



# ENVIRONMENTAL ASSESSMENT

## FOR THE U.S. COAST GUARD SEARCH AND RESCUE / NAVIGATION REMOTE FIXED COMMUNICATION FACILITY ON SAIPAN, COMMONWEALTH OF THE NORTHERN MARIANAS

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NAVIGATION REMOTE FIXED COMMUNICATION FACILITY  
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**Note to Reviewers**

You may comment on this Environmental Assessment by either e-mailing your substantive comments to the following address: [William.A.Freeland@uscg.mil](mailto:William.A.Freeland@uscg.mil) or written comments may be mailed to:

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Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be aware that your entire comment – including your personal identifying information – may be made public. While you can ask us to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Front Cover: Typical Rescue 21 communication tower.

Courtesy: U.S. Coast Guard Rescue 21 PRO Scottsdale.

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## Acronyms

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Acronym	Definition
APE	area of potential effect
ATV	all terrain vehicle
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CNMI	Commonwealth of the Northern Marianas
dBA	A-weighted decibel
DEQ	Department of Environmental Quality
DSC	digital selective calling
EA	environmental assessment
EDR	Environmental Data Resources, Inc.
EMO	Emergency Management Office
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
ft	foot/feet
GMDSS	Global Maritime Distress and Safety System
GPS	global positioning system
in	inch/inches
kW	kilowatt
MDZ	Maritime Defense Zones
MHz	Megahertz
mi	mile
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
mW/cm <sup>2</sup>	milliwatts per square centimeter
MWH	MWH Americas, Inc.
NAAQS	National Ambient Air Quality Standards
NDRS	National Distress and Response System
NEPA	National Environmental Policy Act
NM	nautical mile
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PL	public law
PDFs	Project Design Features

<b>Acronym</b>	<b>Definition</b>
<b>PL</b>	public law
<b>PR</b>	Public Resource
<b>R21</b>	Rescue 21
<b>REC</b>	Recognized Environmental Condition
<b>RF</b>	radio frequency
<b>RU</b>	Rural
<b>SAR</b>	Search and Rescue
<b>SOLAS</b>	Safety of Life at Sea
<b>UHF</b>	ultra high frequency
<b>USCG</b>	US Coast Guard
<b>USFWS</b>	US Fish and Wildlife Service
<b>UXO</b>	unexploded ordnance
<b>VHF</b>	very high frequency
<b>VTS</b>	Vessel Traffic Services

## 1.0 INTRODUCTION

The US Coast Guard (USCG) is conducting an environmental review on a Remote Fixed Facility communication site at Mt. Tapochau, Saipan, Commonwealth of the Northern Mariana Islands (Figure 1-1). This project, called Rescue 21 (R21), is a fully integrated command, control, and communications system that is replacing the Coast Guard's antiquated National Distress and Response System (NDRS) communications system now being used to monitor the international VHF-FM distress frequency, coordinate search and rescue operations, and communicate with commercial and recreational vessels in the coastal zone.

The USCG proposed to deploy the R21 system throughout the terrestrial regions of the continental US, Alaska, Hawaii, the Caribbean, and Guam (URS 2002). In a Programmatic Environmental Assessment (to which this Environmental Assessment is tiered), the decision was made to deploy these new communication technologies.

This Environmental Assessment (EA) was prepared to evaluate potential impacts from the proposed project in compliance with the National Environmental Policy Act (NEPA). This EA provides evidence and analysis sufficient to determine whether there is potential for significant impact, thus requiring an Environmental Impact Statement, or whether there is justification to prepare a Finding of No Significant Impact.

The EA provides important information for decisions by the USCG to construct,

operate, and maintain a new remote fixed communication facility.



Figure 1-1. Location of Guam and Saipan

### 1.1 PURPOSE AND NEED

The USCG is required by its enabling legislation to evaluate and improve the safety of navigation and vessels using marine waters of the United States. Congress has approved funding in the USCG budget for facilities that would enhance very high frequency (VHF) communications throughout the nation as well as the Pacific Islands including:

- improved coverage wherever there are gaps in the communication coverage
- installation of direction-finding and digital selective calling (DSC) capabilities
- improved interoperability with other federal, state, and local government communication systems, and
- installation of a means for protected communications.

The USCG has identified the need for improved maritime distress and response

communication coverage in the Territory of Guam and within the Commonwealth of the Northern Marianas (CNMI).

Communication for navigation purposes and for search and rescue operations would be improved by establishing a new facility in the Mt. Tapochau area.

A complete description of the proposed action may be found in Chapter 2.

### **1.1.1 AUTHORIZING LEGISLATION, REGULATIONS, AND POLICIES**

#### **U.S. Coast Guard**

The USCG is the mandated federal agency for search-and-rescue, environmental response, law enforcement, and national security on marine waters of the U.S. The following is a summarized description of the various statutes, regulations, policies and Memorandum of Agreement (MOA) which task the USCG with specific responsibilities related to the proposed action:

#### **1. Statutes**

- a. 14 USC 2. Tasks the USCG to develop, establish, maintain, and operate facilities for the promotion of Search and Rescue (SAR), carrying out maritime safety programs, and enforcing federal laws and treaties.
- b. 14 USC 93. Authorizes the USCG to maintain radio transmitting and receiving stations.
- c. 14 USC 141. Authorizes the USCG to utilize its personnel and facilities to assist federal and state agencies.

d. 14 USC 145. Sets out the USCG responsibility to act as an armed Naval force. Includes the responsibility for maintaining the Maritime Defense Zones (MDZ). In war, or when the MDZ's are activated, the USCG MDZ commanders have responsibility for port security and coastal defense within 200 miles offshore.

e. 14 USC 147; Authorizes the USCG to cooperate with the National Oceanic and Atmospheric Administration (NOAA) by procuring and maintaining communications facilities and disseminating weather information.

f. 33 USC 1201-1208 (The Bridge-to-Bridge Radiotelephone Act). Provides for certain operators of vessels within navigable waters to communicate their intentions to one another through voice radio. The USCG and Federal Communications Commission (FCC) have designated VHF Channel 16 (156.65 MHz) and Channel 67 (156.375 MHz) as bridge-to-bridge frequencies and established technical requirements and penalties for non-compliance with the Act or regulations.

g. 33 USC 1223. Authorizes the construction, operation, maintenance, improvement, or expansion of Vessel Traffic Services (VTS); and the Secretary to establish carriage requirements for specified navigation equipment, communications equipment, or other devices necessary to comply with vessel traffic services.

h. International Association of Lighthouse Authorities "Guidelines for

Vessel Traffic Services" (IMO Resolution A.578114]). This states that the VTS organization should be equipped to use the appropriate frequencies, as prescribed in Appendix 18 or Radio Regulations, including the international distress, safety, and calling frequencies.

i. Communications Act (47 USC 357). Gives the FCC authority to require radios on vessels for distress purposes and requires "authorities of the United States: to promptly provide warnings to those concerned."

j. Commercial Fishing Industry Vessel Safety Act of 1988. Requires fishing industry vessels to carry radios for communications with the USCG for distress and safety purposes; gives USCG authority to require radios on fishing industry vessels.

k. Safety of Life at Sea (SOLAS) Convention. Chapter IV.8 and 17 requires certain vessels to carry VHF radiotelephones, and to keep watch on Channel 16 (156.8 MHz). Chapter V.3 requires governments to relay danger reports and meteorological warnings to ships.

l. 1988 Amendments to SOLAS-Global Maritime Distress and Safety System (GMDSS) require all ships subject to the Convention to carry DSC equipped radios, phased in during the period 1992 - 2005. Ships will discontinue Channel 16 watch keeping on 1 February 2005.

m. International Telecommunications Union Radio Regulations. Provides maritime distress frequencies and

procedures. RR3057 requires coast stations "which form an essential part of the coverage of the area for distress purposes" to "maintain an effective aural watch" on Channel 16.

n. 1987 Amendments to the ITU Radio Regulations. Provides for DSC on marine radio, establishes DSC distress procedures, and requires coast stations assuming watch keeping responsibility in the GMDSS to maintain automatic DSC watch keeping on the distress channel (RR N3075).

o. Agreement Between the United States and Canada for Promotion of Safety on the Great Lakes by Means of Radio, 1973. Provides for VHF radiotelephone carriage on ships.

## 2. Regulations

a. Manual of Regulations and Procedures for Federal Radio Frequency Management (mandated for federal agencies under 47 CFR 300). Requires federal ships on Great Lakes and in U.S. waters to carry VHF radios. Requires "Government ship and coast stations, during their hours of service of VHF radiotelephone (to) maintain a watch for reception of 156.8 MHz whenever practicable."

b. FCC Telecommunications Regulations, 47 CFR 80. Requires several categories of ships to carry VHF radios for communications with the USCG for distress and safety purposes; provides maritime distress frequencies and procedures. 47 CFR 80 was revised in 1992 to incorporate DSC requirements

on ships subject to the Communications Act.

c. USCG Shipping Regulations, 46 CFR 28. Requires fishing vessels to carry VHF radios for communications with the USCG for distress and safety purposes.

d. Navigation Regulations, 33 CFR 26. Implements the provisions of the Vessel Bridge-to-Bridge Radiotelephone Act (U.S. Code 1201-1208). The regulation makes provisions for vessels to engage in radio communications with USCG and other vessels and shore stations to obtain or furnish information necessary for the safe navigation of vessels.

## **1.2 SUMMARY OF KEY ENVIRONMENTAL REQUIREMENTS**

Applicable environmental requirements at the federal level are summarized below.

### **1.2.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969**

NEPA requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

This EA is a site-specific document tiered to the Supplemental Program Environmental Assessment that addressed the modernization of the USCG R21 facilities (URS 2002). This assessment addresses the USCG action proposal to locate, construct,

operate, and maintain a new communication facility in Saipan, CNMI.

### **1.2.2 INTEGRATION OF OTHER ENVIRONMENTAL STATUTES AND REGULATIONS**

The USCG Commandant Instruction M16475.1D (National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts) requires the consideration of numerous statutes, regulations, and environmental policies in preparing environmental documents, including, but not necessarily limited to the following:

- National Historic Preservation Act and related executive orders (16 USC 470 et seq.)
- Coastal zone management (Public Law [PL] 92-583)
- Coastal barriers (16 USC 3501)
- Wetlands (Executive Order 11990)
- Floodplains (Executive Order 11988)
- Endangered species (16 USC 1531 et seq.)

### **Coastal zone management plans**

Section 307(c) of the Coastal Zone Management Act of 1972, as amended (PL 92-583), requires that “each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved State coastal management programs.”

## National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to consider the effects of projects on historic properties and provide the Advisory Council on Historic Preservation an opportunity to comment on such projects prior to the agency's decision.

## Endangered Species Act

The Endangered Species Act (ESA) requires that all Federal agencies consult with the appropriate Service (the US Fish and Wildlife Service (USFWS)) or National Marine Fisheries Service when any activity permitted, funded or conducted by an agency may affect a listed species or designated critical habitat, or is likely to jeopardize proposed species or adversely modify proposed critical habitat.

### 1.2.3 AGENCY AND PUBLIC INVOLVEMENT

Members of the USCG and its contractors visited the proposed site at Mt. Tapochau and examined potential alternatives for collocating with existing facilities. Invitations to comment on this proposal were mailed in the form of a scoping letter to federal, state, and local governments as well as members of the public. The scoping letter is included as Appendix B.

The mailing list was compiled based on previous mailing lists used by the U.S. Air Force and other sources. Recipients were asked to indicate whether they would like to remain on the mailing list. Recipients who indicated in the affirmative will be sent a copy of the EA.

## Relationship of Proposal to Other Planning Projects

Discussions occurred between the USCG R21 project personnel and USCG Guam Sector personnel on what would be needed to provide coverage in Guam and the CNMI. It was determined that a new facility of an approximate height of 190 feet would provide voice and direction finding coverage of the Saipan area. Other R21 facilities for coverage of Guam and Rota would be collocated on existing towers on those islands with little to minor modification (but are not part of this assessment).

## 1.3 ISSUES

To focus the EA, the USCG selected specific issues after receiving scoping comments for further analysis and eliminated others from evaluation.

### 1.3.1 ISSUES SELECTED FOR DETAILED ANALYSIS

***Land use:*** The Mt. Tapochau site (Figure 1-2) is located on the highest point on the island and is the only site from which it is possible to obtain full 360-degree coverage on Saipan without terrain shadowing. The existing use of Mt. Tapochau includes multiple, tall communication and FM broadcast towers, a religious monument dedicated to Jesus Christ, and a national monument, as part of the War in the Pacific National Monument (National Park Service).

Figure 1-2



**Visual resources:** The mountain, extensively visited by non-resident, island visitors, and people of faith visiting the religious monument dedicated to Jesus Christ, has the potential to be seen at a distance across the island.

**Archeological, historical, and cultural resources:** There are no physical or literature indications that the particular site of the proposal was used for subsistence or religious practices by the indigenous population. There are indications that the area was extensively used in recent history during World War II. The mountain was part of a set of defenses constructed by the Japanese to repel invasion of the island during the war. Any discovery of artifacts or resources will halt any excavation and an assessment will be made of the discovery.

**Air quality and noise:** The proposed facility would include a back-up diesel-fueled generator to provide power when commercial power is unavailable.

**Soils and water resources:** The site is located at an elevation of 1464 feet above mean sea level, just below the top of Mt. Tapochau. Water runoff from precipitation may have the potential for moving contaminants off-site.

**Vegetation and wildlife:** The proposed facility would be new construction involving the clearing of vegetation and excavation for foundations and footings. Some trenching for utility lines may be conducted. The USFWS has identified the potential for two endangered bird species to be found at the site.

**Hazardous materials; public health and safety:** The proposed facility would contain some hazardous materials and petroleum products. The facility provides distress communication capability for recreational boaters, for commercial fisherman, and for commercial ships. Public health and safety is affected by providing communication capability. Meteorological and navigation information is provided to the boating public.

**Cumulative impacts:** There are other projects planned by the federal government on Saipan, but none in the Mt. Tapochau vicinity. Each analysis area will be examined for cumulative effects.

### 1.3.2 ISSUES DISMISSED FROM DETAILED ANALYSIS

**Geology:** The facility's footprint is small in comparison to the existing towers in the surrounding area and won't have any effects on the geology of the region.

**Wetlands:** Examination of the proposed site revealed that there are no wetlands in the vicinity of the Mt. Tapochau. Therefore, there won't be effects to wetlands from a facility at this site.

**Floodplains:** The site isn't located in a floodplain, being positioned just below the top of Mt. Tapochau and is over 1460 feet above mean sea level. No nearby water bodies would be affected by a facility at this site.

**Environmental justice:** The local Chamorro people have resided in Saipan for millennia. However, the influences of European and Asian occupying powers have changed the landscape from the pre-occupation period. This project won't provide any physical or economic disproportional effects on low-income and minority populations. The improved communication capability provided by the USCG facility would affect all boater populations equally regardless of their status of income or minority.

**Socioeconomics:** Construction and operation of the facility would provide few opportunities for employment by local residents. The type of construction and personnel engaged in communication facility construction are specialized. A skilled and experienced team would be hired for the construction. As a supplement to the construction team, local residents might be hired for certain jobs such as staging or transporting materials. Therefore, adverse impacts to socioeconomics in the vicinity of the proposed project aren't expected.

**Transportation:** The local existing transportation avenues on the island

(roads) wouldn't change from installation of the proposed project. The tower would be lighted and/or painted as required to comply with the appropriate Federal Aviation Administration (FAA) regulations for tower marking (air routes).

#### **1.4 PERMITS AND APPROVALS NEEDED TO IMPLEMENT PROJECT**

A One Start Non-Commercial Earthmoving and Erosion Control permit from the CNMI Division of Environmental Quality (DEQ) would be needed before construction of the site begins and before any vegetation is removed. An air quality permit will be submitted for the generator. FAA approvals will also be sought. There is a chance that there may be unexploded ordnance (UXO) left from WWII actions. Excavation would be halted if such were found and the proper authorities would be notified for proper disposal.

Every effect will be made for the proposal to be consistent with Coastal Zone Management goals.

A land use lease from the CNMI Department of Public Lands is also needed prior to occupancy of the proposed site. The term of the lease would be a minimum of twenty years with options for extensions. NDRS legacy sites have lasted 40 years and with upgrades could be extended indefinitely.

If endangered species are found on or use the proposed site, a "take" permit from the USFWS may be necessary. However, efforts will be made to avoid or mitigate any adverse effects on these species.



## 2.0 ALTERNATIVES

This section of the EA describes a range of reasonable alternatives. Details are presented for one other alternative, which is No Action. Other options considered but not evaluated in detail are mentioned at the end of this section.

### 2.1 BACKGROUND BEHIND THE PROPOSED U.S. COAST GUARD ACTION

The USCG R21 program is designed to provide an integrated emergency communication system extending 20 nautical miles (NM) from the tidal mean-low water mark of Saipan with services including monitoring of distress calls from vessels (MAYDAY), improvement in communication for other operational missions, and support for U.S. compliance with international treaties. These services would be accomplished by reducing coverage gaps in the current VHF system, increasing channel capacity, providing DSC capability, digitally recording communication, reducing system “down time” and allowing “critical function” recovery, and improving interoperability among the USCG and other federal, state, and local communications systems. The USCG is modernizing the R21 system by deploying new communication technology throughout the terrestrial regions of the continental US, Alaska, Hawaii, the Caribbean, and Guam (URS 2002). Alternatives for the Supplemental Program Environmental Assessment were developed based on the need for the USCG to modernize the R21 system with the capacity for two-way voice and data

communications between shore stations, vessels, aircraft, and vehicles in the maritime environment. Currently the R21 system consists of approximately 300 remote VHF and UHF communication sites. The USCG estimates that 377 sites are needed nationwide to provide coverage in current gap areas and to resolve localized coverage deficiencies.

The USCG intends to deploy the modern R21 communications equipment to existing remote communication sites to the maximum extent practicable. In those instances where there is no suitable legacy National Distress and Response (NDRS) facility, the USCG must consider the deployment of new facilities to existing towers or undeveloped sites.

The service provided by the USCG Sector Guam would be accomplished by the following actions:

- Reducing coverage gaps in the current VHF system;
- Increasing channel capacity, which allows for simultaneous communications on multiple channels (including VHF Channel 16);
- Having DSC capability that will quickly provide the vessel’s name, exact location, nature of distress, and other vital information when used in conjunction with an integrated global positioning system (GPS) receiver and properly registered Maritime Mobile Service Identity number;
- Digitally recording communication for instant playback;
- Reducing system “down time” and allowing “critical function” recovery;

- Improving interoperability among the USCG and other federal, state, and local communications systems.

USCG Sector Guam consists of the coastal areas of the islands of Guam, Rota, Aquijan, Tinian, and Saipan. Sector Guam responded to 120 cases of distress in 2009, 139 cases in 2010, and 10 cases as of October 2010 (FY2011).

This proposal focuses on the coverage in areas of Saipan proper (Figures 2-1, and 2-2) to be addressed by the proposed action (described in Section 2.3).

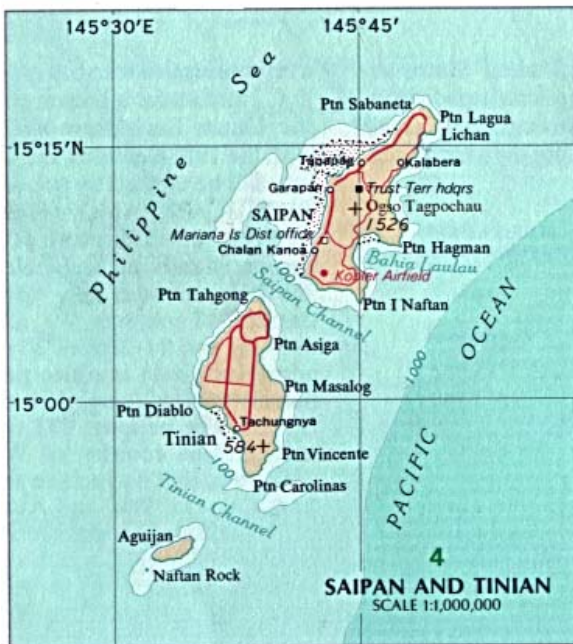


Figure 2-1. Saipan and Tinian

There is no coverage in Saipan under the current NDRS system. Co-location on existing towers was examined and found to be not suitable. As a result, the USCG must consider an additional strategy, which includes the deployment of a new facility to an undeveloped site.

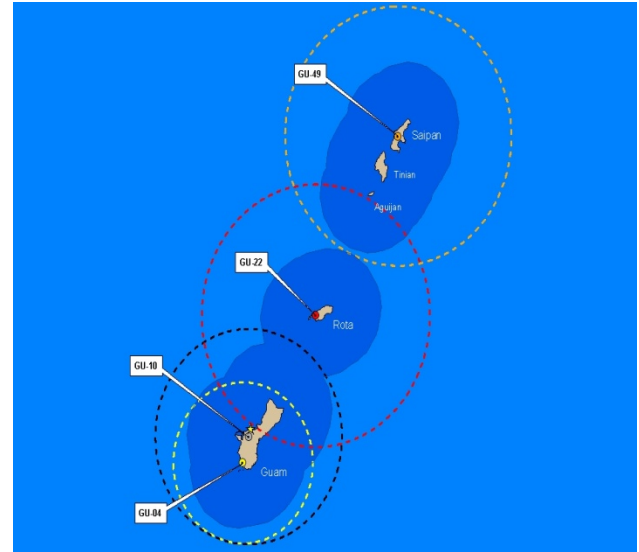


Figure 2-2. VHF Voice Coverage - showing voice coverage using a 1-watt mobile transmitter held at 2 meters above the water surface.

## 2.2 ALTERNATIVE 'A' DESCRIPTION (THE NO ACTION ALTERNATIVE)

As required by the Council of Environmental Quality, a "No Action" alternative is evaluated. Under the No Action Alternative, the USCG's legacy maritime communication system won't be modernized. The system would continue to operate with the existing network of analog transceivers located at existing tower sites. No new communications equipment would be installed and no new antenna tower site would be constructed. Existing gaps in the maritime communication system would remain.

The No Action Alternative provides a baseline for decision-makers and the public. This baseline allows the environmental effects of the action alternatives to be compared with those of the No Action Alternative.

## 2.3 ALTERNATIVE 'B' DESCRIPTION (THE PROPOSED ACTION)

The proposed action consists of the construction and operation of a SAR/navigation remote communication facility by the USCG. The facility would be constructed at Mt. Tapochau on Saipan, which is located in the middle of the island. This new facility would provide communication coverage for 360° around the island, an area that currently is not covered by existing USCG facilities.

All communications received through this new facility will be routed to the USCG watch-standing station at Sector Command Center Guam and Station Apra Harbor on Guam.

The proposed communication facilities would consist of a communication tower, communication equipment shelter, an H-frame structure for power connections, a back-up diesel generator with a belly tank and all necessary electronic equipment capable of receiving and transmitting radio signals within the relevant service area. The site would occupy an area of about 0.20 acre surrounded by fencing. Details are provided below for each component of the proposed facilities.

### 2.3.1 THE MT. TAPOCHAU SITE

Elements proposed for the Mt. Tapochau site are described below and may be similar to the tower shown in Figure 2-3 (a typical communication site on Mt. Tapochau).



**Figure 2-3.** Example of a typical communication site on Mt. Tapochau.

- **Communication Tower** – A lighted 190-foot, self-supporting, galvanized steel lattice tower on a concrete foundation would be built. A steel ladder would be positioned outside the structure. The tower would provide support for USCG antennas including two VHF omni-antennas each 21 foot tall and 5 inches in diameter, one ultra-high-frequency omni-antenna 12.5-foot tall and 4.5 inches in diameter, and a VHF direction-finding array. These antennas would be mounted at the 135 ft., 170 ft., and 190 ft. (top) levels of the tower. Individual coaxial transmission cables would connect the antennas on the tower to the

radio equipment in the communication shelter. The total proposed height of the tower and the top-mounted direction finding antenna would be 203 feet. A grounding loop with grounding rods would be installed around the tower and structures.

- **Communication Shelter** – An 8-ft. 3-in. by 12-ft. 6-in. shelter (Figure 2-4) would house the electronics equipment required to transmit and receive signals, and transfer these signals to the USCG control center. The shelter would most likely be an insulated, precast concrete structure due to the availability, weight, and life span of this material. This facility would be cooled due to the heat generated by the electronics equipment and the ambient temperature on the island. The shelter foundation would consist of a full concrete foundation, set into the soil of the site.



Fig. 2-4 Example of a typical communication shelter.

- **Back-up Generator** – A back-up 20-kW diesel generator with a 300-gallon belly tank would be located

on a 6-ft. by 10-ft. concrete pad and would run periodically as required during commercial power outages. The generator would have mufflers and would run only when commercial power has failed. The generator would also be programmed to perform a reliability test run every other week for 30 minutes at a time for a total of 13 hours per year.

- **Utilities** – Commercial power would be provided to the site by Commonwealth Utilities Corporation. An approximate 275-foot overhead line would run along the access drive from the nearest power source. Telco services would be provided by IT&E on the 275-foot overhead line to the H-frame and then to the R21 communication shelter.
- **Site Access** – A 275-foot long by 12-foot wide access drive from the main access road would be constructed (Figure 2-5) to access the compound. The compound itself will be surrounded by a concrete block-fence for security. A metal vehicle-entry gate would be installed. There would be enough room within the compound to add another communication shelter (no proposal for this has been made).



**Figure 2-5.** New 275-foot access road from the main access road.

### 2.3.2 PROJECT DESIGN FEATURES

Project Design Features (PDFs) are those features that are planned to help reduce potential impacts or effects that stem directly from construction or operation of the facility. PDFs may be either physical attributes designed to reduce or minimize the effects, or may be administrative requirements that would reduce or minimize the direct effects of actual operations and maintenance actions. Any remaining adverse consequences have been reduced or mitigated to the maximum extent practicable without going to exorbitant expense (example – visual resources).

#### 2.3.2.1 Public Safety

- The facility would have limited access provided by locked gates and doors. The concrete block-fence would be topped by security wire.

#### 2.3.2.2 Vegetation

- The compound itself would be kept clear of tall growing vegetation.
- Open ground within the interior of the compound would be capped with vegetation inhibiting geotextile fabric covered with six inches of crushed stone to prevent erosion of the soil.
- A survey for invasive plants would be made annually during a maintenance visit to the site. Invasive plants will be eliminated at the site before they become established.

#### 2.3.2.3 Wildlife

- To the extent possible, construction and maintenance activities would be timed to avoid sensitive periods, such as the nesting period for birds.

#### 2.3.2.4 Soundscape

- To reduce adverse noise impacts to Mt. Tapochau visitors and wildlife, noise from the generator would be reduced with the use of a muffler on the exhaust. Noise would also be further mitigated by the solid block wall surrounding the compound.

#### 2.3.2.5 Cultural Resources

- To address potential impacts related to unexpected encounter of cultural resources during construction, standard USCG contract specifications provide for stopping work until appropriate surveys and characterization of resources are performed by qualified specialists. Alternatives would be evaluated in

consultation with the Historic Preservation Officer and affected stakeholders. Either the project would be modified to avoid such resources, or a program of conservation and preservation would be implemented.

#### 2.3.2.6 Monitoring

- The environmental effects of the construction, operation, and maintenance of the facility would be examined in the field. Monitoring would be scheduled during construction (for spills, noise measurements, cleanup/ area policing effectiveness), during operation, and during maintenance (for animal damage, weather damage, general condition of the facility, and general condition of the surrounding vegetation and environment). Vigor of re-established species in areas of disturbed soil would be checked, and the surrounding area would be monitored for invasive species.

## 2.4 THE ENVIRONMENTALLY PREFERRED ACTION

The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in NEPA (Section 101(b)). The environmentally preferred alternative is the alternative that not only results in the least damage to the biological and physical environment, but that also best protects, preserves, and enhances historic, cultural, and natural resources. Alternative A (No Action) is the environmentally preferred

alternative because no new adverse impacts to the environment would occur from installation of the Rescue 21 communication facility. A new SAR/ navigation communication facility would, however, provide a valuable safety capability (pre-incident) as well as enhanced search and rescue operational communications, improved and quicker response to environmental incidents, and a more reliable communication system for operational (administrative) actions on marine waters, which won't occur under the No Action alternative.

Alternative B is the Proposed Alternative and also the Federal Preferred Alternative.

## 2.5 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

As part of project scoping, several alternative site locations identified were ultimately dismissed from further consideration because they didn't meet the physical objectives of the project.

These alternative sites are named below with the reason for rejection.

Several locations were considered that might partially achieve the goal of the USCG to provide communication around Saipan. These included co-location in existing facilities.

The USCG R21 Project must use several criteria when choosing locations that would meet or improve communication in a particular area. These, as mentioned above, include: the modeled area of improved VHF coverage, the reliability of communications to/from mariners (in

particular, by a mariner in distress trying to use a 1 watt, handheld radio being held 2 meters above the water), the accessibility for maintenance, and the cost of construction and maintenance. In addition, for an existing tower to be suitable, it must meet four criteria:

1. The tower must be structurally capable of supporting the proposed USCG antennas and coaxial cables, or at least upgradeable.
2. It must have sufficient open space for the USCG antennas.
3. The existing antennas on the tower must be compatible from a radio-frequency interference standpoint.
4. The existing tower owner must be willing to lease space to the USCG.

In addition to these criteria, any existing communication compound must have sufficient space for the USCG R21 ground equipment (i.e., shelter, generator, etc.) or there must be suitable surrounding land for the compound to be expanded.

A series of coverage plots were analyzed in light of the purpose and need for the project (See Figures 2-6 and 2-7).



Figure 2-6. Area of Coverage - VHF Voice

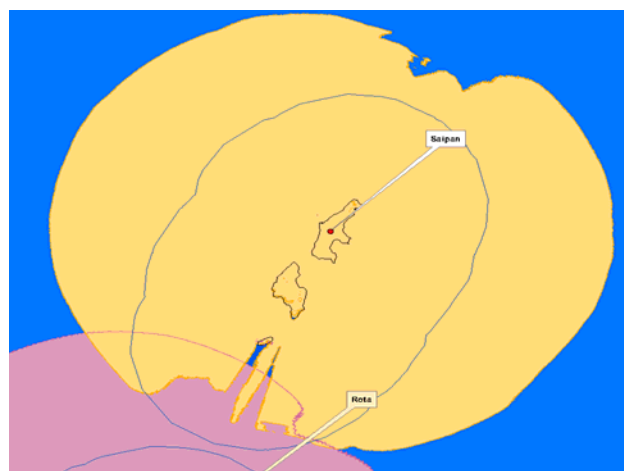


Figure 2-7. Area of Coverage - Direction Finder

- Existing Emergency Management Office (EMO) tower – the existing EMO tower on Mt. Tapochau was examined. Antennas would be collocated on the existing tower and a new USCG shelter would be constructed. Analysis revealed no room for R21 antennas on the existing tower.
- New EMO tower – a new EMO tower on Mt. Tapochau was considered. Antennas would be collocated on the new tower and a new USCG shelter would be constructed. Timing would be

- dependent upon construction by another agency.
- Sorensen Pacific Broadcasting – there was inadequate space in the Sorensen compound for a new-build tower and the existing 138-ft. tower is structurally too weak to support R21 equipment.
- Radiocom tower- the existing tower owned by Radiocom is structurally too weak to support R21 equipment. There was no space to accommodate a new-build tower.
- Another existing tower (unknown owner) – an existing tower on Mt. Tapochau that is located away from the other existing towers is structurally too weak to support R21 equipment. There was no space for a new-build tower.
- Other locations on Saipan – all other locations investigated on the island were at a much lower elevation and would necessitate the installation of two separate remote communication facilities.

## 2.6 COMPARISON OF ALTERNATIVES CONSIDERED

Table 2-1 compares the potential environmental impacts associated with the No Action, and the Proposed Alternative. Potential impacts are provided for each environmental resource topic. The next chapter of this EA contains a detailed discussion of the potential impacts by resource topic.

**Table 2-1 Comparison of Alternatives.**

Affected Environment	Impacts	
	No Action (Alternative A)	Proposed Action (Alternative B)
Land use	<p>No change in land use.</p> <p><i>No change in existing site.</i></p>	<p>There would be one more communications facility located in an area of similar use. There would be no change in other uses of Mt. Tapochau. There would be a minor adverse impact because construction might disrupt traffic to the mountain.</p> <p><i>An additional tower would be located with the existing towers on Mt. Tapochau.</i></p>
Public health and Safety	<p>No improvement to public safety.</p> <p><i>No cumulative impact. The potential risk to boaters would remain.</i></p>	<p>Major beneficial impacts from improving SAR/ navigation communication capabilities.</p> <p><i>A minor impact from the increase in the number of towers on Mt. Tapochau.</i></p>

<p>Hazardous materials and waste management</p>	<p>There are hazardous materials and petroleum products at the existing communication facilities near the Proposed Site. This wouldn't change.</p> <p><i>No cumulative impacts.</i></p>	<p>There would be oil/petroleum lubricants, antifreeze, and minor amounts of hazardous materials at the proposed facility for operations and maintenance. Use of BMPs would limit the potential for these materials to enter the environment.</p> <p><i>A minor amount of petroleum products and fuel is found in all the facilities on the mountain. The Proposed Action introduces a minor amount to this total.</i></p>
<p>Visual resources</p>	<p>Existing site barely visible from sea level.</p> <p><i>No change to existing site.</i></p>	<p>Visual resources at the site would be moderately changed in the near field by the addition of the facility.</p> <p><i>The facility would be an additional tower and compound on Mt. Tapochau with the other existing towers and compounds. Visitors to the area would only notice this addition if they had visited the area previous to construction.</i></p>
<p>Cultural and historic resources</p>	<p>No impact because no construction/ operational activities would occur.</p> <p><i>No change to the existing site.</i></p>	<p>No cultural or historic resources were identified at the site. Some moderate indirect impacts would occur from the tower being visible in the viewshed at historic sites (outside the APE).</p> <p><i>The viewshed of historic sites would be moderately changed by the addition of the facility to similar facilities in the viewshed.</i></p>
<p>Air quality and noise</p>	<p>No impact to air quality. No impact to the soundscape.</p> <p><i>No cumulative impact.</i></p>	<p>Emissions from the generator are negligible and do not contribute to existing air quality sources. Operation of the generators would produce a site-specific impact that is temporary.</p> <p><i>The proposal adds a negligible amount of emissions to the airshed. Sounds from the generators would not contribute to the overall noise levels outside the site compound.</i></p>
<p>Soils and Water Resources (water quality)</p>	<p>No change or disturbance to soils or water resources would occur.</p> <p><i>No cumulative impacts to soils or water resources.</i></p>	<p>The facility would disturb approximately 5800 to 6000 sq ft. of topsoil. This would be a long-term impact for the life of the facility</p> <p><i>No cumulative impacts to soils.</i></p>
<p>Vegetation</p>	<p>Existing site already has non-native vegetation. This condition wouldn't change.</p> <p><i>No cumulative impact but chance intro of invasive weeds remains.</i></p>	<p>Approximately 5800 to 6000 square feet of vegetation would be removed for installation of the facility and the access road.</p> <p><i>No cumulative impacts were identified.</i></p>

<p>Wildlife (Threatened and endangered species)</p>	<p>No impacts on wildlife or habitats.  <i>None.</i></p>	<p>Negligible impact to wildlife populations, communities, or species, including threatened and endangered species.  <i>None. Addition of a new tower would be a neutral effect.</i></p>
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## 2.7 Mitigation Measures (Already Proposed as a Project Design Feature)

Potential mitigation measures have been addressed for the following elements of the environment:

- ◆ To address potential impacts related to unexpected encounter of cultural resources during construction, standard USCG contract specifications would provide for stopping work and contacting the proper authorities until appropriate surveys and characterization of resources are performed by qualified specialists. Alternatives would be evaluated in consultation with the Historic Preservation Officer and affected stakeholders. Either the project would be modified to avoid such resources or a program of conservation or preservation would be implemented.

- ◆ Environmental effects of the construction, operation, and maintenance of the facility would be examined in the field. Monitoring would be scheduled during construction (for spills, noise measurements, cleanup/area policing effectiveness), during operation (for diesel generator run time, etc.), and during scheduled maintenance (for animal damage, weather damage, general condition of facility, and general condition of the surrounding vegetation and environment). Vigor of re-established species in areas of disturbed soil could be checked, and the surrounding area would be monitored for invasive species.
- ◆ The layout of the R21 facility is conceptual. Actual layout and construction of the facility would take advantage of topography and vegetation to locate/ hide the facility components.

### 3.0 AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

**Affected Environment:** The discussion of the affected environment includes a description of the existing resource condition onsite as well as those in the vicinity. These resources include the physical and biological environment, the species and habitats that may be affected, and, if appropriate, the human and socioeconomic aspects of the area.

**Environmental Consequences:** The discussion of environmental consequences evaluates (summarizes) the potential effects of the Proposed Action and the No Action alternatives. The analyses and conclusions presented are based upon the professional knowledge of the analysts; their review of existing plans, research, or industry literature; and measurable parameters (or comparability with similar activities) associated with the resource. An impact (i.e. change or effect) may include a description of a direct, indirect, and cumulative impact(s) on the resource. Both adverse and/or beneficial effects are noted. Some speculation is provided about the numbers of human or wildlife individuals that may be present in the vicinity of the facilities.

While evaluating a proposed action or alternative, the analyst considers the effects of the proposed action/ alternative and determines whether such activity would/won't lead to a significant change in the resource or an impairment of value. It is assumed that if no activity takes place at a site, then there is no change or effect on the

resource and therefore, no impairment of a value. It is also assumed that when there is negligible effect on a resource, there would be no impairment, based upon the context or duration of that particular activity (see below).

The effects to the subject resources are analyzed on the basis of the intensity, duration, and extent of the potential impact. Summary impact levels (characterized as negligible, minor, moderate or major) are given where appropriate for each subject issue topic in the analyses. Definitions are provided below. Table 3-1 presents a summary of impact level thresholds.

**Intensity of Impact:**

*Low* – A change in resource condition is perceptible, but does not measurably alter the resource function in the ecosystem, the cultural integrity, or other socioeconomic circumstances.

*Medium* – A change in the resource condition is measurable or observable and an alteration is detectable to the resource function in the ecosystem, the cultural integrity, or other socioeconomic circumstances.

*High* – A change in the resource condition is measurable or observable and an alteration to the resource function in the ecosystem, the cultural integrity, or other socioeconomic circumstances is clearly and consistently observable.

**Duration of Impact:**

*Temporary* – Impacts would last only a single season or for the duration of the discreet activity, such as installation or maintenance.

Long-term – Impacts would extend for several years up to the life of the facility.

Permanent – Impacts are a permanent change to the resource that would last beyond the life of the facility even if the actions causing the impacts were to cease.

**Context:**

Common – The affected resource is wide spread and is not identified in enabling legislation as important to the area, nor is it rare within or outside the area. The portion of affected resource does not fill a unique role within the area or in the region around the area.

Important – The affected resource is identified by enabling legislation or is rare either within the area or in the region of the area. The portion of affected resource does not fill a unique role within the area or in the region around the area.

Unique - The affected resource is identified by enabling legislation and the portion of the affected resource uniquely fills a role within the area or within the region around the area.

**Unacceptable but not significant effects:**

Effects or changes may also be examined to determine whether they are unacceptable, but not raising to the level of significance.

Unacceptable impacts are effects that, individually or cumulatively, may:

- Be inconsistent with the purposes or values of the site or adjacent environment, as directed by law or regulation, or
- Impede the attainment of a desired future condition for natural or cultural resources as identified through a land manager’s planning process, or create an unsafe or unhealthful environment for visitors or employees, or
- Diminish opportunities for current or future generations to enjoy, learn about, or be inspired by such resources (if such were addressed in a land management plan), or
- Unreasonably interfere with any of the following:
  - Existing programs or activities, or
  - An appropriate use as specified in the local land use management plan.

Conclusions, as such, are based upon the analyst’s judgment of the magnitude of the change in the surrounding environment without the facility or with the facility, and the duration of an activity.

Threshold impact levels are defined as:

**Table 3-1 Impact Level Thresholds**

Negligible	Minor	Moderate	Major
Impacts are generally extremely low in intensity (often they cannot be measured or observed), are temporary, and do not affect unique resources.	Impacts tend to be low intensity or duration, although common resources may have more intense, longer-term impacts. -or-	Impacts can be of any intensity or duration, although common resources are affected by higher intensity, longer impacts while unique resources are affected by medium	Impacts are generally medium or high intensity, long-term or permanent in duration, and affect important or unique resources. -or-

<p>-or- Little or no impact to the resource would occur; any change that might occur may be perceptible but difficult to measure.</p>	<p>Change in a resource would occur, but no substantial impact would result. The change would be perceptible and measurable but not alter resource condition.</p>	<p>or low intensity, shorter-duration impacts. -or- Noticeable and measurable change in a resource would occur and would alter resource condition, but the integrity of the resource would remain.</p>	<p>Substantial impact to a resource would occur that is easily defined, highly noticeable, and would measurably alter the integrity of the resource.</p>
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Adverse effects to non-renewable resources such as cultural resources (physical) can only be classified as “major” because the effect to the resource would destroy the resource both in context and forever. “An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that would qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.” (36 CFR 800.5(a)(1).

**Cumulative Impacts:** Cumulative impacts are assessed by combining the

potential environmental impacts of the alternatives with the impacts of projects that have occurred in the past, are currently occurring, or are proposed in the future. Known past, present and reasonably foreseeable future projects and actions may be found in the immediate area of the undertaking or within the region of this area.

The questions involved with cumulative impacts are: (1) is or will the proposed action contribute to any impacts from other actions; (2) what is magnitude of the change to the particular resource being examined, and; (3) does this change raise above the level of concern that a reasonable manager would have for the particular resource? The reader of this document will want to know what this level of concern is and do the resource impacts raise above this level.

### 3.1 LAND USE

#### AFFECTED ENVIRONMENT

The site of the Proposed Action is located on land owned by the CNMI Marianas Public Land Corporation and leased by the CNMI EMO. The area is currently vacant, densely vegetated land located directly southeast of an existing telecommunications site owned by I-Connect with two equipment shelters and a 180-foot tall self-support tower. Another telecommunications compound containing several towers and antennas is located approximately 300 feet south of the Site. The tallest tower in this compound is 200 feet, with an elevation at the top of the tower of 1,693 feet above sea level.

For governmental purposes, Saipan is considered a single municipality, though it is informally broken into villages and subareas or neighborhoods. The site is located near the top of Mt. Tapochau, which is located near the center of the island in the neighborhood of Tapochau in the Village of Capitol Hill. The site is accessed via an unnamed, unpaved road. Although the road is in moderate to poor condition with numerous ruts and washed out areas, it accommodates frequent travel by residents living near the top of the mountain, and by visitors to the American Memorial Park (National Park Service) World War II historic site and the religious monument at the peak of Mt.

Tapochau. The road is also used by recreational off road vehicles and for a number of organized races throughout the year, including the XTerra Saipan Championship in March, the Marianas Coffee Trail Run in October, the Turkey Trot in November, and the Hell of the Marianas cycling race in December.

The religious monument located near the top of Mt. Tapochau is a concrete statue of Jesus Christ that marks the end of an annual four-mile trek made by thousands of Catholics on Good Friday. A large wooden cross is carried to the peak in the traditional procession that has grown since its start in 1977. An Easter Sunday Mass is also traditionally celebrated near the peak each year.

The site is zoned Public Resource (PR). According to the Saipan Zoning Law of 2008 (10 CMCS 3511, PLL 16-6):

This district is intended to protect government-owned lands, or private lands on request, that need special management due to their unique historic, health and safety, cultural, or ecological value or sensitivity, including:

1. National parks
2. CNMI parks
3. Trails
4. Land within 150 feet of beaches
5. Public museums and cultural centers

6. Major public tourist destination sites
7. Public war memorials
8. Public land areas of exceptional archaeological, historic or cultural value
9. Ecologic resources such as habitat and wetlands
10. Health and safety resources such as stormwater conveyances and water supplies

Surrounding areas are predominantly zoned Rural (RU).

## ENVIRONMENTAL CONSEQUENCES

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur and there would be no change to land use at the site.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

The Proposed Action does not fall within the designated uses for the PR zone. A Conditional Use (Land Use) permit would be required for construction of the new communication tower in this zone. Standard (non-stealth) towers are permitted only in Rural, Mixed Commercial, Industrial, and Public Resource zoning districts, and

Conditional Use permits are required for construction in all zones. The U.S. Coast Guard has applied for a temporary Permit (lease) from the Department of Public Land to use the land on Mt. Tapochau (in lieu of a Conditional Use Permit).

Under the Proposed Action, approximately 2,500 to 2,700 square feet of the site would be disturbed for the compound, with an additional 2,700 to 2,800 square feet being disturbed for the access road. The other portions of the leased parcel would not be affected. Land use would be changed from densely vegetated areas with minimal public access, to a public-safety-related facility periodically accessed by maintenance workers. Because of the relatively small size of the facility footprint, the change to the existing land use at the site would be minimal. Because the facility would be located near two existing telecommunications compounds, the Proposed Action would not substantially alter the character of the area.

#### ➤ **Temporary and Long-term Effects**

Some temporary effects on land use could occur during the construction period from road use by construction equipment that could block or slow access to Mt. Tapochau by recreational users or other visitors. This would be minimized by coordinating with appropriate

entities to confirm that heavy construction periods do not coincide with planned races in the area or times of religious processions. Minor temporary clearing (less than 2,000 square feet) is anticipated beyond the areas to be cleared. These areas would be revegetated, so in the long-term land use would remain unchanged.

The land use lease would be a minimum of twenty years with the option of extensions. With continuous maintenance, operation of R21 facilities could last forty or more years. With the advent of newer technology in VHF communications, upgrades could make this facility useful for many years. If a decision were made to terminate operations of the facility, then the USCG would arrange for the decommissioning of all structures and arrange for remediation of the site to a more natural condition, if appropriate.

➤ **Cumulative Effects**

Another tower on Mt. Tapochau would be added to the existing towers.

➤ **Conclusion**

Overall effects on land use from the Proposed Action would be minor but constitute a long-term change to the site.

## 3.2 PUBLIC SAFETY

### AFFECTED ENVIRONMENT

The CNMI currently has no coverage under the existing USCG distress and response communication system. The lack of a distress response system in this area constitutes a potential public safety issue for recreational and commercial vessel operators off the coast of Saipan and neighboring CNMI islands. Between 2005 and 2009, ten recreational boating accidents were reported in the CNMI, with one resulting in a fatality (USCG 2009).

The site is located on relatively undisturbed, vacant, densely vegetated land with no existing structures. The site has no current public uses; however, it is accessible to the public because it is unfenced and near (approximately 200 feet from) the parking area used by visitors to the Mt. Tapochau viewpoint, WWII interpretive site, and religious monument. The existing telecommunications compound located approximately 100 feet northwest of the site of the Proposed Action was the target of arson in 2004, which resulted in an explosion that destroyed the radio room owned by the telecommunications firm I-Connect, along with Federal Bureau of Investigation (FBI) and NOAA communications equipment. The explosion and a previous arson attempt at the site in 2003 were

determined to be acts of sabotage by a rival telecommunications firm. Gasoline was used as an ignition source in both incidents (Saipan Tribune 2004).

Saipan played a prominent role in the Pacific Theater battles of WWII. In 1914 Japan seized Saipan from Germany, which had purchased the island from Spain in 1899. Japan occupied the island through World War II, using it as a strategic location in sieges on U.S. forces. In June of 1944, U.S. troops landed on Saipan and fought Japanese soldiers for more than three weeks before winning the Battle of Saipan. Because of the history of warfare throughout the island, there is potential for UXO to occur in the area. It is estimated that millions of pounds of unexploded munitions and explosives still occur in the CNMI, including unexploded bombs, artillery shells, grenades, and bullets. Some of the munitions were fired but failed to detonate, while others were abandoned after troops vacated the area (EPA 2009). Although the Marpi area in northeastern Saipan is considered the island's UXO hotspot, UXO has been found in the general project area. The CNMI EMO Response and Recovery coordinator reportedly recovered a live 105-millimeter projectile near a residential area on Mt. Tapochau in July 2002 (Saipan Tribune 2002). The potential for UXO to exist at the site is unknown. There is some existing risk to public safety

due to this potential presence in an unsecured area.

Saipan is located in an area of active seismicity influenced by the convergence of the Pacific plate and the Philippine Sea plate, which form the Mariana Trench and Mariana Ridge. Earthquakes of magnitude five to six occur approximately five to eight times per year, with higher magnitude quakes estimated to occur every ten years. Earthquakes can generate tsunamis, though this occurs infrequently from earthquakes in the Mariana region because seismic activity in this area is typically very deep. Tsunamis can also occur on Saipan as a result of nonlocal seismic activity (earthquakes occurring off the coast of Japan or other areas) (Rutherford and Kaye 2006).

The site of the Proposed Action is located near two existing telecommunications compounds. Nineteen antennas are mounted on towers in these compounds and are between 0.2 and 0.4 mile from the proposed tower. These antennas emit electromagnetic radiation in the form of radiofrequencies (RF) for television, radio, and cellular phone signal transmission. RF transmission frequencies for these antennas range between 89 and 866 megahertz (MHz), of which, transmissions above 300 MHz fall within the microwave range.

RF radiation at these frequencies is non-ionizing, meaning that it does

not strip ions from atoms and molecules, which could lead to damage of biological tissues. X-rays and gamma rays, in contrast, are types of ionizing radiation of higher energy and shorter wavelength that can damage biological tissue. RF radiation does however heat tissue in the same way that microwaves cook by heating water molecules in food. High levels of RF radiation could be harmful to humans due to these thermal effects. Some biological effects may also occur at lower RF radiation levels, such as immune system changes, neurological effects, behavioral effects, or cancer. Scientific evidence for these effects is inconclusive (FCC 1999).

The FCC has adopted guidelines for recommended RF radiation exposure level limits. There are two tiers of limits, one for the public and another for workers. The limits for workers are five times higher than those for the public, who may not be aware of exposure levels or able to exercise control over their exposure. Exposure limits vary with radiation frequency and are expressed in milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ), which is a measure of power density. At sites with multiple transmitters, FCC rules specify that any individual licensee must be evaluated for compliance if the total power density of their antennas is more than five percent of the maximum exposure limit (FCC 1997).

## ENVIRONMENTAL CONSEQUENCES

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, the lack of a distress and response communication system in the area would not be addressed. Any vessels in distress off the coast of Saipan and neighboring CNMI islands would continue to be negatively affected. No vegetation clearing or UXO surveys would be performed and the site would remain unsecured, so potential UXO risks to members of the public accessing the site would remain unchanged.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

The objective of the Proposed Action is to establish maritime distress and response communication coverage within the CNMI for navigation purposes and for search and rescue operations. Implementation of the Proposed Action would result in direct beneficial effects on the public safety of recreational boaters, commercial fisherman, and commercial ships in distress for the life of the facility. The proposed response system would facilitate USCG response to maritime incidents and could minimize the incidence of fatalities.

The proposed compound and facilities would be secured with fencing and locked gates and doors. The concrete block-fence would be topped by security wire. There is some potential for members of the general public to access the compound, resulting in negative indirect effects on public safety from contact with any hazardous materials at the site, exposure to RF radiation, or damage to facilities that would interrupt the functionality of the search and rescue communications system. Security measures installed at the site would reduce the likelihood of this occurring to a very low level.

The Proposed Action occurs in an area of known seismic activity. To account for this, the tower design would incorporate site-specific safety factors that take potential earthquake loading data into consideration. These design safety factors would minimize the potential for structural failure of the tower in the event of a severe earthquake. Because the Proposed Action is located near the highest point on the island, the site is very unlikely to be affected by a tsunami. The closest residential development is located at a distance of more than twice the height of the tower. In the unlikely event of structural failure of the tower, local residences would not be directly affected.

Under the Proposed Action four new antennas would be installed on the proposed tower at heights between

130 feet and 190 feet above ground level. Two of these antennas only receive signals and would therefore not emit any RF radiation. The two antennas that would emit RF radiation are relative low powered transmission antennas with approximately 40 watts of input power. Detailed analysis has shown that at heights greater than 40 feet above the ground, the actual RF radiation levels at the base of the tower from these antennas would be less than 5 percent of the maximum permissible exposure limit for RF radiation as defined by the FCC and, the Proposed Action would therefore be exempt from routine evaluation. In addition, the site itself would be closed off to public access by a solid concrete block wall. Based on the proposed heights of the transmission antennas coupled with the fact that the site is surrounded by a block wall, all publically accessible areas have been deemed safe from RF radiation exposure. Site maintenance personnel could experience brief exposure to RF radiation; however, work practices including personnel safety training and personal safety gear would be put in place to protect site maintenance personnel.

➤ **Temporary and Long-term Effects**

The potential for UXO to be encountered during construction poses an unknown risk. There is some existing risk of UXO being present on the site and of the general public encountering UXO

incidentally because the area is unsecured. The risk of encountering UXO would be greater in the short-term if the Proposed Action were implemented because the site would experience more foot traffic by workers during construction. Clearing of vegetation and soil excavation could also reveal UXO that exist at the site but are currently below the surface. All workers at the site would be informed of the potential for UXO at the site, and would be required to comply with precautionary measures, including limitation of the use of cell phones and electronic devices, which have the potential to detonate UXO. In addition, if unidentified or suspicious objects are observed, work would be immediately stopped and discontinued until the area was cleared by a qualified UXO expert. Though the potential for encountering UXO is greater under the Proposed Action, negative effects on public safety would be temporary (occurring during construction) and would be very low with implementation of precautionary measures. Over the long-term, public safety effects of the project related to UXO would be beneficial, because the site would be cleared and secured in conjunction with the Proposed Action, minimizing the potential for members of the public to encounter UXO in this area.

➤ **Cumulative Effects**

None.

➤ **Conclusion**

There is some potential for negative effects on public safety from members of the general public accessing the compound, from workers accessing areas where the potential for UXO presence is unknown, and from tower instability associated with seismic activity. Overall, however, public safety effects would be beneficial and major associated with installation of the distress and response communication system.

**3.3 HAZARDOUS MATERIALS (including Petroleum Products)**

**AFFECTED ENVIRONMENT**

The locations of the proposed compound and access road are currently vacant, densely vegetated areas. No hazardous substances or indications of hazardous substance use were observed at the site during 2010 field surveys performed by MWH Americas, Inc. (MWH). Two existing telecommunications compounds are located in the vicinity of the site. These contain fuel tanks and may contain some hazardous materials. No evidence was found that fuel or hazardous materials from adjacent compounds have affected the site of the Proposed Action.

MWH prepared a Phase I Environmental Due Diligence Audit (EDDA) to research past use of the site and potential contamination

(MWH 2010). Results of the Phase I EDDA were based on the 2010 field survey and information provided in the Environmental Data Resources, Inc. (EDR) ZIP/PLUS™ Report (EDR 2010). EDR searched federal and local environmental hazard databases for information on properties within the zip code of the site (96950) and presented the results in an environmental risk management data report. None of the sites listed in the November 23, 2010 EDR ZIP/PLUS™ Report were determined to be located in the immediate vicinity of the Site. No recognized environmental conditions (RECs) associated with the Site were identified during the preparation of the Phase I EDDA.

## ENVIRONMENTAL CONSEQUENCES

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur at the site and no hazardous materials would be introduced to the site. There would be no effects related to hazardous materials.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

No direct effects are anticipated related to hazardous materials. Long-term indirect effects could occur in conjunction with

construction and operations and maintenance of the site. See the following section for more detail.

### ➤ **Temporary and Long-term Effects**

No hazardous materials or petroleum products are currently known to be located at the site; however, small quantities of materials would be used at the site in conjunction with construction and operation and maintenance of the facilities. During construction these would include the fuel, lubricants (oils) and hydraulic fluids associated with the construction equipment itself. It also includes minor quantities of touch up and anti-oxidant paints and sealants (e.g., foam caulking for conduit penetrations). During the operation and maintenance of the site, these include fuel in the 300-gallon diesel tank, fuel additives, a lead acid battery, antifreeze, and lubrication oil. Fuel additives could include anti-oxidants, fuel stability foam, and fungicides/biocides, which are added to increase diesel storage life. One lead acid battery, antifreeze, and lubrication oil would be contained in the emergency generator.

The diesel generator has a built-in catchment reservoir in its bottom frame that holds up to five gallons of fluid. This is substantially greater than the combined amount of radiator fluid and engine oil and would prevent these fluids from

leaking outside of the generator case. The generator's weather enclosure would prevent rainwater from collecting in the catchment reservoir, which could otherwise limit the reservoir's capacity to collect any leaking fluids.

The generator and fuel tank would be inspected semi-annually in scheduled preventative maintenance visits. Equipment condition and fluid levels and condition would be checked during these visits. Oil and oil filters would be replaced. Best Management Practices (BMPs) would be implemented during preventative maintenance visits and periodic diesel tank refueling. Disposal of all waste in accordance with local, state, and federal laws and regulations is part of the inspection protocol.

Although hazardous materials would be used in small quantities at the site over the life of the facility (long-term), because of the implementation of BMPs, the potential for spills of hazardous materials at the site would be minimal.

The 300-gallon diesel tank containing fuel for the emergency generator would be installed in the compound on a concrete slab six inches above grade. The tank would be a double-walled steel tank anchored to the ground and fitted with low fuel and fuel leak sensors. The tank would comply with environmental and safety

requirements for emissions and for leakage control and monitoring; and it would be suitable for use in harsh environments. Because of the safety features built-in to the tank, and because preventative maintenance visits would ensure that equipment is functioning properly and not deteriorating, the potential for spontaneous leaks of fuel or other hazardous materials from the tank or generator would be minimal.

#### ➤ **Cumulative Effects**

None.

#### ➤ **Conclusion**

There is some potential for long-term effects of spills or leaks related to hazardous material and petroleum product usage on-site; however, the probability of this occurring is very low with implementation of BMPs and preventative maintenance. Overall effects are anticipated to be minor.

### **3.4 VISUAL RESOURCES**

#### **AFFECTED ENVIRONMENT**

The site of the proposed action is directly southeast of an existing telecommunications site owned by I-Connect that contains a 180-foot tall self-support tower, with a top elevation of 1,644 feet above sea level. Another telecommunications compound containing several towers and antennas is located approximately 300 feet to the south.

The tallest tower in this compound is 200 feet, with an elevation at the top of the tower of 1,693 feet above sea level.

The site of the proposed action is within the CNMI Coastal Zone, and is potentially visible from adjacent residential properties, resorts along the coastline, parks, and historical and cultural resources.

A total of nine coastal resource sites were identified as Marine Protected Areas or areas that may be of concern based on the goals of CNMI Coastal Resources Management Office (CRM 2010). After extensive review of the GIS viewshed map and potential coastal resources, CNMI CRM determined that there were no visual resource concerns within the proposed 1.5-mile-radius APE.

Saipan contains a number of cultural and historical sites. Of these, three historical sites were identified that could be visually affected by construction of a new tower: the Japanese Lighthouse, World War II U.S. Invasion Beaches, and Isley Field Historic District.

## **ENVIRONMENTAL CONSEQUENCES**

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur and there would be no change to

visual resources in the vicinity of the site.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

Under the proposed action, a 190-foot tall self-support tower would be constructed at an elevation of 1,464 feet above sea level near the top of Mount Tapochau. Because Mt. Tapochau is the highest point on Saipan, the new tower would be visible from much of the island. The top of the proposed tower would be approximately 1,654 feet above sea level. Dual-mode white and red lighting would be top-mounted on the unpainted tower. The tower would be visible during the day and at night. The proposed tower would be located near several existing towers and would be below the height of the tallest existing tower in the vicinity.

Residents and visitors of Mt. Tapochau and the island of Saipan in general would experience direct visual effects at a moderate level due to the construction of the new tower in an area of unique resources, including views of historical and cultural sites, recreational areas, and natural features.

#### ➤ **Temporary and Long-term Effects**

Visual effects from operation of a new tower would continue through

the service-life of the facility. When the facility reaches its end of service-life, the tower would be dismantled and effects would no longer occur.

#### ➤ **Cumulative Effects**

Construction of a new tower would have moderate cumulative visual effects due the addition of a structure in the viewshed of unique residential, tourism, cultural, and historical resources that is currently visually affected by other towers. The construction of another tower in this area might reduce barriers to additional development by allowing opportunities for collocation of antennas on the tower.

#### ➤ **Conclusion**

Moderate visual effects would occur from construction of the new tower in the viewshed of this resource.

### **3.5 CULTURAL AND HISTORICAL RESOURCES**

#### **AFFECTED ENVIRONMENT**

Chamorros are the indigenous people of the Mariana Islands, having settled Saipan and surrounding islands approximately 4,000 years ago. In the late seventeenth century Spanish missionaries forcibly relocated all Saipan residents to Guam, where Chamorros remained for over 100 years, intermarrying with Spanish, Filipinos, and Mexicans. Chamorros began returning to Saipan in 1816,

which had been settled in the interim by people from the Caroline Islands (Lamotrek and Woleai) to the south. According to the 2000 Census, approximately 65,000 people of Chamorro ancestry live on Guam and 19,000 live in the Northern Marianas. Another 93,000 live outside the Marianas. Although there are no federally recognized tribes in the Northern Marianas, there is currently a movement by native Chamorro groups to gain federally-recognized status.

Saipan played a prominent role in the Pacific Theater battles of World War II. In 1914 Japan seized Saipan from Germany, which had purchased the island from Spain in 1899. Japan occupied the island through World War II, using it as a strategic location in sieges on U.S. forces. In June of 1944, U.S. troops landed on Saipan and fought Japanese soldiers for more than three weeks before winning the Battle of Saipan. Over 30,000 Japanese troops were killed or committed suicide. When the outcome of the battle became evident, an unknown number (estimated in the hundreds or thousands) of Japanese soldiers and civilians committed suicide by jumping from Banzai Cliffs and Suicide Cliffs on the northern end of the island. These sites are listed on the National Register of Historic Places (NRHP).

Preliminary pedestrian surveys did not identify any cultural or historical resources at the site of the proposed

action. Mt. Tapochau is not listed on the NRHP, but American Memorial National Park signage is located at the top of the trail up to the peak. The American Memorial Park, located approximately 2.5 miles northwest of the Site is a National Park that contains a Court of Honor and Flag Circle, carillon bell tower and Marianas Memorial honoring the more than 5,000 Americans and nearly 1,000 Chamorro and Carolinian people that died in the battles for Saipan and Tinian (called Operation Forager) and the Battle of the Philippine Sea in World War II. National Park Service signs on Mt. Tapochau identify battle sites that can be seen in the distance.

Historical resource research was conducted by reviewing available records and identifying potentially affected historic and archaeological sites in the vicinity of the tower site. A total of 35 potential historical sites were identified in the general vicinity of the Mt. Tapochau tower site. All sites were evaluated for either their listing or eligibility for listing on the CNMI or NRHP. Six of the 35 sites were determined to be located within a 1.5-mile radius of the site of the proposed action; however, when evaluated, all six were determined to be partially or fully outside of the viewshed of the proposed tower. An additional three historical sites - the most important visible historic sites listed on the NRHP according to the CNMI Historic Preservation Office - were identified that could experience

visual effects from a tower at the site of the proposed action. These three sites, listed below, were targeted for further visual resource assessment.

- The Japanese Lighthouse – The Japanese Lighthouse, located approximately 1.75 miles north of the site of the proposed action, was constructed in 1934 during the Japanese Period on Saipan. It was used to guide vessels at Tanapang Harbor. It is located on Navy Hill and is accessed by a small road in a residential area. After sustaining damage during World War II, the U.S. Seabees renovated the structure and likely utilized it until 1947. In 1974, it was one of CNMI's first three sites listed on the NRHP. The structure is currently accessible to the public, but not maintained, although clean-up efforts have occurred in the last few years. Community groups have expressed an interest in transforming the building into a maritime museum or visitor's center.
- World War II U.S. Invasion Beaches – This series of beaches are part of the National Historic Landmark that includes As Lito Airfield, Isely Field, and Marpi Point on Saipan. On the western coast of Saipan, the Invasion Beaches stretch 4.15 miles from Agingan Point to Quartermaster Road in Chalan Laulau. American tanks that did not make it to shore during the

invasion are still present in the reef waters. Japanese defensive features, such as pillboxes, are also present. The entire area is accessible and regularly visited by the public.

- **Isely Field Historic District** – This historic district is located approximately 4 miles southwest of the site of the proposed action in the southern part of Saipan and is comprised of the Japanese As Lito Airfield Complex, the two Isely Field runways, the taxiways, the 110 hardstands, and the headquarters and living quarters formerly occupied by the U.S. 73rd Bomb Wing. Today the area is also the site of Saipan International Airport.

## ENVIRONMENTAL CONSEQUENCES

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur and there would be no change to cultural or historical resources at the site of the proposed action.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

There would be no direct effects, because no cultural or historical resources were identified at the site. Indirect effects would occur from

visual effects of a new tower in the viewshed of existing historical resources but are of minor effect.

#### ➤ **Temporary and Long-term Effects**

Visual effects from operation of the tower would continue through the service-life of the facility. After the facility reaches its end of service-life, the tower would be dismantled.

#### ➤ **Cumulative Effects**

Construction of a new tower would have minor cumulative visual effect due the addition of a structure in the viewshed of historical resources that is currently visually affected by other towers.

#### ➤ **Conclusion**

Minor indirect visual effects would occur from construction and operation of the tower in the viewshed of important historical resources.

## 3.6 AIR QUALITY AND NOISE

### AFFECTED ENVIRONMENT

The Clean Air Act, which was last amended in 1990, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. Areas of the country where air pollution levels persistently exceed the NAAQS may be designated non-attainment.

There are no non-attainment areas on Saipan. The EPA considered the air quality on Saipan to be “generally pristine, due to the wet climate, strong prevailing winds, and distance from any pollution sources” (EPA 2006).

The site of the Proposed Action is located in an undeveloped area with residences in the distance (more than 400 feet). Vehicle traffic from visitors to the WWII site, viewpoint, and religious monument above the site is the primary source of noise in the vicinity. Visitors and residents in the general vicinity are the primary noise receptors. Noise is defined as unwanted or disturbing sound and is considered a form of pollution by the CNMI DEQ.

A-weighted sound level (dbA) is one measurement of noise. The human ear can perceive sound over a range of frequencies, which varies for individuals. In using the A-weighted scale for measurement, only the frequencies heard by most listeners are considered. This gives a more accurate representation of the perception of noise. Using this scale, the background noise level (day/night average) of a rural residential area, similar to conditions at the site, can be estimated as approximately 40 dbA. Normal conversational speech at a distance of five to ten feet is approximately 70 dbA (Cavanaugh and Tocci 1998). The decibel scale is logarithmic, so, for example, sound at 90 dbA would

be perceived to be twice as loud as sound at 80 dbA.

Passenger vehicles, motorcycles, trucks, and all terrain vehicles (ATVs) use the road in the vicinity of the site. Noise levels generated by vehicles vary based on a number of factors including vehicle type, speed, and level of maintenance. Intensity of noise is attenuated with distance. Some estimates of noise levels from vehicles are listed in the following table.

Source	Distance (feet)	Noise Level (dbA)
Auto, 40 mph	50	72
Automobile horn	10	95
Light auto traffic	100	50
Truck, 40 mph	50	84
Heavy truck or motorcycle	25	90

Sources: Cavanaugh and Tocci 1998, MM&A 2011

Excessive noise can cause stress to listeners, and at higher levels could result in hearing damage. Various agencies regulate noise levels, including the Occupational Safety and Health Administration (OSHA). OSHA requires hearing protection when workers are exposed to specific volume levels for different periods of time, as listed below:

Sound Duration	Noise Level (dbA)
>8 hours	90
>4 hours	95
>1 hour	105

Source: CPWR 2001

**ENVIRONMENTAL CONSEQUENCES**

➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur and there would be no change to air quality or noise at the site.

➤ **Alternative B (the Proposed Action)**

➤ **Direct and Indirect Effects**

Sources of air pollution and noise would increase compared to existing conditions during the construction period and during regular maintenance activities. Sources of air pollution and sources of noise would be the same, and would include heavy equipment used during construction of the facilities, vehicle traffic during periodic site maintenance activities, and occasional operation of the emergency generator. No substantial levels of noise would be generated during the operational phase by any of the Proposed Action facilities other than the emergency generator.

➤ **Temporary and Long-term Effects**

Under the Proposed Action, there would be temporary effects of increases in noise levels and emissions during construction from

the use of heavy machinery. Potential air quality effects from road dust would be minimized by the planned timing of construction during the rainy season.

The greatest source of noise would likely come from equipment used to bore into the limestone substrate to a depth of approximately four feet. A large tracked excavator with rock teeth and a hoe ram or similar type of equipment would be used for this work. Other equipment that could be used includes cement mixer, earthmover, bulldozer, and hand-held power tools. Estimated construction noise levels from various types of equipment are listed in the following table.

Equipment	Noise Level (dba)
Pneumatic chip hammer	103-113
Bulldozer	93-96
Crane	90-96
Earthmover	87-94
Front-end loader	86-94
Backhoe	84-93
Quiet air compressor at 50 feet	70
Pneumatic drill at 50 feet	80

Source: Cavanaugh and Tocci 1998, CPWR 2001, MM&A 2011

Some temporary noise effects would be unavoidable during construction; however, effects on workers and the general public would be minimized by implementation of BMPs, including the following:

- all construction equipment, including personal vehicles, would be properly maintained

- and have mufflers to minimize emissions and noise effects;
- all workers would comply with OSHA regulations for hearing protection;
- heavy construction would be limited to daylight hours;
- a block wall would be constructed around the site immediately after clearing the site, and prior to tower foundation excavation, to provide a noise buffer; and,
- utility trenching would be minimized in areas where limestone occurs near the surface (less than 3.5 feet deep). Rather than trenching through rock in these areas, conduit would be run underground on top of the rock and encased in concrete to provide protection from potential future excavations.

Air quality and noise effects from project construction would be perceptible, but implementation of BMPs would reduce the noise effects on workers, visitors in the vicinity, and residents in the area. Because construction effects are temporary and would occur in an area with existing noise disturbance from ATVs and other passenger vehicles, overall construction effects would be minor.

Long-term effects would result over the life of the facility from emissions and noise associated with running of the generator for emergency power and during regular, periodic maintenance and vehicles accessing

the site during maintenance visits.

The R21 emergency generator is a New Source Performance Standard EPA Tier 4 Interim-certified generator, which has substantially lower diesel engine emissions than older diesel engines. The typical rates of constituents emitted by the generator, as listed in the following table, would be nominal.

Constituent	Emissions (gram per hour)
Nitrogen oxides	151.74
Carbon dioxide	39.95
Hydrocarbons	11.80
Particulate matter	4.13

The Clean Air branch of the CNMI DEQ reviews air permit applications and issues air permits for stationary sources. Air permit applications are categorized into two types, major or minor, depending on the amount of proposed emissions. Minor sources are those that emit less than 100 tons per year of any regulated air pollutant. All sources require submission of air permit applications. A permit would be required for the R21 generator. Sources of this type are evaluated by CNMI DEQ using the EPA’s SCREEN3 air quality model. Generators must also demonstrate conformity with New Source Performance Standards for emergency generators and be registered through EPA.

The actual quantity of emissions would depend on the frequency of generator operation. The generator

would run during periods of power outage. In addition, it would be run during periodic maintenance tests for 30 minutes every other week for a total of 13 hours per year. The overall quantity of emissions would be quantifiable but low.

The generator would be contained in a sound attenuating cabinet, which would reduce noise effects to low levels. Additionally, operational testing of the emergency generator would be limited to daylight hours.

Effects on air quality and noise from vehicle operations during routine maintenance visits would be very low relative to existing traffic in the area, because personal vehicles would be used for bimonthly trips.

➤ **Cumulative Effects**

None.

➤ **Conclusion**

The project would have perceptible effects on air quality and noise, but overall effects would be minor.

### **3.7 SOILS AND WATER RESOURCES**

#### **AFFECTED ENVIRONMENT**

The highest point on Saipan is Mt. Tapochau at an elevation of 1,560 feet above mean sea level. The site of the Proposed Action is near the top of Mt. Tapochau at an elevation of approximately 1,464 feet above mean

sea level. Sandy beaches lie along the western side of Saipan, with an offshore coral reef that creates a large lagoon (Garapan Lagoon). The island's eastern shoreline is composed of rugged rocky cliffs. The island is volcanic in origin, with younger limestone overlaying volcanic formations across the majority of the island's surface area. Volcanic rock forms the surface layer at scattered higher elevation locations on Saipan. Areas of limestone deposits are typically highly permeable, while volcanic surfaces are less so; however, fault lines also occur on the island, which alter local permeability. Mt. Tapochau lies within the central uplands, one of the six principal physiographic subdivisions of Saipan. This area is characterized by limestone terraces separated by a central volcanic ridge of rugged terrain formed by erosional features (Carruth 2003, Horsley Witten Group 2004).

According to the Natural Resources Conservation Service Soil Survey, the soil type at the site is Rock outcrop-Takpochao complex, 60 to 99 percent slopes. This is a shallow, well-drained, nonhydric soil, with depth to porous limestone of 10 to 25 centimeters. Takpochao soils are typically black, very cobbly, mucky loam at the surface with a brown, very cobbly, clay layer about 15 centimeters thick. They have moderate permeability, low water capacity, and severe hazard of water erosion. The Rock Outcrop-

Takpochao complex, 60 to 99 percent slopes soil type covers approximately 458 hectares on Saipan (Young 1989).

Mt. Tapochau occurs in an area mapped as low-permeability volcanic rock. The groundwater elevation is approximately 400 to 500 feet above sea level in this area, which is up to 1,000 feet or more below ground surface in the vicinity of the site (Carruth 2003). According to CNMI DEQ, there are six completed, exploratory wells (not currently being used) and seven pending wells in the Mt. Tapochau area. The nearest well is approximately 0.3 mile west of the site and is 960 feet deep (personal communication with Glenn Arriola, January 20, 2011).

This site is located approximately 2 miles east of Garapan Lagoon on the Philippine Sea and approximately 2.3 miles west of the Pacific Ocean. The nearest stream depicted on the U.S. Geological Survey 1:24,000-topographic map is approximately 0.5 mile southeast of the site.

Another stream is located approximately 0.6 mile to the northeast. Both drain to the east into the Pacific Ocean. Some segments of these streams may be wet for the entire year, but all streams on Saipan are intermittent and therefore do not have perennially continuous flow along their entire length (Bearden et al. 2010).

Average annual rainfall on Saipan is approximately 80 inches, with more precipitation occurring during the rainy season of July through November than in other months. Typhoons can occur any time of the year, but are more common during the rainy season. The highest recorded level of monthly rainfall between 1901 and 2000 was 73.25 inches, which occurred in August 1978 concurrent with tropical storms Carmen, Winnie, and Tess. Much of the total annual rainfall occurs during tropical storms (typhoons), and in years with fewer storms the island can experience drought conditions (Carruth 2003).

## ENVIRONMENTAL CONSEQUENCES

### ➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur at the site; therefore, no changes to soils and water resources, including water quality, would occur.

### ➤ **Alternative B (the Proposed Action)**

#### ➤ **Direct and Indirect Effects**

Under the Proposed Action direct effects to soils would occur during excavation required for installation of the concrete foundations for the shelter, generator, fuel tank, block fence, and tower foundation. The depth of excavation would be 2-4

feet for most of these features. Depth of excavation would be greater for the tower foundation, but would not exceed approximately 15-20 feet. The soil type is common relative to the surrounding area and the footprints of the facilities and required depth of soil excavation are small relative to the extent of the soil type; therefore, direct effects on soils would be minor.

There would be no direct effects to water resources or water quality because no surface water bodies are located in the immediate vicinity of the site. Surface water bodies are located more than 0.5 mile from the site.

Construction of the R21 facilities would require ground clearing in an area of approximately 2,500 to 2700 square feet for installation of the fenced compound and approximately 3,300 square feet to construct the 12-foot wide by 275-foot long access road. Ground clearing could result in erosion of surface soil during storm events. Indirect effects to water quality could occur from surface water runoff in precipitation during construction, which may have the potential for moving sediment and contaminants off-site. In addition to potential erosion associated with the construction site, transportation of material and heavy construction equipment to the site along the existing unpaved access roads could increase erosion and soil movement.

One of the greatest sources of water quality impairment on Saipan is stormwater runoff from existing unpaved roads and development. Stormwater runoff from existing roads continues to be a major source of pollution, but runoff from new projects is minimized through the CNMI DEQ permitting program (Bearden et al. 2010). The Earthmoving and Erosion Control Permitting Program, administered by the CNMI DEQ Wastewater and Erosion Control branch manages the "One Start" permitting process. This program requires nearly all forms of development or construction within the CNMI to obtain a "One Start" permit prior to commencing the activity. One component of the "One Start" is demonstration of compliance with the DEQ Earthmoving and Erosion Control Regulations, which establish minimum standards for control of nonpoint surface runoff from human-related activities. A permit would be required for earthmoving activities associated with the Proposed Action. Issuance of a permit would require implementation of erosion and sediment control standards as part of the Proposed Action, as described in Section 2.3.3, Project Design Features. These include minimizing any unnecessary clearing and grading, limiting the amount of bare soil exposed at any given time, and installation of erosion control features such as silt fencing, hay bale walls, rock stilling basins, sediment traps, and settling basins. A

temporary lay-down yard for tower materials and construction equipment would be created with gravel on top of geotechnical fabric to be used for staging during the construction period to reduce exposed surface soil areas and minimize erosion. Erosion on existing roads accessed during construction would be minimized by the installation of temporary wooden or fiber matting at unstable or heavily rutted areas on the existing road.

Implementation of erosion and sediment control measures included in the PDFs would reduce or eliminate any erosion associated with construction. Indirect effects to soils and water resources would be minor.

➤ **Temporary and Long-term Effects**

Temporary effects to soils and surface water quality could occur during storm events due to stormwater runoff during the construction period as described above. No long-term effects would occur. No bare ground would be exposed after the construction period. Open ground within the interior of the compound and along the access road would be capped with a vegetation-inhibiting geotextile fabric covered with six inches of crushed stone. Features would be installed on the side of the access road to slow any water drainage to mitigate erosion.

Operation of the facility would not increase the potential of erosion.

➤ **Cumulative Effects**

None.

➤ **Conclusion**

Direct effects on soils would be permanent but of low intensity. The soil type is common, and activities would not substantially alter the overall extent or composition of soils in the area; therefore, direct impact levels would be minor. Indirect effects to soils and water resources from erosion during storm events would be minimized with erosion and sediment control measures included as part of the PDFs. Overall indirect effect to soil and water resources would be minor.

### 3.8 VEGETATION

#### AFFECTED ENVIRONMENT

Mixed limestone forest was likely the dominant land cover type on Saipan prior to human disturbance (Mueller-Dombois and Fosberg 1998). Vegetation composition was substantially altered during the period of Spanish occupation (1521 to 1899) by the release of nonnative animals, including goats, cattle, pigs, and deer, that naturalized throughout the island. Vegetation cover was further modified during the subsequent periods of German and Japanese occupation when larger areas were converted to agriculture, including coconut (*Cocos*

*nucifera*) and sugar cane (*Saccharum officinarum*). Following devegetation related to occupation and warfare during World War II, only small areas of native forest remained. The U.S. military reseeded much of the island after the war with the nonnative tree tangantangan (*Leucaena leucocephala*) to provide erosion control. Secondary forest has developed on many areas that previously supported native forest. Secondary forests are generally brushy, multilayered areas dominated by nonnative species, but that may contain a few natives. The most recent island wide habitat mapping effort was a 1982 study that estimated the following percent cover by habitat types on Saipan (Engbring et al 1986, as cited in CNMI DLNR 2005):

Native forest	<5%
Secondary vegetation	32%
Tangantangan	28%
Agriforest	9%
Open field	13%
Marsh	1%
Other	12%

More recently, many previously forested and agricultural areas have been converted to residential housing, resorts, golf courses, and commercial and industrial development (Camp et al 2009, CNMI DNLR 2005).

Native and nonnative forested areas continue to be influenced by the spread of invasive plant species, most notably the scarlet gourd (*Coccinia grandis*), a fast growing vine

that spreads over the forest canopy, blocking sunlight and killing vegetation below. An estimated 15,000 acres on Saipan are affected by the scarlet gourd (CNMI DNLR 2005).

The site of the proposed action is located in a mixed limestone forested area containing native and nonnative species. Unvegetated developed areas and grassy patches occur in the vicinity, including species considered to be invasive. More detailed information on vegetation at the site of the proposed action can be requested.

**ENVIRONMENTAL CONSEQUENCES**

➤ **Alternative A (the No Action Alternative)**

Under the No Action Alternative, no construction activities would occur and there would be no change to vegetation at the site.

➤ **Alternative B (the Proposed Action)**

➤ **Direct and Indirect Effects**

Under the proposed action, a densely vegetated mixed limestone forest area of approximately 2,500 to 2,600 square feet of vegetation would be permanently removed for the compound with an additional 3,300 square feet being removed for the permanent access road. The vegetation to be removed is a

secondary forest of native and nonnative species. This vegetation type is common on Saipan, and the relative extent of vegetation clearing would be small; therefore direct effects on vegetation would be minor.

➤ **Temporary and Long-term Effects**

Minor temporary clearing (less than 2,000 square feet) is anticipated beyond the areas to be permanently cleared. The extent of clearing would be minimized to prevent the spread of invasive species. The area of temporary clearing would be revegetated with native species using an approved seed mix. Revegetated areas would be evaluated to confirm that seeding were successful. Temporary effects on vegetation would therefore be minor.

➤ **Cumulative Effects**

None.

➤ **Conclusion**

Overall effects on vegetation from the proposed action would be minor.

### 3.9 WILDLIFE

**(including Threatened and Endangered Species)**

#### AFFECTED ENVIRONMENT

With 12 native species and three non-natives, Saipan has the most diverse population of land birds in the Mariana Islands (Camp et al 2009, Craig 1996). The number of native species is estimated to be about half of what occurred on the island prehistorically. Many of these species are found only in the Marianas or Micronesia (Craig 1996). Numerous migratory and vagrant bird species also have been documented on and around Saipan (Camp et al 2009, Pratt et al 1987, Vogt and Williams 2004).

Bats are the only native mammals in Marianas. A number of non-native, naturalized wildlife species occur on Saipan, including three rat species, pigs, Philippine deer, and feral cats (Camp et al 2009, CNMI DLNR 2005, Vogt and Williams 2004).

A recent survey of Saipan found one amphibian (marine toad, *Bufo marinus*) and 11 species of lizard, including four skink species, an anole, five gecko species, and a monitor lizard (Wiles and Guerrero 1996). Most of the amphibian and reptile species on Saipan are thought to be introduced (Wiles and Guerrero 1996).

The USFWS identified twelve federally listed or candidate animal species and three endangered plant species with potential to occur in the CNMI. Of these, six species are known to occur on Saipan: Micronesian megapode (*Megapodius laperouse*), nightingale reed-warbler

(*Acrocephalus luscini*), Mariana common moorhen (*Gallinula chloropus guami*), Mariana gray swiftlet (*Aerodramus vanikorensis bartschi*), Mariana fruit bat (*Pteropus mariannus mariannus*), and humped tree snail (*Partula gibba*). There is no designated Critical Habitat on Saipan for any of these species. The USFWS indicated that two of these species are known to occur at or near the project site: Mariana gray swiftlets and nightingale reed-warbler (USFWS 2010).

Mariana gray swiftlets nest and roost in limestone caves. A known colony of Mariana gray swiftlets exists in Tapochau Cave (also referred to as Takpochau Cave), a limestone sinkhole on the west side of Mt. Tapochau near the town of Gualo Rai. Grasslands and savanna areas on the hillsides of Mt. Tapochau are important foraging habitat for the species (CNMI DLNR 2005). These habitat types do not occur on the site of the proposed action, but can be found in the general vicinity.

Suitable habitat for the nightingale reed-warbler occurs in the area of the site of the proposed action. Nightingale reed-warbler can be very aggressive and territorial, and appears to have high fidelity to habitat areas (Craig 1992, Craig 1996, USFWS 1998). Nightingale reed-warblers build nests from vines and leaves at an average height of about 18 feet above ground. Breeding may occur year-round, but appears to

peak during the dry season between January and March (USFWS 1998). More detailed information on the Mariana gray swiftlet and nightingale reed-warbler, including factors leading to their decline, can be requested.

## ENVIRONMENTAL CONSEQUENCES

### ➤ Alternative A (the No Action Alternative)

Under the No Action Alternative, no construction activities would occur and there would be no effect on wildlife or potential wildlife habitat at the site.

### ➤ Alternative B (the Proposed Action)

#### ➤ Direct and Indirect Effects

The area of the proposed action does not support Mariana gray swiftlet nesting or roosting habitat (i.e. limestone caves) or foraging habitat (grasslands), so the proposed action would have no direct effects on Mariana gray swiftlet habitat. Potentially suitable habitat for the nightingale reed-warbler occurs at the site of the proposed action. Presence or absence of the species will be determined during planned surveys (preliminary surveys identified that any habitat is marginal). If the species is found to occur in the area, measures would be implemented to minimize effects on the species, such as modification of

construction timing or other measures identified by USFWS. The potential for effects on the nightingale reed-warbler would be determined following planned surveys.

The voluntary USFWS Tower Guidelines were developed to minimize effects from tower projects on migratory birds. The USFWS considers these guidelines to be “the most prudent and effective measures for avoiding bird strikes at towers.” The USCG signed a Memorandum of Understanding (MOU) with USFWS for the R21 project to attempt to minimize effects on migratory birds. R21 places a strong emphasis on attempting to co-locate antennas on existing towers or buildings, preferring to not construct new towers when suitable options are available for collocation. When collocation options are not available, a newly constructed self-support tower without guy wires is the preferred option. Due to the lack of collocation opportunities, the proposed project activities require construction of a new tower, which could affect bird migration. Construction of the proposed self-support tower (without guy wires) in an area of existing towers would

help to minimize potential effects on migratory birds and resident foraging bird species in the area, such as the Mariana gray swiftlet; therefore, direct effects on birds from interactions with the tower would be minor.

➤ **Temporary and Long-term Effects**

If surveys indicate that suitable nightingale reed-warbler habitat occurs at the site of the proposed action, temporary effects on nightingale reed-warbler would result from habitat loss in cleared areas until seeded vegetation matures.

➤ **Cumulative Effects**

None.

➤ **Conclusion**

Assuming that the nightingale reed-warbler is not found to nest at or near the site of the proposed action (a preliminary determination), overall effects on wildlife from the proposed action would be minor.



## 4.0 Consultation and Coordination

Both internal and public scoping were concluded prior to preparing the EA. Members of the USCG, General Dynamics, and MWH Americas Inc., met to discuss the various issues and scope that would be associated with the proposal. A scoping letter was distributed to the public and various federal and local agencies in Saipan and Guam. This letter explained why the USCG was proposing a new facility, gave a description of the proposal, and explained what happens during the EA process. The distribution list was developed from previous mailing lists used by the USCG and the Navy on other proposals. An interest response form (for return) was included. Recipients were asked if they wanted to remain on the mailing list. Approximately 75 scoping letters were distributed in December 2010. Comments were requested by January 21, 2011. The scoping letter is included in Appendix A.

Several federal and local agencies were also consulted in the preparation of this document, as presented in Table 4-1.

People who contributed to this EA are listed in Table 4-2.

Table 4-1. Agencies contacted for the preparation of this EA.

<b>Agency</b>	<b>Subject</b>	<b>Contact Information</b>
CNMI Department of Land and Natural Resources	Land use, wildlife/ vegetation	<a href="http://www.wildlifeactionplans.org/pdfs/action_plans/cnmi_action_plan.pdf">http://www.wildlifeactionplans.org/pdfs/action_plans/cnmi_action_plan.pdf</a>
CNMI Division of Fish and Wildlife	Land use, fish and wildlife, threatened and endangered species	P.O. Box 10007 Saipan, MP 96950 670-664-6011 paulradleycnmidfw@gmail.com
CNMI Coastal Zone Management Program	Land use, visual resources, recreation	P.O. Box 10007 Saipan, MP 96950 670-664-8301 ana.agulto@crm.gov.mp
CNMI Division of Environmental Quality	Air quality, safe drinking water	PO Box 501304 Saipan, MP 96950 670-664-8500 <a href="mailto:normanborja@deq.gov.mp">normanborja@deq.gov.mp</a> <a href="mailto:glennarriola@deq.gov.mp">glennarriola@deq.gov.mp</a>
National Park Service	Land use, monument status	<a href="http://www.nps.gov">http://www.nps.gov</a>
CNMI Division of Historic Preservation	Historical, archaeological, and cultural resources	PO Box 10007 Saipan, MP 96950 670-664-2120 rhr@cnmihpo.net
US Fish and Wildlife Service	Threatened and endangered species	<a href="http://ecos.fws.gov/docs/recovery_plan/980410a.pdf">http://ecos.fws.gov/docs/recovery_plan/980410a.pdf</a> Pacific Islands Fish and Wildlife Office 200 Ala Moana Boulevard Room 3-122, Box 50088 Honolulu, HI 66850

Table 4-2. EA Preparers.

Name	Company	Education	Area of Responsibility
William Freeland, R.E.M.	USCG	BS, Wildlife Biology, Post-Grad Planning (NEPA)	USCG Environmental Program Manager
Paul Lillis, LTJG	USCG	BS, Engineering	USCG Regional Manager for Sector Guam
Chuck Kozlowski	GDC4S	BS, Engineering	GDC4S Area Implementation Manager, Sector Guam
Terry Boyd	GDC4S	MS, Civil Engineering	Rescue 21 Environmental Manager, General Dynamics C4 Systems
Julia Isgreen	GDC4S	BA, Social Sciences	GDC4S Environmental Information Manager
Cynthia V. Jones	MWH	MS, Environmental Studies & Biological Sciences	Land Use, Air Quality, Noise, Soil and Water Resources, Vegetation and Wildlife, Hazardous Materials, Public Health and Safety
Cathryn Kuzdal	MWH	BS, Hydrology and Water Resources	MWH Environmental Program Manager
Steven Bedross	MWH	MA, Landscape Architecture	Technical Review
Richard Bolliger	MWH	BS, Biochemistry & Spanish	Technical Review
Nicole Vernon	GANDA	MA, Anthropology	Historical and Coastal Resource Research
Patrick O'Day	GANDA	MA, Anthropology	Section 106 Compliance
Rad Smith	GANDA	BA, Fine Arts	Photo-Simulation and VRA Analysis

BA - Bachelor of Arts

BS - Bachelor of Science

LTJG - Lieutenant Junior Grade

MA - Master of Arts

MS - Master of Science

REM - Registered Environmental Manager

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## APPENDIX A

### Scoping Letter



Commanding Officer  
USCG Rescue 21  
Project Resident Office Scottsdale

1525 N. Granite Reef Rd.  
Suite 4  
Scottsdale, AZ 85257-3998  
Phone: 480-421-0280  
Fax: 480-421-0290

5090  
06 December 2010

Dear Interested Parties:

The U.S. Coast Guard (USCG) is seeking your input on a proposal to install (construct, operate and maintain) a Remote Fixed Facility communication facility for search and rescue (SAR) and identification of mariners in distress. The USCG has identified the need for improved maritime distress and response communication coverage around Saipan, Commonwealth of the Northern Mariana Islands (CNMI).

#### **Why is the Coast Guard Proposing a New Facility?**

The USCG wants to modernize and install a new maritime search and rescue communication system in Saipan as part of a nationwide mandate. A new location and new equipment will fill existing coverage gaps in Very High Frequency (VHF) marine communications used for Coast Guard operational missions, including search and rescue, maritime pollution prevention and response, maritime law enforcement, and homeland security. The system, known as "Rescue 21", is the maritime equivalent of a "911" communication system, enhancing maritime safety by helping to minimize the time that search and rescue teams spend looking for people in distress.

The project will also increase the channel capacity, integrate GPS capability to acquire any distressed vessel's name, exact location and the nature of distress in the case of emergency, provide digital recordings for instant playback, reduce system down time, and provide for interoperability among USCG, federal, state, and local communication systems. These facilities would also provide improved day-to-day operational (command and control) capabilities for the Coast Guard.

#### **What is the U.S. Coast Guard Proposing?**

The proposed action is to install a Coast Guard Remote Fixed Facility (RFF) communication site on Mt. Tapochau. This facility is designed to provide an integrated emergency communication system extending 20 nautical miles from the coastline around the entire island of Saipan. The facility would be linked to a new watch-standing console for Sector Guam at Apra Harbor.

A typical communication facility for this area would include a 8'3" x 12'6" communication hut on a concrete foundation, an approximately 250' self-supporting tower (263' total height with a Direction Finding antenna), a H-frame structure for connection to the local telephone communication system and for power connections from Saipan Power, a back-up generator on a

6'x 10' concrete pad, and a 300 gallon diesel belly tank for the generator, all within a fenced compound on slightly sloping terrain. Drawings and a map displaying the proposed site are enclosed.

#### **What Happens Next?**

The U.S. Coast Guard will conduct the required National Environmental Policy Act (NEPA) compliance measures to evaluate the construction, operation, and maintenance of this facility. This Environmental Assessment (EA) will analyze the effects of construction, including the staging and mobilization of materials and construction forces, and the eventual operation and annual maintenance that would be performed.

The U.S. Coast Guard will prepare a written project proposal and potential environmental effects in accord with the National Environmental Policy Act (40 CFR 1500-1508) and as required by USCG COMDTINST M16475.1D (USCG policy).

A preliminary review of communication coverage identified potential configurations (alternatives) for a remote fixed facility, including co-location on an existing tower. The proposed facility was analyzed for reception from a 1-watt radio held 2 meters above the surface of the water.

Additional alternatives to the proposed action may be developed depending on issues identified during this initial "scoping" period. At this time, we would like to hear any comments, issues, and concerns you have that would help shape or further develop the project proposal.

We are contacting you so your concerns or ideas can be considered early in the development of the project proposal. Your comments will be most useful if they are received by January 21, 2011. However, comments will be accepted and reviewed up until the time the decision on the project is made.

Please send comments to:

William Freeland, R.E.M.  
Environmental Protection Specialist,  
U.S. Coast Rescue 21 PRO Alaska,  
100 Savikko Rd.,  
Douglas, AK 99824.

Attention: RFF Saipan Rescue 21 Communication Facility

Comments may be written, sent by e-mail ([William.A.Freeland@uscg.mil](mailto:William.A.Freeland@uscg.mil)), or faxed to this address at 907-463-2959. Questions may be directed to William Freeland at 907-463-2955.

This is not the only opportunity you will have to comment on this project. When the EA has been prepared and distributed, you will have an opportunity to make further comments. If you

would like to be kept informed about this project, please complete and return the attached "Interest Response Form" and you will be placed on the mailing list.

Pursuant to 7 CFR Part 1, Subpart B, Section 1.27, all written submissions in response to this notice will be made available for public inspection, including the submitter's name and address, unless the submitter specifically requests confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act, you must state this at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses submitted on official letterheads and from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

Sincerely,

A handwritten signature in blue ink, appearing to read "W.A. Freeland", is written over a horizontal line.

William A. Freeland, R.E.M.  
for  
Steven Osgood, Commander  
Project Resident Office Scottsdale  
US Coast Guard Rescue 21

Enclosures

## APPENDIX B

### SITE PLAN LEASE EXHIBITS (L-1, L-3)

