

Final Environmental Assessment

Communication Tower

Permian Basin Regional Planning Commission

Andrews, Texas

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FEMA

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List of Acronyms and Abbreviations

AFR	American Flood Research, Inc.
AGL	Above Ground Level
APE	Area of Potential Effect
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	State Coastal Zone Management Plans
DHS	Department of Homeland Security
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
FONSI	Finding of No Significant Impact
HSGP	Homeland Security Grant Program
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standard
NAD83	North American Datum of 1983
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PM ₁₀ and PM _{2.5}	Particulate matter
SHPO	State Historic Preservation Officer
SO ₂	Sulfur Dioxide
TCEQ	Texas Commission on Environmental Quality
THPO	Tribal Historic Preservation Officer
USACE	United States Army Corps of Engineers
USEPA	Environmental Protection Agency
USFWS	United States Department of the Interior, Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	Waters of the United States

1.0 INTRODUCTION

This Draft Environmental Assessment (EA) provides a review of the potential environmental impacts associated with grant funds issued by the Homeland Security Grant Program (HSGP). The HSGP is to assist State, local, tribal, and nongovernmental agencies in developing interoperable communications within the P25 VHF trunked system build-out. As a condition of the HSGP, HSGP grantees must comply with all relevant Federal legislation; including the National Environmental Policy Act (NEPA), therefore this project requires a site-specific EA.

The Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) has specified that HSGP-funded projects must be used for projects that would improve communications in areas at high risk for natural disasters and in urban and metropolitan areas at high risk for threats of terrorism, and should include pre-positioning or securing of interoperable communications for immediate deployment during emergencies or major disasters. Investments that received HSGP funding range from large-scale infrastructure build-outs such as tower construction to governance-related initiatives, but not limited to multijurisdictional strategic planning.

The NEPA requires that Federal agencies evaluate the environmental consequences of proposed actions before deciding to fund an action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed decision making. The President's Council on Environmental Quality (CEQ) has developed a series of regulations for implementing the NEPA. These regulations are included in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508. An Environmental Assessment (EA) includes an evaluation of alternative means of addressing the purpose and need for Federal action and a discussion of the potential environmental consequences of the proposed Federal action. The EA provides the evidence and analysis to determine whether the proposed Federal action will have a significant adverse effect on the human environment. An EA related to a FEMA program must be prepared according to the requirements of the Stafford Act and 44 CFR Part 10. This section of the Federal Code requires that the FEMA take environmental considerations into account when authorizing funding or approving actions. This EA was conducted in accordance with both CEQ and FEMA regulations for NEPA. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

2.0 PURPOSE AND NEED

The Permian Basin Regional Planning Commission's objective is to have complete communication coverage throughout the area. The current public safety telecommunications infrastructure is insufficient to meet this need. This lack of radio coverage adversely impacts ability to maintain radio communication, which is directly related to ability to provide emergency services and respond to emergency events. The specific need addressed in this proposal is to provide sufficient system capability to achieve radio coverage throughout Andrews County. The

Purpose of the HSGP is to improve interoperability and reliability in the nation's communications and information systems infrastructure by assisting public safety agencies in performing the following:

- Conducting Statewide or regional planning and coordination
- Supporting the design and engineering of interoperable emergency communications systems
- Supporting the acquisition or deployment of interoperable communications equipment or systems
- Establishing and implementing a strategic technology reserve to pre-position or secure interoperable communications in advance so they may be immediately deployed in an emergency or major disaster

There is currently not an existing communications and information systems infrastructure which meets the coverage and security needs of Andrews and surrounding counties. As a result, there is a need for a communications and information system infrastructure which will:

- Increase the coverage area for emergency responders connected through the communications and information systems of neighboring counties
- Provide updated equipment to support new frequencies to improve and expand voice and data coverage
- Facilitate reliable interoperable communications among first responder organizations
- Enhanced security and facility control
- Use cost-effective measures, via leasing agreements and systems sharing

3.0 ALTERNATIVES

NEPA requires the investigation and evaluation of reasonable project alternatives, including impacts to the natural and human environment as part of the planning process. This EA addresses two alternatives, the No Action alternative and the Proposed Action.

3.1 No Action Alternative

Under the No Action Alternative, Andrews County would continue to rely on existing communication infrastructure which does not provide sufficient coverage throughout the area or county. This would leave emergency response unchanged and results in a lower level of overall public safety than the Proposed Alternative as Andrews County and the surrounding counties emergency responders would remain at risk due to lack of radio coverage. Lack of adequate communication directly impacts command, control, rescue, event analysis, and other critical operations. The No Action Alternative will not address the needs for Andrews County and surrounding areas.

3.2 Proposed Action Alternative

The Proposed Action is the construction of a 480-foot guyed wire telecommunications tower that will be located at 9435 East State Highway 115 approximately 20 miles northeast of Andrews, Texas on Highway 115 in Andrews County, Texas at 32.503778 Latitude and -102.278250 Longitude North American Datum of 1983 (NAD83) (Figure 1), and shown on the United States Geological Survey (USGS) McKenzie Lake SE, Texas 7.5 Minute Series Topographic Map dated 1970 (Figure 2). The area surrounding the undertaking is grassland located in a portion of the Southern High Plains in Andrews County, Texas.

The Andrews Tower site will consist of a 480-foot guyed telecommunication tower and associated equipment to be located on 50-foot by 50-foot grassland covered parcel. The telecommunication compound will include: one 12-foot by 16-foot equipment shelter, a standalone emergency backup generator on a 5-foot by 5-foot pad, and associated 5-foot by 10-foot propane tank, and control utility board as shown in Figure 3. Anchors will be placed at four corners for the guyed wires. There will be four (4) sets of nine (9) guy wires for a total of 36 wires. The tower's surface impact area will be less than 0.25 acres. The Andrews Tower site will be a part of a trunking system associated with other towers in the neighboring counties of Gaines, Dawson, Martin, Midland, Ector and Winkler.

Andrew County will have a 10-year lease on the tower site located on property owned by the University of Texas Lands. The county will have unrestricted access for the term of the lease with the option of renewing the lease every 10 years. An aerial photograph showing the site location is included (Figure 4) (USDA 2004).

The Andrews Tower site will allow for the following:

- Increased coverage area for emergency responders connected through the communications and information systems of neighboring counties
- New technology which will support frequencies which improve/expand voice and/or data coverage
- Improve communications among security/emergency organizations
- Enhance security and facility control
- Use cost-effective measures, via leasing agreements and systems sharing

3.3 Alternatives Considered But Not Carried Forward

Multiple potential alternative sites were examined for the Proposed Action. However, within this region, there are limited sites that are available and suitable for tower siting. There are no other existing tower facilities that would be suitable for structural retrofitting or equipment upgrades.

None of these alternatives could accommodate the future needs of Andrews County and none of the surrounding areas met the necessary pre-screen requirements. Therefore, these alternatives were dismissed and are not discussed any further in this document.

4.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

This section discusses the existing environmental conditions at the site including descriptions of the physical, biological, and socioeconomic resources throughout the general area and the proposed action site. The characterization of existing conditions provides a baseline for assessing the potential environmental impacts from activities associated with the proposed action.

4.1 Physical Resources

4.1.1 Geology and Soils

The Proposed Action is located on the geologic formation identified as the Windblown cover sand consisting of fine-to-medium-grained quartz, silty, calcareous, caliche nodules common, massive, grayish red; thickness up to 10 feet as shown in Figure 5. The soil composition of the Andrews Tower site is listed as Jalmar-Penwell association, undulating which consists of well drained, fine sand, sandy clay loam (Geologic Atlas of Texas, Hobbs Sheet, 1976) as shown in Figure 6. These soils are found on sand sheets. Slopes range from 1 to 8 percent (Natural Resource Conservation Service 2011)

This area of Andrews County lies in the Southern High Plains, with the Central High Plains to the far north and North Central Plains to the east. Parts of this region are some of the hottest and driest in the state. Vegetation in the Southern High Plains includes prairie grassland, small bushes and scrub-brush. The area is predominantly prairie grasslands slightly interspersed with brush. Land use in the region is mostly grassland with medium to long grass and low bushes and scrub brush.

The Farmland Protection Policy Act (FPPA) (p.l. 97-98, Sec. 1539-1549; 7 U.S.C. 4201, et seq.) is intended to minimize the impact Federal programs have on unnecessary and irreversible conversion of farmland to nonagricultural uses. FPPA assures that Federal programs are administered to be compatible with various programs to protect farmland. For the purpose of FPPA, farmland definition includes prime farmland, unique farmland, and land of statewide or local importance; it is important to note that these definitions include land such as forestland, pastureland, or other land that is not in current production.

The project site is not considered prime farmland. The proposed action will not significantly impact geology or soils at the site. The minor construction activity will incorporate practices to minimize soil erosion during the construction/erection of the communication tower, including

best management practices such as minimization of area of disturbance, silt fencing and/or straw bales, and proper staging of equipment.

Geology and soils will not be impacted by the No Action Alternative as no construction activities would occur.

4.1.2 Air Quality

Air quality is measured by the concentration of various pollutants in the atmosphere, usually expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Acceptable levels for six criteria pollutants in ambient air have been established as National Ambient Air Quality Standards (NAAQS). These standards were set by the federal U.S. Environmental Protection Agency (USEPA) for the maximum levels of air pollutants that can exist in the outdoor air without unacceptable effects on human health or the public welfare. The six criteria air pollutants include carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb). PM₁₀ and PM_{2.5} are acronyms for particulate matter consisting of particles smaller than 10 and 2.5 micrometers, respectively.

According to the Texas Commission on Environmental Quality (TCEQ), Andrews County is classified as in attainment and currently meets NAAQS for all six criteria pollutants (TCEQ 2008). The project meets established NAAQS, air permits are not required for new construction or refitting construction for telecommunication towers that include the following activities: building a road, preparing land to erect a tower, temporary small-scale ground disturbance typically associated with new and refitting tower construction.

The proposed action will include short-term construction activities, including soil excavation and grading. These activities are likely to create fugitive dust; however best management practices (BMP) will be used to minimize dust. These BMPs include spraying water to minimize dust, limiting the area of uncovered soil to the minimum needed for each activity, siting of staging areas to minimize fugitive dust, using a temporary gravel cover, limiting the number and speed of vehicles on the site, and covering trucks hauling dirt. BMPs for construction vehicle and equipment emissions include limiting vehicle idling time, and conducting proper vehicle maintenance. Air emissions from construction activities will be temporary and will cease once construction is completed. However, episodic impacts to air quality could occur from the standalone emergency backup generator. Impacts to air quality will be minimal because the emergency backup generator will run on propane fuel that produces negligible greenhouse gas emissions.

Air quality would not be impacted by the No Action Alternative as no construction activities would take place and no air emissions would occur.

4.2 Water Resources

The United States Army Corps of Engineers (USACE) is responsible for permitting and enforcement functions dealing with building into or discharging dredge or fill material into Waters of the United States (WOUS). USACE regulations for building or working in navigable WOUS are authorized by the Rivers and Harbors Act of 1899. These regulations go together with Section 404 of the Clean Water Act (CWA), which establishes the USACE permit program for discharging dredged or fill material into WOUS.

Field reconnaissance performed in February, 2011, did not observe defined surface drainage features, such as rivers, creeks, ponds, etc., on or immediately adjacent to the subject property.

4.2.1 Surface and Ground Water Quality

The CWA, as amended, is the primary Federal law in the United States regulating water pollution (P.L. 92-500, 33 U.S.C. §1251). The CWA regulates water quality of all discharges into “waters of the United States.” Both wetlands and “dry washes” (channels that carry intermittent or seasonal flow) are considered “waters of the United States.” Administered by USEPA, the CWA protects and restores water quality using both water quality standards and technology-based effluent limitations. The USEPA publishes surface water quality standards and toxic pollutant criteria at 40 CFR Part 131.

The CWA also established the National Pollutant Discharge Elimination System (NPDES) permitting program (Section 402) to regulate and enforce discharges into WOUS. The NPDES permit program focuses on point-source outfalls associated with industrial wastewater and municipal sewage discharges. Congress has delegated to many States the responsibility to protect and manage water quality within their legal boundaries by establishing water quality standards and identifying waters not meeting these standards. States also manage the NPDES Program.

According to the USGS McKenzie Lake SE, Texas 7.5 Minute Series Topographic Map dated 1970 (Figure 2), and the USEPA Region 6 Map of Sole Source Aquifers (USEPA Sole Source Aquifers 2011) (Figure 7), the Proposed Action is located in a grassland area of Andrews County, Texas. The site is approximately 3,000 feet above mean sea level with no indications of wetlands, floodplains, coastal management zones, and wild or scenic rivers noted in the reviewed databases and maps. Annual rainfall in this area is approximately 15 inches per year.

The nearest water body is a livestock tank located approximately 3,000 feet northwest of the site identified in the USGS Topographic Map (Figure 2) and the 2008 aerial photograph (Figure 4).

Under the Proposed Action, potential impacts to surface or ground water resources will be minimal, considering that there are no nearby water resources from the site and the relatively

limited size of the Andrews Tower footprint of less than 0.25 acres ground disturbance, construction activities are unlikely to result in a significant amount of erosion.

The proposed action will include short-term construction activities, including soil excavation and grading. The minor construction activity will incorporate best management practices to minimize water quality impacts during the construction/erection of the communication tower; such as minimization of area of disturbance, silt fencing and/or straw bales, and proper staging of equipment. Once construction activities are completed, there will be no water quality impacts to either surface water or groundwater.

Neither surface or ground water quality would be impacted by the No Action Alternative as no construction activities would take place and no impacts to water quality would occur.

4.2.2 Wetlands

Under the CWA (40 CFR § 230.3), wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.” Potential wetlands under the jurisdiction of the USACE include waterways, lakes, streams, and natural springs.

A review of the United States Department of the Interior, Fish and Wildlife Service (USFWS) National Wetlands Inventory map McKenzie Lake SE, Texas, 1995 (USFWS NWI 1995), indicated that wetlands are not located on the site (Figure 9). Furthermore, at the time of the site reconnaissance, there was no evidence of potential wetlands, hydric soils or hydrophytic vegetation at the site. A review of the relevant soil survey map did not indicate hydric soils at the site. Based on the findings of this review, the proposed action will result in no effects to wetlands.

Wetlands would not be impacted by the No Action Alternative as no construction activities would take place and no impacts to wetlands would occur.

4.2.3 Floodplain

Floodplains provide numerous beneficial environmental functions including flood abatement, stream flow mediation, filtering, and water quality enhancement. Executive Order (EO) 11988, Floodplain Management, requires federal agencies to take action to minimize occupancy and modification of the floodplain. Specifically, EO 11988 prohibits federal agencies from funding construction in the 100-year floodplain (500-year floodplain for critical facilities) unless there are no practicable alternatives. Flood Insurance Rate Maps (FIRMs) are used to identify the regulatory 100-year Floodplain for the National Flood Insurance Program (NFIP).

Consistent with EO 11988, FIRMs were examined on-line during the preparation of this EA and according to the Flood Insurance Rate Map (FIRM) on-line database and information from American Flood Research, Inc. (AFR) (Appendix B), the site is in a portion of Andrews County which is not mapped by FEMA on a NFIP map (FIRM 2011). Based on the lack of floodplain data for the area, AFR reported that the site has no flood zone designation. The site is located on a parcel of grassland with sparse brush of the Southern High Plains at 3,000 feet of elevation. Surface runoff is gently toward the south/southeast and the topography of the surrounding area is best described as grassland. The nearest water body is a livestock tank located approximately 3,000 feet northwest of the site. Based on this information, the Proposed Action will not affect areas of the 100-year floodplain, and there will be no impact to floodplains.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to floodplains.

4.3 Coastal Resources

The Coastal Zone Management Act of 1972 (CZMA) (16 U.S.C. §1451) provides States with the authority to determine whether activities of governmental agencies are consistent with federally approved State Coastal Zone Management Plans (CZMP). The intent of the CZMA is to prevent any additional loss of living marine resources, wildlife, and nutrient-enriched areas; alterations in ecological systems; and decreases in undeveloped areas available for public use.

The Proposed Action is located in a grassland area of Andrews County, Texas approximately 295 miles northwest of the nearest coastal management zone. The site is approximately 3,000 feet above mean sea level. Based on the findings of this review, the proposed action will result in no effects to coastal management zones.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to coastal management zones.

4.4 Biological Resources

4.4.1 Threatened and Endangered Species and Critical Habitat

Under the Endangered Species Act of 1973, Federal agencies must review proposed actions to ensure they are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat.

The USFWS Division of Endangered Species County Website listed three species in Andrews County (USFWS 2011). However, none of the species have been listed as Threatened or Endangered. The three species are; the bald eagle (*Haliaeetus leucocephalus*) with a listed status of Recovery, the lesser prairie-chicken (*Tympanuchus pallidicinctus*) with a listed status of Candidate, and the sand dune Lizard (*Sceloporus arenicolus*) with a listed status of Proposed Endangered. None of the habitats for these species were observed on the site. The USFWS

was contacted on March 18, 2011. A stamped “No Action” response from the USFWS was received on March 28, 2011. “No Action” is defined by the USFWS as no known Threatened or Endangered species are known to occur in the project area. The USFWS submittal and list of species is provided (Appendix C).

None of the characteristic habitats were identified on the tower site. No burrows, nests, or other signs of threatened and endangered species habitat were readily observable at the time of the reconnaissance. For these reasons, the tower construction will not affect listed or proposed protected species or critical habitats.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to listed or proposed protected species or critical habitats.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. §703) was first enacted to implement the 1916 convention between the United States and Great Britain for the protection of birds migrating between the U.S. and Canada, offering much-needed protection to many bird species during a time when commercial trade in birds and their feathers was popular. The statute makes it unlawful to pursue, hunt, take, capture, kill or sell birds listed in the statute as "migratory birds", and does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs and nests. The MBTA is the primary law that affirms or implements the nation's commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each convention protects selected species of birds that are common to both countries (e.g., they occur in both countries at some point during their annual life cycle). The potential impact to property owners can exist when migratory birds seek respite within trees or on buildings considered private property.

USFWS's Division of Migratory Bird Management established several initiatives in the past decade to research collisions of birds with communication towers. In 1999, USFWS established the Communication Tower Working Group, composed of government, industry, and academic groups to study and determine tower construction approaches that prevent bird strikes.

Andrews County is located within a portion of the Central Flyway for migratory birds (USFWS 2011). Fall and spring migrants use the region for temporary stops during travel between the northern and southern hemispheres. Best management practices should be implemented for avoiding harassment and harm to migratory birds during construction activities. Impacts on migratory birds could be expected as a result of collision with operating towers, antennae, and other tall structures, particularly during periods of low visibility and as a result of tower lighting that might be distracting to some species. The probability of collision is difficult to determine programmatically due to the range of variables that affect the potential for collision and the lack of conclusive data on the causes of collision. The following 12 guidelines of the USFWS *Service*

Guidelines for Recommendations on Communications Tower Sites, Construction, Operation, and Decommissioning were evaluated with regards to the proposed project.

1. Any company/applicant/licensee proposing to construction a new communications tower is strongly encouraged to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount). Depending on tower load factors, from 6 to 10 providers may collocate on an existing tower.

Response: The proposed site is located in a rural area. An existing tower or other structure is not located on or near the proposed project area. Therefore, a collocation alternative has been dropped from consideration.

2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers are strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc). Such towers should be unlighted if Federal Aviation Administration (FAA) regulations permit.

Response: The proposed tower height of 480-feet is requested in order fill a gap in the coverage in the area and to minimize the number of additional towers in the area. The alternative of multiple shorter towers could potentially increase the cumulative effects to soil, vegetation, wetlands, wildlife habitat, threatened and endangered species and/or migratory birds. A shorter tower was considered, but after further research it was determined that this alternative would not meet and/or overlap the coverage with the trunking system associated with other towers in the neighboring counties of Gaines, Dawson, Martin, Midland, Ector and Winkler. For these reasons, a shorter tower alternative has been dropped from consideration. Lighting and guy wires are discussed below.

3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.

Response: The construction of a 480-foot communications tower may alleviate the need for future development of additional towers for the area that are of a lower height. The alternative of constructing multiple shorter towers could potentially increase the cumulative effects to soil, vegetation, wetlands, wildlife habitat, and threatened and endangered species, as well as migratory birds.

4. If at all possible, new towers should be sited within existing “antenna farms” (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Tower should not be sited in areas with a high incidence of fog, mist, and low ceilings.

Response: The proposed tower is located approximately 20 miles northeast of Andrews, Texas on Highway 115 in Andrews County, Texas. There are no clusters of towers located within an approximate 25 to 30 mile radius of the proposed site.

5. If taller (>199feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.

Response: Based upon the proposed tower height of 480-feet, it is recommended that the Permian Basin Regional Planning Commission use light systems with minimum intensity, maximum off-phased white strobe lighting according to FAA regulations. To minimize adverse affects on migratory birds, the tower will use white strobe lights during the daytime hours and red strobe lights during the evening hours.

6. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover site, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see *Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp,* and *Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp.* Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/envir/>, or by calling 1-800-334-5453.

Response: According to Permian Basin Regional Planning Commission, the proposed tower will contain three guyed wires instead of the typical six guyed wires used to support towers of this height. The decrease in the number of guyed wires should aid in decreasing and/or preventing bird strikes. Adding bird diverters to the guy wires was dismissed due to their potential to comprise the structural integrity of the tower.

7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint". However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.

Response: According to Permian Basin Regional Planning Commission, the prefabricated equipment shelter will be placed within the footprint of the proposed tower adjacent to the base. Furthermore, due to decrease in guyed wire supports to be used for the tower, the footprint will be reduced by fifty percent. It is recommended that construction materials, equipment and staging areas be located/stored within the proposed project footprint in order to avoid and/or minimize impacts to undisturbed native vegetation.

8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site is recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.

Response: Relocation to an alternate site is not a viable option for the proposed project. The location of the proposed project is the most viable location for overlapping the coverage with the trunking system associated with other towers in the neighboring counties. It is recommended that potential project disturbances, including noise, be minimized and, if possible, be scheduled to occur outside of periods of high bird activity.

9. In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers structurally and electrically to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.

Response: According to Permian Basin Regional Planning Commission, the proposed tower will likely accommodate comparable antennas for at least two additional users. The tower will be primarily utilized by security and emergency service entities.

10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

Response: The newly fabricated equipment shelter to be located within the site boundary near the base of the proposed tower will contain down-shielded lighting in an attempt to keep light within the site boundary.

11. If a tower is construction or proposed for construction, Service personnel or researchers from the Communication Tower Working Group should be allowed access to the site to evaluate bird use, conduct dead-bird searches, to place net catchments below the towers but above the ground, and to place radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.

Response: It is recommended that Service personnel or researchers from The Communication Tower Working Group coordinate with the property owner, tower owner and local security and emergency service entities prior to accessing the proposed site.

12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

Response: The proposed project is for a new 480-foot tower. The site does not contain any prior tower structures or equipment.

Adverse impacts on birds resulting from collision generally occur during low visibility conditions at lighted towers supported by guy wires and present greater collision risk than freestanding towers or buildings. Visibility for the Andrews County area, on average, is greater than ten miles. The Proposed Action will have adverse impacts on migratory birds.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to listed or migratory birds.

4.5 Cultural and Historic Resources

4.5.1 Historic Properties

Historic and cultural resources are sites, structures, buildings, districts, or objects, associated with important historic events or people, demonstrating design or construction associated with a historically significant movement, or with the potential to yield historic or prehistoric data, that are considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason (Texas Historical Commission Sites Atlas 2011). Typically, historic and cultural resources are subdivided into the following categories:

- **Archaeological resources.** This includes prehistoric or historic sites where human activity has left physical evidence of that activity but few aboveground structures remain standing.
- **Architectural resources.** This includes buildings or other structures or groups of structures that are of historic or aesthetic significance.
- **Native resources.** These include resources of traditional, cultural, or religious significance to a Native American Tribe, Native Hawaiian, or Native Alaskan organization.

There are multiple Federal regulations that protect historic and cultural resources. The National Historic Preservation Act of 1966 (NHPA) (P.L. 89–665, 16 U.S.C. §470) directs the Federal Government to consider the effects of its actions on historic and cultural resources under

Section 106 through a four-step compliance process. It is noteworthy, however, that the law does not necessarily mandate preservation but does mandate a carefully considered decision making process. The four steps of the Section 106 compliance process are the following:

1. **Establish whether the Proposed Action constitutes an undertaking.** Per 36 CFR 800.16, an undertaking is an action funded in whole or in part under the direct or indirect jurisdiction of a Federal agency. If the Proposed Action is an undertaking, the appropriate State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office (THPO) and other consulting parties (stakeholders) are identified.
2. **Identify National Register-listed or eligible properties.** Eligible historic properties in the geographic area of the Proposed Action are identified and evaluated for significance, including properties potentially eligible or listed with the National Register of Historic Places (NRHP) that may be affected by the Proposed Action.
3. **Assess affects of Proposed Action on eligible historic properties.** If the assessment determines no historic properties or no adverse effect to eligible historic properties, the SHPO/THPO and other consulting parties are informed, and the compliance process stops at this step. If the assessment determines actual or potential adverse effect to eligible historic properties, the SHPO/THPO and other consulting parties are notified through a letter and supporting documentation.
4. **Resolve adverse effects to eligible historic properties through consultation with the SHPO/THPO and Advisory Council on Historic Preservation (ACHP), as necessary.**

The project is located on a parcel of grassland with sparse brush, at 3,000 feet elevation, in the west Texas plains region of Andrews County with no other structures located in the immediate area. Historic, cultural, or tribal resources were not identified within a 1.5-mile Area of Potential Effect (APE) of the Proposed Action based on a review of information available from NRHP, the Texas SHPO, and the Texas Archaeological Site Files. The Texas Historic Commission – Site Atlas is shown in Figure 8.

Consultation with the Texas SHPO was conducted to determine whether the construction of the Andrews Tower and installation associated antennae, microwave links, and infrastructure may generate any short-term or long-term indirect impacts to historic and cultural resources and within the viewshed of any historic and cultural resources. Information available on the Texas SHPO website indicated no state-surveyed historic places were located within the APE. A public notice was listed in the “Andrews County News” on March 19, 2011 to allow for public comments on the effect of the project on historic properties within the viewshed of the proposed tower. No comments pertaining to the public notice were received.

Federal Communications Commission (FCC) Form 620 with attachments was submitted to the SHPO on March 17, 2011. A response dated March 29, 2011 indicated that the SHPO concurred with the recommendations and determined that the project will have no effect on

properties listed, no further evaluation is required and the project may proceed (Appendix C). Based on these findings, FEMA has determined that the proposed action will have no effect on cultural and historic resources.

In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. The applicant will inform FEMA immediately, FEMA will consult with the SHPO or THPO, and Tribes and work in sensitive areas cannot resume until consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the National Historic Preservation Act.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to cultural and historic resources.

4.5.2 Tribal Coordination

Section 106 of the NHPA also requires coordination with Federally-recognized Native American Indian tribes who may have potential cultural interests in the project area, and acknowledges that tribes may have interests in geographic locations other than their seat of government. The FCC has established a Tower Construction Notification System (TCNS) that allows for Federally recognized Tribes and Native Hawaiian Organizations (NHO) to respond to grantees via email.

The following groups were contacted: Southern Ute Tribe, Ysleta del Sur Pueblo, Comanche Nation, Wichita and Affiliated Tribes, Tonkawa Tribe, and Mescalero Apache Tribe. All of the groups indicated by letter, email or by telephone contact that they had no interest in the site (Appendix B).

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to tribal resources

4.6 Socioeconomic Resources

Andrews County, Texas is located in a rural western portion of the State of Texas. It is bordered on the north by Gaines and Dawson Counties, on the east by Martin County, on the south by Kermit, Ector and Midland Counties, and the west by Lea County, New Mexico. In 2009, the U.S. Census Bureau estimated Andrews County's population to be 14,057 (Demographic Fact Finder 2011). The county has a land area of 1,500.64 square miles.

4.6.1 Environmental Justice

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) requires that Federal agencies focus on achieving environmental justice by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

The proposed action will result in significant upgrades to and enhancements of the interoperable communication capability within Andrews County and will address radio coverage issues throughout the county, thus benefitting the entire population.

Under the No Action Alternative, Andrews County would continue to rely on existing communication infrastructure which does not provide sufficient coverage throughout the area. This would leave emergency response unchanged and results in a lower level of overall public safety than the Proposed Alternative as Andrews County emergency responders would remain at risk due to lack of radio coverage. Lack of adequate communication directly impacts command, control, rescue, event analysis, and other critical operations.

4.6.2 Noise

Because of construction-related activities, there will be a temporary increase in localized noise generated during the Andrews Tower construction activities. Construction activities for new infrastructure may result in short-term, negligible adverse impacts. Noise from the construction activities will vary depending on the distance from the source of the noise. The noise levels generated by construction equipment can vary substantially depending on the type of equipment used, operations schedule, and condition of the project area. In addition to daily variations in construction activities, major construction for new infrastructure will be accomplished in several different stages, with each stage having a specific equipment mix for the work to be accomplished. The use of heavy equipment during construction activities could result in short-term minor adverse impacts on the noise environment, especially if noise-sensitive populations are adjacent to a site. Typically, construction-related noise generation can last only for the duration of construction activities and occur during normal working hours (i.e., 7:00 a.m. to 5:00 p.m.), when noise is tolerated better because of the masking effect of background noise, with

equipment being shut off when not in use. Evening noise levels will likely drop to ambient noise levels of the project area.

Noise impacts from the Proposed Action construction activities will be temporary and will not exceed typical noise levels. Noise levels dBA at 50 feet from the source will be no greater than 85 dBA for no more than four to six continuous hours per day over a 10 to 35 day period (USEPA 1974). To reduce noise levels during construction, construction activities will occur during normal working hours (i.e., 7:00 a.m. to 5:00 p.m.). Construction-related noise impacts from the Andrews Tower project will not be significant.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to noise.

4.6.3 Traffic/Transportation Network

Construction-related activities, heavy equipment and materials that may be needed for site access and site preparation will not pose a significant impact to the transportation network or cause a significant increase in traffic for the area. Construction of the Proposed Action may require numerous truck trips to haul materials to the project site. The number of construction-related trips and the frequency and duration of impacts will be dependent on the location, nature, and scale of the project. Since the Andrews Tower site is a 480-foot guyed tower, the surface impact less than 0.25 acres in size of grassland with sparse brush; a significant amount of construction related traffic is not required to complete the project.

Potential impacts to transportation and traffic are expected to be low, provided appropriate planning and implementation actions are taken. Existing roads will be used to the maximum extent possible. There will be no significant impact to transportation networks or traffic from construction-related activities.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to traffic or transportation networks.

4.6.4 Utilities

The Andrews Tower project activities will require additional short-term electric and communication services from available utility networks. The Proposed Action will utilize the existing electrical power lines located approximately 650 feet southwest of the site. Construction-related impacts are not expected to lead to major shortages in supply, nor are they expected to require major changes to the system. Impacts to utilities will not be significant.

During construction-related activities, precautions will be taken to avoid damage to existing utility lines. All potential modifications to utility services will be evaluated. Coordination with potentially affected local and regional utility service providers will occur to avoid unnecessary

damage or interruption of service. There will be no significant impact to utility services from construction-related activities with the Andrews Tower site.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to utilities.

4.6.5 Public Health and Safety

Under the Proposed Action, there will be a slight increase in workplace safety hazards during the construction phase of the Andrews Tower site. Construction and ground-disturbing activities will take place for approximately one week and will include minor grading, tower base and footings installation, and tower erection. The construction site will be fenced and restricted to authorized personnel. Appropriate signs will be posted to further minimize safety risks. In addition, worker safety rules, based on Occupational Safety and Health Administration (OSHA) construction standards, will be established to protect workers. Therefore, construction-related impacts to human health and safety will not be significant. Following construction, there will be no readily identifiable public health and safety concerns associated with the tower.

Under the No Action alternative, construction activities would not take place and there would be no potential impacts to public health and safety.

4.7 Summary Table

Affected Environment/ Resource Area	Impacts	Mitigation/BMPS
Geology and Soils	According to a review of the USDA Natural Resources Conservation Service Web Soil Survey, the soil types at the project site are not defined as prime or unique (Natural Resource Conservation Service 2011). No impacts to underlying geology will occur.	The project site is not considered prime farmland. The proposed action will not significantly impact geology or soils at the site. The minor construction activity will incorporate practices to minimize soil erosion during the construction/erection of the communication tower, including best management practices such as minimization of area of disturbance, silt fencing and/or straw bales, and proper staging of equipment.

Affected Environment/ Resource Area	Impacts	Mitigation/BMPS
Air Quality	Air quality impacts during construction will originate from emission of construction vehicles, equipment, and fugitive dust stirred up during ground disturbing activities. Both will be short-term, temporary and of limited duration. No impacts will occur.	Construction contractors will use best management practices (BMP). These BMPs include spraying water to minimize dust, limiting the area of uncovered soil to the minimum needed for each activity, siting of staging areas to minimize fugitive dust, using a temporary gravel cover, limiting the number and speed of vehicles on the site, and covering trucks hauling dirt. BMPs for construction vehicle and equipment emissions include limiting vehicle idling time, and conducting proper vehicle maintenance.
Water Quality	No impacts to surface water and groundwater will occur.	According to the USGS McKenzie Lake SE, Texas 7.5 Minute Series Topographic Map dated 1970 (Figure 2), and the USEPA Region 6 Map of Sole Source Aquifers (USEPA Sole Source Aquifers 2011) (Figure 7), the Proposed Action is located in a grassland area of Andrews County, Texas. The site is approximately 3,000 feet above mean sea level with no indications of wetlands, floodplains, coastal management zones, and wild or scenic rivers noted in the reviewed databases and maps. Considering that there are no nearby water resources from the site and the relatively limited size of the Andrews Tower footprint of less than 0.25 acres ground disturbance, construction activities are unlikely to result in a significant amount of erosion.
Wetlands	Wetlands are not located on or near the site. No impacts to wetlands will occur.	A review of the United States Department of the Interior, Fish and Wildlife Service (USFWS) National Wetlands Inventory map McKenzie Lake SE, Texas, 1995 (Figure 9), indicated that wetlands are not located on the site. Furthermore, at the time of the site reconnaissance, there was no evidence of potential wetlands, hydric soils or hydrophytic vegetation at the site. Furthermore, a review of the relevant soil survey map did not note hydric soils at the site (Natural Resource Conservation Service 2011). Based on the findings of this review, the proposed action will result in no effects to wetlands.

Affected Environment/ Resource Area	Impacts	Mitigation/BMPS
Floodplain	No impacts to the floodplain will occur.	According to the Flood Insurance Rate Map (FIRM) on-line database and information from American Flood Research, Inc. (AFR) (Appendix B), the site is in a portion of Andrews County which is not mapped by FEMA on a NFIP map (FIRM 2011). The site is located on a parcel of grassland with sparse brush of the Southern High Plains at 3,000 feet of elevation. The nearest water body is a livestock tank located approximately 3,000 feet northwest of the site. Based on this information, the Proposed Action will not affect areas of the 500-year floodplain, and there will be no impact to floodplains.
Coastal Resources	No impacts to coastal management zones will occur.	The Proposed Action is located in a grassland area of Andrews County, Texas approximately 295 miles northwest of the nearest coastal management zone. The site is approximately 3,000 feet above mean sea level with no indications of wetlands, floodplains, coastal management zones, and wild or scenic rivers noted in the reviewed databases and maps. The nearest water body is a livestock tank located approximately 3,000 feet northwest of the site identified in the USGS Topographic Map (Figure 2) and the 2008 aerial photograph (Figure 4). Based on the findings of this review, the proposed action will result in no effects to coastal management zones.
Threatened and Endangered Species and Critical Habitat	No impacts to federally protected species will occur.	No threatened, endangered, and sensitive species habitat was observed at the Proposed Action project site or on the surrounding area during the site reconnaissance. Database searches were researched for wildlife, wildlife habitat, and vegetation in the Andrews Tower project construction site. Consultation with the US Fish and Wildlife Service was submitted on March 18, 2011. A stamped "no action" response from the US Fish and Wildlife Service was received on March 28, 2011. The tower and equipment compound will not have an effect to listed or proposed protected species or critical habitats. To minimize adverse affects on migratory birds, the tower will use white strobe lights during the daytime hours and red strobe lights during the evening hours.