

**United States Department of the Interior
Bureau of Land Management**

**Finding of No Significant Impact
and
Decision Record**

October 2013

**Commnet Embudo Wireless Communications
Tower Project**

DOI-BLM-NM-F020-2013-0030-EA

Taos Field Office
226 Cruz Alta Road
Taos, New Mexico
575-758-8851



FINDING OF NO SIGNIFICANT IMPACT

Commnet Embudo Wireless Communications Tower Project

DOI-BLM-NM-F020-2013-0030-EA

Based on the analysis of potential environmental impacts contained in the environmental assessment prepared for the Comnet Embudo Wireless Communications Tower Project (DOI-BLM-NM-F020-2013-0030-EA), and considering the significance criteria in 40 CFR 508.27, I have determined that the project, including the issuance of a right-of-way grant, will not have a significant effect on the human environment. An environmental impact statement is therefore not required.



Authorized Officer

10/28/13

Date

DECISION RECORD

Commnet Embudo Wireless Communications Tower Project

DOI-BLM-NM-F020-2013-0030-EA

Decision

It is my decision to authorize the right-of-way grant to provide for the Commnet Embudo Wireless Communications Tower Project near Dixon and Embudo, New Mexico, as described under the Proposed Action in environmental assessment DOI-BLM-NM-F020-2013-0030-EA.

The right-of-way grant will allow Commnet Wireless Four Corners, LLC (Commnet) to install a LiteSite monopole tower to host three panel antennas that will provide mobile and data communication services to the Dixon-Embudo area. The new disturbance will be 15 × 15 feet (225 square feet). Facilities installed on-site for the life of the project will include the 60-foot-tall monopole tower, a steel-framed square foundation, and a 6-foot-tall chain linked fence, topped by 12 inches of barbed wire, encircling the 15 × 15-foot base area. (See Figure 1 in the attached EA.) The right-of-way grant includes the tower site location, use of an existing access road, and a staging area for temporary use.

Land Use Plan Consistency

The selected alternative is consistent with the goals and objectives of the Taos Resource Management Plan (RMP), approved in May 2012, which includes the BLM's goal to: "Establish an efficient system of utility corridors and communication sites to meet the energy and communication needs of the public with minimum negative impacts on visual, biological, cultural, and physical resources." In addition, the objective to support the goal states, "Issue land-use authorizations based on RMP decisions, BLM policy, and other Federal mandates to support the public need for uses such as utilities, renewable energy, and telecommunications."

The tower site is located within the Lower Gorge ACEC. Management decisions in the Taos RMP for the Lower Gorge ACEC pertaining to the selected alternative include: "Exclude new rights-of-way, except for road improvements to improve safety, or to provide access or utility service to non-Federal land where no practicable alternative exists" (BLM 2012:109).

Section 2.3 of the attached EA demonstrates what other locations were considered and thoroughly vetted, why these were deemed not practicable by the BLM and applicant, and the rationale for why the BLM is considering granting the ROW within the ACEC.

Since no other reasonable alternative was found located outside the ACEC, the selected alternative is in conformance with the management decisions in the Taos RMP.

Rationale for Decision

By authorizing this action, the BLM would fulfill its responsibility under the Federal Lands Policy and Management Act of 1976, which provides for land use authorizations to accommodate communication transmission systems.

The selected alternative meets the BLM's purpose and need for considering this decision, while meeting the specific objectives of Connet, given its technical constraints described in the attached EA.

The BLM project manager and resource specialists visited the project site on March 28, 2013, and an interdisciplinary team of BLM resource specialists considered resources potentially impacted by the project and discussed potential alternatives during several internal meetings.

The BLM posted a scoping letter describing the project and its location on the BLM's website (http://www.blm.gov/nm/st/en/fo/Taos_Field_Office.html) in order to invite public comment. The project description and scoping letter were also publicized via the Town Crier, an emailed newsletter, for the community of Dixon, New Mexico. The scoping comment period lasted from May 1 through May 31, 2013.

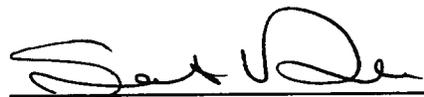
The BLM released the EA for a 30-day public comment period from August 9 to September 10, 2013. Hard copies were available at the BLM Taos Field Office and on the BLM's website. A notice of the EA's availability was also posted on the Town Crier. The BLM accepted public comments via email, the U.S. Postal Service, and by fax.

All public input received during these opportunities were adequately considered and addressed in the EA. (See sections 1.4 and 5.1 of the attached EA.)

In addition, the BLM considered an adequate range of alternatives. Section 2.3 of the attached EA provides a rationale for why certain options were dismissed from detailed analysis.

Protest/Appeal Language

Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a notice of appeal must be filed in the office of the Authorized Officer at Taos Field Office, 226 Cruz Alta Road, Taos, New Mexico 87571. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.



Authorized Officer

10/28/13

Date

**U.S. Department of the Interior
Bureau of Land Management**

**Environmental Assessment for the
Commnet Embudo Wireless Communications
Tower Project**

DOI-BLM-NM-F020-2013-0030-EA

October 2013

U.S. Department of the Interior
Bureau of Land Management
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Environmental Assessment for the Commnet Embudo Communications Tower Project

DOI-BLM-NM-F020-2013-0030-EA

Chapter 1 Introduction

1.1 Background

Commnet Wireless Four Corners, LLC (Commnet) has filed an application for right-of-way (ROW) with the Bureau of Land Management (BLM) Taos Field Office (TFO) for the installation of a 60-foot-tall slim-line LiteSite monopole communications tower. The ROW, granted by the BLM, would authorize Commnet to construct the monopole tower and install necessary facilities, and use the existing access road for project-related vehicle traffic throughout the life of the project. It is anticipated that if the ROW is granted, construction of the proposed tower would commence following approval.

The proposed project area (PPA) is located in Rio Arriba County on lands managed by the BLM TFO between Embudo and Dixon, New Mexico, 1.1 miles east of the intersection of New Mexico Highway (NM) 68 and NM 75. The site is located 1 mile along an existing access road from NM 68. The legal description of the project site, including the access road is Sections 20 and 21, Township 23 North, Range 10 East.

This proposed communications tower would provide services that would enhance the public safety of the area's residents and visitors, and increase the economic viability of the area. The BLM TFO is requiring that this environmental assessment (EA) be prepared to implement the public disclosure requirements of the National Environmental Policy Act of 1969 (NEPA). The BLM TFO has determined that an EA is required due to the location of the proposed tower site within the Lower Gorge Area of Critical Concern (ACEC) and use of the existing access through the Copper Hill ACEC, as well as the public interest in the project.

SWCA Environmental Consultants (SWCA) conducted cultural and biological resource surveys, as required by the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA), and the Migratory Bird Treaty Act (MBTA), on March 28, 2013, and the results of those surveys have been incorporated into this EA. The biological evaluation is included as Appendix A, and the cultural resource survey report is on file with the BLM TFO. BLM representatives visited the site on March 28, 2013, along with the SWCA resource specialists conducting the cultural and biological surveys.

This EA tiers to the 2012 Taos Resource Management Plan (RMP) (BLM 2012). This EA complies with the requirements of NEPA and federal regulations found in 40 Code of Federal Regulations (CFR) Chapter V. The project record contains an interdisciplinary analysis to support the findings in this document and is located at the BLM TFO. This EA analyzes the site-specific impacts associated with the Proposed Action and its alternative, identifies mitigation measures to potentially reduce or eliminate those impacts, and provides agency decision-makers with detailed information upon which to approve or deny the Proposed Action or an alternative.

1.2 Purpose and Need for Action

The BLM's purpose is to provide for the authorized use of public lands in a manner that serves the public interest and minimizes potential impacts to the affected environment. The need for the action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) to respond to an application for a ROW grant for use of federal land. The BLM will decide whether to grant the ROW and, if so, under what terms and conditions.

The proponent's objective is to provide the rural area with enhanced communications services, providing increased safety to the area's residents and visitors through better access to emergency services, and potentially increasing the economic viability of the area via better cell phone coverage and communication capabilities.

1.3 Land Use Plan Conformance

The Proposed Action is consistent with the goals and objectives of the Taos RMP, approved in May 2012, which states the BLM's goal to: "Establish an efficient system of utility corridors and communication sites to meet the energy and communication needs of the public with minimum negative impacts on visual, biological, cultural, and physical resources." (BLM 2012:41). In addition, the objective to support the goal states, "Issue land-use authorizations based on RMP decisions, BLM policy, and other Federal mandates to support the public need for uses such as utilities, renewable energy, and telecommunications."

The proposed tower site location is within the Lower Gorge ACEC, and the existing access route to the proposed site passes through the Copper Hill ACEC. Management prescriptions from the RMP for the Lower Gorge ACEC pertaining to this Proposed Action include: "Exclude new rights-of-way, except for road improvements to improve safety, or to provide access or utility service to non-Federal land where no practicable alternative exists" (BLM 2012:109). The existing road, proposed to be used to access the tower site location, is within the Lower Embudo zone of the Copper Hill ACEC, which the RMP stipulates as a ROW exclusion area (BLM 2012:104).

Guidance on handling ROW applications in exclusion areas can be found in the RMP, which states,

"Requests for land use authorizations will be analyzed and mitigation measures applied on a case-by-case basis in compliance with the NEPA process. Avoidance or exclusion areas may be applied to lands to be avoided but may be available to the location of rights-of-way with special stipulations and areas where location is not available under any conditions, respectively" (BLM 2012:41).

Section 2.3 of this EA will demonstrate what other locations were considered and thoroughly vetted, why these were deemed not practicable by the BLM and applicant, and the rationale for why the BLM is considering granting the ROW within the ACECs.

Since no other reasonable alternative was found located outside the ACECs, the Proposed Action is in conformance with the approved management and guidance found in the Taos RMP.

1.4 Scoping and Identification of Issues

Appropriate scoping helps identify resources and resource uses that could be impacted, reducing the chances of overlooking a potentially significant issue or reasonable alternative. Scoping takes place both internally within the BLM via meetings with resource specialists, as well as externally where the public is informed of the proposal and invited to comment.

The BLM project manager and resource specialists visited the project site on March 28, 2013. In addition, the BLM Interdisciplinary Team (ID Team) of resource specialists considered resources potentially impacted during an internal NEPA ID Team meeting.

In addition, the BLM posted a scoping letter describing the project and its location on the BLM's website (http://www.blm.gov/nm/st/en/fo/Taos_Field_Office.html) in order to invite public comment. The project description and scoping letter were also publicized via the Town Crier, an emailed newsletter, for the community of Dixon, New Mexico. The scoping comment period lasted from May 1 through May 31, 2013.

Twenty-three public comment letters were received regarding the proposed tower. Approximately half the letters were in favor of a cell tower in the proposed location and cited eagerness for increased communications coverage and better access to call emergency services, and the other half objected to the tower, raised some concerns on impacts from the cell tower, or were not in favor of the proposed location.

The primary issues brought up by the public were:

- Effects to visual and scenic values,
- Effects to the rural way-of-life from increased cell phone use,
- Potential health and safety effects from radiation and the dangers of cell phone use while driving on area highways, and
- Potential impacts to property values near the proposed site.

Based on these efforts and results, the following issues have been determined relevant to the analysis of this action:

1.4.1 Areas of Critical Environmental Concern

- *The proposed communications tower site is within the Lower Gorge ACEC and would be accessed by passing through the Copper Hill ACEC; how would this impact the relevant values of the ACECs?*

1.4.2 Wildlife and Special Management Species

- *How would the proposed communications tower impact wildlife and special-status species?*

1.4.3 Soils

- *How would construction of the communications tower and project-related vehicle traffic impact erodible soils in the area?*

1.4.4 Cultural Resources

- *Both ACECs list cultural resources as relevant and important; what resources, if any, were discovered during the cultural investigation and how would cultural resources of the area be impacted by the tower construction and project-related vehicle traffic?*

1.4.5 Visual and Scenic Values

- *The public raised concern with the visibility of the communications tower and its effect on landscape visual values in the rural area. What is the expected scale of the visual impacts?*

1.4.6 Public Health and Safety

- *The public raised concerns regarding effects of radiation from the cell tower, as well as the hazards of driving while using cell phones. How is the proposed tower regulated and what kind of public health and safety impacts can be expected for radio-frequency emissions?*

The following issues were raised during public scoping, and after careful consideration and deliberation, the BLM has dismissed them from detailed analysis along with the following rationale:

- **Impacts to property values:** During the scoping period, a few public comments expressed concern that the communications tower would affect property values near the proposed site and vicinity. The commenters cited examples of communications towers being built on roof tops in

urban settings, or immediately next door to, or immediately outside of a residential home, which then devalued the home or residence. However, the site associated with this Proposed Action is located in a rural area on public, BLM-managed lands and is not immediately adjacent to, above, or next to any private or residential property. The nearest private property line is approximately 1,500 feet (0.21 mile) away from the proposed site, and the nearest residential structure is more than a third of a mile away (1950 feet). Therefore, no potential impact to property values is expected because of the distance of the proposed tower from private property. The BLM has determined that this issue is not potentially significant and has therefore not been brought forward for analysis in the EA.

- **Disruption to traditional social relationships in the rural community:** A few commenters suggested that the increased use of cell phones in the community of Dixon, such as at communal meeting places such as the library and other places, would negatively impact traditional interpersonal communications or other social traditions enjoyed within the community. While the Embudo/Dixon area is a rural community, it is not currently devoid or isolated from technological advances or wireless communications. Currently, high-speed internet service is available, and many businesses and homes have wireless internet modems which transmit the wireless signal to smart phone users. In addition, fiber optic lines have been installed or are planned through Dixon which would increase this availability. Roaming cell phone service is also currently available for subscribers to certain networks. Therefore, the potential impact to the social fabric of the community from the Proposed Action would be a subtle, unquantifiable increment if even discernible. The BLM has determined that this issue is not potentially significant and has therefore not been brought forward for analysis in the EA.

Chapter 2 Description of Alternatives

2.1 Alternative A: Proposed Action

Commnet is proposing to install a LiteSite monopole tower to host three panel antennas that would provide mobile and data communication services to the Dixon-Embudo area. The proposed new disturbance would be 15 × 15 feet (225 square feet). Facilities installed on-site for the life of the project would include the 60-foot-tall monopole tower, a steel-framed square foundation, and a 6-foot-tall chain linked fence, topped by 12 inches of barbed wire, encircling the 15 × 15-foot base area (Figure 1). The proposed ROW would include the tower site location, the existing access road, and a staging area for temporary use (Figure 2). No ground penetration or concrete pad would be necessary for the construction of the LiteSite communications tower.

The tower site would be accessed via an existing 1-mile road across BLM land (see Figure 2), which is included in the ROW application. A LiteSite communication tower comes in small pieces and can be assembled on-site within a short period of time, without the use of a crane. Commnet proposes to use a small staging area just inside the fence off of NM 68. An all-terrain fork lift would bring the tower components via the existing access road from the staging area to the tower site, and the tower would be erected by the same piece of equipment. Total duration of construction would be approximately 5 days. The communications tower would be visited approximately six times per year for routine maintenance.

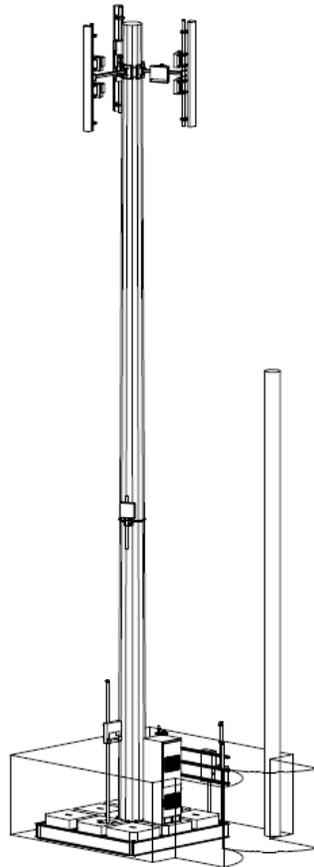


Figure 1. Proposed LiteSite monopole tower.

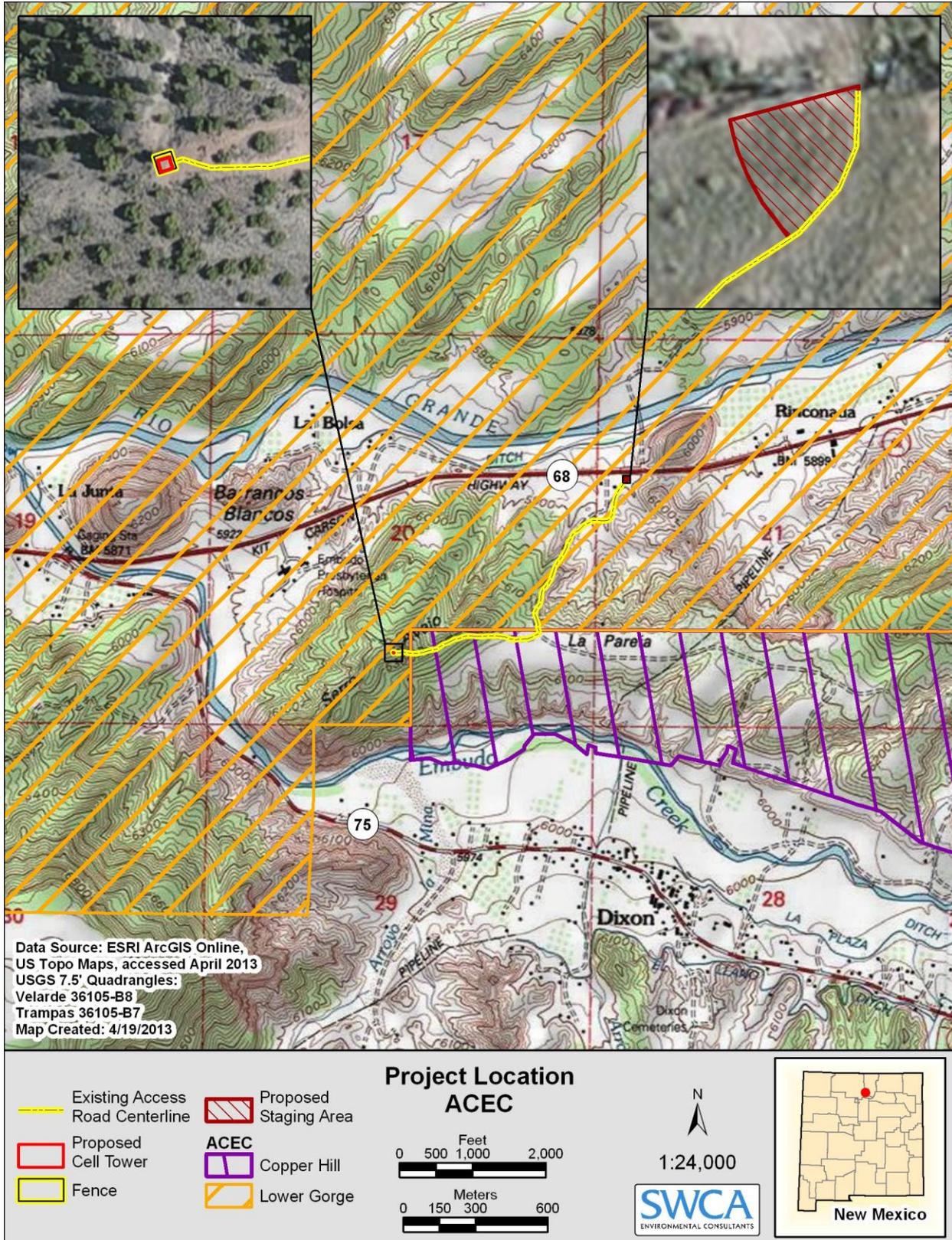


Figure 2. Project vicinity map with ACEC designation boundaries.

The following project design features have been developed to minimize or lessen potential impacts to resources from the Proposed Action and may be included as stipulations or conditions of approval in the ROW grant:

- A LiteSite tower system is constructed of multiple pieces that are transported to and then erected on-site, creating minimal disturbance.
- The tower would be constructed of unpainted galvanized steel so as to visually blend with the sky, thereby reducing its overall visual impact.
- The proposed tower would not contain any kind of lights, reflective features, or beacons.
- No concrete platform or foundation would be required.
- Vehicle traffic would be limited to light-weight all-terrain vehicles (ATVs) to access the tower site via the existing route. No semi-trucks, flatbed trailers, or concrete haulers would be needed past the designated staging area.
- All Federal Communications Commission (FCC) rules, guidelines, and requirements regarding radio-frequency transmissions and emissions would be adhered to.
- If at any time the tower is no longer being used for the stated purpose of hosting the communications equipment or is otherwise no longer needed, the tower would be dismantled at the expense of the applicant, all remnants would be transported away, and the affected area would be returned to its pre-project condition.

2.2 **Alternative B: No Action**

BLM NEPA Handbook H-1790-1 states that for EAs on externally initiated proposed actions, the No Action alternative generally means that the proposed activity would not be approved (BLM 2008:52). This option is provided in 43 CFR 3162.3-1(h)(2). Under this alternative, the BLM would not grant the ROW to the applicant and the proposed communications tower would not be built, the existing accessed road would not be used for the stated purpose, and the associated surface disturbance would not occur. The No Action alternative is presented for baseline analysis of resource impacts.

2.3 **Alternatives Considered but not Analyzed in Detail**

Alternatives to the Proposed Action are developed to explore different ways to accomplish the purpose and need while minimizing environmental impacts and resource conflicts and meeting other objectives of the RMP. Consistent with BLM NEPA Handbook H-1790-1, the agency “need only analyze alternatives that would have a lesser effect than the proposed action” (BLM 2008:80). Those with greater adverse resource impacts are not considered for this analysis.

Siting of communications towers begins with a Radio Frequency Engineer issuing a search ring, or a designated area within which a communications base station must be located with antennas at a certain height to effectively provide coverage in the desired area and work with other sites in the communications network. Commnet initiated this step and communicated the results of the search ring to BLM during alternatives development and the siting investigation.

Several alternative tower site locations in the vicinity of the Dixon area were examined by Commnet and the BLM.

The most feasible alternative location which would potentially locate the tower outside of any ACEC would be approximately 1.12 miles southwest of the proposed location (Section 30, Township 23 North, Range 10 East. Unlike the proposed 60-foot-tall monopole LiteSite tower, the alternative location would require a 150-foot or taller conventional tower with concrete foundation, creating greater resource impacts. The taller tower would be necessary in this location to get the signal over the mesa and down to the areas that Commnet is attempting to provide service for (Figure 3).

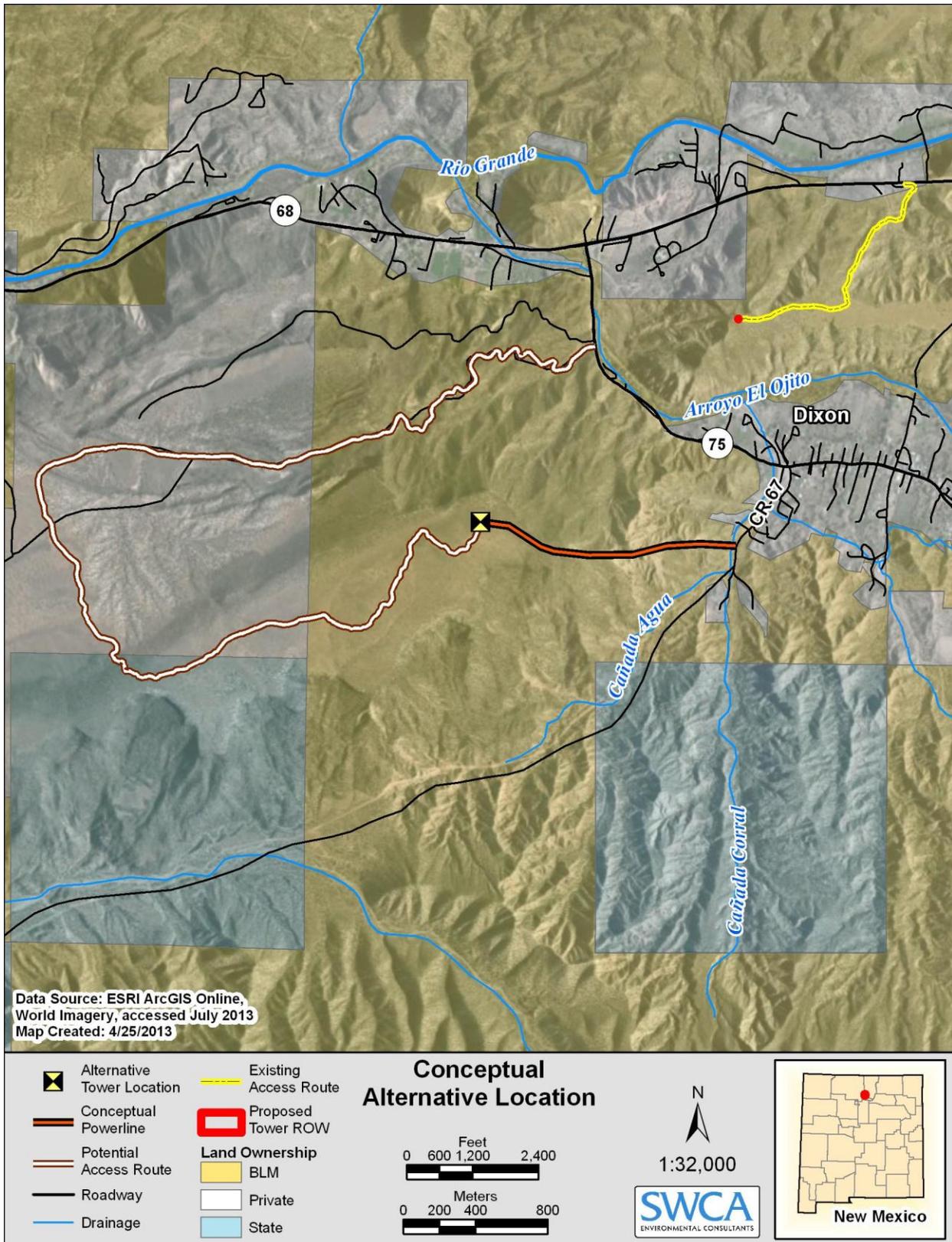


Figure 3. Alternative location considered but not brought forward for detailed analysis.

The alternative location would require a new power line, and the shortest potential route for this power line would be down the east side of the mesa. The power line would be approximately 0.90 mile long and would be built in full view of the village of Dixon.

In addition, in order to access the alternative site, vehicles traffic would have to use an existing 4.85-mile route. A portion of the route is dirt and gravel road until that ends and a two-track/ATV route begins. Portions of the road would have to be upgraded and rebuilt to enable project-related vehicle traffic to access the alternative site.

Because of the greater resource impacts associated with the additional infrastructure needed for the alternate location, this alternative was not brought forward for detailed analysis in this EA.

A few potential locations were examined south of Dixon; however, these sites would not adequately provide coverage to the areas west of Dixon and north along NM 68.

During public scoping, some commenters asked that the tower be located at least 5 miles from the town of Dixon. However, a location 5 miles away would not provide the coverage in the area needing better service and would therefore not meet the stated purpose and need of the project. Therefore, another potential location outside this radius has not been brought forward for detailed analysis.

As no additional alternative was identified that would meet the purpose and need and would result in equal or lesser impacts to resources; only the Proposed Action and No Action alternatives were brought forward for detailed analysis in this EA.

Chapter 3 Affected Environment

This chapter describes the environment that would be affected by implementing the alternatives described in Chapter 2. The resource issues under analysis, and those dismissed from analysis, were identified in Chapter 1. Aspects of the affected environment described in this chapter focus on the relevant major resources or issues/concerns. NEPA requires that the discussion of issues and concerns are commensurate with the potential impacts: “1500.4 (c) impacts shall be discussed in proportion to their significance.” On the basis of Council on Environmental Quality guidance and BLM NEPA Handbook H-1790-1, the following discussion is limited to those resources that could be impacted to a degree that detailed analysis is warranted (40 CFR 1502.15) (BLM 2008:96). The following analysis includes ACECs, biological resources, soils, cultural resources, visual and scenic values, and public health and safety, as presented in Section 1.4.

3.1 Areas of Critical Environmental Concern

Section 202 of FLPMA requires the BLM to give priority to designation and protection of ACECs during the land use planning process. An ACEC is an administrative designation and pertains to a defined area within public lands where special management attention is needed to protect and prevent irreparable damage to relevant and important values or other natural systems or processes, or to protect human life and provide safety from natural hazards (BLM 1988). ACECs differ from other special management designations, such as wilderness areas, in that the ACEC designation, by itself, does not automatically prohibit other uses in the area.

The proposed tower site and temporary staging area are located in the Lower Gorge ACEC, and the tower site would be accessed by passing through a portion of the Copper Hill ACEC (see Figure 2).

3.1.1 Lower Gorge ACEC

The Taos RMP contains a complete description of the Lower Gorge ACEC (BLM 2012:109). The Lower Gorge ACEC encompasses 21,190 acres and contains relevant and important riparian vegetation, special-status species, wildlife habitat, and cultural values. The Lower Gorge ACEC is primarily located along the Rio Grande corridor. Management emphasis also includes recreation, particularly the rafting, boating, and wildlife viewing activities prevalent there. The ACEC is managed according to the management prescriptions in the Taos RMP.

Management prescriptions that apply to the Proposed Action are as follows:

- Exclude new ROWs except for road improvements to improve safety, or to provide access or utility service to non-federal land where no practicable alternative exists.
- Designate Visual Resource Management (VRM) Class I and II areas (the proposed tower site and staging area are within VRM Class II).

3.1.2 Copper Hill ACEC

The Copper Hill ACEC encompasses 17,200 acres and contains relevant and important riparian, fish and wildlife habitat, scenic, cultural, and watershed resource values. The ACEC is managed according to the management prescriptions in the Taos RMP.

The RMP contains a complete description of the Copper Hill ACEC (BLM 2012:104). Management prescriptions that apply to the Proposed Action are as follows:

- Exclude ROWs in the Lower Embudo zone.

- Complete a 100% survey of all cultural resources and nominate eligible sites to the National Register of Historic Places (NRHP).
- Designate VRM Class I, II, and III areas (the existing access road is within VRM Class I).

3.2 Biological Resources

A field reconnaissance of the project area was conducted by SWCA on March 28, 2013, and the full results are included in the biological evaluation in Appendix A. The field reconnaissance consisted of a pedestrian survey of the project area and a 100-foot buffer of the tower site and 50-foot buffer of the access road to evaluate vegetation and landscape features considered important to the potential occurrence of special-status plant and animal species.

3.2.1 Threatened and Endangered and Special-Status Species

The special-status species evaluated under this EA are described in the biological evaluation (see Appendix A) and consist of all the federal endangered, threatened, candidate, and proposed species for Rio Arriba County, as listed by the U.S. Fish and Wildlife Service (USFWS 2013a), and all state-listed species for Rio Arriba County (New Mexico Administrative Code 19.21.2.8.; New Mexico Department of Game and Fish 2012). In addition to federally and state-listed species, BLM sensitive species are also evaluated.

Of the 39 special-status species addressed in the biological evaluation, five are listed by the USFWS as threatened or endangered and are therefore protected under the authority of the ESA, as amended. Fourteen special-status species have the potential to occur in the project area. Full species lists and species descriptions are included in the biological evaluation (see Appendix A).

No special-status plants have the potential to occur within the project area. No federally listed threatened or endangered species have the potential to occur within the project area.

3.2.2 Wildlife and Migratory Birds

An SWCA biologist observed habitat utilization by five bird species—juniper titmouse (*Baeolophus ridgwayi*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), mountain bluebird (*Sialia currucoides*), and American robin (*Turdus migratorius*)—during the March 28, 2013, surveys, as described in the biological evaluation (see Appendix A). Based on a birding survey (Templeton 2007) a total of 143 bird species were counted over a 10 year period in the lower Embudo River valley. Sixty-four of these species are classified as resident, 20 of which are considered of special management concern. The complete list can be found at www.rioembudobirds.org (Templeton 2007).

The federal MBTA prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, or their eggs and nests. Most bird species native to North America are covered by the MBTA. All birds observed in the project area are covered by the MBTA (USFWS 2013b). No active bird nests were observed in or near the project area. Other observed wildlife included dormant harvester ant (*Pogonomyrmex* spp.) mounds.

Wildlife species expected to inhabit the area include rabbits (*Lepus* spp. and *Sylvilagus auduboni*), coyotes (*Canus latrans*), ravens (*Corvus corax*), and various bat species, as well as big game species Rocky Mountain elk, mule deer, black bear, and mountain lion. Numerous small mammals, reptiles, amphibians, and insects can be found and include prairie dogs, field mice, ground squirrels, kangaroo rats, small lizards and rattlesnakes. Seventy-three bird species are reported to breed in pinon-juniper habitat (Balda and Masters 1980). Not all these species will occur at any one site and the mix of species will vary greatly with stand characteristics. The bird species considered obligates or semi-obligates of pinon-juniper habitat include the gray flycatcher, ash-throated flycatcher, western scrub-jay, pinon jay

(*Gymnorhinus cyanocephalus*), juniper titmouse, bushtit, Bewick’s wren, gray vireo, black-throated gray warbler, and lark sparrow. Total breeding density increases as total tree density increases, and large annual fluctuations in breeding densities may occur. Juniper seeds, when present in winter, are an important food source for a variety of thrushes (LaRue 1994). Sagebrush obligate or semi-obligate birds include Brewer’s sparrow, sage sparrow and sage thrasher.

Riparian areas, such as the Rio Grande and Rio Embudo that lie on either side of the project area, represent corridors necessary for migration of amphibians, bats, migratory waterfowl, big game, and other wildlife species. The project area contains critical summer range for big game species such as Rocky Mountain elk and mule deer.

3.3 Soils

Project site soils are composed of the Tinaja-Rock Outcrop Complex (Natural Resource Conservation Service [NRCS] 2013). Tinaja soils are on hilly, gravelly, convex river terrace remnants, cuestas, and mesas, where elevations range from 5,800 to 7,800 feet. These soils consist of loam and sandy clay loams, with rooting depths over 60 inches. Parent materials of colluvium derived from sandstone comprise these soils. The climate is semiarid continental with annual precipitation ranging from 13 to 18 inches with the majority received during the period of July through September. Mean annual temperature is approximately 47 to 55 degrees Fahrenheit. The frost-free period ranges from 100 to 160 days. Vegetation composition is primarily blue grama (*Bouteloua gracilis*), sideoats grama (*B. curtipendula*), little bluestem (*Schizachyrium scoparium*), purple threeawn (*Aristida purpurea*), and yucca (*Yucca* sp.). Components of the soil are described below in Table 1.

Table 1. Soil Type and Erodibility Potential

| Soil Type | Slope | Location | Natural Drainage Class | Water Movement in Most Restrictive Layer | Available Water (to a depth of 60 inches) | Meets Hydric Criteria | Erodibility (Kw, Kf* factor in surface layer) |
|------------------------------------|---------|--|------------------------|--|---|-----------------------|---|
| Tinaja-Rock Outcrop Complex | | | | | | | |
| Tinaja (50%) | 45%–75% | Hilly, convex river terrace remnants, cuestas, and mesas | Well-drained | Moderately high/high | Low | No | Low to moderate** (0.05, 0.37) |
| Rock outcrop (30%) | – | – | – | – | – | – | – |

Source: Galetovic et al 1998; NRCS 2013.
 * "Erosion factors" are shown in the table as the K factor (Kw and Kf). Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments. Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 mm in size.
 ** Fine-textured soils that are high in clay have low K values (about 0.05–0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05–0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25–0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff.

3.4 Cultural Resources

Prior to the cultural resource field survey, SWCA and the BLM conducted Class I records searches both at the online Archaeological Records Management Section (ARMS) and New Mexico Historic

Preservation Division (HPD) databases on February 13, 2013, and at the BLM TFO on the same date (no additional surveys outside the ARMS database were found). Database records were searched for previously recorded archaeological sites and previously conducted archaeological surveys within 0.25 mile of the survey area. The HPD and NRHP database records search was also conducted on February 13, 2013, for properties on the NRHP and the State Register of Cultural Properties (SRCP) within 0.25 mile of the survey area.

Results of the records searches show that two previous investigations and one previously recorded site have been identified within 0.25 mile of the survey area. The one previously recorded site, LA 158064, is a historic structural site and is located outside the proposed project area and was not revisited during this investigation. No registered properties are located within 0.25 mile of the survey area.

A cultural resources pedestrian inventory was conducted by SWCA on February 20, 2013. Class III survey transects were spaced at 50-foot intervals east to west to provide coverage of the entire acreage contained within the proposed project area. Three archaeological sites were discovered and newly recorded during the investigation. All three sites would be avoided by the project activities. SWCA prepared a report of the findings and the BLM TFO Archaeologist reviewed the report and provided concurrence. No traditional cultural properties are known in the vicinity of the Proposed Action.

3.5 Visual and Scenic Values

The BLM manages scenic resources through a Visual Resource Management (VRM) program. Public lands are allocated a management class through the land use planning process and are classified from I to IV, with I being the most restrictive to development. The proposed tower site is in an area assigned as VRM Class II. The objective of Class II lands is to “retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape” (BLM 1986:6).

Views of the project area were inventoried during a site visit that took place on June 4, 2013. Prior to the site visit, the BLM identified three key observation points (KOPs) that would represent the vantage points from where the proposed tower would be most visible and the largest numbers of viewers would be able to see the proposed tower (Figure 4). The first KOP (KOP 1) is on NM 75 near the intersection with NM 68 and is located approximately 0.59 mile (3,100 feet) northwest from the proposed site. KOP 2 is a little further to the east along NM 68 and is approximately 0.44 mile (2,300 feet) north from the proposed site. KOP 3 is on the west side of the town of Dixon and lies approximately 0.54 mile (2,857 feet) southeast from the proposed site. During the site visit, high-resolution photographs were taken of the proposed tower site from each KOP and photo simulations were completed to represent the approximate view once the tower is complete (see Section 4.5). In addition, visual contrast rating worksheets were completed to document the basic elements of form, line, color, texture, and scale found in the characteristic landscape (Appendix B).

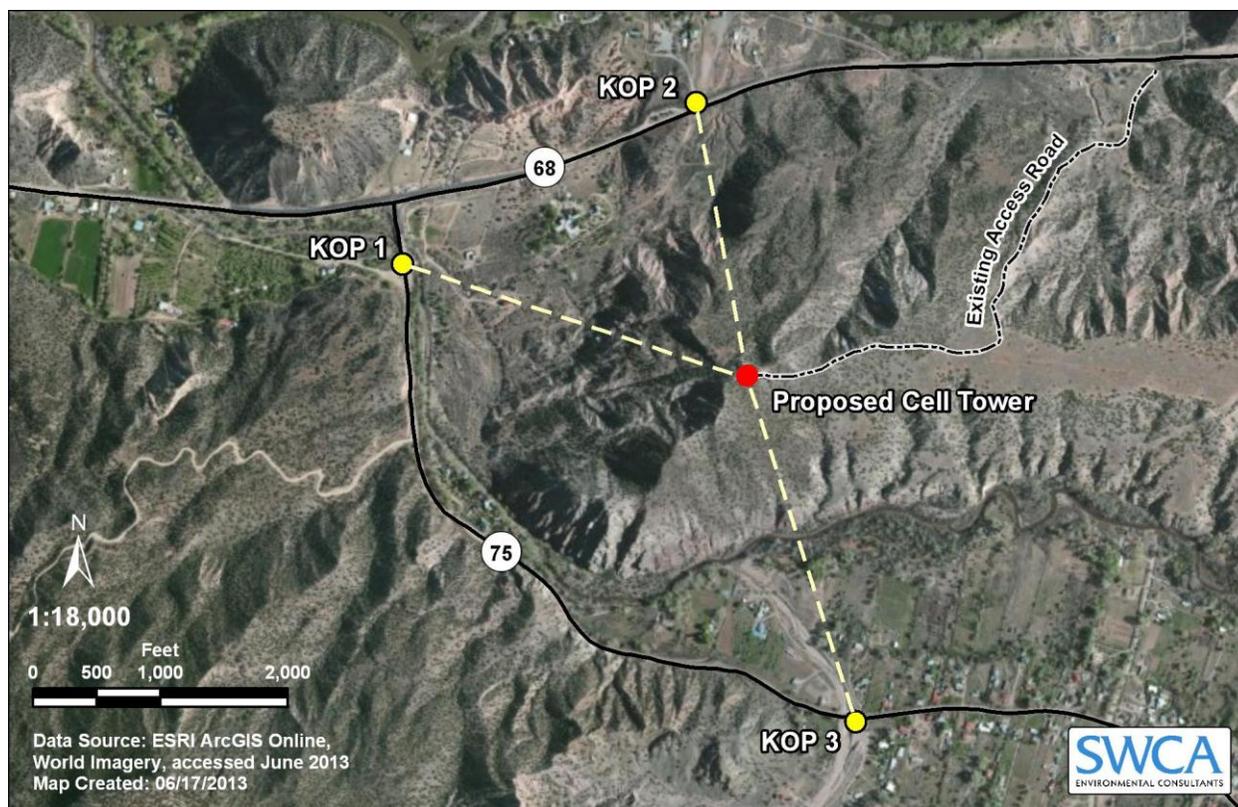


Figure 4. Representation of location of KOPs and line of site to proposed tower.

3.6 Public Health and Safety

During public scoping related to this effort, some commenters expressed concern over the potential effects to public health from the proposed tower and were concerned that the tower would emit harmful amounts of radiation, as a radio frequency (RF) emitter. These RF hazards are regulated by the FCC:

The FCC is required by the National Environmental Policy Act of 1969, among other things, to evaluate the effect of emissions from FCC-regulated transmitters on the quality of the human environment. Several organizations, such as the American National Standards Institute (ANSI), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), and the National Council on Radiation Protection and Measurements (NCRP) have issued recommendations for human exposure to RF electromagnetic fields. On August 1, 1996, the FCC adopted the NCRP's recommended Maximum Permissible Exposure limits for field strength and power density for the transmitters operating at frequencies of 300 kHz to 100 GHz. In addition, the Commission adopted the specific absorption rate (SAR) limits for devices operating within close proximity to the body as specified within the ANSI/IEEE C95.1-1992 guidelines. (FCC 2013)

As part of its compliance with FCC regulations and guidelines, Commnet performs an RF emissions study before the tower goes into service. This study shows that the proposed tower site would emit RF levels significantly below the maximum RF levels set by the FCC (the study is available in the project record and by request at the BLM TFO). The site would be managed to maintain the RF frequency below the public standard as defined by the FCC.

The nearest residence is more than 1,500 feet from the proposed tower site. The nearest town, Dixon, is nearly 1 mile from the site.

Chapter 4 Environmental Effects

The resource sections below identify the potential effects of the Proposed Action on the resources described in Chapter 3. The analysis includes direct, indirect, and potential cumulative impacts. A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other action. For this analysis, the only past actions identified that would contribute to the impacts disclosed from the Proposed Action are the existence of the other communications equipment on the hill top near the proposed site (Figure 5).



Figure 5. Photograph of the proposed tower site (stakes in ground indicate proposed site location), with other communications equipment in the background.

4.1 Alternative A: Proposed Action

4.1.1 Areas of Environmental Concern

Direct and Indirect Impacts

Impacts to the Lower Gorge ACEC

Under the Proposed Action there would be a direct impact to surface within the boundary of the Lower Gorge ACEC from the proposed tower's 15 × 15-foot (0.005-acre) footprint, representing less than 0.00003% of the total acreage within the ACEC. A small staging area, previously disturbed, would be used during construction, just inside the fence off of NM 68. The proposed site is more than 0.50 mile from the riparian area and therefore would not impact riparian vegetation, special-status species, recreation (river-related), or Wild and Scenic River status.

Construction of the 60-foot monopole tower would introduce a visual contrast to the landscape (see Section 4.5 for impacts to visual resources). However, the tower would not be visible from the riparian corridor, but instead would be most visible from passing motorists using NM 68 and NM 75. Indirect impacts to the auditory area would be temporary during the 5-day construction period and localized to the immediate vicinity of the tower site.

Potential impacts from the Proposed Action would not degrade the relevant and important values of the Lower Gorge ACEC because of the aforementioned distance from the riparian area on which these values depend. Since no other feasible alternative exists outside the ACEC that would meet the purpose and need, the Proposed Action would meet the criteria set out in the Taos RMP for granting of a ROW within the Lower Gorge ACEC.

Impacts to the Copper Hill ACEC

Direct impacts to the viewshed of the ACEC would be realized because the proposed tower would be visible from some areas of the Copper Hill ACEC. There would also be an indirect impact to the Copper Hill ACEC as vehicle traffic related to construction and maintenance would use the existing access route that passes through the Copper Hill ACEC; no new disturbance is proposed within the Copper Hill ACEC. Indirect impacts to the auditory area would likewise be temporary (from vehicles during construction, approximately 5 days) and localized.

The Lower Embudo zone of the Copper Hill ACEC is considered a ROW exclusion area (BLM 2012:104). The BLM TFO protects designated ACECs by limiting, as much as possible, surface disturbance within these areas. As mentioned in Section 3.1.2, the relevant and important values associated with this ACEC include riparian, fish and wildlife habitat, scenic quality, and cultural and watershed values.

Potential impacts from the Proposed Action would not degrade these relevant and important values of the Copper Hill ACEC because no disturbance is proposed within the ACEC, the proposed site and access road are well-removed from the riparian areas, and vehicle use through the ACEC would be temporary and sporadic. The proposed tower would create a visual impact, but no degradation to the scenic quality of the area is expected (see Section 4.1.5 below). In addition, no cultural sites would be impacted (see Section 4.1.4 below). Since no other feasible alternative exists outside the ACEC that would meet the purpose and need, the Proposed Action would meet the guidelines for granting of a ROW within the exclusion area set out in the RMP (BLM 2012:41).

Cumulative Effects

Currently there are several other communications poles and equipment occupying the hill top near the proposed site. The other facilities are much smaller in scale than the Proposed Action. These other facilities contribute to the overall impact to the Lower Gorge ACEC, as the site area is experiencing uses other than the recreational and scenic primary uses of the ACEC. Similarly, this communications equipment is also accessed via the existing road, which passes through the Copper Hill ACEC. Project-related vehicle traffic would add to that already using the existing route to reach the established facilities for maintenance. The existing road is also used sporadically by recreational ATV users.

4.1.2 Biological Resources

Direct and Indirect Impacts

Threatened and Endangered Species and Special-Status Species

Because of the small size of the project area and limited scope of project activities, the Proposed Action would not likely adversely affect any of the special-status species with the potential to occur in the project area. The Proposed Action would not directly impact or remove any potential habitat for listed species.

Under Section 7 of the ESA, as amended, the BLM is required to consult with the USFWS on any proposed action that may affect federally listed threatened or endangered species or species proposed for listing. SWCA conducted biological surveys of the Embudo site on March 28, 2013. No USFWS-listed threatened or endangered species or their habitats were found in the PPA during the biological surveys. BLM TFO staff has reviewed the Biological Evaluation for the Proposed Action and determined there would be no impacts to federally listed species. Therefore, under the ESA, no consultation with the USFWS is required.

Wildlife and Migratory Birds

Project activities are expected to occur outside the migratory bird breeding season (April through September). Because of the small size of the project area and limited scope of the project activities, the proposed project is not likely to adversely affect any wildlife species or migratory bird species with the potential to occur in the project area. If project activities occur during the breeding bird season, the Proposed Action has the potential to have a negative effect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds; however, there would be no noticeable impact to the population or to the species as a whole.

Cumulative Effects

The proposed project would increase the number of visits to the site (to conduct maintenance checks), which in addition to current instances of human disturbance from maintenance to existing communication and radio equipment located at the site, and other recreational use, will increase disturbance levels along the route and at the site that may prevent use of the area by some wildlife species sensitive to disturbance, such as big-game or large-bodied animals.

4.1.3 Soils

Direct and Indirect Impacts

The Proposed Action would result in direct soil surface disturbance to the 225-square-foot area of the communication tower footprint. Due to the LiteSite design there will be no ground penetration required during installation and therefore no impact to subsurface soils. The soils in the project area are well drained with low to moderate erodibility, moderate plasticity, and extremely gravelly texture; therefore, any potential erosion resulting from runoff from the tower site or soil compaction under the cell tower frame is expected to be minimal. There would also be minimal temporary impacts to soils during the 5-day construction phase due to increased vehicular traffic on the 1-mile access road.

Cumulative Effects

The proposed project would not have measurable cumulative effects on soil resources because no other reasonably foreseeable future actions or frequent other uses have been identified for the area that would contribute to disturbance or erosion of soils.

4.1.4 Cultural Resources

Direct and Indirect Impacts

Direct impacts to archaeological sites normally include alterations to the physical integrity of a cultural site. If a cultural site is significant for other than its scientific information, direct impacts may also include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. For this Proposed Action, significant cultural sites (e.g., listed or eligible for listing on the NRHP) are being avoided.

Indirect impacts may include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. The proposed communications tower would be visible from one of the newly discovered and recommended eligible sites. A potential indirect impact to eligible cultural sites from the Proposed Action is the increase in human activity during construction and routine maintenance. The Proposed Action is not known to physically threaten any traditional cultural properties, prevent access to sacred sites, prevent the possession of sacred objects, or interfere or otherwise hinder the performance of traditional ceremonies/rituals.

If avoidance measures are properly implemented, no significant impacts to NRHP-listed or eligible cultural resources are expected.

Cumulative Effects

The proposed project would not have measurable cumulative effects on cultural resources, primarily because few other past, present, or reasonably foreseeable future actions have been identified for the project area. Some communications equipment already exists on the hilltop near the proposed site, which adds to the overall human and industrial uses within the cultural landscape.

4.1.5 Visual and Scenic Values

Direct and Indirect Impacts

Photo simulations from the KOPs identified by the BLM for the subject area (Figure 6, Figure 7, and Figure 8) have been created to the best degree possible to depict existing conditions and visual impacts post-construction for the purpose of illustrating how the Proposed Action would affect the landscape as seen by the most frequent viewer groups.

The proposed communications tower may cause very minor contrast to the existing character of the landscape and, while visible to passing viewers, does not dominate the attention of the casual observer. The proposed tower would be slightly visible from passing motorists on NM 69 NM Hwy 75, and from some areas within and around the town of Dixon.



Figure 6. Before and after photo simulation at KOP 1, junction of NM 68 and NM 75, facing southeast.



Figure 7. Before and after photo simulation at KOP 2, from NM 68 in the Embudo area, facing south.



Figure 8. Before and after photo simulation at KOP 3, west edge of town of Dixon, facing north/northwest.

The visual resource contrast rating worksheets (see Appendix B) inventory the visual elements of the landscape, including form, line, color, and texture, and provide a contrast rating for each element that would result from the Proposed Action. The proposed monopole would not change the form of the landscape; therefore, the form contrast rating is none. For color, line, and texture, weak contrast is expected. The proposed tower would not be the only vertical element, as trees, power lines and poles, buildings, and roads are all visible from each KOP. The tower would be of unpainted galvanized steel, and of a gray, non-reflective finish color, which has been shown to be the most appropriate for blending with blue skies. Therefore, the contrast rating for the other three landscape elements, line, color, and texture, is weak. As noted in the Proposed Action, the proposed tower would not host a light, beacon, or any other reflective element that would attract attention of the casual observer. The proposed monopole tower is consistent with VRM Class II objectives, which state that the proposed change to the landscape may be visible but should not attract attention.

Cumulative Effects

There is existing communications equipment on the ridge in the vicinity of the Proposed Action. The proposed project would add another vertical visual element from viewpoints where the existing and

proposed equipment is visible at the same time. The existing equipment is difficult to see, but would be visible when standing directly on the ridge top of the proposed site or from selected distances.

4.1.6 Public Health and Safety

Direct and Indirect Impacts

The proposed communications tower would adhere to all FCC rules, guidelines, and regulations with regard to RF emissions. Therefore, no impacts to public health and safety from radiation are expected.

The hazards of using communications devices, particularly texting, while driving is well documented. Currently New Mexico is one of 11 states without a ban on text messaging by all drivers. While several bills proposing restrictions on cell phone use while driving cleared the legislative committee votes, no distracted driving legislation was approved during New Mexico's 2013 legislative session (Hands Free Info 2013). There are several communities/cities which have passed local ordinances restricting or banning use of communications devices while driving including Albuquerque, Santa Fe, Las Cruces, Gallup, Taos and Espanola.

The Proposed Action would improve the cell phone coverage in the Dixon and Embudo areas, which could indirectly impact the rate of use of cell phones while driving. Some cell phone service and wireless internet is already available in these areas so those that choose to use devices while driving likely already do so, and the increase related to the Proposed Action would be incremental.

Cumulative Effects

A few other antennas currently exist near the proposed tower site. However, the existing equipment is small in nature and would not produce even moderate levels of RF emissions. Therefore, even combined with the proposed tower, RF emissions are expected to be well below the maximum thresholds established by FCC rules and guidelines.

4.2 Alternative B: No Action

The BLM NEPA Handbook H-1790-1 states that for EAs on externally initiated proposed actions, the No Action alternative generally means that the proposed activity would not be approved (BLM 2008:52). This option is provided in 43 CFR 3162.3-1(h)(2). Under this alternative, the BLM would deny the proposed ROW. If the ROW is not granted, the proposed communications tower would not be constructed, project-related vehicle traffic would not use the existing access route, and the current coverage area for communications services would not be improved. The No Action alternative is presented for baseline analysis of resource impacts.

4.2.1 ACECs

There would be no effect to ACECs as a result of the No Action alternative because the ROW would not be granted and the proposed communications tower would not be constructed.

4.2.2 Wildlife and SMS

There would be no effect to any listed species or wildlife as a result of the No Action alternative because the ROW would not be granted and the proposed communications tower would not be constructed.

4.2.3 Soils

There would be no effect to soils as a result of the No Action alternative because the ROW would not be granted and disturbance to soils from construction of the proposed communications tower and associated vehicular traffic would not occur.

4.2.4 Cultural Resources

There would be no effect to cultural resources as a result of the No Action alternative because the ROW would not be granted and would not be visible from any area archaeological sites.

4.2.5 Visual and Scenic Values

There would be no effect to visual or scenic values as a result of the No Action alternative because the ROW would not be granted and the proposed communications tower would not be constructed.

4.2.6 Public Health and Safety

One issue identified during public scoping was the difficulty in communicating with and accessing emergency services because of the lack of adequate cell phone coverage in the rural areas that the proposed tower would serve. This lack of service would not be improved if the No Action alternative is chosen because the ROW would not be granted and the proposed communications tower would not be constructed.

Chapter 5 Consultation and Coordination

5.1 Summary of Public Participation

5.1.1 Public Comments and Analysis

The BLM released this EA for a 30-day public comment period from August 9 to September 10, 2013. Hard copies were available at the BLM Taos Field Office and on the BLM's website. The BLM accepted public comments via email, the U.S. Postal Service, or by fax.

Three public comments were received via email. These comments were similar in nature to those received during the scoping comment period conducted from May 1 to May 31, 2013. Two comments were in favor of the proposed cell tower and one comment raised concern over potential RF emissions from the proposed cell tower and concern over visual impacts.

In regard to the potential public health and safety impacts from the proposed tower, *Sections 3.6 and 4.1.6 Public Health and Safety* describe how the proposed communications tower would adhere to all FCC rules, guidelines, and regulations regarding RF emissions. Therefore, no impacts to public health and safety from radiation are expected from the Proposed Action.

Regarding potential visual impacts, *Sections 3.5 and 4.1.5 Visual and Scenic Values* include the results from the visual resource inventory and visual modeling conducted for the proposed project. The proposed communications tower may cause very minor contrast to the existing character of the landscape. This minor contrast rating is due to other trees, power lines, poles, buildings, and roads all visible from each KOP. Overall, the proposed monopole tower is consistent with VRM Class II objectives, which state that the proposed change to the landscape may be visible but should not attract attention.

5.2 List of Preparers

The following individuals reviewed or contributed to portions of this EA or supporting documentation.

Table 2. Contributors and Reviewers of this EA

| Name | Agency/Organization, Title/Resource |
|---------------------------|---------------------------------------|
| Jason Romero, BLM TFO | Project Manager, Realty Specialist |
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| Heather Timmons, SWCA | Biologist |
| Chris Carlson, SWCA | Archaeologist |
| Ryan Trollinger, SWCA | GIS, Photo Modeling |
| Anne Russell, SWCA | Visual Inventory |

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Appendix A. Biological Evaluation

**BIOLOGICAL EVALUATION OF THE PROPOSED COMMNET
EMBUDO MONOPOLE COMMUNICATIONS TOWER,
RIO ARRIBA COUNTY, NEW MEXICO**

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SWCA Project No. 25493.00

June 2013

EXECUTIVE SUMMARY

This biological evaluation (BE) has been prepared to evaluate the potential for occurrence of special-status species for the proposed construction of 60-foot monopole communications tower near the Dixon/Embudo area of Rio Arriba County, New Mexico. The objectives of this BE are to 1) describe vegetation communities in the project area, 2) evaluate habitat suitability for special-status species including both State- and federally listed plants and wildlife, and 3) evaluate the likelihood of effects on those species with the potential to occur in the project area.

Of the 39 special-status species addressed in this BE, five are listed by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered and are therefore protected under the authority of the Endangered Species Act of 1973 (ESA), as amended.

Six additional species are listed by the USFWS as candidate species, two are proposed for listing, there is one species listed as an experimental non-essential population, which therefore does not receive legal protection under the ESA. No species listed by the USFWS have the potential to occur in the project area. The project area is either clearly beyond these species' known geographic or elevational ranges, or does not contain vegetation or landscape features known to support these species, or both. Additionally, the State of New Mexico lists 15 species as threatened or endangered and the U.S. Bureau of Land Management (BLM) lists 21 sensitive species in Rio Arriba County. Four State-listed species—bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), gray vireo (*Vireo vicinior*), and spotted bat (*Euderma maculatum*)—and 10 BLM sensitive species—ferruginous hawk (*Buteo regalis*), loggerhead shrike (*Lanius ludovicianus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat, western small-footed myotis bat (*Myotis ciliolabrum melanorhinus*), long-eared myotis bat (*M. evotis evotis*), fringed myotis bat (*M. thysanodes thysanodes*), long-legged myotis bat (*M. volans interior*), Yuma myotis bat (*M. yumanensis yumanensis*), and big free-tailed bat (*Nyctinomops macrotis*)—have the potential to occur in the project area. The project area is either clearly beyond the known geographic or elevational ranges of the other State-listed and BLM sensitive species, or it does not contain vegetation or landscape features known to support these species, or both. Because of the small size of the project area and limited scope of the project activities, the proposed project is not likely to adversely affect any of the special-status species with the potential to occur in the project area.

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1.0 INTRODUCTION

SWCA Environmental Consultants (SWCA) was selected by Commnet Wireless Four Corners, LLC (Commnet) to complete a biological evaluation (BE) and botanical inventory for the proposed construction of 60-foot monopole communications tower near the Dixon/Embudo area of Rio Arriba County, New Mexico (Figure 1). The proposed project area is located on lands managed by the Taos Field Office of the U.S. Bureau of Land Management (BLM) between Embudo and Dixon, New Mexico, 1.1 miles east of the intersection of New Mexico State Route (NM) 68 and NM 75. The project site is located 0.95 mile along an existing access road from NM 68. The legal description of the project site, including the access road, is Section 21, Township 23 North, Range 10 East.

The scope of work for this BE included:

- review of the U.S. Fish and Wildlife Service (USFWS) species list for Rio Arriba County;
- review of the State of New Mexico listed species for Rio Arriba County;
- review of BLM sensitive species for Rio Arriba County;
- field reconnaissance of the property;
- botanical inventory of plants within the project area;
- evaluation of the potential for the species listed in this report to occur in the project area; and
- an evaluation of the likelihood of effects on State- and federally listed species with the potential to occur in the project area.

1.1 PROJECT DESCRIPTION

Commnet is proposing to install a LiteSite 60-foot-tall monopole tower to host three panel antennas that would provide mobile and data communication services to the Dixon-Embudo area. The purpose of the proposed tower is to provide communication services that would enhance the public safety of the area's residents and visitors and increase the economic viability of the area. The proposed new disturbance would be 15 × 15 feet (225 square feet). Facilities installed on-site for the life of the project would include the monopole tower, a steel-framed square foundation, and a 6-foot-tall chain-link fence, topped by 12 inches of barbed wire encircling the 15 × 15-foot base area. No ground penetration or concrete pad would be necessary for the construction of a LiteSite communications tower.

The tower site would be accessed via an existing 1.6-km-long (1-mile-long) BLM road. A LiteSite communication tower comes in small pieces and can be assembled on-site within a short period of time, without the use of a crane. Commnet proposes to utilize a small staging area for 1 or 2 days, just inside the fence bordering NM 68. An all-terrain fork lift would bring the tower components via the existing access road from the staging area to the tower site and the tower would be erected by the same piece of equipment. Total duration of construction would be approximately 5 days. The tower would be constructed of unpainted galvanized steel so as to visually blend with the sky, thereby reducing its overall visual impact. The tower would be visited approximately six times per year for routine maintenance. The proposed project is located within the BLM's Lower Gorge Area of Critical Environmental Concern (ACEC) and the Copper Hill ACEC.

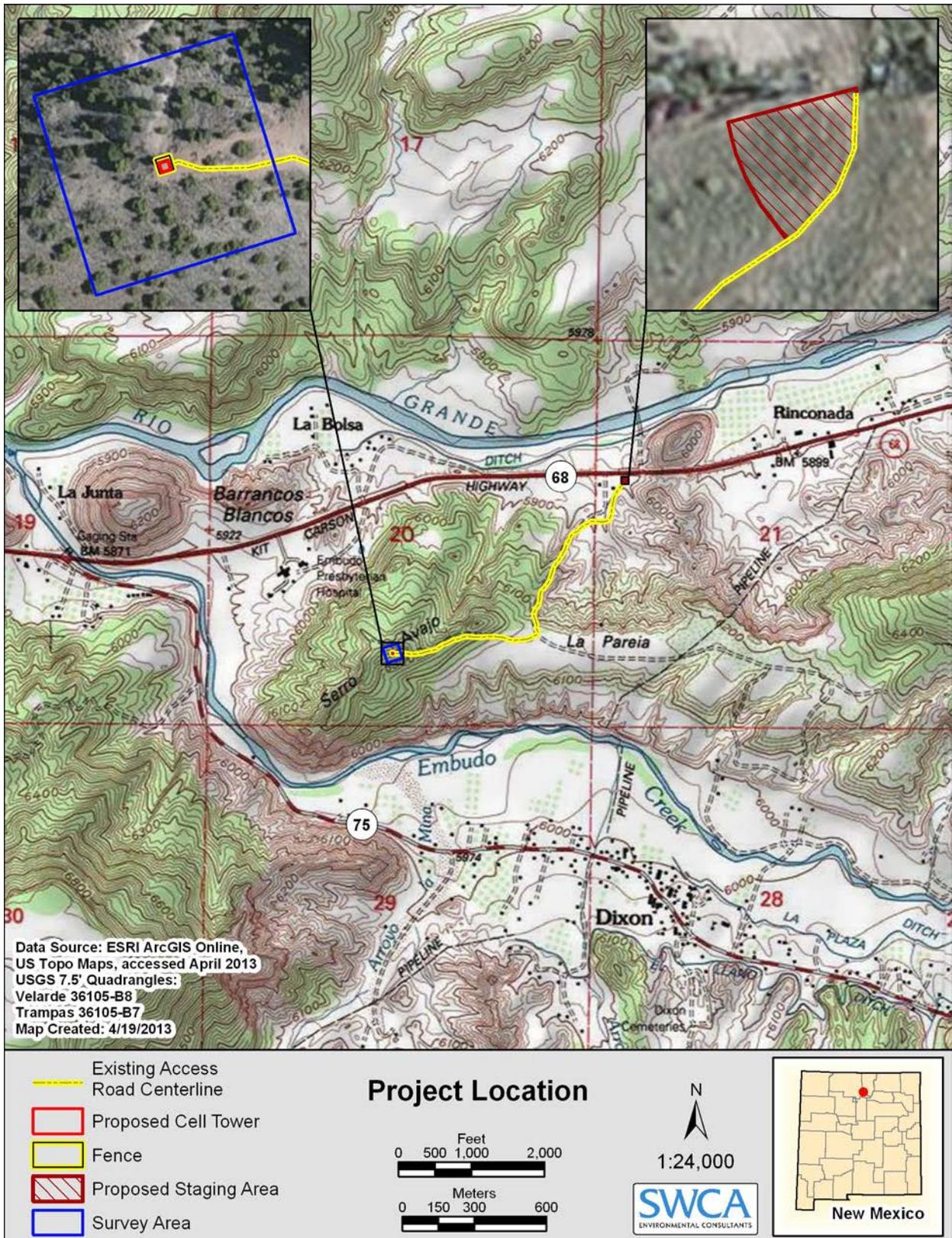


Figure 1. Project location map.

2.0 METHODS

A field reconnaissance of the project area was conducted by SWCA biologist Heather Timmons on March 28, 2013. A U.S. Geological Survey 7.5-minute topographic map (Velarde) and maps provided by Commnet were used for general orientation and to locate the project area boundaries. The field reconnaissance consisted of a pedestrian survey of the project area and a 100-foot buffer of the tower site and 50-foot buffer of the access road to evaluate vegetation and landscape features considered important to the potential occurrence of special-status plant and animal species. All plant and animal species observed within or in proximity to the project area were identified. Vegetation was classified to the community level according to *Ecoregions of New Mexico* (Griffith et al. 2006) and *Biotic Communities of the Southwest* (Brown 1994).

2.1 SPECIES IDENTIFICATION

The special-status species evaluated in this BE consist of all the federal endangered, threatened, candidate, and proposed species for Rio Arriba County, as identified at the USFWS website (USFWS 2013a) and all State-listed species for Rio Arriba County (New Mexico Administrative Code 19.21.2.8.; New Mexico Department of Game and Fish [NMDGF] 2012). In addition to federally and State-listed species, BLM sensitive species are also evaluated in this BE. The potential for local occurrence of the species addressed in this BE was based on 1) existing information on distribution, and 2) qualitative comparisons of the habitat requirements of each species with vegetation communities or landscape features in the project area. Impacts from the proposed project on all special-status species were evaluated for both the survey area (corresponding to the project's immediate footprint and the buffer) and the larger action area. The USFWS defines the action area as all areas to be affected directly or indirectly by the federal action (50 Code of Federal Regulations 402.02). For the purposes of this project, the action area includes the project area and a 0.4-km (0.25-mile) buffer around the proposed tower site as well as a 300-foot buffer around the existing access road, ending at NM Highway 68 (Figure 2). Impacts in the action area include temporary noise disturbance from construction activities. No impacts are expected to aquatic habitats found in the Rio Grande. Possible impacts to these species were evaluated based on reasonably foreseeable project-related activities.

Except where noted otherwise, information used to evaluate the potential for local occurrence and likely effects is derived from the Biota Information System of New Mexico (BISON-M 2013), New Mexico Partners in Flight (2007), and the New Mexico Rare Plant Technical Council (NMRPTC 1999).

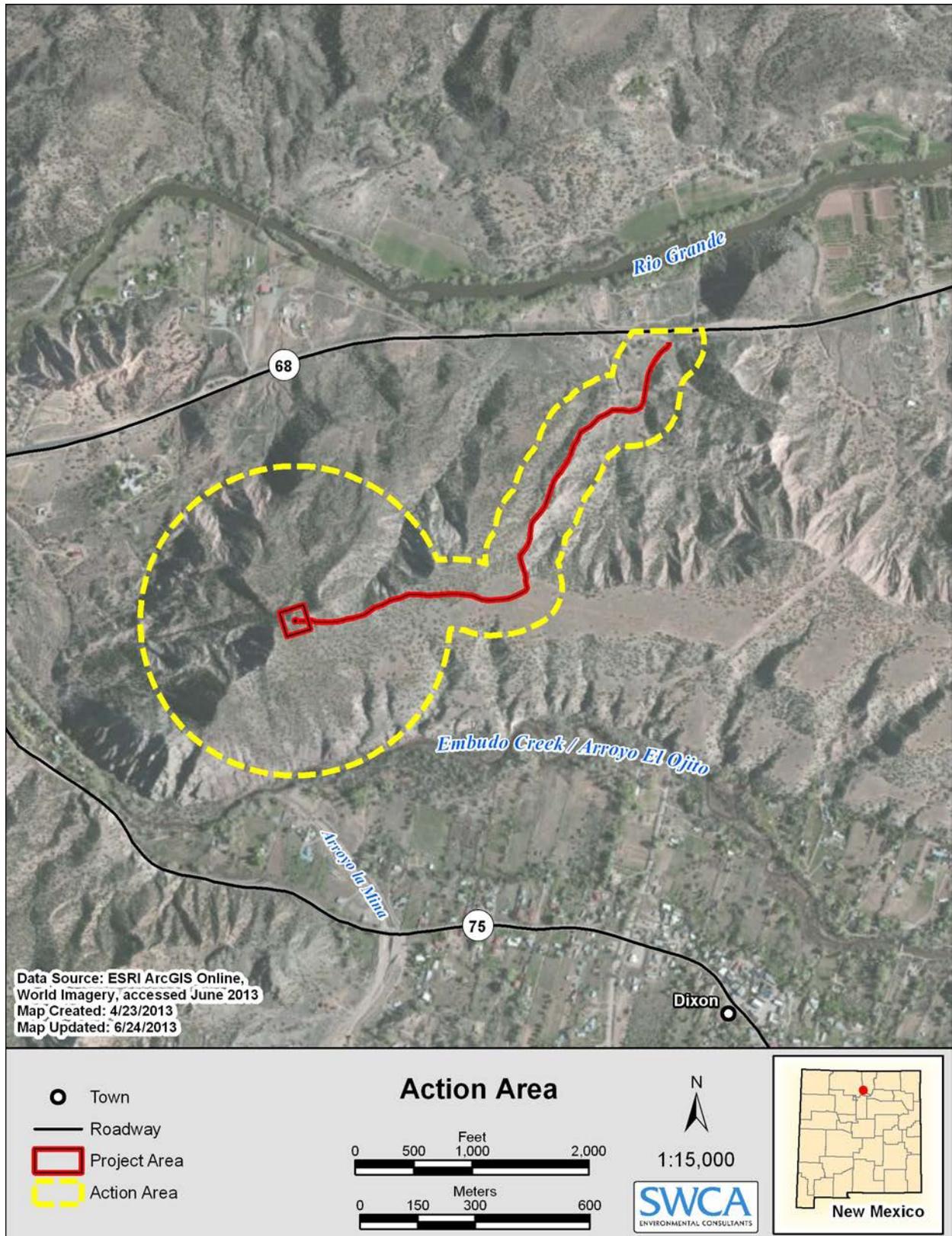


Figure 2. Action area.

2.2 SPECIES EVALUATION

The potential for occurrence of each species was summarized according to the categories listed below. Because not all species are accommodated precisely by a given category (i.e., category definitions may be too restrictive), an expanded rationale for each category assignment is provided. Potential for occurrence categories are as follows:

- *Known to occur*—the species has been documented in the project area by a reliable observer.
- *May occur*—the project area is within the species' currently known range, and vegetation communities, soils, etc., resemble those known to be used by the species.
- *Unlikely to occur*—the project area is within the species' currently known range, but vegetation communities, soils, etc., do not resemble those known to be used by the species, or the project area is clearly outside the species' currently known range.

Those species listed by the USFWS were assigned to one of three categories of possible effect, following USFWS recommendations. The effects determinations recommended by USFWS are:

- *May affect, is likely to adversely affect*—This effect determination means that the proposed action would have an adverse effect on the species or its critical habitat. Any action that would result in “take” of an endangered or threatened species is considered an adverse effect. A combination of beneficial and adverse effects is still considered “likely to adversely affect,” even if the net effect is neutral or positive. Adverse effects are not considered discountable because they are expected to occur. In addition, the probability of occurrence must be extremely small to qualify as discountable effects. Likewise, an effect that can be detected in any way or that can be meaningfully articulated in a discussion of the results of the analysis is not insignificant; it is an adverse affect.
- *May affect, is not likely to adversely affect*—Under this effect determination, all effects to the species and its critical habitat are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without adverse effects to the species (for example, there cannot be “balancing,” so that the benefits of the action would outweigh the adverse effects). Insignificant effects relate to the size of the impact and should not reach the scale where take occurs. Discountable effects are considered extremely unlikely to occur. Based on best judgment, a person would not: 1) be able to meaningfully measure, detect, or evaluate insignificant effects or 2) expect discountable effects to occur. Determinations of “not likely to adversely affect, due to beneficial, insignificant, or discountable effects” require written concurrence from the USFWS.
- *No effect*—a determination of no effect means there are absolutely no effects to the species and its critical habitat, either positive or negative. It does not include small effects or effects that are unlikely to occur.

The federal Endangered Species Act of 1973 (ESA) defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”

Because species not listed as threatened or endangered are not protected under the authority of the ESA, impact determinations for these species do not follow USFWS recommendations. Instead, the impact determinations for any species not protected under the ESA¹ are as follows:

- *No impact*—the project would have no impact on a species if 1) the species is considered unlikely to occur (range, vegetation, etc., are inappropriate) and 2) the species or its sign was not observed during surveys of the project area.
- *Beneficial impact*—the project is likely to benefit the species, whether it is currently present or not, by creating or enhancing habitat elements known to be used by the species.
- *May impact individuals, but is not likely to result in a trend toward federal listing or loss of viability*—the project is not likely to adversely impact a species if 1) the species may occur but its presence has not been documented and 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- *May impact individuals and is likely to result in a trend toward federal listing or loss of viability*—the project is likely to adversely impact a species if 1) the species is known to occur in the project area and 2) project activities would disturb areas or habitat elements known to be used by the species or would directly affect an individual.

3.0 RESULTS

3.1 ECOLOGICAL OVERVIEW

The project area is in the Great Basins Coniferous Woodland community (Brown 1994) and the Taos Plateau section of the Arizona/New Mexico Plateau ecoregion (Griffith et al. 2006) at an elevational range of 1,802 to 1,946 m (5,912–6,384 feet) above mean sea level. The Taos Plateau is a region of mostly Pliocene basaltic lavas with distinct cones of Pliocene composite volcanoes. This region has higher elevation volcanic cones than the San Luis Hills of Ecoregion 22a in Colorado; several cones are over 2,743 m (9,000 feet) and Ute Mountain is higher than 3,048 m (10,000 feet). The plateau surface has more sagebrush than Ecoregion 22a in Colorado. The plateau surface has only minor dissection, but the Rio Grande is confined to a deep canyon or gorge, 244 to 305 m deep (800–1,000 feet deep) in places. The ecoregion extends south to include the basalt-capped Black Mesa (Griffith et al. 2006).

Vegetation and soils in the project area are typical of the Taos Plateau ecoregion. Representative photographs of the project area are included in Appendix A.

3.2 VEGETATION

A botanical inventory of the proposed project area and adjacent area was performed. All plants observed were identified to the species level if possible. Table 1 lists species that were positively

¹ This includes species listed by the State of New Mexico and BLM sensitive species. This also applies to the federal species that are not threatened or endangered and are therefore not federally protected, but are still addressed in this BE.

identified. Numerous forbs and grasses could not be identified due to lack of vegetative features during the time of the field survey. Growing season plays a major role in the vegetative component observed, and it is likely that many annuals or out-of-season perennials were not recorded during the field survey.

Available habitat in the project area consists of piñon-juniper woodland with the dominant species being twoneedle pinyon (piñon [*Pinus edulis*]) and oneseed juniper (*Juniperus monosperma*). Piñon trees in the project area have been heavily impacted by drought and bark beetle (*Ips* spp.) and the majority of the mature trees were dead or dying. From the proposed tower site to approximately 0.25 mile down slope following the access road, the piñon-juniper woodland has a grass understory dominated by blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), and James' galleta (*Pleuraphis jamesii*). At this point a clearing is present that shows signs of past disturbance. This area is dominated by native grasses and plains prickly pear (*Opuntia polyacantha*). From the clearing heading down slope on the access road to the north, the piñon-juniper woodland has a larger shrub component in the understory with slenderleaf buckwheat (*Eriogonum leptophyllum*) and pale desert-thorn (*Lycium pallidum*) becoming common. A small wash is present approximately 0.7 miles down the access road from the tower site. This wash is approximately 3 m (10 feet) wide with a braided channel. Rio Grande cottonwood (*Populus deltoides* ssp. *wislizeni*) and saltcedar (*Tamarix* sp.) are present in the wash.

Table 1. Botanical Inventory of Plants Observed within and adjacent to the Project Area

| Common Name | Scientific Name | Native/Introduced Status |
|-----------------------------|---|--------------------------|
| Indian ricegrass | <i>Achnatherum hymenoides</i> | N |
| Pussytoes | <i>Antennaria</i> spp. | N |
| Threeawn | <i>Aristida</i> spp. | N |
| Sand sagebrush | <i>Artemisia filifolia</i> | N |
| Big sagebrush | <i>Artemisia tridentata</i> | N |
| Fourwing saltbush | <i>Atriplex canescens</i> | N |
| Sideoats grama | <i>Bouteloua curtipendula</i> | N |
| Black grama | <i>Bouteloua eriopoda</i> | N |
| Blue grama | <i>Bouteloua gracilis</i> | N |
| Cheatgrass | <i>Bromus tectorum</i> | I |
| Alderleaf mountain mahogany | <i>Cercocarpus montanus</i> | N |
| James' cryptantha | <i>Cryptantha cinerea</i> | N |
| Tree cholla | <i>Cylindropuntia imbricata</i> | N |
| Rubber rabbitbrush | <i>Ericameria nauseosa</i> | N |
| Slenderleaf buckwheat | <i>Eriogonum leptophyllum</i> | N |
| Spinystar | <i>Escobaria (Coryphantha) vivipara</i> | N |
| Broom snakeweed | <i>Gutierrezia sarothrae</i> | N |
| Oneseed juniper | <i>Juniperus monosperma</i> | N |
| Pale desert-thorn | <i>Lycium pallidum</i> | N |
| Ring muhly | <i>Muhlenbergia torreyi</i> | N |
| Cactus apple | <i>Opuntia engelmannii</i> | N |
| Plains pricklypear | <i>Opuntia polyacantha</i> | N |
| Twoneedle pinyon (piñon) | <i>Pinus edulis</i> | N |
| James' galleta | <i>Pleuraphis jamesii</i> | N |

| Common Name | Scientific Name | Native/Introduced Status |
|-----------------------------|---|--------------------------|
| Rio Grande cottonwood | <i>Populus deltoides ssp. wislizeni</i> | N |
| Prickly Russian thistle | <i>Salsola tragus</i> | I |
| Smallflower fishhook cactus | <i>Sclerocactus parviflorus</i> | N |
| Alkali sacaton | <i>Sporobolus airoides</i> | N |
| Tamarisk (saltcedar) | <i>Tamarix spp.</i> | I |
| Spiny cocklebur | <i>Xanthium spinosum</i> | I |
| Banana yucca | <i>Yucca baccata</i> | N |
| Soapweed yucca | <i>Yucca glauca</i> | N |

Note: All common names and scientific names are taken the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service PLANTS database (2013).

3.3 NOXIOUS WEEDS

During field reconnaissance, cheatgrass (*Bromus tectorum*) and saltcedar, both New Mexico Department of Agriculture (NMDA) Class C noxious weeds (NMDA 2009), were observed within and adjacent to the project area. Class C weeds are those species which are widespread in the state. Management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation. In addition to the two NMDA noxious weeds, prickly Russian thistle (*Salsola tragus*) and spiny cocklebur (*Xanthium spinosum*) were observed in the project area. These plants are both invasive weeds.

3.4 WILDLIFE

Five birds were observed within and adjacent to the project area (Table 2).

Table 2. Birds Observed during the Field Survey

| Common Name | Scientific Name | Observation |
|-------------------|-----------------------------|--|
| Juniper titmouse | <i>Baeolophus ridgwayi</i> | Foraging in project area |
| Common raven | <i>Corvus corax</i> | Flying over |
| House finch | <i>Haemorhous mexicanus</i> | Foraging in project area |
| Mountain bluebird | <i>Sialia currucoides</i> | Foraging in the vicinity of the project area |
| American robin | <i>Turdus migratorius</i> | Calls heard in vicinity of the project area |

The federal Migratory Bird Treaty Act of 1918 (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, or their eggs and nests. Most bird species native to North America are covered by the MBTA. All birds observed in the project area are covered by the MBTA (USFWS 2013b). No active bird nests were observed in or near the project area.

Nesting habitat exists for many birds within the project area, especially in association with piñon-juniper habitat. SWCA recommends that all project activities take place outside the breeding season (March 1 to September 1) to avoid the direct loss of nests or noise disturbance of nesting pairs. Should project activities be conducted during the breeding season of birds, SWCA recommends that breeding bird surveys be conducted periodically to locate any nests within the project area. Should any nests be found, consultation and coordination with the USFWS may be necessary.

In addition, SWCA recommends that the NMDGF guidelines for mitigating bird mortality from communications towers (Appendix B), be followed throughout the life of the project (NMDGF 2001).

Other observed wildlife included dormant harvester ant (*Pogonomyrmex* spp.) mounds.

3.5 SPECIES EVALUATION

The USFWS (2013a) lists five threatened or endangered species in Rio Arriba County that receive full protection under the ESA. In addition, yellow-billed cuckoo (*Coccyzus americanus*), Rio Grande cutthroat trout (*Oncorhynchus clarki virginalis*), roundtail chub (*Gila robusta*), Canada lynx (*Lynx canadensis*), Gunnison's prairie dog (*Cynomys gunnisoni*), and New Mexico meadow jumping mouse (*Zapus hudsonius luteus*) are listed by the USFWS (2013a) as candidate species; Jemez mountains salamander (*Plethodon neomexicanus*) is listed as proposed for critical habitat designation; and the whooping crane (*Grus americana*), is listed as experimental, non-essential populations; therefore, none of these species receive full legal protection under the ESA.

Additionally, the State lists 15 species as threatened or endangered (NMAC 1995; NMDGF 2012) in Rio Arriba County.

The BLM lists 21 sensitive species occurring in Rio Arriba County. Habitat requirements, potential for occurrence, and possible effects on all federal and State-listed species are summarized in Table 3.

Of the 13 species listed for Rio Arriba County by USFWS addressed in this BE, none have the potential to occur in the action area. The project area is either clearly beyond the known geographic or elevational ranges for the federally listed species, or it does not contain vegetation or landscape features known to support these species, or both. Of the 15 species for Rio Arriba County listed by the State, four—bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), gray vireo (*Vireo vicinior*), and spotted bat (*Euderma maculatum*)—have the potential to occur in the project area. Of the 21 species listed as sensitive by the BLM, 10—ferruginous hawk (*Buteo regalis*), loggerhead shrike (*Lanius ludovicianus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat, western small-footed myotis bat (*Myotis ciliolabrum melanorhinus*), long-eared myotis bat (*M. evotis evotis*), fringed myotis bat (*M. thysanodes thysanodes*), long-legged myotis bat (*M. volans interior*), Yuma myotis bat (*M. yumanensis yumanensis*) and big free-tailed bat (*Nyctinomops macrotis*)—have the potential to occur in the project area. The project area is either clearly beyond the known geographic or elevation ranges of the other State-listed species or BLM sensitive species, or it does not contain vegetation or landscape features known to support these species, or both. The 13 species with the potential to occur in the project area are discussed in detail in Section 3.5.1.

Table 3. Federally and State-Listed Species and BLM Sensitive Species Potentially Occurring in Rio Arriba County, New Mexico

| Common Name (Scientific Name) | Status | Range or Habitat | Potential for Occurrence | Determination of Effect |
|---|-------------------------------------|---|--|-------------------------|
| Plants | | | | |
| Tufted sand verbena (<i>Abronia bigelovii</i>) | BLM Sensitive | Hills and ridges of gypsum in the Todilto Formation, 1,750–2,250 m (5,700–7,400 feet). | Unlikely to occur, no suitable gypsum soils in the project area. | No effect |
| Ripley's milkvetch (<i>Astragalus ripleyi</i>) | BLM Sensitive | Sagebrush, piñon-juniper woodland, and Gambel oak (<i>Quercus gambelii</i>) thickets in ponderosa pine (<i>Pinus ponderosa</i>) forest; 2,120–2,500 m (7,000–8,250 feet). | Unlikely to occur, project area outside of elevational range. | No effect |
| Fish | | | | |
| Roundtail chub* (<i>Gila robusta</i>) | USFWS C State E BLM Sensitive | The roundtail chub inhabits pools and rapids of moderate to large rivers and large reservoirs within the Colorado River basin, including the San Jan and Gila River drainages in New Mexico. | Unlikely to occur, project area and action area are outside of known range. | No effect |
| Rio Grande cutthroat trout (<i>Oncorhynchus clarki virginalis</i>) | USFWS C | Cutthroat trout prefer clear, cold streams and lakes. The distribution of the species is presently limited primarily to headwater tributaries within the subspecies' native range. | Unlikely to occur, no cold streams or lakes present in the project area or action area. | No effect |
| Flathead chub (<i>Platygobio gracilis</i>) | BLM Sensitive | This species is found in moderate to strong current in rivers and larger streams above shifting sand substrates, in water that is usually highly turbid and with high levels of dissolved solids. | Unlikely to occur, although this species may occur in the adjacent Rio Grande, no impacts to aquatic habitats are anticipated from project activities. | No effect |
| Reptiles and Amphibians | | | | |
| Jemez Mountains salamander (<i>Plethodon neomexicanus</i>) | USFWS P State E BLM Sensitive | Typically occurs on shady, wooded sites at elevations of 2,190–2,800 m (7,185–9,186 feet) characterized by conifers, including white fir (<i>Abies concolor</i>), Engelmann spruce (<i>Picea engelmannii</i>), blue spruce (<i>P. pungens</i>), and Douglas-fir (<i>Pseudotsuga menziesii</i>). In these habitats, salamanders spend much of the time below the surface, including under rocks and in fallen logs. Old, stabilized talus slopes are important types of cover for this species, especially those with a good covering of damp soil and plant debris. | Unlikely to occur, no suitable habitat in project area or action area. | No effect |
| Boreal toad (<i>Anaxyrus boreas</i>) | State E | May have been extirpated in New Mexico, only known in three localities in the San Juan Mountains. Lives near ponds, streams, and lakes in foothill woodlands. | Unlikely to occur, project area and action area are outside of known range. | No effect |
| Birds | | | | |
| Northern goshawk (<i>Accipiter gentilis</i>) | BLM Sensitive | Populations in New Mexico occur in mature, closed canopied coniferous forests of mountains and high mesas. | Unlikely to occur, no suitable habitat is present in the project area. | No effect |
| Boreal owl (<i>Aegolius funereus</i>) | State T | Associated with tracts of high-elevation coniferous forest, especially mature to old growth spruce and fir. | Unlikely to occur, no suitable habitat is present in the project area. | No effect |
| Baird's sparrow (<i>Ammodramus bairdii</i>) | State T BLM Sensitive | Baird's sparrow is a winter resident of New Mexico but rarely seen in Rio Arriba County. It typically breeds in shortgrass prairies and meadow mountains. | Unlikely to occur, no suitable grassland habitat present in the project area. | No effect |

| Common Name (Scientific Name) | Status | Range or Habitat | Potential for Occurrence | Determination of Effect |
|---|--------------------|---|--|---|
| Burrowing owl (<i>Athene cunicularia hypugaea</i>) | BLM Sensitive | Found typically in semiarid grasslands and prairies in association with prairie dog (<i>Cynomys</i> sp.) towns; also occurs in desert scrub and in open, disturbed rural or urban areas including along canals and arroyos. Most nests in the state are in prairie dog towns, but in some areas the species uses old burrows of rock squirrels (<i>Spermophilus variegatus</i>), badgers (<i>Mustelidae</i>), or banner-tailed kangaroo rats (<i>Dipodomys spectabilis</i>). | Unlikely to occur, no suitable nesting or foraging habitat present in the project area. | No effect |
| Ferruginous hawk (<i>Buteo regalis</i>) | BLM Sensitive | This species may generally be found in arid habitats throughout the western United States. Nests in riparian communities, sometimes in isolated or roadside trees, occasionally near urban areas. Forages only in open plains and grasslands. May also use some agricultural lands (e.g., alfalfa and dry or fallow pasture). | May occur, suitable nesting habitat located within the project area and action area. | May effect, but is not likely to adversely effect |
| Common black-hawk (<i>Buteogallus anthracinus</i>) | State T | Occupies mature, well-developed riparian gallery forests located near permanent streams where principal aquatic prey species (e.g., frogs and crayfish) are available. Primary breeding distribution includes the Upper Gila and San Francisco watersheds, the Rio Hondo, the Mimbres River, and the Middle Rio Grande River. | Unlikely to occur, project area and action area are outside of known range. | No effect |
| Black tern (<i>Chlidonias niger</i>) | BLM Sensitive | Black terns migrate statewide and are considered rare to locally fairly common. They are most frequent in summer in the San Juan Valley, Jicarilla Apache Indian Reservation, the middle Rio Grande Valley, and at Bitter Lake National Wildlife Refuge. In New Mexico black terns are found near water at lower (853–1,676 m [2,800–5,500 feet]) and middle (1,524–2,286 m [5,000–7,500 feet]) elevations. | Unlikely to occur, although suitable habitat may be present in the adjacent Rio Grande, this species is only a migrant and will not be impacted by project activities. | No effect |
| Yellow-billed cuckoo (<i>Coccyzus americanus</i>) | USFWS C | Western subspecies nests preferentially in large patches of moist cottonwood-willow woodland with high canopy closure. Found in cottonwood woodland and in tall willows along ditches along the Middle Rio Grande. | Unlikely to occur, although suitable migratory habitat present north of the action area along the Rio Grande bosque. | No effect |
| Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) | USFWS E State E | Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), saltcedar, and Russian olive (<i>Elaeagnus angustifolia</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 4 to 7 m (13–23 feet) tall, among dense, homogeneous foliage. Habitat occurs at elevations below 2,590 m (8,500 feet). | Unlikely to occur, although migratory habitat is present in the adjacent Rio Grande. This species is a migrant outside the action area and will not be impacted by project activities. | No effect |
| Peregrine falcon (<i>Falco peregrinus</i>) | State T | Occurs in mountain areas, breeds on cliffs near wooded/forested habitats often near water, with available nearby updrafts for foraging. Winters in areas where abundant prey and large roosting trees are available such as the Rio Grande and Pecos River. | May occur, suitable cliffs and available water are present in the project vicinity. | May affect, not likely to adversely affect |

| Common Name (Scientific Name) | Status | Range or Habitat | Potential for Occurrence | Determination of Effect |
|---|------------------|---|---|--|
| Whooping crane (<i>Grus americana</i>) | USFWS E, ENP | The whooping crane breeds, migrates, winters, and forages in a variety of wetland and other habitats, including coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields. Whooping cranes breed and nest in wetland habitat. Rio Arriba County occurrence is considered historical by the NMDGF. The Experimental, Non-essential Population that wintered in New Mexico during the 1990s is now believed to be extinct. | Unlikely to occur, project area outside of known range. | No effect |
| Bald eagle (<i>Haliaeetus leucocephalus</i>) | State T | The species is primarily water-oriented, and the majority of the populations occurring in New Mexico are found near streams and lakes. New Mexico harbors a small breeding population along the shores of lakes primarily in the northern part of the state. Preys on prairie dogs, waterfowl, and fish. Known to winter roost along the Rio Grande. | May occur, suitable foraging habitat is present within the action area. | May affect, not likely to adversely affect |
| Loggerhead shrike (<i>Lanius ludovicianus</i>) | BLM Sensitive | In the Rocky Mountains, ranges altitudinally from agricultural lands on the prairies to montane meadows, nesting in sagebrush areas, desert scrub, piñon-juniper woodlands, and woodland edges. | May occur, suitable foraging and nesting habitat present in the project action area. | May affect, not likely to adversely affect |
| White-tailed ptarmigan (<i>Lagopus leucura altipetens</i>) | State E | Extremely rare throughout its New Mexico range but is resident in the Sangre de Cristo Mountains, the southernmost limit of its range. Inhabits alpine tundra and timberline habitats mainly above 3,200 m (10,500 feet). | Unlikely to occur, project area is outside the known range. | No effect |
| Brown pelican (<i>Pelecanus occidentalis</i>) | State E | This species is a vagrant to New Mexico. Most brown pelicans found in New Mexico occur primarily as immature-aged wanderers during the summer-fall seasons near large lakes or permanent streams. | Unlikely to occur, no large lakes or suitable stream conditions present in the project area or action area. | No effect |
| White-faced ibis (<i>Plegadis chihi</i>) | BLM Sensitive | Found in shoreline and marsh habitats that border open water with cattails (<i>Typha</i> sp.) and rushes (<i>Juncus</i> sp.). Other plant species including woody shrub and trees may be used for breeding. | Unlikely to occur, no suitable wetland habitat present in the project area or action area. | No effect |
| Least tern (<i>Sternula antillarum</i>) | State E | Least terns nest colonially on bare or sparsely vegetated sand or dried mudflats, on coasts, rivers, or emergent wetland areas. In New Mexico, they breed regularly only at Bitter Lake National Wildlife Refuge, and they occur occasionally elsewhere along the Pecos River valley. | Unlikely to occur, project area is outside the known range. | No effect |
| Mexican spotted owl (<i>Strix occidentalis lucida</i>) | USFWS T | Dependent on the presence of large trees, snags, down logs, dense canopy cover, and multi-storied conditions within predominantly mixed-conifer and pine-oak habitats on a steep mountain hillside. | Unlikely to occur, no suitable mixed-conifer or pine-oak habitats present in the project area or action area. | No effect |
| Gray vireo (<i>Vireo vicinior</i>) | State T | In New Mexico, gray vireos are locally distributed across the western two-thirds of the state. Gray vireos typically prefer open piñon-juniper woodland or juniper savannah with a shrub component. | May occur, suitable piñon-juniper woodland is present in the project action area. | May affect, not likely to adversely affect |
| Mammals | | | | |
| Townsend's big-eared bat (<i>Corynorhinus townsendii</i>) | BLM Sensitive | Occupies semidesert shrublands, piñon-juniper woodlands, and open montane forests. Frequently associated with caves and abandoned mines for day roosts and hibernacula but will also use abandoned buildings and crevices on rock cliffs for refuge. | May occur, suitable foraging and roosting habitat present in the project area and action area. | May affect, not likely to adversely affect |

| Common Name (Scientific Name) | Status | Range or Habitat | Potential for Occurrence | Determination of Effect |
|---|--------------------------------|---|---|--|
| Gunnison's prairie dog (<i>Cynomys gunnisoni</i>) | USFWS C | Only montane populations have a USFWS candidate status. Those populations inhabit montane shrublands and high mountain valleys and plateaus in the southern Rocky Mountains from 1,829–3,658 m (6,000–12,000 feet). | Unlikely to occur, no suitable habitat present in the project area or action area. | No effect |
| Spotted bat (<i>Euderma maculatum</i>) | State T BLM Sensitive | This species has been captured in ponderosa pine of montane forests, piñon-juniper woodlands, and open semidesert shrublands. Rocky cliffs are necessary to provide suitable cracks and crevices for roosting, as is access to water. Shows apparent seasonal change in habitat, occupying ponderosa pine woodlands in the reproductive season and lower elevations at other times of the year. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Canada lynx (<i>Lynx canadensis</i>) | USFWS C | Mature subalpine coniferous forests with downed logs and windfalls to provide cover for denning, escape, and protection from severe weather. | Unlikely to occur, no suitable habitat is present in the project area or action area. | No effect |
| American marten (<i>Martes Americana origenes</i>) | State T | Rare in New Mexico. Has been verified in the San Juan and Sangre de Cristo Mountains. Found in late successional stands of mesic, conifer-dominated forests. | Unlikely to occur, no suitable habitat is present in the project area or action area. | No effect |
| Western small-footed myotis bat (<i>Myotis ciliolabrum melanorhinus</i>) | BLM Sensitive | Occurs primarily in wooded, montane areas, but a few specimens have been taken in grassland and desert scrub habitats. Seeks daytime roosts primarily in rock crevices, caves, and mines. Maternity colonies often are in abandoned houses, barns, or similar structures. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Long-eared myotis bat (<i>Myotis evotis evotis</i>) | BLM Sensitive | This species occurs in coniferous forests at moderate elevations. It is most common in ponderosa pine woodlands and is also found in piñon-juniper woodlands and subalpine forests. Uses day roosts in tree cavities, under loose bark, and in buildings. These sites as well as caves and mines are used for night roosts. Feeds over water and along the margins of vegetation. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Fringed myotis bat (<i>Myotis thysanodes thysanodes</i>) | BLM Sensitive | Varied habitats from desert scrub to fir-pine. Known to roost in caves, mines, and buildings. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Long-legged myotis bat (<i>Myotis volans interior</i>) | BLM Sensitive | Relatively common in ponderosa pine forests and piñon-juniper woodlands. Also known from some lowland sites. This bat roosts in a variety of sites including trees, buildings, crevices in rock faces, and even fissures in the ground in evenly eroded areas. Caves and mines do not appear to be important as day roosts, but are used as night roosts if available. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Yuma myotis bat (<i>Myotis yumanensis yumanensis</i>) | BLM Sensitive | More closely associated with water than most other North American bats. Found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands and forests, but usually found near open water. Flies low. Nursery colonies usually are in buildings, caves and mines, and under bridges. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |
| Big free-tailed bat (<i>Nyctinomops macrotis</i>) | BLM Sensitive | Prefers coniferous, mixed woodland or riparian habitats for foraging and depend on rocky cliffs for roosting. | May occur, suitable roosting and foraging habitat occurs in the project area and action area. | May affect, not likely to adversely affect |

| Common Name (Scientific Name) | Status | Range or Habitat | Potential for Occurrence | Determination of Effect |
|--|--|---|---|-------------------------|
| Goat Peak pika (<i>Ochotona princeps nigrescens</i>) | BLM Sensitive | This species is confined to talus slides and boulder fields in alpine and sub-alpine areas within the Jemez Mountains. | Unlikely to occur, project area and action area outside of known range. | No effect |
| New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>) | USFWS C State E BLM Sensitive | Occupies mesic habitats in lowland valleys and along montane streams, and in riparian zones along permanent waterways. It is also found along irrigation ditches and in wet meadow areas within some river floodplains. | Unlikely to occur, no suitable habitat in the project area. | No effect |
| <p>* Rio Arriba County occurrence is historical, not currently found in the county.</p> <p>USFWS Status Definitions C = Candidate. Candidate species are those for which the USFWS has sufficient information on biological vulnerability and threats to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because they are precluded by other listing activity that is a higher priority. This listing category has no legal protection. E = Endangered. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct. T = Threatened. The ESA specifically prohibits the take of a species listed as threatened. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct. P = Proposed. Any species of fish, wildlife or plant that is proposed in the <i>Federal Register</i> to be listed under Section 4 of the ESA. This could be either proposed for endangered or threatened status. ENP = Experimental, Non-essential Population. A reintroduced population established outside the species' current range, but within its historical range. For purposes of ESA Section 7 consultation, this population is treated as a proposed species, except when it is located within a National Wildlife Refuge or National Park, when the population is considered threatened. Range or habitat data were obtained from the NMDGF (BISON-M 2013), the NMRPTC (1999), New Mexico Partners in Flight (2007) and USFWS (2013a) websites unless otherwise noted.</p> | | | | |

3.5.1 Species Descriptions and Determinations of Effect

Ferruginous hawk (*Buteo regalis*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This species can be found in New Mexico year-round but only breeds in the northern two-thirds of the state and is considered irregular to locally common in winter. This species is primarily associated with grasslands and shrub steppes but has been found in grassland, piñon-juniper grassland ecotones, and badlands. The ecology of this species is tied to prairie dogs (*Cynomys* sp.). Ferruginous hawks nest within 1 km (0.6 mile) of prairie dog towns and appear to congregate near them during migration and the winter (Cartron et al. 2010).

Habitat Evaluation and Suitability. Suitable piñon-juniper habitat is present in the vicinity of the project area. No prairie dog towns were observed in the project area or vicinity. Any ferruginous hawks in the project area would likely be migratory and not stay long due to the lack of prey. Project activities may result in avoidance of the area due to noise impacts. No direct impacts to ferruginous hawks or their habitats are expected.

Determination of Effect. The proposed project may impact individuals of ferruginous hawk, but is not likely to result in a trend toward federal listing or loss of viability.

Peregrine falcon (*Falco peregrinus*)

Current Status. State of New Mexico threatened.

Habitat and Range Requirements. Peregrine falcons attack prey in open air far from cover and forage in areas with large “gulfs” of open air such as canyons, mountains, or large open areas like rivers and wetlands (Stahlecker 2010). Peregrine falcons nest in cliffs near suitable foraging habitat and winter in areas where potential prey is abundant (Stahlecker 2010). Peregrine falcons have a year round distribution in Rio Arriba County (Stahlecker 2010).

Habitat Evaluation and Suitability. Numerous canyons and the Rio Grande are present in the vicinity of the project area and action area. There is suitable foraging and nesting habitat for the peregrine falcon in the Rio Grande. Noise from construction activities may disturb peregrine falcons roosting or foraging in the vicinity of the project area. No direct impacts to the peregrine falcon are expected from project activities.

Determination of Effect. Construction of the proposed project may impact individuals of peregrine falcon, but it is not likely to result in a trend toward federal listing or loss of viability.

Bald eagle (*Haliaeetus leucocephalus*)

Current Status. State of New Mexico threatened.

Habitat and Range Requirements. The bald eagle is typically found near water, and the majority of the populations occurring in New Mexico are found near streams and lakes. In New Mexico this species nests in large trees or snags close to water along slopes or shorelines. This species occurs in New Mexico primarily as winter visitors, although three nesting territories have been recorded in Colfax County with others recorded in Rio Arriba, Catron, and Rio Arriba Counties (Stahlecker and Walker 2010). Although this species occurs statewide during the winter months, it is most heavily associated with rivers, lakes, and reservoirs in areas where it does occur (Stahlecker and Walker 2010).

Habitat Evaluation and Suitability. The Rio Grande is located to the north of the action area. There is suitable roosting and foraging habitat for the bald eagle along the Rio Grande. Eagles are known to use the Rio Grande for winter roosting and are likely to be observed flying over the project area, foraging within the action area, or roosting in the vicinity during the winter months.

Noise from construction activities may disturb bald eagles roosting or foraging within the action area or vicinity.

Determination of Effect. Construction of the proposed project may impact individuals of bald eagle, but it is not likely to result in a trend toward federal listing or loss of viability.

Loggerhead shrike (*Lanius ludovicianus*)

Current Status. BLM Sensitive.

Habitat and Range Requirements. This species occurs across the southern half of the United States from California east to the Carolinas, extending south into the highlands of Mexico. The summer breeding populations extend farther north. In New Mexico the loggerhead shrike occurs statewide across the lower elevations and it occupies a wide range of habitats, including open

country with short vegetation such as desert grasslands, shrublands, and open woodlands or juniper savannahs (New Mexico Partners in Flight 2007). Preferred nest sites in the Southwest consist of dense and thorny shrubs, and foraging occurs in open areas with short grass and shrubs. The loggerhead shrike is a year-round resident throughout the state. In the winter it may use a variety of areas, including disturbed areas for foraging. The loggerhead shrike breeds from May to July (BISON-M 2013).

Habitat Evaluation and Suitability. Suitable nesting and foraging habitat for the loggerhead shrike exists in the project area and action area.

Temporary noise impacts may disturb nesting loggerhead shrike if they are present, causing them to avoid the project area during construction.

Determination of Effect. This proposed project may impact individuals of loggerhead shrike, but it is not likely to result in a trend toward federal listing or loss of viability.

Gray vireo (*Vireo vicinior*)

Current Status. State of New Mexico threatened.

Habitat and Range Requirements. Gray vireo breeds in mid-elevation woodland and scrubland habitats of the southwestern United States and northern Mexico. Most the species' range falls within the states of Utah, Colorado, Arizona, and New Mexico. Gray vireos typically prefer open piñon-juniper woodland or juniper savannah with a shrub component. In New Mexico, the species occurs in chaparral-juniper, piñon-juniper, and piñon-madrone associations (New Mexico Partners in Flight 2007). Gray vireos arrive in New Mexico from mid to late April, generally depart by mid August, and winter in coastal and desert areas of Sonora and Baja California in Mexico (New Mexico Partners in Flight 2007).

Habitat Evaluation and Suitability. Suitable nesting and foraging habitat for the gray vireo exists in the project area and action area.

Temporary noise impacts may disturb nesting gray vireo if they are present, causing them to avoid the project area during construction.

Determination of Effect. The proposed project may impact individuals of gray vireo, but it is not likely to result in a trend toward federal listing or loss of viability.

Townsend's big-eared bat (*Corynorhinus townsendii*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This bat occurs throughout the West, from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains, with isolated populations occurring in the south and southeastern United States. It has been reported in a wide variety of xeric to mesic habitat types including scrub-grassland, desert scrub, semi-desert shrublands, chaparral, tundra, riparian communities, open montane

forests, spruce-fir, mixed hardwood-conifer, oak woodlands and forests, and active agricultural areas. Distribution of the Townsend's big-eared bat is strongly linked with the availability of caves and cave-like roosting habitat (Western Bat Working Group 2005). This species occurs in areas dominated by exposed cavities in rock formations and/or historical mining districts. It has also been known to utilize buildings, bridges, rock crevices, and hollow trees as roost sites. In New Mexico, it is known to regularly occur in caves and mine shafts in the winter (BISON-M 2013). No long-distance migrations are known and like many other bats, they return year after year to the same roost sites (BATCALL 2013).

Habitat Evaluation and Suitability. Marginal roosting habitat is present in the piñon-juniper woodlands and surrounding areas, and suitable foraging habitat is present in the piñon-juniper woodlands and riparian area along the Rio Grande. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of Townsend's big-eared bat, but is not likely to result in a trend toward federal listing or loss of viability.

Spotted bat (*Euderma maculatum*)

Current Status. State of New Mexico threatened, BLM sensitive.

Habitat and Range Requirements. The species has been captured in ponderosa pine (*Pinus ponderosa*) of montane forests, piñon-juniper woodlands, and open semi-desert shrublands. Rocky cliffs are necessary to provide suitable cracks and crevices for roosting, as is access to water. The bat shows apparent seasonal change in habitat, occupying ponderosa pine woodlands in the reproductive season and lower elevations at other times of the year (BISON-M 2013).

Habitat Evaluation and Suitability. Suitable roosting and foraging habitat for this species exists within the project area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of spotted bat, but it is not likely to result in a trend toward federal listing or loss of viability.

Western small-footed myotis bat (*Myotis ciliolabrum*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This species is widely distributed in many habitats throughout the western United States. In summer it has been found roosting in rock crevices, caves, dwellings, burrows, among rocks, under bark, and even beneath rocks scattered on the ground. Along the Rocky Mountains and adjacent plains, the bat is generally found in the broken terrain of canyons and foothills, commonly in places with cover of trees or shrubs. It is probably absent from most of the eastern plains where suitable roosting cover is scarce; records are restricted to the rocky, eroded terrain along the southern and northern margins (BISON-M 2013). The western small-footed myotis bat is a nocturnal insectivore.

Habitat Evaluation and Suitability. Suitable roosting and foraging habitat for this species exists within the project area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of western small-footed myotis bat, but is not likely to result in a trend toward federal listing or loss of viability.

Long-eared myotis bat (*Myotis evotis*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This species occurs in a variety of habitats over its range in North America, but mostly in forested areas. Where suitable roosting sites are available, this species also is found in semiarid shrublands, sage, chaparral, and agricultural areas. Daytime roosts are known to include abandoned buildings, hollow trees, loose slabs of bark, timbers of unused railroad trestles, caves and mines, fissures of cliffs, and sink holes. This species emerges at dusk, and its flight is slow and maneuverable as it forages between and within the treetops and over woodland ponds (BATCALL 2013).

Habitat Evaluation and Suitability. Marginal roosting and foraging habitat is present in the project area and action area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of long-eared myotis bat, but is not likely to result in a trend toward federal listing or loss of viability.

Fringed myotis bat (*Myotis thysanodes*)

Current Status. BLM sensitive.

Habitat and Range Requirements. The fringed bat occurs in a variety of habitats from desert-scrub to fir-pine associations. Oak and piñon woodlands appear to be the most commonly used vegetative associations. Roost sites may be in caves, mines, and buildings (BATCALL 2013).

Habitat Evaluation and Suitability. Suitable roosting and foraging habitat are present in the project area and action area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of fringed myotis bat, but is not likely to result in a trend toward federal listing or loss of viability.

Long-legged myotis bat (*Myotis volans*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This bat primarily inhabits coniferous forests, but also occurs seasonally in riparian and desert habitats. This species uses abandoned buildings, cracks in the

ground, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts; caves and mine tunnels as hibernacula. It is active throughout the night, but peak activity is 3 to 4 hours after sunset. It is a rapid, direct flier, often traveling some distance while foraging, and feeds in and around the forest canopy, primarily on moths and other soft-bodied insects (Western Bat Working Group 2005).

Habitat Evaluation and Suitability. Suitable roosting habitat is present in the riparian areas of the action area and marginal habitat is present in the piñon-juniper woodlands of the project area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of long-legged myotis bat, but is not likely to result in a trend toward federal listing or loss of viability.

Yuma myotis bat (*Myotis yumanensis*)

Current Status. BLM sensitive.

Habitat and Range Requirements. This bat ranges across the western third of North America from British Columbia, Canada, to Baja California and southern Mexico. In the United States, it is found in all the Pacific coastal states, as far east as western Montana in the north, and as far east as western Oklahoma in the south. The Yuma myotis bat is usually associated with permanent sources of water, typically rivers and streams, but it also uses tinajas in the arid West. The species occurs in a variety of habitats including riparian vegetation, arid scrublands and deserts, and forests. The species roosts in bridges, buildings, cliff crevices, caves, mines, swallow nests, and trees (BISON-M 2013). Individuals become active and forage just after sunset, feeding primarily on aquatic emergent insects. Their diet is known to include caddis flies, flies, midges, small moths, and small beetles. After feeding, they periodically rest at night roosts where the food is digested.

Habitat Evaluation and Suitability. Suitable foraging habitat is present at the Rio Grande in the action area and suitable roosting habitat is present in the vicinity of both the action area and project area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of Yuma myotis bat, but is not likely to result in a trend toward federal listing or loss of viability.

Big free-tailed bat (*Nyctinomops macrotis*)

Current Status. BLM sensitive.

Habitat and Range Requirements. The big free-tailed bat inhabits rocky country, where it roosts in crevices high up on cliff faces, but it has been known to roost in buildings. This bat leaves its roost late, when it is quite dark. As the species is incapable of hibernation, the northern populations are believed to be migratory. In Utah, the northern part of the distributional range of the species, individuals are present from the latter half of May to mid-September, but none are

present in winter. This bat is a fast and powerful flier, and after the young are weaned, individuals may appear hundreds of kilometers beyond what seems to be the usual range. Records of accidental occurrence are widespread in North America; for example, there are autumn records from Iowa and British Columbia. When foraging, the big free-tailed bat usually emits a loud piercing chatter (BATCALL 2013).

Habitat Evaluation and Suitability. Suitable roosting and foraging habitat is present for the big free-tailed bat in the project area and action area. Temporary noise impacts may disturb roosting bats in the immediate construction area. No bats or bat sign were observed during field surveys.

Determination of Effect. The proposed project may impact individuals of big free-tailed bat, but is not likely to result in a trend toward federal listing or loss of viability.

4.0 SUMMARY AND RECOMMENDATIONS

SWCA recommends that all project activities take place outside the breeding season (March 1 to September 1) to avoid the direct loss of nests or noise disturbance of nesting pairs. Should project activities be conducted during the breeding season of birds, SWCA recommends that breeding bird surveys be conducted periodically to locate any nests within the project area. Should any nests be found, consultation and coordination with the USFWS may be necessary.

In addition, SWCA recommends that the NMDGF guidelines for mitigating bird mortality from communications towers (see Appendix B), be followed throughout the life of the project (NMDGF 2001).

5.0 LIMITATIONS AND WARRANTY

Within the limitations of schedule, budget, and scope of work, SWCA warrants that this study was conducted in accordance with accepted environmental science practices, including the technical guidelines, evaluation criteria, and species' listing status in effect at the time this evaluation was performed, as outlined in the species evaluation.

The results and conclusions of this report represent the best professional judgment of SWCA scientists and are based on information provided by the project proponent and on information obtained from agencies and other sources during the course of the study. No other warranty, expressed or implied, is made.

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APPENDIX A
SITE PHOTOGRAPHS



Photograph 1. Overview of tower site, facing north.



Photograph 2. Piñon-juniper woodland habitat with a grass understory at the top of the access road just down slope from the tower site, facing west.



Photograph 3. Clearing 0.25 miles down slope from tower site, facing north.



Photograph 4. Piñon-juniper woodland habitat with shrub understory, facing north.



Photograph 5. Small wash 0.7 miles down slope from tower site, facing upstream (south).



Photograph 6. Overview of staging area, facing southwest.

APPENDIX B
NMDGF COMMUNICATIONS TOWER GUIDELINES

**NEW MEXICO DEPARTMENT OF GAME AND FISH GUIDELINES
FOR MITIGATING BIRD MORTALITY FROM COMMUNICATIONS TOWERS
CONSERVATION SERVICES DIVISION, JULY 2001**

BACKGROUND

Communication towers pose a significant threat to migratory birds, killing an estimated 4–5 million birds per year. Especially vulnerable are some 350 species of neotropical migratory songbirds. Of these, thrushes (Muscicapidae), vireos (Vireonidae), and warblers (Parulidae) are apparently the most vulnerable, although smaller numbers of waterfowl, shorebirds and other species have been documented. These migratory songbirds breed in North America in the spring and summer and migrate south in the fall and winter. These species also generally migrate at night and appear to be most susceptible to collisions with towers with lights on foggy, misty, or low-cloud-ceiling nights during migration. Lights on the towers seem to be the primary factor causing large mortality events.

There are only a few long-term studies of bird mortality at tall communications towers in North America, all indicating that large kills occur on a regular basis often, but not always, in conjunction with these adverse weather conditions. The first long-term study of the impact of a television tower on birds began in 1955 at the Tall Timbers Research Station in northern Florida. Kills occurred nearly every night from mid-August through mid-November. Moderate numbers of migrants were killed under clear skies, but mortalities increased markedly with overcast conditions. After the first 25 years, 42,384 birds representing 189 species were counted. Beginning in 1957, the longest study yet conducted identified 121,560 birds of 123 species killed in Wisconsin over a 38-year period. During this study, on one night in 1963, over 12,000 birds were collected, the largest single-night kill ever documented. Another large kill occurred in 1998, at three towers in western Kansas, where an estimated 10,000 lapland longspurs were killed. Large kills are thought to occur regularly over a wide area of North America, primarily east of the Rocky Mountains and along the Pacific Coast.

Two types of bird mortality occur at communications towers. Blind collision occurs when birds flying in poor visibility conditions strike the tower. Communications towers that are lighted at night for aviation safety (the Federal Aviation Administration requires towers over 200 feet above ground level (AGL) to be lighted) may help reduce bird collisions caused by poor visibility, but they can cause a second, potentially more deadly mechanism for mortality. When low cloud ceiling or foggy conditions occur, tower lights refract off water particles in the air, creating an illuminated area around the tower similar to that created by automobile headlights on bright in a snowstorm. Migrating flocks of birds numbering in the thousands can lose stellar cues for nocturnal migration in these weather conditions, entering the lighted area around the tower from which they are reluctant to leave. Visual and radar observations have documented hundreds or thousands of birds circling lighted towers, emitting warning calls. Mortality occurs when the birds hit the tower structure, guy wires, the ground or each other, as more and more passing birds become "trapped" in the lighted space. "Entrapment" of birds in the tower light sphere has been documented by turning off the lights while "swarming" is occurring, which allows the migrating birds to continue on.

Current research suggests that white flashing strobe lights are less likely to cause large kill events than are either solid or blinking incandescent red lights. Long wavelength illumination, such as in the red-orange spectrum, has been shown to interfere with the avian magnetic compass. However, current hypotheses suggests that light flash duration, rather than color, is a more critical factor. Therefore, it is thought that the longer the "off" phase between the flash phases of the light pulses, the less likely birds are to be attracted to the lighting.

Height is also a factor, with taller towers presenting more of a hazard to migrating birds. Also, because towers over 199 feet AGL must have lighting for aviation safety, towers over this height compound the risk of large kill events.

Construction of communications towers (including radio, television, cellular, and microwave) in the United States has been growing at an exponential rate due to the deregulation of the telecommunications industry, increasing at an estimated 6 to 8 percent annually. According to the Federal Communication Commission's *2000 Antenna Structure Registry*, the number of lighted towers greater than 199 feet above ground level (AGL) is estimated at more than 45,000, and the total number of towers is estimated at over 74,000. Non-compliance with the registry program is estimated at 24 to 38 percent, bringing the total to 92,000 to 102,000 towers currently nationwide. By 2003, all television stations must be converted to digital, adding potentially 1,000 new towers exceeding 1,000 feet AGL. In November 1998 approximately 370 towers over 200 ft AGL had been constructed in New Mexico.

Communication Tower Guidelines

Communications towers have the potential to cause significant impacts to night-migrating bird populations. We offer the following recommendations to reduce or mitigate adverse impacts:

Location

- If significant numbers of breeding, feeding, or roosting birds are known to habitually use a proposed tower construction site, 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 nesting (i.e., not during spring and summer).
- Co-locate communications equipment, antennas, etc. on existing towers or buildings (water towers, church steeples, etc.), or within existing groups of towers or "antenna farms", if feasible.
- New towers should be designed structurally and electrically to accommodate the applicant's antenna(s), and comparable antennas for at least two additional users, to reduce the number of future towers, unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.
- If constructing multiple towers, consider the cumulative impacts of all those towers, as well as the impact of each individual tower.
- Towers should not be located in or near wetlands, riparian areas, playas, lakes, state or federal waterfowl refuges, staging areas, rookeries or other known bird concentration areas, in known migratory or daily movement flyways, or in habitat of threatened or endangered bird species that could be prone to tower-caused mortality (i.e. night-migrating species). If location near or within one of these areas is deemed necessary, the Department requests the opportunity for additional consultation.
- Local meteorological conditions should be reviewed, and areas with an especially high incidence of fog, mist, and low cloud ceilings should be avoided.

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

Construction

- Lights on towers attract night-migrating birds, and can cause large mortality events when birds strike the tower or guy cables. Towers taller than 200 feet (61 m) above ground level (AGL) are required by the Federal Communications Commission (FCC) to have lighting for aircraft safety. Therefore, if construction of new towers is required, we recommend that they be less than 200 feet AGL, if possible, so lighting is not necessary.
- Solid or pulsating red lights attract night-migrating birds at a much higher rate than white strobe lights. Therefore, where permissible by FCC and local zoning regulations, we recommend that white strobe lights be used and solid or pulsating red warning lights be avoided. The minimum amount of lighting required by the FCC should be used, with minimum intensity and number of flashes per minute (longest duration between flashes) allowed by the FCC.
- Construction techniques should be used which do not require guy wires, as these components are thought to be a primary cause of tower-related bird mortality. Alternative construction techniques include using a lattice structure or a monopole. Towers using guy wires for support should install daytime visual markers (i.e., bird diverter devices) on the guy wires to prevent collisions by diurnally active bird species. For guidance on markers, see Chapter V in *Avian Power Line Interaction Committee, 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp.* Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/enviro/>, or by calling 1-800/334-5453.
- Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site and minimize its potential attraction for birds.
- Tower construction, including road access and fencing, should be designed to minimize habitat loss and fragmentation, and to reduce above-ground obstacles that might impact birds in flight. A larger tower footprint, however, is preferable to construction of a guy-supported tower.

This guideline was in large part adopted from recommendations published by the U.S. Fish and Wildlife Service, September 14, 2000. The guidelines were reviewed, by the Department, in September, 2003.

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Tower numbers by height class and location by state can be accessed at <http://www.towerkill.com/>.

Appendix B. Visual Contrast Rating Worksheets

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 6/4/13
 District Office: Farmington
 Field Office: Taos
 Activity (program): Right-of-Way Application

SECTION A: PROJECT INFORMATION

| | | |
|--|------------------------------------|--|
| 1. Project Name: Commnet Embudo Communications Tower | 4. Location Township <u>23N</u> | 5. Location Sketch  |
| 2. Key Observation Point: 1 | Range <u>10E</u> | |
| 3. VRM Class: II | Section <u>20</u> | |

SECTION B: CHARACTERISTICS LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|---|-------------------------------------|---|
| FORM | Hills with rounded peaks, ridges | Irregular patches, scrub, sagebrush | Square/rectangular, linear |
| LINE | Horizon line, ridge lines, diagonal, vertical | Tree trunks, angular, edge effects | Fence lines, power lines, poles, pitched roof lines |
| COLOR | Tan, reddish brown, light brown | Dark green, light green, med green | Red, gray, brown, tan |
| TEXTURE | Medium to high | Medium to course | Sparse buildings, med to fine |

SECTION C: PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|---------------|---------------|------------------|
| FORM | No change | No change | Linear, vertical |
| LINE | No change | No change | Linear pole |
| COLOR | No change | No change | Gray |
| TEXTURE | No change | No change | Smooth |

SECTION D. CONTRAST RATING ___ SHORT TERM X LONG TERM

| | | | | | | | | | | | | | | |
|---------------------------------|---------|---------------------|--|--|---|----------------|--|--|---|----------------|--|---|---|--|
| 1. DEGREE OF CONTRAST | | FEATURES | | | | | | | | | | | | 2. Does the project design meet visual resource management objectives? <u>X</u> Yes ___ No (explain on reverse side) 3. Additional mitigating measures recommended ___ Yes <u>X</u> No (Explain on reverse side) Evaluator's Names Anne Russell, Paige Marchus Date June 4, 2013 |
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | | |
| ELEMENTS | FORM | | | | X | | | | X | | | | X | |
| | LINE | | | | X | | | | X | | | X | | |
| | COLOR | | | | X | | | | X | | | X | | |
| | TEXTURE | | | | X | | | | X | | | X | | |

SECTION D. (Continued)

Comments from item 2.

The change to the landscape is visible but does not attract attention. Contrast to existing elements is weak. Meets VRM Class II objectives.

Additional Mitigating Measures (See item 3)

Proposed monopole is the lowest height that would still meet project objectives. Pole and equipment would remain a non-galvanized steel color so as to blend with the sky and not be reflective. No lights, beacons, or reflectors would be on the monopole.

Commnet Embudo Communications Tower Project

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

District Office: Farmington

Field Office: Taos

Activity (program): Right-of-Way Application

SECTION A: PROJECT INFORMATION

| | | |
|--|------------------------------------|--|
| 1. Project Name: Commnet Embudo Communications Tower | 4. Location Township <u>23N</u> | 5. Location Sketch  |
| 2. Key Observation Point: 2 | Range <u>10E</u> | |
| 3. VRM Class: II | Section <u>20</u> | |

SECTION B: CHARACTERISTICS LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|---------------------------------|-------------------------------------|--|
| FORM | Rounded hills, angular ridges | Irregular patches, scrub, sagebrush | Linear |
| LINE | Horizon line, angular, vertical | Road edge effects | Vertical and horizontal, fence poles, two-track road, linear |
| COLOR | Tan, reddish brown | Medium to light green, yellow | Tan, dark green, dark brown |
| TEXTURE | Medium | Medium to fine | Coarse |

SECTION C: PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|---------------|---------------|------------------|
| FORM | No change | No change | Linear, vertical |
| LINE | No change | No change | Linear pole |
| COLOR | No change | No change | Gray |
| TEXTURE | No change | No change | Smooth |

SECTION D. CONTRAST RATING ___SHORT TERM XLONG TERM

| | | | | | | | | | | | | | | |
|---------------------------------|---------|---------------------|--|--|---|----------------|--|--|---|----------------|--|---|---|---|
| 1. DEGREE OF CONTRAST | | FEATURES | | | | | | | | | | | | 2. Does the project design meet visual resource management objectives? <u>x</u> Yes ___No (explain on reverse side) |
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | | |
| ELEMENTS | FORM | | | | X | | | | X | | | | X | 3. Additional mitigating measures recommended ___Yes <u>x</u> No (Explain on reverse side) Evaluator's Names Anne Russell, Paige Marchus Date June 4, 2013 |
| | LINE | | | | X | | | | X | | | X | | |
| | COLOR | | | | X | | | | X | | | X | | |
| | TEXTURE | | | | X | | | | X | | | X | | |

SECTION D. (Continued)

Comments from item 2.

The change to the landscape is visible but does not attract attention. The contrast rating to landscape elements is weak. Meets VRM Class II objectives.

Additional Mitigating Measures (See item 3)

Proposed monopole is the lowest height that would still meet project objectives. Pole and equipment would remain a non-galvanized steel color so as to blend with the sky and not be reflective. No lights, beacons, or reflectors would be on the monopole.

Commnet Embudo Communications Tower Project

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VISUAL CONTRAST RATING WORKSHEET

Date: 6/4/13
District Office: Farmington
Field Office: Taos
Activity (program): Right-of-Way Application

SECTION A: PROJECT INFORMATION

| | | |
|--|------------------------------------|---|
| 1. Project Name: Commnet Embudo Communications Tower | 4. Location Township <u>23N</u> | 5. Location Sketch  |
| 2. Key Observation Point: 3 | Range <u>10E</u> | |
| 3. VRM Class: II | Section <u>29</u> | |

SECTION B: CHARACTERISTICS LANDSCAPE DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|-----------------------------------|---|---|
| FORM | High hills, steep | Patchy, irregular, round | Rectangular, linear |
| LINE | Horizon line, angles | Edge effects down hills, tree-trunks-angles | Vertical, straight, horizontal buildings, |
| COLOR | Light tan, tan, reddish tan, grey | Dark, medium, and light greens | Light blue, reddish tan, gray, tan, dark brown, dark tan, white |
| TEXTURE | Coarse | Sparse to medium | Medium |

SECTION C: PROPOSED ACTIVITY DESCRIPTION

| | 1. LAND/WATER | 2. VEGETATION | 3. STRUCTURES |
|---------|---------------|---------------|------------------|
| FORM | No change | No change | Linear, vertical |
| LINE | No change | No change | Linear pole |
| COLOR | No change | No change | Gray |
| TEXTURE | No change | No change | Smooth |

SECTION D. CONTRAST RATING ___ SHORT TERM X LONG TERM

| | | | | | | | | | | | | | | | | |
|---|---------|------------------------|--|--|---|-------------------|--|--|--|-------------------|--|--|--|--|--|--|
| 1. DEGREE OF CONTRAST | | FEATURES | | | | | | | | | | | | 2. Does the project design meet visual resource management objectives? <u>X</u> Yes ___ No (explain on reverse side) | | |
| | | LAND/WATER BODY (1) | | | | VEGETATION (2) | | | | STRUCTURES (3) | | | | | | |
| ELEMENTS | FORM | | | | X | | | | | X | | | | | X | 3. Additional mitigating measures recommended ___ Yes <u>X</u> No (Explain on reverse side) |
| | LINE | | | | X | | | | | X | | | | X | Evaluator's Names Anne Russell, Paige Marchus Date June 4, 2013 | |
| | COLOR | | | | X | | | | | X | | | | X | | |
| | TEXTURE | | | | X | | | | | X | | | | X | | |

SECTION D. (Continued)

Comments from item 2.

The change to the landscape is visible but does not attract attention. The contrast rating to the existing landscape is weak. Meets VRM Class II objectives.

Additional Mitigating Measures (See item 3)

Proposed monopole is the lowest height that would still meet project objectives. Pole and equipment would remain a non-galvanized steel color so as to blend with the sky and not be reflective. No lights, beacons, or reflectors would be on the monopole.