BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN PUBLIC SERVICE COMPANY'S APPLICATION REQUESTING: (1) ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING CONSTRUCTION AND OPERATION OF A 345 KV TRANSMISSION LINE AND ASSOCIATED FACILITIES IN EDDY AND LEA COUNTIES, NEW MEXICO; (2) APPROVAL OF THE LOCATION OF THE 345 KV TRANSMISSION LINE; (3) DETERMINATION OF RIGHT OF WAY WIDTH AND (4) AUTHORIZATION TO ACCRUE AN ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION FOR THE TRANSMISSION LINE AND ASSOCIATED FACILITIES,	)	**CASE NO. 16-_____-UT**
SOUTHWESTERN PUBLIC SERVICE COMPANY,	)	
APPLICANT.	)	

DIRECT TESTIMONY

of

DAVID J. BROWN

on behalf of

SOUTHWESTERN PUBLIC SERVICE COMPANY

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
BLM	Bureau of Land Management
CFO	Carlsbad Field Office
Commission	New Mexico Public Regulation Commission
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FONSI	Finding of No Significant Impact
IPA	Isolated Population Area
KOP	Key Observation Point
kV	Kilovolt
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMSLO	New Mexico State Land Office
Proposed Project	345-kV transmission line and associated facilities that will connect SPS's Hobbs Generating Substation, located in Lea County, New Mexico, to its China Draw Substation, located in Eddy County, New Mexico
PUA	Public Utility Act (NMSA 1978, § 62-3-1, et al.)

Acronym/Defined Term	**Meaning**
ROW	Right-Of-Way
RMP	Resource Management Plan
Rule 592	17.9.592 NMAC
SHPO	New Mexico State Historic Preservation Officer
SPS	Southwestern Public Service Company, a New Mexico corporation
SWCA	SWCA Environmental Consultants, Inc.
VRM	Visual Resource Management
Xcel Energy	Xcel Energy Inc.

LIST OF ATTACHMENTS

Case No. 16-_____-UT
Direct Testimony
of
David J. Brown

I. WITNESS IDENTIFICATION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is David J. Brown. My business address is 257 East 200 South, Suite 200, Salt Lake City, Utah 84111.

Q. On whose behalf are you testifying in this proceeding?

A. I am filing testimony on behalf of Southwestern Public Service Company, a New Mexico corporation ("SPS") and wholly-owned electric utility subsidiary of Xcel Energy Inc. ("Xcel Energy"). Xcel Energy is a utility holding company that owns several electric and natural gas utility operating companies, a regulated natural gas pipeline company, and three electric transmission companies.[1]

Q. By whom are you employed and in what position?

A. I am employed by SWCA, Inc. d.b.a. SWCA Environmental Consultants, Inc. ("SWCA") and serve as the Natural Resources Program Director for the Great

[1] Xcel Energy is the parent company of four utility operating companies: Northern States Power Company, a Minnesota corporation; Northern States Power Company, a Wisconsin corporation; Public Service Company of Colorado, a Colorado corporation and SPS. Xcel Energy's natural gas pipeline company is WestGas Interstate, Inc. Through its subsidiary, Xcel Energy Transmission Holding Company, LLC, Xcel Energy also has three transmission-only operating companies: Xcel Energy Southwest Transmission Company, LLC; Xcel Energy Transmission Development Company, LLC; and Xcel Energy West Transmission Company, LLC, all of which are either currently regulated by the Federal Energy Regulatory Commission ("FERC") or expected to be regulated by FERC.

Basin offices. I am also one of the company's senior transmission line specialists and previously served as SWCA's National Transmission Business Line Lead. For this project, I serve as the Project Manager and lead SWCA's team of more than 20 planners and scientists who have contributed to this effort.

Q. Please briefly describe SWCA.

A. SWCA is an interdisciplinary environmental consulting firm with more than 750 employees across the United States. We have had an established presence in New Mexico for 26 years. Our Albuquerque office currently has a staff of 49 full-time planning, natural resource, and cultural resource professionals.

SWCA has been involved in numerous electric transmission line permitting projects throughout the United States, including the recently-completed Southline Transmission Project, a high-voltage transmission line spanning more than 360 miles and sponsored by Hunt Power. The line originates at the Afton Substation near Las Cruces, New Mexico, and terminates at the Saguaro Substation northwest of Tucson, Arizona. SWCA has also been recently selected to prepare an Environmental Impact Statement ("EIS") for the United States Bureau of Land Management ("BLM") Taos Field Office for a high-voltage transmission line in northern New Mexico.

Q. Please describe your educational background.

A. I have a Bachelor of Arts in Architecture from the University of California at Berkeley and a Master of Landscape Architecture from Utah State University's Department of Landscape Architecture and Environmental Planning. As part of my graduate work, I concentrated on environmental planning by acquiring a broad understanding of natural systems, including riparian ecology, wetland science, geomorphology, botany, soils, and wildlife ecology. In addition, I have completed focused trainings on the National Environmental Policy Act ("NEPA"), Section 106 of the National Historic Preservation Act ("NHPA"), environmental compliance, and project management.

Q. Please describe your professional experience.

A. My primary planning experience as a professional has been related to the NEPA permitting process and development of interdisciplinary Environmental Assessments ("EA") and/or EISs. Over my 13-year career, I have been involved in approximately 50 different projects undergoing the NEPA process, the majority of which were led by the BLM as the lead federal agency. In addition to my work on more than a dozen electric transmission line projects going through the NEPA process, I have also worked on EAs and EISs for oil and gas field developments, pipelines, land use plan updates and revisions, mining projects, and renewable generation projects. My participation has included permitting tasks such as initial public and agency scoping, drafting detailed project descriptions, alternatives development, resource analyses, mitigation design and implementation, and preparation of associated project documents such as plans of development. I have also been closely involved with the parallel regulatory processes often associated with NEPA, such as Section 404 of the Clean Water Act, Section 106 of the NHPA, and Section 7 of the Endangered Species Act ("ESA").

Q. Have you testified before the New Mexico Public Regulation Commission ("Commission") or any other regulatory authorities?

A. I have not testified before the Commission. However, I testified before the Public Utility Commission of Texas in Docket No. 43878 on behalf of Sandbrock Investments, Inc. regarding SWCA's independent review of the Environmental Report and Alternative Route Analysis prepared for a proposed 138-kilovolt ("kV") transmission line in Collin and Denton Counties, Texas. Additionally, I have been involved in the preparation and evaluation of more than a dozen EAs or EISs submitted to the BLM and state agencies in support of high-voltage transmission facility projects.

II. ASSIGNMENT AND SUMMARY OF TESTIMONY AND RECOMMENDATIONS

Q. What is your assignment in this proceeding?

A. I will discuss SWCA's involvement in preparing the EA, as directed by the BLM, to analyze the environmental impacts of SPS's proposed construction, operation, and maintenance of a 345-kV transmission line and associated facilities that will connect SPS's Hobbs Generating Substation, located in Lea County, New Mexico, to its China Draw Substation, located in Eddy County, New Mexico ("Proposed Project"). Specifically, my testimony: (1) briefly describes the Proposed Project; (2) discusses the EA prepared to evaluate the Proposed Project's environmental impacts within the areas where the Proposed Project will be constructed and operated; and (3) explains the EA study process and modifications to the preliminary transmission line route that address potential impacts identified in the EA. Finally, I will discuss the BLM's review of the EA and its actions in relation to approving SPS's request for a 150-foot right-of-way ("ROW") grant for the Proposed Project, and establish that the BLM's action on the EA satisfies the requirements for location approval established in Section 62-9-3 of the Public Utility Act (NMSA 1978, § 62-3-1, et al. "PUA") and 17.9.592 NMAC ("Rule 592").

Q. Please briefly outline your responsibilities as project manager for preparation of the EA evaluating SPS's Proposed Project.

A. As Project Manager, I am responsible for all aspects of SWCA's performance and the completion of the EA, prepared on behalf of the BLM, which included SPS's proposed approximately 87-mile, 345-kV transmission line that will extend from SPS's existing Hobbs Generating Substation to its China Draw Substation. For the Proposed Project, I oversaw the collection of all resource data included in the preparation of the EA to comply with the BLM's obligations under NEPA, as well as its obligations under Section 106 of the NHPA, Section 404 of the Clean Water Act, and Section 7 of the ESA. I have also assisted in the routing and siting of the Proposed Project as it pertains to environmental constraints and preparation of a Plan of Development, among other tasks. Finally, I am responsible for managing the Project budget, schedule, and SWCA staff who have been designated to lead specific aspects of the project.

Q. Please summarize your testimony.

A. The EA, prepared by SWCA, evaluates the potential impacts of the Proposed Project on the cultural, biological, geological, water, and visual resources located in the Proposed Project area in compliance with NEPA, other applicable federal regulations, and the requirements of Section 62-9-3 and Rule 592.10.

The EA also demonstrates that the Proposed Project, as modified to address and resolve resource conflicts, mitigates the potential impacts associated with the 345-kV transmission line and associated facilities in the Proposed Project area, and led the BLM to conclude that its action will not result in significant environmental impacts to any important environmental resources or values in the Proposed Project area.

After considering the EA, the BLM issued a Finding of No Significant Impact ("FONSI") and Decision Record that determined the Proposed Project will have an acceptable level of impact to the human environment and consequently the BLM issued ROW grants to SPS for the Proposed Project.[2] My testimony explains the EA process and establishes that the EA's findings support SPS's request for location approval of the Proposed Project under Section 62-9-3 and Rule 592.10.

[2] The BLM issued two separate ROW grants related to the Proposed Project: (1) ROW grant #NM-133171 for the Hobbs to China Draw 345-kV transmission line and (2) ROW grant #NM-134336 for the Kiowa Substation.

III. DESCRIPTION OF PROPOSED PROJECT AND BASIS FOR BLM AND COMMISSION ACTION ON PROPOSED PROJECT

Q. Please describe the Proposed Project.

A. SPS proposes to construct, operate, and maintain an approximately 87-mile-long, 345-kV transmission line and associated facilities that will connect SPS's existing Hobbs Generating Substation, located approximately 10 miles west of Hobbs, New Mexico, to the existing China Draw Substation, which is approximately 25 miles southeast of Carlsbad, New Mexico. The 345-kV transmission line will be composed of three different circuits (or segments) that interconnect with intermediary substations, starting at the Hobbs Generating Substation and running to the new Kiowa Substation and the North Loving Substation before terminating at the China Draw Substation. Approximately 44 miles of the proposed transmission line will be located on federal lands managed by the BLM; 30 miles will be located on lands managed by the New Mexico State Land Office ("NMSLO"); and 13 miles will be on private lands. SPS will be required to obtain ROW grants, easements, or permits from all of the respective landowners.

A map showing the route of the Proposed Project is provided as Attachment DJB-1.[3]

Q. Please provide an overview of the process for SPS's request for the BLM's issuance of the ROW grants for the Proposed Project.

A. In 2014, SPS submitted applications to the BLM for a 150-foot ROW grant for the Proposed Project.[4] In support of SPS's applications, SWCA prepared an EA under the direction of the BLM's Carlsbad Field Office ("CFO"), the primary land manager for the federal lands traversed by the Proposed Project. The EA analyzes the potential site-specific impacts associated with the Proposed Project and its alternatives, identifies mitigation measures to potentially reduce or eliminate those impacts, and provides the BLM detailed analyses to inform its eventual decision whether or not to issue SPS the requested ROW grants. A copy

[3] The separate segments of the Proposed Project are identified on the map as follows: Hobbs Generating Substation to Kiowa Substation segment is circuit number J-20; the Kiowa Substation to North Loving Substation segment is circuit number J-21; and the North Loving Substation to China Draw Substation segment is circuit number J-22. The legal descriptions for each segment, as well as the proposed Kiowa Substation, are provided in the EA (Attachment DJB-2(CD)).

[4] SPS also submitted ROW applications to the BLM for a 345-kV transmission line connecting SPS's existing Eddy County Substation to the proposed Kiowa Substation ("Eddy to Kiowa 345-kV transmission line") and expansion of the Eddy County Substation. SPS is not seeking in this case any approvals for issuance of a Certificate of Public Convenience and Necessity or location authorization for the Eddy to Kiowa transmission line or the expansion of the Eddy County Substation.

of the EA, in electronic format, is attached to my testimony as Attachment DJB-2(CD).

Q. What is the basis for the BLM's evaluation and issuance of the ROW grants for the Proposed Project?

A. In reaching its decision whether to issue the ROW grants, the BLM considers the environmental impact on all lands crossed by the Proposed Project, including lands managed by the NMSLO and private lands. Consequently, the BLM evaluates the broader impact of its decisions on all lands traversed by the project. Therefore, consideration of the EA serves as the basis for the BLM's decision whether to issue the ROW grants or to require any modifications to SPS's ROW applications.

As will be discussed more below, the BLM has completed its review of the EA prepared for the Proposed Project and has issued its FONSI and Decision Record concluding that the Proposed Project will not have any significant impact on the quality of the human environment.

Q. What are the requirements for Commission location approval for the Proposed Project?

A. Section 62-9-3 of the PUA governs location approval for transmission lines and associated substation facilities that are 230-kV and greater. Section 62-9-3(F) provides that the Commission shall approve an application for the location of transmission lines and associated facilities if it finds that the location will not unduly impair important environmental values. In determining whether a proposed project will unduly impair important environmental values, the Commission may consider various factors identified in Section 62-9-3(M).

Rule 592.10 implements Section 62-9-3 by setting forth the filing requirements for utilities requesting location approval of a proposed transmission line with voltages at or above 230 kV. Specifically, Rule 592.10(H) requires that utilities demonstrate that the proposed transmission line will not unduly impair important environmental values, which are identified to include the preservation of air and water quality; land uses; soils; flora; fauna; and water, mineral, socioeconomic, cultural, historic, religious, visual, geologic, and geographic resources.

Q. What has been prepared on behalf of SPS for this case to support its request for location approval of the Proposed Project under Section 62-9-3 of the PUA and Rule 592?

A. SWCA prepared the EA to evaluate the potential environmental impacts related to the construction and operation of the Proposed Project. The EA analyzed the entire transmission line route (i.e., across all federal, state, and private lands), substations, and associated temporary facilities. It also describes the modifications required by the BLM to the initial route proposed by SPS. Based on this analysis, the EA concludes that the transmission line route, as modified, will have no significant impacts on any important environmental values and supports SPS's request for location approval under Section 62-9-3 and Rule 592.

IV. ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED PROJECT

A. Overview

Q. Please summarize the purpose and scope of the EA that SWCA prepared on behalf of the BLM.

A. The EA prepared by SWCA evaluates the potential impacts related to construction and operation of the Proposed Project on all lands traversed by the Proposed Project, including BLM, state, and private lands, because all of the project components are considered "connected actions." The EA allows the BLM to evaluate and act on SPS's application for the ROW grants, authorizing the use of and access across BLM-managed lands for each transmission line segment and the associated facilities included in the Proposed Project. The BLM's mandate for multiple uses of public lands includes development of energy transmission in a manner that conserves the multitude of other resources found on public lands. The need for the BLM's action is established by the Federal Land Policy and Management Act, and is to respond to SPS's ROW applications by evaluating the intended use of federal land for construction of the Proposed Project.[5]

5 *See* EA at Section 1.2 (p. 12).

Another purpose of the EA is to confirm that the Proposed Project meets the BLM's land use plan for the CFO. The 1988 Carlsbad Resource Management Plan ("RMP") (BLM 1988) recognizes that utility corridors are an appropriate use of federal lands and encourages applicants to locate new facilities within designated ROW corridors. The BLM's 2008 RMP amendment for the CFO states the following:

> New projects of the type described above [utility corridors for major projects such as interstate electric transmission lines; pipelines; and communications lines for interstate use] that propose to cross the Planning Area would be evaluated based on the impacts to lesser prairie-chicken and sand dune lizard habitats and other resources to meet the overall objectives of this plan. These projects would not be located in ROW avoidance areas if other routes can meet the purposes of the project. (BLM 2008a:2-13)

As reflected in the EA, the Proposed Project is not located in a ROW avoidance area and complies with the recommended mitigation measures described in amendments to the Carlsbad RMP. Therefore, the EA confirms that the Proposed Project is in conformance with the Carlsbad RMP, as amended.[6]

[6] *See* EA at Section 1.4 (p. 13).

B. The EA's Analysis of the Proposed Project

Q. Please describe the EA study process.

A. In the early stages of project development, SPS met with the BLM several times to identify resource issues and potential routing options. In particular, SPS sited its preliminary alignment to meet the BLM's existing and future land use planning considerations. This included paralleling existing linear features on the landscape, namely U.S. Highway 62. As part of this collaborative process, SPS also consulted with the BLM to avoid sensitive resources to the maximum extent practicable, including the lesser prairie-chicken, shinnery oak, and dunes sagebrush lizard. The intent to minimize potential resource impacts was further demonstrated by the design features that SPS included in its preliminary Plan of Development filed with its ROW applications. Using this information, SPS identified its preferred route and submitted its ROW application to the BLM in August 2014.

Based on these meetings and a review of the preliminary Plan of Development, the BLM determined that the project would be appropriate for an EA level of NEPA analysis. The BLM entered into a cost recovery agreement with SPS with the understanding that SWCA would develop the EA for the Proposed Project on behalf of the BLM.

During this early stage of the EA process, the BLM's interdisciplinary team of resource specialists conducted internal scoping of the Proposed Project in November 2014, and identified several resource issues to carry forward for detailed analysis in the EA. Other resources were considered but not analyzed in the EA because they were either not present in the project area or were not likely to be affected by the Proposed Project to a degree that warranted detailed analysis. For each resource carried forward, SWCA prepared cause-and-effect worksheets for their counterparts at the BLM. These worksheets are used to better understand the BLM specialists' concerns and to identify impact indicators, data needs, and the appropriate analytical approach to assess impacts according to the BLM's NEPA Handbook (BLM 2008b).

Q. How was the preliminary route for the Proposed Project established?

A. Prior to siting the preliminary route for the Proposed Project, a member of SPS's Siting and Land Rights group conducted a desktop analysis to identify sensitive areas to avoid (constraints) and developed corridors within the project vicinity (opportunities) that could be used to route the project. SPS staff then held meetings with the BLM to refine the route. During these meetings, additional siting constraints and opportunities were discussed, including the preference to parallel U.S. Highway 62/180 for the J-20 segment between the Hobbs Generating and proposed Kiowa Substations. The J-21 segment (Kiowa to North Loving) was routed cross-country southward from the Kiowa Substation rather than following New Mexico Highway 31 to avoid a 4-mile-long drill island and potash mining activities to the east of New Mexico Highway 31. The J-22 segment was sited parallel to a new 115-kV line that is being developed to connect the North Loving and China Draw Substations. The opportunities and constraints analysis resulted in a preliminary route, which was submitted to the BLM in August 2014 as part of the ROW applications.

After the preliminary route was identified, SPS staff consulted with various private landowners, the NMSLO, and other stakeholders that had an interest in lands located near the route. Subsequent discussions were held with the CFO's management team, the project manager, and select resource specialists to consider proposed modifications to the route to minimize resource conflicts and potential land use conflicts with other BLM lessees. Several adjustments to the route were made to minimize conflicts with environmental resources, oil and gas developers, potash mines, private landowners, and private developers.

In early March 2015, a description of the Proposed Project and its location was posted on the BLM's website and published in the *Carlsbad Current-Argus* and the *Hobbs News-Sun* local newspapers. This action initiated a 30-day public scoping period; no comments were received from the public.

Q. Please describe SWCA's methodology used to evaluate the potential impacts of the Proposed Project.

A. The EA evaluated the potential effects of the Proposed Project on the environment in accordance with the Council on Environmental Quality's guidance and BLM NEPA Handbook H-1790-1 (BLM 2008b). In accordance with these guidelines, the BLM's interdisciplinary team of resource specialists first went through an internal agency review of, and public scoping process for, the Proposed Project to determine and identify resources and resource uses that could be affected by the Proposed Project. The team solicited public comment to ensure that no significant resources or issues were overlooked. The EA's analysis was limited to those resources that could be affected to a degree that would warrant detailed analysis (40 CFR 1502.15) (BLM 2008b:96), as determined by the BLM CFO interdisciplinary team. Each resource section of the EA includes analyses of the affected environment, which is described as the existing condition and trend of issue-related elements of the human environment that would be affected by implementing the Proposed Project or an alternative. Each resource section then analyzes the direct, indirect, and cumulative impacts of the Proposed Project and its alternatives.

Q. Does the EA consider the factors identified in Section 62-9-3(M) of the PUA and Rule 592.10(H)?

A. Yes. The factors and important environmental values identified in Section 62-9-3(M) and Rule 592.10(H), respectively, were considered in the EA's analysis of the Proposed Project. Specific resources and issues considered and analyzed as part of the EA include air resources, cave and karst resources, soil resources, water resources, upland vegetation (including noxious weeds), wildlife and special status species, cultural resources, visual resources, special designations and recreation areas, livestock grazing, and public health and safety.[7] For each of these areas, the EA considered the nature of the current environment

[7] *See generally* EA at Sections 3.1 to 3.11.

that could be affected, focusing on its existing conditions, and addressed the environmental consequences (impacts) of the Proposed Project consistent with Section 62-9-3(M) and Rule 592.10(H). Based on these analyses, the EA concludes that the Proposed Project will not unduly impair important environmental values.

Finally, the EA identifies the following four resource issues that were considered but that were found not to have any potential impacts to important environmental values. First, based on a review of literature, geologic maps, and aerial photographs, it was determined the Proposed Project was not expected to affect paleontological resources because there were few geological units with the potential to contain fossils in the Project area.[8] Secondly, the EA considered potential impacts on minerals and determined that a detailed analysis of this resource was not necessary because the proposed transmission line was routed specifically to avoid potash mine tailings, and active caliche pits.[9] Third, it was determined that the Proposed Project would not affect any Native American religious sites or traditional cultural properties, prevent access to sacred sites,

[8] *See* EA at Section 1.6.1.

[9] *See* EA at Section 1.6.1.

prevent the possession of sacred objects, or interfere with or hinder the performance of traditional ceremonies or rituals. For these reasons, no further study of Native American Religious Concerns was needed.[10] Finally, regarding potential socioeconomic impacts of the Proposed Project, the EA concluded that the Proposed Project is expected to have positive short-term employment and demographic impacts, and, therefore, no further analysis was needed.[11]

Q. Please describe the field investigations as part of the EA process.

A. SWCA staff performed cultural, biological, and visual resource surveys of the route in accordance with all applicable federal and state protocols. At the BLM's direction, SWCA conducted a biological assessment of the proposed disturbance area over several sessions from October 2014 to August 2015 to evaluate, among other things, the potential for special status species to occur and to identify habitat communities regulated by the U.S. Fish and Wildlife Service under Section 7 of the ESA, jurisdictional drainages or sensitive aquatic habitats regulated by the U.S. Army Corps of Engineers under the Clean Water Act of 1972, and active and

[10] *See* EA at Section 1.6.1.

[11] *See* EA at Section 1.6.1. (Although there will be no permanent jobs created to operate the transmission line, SPS estimates that approximately 180 workers will be hired to build the line).

inactive migratory bird nests protected by the Migratory Bird Treaty Act of 1918. The biological assessment consisted of a pedestrian survey within a 500-foot-wide corridor following the centerline of the proposed route, substation locations, laydown yards, pull pockets, and access roads to assess general vegetation and habitat suitability for U.S. Fish and Wildlife Service, BLM, and State of New Mexico protected native plants and special status species. Presence of active and inactive bird nests and burrows were also recorded. The survey included an assessment of wetlands, surface waters, and other potential waters. In addition to the biological field survey, at the request of the BLM, lek surveys were conducted for portions of the Proposed Project traversing through the BLM-designated Isolated Population Area ("IPA") for the lesser prairie-chicken. Biological and other sensitive resources that were identified include isolated occurrences of special status species and associated habitat, playas, migratory bird nesting areas, cave and karst features, and potentially jurisdictional water features. The survey results were included in a biological assessment (SWCA 2015a) and wetland report (SWCA 2015b).[12]

[12] *See generally* EA at Section 3.6.3 (pp. 75–83).

SWCA also conducted an intensive Class III cultural resources inventory of the Proposed Project's area of potential effect in accordance with the *Procedures for Performing Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005) and *Standards for Survey Site Evaluation and Reporting for the CFO* (BLM 2012). Site file searches and a 100-percent pedestrian survey for a 500-foot-wide corridor were conducted by qualified archaeologists centered on the proposed route.[13] These findings were documented in a series of cultural resources inventory reports (Sisneros et al. 2015a, 2015b, 2015c, 2015d) to aid the BLM in complying with Section 106 of the NHPA.

Additionally, SWCA conducted a visual resource survey of the proposed route. SWCA reviewed the BLM's visual resource management ("VRM") system, which classifies land based on its visual appeal, public concern for scenic quality, and visibility from travel routes or other key observation points ("KOPs").[14] Based on the BLM's classification system,[15] the Proposed Project is

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[13] *See* EA at Section 3.7.1 (pp. 83–84).

[14] *See* EA at Section 3.8.1 (p. 88).

[15] VRM Classes I and II are the most restrictive with regard to changing the visual landscape, and Classes III and IV are more lenient and allow modification.

located in an area with VRM Classes III and IV.[16] In evaluating the impact on the visual resources, SWCA identified six KOPs with potential views of the proposed transmission line for analysis. Based on field surveys of the six KOPs, SWCA concluded that the proposed construction, operation, and maintenance of the Proposed Project would not exceed the BLM's management objectives for VRM Classes III and IV, given the substantial modifications to the existing landscape from various residential, agriculture, and commercial structures; transmission lines and substations; and oil and gas wells and facilities.[17]

Q. Please explain the process for establishing the final transmission route approved by the BLM.

A. Under NEPA, alternatives to a proposed action are developed to explore different ways to accomplish the purpose and satisfy the need for the proposed action, while minimizing environmental impacts and resource conflicts and meeting other objectives of the BLM's RMP. Consistent with the BLM NEPA Handbook, the agency "need only analyze alternatives that would have a lesser effect than the proposed action" (BLM 2008b:80).

[16] *See* EA at Section 3.8.1 (p. 89).

[17] *See* EA at Section 3.8.3 (p. 90).

Because the scoping process did not identify any additional unforeseen alternatives, only the No Action and Proposed Action alternatives were brought forward for detailed analysis in the EA.[18]

Q. Please describe the modifications required by the BLM to the preliminary route.

A. In the "route refinement" process, the BLM required adjustments to the preliminary route to avoid most eligible cultural resources, except for five locations where avoidance was not feasible or would have resulted in impacts to other cultural resources.[19] The preliminary route was also modified to minimize potential impacts to playas identified during field surveys, because portions of the route also cross areas of high karst potential, and the Proposed Project was also re-routed to avoid the BLM's Cave Resources Special Management Area.[20]

The preliminary route was also reviewed by the Center for Excellence for Hazardous Materials Management for proximity to active caliche pits. No caliche pits are located within the Project area. Two caliche pits are located within 1,000

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[18] *See* EA at Section 2.3 (p. 42).

[19] *See* EA at Section 2.3 (p. 42).

[20] *See* EA at Section 2.3 (p. 41).

feet of the route; however, based on aerial photography, these material pits appear to have room for expansion without encroaching on the proposed transmission line route.[21]

The preliminary route also chose a crossing location for the transmission line that roughly bisected the BLM's Pecos River Corridor Special Management Area. After reviewing other potential river crossing locations, the BLM selected the final route across the Pecos River as the optimal location for balancing resource protection with safety and constructability factors.[22]

Within the IPA, the majority of the proposed route is located within 0.5 mile of U.S. Highway 62/180 to minimize impacts to the lesser prairie-chicken.[23] However, approximately 10 miles of the route within the IPA is more than 0.5 mile from U.S. Highway 62/180 to avoid ROW encroachments from oil and gas operators.[24] This 10-mile re-route, known as the Marathon Road re-route, was

[21] *See* EA at Section 2.3 (p. 42).

[22] *See* EA at Section 2.3 (pp. 41–42).

[23] *See* EA at Section 2.3 (p. 41).

[24] *See* EA at Section 2.3 (p. 42).

presented to the BLM in July 2015, and was refined further to avoid dunes known to be occupied by the dunes sagebrush lizard.[25]

Finally, in November 2015, an area oil and gas operator notified SPS about a potential conflict with the proposed route's proximity to its lease, which was intended for future oil and gas operations and led SPS to agree to modify its proposed route south of the Pecos River. Additional resource surveys were conducted prior to adopting the realignment of the route.[26]

Q. What does the EA conclude regarding the impacts of the Proposed Project, as modified, on the human environment?

A. The EA concludes that the Proposed Project is not expected to have significant impacts to cultural resources.[27] The EA identified 24 cultural resources that intersect the proposed project ROW and that were determined eligible for the National Register of Historic Places or that are of undetermined eligibility.[28] SWCA prepared a detailed treatment plan for the BLM (Whitehead et al. 2015),

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[25] *See* EA at Section 2.3 (p. 41).

[26] *See* EA at Section 2.3 (p. 42).

[27] *See generally* EA at Section 3.7.3 (pp. 86–88).

[28] *See* EA at Section 3.7.3 (p. 87).

which was reviewed and approved by the New Mexico State Historic Preservation Officer ("SHPO") and other interested parties. This plan includes the methods, protocols, and requirements for data recovery, construction monitoring, and testing to avoid, minimize, or mitigate impacts to cultural resources.[29]

Additionally, the Proposed Project is not expected to have any significant impacts on biological resources based on the mitigation measures adopted for the Proposed Project in the EA. The route was sited in concert with the BLM to minimize impacts to the lesser prairie-chicken and dunes sagebrush lizard, as well as other flora and fauna special status species.[30] The EA identified both direct effects (changes to habitat) and indirect effects (increased noise levels during construction) that could affect biological resources. To address and mitigate these impacts, SPS adopted design features to avoid or minimize impacts to biological resources. These design features include performing pre-construction avian surveys to avoid impacts to nesting birds and, at the request of the BLM, constructing an artificial heronry to offset residual wildlife impacts. With respect to other resources analyzed, the Proposed Project would have minimal or no

[29] *See* EA at Section 3.7.3 (p. 87).

[30] *See, e.g.,* EA at Section 3.6.3 (p. 82).

effect on those resources. Impacts to air resources from the construction and operation of the Proposed Project are likely to be insignificant.[31] There will also be no effect on wetlands and only minor impacts to riparian areas.[32] The Proposed Project would not exceed BLM management objectives for visual resources, given the substantial existing visual modifications to the landscape.[33] Finally, the effects on mineral resources (especially potash) are expected to be minimal because the transmission line and facility locations have been designed to avoid these resources.[34]

Q. Will further environmental studies be needed in view of the BLM's approval of the ROW?

A. As explained in the next subsection, the BLM has approved the EA and has issued ROW grants for the Proposed Project. No further environmental studies will be needed except if the results of cultural resources site testing, as required by the Archaeological Treatment Plan (Whitehead), indicate that some eligible cultural

[31] *See* EA at Section 3.1.

[32] *See* EA at Section 3.4.

[33] *See* EA at Section 3.8.

[34] *See* EA at Section 1.6.1.

resources would be adversely affected by the Proposed Project. However this would not affect the BLM's approval of the route. Currently, an extensive data recovery, testing, and treatment plan is in place, which has been agreed to by the BLM, SHPO, New Mexico Cultural Properties Review Committee, and NMSLO. Fieldwork for this mitigation effort has begun and will be completed prior to the BLM issuing SPS a notice-to-proceed with construction.[35]

Q. Please generally summarize your conclusions regarding the potential impacts of the Proposed Project based on the EA.

A. Based on the modified transmission line route established in the EA, the Proposed Project will not have significant impacts on any important environmental values analyzed in accordance with NEPA, the NHPA, the PUA, or Rule 592. SPS's modified route minimizes land use conflicts with other entities operating or developing projects in the area. The Proposed Project as modified by the BLM, and as reflected in the EA, is expected to have minimal impact to the human environment. Some resources will be affected such that mitigation will be required. There will be some unavoidable impacts to cultural resource sites that

[35] *See* EA at Section 3.7.3 (pp. 87–88).

are eligible for the National Register of Historic Places, and these impacts will be mitigated by data recovery, site testing, and monitoring. Residual impacts to wildlife will be mitigated by construction of an artificial heronry.

C. BLM's Findings and Action Regarding the Proposed Project

Q. Has the BLM reached its decision regarding the Proposed Project?

A. Yes, based on the findings in the EA and the agreed-upon modification to the Proposed Project, the BLM published its FONSI and Decision Record approving the Proposed Project on January 27, 2016. Copies of the FONSI and Decision Record are attached to my testimony as Attachment DJB-3. No comments were received by the public or any federal or state agency during the 30-day appeal period for the FONSI and Decision Record.

Q. What did the BLM determine in the FONSI and Decision Record?

A. The BLM found that the Proposed Project will not have any significant impacts, individually or cumulatively, on the quality of the human environment.[36] In making its determination, the BLM considered both the beneficial or adverse impacts of the Proposed Project, as well as efforts taken by SPS to avoid or

[36] *See* FONSI at p. 1.

minimize environmental harm.[37] Specifically, the BLM found that the Proposed Project achieves a balance of resource protection and beneficial uses of the human environment envisioned by NEPA.[38]

As to the Decision Record, the BLM concluded that the Proposed Project sufficiently meets the purpose and need for the action and conforms to the Carlsbad RMP, as amended.[39] The Decision Record acknowledges that alternatives were considered to accomplish the purpose and need for the Proposed Project while minimizing environmental impacts and resource conflicts, as well as meeting other objections of the Carlsbad RMP, as amended.[40]

Q. When did the BLM issue the ROW grants for the Proposed Project?

A. On February 16, 2016, the BLM issued to SPS: (1) ROW Grant No. NM-133171 (effective March 2, 2016), granting to SPS a 30-year, 150-foot ROW for all BLM-managed lands crossed by the 345-kV transmission line that extends from the Hobbs Generating Substation to the China Draw Substation; and (2) ROW

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[37] *See* FONSI at p. 1.

[38] *See* FONSI at p. 2.

[39] *See* Decision Record at Section I, p. 2.

[40] *See* Decision Record at Section III, p. 2.

Grant No. NM-134336, granting to SPS a 30-year ROW for the Kiowa Substation, which will be constructed on BLM lands. Please refer to Attachment DJB-4(CD), which is a copy of the BLM ROW grants covering the Kiowa Substation and all three transmission line segments of the Proposed Project.

Q. What is status of the environmental review for the easements required for the portions of the 345-kV transmission lines segments that cross state and private lands?

A. As discussed earlier, the BLM concluded, based on the EA that the Proposed Project would not have adverse environmental impacts on NMSLO and private lands crossed by the 345-kV transmission lines segments, and that determination is embodied in the BLM's issuance of the FONSI and Decision Record. Please refer to the Direct Testimony of Nisha P. Fleishman for further discussion of the of the 150-foot ROW easement issued by the NMSLO for the Proposed Project and the status of the easements necessary for private lands crossed by the Proposed Project.

V. SPS's COMPLIANCE WITH THE REQUIREMENTS FOR LOCATION APPROVAL UNDER THE PUA AND RULE 592

Q. Has SPS established that the Proposed Project does not unduly impair important environmental values as defined by Section 62-9-3(M) of the PUA and Rule 592.10(H)?

A. Yes. As discussed in the EA and the BLM's FONSI and Decision Record, the Proposed Project, as modified by the BLM, will not unduly impair any important environmental values as defined under the Section 62-9-3(M) and Rule 592.10(H). Accordingly, the Proposed Project satisfies the requirements for location approval under Section 62-9-3 and Rule 592.

Q. Does SPS's filing comply with the filing requirements of Rule 592.10(C) – (E) related to the requirements under NEPA?

A. Yes. As discussed above, the EA was prepared specifically for the Proposed Project, and based on the EA, the BLM issued a FONSI and Decision Record finding that the Proposed Project would not have any significant impact, individually or cumulatively, on the quality of the human environment. Ms. Fleishman addresses the other filing requirements under Rule 592.10 including a more thorough discussion of the requisite permits and ROW grants received by the BLM, the NMSLO, and private landowners for construction, operation, and maintenance of the Proposed Project.

VI. CONCLUSION

Q. Have you included a bibliography of the reference materials and literature cited in your direct testimony?

A. Yes. Please refer to Attachment DJB-5 for a list of materials cited in my direct testimony.

Q. Were Attachments DJB-1, DJB-2(CD), and DJB-5 prepared by you or under your direct supervision and control?

A. Yes.

Q. Are Attachments DJB-3 and DJB-4(CD) true and correct copies of the documents that they purport to be?

A. Yes.

Q. Does this conclude your pre-filed direct testimony?

A. Yes.

VERIFICATION

STATE OF UTAH)
) **ss.**
COUNTY OF SALT LAKE)

David J. Brown, first being sworn on his oath, states:

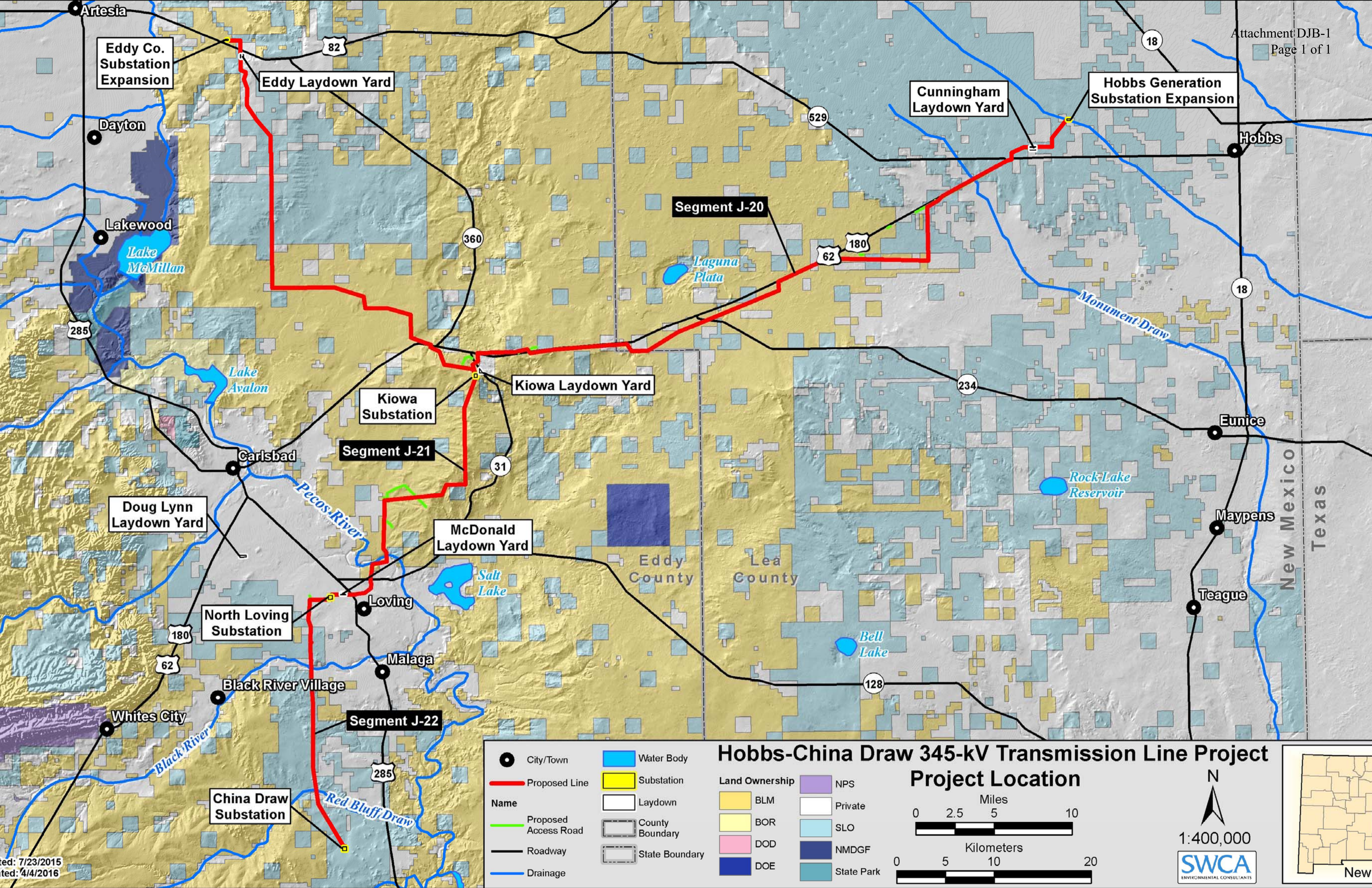
I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachments and am familiar with their contents. Based upon my personal knowledge, the facts stated in the direct testimony are true. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

DAVID J. BROWN

SUBSCRIBED AND SWORN TO before me this 5th day of May 2016.

ELIZABETH NANCY HARTMAN
Notary Public
State of Utah
Comm. No. 666701
My Comm. Expires Jun 26, 2017

Elizabeth Nancy Hartman
Notary Public, State of Utah
My Commission Expires: 6/26/17


Hobbs-China Draw 345-kV Transmission Line Project
Project Location
Artesia
Eddy Co. Substation Expansion
Eddy Laydown Yard
Dayton
Lakewood
Lake McMillan
Cunningham Laydown Yard
Hobbs Generation Substation Expansion
Hobbs
Segment J-20
Laguna Plata
Monument Draw
Lake Avalon
Kiowa Substation
Kiowa Laydown Yard
Segment J-21
Carlsbad
Pecos River
Doug Lynn Laydown Yard
McDonald Laydown Yard
Salt Lake
Eddy County
Lea County
Eunice
Rock Lake Reservoir
Maypens
Teague
New Mexico
Texas
Loving
North Loving Substation
Malaga
Black River Village
Whites City
Black River
Bell Lake
Segment J-22
China Draw Substation
Red Bluff Draw
82
529
18
360
180
62
285
234
31
128
City/Town
Proposed Line
Name
Proposed Access Road
Roadway
Drainage
Water Body
Substation
Laydown
County Boundary
State Boundary
Land Ownership
BLM
BOR
DOD
DOE
NPS
Private
SLO
NMDGF
State Park
Miles
0 2.5 5 10
Kilometers
0 5 10 20
N
1:400,000
SWCA
New

BLM

United States Department of the Interior
Bureau of Land Management

Environmental Assessment DOI-BLM-NM-PO20-2016-0089-EA

Southwestern Public Service Company's Hobbs to China Draw 345-kV Transmission Line Project, Lea and Eddy Counties, New Mexico

January 6, 2016

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Bureau of Land Management
Pecos District
Carlsbad Field Office
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Carlsbad, NM 88220
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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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TABLES

List of Abbreviations and Acronyms

°F	degrees Fahrenheit
µg/m^3	microgram per cubic meter
APD	Application for Permit to Drill
APE	area of potential effect
AQB	Air Quality Bureau
ARMS	Archaeological Records Management Section
AUM	animal unit month
BA	biological assessment
BISON-M	Biota Information System of New Mexico
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
BMP	best management practices
CAA	Clean Air Act of 1970
CEHMM	Center for Excellence for Hazardous Materials Management
CEQ	Council on Environmental Quality
CFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CIAA	cumulative impact analysis area
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
DSL	dunes sagebrush lizard
EA	Environmental Assessment
EMF	electromagnetic field
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Committee
FLPMA	Federal Land Policy and Management Act
GHG	greenhouse gas
GIS	geographic information system
GPR	ground-penetrating radar
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HCPI	Historic Cultural Property Inventory
HPILS	High Priority Incremental Load Study
HUC	Hydrologic Unit Code
ICES	International Committee on Electromagnetic Safety
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IPA	Isolated Population Area

KOP	key observation point
kV	kilovolt(s)
kV/m	kilovolts per meter
LPC	lesser prairie-chicken
MBTA	Migratory Bird Treaty Act of 1918
mG	milliGauss
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NERC	North American Electric Reliability Corporation
NHPA	National Historic Preservation Act
NMAAQS	New Mexico Ambient Air Quality Standards
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environmental Department
NMOSE	New Mexico Office of the State Engineer
NMPIF	New Mexico Partners in Flight
NO_2	nitrous oxide
NO_X	nitrogen oxide(s)
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NTC	Notice to Construct
O_3	ozone
OSHA	Occupational Safety and Health Administration
OHV	off-highway vehicle
Pb	Lead
PL	Public Law
PM_{10}	particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
POD	Plan of Development
ppb	parts per billion
ppm	parts per million
ReMi	Refraction Microtremor
RFFA	Reasonably Foreseeable Future Actions
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
ROD	Record of Decision
ROW	right-of-way
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Office

SLO	New Mexico State Land Office
SMA	Special Management Area
SO_2	sulfur dioxide
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company
SWCA	SWCA Environmental Consultants
SWPPP	Stormwater Pollution Prevention Plan
TCP	traditional cultural property
TRS	total reduced sulfur
TSP	total suspended particulate
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VRM	visual resource management
WRCC	Western Regional Climate Center

1 PURPOSE OF AND NEED FOR ACTION

1.1 Background

Southwestern Public Service Company (SPS), a wholly owned subsidiary of Xcel Energy Inc., has submitted four Applications for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for right-of-way (ROW) grants needed to construct, operate, and maintain two 345-kilovolt (kV) transmission lines, a new substation (Kiowa Substation), and two substation expansions (Hobbs Generation and Eddy County Substation) in southeast New Mexico, herein referred to as the “project” or “Proposed Action.” Xcel Energy is a registered holding company that owns several electric and natural gas utility operating companies. The project crosses BLM CFO–managed surface lands, New Mexico State Land Office (SLO) lands, and private lands (Figure 1.1). The BLM is serving as the lead federal agency for the undertaking.

The four applications include distinct project components but are considered to be connected actions as defined in the BLM’s National Environmental Policy Act (NEPA) handbook (Section 6.5.2.1) and regulations of the Council of Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1508.25). As such, impacts from construction and operation of the proposed project described briefly below (and further detailed in Chapter 2) are analyzed and disclosed together within this Environmental Assessment (EA).

The proposed 345-kV transmission lines interconnect with other existing and proposed electrical system facilities owned and operated by SPS, as parts of the larger electrical system grid. SPS is requesting a 150-foot-wide permanent ROW for the transmission lines:

1. **Hobbs to China Draw 345-kV Transmission Line (including Hobbs Generation Substation, North Loving Substation, and China Draw Substation expansions).** The first Standard Form 299 application (Hobbs to China Draw) would connect the existing Hobbs Generation Substation in Lea County to the proposed China Draw Substation in Eddy County, New Mexico. The Hobbs to China Draw line is composed of three segments that interconnect with intermediary substations, namely the Hobbs Generation Substation to Kiowa Substation segment (which SPS refers to by the circuit number J-20), the Kiowa Substation to North Loving Substation segment (referred to as J-21), and the North Loving Substation to China Draw Substation segment (referred to as J-22). The BLM has assigned this project component the ROW serial number NM-133171 (Table 1.1).

Table 1.1. Legal Description of the Hobbs to China Draw 345-kV Transmission Line

345-kV Line - Hobbs Generation Substation to Kiowa Substation (J-20)	
BLM Lands	**SLO/Private Lands**
T.20 S.,R.30E.,NMPM **Sec. 36:** SW¼SE¼ **T.20 S.,R.31E.,NMPM** **Sec. 31:** L4, SE¼SW¼ **Sec. 32:** SW¼SW¼ **Sec. 33:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 34:** NE¼SE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 35:** NE¼SE¼, NE¼SW¼, NW¼SE¼, NW¼SW¼ **Sec. 36:** NW¼SW¼ **T.20 S.,R.32E.,NMPM** **Sec. 25:** NE¼NE¼, NE¼NW¼, NW¼NE¼, SE¼NW¼, SW¼NW¼ **Sec. 26:** NE¼SE¼, NE¼SW¼, NW¼SE¼, NW¼SW¼, SE¼NE¼, SW¼SW¼ **Sec.27:** SE¼SE¼, SW¼SE¼	**T.18 S.,R.36E.,NMPM** **Sec. 23:** NE¼SE¼, SE¼SE¼, SW¼SE¼ **Sec.24:** NW¼SW¼ **Sec. 26:** NE¼NW¼, NE¼SW¼, NW¼NE¼, NW¼SW¼, SE¼NW¼, SW¼SW¼ **Sec. 32:** NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼ **Sec. 33:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 34:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 35:** NW¼NW¼, SW¼NW¼ **T.19 S.,R.35E.,NMPM** **Sec. 1:** SE¼SE¼, SW¼SE¼ **Sec. 10:** SE¼SE¼, SW¼SE¼ **Sec. 11:** NE¼SW¼, NW¼SE¼, SE¼NE¼, SW¼NE¼, NW¼SW¼, SW¼SW¼ **Sec. 12:** NW¼NW¼, SW¼NW¼, NE¼NW¼, NW¼NE¼

Sec. 31: L3, NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼SE¼ **Sec. 33:** NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SW¼ **Sec. 34:** NE¼NW¼, NW¼NE¼, SE¼NW¼, SW¼NW¼ **<u>T.20 S.,R.33E.,NMPM</u>** **Sec.1:** SE¼SE¼ **Sec. 11:** NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼ **Sec. 12:** NW¼NE¼, SE¼NW¼, SW¼NW¼ **Sec. 14:** SE¼NW¼, SW¼NW¼ **Sec. 15:** NE¼SW¼, NW¼SE¼, NW¼SW¼, SE¼NE¼, SW¼SW¼ **Sec. 19:** NW¼SE¼, SE¼SW¼, SW¼SE¼ **Sec. 20:** NE¼SW¼, NW¼SW¼, SE¼NE¼, SE¼NW¼, SW¼NE¼ **Sec. 21:** NW¼NE¼, NW¼NW¼ **Sec. 30:** L1 **<u>T.20 S.,R.34E.,NMPM</u>** **Sec. 1:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 2:** SE¼NE¼ **Sec. 3:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 4:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 5:** NW¼SW¼, SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 6:** L7, NE¼SE¼, NE¼SW¼, SE¼SW¼ **<u>T.20 S.,R.35E.,NMPM</u>** **Sec. 5:** SE¼NE¼, SE¼NW¼, SW¼NE¼ **Sec. 6:** L5, SE¼NE¼, SE¼NW¼, SW¼NE¼ **<u>T.21 S.,R.29E.,NMPM</u>** **Sec. 1:** L1, L2, L3, L4 **Sec. 2:** L1 **Sec. 3:** L1, L10, L15, L8, L9, NW¼SE¼, SW¼SE¼ **<u>T.21 S.,R.30E.,NMPM</u>** **Sec. 5:** L1, L2, L3, L4 **Sec.6:** L4, L5 **<u>T.21 S.,R.31E.,NMPM</u>** **Sec. 4:** L2, L3, L4 **Sec. 5:** L1, L2	**Sec. 15:** NE¼NW¼, NW¼NE¼, NW¼NW¼, SW¼NW¼ **Sec. 16:** NE¼SE¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼, **Sec. 21:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 28:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 33:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **<u>T.19 S.,R.36E.,NMPM</u>** **Sec. 5:** L3, L4 **Sec. 6:** L1, L6, L7, NE¼SW¼, SE¼NE¼, SE¼NW¼, SW¼NE¼ **<u>T.20 S.,R.30E.,NMPM</u>** **Sec. 36:** L4, SE¼SE¼, SW¼SE¼ **<u>T.20 S.,R.31E.,NMPM</u>** **Sec. 31:** L4 **Sec. 32:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 33:** SW¼SW¼ **Sec. 36:** NE¼SE¼, NE¼SW¼, NW¼SE¼, NW¼SW¼ **<u>T.20 S.,R.32E.,NMPM</u>** **Sec. 31:** L3 **<u>T.20 S.,R.33E.,NMPM</u>** **Sec. 15:** SW¼SW¼ **Sec. 16:** SE¼SE¼, SW¼SE¼ **Sec. 21:** NW¼NE¼ **<u>T.20 S.,R.34E.,NMPM</u>** **Sec. 2:** SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 3:** SE¼NE¼ **Sec. 6:** NE¼SE¼, NE¼SW¼, NW¼SE¼ **<u>T.20 S.,R.35E.,NMPM</u>** **Sec. 4:** L4, SW¼NW¼ **Sec. 5:** SE¼NE¼, SE¼NW¼, SW¼NW¼ **Sec. 6:** SE¼NE¼ **<u>T.21 S.,R.29E.,NMPM</u>** **Sec. 2:** L1, L2, L3, L4 **Sec. 3:** L1
345-kV Line - Kiowa Substation to North Loving Substation (J-21)	
BLM Lands	**SLO/Private Lands**
<u>T. 21 S., R. 29 E., NMPM</u> **Sec. 10:** NW¼NE¼, NW¼SE¼, SE¼SW¼, SW¼NE¼, SW¼SE¼ **Sec. 15:** NE¼NW¼, NW¼SW¼, SE¼NW¼, SW¼NW¼, SW¼SW¼ **Sec. 22:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 27:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 34:** L1, NW¼NW¼, NW¼SW¼, SW¼NW¼ **<u>T. 22 S., R. 28 E., NMPM</u>** **Sec. 13:** L13, L14, L15, L16 **Sec. 14:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 15:** SE¼SE¼ **Sec. 22:** NE¼NE¼, NE¼SE¼, SE¼NE¼ **Sec. 27:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼	**<u>T.22 S.,R.28E.,NMPM</u>** **Sec. 22:** NE¼SE¼, SE¼SE¼ **Sec.27:** NE¼NE¼ **<u>T.23 S.,R.28E.,NMPM</u>** **Sec. 9:** NE¼SE¼ **Sec. 10:** NW¼SW¼ **Sec. 16:** NE¼NE¼, NE¼SE¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 17:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 18:** SE¼SE¼, SE¼SW¼, SW¼SE¼ **Sec.19:** NE¼NW¼

Sec. 34: NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **<u>T. 22 S., R. 29 E., NMPM</u>** **Sec. 4:** L1, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 8:** SE¼SE¼ **Sec. 9:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 17:** NE¼NE¼, NE¼SW¼, NW¼NE¼, NW¼SE¼, NW¼SW¼, SW¼NE¼ **Sec. 18:** L4, NE¼SE¼, NW¼SE¼, SE¼SW¼, SW¼SE¼ **<u>T. 23 S., R. 28 E., NMPM</u>** **Sec. 3:** L1, NE¼SE¼, SE¼NE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼ **Sec. 9:** NE¼SE¼, SE¼SE¼ **Sec. 10:** NE¼NW¼, NW¼NW¼, NW¼SW¼, SW¼NW¼ **Sec. 16:** NE¼NE¼	
345 kV line - North Loving Substation to China Draw Substation (J-22)	
BLM Lands	**SLO/Private Lands**
<u>None</u>	**<u>T.23 S.,R.27E.,NMPM</u>** **Sec. 23:** NE¼NE¼,SE¼SE¼ **Sec. 24:** NW¼SW¼, SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼ **Sec. 25:** SW¼SW¼ **Sec.26:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 36:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **<u>T.23 S.,R.28E.,NMPM</u>** **Sec. 19:** L2, NE¼NW¼, SE¼NW¼ **<u>T.24 S.,R.27E.,NMPM</u>** **Sec. 1:** L4, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 12:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 13:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 24:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 25:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 36:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **<u>T.25 S.,R.27E.,NMPM</u>** **Sec. 1:** L4, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 12:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 13:** NE¼SW¼, NW¼NW¼, NW¼SW¼, SE¼SW¼, SW¼NW¼ **Sec. 24:** NE¼NW¼, NE¼SW¼, SE¼NW¼, SE¼SW¼ **Sec. 25:** NE¼NW¼, NE¼SE¼, NW¼SE¼, SE¼NW¼, SE¼SE¼, SW¼NE¼ **Sec. 36:** NE¼NE¼ **<u>T.25 S.,R.28E.,NMPM</u>** **Sec. 31:** L1, L2, L3, NE¼SW¼, SE¼SW¼ **<u>T.26 S.,R.28E.,NMPM</u>** **Sec. 5:** SW¼SW¼ **Sec. 6:** NE¼NW¼, NE¼SE¼, NW¼NE¼, SE¼NE¼, SE¼SE¼, SW¼NE¼ **Sec. 8:** NW¼NW¼
Hobbs Generation Substation Expansion	
Private Lands	
<u>T.18 S.,R.36E.,NMPM</u> **Sec. 24:** NW¼SW¼	

North Loving Substation Expansion
Private Lands
T.23 S.,R.28E.,NMPM **Sec. 19:** NE¼NW¼
China Draw Substation Expansion
SLO Lands
T.26 S.,R.28E.,NMPM **Sec. 5:** SW¼SW¼ **Sec. 8:** NW¼NW¼

2. **Eddy to Kiowa 345-kV Transmission Line.** The second Standard Form 299 application (Eddy to Kiowa 345) would connect the existing Eddy County Substation to the proposed Kiowa Substation, also in Eddy County, New Mexico. The Eddy County to Kiowa transmission line is composed of a single segment and does not have a circuit number assigned yet. The BLM has assigned this project component the ROW serial number NM-134370 (Table 1.2).

Table 1.2. Legal Description of the Eddy to Kiowa 345-kV Transmission Line

345-kV Line - Eddy County Substation to Kiowa Substation	
BLM Lands	**SLO/Private Lands**
T.17 S.,R.27E.,NMPM **Sec. 24:** SE¼SW¼, SW¼SE¼, SW¼SW¼ **T.19 S.,R.28E.,NMPM** **Sec. 33:** NW¼SW¼, SW¼NW¼, SW¼SW¼ **T.20 S.,R.28E.,NMPM** **Sec. 4:** L4, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 9:** NW¼NW¼, NW¼SW¼, SE¼SE¼, SE¼SW¼, SW¼NW¼, SW¼SE¼, SW¼SW¼ **Sec. 10:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 11:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **Sec. 12:** SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼ **T.20 S.,R.29E.,NMPM** **Sec. 7:** L4, SE¼SE¼, SE¼SW¼, SW¼SE¼ **Sec. 17:** NE¼NW¼, NE¼SE¼, NW¼NE¼, NW¼NW¼, SE¼NE¼, SE¼SE¼, SW¼NE¼ **Sec.18:** NE¼NE¼ **Sec. 20:** NE¼NE¼ **Sec. 21:** NE¼NE¼, NE¼NW¼, NW¼NE¼, NW¼NW¼ **Sec. 22:** NE¼NE¼, NE¼NW¼, NW¼NE¼, NW¼NW¼, SE¼NE¼ **Sec. 23:** NE¼SE¼, NW¼SE¼, SE¼NW¼, SE¼SE¼, SW¼NE¼, SW¼NW¼ **Sec. 26:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 35:** NE¼NE¼ **Sec. 36:** NE¼NW¼, NW¼NE¼, NW¼NW¼, SE¼NE¼, SW¼NE¼ **T.20 S.,R.30E.,NMPM** **Sec. 31:** L2, L3, NE¼SW¼, SE¼SE¼, SE¼SW¼, SW¼SE¼ **T.21 S.,R.29E.,NMPM** **Sec. 3:** NE¼SW¼, NW¼SE¼, NW¼SW¼, SW¼SE¼ **Sec.4:** L13, L14, L15, L16, NE¼SE¼ **Sec. 5:** L10, L15, L16, L2, L3, L7	**T.17 S.,R.27E.,NMPM** **Sec. 24:** SE¼SE¼, SW¼SE¼ **T.17 S.,R.28E.,NMPM** **Sec. 19:** L4 **Sec. 30:** L1, L2, L3, L4 **Sec. 31:** L1, L2, L3, L4**,** SE¼SW¼ **T.18 S.,R.28E.,NMPM** **Sec. 6:** L3, L4, L5, NE¼SW¼, SE¼NW¼, SE¼SW¼ **Sec. 7:** NE¼NW¼, NE¼SW¼, SE¼NW¼, SE¼SW¼ **Sec. 17:** SW¼SW¼ **Sec. 18:** NE¼NW¼, NE¼SE¼, NW¼NE¼, NW¼SE¼, SE¼SE¼, SW¼NE¼ **Sec. 20:** NE¼SW¼, NW¼NW¼, NW¼SE¼, SE¼NW¼, SE¼SE¼, SW¼NW¼, SW¼SE¼ **Sec. 29:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 32:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **T.19 S.,R.28E.,NMPM** **Sec. 5:** L1, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 8:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 17:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 20:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 29:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 32:** NE¼NE¼, SE¼NE¼ **Sec. 33:** SW¼NW¼

3. **Kiowa Substation.** The third Standard Form 299 application would be the new Kiowa Substation on BLM lands in Eddy County, New Mexico (Table 1.3). The BLM has assigned this project component the ROW serial number NM-134336.

Table 1.3. Legal Description of the Proposed Kiowa Substation

Proposed Kiowa Substation
BLM Lands
T.21 S.,R.29E.,NMPM **Sec. 10:** NE¼NE¼, NW¼NE¼ **Sec. 30:** SE¼SE¼, SW¼SE¼

4. **Eddy County Substation Expansion**. The fourth Standard Form 299 application is for the expansion of the existing Eddy County Substation (Table 1.4). The BLM has assigned this project component with the ROW serial number NM-077768. The proposed Hobbs Generation Substation expansion is on private land and is not the subject of an application, but will be analyzed for impacts within this EA.

Table 1.4. Legal Description of the Proposed Eddy County Substation Expansion

Proposed Eddy County Substation Expansion
BLM Lands
T. 17 S., R. 27 E., NMPM **Sec. 24:** SW¼SW¼

The proposed project also includes access roads and temporary use areas, such as pull pockets and laydown yards. The legal descriptions for the proposed access roads and additional temporary workspaces are listed in Table 1.5.

Table 1.5. Legal Description of Proposed Access Roads and Temporary Workspaces

Pull Pockets Hobbs to China Draw (J-20 through J-22)	
BLM Lands	**SLO/Private Lands**
No. 8 T.20 S.,R.34E.,NMPM **Sec. 5:** L2, L3, SE¼NW¼, SW¼NE¼ **No. 9** T.20 S.,R.33E.,NMPM **Sec. 11:** NE¼SW¼ **No. 10** T.20 S.,R.33E.,NMPM **Sec. 14:** NE¼NW¼, NW¼NE¼, SE¼NW¼ **No. 11** T.20 S.,R.32E.,NMPM **Sec. 33:** SW¼SW¼ T.21 S.,R.31E.,NMPM **Sec. 4:** L1, L2 **No. 12** T.20 S.,R.32E.,NMPM **Sec. 31:** SE¼SE¼ T.21 S.,R.31E.,NMPM **Sec. 5:** L2	**No. 1** T.18 S.,R.36E.,NMPM **Sec. 23:** NE¼SE¼ **Sec. 24:** NW¼SW¼ **No. 2** T.18 S.,R.36E.,NMPM **Sec. 26:** NW¼SW¼, SW¼SW¼ **Sec. 27:** SE¼SE **No. 3** T.18 S.,R.36E.,NMPM **Sec. 35:** SW¼NW¼ **No. 4** T.18 S.,R.36E.,NMPM **Sec. 32:** NE¼SW¼, **No. 5** T.19 S.,R.36E.,NMPM **Sec. 5:** L2, L3 **No. 6**

No. 13
T.20 S.,R.32E.,NMPM
Sec. 31: NE¼SE¼, NW¼SE¼, SW¼NE¼

No. 14
T.21 S.,R.30E.,NMPM
Sec. 5: L4

No. 15
T.20 S.,R.31E.,NMPM
Sec. 31: SE¼SW¼

No. 16
T.20 S.,R.30E.,NMPM
Sec. 34: SW¼SW¼
T.21 S.,R.29E.,NMPM
Sec. 3: L1

No. 17
T.21 S.,R.29E.,NMPM
Sec. 3: L9

No. 18
T.21 S.,R.29E.,NMPM
Sec. 3: L14, L15

No. 19
T.22 S.,R.29E.,NMPM
Sec. 10: SW¼SW¼
Sec. 15: NW¼NW¼
Sec. 16: NE¼NE¼

No. 20
T.22 S.,R.29E.,NMPM
Sec. 8: SE¼SE¼, SW¼SE¼
Sec. 17: NE¼NE¼, NW¼NE¼

No. 21
T.22 S.,R.29E.,NMPM
Sec. 17: NE¼SW¼, NW¼SE¼

No. 22
T.22 S.,R.28E.,NMPM
Sec. 15: SE¼SE¼
Sec. 22: NE¼NE¼

No. 23
T.23 S.,R.28E.,NMPM
Sec. 3: L1, L2

No. 24
T.23 S.,R.28E.,NMPM
Sec. 3: SE¼NE¼

No. 25

T.19 S.,R.35E.,NMPM
Sec. 16: SW¼SW¼
Sec. 17: SE¼SE¼
Sec. 20: NE¼NE¼
Sec. 21: NW¼NW¼

No. 7
T.20 S.,R.35E.,NMPM
Sec. 4: NW¼SW¼, SW¼NW¼
Sec. 5: NE¼SE¼, SE¼NE¼

No. 19
T.22 S.,R.29E.,NMPM
Sec. 16: NE¼NE¼

No. 24
T.23 S.,R.28E.,NMPM
Sec. 2: SW¼NW¼
Sec. 3: SE¼NE¼

No. 25
T.23 S.,R.28E.,NMPM
Sec. 2: SW¼SW¼
Sec. 3: SE¼SE¼
Sec. 10: NE¼NE¼

No. 28
T.23 S.,R.28E.,NMPM
Sec. 15: NW¼SW¼
Sec. 16: NE¼SE¼

No. 29
T.23 S.,R.28E.,NMPM
Sec. 16: SE¼SW¼, SW¼SE¼

No. 30
T.23 S.,R.28E.,NMPM
Sec. 18: SE¼SW¼

No. 31
T.23 S.,R.28E.,NMPM
Sec. 19: NE¼NW¼, SE¼NW¼

No. 32
T.23 S.,R.27E.,NMPM
Sec. 23: NE¼NE¼, SE¼NE¼
Sec. 24: NW¼NW¼, SW¼NW¼

No. 33
T.23 S.,R.27E.,NMPM
Sec. 36: SW¼SW¼
T.24 S.,R.27E.,NMPM
Sec. 1: l4

No. 34
T.26 S.,R.28E.,NMPM

T.23 S.,R.28E.,NMPM **Sec. 3:** SE¼SE¼ **Sec. 10:** NE¼NE¼ **No. 26** **T.23 S.,R.28E.,NMPM** **Sec. 3:** SE¼SW¼, SW¼SW¼ **Sec. 10:** NE¼NW¼, NW¼NW¼ **No. 27** **T.23 S.,R.28E.,NMPM** **Sec. 9:** NE¼SE¼, SE¼SE¼	**Sec. 5:** SW¼SW¼ **Sec. 8:** NW¼NW¼ **No. 35** **T.26 S.,R.28E.,NMPM** **Sec. 5:** SE¼SW¼, SW¼SW¼ **Sec. 8:** NE¼NW¼, NW¼NW¼
Pull Pockets Eddy to Kiowa	
BLM Lands	**SLO/Private Lands**
No. 7 **T.20 S.,R.28E.,NMPM** **Sec. 8:** NE¼SE¼, SE¼SE¼ **Sec. 9:** NW¼SW¼, SW¼SW¼ **No. 8** **T.20 S.,R.29E.,NMPM** **Sec. 17:** SE¼NE¼ **No. 9** **T.20 S.,R.29E.,NMPM** **Sec. 20:** NE¼NE¼ **Sec. 21:** NW¼NW¼ **No. 10** **T.20 S.,R.29E.,NMPM** **Sec. 23:** NE¼SE¼, SE¼NE¼ **No. 11** **T.20 S.,R.29E.,NMPM** **Sec. 26:** SE¼SE¼ **Sec. 35:** NE¼NE¼ **No. 12** **T.20 S.,R.30E.,NMPM** **Sec. 31:** L2, L3 **No. 13** **T.20 S.,R.30E.,NMPM** **Sec. 31:** L3 **No. 14** **T.20 S.,R.30E.,NMPM** **Sec. 31:** SE¼SE¼, SW¼SE¼ **No. 15** **T.21 S.,R.29E.,NMPM** **Sec. 5:** L15, L16 **No. 16** **T.21 S.,R.29E.,NMPM**	**No. 1** **T.17 S.,R.27E.,NMPM** **Sec. 24:** SE¼SE¼ **T.17 S.,R.28E.,NMPM** **Sec. 19:** L4 **No. 2** **T.17 S.,R.27E.,NMPM** **Sec. 36:** NE¼SE¼, SE¼SE¼ **T.17 S.,R.28E.,NMPM** **Sec. 31:** L3, L4 **No. 3** **T.17 S.,R.28E.,NMPM** **Sec. 31:** SE¼SW¼ **No. 4** **T.18 S.,R.28E.,NMPM** **Sec. 6:** L5 **No. 5** **T.18 S.,R.28E.,NMPM** **Sec. 7:** SE¼SW¼ **Sec. 18:** NE¼NW¼ **No. 6** **T.18 S.,R.28E.,NMPM** **Sec. 20:** SE¼SE¼ **Sec. 29:** NE¼NE¼ **No. 7** **T.20 S.,R.28E.,NMPM** **Sec. 8:** NE¼SE¼, SE¼SE¼

Sec. 3: NW¼SE¼	
Laydown Yards	
SLO Lands	**Private Lands**
Cunningham Laydown Yard	**Doug Lynn Laydown Yard**
T.18 S.,R.36E.,NMPM **Sec. 33:** SE¼NE¼, SW¼NE¼	**T.23 S.,R.27E.,NMPM** **Sec. 6:** SE¼NE¼, SW¼NE¼
	Eddy Potential Laydown Yard
	T.17 S.,R.28E.,NMPM **Sec. 30:** L4
	Kiowa Laydown Yard
	T.21 S.,R.29E.,NMPM **Sec. 2:** NW¼SW¼, SW¼SW¼ **Sec. 30:** NE¼SE¼, SE¼SE¼
	McDonald Laydown Yard
	T.23 S.,R.28E.,NMPM **Sec. 18:** SE¼SE¼ **Sec. 17:** SE¼SW¼, SW¼SW¼
Access Roads	
Existing Roads – To be Improved	
BLM Lands	**SLO/Private Lands**
T.19 S.,R.34E.,NMPM **Sec. 25:** NW¼NE¼, SE¼NW¼, SW¼NE¼ **T.20 S.,R.29E.,NMPM** **Sec. 23:** NE¼NE¼, NE¼SE¼ **Sec. 25:** NW¼NW¼ **Sec. 26:** NE¼NE¼ **T.20 S.,R.31E.,NMPM** **Sec. 31:** NE¼SE¼, NW¼SE¼, SE¼SW¼, SW¼SE¼ **T.20 S.,R.34E.,NMPM** **Sec. 34:** L1, L2 **T.21 S.,R.29E.,NMPM** **Sec. 1:** L2 **Sec. 3:** L12, L5, L6, L7 **Sec. 4:** L16, L9, NE¼SE¼ **T.22 S.,R.28E.,NMPM** **Sec. 13:** L10, L16, L3, L4, L6, L7, L9 **Sec. 14:** NE¼NE¼, NW¼NE¼, NW¼SW¼, SE¼NW¼, SW¼NE¼, SW¼NW¼, SW¼SW¼ **Sec. 15:** SE¼SE¼ **Sec. 22:** NE¼NE¼, NE¼SE¼, SE¼NE¼ **Sec. 26:** NE¼SW¼, NW¼SW¼, SW¼NW¼ **Sec. 27:** NE¼NE¼, SE¼NE¼ **T.22 S.,R.29E.,NMPM** **Sec. 18:** L4 **Sec. 19:** L1, NE¼NW¼, SE¼NW¼	**T.19 S.,R.28E.,NMPM** **Sec. 16:** NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 17:** SE¼NE¼ **Sec. 20:** NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼ **Sec. 21:** NW¼NW¼ **Sec. 28:** NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼ **Sec. 29:** NE¼NE¼, SE¼SE¼, NE¼NE¼ **Sec. 32:** NE¼NE¼ **Sec. 23:** NW¼NW¼, SW¼NW¼ **T.19 S.,R.35E.,NMPM** **Sec. 1:** SE¼SE¼, SW¼SE¼ **Sec. 10:** SE¼SE¼ **Sec. 11:** NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SW¼ **Sec. 12:** NE¼NW¼, NW¼NE¼, NW¼NW¼, SW¼NW¼ **Sec. 15:** NE¼NE¼, NE¼NW¼, NW¼NE¼, SE¼NW¼, SW¼NW¼ **Sec. 16:** NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SW¼, SE¼SE¼, NE¼NE¼ **Sec. 17:** SE¼SE¼ **Sec. 20:** NE¼NE¼, NE¼NW¼, NW¼NE¼, SE¼NW¼ **T.19 S.,R.36E.,NMPM** **Sec. 6:** L7 **T.22 S.,R.28E.,NMPM** **Sec. 22:** NE¼SE¼, SE¼SE¼ **Sec. 27:** NE¼NE¼ **T.23 S.,R.27E.,NMPM** **Sec. 14:** SE¼SE¼ **Sec. 23:** NE¼NE¼

	Sec. 24: NW¼NW¼
Access Roads – New Roads	
BLM Lands	**SLO/Private Lands**
T.20 S.,R.30E.,NMPM **Sec. 36:** SE¼SE¼ **T.21 S.,R.29E.,NMPM** **Sec. 3:** NE¼SE¼, SE¼SE¼ **T.21 S.,R.30E.,NMPM** **Sec. 6:** L3 **T.22 S.,R.28E.,NMPM** **Sec. 14:** SW¼SW¼	**T.17 S.,R.28E.,NMPM** **Sec. 30:** L2, L3, L4 **Sec. 31:** L1 **T.18 S.,R.36E.,NMPM** **Sec. 33:** SE¼NW¼ **T.19 S.,R.35E.,NMPM** **Sec. 1:** NE¼SE¼, SE¼SE¼ **Sec. 11:** SE¼NE¼, SW¼NE¼ **Sec. 15:** SW¼NW¼ **T.19 S.,R.36E.,NMPM** **Sec. 6:** L6 **T.20 S.,R.30E.,NMPM** **Sec. 36:** SE¼SE¼ **T.21 S.,R.29E.,NMPM** **Sec. 2:** NW¼SW¼ **Sec. 3:** NE¼SE¼

As part of the application process, a Plan of Development (POD) is required and has been prepared. The appropriate information from the POD has been incorporated into the Proposed Action of this EA. On federal lands administered by the BLM, the POD is an enforceable stipulation of the BLM ROW grant and pertains not only to the construction of the project, but also to the operation and maintenance phase of the project. Along with the Standard Form 299s, a preliminary POD was submitted to the BLM for the Hobbs to China Draw transmission line in August 2014 and for the Eddy County to Kiowa transmission line in November 2014. SPS filed Standard Form 299s for the Kiowa Substation and Eddy County Substation expansion in March 2015. Prior to receiving a Notice to Proceed from the BLM, SPS would be responsible to prepare a final POD based on the EA.

SWCA Environmental Consultants (SWCA) conducted a general biological survey of the proposed disturbance area over several sessions from October 2014 to August 2015 to evaluate the potential for special status species to occur and to identify habitat communities regulated by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act of 1973 (ESA), jurisdictional drainages or sensitive aquatic habitats regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act of 1972, and active and inactive migratory bird nests protected by the Migratory Bird Treaty Act of 1918 (MBTA). The survey results are included in the biological assessment (BA), (SWCA 2015a), and wetland report (SWCA 2015b). Additionally, SWCA prepared a series of cultural resources inventory reports for the proposed project (Sisneros et al. 2015a, 2015b, 2015c) to aid in complying with Section 106 of the National Historic Preservation Act of 1966 (NHPA). These reports are on file with the BLM CFO.

This EA complies with the requirements of NEPA and federal regulations found in 40 CFR Chapter V. This EA analyzes the site-specific impacts associated with the Proposed Action and its alternatives, identifies project design features to potentially reduce or eliminate those impacts, and provides agency decision makers with detailed information with which to make a decision on the pending applications under review (see Section 1.3).

Figure 1.1 shows an overview of the Proposed Action.

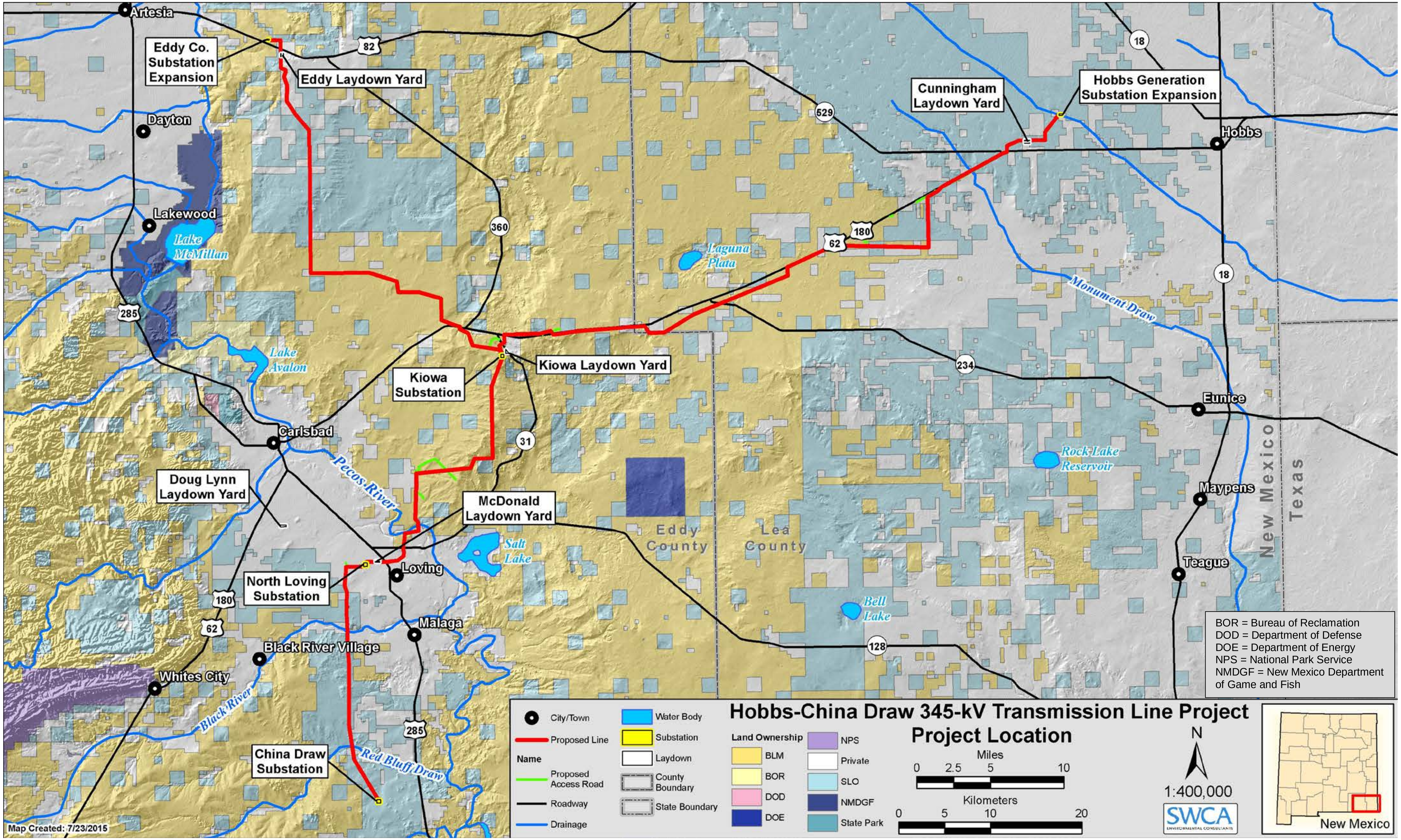


Figure 1.1. **Project location map.**

1.2 Purpose of and Need for Action

The BLM's purpose is to respond to SPS's request for legal use of and access across BLM-managed public lands by granting SPS a ROW for each transmission line and their associated facilities. As stated in 43 CFR 2801.9, a BLM ROW grant is required for use of public lands for "systems or facilities over, under, on, or through public lands," including transmission lines. The BLM's mandate for multiple uses of public lands includes development of energy transmission in a manner that conserves the multitude of other resources found on public lands. The need for the BLM's action is established by the Federal Land Policy and Management Act (FLPMA) and is to respond to an application for a ROW grant by evaluating the application for use of federal land for construction of two 345-kV transmission lines, a new substation, and the expansion of one substation on federal land. The BLM would consider the application in accordance with 43 CFR 2800, Rights-of-Way under FLPMA, and the Energy Policy Act of 2005, and would decide whether to issue a ROW grant and, if so, under what terms and conditions.

The applicant's need is established by its obligations as a regulated utility subject to the jurisdiction of the New Mexico Public Regulation Commission, the Federal Energy Regulatory Commission (FERC), and its delegates, including the North American Electric Reliability Corporation (NERC) and the Southwest Power Pool (SPP), which is the Regional Transmission Organization to which SPS belongs. SPS is responsible to reliably serve its customers' electrical needs and to plan its system such that it can reliably accommodate the future electrical load within its system. Within its service territory, SPS has recently experienced a substantial increase in electrical demand in southeast New Mexico where development of oil and gas fields has grown tremendously. SPP conducted a High Priority Incremental Load Study (HPILS), finalized in April 2014, to evaluate transmission needs resulting from significant load growth expectations.

Using the results from the HPILS, SPP issued numerous orders to its members in the form of Notices to Construct (NTCs). These included NTCs to SPS to construct a number of new high-voltage transmission lines in southeast New Mexico. Some of these NTCs have been combined as part of the SPS Proposed Action. Therefore, this EA and the associated POD pertains to the following SPP projects:

- installation of new substation equipment at the existing Hobbs Generation, North Loving, and China Draw Substations;
- construction of the proposed Kiowa Substation and installation of new substation equipment therein;
- construction of three segments, totaling approximately 86 miles of, new 345-kV transmission lines connecting the Hobbs Generation Station, the proposed Kiowa Substation; and the existing North Loving and China Draw Substations, and
- construction of a new 345-kV line segment between Kiowa Substation and the existing Eddy substation.

As part of the NTCs, SPP directed SPS to have all of these system additions in service by June 1, 2018.

1.3 Decision to be Made by the BLM

In making its decision, the BLM must determine and consider the environmental impact on all lands crossed as a result of granting a ROW across BLM-administered public lands. In its decision to issue a ROW grant, the BLM must also consider existing resource management plans (RMPs) and other BLM plans in terms of how the authorizations and actions conform to the existing BLM land use plans. This EA analyzes the site-specific impacts associated with the Proposed Action and its alternatives, identifies mitigation measures to potentially reduce or eliminate those impacts, and provides the BLM detailed analyses to inform the decision.

The BLM would decide whether to issue the grant for one and/or all ROWs applications for use of federal land, grant with modifications, or deny one and/or all applications. Modifications could include granting only a portion of the project, modifying the proposed use, or changing the route or location of the proposed facilities if the BLM determines such terms, conditions, and stipulations are in the public interest (43 CFR 2805.10(a)(1)).

1.4 Conformance with Applicable Land Use Plan(s)

The Proposed Action is in conformance with the 1988 Carlsbad RMP as amended (BLM 1988, 1997, 2008a).

Utility corridors are recognized as an appropriate use of public lands by the BLM CFO 1988 RMP (BLM 1988:10-11), which provides management direction for designation of ROW corridors. The BLM encourages applicants to locate new facilities within designated ROW corridors. Deviations from designated corridors may be permitted based on the type and need of the proposed facility and lack of conflicts with other resource values and uses. In order to comply with Section 368 of the Energy Policy Act of 2005, the BLM Pecos District would designate utility corridors for major projects such as interstate electric transmission lines, pipelines, and communications lines for interstate use (BLM 2008a:2-12).

The 2008 Resource Management Plan Amendment (RMPA) states:

> New projects of the type described above [utility corridors for major projects such as interstate electric transmission lines; pipelines; and communications lines for interstate use] that propose to cross the Planning Area would be evaluated based on the impacts to lesser prairie-chicken and sand dune lizard habitats and other resources to meet the overall objectives of this plan. These projects would not be located in ROW avoidance areas if other routes can meet the purposes of the project. (BLM 2008a:2-13)

Appendix 2 of the Carlsbad Approved RMPA and Record of Decision (ROD) (BLM 1997:Appendix 2:8-9) and the 2008 RMPA and ROD (BLM 2008a:6-7) describe Conditions of Approval and mitigation measures for overhead transmission lines. The Proposed Action is not located in a ROW avoidance area and complies with the recommended mitigation measures in the RMP. This site-specific EA tiers to the information and analysis contained in the BLM CFO's RMP, as amended. Therefore, the Proposed Action is in conformance with the RMP.

1.5 Relationship to Statutes, Regulations, or Other Plans

Various federal and state agencies regulate different aspects of electric power transmission projects. Table 1.6 lists the environmental permits and approvals that could be required for the proposed project.

Table 1.6. Potential Permits, Approvals, and Clearances Needed for Construction, Operation, and Maintenance of Facilities

Permit/Notification	Issuing Agency	Status
Federal Permit, Approval, or Clearance		
ROW grant	BLM	Subject of this EA.
Clearance under Section 7 of the ESA	USFWS	Surveys were conducted. Findings are described in Section 3.6 and in the BA (SWCA 2015a).
Clean Water Act Section 404 Permit	USACE	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project. Findings are described in Section 3.4.
Clean Water Act Section 402 General Construction (Stormwater) Permit	U.S. Environmental Protection Agency (EPA)	The permit would be obtained prior to construction under the EPA's Construction General Permit.
State Permit, Approval, or Clearance		
ROW grant	SLO	Subject of this EA.
Certificate of Public Convenience and Necessity	New Mexico Public Regulation Commission	Application for approval of location of the transmission lines and substations is underway.

Permit/Notification	Issuing Agency	Status
Tribal consultation to determine if the proposed project would have any impact on receptors of cultural importance	Native American tribes	Findings are described in Section 3.7 and the associated cultural resources reports.
Clearance under Section 106 of the NHPA	New Mexico State Historic Preservation District	Cultural resources surveys were conducted. Findings are described in Section 3.7 and the associated cultural resources reports.
Clean Water Act Section 401 Permit	New Mexico Environment Department	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project. Findings are described in Section 3.4.
Collection permit for the displacement or removal of any state endangered plant species	New Mexico Energy, Minerals, and Natural Resources Department Forestry Division	Biological resource surveys were conducted. Findings are described in Section 3.6 and in the BA (SWCA 2015a).
Access permit or public highway utility accommodation permit	New Mexico Department of Transportation (NMDOT)	Discussions with the NMDOT regarding the location of the proposed project and access locations are underway.

1.5.1 Executive Order 13212

Executive Order (EO) 13212, dated May 18, 2001, mandates that agencies act expediently and in a manner consistent with applicable laws to increase the “production and transmission of energy in a safe and environmentally sound manner.” Furthermore, agencies are directed to expedite projects that would increase the transmission of energy and expedite their review of permits to accelerate the completion of such projects.

1.5.2 Council on Environmental Quality Regulations

Parts 1500 through 1508 of the CEQ regulations (40 CFR 1500.3) provide stipulations applicable to and binding for all federal agencies for implementing the procedural provisions of NEPA, “except where compliance would be inconsistent with other statutory requirements.”

Additionally, the ROW grant holder is required to:
- comply with all applicable federal, state, and local laws and regulations; and
- implement the Proposed Action in a way that is as consistent as possible with local, county, or state plans.

1.5.3 Endangered Species Act of 1973

The ESA requires all federal departments and agencies to conserve threatened, endangered, and critical and sensitive species and the habitats on which they depend and to consult with the USFWS on all actions authorized, funded, or carried out by the agency to ensure that the action would not likely jeopardize the continued existence of any threatened and endangered species or adversely modify critical habitat. Consultation with the USFWS, as required by Section 7 of the ESA, would be conducted by BLM for the Proposed Action.

1.5.4 National Historic Preservation Act

Heritage resources are protected by the NHPA (Public Law [PL] 89-665), as amended, and its implementing regulations (36 CFR 800) and other legislation, including NEPA (PL 91-852) and its implementing regulations (40 CFR 1500–1508). Other relevant laws include the following:
- Antiquities Act of 1906 (PL 52-209);
- Archaeological and Historical Conservation Act of 1974 (PL 93-291);

- Archaeological Resources Protection Act of 1979 (PL 96-95) and its regulations (36 CFR 296);
- American Indian Religious Freedom Act (42 United States Code [USC] 1996);
- Native American Graves Protection and Repatriation Act of 1990 (PL 101-601); and
- EO 11593 of 1971.

Compliance with Section 106 responsibilities of the NHPA is achieved by following the BLM–New Mexico State Historic Preservation Office protocol agreement, which is authorized by the National Programmatic Agreement between the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. The BLM would conduct any consultation with the New Mexico State Historic Preservation Office (SHPO) regarding this Proposed Action.

1.5.5 Clean Water Act

The Federal Water Pollution Control Act, commonly known as the Clean Water Act (codified at 40 CFR 112), protects surface water resources from pollution. The USACE has jurisdiction of navigable waters of the U.S.

Section 401 of the federal Clean Water Act, which through state certification by the New Mexico Environment Department (NMED), requires the USACE to meet state water quality regulations prior to granting a Section 404 permit for discharges of dredge or fill material in waters of the U.S. All federal consultations, including the ESA, must be completed prior to USACE issuance of Section 404 authorizations.

Three wetlands, two perennial streams, one intermittent stream, two playas, and 22 ephemeral streams were recorded within the project area. All of these features are potentially jurisdictional, or waters of the U.S. (SWCA 2015b). All of the potential waters of the U.S., including the Pecos and Black Rivers and Red Bluff Draw, as well as playas, would be avoided by the proposed transmission lines and structures by either spanning the water bodies or designating the areas as avoidance zones in the POD. Any impact to drainages from proposed access road use or construction would be in accordance with the USACE's Nationwide Permit 12 for Utility Line Activities (see Section 3.4).

Prior to construction, a Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) permit would be acquired from the U.S. Environmental Protection Agency (EPA). This would be obtained through the EPA's Construction General Permit. As part of the permit requirements, a Stormwater Pollution Plan (SWPPP) would be written.

1.5.6 Clean Air Act

The Clean Air Act of 1970 (CAA), as amended, establishes National Ambient Air Quality Standards (NAAQS) to control air pollution. The NMED Air Quality Bureau (AQB) oversees air quality regulations and standards for stationary sources of air pollution. Impacts to air quality from transmission lines are controlled by mitigation measures developed on a case-by-case basis. As part of the planning and decision-making process, the BLM must consider and analyze the potential effects of its activities on air resources (see Section 3.1). The Proposed Action would be in compliance with the NAAQS for potential air pollution from the proposed project activities. This EA discusses the recommended mitigation measures during construction that would prevent the potential for adverse impacts to air quality in Section 2.1.2, Project Design Features.

1.6 Scoping, Public Involvement, and Issues

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 invited to comment.

The BLM's interdisciplinary team of resource specialists conducted internal scoping on the Proposed Action in November 2014 and identified several resource issues. In addition, the project description and location were posted to the BLM's website, as well as the *Carlsbad Current-Argus* and the *Hobbs News-Sun* local newspapers, beginning on March 2, 2015, for a 30-day public scoping comment period. Internal and external resource issues identified for the project are listed in Table 1.7. No public comments were received.

Table 1.7. Internal and External Resource Issues

Resource	Issue
Air Resources	How would the proposed project impact air quality, especially during construction and maintenance?
Soils	How would the surface disturbance associated with the proposed project affect soils?
Water Resources	How would the proposed project affect water resources, including wetlands and playas, and groundwater?
Cave and Karst Resources	How would the proposed project affect cave and karst resources known to occur in portions of the project area?
Vegetation	How would the proposed project affect vegetation, especially during construction and regular vegetation maintenance activities? How would the proposed project affect the spread of invasive non-native species?
Wildlife and Special Status Species	How would the proposed project affect wildlife and migratory birds? How would the proposed project and associated noise impacts affect special status species with the potential to occur in the project area, including habitat for the lesser prairie-chicken and dunes sagebrush lizard?
Cultural Resources	How would the proposed project affect cultural resources?
Visual Resources	How would the scenic quality of the landscape be affected by the proposed project?
Special Designations	Which special designations are crossed by the proposed project? How would the proposed project effect the resources protected by these special designations?
Livestock Grazing	How would the proposed project impact livestock grazing in the vicinity of the Proposed Action, specifically fence crossings and water line crossings?
Public Health and Safety	How would the proposed project's construction, operation, and maintenance affect public health and safety?

1.6.1 Issues Considered but Not Analyzed

The following issues were considered but not analyzed in detail in this EA.

Paleontological Resources

Based on a literature, geologic map, and aerial photograph review of the project area, the proposed project is located within an area underlain by geologic units that have been classified using the Potential Fossil Yield Classification system primarily as Class 2 or Class 3a. These classifications indicate these geologic units have low (Class 2) to moderate (Class 3a) potential to contain recognizable fossil remains. Management concern for paleontological resources within Class 2 units is usually low and assessment or mitigation is usually unnecessary (BLM 2007). Management concerns for paleontological resources within Class 3a units is moderate. While surface-disturbing activities may require field assessment to determine appropriate course of action, the Class 3a geologic unit exposed in the project is the Ogallala Formation but is limited to layers of well developed (stage VI) caliche, which is not known to be fossiliferous. An aerial photographic review of the alignment revealed that only a few very small exposures of geologic units with the potential to contain recognizable fossils occur within the proposed disturbance corridor, and no previously recorded fossil localities were found to occur within the project area. Based on these findings and the low to moderate potential of these units to contain recognizable fossil remains, field surveys were not conducted. The proposed project is not expected to impact paleontological resources;

therefore, the issue is not analyzed in this EA. Section 2.1.2 includes a design feature for paleontological resources, if conditions arise.

Minerals

The proposed project crosses areas with heavy oil and gas development, as well as the Designated Potash Area defined by the Secretary of the Interior under the authority of Mineral Leasing Act of 1920, as amended (30 USC 185). The project elements have been routed to avoid potash mine tailings and salt tailings. SPS coordinated with potash mining companies in the project vicinity during the development of the proposed project. No impacts to underground potash mining activity were identified during these meetings.

The refined route was also reviewed for proximity to active caliche pits, and none are located within the project area (Center for Excellence for Hazardous Materials Management [CEHMM] 2015). Two caliche pits are located within 1,000 feet of the route; however, based on aerial photography, these material pits appear to have room for expansion without encroaching on the proposed transmission line route. Based on the coordination with potash mining companies and review of caliche pits near the project are, the issue of mineral resources is not analyzed in this EA.

Native American Religious Concerns

For the Proposed Action, identification efforts for Native American religious concerns were limited to reviewing existing published and unpublished literature, the site-specific Class III survey reports prepared for the Proposed Action (Sisneros et al. 2015a, 2015b, 2015c), and the BLM's cultural resources program regarding the presence of traditional cultural properties (TCPs) identified through ongoing BLM tribal consultation efforts. The Proposed Action would not impact any known TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere with or hinder the performance of traditional ceremonies and rituals pursuant to the American Indian Religious Freedom Act of 1978 (42 USC 1996) or EO 13007.

Socioeconomics and Environmental Justice

SPS estimates that approximately 180 workers total would be employed during construction of the $128 million project. These workers would primarily be employed by SPS contractors and the work would be temporary in nature, no new permanent jobs would be created. The number of jobs created and the temporary status of those jobs, compared to the high overall employment rate in the BLM CFO planning area, does not warrant detailed analysis of socioeconomics in this EA, as only marginal and minimal, short-term, impacts to employment and demographics would be expected. The proposed project would not disproportionally impact environmental justice populations as no majority environmental justice population (as defined by EO 12898) was identified in the region.

2 PROPOSED ACTION AND ALTERNATIVES

This chapter provides a detailed description of the proposed project, the No Action Alternative, and those alternatives that were considered but not included for detailed analysis.

2.1 Proposed Action

SPS is proposing to construct, operate, and maintain two single-circuit alternating current 345-kV overhead electric transmission lines that both interconnect with the proposed Kiowa Substation in Eddy County, New Mexico. In addition, SPS is proposing to build one new substation and expand four existing substations and secure the necessary ROWs for associated facilities, including but not limited to access roads and temporary work areas.

The proposed project would cross private, state, and BLM-managed lands. Table 2.1 provides the length of the proposed project and acres of surface disturbance, by land ownership, for the Proposed Action.

Table 2.1. Acreages and Miles of Proposed ROW and Surface Disturbance by Land Ownership

Project Component	Land Ownership	Lengths (miles)	Proposed Total Disturbance (acres)	Proposed BLM Disturbance (acres)
Hobbs to China Draw 345-kV transmission line (150-foot ROW)	BLM	45	803	803
	SLO	30	549	–
	Private	13	241	–
Subtotal		**88**	**1,593**	**–**
Eddy County to Kiowa 345-kV transmission line (150-foot ROW)	BLM	19	347	347
	SLO	9	158	–
	Private	6	109	–
Subtotal		**34**	**614**	**–**
New substation and substation expansions	BLM	–	34	34
	SLO	–	5	–
	Private	–	13	–
Subtotal		**0**	**52**	**–**
Additional temporary workspace (including laydown yards and pull pockets)	BLM	–	76	76
	SLO	–	78	–
	Private	–	136	–
Subtotal		**0**	**290**	**–**
Access roads (60-foot ROW)	BLM	9	67	67
	SLO	7	47	–
	Private	4	24	–
Subtotal		**20**	**138**	**–**
Subtotal (acres)			**2,687**	**1,327**
Overlap of Project Components (acres)			**-26**	**-3**
Total Proposed Disturbance (acres)			***2,661***	***1,324***

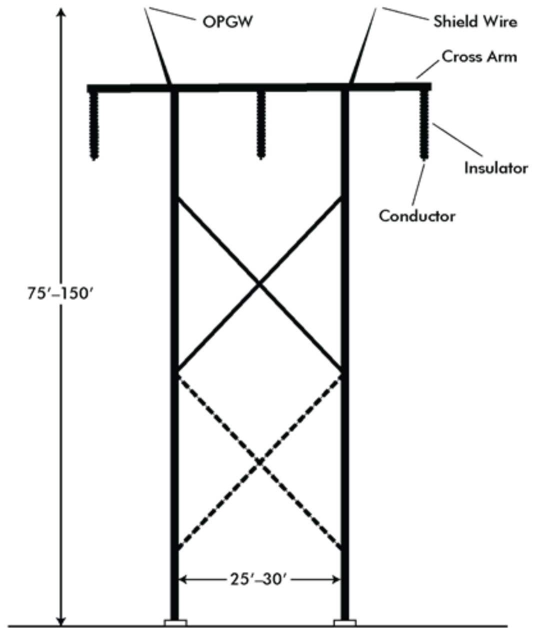
Transmission Lines

The 345-kV overhead power lines would require a 150-foot-wide ROW throughout the proposed alignments, except in select areas where sensitive resources are actively being avoided through narrowing the ROW, or in select locations where the height of structures are taller to span avoidance areas, requiring a wider ROW between structures. The overhead transmission lines would be supported by either H-frame, three-pole, or monopole structures (Figure 2.1–Figure 2.3). In rural areas, the most common structure would be a single-circuit, tubular steel pole H-frame at tangent locations. Where the line terminates or turns at an angle, a single-circuit three-pole tubular steel structure would be used. Monopole structures would be used as warranted by land use constraints and transmission line design requirements, monopoles would be least used of the three structure types. All transmission structures would be made of self-weathering steel. Substation structures would be made of galvanized, or dull galvanized steel. The top of the structures would be strung with 3/8-inch extra-high-strength shield wire on one side (for protection from lightning) and optical ground wire for communication purposes on the other side.

The average structure heights would vary depending on clearance, topographic conditions, and line design requirements (Table 2.2). The typical structures would range in height between 100 to 150 feet with a few structures that may be as tall as 175 feet. Typical spans between structures would range from 800 to 1,200 feet or four to six structures per mile. In some situations, longer spans may be necessary, which can reduce ground clearances and require additional vegetation clearing to maintain appropriate electrical clearances. In such instances, taller structures and a wider ROW width may be necessary to maintain clearance for "blowout" conditions. During final engineering, conductor clearances may be increased in certain locations to account for site-specific conditions and for safe operation.

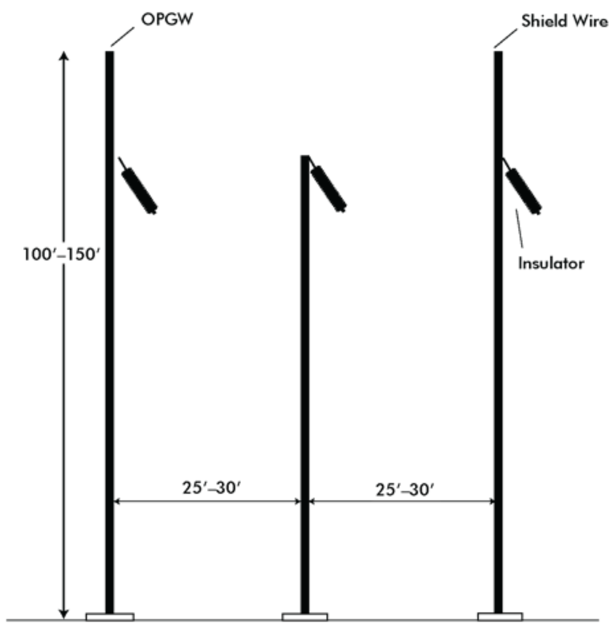
Table 2.2. Summary of Major Features for 345-kV Overhead Power Lines

Feature	Description
345-kV line length	120 miles
Types of structures	Tangent = H-frame structures Angle/Dead-end = three-pole structures Monopole structures as needed
Typical Structure height	100–150 feet
Structure foundation area	30–60 square feet for H-frame structures, 75–150 square feet for three-pole structures, and 15–40 square feet for monopole structures
Span length	Typically 800–1,200 feet
Structures per mile	4–6
ROW width	150 feet



Note: Dimensions are approximate and drawings are not to scale.

Figure 2.1. Basic H-frame structure design.



Note: Dimensions are approximate and drawings are not to scale.

Figure 2.2. Basic three-pole structure design.

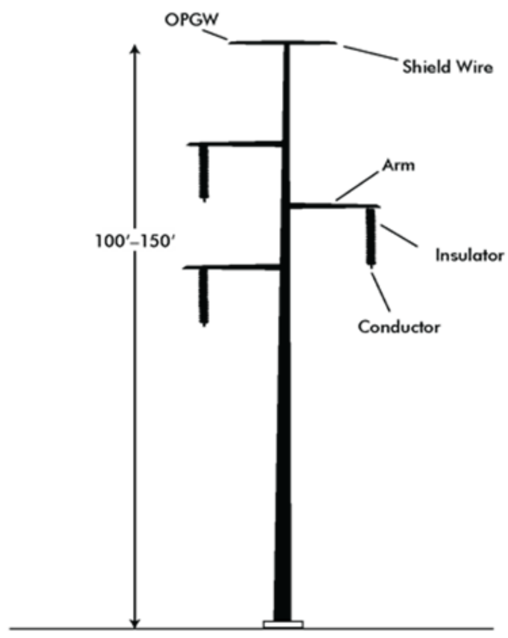


Figure 2.3. Basic monopole structure design.

Substation Details

One new substation would be built and four other substations would be expanded to accommodate the proposed project. The proposed Kiowa Substation would be constructed on approximately 27 acres of BLM land as part of the Proposed Action. The existing Hobbs Generation Substation would be expanded on private lands by 14 acres. The existing North Loving and China Draw Substations would be expanded on private and SLO lands, respectively. The existing Eddy County Substation would be expanded on BLM-managed lands by 7 acres. Table 2.3 provides the proposed acreage for each substation.

Table 2.3. Substation Details

Substation Name	Land Ownership	Proposed Action	Proposed Size Expansion (Acres)
Hobbs Generation Substation	Private	Expand	8
Kiowa Substation (new construction)	BLM	New	27
North Loving Substation	Private	Expand	5
China Draw Substation	SLO	Expand	5
Eddy County Substation	BLM	Expand	7
Total			***52***

Additional Temporary Workspace

Temporary work areas, including pull pockets and laydown yards, would be required to construct the project. The pull pockets would extend outside the permanent 150-foot ROW to ensure safe construction of structures for pulling and tensioning sites at angled structure locations. Each pull pocket would be approximately 150 × 300 to 400 feet, extending outward from the centerline in both directions of angles greater than 30 degrees and/or approximately every 3 miles. Details on pull pockets are provided in Table 2.4.

Table 2.4. Pull Pockets Detail

Number South to North	Land Status	Acres	Number South to North	Land Status	Acres
Hobbs to China Draw			**Eddy to Kiowa**		
1	Private	2.53	1	State	2.84
2	Private	0.02	2	Private	1.38
	State	2.26		State	1.36
3	State	2.84	3	Private	2.74
4	State	2.74	4	Private	2.32
5	Private	0.14	5	Private	2.11
5	State	2.63	6	State	2.34
6	Private	1.25	7	BLM	2.64
	State	1.45		Private	0.20
7	Private	2.84	8	BLM	2.72
8	BLM	1.70	9	BLM	2.82
9	BLM	2.77	10	BLM	2.79
10	BLM	2.78	11	BLM	2.76
11	BLM	1.97	12	BLM	2.82
12	BLM	2.67	13	BLM	2.78
13	BLM	2.71	14	BLM	2.43
14	BLM	2.70	15	BLM	2.68
15	BLM	2.75	16	BLM	1.80
16	BLM	2.84	***Total***		***41.53***
17	BLM	2.66			
18	BLM	2.78			
19	BLM	2.13			
	State	0.71			
20	BLM	2.74			
21	BLM	2.69			
22	BLM	2.83			
23	BLM	2.35			
24	BLM	2.27			
	State	0.02			
25	BLM	2.19			
	Private	0.64			
26	BLM	2.64			
27	BLM	1.89			
28	Private	2.58			
29	Private	1.91			
30	Private	2.83			
31	Private	2.84			
32	Private	2.84			
33	State	2.76			
34	State	2.66			
35	State	2.84			
Total Column 1		***91.39***			

Number South to North	Land Status	Acres	Number South to North	Land Status	Acres
Hobbs to China Draw			**Eddy to Kiowa**		
Total Column 2		***41.53***			
Grand Total		***132.92***			

Also proposed are five temporary laydown yards for the staging of materials and equipment and assembly of structures as needed. The laydown yards would require a total of 158 acres of private and SLO lands. The temporary laydown yards would be located close to existing highways or roads within the project area. They would be used to park vehicles, assemble crews, and collect trash for off-site disposal, etc. The laydown yards may also contain a temporary portable construction office trailer, bathroom, and electric power. For this project, the laydown yards either have electrical service already or are located near existing distribution lines from which new service could be attained. The exact alignments of any necessary distribution lines has not been determined at this point. If acquiring new electrical service is impractical, then the laydown yards could use diesel-operated generators. Table 2.5 lists the temporary laydown yards needed to construct the proposed project.

Table 2.5. Laydown Yards

Name	Land Status	Dimensions (north-south)	Acres
Eddy laydown yard	Private	1,167 × 1,112 feet	29.8
Kiowa laydown yard	Private	1,477 × 1,155 feet	19.6
Cunningham laydown yard	SLO	1,208 × 1,843 feet	50.7
Doug Lynn laydown yard	Private	605 × 2,085 feet	29.0
McDonald laydown yard	Private	718 × 1,729 feet	28.5
		Total	**157.6**

Access Roads

Access roads would be needed to facilitate both construction and regular inspection and maintenance activities. Existing roads would be used to access the ROW and individual structures to the maximum extent practical, but in some cases new access roads would need to be developed or existing roads would need to be improved to accommodate construction vehicles. In some cases, the ROW or individual structures may be accessed by constructing short spur roads from existing access roads. Access roads would be temporarily constructed up to 60 feet in width during construction and reduced through reclamation to resemble a two-track road, for long-term operation and maintenance (to be located within the ROW to the maximum extent possible) (Figure 2.4).

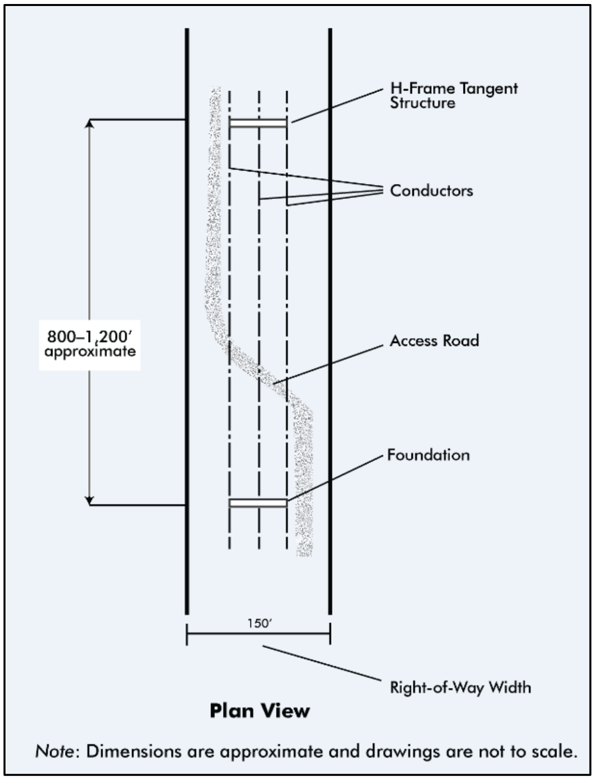


Figure 2.4. Typical access road schematic.

Four types of access to the ROW would be used as described here and listed in Table 2.6 and Table 2.7 below.

1. New access road (outside ROW): This type of road would include areas that do not have existing access and require new permanent access during construction and operations. This access would typically have a 60-foot-wide ROW during construction and reclaimed to 30-feet width of permanent traveled surface width. The travel surface road base would be compacted to provide a smooth, uniform surface. An example application of this type of road would be in an area where there are no existing roads available for access to proposed structures, new access cannot be achieved by clear and cut methods, and permanent access would be needed for operation and maintenance. This access type could include cuts in steep slopes and/or soil removal.

2. New access road (within ROW): This type would be contained within the ROW and have an up to 60-foot wide access road constructed between structures following a ‘least disturbance’ path and avoiding straight lines where practical.’ This road would be fully reclaimed following construction, for the majority of the route, and as maintenance vehicles access the ROW over time it would begin to resemble a two-track in the long-term. In some places, it would be surfaced with caliche to deter vehicles from veering off the designated path.

3. Existing access road (to be improved): This category would require widening or blading inside and/or outside the existing roadway. This access road type pertains to access that must be improved to function as permanent access road. An example of this type of road would be an existing 8-foot-wide road (with ruts or a two-track road), improved to meet road surface standards, that is identified as a route on the BLM Transportation Plan, or identified as a county road. The standard for traveled surface road width is 14 feet plus an additional 1 foot on fill slopes to accommodate sloughing. When fills are over 6 feet high at shoulder, 2 feet would be added to the road width.

4. Existing permanent access road (no improvement): This type includes paved highways and other developed roadways, including well-traversed and established dirt roadways (e.g., a well-graded 14-foot-wide or wider road surface with a road base in good condition), which would not be expected to be affected by inclement weather or degradation due to the construction, operation, and maintenance activities. These types of roads are typically maintained by entities other than the applicant. SPS would be a named user on these BLM, SLO, and private roads for the duration of the project (see Table 2.7).

Table 2.6. Proposed New Access Roads and Roads to be Improved

Type	Land Ownership	Miles	Acres of Disturbance
1. New access road (outside ROW)	BLM	0.5	3.5
	SLO	0.5	3.6
	Private	0.1	0.5
	Subtotal	**1.1**	**7.6**
2. New access road (within ROW)	BLM	0.0	0
	SLO	0.0	0
	Private	0.0	0
	Subtotal	**0.0**	**0***
3. Existing access road (to be improved)	BLM	8.6	62.9
	SLO	6.0	43.8
	Private	3.2	23.2
	Subtotal	**17.8**	**129.9**
Total		***18.9***	***137.5***
*Disturbance from access within the ROW is already accounted for as part of transmission line disturbance, therefore it is not repeated here..			

Table 2.7. Existing Access Roads Utilized with No Improvements

Type	Land Ownership	Miles	Acres of Disturbance
4. Existing permanent access road – (no improvement)	BLM	51	0
	SLO	34	0
	Private	17	0
Total		***102***	***0***

2.1.1 Project Phases

The project would occur in four separate phases:

1. Pre-construction Activities
2. Construction Phase
3. Operations and Maintenance Phase
4. Right-of-way Renewal or Decommissioning

See Section 2.1.2, for built-in environmental design features.

Pre-construction Activities

If the BLM issues the ROW grants for the project, the Standard Form 299 and associated POD would be finalized with the project design details, including the associated plans, maps, ROW acquisition, centerline surveys, and pre-construction resource surveys.

Right-of-way Acquisition

SPS would acquire ROWs for the transmission line facilities on non-federal land (state, private, or fee-owned) in perpetual easements or fee purchases. Every effort would be made to purchase all of the land rights on private land through reasonable negotiations with the present owners. In the event an agreement with the landowners cannot be reached, SPS could potentially obtain land rights by eminent domain.

Worker Awareness Training

All construction personnel would receive environmental training prior to constructing the project. Training would emphasize compliance with all applicable environmental laws, including the stipulations in the ROW grant and POD.

Engineering Surveys

Field investigations and surveys would be completed at the substations and within the approved ROW locations to accurately locate the centerline and approved access routes. Before any surveying begins, the required permits to survey on federal lands, state lands, or right-of-entry on private lands would be obtained.

Prior to finalizing the design, SPS would collect subsurface information to preliminarily design individual transmission line structure (structure) foundations. The geotechnical investigation would follow conventional drilling methods with boreholes approximately 1 foot in diameter and as deep as 50 feet. Drilling would be conducted with a variety of field equipment, including conventional rubber-tired and/or tracked drilling rigs. The boreholes would be backfilled with auger cuttings and on-site soils. Existing access would be used wherever possible to facilitate these surveys; however, cross-country travel may be necessary. In these areas, access would be designed to follow future access routes to minimize disturbance.

If drilling is impractical, geophysical exploration techniques, such as ground-penetrating radar (GPR) or Refraction Microtremor (ReMi) may be used to identify subsurface soil and rock stratification. GPR uses electromagnetic signals emitted from a device typically mounted to a pedestrian-operated wheeled cart similar in size to a lawnmower. The GPR sends pulses of energy into the ground then records the signal strength and reflection times to scan an analysis area. The data are then analyzed to assess and interpret the different electrical conduction properties of the subsurface. A ReMi survey analyzes energy from seismic sources. A multichannel seismograph and low and high frequency geophones are typically laid out from 10- to 50-foot intervals. Geophones are typically 3 inches long and can be hand pushed into the ground and removed after the readings are taken. In hard ground conditions, hand placement of geophones can be aided by pre-drilling holes with handheld drills. The geophones record data in response to signals generated from either active or passive seismic sources, such as sledgehammers striking a metal plate or nearby vehicle traffic.

Flagging and Fencing

Survey flags and stakes would be installed before the start of construction. Structure sites (e.g., tower locations, anchor points, and reference points), designated access roads, spur roads, parking areas, and pullout areas would be marked to facilitate travel to and from the ROW. Pull pockets, wire stringing/pulling sites, and laydown yards would be demarcated as necessary to indicate the limits of the approved work area. In areas where access routes traverse existing fences, a contractor would cut the fences and install gates and/or cattle guards as needed.

Signs, flags, and/or fencing would be used to establish exclusion areas to protect sensitive environmental resources (e.g., biological, wetland, and karst resources) in the vicinity of construction activities. A system of standardized and simplified exclusion markings would be used to reduce potential confusion during construction without revealing the underlying reason for their use. For example, the exclusion marking could not be interpreted as protecting land ownership rights versus sensitive environmental resources versus underground pipelines. Signs would also be used to identify approved access roads. The BLM serial number assigned to each ROW grant would be posted on a sign in a permanent, conspicuous manner and be maintained in a legible condition for the term of the ROW at all major road crossings and at all serviced facilities.

Routine monitoring by environmental monitors would include an ongoing assessment of the need for replacement or repair of exclusionary flagging or fencing. If maintenance of an exclusionary device (e.g., signs, flagging, and fencing) is needed within an active construction area, corrective action would be taken immediately. Maintenance of signs, flagging, and fencing within inactive work areas would be implemented as soon as practical. All exclusionary devices would be removed after project cleanup and reclamation activities.

Stormwater Pollution Prevention Planning and Installation

Before construction begins, the construction contractor(s) would be responsible for developing a SWPPP and obtaining coverage under the NPDES Storm Water General Permit for Construction Activities by filing a Notice of Intent and appropriate fee with the NMED's Surface Water Quality Bureau. Prior to construction, a contractor would install erosion and sediment control measures to control and minimize erosion at the source, such as silt fences and/or berms in areas that could drain to arroyos.

Construction Phase

Construction would begin following approval of the Proposed Action, issuance of the BLM ROW grants, and completion of the pre-construction activities described above, as well as the certificate of public convenience necessity from the State of New Mexico, and final notice to proceed from BLM. It is estimated the project would take approximately 18 to 24 months to complete. Construction would be conducted in a sequential set of tasks performed by multiple crew types. The construction activities would include conducting access and site preparation, installing foundations, assembling and erecting structures, stringing conductors and shield wires, testing and commission, and cleaning up the construction site. Due to the length of the project, there may be several sets of crews engaged in constructing the line.

Construction of Transmission Lines, Laydown Yards, and Access Roads

Laydown Yards

Early in the construction phase, the five laydown yards would be established and constructed. These are located close to existing highways or roads within the project area. The surface of the laydown yards may require some grading to create a flat surface and installation of an all-weather surface. All laydown yards would be fenced and secured with locked gates.

Site Access and Preparation

Clearing and grading of unpaved access roads to the ROW and individual structure locations would begin after completion of the pre-construction activities identified above. After the access roads are cleared and/or graded, the work areas or construction pads at each structure site would be cleared and/or graded to install the structures and prepare for future maintenance. Individual structure sites would be cleared using the appropriate equipment, such as a masticator, brush hog flail-type mower, bulldozer, or blade, to provide a safe working space to place equipment, vehicles, and materials necessary for structure assembly and erection.

Prior to construction, woody vegetation would be removed (such as creosote bush [*Larrea tridentata*] and mesquite [*Prosopis* sp.]) and chipped, except in riparian areas. Vegetation clearing would include mechanical methods and herbicide application. Low-growing shrubs would be cut at the basal root.

Following removal of woody vegetation, the full ROW would be mowed except in avoidance zones designated in the construction contractor bid package. On BLM lands, blading would not occur without prior approval.

The overland drive-and-crush method would be used to prepare the work site in areas that are relatively level and have low-growing vegetation, such as grasses and forbs. This method involves crushing but not cropping vegetation. In similarly level areas where the vegetation is dense, aboveground cutting methods would be used with the intent of leaving the root crown intact. When grading must occur to create a safe, level workspace for structure installation, the topsoil would be segregated and stored on-site for post-construction reclamation efforts except for structure holes excavated by an auger. Excess fill may also be used to create level areas in other locations where needed.

Foundation Installation

The excavation and installation of the structure foundations would require the use of a power auger or drill, crane, material trucks, and concrete trucks, which would access each foundation site via access roads. Holes for the foundations would typically be excavated using a power auger mounted to a heavy vehicle. In some areas, a drilling rig would be necessary to excavate the foundation holes. Excavated spoils would typically be hauled off-site or used for fill where suitable.

After a structure hole is excavated, it would be prepared for a cast-in-place concrete footing, except where structures would be directly embedded into the ground. Reinforced steel and anchor bolts would be inserted into the foundation hole and then encased in concrete. Excess concrete or concrete washout would be removed from the work area or temporarily placed on spoil stockpiles. Some excess soil from the foundation hole excavations would be placed around the base of each structure to provide positive drainage away from the structure.

Foundation designs and installation processes would depend on the geotechnical analysis and line design parameters of each structure site. It is anticipated that most H-frame structures would be direct embedded foundations. For all H-frame structures over a line angle of two degrees, they would be installed on drilled pier concrete foundations. All three pole and monopole structures would be installed on drilled pier concrete foundations. The structure foundation diameter and depth would vary at each location based on structure height, terrain, and soil type.

Structure Assembly and Erection

The components required for each structure would be bundled and shipped by truck to each site. The structures would be assembled on-site and lifted into place by a crane. Structures would be fully assembled within the ROW to the greatest extent possible. Additional space may be required based on ground conditions.

Guard structures would be erected over highways, railroads, other power lines, and similar features. They would be temporary H-frames directly embedded into the ground. It is anticipated that guard structures would be located within the 150-foot ROW.

At the base of each structure, copper ground rods would be buried near the structure foundation and connected to the structure with copper cables. When resistance to the ground is too great, counterpoise—a bare copper-clad or galvanized-steel cable—would be installed underground. The counterpoise would extend from the structure outward to approximately 200 feet within the ROW and would be buried a foot or more.

Conductor Stringing

Reels of conductor and shield wire would be delivered to the ROW and loaded onto vehicle-mounted pulling machines. Each section of conductor, usually 18,000 feet per reel, would be delivered by truck and spliced together to fuse the two ends together.

Heavy vehicles would be used to pull the shield wire and conductor bundles into place with powered pulling equipment at one end and powered braking or tensioning equipment at the other end. A pilot wire would be attached to a stronger pulling wire, used to thread the shield wire and conductor bundles into place without allowing them to contact the ground. Once the conductor and shield wire are strung through the pulleys, adjustments would be made to achieve the correct sagging of the lines between structures.

On straight sections of line, conductor stringing activity would be contained within the ROW. At turning points and angles greater than 30 degrees, additional temporary workspace would be required to accommodate pull pockets. A description of the pulling and tensioning sites would be included in the final POD.

Cleanup

All construction sites, laydown yards, and access roads would be kept in an orderly condition throughout construction. All refuse and trash would be removed and disposed of properly. There would be no open burning on BLM-managed lands. The BLM would be consulted prior if the need for open burning arises.

Cleanup would occur after the transmission line is installed and all construction activities are completed. Cleanup of the surface along the construction ROW would consist of the removal of construction debris and final grading to the finished contours. Permanent erosion control measures would be installed and seeding would occur in accordance with BLM requirements.

Construction of Kiowa Substation and Substation Expansions

The proposed Kiowa Substation would be construction as part of the project. The following discussion is an overview of the types of construction activities that would take place at the Kiowa Substation and the four substations to be expanded (Hobbs Generation, North Loving, China Draw, and Eddy County).

Access Roads

A new access road extending from the existing access road to the Potash Junction Substation would be constructed to provide permanent, all-weather access for personnel, material deliveries, vehicle trucks, heavy equipment, and ongoing maintenance activities. The alignment and parameters of the access road would be determined during final design and included in the final POD. The existing access roads to the Hobbs Generation, North Loving, China Draw, and Eddy County substations would be used for constructing the substation expansions.

Clearing and Grading

Clearing and grading of the entire substation area would be necessary to prepare the site for construction. The site would be graded to create a level surface with a moderate slope for drainage. Grading would be engineered to provide adequate clearances from energized conductors entering the substation. All topsoil would be segregated and stockpiled away from other excavated soil, which would be used as backfill, berms or fill for other areas, with the exception of structure holes excavated by an auger.

The surface of the substation would be covered with an insulating layer to protect personnel from high currents and voltages in the event of a fault condition. Approximately 2 to 4 inches of crushed rock would be applied to the finished surface of the substation, which would then be treated with a soil sterilizer to prevent vegetation growth. If necessary, drainage structures such as ditches, culverts, and sumps would be installed.

Grounding

A grounding system consisting of buried copper conductor arranged in a grid system and driven ground rods 8 to 10 feet long would be installed. The ground rods and any equipment and structures would be connected to the grounding conductor. The amount of conductor, length, and number of ground rods required is calculated based on fault current and soil characteristics.

Fencing

Security fence would be installed around the entire perimeter of the substation. The fence would be 8 feet tall and made of chain link topped with barbed wire. Locked gates would be installed at appropriate locations for authorized vehicle and personnel access.

Foundation Installation

Structures entering the substation would be either directly embedded into the ground or placed on a drilled pier foundation. Equipment foundations for circuit breakers and transformers would be slab-on-grade. These foundations would be installed by excavating the foundation area, placing forms, placing reinforced steel and anchor bolts as necessary, and placing concrete into the forms. After the foundations are poured, the forms would be removed, and the surface of the foundation dressed. Reinforced steel and anchor bolts would be transported to each site by truck, either as a prefabricated cage or loose pieces, and would be fabricated into cages on-site. Concrete would be hauled to the site in concrete trucks.

Oil Containment

Some substation equipment such as transformers, reactors, and circuit breakers are filled with an insulating mineral oil. Containment structures would be used to prevent oil from escaping into the ground. The type of containment device varies depending on site requirements, environmental conditions, and regulatory restrictions. The simplest type of oil containment is an excavated pit of a calculated capacity under the oil-filled equipment with an oil impervious liner. The pit may use grates to facilitate access to the equipment. In the event of an oil leak or rupture, the oil captured in the containment pit is pumped into tanks or barrels and transported to a disposal facility. If required, more elaborate oil containment systems can be installed. This may take the form of an on- or off-site storage tank and/or oil-water separator equipment, depending on site requirements. The exact type of containment structure would be determined as part of the final substation design.

Structure and Equipment Installation

Steel structures to support some substation equipment would be affixed to the concrete foundation anchor bolts with a track-mounted crane. Equipment such as transformers, reactors, and circuit breakers can be mounted directly to the foundations without supporting structures. The equipment is then assembled, tested, and connected electrically to the control building through multi-conductor control cables installed in conduits and/or a precast concrete cable trench system.

Cleanup

The substation site would be kept in an orderly condition throughout construction. All refuse and trash would be removed and disposed of appropriately. If landscaping is required by the permitting agency, drought-tolerant and primarily native plant materials would be used.

Stabilization and Rehabilitation Post-construction

After construction, disturbed areas would be restored using a BLM-approved seed mix and according to BLM, SLO, and private landowner standards. Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM. In those areas where erosion control structures would be required to stabilize soil, the structures would be installed for the specific soil conditions encountered in the field and in accordance with industry best management practices (BMPs) and design features identified in Section 2.1.2.

Once construction of the facilities and 345-kV lines is complete, all areas not needed for the operations and maintenance phase would be reclaimed (reseeded for optimal vegetation regrowth of species compatible with SPS's vegetation management standards). Reclamation would occur as soon as possible after completion of final construction activities.

Areas Reclaimed

Except for those portions of the ROW necessary for maintenance and operation (such as a permanent patrol access road), the entire 150-foot wide ROW would be reclaimed, as well as areas of temporary disturbance outside the ROW that are no longer needed, such as temporary access roads, pull pockets, and laydown yards. The 60-foot-wide access road used for construction would be fully reclaimed and over time converted into a permanent patrol access road similar to a two-track. In some locations, the patrol road would be surfaced with a caliche base to encourage a single travel route and continual avoidance of sensitive resources. A level work area at the base of each structure would be reseeded but not recontoured to facilitate future maintenance activities that may require use of an extended-reach vehicle or crane.

Reclamation Procedures

The steps to reclamation include:

1. **ROW preparation:** Vegetation removed during construction, including trees that measure less than 3 inches in diameter at ground level and slash/brush, would be chipped or mulched and spread across the ROW. All tree and shrub species that are not compatible with SPS's vegetation management standards would be cut to ground level, delimbed, and subsequently treated with herbicides to discourage regrowth.
2. **Soil stockpiling:** Following the removal of vegetation, the top 6 inches of topsoil would be stripped from the ROW where necessary. The topsoil would be free of brush and tree limbs, trunks, and root balls. Except for locations where structure holes would be excavated by an auger, the topsoil would be stockpiled separately from subsoil or other excavated material and stored along the ROW corridor. Topsoil would be labeled as such and protected from erosion and inadvertent use as fill. Topsoil would not be mixed with subsoil. When stockpiled, topsoil would be tackified with water to a 2-inch wetting depth to minimize erosion, and overall handling should be kept to a minimum. Gaps would be made in soil stockpiles (where necessary) to avoid ponding or to divert water during storm events. If present, surface rocks would be stockpiled adjacent to the topsoil stockpile(s). Vehicle and equipment traffic would not be allowed to cross topsoil stockpile(s). A SWPPP would be developed to include BMPs intended to minimize stockpile erosion and prevent topsoil loss.
3. **Recontouring:** Within areas that require recontouring, the surface would be recontoured to match pre-disturbance conditions or to blend with the surrounding landform as closely as possible. Excess subsoil from excavated or graded areas (around structure bases) would be evenly spread over disturbed areas and moistened and compacted to a relative average density comparable to undisturbed adjacent material before respreading topsoil. Subsoils would not be spread outside the approved construction areas.
4. **Soil and seedbed preparation:** Where any compaction exists, the surface would be ripped or scarified to a depth of 6 inches as appropriate (e.g., not applicable to rock faces, severe slopes, or cliff areas), and would retain a 12-inch buffer from existing vegetation or plants designated as preserve in place. Depth and area of compaction relief would depend on site-specific conditions. Decompaction or ripping would be conducted to avoid corn rows. Cross ripping is preferable and care should be taken to prevent inverting the soil layers and preserving any vegetation in place. Deep sandy soils do not need to be decompacted and would not be ripped.
5. **Topsoil replacement:** Topsoil would be replaced without mixing with subsoil to prevent mixing fertile, shallow soils with deeper soils that may be less productive because of rock, gravel, sand, calcareous layers, salinity, or other chemical characteristics that would adversely affect growth of desired vegetation. Stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Topsoil would not be redistributed when the ground or topsoil is frozen or wet.
6. **Seeding:** During seeding of the reclamation area, a disc-type drill with two boxes for various seed sizes would be used. The drill rows would be 8 to 10 inches apart. Where practicable with the seeding equipment being used, planting depths for smalls seeds would be 0.25 inch, for intermediate seeds would be 0.50 inch, and for large seeds would be 1 to 2 inches. Where these seed depths are impracticable with the seeding equipment being used, planting depths would be no more than 0.25 inch. A drag, packer, or roller would follow the seeder to ensure uniform seed

coverage and adequate compaction. Seeding would run perpendicular to slopes in order to minimize runoff and erosion. In areas where the slope is too steep for a seed drill, hand- or broadcast-seeding methods would be used, and the seeds would be covered to the depths described above. BLM-prescribed seed mixes would be used.

7. **BMP installation:** Prior to construction, a SWPPP would be developed to include BMPs according to BLM prescriptions, including erosion control devices such as silt traps, silt fencing, straw rolls, etc.
8. **Weed control**: SPS has enrolled in the county weed programs for both Lea and Eddy Counties. These programs enable the BLM to identify target areas for treatment to prevent the spread of noxious weeds and invasive species. These programs would include annual surveys of the ROW and subsequent treatment of weed infested areas for up to 5 years after construction is complete.
9. **Monitoring:** Monitoring would be conducted after construction activities are complete until reclamation has achieved the success criteria established by the BLM.

Operations and Maintenance Phase

The transmission lines constructed as part of the project would become critical infrastructure of the SPS and southeast New Mexico transmission systems. Therefore, limiting the duration of unplanned outages and planning for the use of live-line maintenance techniques to minimize the requirement for any outages is an important part of the design, construction, and operation/maintenance requirements of the project.

Inspections

Regular inspection of transmission lines, vegetation conditions, substations, and support systems is critical for safe, efficient, and economical operation of the project. Responsibly conducted routine maintenance activities are anticipated to have minimal impact and are usually authorized under the transmission line easements and BLM ROW grants.

Aerial inspections are conducted annually to identify conditions that pose an immediate hazard to the public or employees, or that risk immediate loss of supply or damage to the electrical system. Any conditions identified are to be resolved prior to peak demand in the summer and winter months.

Ground inspections would be done on approved access roads, including the patrol road, or along the transmission line ROWs to each structure as appropriate. The inspector would access each of the structures and would check all equipment and other components that could require repairs. Inspectors performing such inspections would use conventional four-wheel-drive trucks and/or four-wheel-drive all-terrain vehicles, or they may walk the line. The ground inspection would be conducted at a time deemed appropriate based on the weather conditions, results of aerial inspections, and other conditions subject to change on an annual basis. SPS may perform minor repairs during its ground inspections, such as installing new numbers, installing/repairing ground wire, or performing other minor tasks that do not involve long duration, specialized equipment, or large work crews.

Each year aerial inspections would be conducted annually and ground patrols would be conducted bi-annually.

Line Maintenance

Routine maintenance activities are ordinary maintenance tasks that have historically been performed and are regularly carried out on a routine basis, including the replacement of individual structures, components, cables, lines, insulators, and other facilities that, due to obsolescence, age, or wear, are in need of replacement or repair. It is expected these replacements would be required infrequently (every 5 to 10 years) or as determined by inspection. The work performed is typically repair or replacement of individual components, performed by relatively small crews using a minimum of equipment, and usually is conducted within a period from a few hours up to a few days. The type of equipment used to perform routine maintenance activities varies depending on the extent of the work to be performed. Typical equipment used for these kinds of activities includes four-wheel-drive pickups, man-haul, material flatbeds, line trucks, cranes, tractor trailers, and high reach bulldozers/caterpillars.

Typically, maintenance vehicles and equipment would access the ROW and individual structures using the patrol roads and would remain within the level work area that surrounds the structure, and no new ground disturbance would be required. If maintenance activities and/or equipment are required beyond the permanent maintenance work area, maintenance crews would coordinate with the BLM Authorized Officer(s) to obtain any required temporary use approval/permits to complete the work, and maintenance activities would be conducted within the previously disturbed temporary work areas from project construction. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

Major maintenance activities may need to occur on an infrequent basis. These activities would require planning and budgeting in advance and agency coordination. They may involve larger work crews than routine maintenance activities and a variety of equipment, including heavy equipment, and usually require several days or longer to complete. SPS would notify the BLM before initiating major maintenance activities to identify what, if any, special notification or additional clearance approvals would be required. All major maintenance activities would adhere to all standards and guidelines contained in the POD and the terms and conditions of the ROW grant.

In an emergency, SPS must respond as quickly as possible to restore power. As soon as an incident is detected, SPS' control room dispatchers would notify the responsible operations staff in the area(s) affected and crews and equipment would be organized and dispatched to respond to the incident. In these cases, SPS would immediately deploy the necessary crews to restore power and notify the appropriate land management agency depending on the location of the incident. Examples of emergency maintenance include transmission structure or conductor failure due to natural hazard, fire, or human-caused damages to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the power line, or restore service if there is an outage. The equipment necessary to carry out emergency repairs is similar to that necessary to conduct routine maintenance, in most cases. Emergency response to outages may require additional equipment to complete the repairs. For example, where the site of the outage is remote, helicopters may be used to respond quickly to emergencies. SPS would adhere to the same constraints identified for routine and major maintenance activities to minimize impacts to resources, when possible.

Vegetation Management

SPS would need to manage vegetation to meet its requirements for conductor clearances at maximum loading (sag) and maximum blowout (sway) locations and to minimize potential ignition sources and to provide access within the ROW. Within or adjacent to the ROW, mature vegetation would be removed under or near the conductors to provide adequate electrical clearance, as required by the NERC. Typically, woody vegetation would be removed and treated with herbicides. Slash would be left in place or disposed of in accordance with the requirements of the land management agency or landowner. If necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible. Shrubs and other obstructions would be removed regularly within the ROW.

Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as creosote and mesquite with herbicides to prevent vegetation encroachment on SPS' conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. All herbicide applications would be performed in accordance with federal, state, and local regulations, and in compliance with land management agency and/or landowner requirements. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.

Vegetation may also be removed using mechanical equipment such as chainsaws, weed trimmers, rakes, shovels, brush hooks, and mowers. Clearing efforts in heavy growth areas would use equipment such as a masticator, mounted brush mower or similar. The duration of activities and the size of crew and equipment required would be dependent on the amount and size of the vegetation to be pruned or removed.

Herbicides will be used to control noxious weeds or incompatible tree and brush species (e.g., mesquite and creosote) that regenerate from the root systems after removal to meet vegetation management objectives. These activities would be performed in coordination with the land management agency or landowner in the case of private property.

Access Road Maintenance

Repairs to the ROW or access roads would be scheduled as a result of line inspections or would occur in response to a significantly degraded condition or an emergency situation. Where access is required for maintenance of the line, SPS would maintain the approved access roads for which it is solely responsible in a safe, useable condition. Access road repairs include grading or repair of existing maintenance access roads and work areas and spot repair of sites subject to erosion, slumping of side slopes, inadequate drainage, flooding or scouring. In some cases, cut and/or fill of foreign material may be required to repair the access roads into suitable condition for safe travel of maintenance repair vehicles, such as high reach boom trucks. When an approved access road to a structure location needs improvement, heavy equipment appropriate for the required work would be used after notifying the BLM Authorized Officer. Required equipment may include a grader, backhoe, four-wheel-drive pickup truck, and a steel-tracked front-loader or bulldozer. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

Right-of-way Renewal or Decommissioning

Right-of-way Renewal

The proposed project would have a minimum projected operation life of 50 years or longer. A ROW grant issued for 50 years with the option of renewal would be necessary for the operation, maintenance, and decommissioning of the transmission line facilities located on BLM-managed lands. At the end of the ROW grant term (50 years), SPS would have the option to renew the ROW grant past 50 years to continue operation of the line. The terms and conditions in the original ROW grant could be modified for the renewed ROW grant.

Project Decommissioning

At the end of the transmission lines useful life, estimated to be 50 years from construction, the necessary authorizations would be obtained from the BLM Authorized Officer to decommission the project. Future decommissioning of the transmission line would include removal of conductors and structures. All materials would be removed from the ROW. Equipment at the substations and unsalvageable materials would be disposed of at authorized sites. Regrading and revegetation of disturbed areas would be completed according to BLM, SLO, or landowner standards. The abandoned ROW would revert to the control of the landowners.

2.1.2 Project Design Features

The following applicant-committed environmental protection measures have been incorporated into the project design of the Proposed Action to lessen or avoid impacts to resources. These design features are organized below under the resource they are designed to protect, although some of these measures are designed to protect or mitigate impacts to multiple resources. The design features incorporate applicable BMPs, which are industry- or agency-recommended construction methods that are routinely implemented to minimize impacts to resources.

General

- All construction vehicle movement outside the ROW would be restricted to predesignated access, contractor-acquired access, or public roads.
- The spatial limits of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents indicating survey or construction limits would be applied to rocks, vegetation, structures, fences, etc.
- Prior to construction, an environmental awareness training would be conducted to instruct all personnel on the protection of cultural, ecological, and other natural resources including 1) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; 2) the importance of these resources; and 3) the purpose and necessity of protecting them.
- Sensitive resource areas located within the ROW or designated temporary work areas would be mapped and avoided by use of an appropriate monitor. Flagging and fencing materials would not be used because they may inadvertently draw attention to the resources being protected.
- The contractor would limit movement of crews, vehicles, and equipment on the ROW and approved access roads to minimize damage to property and disruption of normal land use activity.
- Construction vehicles and equipment would be maintained in proper operating condition and would be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, engine enclosures, etc.).
- SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines (4.5 inches or less in diameter). The BLM would be notified if any larger aboveground lines are encountered.
- SPS would use overburden to place the necessary fill over belowground pipelines and would leave and reclaim the overburden in place.

Air Quality

- All requirements of those entities having jurisdiction over air quality matters would be adhered to. Any necessary permits for construction activities would be obtained. Open burning of construction trash would not be allowed unless permitted by appropriate authorities.
- Construction-related dust disturbance would be controlled by the periodic application of water to all disturbed areas along the ROW and access roads, when necessary.

Soils and Vegetation

- SPS would reclaim disturbed areas per the approved POD using a BLM-specified seed mixture and would work with BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.
- All soils compacted by movement of construction vehicles and equipment would be 1) loosened and leveled through harrowing or disking to approximate pre-construction contours, and 2) reseeded with certified weed-free native grasses and mulched (except in cultivated fields). The specific seed mix(es) and rate(s) of application would be determined by the BLM.
- Excavated material not used in the backfilling of poles would be spread around each pole or hauled off-site or transported as fill to other locations where needed.
- In newly disturbed temporary work areas, the soil would be salvaged and would be distributed and contoured evenly over the surface of the disturbed area after construction completion. The soil surface would be left rough to help reduce potential wind erosion.
- On completion of the work, all work areas, except any permanent access roads/trails, would be regraded as required so that all surfaces drain naturally and blend with the natural terrain, and are left in a condition that would facilitate natural revegetation, provide for proper drainage, and prevent erosion.
- SPS has enrolled in the Eddy and Lea County noxious weed control programs. Through these programs, which entail treatment of weeds in target areas identified by BLM, noxious weeds would be sprayed annually through the life of the project. The noxious weed program would apply to the length of the project regardless of land ownership.

- Gravel and fill to be used must come from a weed-free source(s). Gravel pits and fill sources would be inspected to identify weed-free sources.
- Compatible vegetation would be preserved and protected from damage by construction operations to the maximum extent practicable.
- In construction areas where recontouring is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for resprouting in accordance with the reclamation plan. Vegetation not consistent with line safety and operation would be removed according to SPS vegetation management practices.
- Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as creosote and mesquite with herbicides to prevent vegetation encroachment on SPS' conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.
- If necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible.

Dunes and Hummocks

- Blading would occur at and between structures that have dunes or hummocks that would otherwise impede construction activities, in an area of up to 150 × 150 feet at or adjacent to those structures.
- Blading up to 60 feet in total width along the line between structures following a "least disturbance" path and avoiding straight lines where practical.
- SPS would reclaim disturbed linear or crescent-shaped dunes (generally over 6 feet tall with at least one slipface, and being significantly longer than they are tall) to landforms of similar size and orientation in the same general areas to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- SPS would reclaim areas with disturbed hummocks (knolls or mounds, generally less than 6 feet tall) to a generally undulating surface to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- For aboveground flowlines less than or equal to 4.5 inches, SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines and would leave and reclaim the cover in place. For aboveground flowlines larger than 4.5 inches, SPS will notify the BLM Environmental Protection Specialist and wait for instructions.
- SPS would use overburden to place the necessary fill over belowground pipelines and would be allowed to leave and reclaim the overburden in place.
- SPS would reclaim disturbed areas per the approved POD using a BLM-specified lesser prairie-chicken (*Tympanuchus pallidicinctus*; LPC) seed mixture and would work with BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.

Water Resources

- Any chemical treatments of the ROW would comply with the applicable laws and procedures of the land management agencies, the EPA, and the NMED.
- No wetlands and/or waters of the U.S. would be altered, crossed, filled, or cut unless previously permitted to do so by the USACE or the NMED.
- Construction activities would be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. Such pollutants and wastes include but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

- Dewatering work for structure foundations or earthwork operations adjacent to or encroaching on streams or water courses would not be performed without prior approval by the BLM or the applicable land management agency.
- Excavated material or other construction materials would not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or can in any way encroach upon the actual water source itself.
- Wastewaters from construction operations would not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such wastewaters discharged into surface waters would be essentially free of settleable material. Settleable material is defined as that material that settles from the water by gravity during a 1-hour quiescent period.
- Refueling and storing of potentially hazardous materials would not occur within a 100-foot radius of a water body, a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water supply wells. Spill preventive and containment measures or practices would be incorporated as needed and included in the POD.
- Where access routes would need to cross aboveground flow lines (4.5 inches or less in diameter), the contractor would push adjacent soil up and over the lines. The BLM would be notified if any larger aboveground lines are encountered. The contractor would use overburden to place the necessary fill over belowground pipelines and would leave and reclaim the overburden in place.
- Temporary culverts would be installed to cross small drainages. These would be removed after construction.
- Ground disturbance will be avoided within 200 meters of playas.

Wildlife and Special Status Species

- Special status species or other species of particular concern would be considered in accordance with management policies set forth by appropriate land management agencies. This may entail conducting surveys for plant and wildlife species of concern along the proposed transmission line route and associated facilities (e.g., substations, access roads, laydown yards, etc.) as agreed upon by the agencies. In cases where such species are identified, adverse impacts on the species and its habitat would be avoided to the maximum extent practical and in consultation with the agencies.
- SPS designs and constructs all new transmission facilities to raptor-safe design standards as described in its Avian Protection Plan (EDM International 2008), which includes avian electrocution and collision minimization practices described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Edison Electric Institute and Avian Power Line Interaction Committee 2006).
- To the extent possible, construction activities during the migratory bird nesting season (March–August) in suitable habitat would be avoided. Seasonal dates may vary depending upon the species, current environmental conditions, and pre-construction survey results.
- If construction and maintenance activities, including mechanical or herbicide treatments of woody vegetation, cannot be avoided in the primary nesting season for migratory birds (March–August), migratory bird and nest surveys would be performed up to two weeks prior to commencing with those activities, and an avoidance buffer around each active nest would be implemented until the young have fledged, the size and timing of which may vary by species, but would be no less than 100 feet. This stipulation would not apply in the event of an emergency as per Xcel's *Migratory Bird Special Purpose Utility Permit* (USFWS 2015a).
- A 200-meter avoidance buffer would be implemented around any active burrowing owl (*Athene cunicularia*) nest burrow or active raptor nest until the young have fledged.
- The BLM may require a biological monitor near occupied nests and burrowing owl burrows identified during pre-construction surveys.
- Active raptor nests would be monitored for activity until the hatchlings fledge.

- Removal of any unoccupied raptor nests may need to be replaced by nest platforms.
- Foundation holes left open or unguarded would be covered to protect the public, wildlife, and livestock. If practical, temporary safety fencing may be used.
- During reclamation of disturbed areas, the seed mixture quantity for 1 mile along the Eddy to Kiowa route in Section 12 would be doubled for Sprague's pipit (*Anthus spragueii*) as identified in the POD.
- Bird flight diverters would be installed on the conductors for the crossing of the Pecos River.

Dunes Sagebrush Lizard

- SPS would follow excavation BMPs during construction within the dunes sagebrush lizard (*Sceloporus arenicolus*; DSL) habitat boundary, as required by the BLM RMPA (2008a) and the BLM Open Trench Wildlife Removal Workshop materials (BLM 2013). This stipulation would apply to the length of the project in DSL habitat regardless of land ownership.
- Any holes left open for 8 hours or less is not required to have escape ramps; however, before the hole is backfilled, a BLM-approved monitor would inspect the hole and remove all trapped wildlife and release them at least 300 feet away.
- For holes left open for 8 hours or more, escape ramps would be placed in the hole. The hole would be monitored each day by a BLM-approved monitor during the following three time periods: 1) 5:00 to 10:00 a.m., 2) 11:00 a.m. to 2:00 p.m., and 3) 3:00 p.m. to sunset. All trapped wildlife would be released at least 300 feet away.
- One BLM-approved monitor would be required for every up to 3-mile segment that contains open holes in DSL habitat. A daily report (consolidate if there is more than one monitor) on the wildlife found and removed from the hole would be provided to the BLM (email is acceptable) the following morning.
- SPS and its contractors would instruct personnel working on the construction of the project to avoid intentionally harassing all animals, including the DSL and Texas horned lizard (*Phrynosoma cornutum*).

Lesser Prairie-Chicken

- Timing and noise restrictions would be applied to construction and maintenance activities within the LPC Isolated Population Area (IPA) to prevent disruption of mating and nesting activities. All construction and maintenance activities would be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
- Exceptions to these timing requirements would be considered in emergency situations such as mechanical failures. Exceptions would not be granted after March 15, or during the March 1 to 15 period if the BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt LPC booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered, for the period of March 1 to June 15, but these exceptions would not be granted if the BLM determines that there is LPC habitat, LPC sightings within 1.5 miles of the proposed location, historic leks, and/or active leks within 1.5 miles of the proposed location, or any combination of the above mentioned criteria.

Sheer's Beehive Cactus

- Workers would be instructed not to park off the roads to protect any threatened or endangered species, including Scheer's beehive cactus (*Coryphantha robustispina* ssp. *scheeri*).

Cultural Resources

- In consultation with appropriate land management agencies and the SHPO, specific mitigation measures for cultural resources would be developed and implemented to mitigate any identified adverse impacts. These may include project modifications to avoid adverse impacts, monitoring of construction activities, and data recovery studies.

- An archaeological construction monitor would be present during ground-disturbing activities in site-specific areas identified in the POD.
- An Unanticipated Discovery Plan would be prepared to specify the protocols to follow in the event of an unanticipated discovery of any previously unknown historic/prehistoric sites or artifacts encountered during construction. The Unanticipated Discovery Plan would identify communication protocols and immediate measures to be used to protect the site until further evaluation can be completed. The Unanticipated Discovery Plan would be prepared in coordination with the SHPO and jurisdictional land management agency.

Cave and Karst Resources

- SPS would notify and coordinate with the BLM Cave/Karst Resource Specialist before performing any blading in the high karst potential areas on both BLM and SLO lands on the Eddy to Kiowa line length.
- In the event that any underground voids, subsurface drainage channels, or cave passages are encountered during construction activities, construction would be halted in the immediate vicinity of the discovery and the BLM would be notified immediately.
- Pole locations would be adjusted as necessary to avoid cave and karst features.
- The BLM would be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no further construction would be allowed until clearance has been issued by the Authorized Officer. Special restoration stipulations or realignment may be required.
- Roads would be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Soil bores would be collected at all proposed foundation structures along the centerline prior to construction. Proposed foundation locations will be based on any line angle larger than two degrees. The bores would be up to 50 feet deep to ensure the contractor does not drill into voids or karst features to install structures. If a void is encountered, depth of boring may exceed 50 feet to determine the depth of the void.

Paleontological Resources

- In the event that any fossils are encountered during construction activities, construction would be halted in the immediate vicinity and the BLM would be notified immediately.

Visual Resources

- Self-weathering steel would be used to reduce visual impacts except in substations.
- Reclamation would be implemented to disguise disturbance.
- Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM.

Livestock Grazing and Farmland

- All fences and gates would be maintained during the construction period. Fences, gates, and walls would be replaced, repaired, or reclaimed to their original condition as required by the landowner or the land management agency in the event that they are removed, damaged, or destroyed by construction activities. Fences would be braced before cutting. Gates or enclosures would be installed only with the permission of the landowner or the land management agency and would be removed/reclaimed following construction should it be necessary. Cattle guards would be installed on a case-by-case basis in negotiation with the landowner or land management agency.
- Prior to construction, the conditions of the water lines crossed by the proposed project would be evaluated and appropriate protections would be put in place to maintain their function during the construction of the proposed project. If necessary, waterlines would be protected either by

burying or pushing adjacent soil over the lines within the construction area to shield the lines from damage.
- The contractor would eliminate at the earliest opportunity all construction ruts that are hazardous to agricultural operations and/or movement of vehicles and equipment. Such ruts would be leveled, filled, and graded or otherwise eliminated in an approved manner. Damage to ditches, tile drains, culverts, terraces, local roads, and other similar land use features would be corrected as necessary by the contractor. The land and facilities would be restored as nearly as practicable to their original condition.
- On agricultural land, the ROW would be aligned, insofar as is practical, to reduce the impact to farm operations and agricultural production.
- In cultivated agricultural areas, soil compacted by construction activities would be decompacted except where a permanent two-track access route would be kept for future operation and maintenance activities.

Travel Management

- Where appropriate, signage would be installed on newly installed gates to deter users from circumventing the gates and traversing areas that were formerly inaccessible or harder to access.

Public Health and Safety

- The contractor would make all necessary provisions for conformance with federal, state, and local traffic safety standards, and would conduct construction operations so as to minimize obstruction and inconvenience to public traffic.
- During construction of the transmission lines, the ROW would be free of non-biodegradable debris. Slash would be left in place or disposed of in accordance with requirements of the land management agency or landowner.
- Towers and/or conductors and/or shield wires would be marked with high visibility devices (e.g., marker balls or other marking devices) where required by governmental agencies with jurisdiction (e.g., the Federal Aviation Administration). Tower heights would be less than 200 feet to avoid the need for aircraft obstruction lighting.
- A Fire Protection Plan would be developed and incorporated into the final POD.
    - Construction vehicles would be equipped with approved spark arresters.
    - The contractor would maintain in all construction vehicles a current list of local emergency response providers and methods of contact/communication.
- A Spill Prevention, Containment, and Countermeasure Plan would be prepared to specify preventative procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction.
    - Hazardous material would not be drained onto the ground or into streams or drainage areas. Totally enclosed containment would be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.

2.2 No Action

BLM NEPA Handbook H-1790-1 states that for EAs on externally generated applications, the No Action Alternative generally means that the proposed activity would be denied (BLM 2008b: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, the proposed electric transmission lines and substations would not be built, 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 Eliminated from Detailed Study

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 2008b:80). Those with greater adverse resource impacts or those that are not feasible because of existing physical constraints or infrastructure are not brought forward for detailed analysis in this EA.

The proposed route described in the EA has been adjusted or realigned in several segments to minimize impacts to resources and to avoid conflicts with other ROWs, where possible. This process is referred to as "route refinement." The following is a concise summary of the route refinement process used by the proponent, with input from the BLM, to develop the refined Proposed Action route presented in the EA.

Prior to siting the preliminary route for the proposed project, a desktop analysis was conducted by the proponent to identify sensitive areas to avoid (constraints) and developed corridors within the project vicinity (opportunities) that could be used to route the project. SPS then conducted preliminary meetings with the BLM to refine the route. During these meetings, additional siting constraints and opportunities were discussed including the preference to parallel US Highway 62/180 for the J-20 segment between the Hobbs Generation and proposed Kiowa substations. The J-21 segment (Kiowa to North Loving) was routed cross-country as it heads south from the Kiowa substation rather than following Highway 31. This routing was necessary to avoid a four-mile long drill island, as well as the potash mining activities to the east of Highway 31. The J-22 segment was sited parallel to a new 115kV line being developed to connect the North Loving and China Draw substations. The opportunities and constraints analysis resulted in a preliminary route, which was submitted to the BLM in August 2014.

Once the preliminary route was identified, SPS staff consulted with various landowners and stakeholders in proximity to the route. Subsequent discussions were held to modify the route to minimize conflicts with their interests and/or properties. As a result, several re-routes were developed to minimize conflicts with oil and gas developers, potash mines, private landowners, and private developers.

Field investigations were conducted to identify biological resources, record cultural resources, and identify other ROW conflicts along the preliminary route. Biological resources that were identified include special status species and associated habitat, wetlands, playas, migratory bird nesting areas, cave and karst features, and potentially jurisdictional water bodies (see the resource sections in Chapter 3 for details regarding these listed resources).

The biological survey consisted of a pedestrian survey within a 500-foot wide corridor following the centerline of the proposed route, substation locations, laydown yards, pull pockets, and access roads to assess general vegetation and habitat suitability for USFWS, BLM, and State of New Mexico protected native plants and special status species. Presence of active and inactive bird nests and burrows were also recorded. The survey included an assessment of wetlands, surface waters, and other potential waters of the U.S., referred to as a "wetland delineation." In addition to the general biological field survey, at the request of the BLM, LPC lek surveys were conducted for portions of the proposed project traversing through the BLM-designated IPA for the LPC. Within the IPA, the majority of the proposed route is located within 0.5 mile of U.S. Highway 62/180 to minimize impacts to LPC. Approximately 10 miles of the route within the IPA is more than 0.5 mile from U.S. Highway 62/180; however, this route was deemed necessary to avoid new ROW encroachments (discussed below in detail). This 10-mile reroute, known as the Marathon Road reroute, was presented to the BLM in July 2015, and the route was refined further to avoid dunes known to be occupied by the DSL.

Portions of the proposed route also cross areas of high karst potential. The proposed project was routed to avoid the Cave Resources Special Management Area (SMA). Cave and karst features were identified during the biological survey on the Eddy to Kiowa segment. The observed cave and karst features were located outside the proposed route's ROW.

On February 20, 2015, representatives of the BLM CFO, SPS, and SPS's contractors attended a field visit to discuss the locations to be considered for the Pecos River crossing. The preliminary route identified a crossing location for the transmission line that roughly bisected the Pecos River Corridor SMA. After reviewing other potential river crossing locations, the current route across the Pecos River was selected as the optimal location for balancing resource protection with safety and constructability factors (SWCA 2015c).

An intensive Class III cultural resources inventory of the preliminary route's area of potential effect (APE) was also conducted in accordance with the *Procedures for Performing Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005) and *Standards for Survey Site Evaluation and Reporting for the CFO* (BLM 2012). The preliminary route was readjusted to avoid all eligible cultural resources, except for five locations where avoidance would have resulted in impacts to other cultural resources (see Section 3.7 for details regarding avoidance of cultural sites).

The proponent has engaged the CEHMM to conduct ongoing monitoring of the proposed route to identify conflicts between the proposed transmission line and substation corridor with other, newly proposed ROWs. Due to the amount of development within the CFO planning area, situations commonly arise where proposed ROWs, under review by the CFO, can intersect each other resulting in encroachment conflicts during the planning phase. This can lead to uncertainty among the involved parties for how to proceed with the ROW permitting process. The CEHMM's role is to monitor the proposed route regularly to identify the potential ROW encroachments, report the potential conflicts to the proponent, and facilitate communication among the parties to resolve the ROW conflicts prior to issuance of the ROW grant by the CFO. During the route refinement process, the proponent adjusted approximately 10 miles of the preliminary route to follow Marathon Road to avoid ROW encroachments by other proposed infrastructure projects in the area.

In November of 2015, an area oil and gas operator notified SPS about another potential conflict and small reroute on the alignment south of the Pecos River crossing was agreed upon. Resource surveys were conducted prior to adopting the alignment change.

The refined route was also reviewed for proximity to active caliche pits (CEHMM 2015). No caliche pits are located within the proposed route (CEHMM 2015). Two caliche pits are located within 1,000 feet of the route; however, based on aerial photography, these material pits appear to have room for expansion without encroaching on the proposed transmission line route (CEHMM 2015).

The proposed transmission line route and design would meet the BLM's purpose and need while minimizing environmental impacts to the greatest extent possible. The scoping process did not identify any additional unforeseen alternatives; therefore, only the No Action and Proposed Action alternatives were brought forward for detailed analysis in this EA.

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3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter is organized by relevant major resources or issues/concerns as presented in Section 1.5. On the basis of CEQ guidance and BLM NEPA Handbook H-1790-1, the following discussion is limited to those resources that could be impacted to a degree that warrants detailed analysis (40 CFR 1502.15) (BLM 2008b:96) as determined by the BLM CFO interdisciplinary team. Each resource section includes the following analyses:

Affected Environment:

This section succinctly describes the existing condition and trend of issue-related elements of the human environment that would be affected by implementing the Proposed Action or an alternative, as described in Chapter 2 and limits the description of the affected environment to be commensurate with the potential impacts: "1500.4 (c) impacts shall be discussed in proportion to their significance." For the purposes of providing baseline data for the affected environment, an analysis area for each resource was delineated, as appropriate.

Impacts from the No Action Alternative:

Direct and Indirect Impacts: The No Action Alternative reflects the current situation within the project area and serves as the baseline for comparing the environmental impacts of the Proposed Action.

Cumulative Impacts: Since the No Action Alternative means the Proposed Action would not be approved, no cumulative impact, or incremental addition to existing trends would occur. No cumulative analysis is provided for the No Action Alternative.

Impacts from the Proposed Action:

Direct and Indirect Impacts: This EA addresses the resources and impacts on a site-specific basis as required by NEPA. Pursuant to 40 CFR 1508.28 and 1502.21, this site-specific EA tiers to the information and analysis contained in the BLM CFO's RMP, as amended (BLM 1988, 1997, 2008a). For each resource analyzed, the impacts discussion identifies:

- Direct impacts – impacts that are caused by the action and occur at the same time and in the same general location as the action.
- Indirect impacts – impacts that occur at a different time or in a different location than the action to which the impacts are related.
- Short- or long-term impacts – the duration of impacts are described as short or long term. For the purposes of this EA, short-term impacts occur during or immediately after the construction phase, approximately 1 year for construction and an additional year following construction for a total of 2 years. Long-term impacts occur beyond the first 2 years and apply to the production and the overall life of the project through eventual decommissioning.
- Impact indicators – for each resource, the indicator to measure the impact is provided in Table 3.1.

Table 3.1. Impact Indicators by Resource or Resource Use

Resource/Resource Use	Indicators
Air Resources	Emission estimates for regulated pollutants; exceedance of air quality standards, including NAAQS or New Mexico Ambient Air Quality Standards, Class I or Class II Prevention of Significant Deterioration increments, air quality related values, or general conformity de minimis levels
Cave and Karst Resources	Acres of disturbance within high and medium cave and karst potential
Soils	Acres of soil to be disturbed by construction and maintenance, by soil

Resource/Resource Use	Indicators
	type
Water Resources	Number of potential jurisdictional waterways to be crossed by the proposed project; acres of disturbance within potential jurisdictional drainages, playas, and floodplains; qualitative description of potential impacts to groundwater resources
Upland Vegetation	Acres of surface disturbance from construction and maintenance activities
Wildlife and Special Status Species	Acres of habitat to be disturbed by construction and maintenance activities; qualitative description of direct and indirect impacts to individuals
Cultural Resources	Number of eligible cultural resources sites to be disturbed within the project area
Visual Resources	Changes in visual contrast that exceed visual resource management class objectives
Special Designations and Recreation	Acres and number of special designations and recreation areas to incur surface disturbance from the proposed project
Livestock Grazing	Acres and number of grazing allotments to incur surface disturbance from the proposed project, number of fences to be disturbed during construction, and number of water tanks within the proposed project area
Public Health and Safety	Potential for occupational safety and severe weather hazards, level of human exposure to electromagnetic field at representative segments of the project area

Cumulative Impacts: Cumulative impact analysis methodology is described in detail in the next section (below).

Mitigation Measures and Residual Impacts: As directed by 40 CFR 1508.20, mitigation measures are those measures that could reduce or avoid adverse impacts and have not already been incorporated into the Proposed Action (as listed in the project design features, Section 2.1.2). These measures may:

- avoid the impact altogether by not taking a certain action or parts of an action;
- minimize the impact by limiting the degree of magnitude of the action and its implementation;
- rectify the impact by repairing, rehabilitating, or restoring the affected environment;
- reduce or eliminate the impact over time by implementing preservation and maintenance operations during the life of the action; and/or
- compensate for the impact by replacing or providing substitute resources or environments.

Residual impacts are those remaining after implementation of mitigation measures. These impacts may be to the subject resource or a different resource.

Cumulative Impact Analysis Methodology for Proposed Action

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.

The geographic extent of cumulative impact analysis area (CIAA) varies by the type of resource and impact. Four different spatial and temporal CIAAs have been developed and are listed with their total acreage in Table 3.2. The time frames, or temporal boundaries, for those impacts may also vary by resource. In some areas, restoration may potentially include plant species that are not locally native or are not present within the adjacent, native plant communities. Although the replanting of disturbed soils may successfully establish vegetation in some locations, the success of project area rehabilitation is dependent on many factors, including rainfall, seed mix, and appropriate seedbed preparation. For this reason, the temporal boundary for several of the CIAAs is 3 years, allowing 2 years after construction for vegetative regrowth within the project area.

Table 3.2. Cumulative Impact Analysis Areas by Resource

Resource	CIAA	Total CIAA Acreage	Temporal Boundary
Cave and Karst Soils Water Vegetation Wildlife Cultural Resources Visual Resources Livestock Grazing	The total area of the 14 Hydrologic Unit Code (HUC) 10-digit watersheds intersected by the project area. This area was chosen because it is an area with clear natural topographical boundaries with vegetative connectivity, similar soil types, habitat availability, geologic conditions, visual and cultural landscapes, and hydrological functionality. This area also includes available grazing lands on all land jurisdictions considered in the EA. The watersheds are Upper Monument Draw, Rio Peñasco, Burton Flat, Pamilla Draw, Williams Sink, Monument Springs-Monument Draw, Laguna Plata, Clayton Basin, Salt Lake, Dark Canyon-Pecos River, Black River, Red Bluff Draw, Black River-Pecos River, and Delaware River-Pecos River (Figure A.1 in Appendix A).	2,359,693	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Special Status Species: LPC DSL	Total area of LPC Habitat Evaluation Areas, the LPC IPA, and DSL habitat areas as delineated in the RMPA, intersected by the proposed project. Because there is substantial overlap between the IPA and DSL known distribution, the IPA is used as the CIAA (Figure A.2 in Appendix A).	794,683	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Special Designations and Recreation Areas	Total area of special designations (SMAs) and the Hackberry Lake Off-highway Vehicle Recreation Area that are crossed by the proposed project (Figure A.3 in Appendix A).	81,542	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Air Quality and Climate Public Health and Safety	Lands within the CFO planning area.	6,257,412	Life of the proposed project

Past and Present Actions

The past and present actions can be defined as all actions contributing to the current condition of resources found in the project area, as described in the affected environment sections below. Past and present actions that have contributed to the current condition of resources include heavy oil and gas development, land use authorizations that require ROW grants, livestock grazing, and dispersed recreational use of public lands. No data are available to estimate the acreage of impacts of past or present livestock grazing and recreation.

Estimates were obtained from the BLM CFO to calculate area of disturbance resulting from past actions (BLM 2014). A factor of 3.0 acres of disturbance was applied to each existing well on federal and non-federal lands within the 6,257,412-acre CFO planning area (Table 3.3). Surface disturbance associated with all existing land use authorizations, including roads, pipelines, sites, power lines, and other easements, on both federal and non-federal lands were also included in the past disturbance calculations (Table 3.3). In total, the past actions account for approximately 5% of the planning area. This percentage was then applied to the acreage of each CIAA identified above to estimate the past disturbance within each CIAA. Table 3.4 summarizes past actions by CIAA.

Table 3.3. Summary of Past Disturbance within CFO Planning Area

Past Action	Quantity	Acres
Oil and gas wells	25,751	77,253
Roads	1,159	15,700
Pipelines/facilities	6,626	50,985
Power lines/facilities	2,117	12,473
Telephone/Fiber optic cables	94	1,580
Water facilities, ditches, reservoirs	196	146,898
U.S. Forest Service easements/grants	1	2
Other	8	12,239
Total	***35,952***	***317,130***
Source: BLM 2014		

Present Actions and Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions (RFFAs) are those for which there are existing decisions, formal proposals, or highly probably, based on known opportunities or trends. The BLM has identified the following RFFAs occurring within the CIAAs identified above. It is likely several other oil and gas well and road activities would also occur within these areas.

- *SPS' other SE New Mexico transmission line projects* –. SPS has launched 'Power for the Plains,' a transmission expansion plan in Texas, New Mexico, and Oklahoma, to accommodate future projected power needs. Details regarding existing and future projects can be found on their public website: http://powerfortheplains.com/projects/index.asp. Total miles of 115-kV and 345-kV transmission projects (including Potash Junction to Roadrunner that is almost completely constructed) that intersect the HUC-10 watershed CIAA in SE New Mexico amount to approximately 194 miles of new lines and associated substations. The total acreage of impacts are approximately 1,788 acres within the watershed CIAA, and 621 acres of disturbance within the CIAA for LPC and DSL.
- *Western Refining Southwest, Inc. 70-12 Pipeline Project* – This project is an approved 76-mile, 12-inch crude oil pipeline with an estimated 403 acres of surface disturbance for the pipeline and aboveground appurtenances.
- *DCP Midstream, Lea County Lateral Pipeline Project* – This project is an approved 12-inch-diameter natural gas pipeline with an estimated 598 acres of surface disturbance for the pipeline and aboveground appurtenances.
- *DCP Midstream, Zia II Natural Gas Processing Plant and Pipeline Project* – This project is an approved natural gas processing plant and series of gathering pipelines with an estimated 694 acres of surface disturbance.
- *Enterprise Gaucho-Thistle Crude Oil Pipeline Project* – The pipeline project is 26.1 miles of 10-inch-diameter pipeline and four aboveground facilities. The pipeline would transport crude oil from the Thistle 44 Truck Station and Central Delivery Point, the Thistle Central Delivery Point, and the Gaucho Central Delivery Point to the Lynch Station. From the Lynch Station, crude oil would be injected into the existing C88 pipeline to be transported to the Hobbs Station and ultimately moved towards Midland, Texas. The total project area is 174.4 acres.
- *Expansion of Enterprise's Chaparral Gas Plant* – Enterprise is proposing to expand the existing Chaparral Gas Plant, which is located on public lands managed by the BLM, approximately 25 miles northeast of Carlsbad. The legal description of the plant expansion site is the SW¼ of Section 17, Township 19 South, Range 31 East, New Mexico Prime Meridian, Eddy County, New Mexico. The permanent footprint of the expansion area is 4.6 acres.
- *Navitas Midstream New Mexico, Delaware Basin Natural Gas Cryogenic Processing Plant and Pipeline Project* – This project is a proposed natural gas processing plant, associated gathering

pipelines, natural gas liquid pipeline, and lateral pipeline, gathering compression stations, and downstream interconnect points.

- *Mid-America Y-Grade Pipeline Project* **–** The pipeline project is approximately 35.8 miles of 12-inch-diameter pipeline to transport natural gas liquids from the South Eddy Cryogenic Gas Plant on the south end of the pipeline and would terminate at a mainline valve on the north end of the pipeline to facilitate takeaway to storage and additional processing facilities. Project area is estimated to be 220 acres. The proposed pipeline project would deliver 25 million barrels per day, with an increase capacity up to 65 million barrels per day of natural gas liquids.
- *Enterprise South Eddy Interconnects and Cryogenic Gas Plant* – Enterprise is planning to build the South Eddy Cryogenic Gas Plant on a 40-acre parcel in eastern Eddy County. The gas processing capacity of the plant is estimated at 200 million cubic feet per day. The proposed plant would also require several pipeline interconnects, access roads, and electric easements.
- *OXY USA Inc. Sand Dunes Master Development Plan* – OXY USA Inc. is proposing to drill, produce, and finally abandon 31 to 155 oil and natural gas wells and construct, use, and reclaim the associated surface features in the Sand Dunes Area of Eddy County, New Mexico. Total surface disturbance for the proposed project is 320 acres. Project elements include 31 well pads, seven access roads, five buried pipelines, 62 surface pipelines, utility poles, and several centralized tank batteries.
- *Other oil and gas proposed well pad and access road activity* – According to the BLM CFO's NEPA log published on July 7, 2015, 156 Applications for Permit to Drill (APDs) in Lea County and 295 APDs in Eddy County were listed as pending or approved within the first 7 months of 2015. This analysis assumes each of these projects represents an average disturbance of approximately 3 acres. While exact location data for these pending actions were not available, this analysis assumes that the projects would be located evenly across Lea and Eddy Counties and, as a result, approximately 40% or 62 projects would fall within the Lea County portion of the CIAAs. Approximately 60% or 177 projects would fall within the Eddy County portion of the CIAAs.

Table 3.4 summarizes known past, present, and reasonably foreseeable disturbance impacts by CIAA.

Table 3.4. Past, Present and Reasonably Foreseeable Disturbance Impacts by CIAA

CIAA	Past Actions (acres)	Present Actions and RFFAs (acres within CIAA)*
Cave and Karst Soils Water Vegetation Wildlife Cultural Resources Visual Resources Livestock Grazing	117,985	5,040
Special Status Species: LPC DSL	39,734	11,220
Special Designations and Recreation	4,077	85
Air Quality and Climate Public Health and Safety	Qualitative discussion of past, present, and RFFAs within CIAA	

*See resource specific sections below for full cumulative analysis.

3.1 Air Resources

3.1.1 Affected Environment

Air quality and climate are components of air resources that may be affected by the Proposed Action. Air resource impacts associated with the Proposed Action were evaluated within a designated analysis area, extending 1 mile beyond the site of the Proposed Action. The analysis area includes portions of Eddy and Lea Counties in New Mexico. Climate, ambient air quality standards, existing air quality, and county emissions inventories are discussed in this section. The analysis area is presented in Figure A.4 in Appendix A.

Climate

Southeastern New Mexico's climate is generally categorized as semiarid. The area receives low annual precipitation, has low annual humidity, and is among the highest evaporation rates in the state. During summer months, individual daytime temperatures can exceed 100 degrees Fahrenheit (°F); the warmest days often occur in June just before the monsoon season begins (monsoon season in the southwestern United States typically occurs from June to September). Precipitation in semiarid regions typically varies markedly between seasons with intense precipitation events in the summer providing the majority of the annual precipitation. May through October are the warmest 6 months of the year and provide an average of 80% of the annual total precipitation for the state's eastern plains where the Proposed Action site is located (Western Regional Climate Center [WRCC] 2015a).

There are two wind measurement stations near the Proposed Action: Paduca, near the southern end of the Proposed Action, and Caprock, near the northern end. The data from Paduca and Caprock indicate that the prevailing winds most frequently arrive from the south-southeast and southeast, respectively (WRCC 2015b, 2015c).

Ambient Air Quality Standards

Under the CAA, the EPA has the authority to regulate emissions from both stationary and mobile sources. The CAA requires the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. Per the requirement, the EPA has created national standards for six common air pollutants, also known as criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), lead (Pb), and particulate matter (particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]).

The NAAQS include primary standards that provide for the protection of human health and secondary standards that provide for the protection of public welfare (e.g., visibility, the health of vegetation and animals). The NAAQS are defined in terms of threshold ambient concentrations measured as an average for specified periods of time. Pollutants with acute health effects are assigned short-term standards and those with chronic health effects are assigned long-term standards. The NAAQS undergo periodic revisions to ensure that emerging science and technology result in the most up-to-date and protective standards achievable.

Under the provisions of the CAA, states can elect to develop their own ambient air quality standards, and New Mexico has adopted its own standards (New Mexico Ambient Air Quality Standards [NMAAAQS]) for CO, NO_2, total suspended particulates (TSP), SO_2, hydrogen sulfide (H_2S), and total reduced sulfur (TRS). The NAAQS and NMAAQS are presented in Table 3.5.

Table 3.5. Ambient Air Quality Standards

Pollutant	NMAAAQS	NAAQS	
		Primary	Secondary
CO			
1-hour average	13.1 ppm	35 ppm	-
8-hour average	8.7 ppm	9 ppm	-

Pollutant	NMAAAQS	NAAQS	
		Primary	Secondary
Pb			
Rolling 3-month average	-	0.15 µg/m^3	Same as Primary
NO_2			
1-hour average	-		
24-hour average	0.05 ppm	100 ppb	-
Annual average	0.10 ppm	53 ppb	Same as Primary
O_3			
8-hour average	-	0.075 ppm	Same as Primary
TSP			
24-hour average	150 µg/m^3	-	-
7-day average	110 µg/m^3	-	-
30-day average	90 µg/m^3	-	-
Annual geometric mean	60 µg/m^3	-	-
PM_{10}			
24-hour average	-	150 µg/m^3	Same as Primary
$PM_{2.5}$			
24-hour average	-	35 µg/m^3	Same as Primary
Annual average	-	12 µg/m^3	15 µg/m^3
SO_2			
1-hour average	-	75 ppb	-
3-hour average	-	-	0.5 ppm
24-hour average	0.10 ppm	-	-
Annual average	0.02 ppm	-	-
H_2S			
½ hour average [a]	0.100 ppm	-	-
TRS			
½ hour average [a]	0.010 ppm	-	-

[a] H_2S and TRS 0.5-hour average for the Pecos-Permian Basin Intrastate Air Quality Control Region.
µg/m^3: microgram per cubic meter.
ppb: parts per billion.
ppm: parts per million.
Source: New Mexico Administrative Code 20.2.3, EPA 2014.

Existing Air Quality and Emissions Inventory

In accordance with the CAA, the EPA must review air quality conditions reported by states to determine whether states are meeting the national standards for air quality. Areas with ambient concentrations of criteria pollutants within the NAAQS are deemed to be “attainment” areas; conversely, those that do not meet the standards are referred to as “non-attainment” areas. Areas that cannot be classified on the basis of insufficient data are designated as “unclassifiable.” The designation “attainment/unclassifiable” may be assigned to areas that are lacking sufficient monitoring data but meet the standard or will soon meet the standard.

The EPA designates Eddy and Lea Counties in New Mexico as being in attainment/unclassifiable with respect to the NAAQS for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. Similarly, the NMED designates these counties as being in attainment/unclassifiable with respect to the NMAAQS for CO, NO_2, SO_2, TSP, H_2S, and TRS (EPA 2015a). The Proposed Action is located within New Mexico Air Quality Control Region 155.

Emission inventories are useful in comparing emission source categories to determine which industries or practices are contributing to the general level of pollution in an area. Emission inventories provide an overview of the type and amount of pollution emitted on an annual basis from sources in the area. For the purposes of this assessment, the most recent National Emissions Inventory conducted in 2011 was summarized for Eddy and Lea Counties. The emission inventory data are presented in Table 3.6.

Table 3.6. Emissions Inventory in Tons per Year for Eddy and Lea County

Source	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOCs	HAPs
Eddy County, New Mexico							
Agriculture	-	-	656	131	-	-	-
Biogenics [1]	16,729	438	-	-	-	85,527	16,787
Dust	-	-	18,905	1,928	-	-	-
Fires	13,153	268	1,424	1,198	127	3,100	385
Fuel Combustion	943	1,377	87	72	48	199	27
Industrial Processes	9,593	8,234	1,919	708	2,289	41,972	1,804
Miscellaneous [2]	9	-	23	21	-	864	126
Mobile	10,388	1,964	112	75	9	1,332	330
Waste Disposal	632	21	82	66	1	48	5
Subtotal	***51,447***	***12,303***	***23,208***	***4,200***	***2,473***	***133,042***	***19,465***
Lea County, New Mexico							
Agriculture	-	-	2,031	406	-	-	-
Biogenics [1]	14,220	1,619	-	-	-	63,497	14,360
Dust	-	-	23,685	2,407	-	-	-
Fires	4,919	152	591	473	63	1,067	195
Fuel Combustion	3,598	11.782	318	310	56	777	301
Industrial Processes	9,431	7,185	259	242	10,247	39,140	1,675
Miscellaneous [2]	9	-	23	22	-	875	142
Mobile	9,555	1,726	92	59	7	929	241
Waste Disposal	1,098	35	130	104	1	78	7
Subtotal	***42,829***	***22,500***	***27,131***	***4,023***	***10,374***	***106,364***	***16,920***
Total Emissions	***94,276***	***34,803***	***50,339***	***8,223***	***12,847***	***239,406***	***36,385***

Note: "-" denotes no information available. Due to an incomplete data set, greenhouse gas emissions are not presented. Totals may not sum exactly due to rounding.

[1] Biogenic emissions are those emissions derived from natural processes (such as vegetation and soil).

[2] Miscellaneous categories include bulk gasoline terminals, commercial cooking, gas stations, miscellaneous non-industrial (not elsewhere classified), and solvent use.

NO_x = nitrogen oxides.

VOC = Volatile Organic Compounds.

HAPs = Hazardous Air Pollutants.

Source: EPA 2015b.

According to the 2011 National Emissions Inventory, the major pollutants emitted in Eddy and Lea Counties are volatile organic compounds (VOCs) and CO. The major sources contributing to VOC emissions are biogenics and industrial processes. The major sources contributing to CO emissions are biogenics, fires, mobile sources, and industrial processes. PM_{10} emissions are principally generated from dust, industrial processes, agriculture, and fires; $PM_{2.5}$ emissions are primarily attributable to dust and fires. Industrial processes and mobile sources are the major contributors to nitrogen oxides (NO_X) emissions in both counties. SO_2 emissions are mostly generated in Eddy and Lea Counties through industrial processes. Industrial facilities near the Proposed Action area in New Mexico include compressor stations, gas processing plants, booster stations, refineries, and power plants (NMED 2015).

Pollutants included in the 2011 National Emissions Inventory are the criteria pollutants and hazardous air pollutants (HAPs). Due to an incomplete data set from the 2011 National Emissions Inventory, greenhouse gas (GHG) emissions are not represented. However, according to the NMED, emissions of GHGs in New Mexico remained essentially level from 2000 to 2007, despite a 6.7% growth in New

Mexico's population over that period. The largest sources of GHG emissions in New Mexico in 2007 were electricity production (41%), the fossil fuel industry (22%) and transportation fuel use (20%). Estimated total gross GHG emissions in 2007 for New Mexico were 76.2 million metric tons (NMED 2010).

3.1.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the ROW for the proposed project would not be granted. As a result of the No Action Alternative, emissions due to the construction and operation of the transmission lines and associated substations would not occur. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.1.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Under the FLPMA and the CAA, the BLM cannot conduct or authorize any activity that does not conform to all applicable federal, state, tribal, or local air quality laws, statutes, regulations, standards, or implementation plans. As such, the criteria for assessing air quality impacts are based on existing regulatory requirements across all applicable jurisdictions. Therefore, significant direct and indirect impacts from the Proposed Action can be assumed to result if it is demonstrated that the NAAQS or NMAAQS would be exceeded.

Emissions from the construction and operation of the Proposed Action have been estimated to characterize the potential emissions increase that would result. While these estimates are not directly comparable to any ambient air quality standard, these emissions estimates are compared to Eddy and Lea County's emissions inventory as a percentage of both county's emissions. This comparison is provided for informational purposes only and carries no regulatory significance. The comparison offers an estimate of the scope of the Proposed Action.

Emissions of air pollutants would occur during construction of the transmission lines and substations and, to a lesser extent, during the operation of the transmission lines. Impacts are evaluated separately as construction phase emissions (those emissions that are expected to be temporary in nature) and operational phase emissions (those emissions that are expected to occur during operation of the Proposed Action). Construction-related emissions considered include exhaust from construction vehicles, material movement, and equipment; exhaust from construction worker commuting; and fugitive dust from general construction activity. Construction emissions take into account expansion and construction of associated substations. Operational-related emissions considered include emissions from inspection and maintenance activities (which includes exhaust from inspection vehicles and aerial inspections, fugitive dust from unpaved roads, and line maintenance equipment) and fugitive emissions due to leaks of sulfur hexafluoride (SF_6), a potent GHG, in substation transformer equipment.

Construction Emissions

Exhaust emissions from off-road construction vehicles and equipment were calculated using the South Coast Air Quality Management District (SCAQMD) Off-Road Model Mobile Source Emission Factors using the 2015 vehicle fleet. Several variables were incorporated into these calculations, including equipment-specific emission factors, quantity of each equipment type, and duration of use. Emissions from helicopter use during the construction phase were estimated according to emissions factors from the Emissions and Dispersion Modeling System and the California Climate Action Registry General Reporting Protocol (California Public Utilities Commission 2012).

Construction worker commute and equipment delivery emissions were calculated using SCAQMD emission factors for On-Road Passenger Vehicles for the 2015 vehicle fleet (SCAQMD 2007a). The construction workers were assumed to originate from Carlsbad, New Mexico. Emissions associated with equipment delivery were estimated using SCAQMD emission factors for Heavy-Heavy-Duty-Vehicles (with vehicle weights ranging from 33,001 to 60,000 pounds) (SCAQMD 2007b). Fugitive dust emissions due to general construction activities were estimated using the Western Regional Air Partnership's (2006) Fugitive Dust Handbook. Construction related emissions resulting from the Proposed Action is presented in Table 3.7.

Table 3.7. Construction-related Emissions in Tons Resulting from the Proposed Action

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOC	HAPs	GHG [2]
Construction equipment	12.82	29.94	0.51	1.49	1.38	2.88	0.29	2,519
Construction worker commuting	4.93	2.37	0.01	0.16	0.12	0.62	0.06	1,040
Equipment and material delivery	10.40	28.78	0.06	1.42	1.19	2.42	0.24	5,180
Fugitive dust emissions	-	-	-	6.31	0.64	-	-	-
Total	***28.15***	***61.09***	***0.58***	***9.38***	***3.33***	***5.93***	***0.59***	***8,739***
Percent of Total Eddy and Lea County Emissions	***0.03%***	***0.18%***	***< 0.01%***	***0.02%***	***0.04%***	***< 0.01%***	***< 0.01%***	***N/A*** [3]

[1] All oxides of sulfur (including SO_2). For purposes of comparison, SO_2 emissions reported in the county inventory are assumed to be equal to SO_X.
[2] GHG emissions are reported in metric tons of carbon dioxide equivalent (CO_2e). For any quantity and type of GHG, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.
[3] GHG emissions are not reported for all sources in the county inventory. Therefore, GHG emissions are not compared to the county inventory.

The most abundant pollutants estimated to be produced during the construction phase of the Proposed Action, in total tons, are GHG, NO_X, PM_{10}, and CO. The greatest contributors to these pollutants are construction equipment, construction worker commuting, and equipment and material delivery for GHG, NO_X, and CO, and fugitive dust emissions for PM_{10}. Each pollutant is equal to or less than 0.18% of both Eddy and Lea County's emissions inventories. Additionally, the construction phase would be temporary and advance down the line as construction progresses. Therefore, impacts to air resources are likely to be insignificant from the construction of the Proposed Action.

Operational Emissions

Operations-related emissions include inspection and maintenance-related activities and fugitive emissions due to leaks of SF_6 in substation transformer equipment. Inspection and maintenance activities are assumed to occur every year of operation. Leaks of SF_6 are conservatively assumed to equal 1% of the original SF_6 transformer content for every year of operation. Operational-related emissions resulting from the Proposed Action are presented in Table 3.8.

Table 3.8. Operational-related Emissions in Tons per Year Resulting from the Proposed Action

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOC	HAPs	GHG [2]
Inspection and maintenance activities	0.62	1.42	0.03	0.19	0.08	0.12	0.01	120
Fugitive leaks of SF_6	-	-	-	-	-	-	-	522
Total	***0.62***	***1.42***	***0.03***	***0.19***	***0.08***	***0.12***	***0.01***	***642***
Percent of Total Eddy and Lea County Emissions	***< 0.01%***	***< 0.01%***	***< 0.01%***	***< 0.01%***	***< 0.01%***	***< 0.01%***	***< 0.01%***	***N/A*** [3]

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOC	HAPs	GHG [2]

[1] All oxides of sulfur (including SO_2). For purposes of comparison, SO_2 emissions reported in the county inventory are assumed to be equal to SO_X.
[2] GHG emissions are reported in metric tons of carbon dioxide equivalent (CO_2e). For any quantity and type of GHG, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.
[3] GHG emissions are not reported for all sources in the county inventory. Therefore, GHG emissions are not compared to the county inventory.

The most abundant pollutant emitted during operation of the Proposed Action, according to the methodology described above, are GHGs (from fugitive leaks of SF6 from substation transformers). All emissions from the operation of the Proposed Action are less than 0.01% of the county's emissions inventory. Therefore, significant impacts to air resources are not likely to occur from the operation of the Proposed Action.

Cumulative Impacts

Impacts from the Proposed Action, when considering neighboring oil and gas development projects and existing ambient air quality, may contribute to air quality deterioration. Oil and gas development, which includes oil and gas production, natural gas compressor stations and pipelines, gas plants, and petroleum refining, generates air pollutants (primarily VOCs and HAPs) and GHG emissions throughout the analysis area. The analysis area is currently experiencing a rapid expansion of oil and gas development, which is expected to continue into the future.

Present and Reasonably Foreseeable Future Actions

Present actions within the analysis area include existing oil and gas production facilities and supporting infrastructure. RFFAs in the area are generally those serving the oil and gas industry. Project types generally include transmission lines, pipelines, oil and gas production facilities, and natural gas processing plants.

Transmission line and pipeline projects have similar emissions profiles to the Proposed Action; the majority of emissions from these projects would be during construction. Present transmission line and pipeline projects include the Potash Junction to Roadrunner 345-kV Transmission Line Project, Western Refining Southwest, Inc.'s 70-12 Pipeline Project, DCP Midstream's Lea County Lateral Pipeline Project, and Enterprise's Gaucho-Thistle Crude Oil Pipeline Project. RFFAs include the Mid-America Y-Grade Pipeline Project. Similar to the Proposed Action, construction emissions would include exhaust from construction vehicles, material movement, and equipment; exhaust from construction worker commuting; and fugitive dust from general construction activity. These projects would emit a small amount of construction-related emissions over a large area in the short-term, and relatively small amount of pollutants during the operational phase. Typically, these levels of emitted pollutants do not contribute largely to the overall cumulative impact to air resources. Therefore, concurrent construction or operation of these actions during construction or operation of the Proposed Action is expected to have an insignificant impact on air quality.

Construction and operation of natural gas processing plants and oil and gas production facilities would release regulated air pollutants to the atmosphere. Present projects include DCP Midstream's Zia II Natural Gas Processing Plant and Pipeline Project and Enterprise's Chaparral Gas Plant Expansion. RFFAs include Navitas Midstream New Mexico's Delaware Basin Natural Gas Cryogenic Processing Plant and Pipeline Project, Enterprise's South Eddy Interconnects and Cryogenic Gas Plant, and OXY USA Inc.'s Sand Dunes Master Development Plan. OXY USA Inc.'s Sand Dunes Master Development Plan proposes 31 to 155 oil and natural gas wells in the Sand Dunes Area of Eddy County, New Mexico. These projects would emit emissions during construction, but would emit higher amounts of pollutants during the operational lifetime of the facility. Natural gas processing plants (like the ones listed above) typically emit large amounts of NO_x, CO, VOCs, SO_2, and GHGs. Operation of the Sand Dunes Master Development Plan would result in emissions of VOCs and HAPs, in addition to smaller amounts of NO_x and CO.

Sufficient data are not currently available to determine cumulative impacts from the present or future actions listed above. The RFFAs outlined above could cumulatively impact air quality through emissions from surface disturbance, tailpipe and fugitive dust emissions from mobile sources, and point-source emissions from industrial activities. These air quality impacts, collectively, could result in degradation of air resources within the project analysis area. However, all proposed actions in the analysis area would be regulated by the appropriate regulatory authority ensuring that anthropogenic air pollution emissions are minimized.

Climate Change

Climate change analyses consist of several factors, including GHGs, land use management practices, and the albedo effect. There are no sites within or near the Proposed Action area that are collecting ambient GHG data. The tools necessary to quantify incremental climatic impacts of specific activities associated with those factors are presently unavailable. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Ambient background data that exist are parametrically derived from fossil fuel combustion and other industrial sources. While the cumulative effect of climate change in the air resources CIAA may be major and long term, it is difficult to state with certainty what the Proposed Action would contribute to those climate impacts.

However, CEQ draft guidance states that NEPA documents for proposed federal actions resulting in direct GHG emissions of 25,000 metric tons per year should include a GHG emissions analysis of alternatives. The reference point of 25,000 metric tons of direct GHG emissions is not an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, but serves as a minimum for conducting a quantitative analysis (CEQ 2014). While a quantitative analysis of alternatives was provided, the Proposed Action would have GHG emissions much less than the reference point.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.2 Cave and Karst Resources

3.2.1 Affected Environment

The proposed project is located in gypsum karst terrain, a land form that is characterized by underground drainage systems through solutionally enlarged conduits. Gypsum karst terrain may contain sinkholes, sinking streams, caves, fissures, and springs (Stafford 2006). Sinkholes, fissures, and other karst features leading to underground drainages and voids are common and some karst features within this region are responsible for the rapid recharge of several widespread shallow freshwater aquifers and springs. Subsurface voids with little or no surface expression are also common within this landscape.

Sinkholes and cave entrances may collect water and can subsequently accumulate rich organic materials and soils. This, in conjunction with the stable microclimate near cave entrances, supports a rich diversity and abundance of plant life which, in turn, provides habitat and food for a variety of wildlife such as insects, rodents, mammals, and reptiles.

Caves and other karst features provide habitat that supports a diverse ecosystem, including a variety of troglobitic, or cave-adapted, species (Reddell 1988; Cokendolpher 2004). These troglobitic species, including millipedes, beetles, and spiders, have adapted specifically to the cave environment due to constant temperatures, high humidity, and complete darkness (Culver et al. 2003). These subterranean ecosystems are extremely sensitive due to the delicate balance between the cave-adapted biological communities and the influential biotic and abiotic factors on the surface (Barr and Holsinger 1985).

The BLM categorizes all areas within the CFO planning area as having either low, medium, high karst and cave potential occurrence. These criteria are based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers. Figure A.5 and Figure A.6 in Appendix A show the proposed project alignment in relation to the cave and karst potential zones. Table 3.9 shows the acres of the project area within each potential category. No critical zones for caves or karsts are crossed by the proposed project.

Table 3.9. Acreage of the Proposed Project within Areas of High, Medium, and Low Cave and Karst Potential

Potential Level	Project Area within Cave Potential (acres)	Project Area within Karst Potential (acres)
High	605	506
Medium	1,048	1,068
Low	1,007	1,087

3.2.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance within areas of cave and karst potential resulting from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.2.3 Impacts from the Proposed Action

Direct and Indirect Impacts

The proposed project crosses areas of high, medium, and low potential for occurrence for both cave and karst resources (see Table 3.9). The proposed project area crosses approximately 605 acres of are mapped with high cave potential and 506 acres of are mapped as high karst potential. Although no caves, voids, or karst features were identified within the project area during field surveys, ground-disturbing activities, including heavy vibrations and alternation of surface drainages, associated with this proposed project could impact cave and karst resources. Some surface karst features were identified near the proposed ROW, within the area surveyed for archaeological resources, along the Eddy County to Kiowa route. Excessive siltation and sedimentation, resulting from ground disturbance, can affect surface water infiltration and plug downstream sinkholes and/or other karst features, resulting in adverse impacts to groundwater quality and the cave ecosystem. Construction activities could activate or contribute to existing slow subsidence or sudden collapse of a sinkhole, cave passage, or void during construction activities. This development would cause both safety hazards for the construction crew and cause environmental impacts. Opening a new entrance into a karst system can change air flow patterns, temperatures, and modify the environment on which the biological community relies. Opening a new entrance may cause other undetermined effects on the cave ecosystem. Encountering a void would also have adverse impacts on the stability of the power pole structures and may result in the subsequent failure structures placed in or near voids. Per the design features found in Section 2.1.2, soil bores would be drilled in high cave and karst potential areas in investigate the potential presence of voids and karst features below ground prior to undertaking excavation activities for the structure foundations. If voids are found, the structure locations would be relocated. Additionally, close coordination with the BLM would occur when working in high potential areas. The BLM would be notified if any caves, voids, or sinkholes are encountered during construction activities. These design features are intended to minimize impacts to cave and karst resources.

Other adverse impacts would include the transportation of contaminants from spills or leaks occurring during construction or operation of the proposed project directly into the nearby Pecos River or underground water systems without filtration or biodegradation. In addition, contaminates spilled or leaked into or onto cave/karst zone surfaces and subsurfaces may lead directly to the disruption or displacement of cave species and critical biological processes.

Indirect impacts would include potential disruptions to recharge processes and moisture regimes within the karst system. Other indirect impacts would include changes in airflow patterns within the karst environment and alterations in the surface communities (vegetative and animal) surrounding karst features. This would impact those animals, particularly invertebrates and small mammals that may use the karst features for shelter and sources of food.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for soil disturbance on approximately 5% of the CIAA. The past surface disturbance has occurred in areas with medium and high potential for cave and karst resources within the CIAA. Studies completed by the CFO have demonstrated a positive connection between lost circulation zones encountered during oil and gas drilling and karst aquifers. The contamination of these aquifers may affect all users of these water sources, including riparian and in-cave biological community (BLM 2014).

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to cave and karst resources would depend on the placement and type of surface disturbance, the level of cave and karst potential as well as the hydrologic conditions within the individual project areas. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs. Cumulative impacts to cave and karst resources are difficult to estimate because, as with the Proposed Action, impacts would occur from accidental spills during construction or operation that intercept cave or karst features. BMPs would be in place for all projects considered for the cumulative impacts analysis; therefore, spills would be rare. If a spill did occur, response would be immediate, thereby reducing the likelihood of groundwater contamination.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.3 Soil Resources

3.3.1 Affected Environment

According to the Natural Resources Conservation Service ([NRCS] 2015a), 68 mapped soil types occur within the proposed project area. For a complete list of soil types, please refer to the BA (SWCA 2015a). Those soil types that make up 5% or more of the proposed project area, are associated with dunes, or those that contain gypsum components (denoted in bold) are listed in Table 3.10.

Table 3.10. Major soil types, gypsum soils, and dunes in the proposed project area.

Map Unit Name	Acres	Percent of Project Area	Abridged Soil Description
Berino complex, 0 to 3 percent slopes, eroded	250	10	Berino component is on fan piedmonts, uplands. Pajarito component is on upland and dunes. Parent material for both components consists of mixed alluvium and/or eolian sands. Not prime farmland.
Berino-Pajarito complex, 0 to 3 percent slopes, eroded	14	1	The Berino component is on uplands, fan piedmonts. The Pajarito component is on uplands, dunes. Parent material for both components consists of mixed alluvium and/or eolian sands. Not prime farmland.

Map Unit Name	Acres	Percent of Project Area	Abridged Soil Description
Gypsum land	1	Less than 0.1	Gypsum land makes up 100 percent of this map unit. Not prime farmland
Gypsum land-Cottonwood complex, 0 to 3 percent slopes (GC map unit)	20	1	Gypsum land makes up 60 percent of this map unit. The Cottonwood component is on hills, uplands. The parent material of both components consists of residuum weathered from gypsum. Not prime farmland
Gypsum land-Cottonwood complex, 0 to 3 percent slopes (Gs map unit)	34	1	Gypsum land makes up 60 percent of this map unit. The Cottonwood component is on hills, uplands. The parent material for both components consists of residuum weathered from gypsum. Farmland of statewide importance
Jal association	14	1	The Jal component is on playa rims, tablelands. The parent material consists of calcareous alluvium and/or calcareous lacustrine deposits derived from sedimentary rock. The Drake component is on playa dunes, tablelands. The parent material consists of calcareous eolian deposits derived from sedimentary rock. Farmland of statewide importance.
Kermit-Berino fine sands, 0 to 3 percent slopes	120	5	Kermit component on uplands, alluvial fans. Berino component on uplands, fan piedmonts. Parent material for both components consists of mixed alluvium and/or eolian sands. Not prime farmland
Kermit-Palomas fine sands, 0 to 12 percent slopes	27	1	The Kermit component is on dunes, sandhills. The parent material consists of calcareous sandy eolian depots derived from sedimentary rock. The Palomas component is on dunes, sandhills. The parent material consists of alluvium derived from sandstone. Not prime farmland.
Kermit soils and dune land, 0 to 12 percent slopes	78	3	Dune land makes up 45 percent of the map unit. The Kermit component is on dunes, sandhills. The parent material consists of calcareous sandy eolian deposits derived from sedimentary rock. Not prime farmland.
Kimbrough gravelly loam, 0 to 3 percent slopes	137	5	The Kimbrough component is on tablelands, plains. The parent material consists of calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock. Not prime farmland
Kimbrough-Lea complex	143	5	The Kimbrough and Lea components are on tablelands, plains. The parent material for both components consists of calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock. Not prime farmland
Kimbrough-Stegall loams, 0 to 3 percent slopes	176	7	The Kimbrough and Stegall components are on uplands, alluvial fans. The parent material for both components consists of alluvium and/or eolian sands. Not prime farmland
Pajarito loamy fine sand, 0 to 3 percent slopes, eroded	28	1	Pajarito component is on dunes, uplands. Parent material for both components consists of mixed alluvium and/or eolian sands. Not prime farmland.
Pajarito-Dune land complex, 0 to 3 percent slopes	7	0.3	Dune land makes up 45 percent of the map unit. The Pajarito component is on dunes, uplands. Parent material consists of mixed alluvium and/or eolian sands. Not prime farmland.
Pyote soils and dune land	82	3	Dune land makes up 45 percent of the map unit. The Pyote component is on depressions, sandhills. The parent

Map Unit Name	Acres	Percent of Project Area	Abridged Soil Description
			material consists of sandy eolian deposits derived from sedimentary rock. Farmland of statewide importance.
Reagan-Upton association, 0 to 9 percent slopes	32	1	The Reagan component is on alluvial fans, uplands. The parent material consists of alluvium and/or eolian deposits. Upton component is on fans, uplands. The parent material consists of residuum weathered from limestone. Farmland of statewide importance
Reeves-Gypsum land complex, 0 to 3 percent slopes	**284**	**11**	**The Reeves component is on hills, uplands. The parent material consists of residuum weathered from gypsum. Gypsum land makes up 45 percent of map unit. Not prime farmland**
Other	1,447	54	
Total	***2,661***	***100***	

Source: NRCS 2015a.

The major soil types found in the project area as summarized in the above table and the BA (SWCA 2015a) are sensitive soils, including dunes, sand hills, sand sheets, or soils developed from eolian (windblown) and alluvium parent material. They can be best characterized as loamy sands to sandy soils with coarse to moderately textured surface soils. Due to the texture of the soils within the project area, they are highly susceptible to erosion when vegetation cover is removed (NRCS 2015a).

Approximately 7 acres of soils found in the project area are considered prime farmland, if irrigated. Several soil types are considered farmland of statewide importance, which indicates the lands that could be economically produce high yield of crops when treated and managed according to acceptable farming methods (NRCS 2015b). Active irrigated farmland does occur within the project area in the vicinity of the Pecos River.

3.3.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance and no impact to soils resulting from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.3.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts to soil resources include the loss of soil productivity due to the removal of soils for construction access roads, laydown yards, transmission line structures, and substations. A total of 2,661 acres of soil would be disturbed for construction of the proposed project, of which approximately 330 acres are gypsum soils and approximately 420 acres have dune components in their soil type. Clearing of vegetation and topsoil, as well as grading, would be required and these activities would result in newly exposed, disturbed soils that would be subject to accelerated wind and water erosion. This has the greatest chance of occurring on sensitive soils, which include soils that are easily eroded with shallow profiles, such as those found in the project area.

Any soil removal associated with development of structure foundations and at substation sites would be permanent. The construction of the new Kiowa Substation and substation expansions would total 58 acres and would permanently remove soils from productivity. Direct impacts to soils include increased erosion from the removal of vegetative cover, contamination from accidental spills or leaks, and soil compaction from heavy equipment resulting in the loss of soil structure and porosity. These impacts can lead to increased rainfall runoff and susceptibility to high wind events and consequently increased erosion.

As mentioned above, active irrigated agricultural land does occur within the project area in the vicinity of the Pecos River. SPS would work with landowners of active agricultural land to minimize permanent impacts to farmland. Per the design features found in Section 2.1.2, the ROW within agricultural lands would be aligned, insofar as is practical, to reduce the impact to farm operations and agricultural production. Soil compacted by construction activities would be decompacted except where a permanent two-track access route would be kept for future operation and maintenance activities. The contractor would eliminate at the earliest opportunity all construction ruts that are hazardous to agricultural operations and/or movement of vehicles and equipment. The land and facilities would be restored as nearly as practicable to their original condition.

An indirect impact is the colonization of noxious weeds on disturbed soils. This can occur anywhere soil is disturbed. Weeds can outcompete native species due to their ability to thrive under conditions with low soil moisture content, poor nutrient availability, and coarse soil textures.

Per communication with the BLM CFO and comparison with similar projects in the region, it is reasonable to expect seeded vegetation to be re-established within the project area 2 years after construction. This assumes the project area would receive sufficient rainfall, proper seed bed preparation, and appropriate seeding techniques, and that a BLM-prescribed seed mix would be used.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for soil disturbance on approximately 5% of the CIAA. The loss of vegetation results in a loss of forage available to livestock within the grazing allotments located in the CIAA. Reclamation of some disturbed areas and use of BMPs for erosion control and stormwater events has reduced impacts to soil resources by improving vegetative cover from construction conditions and reducing soil loss.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to soil resources would depend on the placement and type of surface disturbance, the type of soil and the topography within the individual project areas. Generally, soil erosion would be expected to occur, especially when storm events occur during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.4 Water Resources

3.4.1 Affected Environment

Surface Hydrology

The surface water supplies in southeast Eddy County and Lea County are transitory and limited to quantities of runoff impounded in short drainage ways, shallow lakes, and small depressions, including various playas and lagunas (New Mexico Office of the State Engineer [NMOSE] 1999). The proposed project crosses 14 watersheds, as defined by the 10-digit Hydrologic Unit Codes (HUCs) (Table 3.11). There are no New Mexico Outstanding National Resource Waters within these watersheds.

Table 3.11. Watersheds Crossed by the Proposed Project

Watershed Name	HUC-10 ID	Portion of Project Area within the Watershed (acres)	Total Watershed Size (acres)
Upper Monument Draw	1208000306	35	260,185
Rio Peñasco	1306000714	86	122,105
Burton Flat	1306001101	67	93,707
Pamilla Draw	1306001103	236	215,057
Williams Sink	1306001115	100	94,792
Monument Springs-Monument Draw	1307000701	355	212,779
Laguna Plata	1306001116	327	156,915
Clayton Basin	1306001102	366	156,259
Salt Lake	1306001117	177	233,510
Dark Canyon- Pecos River	1306001110	124	185,130
Black River-Pecos River	1306001112	516	126,571
Red Bluff Draw	1306001113	122	107,503
Black River	1306001111	74	249,791
Delaware River-Pecos River	1306001114	76	145,388
Total		***2,661***	***2,359,692***

A pedestrian survey of the project area was conducted over several sessions from October 2014 to August 2015 to determine the presence of potential waters of the U.S., including wetlands and other special aquatic sites. Defining elements of potential waters of the U.S. include ordinary high water marks, defined bed and banks, or the three mandatory wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Three wetlands, two perennial streams (Pecos and Black Rivers), one intermittent stream (Red Bluff Draw), 22 ephemeral streams, and two playas were recorded within the project area (SWCA 2015b).

The proposed project ROW crosses approximately 0.8 acre of the Pecos River 2 miles north of New Mexico State Highway 31 within the Pecos River Corridor SMA (see Section 3.9 for a full description of the SMA). Figure 3.1 shows a photograph of the Pecos River crossing location. The crossing location lacks dense aquatic and emergent vegetation (SWCA 2015a).

Figure 3.1. View of the Pecos River crossing location, facing downstream.

The proposed project ROW crosses an estimated 0.2 acre of the Black River approximately 8 miles upstream from the confluence with the Pecos River. Figure 3.2 shows a photograph of the Black River crossing location. The proposed project ROW crosses an estimated 0.2 acre of Red Bluff Draw approximately 9 miles upstream from the confluence with the Pecos River. Figure 3.3 shows a photograph of the Red Bluff Draw crossing location.

Figure 3.2. View of the Black River crossing location from the south bank.

Figure 3.3. View of the Red Bluff Draw from the south bank.

The presence of playas and vegetated depressions were identified in the field according to the CFO's guidance. The CFO defines a playa as a "shallow, nearly level, often saline, dry lake bed. Playas vary considerably in materials, salinity, and hydrologic regime. In general, playas: (1) collect surface runoff in closed basins; (2) are poorly vegetated; (3) are ephemerally flooded; and (4) have a thin surface of non-gravelly, fine-textured sediment" (BLM 2014). These features are of interest to the BLM and subject to protective measures due to their ability to serve as intermittent surface water sources for wildlife in otherwise arid habitats. Additionally, vegetated depressions supporting surface runoff sufficient to affect a type-change in vegetation toward more mesic species, plants adapted to moderate moisture, or toward more vigorous upland species, such as mesquite, are also of importance due to their similar, although less significant, ability to support ephemeral surface waters and are therefore subject to identification during project surveys (personal communication, telephone conversation with Steve Daly, Soil Conservationist, BLM, with Greg Everett, SWCA, on November 7, 2014).

Groundwater Hydrology

The project area occurs primarily within four groundwater areas: the Roswell, Capitan, Lea County, and Carlsbad Basins (NMOSE 1999; Pecos Valley Water Users Organization 2001).

Capitan Basin

Groundwater use within this basin is relatively limited, with small livestock and domestic uses, and industrial use for potash, oil, and gas development. Groundwater supplies in the Capitan Basin are primarily derived from the Capitan Limestone and also from the Castile, Rustler, and Dockum Formations. Groundwater quality is generally poor and well yields are limited (Pecos Valley Water Users Organization 2001).

Roswell Basin

The Roswell Basin is the largest declared basin lying in the Pecos Valley. The Pecos River runs through the eastern side of the basin, from north to south. Groundwater in this basin is derived from several geological formations, including the Yeso and San Andres Formations, the Artesia Group, the Glorieta Sandstone, and alluvium (water eroded) and river terrace deposits (Pecos Valley Water Users Organization 2001). The two major aquifers that yield large supplies of water are the Permian artesian aquifer and the shallow-water aquifer found in alluvium and river terrace deposits. These two aquifers provide water for the cities of Roswell, Artesia Lake Arthur, Dexter, and Hagerman. Irrigation wells have been developed throughout the basin as well, with the largest concentration in the Pecos River valley between Roswell and Seven Rivers. The quality of groundwater ranges widely, and chloride and sulfate are the most common elements that degrade quality of the Roswell Basin (Pecos Valley Water Users Organization 2001).

Carlsbad Underground Basin

The Carlsbad Underground Basin stretches from the Guadalupe Mountains, west of Carlsbad, south to the Texas border, and east into Lea County. Groundwater in this basin is derived from several geological formations, including the Delaware Mountain Group, the Carlsbad and Capitan Limestones, the Castile, the Rustler and Dockum Formations, and alluvium (water eroded) and river terrace deposits (Pecos Valley Water Users Organization 2001). The two major aquifers that yield large supplies of water are the Capitan Reef and the shallow water aquifer found in the alluvium and river terrace deposits. The city of Carlsbad, the village of Loving, and five other community water systems derive their water supplies from the two major aquifers in the basin. Mineral extraction industries (potash, oil and gas) also use water from the basin. The groundwater quality within the Carlsbad Underground Basin can vary from good to poor. The major constituents affecting water quality are salts and sulfur (Pecos Valley Water Users Organization 2001).

Lea County Basin and Ogallala Aquifer

The Lea County Basin is a geographic area designated by the NMOSE for the purposes of groundwater management; the Lea County Basin geographically ends at the Texas border. Physically, however, the primary aquifer of the Lea County Basin is the Ogallala Formation, which extends into Texas. The Ogallala Formation is a Tertiary-age sedimentary formation, composed primarily of unconsolidated, poorly sorted clay, silt, sand, and gravel. The Ogallala Aquifer is unconfined and the saturated thickness of the Ogallala Aquifer in the vicinity of the pipeline is approximately 50 to 250 feet (NMOSE 1999). Groundwater flow in the Ogallala Aquifer is generally to the southeast. The primary uses of groundwater in the vicinity of the pipeline are irrigation and public water supply, with Hobbs, Lovington, and Tatum having municipal well fields accessing the Ogallala. Areas of discontinuous shallow alluvial aquifers may also exist in the vicinity of the proposed pipeline (NMOSE 1999). Groundwater quality is variable, with generally good quality water but some areas in the vicinity of the pipeline have elevated dissolved solids (NMOSE 1999).

Groundwater Levels

Groundwater level data are limited for the project vicinity. Based on the New Mexico Water Rights Reporting System, average groundwater levels in the subject groundwater basins range from 70 feet to 235 feet below the ground surface (Table 3.12) (NMOSE 2015).

Table 3.12. Depth to Groundwater within Groundwater Basins crossed by the proposed project

Groundwater Basin	Average Depth (feet)	Minimum Depth (feet)	Maximum Depth (feet)
Capitan Basin	235	17	1,334
Roswell Basin	144	0	1,280
Carlsbad Underground Basin	93	0	639
Lea County Basin/Ogallala Aquifer	70	0	1,072

3.4.1 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance and no impacts to water resources from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.4.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Three wetlands, two perennial streams, one intermittent stream, 22 ephemeral streams, and two playas were recorded within the project area. All of these features are potentially jurisdictional, or waters of the U.S. (SWCA 2015b). All of the potential waters of the U.S., including the Pecos and Black Rivers and Red Bluff Draw, as well as playas, would be avoided by the proposed project by either spanning the water bodies or designating the areas as avoidance zones in the construction contractor bid package. No permanent surface disturbance within the ordinary high water mark of waters of the U.S., their associated 100-year floodplains, and playas would occur as a result of the proposed project.

Nationwide Permit 12 authorizes the construction of utility lines, such as a transmission lines, and other activities in one single and complete project that does not result in the loss of greater than 0.5 acre of waters of the U.S. Any temporary stream or arroyo crossings required for construction would occur either by a low water crossing or a temporary culvert. The proposed project falls within the regulatory threshold of Nationwide Permit 12, as it is estimated to temporarily disturb less than 0.5 acre of potential waters of the U.S., with no permanent discharge of fill material into waters of the U.S. (SWCA 2015b).

The potential to impact water resources primarily lies with the indirect impacts that could occur due to stormwater runoff from construction activities into downstream waters or the nearby playas. While indirect impacts from stormwater movement of contaminants or sediment due to ground disturbance is a possibility, the stabilization and rehabilitation procedures described in Section 2.1.2, including established stormwater BMPs, are likely to limit any movement of contaminants or sediment and limit any indirect impacts.

Riparian areas would also be avoided to the greatest extent possible. Per the design features in Section 2.1.2, vegetation removal within riparian areas would be limited to selective removal of plants in a manner that protects biological resource as much as possible. Since the 100-year floodplain and potentially jurisdictional water bodies would be spanned by the proposed project, impacts to riparian areas would be minimal (SWCA 2015c).

Depth to groundwater in the project vicinity can be relatively shallow. There is also the potential to impact groundwater resources from construction activities, especially the excavation of holes for structure foundations. Section 2.1.2 includes a design feature for dewatering the construction area near streams and watercourses, if the need arises. Another potential impact could result from accidental spills or release of contaminants that could migrate to groundwater. The use of BMPs, and spill prevention, control, and cleanup procedures would minimize the risk of any impact to shallow groundwater resources, if they exist.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for soil disturbance on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs for erosion control and stormwater events has reduced impacts to water resources by limiting sedimentation and controlling runoff.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to water resources would depend on the placement and type of surface disturbance, the type of soil and the hydrologic conditions within the individual project areas. Generally, soil erosion and sedimentation of local drainages would be expected to occur, especially when storm events occur during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs. Cumulative impacts to groundwater are difficult to estimate because, as with the Proposed Action, impacts to groundwater would occur from accidental spills during construction or operation that would reach the water table. BMPs would be in place for all projects considered for the cumulative impacts analysis; therefore, spills would be rare. If a spill did occur, response would be immediate, thereby reducing the likelihood of groundwater contamination.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.5 Upland Vegetation, Including Noxious Weeds

3.5.1 Affected Environment

The project area occurs within four EPA Level IV ecoregions (Griffith et al. 2006): Arid Llano Estacado, Shinnery Sands, Chihuahuan Desert Grasslands, and Chihuahuan Basin and Playas (Table 3.13).

Table 3.13. EPA Level IV Ecoregions Crossed by the Proposed Project

Level IV Ecoregion	Project Area (acres)
Chihuahuan Basin and Playas	1,273
Chihuahuan Desert Grasslands	763

Shinnery Sands	349
Arid Llano Estacado	276
Total	***2,661***

Arid Llano Estacado

The Arid Llano Estacado ecoregion is present along approximately 11 miles on the east end of the proposed project area. This ecoregion is drier than the main Llano Estacado region to the north. The ecoregion is a climate transitional area from the Chihuahuan Desert region to the southwest, and it has somewhat more broken topography and fewer playas than the plain to the north. Yearly precipitation is less due to a lack of winter precipitation and the absence of snow cover. Lack of precipitation in this region often causes a caliche layer closer to the surface, which increases the general drought condition of the soil.

The following dominant species were observed throughout the Arid Llano Estacado ecoregion habitat during the 2014–2015 biological surveys. The grasses seen include blue grama (*Bouteloua gracilis*), black grama (*B. eriopoda*), hairy grama (*B. hirsuta*), buffalograss (*B. dactyloides*), silver bluestem (*Bothriochloa saccharoides*), sand dropseed (*Sporobolus cryptandrus*), threeawn (*Aristida* sp.), Arizona cottontop (*Digitaria californica*), hairy tridens (*Erioneuron pilosum*), muhly (*Muhlenbergia* sp.), bottlebrush (*Callistemon* sp.), squirreltail (*Elymus elymoides*).Burrograss (*Scleropogon* sp.), threeawns, tobosagrass (*Pleuraphis mutica*), and broom snakeweed (*Gutierrezia sarothrae*) increase with grazing activities. The forbs seen include bush sunflower (*Encelia californica*), gray goldaster (*Heterotheca canescens*), dalea (*Dalea* sp.), sand sagebrush (*Artemisia filifolia*), and gayfeather (Liatris sp.). Mesquite, narrowleaf yucca (*Yucca angustissima*), juniper (*Juniperus* sp.), and ephedra (*Ephedra* sp.) compose invading shrub cover (Griffith et al. 2006). The majority of the land use is dominated by livestock grazing and oil and gas production activities are widespread throughout the ecoregion.

Shinnery Sands

The Shinnery Sands ecoregion is present along approximately 16 miles of the proposed project area between the Arid Llano Estacado and Chihuahuan Desert Grasslands ecoregions. This area includes sand hills and dunes, as well as flat sandy recharge areas. These sand beds lie at the western edge of the High Plains where rising winds drop heavier sand grains and carry finer material further east onto the flat expanse of the Llano Estacado. The ecoregion is named for the Havard (shinnery) oak (*Quercus havardii*) brush that stabilizes sandy areas subject to wind erosion. Although shinnery oak rarely grows higher than 4 feet, its extensive root system can reach over 50 feet through dune sand to reach water. The largest area of sand dunes, at the southwestern edge of the Llano Estacado, is composed of sands blown out of the Pecos River Basin against the Mescalero Escarpment of the Llano Estacado by prevailing southwesterly winds. These dunes serve as a major recharge area for the Pecos River.

Dominant species observed during the 2014–2015 biological surveys in the dune areas include shinnery oak, fourwing saltbush (*Atriplex canescens*), yucca (*Yucca* sp.), sand verbenas (*Abronia fragrans*), sunflowers (*Helianthus annuus*), fringed sagewort (*Artemisia frigida*), and hoary rosemary-mint (*Poliomintha incana*). Ephemeral ponds and swales between the dunes support rushes (*Juncus* sp.), sedges (*Carex* sp.), and sandbar willow (*Salix interior*) (Griffith et al. 2006). The Shinnery Sands are habitat for the LPC and DSL, two species that have exhibited significant population declines. The shrubs offer cover and shade for nesting LPCs, and shinnery oak acorns are a staple food source. The dunes are dominated by oil and gas production in patches throughout the shinnery sands ecoregion.

Chihuahuan Desert Grasslands

The Chihuahuan Desert Grassland ecoregion occurs along approximately 32 miles of the Hobbs to China Draw segment and the southern extent to Eddy to Kiowa near the new Kiowa Substation. The ecoregion is found in areas of fine-textured soils, such as silts and clays that have a higher water retention capacity than coarse-textured, rocky soil These grasslands are present in areas of somewhat higher annual precipitation (10–15 inches) than the Chihuahuan Basins and Playas ecoregion, such as elevated basins between mountain ranges, low mountain benches and plateau tops, and north-facing mountain slopes.

Chihuahuan Desert Grasslands were once more widespread, but heavy grazing in the late nineteenth and early twentieth centuries was unsustainable, and desert shrubs invaded where the grass cover became fragmented. In grassland areas with lower rainfall, areal coverage of grasses may be sparse, 10% or less. Some areas are now mostly shrubs as grasslands continue to decline due to erosion, drought, and climatic change.

Typical grasses of this ecoregion were observed during the 2014-2015 field surveys, such as black grama, blue grama, sideoats grama (*Bouteloua curtipendula*), dropseeds (*Sporobolus* sp.), bush muhly (*Muhlenbergia porteri*), and tobosagrass, with scattered creosote bush, prickly pear (*Opuntia* sp.), and cholla (*Cylindropuntia* sp.) (Griffith et al. 2006). Land use is dominated by livestock grazing, and oil and gas production activities are widespread throughout the Chihuahuan Desert Grasslands ecoregion.

Chihuahuan Basins and Playas

The Chihuahuan Basins and Playas ecoregion is the dominant habitat region present along the western portion of the project area, occurring along the majority of the Eddy to Kiowa line and approximately 31 miles of the Hobbs to China Draw line. Chihuahuan Basins and Playas include alluvial fans, internally drained basins, and river valleys mostly below 4,500 feet. The major Chihuahuan basins formed during tertiary basin and range tectonism when the Earth’s crust stretched and fault collapse resulted in sediment-filled basins. These low elevation areas are some of the hottest and most arid habitats in the state. The playas and basin floors have saline or alkaline soils and areas of salt flats, dunes, and windblown sand.

Biologists observed the following dominant vegetation in this ecoregion: creosote bush, mesquite, tarbush (*Flourensia cernua*), fourwing saltbush, acacias (*Acacia* sp.), blue grama, and alkali sacaton (*Sporobolus airoides*). The vegetation observed along the project area is primarily comprised of mesquite, burrograss, narrowleaf yucca, silver bluestem, blue and black grama grasses, tobosagrass, spectacle pod (*Dimorphocarpa wislizeni*), and shinnery oak. Plant species recorded during the biological survey are listed in Appendix B. One state endangered and BLM sensitive plant species, Scheer’s beehive cactus, was found in two locations along the route. No other special status plant species were observed.

Noxious Weeds

Class A or C noxious weeds were not observed at the time of the investigation (New Mexico Department of Agriculture 2009). One Class B noxious weed species, malta starthistle (*Centaurea melitensis*), was found along the north bank of the Black River. This infestation was small, consisting of several plants. Based on review the latest CFO geographic information system (GIS) data set (July 2015), no other noxious weed locations nor noxious weed treatment areas were identified along the proposed route. Table 3.14 lists the previously treated noxious weed areas within 0.5 mile of the proposed ROW.

Table 3.14. Existing Noxious Weed Treatment Areas within 0.5 mile of the Proposed ROW

Vegetation Code	Species Common Name	Size of Treatment Area
Noxious Weed Treatment Polygons		
CEME	Malta star thistle	63 acres
PEHA	African rue	73 acres
TASP	Salt cedar/tamarisk	84 acres
	Total Area	**220 acres**
Noxious Weed Treatment Lines		
CEME	Malta star thistle	133 miles
HAHE	Rayless goldenrod	4 miles
PEHA	African rue	265 miles
PRGL	Honey mesquite	2 miles
TASP	Salt cedar/tamarisk	2 miles
Unnamed	N/A	5 miles
	Total Length	**411 miles**

Species common name source: USDA PLANTS database (http://plants.usda.gov/java/)

3.5.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance and no impacts to vegetation from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.5.3 Impacts from the Proposed Action

Direct and Indirect Impacts to Upland Vegetation, Including Noxious Weeds

Impacts to plant communities and habitats from the construction of the proposed project would include 2,661 acres of direct impacts from vegetation removal. Prior to construction, woody vegetation would be removed (such as creosote bush and mesquite) and chipped except in riparian areas. Following removal of woody vegetation, the full ROW would be mowed, except in dunes and hummocks, riparian areas, and other environmentally sensitive locations. If it becomes necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible. Short-term impacts would occur from the vegetation removal activities during site preparation and would continue until revegetation of the project area by faster growing plants is achieved, which is estimated to be 2 years after construction.

After construction, the project area would be reclaimed following the BLM-approved reclamation plan (see Section 2.1.1) and using a BLM-prescribed seed mix. However, even after the proposed project area is revegetated, it is expected that the vegetation community within the ROW would be different than that outside the ROW because SPS vegetation management practices require permanent removal of woody vegetation except within riparian areas. Therefore the vegetation community within the ROW would be permanently shifted to predominantly grasses and forbs. In addition, the planting of non-native species may result in the introduction of those species into nearby natural areas. The establishment of mature native plant communities may require decades, and some community types may never fully recover from disturbance. Successful re-establishment of some habitat types, such as sand sagebrush communities, may be difficult and may require considerably greater periods of time. Woody species would be suppressed via herbicides so as not to encroach upon the transmission lines, and would therefore not be reestablished. Restoration of plant communities in areas with arid climates (e.g., averaging less than 9 inches of annual precipitation) would be especially difficult (Monsen et al. 2004).

Long-term, permanent impacts from the construction of the substations would result in 58 acres of vegetation loss as a result of the construction of the new Kiowa Substation and expansion of two additional substations. These impacts are expected to change the vegetation species composition, abundance, and distribution in and adjacent to the project area.

Indirect impacts to vegetation would occur as a result of deposition of fugitive dust generated during clearing and grading activities, the use of access roads, and from wind erosion of exposed soils. This could reduce photosynthesis and productivity, increase water loss (Eveling and Bataille 1984) in plants near the project area, and result in injury to leaves. Localized fugitive dust could be generated from the large areas of disturbed soil from foundation boring and blading associated with construction. Plant community composition could subsequently be altered, resulting in habitat degradation. Localized impacts on plant populations and communities could occur if seed production in some plant species is reduced. BMPs to control fugitive dust are incorporated into the project design features found in Section 2.1.2.

Any surface disturbance can increase the possibility of establishment of new populations of invasive, non-native species. Noxious weed seeds could be carried to and from the project area by construction equipment and transport vehicles. The spread of noxious weeds could occur during construction on the north bank of the Black River, where a small population of malta starthistle has been documented. However, it is expected that this infestation would be treated with herbicide prior to construction as SPS has enrolled in the Eddy and Lea Counties noxious weed programs. Several previously treated noxious weed areas occur within 0.5 mile of the proposed ROW (see Table 3.14). African rue, saltcedar, goldenrod, malta starthistle, and mesquite have been the targets of the ongoing weed treatments. BMPs to prevent the spread and new propagation of invasive, non-native species are incorporated into the project design are listed in Section 2.1.2.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. The loss of vegetation results in a reduction of stable ground cover, which can encourage the growth of non-native and invasive weeds in the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to vegetation.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to vegetation would depend on the placement and type of surface disturbance and the plant species present within the individual project areas. Generally, native vegetation loss and the spread of noxious weeds would be expected to occur, especially during construction of the present and future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities, although species composition may not be similar to pre-disturbance conditions. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.6 Wildlife and Special Status Species

3.6.1 Affected Environment

The project area falls within four EPA Level IV ecoregions: Arid Llano Estacado, Shinnery Sands, Chihuahuan Desert Grasslands, and Chihuahuan Basins and Playas (Griffith et al. 2006), all of which provide habitat for a variety of wildlife species. The BLM CFO RMPA contains a description of wildlife species that are found within the planning area (BLM 2008a). One of the BLM CFO wildlife management objectives is to manage habitats on public land for the conservation and rehabilitation of fish, wildlife, and plant resources consistent with multiple use management principles (BLM 2008a).

Biological field surveys of the project were conducted over several months from October 2014 to August 2015. Biologists detected 42 bird species, nine mammals, and four reptiles (Table 3.15). Three special status species or their sign were observed (denoted in bold). A full description of the biological survey and effects analysis is found in the BA (SWCA 2015a).

Table 3.15. Wildlife Observed during the Biological Survey

Common Name	Scientific Name
Birds	
American kestrel[1]	*Falco sparverius*
Ash-throated flycatcher[1]	*Myiarchus cinerascens*
Barn owl[1]	*Tyto alba*
Barn swallow[1]	*Hirundo rustica*

Common Name	Scientific Name
Brewer's blackbird[1]	*Euphagus cyanocephalus*
Brewer's sparrow[1]	*Spizella breweri*
Burrowing owl[1, 2, 3]	*Athene cunicularia*
Cactus wren[1]	*Campylorhynchus brunneicapillus*
Canyon towhee[1]	*Pipilo fuscus*
Chihuahuan raven[1]	*Corvus cryptoleucus*
Chipping sparrow[1]	*Spizella passerina*
Clay colored sparrow[1]	*Spizella pallida*
Common raven[1]	*Corvus corax*
Crissal thrasher[1]	*Toxostoma crissale*
Curve-billed thrasher[1]	*Toxostoma curvirostre*
Eastern meadowlark[1]	*Sturnella magna*
Gadwall[1, 2]	*Anas strepera*
Great-tailed grackle[1]	*Quiscalus mexicanus*
Greater roadrunner[1, 2]	*Geococcyx californianus*
Green-tailed towhee[1]	*Pipilo chlorurus*
Harris's hawk[1]	*Parabuteo unicinctus*
House finch[1]	*Haemorhous mexicanus*
House wren[1]	*Troglodytes aedon*
Ladder-backed woodpecker[1]	*Picoides scalaris*
Lark bunting[1]	*Calamospiza melanocorys*
Lark sparrow[1]	*Chondestes grammacus*
Loggerhead shrike[1, 2]	*Lanius ludovicianus*
Mourning dove[1]	*Zenaida macroura*
Northern bobwhite[1]	*Colinus virginianus*
Northern mockingbird[1]	*Mimus polyglottos*
Pyrrhuloxia[1]	*Cardinalis sinuatus*
Red-tailed hawk[1]	*Buteo jamaicensis*
Sage sparrow[1]	*Amphispiza belli*
Say's phoebe[1]	*Sayornis saya*
Scaled quail[1]	*Callipepla squamata*
Spotted towhee[1]	*Pipilo maculatus*
Sprague's pipit[1]	*Anthus spragueii*
Vesper sparrow[1]	*Pooecetes gramineus*
Western meadowlark[1]	*Sturnella neglecta*
White-crowned sparrow[1]	*Zonotrichia leucophrys*
White-throated sparrow[1]	*Zonotrichia albicollis*
Yellow-rumped warbler[1]	*Setophaga coronata*
Mammals	
Domestic cattle[1]	*Bos* spp.
Cottontail rabbit[1]	*Sylvilagus* sp.
Coyote[1]	*Canis latrans*
Jackrabbit[1]	*Lepus californicus*
Javelina[3]	*Pecari tajacu*
Kangaroo rat[2]	*Dipodomys* sp.
Mule deer[1]	*Odocoileus hemionus*
Pronghorn[1]	*Antilocapra americana*
Wood rat[2]	*Neotoma* sp.
Reptiles	
Common side-blotched lizard[1]	*Uta stansburiana*
Unknown spiny lizard[1]	*Sceloporus* sp.
Ornate box turtle[1]	*Terrapene ornate*

Common Name	Scientific Name
New Mexico whiptail lizard[1]	*Cnemidophorus* sp.

Note: [1]Direct observation; [2] mounds and/or nests; [3] tracks and/or scats; [4] carcass/shell.

Besides mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), javelina (*Pecari tajacu*), and scaled quail (*Callipepla squamata*), other game species that have the potential to occur in and around the project area include Montezuma quail (*Cyrtonyx montezumae*). Furbearer game species likely to occur in the project area include badger (*Taxidea taxus*), long-tailed weasel (*Mustela frenata*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), ringtail (*Bassariscus astutus*), and bobcat (*Lynx rufus*) (Findley et al. 1975; Frey 2004).

An abundance of non-game species is also known to occur within the CFO's jurisdiction, including mammals, reptiles, amphibians, raptors, and neotropical migrant bird species not discussed above. Due to the range of habitats present within the project area, such species are numerous and diverse. Non-game mammals with the potential to occur in the project area include desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), and a variety of small mammals (*Order Rodentia*). Numerous bat species are also known to occur in the surrounding area, including big brown bat (*Eptesicus fuscus pallidus*), California myotis bat (*Myotis californicus*), western small-footed myotis bat (*M. ciliolabrum melanorhinus*), Mexican free-tailed bat (*Tadarida brasiliensis*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), hoary bat (*Lasiurus cinereus*), eastern red bat (*L. borealis*), pallid bat (*Antrozous pallidus*), and western pipistrelle bat (*Pipistrellus hesperus*) (Findley et al. 1975; Frey 2004).

Reptiles and amphibians with the potential to occur in the project area include, but are not limited to, western diamondback rattlesnake (*Crotalus atrox*), coachwhip (*Coluber flagellum*), desert kingsnake (*Lampropeltis getula*), bullsnake (*Pituophis catenifer*), Texas horned lizard, common side-blotched lizard (*Uta stansburana*), checkered whiptail (*Aspidoscelis tesselata*), collared lizard (*Crytaphytus collaris*), ornate box turtle (*Terrapene ornata*), Great Plains toad (*Anaxyrus cognatus*), Mexican spadefoot (*Spea multiplicata*), Couch's spadefoot (*Scaphiopus couchii*), and eastern tiger salamander (*Ambystoma tigrinum*) (Degenhardt et al. 1996; Stebbins 2003).

Migratory Birds

EO 13186, dated January 17, 2001, calls for increased efforts to more fully implement the MBTA. 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.

Numerous bird species, as well as active and inactive passerine, burrowing owl, and raptor nests, were observed during the biological field surveys (see Table 3.15). Most of these species occur in southern New Mexico during the breeding season and may nest on the ground or in shrubs documented in the project area. Raptor nests were primarily found on exiting transmission and distribution line structures.

Raptor species with the potential to occur in the project area include, but are not limited to, golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*B. swainsoni*), red-tailed hawk (*B. jamaicensis*), rough-legged hawk (*B. lagopus*), bald eagles (*Haliaeetus leucocephalus*), Harris's hawk (*Parabuteo unicinctus*), Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), barn owl (*Tyto alba*), burrowing owl, great horned owl (*Bubo virginianus*), western screech owl (*Otus kennicotti*), American kestrel (*Falco sparverius*), and prairie falcon (*F. mexicanus*). Burrowing owls, as well as an active burrowing owl burrow, were observed in the project area.

Bald and Golden Eagles

Bald eagles and golden eagles are protected under the Bald and Golden Eagle Protection Act and the MBTA. In New Mexico the bald eagle is found typically in association with water and nests only at a few undisclosed locations along lakes or streams in the northern and western portions of the state (Stahlecker and Walker 2010). The golden eagle nests primarily on rock ledges or cliffs, less often in large trees at elevations ranging from 4,000 to 10,000 feet and is typically found in mountainous regions of open country, prairies, arctic and alpine tundra, open wooded areas, and barren areas. Both bald and golden eagles are carnivores. In New Mexico, bald eagles prey on fish but also on mammals, especially prairie dogs (*Cynomys* sp.). Golden eagles feed mainly on small mammals, as well as invertebrates, carrion, and other wildlife (Biota Information System of New Mexico [BISON-M] 2015). No bald or golden eagles were observed during the biological survey. Suitable foraging and marginal nesting habitat for bald eagles is present along the Pecos River. Golden eagles may occur in the project area outside the breeding season when they can perch on utility poles far from cliffs and other rugged terrain.

Special Status Species

The special status species evaluated in this EA are described in the BA (SWCA 2015a) and consist of 1) all federally protected (i.e., endangered and threatened) species, 2) additional species listed by the USFWS as candidate and proposed and species under review (USFWS 2015b), 3) state-listed endangered and threatened species (BISON-M 2015), and 4) BLM sensitive species, some of which are also listed as candidates or are under the review by the USFWS and/or are state listed. The BLM manages certain sensitive species that are not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. The authority for this policy and guidance is established by the ESA, as amended; Title II of the Sikes Act, as amended; FLPMA; and Department of the Interior Manual 235.1.1A.

Based on the biological survey conducted in the project area and additional biological research, 14 special status species have the potential to occur in the project area (Table 3.16). Of these special status species, loggerhead shrike (*Lanius ludovicianus*), Sprague's pipit (*Anthus spragueii*), and burrowing owl were observed during the field survey of the project area.

Table 3.16. Special Status Species with the Potential to Occur in the Project Area

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Plants			
Scheer's beehive cactus (*Coryphantha robustispina* var. *scheeri*)	State E BLM Sensitive	Typically associated with gravelly or silty soil in desert grassland and Chihuahuan desert scrub. May also be found on rocky benches or bajadas on limestone or gypsum; the elevation range of this cactus is 3,300–3,600 feet.	Individuals of this species were observed during field surveys.
Reptiles			
Texas horned lizard (*Phrynosoma cornutum*)	BLM Sensitive	Inhabits arid and semiarid areas in the southwestern United States, characterized by open country with little vegetation. These areas often consist of grasses interspersed with cacti, yucca, mesquite, and other assorted woody shrubs and trees. In New Mexico, the species is associated with *Yucca-Prosopis-Ephedra* and *Larrea-Acacia-Fouquieria* associations often in playas or on bajadas and mountain foothills.	May occur. Open mesquite associations within the project area represent suitable habitat for the species.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Dunes sagebrush lizard (*Sceloporus arenicolus*)	State E BLM Sensitive	A habitat specialist native to the shinnery oak sand dune habitats extending from the San Juan Mesa in northeastern Chaves County, Roosevelt County, and through eastern Eddy and southern Lea Counties. DSLs have an extremely strong affinity for bowl-shaped depressions in active dune complexes referred to as sand dune blowouts. They prefer relatively large blowouts and select microhabitat within a given blowout. Within their geographic range, the presence of the DSL is also associated with composition of the sand; they only occur at sites with relatively coarse sand.	May occur. Shinnery oak sand dune habitat occurs in the project area. Portions of project are within the known distribution area for the DSL.
Birds			
Aplomado falcon (*Falco femoralis septentrionalis*)	USFWS ENEP State E	Associated with semi-desert grasslands with scattered yuccas, mesquite, and cactus. Naturally occurring populations are essentially restricted to the southern tier of New Mexico. The species has also been reintroduced on the Armendaris Ranch in Socorro and Sierra Counties and on lands administered by the BLM, White Sands Missile Range, and the SLO beginning in 2006.	May occur in the project area. Aplomado falcons occur in open country in southern New Mexico. Utility poles in the project area offer hunting perches.
Bald eagle (*Haliaeetus leucocephalus alascanus*)	State T BLM Sensitive	Occurs in New Mexico year-round. Breeding is restricted to a few areas mainly in the northern part of the state along or near lakes. In migration and during winter months the species is found chiefly along or near rivers and streams and in grasslands associated with large prairie dog colonies. Typically perches in trees.	May occur as a migrant along the Pecos and Black Rivers.
Burrowing owl (*Athene cunicularia hypugaea*)	BLM Sensitive	Present mainly during the breeding season in the northern half of the state and present year-round in the southern half. Found in grasslands especially in association with prairie dog colonies, in desert scrub, and in agricultural and semi-urban environments. Depends on prairie dogs, rock squirrels (*Otospermophilus variegatus*), and other fossorial mammals for the availability of burrows.	May occur due to grassland and desert scrub vegetation in the project area. Species was observed during surveys.
Common ground dove (*Columbina passerina pallescens*)	State E	Associated with shrubby riparian habitat or riparian woodland edges. Also occurs in desert scrub dominated by mesquite or creosote. Feeds exclusively on the ground, in sparsely vegetated areas.	May occur in the project area due to the presence of mesquite-dominated desert scrub.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Ferruginous hawk (*Buteo regalis*)	BLM Sensitive	Occurs year-round in New Mexico. During the breeding season it is present in grasslands, badlands, and along the ecotone between grasslands and piñon-juniper woodlands, especially in the vicinity of prairie dog towns. During the winter, ferruginous hawks are primarily associated with grasslands but may be found in other habitat types such as ponderosa pine (*Pinus ponderosa*) forest. Prairie dogs are important year-round in the diet of New Mexico's ferruginous hawks.	May occur in open vegetation habitat in the project area. Utility poles in the project area offer hunting perches.
Lesser prairie-chicken (*Tympanuchus pallidicinctus*)	BLM Sensitive	The LPC occurs in southeastern New Mexico primarily in shinnery oak or sand sagebrush grasslands. Also occurs in shinnery oak-bluestem habitats dominated by sand bluestem (*Andropogon hallii*), little bluestem (*Schizachyrium scoparium*), sand dropseed, threeawn, and blue grama.	Portions of the project area lie within a BLM designated management area for this species. May occur in grassland and dune habitat within the project area.
Loggerhead shrike (*Lanius ludovicianus*)	BLM Sensitive	The loggerhead shrike is a year-round resident in New Mexico and is found throughout the state primarily in open country, including grasslands, improved pastures, hayfields, shrub steppe, and desert scrub, as well as piñon-juniper woodland and woodland edges.	May occur. The project area contains thorny desert scrub habitat preferred by the species.
Neotropic cormorant (*Phalacrocorax brasilianus*)	State T	Associated with wetlands. Key requirements include areas of deep water for diving and elevated perches in trees, shrubs, and other structures for nesting, roosting, and drying plumage after feeding.	May occur. The Pecos River provides an adequate food source for the species. The project area lacks large, mature trees for roosting and nesting.
Peregrine falcon (*Falco peregrinus*)	State T	Found in New Mexico year-round. All nests in New Mexico are found on cliffs. In migration and during winter months New Mexico's peregrine falcons are typically associated with water and large wetlands.	May utilize areas along the Pecos and Black Rivers for foraging.
Sprague's pipit (*Anthus spragueii*)	USFWS C BLM Sensitive	Occurs in New Mexico only as a sporadic winter resident. Its distribution in the state is not well known, but includes the lower Pecos River valley, Otero Mesa, and the Animas Valley. It is associated with southern desert grasslands of the state. The species as a whole prefers dry, open grasslands.	Observed during surveys and could occur in grasslands of the project area during winter.
Varied bunting (*Passerina versicolor versicolor*)	State T	This species is associated with desert canyons, thorn-scrub and riparian edge habitats within the extreme southern portion of New Mexico. A small breeding population has been located in canyons of Carlsbad Caverns National Park. Prefers nesting along washes or on slopes of dense shrubby vegetation.	May occur in desert scrub habitat present in the project area.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area

* Federal (USFWS) status definitions:

E = **Endangered.** Any species considered by the USFWS as being in danger of extinction throughout all or a significant portion of its range. 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.** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The ESA specifically prohibits the take (see definition above) of a species listed as threatened.

C = Candidate. Any species (taxon) for which the USFWS has sufficient information to propose that it be added to the list of endangered and threatened species, but the listing action has been precluded by other, higher priority listing activities.

ENEP = Experimental, Non-essential Population. Any reintroduced population established outside the species' current range, but within its historical distribution. For purposes of Section 7 consultation, experimental, non-essential populations are treated as proposed species (species proposed in the *Federal Register* for listing under Section 4 of the ESA), except on national wildlife refuges and national parks, where they are treated instead as threatened.

w/CH = with Critical Habitat. Critical habitat corresponds to specific areas within the geographical area occupied by the species at the time of listing, with physical or biological features essential to the species' conservation and requiring special management considerations or protection.

* State status definitions:

E = **Endangered.** Any species that is considered by the State of New Mexico (New Mexico Department of Game and Fish for wildlife, Forestry and Resources Conservation Division for plants) as being in jeopardy of extinction or extirpation from the state.

T = **Threatened.** Any species that, in the view of the State of New Mexico, is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico.

Note: A no effect determination is defined based on recommendations by the USFWS.

Except where otherwise noted, range or habitat information for wildlife species is taken from the BISON-M website (BISON-M 2015), the USFWS New Mexico Southwest Region Ecological Services Field Office (USFWS 2015b), the New Mexico Forestry Division (2006), Cartron (2010), and the New Mexico Rare Plant Technical Council (1999).

3.6.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no impacts to wildlife, migratory birds, or special status species because the ROW would not be granted and no ground disturbance or noise related to construction and operations would occur. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.6.3 Impacts from the Proposed Action

Direct and Indirect Impacts

General Wildlife

Impacts to wildlife would result from actions that alter wildlife habitats, including changes to habitat and disturbance. Altering wildlife habitat in ways that would be considered adverse may occur directly (through habitat loss from surface disturbance) or indirectly (through the reduction in habitat quality caused by increased noise levels and increased human activity).

Construction of the transmission line, access roads, and substations would result in approximately 2,661 acres of temporary, direct surface disturbance and habitat removal. Additional short-term impacts may include displacement of wildlife during construction activities or exposure of wildlife to hazards such as entrapment in foundation holes and collisions with project-related vehicle traffic. Construction noise would also indirectly impact wildlife. Infrequent, abrupt, and unpredictable noise could be perceived as threats and cause wildlife to flee or hide, which could impact individual survival and fitness (Francis and Barber 2013).

Long-term, direct impacts to wildlife include the permanent removal of approximately 58 acres of habitat for substation construction and expansion activities.

After construction, the project area would be reclaimed with a BLM-prescribed seed mix. Reclamation of the disturbed ROW is expected to return those affected areas to herbaceous production within 2 years after construction, depending on drought conditions. In some areas, restoration may potentially include plant species that are not locally native or plant communities different from local native communities because SPS vegetation management practices require permanent removal of woody vegetation except within riparian areas. Although the replanting of disturbed soils may successfully establish vegetation in some locations (i.e., with a biomass and species richness similar to those of local native communities), the resulting plant community is expected to be quite different from native communities in terms of species composition and representation of particular vegetation types, predominantly grasses and forbs.

In addition, the planting of non-native species may result in the introduction of those species into nearby natural areas. The establishment of mature native plant communities may require decades, and some community types may never fully recover from disturbance. Successful re-establishment of some habitat types, such as shinnery oak and sand sagebrush communities, may be difficult and may require considerably greater periods of time. As a result, reclamation of the project area could have a long-term impact to wildlife by modifying the habitat within and adjacent to the project area. The change in vegetative species composition may modify cover and foraging opportunities for wildlife.

Migratory Birds

Short-term impacts to migratory birds include displacement from the project area until vegetation has become re-established within the ROW. No long-term impacts to migratory birds are anticipated from the implementation of the proposed project. If possible, vegetation removal, or treatment with herbicides during maintenance every four years, would be scheduled outside the migratory breeding bird season (March–August). Any vegetation removal during the breeding bird season would be preceded by pre-removal nesting surveys to identify occupied nests. Active nests would be avoided until the young have fledged to prevent impacts to species protected under the MBTA. Plant communities present in the project area are widespread elsewhere and many birds occurring locally would likely move into adjacent habitats in response to temporary habitat loss from 2,661 acres of temporary construction-related surface disturbance and 58 acres of permanent upland vegetation loss for the new Kiowa substation and additional substation expansions.

Burrowing owls and an active nest burrow were observed during the field surveys. These birds are protected by the MBTA and are designated sensitive by the BLM. Pre-construction surveys would establish the occupancy status of suitable burrows detected within the project area. A 200-meter avoidance buffer would be established around all occupied burrowing owl burrows.

Activities in the survey area are not expected to impact bald and golden eagles. No bald or golden eagles were observed during the field survey, and eagles that may occur in the survey area likely would not be disturbed. Golden eagles may occur in the project area, especially outside the breeding season when they can perch on utility poles far from cliffs and other rugged terrain. However, their presence would likely be of short duration and nesting within or adjacent to the project area would be unlikely. Active raptor nests would be subject to 200-meter construction setbacks during active nesting. Raptor nests (except for bald and golden eagle nests) within 200 meters of the construction ROW that are found to be inactive during pre-clearing nest surveys may be subject to removal. Section 2.1.2 includes measures to minimize impacts to migratory birds including the installation of bird flight diverters on the lines crossing the Pecos and Black rivers.

Special Status Species

Special status species with the potential to occur in the project area were evaluated for possible impacts from the proposed project. However, effect determination categories are written differently based on the legal status of a species and the responsibilities of the agency tasked to manage or protect that species. The aplomado falcon is listed as a federal experimental, non-essential population, and is the only federally protected species identified as likely to occur within the project area.

Impact determinations for all other species (USFWS candidate, BLM sensitive, species under federal review, and state-listed species that are not federally threatened or endangered) were evaluated for possible impacts as follows.

- *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 or habitat, 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 or habitat 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.

Scheer's Beehive Cactus (*Coryphantha robustispina* var. *scheeri*)

Scheer's beehive cactus is a state endangered plant and a BLM sensitive species. The cactus is found at a limited number of locations in Arizona, New Mexico, Texas, and possibly Mexico (New Mexico Rare Plant Technical Council 1999). Primary threats to Scheer's beehive cactus include cattle grazing and trampling, and oil and gas development.

Scheer's beehive cactus could potentially occur throughout the project area, and two were observed during the biological surveys. The BLM, with assistance from the local native plant society, has transplanted the Scheer's cactus to an area outside the ROW. Vegetation removal and ground-disturbing activities may impact cactus habitat within the ROW or individual cactus undetectable during the survey. Exposed soils would be reclaimed following construction. The status of Scheer's beehive cactus in southern New Mexico is unlikely to be affected by the construction and maintenance of the proposed project, and would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

The DSL is a state-listed endangered species. Suitable habitat for this species consists of shinnery oak sand dune habitat. Suitable habitat also consists of scattered patches of open sand called "blowouts" that are present in areas where the sand dunes are well developed. The DSL has been found to be closely associated with sand dune blowouts, patches of bare open sand that form from wind erosion along the bases of tall dune crests (Fitzgerald et al. 1997). Threats to the DSL include the fragmentation and loss of shinnery oak dune habitat as a result of disturbance and herbicide application.

Approximately 8 miles of the project traverses through the known distribution area for the DSL. Approximately 120 acres of the proposed project area is located within the DSL distribution area. Potential impacts to the DSL include temporary disturbance of individuals and temporary localized habitat loss during construction. To minimize potential impacts to occupied DSL habitat, SPS sited the route within 0.5 mile of U.S. Highway 62/180 and other existing ROW easements to the extent feasible. SPS has coordinated with the BLM throughout the planning process to develop a route that avoids dunes known to be occupied by DSL, thereby minimizing the impact to DSL to the fullest extent feasible. Disturbance to dunes and hummocks would be minimized to the extent feasible and reclaimed following construction. BMPs for DSL would be adhered to while digging foundation holes (BLM 2008a). No long-term impacts to the species or its habitat are anticipated from the proposed project. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the DSL or its habitat.

Texas Horned Lizard (*Phrynosoma cornutum*)

The Texas horned lizard is a BLM sensitive species. Threats to the Texas horned lizard include habitat loss from destruction and fragmentation, commercial collection, chemical spraying of non-native vegetation, and red fire ant (*Solenopsis invicta*) introduction (Degenhardt et al. 1996; Jones and Lovich 2009).

The project area is characterized by suitable habitat for the species. No Texas horned lizards were observed during the biological surveys of the project area. If Texas horned lizards are present in the project area during construction, they could avoid the disturbance by moving to adjacent habitat. The proposed project is not likely to adversely impact this species. Per Section 2.1.2, all personnel working on the construction of the proposed project would be instructed to avoid intentionally harassing all animals. Following BMPs to minimize the duration and extent of open holes would reduce potential for accidental Texas horned lizard mortality resulting from entrapment. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Aplomado Falcon (*Falco femoralis septentrionalis*)

The aplomado falcon is currently listed as a state endangered species and a federal experimental, non-essential population in New Mexico (Cartron 2010). Currently in New Mexico the aplomado falcon is restricted to the southwestern portion of the state and is a year-round resident. Threats to the aplomado falcon include habitat loss from brush encroachment, drought, grazing, and energy development, as well as pesticide contamination.

The project area is within the known distribution of the species, and provides suitable foraging habitat of mesquite shrubs and sparse yuccas with a sparse grass understory, as well as the presence of utility poles, used for hunting perches. Suitable nesting habitat for this species is not present in the project area. No aplomado falcons were observed during the biological surveys of the project area. Impacts to any aplomado falcons present in the general area of the project are possible in the form of noise disturbance, but such impacts would be minimal and temporary. No long-term impacts to the aplomado falcon or its habitat are anticipated. The proposed project may affect, is not likely to adversely affect the aplomado falcon.

Bald Eagle (*Haliaeetus leucocephalus alascanus*)

The bald eagle is listed as threatened by the State of New Mexico and sensitive by the BLM. Primary threats to the species include degradation of habitat and lead poisoning from the ingestion of wounded waterfowl. Bald eagles have the potential to forage in the project area or be present during migration.

Potential impacts to bald eagles could include temporary disturbance of individuals during construction. Per the project design features described in Section 2.1.2, construction during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of eagles nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the bald eagle or its habitat.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is protected under the MBTA. It is also a BLM sensitive species. Primary threats to the species consist chiefly of prairie grassland habitat loss and fragmentation, human-caused mortality on wintering grounds and during migration, and the loss of colonial sciurids such as prairie dogs.

Burrowing owls were observed in the vicinity of the project area during the biological surveys. Suitable nesting burrows were observed in the project area, including one active burrowing owl burrow. Most of these burrows appeared to be of leporine, hare or rabbit, origin. No prairie dog colonies, extant or historic, were identified within the project area. Potential impacts to burrowing owls could range from temporary disturbance to loss of burrows.

Potential impacts to burrowing owls could include temporary disturbance of individuals during construction. Per Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of burrowing owls nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but likely would not contribute to a trend toward federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the burrowing owl or its habitat.

Common Ground Dove (*Columbina passerina pallescens*)

The common ground dove is a State of New Mexico–listed endangered species and is also protected under the MBTA. In New Mexico, this species prefers shrubby riparian habitat or edges of riparian woodlands; it also occurs in desert shrub dominated by mesquite or cholla, and in abandoned agricultural fields with tall weeds. Common ground doves feed exclusively on the ground, in sparsely vegetated areas (New Mexico Partners in Flight [NMPIF] 2015).

Potential impacts to common ground doves could include temporary disturbance of individuals. SPS would not remove woody vegetation in riparian areas as part of preparing the ROW for construction. If it is necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be selectively removed. Per the project design features described in Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of common ground doves nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the common ground dove or its habitat.

Ferruginous Hawk (*Buteo regalis*)

The ferruginous hawk is designated as a BLM sensitive species. In southern New Mexico the species is primarily a winter resident. Primary threats to the species consist primarily of loss of quality habitat (Cartron et al. 2010).

No ferruginous hawks were observed in the vicinity of the project area during the field surveys. The project area represents marginal habitat for the ferruginous hawk. Any impacts to ferruginous hawks would likely be in the form of noise disturbance only and ferruginous hawks present in or near the project area would relocate to a nearby area with similar habitat. Per Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of ferruginous hawks nesting in the project area. No long-term impacts to the ferruginous hawk or its habitat are anticipated from the proposed project. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)

As of September 2, 2015, the lesser prairie-chicken was removed from listing under the ESA (U.S. District Court, Western District of Texas 2015). However, this species is still a BLM sensitive species. Preliminary data over 2 years show that inactive lek sites are exposed to higher ambient sound levels than active sites (Hunt and Best 2002). The same study also reports a significantly higher number of operating wells within 1 mile of inactive than active lek sites (NMPIF 2015). A growing body of evidence suggests that LPCs actively avoid areas of human activity, noise, and proximity to vertical elements (such as trees or power poles), particularly during nesting (Robel et al. 2004; NMPIF 2015). Predation on nests, chicks, and adult birds is by far the largest source of mortality for this species (NMPIF 2015). The introduction of trees, power lines, or other vertical structures into prairie habitats provides hunting perches for raptors and may indirectly increase raptor predation on LPCs (Bidwell et al. 2002). Fences and power lines may also be a significant cause of direct mortality by collision (Bidwell et al. 2002).

The project area lies within the IPA, a special status species RMPA zoning area established by the BLM for the LPC (BLM 2008a). Approximately 23.5 miles of the IPA are crossed by the project. To minimize potential impacts to LPC within the IPA boundary, SPS sited the route within 0.5 mile of U.S. Highway 62/180 to the extent feasible.

LPC lek surveys were conducted along the proposed route. No LPCs or indicators of this species (e.g., tracks, scat, feathers) were detected during biological surveys performed in 2015.

The proposed project includes design features specifically for LPCs (see Section 2.1.2). Short-term impacts to LPCs potentially present in the general area of the project are possible in the form of construction-related noise disturbance. SPS has coordinated with the BLM throughout the planning process to develop a route that minimizes surface disturbance in the project area and avoids crossing through any Habitat Evaluation Areas for LPC. Long-term impacts to LPCs would result from fragmentation of potential habitat, as well as creation of new nesting and perching opportunities in some areas; however, SPS has sited the route along corridors of existing disturbance to the extent feasible. Therefore, new impacts to suitable LPC habitat along the project route are not expected.

Impacts to LPCs potentially present in the vicinity of the project are possible in the form of construction-related noise disturbance, but such impacts would be temporary. Any LPCs present locally during construction activities would likely move to adjacent suitable habitat. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is designated as a BLM sensitive species. The loggerhead shrike is known to occur within the vicinity of the project area, and suitable thorny shrub habitat is present. The species was observed during the biological surveys.

Per Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of loggerhead shrikes nesting in the project area and establish avoidance buffers around any occupied nests until the young have fledged. Disturbance of loggerhead shrikes or their habitat would be temporary. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Neotropic Cormorant (*Phalacrocorax brasilianus*)

Neotropic cormorant is a threatened species in the State of New Mexico and is also protected under the MBTA. Neotropic cormorants are known to occur along the Pecos River. This species could forage, roost, or nest within the project area; however, human activity in the surrounding area is high.

Potential impacts to neotropic cormorants could range from temporary disturbance of individuals during construction to loss of nesting habitat. Per the project design features described in Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of neotropic cormorant nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the neotropic cormorant or its habitat.

Peregrine Falcon (*Falco peregrinus*)

The peregrine falcon is a State of New Mexico threatened species and is protected under the MBTA. It has recovered from low populations brought on by organochloride pesticide contaminations that resulted in thin egg shells and low brood success (NMPIF 2015). Preferred habitat is montane and canyon areas, and nesting usually occurs on cliffs. The species may nest on human-made structures, such as towers or tall buildings (NMPIF 2015). The species may pass through the project as a migrant following the Pecos River.

Potential impacts to peregrine falcons could include temporary disturbance of individuals during construction. Per the project design features described in Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of raptors nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the peregrine falcon or its habitat.

Sprague's Pipit (*Anthus spragueii*)

Sprague's pipit is listed as a candidate species by USFWS, and is also protected under the MBTA. The species prefers open native grassland. Primary threats to Sprague's pipit consist chiefly consist of habitat conversion to agricultural use. This species occurs in New Mexico during winter and migration. It does not breed in the state. One Sprague's pipit was observed during biological surveys.

Potential impacts to Sprague's pipit could range from temporary disturbance of individuals during construction to loss of foraging habitat. Per the project design features described in Section 2.1.2, the seed mixture quantity for 1 mile along the Eddy–-Kiowa route in Section 12 would be doubled during reclamation of disturbed areas. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the Sprague's pipit or its habitat.

Varied Bunting (*Passerina versicolor versicolor*)

Varied bunting is listed as threatened by the State of New Mexico and is also protected under the MBTA. The species nests in dense, shrubby vegetation. Primary threats to the species consist chiefly of habitat loss and degradation.

Potential impacts to varied bunting could range from temporary disturbance of individuals during construction to loss of nesting habitat. Per the project design features described in Section 2.1.2, construction and vegetation treatments conducted during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of varied bunting nesting in the project area and establish avoidance buffers around any occupied nesting sites. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the varied bunting or its habitat.

Cumulative Impacts

Cumulative Impacts to Wildlife and Special Status Species, except for LPC and DSL

Surface-disturbing activities affect wildlife, migratory birds, and special status species through decreasing available forage and habitat and causing habitat alteration and fragmentation. Well pad and road density break the available habitat into smaller and smaller pieces, which can lead to displacement and physiological stress in wildlife species. Fragmentation results in indirect habitat loss and degradation. Wildlife species would have to expend an increased amount of energy to avoid disturbed areas or when experiencing alarm due to human presence, traffic, and associated noise.

Watkins et al. (2007) describe quantitative thresholds of fragmentation impact as moderate, high, and extreme, based on the density of well pads per section and cumulative surface disturbance. Moderate impact is defined as one to four wells and less than 20 acres of disturbance per section. High impact is defined as five to 16 wells and 20 to 80 acres of disturbance per section. Extreme impact is defined as more than 16 wells and greater than 80 acres of disturbance per section. Based on the above-described definitions, the density of current oil and gas development is extreme within the project area. This indicates habitat function is severely compromised with long-term habitat fragmentation consequences (Watkins et al. 2007).

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past and present actions account for surface disturbance and potential habitat removal on approximately 5% of the CIAA.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to wildlife, migratory birds, and special status species, would depend on the placement and type of surface disturbance and the available habitat within the individual project areas. Generally, native vegetation loss, increased noise, and habitat degradation would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities, although the plant species may be different than the vegetative communities present prior to construction. Some species would also adapt to noise associated with maintenance and operation of these actions. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA). Based on the cumulative impacts, habitat fragmentation in the project area is expected to be maintained at high to extreme levels into the future.

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises a negligible addition (~2%) to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Cumulative Impacts to LPC and DSL

The specific CIAA for the LPC and DSL is based on the habitat zones identified in the 2008 RMPA. Due to the substantial overlap between the LPC IPA and DSL known distribution area, the IPA is used as the CIAA. For all other special status species with potential to occur in the project area, the cumulative effects analysis above for general wildlife would also apply.

Impacts to LPC and DSL from past and present actions within the 794,683-acre CIAA include surface-disturbing activities primarily from past construction of well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% or 39,734 acres of the CIAA. Reclamation of some disturbed areas has reduced impacts to LPC and DSL from some of this development.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 11,220 acres of surface and vegetation disturbance within the CIAA, or 1.4% of the CIAA. There are no specific data on when RFFA activities are scheduled to begin and when reclamation would be complete, but most of the soil types identified in the CIAA and in the project area have characteristics that could limit successful reclamation of LPC and DSL habitat. RFFAs would require BMPs or other mitigation measures to mitigate LPC and DSL habitat loss. Together, past, present, and reasonably foreseeable surface disturbance would total 50,954 acres (approximately 6.4% of the CIAA).

The Proposed Action would cross 24 miles LPC IPA and 8 miles of DSL known habitat as defined by the 2008 RMPA (see Figure A.2 in Appendix A). The Proposed Action would disturb an estimated 454 acres of potential LPC habitat and 120 acres of DSL distribution, which is approximately 0.06% and 0.02% of the CIAA, respectively. This comprises a 1% addition to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be minimized from implementation of project design features and BMPs presented in Section 2.1.2.

Mitigation Measures and Residual Impacts

To offset potential impacts to riparian areas at the Pecos River crossing, and to freshwater avian species that potentially nest in the vicinity, SPS will install up to 10 poles, some of which will have multiple artificial nesting platforms, at locations within Section 30 of Township 22 South, Range 28 East (see map and diagram in Appendix C of the Plan of Development [on file with BLM]). BLM will be responsible to secure all necessary access and land rights as well as associated permitting requirements, if any. Short-term and long-term maintenance of the nesting platforms will be the responsibility of BLM.

Residual impacts from installation of the nesting platforms include minor disturbance (less than 0.05 acre) to vegetation and soils from excavation of the holes necessary to construct the poles. The platforms will be visible to passersby but are not in a high-use recreation area or high-value scenic area. BLM will perform cultural resources survey prior to installation of the platforms, and ensure compliance with the NHPA. No impacts to air resources, cave and karst resources, water resources, special designations, livestock grazing, or public health and safety are expected. The platforms would provide beneficial impacts to herons by providing a safe platform for perching and nesting.

3.7 Cultural Resources

3.7.1 Affected Environment

Several federal laws and implementing regulations apply to the evaluation and protection of significant cultural resource properties and preservation of cultural standards. Among the most significant of these laws and regulations are:

- NHPA, Section 106, as amended (16 USC 470, EO 13007);
- NRHP (36 CFR 60);
- Protection and Enhancement of the Cultural Environment, 1971 (EO 11593);
- American Indian Religious Freedom Act Amendments of 1978, as amended (42 USC 1996, 43 CFR 7);
- Archaeological Resources Protection Act of 1979 (16 USC 470aa-47011, 43 CFR 7); and
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001, 43 CFR 10).

Management of cultural resources on BLM lands is determined by policy directives contained in the CFO RMP (BLM 1988), as amended. The BLM makes land use decisions that could limit access or require alterations to the Proposed Action to minimize impacts to cultural resources.

A Class I inventory was conducted by SWCA using the online database available at the Archaeological Records Management Section (ARMS) of the New Mexico Historic Preservation Division in order to identify previously recorded archaeological sites within 0.25 mile of the proposed project area, also known as the area of potential effect (APE). Additionally, records searches of data maintained by the CFO and the National Park Service National Register of Historic Places (NRHP) were also conducted. The results of the record search show that 616 previous cultural resources investigations have been completed within 0.25 mile of the APE, with 142 archaeological sites previously recorded (see Sisneros et al. 2015a, 2015b, 2015c). Of these sites, 81 were potentially in the project area. In addition to these sites, the northern edge of the Maroon Cliffs Archaeological District is crossed by the Proposed Action.

Resources in the vicinity of the APE, which consists of the entire project footprint, span the entire prehistoric period from the Paleoindian through the Formative periods, as well as the post-Formative or protohistoric period. Historic sites date from the mid-1800s into the mid twentieth century and are the result of homesteading and ranching/agricultural activities. Resources related to historic oil and gas exploration are also common in the area. The Class I inventory concluded that of the 142 known archaeological sites within 0.25 mile of the project area (10 of which are multicomponent sites), 40 sites have unknown chronological components, 38 sites have a historic component, one site has a prehistoric Plains component, 21 have an Archaic component, and 45 sites have a Jornada Mogollon component.

SWCA conducted a Class III archaeological survey of the project area between November 2014 and September 2015 to assist the BLM in complying with Section 106 of the NHPA. The survey examined

11,173 acres, consisting of 150-foot-wide ROW corridor and 175-foot-wide cultural resources buffer on both sides of the ROW corridor, for a total survey width of 500 feet. In the area of the Marathon Road reroute, the survey corridor was 250 feet wide and included a 50-foot-wide buffer on either side of the ROW corridor for a total survey width of 600 feet. For portions of unpaved roads that would be upgraded for the proposed project, a 50-foot buffer was surveyed on either side of the surveyed 60-foot road ROW width. For road junctions, 200 feet was surveyed on each side of the road junction. Following submission of the cultural resources report in October 2015, SPS proposed a reroute 1,514 m (5,296 feet) in length within the southwestern portion of the project area to accommodate planned development by an oil and gas development company, along the original proposed route. In this area, the survey corridor was 76.2-m-wide (250-foot-wide) and included a 15.2-m-wide (50-foot-wide) cultural resources buffer on either side of the 45.7-m-wide (150-foot-wide) APE.

SWCA's investigation included 178 resources. This total includes 160 recorded resources, 10 sites that were not relocated, five sites that were relocated outside the survey corridor, one site that was subsumed into another site, and two resources that have both an HCPI number and an LA number. Of the 160 recorded resources, 141 are archaeological sites (68 previously recorded and 73 newly recorded) and 19 are HCPI properties. A full summary of the archaeological survey is presented in Sisneros et al. (2015a, 2015b, 2015c, and 2015d).

Of the 141 archaeological sites recorded during the inventory of the survey area, 34 are prehistoric artifact scatters and artifact scatters with one or more feature that date between the Archaic and Formative periods. Another 38 scatters/scatters with features are most likely prehistoric in origin, but were assigned an unspecified aboriginal affiliation because of a lack of diagnostic artifacts. Fifty-three historic archaeological sites were recorded and consisted of artifact scatters with or without features, industrial, ranching/agriculture, transportation/communication, and government/military resources. Sixteen multicomponent sites were identified; of these, 10 exhibited discrete prehistoric and historic occupations, one exhibited two discrete historic occupations, two exhibited two discrete prehistoric occupations, and one exhibited two discrete prehistoric components and a historic component, and two sites exhibit multiple components in that they overlap the Archaic and Formative periods.

Of the 141 archaeological sites, 41 sites were recommended eligible to the NRHP, 53 were recommended not eligible, 46 sites have undetermined eligibility, and one site—LA 132493—is a non-contributing segment of an eligible resource. Of the 19 HCPI resources recorded during this investigation, two are recommended eligible to the NRHP, 11 are recommended not eligible, and five have undetermined eligibility. Site summaries for previously and newly recorded sites eligible for the NRHP or of undetermined eligibility that intersect the proposed project area are presented in Table 3.17 and Table 3.18, respectively. Eligible HCPI resources that intersect the proposed project area are provided in Table 3.19.

Table 3.17. Previously Recorded Sites, Eligible for the NRHP, within the Surveyed Area.

Site No.	Cultural Affiliation and Dates	Landowner	Eligibility
LA 8055	Jornada Mogollon, Formative tradition (A.D. 450–1450)	BLM	Eligible, Criterion D
LA 34389	Jornada Mogollon, Late Formative tradition (A.D. 1150–1450)	BLM	Eligible, Criterion D
LA 45730	Multicomponent: Archaic, Late Archaic (1500–1000 B.C.); Jornada Mogollon, Formative tradition (A.D. 500–1450); Anglo, U.S. Territorial to Statehood/WWII (A.D. 1890–1929)	BLM	Eligible, Criterion D
LA 51813	Unspecified aboriginal (< A.D. 1800)	BLM	Eligible, D
LA 79926	Jornada Mogollon, Formative tradition (A.D. 500–1450)	Private	Eligible D
LA 99414	Jornada Mogollon, Late Formative tradition (A.D. 1100–1450)	BLM	Eligible, Criterion D
LA 102897	Multicomponent: Late Archaic (1500 B.C.–A.D. 300); Anglo, Statehood–WWII (A.D. 1900–1945)	BLM	Eligible D
LA 124293	Jornada Mogollon, Formative tradition (A.D. 500–1450)	Private	Eligible D

Site No.	Cultural Affiliation and Dates	Landowner	Eligibility
LA 124864	Unspecified aboriginal (< A.D. 1800)	SLO	Eligible, Criterion D
LA 130739	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	Eligible D
LA 130740	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	Eligible, Criterion D
LA 132486	Multicomponent: Archaic, Middle to Late Archaic (3000 B.C.-A.D. 200); Anglo, U.S. Territorial to Statehood/WWII (A.D. 1890–1945)	SLO	Eligible, Criterion D
LA 132487	Multicomponent: Late Archaic to Jornada Mogollon, Formative tradition (A.D. 70–380 and 500−1450)	Private	Eligible, Criterion D
LA 132488	Multicomponent; Late Archaic (1800 B.C.–A.D. 200) and Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM, SLO, and private	Eligible, Criterion D
LA 132494	Multicomponent: Late Archaic through Jornada Mogollon, Early Formative (1000 B.C.–A.D. 980)	BLM	Undetermined
LA 141498	Unspecified aboriginal (< A.D. 1800)	BLM	Eligible D
LA 142391	Multicomponent: Jornada Mogollon, Late Formative (A.D. 1150–1450) and Anglo, Statehood/WWII to recent historic (A.D. 1912–1950)	BLM	Eligible, D
LA 156242	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	eligible, D
LA 156243	Jornada Mogollon, Late Formative tradition (A.D. 1125–1500)	BLM	recommended eligible, D
LA 156249	Unspecified aboriginal (< A.D. 1800)	BLM	Eligible, D
LA 171860	Unspecified aboriginal (< A.D. 1800)	Private	Eligible, Criterion D
LA 171861	Archaic, Late Archaic (1000 B.C.–A.D. 300)	BLM	recommended eligible, Criterion D
LA 172572	Multicomponent: Unspecified aboriginal (< A.D. 1800); Anglo, Statehood/WWII (A.D. 1880−1930)	SLO and private	Eligible, D
LA 172574	Archaic, Late Archaic (1600 B.C.–A.D. 300)	Private	Eligible, Criterion D
LA 174340	Archaic, Late Archaic (1600 B.C.–A.D. 300)	Private	Eligible, D
LA 174341	Unspecified aboriginal (< A.D. 1800)	Private	Eligible, Criterion D
LA 174376	Archaic, Late Archaic (1600 B.C.–A.D. 300)	SLO	Eligible D
LA 174714	Jornada Mogollon, Formative tradition (A.D. 500–1450)	SLO	Eligible D
LA 174715	Archaic, Late Archaic (1600 B.C.–A.D. 300)	SLO	Eligible D
LA 174716	Multicomponent: Jornada Mogollon, Formative tradition (A.D. 500–1450); Anglo, Statehood/WWII (A.D. 1880−1930)	SLO	Eligible D
LA 179130	Multicomponent; Jornada Mogollon, Formative tradition (A.D. 200–1450); Anglo, Statehood to recent historic (A.D. 1920–1960s	BLM	Eligible, D
LA 179413	Multicomponent: Archaic and Jornada Mogollon, Late Archaic through Early Formative (A.D. 100–900)	BLM	Eligible, D

Table 3.18. Newly Recorded Sites, Eligible for the NRHP, within the Surveyed Area

Site No.	Cultural Affiliation and Dates	Landowner	Eligibility
LA 181918	Unspecified aboriginal (< A.D. 1800)	SLO	Eligible, D
LA 181925	Multicomponent: unspecified aboriginal (< A.D. 1800), and Anglo, Statehood/WWII (A.D. 1910–1945)	BLM	Undetermined
LA 181926	Multicomponent: Late Archaic to Jornada Mogollon, Formative tradition (100 B.C.−A.D. 200–1450)	BLM	Eligible, Criterion D
LA 181932	Multicomponent: unspecified aboriginal (< A.D. 1800) and Anglo, Statehood to WWII (A.D. 1912–1945)	SLO	Eligible, Criterion D
LA 181934	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	Eligible D
LA 181935	Unspecified aboriginal (< A.D. 1800)	BLM	Eligible, Criterion D
LA 181936	Jornada Mogollon, Late Formative tradition (A.D. 1150–1450)	BLM	Eligible D
LA 181953	Unspecified aboriginal (< A.D. 1800)	BLM	Eligible, Criterion D
LA 181954	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	Eligible, Criterion D

Site No.	Cultural Affiliation and Dates	Landowner	Eligibility
LA 181959	Unspecified aboriginal (< A.D. 1800)	Private	Eligible, Criterion D
LA 181976	Jornada Mogollon, Formative tradition (A.D. 500–1450)	BLM	Eligible D
LA 183250	Jornada Mogollon, Late Formative (A.D. 1050-1400)	SLO	Eligible, Criterion D
LA 183251	Unknown aboriginal (< A.D. 1800)	SLO	Eligible, Criterion D
LA 183311	Multicomponent: unspecified aboriginal (< A.D. 1800) and Anglo, U.S. Territorial to Statehood/WWII (A.D. 1900–1930)	BLM	Eligible, Criterion D

Table 3.19. HCPI Resources, Eligible for the NRHP, within the Proposed Project Area

HCPI No.	Site Type	Cultural Affiliation and Dates	Landowner	Eligibility
HCPI 31531	Southern Canal	ca. 1880–1966	Private	Eligible, Criteria A and C
HCPI 38945	Railroad	A.D. 1891	Private	Eligible, Criterion A

3.7.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance and no impacts to cultural resources from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.7.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts to a cultural site, if disturbed by construction, would include alterations to the physical integrity of the site. The primary impact indicator for cultural resources is the number of eligible cultural resources sites to be disturbed within the project area.

In total, 24 NRHP-eligible resources or resources of undetermined eligibility intersect the proposed project ROW. Fifteen of these are previously recorded sites, while six are newly recorded. The remaining three are HCPI resources. LA 181924 is just outside the ROW and would not be impacted by the proposed project. In addition, a qualified archaeological monitor is required for all construction activities taking place within 100 feet of the site to ensure the sites are avoided.

Where possible, transmission tower locations would be sited so as to avoid (or span) these resources as a means to mitigate adverse impacts to the sites. Patrol roads would be established well away from all site boundaries. Prescribed patrol routes would be flagged with temporary markers and monitoring would ensure that all equipment follows these routes during all construction-related activities. In proximity to these sites, the proposed project area would be accessed by an existing access road to the south. New formal spur roads would be established off of the ROW so that mechanical equipment would access the project area without impacting sites. See the Mitigation Measures and Residual Impacts section below for more details regarding data recovery and testing.

If a cultural resource is significant for reasons other than its scientific information potential, indirect impacts may also include audible, atmospheric, or visual elements that are out of character for the cultural resource. These impacts include temporary, non-physical effects that would last the duration of construction, such as increased noise due to heavy equipment and an increase in construction-related traffic in the area. Long-term effects may include a permanent increase in human and vehicle activity due to the construction, operation, and maintenance of facilities built within the Proposed Action area. An increase in human activity in the area, as an indirect impact, could potentially contribute to direct adverse effects such as unauthorized removal or other alterations to cultural resources in the vicinity.

There are 117 archaeological sites that are either not eligible for the NRHP or are eligible but are located outside the ROW. No further management is required for these sites.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance on approximately 5% of the CIAA. The construction of existing pipelines, roads, and other mineral extraction infrastructure would have had the greatest effect on cultural resources through ground disturbance; transmission lines are more flexible and can be designed to avoid resources as well as minimize ground disturbance. Many of these past projects with adverse effects to cultural resources would have been mitigated under Section 106 of the NHPA, which would serve to reduce the adverse effects. Mitigation for most cultural resources would have involved data recovery which would contribute to our knowledge of prehistoric and historic peoples. In the Permian Basin especially, data recovery projects conducted in compliance with Section 106 and the Permian Basin Mitigation Program have greatly expanded our understanding of cultural resources in southeastern New Mexico.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface disturbance within the CIAA, or 0.2% of the CIAA. Ground disturbance associated with present actions and RFFAs would contribute to cumulative impacts if cultural resources are present; however these projects are subject to applicable State and Federal laws and regulations, and adverse impacts would be reduced through mitigation in accordance with those laws and regulations. If data recovery is conducted as mitigation, these projects have the potential to contribute to our knowledge of the past and may result in a moderate, long-term positive effect. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,626 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be minimized from implementation of project design features and mitigation measures (discussed below), such as spanning sites with the transmission line and avoiding the placement of structures within cultural resource site boundaries.

Mitigation Measures and Residual Impacts

Mitigation measures would apply to cultural sites recommended eligible for listing in the NRHP that could potentially be adversely impacted by the Proposed Action. Eligibility recommendations and mitigation measures are provided in Table 3.20 and Table 3.21. The vast majority of the archaeological resources encountered in the proposed project area have been avoided; however, some sites cannot be avoided by re-routing the alignment due to other resource constraints, constructability issues, and/or design limitations. Therefore, a testing and data recovery plan has been designed to mitigate impacts to these sites and collect valuable scientific data in the areas that would be adversely affected during the construction of the proposed project.

As part of cultural remediation actions, the testing plan includes 14 sites and data recovery is recommended for five sites (LA 45730, LA 99414, LA 171861, LA 172574, and LA 181926) and consultation with the BLM and SHPO is currently underway.

In general, data recovery has been recommended for sites that completely occupy the proposed ROW; testing has been proposed for those sites that are only partially within the ROW and could be avoided by restricting the spatial extent of construction activities and strategically locating the patrol road away from the site boundaries. Testing would involve limited hand excavations and some potential mechanical scraping to determine if any cultural remains and information potential exist within the project ROW. If significant deposits are determined to be present, the sites would be avoided within the ROW by siting of the access road away from the site and restrictions on travel during construction and operations.

Archaeological testing would be completed before construction to ensure that the portion of the site overlapping the proposed project ROW is non-contributing to the eligibility of the overall site.

Table 3.20. Site Summary, NRHP Eligibility, and Mitigation Recommendations

Site No.	Landowner	Eligibility	Recommended Mitigation
Previously Recorded Sites			
LA 34389	BLM	Eligible, D	Testing
LA 45730	BLM	Eligible, D	Data recovery
LA 99414	BLM	Eligible, D	Data recovery
LA 124864	SLO	Eligible, D	Testing
LA 130740	BLM	Eligible, D	Testing
LA 132486	SLO	Eligible, D	Testing
LA 132494	BLM	Eligible, U	Testing
LA 156243	BLM	Eligible, D	Testing
LA 171860	BLM	Eligible, D	Testing
LA 171861	BLM	Eligible, D	Data recovery
LA 172574	Private	Eligible, D	Testing
LA 174341	Private	Eligible, D	Testing
Newly Recorded Sites			
LA 181932	SLO	Eligible, D	Testing
LA 181935	BLM	Eligible, D	Testing
LA 181953	BLM	Eligible, D	Testing
LA 181954	BLM	Eligible, D	Testing
LA 183250	SLO	Eligible, D	Testing
LA 183251	SLO	Eligible, D	Data recovery
LA 183311	BLM	Eligible, D	Data recovery

Table 3.21. HCPI Summary, NRHP Eligibility, and Mitigation Recommendations

HCPI No.	Site Type	Cultural Affiliation and Dates	Landowner	Eligibility	Recommended Mitigation
HCPI 31531	Southern Canal	ca. 1880–1966	Private	Eligible, A and C	Avoidance by spanning
HCPI 38943	Irrigation ditch	Late 1800s or early 1900s	Private	Undetermined	Avoidance by spanning
HCPI 38945	Railroad	A.D. 1891	Private	Eligible, A	Avoidance by spanning

3.8 Visual Resources

3.8.1 Affected Environment

The BLM is responsible for managing public lands for multiple uses while ensuring that the scenic values of public lands are considered before authorizing actions on public lands. The BLM accomplishes this through the visual resource management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or other key observation points (KOPs). The system is based on the premise that public lands have a variety of visual values, and these values mandate different levels of management. Visual values are identified through the VRM inventory (BLM 1986) process that consists of scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. VRM Classes I and II are the most restrictive with regard to the allowable change to the visual landscape, Classes III and IV are more lenient with regard to allowable modification.

The proposed project area is located in an area with VRM Classes III and IV (see Figure A.7 in Appendix A). Within the project area, there are approximately 30 acres of VRM Class III and 2,631 acres of Class IV lands. The objective of Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. The objective of Class IV is to provide for management activities that require major modifications to the existing character of the landscape. The level of change to the landscape can be high. Management activities may dominate the view and may be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic visual elements of form, line, color, and texture.

Visual resources include the natural and human modified landscape. The existing visual quality of the project area is influenced by the presence of roads, oil and gas development, existing power lines, highway corridors, and development near Hobbs, Carlsbad, and other populated areas. The visual character of the landscape within and surrounding the project area is generally open with unencumbered views to surrounding lands. Grasslands and sagebrush shrublands form sparse irregular clumps of vegetation across a relatively flat landscape with occasional rolling hills. The Pecos River corridor creates a contrasting sinuous line on the land due to the presence of water, additional vegetation, and eroded banks. Human elements on the landscape include scattered rural structures, along with pumpjacks, well pads, and aboveground tanks associated with oil and gas production facilities. Highways, rural roads, and well field access roads provide lines that can be seen from a distance and visually fragment the land. Existing power lines provide noticeable vertical elements and create implied lines on the landscape. Predominant colors include tans and browns from the sandy soils and light to medium greens from the vegetation. Human elements are muted grays, whites, and browns, punctuated with occasional red and yellow signage.

Six KOPs with potential views of the proposed transmission line were identified for analysis (see Figure A.7 in Appendix A). Each KOP was visited on January 26 or 27, 2015. Sections A and B of BLM Form 8400-4 (Visual Contrast Rating Worksheet) were completed in the field on January 26–27, 2015 at each KOP location. KOP 4 was revisited on March 31, 2015. Photographs of surrounding views at each KOP were also taken to record the visual character of the landscape. A representative photograph from each KOP and an associated visual simulation of the proposed project are included in Section 3.8.3 below.

KOP 1

KOP 1 is located in Lea County on U.S. Highway 62/180 approximately 6 miles northeast of the intersection of U.S. Highway 62/180 and New Mexico Highway 243 (see Figure A.7 in Appendix A). The landscape is relative flat with clumps of low gray-green vegetation scattered across exposed light brown sandy soils. Brown grasses provide a visual matrix for other landscape elements. A strong horizon line is evident in every direction. Existing transmission lines and fencing are noticeable adjacent to the highway and in the distance (Figure 3.4).

KOP 2

KOP 2 is located at the intersection of U.S. Highway 62/180 and New Mexico Highway 31 in Eddy County (see Figure A.7 in Appendix A). Surrounding terrain is relatively flat with low sloping hills. Views are unimpeded to the horizon in all directions. Vegetation is a mix of light brown spiky grasses and clumps of darker green vegetation. Dark asphalt roads, signage, fences, transmission lines, and substation structures provide visually obvious elements and implied lines on the land (Figure 3.6).

KOP 3

KOP 3 is located north of Loving in Eddy County and adjacent to the Pecos River corridor. The KOP is approximately a mile north of where New Mexico Highway 31 crosses the river (see Figure A.7 in

Appendix A). The terrain on the east side of the river is slightly undulating and rough with flat, open well pads visible. To the west of the river, the landscape is flat and uniform with low agricultural vegetation and scattered rural structures visible. Non-cultivated areas are sparsely covered with low, uniform, dark green vegetation interspersed with gray sand, gravel, and cobble. The river itself is flat and straight, appearing almost channelized, and reflecting the sky. Views extend to the horizon in all directions (Figure 3.8).

KOP 4

KOP 4 is located on New Mexico Highway 31 approximately 2 miles east of where it intersects U.S. Highway 285 in Eddy County (see Figure A.7 in Appendix A). Low hills typify the area and are covered with irregular clumps of low grasses and low to mid-size shrubs and dark soils. The highway provides a dominant linear element on the land. Scattered rural structures and transmission lines are visible to the south of the highway (Figure 3.10).

KOP 5

KOP 5 is located on U.S. Highway 285, approximately 3 miles due east of the China Draw Substation (see Figure A.7 in Appendix A). In the foreground to the west, a gravel road, gated fence line, and small-diameter white pipe on the ground surface are evident. Low rolling hills occur in the middleground of the view to the west. Exposed light-colored patches of soil and medium gray-green clumps of vegetation comprise the majority of the surrounding views (Figure 3.12).

KOP 6

KOP 6 is located in Eddy County on New Mexico Highway 82 approximately 10 miles east of Artesia (see Figure A.7 in Appendix A). The landscape is relatively flat surrounding the KOP. Built structures dominate the landscape. Irregular and angular structures (e.g., transmission lines, tanks, towers, substation, buildings, roadways, fences) all dominate and define the local visual landscape from the foreground to background. Vegetation constitutes secondary visual elements and consists of brown grasses and low gray-green clumps of shrubs (Figure 3.14).

3.8.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the characteristic visual landscape would generally remain the same with sparsely vegetated flat and rolling terrain with unconfined views of surrounding lands. Ongoing land uses and development would likely mimic adjacent uses. This would result in a gradual increase over time of more transmission lines, oil and gas facilities, access roads, and other development. Though the landscape would likely retain its open and rural visual quality, additional vertical structural elements would become part of the visual landscape. The BLM could authorize other management activities that may result in moderate to major modifications to the existing visual landscape on federal lands.

3.8.3 Impacts from the Proposed Action

Direct and Indirect Impacts

The construction, operation, and maintenance of the Proposed Action would not exceed management objectives for VRM Classes III or IV, given the substantial existing visual modifications to the landscape due to residential, agricultural, and commercial structures; transmission lines; substations; and oil and gas wells and facilities. Proposed activities would likely attract attention and may, in some cases, dominate the view, but would be consistent with VRM objectives. Self-weathering steel structures would reduce reflectivity and the distance at which structures are noticeable to the casual observer. Vegetation removal and soil disturbance would create some visual contrast and be noticeable as linear swaths across the landscape, but would not exceed VRM objectives. Reclamation would reduce visual contrasts over time.

KOP 1

The proposed transmission line structures would create dominant vertical elements adjacent to the highway and that would appear from a distance as an implied line on the landscape. This visual contrast would be diminished by the existence of other nearby linear elements (i.e., transmission line, fence line) visible to observers from the highway (Figure 3.5). Ground disturbance would create a temporary visual contrast with surrounding vegetation and exposed soils, but would lessen over time as disturbed areas are reclaimed.

KOP 2

From the KOP, only subtle changes to the existing structural elements of the landscape would be noticeable (Figure 3.7). No changes to vegetation would be noticeable.

KOP 3

The proposed transmission line would have a weak to moderate contrast with the visual landscape. Structures would be visible and create noticeable vertical elements, forming an implied line against the horizon to the west (Figure 3.9). No changes to vegetation would be noticeable.

KOP 4

The proposed transmission line structures would create a strong vertical contrast on the landscape directly adjacent to New Mexico Highway 31 (Figure 3.11). This contrast would quickly diminish as the transmission line receded from the highway to the north and south. The structures would form an obvious line as observers approached the crossing. Vegetation removal and soil disturbance would not be visible until the observer was very close to the crossing, but would lessen over time as disturbed areas are reclaimed.

KOP 5

The proposed transmission line and China Draw Substation would not be visible from KOP 5 due to distance and topography between the proposed project area and the highway (Figure 3.13).

KOP 6

Because of the visual clutter of existing structures at KOP 6 (i.e., high visual absorption capacity), the Proposed Action would have little discernable visual impact (Figure 3.15). The transmission line would become more noticeable as it moves away from the substation across the rural landscape. Little to no vegetation removal or soil disturbance would be noticeable.

Figure 3.4. KOP 1 facing east along U.S. Highway 62/180.

Figure 3.5. The simulation at KOP 1 illustrates the placement and scale of the proposed transmission line on the south side of U.S. Highway 62/180.

Figure 3.6. KOP 2 facing southeast along New Mexico Highway 31.

Figure 3.7. The simulation at KOP 2 illustrates the proposed transmission line coming from the west and terminating at the Kiowa Substation.

Figure 3.8. KOP 3 facing northwest across the Pecos River.

Figure 3.9. The simulation at KOP 3 shows the proposed transmission line coming from the north and crossing the Pecos River approximately 0.5 mile away.

Figure 3.10. KOP 4 facing east along New Mexico Highway 31.

Figure 3.11. The simulation at KOP 4 illustrates the proposed transmission line crossing the highway north to south.

Figure 3.12. KOP 5 facing west toward the China Draw Substation.

Figure 3.13. The simulation at KOP 5 shows that due to topography and distance (approximately 2.85 miles) the proposed transmission line and substation would not be visible from Highway 285.

Figure 3.14. KOP 6 facing east along New Mexico Highway 82.

Figure 3.15. The simulation at KOP 6 shows that the addition of proposed transmission line is indistinguishable from the existing infrastructure at this KOP.

Cumulative Impacts

As described under past actions in the introduction to Chapter 3 and further described in the affected environment section above, Eddy and Lea Counties have experienced high development of oil and gas related projects and infrastructure which is visible on the landscape. Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas and painting aboveground facilitates, have reduced impacts to visual resources.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. These actions would introduce new visual elements to the landscape in the form of oil and gas facilities, and others would contribute to the presence of linear on-the-ground features from cleared vegetation and disturbed soils associated with ROWs. Changes in of form, line, color, and texture would be expected to occur. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities, thereby reducing the changes to texture and color. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. The proposed project would draw the attention of viewers in some locations, but based on the photo simulations presented above, the proposed project would not dominate the viewshed. In terms of surface disturbance, the proposed project comprises an additional 2% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. The RFFAs cumulatively with the Proposed Action are in compliance with VRM Class IV objectives as they represent a major modification to the landscape and, at close range, would dominate the attention of the casual observer.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.9 Special Designations and Recreation Areas

3.9.1 Affected Environment

The proposed project crosses two SMAs (Table 3.21) (see Figure A.3 in Appendix A), the Maroon Cliffs Archeological District and Pecos River Corridor. SMAs are locations containing one or a combination of unique resources or values that receive more intensive management.

The Maroon Cliffs Archeological District SMA is has been determined eligible for the NRHP as an archaeological district. The archaeological sites recorded thus far are open campsites dating from the Archaic period (5000 B.C.) to the Jornada Mogollon period (A.D. 900–1450) (BLM 2014). Pit house structures have been reported at Maroon Cliffs; however, excavation is required to confirm this report (BLM 2014). The Maroon Cliffs area is topographically diverse, providing a variety of exploitable environments for prehistoric peoples. The Maroon Cliffs Archaeological District is an ideal laboratory for the study of human-environment adaptations in southeastern New Mexico. The main objective of this archaeological district is to protect and preserve the important and sensitive cultural resource values for research (BLM 2014).

The Pecos River Corridor is approximately 6,000 acres and includes a 0.5-mile corridor of BLM-administered lands along the Pecos River, as well as the lands surrounding Red Bluff Reservoir in Texas. Management objectives identified in the 1988 RMP provide protection for “scarce water-based recreation, public access, protect the natural values and still allow for semi-primitive motorized recreation opportunities. Additional goals are to reduce soil erosion and vegetation destruction while still allowing leasable minerals and other resource development to occur in the area” (BLM 1988:C-39).

The proposed project also crosses a small portion of the Hackberry Lake Off-Highway Vehicle (OHV) Recreation Area. (Table 3.21) (see Figure A.3 in Appendix A). The Hackberry Lake OHV Recreation Area is located approximately 20 miles northeast of Carlsbad, which provides approximately 55,800 acres of rolling stabilized dune lands and cliffs for open use of motorcycles, sand dune buggies, and other OHVs. Trails within the area take advantage of a variety of soils and topographic features, which include many turns and steep hill climbs. Routes go from shallow rocky, loamy soil on low hills to deep alluvial soils with sandy inclusions. The trails travel across small draws and along the bottom of deep arroyos. The area also includes a sand dune complex. An estimated 6,850 visits occurred at the Hackberry Lake OHV area during fiscal year 2011 (BLM 2014). The Hackberry Lake OHV Recreation Area is used by the Desert Rough Riders Club for an annual competitive motorcycle event—the Carlsbad 100 Desert Race—which traverses more than 44 miles of public land. The annual race typically occurs in the spring.

Table 3.22. Special Designations (SMAs) and Recreation Areas Crossed by the Proposed Project

Special Designation Area	Size of Project Area within Special Designation (acres)	Total Size of Special Designation (acres)
Special Management Areas (SMAs)		
Pecos River Corridor	16	6,088
Maroon Cliffs Archeological District	23	17,878
Recreation Areas		
Hackberry Lake OHV Recreation Area	0.5	57,576
Total	***39.5***	***81,542***

3.9.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance within the special designations and recreation areas resulting from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.9.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Surface disturbance within the Maroon Cliffs and Pecos River Corridor SMAs by the proposed project would be the primary impact to special designations. Construction of the transmission line would temporarily remove approximately 23 acres of vegetation along the northern border of the Maroon Cliffs SMA, which represents 0.1% of the special designation. The proposed ROW is collocated along U.S. Highway 62/180 and existing energy infrastructure, where the project would cross the SMA thereby minimizing impacts to the archeological district. Periodic operation and maintenance activities for the proposed transmission line would occur using a permanent access road within the ROW. No temporary access roads are proposed within the Maroon Cliffs SMA. Due to the location of the proposed project, along the northern boundary of the SMA and the small portion of surface disturbance compared to the total size of the SMA, the proposed project is not in conflict with the management objective for Maroon Cliffs. However, cultural resource sites within the archeological district may be impacted by the proposed project. Refer to Section 3.7 for more information regarding cultural resource impacts.

The proposed project would remove approximately 16 acres of vegetation within the Pecos River Corridor SMA, which represents 0.4% of the special designation. The proposed project would cross the SMA and the Pecos River in proximity to an existing electric distribution line, thereby minimizing the impacts to the special designation. The proposed project is not in conflict with the management objectives for the Pecos River Corridor. However the addition of new infrastructure to the area would add a new, although incremental, visual element to the landscape, which would also would impact the semi-primitive motorized recreational opportunities in the SMA. Refer to Section 3.8 for more information regarding visual resource impacts. The collocation of the proposed project along an existing transmission line would minimize the level of intrusion on the natural landscape.

Approximately 0.5 acre of the Hackberry Lake OHV Recreation Area would be temporarily disturbed along the southern boundary of the OHV area where the proposed transmission line would parallel U.S. Highway 62/180. The transmission line and support structures would be located within the ROW within the Hackberry Lake OHV Recreation Area. Due to the small area of disturbance and the collocation of the ROW along an existing transportation corridor, impacts to recreation opportunities within the area would be minimal. Although the area is designated for open recreation use, it is also open to other types of development, such as livestock grazing and mineral leasing activities. Recreation users are notified of the multiple uses within the Hackberry Lake OHV Recreation Area in published BLM materials. Therefore, the public should be aware of other, non-recreation uses in the area.

Indirect impacts to recreation from the proposed project include increased truck traffic during the construction phase of the project and potential conflicts among vehicle drivers access the OHV area. The proposed project is not expected to impact OHV trail usage or create congestion on designated trails. Portions of the reclaimed, temporary access roads and segments of the permanent ROW could create new informal access points to parcels of BLM land previously considered inaccessible to the public. Increased hunting and dispersed recreation activities may occur in areas where gates would be installed to replace existing fences within the ROW because the gates could be viewed as new access points by members of the public using the ROW as an unauthorized route. Where appropriate, signage would be installed on newly installed gates to deter users from circumventing the gates and traversing areas that were formerly inaccessible or harder to access.

Portions of the project area within the special designations and recreation area not required for long-term maintenance or access would be reclaimed with a BLM-approved seed mix at the end of the construction phase. This design feature would minimize impacts to the SMAs and OHV area by supporting regrowth of vegetation within the disturbed areas.

Cumulative Impacts

Impacts from past actions within the 81,542-acre CIAA, which includes the Maroon Cliffs Archeological District SMA, Pecos River Corridor SMA, and Hackberry Lake OHV Area, have resulted in approximately 4,077 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions are estimated to have disturbed approximately 5% of the CIAA.

Present actions and RFFAs, not including the Proposed Action, have been identified for the special designations and recreation areas, are estimated to create an additional 85 acres of surface and vegetation disturbance within the CIAA, or 0.1% of the CIAA. Cumulative impacts to the SMAs and recreation area include surface disturbance, vegetation removal, and infrastructure developments within areas established for other resource protections and resource uses. For example, the Maroon Cliffs SMA was established to protect and preserve sensitive cultural resource values for research. As new surface disturbance is introduced into the SMA, the cultural resource management objectives become more challenging to manage as surface disturbance can expose sensitive cultural resource material. Similarly, the Pecos River Corridor management goals are to reduce soil erosion and vegetation destruction while allowing resource development. Cumulative impacts to this SMA can lead to increased soil erosion and vegetation loss through surface-disturbing activities. Cumulative impacts to the Hackberry Lake OHV Area would occur in the form of increased conflicts between recreation activities and permitted infrastructure.

The Proposed Action would disturb an additional 49 acres within the CIAA, which is approximately 0.06% of the CIAA. This comprises an additional 1.2% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.10 Livestock Grazing

3.10.1 Affected Environment

The BLM is responsible for managing livestock grazing on 1,947,890 federal acres within the CFO, which includes approximately 367,656 active animal unit months (AUMs) of livestock forage in 265 grazing allotments. Livestock grazing includes the grazing of domestic cattle, sheep, goats, and horses (BLM 2014). Almost all livestock grazing within the CFO planning area is permitted for year-round. The most common livestock operations in the project area are cattle and calf operations.

Permitted livestock numbers for each allotment are set at levels that provide for plant recovery to enhance rangeland health. These levels have been determined by quantitative measurements of forage present. Prolonged drought and rangeland wildfire continues to threaten rangeland health and forage availability within and near the project area. When rangelands are not meeting resource objectives, changes in grazing management are implemented, including adjusting permitted livestock numbers, adding additional waters and fences, or providing rest in certain pastures during the growing season.

The project area coincides with 27 BLM allotments within the CFO's jurisdiction, as well as infrastructure associated with the allotments, summarized in Table 3.23. Based on review of the CFO GIS data set, there are no water troughs located within the project area. Twelve water wells, watering troughs, or storage tanks are located within 200 meters of the proposed ROW (Table 3.24).

Table 3.23. BLM CFO Allotments on BLM-administered Lands Coinciding with the Project Area

CFO Allotment Name	Allotment Number	Size of Project Area within Allotment (acres)	Total Allotment Size (acres)	No. of Fences Crossed by Proposed Project	No. of Waterlines Crossed by Proposed Project
Alkali Lake	77020	5	22,281	5	-
Angell Draw	77015	74	14,266	4	2
Brookin West	76056	73	3,899	4	-
Brushy Knob	77031	206	34,457	5	2
Burton South	77014	69	7,777	8	-
China Draw	78094	129	22,823	4	1
Clayton Basin	77013	85	58,607	4	-
Delaware River West	78142	34	19,834	2	-
Fenton Draw	77048	43	6,266	4	-
Halfway	76021	89	17,203	7	1
Harkey Crossing	78088	14	7,027	1	-
Hart Ranch	76049	4	14,233	2	-
Herradura Bend	78099	44	1,356	1	-
Jackson East	76057	48	3,228	1	-
Laguna Tonto	76011	98	23,588	10	-
Laguna Totson	76022	42	3,835		-
Lea Townsite	76020	66	19,606	3	-
Lindsey Lake	77045	56	9,736	3	-
Maroon Cliffs	77022	70	20,247	4	-
Mimosa	77049	200	26,229	8	1
Quahada Ridge	77026	44	2,877	9	-
Red Bluff Draw	78101	66	7,327	4	-
Salt Lake	76011	18	47,844		-

CFO Allotment Name	Allotment Number	Size of Project Area within Allotment (acres)	Total Allotment Size (acres)	No. of Fences Crossed by Proposed Project	No. of Waterlines Crossed by Proposed Project
Salt Lake	77029	18	47,844	3	-
Turkey Track	65075	244	237,267		-
Twin Wells North	77012	178	99,940	7	-
West Bilbrey	77021	13	7,238	6	-
West Jackson	76055	18	648	2	-
Total		***2,048***	***787,483***	***111***	***7***

Table 3.24. Water Troughs, Tanks, Wells within 200 meters of Proposed ROW

Trough Type	Name	Improvement Number	Allotment Name	Allotment Number
Water Well & Storage	N/A	N/A	China Draw	78094
Trough	N/A	N/A	China Draw	78094
Water Well & Storage	N/A	N/A	China Draw	78094
Base Water	N/A	N/A	China Draw	78094
Trough	N/A	N/A	Clayton Basin	77013
Trough	McCarty Pipeline Reconstruction	665629	Laguna Totson	76022
Well	Snyder #1 Well	661656	Twin Wells North	77012
Water Well & Storage	Nimenim Storage & Tub	660952	Twin Wells North	77012
Windmill	N/A	N/A	Twin Wells North	77012
Trough	N/A	015635	Angell Draw	77015
Trough	N/A	N/A	Angell Draw	77015
Storage Tank	N/A	N/A	Angell Draw	77015

3.10.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance within livestock grazing allotments resulting from the proposed project, because the ROWs would not be granted. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.10.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Forage removal from the 31 grazing allotments crossed by the proposed project would be the primary impact to grazing resources. Construction of the proposed project elements, including the transmission line, access roads, and substations, would temporarily remove approximately 2,059 acres of vegetation, which represents 0.3% of the BLM grazing allotments intersected by the Proposed Action. Approximately 27 acres would be permanently removed from grazing within the Mimosa grazing allotment to accommodate the Kiowa Substation. Approximately 7 acres would be permanently removed from grazing with the Turkey Track grazing allotment to accommodate the Eddy County Substation expansion.

Range improvements would also be temporarily impacted by the proposed project. In total, 112 pasture fences occur within the proposed transmission line construction area; therefore, many of these fences would need to be temporarily disturbed to accommodate installation of the transmission line and access roads. Per the design features in Section 2.1.2, pasture fences would be maintained during construction and would be replaced, repaired, or reclaimed upon completion of the construction phase. Seven livestock watering lines would be crossed by the proposed project. Prior to construction, the conditions of the water lines would be evaluated and appropriate protections would be put in place to maintain their function during the construction of the proposed project. If necessary, waterlines would be protected either by burying or pushing adjacent soil over the lines within the construction area to shield the lines from damage.

Surface disturbance resulting from construction and ongoing maintenance may facilitate the introduction and spread of noxious weeds throughout grazing allotments and could accelerate soil erosion, which would reduce site productivity and limit grazing opportunities through a reduction in available AUMs. One Class B noxious weed species, malta starthistle, is documented along the north bank of the Black River. This infestation, as identified during the project's biological survey, is small, consisting of several plants. Based on review the latest CFO GIS data set (July 2015), no other noxious weed locations or noxious weed treatment areas were identified along the proposed route. However, several previously treated noxious weed areas occur within 0.5 mile of the proposed ROW (Table 3.14). African rue, saltcedar, goldenrod, malta starthistle, and mesquite have been the targets of the ongoing weed treatments. Design features listed in Section 2.1.2 would help reduce these spread of noxious weeds into the project area.

Construction activities could result in the expansion and spread of this noxious weed area. This impact is expected to be minimal because the project proponent, SPS, has entered into noxious weed programs in both Eddy and Lea Counties. In addition, portions of the project area not required for long-term maintenance or access would be reclaimed with a BLM-approved seed mix at the end of the construction phase. These design features would mitigate impacts to livestock grazing within one or two growing seasons after construction. Ongoing drought in the region could threaten the target of successful reclamation of the project area within 2 years if conditions do not improve and indirectly impact grazing opportunities. If sufficient rainfall does not occur, it is unlikely that herbaceous production and forage levels would return to pre-construction levels, within the average two growing seasons. However, if drought conditions improve, and the area receives abundant precipitation, herbaceous production and forage levels may be restored within two to three growing seasons.

Additional short-term impacts may include displacement of permitted livestock during construction activities or exposure of livestock to hazards. Movement of livestock may also be temporarily impeded in areas of active construction. Twelve water wells, storage tanks, or troughs are located within 200 meters of the proposed ROW. Construction activities may temporarily hinder the ability of grazing livestock to access to these range improvements. After construction, livestock should become acclimated to the maintenance and operation activities along the transmission line and at the substations. Vehicle traffic associated with the Proposed Action could pose impacts to livestock considering that the area is open range and livestock may be found on access roads in the area.

Direct impacts to livestock occur when holes, ditches, or trenches are not excluded properly. Any type of hole or ditch is potentially a hazard to livestock while grazing. Cow or calf injuries may occur if they fall into a ditch or trench-type cavity or in the process of trying to get out. Cow or calf leg injuries also may occur when any hole is left uncovered. Livestock can step into the hole and break or injure a leg. Design features found in Section 2.1.2 include the covering of foundation holes to protect livestock from becoming injured. The project has the potential to temporarily impact natural or human-made barriers to livestock movement (fencing/ditches) and range improvements such as watering troughs or water delivery systems (ditches/pipelines) on BLM-administered lands. However, the design features for the proposed project (see Section 2.1.2) identify measures to prevent these types of impacts to grazing livestock after construction is complete. Indirect impacts include extra time required by the permit holder to locate livestock or potential trespass issues for the livestock owner if the livestock cross allotment boundaries.

Under the Proposed Action, the proponent would manage vegetation to meet its requirements for conductor clearances at maximum loading (sag) and maximum blowout (sway) locations, minimize potential ignition sources, and to provide access within the ROW. Within or adjacent to the ROW, mature vegetation would be removed under or near the conductors to provide adequate electrical clearance, as required by the NERC. These vegetation maintenance activities would result in a long-term transition within the ROW from woody shrub communities of primarily creosote bush and mesquite to a vegetation community dominated by grasses and forbs. This would have a beneficial impact to livestock grazing over the long-term because there would be more forage available within the maintained ROW.

Cumulative Impacts

Impacts from past actions within the 2,359,693-acre CIAA include approximately 117,985 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. The loss of vegetation results in a loss of forage available to livestock within the grazing allotments located in the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to vegetation and livestock grazing conditions.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 5,040 acres of surface and vegetation disturbance within the CIAA, or 0.2% of the CIAA. Impacts to vegetation and livestock grazing conditions would depend on the placement and type of surface disturbance and the plant species present within the individual project areas. Generally, native vegetation loss and the spread of noxious weeds would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities, thereby reclaiming the forage available to livestock. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 121,460 acres (approximately 5.1% of the CIAA).

The Proposed Action would disturb an additional 2,661 acres, which is approximately 0.1% of the CIAA. This comprises an additional 2% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.11 Public Health and Safety

3.11.1 Affected Environment

This section describes the existing conditions of public health and safety in the analysis area. The analysis area for impacts to public health and safety is a 2-mile-wide buffer around the centerline of a 200-foot-wide representative ROW. The actual construction ROW would likely be configured to avoid certain environmental impacts, or for other logistical reasons. The representative ROW is used to identify natural and manmade hazards that could be directly impacted by construction, operations, and maintenance of the Proposed Action.

Occupational Safety

Work related fatalities, injuries, and illnesses associated with utility and construction workers can occur in and around utility construction sites. According to the Occupational Safety and Health Administration (OSHA), “Over the past three decades, occupational injuries and illnesses in the U.S. have declined by 42 percent, even though employment has more than doubled” (OSHA 2012).

The Bureau of Labor Statistics (BLS) released a report in December 2014 with estimates from the Survey of Occupational Injuries and Illnesses that found that the construction industry had 3.8 total recordable cases per 100 equivalent full-time workers compared to the average 3.3 total recordable cases per 100 equivalent full-time workers for private industry (BLS 2014). The BLS also reported, “Over half of the more than 3.0 million private industry injury and illness cases reported in 2013 were of a more serious nature that involved days away from work, job transfer, or restriction. These cases occurred at a rate of 1.7 cases per 100 full-time workers, a statistically significant decrease from 2012.” (BLS 2014).

Incidence rates of non-fatal occupational injuries and illness in New Mexico rate (at 2.6 incidents per 100 full-time workers) is below the national statistic for construction-related injuries and illnesses (BLS 2013).

Statistics for injuries and illnesses incurred during operations and maintenance activities for the proposed project are not available.

Risk of Severe Weather Hazard and Fire

The most common severe weather events in the analysis area are extreme heat in the summer, extreme cold in the winter, strong winds, and lightning strikes. Earthquakes, tornadoes, and hurricanes/tropical storms are historically uncommon events within the analysis area.

The most recent severe weather event to occur within the analysis area that met the NERC reporting criteria was a cold weather–related outage in February 2011. This event caused a severe loss of generation across West Texas, New Mexico, and Arizona, for a total of several thousand megawatts of generation loss and impacts for more than 4 million customers (FERC and NERC 2011). Severe heat can also cause power outages in the summer due to increased demand for electricity to power air conditioners and other climate control devices. Although common in the analysis area, a severe heat event has not triggered an outage that meets the NERC reporting criteria.

High winds frequently occur in southern New Mexico. On occasion, sustained high winds over dry terrain can cause large dust storms. The largest of these dust storms, called a haboob, can cover very large areas with dust and dirt and damage transmission lines. Several large haboobs have occurred and/or originated from southern New Mexico in recent summers.

Lightning strikes can cause fires and transmission outages. Lightning often strikes tall objects because it provides the easiest path for the lightning to take. In a rural desert region, transmission towers are often the tallest objects available.

Electromagnetic Fields

Electromagnetic fields (EMFs) are phenomena that occur both naturally and as a result of human activity. Naturally occurring EMFs are caused by the weather and Earth's geomagnetic field. In the case of a transmission line, magnetic fields are created when current flows through power lines. The strength of the fields is determined mainly by line current, line height, and distance. Most objects, including fences, shrubbery, and buildings, block electric fields. Around transmission lines, measurable electric fields at ground level typically are highest in outdoor areas on the ROW cleared of vegetation.

Many studies have been conducted to review the possible health effects associated with EMF (see International Commission on Non-Ionizing Radiation Protection [ICNIRP] 1998; National Institute for Environmental Health Sciences 1998; Scientific Committee on Emerging and Newly Identified Health Risks 2007, 2009). Overall, the published conclusions of these studies have been consistent in concluding that neither electric fields nor magnetic fields are a known or likely cause of any adverse health effect at the long-term, low exposure levels found in the environment. However, research has confirmed that short-term exposure to higher intensity EMF could produce adverse stimulation of nerves and muscles. This has led to the creation of guidelines for exposure limits for the general public recommended by the International Committee on Electromagnetic Safety (ICES) and the ICNIRP to address health and safety issues (ICES 2002; ICNIRP 2010). The exposure limits recommended by ICES and ICNIRP to protect against these acute adverse effects from short-term exposures are listed in Table 3.23.

Table 3.25. Recommended Short-term Exposure Limits for Magnetic and Electric Fields

Organization Recommending Limit	Magnetic Fields	Electric Fields
ICNIRP	2,000 milligauss*	4.2 kilovolts per meter† (kV/m)
ICES	9,000 milligauss*	5 kV/m 10 kV/m (within transmission line ROW)
*The strength of magnetic fields is expressed as magnetic flux density in units of milligauss (mG), where 1 Gauss = 1,000 mG.		

[†]The strength of electric fields is expressed in units of kilovolts per meter (kV/m), which is equal to 1,000 volts per meter. Typical electric field levels in the home and at work are less than 0.1 kV/m. Electric fields within 1 foot of small appliances are in the range of 0.02 to 0.2 kV/m, while the electric field immediately adjacent to the heating wires of some electric blankets can be considerably higher.

The only confirmed relationship between electric fields or magnetic fields and an adverse biological or health effect is when electric currents, at very high levels of exposure, are experienced in the body as a shock-like effect. The levels at which these short-term effects occur are typically much higher than levels found under transmission lines, and higher than levels found in most homes or commercial establishments.

3.11.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, the proposed transmission line would not be constructed; therefore, there would not be an increased risk to occupational safety from the construction and operation/maintenance of the transmission line, nor would there be an increased risk of fire from potential fire-causing activities. Severe weather events would continue to potentially impact the existing transmission infrastructure. The public would not benefit from an increase in reliability in electric service that the proposed infrastructure would provide should a severe weather or other disruptive event occur that causes a disruption in service from damage to the existing infrastructure.

3.11.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Occupational Safety

Potential risks associated with construction activities include, but are not limited to, electrocution, exposure to extreme weather, falling, exposure to hazardous materials, and injury from equipment and materials. Site-specific risks such as difficult or remote terrain or highway crossings would exist throughout the project area. Construction information including workers and types of equipment and materials are included in the POD for the proposed project. Specific mitigation measures and safety procedures are also included in the POD. The construction of the proposed project is temporary and would be confined to the footprint of the facilities, access roads, and laydown yards. Implementation of the proposed project mitigation would help to limit the frequency and magnitude of potential health and safety risks to construction workers. Construction safety requirements and mitigation measures would meet the OSHA standards and site specific occupational safety measures (such as a smoking ban in fire-prone areas) would be developed as appropriate. Construction of the proposed transmission line and associated facilities would not be expected to generate injury or fatality rates that are higher than industry averages. The implementation of OSHA safety requirements through the use of BMPs, mitigation measures, and other safety requirements would minimize the chance that an accident could occur. Therefore, short-term impacts to occupational safety would be considered negligible.

The number of workers that would be required for operation and maintenance of the proposed project would be much smaller than would be required for construction. All operations and maintenance staff would be required to be fully trained to safely perform their duties in full compliance with OSHA and all other safety requirements. Although more workers would be required to operate and maintain the transmission lines, substations, and ancillary facilities, there would not be an increased risk to occupational safety as a result of the construction of any of the action alternatives. Therefore, impacts to occupational safety during operation and maintenance would be considered negligible.

Severe Weather Hazards

A severe weather event during construction such as high wind, excessive heat, or excessive cold could pose a danger to construction workers during construction of the proposed transmission line and associated facilities; however, this risk could be minimized by appropriate BMPs to stop, limit, or delay construction until it is safe to continue with construction. Should a severe weather event occur during construction, the impact would be temporary and limited to the construction site. The general public would not be affected by this impact because the proposed transmission line would not be operating.

Potentially fire-causing activities (such as welding or the use of combustion engines) would occur during construction of the proposed transmission line and associated facilities in areas known for extreme fire danger during the dry season. The implementation of project design features and mitigation measures would reduce the potential for health and safety impacts that could result from fires associated with construction and/or operation and maintenance of the proposed project. Therefore, impacts from severe weather hazards and potential fire-causing activities during construction would be considered negligible.

Electromagnetic Fields

EMFs during construction would not occur because the proposed transmission line and associated facilities that would be constructed would not be transmitting electricity. The existing transmission infrastructure in the proposed alignment areas does not pose a risk to the public for EMFs because the EMFs are below proposed cautionary levels outside the ROW. EMFs would typically not impact workers constructing the proposed transmission line and associated facilities due to precautions during construction that would keep them from working directly under or parallel to the existing facilities for extended periods of time. If constant work were being performed near existing facilities that posed any kind of safety threat, the existing transmission facilities would be turned off, eliminating exposure to EMFs for construction crews. Therefore, impacts from electromagnetic fields would be considered negligible.

The EMF from the proposed transmission line would occur mainly within the 150-foot ROW and for a short distance beyond (approximately 50 feet beyond the ROW). An EMF analysis was performed using PLS-CADD’s built in EMF calculator, and was calculated +/- 1,000 feet to either side of the transmission line center. Calculated values represent the EMF at 3.28 feet (1 meter) above ground. The analysis was completed assuming a 345-kV line design using H-frame and single pole tangent structures as well as three-pole and single-pole dead-ends and corners. Wire height was minimized to the SPS design criteria stipulation of 30 feet vertical clearance to ground. The ampacity assumptions are based on the maximum operating condition of 795 thousand circular mils aluminum conductor, steel supported Drake conductor at 345-kV operation. Figure 3.16 and Figure 3.17 show examples of the calculated results of the EMF analysis. The electric and magnetic fields associated with the line loading would be at a maximum between spans that approach the minimum SPS-required ground clearance of 30 feet for a 345-kV transmission line. The reported values are the maximum conditions. Also, large portions of any transmission line often exceed the minimum ground clearance requirements, which would result in lower EMF values. It is expected that the typical EMF of the proposed transmission line would be lower than the reported values.

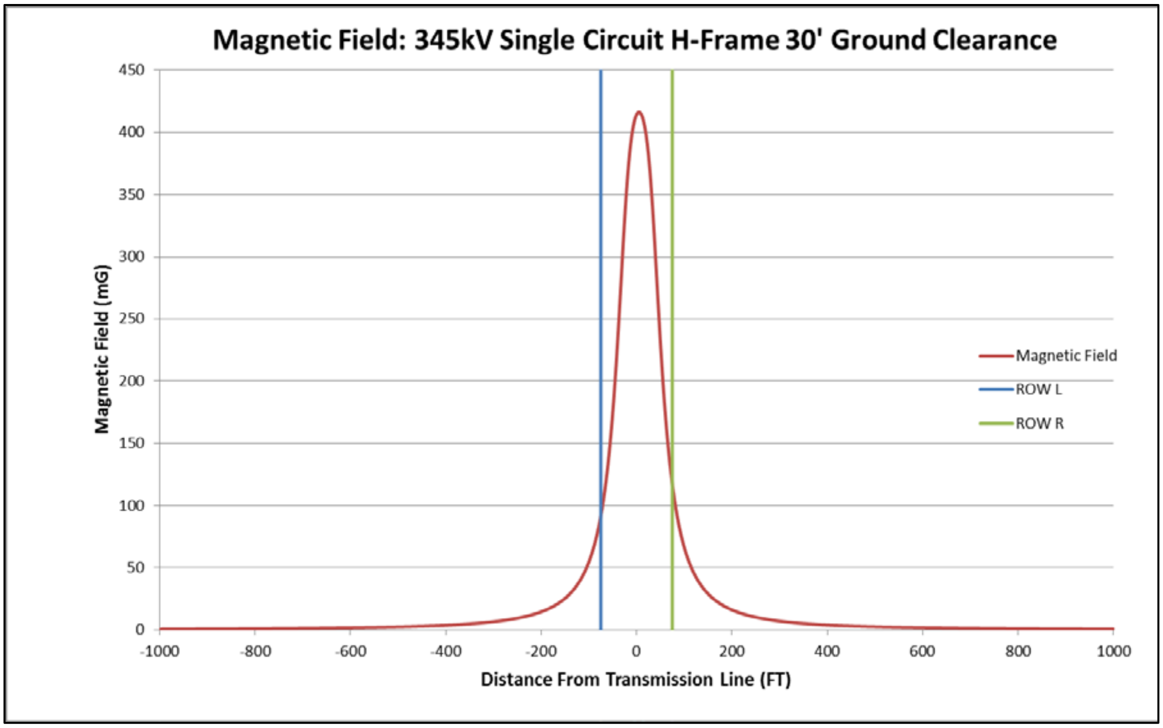

Figure 3.16. Magnetic field analysis results for 345-kV single circuit H-frame with 30-foot ground clearance

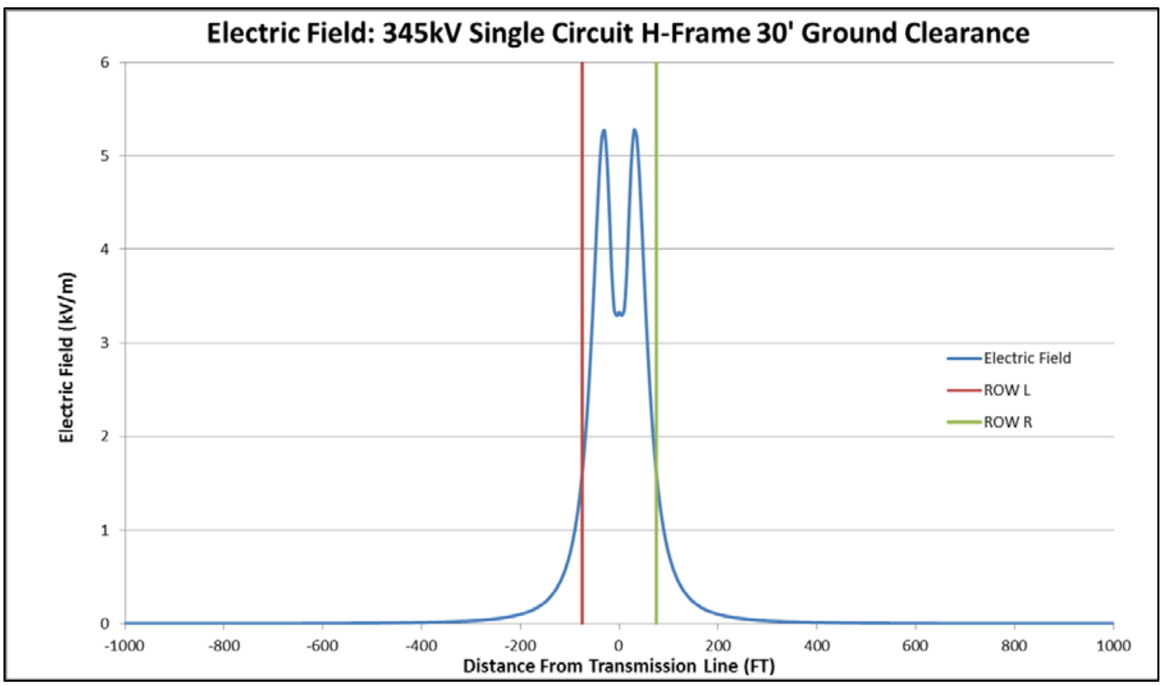

Figure 3.17. Electric field analysis results for 345-kV single circuit H-frame with 30-foot ground clearance

All of the scenarios analyzed would fall well below the recommended short-term magnetic field exposure limits listed in Table 3.23. All the scenarios analyzed would exceed the recommended short-term electric field exposure limits listed in Table 3.23 when the electric field is measured directly beneath the transmission line. However, the ICES recognizes a 10-kilovolt-per-meter (kV/m) exposure limit when within a transmission line ROW. None of the scenarios analyzed would exceed the 10-kV/m electric field exposure limit. At the edges of the transmission line ROWs analyzed in the scenarios, the electric field falls well below the recommended exposure limits.

Cumulative Impacts

Past actions have had a negligible impact on public health and safety. Construction of linear projects such as roads, transmission lines, pipelines, well pads, and mines has occurred throughout the CFO planning area, with negligible impacts on public health and safety. There is no evidence that EMFs from the existing transmission lines are impacting public health and safety.

Present and RFFAs in the CFO planning area have the potential to result in cumulative impacts to human health and safety by increasing the potential for occupational and fires risks, and generating EMFs where they previously did not exist. Construction of these projects would have a short-term minor impact to public health and safety by temporarily increasing occupational risk and fire risks. However, because construction of these projects would be unlikely to occur at the same time and location as construction of the Proposed Action, there would not be a cumulative impact. Future transmission projects that would occur within the analysis are would increase the potential for public exposure to EMFs; however, this impact would be consider negligible because EMFs would not exceed the exposure guidelines outside the transmission line ROW.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

4 SUPPORTING INFORMATION

4.1 Tribes, Individuals, Organizations, or Agencies Consulted

Table 29 contains a list of tribes, individuals, organizations, and agencies consulted with during development of the proposed action.

Table 4.1. Tribes, Individuals, Organizations, and Agencies

Name	Tribe, Organization, or Agency
David Eck, Archeologist	NMSLO
Will Barnes, Natural Resource Specialist	NMSLO
Andrew Zink, Archaeologist	NM SHPO
Judy Bock, Weed Program Coordinator	Eddy County
Shay Hager, Weed Program Coordinator	Lea County

4.2 List of Preparers

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

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Daniel Sloat, Air Quality Specialist	SWCA
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Georgia Knauss, Paleontologist	SWCA
Anne Russell, GIS Specialist	SWCA

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APPENDIX A. MAPS

LIST OF MAPS

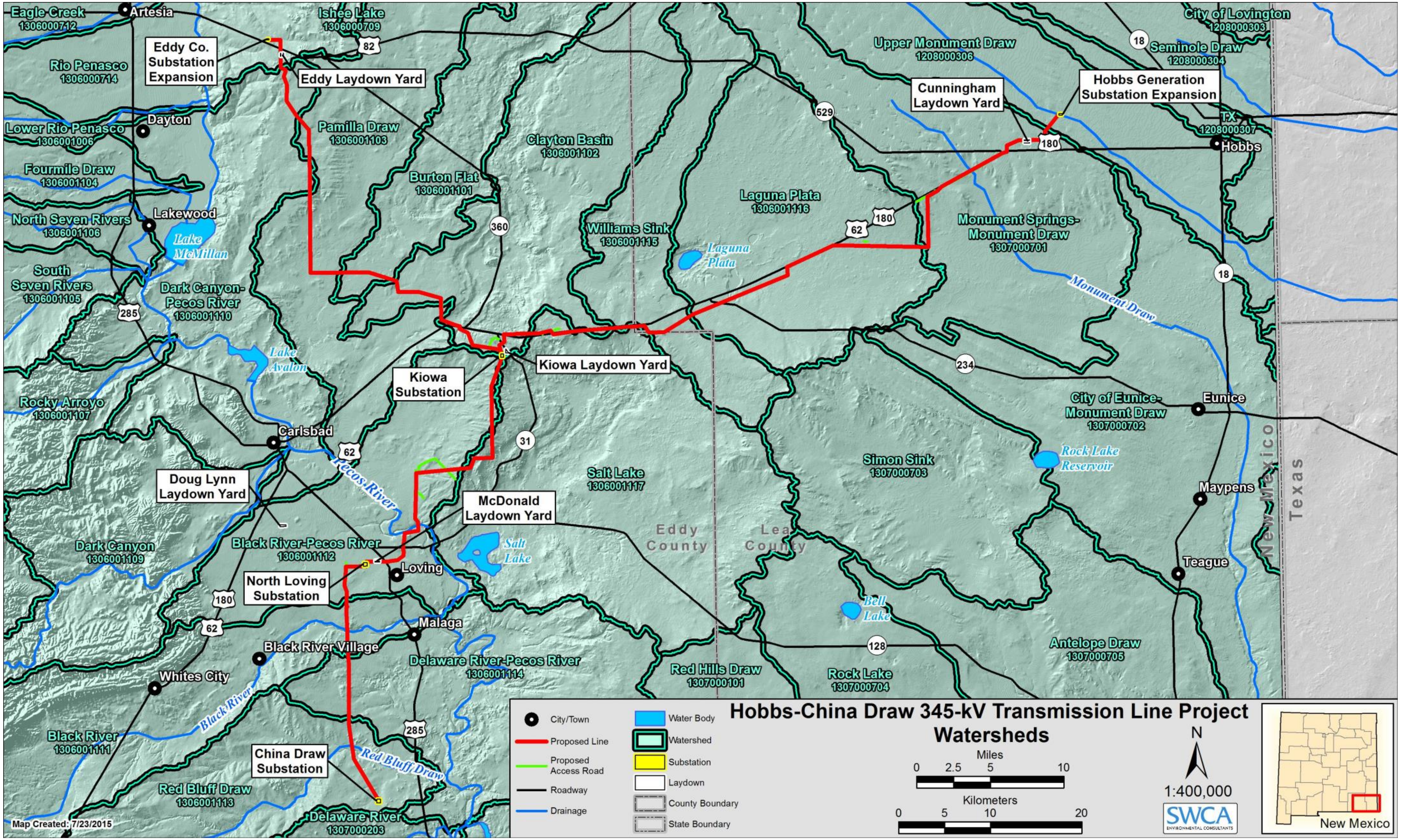

Figure A.1. HUC-10 Watersheds Crossed by the proposed project used to define the CIAA for karst resources, soil resources, water resources, upland vegetation, wildlife, cultural resources, visual resources, and livestock grazing.

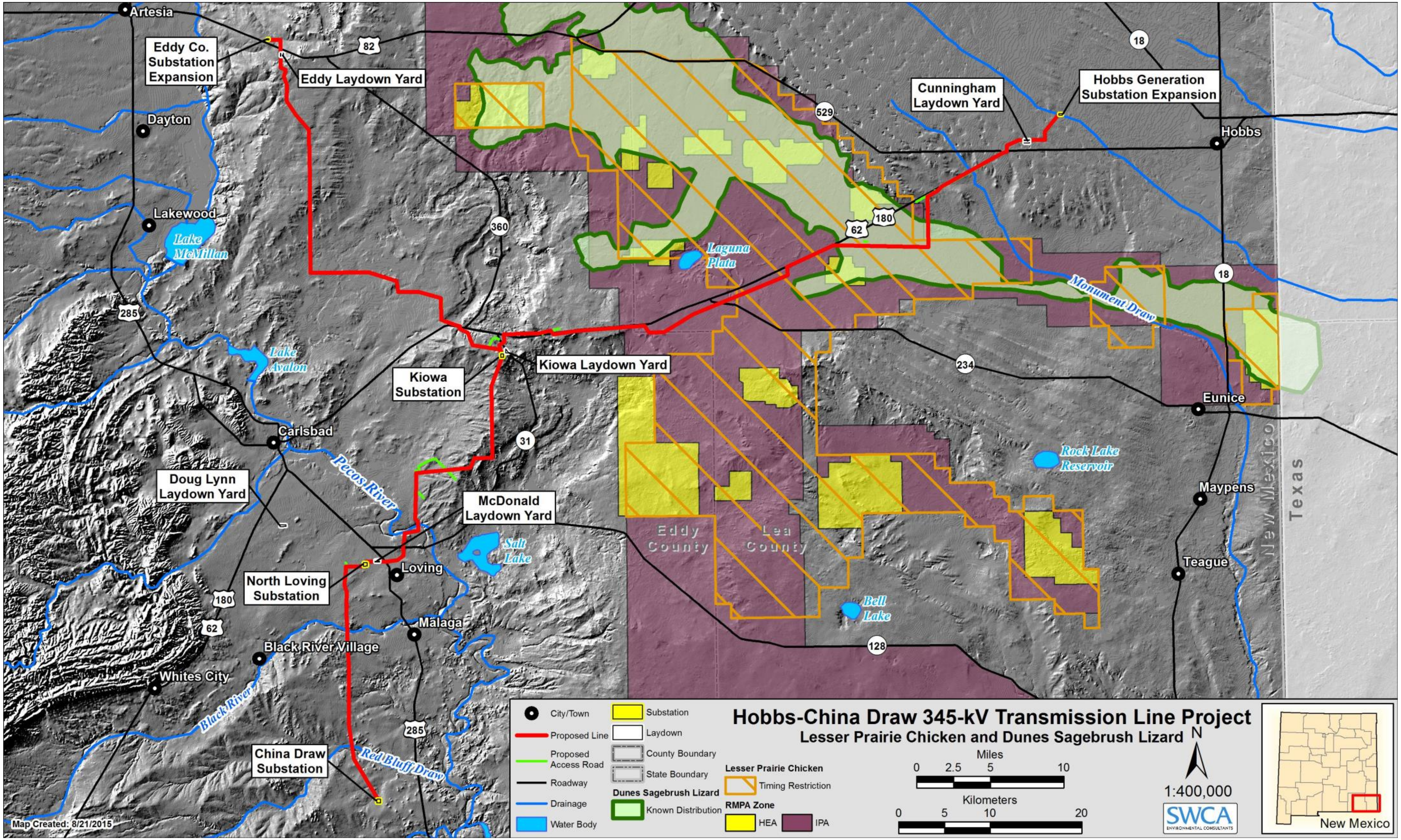

Figure A.2. CIAA for LPC and DSL.

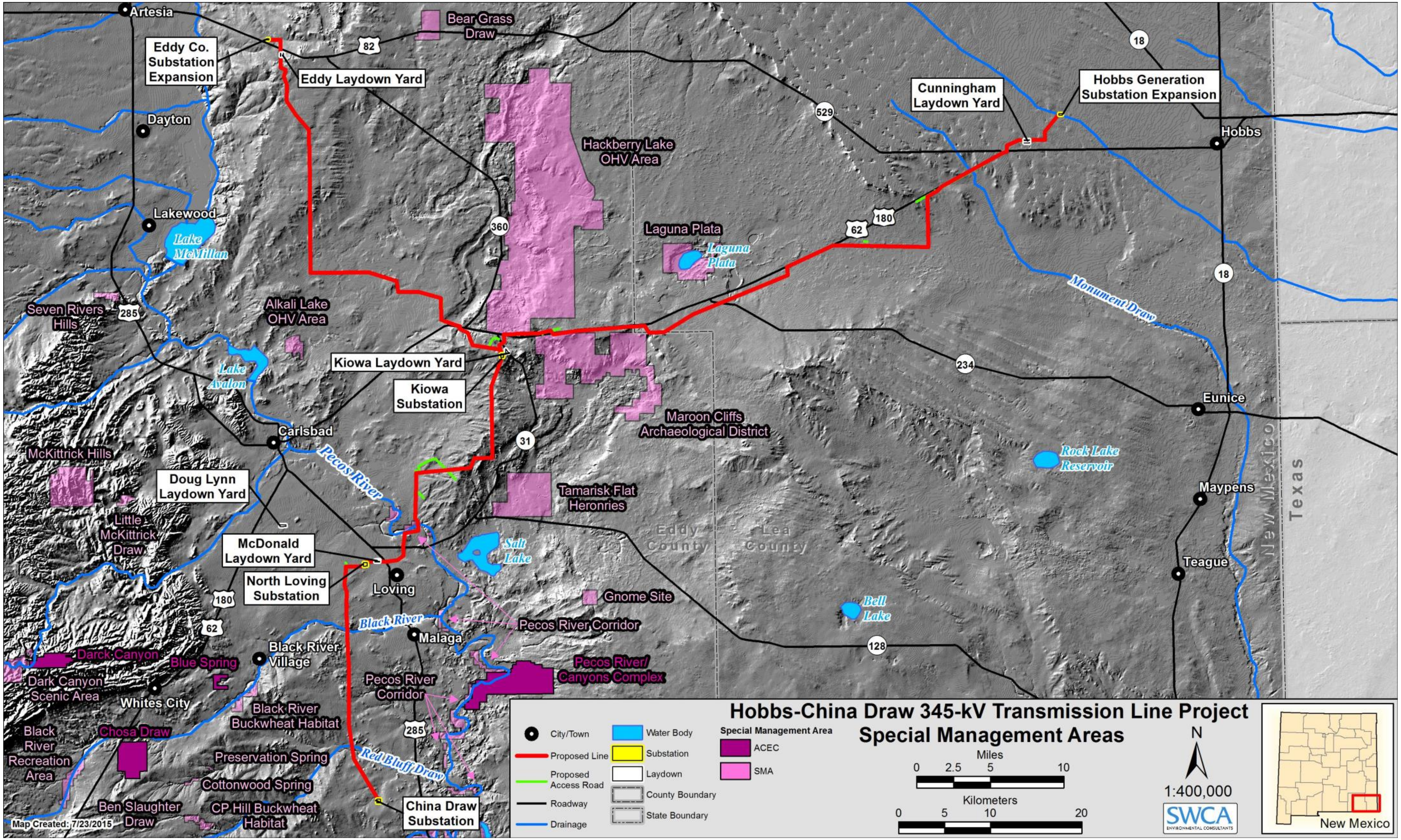

Figure A.3. CIAA for special designations and recreation areas.

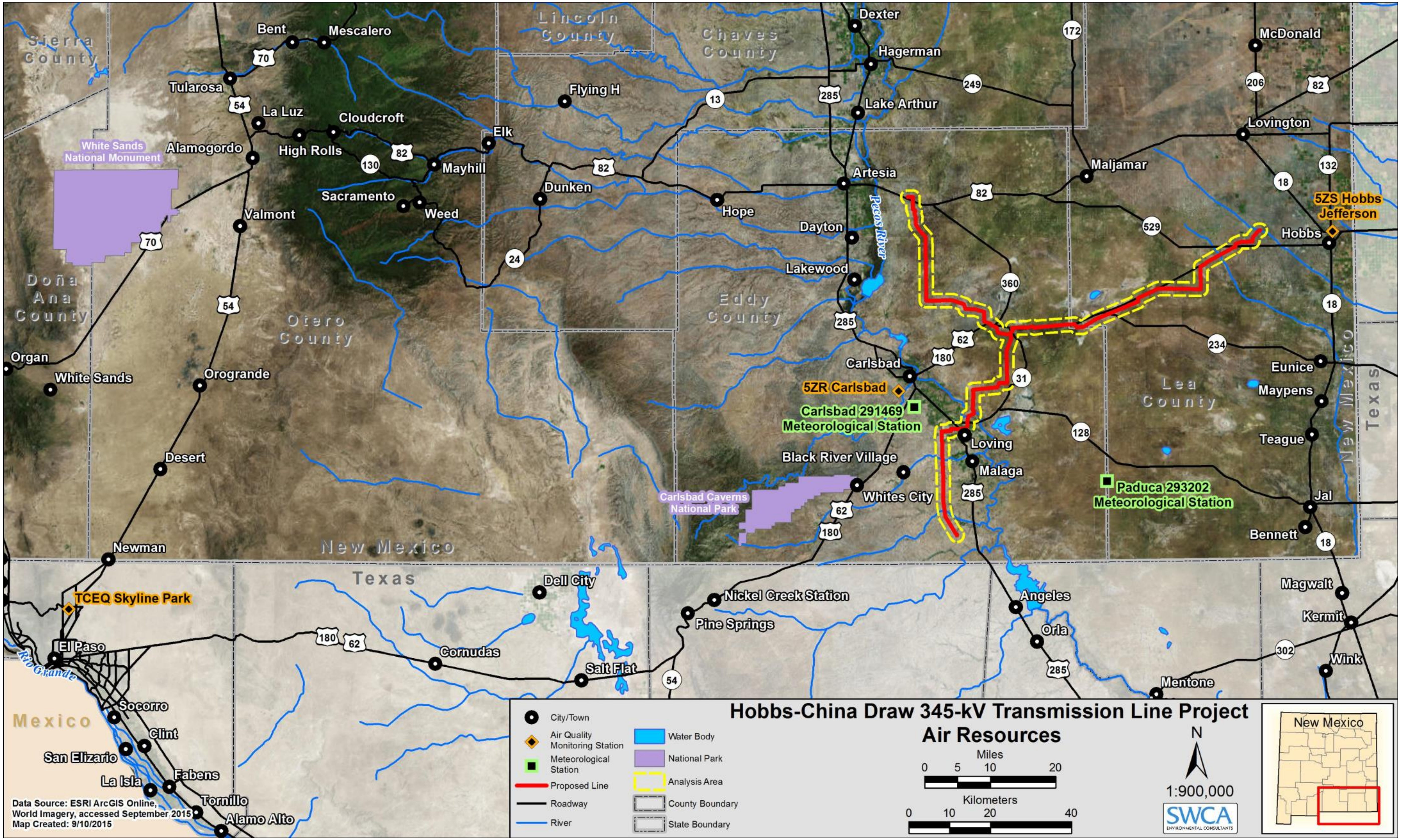

Figure A.4. Air resources analysis area.

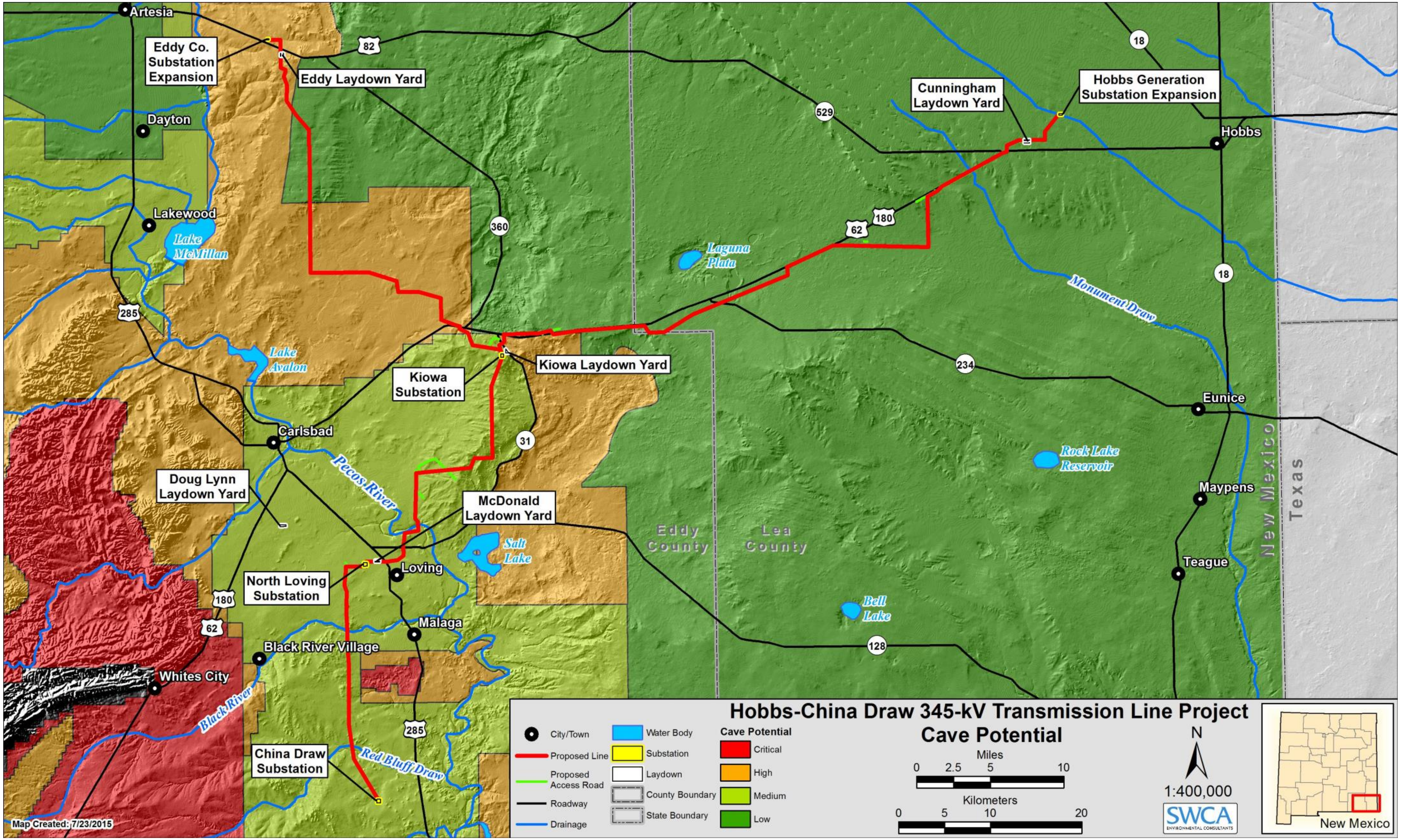

Figure A.5. **Cave potential areas crossed by the proposed project.**

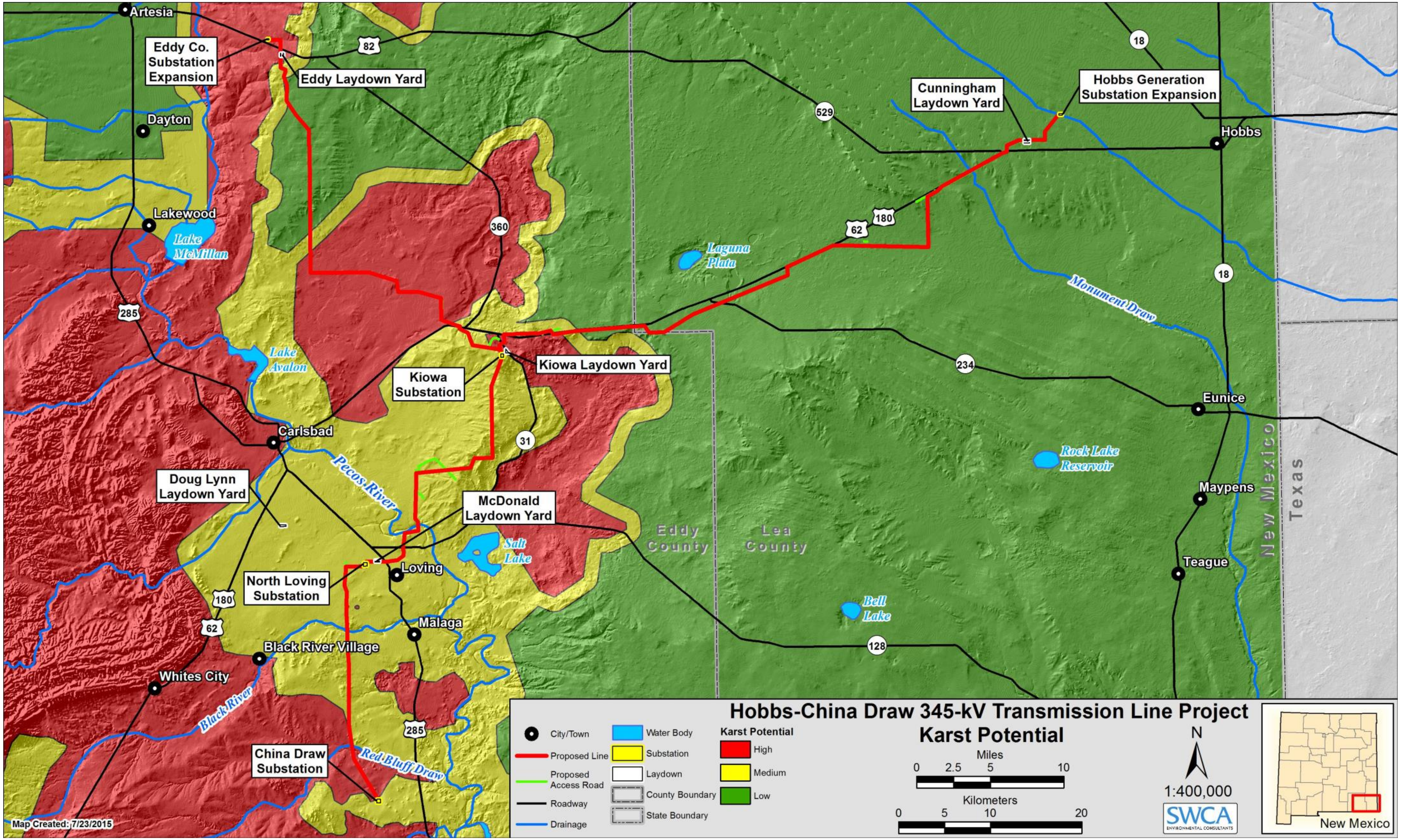

Figure A.6. Karst potential areas crossed by the proposed project.

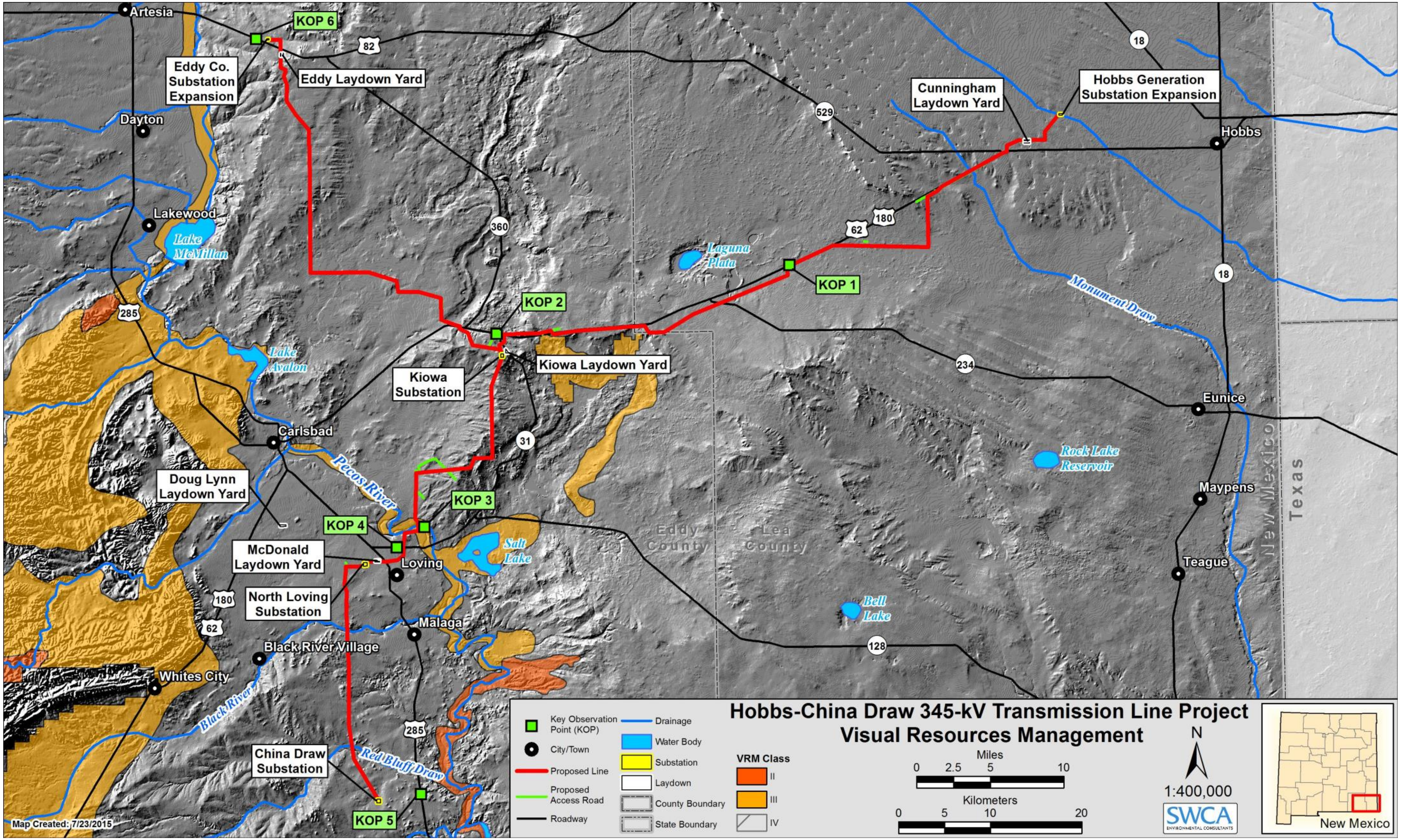

Figure A.7. Visual Resource Management classes crossed by proposed project and Key Observation Points (KOPs).

APPENDIX B. PLANT SPECIES OBSERVED DURING BIOLOGICAL SURVEY

Common Name	**Scientific Name**
Snowball sand verbena	*Abronia fragrans*
Whitethorn acacia	*Acacia constricta*
Catclaw acacia	*Acacia greggii*
Angel's trumpets	*Acleisanthes longiflora*
Dwarf desertpeony	*Acourtia nana*
Brownfoot	*Acourtia wrightii*
Trailing windmills	*Allionia incarnata*
Geyer's onion	*Allium geyeri*
Washerwoman	*Alternanthera caracasana*
Pigweed	*Amaranthus*
Cuman ragweed	*Ambrosia psilostachya*
Big bluestem	*Andropogon gerardii*
New Mexico silverbush	*Argythamnia neomexicana*
Sixweeks threeawn	*Aristida adscensionis*
Purple threeawn	*Aristida purpurea*
Spidergrass	*Aristida ternipes*
Carruth's sagewort	*Artemisia carruthii*
Sand sagebrush	*Artemisia filifolia*
White sagebrush	*Artemisia ludoviciana*
Broadleaf milkweed	*Asclepias latifolia*
Woolly locoweed	*Astragalus mollissimus*
Hairyseed bahia	*Bahia absinthifolia*
Burningbush	*Bassia scoparia*
Lyreleaf greeneyes	*Berlandiera lyrata*
Cane bluestem	*Bothriochloa barbinodis*
Sixweeks grama	*Bouteloua barbata*
Gypsum grama	*Bouteloua breviseta*
Sideoats grama	*Bouteloua curtipendula*
Buffalograss	*Bouteloua dactyloides*
Black grama	*Bouteloua eriopoda*
Blue grama	*Bouteloua gracilis*
Coastal sandbur	*Cenchrus spinifex*
Malta starthistle	*Centaurea melitensis*
Rose heath	*Chaetopappa ericoides*
Hairy five eyes	*Chamaesaracha sordida*
Whitemargin sandmat	*Chamaesyce albomarginata*
Ribseed sandmat	*Chamaesyce glyptosperma*
Hoary sandmat	*Chamaesyce lata*
Slimleaf goosefoot	*Chenopodium pallescens*
Hooded windmill grass	*Chloris cucullata*
Watermelon	*Citrullus lanatus*
Drummond's clematis	*Clematis drummondii*
Whitemouth dayflower	*Commelina erecta*
Javelina bush	*Condalia ericoides*
Scheer’s beehive cacti	***Coryphantha robustispina var. scheeri***
Grassland croton	*Croton dioicus*
Leatherweed	*Croton pottsii*
Texas croton	*Croton texensis*
James' cryptantha	*Cryptantha cinerea*
Missouri gourd	*Cucurbita foetidissima*
Dodder	*Cuscuta*
Winged pigweed	*Cycloloma atriplicifolium*
Thistle cholla	*Cylindropuntia davisii*
Tree cholla	*Cylindropuntia imbricata*
Christmas cactus	*Cylindropuntia leptocaulis*
Featherplume	*Dalea formosa*
Woolly prairie clover	*Dalea lanata*

Common Name	Scientific Name
Low woollygrass	*Dasyochloa pulchella*
Chinese thorn-apple	*Datura quercifolia*
Touristplant	*Dimorphocarpa wislizeni*
Fetid marigold	*Dyssodia papposa*
Horse crippler	*Echinocactus texensis*
Lace hedgehog cactus	*Echinocereus reichenbachii*
Nylon hedgehog cactus	*Echinocereus viridiflorus var. chloranthus*
Engelmann's daisy	*Engelmannia peristenia*
Cory's jointfir	*Ephedra coryi*
Torrey's jointfir	*Ephedra torreyana*
Torrey's jointfir	*Ephedra torreyana*
Lehmann lovegrass	*Eragrostis lehmanniana*
Red lovegrass	*Eragrostis secundiflora*
Western daisy fleabane	*Erigeron bellidiastrum*
Abert's buckwheat	*Eriogonum abertianum*
Annual buckwheat	*Eriogonum annuum*
Roundleaf buckwheat	*Eriogonum rotundifolium*
Shortleaf woollygrass	*Erioneuron avenaceum*
Spurge	*Euphorbia* sp
American tarwort	*Flourensia cernua*
Red dome blanketflower	*Gaillardia pinnatifida*
Beeblossom	*Gaura*
Dakota mock vervain	*Glandularia bipinnatifida*
Curlytop gumweed	*Grindelia nuda*
Curlycup gumweed	*Grindelia squarrosa*
Small matweed	*Guilleminea densa*
Threadleaf snakeweed	*Gutierrezia microcephala*
Broom snakeweed	*Gutierrezia sarothrae*
Common sunflower	*Helianthus annuus*
Texas blueweed	*Helianthus ciliaris*
Phlox heliotrope	*Heliotropium convolvulaceum*
Fragrant heliotrope	*Heliotropium greggii*
Sicklepod holdback	*Hoffmannseggia drepanocarpa*
Foxtail barley	*Hordeum jubatum*
Matted bluet	*Houstonia humifusa*
Collegeflower	*Hymenopappus flavescens*
Chalk Hill hymenopappus	*Hymenopappus tenuifolius*
Slimlobe globeberry	*Ibervillea tenuisecta*
Southern goldenbush	*Isocoma pluriflora*
Arctic rush	*Juncus arcticus*
Warty caltrop	*Kallstroemia parviflora*
Crown of thorns	*Koeberlinia spinosa*
Littleleaf ratany	*Krameria erecta*
Trailing krameria	*Krameria lanceolata*
Creosote bush	*Larrea tridentata*
Mesa pepperwort	*Lepidium alyssoides*
Fendler's bladderpod	*Lesquerella fendleri*
Woolly marsh elder	*Leuciva dealbata*
Bristle flax	*Linum aristatum*
Narrowleaf stoneseed	*Lithospermum incisum*
Collected	*Lorandersonia baileyi*
Berlandier's wolfberry	*Lycium berlandieri*
Common wolfstail	*Lycurus phleoides*
Hoary tansyaster	*Machaeranthera canescens*
Lacy tansyaster	*Machaeranthera pinnatifida*
Tanseyleaf tansyaster	*Machaeranthera tanacetifolia*
Horehound	*Marrubium vulgare*

Common Name	Scientific Name
Hairy waterclover	*Marsilea vestita*
Rough menodora	*Menodora scabra*
Grassland blazingstar	*Mentzelia strictissima*
Fourvalve mimosa	*Mimosa quadrivalvis*
Smooth four o'clock	*Mirabilis glabra*
Green carpetweed	*Mollugo verticillata*
Bush muhly	*Muhlenbergi porteri*
Sand muhly	*Muhlenbergia arenicola*
False buffalograss	*Munroa squarrosa*
Bicolor fanmustard	*Nerisyrenia camporum*
White Sands fanmustard	*Nerisyrenia linearifolia*
Texas false garlic	*Nothoscordum texanum*
Devil's bouquet	*Nyctaginia capitata*
Evening primrose	*Oenothera* sp
Tulip pricklypear	*Opuntia phaeacantha*
Plains pricklypear	*Opuntia polyacantha*
Othake	*Palafoxia sphacelata*
Mexican panicgrass	*Panicum hirticaule*
Vine mesquite	*Panicum obtusum*
James' nailwort	*Paronychia jamesii*
Gray's feverfew	*Parthenium confertum*
Mariola	*Parthenium incanum*
Lemonscent	*Pectis angustifolia*
Gilia beardtongue	*Penstemon ambiguus*
Buckley's beardtongue	*Penstemon buckleyi*
Drummond's leaf-flower	*Phyllanthus abnormis*
Ivyleaf groundcherry	*Physalis hederifolia*
James' galleta	*Pleuraphis jamesii*
White milkwort	*Polygala alba*
Bushy knotweed	*Polygonum ramosissimum*
James' holdback	*Pomaria jamesii*
Kiss me quick	*Portulaca pilosa*
Shrubby purslane	*Portulaca suffrutescens*
Sanddune unicorn-plant	*Proboscidea sabulosa*
Honey mesquite	*Prosopis glandulosa*
Woolly paperflower	*Psilostrophe tagetina*
Havard oak	*Quercus havardii*
Chinese lantern	*Quincula lobata*
Upright prairie coneflower	*Ratibida columnifera*
Littleleaf sumac	*Rhus microphylla*
Buffpetal	*Rhynchosida physocalyx*
Canaigre dock	*Rumex hymenosepalus*
Prickly Russian thistle	*Salsola tragus*
Wingleaf soapberry	*Sapindus saponaria*
Threadleaf glowwort	*Sartwellia flaveriae*
Little bluestem	*Schizachyrium scoparium*
Burrograss	*Scleropogon brevifolius*
Spreading moonpod	*Selinocarpus diffusus*
Threadleaf ragwort	*Senecio flaccidus*
Riddell's ragwort	*Senecio riddellii*
Twinleaf senna	*Senna bauhinioides*
Twoleaf senna	*Senna roemeriana*
Streambed bristlegrass	*Setaria leucopila*
Silverleaf nightshade	*Solanum elaeagnifolium*
Melonleaf nightshade	*Solanum heterodoxum*
Copper globemallow	*Sphaeralcea angustifolia*
Scarlet globemallow	*Sphaeralcea coccinea*

Common Name	Scientific Name
Spear globemallow	*Sphaeralcea hastulata*
Brickellia laciniata	*splitleaf brickellbush*
Alkali sacaton	*Sporobolus airoides*
Sand dropseed	*Sporobolus cryptandrus*
Mesa dropseed	*Sporobolus flexuosus*
Giant dropseed	*Sporobolus giganteus*
Early shaggytuft	*Stenandrium barbatum*
Queen's-delight	*Stillingia sylvatica*
Five-stamen tamarisk	*Tamarix chinensis*
Coulter's wrinklefruit	*Tetraclea coulteri*
Stemmy four-nerve daisy	*Tetraneuris scaposa*
Longstalk greenthread	*Thelesperma longipes*
Hopi tea greenthread	*Thelesperma megapotamicum*
Pricklyleaf dogweed	*Thymophylla acerosa*
Fiveneedle pricklyleaf	*Thymophylla pentachaeta*
Woolly tidestromia	*Tidestromia lanuginosa*
Woody crinklemat	*Tiquilia canescens*
Hairy crinklemat	*Tiquilia hispidissima*
Stemless Townsend daisy	*Townsendia exscapa*
Branched noseburn	*Tragia ramosa*
Slim tridens	*Tridens muticus*
Fanleaf vervain	*Verbena plicata*
Golden crownbeard	*Verbesina encelioides*
Texas sleepydaisy	*Xanthisma texanum*
Rough cocklebur	*Xanthium strumarium*
Plains yucca	*Yucca campestris*
Don Quixote's lace	*Yucca treculeana*
Desert zinnia	*Zinnia acerosa*
Rocky Mountain zinnia	*Zinnia grandiflora*
Lotebush	*Ziziphus obtusifolia*

Note: Nomenclature follows the NRCS PLANTS Database (http://plants.usda.gov/java/).

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pecos District
Carlsbad Field Office
620 E Greene Street
Carlsbad, NM 88220

Finding of No Significant Impact (FONSI)

Southwestern Public Service Company (SPS)
Hobbs to China Draw 345kV Transmission Line Project Environmental Assessment
NEPA No. DOI-BLM-NM-P020-2016-0089-EA

FINDING OF NO SIGNIFICANT IMPACT

Based upon a review of the EA and the supporting documents, I have determined that the Proposed Action, as described in the EA would not have any significant impact, individually or cumulatively, on the quality of the human environment. Because there would not be any significant impact, an Environmental Impact Statement is not required.

In making this determination, I considered the following factors:

1. The activities described in the Proposed Action do not include any significant beneficial or adverse impacts (40 CFR 1508.27(b) (1)). The EA includes a description of the expected environmental consequences of the Proposed Action and all practical means to avoid or minimize environmental harm have been adopted. The beneficial effects of the Hobbs to China Draw 345kV Project are needed to satisfy increase in electrical demand in southeast New Mexico where development of oil and gas fields has grown tremendously. This additional capacity will allow SPS to reliably accommodate the future electrical load within its system. Adverse effects include impacts to soils, vegetation, wildlife, and visual resources that would occur temporarily during construction of the Proposed Action. Long-term effects include impacts to vegetation, wildlife, and visual resources.

2. The activities included in the Proposed Action would not significantly affect public health or safety (40 CFR 1508.27(b) (2). The BLM and SPS have selected the Proposed Action, comprising the 122-mile ROW and associated substations, as the environmentally preferred alternative. The Proposed Action achieves the balance of resource protection and beneficial uses of the human environment envisioned by the National Environmental Policy Act.

3. The proposed activities would not significantly affect any unique characteristics (40 CFR 1508.27(b) (3)) of the geographic area such as prime and unique farmlands,

caves, wild and scenic rivers, designated wilderness areas, wilderness study areas, or areas of critical concern. There are no wild and scenic rivers in the project area. As described in the EA, impacts to cultural resources were identified for the preferred alternative. Monitoring and environmental commitments included in the Proposed Action would be implemented during project construction to minimize the potential for adverse impacts to heritage resources.

4. The activities described in the Proposed Action do not involve effects on the human environment that are likely to be highly controversial (40 CFR 1508.27(b)(4)). The effects on the quality of the human environment are not likely to be highly controversial because there is no known scientific controversy over the impacts of the project.

5. The activities described in the Proposed Action do not involve effects that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)). The BLM has considerable experience with the types of activities to be implemented. The effects analysis (EA, Chapter 3) shows the effects are not uncertain and do not involve unique or unknown risk. No highly uncertain or unknown risks to the human environment were identified during analysis of the preferred alternative.

6. My decision to implement these activities does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)) because it conforms to all existing BLM plans and is applicable to the project area.

7. The effects of the construction of the transmission lines and substations would not be significant, individually or cumulatively, when considered with the effects of other actions (40 CFR 1508.27(b)(7)). No individually or cumulatively significant impacts were identified for the preferred alternative. Any adverse impacts identified for the preferred alternative, in conjunction with any adverse impacts of other past, present, or reasonably foreseeable future actions would result in negligible to moderate impacts to natural and cultural resources.

8. Additional Mitigation Measure:
The proposed activities may effect, but are not likely to adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973 (40 CFR 1508.27(b)(9)). Environmental commitments integral to the preferred alternative would also lessen adverse effects to wildlife and special status species designated by the U.S. Fish and Wildlife Service and the BLM. In order to minimize the potential for adverse effect on the aplomado falcon, If construction and maintenance activities, including mechanical or herbicide treatments of woody vegetation, cannot be avoided in the primary nesting season for migratory birds (March–August), migratory bird and nest surveys would be performed up to two weeks prior to commencing with those activities, and an avoidance buffer around each active nest would be implemented until the young have fledged.

In order to minimize the potential for adverse effect on the lesser prairie chicken, timing and noise restrictions would be applied to prevent disruption of mating and nesting activities, construction activities would be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15. Non-construction activities such as tailgate meetings and activities where machinery is not needed would be allowable outside the timing limitations. In order to minimize the potential for adverse effect on the dunes sagebrush lizard, a BLM-approved monitor would be required for every up to 3-mile segment that contains open holes in DSL habitat.

9. The proposed activities would not threaten any violation of federal, state, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). Applicable laws and regulations were considered in the EA (see EA Chapter 1.4). This action is consistent with the Carlsbad RMP, as amended (1997 RMPA pp. AP2-8–AP2-9) and (2008 RMPA pp. 2-13). The preferred alternative violates no federal, state, or local environmental protection laws.

Approved:

Cody D. Layton

for George MacDonell
Field Manager
Carlsbad Field Office

1/27/16
Date

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pecos District
Carlsbad Field Office
620 E Greene Street
Carlsbad, NM 88220

DECISION RECORD
for the
DOI-BLM-NM-P020-2016-0089-EA
Southwestern Public Service Company (SPS)
Serial Nos. NM-133171; NM-134370; NM-134336; NM-077768
SPS' Hobbs to China Draw 345kV Transmission Line Project

SUMMARY OF THE DEVELOPMENT PROPOSAL

Southwestern Public Service Company (SPS), a wholly owned subsidiary of Xcel Energy Inc., has submitted four Applications for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for right-of-way (ROW) grants needed to construct, operate, and maintain two 345-kilovolt (kV) transmission lines, a new substation (Kiowa Substation), and two substation expansions (Hobbs Generation and Eddy County Substation) in southeast New Mexico, herein referred to as the "project" or "Proposed Action." Xcel Energy is a registered holding company that owns several electric and natural gas utility operating companies. The project crosses BLM CFO–managed surface lands, New Mexico State Land Office (SLO) lands, and private lands. The BLM is serving as the lead federal agency for the undertaking.

The four applications include distinct project components but are considered to be connected actions as defined in the BLM's National Environmental Policy Act (NEPA) handbook (Section 6.5.2.1) and regulations of the Council of Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1508.25). As such, impacts from construction and operation of the proposed project are analyzed and disclosed together within the Project's Environmental Assessment (EA). This Decision Record includes the BLM's decision for all four subject applications as described in the EA.

The 345-kV transmission lines interconnect with other existing and proposed electrical system facilities owned and operated by SPS, as parts of the larger electrical system grid. SPS is requesting a 150-foot-wide permanent ROW for the transmission lines. One new substation, and four substation expansions are proposed. Additional temporary workspace is also proposed for staging areas or other construction-related needs. Disturbance associated with the Proposed Action (2,661 acres) would be primarily short term, as the majority of the ROW would be reclaimed following construction.

Prior to siting the preliminary routes for the ROW, a desktop analysis was conducted by the BLM to identify sensitive areas to avoid. Once the preliminary route was identified and cultural resource and biological resource surveys were conducted, the route was then adjusted or realigned in several segments in order to avoid impacts to cultural or biological resources where possible.

I. Decision

I have decided to select the Proposed Action for implementation as described in Chapter 2 of the attached Environmental Assessment (EA) (DOI-BLM-NM-P020-2016-0089-EA) dated January 6, 2016. Based on my review of the EA and project record, I have concluded that the Proposed Action was analyzed in sufficient detail to allow me to make an informed decision. I have selected the Proposed Action because this action sufficiently meets the purpose and need for the action in a manner that conforms to the 1988 Carlsbad Resource Management Plan (RMP), as amended by the 1997 Carlsbad Approved RMP Amendment (Appendix 2; pp. AP2-8–AP2-9), and 2008 Approved RMP Amendment (pp. 2-13).

II. Finding of No Significant Impact

I have reviewed the direct, indirect, and cumulative effects of the proposed activities documented in the EA for the Proposed Action (DOI-BLM-NM-P020-2014-1434-EA). I have also reviewed the project record for this analysis. The effects of the Proposed Action and alternatives are disclosed in the Alternatives and Environmental Consequences sections of the EA. I have determined that the project is not a major federal action and would not significantly affect the quality of the human environment, individually, or cumulatively with other actions in the general area. I have determined that the preparation of an Environmental Impact Statement is not necessary.

III. Other Alternatives Considered

Alternatives to the Proposed Action were 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 National Environmental Policy Act (NEPA) Handbook H-1790-1, the agency "need only analyze alternatives that would have a lesser effect than the Proposed Action." Those with greater adverse resource impacts or those that are not feasible because of existing physical constraints or infrastructure were not brought forward for detailed analysis in the EA. The proposed transmission line route and design would meet the BLM's purpose and need while minimizing environmental impacts to the greatest extent possible. The route was ultimately planned to minimize impacts to habitat for both the lesser prairie-chicken (*Tympanuchus pallidicinctus*) and the dunes sagebrush lizard (*Sceloporus arenicolus*) (see EA section 3.6.3). Cultural and historic sites were also avoided where applicable (see EA Section 3.7.3 for details regarding avoidance of cultural sites). Any other proposed ROW routing would likely result in greater surface impacts and environmental impacts. Public scoping did not identify any additional unforeseen alternatives.

IV. Public Involvement

The project description and location was posted to the BLM's website, as well as the Carlsbad and Hobbs newspapers, beginning on March 2, 2015, for a 30-day public scoping comment period. In addition, the BLM CFO published a NEPA log for public inspection. This log contained a list of proposed and approved actions in the CFO planning area. The log is located on the BLM New Mexico website (http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html). No public comments were received.

COMPLIANCE AND MONITORING

SPS and BLM will provide qualified representatives on the ground during and following construction to validate construction, reclamation, other approved design and compliance commensurate with the provisions of this Decision Record. SPS will be required to conduct monitoring of the project in cooperation with the BLM. SPS will monitor reclamation to ensure that mitigation measures are enforced, the project is constructed per the plans of development, and revegetation meets accepted standards.

V. Appeals

This decision may be appealed to the Interior Board of Land Appeals (IBLA), Office of the Secretary, in accordance with the regulations contained in 43 Code of Federal Regulations (CFR) 4. Any appeal must be filed within 30 days of this decision. Any notice of appeal must be filed with the Authorized Officer at Carlsbad Field Office, 620 E. Greene St., Carlsbad, New Mexico 88220. The appellant shall serve a copy of the notice of appeal and any statement of reasons, written arguments, or briefs on each adverse party named in the decision, not later than 15 days after filing such document (see 43 CFR 4.413(a)). Failure to serve within the time required will subject the appeal to summary dismissal (see 43 CFR 4.413(b)). If a statement of reasons for the appeal is not included with the notice, it must be filed with the IBLA, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, Virginia 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.

Notwithstanding the provisions of 43 CFR 4.21(a)(1), filing a notice of appeal under 43 CFR 4 does not automatically suspend the effect of the decision. This decision shall take effect when the BLM Authorized Officer issues a “Grant Issued” decision letter and shall remain in effect while any appeal is pending unless the IBLA issues a stay (43 CFR 2801.10). If you wish to file a petition for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the IBLA, the petition for a stay must accompany your notice of appeal.

A petition for a stay is required to show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied;
(2) The likelihood of the appellant's success on the merits;
(3) The likelihood of immediate and irreparable harm if the stay is not granted; and
(4) Whether the public interest favors granting the stay.

In the event a request for stay or an appeal is filed, the person/party requesting the stay or filing the appeal must serve a copy of the appeal on the Office of the Field Solicitor, U.S. Department of the Interior, Bureau of Land Management, P.O. Box 27115, Santa Fe, New Mexico 87502-0115.

for Cody R. Layton
George MacDonell, Field Manager
Carlsbad Field Office, BLM

1/27/16
Date

Attachment(s)
1. Southwestern Public Service Company's Hobbs to China Draw 345kV Transmission Line Project, Lea and Eddy Counties, New Mexico. Environmental Assessment (**DOI-BLM-NM-P020-2016-0089-EA**) dated 01/06/16.

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220-6292

In Reply Refer to:
NM-133171
2800(NMP0220)

Xcel Energy
Attn: Nisha Patel
600 S. Tyler, 18th Floor
Amarillo, TX 79101

Re: Right-of-Way
NM-133171
Hobbs to China Draw

Dear Nisha Patel:

On 8/22/2014, you filed a right-of-way application for a 345 KV Transmission Line on Federal surface.

Enclosed are two copies of an unsigned right-of-way grant for your transmission line. Please review the document and if it meets with your approval, sign and date both copies and return to the addresses shown above. Upon our receipt of the signed documents and the fees discussed below, we will issue the right-of-way grant, absent any other unresolved issues.

You must pay a fee to the BLM for the costs we will incur in monitoring the construction and operation of your authorized use. These fees are categorized according to the number of work hours necessary to monitor your grant, and are not refundable. We anticipate your use will require a Monitoring Category 1, the fees of which are included in the rental options below.

Rent for use of public lands must be paid in advance of such use and prior to issuance of the right-of-way grant. Rent for a linear right-of-way is based on a schedule that is adjusted annually based on the Implicit Price Deflator GNP (IPD), and inflation index. You may obtain a copy of the rent schedule from this office.

You have the option of paying the rent in 10-year periods, or for the entire term (approx. 30 years) of the right-of-way grant.

10-Year Rental Option		30-Year Rental Option	
Nine Year Rental	**$90,377.82**	**Twenty-Nine Year Rental**	**$291,217.42**
Partial Year Amount	**$9,205.49**	**Partial Year Amount**	**$9,205.49**
TOTAL AMOUNT DUE:	**$99,583.31**	TOTAL AMOUNT DUE:	**$300,422.91**

Please be aware that you may not conduct any activities related to your right-of-way project on public land until you have received an authorized grant from this office. If you have any questions, please contact Tessa Cisneros at (575)234-5972.

Sincerely,

for Cody V. Layton

George MacDonell
Field Manager

2-attachments
R/W Grant

Form 2800-14
(August 1985)

United States Department of the Interior
Bureau of Land Management
RIGHT-OF-WAY GRANT
Serial Number:NM-133171
Project Name: Hobbs to China Draw

Issuing Office
Carlsbad Field Office

---

1. A right-of-way is hereby granted pursuant to

APPROVED
MAR 0 2 2016
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

2. Nature of Interest:
   a. By this instrument, the holder:

Xcel Energy
600 Tyler St. Floor Suite 1800
Amarillo, TX 79710

receives a right to construct, operate, maintain, and terminate a 345 KV Transmission Line across public lands in Lea and Eddy County, New Mexico described as follows:

T.20 S.,R.30E.,NMPM
sec. 36: SW¼SE¼.
T.20 S.,R.31E.,NMPM
sec. 31: Lot4, SE¼SW¼;
sec. 32: SW¼SW¼;
sec. 33: SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼;
sec. 34: NE¼SE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼;
sec. 35: NE¼SE¼, NE¼SW¼, NW¼SE¼, NW¼SW¼;
sec. 36: NW¼SW¼.
T.20 S.,R.32E.,NMPM
sec. 25: NE¼NE¼, NE¼NW¼, NW¼NE¼, SE¼NW¼, SW¼NW¼;
sec. 26: NE¼SE¼, NE¼SW¼, NW¼SE¼, NW¼SW¼, SE¼NE¼, SW¼SW¼;
sec. 27: SE¼SE¼, SW¼SE¼;
sec. 31: Lot 3, NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼SE¼;
sec. 33: NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼, SW¼SW¼;
sec. 34: NE¼NW¼, NW¼NE¼, SE¼NW¼, SW¼NW¼.
T.20 S.,R.33E.,NMPM
sec. 01: SE¼SE¼;
sec. 11: NE¼SE¼, NE¼SW¼, NW¼SE¼, SE¼NE¼, SE¼SW¼;
sec. 12: N½NE¼, NE¼NW¼, S½NW¼;
sec. 14: E½NW¼, SW¼NW¼;
sec. 15: SE¼NE¼, N½SW¼, SW¼SW¼, N½SE¼;
sec. 19: S½SW¼, N½SE¼, SW¼SE¼;
sec. 20: E½NE¼, SW¼NE¼, SE¼NW¼, N½SW¼;
sec. 21: NW¼NE¼, N½NW¼;
sec. 30: Lot 1.
T.20 S.,R.34E.,NMPM
sec. 01: SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼;
sec. 02: SE¼NE¼;
sec. 03: SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼;
sec. 04: SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼;
sec. 05: NW¼SW¼, SE¼NE¼, SE¼NW¼, SW¼NE¼, SW¼NW¼;
sec. 06: Lot 7, NE¼SE¼, NE¼SW¼, SE¼SW¼.
T.20 S.,R.35E.,NMPM

sec. 05: SE¼NE¼, SE¼NW¼, SW¼NE¼;
sec. 06: Lot 5, SE¼NE¼, SE¼NW¼, SW¼NE¼.

T.21 S.,R.29E.,NMPM

sec. 01: Lots 1, 2, 3 and 4;
sec. 02: Lot 1;
sec. 03: Lots 1, 8, 9, 10 and 15, NW¼SE¼, SW¼SE¼;
sec. 10: NW¼NE¼, NW¼SE¼, SE¼SW¼, SW¼NE¼, SW¼SE¼;
sec. 15: NE¼NW¼, NW¼SW¼, SE¼NW¼, SW¼NW¼, SW¼SW¼;
sec. 22: NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼;
sec. 27: NW¼NW¼, NW¼SW¼, SW¼NW¼, SW¼SW¼;
sec. 34: Lot 1, NW¼NW¼, NW¼SW¼, SW¼NW¼.

T.21 S.,R.30E.,NMPM

sec. 05: Lots 1, 2, 3 and 4;
sec. 06: Lots 4 and 5.

T.21 S.,R.31E.,NMPM

sec. 04: Lots 2, 3 and 4;
sec. 05: Lots 1 and 2.

T. 22 S., R. 28 E., NMPM

sec. 13: Lots 13, 14, 15 and 16;
sec. 14: SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼;
sec. 15: SE¼SE¼;
sec. 22: NE¼NE¼, NE¼SE¼, SE¼NE¼;
sec. 27: NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼;
sec. 34: NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼.

T. 22 S., R. 29 E., NMPM

sec. 04: Lot 1, NE¼SE¼, SE¼NE¼, SE¼SE¼;
sec. 08: SE¼SE¼;
sec. 09: NE¼NE¼, NE¼SE¼, SE¼NE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼, SW¼SW¼;
sec. 17: NE¼NE¼, NE¼SW¼, NW¼NE¼, NW¼SE¼, NW¼SW¼, SW¼NE¼;
sec. 18: Lot 4, NE¼SE¼, NW¼SE¼, SE¼SW¼, SW¼SE¼.

T. 23 S., R. 28 E., NMPM

sec. 03: Lot 1, NE¼SE¼, SE¼NE¼, SE¼SE¼, SE¼SW¼, SW¼SE¼;
sec. 09: NE¼SE¼, SE¼SE¼;
sec. 10: NE¼NW¼, NW¼NW¼, NW¼SW¼, SW¼NW¼;
sec. 16: NE¼NE¼.

The lands described above contain a total length of 44.38 miles.

b. The right-of-way or permit area granted herein is 150.00 feet wide, 234,326.40 feet long and contains 806.90 acres, more or less.

c. This instrument shall terminate on 12-31-2045 unless prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Not withstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.

c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter, not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.

d. The stipulations, plans, maps, or designs set forth in Exhibit A, A-1 and B (map) and POD, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

f. The holder shall perform all operations in a good and workman like manner so as to ensure protection of the environment and the health and safety of the public.

g. In the event that the public land underlying the right-of-way (ROW) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

IN WITNESS THEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Sean L. Fadenrecht (signature)	James A. Amos (signature)
(Signature of Holder)	(Signature of Authorized Officer)
Manager Siting & Land Rights	For Field Manager, Carlsbad Field Office
(Title)	(Title)
2-16-16	3.2.16
(Date)	(Effective Date of Grant)

EXHIBIT A

BLM Serial Number: NM-133171 & NM-134370
Company Reference: Hobbs to China Draw & Eddy Kiowa

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC TRANSMISSION LINES IN THE CARLSBAD FIELD OFFICE, BLM

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, *etc.*) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roasting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. **The BLM serial number assigned to this right-of-way grant shall be posted in a permanent, conspicuous manner, and be maintained in a legible condition for the term of the right-of-way at all major road crossings and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.**

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, *etc.*) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facilities or within 180 days of abandonment, relinquishment, or termination of this grant, whichever comes first. This will not apply where the power line extends to serve an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and the Authorized Officer will make any decision as to the proper mitigation measures after consulting with the holder.

11. The area will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle, and saltcedar.

Special stipulations:
The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer. Special restoration stipulations or realignment may be required.

Please contact Randy Pair at the BLM 5 days prior to construction. 575-234-6240

EXHIBIT NO. A-1

Date of Issue:
1/7/2016

Bureau of Land Management, Carlsbad Field Office
620 E. Greene Street Carlsbad, NM 88220

NM-133171, NM-134370, NM-134336 & NM-77768

Cultural and Archaeological Resources

BLM Report No.

NOTICE OF STIPULATIONS

Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.

Project Name:	**Southwestern Public Service Company's Hobbs to China Draw & Eddy to Kiowa 345-kV Transmission Line Project, Kiowa Substation and Eddy County Substation** **Lea and Eddy Counties, New Mexico** **NM-133171, NM-134370, NM-134336 & NM-77768**
	1). A 3-day preconstruction call-in notification. Contact BLM Inspection and Enforcement at
Required	***2. Professional archaeological monitoring***. Contact your BLM project archaeologist at (575) 234-5917 for assistance.
A. ☒	These stipulations must be given to your monitor at least **5 days** prior to the start of construction.
B. ☒	No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.
Required	Other:
A. ☒	**Final: Conditions of approval or archaeology stipulations for the proposed action shall adhere** to the December 2015 SWCA Environmental Consultants treatment plan entitled *Archaeological Treatment Plan for Nineteen Sites in the Southwestern Publicl Service Company's Hobbs to China Draw 345-KV Transmission Line Project, Eddy and Lea Counties, New Mexico* by William Whitehead and Matt Bandy with contributions by Brianne Sisneros, Jim Railey, and Jennifer Hyre. A hard copy of this document is on file with BLM realty specialist Tessa Cisneros.

	If subsurface cultural resources are encountered during the monitoring, all activities shall cease and a BLM-CFO archaeologist shall be notified immediately.

Site Protection and Employee Education: It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands.

For assistance contact: Bruce Boeke (575) 234-5917

Hobbs – China Draw 345kV Transmission Line Project

NEPA Plan of Development

Submitted to:

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pecos District
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220

Submitted by:

XCEL ENERGY/SOUTHWESTERN PUBLIC SERVICE COMPANY
600 South Tyler Street
Amarillo, Texas 79101

December 2015

Xcel Energy℠

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TABLE OF CONTENTS

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LIST OF ACRONYMS

AC	alternating current
BLM	Bureau of Land Management
CFO	Carlsbad Field Office
CFR	Code of Federal Regulations
EA	environmental analysis
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Management Policy Act
HPILS	High Priority Incremental Load Study
ISO	independent system operator
kV	kilovolt(s)
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NTC	Notice to Construct
OPGW	optical ground wire
POD	Plan of Development
ReMI	refraction microtremor
ROW	right-of-way
RTO	regional transmission operators
SHPO	State Historic Preservation Officer
SLO	State Land Office
SPCC	Spill Prevention, Containment, and Countermeasures Plan
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company

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1. INTRODUCTION

Southwestern Public Service Company (SPS), a wholly owned subsidiary of Xcel Energy Inc., has submitted four Applications for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for right-of-way (ROW) grants needed to construct, operate, and maintain two 345-kilovolt (kV) transmission lines, a new substation (Kiowa Substation), and four substation expansions (Hobbs Generation and Eddy County Substation) in southeast New Mexico, herein referred to as the "project" or "Proposed Action." Xcel Energy is a registered holding company that owns several electric and natural gas utility operating companies. The project crosses BLM CFO–managed surface lands, New Mexico State Land Office (SLO) lands, and private lands (Figure 1.1). The BLM is serving as the lead federal agency for the undertaking.

This National Environmental Policy Act (NEPA) Plan of Development (POD) updates the Preliminary POD submitted by Xcel Energy as part of its original application in 2014. It provides an overview of the Hobbs to China Draw 345-kV Transmission Line Project based on information presented in an environmental assessment prepared for the project to meet the BLM's requirements under NEPA. It includes a general description of the design, construction, operation, reclamation, and maintenance of the Project. It also provides detailed information on the proposed Project facilities, procedures, and measures that SPS, as the Proponent, will implement during construction, operation, and maintenance of the Project. A mapbook depicting the project and the known environmentally sensitive areas and associated restrictions is included as Appendix A. A variance plan is provided as Appendix B, and a map of the heronry location and the nest platform design and specifications is provided in Appendix C. SPS would construct and operate the Project in conformity with this POD, which will be included as part of the ROW grant design criteria. The design, construction, operation, and maintenance of the Project will meet or exceed the requirements of all applicable regulations.

1.1. Southwestern Public Service Company

SPS is a regulated utility that generates purchases, transmits, distributes, and sells electricity in Texas and New Mexico. SPS provides service to more than 380,000 retail customers, including residential, commercial, industrial, and public customers. As a point of clarification, the utility company name is "branded" as Xcel Energy; however, the legal owner and operator of the utility facilities in New Mexico is SPS. All utility facilities and related land rights, including fee property, easements, permits, etc., are owned by, operated by, and held in the name of Southwestern Public Service Company, a New Mexico Corporation.

1.2. Project Overview

SPS proposes to construct, operate, and maintain approximately 122 miles of single-circuit alternating current (AC), 345kV overhead electric transmission lines from the existing Hobbs Generation Substation in Lea County, New Mexico, to the existing China Draw Substation in Eddy County, New Mexico, which is approximately 11 miles southwest of Malaga, New Mexico. The project would also construct a line to connect the proposed Kiowa Substation in Eddy County, New Mexico, to the existing Eddy County Substation (Figure 1.1).

The Project will require a ROW width of 150 feet. A permanent access road (patrol road) will be located down the ROW to the maximum extent possible. Temporary work areas will mainly be located in the ROW but extend outside in certain locations to ensure safe construction of facilities at structure locations, pulling and tensioning sites at angle structures, and areas of sloped or difficult terrain (see Section 2.1.3). Construction of the Project will take approximately 24 months to complete and will consist of the following permanent facilities:

- A single-circuit 345kV overhead transmission line between the Hobbs Generation Substation, Kiowa Substation, North Loving Substation, and China Draw Substation
- A single-circuit 345kV overhead transmission line between the Kiowa substation and the Eddy County Substation
- An optical ground wire (OPGW) communication system associated with the transmission line
- Access roads to the transmission line structures
- A new 12.5-acre Kiowa Substation adjacent to the existing Potash Junction Substation
- New substation equipment (expansion) at each aforementioned substation

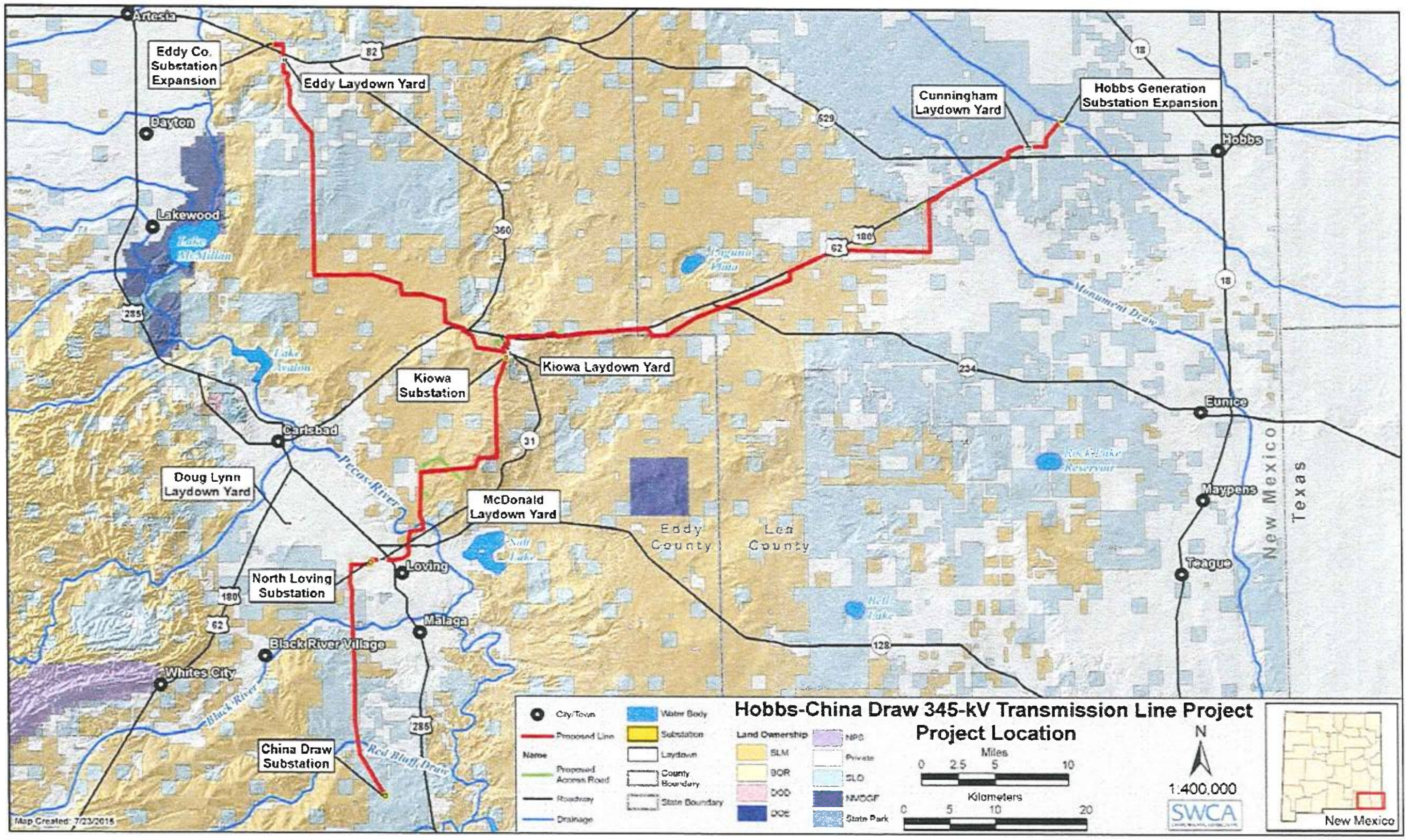

Figure 1.1. Project vicinity map.

1.3. Need for the Project

As the Proponent, Xcel Energy is seeking an ROW grant on public lands managed by the BLM in southeast New Mexico. Additional ROWs are also being sought across private and New Mexico state lands. The BLM's purpose is to provide Xcel Energy with the legal use of and access across BLM-managed public lands by granting an ROW. As stated in 43 Code of Federal Regulations (CFR) Part 2801.9, a BLM ROW grant is required for use of public lands for "systems or facilities over, under, on, or through public lands," including transmission lines. The BLM's mandate for multiple uses of public lands includes development of energy transmission in a manner that conserves the multitude of other resources found on public lands. The need for the BLM's action is established by the Federal Land Policy and Management Act (FLPMA) and is to respond to an application for an ROW grant by evaluating the proponent's application for use of federal land for construction of a 345kv transmission line.

The BLM will consider the application in accordance with 43 CFR 2800 (Rights-of-way under the Federal Land Policy and Management Act) and the Energy Policy Act of 2005, and will decide whether to issue an ROW grant and, if so, under what terms and conditions.

Xcel Energy serves its customers in New Mexico through the electrical system of its subsidiary, SPS, which is a member of the Southwest Power Pool (SPP), a regional organization that combines the electrical systems of its members to provide reliable, cost-efficient, and equitable electrical service to those member's customers within its service territory. The SPP is one of nine independent system operators/regional transmission organizations (ISOs/RTOs), and one of eight North American Electric Reliability Corporation (NERC) Regional Entities. SPP is mandated by the FERC to ensure reliable supplies of power, adequate transmission infrastructure, and competitive wholesale prices of electricity. ISOs/RTOs are the "air traffic controllers" of the electric power grid. ISOs/RTOs do not own the power grid; they independently operate the grid minute-by-minute to ensure that power gets to customers and to eliminate power shortages. The SPP provides the following services to members in nine states: Arkansas, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, and Texas.[1]

Within its service territory, SPS has recently experienced a substantial increase in electrical demand in southeast New Mexico where development of oil and gas fields has grown tremendously. To meet this urgent demand, SPP conducted several iterations of an in-depth study finalized in May 2014 and referred to as the *High Priority Incremental Load Study* (HPILS). The purpose of the study was to evaluate "transmission needs resulting from significant incremental load growth expectations in certain parts of SPP."[2] In particular, this study responded to "concerns about oil and gas shale play developments, and other future load additions in the region that had not been accounted for in previous planning efforts." In addition to increased electrical demand from oil and gas development, other previously interruptible loads became more predictable and "firm," thereby exacerbating SPP's need to update its load growth assumptions. Ultimately, the study "formed the basis for the development of transmission expansion needs required to address the recent load developments" and the catalyst for SPS transmission expansion plans in southeast New Mexico.[3]

Using the results from the study, SPP issued numerous orders to its members in the form of Notices to Construct (NTCs). These included NTCs to SPS to construct a number of new high-voltage transmission lines in southeast New Mexico. Some of these NTCs have been combined as part of SPS Proposed Action. Therefore, this POD pertains to the components listed below under Section 2.1. The Project cost is estimated to be $128 million, has a construction period of approximately 24 months, and as part of the NTCs, SPP directed SPS to have all of these system additions in service by June 1, 2018.

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[1] Southwestern Power Pool. 2014. About SPP. Available at: http://www.spp.org/section.asp?pageid=1. Accessed August 8, 2014.

[2] Southwest Power Pool. 2014. High Incremental Load Study. April 02, 2014. HPILS Task Force.

[3] Southwest Power Pool. 2014. High Incremental Load Study, April 02, 2014. HPILS Task Force.

1.4. Relationship to Statutes, Regulations, or Other Plans

Various federal and state agencies regulate different aspects of electric power transmission projects. Table 1.1 lists the environmental permits and approvals that could be required for the proposed project.

Table 1.1. Potential Permits, Approvals, and Clearances Needed for Construction, Operation, and Maintenance of Facilities

Permit/Notification	Issuing Agency	Status
	Federal Permit, Approval, or Clearance	
Right-of-way (ROW) grant	Bureau of Land Management	Subject of the SF-299 and EA referenced in this POD; being processed under BLM ROW serial numbers NM-133171, NM-134370, NM-134336 and NM-077768.
Clearance under Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service	Surveys were conducted; findings are described in a Biological Assessment submitted under separate cover in Section 3.6 of the EA associated with this POD (SWCA 2015a)
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project; findings are described in Section 3.4 of the EA associated with this POD
Clean Water Act Section 402 General Construction (Stormwater) Permit	Environmental Protection Agency (EPA)	The permit would be obtained prior to construction under the EPA's Construction General Permit
	State Permit, Approval, or Clearance	
ROW grant	State Land Office	Subject of the EA referenced in this POD
Certificate of Public Convenience and Necessity	New Mexico Public Regulation Commission	Application for approval of location of the transmission lines and substations is underway
Tribal consultation to determine if the proposed project would have any impact on receptors of cultural importance	Native American tribes	Findings are described in Section 3.7 of the EA referenced in this POD and the associated cultural resources reports
Clearance under Section 106 of the National Historic Preservation Act	New Mexico State Historic Preservation District	Cultural resources surveys were conducted; findings are described in Section 3.7 of the EA referenced in this POD and the associated cultural resources reports
Clean Water Act Section 401 Permit	New Mexico Environment Department	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project; findings are described in Section 3.4 of the EA referenced in this POD
Collection permit for the displacement or removal of any state endangered plant species	New Mexico Energy, Minerals, and Natural Resources Department Forestry Division	Biological resource surveys were conducted; findings are described in Section 3.6 of the EA referenced in this POD and in the biological assessment (SWCA 2015a)
Access permit or public highway utility accommodation permit	New Mexico Department of Transportation (NMDOT)	Discussions with the NMDOT regarding the location of the proposed project and access locations are underway

2. PROPOSED ACTION

2.1. Project Components

SPS proposes to construct, operate, and maintain the following SPP projects:

- A 47-mile-long 345kV transmission line between the Hobbs Generation Station and the proposed Kiowa Substation
- A 20-mile-long 345kV transmission line between the Kiowa Substation and an expanded North Loving Substation
- An 18-mile-long 345kV transmission line North Loving Substation to the proposed China Draw Substation
- The 33-mile-long Eddy to Kiowa 345-kV Transmission Line
- Expand the existing Hobbs Generation, North Loving, China Draw, and Eddy County substations
- A new Kiowa Substation

Acreage disturbances associated with the Proposed Action by landowner type are presented in Table 2.1.

Table 2.1. Acreages and Miles of Proposed Right-of-Way and Surface Disturbance by Landownership

Project Component	Land-ownership	Lengths (miles)	Proposed Total Disturbance (acres)	Proposed BLM Disturbance (acres)
Hobbs to China Draw 345kV transmission line (150-foot ROW)	BLM	45	803	803
	SLO	30	549	–
	Private	13	241	–
	Subtotal	**88**	**1,593**	**–**
Eddy County to Kiowa 345kV transmission line (150-foot ROW)	BLM	19	347	347
	SLO	9	158	–
	Private	6	109	–
	Subtotal	**34**	**614**	**–**
New substation and substation expansions	BLM	–	34	34
	SLO	–	5	–
	Private	–	13	–
	Subtotal	**0**	**52**	**–**
Additional temporary workspace (including laydown yards and pull pockets)	BLM	–	76	76
	SLO	–	78	–
	Private	–	136	–
	Subtotal	**0**	**290**	**–**
Access roads (60-foot ROW)	BLM	9	67	67
	SLO	7	47	–
	Private	4	24	–
	Subtotal	**20**	**138**	**–**
Subtotal (acres)			**2,687**	**1,327**
Overlap of project components (acres)			**-26**	**-3**
Total proposed disturbance (acres)			***2,661***	***1,324***

Notes: BLM = Bureau of Land Management; SLO = State Land Office

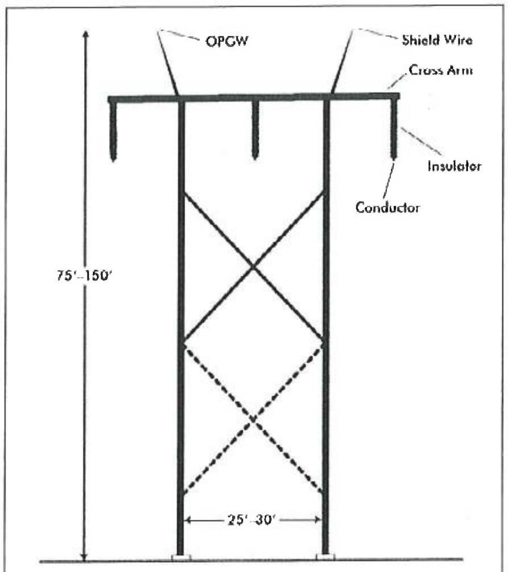
2.1.1. Transmission Lines

The 345kV overhead power lines would require a 150-foot-wide ROW throughout the proposed alignments, except in select areas where sensitive resources are actively being avoided through narrowing the ROW, or in select locations where the height of structures are taller to span avoidance areas, requiring a wider ROW between structures. The overhead transmission lines would be supported by either H-frame, three-pole, or monopole structures (Figure 2.1–Figure 2.3). In rural areas, the most common structure would be a single-circuit, tubular steel pole H-frame at tangent locations. Where the line terminates or turns at an angle, a single-circuit three-pole tubular steel structure would be used. Monopole structures would be used as warranted by land use constraints and transmission line design requirements; monopoles would be least used of the three structure types. All transmission structures would be made of self-weathering steel. Substation structures would be made of galvanized, or dull galvanized steel. The top of the structures would be strung with 3/8-inch extra-high-strength shield wire on one side (for protection from lightning) and optical ground wire for communication purposes on the other side.

The average structure heights would vary depending on clearance, topographic conditions, and line design requirements (Table 2.2). The typical structures would range in height between 100 to 150 feet with a few structures that may be as tall as 175 feet. Typical spans between structures would range from 800 to 1,200 feet or four to six structures per mile. In some situations, longer spans may be necessary, which can reduce ground clearances and require additional vegetation clearing to maintain appropriate electrical clearances. In such instances, taller structures and a wider ROW width may be necessary to maintain clearance for "blowout" conditions. During final engineering, conductor clearances may be increased in certain locations to account for site-specific conditions and for safe operation.

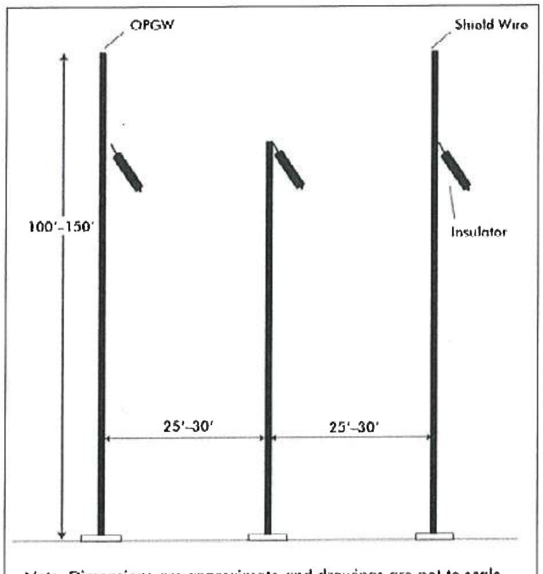
Table 2.2. Summary of Major Features for 345-kV Overhead Power Lines

Feature	Description
345kV line length	120 miles
Types of structures	Tangent = H-frame structures Angle/dead-end = three-pole structures Monopole structures as needed
Typical structure height	100–150 feet
Structure foundation area	30–60 square feet for H-frame structures, 75–150 square feet for three-pole structures, and 15–40 square feet for monopole structures
Span length	Typically 800–1,200 feet
Structures per mile	4–6
Right-of-way width	150 feet



Note: Dimensions are approximate and drawings are not to scale.

Figure 2.1. Basic H-frame structure design.



Note: Dimensions are approximate and drawings are not to scale.

Figure 2.2. Basic three-pole structure design.

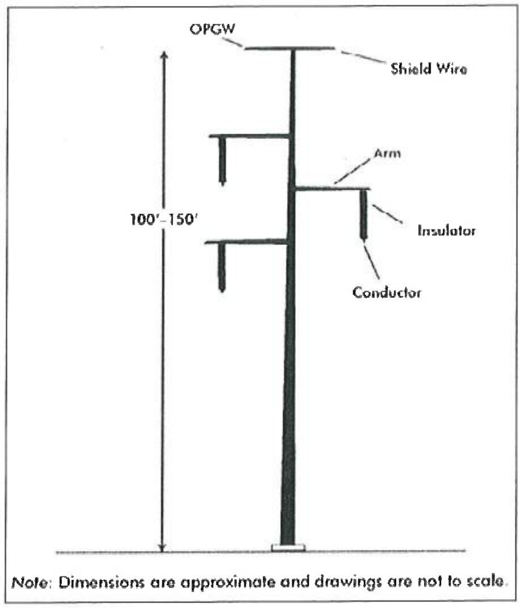


Figure 2.3. Basic monopole structure design.

2.1.2. Substation Details

One new substation would be built and four other substations would be expanded to accommodate the proposed project. The proposed Kiowa Substation would be constructed on approximately 27 acres of BLM land as part of the Proposed Action. The existing Hobbs Generation Substation would be expanded on private lands by 14 acres. The existing North Loving and China Draw Substations would be expanded on private and SLO lands, respectively. The existing Eddy County Substation would be expanded on BLM-managed lands by 7 acres. Table 2.3 provides the proposed acreage for each substation.

Table 2.3. Substation Details

Substation Name	Land Ownership	Proposed Action	Proposed Size Expansion (Acres)
Hobbs Generation Substation	Private	Expand	8
Kiowa Substation (new construction)	BLM	New	27
North Loving Substation	Private	Expand	5
China Draw Substation	SLO	Expand	5
Eddy County Substation	BLM	Expand	7
		Total	**52**

2.1.3. Additional Temporary Workspace

Temporary work areas, including pull pockets and laydown yards, would be required to construct the project. The pull pockets would extend outside the permanent 150-foot ROW to ensure safe construction of structures for pulling and tensioning sites at angled structure locations. Each pull pocket would be approximately 150 × 300–400 feet, extending outward from the centerline in both directions of angles greater than 30 degrees and/or approximately every 3 miles. Details on pull pockets are provided in Table 2.4.

Table 2.4. Pull Pockets Details

Number South to North	Land Status	Acres
	Hobbs to China Draw	
1	Private	2.53
2	State	2.26
	Private	0.02
3	State	2.84
4	State	2.74
5	Private	0.14
5	State	2.63
6	State	1.45
	Private	1.25
7	Private	2.84
8	BLM	1.70
9	BLM	2.77
10	BLM	2.78
11	BLM	1.97
12	BLM	2.67
13	BLM	2.71
14	BLM	2.70
15	BLM	2.75
16	BLM	2.84
17	BLM	2.66
18	BLM	2.78
19	BLM	2.13
	State	0.71
20	BLM	2.74
21	BLM	2.69
22	BLM	2.83
23	BLM	2.35
24	BLM	2.27
	State	0.02
25	BLM	2.19
25	Private	0.64
26	BLM	2.64
27	BLM	1.89
28	Private	2.58
29	Private	1.91
30	Private	2.83
31	Private	2.84

Table 2.4. Pull Pockets Details

Number South to North	Land Status	Acres
32	Private	2.84
33	State	2.76
34	State	2.66
35	State	2.84
	Total Hobbs to China Draw	**91.39**
	Eddy to Kiowa	
1	State	2.84
2	State	1.36
	Private	1.38
3	Private	2.74
4	Private	2.32
5	Private	2.11
6	State	2.34
7	BLM	2.64
	Private	0.20
8	BLM	2.72
9	BLM	2.82
10	BLM	2.79
11	BLM	2.76
12	BLM	2.82
13	BLM	2.78
14	BLM	2.43
15	BLM	2.68
16	BLM	1.80
	Total Eddy to Kiowa	**41.53**
	Grand Total	***132.92***

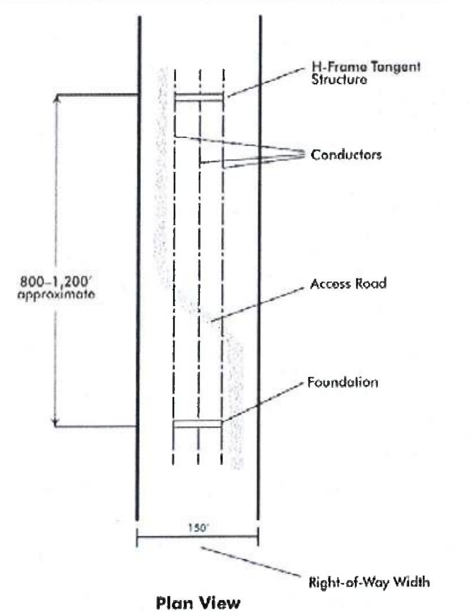
Also proposed are five temporary laydown yards for the staging of materials and equipment and assembly of structures as needed. The laydown yards would require a total of approximately 158 acres of private and SLO lands. The temporary laydown yards would be located close to existing highways or roads within the project area. They would be used to park vehicles, assemble crews, and collect trash for off-site disposal, etc. The laydown yards may also contain a temporary portable construction office trailer, bathroom, and electric power. For this project, the laydown yards either have electrical service already or are located near existing distribution lines from which new service could be attained. The exact alignments of any necessary distribution lines have not been determined at this point. If acquiring new electrical service is impractical, then the laydown yards could use diesel-operated generators. Table 2.5 lists the temporary laydown yards needed to construct the proposed project.

Table 2.5. Laydown Yards

Name	Land Status	Dimensions (north-south)	Acres
Eddy laydown yard	Private	1,167 × 1,112 feet	29.8
Kiowa laydown yard	Private	1,477 × 1,155 feet	19.6
Cunningham laydown yard	SLO	1,208 × 1,843 feet	50.7
Doug Lynn laydown yard	Private	605 × 2,085 feet	29.0
McDonald laydown yard	Private	718 × 1,729 feet	28.5
		Total	***157.6***

2.1.4. Access Roads

Access roads would be needed to facilitate both construction and regular inspection and maintenance activities. Existing roads would be used to access the ROW and individual structures to the maximum extent practical, but in some cases new access roads would need to be developed or existing roads would need to be improved to accommodate construction vehicles. In some cases, the ROW or individual structures may be accessed by constructing short spur roads from existing access roads. Access roads would be temporarily constructed up to 60 feet in width during construction and reduced through reclamation to resemble a two-track road for long-term operation and maintenance (to be located within the ROW to the maximum extent possible) (Figure 2.4).



Note: Dimensions are approximate and drawings are not to scale.

Figure 2.4. Typical access road schematic.

Four types of access to the ROW would be used as described here and listed in Tables 2.6 and 2.7 (separated between access resulting in new disturbance versus access that would not result in new disturbance).

1. New access road (outside ROW): This type of road would include areas that do not have existing access and require new permanent access during construction and operations. This access would typically have a 60-foot-wide ROW during construction and be reclaimed to 30-feet width of permanent traveled surface width. The travel surface road base would be compacted to provide a smooth, uniform surface. An example application of this type of road would be in an area where there are no existing roads available for access to proposed structures, new access cannot be achieved by clear and cut methods, and permanent access would be needed for operation and maintenance. This access type could include cuts in steep slopes and/or soil removal.
2. New access road (within ROW): This type would be contained within the ROW and have an access road up to 60 feet wide constructed between structures following a "least disturbance" path and avoiding straight lines where practical. This road would be fully reclaimed following construction for the majority of the route, and as maintenance vehicles access the ROW over time, it would begin to resemble a two-track in the long term. In some places, it would be surfaced with caliche to deter vehicles from veering off the designated path.
3. Existing access road (to be improved): This category would require widening or blading inside and/or outside the existing roadway. This access road type pertains to access that must be improved to function as permanent access road. An example of this type of road would be an existing 8-foot-wide road (with ruts or a two-track road), improved to meet road surface standards, that is identified as a route in the BLM Transportation Plan, or identified as a county road. The standard for traveled surface road width is 14 feet plus an additional 1 foot on fill slopes to accommodate sloughing. When fills are over 6 feet high at shoulder, 2 feet would be added to the road width.
4. Existing permanent access road (no improvement): This type includes paved highways and other developed roadways, including well-traversed and established dirt roadways (e.g., a well-graded 14-foot-wide or wider road surface with a road base in good condition), which would not be expected to be affected by inclement weather or degradation due to the construction, operation, and maintenance activities. These types of roads are typically maintained by entities other than the applicant. SPS would be a named user on these BLM, SLO, and private roads for the duration of the project (see Table 2.7).

Table 2.6. Proposed New Access Roads and Roads to be Improved

Type	Landownership	Miles	Acres of Disturbance
1. New access road (outside ROW)	BLM	0.5	3.5
	SLO	0.5	3.6
	Private	0.1	0.5
	Subtotal	**1.1**	**7.6**
2. New access road (within ROW)	BLM	0.0	0
	SLO	0.0	0
	Private	0.0	0
	Subtotal	**0.0**	**0***
3. Existing access road (to be improved)	BLM	8.6	62.9
	SLO	6.0	43.8
	Private	3.2	23.2
	Subtotal	**17.8**	**129.9**
	Total	***18.9***	***137.5***

**Disturbance from access within the ROW is already accounted for as part of transmission line disturbance and is therefore not repeated here.*

Table 2.7. Existing Access Roads Utilized with No Improvements

Type	Land Ownership	Miles	Acres of Disturbance
4. Existing permanent access road – (no improvement)	BLM	51	0
	SLO	34	0
	Private	17	0
	Total	***102***	***0***

2.2. Induced Currents

AC transmission lines can potentially induce currents on nearby metallic structures such as railroads, pipelines, fences, or similar facilities. Standard design and construction practices will be used to minimize this effect, which is further explained in Section 3. This condition can occur during regular operations, but more often happens when faults (abnormal electrical currents, such as a "short-circuit") occur, which sometimes results in electrical current flowing from the structure and into the ground. Several factors contribute to the severity of the effects, including the proximity, alignment, and composition of adjacent facilities as well as the amount of current being conducted and the ground's inherent resistivity.

Grounding of existing metallic facilities outside the ROW may be necessary, contingent upon agreement with the appropriate responsible party. Additional studies would need to be performed on a case-by-case basis to determine the appropriate method to mitigate this potential. For pipelines that parallel the Project, installation of gradient control wires, gradient control mats, or cathodic protection may be needed.

SPS seeks to minimize the potential for induced currents by providing a minimum offset from pipelines that parallel the alignment. In these cases, a minimum offset of 100 feet from the outside edge of the structures to the outside edge of the pipeline will be requested. A larger offset may be required in some circumstances; this will be evaluated on a case-by-case basis once adequate information is collected and can be assessed. Design of the Project's characteristics will progress as more information is gathered through landowner and agency coordination, field reviews, and resource studies. The construction contractor will be responsible to complete the detailed design phase of the Project based upon the Project features included in the POD.

2.3. Right-of-Way Acquisition

The width of the ROW and the restrictions within it are determined by the National Electrical Safety Code (NESC) operation considerations and are proportional to the voltage and structure type. The permanent ROW requested for the Project is 150 feet in width. In some localized circumstances, additional easement may need to be acquired for compliance with NERC reliability standards and other engineering criteria.

SPS will acquire ROWs for transmission line facilities on nonfederal land (state, private, or fee-owned) in perpetual easements or fee purchases. Every effort will be made to purchase all of the land rights on private land through reasonable negotiations with the present owners. In the event an agreement with the landowners cannot be reached, SPS may obtain land rights by eminent domain. Land rights will be obtained in the name of Xcel Energy, doing business as SPS.

3. PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

The following section describes the activities that are anticipated to occur before and during Project construction and throughout operation and maintenance of the Project. Details regarding construction, operation, and maintenance of the Project are described to the extent necessary to support development of the environmental analysis (EA) for the Project. A variance plan is included as Appendix B in the event conditions warrant changes from what has been described in this document, the EA, or the BLM's ROW grant, and what is necessary to safely construct and operate the Project.

3.1. Preconstruction Activities

3.1.1. Worker Awareness Training

All construction personnel will receive environmental training prior to commencing work on the Project. Training will emphasize compliance with all environmental laws, including the stipulations in the ROW grant and POD. Project-specific requirements and local issues will be addressed as necessary. Topics covered in the training will include terms and conditions of the BLM ROW grant, roles and responsibilities, communication protocols, flagging and signage, limits of disturbance, access and travel restrictions, specific landowner issues, and any resource mitigation plans. Trainings will be conducted at the construction contractor's offices or in the field as needed to address specific and immediate issues that come up during the workday. Remedial training will be given to individuals and crews who are involved in noncompliant activities. A master list of all Project personnel that have completed the training will be kept by the construction contractor and furnished to the BLM and/or SPS upon request. Hardhat stickers demonstrating attendance of the training will be issued to attendees.

3.1.2. Engineering Surveys

Field investigations and surveys will be completed to accurately locate the centerline of the approved ROW. The exact centerline will be chosen to best implement design criteria and to satisfy site-specific mitigation measures that have not been addressed in the EA. Before any construction surveying begins, the required permits to survey on federal lands, state lands, or right-of-entry on private lands will be obtained. All limits of ground disturbance, structure locations, and temporary work areas will be flagged and staked, and the proposed centerline will be flagged and staked where it is necessary.

SPS will file with the BLM a separate Application for Transportation and Utility Systems and Facilities on Federal Land (Standard Form 299) to conduct geotechnical studies for the Project. This will allow SPS to collect subsurface information necessary to complete the final design of the foundations of the transmission line structures and substations. This data will be used to properly site individual structures and confirm their final locations as well as include subsurface data necessary to prepare the commercial request for proposal packages. The BLM will review and process the application in accordance with all applicable federal laws and regulations.

If approved, SPS will conduct geotechnical borings using conventional drilling methods. The geotechnical investigation would consist of drilling boreholes approximately 1 foot in diameter and as deep as 50 feet. Drilling would be conducted with a variety of field equipment, including conventional rubber-tired and/or tracked drilling rigs. The boreholes will be backfilled with auger cuttings and on-site soils.

If drilling is impractical, geophysical exploration techniques such as refraction microtremor (ReMi) may be used. ReMi can identify subsurface soil and rock stratification, but is less accurate than geotechnical borings. The ReMi survey would use a multichannel seismograph and low- and high-frequency geophones laid out from 10-foot to 50-foot intervals. Geophones are typically 3 inches long and can be hand-pushed into the ground and removed after the readings are taken. In hard ground conditions, hand placement of geophones can be aided by pre-drilling probe holes with a handheld, battery-operated drill and penetrating 2 to 3 inches into the ground.

3.1.3. Preconstruction Resource Surveys

Resource surveys will be conducted prior to the commencement of construction activities. Table 3.1 provides a list of the surveys to be conducted prior to the start of construction, the dates these surveys are anticipated to occur, the location and extent of the surveys, and any associated conditions or restrictions.

Cultural resources surveys will be carried out on the Project route prior to construction to support development of the draft EA. SPS expects this survey effort to focus on federal and state lands where applicable. Following identification of an agency preferred alternative, SPS will conduct a full survey of the route to identify cultural properties. Any cultural property that will be directly or indirectly impacted will be subject to evaluation and determination through BLM Section 106 consultation. Project engineers will work with agency archaeologists to either avoid or minimize impacts on any identified cultural resource, to the extent practicable.

Initial efforts to assess potential biological resources will be conducted using primarily desktop review with field spot checks. The exception to the desktop review would be areas where resource agencies identify the need to conduct species and site-specific surveys to support development of the EA. Required site-specific surveys along the agency-preferred alternative will be conducted as needed or as otherwise directed in the final EA for the Project. Specific mitigation measures for biological resource areas will be developed as part of the Project planning and environmental review processes. As with cultural resources, Project engineers will work with agency staff to avoid or minimize impacts on biological resources, to the extent practicable.

Table 3.1. Preconstruction Resource Surveys

Resource	Timing	Location	Extent	Other
Cultural	2014–2015	ROW plus 175-foot-wide buffer on both sides	Prior to project approval	To Be Determined
Biological including special status species and waters of the U.S./wetland/playa	2014–2015	ROW plus 175-foot-wide buffer on both sides	Prior to project approval	TBD
Avian (Migratory Bird Treaty Act)	Breeding season (March 1–August 31)	Areas planned for vegetation removal	Two weeks prior to vegetation removal	TBD

3.2. Construction Activities

Following preconstruction activities, construction will be conducted in a sequential set of tasks performed by multiple crews. The construction activities will include preliminary engineering surveys, access and site preparation, excavation, foundation construction, foundations, assembling and erecting structures, stringing conductors and shield wires, testing and commissioning, restoration and cleanup, and site reclamation. Due to the length of the Project, there may be several sets of crews engaged in constructing the line. Table 3.2 outlines the typical specifications of vehicles expected to participate in the construction activities. These numbers are estimates; conditions during construction will dictate equipment allocation.

Table 3.2. Anticipated Construction Vehicle/Equipment Roster

Construction Activity	Vehicle/ Equipment Type	Commuting Distance (miles)	Quantity Anticipated	Estimated Activity Schedule (days)	Estimated Usage Time (hours/day)
Site access/ prep/land clearing	Brush hog	N/A	2	40	8
	Bulldozer	N/A	4	120	4
	Pickups	100	8	160	6
Construction of transmission lines	Pickup truck	100	12	480	6
	Water truck	N/A	2	480	8
	Boom truck	N/A	2	240	4
	Tractor trailer	2	4	100	6
	Tracked vehicle	2	8	400	8
	Crane	N/A	2	400	6
	Material truck	N/A	6	400	8
	Concrete truck	N/A	2	320	8
	Helicopter	1	2	120	8
Construction/ expansion of substations	Pickup truck	100	12	360	6
	Bulldozer	N/A	2	80	8
	Boom truck	N/A	2	80	6
	Material truck	N/A	12	120	6
	Tracked vehicle	N/A	12	160	8
	Dump trucks	100	28	160	8
	Concrete trucks	100	12	240	8
Operation and maintenance	Helicopter	N/A			
	Pickup truck	100	2	2/days/week for duration	2
Termination/ rehabilitation	Tracked vehicle	N/A	4	160	4
	Crane	N/A	2	160	4
	Pickup truck	100	12	160	6
	Tractor trailer	100	2	40	6
	Dump trucks	100	4	80	8
	Boom truck	N/A	2	80	8

N/A = not applicable

3.2.1. Site Access and Preparation

Construction of the transmission lines will begin with clearing and grading of unpaved access roads to allow entry to individual structure locations. After the access roads are cleared and/or graded, temporary work areas at each individual structure site will be cleared and/or graded to install the transmission line support structures and prepare for future maintenance.

Individual structure sites will be cleared using the appropriate equipment, which could range from a brush hog flail-type mower to a bulldozer to blade the area required to provide a safe working space for placing equipment, vehicles, and materials for tower assembly and erection. The work area will be cleared of vegetation only to the extent necessary. Any chemical treatments of ROWs will comply with those laws and procedures of federal and state land-managing agencies whose land would be traversed by the Project. Within the work areas, the permanent disturbance associated with the tower footings will be 30 to 60 square feet for H-frame structures, 75 to 150 square feet for 3-pole structures, and 15 to 40 square feet for monopole structures.

The "overland drive-and-crush" method will primarily be used to prepare the work site in areas that are relatively level and that have low-growing grasses and shrubs. This method involves crushing but not cropping vegetation. In similarly level areas where the vegetation is dense, aboveground cutting methods will be used with the intent of leaving the root crown intact. The soil will be compacted, but only excavated for the foundations. Excess soil from foundation hole excavations will be placed around the base of each structure to provide positive drainage away from the structure. When grading must occur to create a safe, level working space for structure installation, the topsoil will be segregated and then spread back over the site to provide a suitable seed bed for reclamation efforts. Excess fill may also be used to create level areas in other locations where needed. After transmission line construction, all work areas identified as temporary disturbance will be reclaimed in accordance with BLM requirements.

3.2.2. Foundation Installation

The excavation and installation of the foundation will require access to the site by a power auger or drill, a crane, material trucks, and concrete trucks using the access roads. Holes for the foundations will typically be excavated using a power auger mounted to a heavy vehicle. In some areas, a drilling rig may be necessary to excavate the foundation holes. If the location is rocky and unsuitable for either an auger or drill rig, blasting may be needed to break up the rock prior to excavation with an auger or drill rig. Excavated spoils will be segregated from topsoil and may be used for backfill or other fill where suitable.

After completion, the foundation hole will be prepared for a cast-in-place concrete footing except for structures that will be directly embedded into the ground. Reinforced steel and anchor bolts will be inserted into the foundation hole and then encased in concrete. Excess concrete or concrete washout will be removed from the work area or temporarily placed on spoil stockpiles. Foundation holes left open or unguarded will be covered to protect the public and wildlife. If practical, temporary safety fencing may be used.

Foundation designs and installation processes will depend on the geotechnical analysis and line design parameters of each particular structure site.

3.2.3. Structure Assembly and Erection

The structure components will be bundled into the components required for each structure and shipped by truck to each site. There, the structures will be assembled on the ground and lifted into place by crane. Generally, structures can be fully assembled in the ROW.

Guard structures will be erected over highways, railroads, power lines, and other similar features. The guard structures will be temporary H-frame designs directly embedded into the ground. It is anticipated that guard structures will be located within the 150-foot ROW.

3.2.4. Grounding

At the base of each structure, copper ground rods will be buried near the structure foundation and connected to the structure with copper cables. Counterpoise, a bare copper-clad or galvanized-steel cable extending from the structure outward to approximately 200 feet within the ROW, will be buried a foot or more deep if resistance to ground warrants its use.

3.2.5. Conductor Stringing

Reels of conductor and shield wire will be delivered to the ROW and loaded onto vehicle-mounted pulling machines. Heavy vehicles will be used to pull the shield wire and conductor bundles into place with powered pulling equipment at one end and powered braking or tensioning equipment at the other end. A pilot wire will be threaded though pulleys suspended from the structure insulators. The pilot wire will then be attached to a stronger pulling wire, which will be used to thread the shield wire and conductor bundles into place without contacting the ground. Once the conductor and shield wire is strung through the pulleys, adjustments will be made to achieve the correct sagging of the lines between structures. Once complete, the pulleys will be removed and the conductors "clipped" to the insulators with clamps. At dead-end structures, the conductors will be clipped to the insulators with compression fittings to secure the conductor to the insulator.

On straight sections of line, conductor stringing activity will be contained within the ROW. At turning points with angles greater than 20 degrees, additional temporary space will be required outside of the ROW for pull-pockets.

3.2.6. Cleanup

All construction sites, staging areas, and access roads will be kept in an orderly condition throughout the construction of the transmission line. All refuse and trash will be removed and disposed of appropriately. A Spill Prevention, Containment, and Countermeasures Plan (SPCC) will be prepared to specify preventive procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction and refueling activities. There will be no open burning on BLM-administered lands. If a need is determined for any open burning, the BLM will be consulted prior to any burning for the purpose of obtaining a permit as required.

3.2.7. Reclamation

After construction, disturbed areas would be restored using a BLM-approved seed mix and according to BLM, SLO, and private landowner standards. Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM. In those areas where erosion control structures would be required to stabilize soil, the structures would be installed for the specific soil conditions encountered in the field and in accordance with industry best management practices (BMPs) and design features identified in Section 2.1.2.

Once construction of the facilities and 345kV lines is complete, all areas not needed for the operations and maintenance phase would be reclaimed (reseeded for optimal vegetation regrowth of species compatible with SPS's vegetation management standards). Reclamation would occur as soon as possible after completion of final construction activities.

Areas Reclaimed

Except for those portions of the ROW necessary for maintenance and operation (such as a permanent patrol access road), the entire 150-foot-wide ROW would be reclaimed, as well as areas of temporary disturbance outside the ROW that are no longer needed, such as temporary access roads, pull pockets, and laydown yards. The 60-foot-wide access road used for construction would be fully reclaimed, and over time converted into a permanent patrol access road similar to a two-track. In some locations, the patrol road would be surfaced with a caliche base to encourage a single travel route and continual avoidance of sensitive resources. A level work area at the base of each structure would be reseeded but not recontoured to facilitate future maintenance activities that may require use of an extended-reach vehicle or crane.

Reclamation Procedures

The steps to reclamation include:

1. **ROW preparation:** Vegetation removed during construction, including trees that measure less than 3 inches in diameter at ground level and slash/brush, would be chipped or mulched and spread across the ROW. All tree and shrub species that are not compatible with SPS's vegetation management standards would be cut to ground level, delimbed, and subsequently treated with herbicides to discourage regrowth.
2. **Soil stockpiling:** Following the removal of vegetation, the top 6 inches of topsoil would be stripped from the ROW where necessary. The topsoil would be free of brush and tree limbs, trunks, and root balls. Except for locations where structure holes would be excavated by an auger, the topsoil would be stockpiled separately from subsoil or other excavated material and stored along the ROW corridor. Topsoil would be labeled as such and protected from erosion and inadvertent use as fill. Topsoil would not be mixed with subsoil. When stockpiled, topsoil would be tackified with water to a 2-inch wetting depth to minimize erosion, and overall handling should be kept to a minimum. Gaps would be made in soil stockpiles (where necessary) to avoid ponding or to divert water during storm events. If present, surface rocks would be stockpiled adjacent to the topsoil stockpile(s). Vehicle and equipment traffic would not be allowed to cross topsoil stockpile(s). An SWPPP would be developed to include BMPs intended to minimize stockpile erosion and prevent topsoil loss.
3. **Recontouring:** Within areas that require recontouring, the surface would be recontoured to match pre-disturbance conditions or to blend with the surrounding landform as closely as possible. Excess subsoil from excavated or graded areas (around structure bases) would be evenly spread over disturbed areas and moistened and compacted to a relative average density comparable to undisturbed adjacent material before respreading topsoil. Subsoils would not be spread outside the approved construction areas.
4. **Soil and seedbed preparation:** Where any compaction exists, the surface would be ripped or scarified to a depth of 6 inches as appropriate (e.g., not applicable to rock faces, severe slopes, or cliff areas), and would retain a 12-inch buffer from existing vegetation or plants designated as preserve in place. Depth and area of compaction relief would depend on site-specific conditions. Decompaction or ripping would be conducted to avoid corn rows. Cross ripping is preferable and care should be taken to prevent inverting the soil layers and preserving any vegetation in place. Deep sandy soils do not need to be decompacted and would not be ripped.
5. **Topsoil replacement:** Topsoil would be replaced without mixing with subsoil to prevent mixing fertile, shallow soils with deeper soils that may be less productive because of rock, gravel, sand, calcareous layers, salinity, or other chemical characteristics that would adversely affect growth of desired vegetation. Stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Topsoil would not be redistributed when the ground or topsoil is frozen or wet.
6. **Seeding:** During seeding of the reclamation area, a disc-type drill with two boxes for various seed sizes would be used. The drill rows would be 8 to 10 inches apart. Where practicable with the seeding equipment being used, planting depths for smalls seeds would be 0.25 inch, for intermediate seeds would be 0.50 inch, and for large seeds would be 1 to 2 inches. Where these seed depths are impracticable with the seeding equipment being used, planting depths would be no more than 0.25 inch. A drag, packer, or roller would follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding would run perpendicular to slopes in order to minimize runoff and erosion. In areas where the slope is too steep for a seed drill, hand- or broadcast-seeding methods would be used, and the seeds would be covered to the depths described above. BLM-prescribed seed mixes would be used.
7. **BMP installation:** Prior to construction, an SWPPP would be developed to include BMPs according to BLM prescriptions, including erosion control devices such as silt traps, silt fencing, straw rolls, etc.

8. **Weed control**: SPS has enrolled in the county weed programs for both Lea and Eddy Counties. These programs enable the BLM to identify target areas for treatment to prevent the spread of noxious weeds and invasive species. These programs would include annual surveys of the ROW and subsequent treatment of weed infested areas for up to 5 years after construction is complete.
9. **Monitoring:** Monitoring would be conducted after construction activities are complete until reclamation has achieved the success criteria established by the BLM.

3.2.8. Project Safety

SPS places a high value on employee, contractor, and public safety. A Project Safety Plan to address employee, contractor, and public safety risks will be prepared prior to construction.

All construction activities will be carried out in safe and healthful working conditions as outlined by the Occupational Health and Safety Administration's guidelines.

3.3. Substation Construction

The proposed Kiowa Substation will be constructed as part of the Project and the other four substations would be expanded (see Section 2.1.2). The following discussion is an overview of the types of construction activities that will take place at the substation.

3.3.1. Engineering Surveys

Field investigations and surveys will be completed to accurately locate the substation components. All limits of the proposed substation boundary, ground disturbance, structure locations, and temporary work areas will be flagged and staked, where necessary.

SPS will file with the BLM a separate Application for Transportation and Utility Systems and Facilities on Federal Land (Standard Form 299) to conduct geotechnical studies for the Project. This will allow SPS to collect subsurface information necessary to complete the substation's final design. These data will be used to confirm the substation location as well as include subsurface data necessary to prepare the commercial request for proposal packages. The BLM will review and process the application in accordance with all applicable federal laws and regulations.

Geotechnical soil borings will be conducted to collect information regarding subsurface soil stability necessary for the final design of the substation foundation. The geotechnical investigation would consist of drilling boreholes approximately 1 foot in diameter and as deep as 50 feet. Drilling would be conducted using a variety of field equipment, including conventional rubber-tired and/or tracked drilling rigs. The boreholes will be backfilled with auger cuttings and on-site soils.

3.3.2. Clearing and Grading

Clearing and grading of the entire substation area will be necessary to prepare the substation site for construction. The site will be graded to create a level surface with a moderate slope for drainage. Grading will also be engineered to allow for adequate clearances to energized conductors entering the substation. All topsoil will be stockpiled and segregated from other excavated soil, which will be used as backfill, berms, or as fill for other areas nearby.

The surface of the substation will be covered with an insulating layer to protect personnel from high currents and voltages in the event of a fault condition. Approximately 4 to 6 inches of crushed rock will be applied to the finished surface of the substation, which will then be treated with a soil sterilizer to prevent vegetation growth. If necessary, drainage structures such as ditches, culverts, and sumps will be installed.

3.3.3. Grounding

A grounding system typically consisting of buried copper conductor arranged in a grid system and driven ground rods typically 8 to 10 feet long will be installed. The ground rods and any equipment and structures would be connected to the grounding conductor. The amount of conductor and length and number of ground rods required is calculated based on fault current and soil characteristics.

3.3.4. Fencing

Security fencing will be installed around the entire perimeter of the substation. The fence will be 8 feet high and made of chain link topped with barb. Locked gates will be installed at appropriate locations for authorized vehicle and personnel access.

3.3.5. Foundation Installation

Structures entering the substation will be either directly embedded into the ground or placed on a drilled pier foundation as described in Section 3.2.3. For the substation, equipment foundations for circuit breakers and transformers will be slab-on-grade. These foundations will be installed by excavating the foundation area, placing forms, placing reinforced-steel and anchor bolts (if required), and placing concrete into the forms. After the foundations have been poured, the forms will be removed, and the surface of the foundation dressed. Reinforced-steel and anchor bolts will be transported to each site by truck, either as a prefabricated cage or loose pieces, and will be fabricated into cages on the site. Concrete will be hauled to the site in concrete trucks.

3.3.6. Oil Containment

Some substation equipment such as transformers, reactors, and circuit breakers are filled with an insulating mineral oil. Containment structures will be used to prevent oil from escaping into the ground. The exact type of containment structure will be determined as part of the final substation design.

3.3.7. Structure and Equipment Installation

Steel structures to support some substation equipment will be affixed on the concrete foundation anchor bolts with a track-mounted crane. Equipment such as transformers, reactors, and circuit breakers can be mounted directly to the foundations without supporting structures. The equipment will then be assembled, tested, and connected electrically to the control building through multi-conductor control cables installed in conduits and/or a precast concrete cable trench system.

3.3.8. Cleanup

The substation site will be kept in an orderly condition throughout construction. All refuse and trash will be removed and disposed of appropriately. An SPCC will be prepared to specify preventive procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction and refueling activities. If landscaping is required by the permitting agency, drought-tolerant and primarily native plant materials will be used.

3.4. Operation and Maintenance

The transmission lines constructed as part of the project would become critical infrastructure of the SPS and southeast New Mexico transmission systems. Therefore, limiting the duration of unplanned outages and planning for the use of live-line maintenance techniques to minimize the requirement for any outages are important parts of the design, construction, and operation/maintenance requirements of the project.

3.4.1. Inspections

Regular inspection of transmission lines, vegetation conditions, substations, and support systems is critical for safe, efficient, and economical operation of the project. Responsibly conducted routine maintenance activities are anticipated to have minimal impact and are usually authorized under the transmission line easements and BLM ROW grants.

Aerial inspections would be conducted annually to identify conditions that pose an immediate hazard to the public or employees, or that risk immediate loss of supply or damage to the electrical system. Any conditions identified are to be resolved prior to peak demand in the summer and winter months.

Ground inspections would be done on approved access roads, including the patrol road, or along the transmission line ROWs to each structure as appropriate. The inspector would access each of the structures and would check all equipment and other components that could require repairs. Inspectors performing such inspections would use conventional four-wheel-drive trucks and/or four-wheel-drive all-terrain vehicles, or they may walk the line. The ground inspection would be conducted at a time deemed appropriate based on the weather conditions, results of aerial inspections, and other conditions subject to change on an annual basis. SPS may perform minor repairs during its ground inspections, such as installing new numbers, installing/repairing ground wire, or performing other minor tasks that do not involve long duration, specialized equipment, or large work crews.

Each year aerial inspections would be conducted annually, and ground patrols would be conducted biannually.

3.4.2. Line Maintenance

Routine maintenance activities are ordinary maintenance tasks that have historically been performed and are regularly carried out on a routine basis, including the replacement of individual structures, components, cables, lines, insulators, and other facilities that, due to obsolescence, age, or wear, are in need of replacement or repair. It is expected these replacements would be required infrequently (every 5 to 10 years) or as determined by inspection. The work performed is typically repair or replacement of individual components by relatively small crews using a minimal amount of equipment, and usually is conducted within a period from a few hours up to a few days. The type of equipment used to perform routine maintenance activities varies depending on the extent of the work to be performed. Typical equipment used for these kinds of activities includes four-wheel-drive pickups, man-haul, material flatbeds, line trucks, cranes, tractor trailers, and high-reach bulldozers/caterpillars.

Typically, maintenance vehicles and equipment would access the ROW and individual structures using the patrol roads and would remain within the level work area that surrounds the structure, and no new ground disturbance would be required. If maintenance activities and/or equipment are required beyond the permanent maintenance work area, maintenance crews would coordinate with the BLM Authorized Officer(s) to obtain any required temporary use approval/permits to complete the work, and maintenance activities would be conducted within the previously disturbed temporary work areas from project construction. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

Major maintenance activities may need to occur on an infrequent basis. These activities would require planning and budgeting in advance and agency coordination. They may involve larger work crews than routine maintenance activities and a variety of equipment, including heavy equipment, and usually require several days or longer to complete. SPS would notify the BLM before initiating major maintenance activities to identify what, if any, special notification or additional clearance approvals would be required. All major maintenance activities would adhere to all standards and guidelines contained in the POD and the terms and conditions of the ROW grant.

In an emergency, SPS must respond as quickly as possible to restore power. As soon as an incident is detected, SPS's control room dispatchers would notify the responsible operations staff in the area(s) affected, and crews and equipment would be organized and dispatched to respond to the incident. In these cases, SPS would immediately deploy the necessary crews to restore power and notify the appropriate land management agency depending on the location of the incident. Examples of emergency maintenance include transmission structure or conductor failure due to natural hazard, fire, or human-caused damages to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the power line, or restore service if there is an outage. The equipment necessary to carry out emergency repairs is similar to that necessary to conduct routine maintenance, in most cases. Emergency response to outages may require additional equipment to complete the repairs. For example, where the site of the outage is remote, helicopters may be used to respond quickly to emergencies. SPS would adhere to the same constraints identified for routine and major maintenance activities to minimize impacts to resources, when possible.

3.4.3. Vegetation Management

SPS would need to manage vegetation to meet its requirements for conductor clearances at maximum loading (sag) and maximum blowout (sway) locations, and to minimize potential ignition sources and to provide access within the ROW. Within or adjacent to the ROW, mature vegetation would be removed under or near the conductors to provide adequate electrical clearance, as required by the NERC. Typically, woody vegetation would be removed and treated with herbicides. Slash would be left in place or disposed of in accordance with the requirements of the land management agency or landowner. If necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible. Shrubs and other obstructions would be removed regularly within the ROW.

Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as creosote and mesquite with herbicides to prevent vegetation encroachment on SPS's conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. All herbicide applications would be performed in accordance with federal, state, and local regulations, and in compliance with land management agency and/or landowner requirements. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.

Vegetation may also be removed using mechanical equipment such as chainsaws, weed trimmers, rakes, shovels, brush hooks, and mowers. Clearing efforts in heavy growth areas would involve equipment such as a masticator, a mounted brush mower, or similar. The duration of activities and the size of crew and equipment required would be dependent on the amount and size of the vegetation to be pruned or removed.

Herbicides will be used to control noxious weeds or incompatible tree and brush species (e.g., mesquite and creosote) that regenerate from the root systems after removal to meet vegetation management objectives. These activities would be performed in coordination with the land management agency or landowner in the case of private property.

3.4.4. Access Road Maintenance

Repairs to the ROW or access roads would be scheduled as a result of line inspections or would occur in response to a significantly degraded condition or an emergency situation. Where access is required for maintenance of the line, SPS would maintain the approved access roads for which it is solely responsible in a safe, useable condition. Access road repairs include grading or repair of existing maintenance access roads and work areas, and spot repair of sites subject to erosion, slumping of side slopes, inadequate drainage, flooding, or scouring. In some cases, cut and/or fill of foreign material may be required to repair the access roads into suitable condition for safe travel of maintenance repair vehicles, such as high-reach boom trucks. When an approved access road to a structure location needs improvement, heavy equipment appropriate for the required work would be used after notifying the BLM Authorized Officer. Required equipment may include a grader, backhoe, four-wheel-drive pickup truck, and a steel-tracked front-loader or bulldozer. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

3.5. Right-of-Way Renewal or Decommissioning

3.5.1. Right-of-Way Renewal

The proposed project would have a minimum projected operation life of 50 years or longer. A ROW grant issued for 50 years with the option of renewal would be necessary for the operation, maintenance, and decommissioning of the transmission line facilities located on BLM-managed lands. At the end of the ROW grant term (50 years), SPS would have the option to renew the ROW grant past 50 years to continue operation of the line. The terms and conditions in the original ROW grant could be modified for the renewed ROW grant.

3.5.2. Project Decommissioning

At the end of the transmission line's useful life, estimated to be 50 years from construction, the necessary authorizations would be obtained from the BLM Authorized Officer to decommission the project. Future decommissioning of the transmission line would include removal of conductors and structures. All materials would be removed from the ROW. Equipment at the substations and unsalvageable materials would be disposed of at authorized sites. Regrading and revegetation of disturbed areas would be completed according to BLM, SLO, or landowner standards. The abandoned ROW would revert to the control of the landowners.

3.6. Environmental Protection Measures

The following applicant-committed environmental protection measures have been incorporated into the project design of the Proposed Action to lessen or avoid impacts to resources. These design features are organized below under the resource they are designed to protect, although some of these measures are designed to protect or mitigate impacts to multiple resources. The design features incorporate applicable BMPs, which are industry- or agency-recommended construction methods that are routinely implemented to minimize impacts to resources.

3.6.1. General

- All construction vehicle movement outside the ROW would be restricted to predesignated access, contractor-acquired access, or public roads.
- The spatial limits of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents indicating survey or construction limits would be applied to rocks, vegetation, structures, fences, etc.
- Prior to construction, an environmental awareness training would be conducted to instruct all personnel on the protection of cultural, ecological, and other natural resources, including 1) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; 2) the importance of these resources; and 3) the purpose and necessity of protecting them.
- Sensitive resource areas within the ROW or designated temporary work areas would be mapped and avoided by use of an appropriate monitor. Flagging and fencing materials would not be used because they may inadvertently draw attention to the resources being protected.

- The contractor would limit movement of crews, vehicles, and equipment on the ROW and approved access roads to minimize damage to property and disruption of normal land use activity.
- Construction vehicles and equipment would be maintained in proper operating condition, and would be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, engine enclosures, etc.).
- SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines (4.5 inches or less in diameter). The BLM would be notified if any larger aboveground lines are encountered.
- SPS would use overburden to place the necessary fill over belowground pipelines, and would leave and reclaim the overburden in place.

3.6.2. Air Quality

- All requirements of those entities having jurisdiction over air quality matters would be adhered to. Any necessary permits for construction activities would be obtained. Open burning of construction trash would not be allowed unless permitted by appropriate authorities.
- Construction-related dust disturbance would be controlled by the periodic application of water to all disturbed areas along the ROW and access roads, when necessary.

3.6.3. Soils and Vegetation

- SPS would reclaim disturbed areas per the POD using a BLM-specified seed mixture, and would work with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.
- All soils compacted by movement of construction vehicles and equipment would be 1) loosened and leveled through harrowing or disking to approximate preconstruction contours, and 2) reseeded with certified weed-free native grasses and mulched (except in cultivated fields). The specific seed mix(es) and rate(s) of application would be determined by the BLM.
- Excavated material not used in the backfilling of poles would be spread around each pole or hauled off-site or transported as fill to other locations where needed.
- In newly disturbed temporary work areas, soil would be salvaged, distributed, and contoured evenly over the surface of the disturbed area after construction completion. The soil surface would be left rough to help reduce potential wind erosion.
- Upon completion of work, all work areas except any permanent access roads/trails would be regraded as required so that all surfaces would drain naturally and blend with the natural terrain, and be left in a condition to facilitate natural revegetation, provide for proper drainage, and prevent erosion.
- SPS has enrolled in the Eddy and Lea County noxious weed control programs. Through these programs, which entail treatment of weeds in target areas identified by BLM, noxious weeds would be sprayed annually through the life of the project. The noxious weed program would apply to the length of the project regardless of landownership.
- Gravel and fill to be used must come from a weed-free source(s). Gravel pits and fill sources would be inspected to identify weed-free sources.
- Compatible vegetation would be preserved and protected from damage by construction operations to the maximum extent practicable.
- In construction areas where recontouring is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for resprouting in accordance with the reclamation plan. Vegetation not consistent with line safety and operation would be removed according to SPS vegetation management practices.
- Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as

creosote and mesquite with herbicides to prevent vegetation encroachment on SPS's conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.

- If it is necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible.

3.6.3.1. Dunes and Hummocks

- Blading would occur at and between structures that have dunes or hummocks that would otherwise impede construction activities, in an area of up to 150 × 150 feet at or adjacent to those structures.
- Blading up to 60 feet in total width along the line between structures would follow a "least disturbance" path and avoid straight lines where practical.
- SPS would reclaim disturbed linear or crescent-shaped dunes (generally over 6 feet tall with at least one slipface, and being significantly longer than they are tall) to landforms of similar size and orientation in the same general areas to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- SPS would reclaim areas with disturbed hummocks (knolls or mounds, generally less than 6 feet tall) to a generally undulating surface to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- For aboveground flowlines less than or equal to 4.5 inches, SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines, and would leave and reclaim the cover in place. For aboveground flowlines larger than 4.5 inches, SPS will notify the BLM Environmental Protection Specialist and wait for instructions.
- SPS would use overburden to place the necessary fill over belowground pipelines, and would be allowed to leave and reclaim the overburden in place.
- SPS would reclaim disturbed areas per the POD using a BLM-specified lesser prairie-chicken (*Tympanuchus pallidicinctus*; LPC) seed mixture, and would work with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.

3.6.4. Water Resources

- Any chemical treatments of the ROW would comply with the applicable laws and procedures of the land management agencies, the Environmental Protection Agency (EPA), and the New Mexico Environment Department (NMED).
- No wetlands and/or waters of the U.S. would be altered, crossed, filled, or cut unless previously permitted to do so by the U.S. Army Corps of Engineers or the NMED.
- Construction activities would be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. Such pollutants and wastes include but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.
- Dewatering work for structure foundations or earthwork operations adjacent to or encroaching upon streams or water courses would not be performed without prior approval by the BLM or the applicable land management agency.
- Excavated material or other construction materials would not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or could in any way encroach upon the actual water source itself.
- Wastewaters from construction operations would not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel

filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such wastewaters discharged into surface waters would be essentially free of settleable material. Settleable material is defined as that material that settles from the water by gravity during a 1-hour quiescent period.

- Refueling and storing of potentially hazardous materials would not occur within a 100-foot radius of a waterbody, a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water supply wells. Spill preventive and containment measures or practices would be incorporated as needed and included in the POD.
- Where access routes would need to cross aboveground flow lines (4.5 inches or less in diameter), the contractor would push adjacent soil up and over the lines. The BLM would be notified if any larger aboveground lines are encountered. The contractor would use overburden to place the necessary fill over belowground pipelines, and would leave and reclaim the overburden in place.
- Temporary culverts would be installed to cross small drainages. These would be removed after construction.
- Ground disturbance would be avoided within 200 meters of playas.

3.6.5. Wildlife and Special Status Species

- Special status species or other species of particular concern would be considered in accordance with management policies set forth by appropriate land management agencies. This may entail conducting surveys for plant and wildlife species of concern along the proposed transmission line route and associated facilities (e.g., substations, access roads, laydown yards, etc.) as agreed upon by the agencies. In cases where such species are identified, adverse impacts on the species and its habitat would be avoided to the maximum extent practical and in consultation with the agencies.
- SPS designs and constructs all new transmission facilities to raptor-safe design standards as described in its *Avian Protection Plan* (EDM International 2008), which includes avian electrocution and collision minimization practices described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Edison Electric Institute and Avian Power Line Interaction Committee 2006).
- To the extent possible, construction activities during the migratory bird-nesting season (March–August) in suitable habitat would be avoided. Seasonal dates may vary depending on the species, current environmental conditions, and preconstruction survey results.
- If construction and maintenance activities, including mechanical or herbicide treatments of woody vegetation, cannot be avoided in the primary nesting season for migratory birds (March–August), migratory bird and nest surveys would be performed up to 2 weeks prior to commencing with those activities, and an avoidance buffer around each active nest would be implemented until the young have fledged, the size and timing of which may vary by species, but would be no less than 100 feet. This stipulation would not apply in the event of an emergency as per Xcel's Migratory Bird Special Purpose Utility Permit (USFWS 2015a).
- A 200-meter avoidance buffer would be implemented around any active burrowing owl (*Athene cunicularia*) nest burrow or active raptor nest until the young have fledged.
- The BLM may require a biological monitor near occupied nests and burrowing owl burrows identified during preconstruction surveys.
- Active raptor nests would be monitored for activity until the hatchlings fledge.
- Removal of any unoccupied raptor nests may require replacement by nest platforms.
- Foundation holes left open or unguarded would be covered to protect the public, wildlife, and livestock. If practical, temporary safety fencing may be used.
- During reclamation of disturbed areas, the seed mixture quantity for 1 mile along the Eddy to Kiowa route in Section 12 would be doubled for Sprague's pipit (*Anthus spragueii*) as identified in the POD.

- Bird flight diverters would be installed on the conductors for the crossing of the Pecos River.
- To offset potential impacts to riparian areas at the Pecos River crossing, as well as impacts to freshwater avian species that potentially nest in the vicinity, SPS will install up to 10 poles, some of which will have multiple artificial nesting platforms at locations within Section 30 of Township 22 South, Range 28 East (see the map and diagram in Appendix C). BLM will be responsible to secure all necessary access and land rights as well as associated permitting requirements, if any. Short-term and long-term maintenance of the nesting platforms will be the responsibility of BLM.

3.6.5.1. Dunes Sagebrush Lizard

- SPS would follow excavation BMPs during construction within the dunes sagebrush lizard (*Sceloporus arenicolus*; DSL) habitat boundary, as required by the BLM Resource Management Plan Amendment (2008a) and the BLM Open Trench Wildlife Removal Workshop materials (BLM 2013). This stipulation would apply to the length of the project in DSL habitat regardless of landownership.
- Any holes left open for 8 hours or less are not required to have escape ramps; however, before the hole is backfilled, a BLM-approved monitor would inspect the hole and remove all trapped wildlife and release it at least 300 feet away.
- For holes left open for 8 hours or more, escape ramps would be placed in the hole. The hole would be monitored each day by a BLM-approved monitor during the following three time periods: 1) 5:00 a.m. to 10:00 a.m., 2) 11:00 a.m. to 2:00 p.m., and 3) 3:00 p.m. to sunset. All trapped wildlife would be released at least 300 feet away.
- One BLM-approved monitor would be required for every up to 3-mile segment containing open holes in DSL habitat. A daily report (consolidate if there is more than one monitor) on the wildlife found and removed from the hole would be provided to the BLM (email is acceptable) the following morning.
- SPS and its contractors would instruct personnel working on the construction of the project to avoid intentionally harassing all animals, including the DSL and Texas horned lizard (*Phrynosoma cornutum*).

3.6.5.2. Lesser Prairie-Chicken

- Timing and noise restrictions would be applied to construction and maintenance activities within the LPC Isolated Population Area to prevent disruption of mating and nesting activities. All construction and maintenance activities would be prohibited from 3:00 a.m. to 9:00 a.m. from March 1 to June 15.
- Exceptions to these timing requirements would be considered in emergency situations such as mechanical failures. Exceptions would not be granted after March 15, or during the March 1 to June 15 period if the BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt LPC booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered for the period of March 1 to June 15, but these exceptions would not be granted if the BLM determines that there is LPC habitat, LPC sightings within 1.5 miles of the proposed location, historic leks, and/or active leks within 1.5 miles of the proposed location, or any combination of the above mentioned criteria.

3.6.5.3. Sheer's Beehive Cactus

- Workers would be instructed not to park off the roads to protect any threatened or endangered species, including Scheer's beehive cactus (*Coryphantha robustispina* ssp. *scheeri*).

3.6.6. Cultural Resources

- In consultation with appropriate land management agencies and the State Historic Preservation Officer (SHPO), specific mitigation measures for cultural resources would be developed and implemented to mitigate any identified adverse impacts. These may include project modifications to avoid adverse impacts, monitoring of construction activities, and data recovery studies.

- An archaeological construction monitor would be present during ground-disturbing activities in site-specific areas identified in the POD.
- An Unanticipated Discovery Plan would be prepared to specify the protocols to follow in the event of an unanticipated discovery of any previously unknown historic/prehistoric sites or artifacts encountered during construction. The Unanticipated Discovery Plan would identify communication protocols and immediate measures to be used to protect the site until further evaluation can be completed. The Unanticipated Discovery Plan would be prepared in coordination with the SHPO and jurisdictional land management agency.

3.6.7. Cave and Karst Resources

- SPS would notify and coordinate with the BLM Cave/Karst Resource Specialist before performing any blading in the high karst potential areas on both BLM and SLO lands on the Eddy to Kiowa line length.
- In the event that any underground voids, subsurface drainage channels, or cave passages are encountered during construction activities, construction would be halted in the immediate vicinity of the discovery, and the BLM would be notified immediately.
- Pole locations would be adjusted as necessary to avoid cave and karst features.
- The BLM would be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no further construction would be allowed until clearance has been issued by the Authorized Officer. Special restoration stipulations or realignment may be required.
- Roads would be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Soil bores would be collected at all proposed foundation structures along the centerline prior to construction. Proposed foundation locations will be based on any line angle larger than 2 degrees. The bores would be up to 50 feet deep to ensure the contractor does not drill into voids or karst features to install structures. If a void is encountered, depth of boring may exceed 50 feet to determine the depth of the void.

3.6.8. Paleontological Resources

- In the event that any fossils are encountered during construction activities, construction would be halted in the immediate vicinity, and the BLM would be notified immediately.

3.6.9. Visual Resources

- Self-weathering steel would be used to reduce visual impacts except in substations.
- Reclamation would be implemented to disguise disturbance.
- Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM.

3.6.10. Livestock Grazing and Farmland

- All fences and gates would be maintained during the construction period. Fences, gates, and walls would be replaced, repaired, or reclaimed to their original condition as required by the landowner or the land management agency in the event that they are removed, damaged, or destroyed by construction activities. Fences would be braced before cutting. Gates or enclosures would be installed only with the permission of the landowner or the land management agency, and would be removed/reclaimed following construction should it be necessary. Cattle guards would be installed on a case-by-case basis in negotiation with the landowner or land management agency.

- Prior to construction, the conditions of the water lines crossed by the proposed project would be evaluated, and appropriate protections would be put in place to maintain their function during the construction of the proposed project. If necessary, waterlines would be protected either by burying or pushing adjacent soil over the lines within the construction area to shield the lines from damage.
- The contractor would eliminate at the earliest opportunity all construction ruts that are hazardous to agricultural operations and/or movement of vehicles and equipment. Such ruts would be leveled, filled, and graded or otherwise eliminated in an approved manner. Damage to ditches, tile drains, culverts, terraces, local roads, and other similar land use features would be corrected as necessary by the contractor. Land and facilities would be restored as nearly as practicable to their original condition.
- On agricultural land, the ROW would be aligned, insofar as is practical, to reduce the impact to farm operations and agricultural production.
- In cultivated agricultural areas, soil compacted by construction activities would be decompacted except where a permanent two-track access route would be kept for future operation and maintenance activities.

3.6.11. Travel Management

- Where appropriate, signage would be installed on newly installed gates to deter users from circumventing the gates and traversing areas that were formerly inaccessible or harder to access.

3.6.12. Public Health and Safety

- The contractor would make all necessary provisions for conformance with federal, state, and local traffic safety standards, and would conduct construction operations to minimize obstruction and inconvenience to public traffic.
- During construction of the transmission lines, the ROW would be free of non-biodegradable debris. Slash would be left in place or disposed of in accordance with requirements of the land management agency or landowner.
- Towers and/or conductors and/or shield wires would be marked with high-visibility devices (e.g., marker balls or other marking devices) where required by governmental agencies with jurisdiction (e.g., the Federal Aviation Administration). Tower heights would be less than 200 feet to avoid the need for aircraft obstruction lighting.
- A Fire Protection Plan would be developed.
  - Construction vehicles would be equipped with approved spark arresters.
  - The contractor would maintain in all construction vehicles a current list of local emergency response providers and methods of contact/communication.
- An SPCC would be prepared to specify preventative procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction.
  - Hazardous material would not be drained onto the ground or into streams or drainage areas. Totally enclosed containment would be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.

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Appendix A

Mapbook

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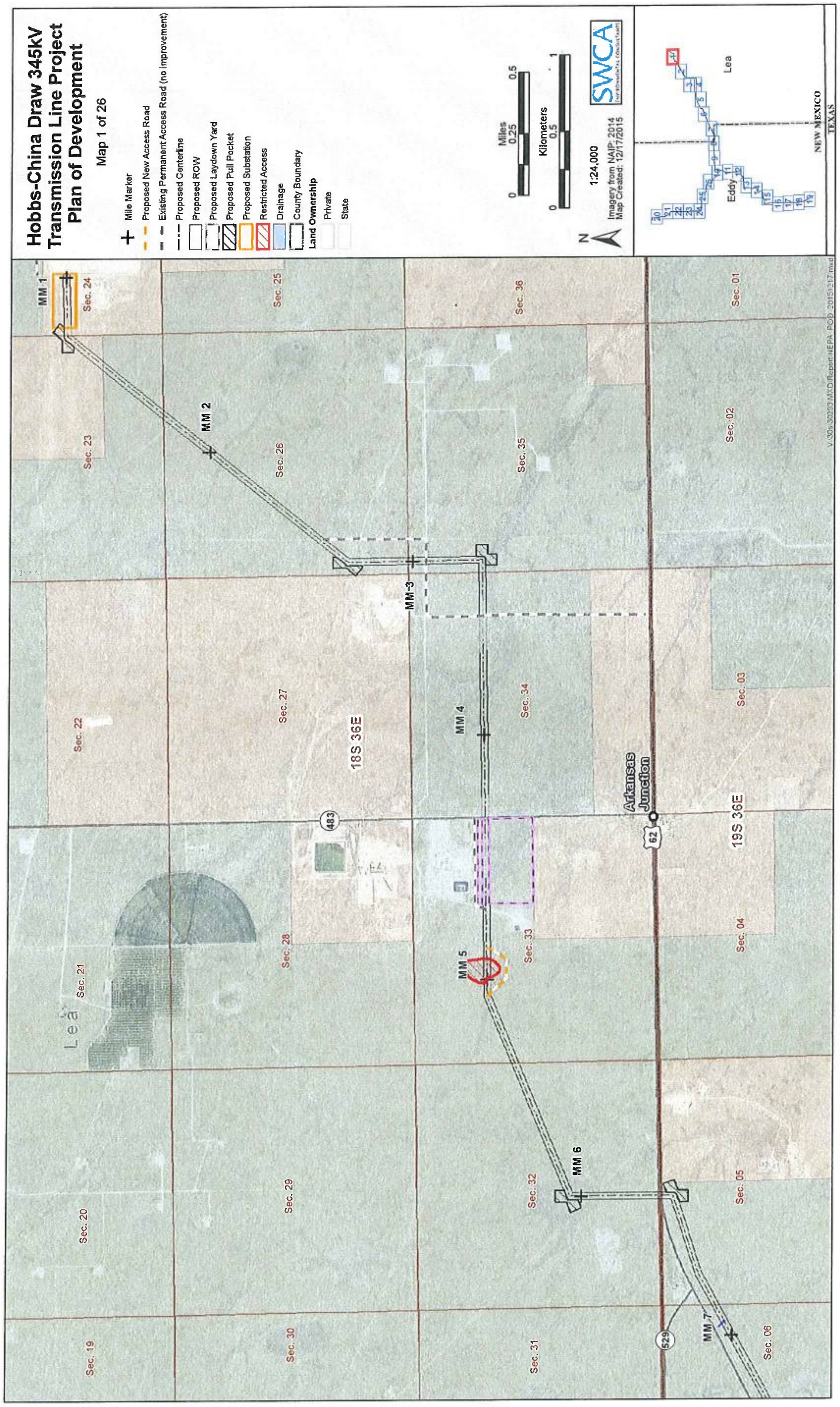
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 1 of 26
Mile Marker
Proposed New Access Road
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Laydown Yard
Proposed Pull Pocket
Proposed Substation
Restricted Access
Drainage
County Boundary
Land Ownership
Private
State
Miles
0
0.25
0.5
Kilometers
0
0.5
1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
MM 1
MM 2
MM-3
MM 4
MM 5
MM 6
MM 7
Sec. 19
Sec. 20
Sec. 21
Sec. 22
Sec. 23
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Sec. 26
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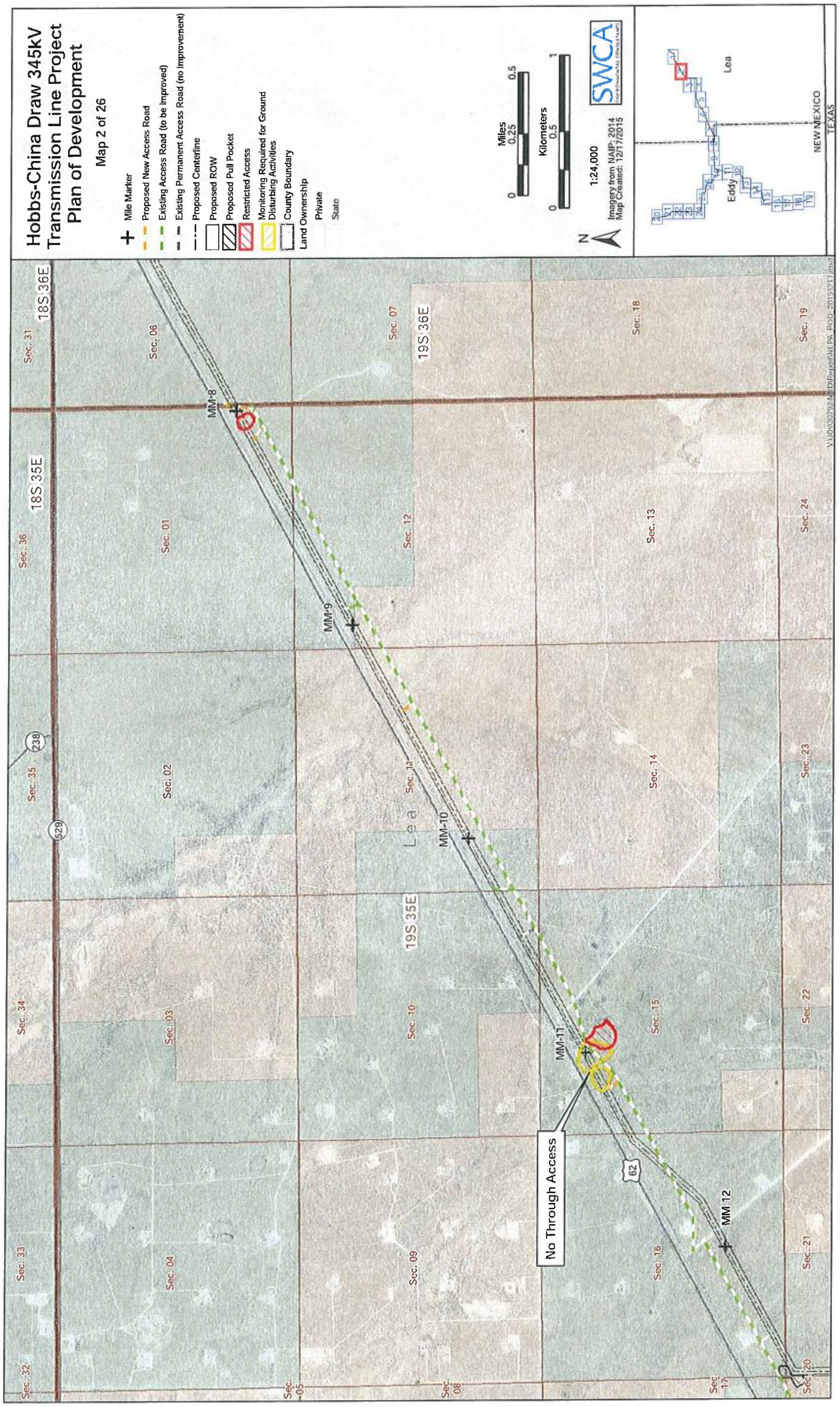
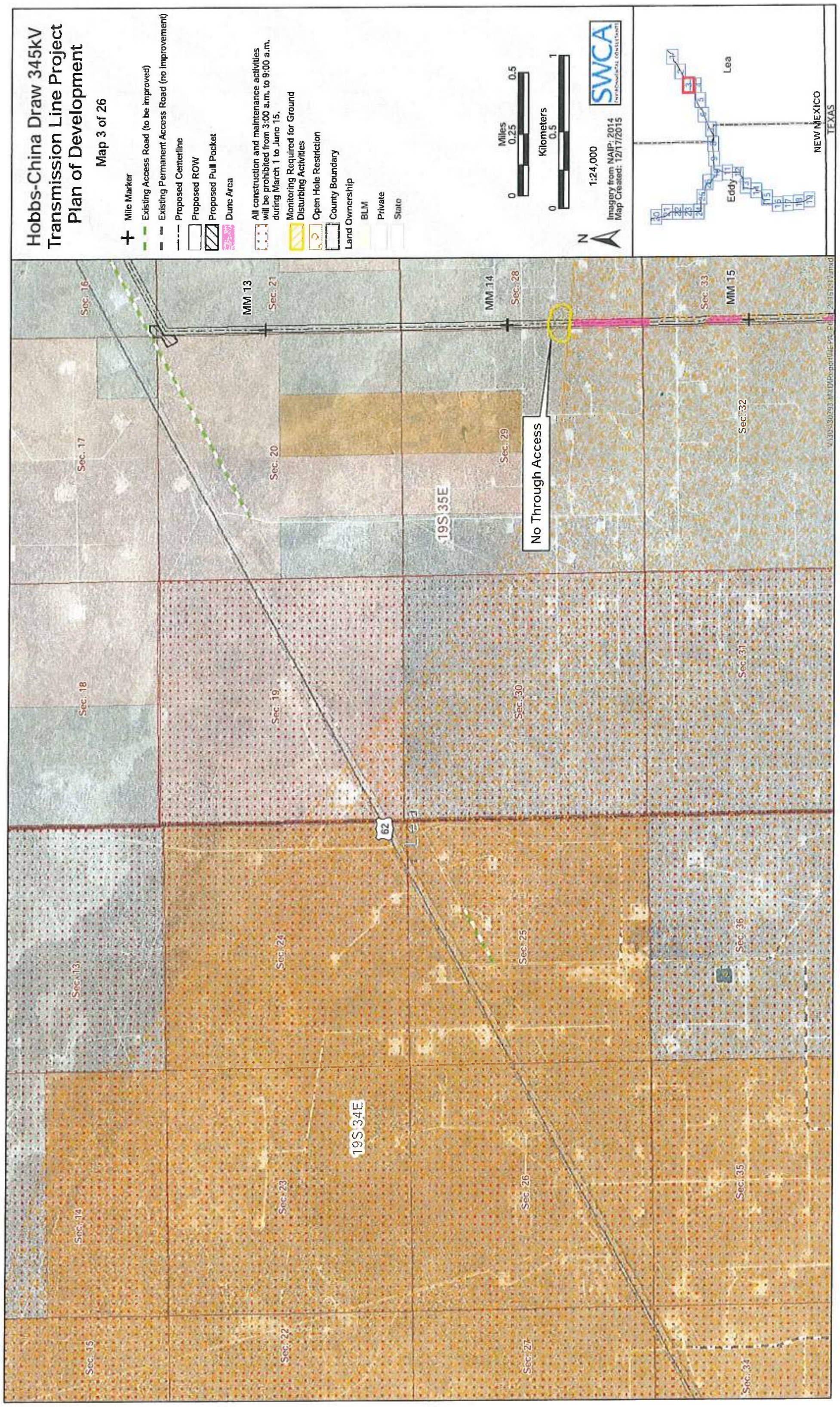
Sec. 31
Sec. 32
Sec. 33
Sec. 34
Sec. 35
Sec. 36
Sec. 01
Sec. 02
Sec. 03
Sec. 04
Sec. 05
Sec. 06
18S 36E
19S 36E
Arkansas Junction
483
62
529


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 2 of 26
Mile Marker
Proposed New Access Road
Existing Access Road (to be Improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Restricted Access
Monitoring Required for Ground Disturbing Activities
County Boundary
Land Ownership
Private
State
Miles
0
0.25
0.5
Kilometers
0
0.5
1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
18S 36E
18S 35E
19S 36E
19S 35E
MM-8
MM-9
MM-10
MM-11
MM 12
No Through Access
Lea
Sec. 31
Sec. 06
Sec. 07
Sec. 18
Sec. 19
Sec. 36
Sec. 01
Sec. 12
Sec. 13
Sec. 24
Sec. 35
Sec. 02
Sec. 14
Sec. 23
Sec. 34
Sec. 03
Sec. 10
Sec. 15
Sec. 22
Sec. 33
Sec. 04
Sec. 09
Sec. 16
Sec. 21
Sec. 32
Sec. 05
Sec. 08
Sec. 17
Sec. 20
238
529
62


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 3 of 26
Mile Marker
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Monitoring Required for Ground Disturbing Activities
Open Hole Restriction
County Boundary
Land Ownership
BLM
Private
State
Miles
Kilometers
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
MM 13
MM 14
MM 15
No Through Access
19S 35E
19S 34E
Sec. 16
Sec. 17
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Sec. 27
Sec. 33
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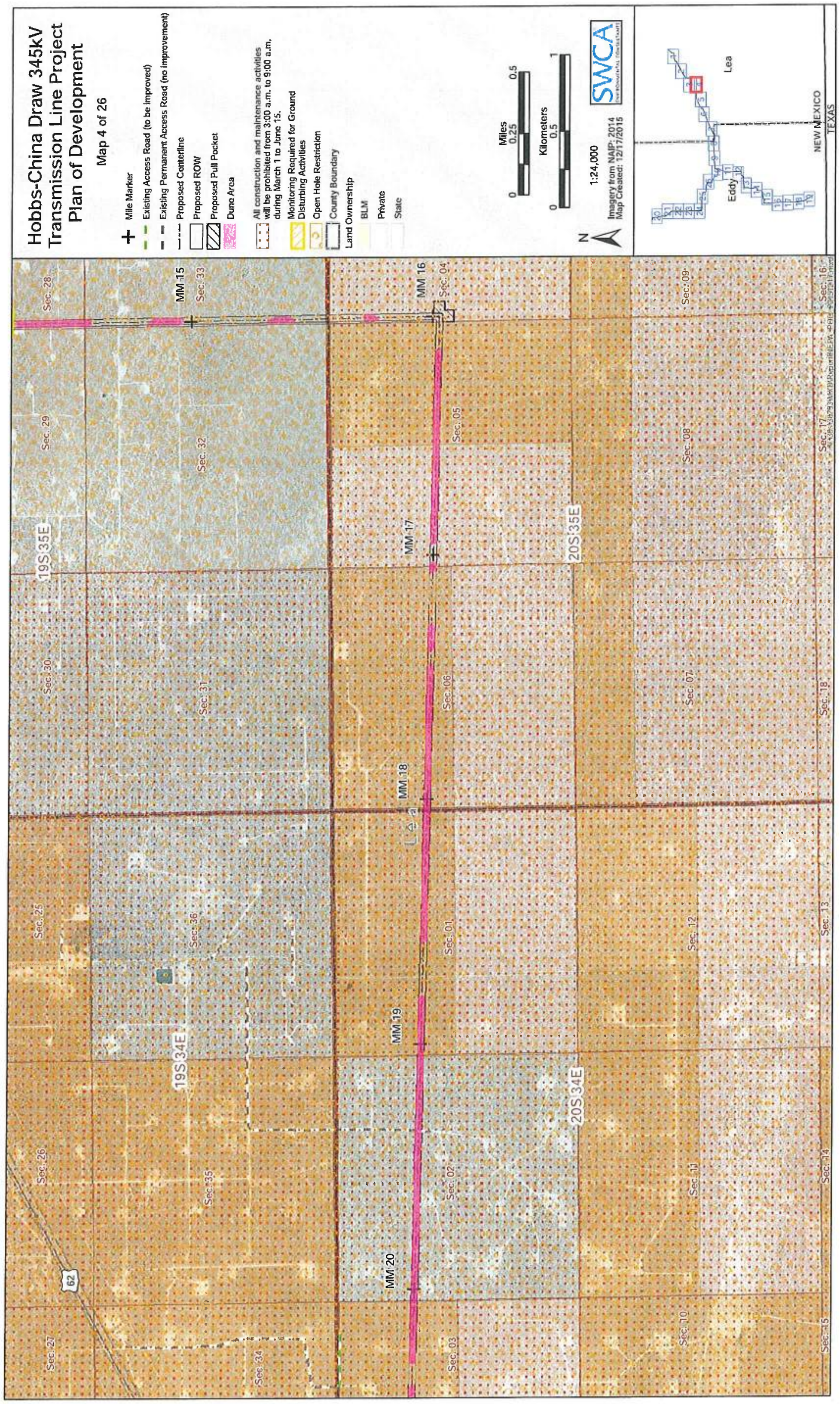
Sec. 31
Sec. 36
Sec. 35
Sec. 34
62


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 4 of 26
Mile Marker
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Monitoring Required for Ground Disturbing Activities
Open Hole Restriction
County Boundary
Land Ownership
BLM
Private
State
Miles
0
0.25
0.5
Kilometers
0
0.5
1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
19S 35E
20S 35E
19S 34E
20S 34E
MM 15
MM 16
MM 17
MM 18
MM 19
MM 20
62
Sec. 28
Sec. 33
Sec. 04
Sec. 09
Sec. 16
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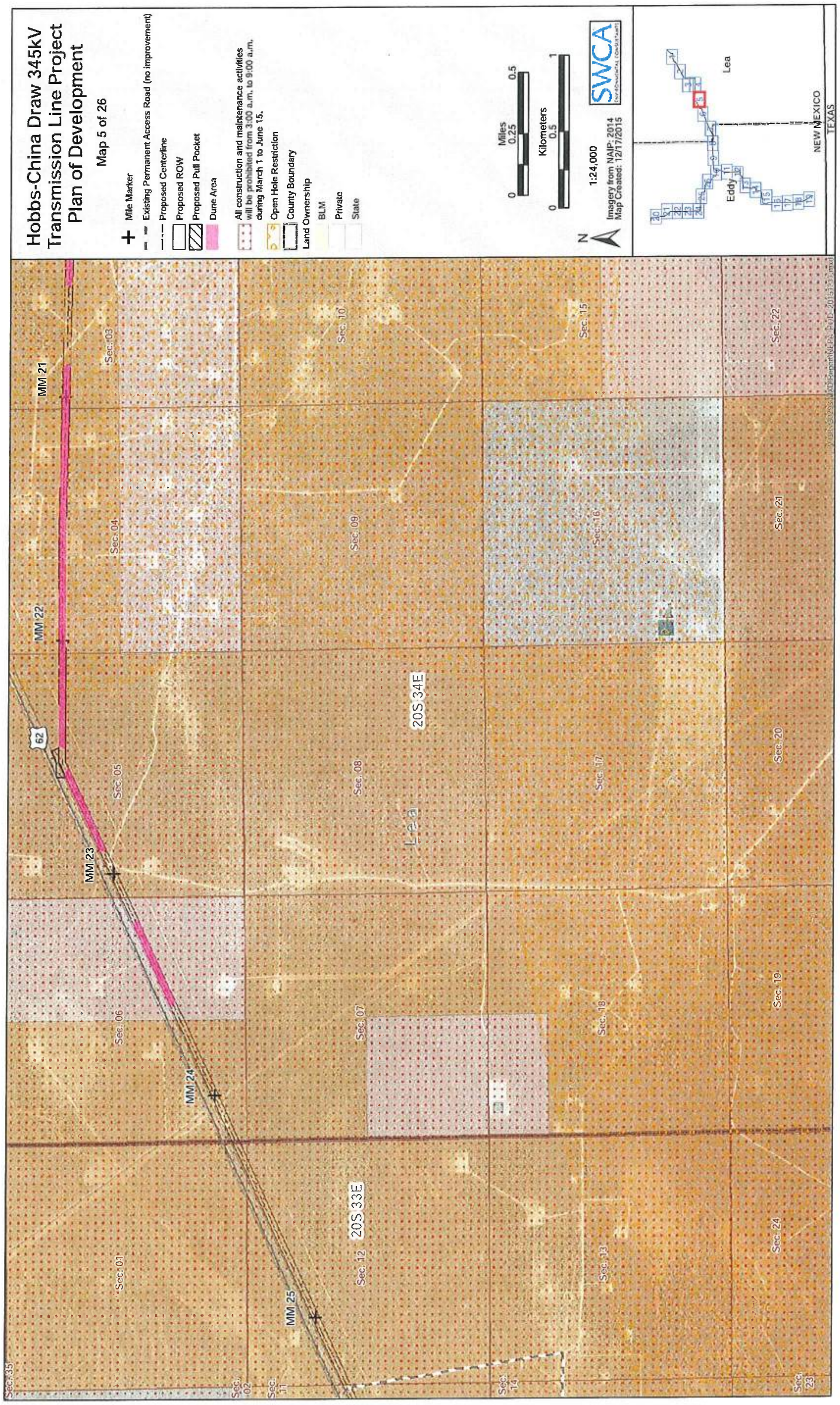
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 5 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Open Hole Restriction
County Boundary
Land Ownership
BLM
Private
State
Miles
0 0.25 0.5
Kilometers
0 0.5 1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
MM 21
MM 22
MM 23
MM 24
MM 25
62
20S 34E
20S 33E
Lea
Sec. 35
Sec. 02
Sec. 11
Sec. 14
Sec. 23
Sec. 01
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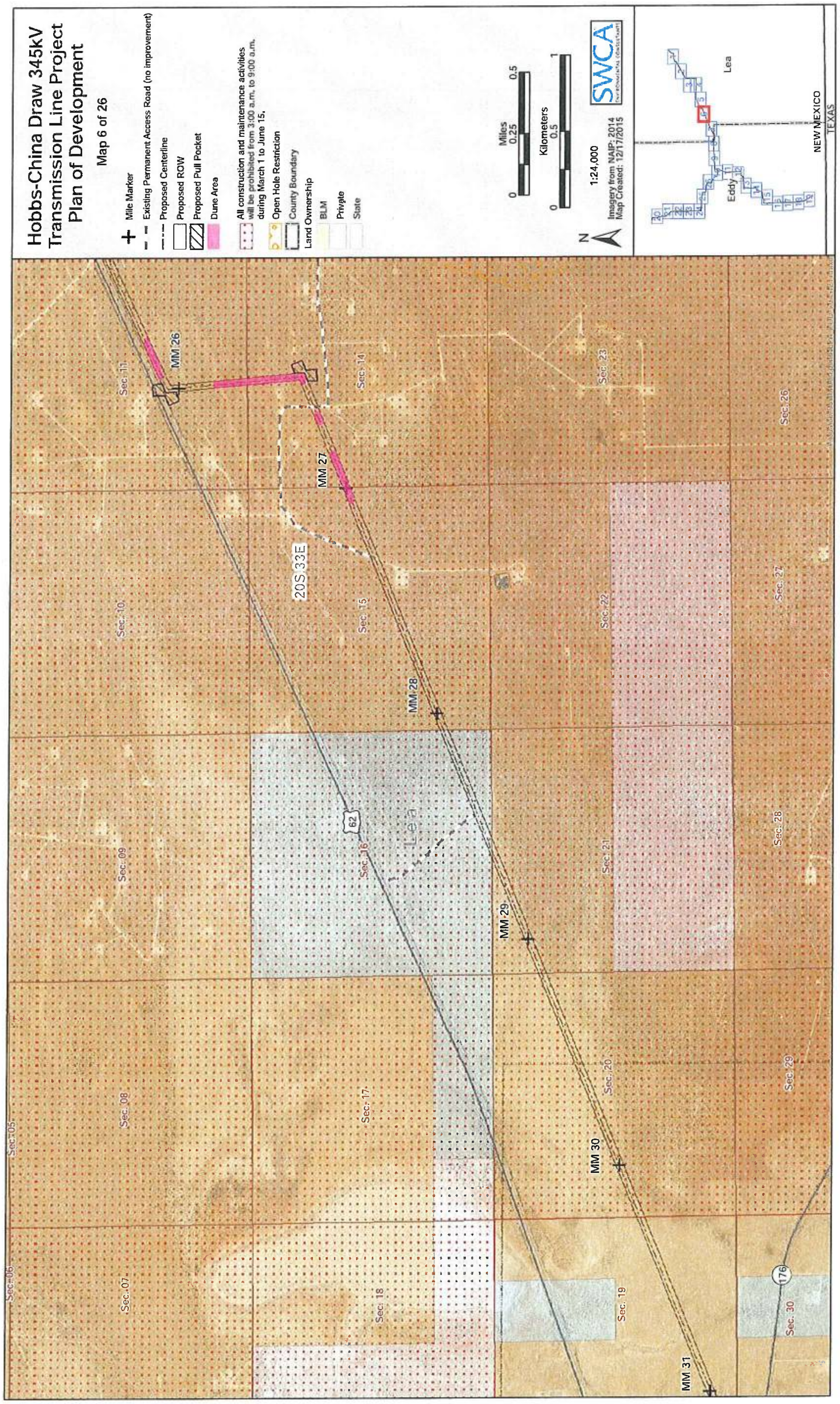
Sec. 15
Sec. 22


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 6 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Open Hole Restriction
County Boundary
Land Ownership
BLM
Private
State
Miles
0
0.25
0.5
Kilometers
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Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
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MM 31
20S 33E
Lea
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176
Sec. 05
Sec. 06
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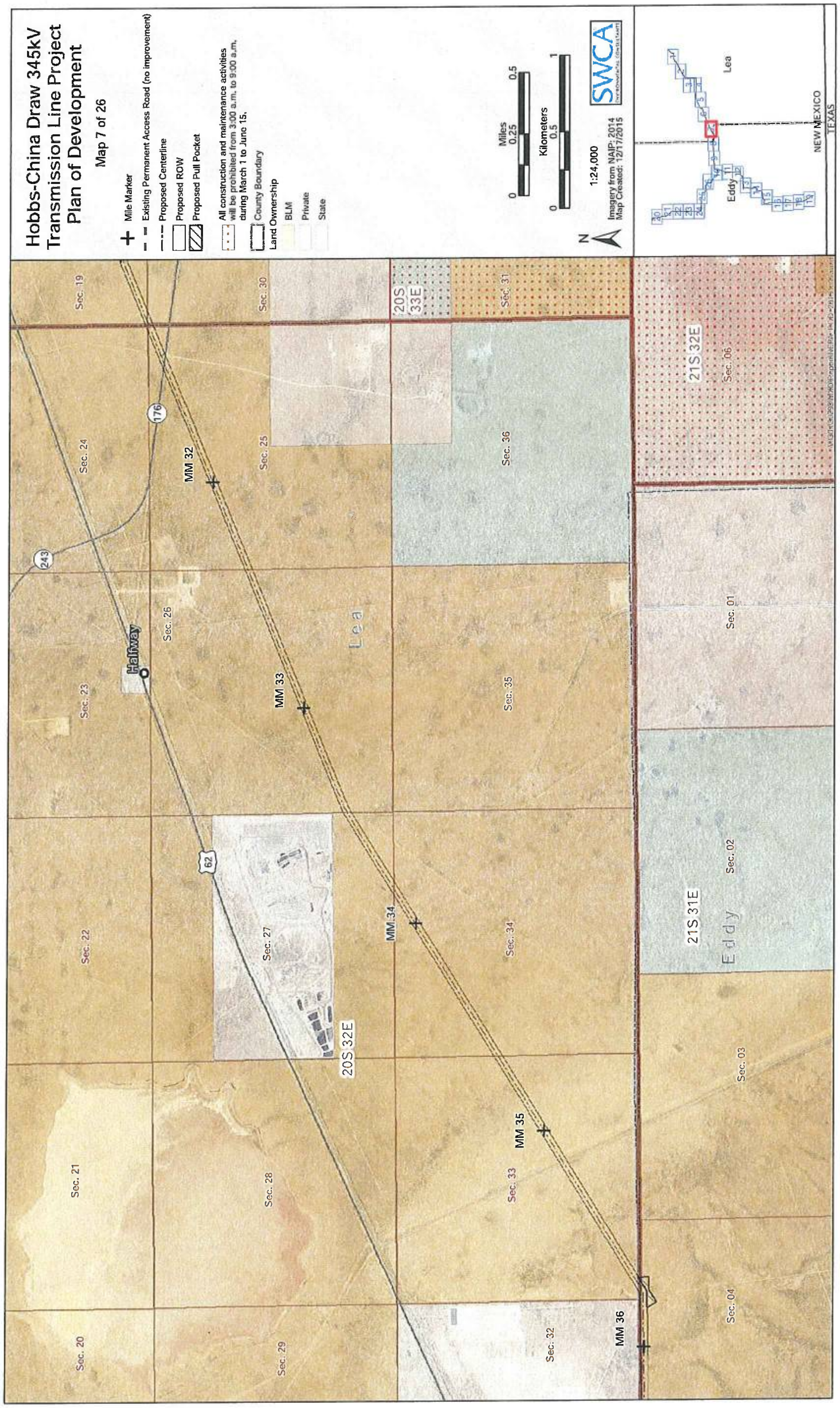
Sec. 30


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 7 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
County Boundary
Land Ownership
BLM
Private
State
Miles
0
0.25
0.5
Kilometers
0
0.5
1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
Sec. 19
Sec. 24
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Sec. 33
Sec. 32
Sec. 06
Sec. 01
Sec. 02
Sec. 03
Sec. 04
20S 33E
21S 32E
20S 32E
21S 31E
Halfway
MM 32
MM 33
MM 34
MM 35
MM 36
176
243
62


Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 8 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
County Boundary
Land Ownership
BLM
Private
State
Miles
0 0.25 0.5
Kilometers
0 0.5 1
1:24,000
Imagery from NAIP: 2014
Map Created: 12/17/2015
SWCA
Lea
Eddy
NEW MEXICO
TEXAS
20S 32E
20S 31E
21S 31E
21S 30E
MM 37
MM 38
MM 39
MM 40
MM 41
Sec. 29
Sec. 30
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Sec. 26
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Proposed New Access Road
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Proposed Pull Pocket
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
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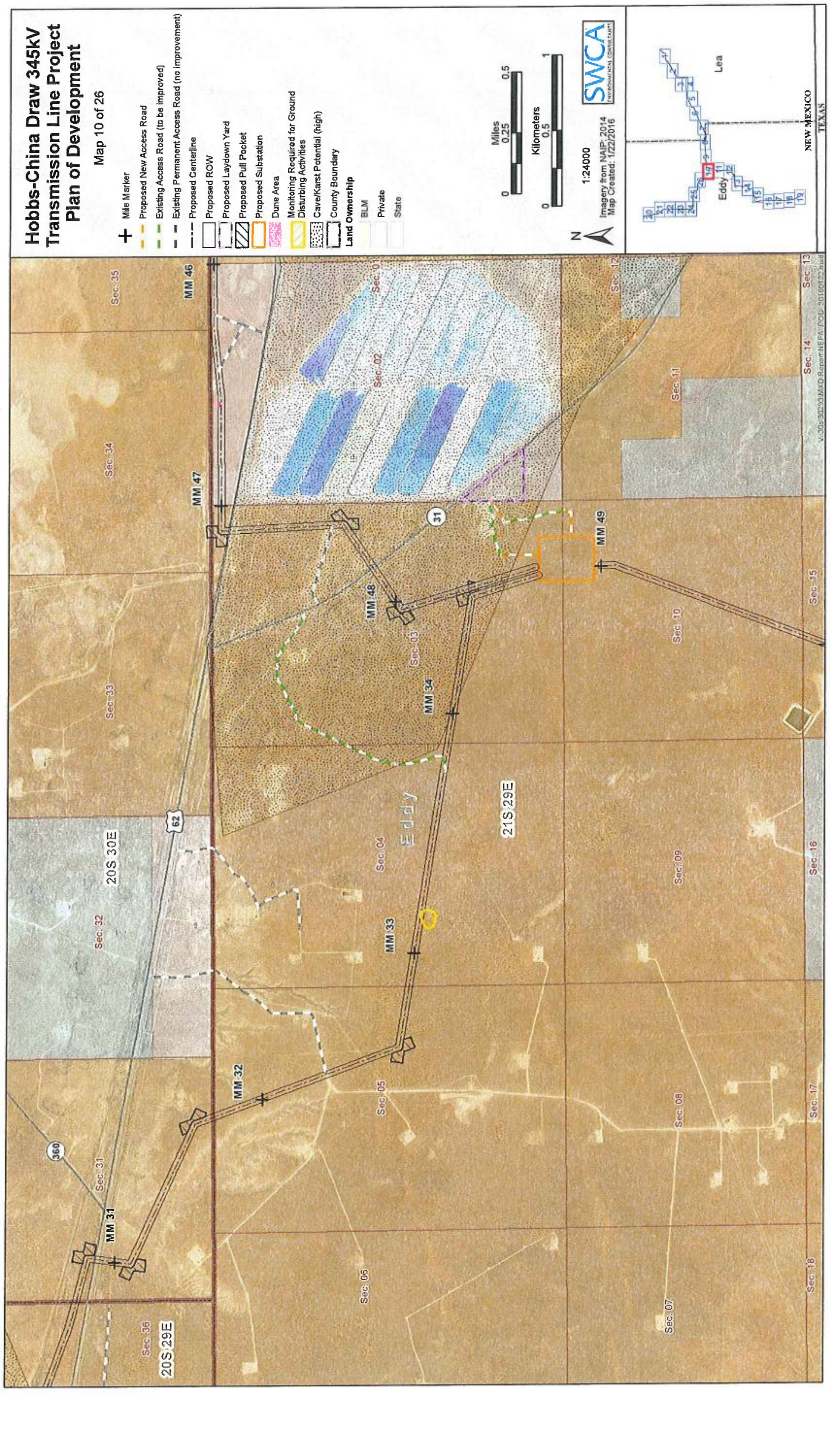
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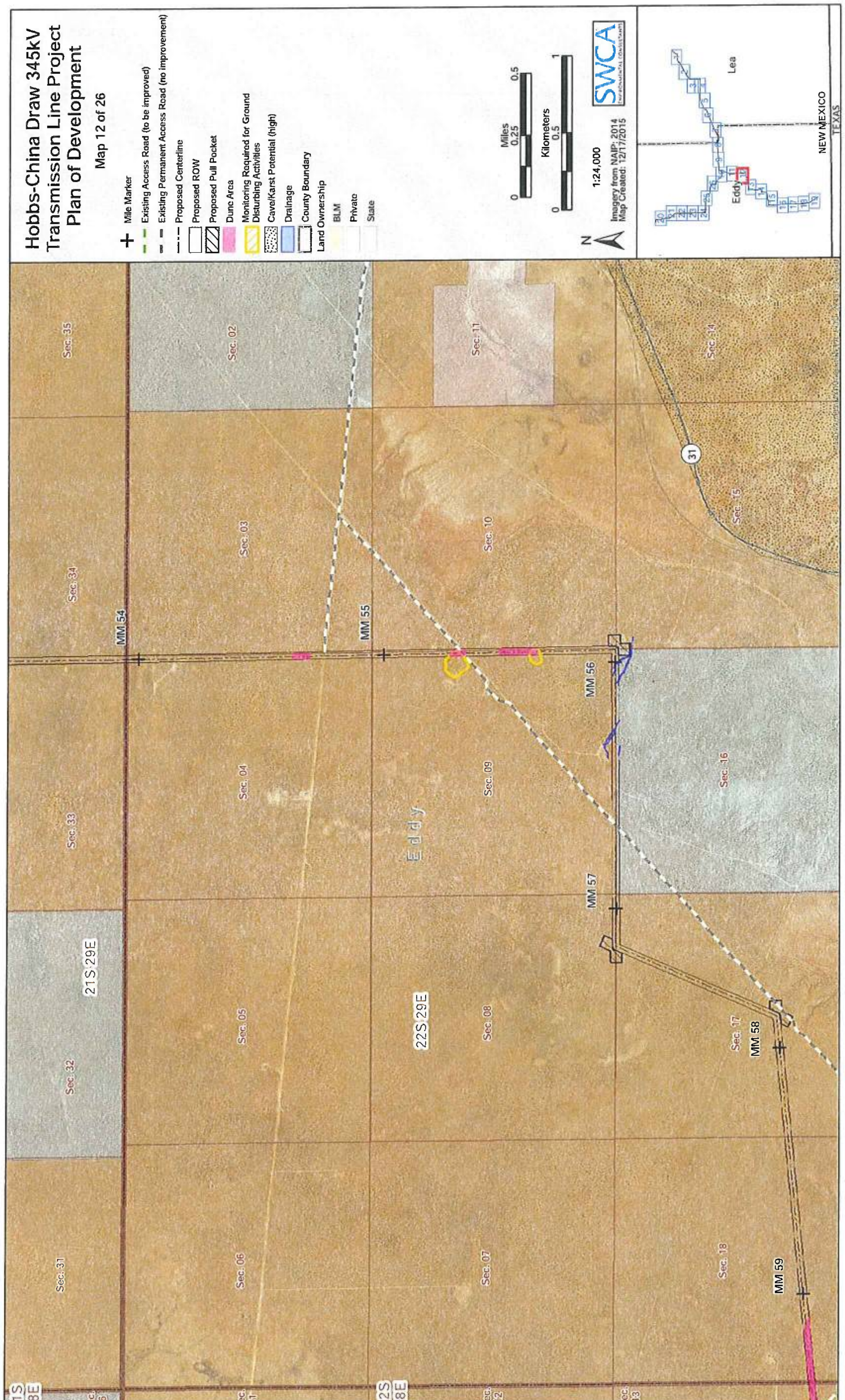
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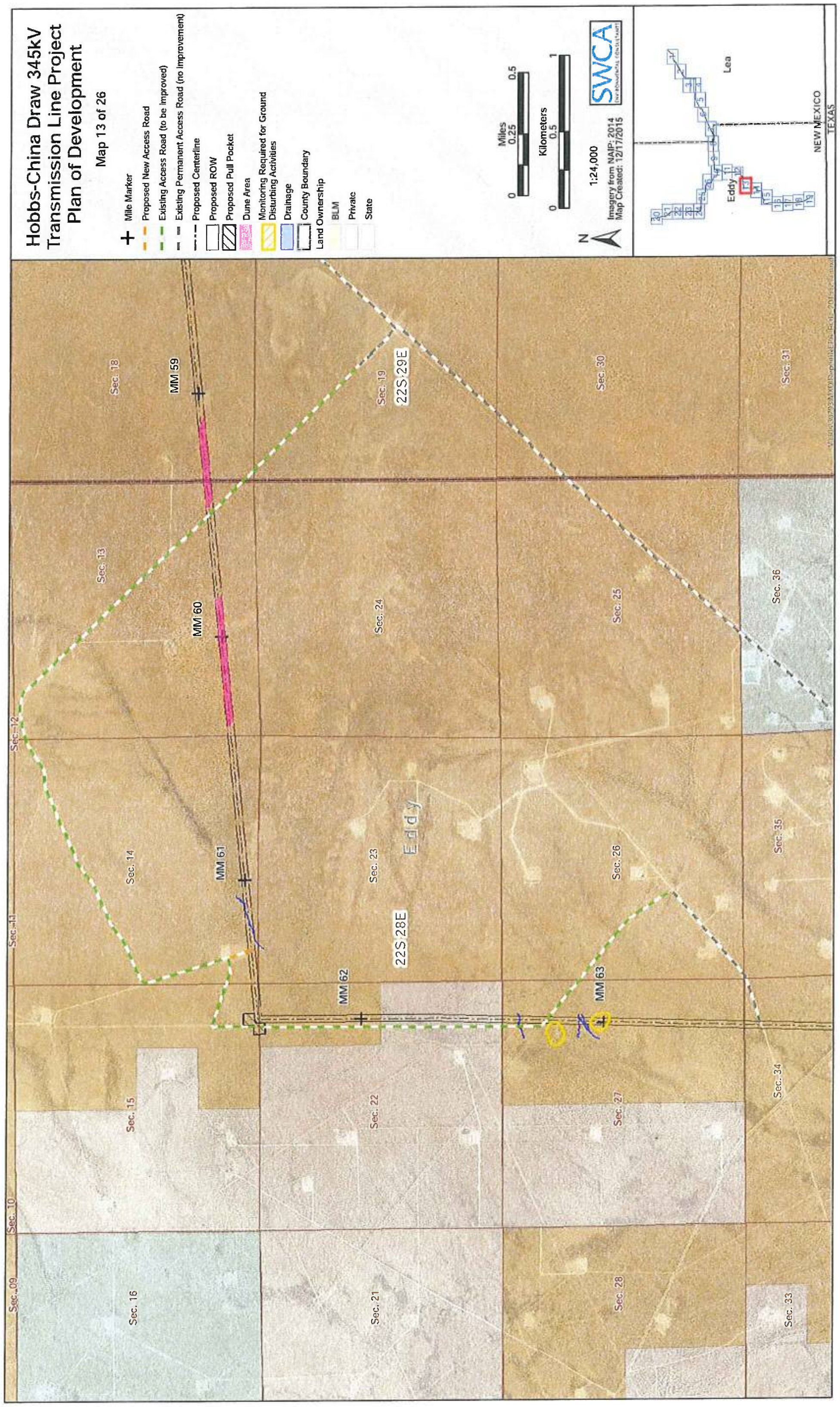
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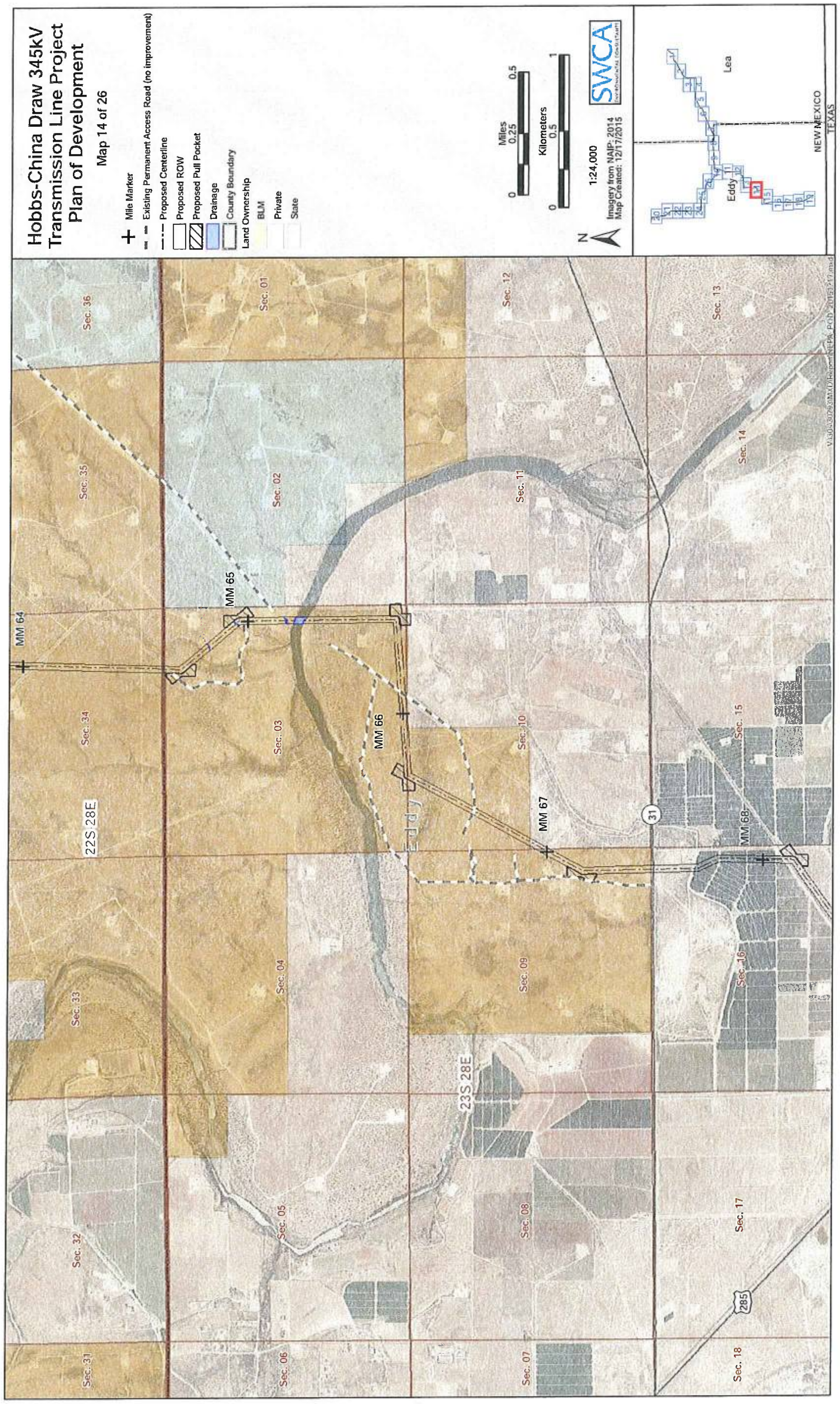
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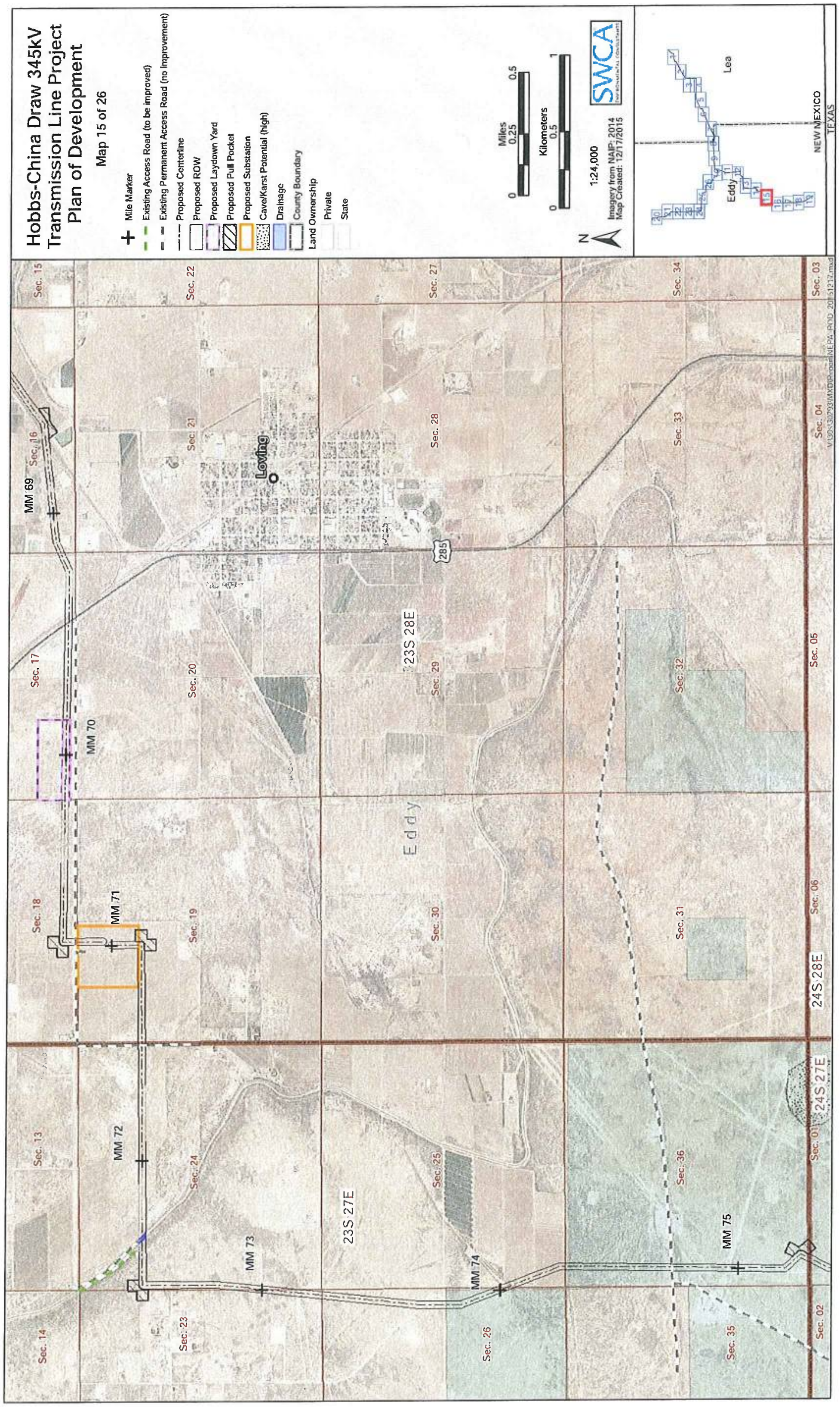
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Transmission Line Project
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Proposed Substation
Cave/Karst Potential (high)
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Proposed Centerline
Proposed ROW
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Drainage
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Land Ownership
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Existing Permanent Access Road (no improvement)
Proposed Centerline
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Cave/Karst Potential (high)
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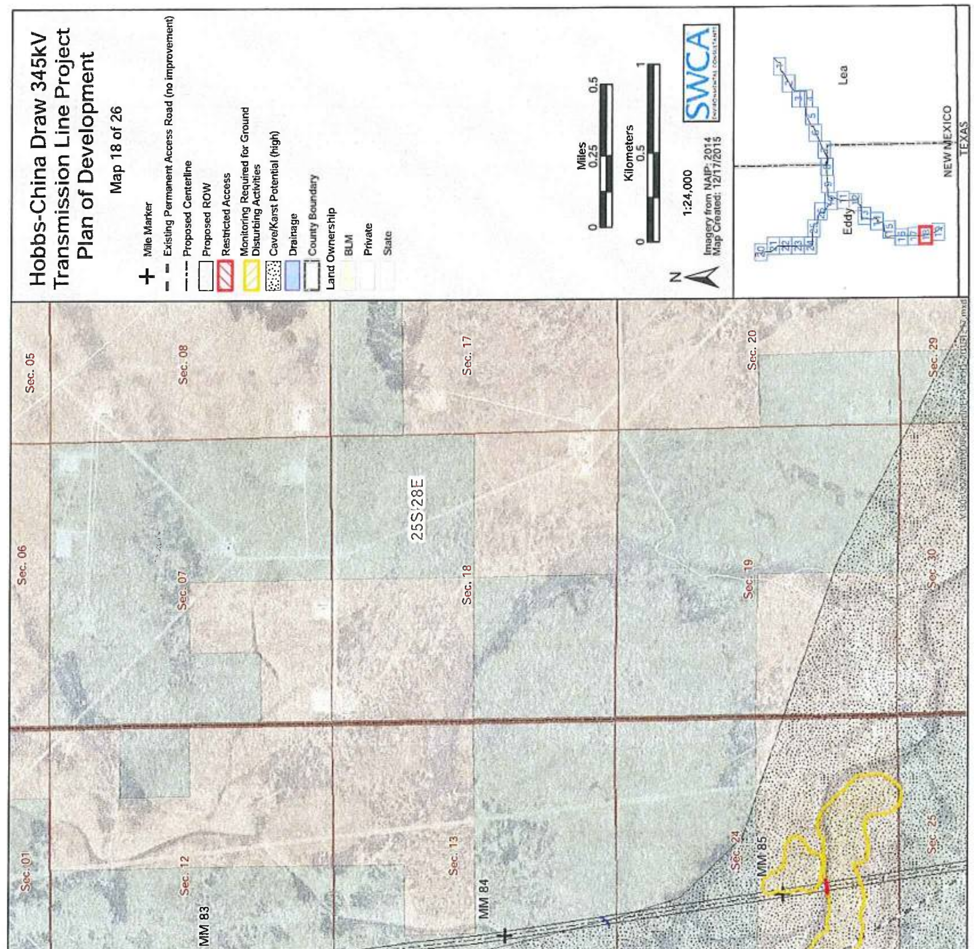
Hobbs-China Draw 345kV
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Proposed Centerline
Proposed ROW
Restricted Access
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Cave/Karst Potential (high)
Drainage
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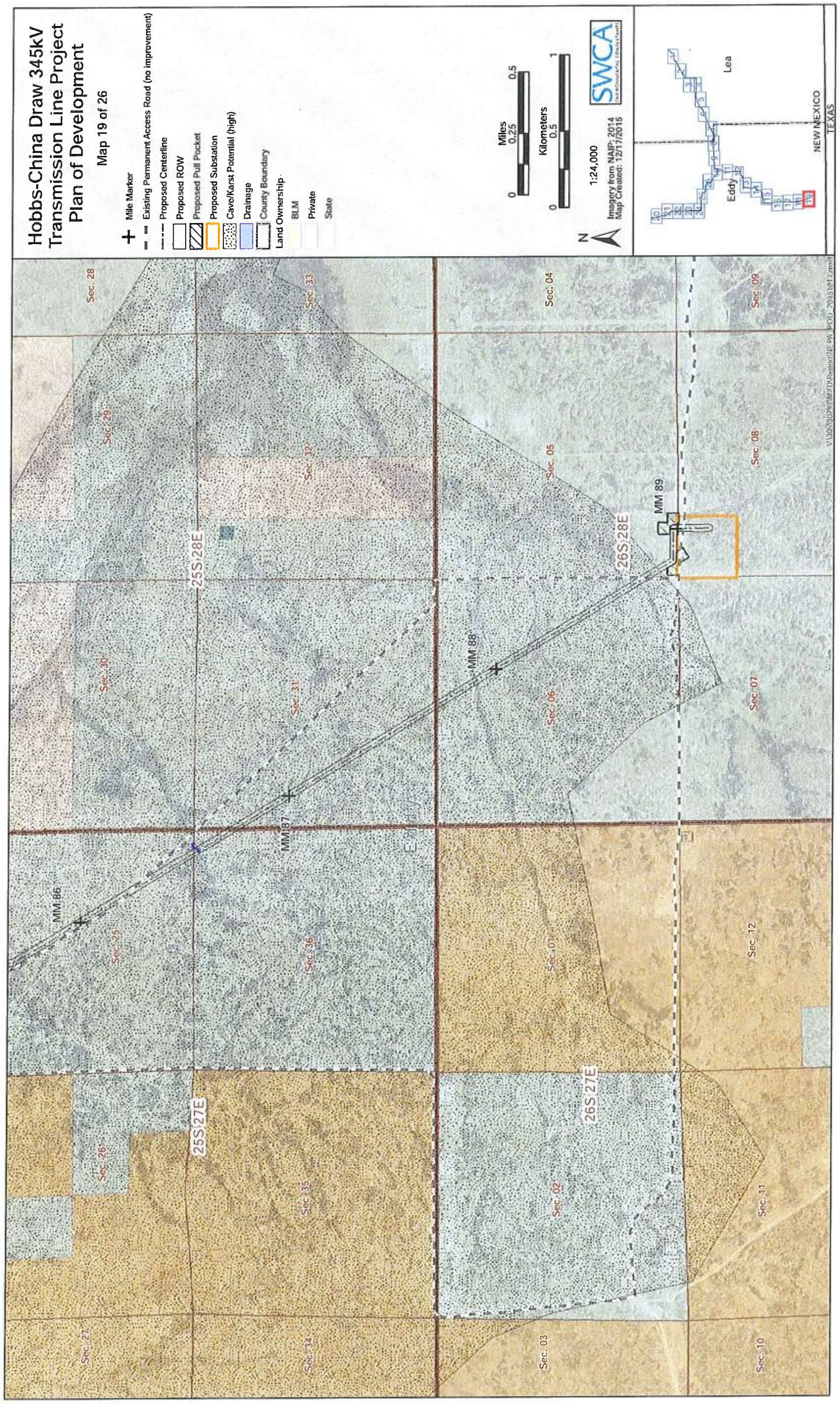
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Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Proposed Substation
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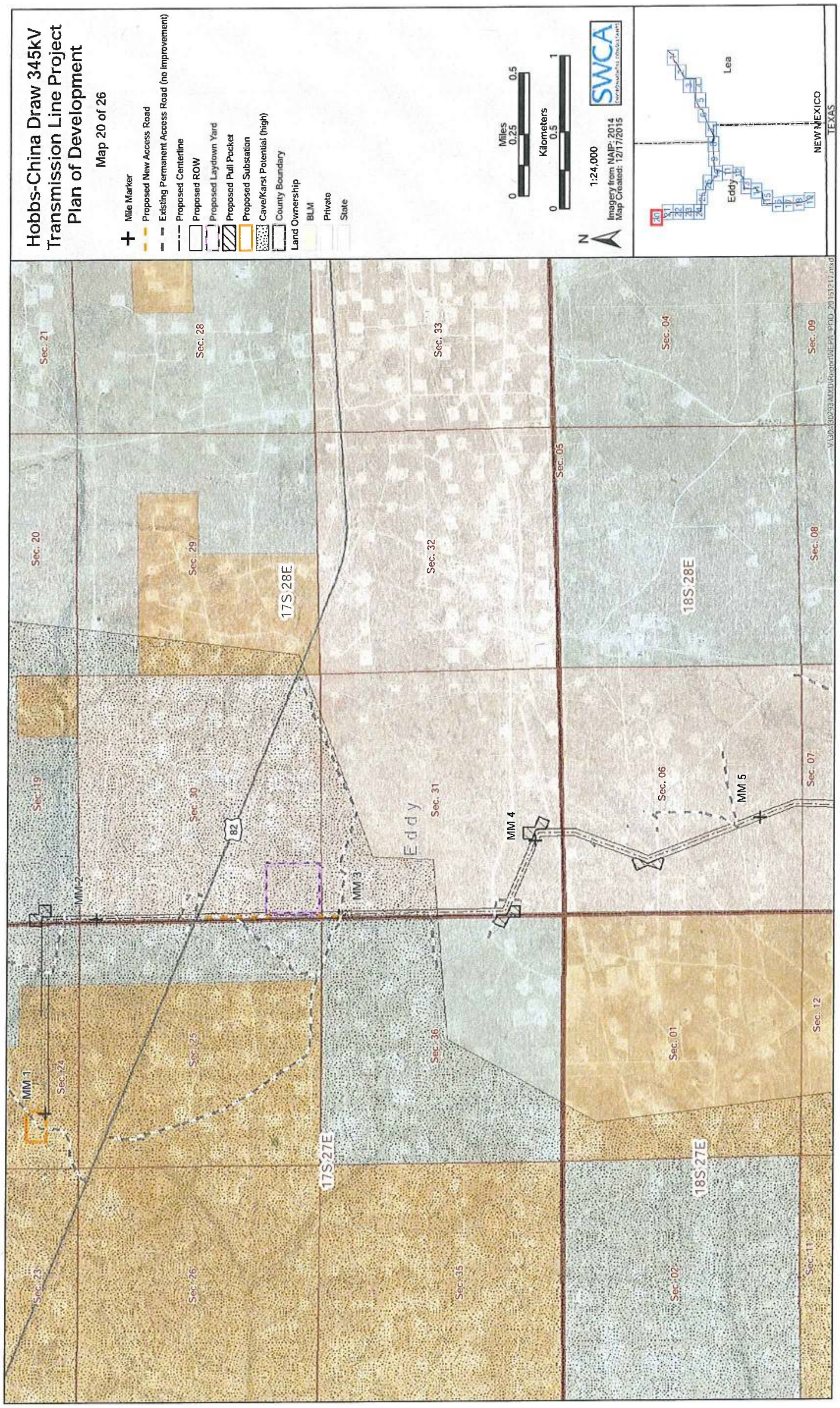
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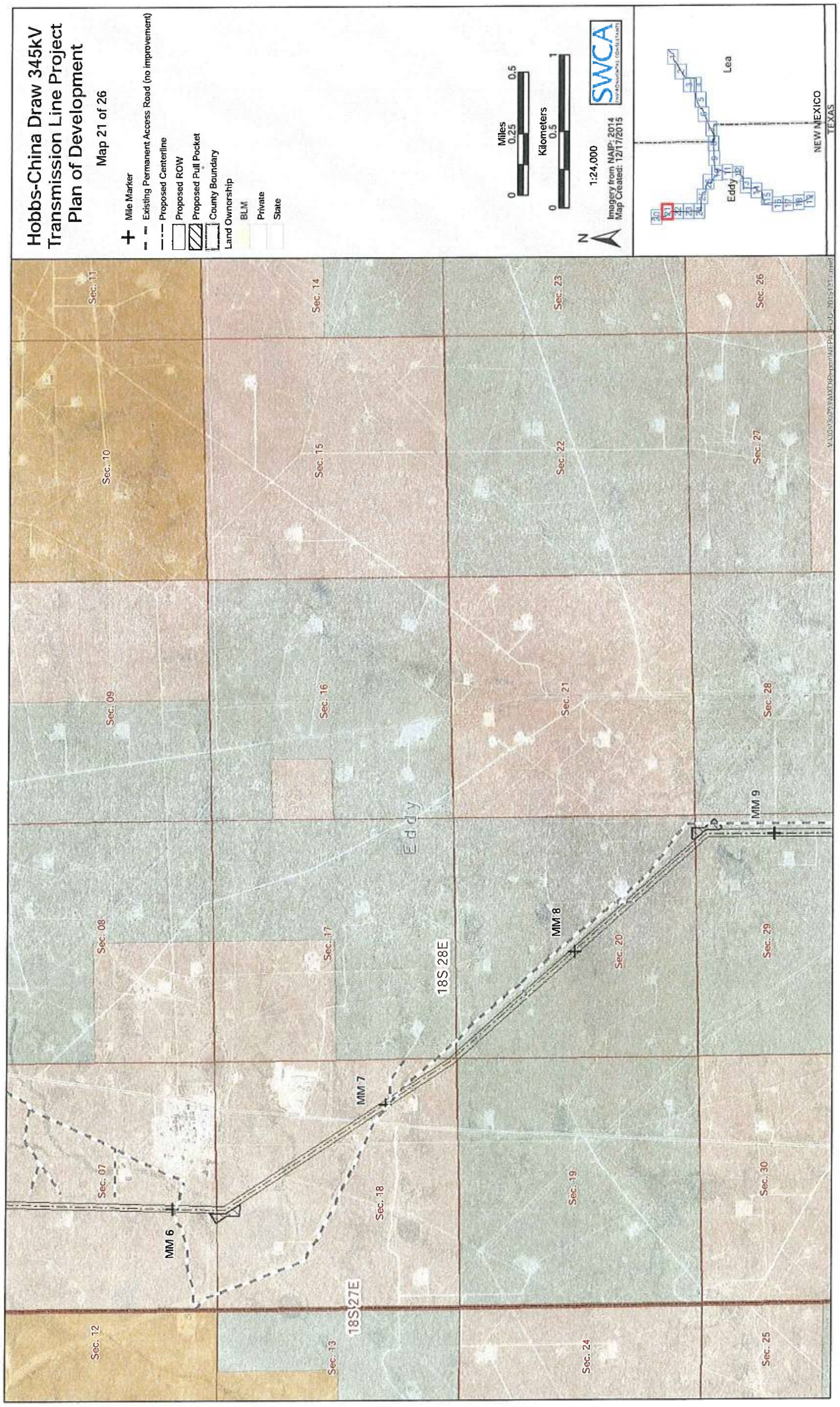
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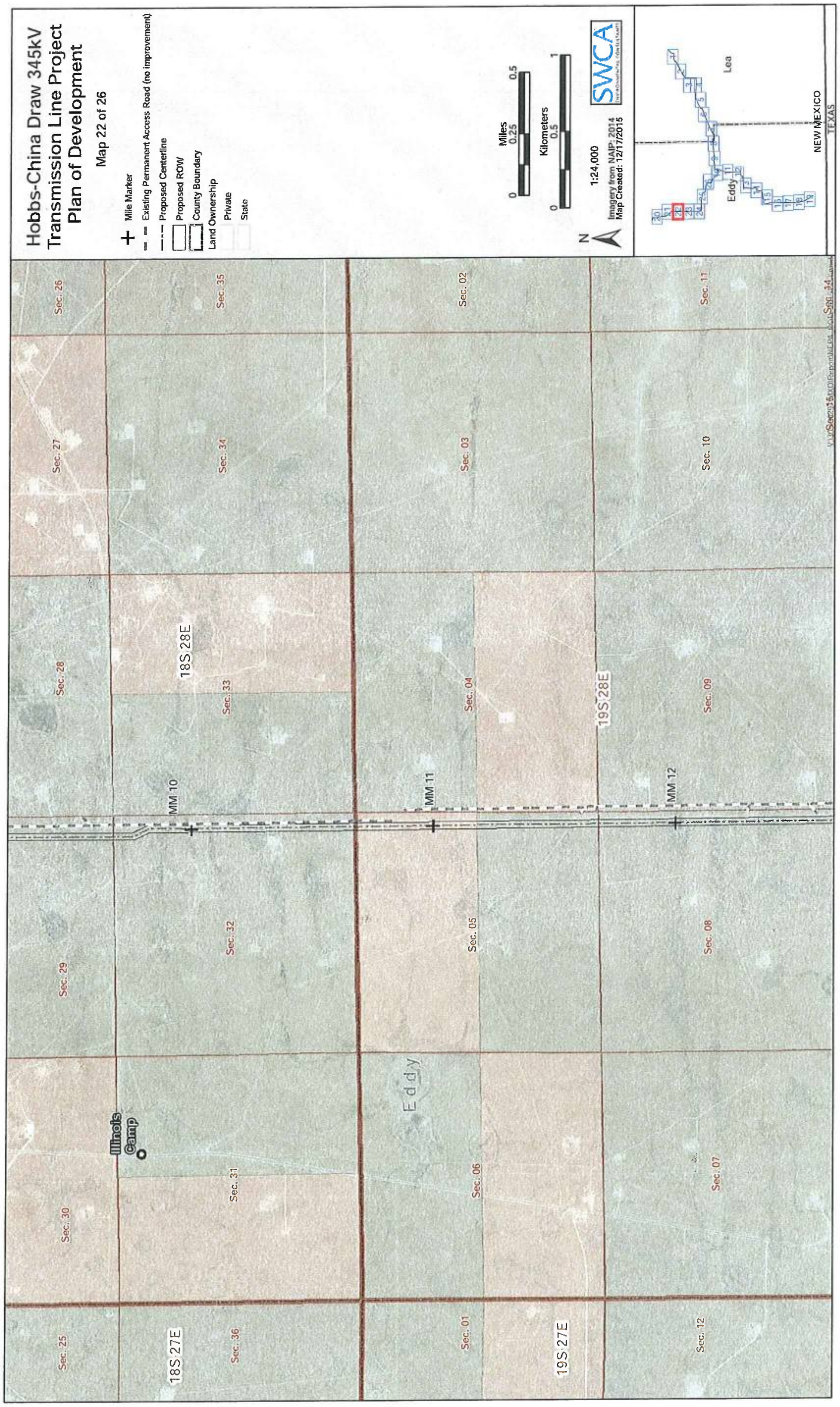
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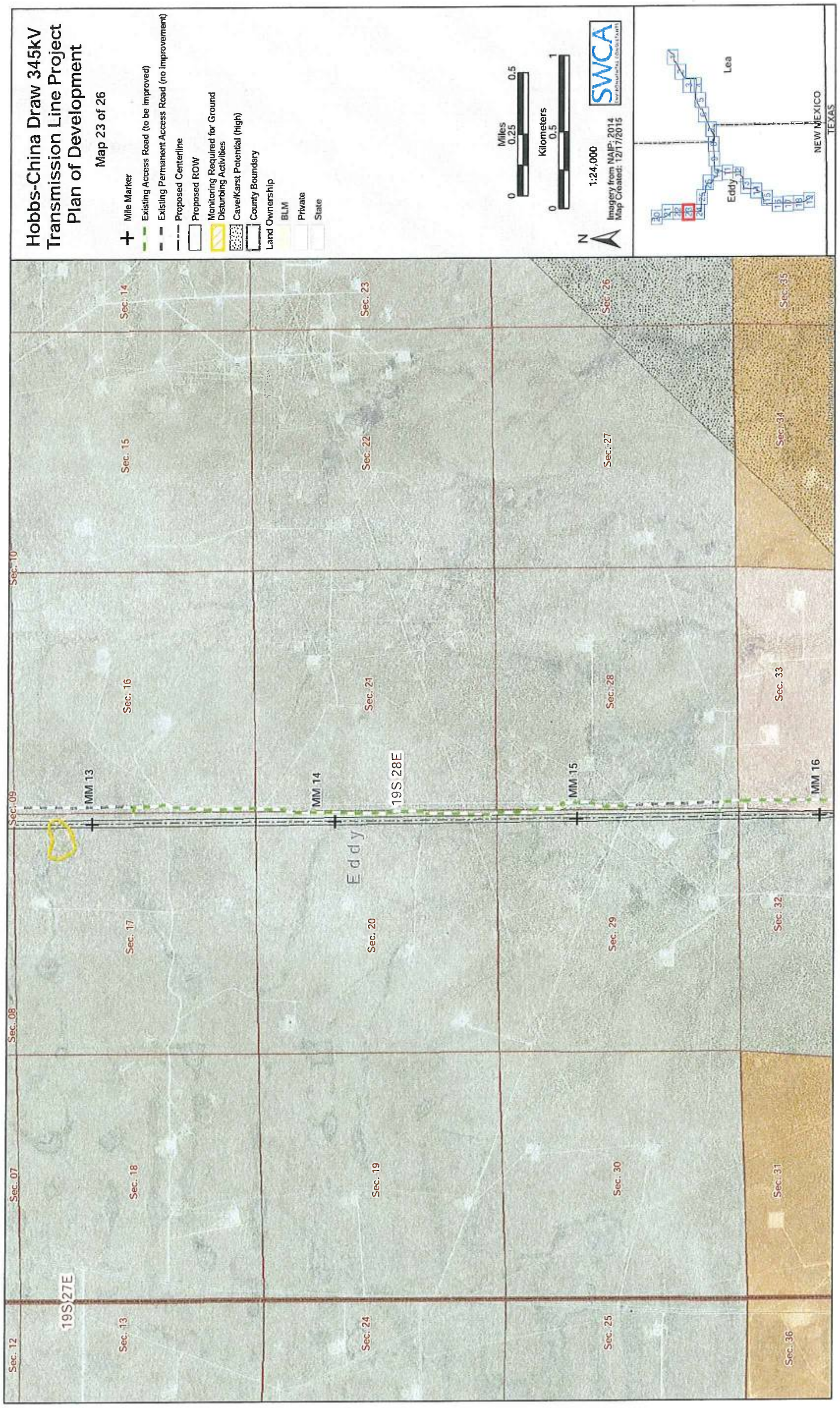
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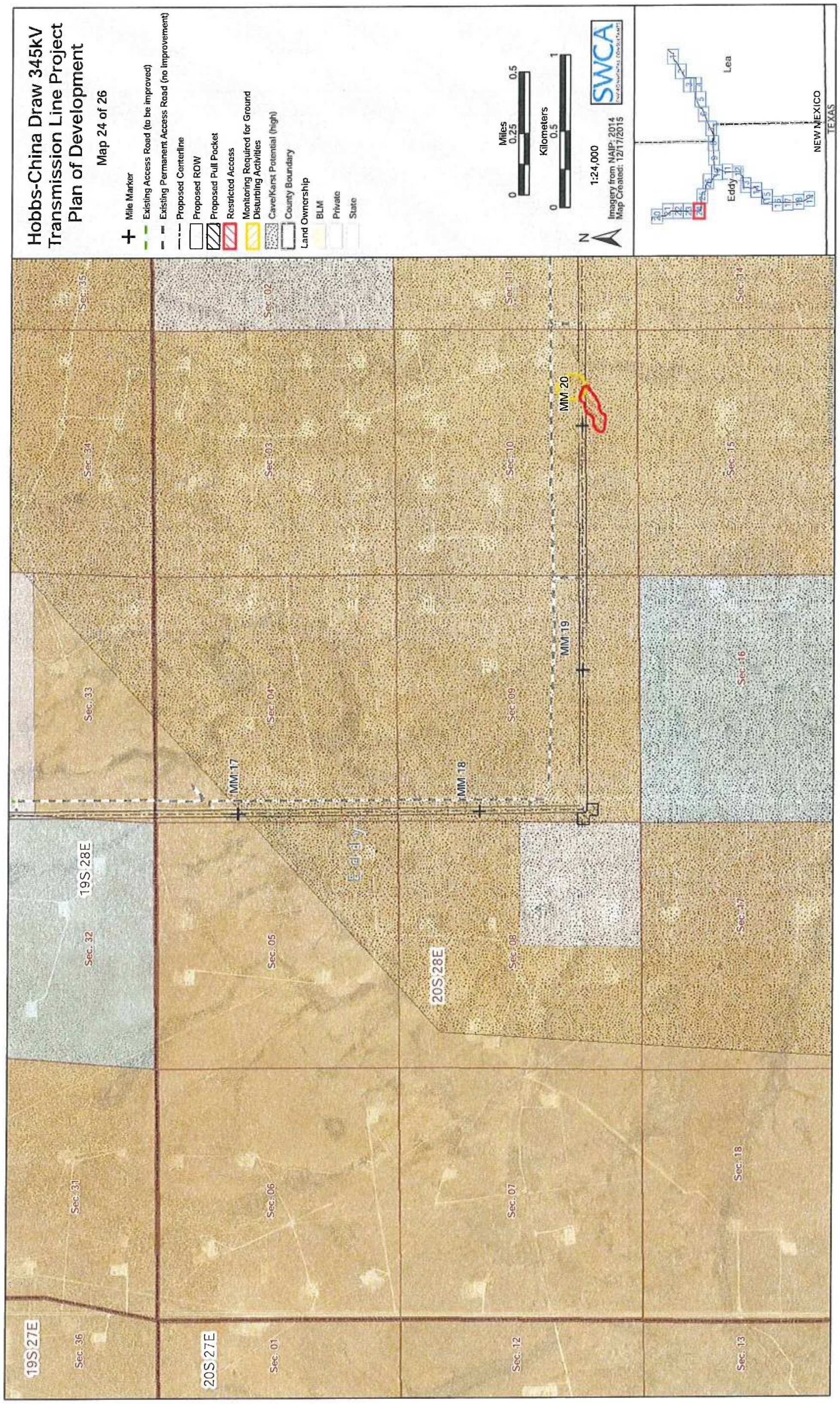
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Existing Access Road (to be improved)
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Cave/Karst Potential (high)
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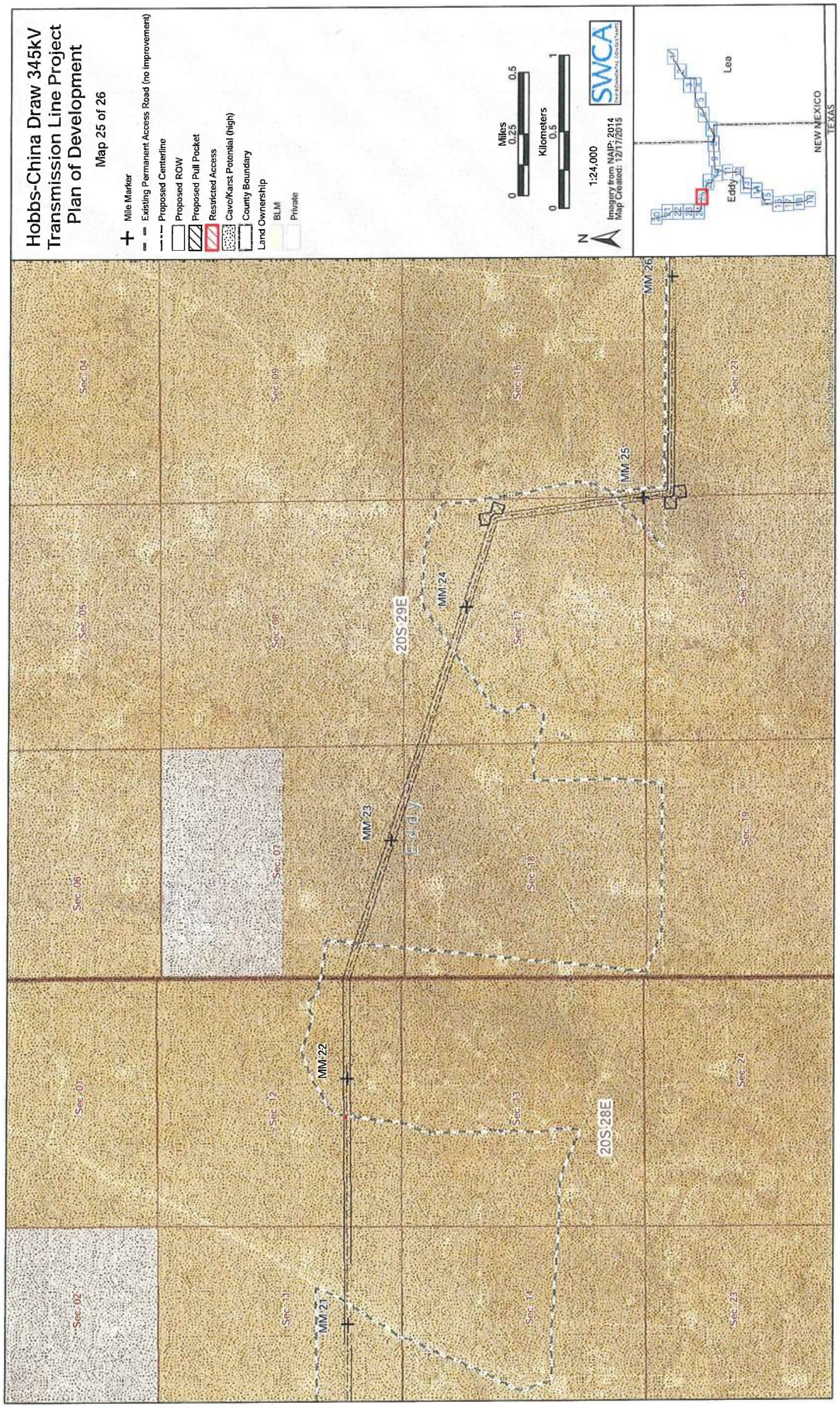
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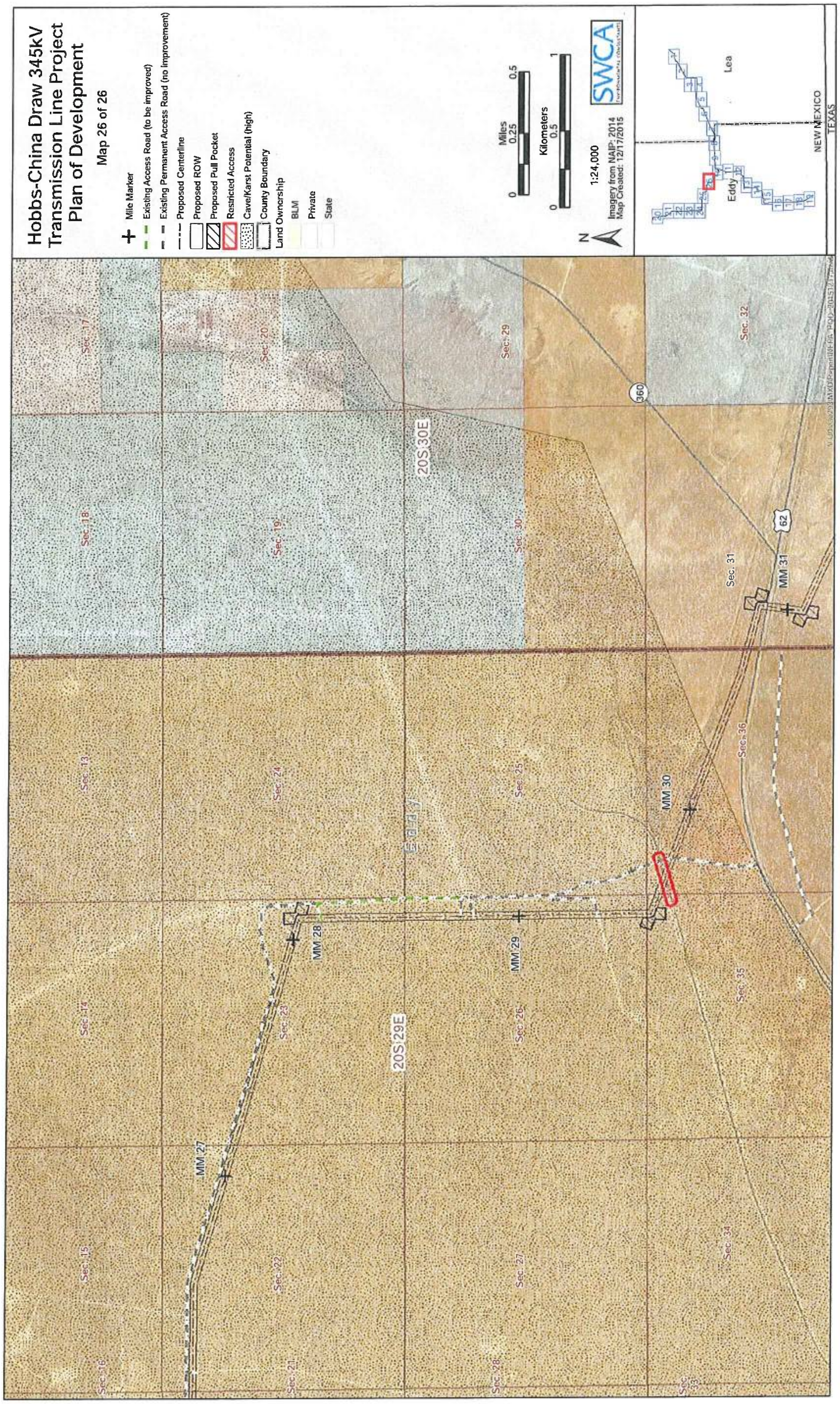
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Appendix B

Variance Plan

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CONTENTS

ATTACHMENTS

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1. INTRODUCTION

The Bureau of Land Management (BLM) will be responsible for enforcing the terms and conditions of the BLM's right-of-way grant on federal lands during the term of the grant. As the lead federal agency, the BLM will also be responsible for inspecting and monitoring preconstruction and construction activities, on federal lands, as they relate to the grant. On non-federal lands, Xcel Energy, doing business as Southwestern Public Service Company (SPS or Applicant), will be responsible for inspecting and monitoring preconstruction and construction activities of the entire Hobbs China Draw 345-kilovolt (kv) Transmission Project (Project) on all lands analyzed in the Environmental Assessment (EA), and enforcing requirements related to BLM responsibilities under the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). In addition, the Project will require adherence to any federal, state, and local permits, as well as private landowner agreements (if applicable), that include conditions to construct. The responsibility of compliance monitoring and enforcement of non-federal conditions will be determined between the Applicant and the landowner on a case-by-case basis. This variance plan (VP) describes the standard protocols for variance requests and other deviations from the approved project described in the EA and Plan of Development (POD). The VP is intended to be a controlled document and may be revised as needed throughout the construction process. Authority for implementation of this VP originates from the terms, conditions, and stipulations of the BLM's right-of-way grant, the POD, the EA, the decision document and the findings of no significant impact (FONSI).

2. VARIANCE PROCEDURES (UNFORESEEN CIRCUMSTANCES)

The intent of this section is to inform SPS, BLM, Construction Contractor(s), and other Project personnel of the variance request process to minimize potential costly construction delays. It is understood by the BLM and SPS that unforeseen circumstances will occur during construction. The need for realignments to the proposed route, access roads, and/or work areas not within the permitted Project right-of-way grant and not analyzed in the EA analysis may arise. In addition, the need to make changes to construction procedures, schedule, and/or approved mitigation measures and other specific stipulations and methods may be required. Under these or similar circumstances, a variance will need to be approved by the BLM to stay in compliance.
Variance requests will be generated by the Construction Contractor(s) and provided in writing to SPS who will then review the request. SPS will evaluate the variance request and submit it to the BLM to be processed according to the process outlined herein. The variance request form (see Attachment A) will be incorporated into the preconstruction environmental training program. The variance request form will describe the variance request in detail, provide justification and documentation for the variance (including maps and photographs), calculate the proposed permanent or temporary acreage affected, describe the original disturbance acreage analyzed in the EA, and show the difference in acreage between the proposed variance and the original disturbance. It will also describe any potentially impacted resources and identify if additional resource surveys will be required. Depending on the nature of the variance request, it may be implemented in the field as soon as the approved variance is received by SPS or the Construction Contractor(s).

2.1. Level 1 Variance: Variances Accomplished through Field Resolution

A Level 1 variance is a minor field adjustment within the approved BLM right-of-way grant that conforms to the EA and POD. A Level 1 variance must meet the following criteria:

- The area of activity or change lies within the approved right-of-way area, including temporary use areas.
- The area of activity or change was previously identified and analyzed in the EA.
- The area of activity or change does not result in an increase in disturbed acres than is estimated in the EA.
- The variance creates equal to or less impact to resource values than the original location and activity (e.g., does not involve higher density wildlife habitat than the planned site, impacts to populations of sensitive plants, or impacts to cultural sites)

A Level 1 variance request will be initiated by the Construction Contractor(s) and submitted to SPS for review. The variance request form will include all attached supporting documentation. SPS will submit the variance request package to the BLM for their review who may approve these variances in the field. However, the desired adjustments or deviations will be documented in a variance request form for inclusion in the Project record.

Examples of minor field adjustments include the following:

- Relocation of erosion-control devices (note this could also require a modification to the stormwater pollution prevention plan).
- Locating temporary fences inside authorized work areas.
- Permitting water bars to be extended, if applicable, off the area designated for the transmission line, and into native vegetation "one dozer length" (this includes providing permission for construction equipment to work outside designated work areas).
- Allowing rubber-tired vehicles to use additional designated access roads (in addition to those approved in BLM-approval documents) where improvements to the road will not be necessary. *Note*: this is not intended for authorizing additional haul roads for equipment and materials.
- Temporarily (for not more than 7 days) placing parts or other assemblies outside areas designated in the EA or POD but within the authorized Project area. This does not include any surface disturbance associated with temporary storage.

2.1.1.1. Level 1 Variance Approval or Denial

The BLM can approve or deny Level 1 variance requests in the field if the results of implementing the changes are not significant and will occur within the granted right-of-way. A Level 1 variance request can be implemented in the field as soon as it is approved by the BLM. In some cases, a verbal approval can be given and followed up with a written, signed variance document.

If a Level 1 variance is denied, the BLM will inform SPS within 24 hours. SPS may choose to resubmit the request as a Level 2 variance or discontinue pursuit of the request.

2.2. Level 2 Variance: Variances Beyond Field Resolution, Not Requiring an Amendment to the Right-of-Way Grant

Level 2 variances pertain to requests that exceed the field decision authority of the BLM and may require agency resource staff review or field examinations. These alterations generally involve Project changes that will affect an area outside of the granted work area, but within the area previously surveyed and/or analyzed for cultural resources, Section 404 of the Clean Water Act, and biological resources. Such variance requests typically require review of supplemental documents, correspondence, and records to be provided with the request. Examples include the following:

- Shifting extra workspace outside the approved construction corridor a short distance but within the area previously surveyed; here, overall disturbance type and acreage remains approximately the same, and no additional cultural or biological resources could be affected.
- Using additional extra workspace outside of the previously approved work areas (within or outside the Project or off-Project right-of-way).
- Shifting temporary workspace to previously disturbed areas.
- Allowing construction or maintenance activities to be conducted in Project areas when seasonal restrictions are in place.
- Moving proposed culvert location(s) to better accommodate natural drainages. *Note*: this may also require a modification to the stormwater pollution prevention plan.
- Providing extra work space for topsoil and spoil material storage to prevent mixing of soils.
- Moving a range fence a specified distance laterally, and permanently installing it to avoid proposed construction. *Note*: this may also require an amendment to the allotment management plan, if applicable.
- Modifying seed mixes specified in the POD, typically due to unavailability.
- Modifying an access road due to safety hazards.

Variance requests may also be submitted for minor changes that will extend beyond the previously surveyed work area and corridor for sensitive resources. In these situations, additional cultural and/or biological surveys will be required. Documentation of the surveys and other applicable correspondence will need to be submitted with the variance request. If sensitive biological resources are encountered during the additional surveys, documentation of consultation with applicable agencies must be provided with the variance request. All BLM-approved stipulations (and if applicable, the terms and conditions of the biological assessment) must be adhered to for the variance to be approved.

A Level 2 variance request will be initiated by the Construction Contractor(s) and submitted to SPS for review. The variance request form will include all attached supporting documentation. SPS will submit the variance request package to the BLM for review. After consulting with the BLM resource specialists, if necessary, the BLM will provide SPS written approval or denial (including an explanation) of the request by using the spaces provide on the form. The BLM may request additional information, or a modification of the request, before the variance can be approved. In addition, SPS will be informed if an amendment to the BLM right-of-way grant will be required.

2.2.1.1. Level 2 Variance Approval or Denial

The BLM will review the variance request form and any attachments in consultation with the appropriate BLM resource specialists. If additional information or a modification to the request is required, SPS will submit the requested information within 5 business days. The BLM will provide SPS written approval of the request by using the space provided on the form within 5 business days from receipt of a complete request.

If a Level 2 variance is denied, the BLM will provide SPS a written denial (including an explanation) of the request by using the spaces provided on the form within 5 business days from receipt of a complete request. SPS may choose to resubmit the request as a Level 3 variance request, or to discontinue pursuit of the request.

2.3. Level 3 Variance: Variances Requiring an Amendment to the Right-of-Way Grant

The BLM will assist SPS in determining whether a significant proposed change, outside the approved BLM right-of-way grant, will necessitate submittal of an amendment, or whether the change can be handled with a variance request.

If the BLM determines that a proposed construction modification involves substantial deviations from the right-of-way grant, it will require a grant amendment in accordance with 43 CFR 2807.20. A variance requiring an amendment to the right-of-way grant requires completion of an application on a Standard Form 299 and a decision by the BLM Authorized Officer. SPS will prepare the Standard Form 299 with applicable supporting documentation. On approval, the package will be submitted to the appropriate BLM Project Manager. The BLM will process the amendment application pursuant to 43 CFR 2800. The BLM may request additional information, or a modification of the request, before the amendment can be approved.

Grant amendments will be reviewed by BLM staff who will consult with other federal, state, and local agencies as needed. Grant authorization amendment approvals or denials will come directly from the BLM. Approval of the grant amendment also requires issuance of an NTP addressing the amendment, if an NTP is a requirement of the original right-of-way grant. Examples of grant amendment requests include the following:

- Route realignments or facility relocations onto BLM land not analyzed in the EA and included in the right-of-way grant.
- Certain Project-wide changes to mitigation measures or reclamation procedures.
- Expansion of the Project area defined in the right-of-way grant and POD.
- Requests affecting sites potentially eligible for the National Register of Historic Places or involving state or federally protected species or their habitat.

Attachment A

Variance Request Form

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Variance Request Form

(Note: All fields shaded in yellow are to be completed as applicable.)

Variance Request No.:

		Date Submitted to SPS:	
		Date Submitted to BLM:	
Requested by:		BLM Approval Reference No.	
Request prepared by:		**Variance Type:**	
Spread:		**Variance Sequence Number:**	

Location (Use either Station or Milepost)

Station:		To:		**Milepost:**		To:
Alignment Sheet Number:				**Tract No.:**		
Landowner:				**Other Agency Jurisdiction:**		
Current Land Use/Vegetative Cover:						

Nearby Features (Waterbody, T&E Habitat, Wetland, Cultural Resource Site [distance], etc.):

☐ Noxious Weed Area ☐ Residence (distance)
☐ T/E Species Habitat ☐ Cultural Resource Site (distance)
☐ Raptor Nest ☐ Water Well
☐ Other (Specify):

In or within 100 feet of a wetland: ☐ Yes ☐ No
In or within 100 feet of a waterbody: ☐ Yes ☐ No
Wetland or Waterbody ID:

Net acreage affected:

To be Completed by the Construction Contractor

Variance Level: ☐ Level 1 ☐ Level 2 ☐ Level 3

Variance From: ☐ Permit ☐ POD ☐ ROW Grant ☐ EA ☐ Specification ☐ Drawing ☐ Mitigation Measure ☐ Other Describe:

Detailed Description of Variance: Attachments? ☐ Yes ☐ No Photographs? ☐ Yes ☐ No

List Attachments:

Variance Justification:

For SPS Use Only

Additional Surveys Required		**Surveyed Corridor Description**	**Additional Surveys Completed**
Cultural Survey	☐ Yes ☐ No		☐ Yes ☐ No
T&E Survey	☐ Yes ☐ No		☐ Yes ☐ No

Proof of Previous Biological and Cultural Survey Clearance

Sign-off (as appropriate)	**Name (Print)**	**Approval Signature**	**Conditions (See Attached)**
SPS			☐ Yes ☐ No
BLM			☐ Yes ☐ No
Construction Contractor			☐ Yes ☐ No

For BLM Use Only				☐ Yes ☐ No	
Variance Approved:		Variance Denied:		Beyond Authority:	
Signature::					
Date:					
Stipulations:					

Variance Conditions					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					

VARIANCE REPORT FORM DEFINITIONS

CODE	TYPE
AR	Request new access road
CM	Request new or different construction
MM	Request new or different mitigation method
PM	Request permit modification
RA	Request new realignment of centerline
RR	Request re-route (outside cleared footprint)
WS	Request additional temporary workspace
CY	Request additional contractor yard
BLM	BLM NEPA requirement
AG	Agency request

Appendix C

Heronry Location and Design

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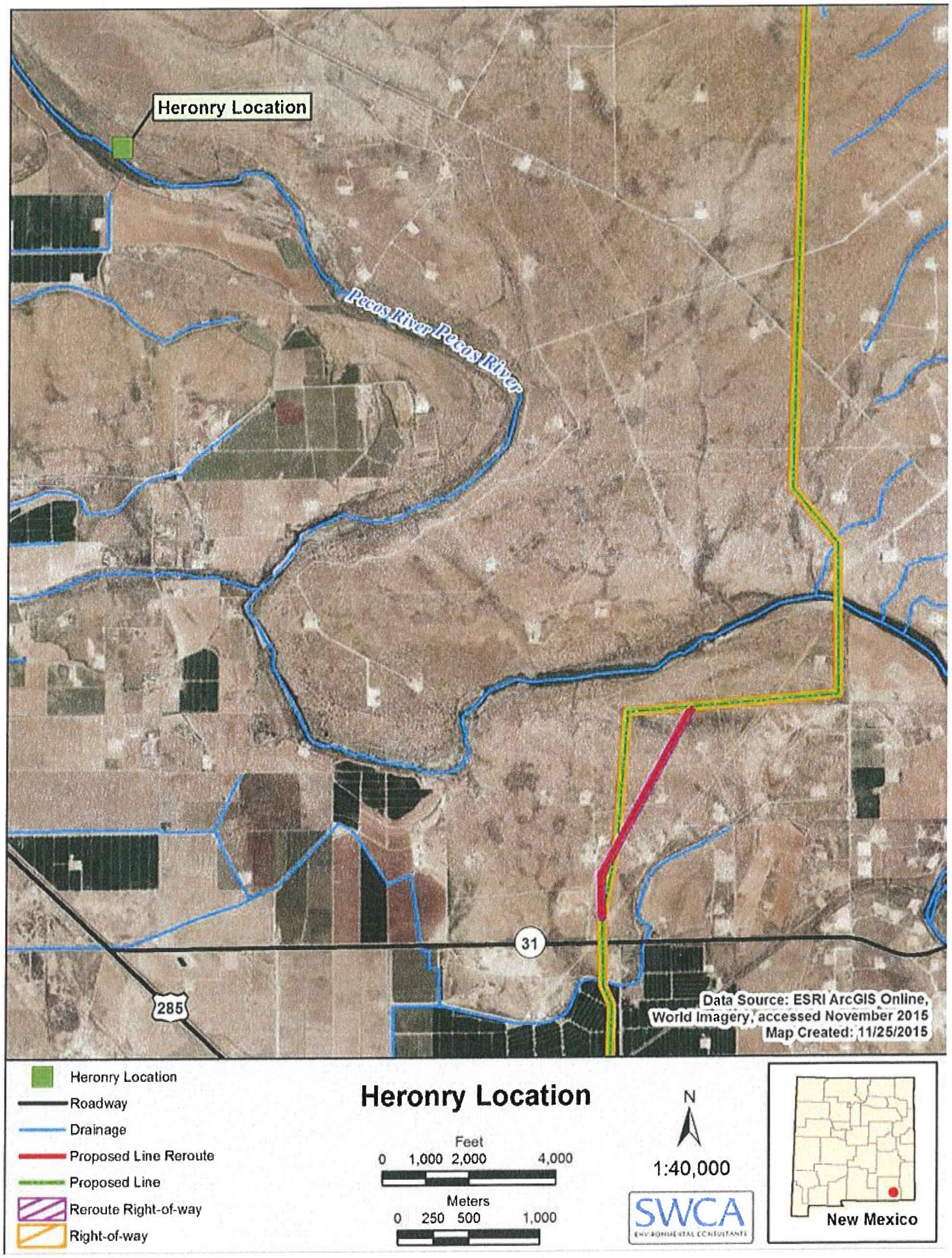
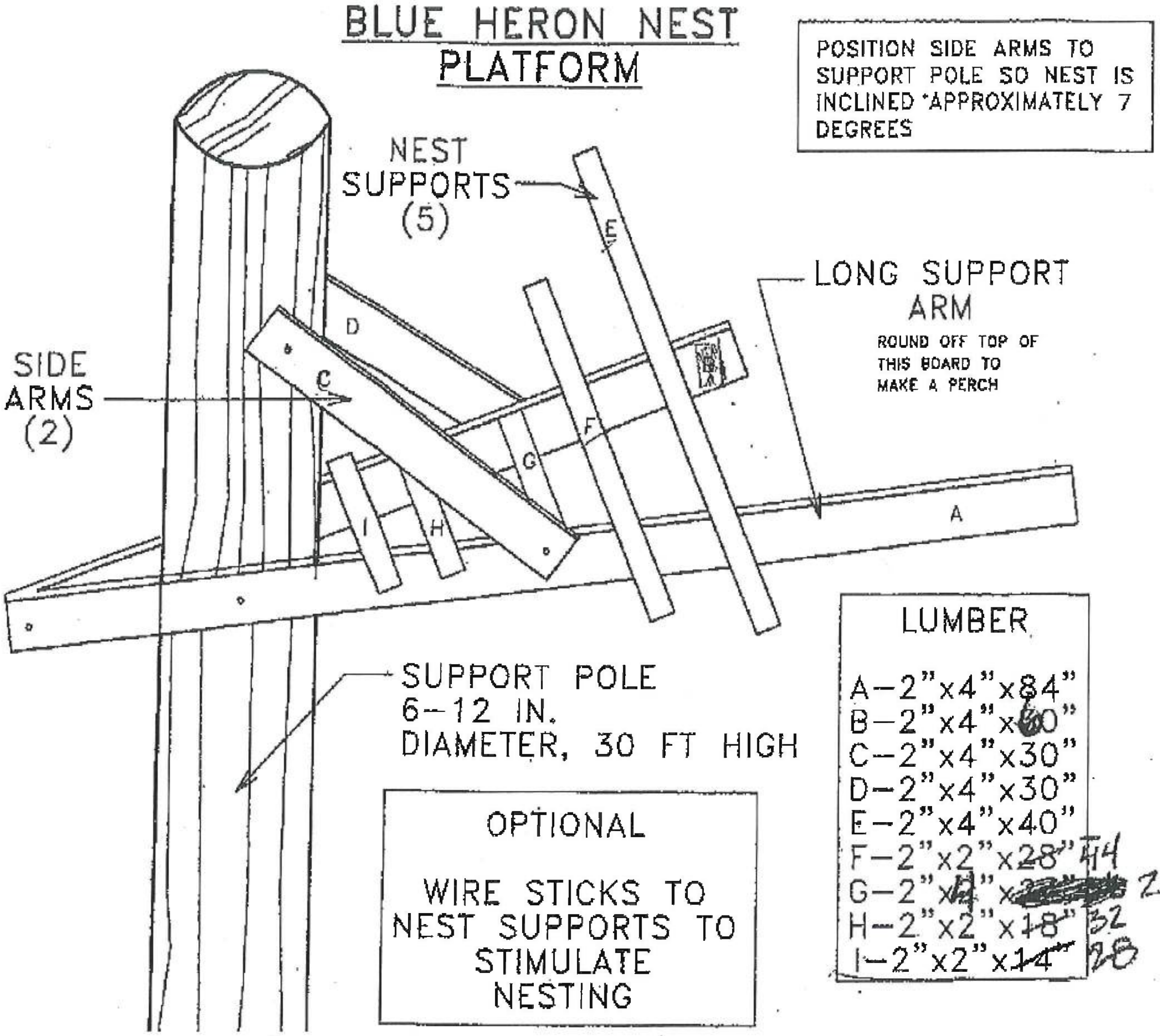

Heronry Location
Pecos River
Pecos River
31
285
Data Source: ESRI ArcGIS Online,
World Imagery, accessed November 2015
Map Created: 11/25/2015
Heronry Location
Roadway
Drainage
Proposed Line Reroute
Proposed Line
Reroute Right-of-way
Right-of-way
Heronry Location
Feet
0 1,000 2,000 4,000
Meters
0 250 500 1,000
N
1:40,000
SWCA
New Mexico



NESTING PLATFORM QUANTITIES

3 - TRIPLE PLATFORMS - MATERIAL & INSTALLATION
3 - DOUBLE PLATFORMS - MATERIAL & INSTALLATION
3 - SINGLE PLATFORMS - MATERIAL & INSTALLATION

3 - TRIPLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL
3 - DOUBLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL
3 - SINGLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL COMMITMENTS

CN G2112

United States Department of the Interior

Bureau of Land Management
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220-6292

In Reply Refer to:
NM-134336
2800(NMP0220)

Southwestern Public Service Company
Attn: Nisha Patel
600 S. Tyler, 18th Floor
Amarillo, TX 79101

Re: Right-of-Way
NM-134336
KIOWA SUBSTATION

Dear Nisha Patel:

On 3/26/2015, you filed a right-of-way application for a substation on Federal surface.

Enclosed are two copies of an unsigned right-of-way grant for your ROW FLPMA site. Please review the document and if it meets with your approval, sign and date both copies and return to the addresses shown above. Upon our receipt of the signed documents and the fees discussed below, we will issue the right-of-way grant, absent any other unresolved issues.

You must pay a fee to the BLM for the costs we will incur in monitoring the construction and operation of your authorized use. These fees are categorized according to the number of work hours necessary to monitor your grant, and are not refundable. We anticipate your use will require a Monitoring Category 4, the fees of which are included in the rental options below.

Rent for use of public lands must be paid in advance of such use and prior to issuance of the right-of-way grant. Rent for a linear right-of-way is based on a schedule that is adjusted annually based on the Implicit Price Deflator GNP (IPD), and inflation index. You may obtain a copy of the rent schedule from this office.

You have the option of paying the rent in 10-year periods, or for the entire term (approx. 30 years) of the right-of-way grant.

10-Year Rental Option		30-Year Rental Option	
Nine Year Rental	$13,500.00	**Twenty-Nine Year Rental**	$43,500.00
Partial Year Amount	$1,250.00	**Partial Year Amount**	$1,250.00
Monitoring Fee	$1,156.00	**Monitoring Fee**	$1,156.00
TOTAL AMOUNT DUE:	$15,906.00	TOTAL AMOUNT DUE:	$45,906.00

Please be aware that you may not conduct any activities related to your right-of-way project on public land until you have received an authorized grant from this office. If you have any questions, please contact Tessa Cisneros at (575)234-5972.

Sincerely,

Stephen Caffey
For George MacDonell
Field Manager

2-attachments
R/W Grant

ROW Monitoring Fee Category Determination Decision For FLPMA and MLA Rights-of-Way

Application Serial Number:	NM-134336
Applicant:	Southwestern Public Service Company
Agent:	Nisha Patel
Address:	600 S. Tyler, 18th Floor
	Amarillo, TX 79101
Application for:	ROW FLPMA site
Location:	T020S, R029E, Sec 010

Personnel Needed for Monitoring

Realty Specialist	16
Cultural/Paleontological	5
T and E Species	5
Wildlife/Fisheries	5
Air/Water/Soils	
Recreation/Visual	
Cave/Karst	
Range	
Fluids/Minerals	
Admin/Contracting	3
Manager	3
Other	
Other	
Total Hours:	37

Monitoring Fee Schedule for FLPMA and MLA Rights-of-Way

Processing and Monitoring Category	Federal Work Hours Involved	Processing and Monitoring fee per application as of January 1, 2014. To be adjusted annualy for changes in the IDP-GDP.
1. Applications for new grants, assignments, renewals, and amendments to existing grants.	Estimated Federal work hours are >1<=8	$122
2. Applications for new grants, assignments, renewals, and amendments to existing grants.	Estimated Federal work hours are >8<=24	$428
3. Applications for new grants, assignments, renewals, and amendments to existing grants.	Estimated Federal work hours are >24<=36.	$806
4. Applications for new grants, assignments, renewals, and amedments to existing grants.	Estimated Federal work hours are >36<=50.	$1,156
5. Master Agreements	Varies.	As Specified in the Agreement
6. Applications for new grants, assignments, renewals, and amendments to existing grants.	Estimated Federal work hours are >50.	Full Reasonable Costs (FLPMA) Full Actual Costs (MLA)

The appropriate Monitoring Category for this application is Category 4. The Monitoring fee for this Category is $1156.00. Monitoring fees for Categories 1-4 are non-refundable. See enclosed table for Category definitions and fee schedule.

Prepared By: Tessa Cisneros
Realty Specialist Date

Approved By:
Authorized Officer Date

Appeal Information

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 2801.10 or 43 CFR 2881.10 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied,

(2) The likelihood of the appellant's success on the merits,

(3) The likelihood of immediate and irreparable harm if the stay is not granted, and

(4) Whether the public interest favors granting the stay.

Enclosure
BLM Form 1842-1

Form 2800-14
(August 1985)

United States Department of the Interior
Bureau of Land Management
RIGHT-OF-WAY GRANT
Serial Number:NM-134336
Project Name: KIOWA SUBSTATION

Issuing Office
Carlsbad Field Office

1. A right-of-way is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of Oct. 21, 1976 (90 Sta. 2776; 43 U.S.C. 1761).

APPROVED
MAR 02 2016
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

2. Nature of Interest:

a. By this instrument, the holder:

Southwestern Public Service Company
600 S. Tyler, 18th Floor
Amarillo, TX 79101

receives a right to construct, operate, maintain, and terminate a 26.52 acres substation and access road across public lands in Eddy County, New Mexico described as follows:

T.21 S.,R.29 E.,NMPM
sec. 03: S½SE¼;
sec. 10: N½NE¼.

b. The right-of-way or permit area granted herein is 26.52 acres, more or less.

c. This instrument shall terminate on 12-31-2045 unless prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Not withstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.

c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter, not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.

d. The stipulations, plans, maps, or designs set forth in Exhibit A, B (map) and POD, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

f. The holder shall perform all operations in a good and workman like manner so as to ensure protection of the environment and the health and safety of the public.

g. In the event that the public land underlying the right-of-way (ROW) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

IN WITNESS THEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Edan L. Lindenfelser	James A. Amos
(Signature of Holder)	(Signature of Authorized Officer)
Manager Siting & Land Right	For Field Manager, Carlsbad Field Office
(Title)	(Title)
2-16-16	3-2-16
(Date)	(Effective Date of Grant)

EXHIBIT A

NM-134336 Kiowa Substation

STIPULATIONS FOR FLPMA SITES

A copy of the grant an attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this right-of-way.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, *etc.*) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site any pollutant should be discharged from site facilities, or from containers, or vehicles impacting public lands, the control and total removal, disposal, and cleanup of such pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting public lands, or to repair all damages to public lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, and equipment.

NM-134336
Exhibit A

6. The holder shall post a sign designating the BLM serial number assigned to this right-of-way grant in a permanent, conspicuous location on the site where the sign will be visible from the entry to the site. This sign will be maintained in a legible condition for the term of the right-of-way.

7. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

8. Should the holder require a base of mineral material, a sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office.

9. The area will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle, and saltcedar.

Special Stipulations:

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:
Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hobbs – China Draw 345kV Transmission Line Project

NEPA Plan of Development

Submitted to:

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pecos District
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220

Submitted by:

XCEL ENERGY/SOUTHWESTERN PUBLIC SERVICE COMPANY
600 South Tyler Street
Amarillo, Texas 79101

December 2015

Xcel Energy℠

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

AC	alternating current
BLM	Bureau of Land Management
CFO	Carlsbad Field Office
CFR	Code of Federal Regulations
EA	environmental analysis
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Management Policy Act
HPILS	High Priority Incremental Load Study
ISO	independent system operator
kV	kilovolt(s)
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NTC	Notice to Construct
OPGW	optical ground wire
POD	Plan of Development
ReMI	refraction microtremor
ROW	right-of-way
RTO	regional transmission operators
SHPO	State Historic Preservation Officer
SLO	State Land Office
SPCC	Spill Prevention, Containment, and Countermeasures Plan
SPP	Southwest Power Pool
SPS	Southwestern Public Service Company

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1. INTRODUCTION

Southwestern Public Service Company (SPS), a wholly owned subsidiary of Xcel Energy Inc., has submitted four Applications for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for right-of-way (ROW) grants needed to construct, operate, and maintain two 345-kilovolt (kV) transmission lines, a new substation (Kiowa Substation), and four substation expansions (Hobbs Generation and Eddy County Substation) in southeast New Mexico, herein referred to as the "project" or "Proposed Action." Xcel Energy is a registered holding company that owns several electric and natural gas utility operating companies. The project crosses BLM CFO–managed surface lands, New Mexico State Land Office (SLO) lands, and private lands (Figure 1.1). The BLM is serving as the lead federal agency for the undertaking.

This National Environmental Policy Act (NEPA) Plan of Development (POD) updates the Preliminary POD submitted by Xcel Energy as part of its original application in 2014. It provides an overview of the Hobbs to China Draw 345-kV Transmission Line Project based on information presented in an environmental assessment prepared for the project to meet the BLM's requirements under NEPA. It includes a general description of the design, construction, operation, reclamation, and maintenance of the Project. It also provides detailed information on the proposed Project facilities, procedures, and measures that SPS, as the Proponent, will implement during construction, operation, and maintenance of the Project. A mapbook depicting the project and the known environmentally sensitive areas and associated restrictions is included as Appendix A. A variance plan is provided as Appendix B, and a map of the heronry location and the nest platform design and specifications is provided in Appendix C. SPS would construct and operate the Project in conformity with this POD, which will be included as part of the ROW grant design criteria. The design, construction, operation, and maintenance of the Project will meet or exceed the requirements of all applicable regulations.

1.1. Southwestern Public Service Company

SPS is a regulated utility that generates purchases, transmits, distributes, and sells electricity in Texas and New Mexico. SPS provides service to more than 380,000 retail customers, including residential, commercial, industrial, and public customers. As a point of clarification, the utility company name is "branded" as Xcel Energy; however, the legal owner and operator of the utility facilities in New Mexico is SPS. All utility facilities and related land rights, including fee property, easements, permits, etc., are owned by, operated by, and held in the name of Southwestern Public Service Company, a New Mexico Corporation.

1.2. Project Overview

SPS proposes to construct, operate, and maintain approximately 122 miles of single-circuit alternating current (AC), 345kV overhead electric transmission lines from the existing Hobbs Generation Substation in Lea County, New Mexico, to the existing China Draw Substation in Eddy County, New Mexico, which is approximately 11 miles southwest of Malaga, New Mexico. The project would also construct a line to connect the proposed Kiowa Substation in Eddy County, New Mexico, to the existing Eddy County Substation (Figure 1.1).

The Project will require a ROW width of 150 feet. A permanent access road (patrol road) will be located down the ROW to the maximum extent possible. Temporary work areas will mainly be located in the ROW but extend outside in certain locations to ensure safe construction of facilities at structure locations, pulling and tensioning sites at angle structures, and areas of sloped or difficult terrain (see Section 2.1.3). Construction of the Project will take approximately 24 months to complete and will consist of the following permanent facilities:

- A single-circuit 345kV overhead transmission line between the Hobbs Generation Substation, Kiowa Substation, North Loving Substation, and China Draw Substation
- A single-circuit 345kV overhead transmission line between the Kiowa substation and the Eddy County Substation
- An optical ground wire (OPGW) communication system associated with the transmission line
- Access roads to the transmission line structures
- A new 12.5-acre Kiowa Substation adjacent to the existing Potash Junction Substation
- New substation equipment (expansion) at each aforementioned substation

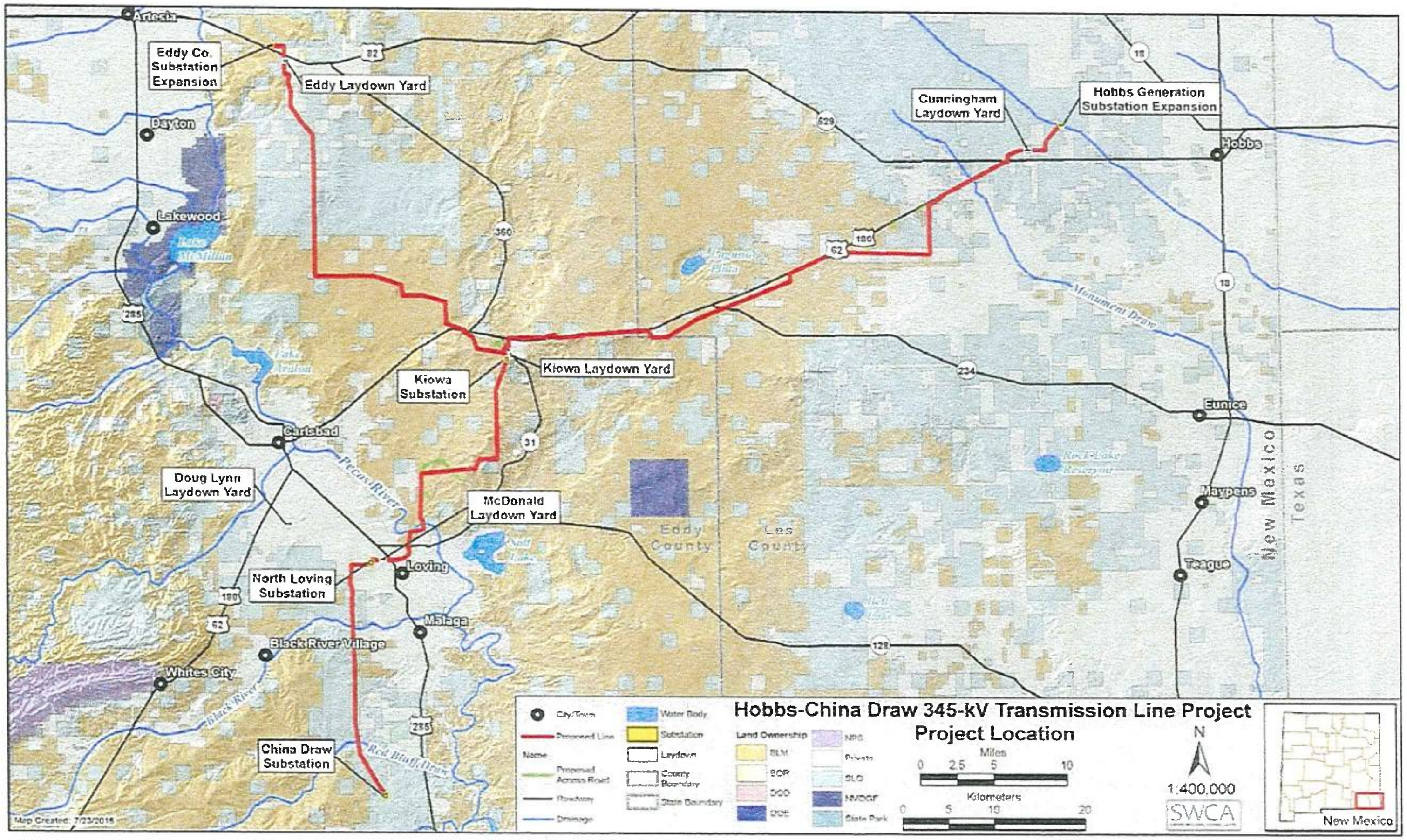

Figure 1.1. Project vicinity map.

1.3. Need for the Project

As the Proponent, Xcel Energy is seeking an ROW grant on public lands managed by the BLM in southeast New Mexico. Additional ROWs are also being sought across private and New Mexico state lands. The BLM's purpose is to provide Xcel Energy with the legal use of and access across BLM-managed public lands by granting an ROW. As stated in 43 Code of Federal Regulations (CFR) Part 2801.9, a BLM ROW grant is required for use of public lands for "systems or facilities over, under, on, or through public lands," including transmission lines. The BLM's mandate for multiple uses of public lands includes development of energy transmission in a manner that conserves the multitude of other resources found on public lands. The need for the BLM's action is established by the Federal Land Policy and Management Act (FLPMA) and is to respond to an application for an ROW grant by evaluating the proponent's application for use of federal land for construction of a 345kv transmission line.

The BLM will consider the application in accordance with 43 CFR 2800 (Rights-of-way under the Federal Land Policy and Management Act) and the Energy Policy Act of 2005, and will decide whether to issue an ROW grant and, if so, under what terms and conditions.

Xcel Energy serves its customers in New Mexico through the electrical system of its subsidiary, SPS, which is a member of the Southwest Power Pool (SPP), a regional organization that combines the electrical systems of its members to provide reliable, cost-efficient, and equitable electrical service to those member's customers within its service territory. The SPP is one of nine independent system operators/regional transmission organizations (ISOs/RTOs), and one of eight North American Electric Reliability Corporation (NERC) Regional Entities. SPP is mandated by the FERC to ensure reliable supplies of power, adequate transmission infrastructure, and competitive wholesale prices of electricity. ISOs/RTOs are the "air traffic controllers" of the electric power grid. ISOs/RTOs do not own the power grid; they independently operate the grid minute-by-minute to ensure that power gets to customers and to eliminate power shortages. The SPP provides the following services to members in nine states: Arkansas, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, and Texas.[1]

Within its service territory, SPS has recently experienced a substantial increase in electrical demand in southeast New Mexico where development of oil and gas fields has grown tremendously. To meet this urgent demand, SPP conducted several iterations of an in-depth study finalized in May 2014 and referred to as the *High Priority Incremental Load Study* (HPILS). The purpose of the study was to evaluate "transmission needs resulting from significant incremental load growth expectations in certain parts of SPP."[2] In particular, this study responded to "concerns about oil and gas shale play developments, and other future load additions in the region that had not been accounted for in previous planning efforts." In addition to increased electrical demand from oil and gas development, other previously interruptible loads became more predictable and "firm," thereby exacerbating SPP's need to update its load growth assumptions. Ultimately, the study "formed the basis for the development of transmission expansion needs required to address the recent load developments" and the catalyst for SPS transmission expansion plans in southeast New Mexico.[3]

Using the results from the study, SPP issued numerous orders to its members in the form of Notices to Construct (NTCs). These included NTCs to SPS to construct a number of new high-voltage transmission lines in southeast New Mexico. Some of these NTCs have been combined as part of SPS Proposed Action. Therefore, this POD pertains to the components listed below under Section 2.1. The Project cost is estimated to be $128 million, has a construction period of approximately 24 months, and as part of the NTCs, SPP directed SPS to have all of these system additions in service by June 1, 2018.

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[1] Southwestern Power Pool. 2014. About SPP. Available at: http://www.spp.org/section.asp?pageid=1. Accessed August 8, 2014.
[2] Southwest Power Pool. 2014. High Incremental Load Study. April 02, 2014. HPILS Task Force.
[3] Southwest Power Pool. 2014. High Incremental Load Study, April 02, 2014. HPILS Task Force.

1.4. Relationship to Statutes, Regulations, or Other Plans

Various federal and state agencies regulate different aspects of electric power transmission projects. Table 1.1 lists the environmental permits and approvals that could be required for the proposed project.

Table 1.1. Potential Permits, Approvals, and Clearances Needed for Construction, Operation, and Maintenance of Facilities

Permit/Notification	Issuing Agency	Status
	Federal Permit, Approval, or Clearance	
Right-of-way (ROW) grant	Bureau of Land Management	Subject of the SF-299 and EA referenced in this POD; being processed under BLM ROW serial numbers NM-133171, NM-134370, NM-134336 and NM-077768.
Clearance under Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service	Surveys were conducted; findings are described in a Biological Assessment submitted under separate cover in Section 3.6 of the EA associated with this POD (SWCA 2015a)
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project; findings are described in Section 3.4 of the EA associated with this POD
Clean Water Act Section 402 General Construction (Stormwater) Permit	Environmental Protection Agency (EPA)	The permit would be obtained prior to construction under the EPA's Construction General Permit
	State Permit, Approval, or Clearance	
ROW grant	State Land Office	Subject of the EA referenced in this POD
Certificate of Public Convenience and Necessity	New Mexico Public Regulation Commission	Application for approval of location of the transmission lines and substations is underway
Tribal consultation to determine if the proposed project would have any impact on receptors of cultural importance	Native American tribes	Findings are described in Section 3.7 of the EA referenced in this POD and the associated cultural resources reports
Clearance under Section 106 of the National Historic Preservation Act	New Mexico State Historic Preservation District	Cultural resources surveys were conducted; findings are described in Section 3.7 of the EA referenced in this POD and the associated cultural resources reports
Clean Water Act Section 401 Permit	New Mexico Environment Department	Field investigations have been conducted to identify potential waters of the U.S. that would be impacted by the proposed project; findings are described in Section 3.4 of the EA referenced in this POD
Collection permit for the displacement or removal of any state endangered plant species	New Mexico Energy, Minerals, and Natural Resources Department Forestry Division	Biological resource surveys were conducted; findings are described in Section 3.6 of the EA referenced in this POD and in the biological assessment (SWCA 2015a)
Access permit or public highway utility accommodation permit	New Mexico Department of Transportation (NMDOT)	Discussions with the NMDOT regarding the location of the proposed project and access locations are underway

2. PROPOSED ACTION

2.1. Project Components

SPS proposes to construct, operate, and maintain the following SPP projects:

- A 47-mile-long 345kV transmission line between the Hobbs Generation Station and the proposed Kiowa Substation
- A 20-mile-long 345kV transmission line between the Kiowa Substation and an expanded North Loving Substation
- An 18-mile-long 345kV transmission line North Loving Substation to the proposed China Draw Substation
- The 33-mile-long Eddy to Kiowa 345-kV Transmission Line
- Expand the existing Hobbs Generation, North Loving, China Draw, and Eddy County substations
- A new Kiowa Substation

Acreage disturbances associated with the Proposed Action by landowner type are presented in Table 2.1.

Table 2.1. Acreages and Miles of Proposed Right-of-Way and Surface Disturbance by Landownership

Project Component	Land-ownership	Lengths (miles)	Proposed Total Disturbance (acres)	Proposed BLM Disturbance (acres)
Hobbs to China Draw 345kV transmission line (150-foot ROW)	BLM	45	803	803
	SLO	30	549	–
	Private	13	241	–
	Subtotal	**88**	**1,593**	**–**
Eddy County to Kiowa 345kV transmission line (150-foot ROW)	BLM	19	347	347
	SLO	9	158	–
	Private	6	109	–
	Subtotal	**34**	**614**	**–**
New substation and substation expansions	BLM	–	34	34
	SLO	–	5	–
	Private	–	13	–
	Subtotal	**0**	**52**	**–**
Additional temporary workspace (including laydown yards and pull pockets)	BLM	–	76	76
	SLO	–	78	–
	Private	–	136	–
	Subtotal	**0**	**290**	**–**
Access roads (60-foot ROW)	BLM	9	67	67
	SLO	7	47	–
	Private	4	24	–
	Subtotal	**20**	**138**	**–**
Subtotal (acres)			**2,687**	**1,327**
Overlap of project components (acres)			**-26**	**-3**
Total proposed disturbance (acres)			***2,661***	***1,324***

Notes: BLM = Bureau of Land Management; SLO = State Land Office

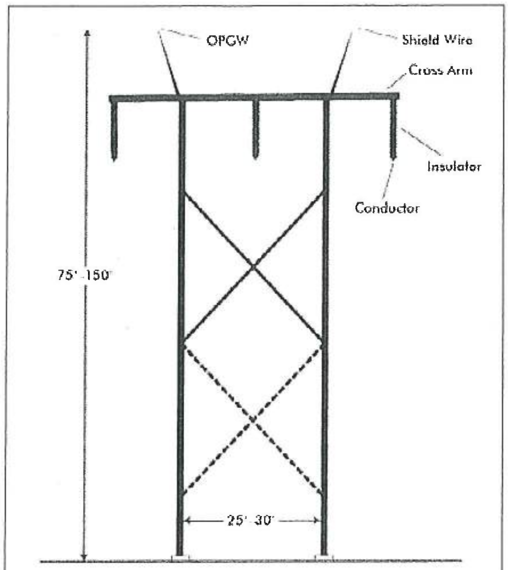
2.1.1. Transmission Lines

The 345kV overhead power lines would require a 150-foot-wide ROW throughout the proposed alignments, except in select areas where sensitive resources are actively being avoided through narrowing the ROW, or in select locations where the height of structures are taller to span avoidance areas, requiring a wider ROW between structures. The overhead transmission lines would be supported by either H-frame, three-pole, or monopole structures (Figure 2.1–Figure 2.3). In rural areas, the most common structure would be a single-circuit, tubular steel pole H-frame at tangent locations. Where the line terminates or turns at an angle, a single-circuit three-pole tubular steel structure would be used. Monopole structures would be used as warranted by land use constraints and transmission line design requirements; monopoles would be least used of the three structure types. All transmission structures would be made of self-weathering steel. Substation structures would be made of galvanized, or dull galvanized steel. The top of the structures would be strung with 3/8-inch extra-high-strength shield wire on one side (for protection from lightning) and optical ground wire for communication purposes on the other side.

The average structure heights would vary depending on clearance, topographic conditions, and line design requirements (Table 2.2). The typical structures would range in height between 100 to 150 feet with a few structures that may be as tall as 175 feet. Typical spans between structures would range from 800 to 1,200 feet or four to six structures per mile. In some situations, longer spans may be necessary, which can reduce ground clearances and require additional vegetation clearing to maintain appropriate electrical clearances. In such instances, taller structures and a wider ROW width may be necessary to maintain clearance for "blowout" conditions. During final engineering, conductor clearances may be increased in certain locations to account for site-specific conditions and for safe operation.

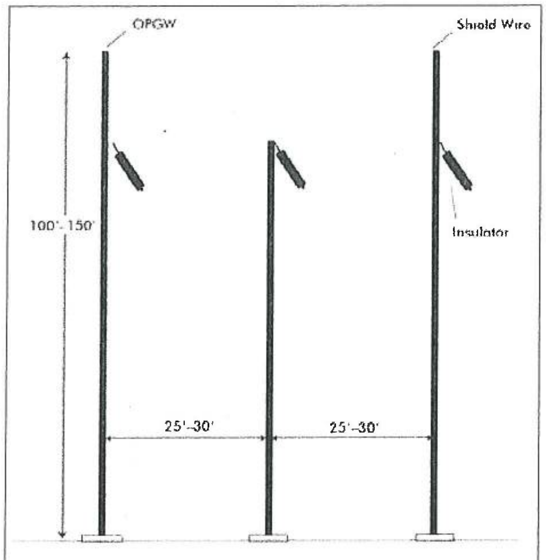
Table 2.2. Summary of Major Features for 345-kV Overhead Power Lines

Feature	Description
345kV line length	120 miles
Types of structures	Tangent = H-frame structures Angle/dead-end = three-pole structures Monopole structures as needed
Typical structure height	100–150 feet
Structure foundation area	30–60 square feet for H-frame structures, 75–150 square feet for three-pole structures, and 15–40 square feet for monopole structures
Span length	Typically 800–1,200 feet
Structures per mile	4–6
Right-of-way width	150 feet



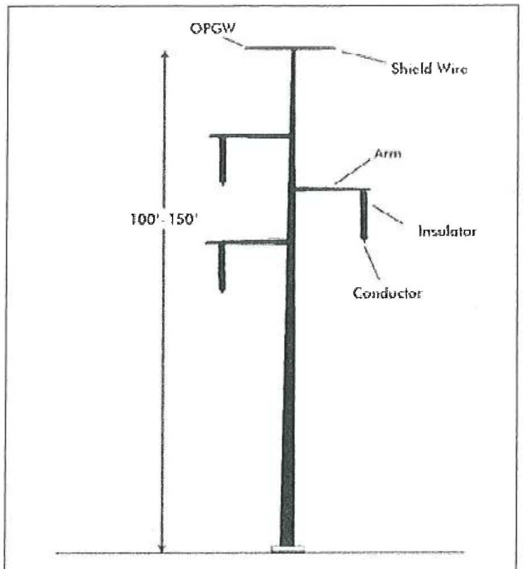
Note Dimensions are approximate and drawings are not to scale

Figure 2.1. Basic H-frame structure design.



Note: Dimensions are approximate and drawings are not to scale

Figure 2.2. Basic three-pole structure design.



Note Dimensions are approximate and drawings are not to scale

Figure 2.3. Basic monopole structure design.

2.1.2. Substation Details

One new substation would be built and four other substations would be expanded to accommodate the proposed project. The proposed Kiowa Substation would be constructed on approximately 27 acres of BLM land as part of the Proposed Action. The existing Hobbs Generation Substation would be expanded on private lands by 14 acres. The existing North Loving and China Draw Substations would be expanded on private and SLO lands, respectively. The existing Eddy County Substation would be expanded on BLM-managed lands by 7 acres. Table 2.3 provides the proposed acreage for each substation.

Table 2.3. Substation Details

Substation Name	Land Ownership	Proposed Action	Proposed Size Expansion (Acres)
Hobbs Generation Substation	Private	Expand	8
Kiowa Substation (new construction)	BLM	New	27
North Loving Substation	Private	Expand	5
China Draw Substation	SLO	Expand	5
Eddy County Substation	BLM	Expand	7
		Total	**52**

2.1.3. Additional Temporary Workspace

Temporary work areas, including pull pockets and laydown yards, would be required to construct the project. The pull pockets would extend outside the permanent 150-foot ROW to ensure safe construction of structures for pulling and tensioning sites at angled structure locations. Each pull pocket would be approximately 150 × 300–400 feet, extending outward from the centerline in both directions of angles greater than 30 degrees and/or approximately every 3 miles. Details on pull pockets are provided in Table 2.4.

Table 2.4. Pull Pockets Details

Number South to North	Land Status	Acres
	Hobbs to China Draw	
1	Private	2.53
2	State	2.26
	Private	0.02
3	State	2.84
4	State	2.74
5	Private	0.14
5	State	2.63
6	State	1.45
	Private	1.25
7	Private	2.84
8	BLM	1.70
9	BLM	2.77
10	BLM	2.78
11	BLM	1.97
12	BLM	2.67
13	BLM	2.71
14	BLM	2.70
15	BLM	2.75
16	BLM	2.84
17	BLM	2.66
18	BLM	2.78
19	BLM	2.13
	State	0.71
20	BLM	2.74
21	BLM	2.69
22	BLM	2.83
23	BLM	2.35
24	BLM	2.27
	State	0.02
25	BLM	2.19
25	Private	0.64
26	BLM	2.64
27	BLM	1.89
28	Private	2.58
29	Private	1.91
30	Private	2.83
31	Private	2.84

Table 2.4. Pull Pockets Details

Number South to North	Land Status	Acres
32	Private	2.84
33	State	2.76
34	State	2.66
35	State	2.84
	Total Hobbs to China Draw	**91.39**
	Eddy to Kiowa	
1	State	2.84
2	State	1.36
	Private	1.38
3	Private	2.74
4	Private	2.32
5	Private	2.11
6	State	2.34
7	BLM	2.64
	Private	0.20
8	BLM	2.72
9	BLM	2.82
10	BLM	2.79
11	BLM	2.76
12	BLM	2.82
13	BLM	2.78
14	BLM	2.43
15	BLM	2.68
16	BLM	1.80
	Total Eddy to Kiowa	**41.53**
	Grand Total	***132.92***

Also proposed are five temporary laydown yards for the staging of materials and equipment and assembly of structures as needed. The laydown yards would require a total of approximately 158 acres of private and SLO lands. The temporary laydown yards would be located close to existing highways or roads within the project area. They would be used to park vehicles, assemble crews, and collect trash for off-site disposal, etc. The laydown yards may also contain a temporary portable construction office trailer, bathroom, and electric power. For this project, the laydown yards either have electrical service already or are located near existing distribution lines from which new service could be attained. The exact alignments of any necessary distribution lines have not been determined at this point. If acquiring new electrical service is impractical, then the laydown yards could use diesel-operated generators. Table 2.5 lists the temporary laydown yards needed to construct the proposed project.

Table 2.5. Laydown Yards

Name	Land Status	Dimensions (north-south)	Acres
Eddy laydown yard	Private	1,167 × 1,112 feet	29.8
Kiowa laydown yard	Private	1,477 × 1,155 feet	19.6
Cunningham laydown yard	SLO	1,208 × 1,843 feet	50.7
Doug Lynn laydown yard	Private	605 × 2,085 feet	29.0
McDonald laydown yard	Private	718 × 1,729 feet	28.5
		Total	***157.6***

2.1.4. Access Roads

Access roads would be needed to facilitate both construction and regular inspection and maintenance activities. Existing roads would be used to access the ROW and individual structures to the maximum extent practical, but in some cases new access roads would need to be developed or existing roads would need to be improved to accommodate construction vehicles. In some cases, the ROW or individual structures may be accessed by constructing short spur roads from existing access roads. Access roads would be temporarily constructed up to 60 feet in width during construction and reduced through reclamation to resemble a two-track road for long-term operation and maintenance (to be located within the ROW to the maximum extent possible) (Figure 2.4).

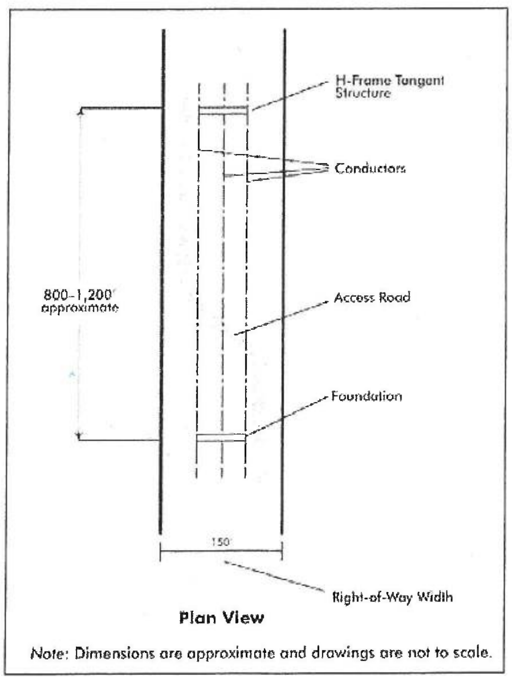


Figure 2.4. Typical access road schematic.

Four types of access to the ROW would be used as described here and listed in Tables 2.6 and 2.7 (separated between access resulting in new disturbance versus access that would not result in new disturbance).

1. New access road (outside ROW): This type of road would include areas that do not have existing access and require new permanent access during construction and operations. This access would typically have a 60-foot-wide ROW during construction and be reclaimed to 30-feet width of permanent traveled surface width. The travel surface road base would be compacted to provide a smooth, uniform surface. An example application of this type of road would be in an area where there are no existing roads available for access to proposed structures, new access cannot be achieved by clear and cut methods, and permanent access would be needed for operation and maintenance. This access type could include cuts in steep slopes and/or soil removal.
2. New access road (within ROW): This type would be contained within the ROW and have an access road up to 60 feet wide constructed between structures following a "least disturbance" path and avoiding straight lines where practical. This road would be fully reclaimed following construction for the majority of the route, and as maintenance vehicles access the ROW over time, it would begin to resemble a two-track in the long term. In some places, it would be surfaced with caliche to deter vehicles from veering off the designated path.
3. Existing access road (to be improved): This category would require widening or blading inside and/or outside the existing roadway. This access road type pertains to access that must be improved to function as permanent access road. An example of this type of road would be an existing 8-foot-wide road (with ruts or a two-track road), improved to meet road surface standards, that is identified as a route in the BLM Transportation Plan, or identified as a county road. The standard for traveled surface road width is 14 feet plus an additional 1 foot on fill slopes to accommodate sloughing. When fills are over 6 feet high at shoulder, 2 feet would be added to the road width.
4. Existing permanent access road (no improvement): This type includes paved highways and other developed roadways, including well-traversed and established dirt roadways (e.g., a well-graded 14-foot-wide or wider road surface with a road base in good condition), which would not be expected to be affected by inclement weather or degradation due to the construction, operation, and maintenance activities. These types of roads are typically maintained by entities other than the applicant. SPS would be a named user on these BLM, SLO, and private roads for the duration of the project (see Table 2.7).

Table 2.6. Proposed New Access Roads and Roads to be Improved

Type	Landownership	Miles	Acres of Disturbance
1. New access road (outside ROW)	BLM	0.5	3.5
	SLO	0.5	3.6
	Private	0.1	0.5
	Subtotal	**1.1**	**7.6**
2. New access road (within ROW)	BLM	0.0	0
	SLO	0.0	0
	Private	0.0	0
	Subtotal	**0.0**	**0***
3. Existing access road (to be improved)	BLM	8.6	62.9
	SLO	6.0	43.8
	Private	3.2	23.2
	Subtotal	**17.8**	**129.9**
	Total	***18.9***	***137.5***

**Disturbance from access within the ROW is already accounted for as part of transmission line disturbance and is therefore not repeated here.*

Table 2.7. Existing Access Roads Utilized with No Improvements

Type	Land Ownership	Miles	Acres of Disturbance
4. Existing permanent access road – (no improvement)	BLM	51	0
	SLO	34	0
	Private	17	0
	Total	***102***	***0***

2.2. Induced Currents

AC transmission lines can potentially induce currents on nearby metallic structures such as railroads, pipelines, fences, or similar facilities. Standard design and construction practices will be used to minimize this effect, which is further explained in Section 3. This condition can occur during regular operations, but more often happens when faults (abnormal electrical currents, such as a "short-circuit") occur, which sometimes results in electrical current flowing from the structure and into the ground. Several factors contribute to the severity of the effects, including the proximity, alignment, and composition of adjacent facilities as well as the amount of current being conducted and the ground's inherent resistivity.

Grounding of existing metallic facilities outside the ROW may be necessary, contingent upon agreement with the appropriate responsible party. Additional studies would need to be performed on a case-by-case basis to determine the appropriate method to mitigate this potential. For pipelines that parallel the Project, installation of gradient control wires, gradient control mats, or cathodic protection may be needed.

SPS seeks to minimize the potential for induced currents by providing a minimum offset from pipelines that parallel the alignment. In these cases, a minimum offset of 100 feet from the outside edge of the structures to the outside edge of the pipeline will be requested. A larger offset may be required in some circumstances; this will be evaluated on a case-by-case basis once adequate information is collected and can be assessed. Design of the Project's characteristics will progress as more information is gathered through landowner and agency coordination, field reviews, and resource studies. The construction contractor will be responsible to complete the detailed design phase of the Project based upon the Project features included in the POD.

2.3. Right-of-Way Acquisition

The width of the ROW and the restrictions within it are determined by the National Electrical Safety Code (NESC) operation considerations and are proportional to the voltage and structure type. The permanent ROW requested for the Project is 150 feet in width. In some localized circumstances, additional easement may need to be acquired for compliance with NERC reliability standards and other engineering criteria.

SPS will acquire ROWs for transmission line facilities on nonfederal land (state, private, or fee-owned) in perpetual easements or fee purchases. Every effort will be made to purchase all of the land rights on private land through reasonable negotiations with the present owners. In the event an agreement with the landowners cannot be reached, SPS may obtain land rights by eminent domain. Land rights will be obtained in the name of Xcel Energy, doing business as SPS.

3. PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

The following section describes the activities that are anticipated to occur before and during Project construction and throughout operation and maintenance of the Project. Details regarding construction, operation, and maintenance of the Project are described to the extent necessary to support development of the environmental analysis (EA) for the Project. A variance plan is included as Appendix B in the event conditions warrant changes from what has been described in this document, the EA, or the BLM's ROW grant, and what is necessary to safely construct and operate the Project.

3.1. Preconstruction Activities

3.1.1. Worker Awareness Training

All construction personnel will receive environmental training prior to commencing work on the Project. Training will emphasize compliance with all environmental laws, including the stipulations in the ROW grant and POD. Project-specific requirements and local issues will be addressed as necessary. Topics covered in the training will include terms and conditions of the BLM ROW grant, roles and responsibilities, communication protocols, flagging and signage, limits of disturbance, access and travel restrictions, specific landowner issues, and any resource mitigation plans. Trainings will be conducted at the construction contractor's offices or in the field as needed to address specific and immediate issues that come up during the workday. Remedial training will be given to individuals and crews who are involved in noncompliant activities. A master list of all Project personnel that have completed the training will be kept by the construction contractor and furnished to the BLM and/or SPS upon request. Hardhat stickers demonstrating attendance of the training will be issued to attendees.

3.1.2. Engineering Surveys

Field investigations and surveys will be completed to accurately locate the centerline of the approved ROW. The exact centerline will be chosen to best implement design criteria and to satisfy site-specific mitigation measures that have not been addressed in the EA. Before any construction surveying begins, the required permits to survey on federal lands, state lands, or right-of-entry on private lands will be obtained. All limits of ground disturbance, structure locations, and temporary work areas will be flagged and staked, and the proposed centerline will be flagged and staked where it is necessary.

SPS will file with the BLM a separate Application for Transportation and Utility Systems and Facilities on Federal Land (Standard Form 299) to conduct geotechnical studies for the Project. This will allow SPS to collect subsurface information necessary to complete the final design of the foundations of the transmission line structures and substations. This data will be used to properly site individual structures and confirm their final locations as well as include subsurface data necessary to prepare the commercial request for proposal packages. The BLM will review and process the application in accordance with all applicable federal laws and regulations.

If approved, SPS will conduct geotechnical borings using conventional drilling methods. The geotechnical investigation would consist of drilling boreholes approximately 1 foot in diameter and as deep as 50 feet. Drilling would be conducted with a variety of field equipment, including conventional rubber-tired and/or tracked drilling rigs. The boreholes will be backfilled with auger cuttings and on-site soils.

If drilling is impractical, geophysical exploration techniques such as refraction microtremor (ReMi) may be used. ReMi can identify subsurface soil and rock stratification, but is less accurate than geotechnical borings. The ReMi survey would use a multichannel seismograph and low- and high-frequency geophones laid out from 10-foot to 50-foot intervals. Geophones are typically 3 inches long and can be hand-pushed into the ground and removed after the readings are taken. In hard ground conditions, hand placement of geophones can be aided by pre-drilling probe holes with a handheld, battery-operated drill and penetrating 2 to 3 inches into the ground.

3.1.3. Preconstruction Resource Surveys

Resource surveys will be conducted prior to the commencement of construction activities. Table 3.1 provides a list of the surveys to be conducted prior to the start of construction, the dates these surveys are anticipated to occur, the location and extent of the surveys, and any associated conditions or restrictions.

Cultural resources surveys will be carried out on the Project route prior to construction to support development of the draft EA. SPS expects this survey effort to focus on federal and state lands where applicable. Following identification of an agency preferred alternative, SPS will conduct a full survey of the route to identify cultural properties. Any cultural property that will be directly or indirectly impacted will be subject to evaluation and determination through BLM Section 106 consultation. Project engineers will work with agency archaeologists to either avoid or minimize impacts on any identified cultural resource, to the extent practicable.

Initial efforts to assess potential biological resources will be conducted using primarily desktop review with field spot checks. The exception to the desktop review would be areas where resource agencies identify the need to conduct species and site-specific surveys to support development of the EA. Required site-specific surveys along the agency-preferred alternative will be conducted as needed or as otherwise directed in the final EA for the Project. Specific mitigation measures for biological resource areas will be developed as part of the Project planning and environmental review processes. As with cultural resources, Project engineers will work with agency staff to avoid or minimize impacts on biological resources, to the extent practicable.

Table 3.1. Preconstruction Resource Surveys

Resource	Timing	Location	Extent	Other
Cultural	2014–2015	ROW plus 175-foot-wide buffer on both sides	Prior to project approval	To Be Determined
Biological including special status species and waters of the U.S./wetland/playa	2014–2015	ROW plus 175-foot-wide buffer on both sides	Prior to project approval	TBD
Avian (Migratory Bird Treaty Act)	Breeding season (March 1–August 31)	Areas planned for vegetation removal	Two weeks prior to vegetation removal	TBD

3.2. Construction Activities

Following preconstruction activities, construction will be conducted in a sequential set of tasks performed by multiple crews. The construction activities will include preliminary engineering surveys, access and site preparation, excavation, foundation construction, foundations, assembling and erecting structures, stringing conductors and shield wires, testing and commissioning, restoration and cleanup, and site reclamation. Due to the length of the Project, there may be several sets of crews engaged in constructing the line. Table 3.2 outlines the typical specifications of vehicles expected to participate in the construction activities. These numbers are estimates; conditions during construction will dictate equipment allocation.

Table 3.2. Anticipated Construction Vehicle/Equipment Roster

Construction Activity	Vehicle/ Equipment Type	Commuting Distance (miles)	Quantity Anticipated	Estimated Activity Schedule (days)	Estimated Usage Time (hours/day)
Site access/ prep/land clearing	Brush hog	N/A	2	40	8
	Bulldozer	N/A	4	120	4
	Pickups	100	8	160	6
Construction of transmission lines	Pickup truck	100	12	480	6
	Water truck	N/A	2	480	8
	Boom truck	N/A	2	240	4
	Tractor trailer	2	4	100	6
	Tracked vehicle	2	8	400	8
	Crane	N/A	2	400	6
	Material truck	N/A	6	400	8
	Concrete truck	N/A	2	320	8
	Helicopter	1	2	120	8
Construction/ expansion of substations	Pickup truck	100	12	360	6
	Bulldozer	N/A	2	80	8
	Boom truck	N/A	2	80	6
	Material truck	N/A	12	120	6
	Tracked vehicle	N/A	12	160	8
	Dump trucks	100	28	160	8
	Concrete trucks	100	12	240	8
Operation and maintenance	Helicopter	N/A			
	Pickup truck	100	2	2/days/week for duration	2
Termination/ rehabilitation	Tracked vehicle	N/A	4	160	4
	Crane	N/A	2	160	4
	Pickup truck	100	12	160	6
	Tractor trailer	100	2	40	6
	Dump trucks	100	4	80	8
	Boom truck	N/A	2	80	8

N/A = not applicable

3.2.1. Site Access and Preparation

Construction of the transmission lines will begin with clearing and grading of unpaved access roads to allow entry to individual structure locations. After the access roads are cleared and/or graded, temporary work areas at each individual structure site will be cleared and/or graded to install the transmission line support structures and prepare for future maintenance.

Individual structure sites will be cleared using the appropriate equipment, which could range from a brush hog flail-type mower to a bulldozer to blade the area required to provide a safe working space for placing equipment, vehicles, and materials for tower assembly and erection. The work area will be cleared of vegetation only to the extent necessary. Any chemical treatments of ROWs will comply with those laws and procedures of federal and state land-managing agencies whose land would be traversed by the Project. Within the work areas, the permanent disturbance associated with the tower footings will be 30 to 60 square feet for H-frame structures, 75 to 150 square feet for 3-pole structures, and 15 to 40 square feet for monopole structures.

The "overland drive-and-crush" method will primarily be used to prepare the work site in areas that are relatively level and that have low-growing grasses and shrubs. This method involves crushing but not cropping vegetation. In similarly level areas where the vegetation is dense, aboveground cutting methods will be used with the intent of leaving the root crown intact. The soil will be compacted, but only excavated for the foundations. Excess soil from foundation hole excavations will be placed around the base of each structure to provide positive drainage away from the structure. When grading must occur to create a safe, level working space for structure installation, the topsoil will be segregated and then spread back over the site to provide a suitable seed bed for reclamation efforts. Excess fill may also be used to create level areas in other locations where needed. After transmission line construction, all work areas identified as temporary disturbance will be reclaimed in accordance with BLM requirements.

3.2.2. Foundation Installation

The excavation and installation of the foundation will require access to the site by a power auger or drill, a crane, material trucks, and concrete trucks using the access roads. Holes for the foundations will typically be excavated using a power auger mounted to a heavy vehicle. In some areas, a drilling rig may be necessary to excavate the foundation holes. If the location is rocky and unsuitable for either an auger or drill rig, blasting may be needed to break up the rock prior to excavation with an auger or drill rig. Excavated spoils will be segregated from topsoil and may be used for backfill or other fill where suitable.

After completion, the foundation hole will be prepared for a cast-in-place concrete footing except for structures that will be directly embedded into the ground. Reinforced steel and anchor bolts will be inserted into the foundation hole and then encased in concrete. Excess concrete or concrete washout will be removed from the work area or temporarily placed on spoil stockpiles. Foundation holes left open or unguarded will be covered to protect the public and wildlife. If practical, temporary safety fencing may be used.

Foundation designs and installation processes will depend on the geotechnical analysis and line design parameters of each particular structure site.

3.2.3. Structure Assembly and Erection

The structure components will be bundled into the components required for each structure and shipped by truck to each site. There, the structures will be assembled on the ground and lifted into place by crane. Generally, structures can be fully assembled in the ROW.

Guard structures will be erected over highways, railroads, power lines, and other similar features. The guard structures will be temporary H-frame designs directly embedded into the ground. It is anticipated that guard structures will be located within the 150-foot ROW.

3.2.4. Grounding

At the base of each structure, copper ground rods will be buried near the structure foundation and connected to the structure with copper cables. Counterpoise, a bare copper-clad or galvanized-steel cable extending from the structure outward to approximately 200 feet within the ROW, will be buried a foot or more deep if resistance to ground warrants its use.

3.2.5. Conductor Stringing

Reels of conductor and shield wire will be delivered to the ROW and loaded onto vehicle-mounted pulling machines. Heavy vehicles will be used to pull the shield wire and conductor bundles into place with powered pulling equipment at one end and powered braking or tensioning equipment at the other end. A pilot wire will be threaded though pulleys suspended from the structure insulators. The pilot wire will then be attached to a stronger pulling wire, which will be used to thread the shield wire and conductor bundles into place without contacting the ground. Once the conductor and shield wire is strung through the pulleys, adjustments will be made to achieve the correct sagging of the lines between structures. Once complete, the pulleys will be removed and the conductors "clipped" to the insulators with clamps. At dead-end structures, the conductors will be clipped to the insulators with compression fittings to secure the conductor to the insulator.

On straight sections of line, conductor stringing activity will be contained within the ROW. At turning points with angles greater than 20 degrees, additional temporary space will be required outside of the ROW for pull-pockets.

3.2.6. Cleanup

All construction sites, staging areas, and access roads will be kept in an orderly condition throughout the construction of the transmission line. All refuse and trash will be removed and disposed of appropriately. A Spill Prevention, Containment, and Countermeasures Plan (SPCC) will be prepared to specify preventive procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction and refueling activities. There will be no open burning on BLM-administered lands. If a need is determined for any open burning, the BLM will be consulted prior to any burning for the purpose of obtaining a permit as required.

3.2.7. Reclamation

After construction, disturbed areas would be restored using a BLM-approved seed mix and according to BLM, SLO, and private landowner standards. Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM. In those areas where erosion control structures would be required to stabilize soil, the structures would be installed for the specific soil conditions encountered in the field and in accordance with industry best management practices (BMPs) and design features identified in Section 2.1.2.

Once construction of the facilities and 345kV lines is complete, all areas not needed for the operations and maintenance phase would be reclaimed (reseeded for optimal vegetation regrowth of species compatible with SPS's vegetation management standards). Reclamation would occur as soon as possible after completion of final construction activities.

Areas Reclaimed

Except for those portions of the ROW necessary for maintenance and operation (such as a permanent patrol access road), the entire 150-foot-wide ROW would be reclaimed, as well as areas of temporary disturbance outside the ROW that are no longer needed, such as temporary access roads, pull pockets, and laydown yards. The 60-foot-wide access road used for construction would be fully reclaimed, and over time converted into a permanent patrol access road similar to a two-track. In some locations, the patrol road would be surfaced with a caliche base to encourage a single travel route and continual avoidance of sensitive resources. A level work area at the base of each structure would be reseeded but not recontoured to facilitate future maintenance activities that may require use of an extended-reach vehicle or crane.

Reclamation Procedures

The steps to reclamation include:

1. **ROW preparation:** Vegetation removed during construction, including trees that measure less than 3 inches in diameter at ground level and slash/brush, would be chipped or mulched and spread across the ROW. All tree and shrub species that are not compatible with SPS's vegetation management standards would be cut to ground level, delimbed, and subsequently treated with herbicides to discourage regrowth.
2. **Soil stockpiling:** Following the removal of vegetation, the top 6 inches of topsoil would be stripped from the ROW where necessary. The topsoil would be free of brush and tree limbs, trunks, and root balls. Except for locations where structure holes would be excavated by an auger, the topsoil would be stockpiled separately from subsoil or other excavated material and stored along the ROW corridor. Topsoil would be labeled as such and protected from erosion and inadvertent use as fill. Topsoil would not be mixed with subsoil. When stockpiled, topsoil would be tackified with water to a 2-inch wetting depth to minimize erosion, and overall handling should be kept to a minimum. Gaps would be made in soil stockpiles (where necessary) to avoid ponding or to divert water during storm events. If present, surface rocks would be stockpiled adjacent to the topsoil stockpile(s). Vehicle and equipment traffic would not be allowed to cross topsoil stockpile(s). An SWPPP would be developed to include BMPs intended to minimize stockpile erosion and prevent topsoil loss.
3. **Recontouring:** Within areas that require recontouring, the surface would be recontoured to match pre-disturbance conditions or to blend with the surrounding landform as closely as possible. Excess subsoil from excavated or graded areas (around structure bases) would be evenly spread over disturbed areas and moistened and compacted to a relative average density comparable to undisturbed adjacent material before respreading topsoil. Subsoils would not be spread outside the approved construction areas.
4. **Soil and seedbed preparation:** Where any compaction exists, the surface would be ripped or scarified to a depth of 6 inches as appropriate (e.g., not applicable to rock faces, severe slopes, or cliff areas), and would retain a 12-inch buffer from existing vegetation or plants designated as preserve in place. Depth and area of compaction relief would depend on site-specific conditions. Decompaction or ripping would be conducted to avoid corn rows. Cross ripping is preferable and care should be taken to prevent inverting the soil layers and preserving any vegetation in place. Deep sandy soils do not need to be decompacted and would not be ripped.
5. **Topsoil replacement:** Topsoil would be replaced without mixing with subsoil to prevent mixing fertile, shallow soils with deeper soils that may be less productive because of rock, gravel, sand, calcareous layers, salinity, or other chemical characteristics that would adversely affect growth of desired vegetation. Stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Topsoil would not be redistributed when the ground or topsoil is frozen or wet.
6. **Seeding:** During seeding of the reclamation area, a disc-type drill with two boxes for various seed sizes would be used. The drill rows would be 8 to 10 inches apart. Where practicable with the seeding equipment being used, planting depths for smalls seeds would be 0.25 inch, for intermediate seeds would be 0.50 inch, and for large seeds would be 1 to 2 inches. Where these seed depths are impracticable with the seeding equipment being used, planting depths would be no more than 0.25 inch. A drag, packer, or roller would follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding would run perpendicular to slopes in order to minimize runoff and erosion. In areas where the slope is too steep for a seed drill, hand- or broadcast-seeding methods would be used, and the seeds would be covered to the depths described above. BLM-prescribed seed mixes would be used.
7. **BMP installation:** Prior to construction, an SWPPP would be developed to include BMPs according to BLM prescriptions, including erosion control devices such as silt traps, silt fencing, straw rolls, etc.

8. **Weed control**: SPS has enrolled in the county weed programs for both Lea and Eddy Counties. These programs enable the BLM to identify target areas for treatment to prevent the spread of noxious weeds and invasive species. These programs would include annual surveys of the ROW and subsequent treatment of weed infested areas for up to 5 years after construction is complete.
9. **Monitoring:** Monitoring would be conducted after construction activities are complete until reclamation has achieved the success criteria established by the BLM.

3.2.8. Project Safety

SPS places a high value on employee, contractor, and public safety. A Project Safety Plan to address employee, contractor, and public safety risks will be prepared prior to construction.

All construction activities will be carried out in safe and healthful working conditions as outlined by the Occupational Health and Safety Administration's guidelines.

3.3. Substation Construction

The proposed Kiowa Substation will be constructed as part of the Project and the other four substations would be expanded (see Section 2.1.2). The following discussion is an overview of the types of construction activities that will take place at the substation.

3.3.1. Engineering Surveys

Field investigations and surveys will be completed to accurately locate the substation components. All limits of the proposed substation boundary, ground disturbance, structure locations, and temporary work areas will be flagged and staked, where necessary.

SPS will file with the BLM a separate Application for Transportation and Utility Systems and Facilities on Federal Land (Standard Form 299) to conduct geotechnical studies for the Project. This will allow SPS to collect subsurface information necessary to complete the substation's final design. These data will be used to confirm the substation location as well as include subsurface data necessary to prepare the commercial request for proposal packages. The BLM will review and process the application in accordance with all applicable federal laws and regulations.

Geotechnical soil borings will be conducted to collect information regarding subsurface soil stability necessary for the final design of the substation foundation. The geotechnical investigation would consist of drilling boreholes approximately 1 foot in diameter and as deep as 50 feet. Drilling would be conducted using a variety of field equipment, including conventional rubber-tired and/or tracked drilling rigs. The boreholes will be backfilled with auger cuttings and on-site soils.

3.3.2. Clearing and Grading

Clearing and grading of the entire substation area will be necessary to prepare the substation site for construction. The site will be graded to create a level surface with a moderate slope for drainage. Grading will also be engineered to allow for adequate clearances to energized conductors entering the substation. All topsoil will be stockpiled and segregated from other excavated soil, which will be used as backfill, berms, or as fill for other areas nearby.

The surface of the substation will be covered with an insulating layer to protect personnel from high currents and voltages in the event of a fault condition. Approximately 4 to 6 inches of crushed rock will be applied to the finished surface of the substation, which will then be treated with a soil sterilizer to prevent vegetation growth. If necessary, drainage structures such as ditches, culverts, and sumps will be installed.

3.3.3. Grounding

A grounding system typically consisting of buried copper conductor arranged in a grid system and driven ground rods typically 8 to 10 feet long will be installed. The ground rods and any equipment and structures would be connected to the grounding conductor. The amount of conductor and length and number of ground rods required is calculated based on fault current and soil characteristics.

3.3.4. Fencing

Security fencing will be installed around the entire perimeter of the substation. The fence will be 8 feet high and made of chain link topped with barb. Locked gates will be installed at appropriate locations for authorized vehicle and personnel access.

3.3.5. Foundation Installation

Structures entering the substation will be either directly embedded into the ground or placed on a drilled pier foundation as described in Section 3.2.3. For the substation, equipment foundations for circuit breakers and transformers will be slab-on-grade. These foundations will be installed by excavating the foundation area, placing forms, placing reinforced-steel and anchor bolts (if required), and placing concrete into the forms. After the foundations have been poured, the forms will be removed, and the surface of the foundation dressed. Reinforced-steel and anchor bolts will be transported to each site by truck, either as a prefabricated cage or loose pieces, and will be fabricated into cages on the site. Concrete will be hauled to the site in concrete trucks.

3.3.6. Oil Containment

Some substation equipment such as transformers, reactors, and circuit breakers are filled with an insulating mineral oil. Containment structures will be used to prevent oil from escaping into the ground. The exact type of containment structure will be determined as part of the final substation design.

3.3.7. Structure and Equipment Installation

Steel structures to support some substation equipment will be affixed on the concrete foundation anchor bolts with a track-mounted crane. Equipment such as transformers, reactors, and circuit breakers can be mounted directly to the foundations without supporting structures. The equipment will then be assembled, tested, and connected electrically to the control building through multi-conductor control cables installed in conduits and/or a precast concrete cable trench system.

3.3.8. Cleanup

The substation site will be kept in an orderly condition throughout construction. All refuse and trash will be removed and disposed of appropriately. An SPCC will be prepared to specify preventive procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction and refueling activities. If landscaping is required by the permitting agency, drought-tolerant and primarily native plant materials will be used.

3.4. Operation and Maintenance

The transmission lines constructed as part of the project would become critical infrastructure of the SPS and southeast New Mexico transmission systems. Therefore, limiting the duration of unplanned outages and planning for the use of live-line maintenance techniques to minimize the requirement for any outages are important parts of the design, construction, and operation/maintenance requirements of the project.

3.4.1. Inspections

Regular inspection of transmission lines, vegetation conditions, substations, and support systems is critical for safe, efficient, and economical operation of the project. Responsibly conducted routine maintenance activities are anticipated to have minimal impact and are usually authorized under the transmission line easements and BLM ROW grants.

Aerial inspections would be conducted annually to identify conditions that pose an immediate hazard to the public or employees, or that risk immediate loss of supply or damage to the electrical system. Any conditions identified are to be resolved prior to peak demand in the summer and winter months.

Ground inspections would be done on approved access roads, including the patrol road, or along the transmission line ROWs to each structure as appropriate. The inspector would access each of the structures and would check all equipment and other components that could require repairs. Inspectors performing such inspections would use conventional four-wheel-drive trucks and/or four-wheel-drive all-terrain vehicles, or they may walk the line. The ground inspection would be conducted at a time deemed appropriate based on the weather conditions, results of aerial inspections, and other conditions subject to change on an annual basis. SPS may perform minor repairs during its ground inspections, such as installing new numbers, installing/repairing ground wire, or performing other minor tasks that do not involve long duration, specialized equipment, or large work crews.

Each year aerial inspections would be conducted annually, and ground patrols would be conducted biannually.

3.4.2. Line Maintenance

Routine maintenance activities are ordinary maintenance tasks that have historically been performed and are regularly carried out on a routine basis, including the replacement of individual structures, components, cables, lines, insulators, and other facilities that, due to obsolescence, age, or wear, are in need of replacement or repair. It is expected these replacements would be required infrequently (every 5 to 10 years) or as determined by inspection. The work performed is typically repair or replacement of individual components by relatively small crews using a minimal amount of equipment, and usually is conducted within a period from a few hours up to a few days. The type of equipment used to perform routine maintenance activities varies depending on the extent of the work to be performed. Typical equipment used for these kinds of activities includes four-wheel-drive pickups, man-haul, material flatbeds, line trucks, cranes, tractor trailers, and high-reach bulldozers/caterpillars.

Typically, maintenance vehicles and equipment would access the ROW and individual structures using the patrol roads and would remain within the level work area that surrounds the structure, and no new ground disturbance would be required. If maintenance activities and/or equipment are required beyond the permanent maintenance work area, maintenance crews would coordinate with the BLM Authorized Officer(s) to obtain any required temporary use approval/permits to complete the work, and maintenance activities would be conducted within the previously disturbed temporary work areas from project construction. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

Major maintenance activities may need to occur on an infrequent basis. These activities would require planning and budgeting in advance and agency coordination. They may involve larger work crews than routine maintenance activities and a variety of equipment, including heavy equipment, and usually require several days or longer to complete. SPS would notify the BLM before initiating major maintenance activities to identify what, if any, special notification or additional clearance approvals would be required. All major maintenance activities would adhere to all standards and guidelines contained in the POD and the terms and conditions of the ROW grant.

In an emergency, SPS must respond as quickly as possible to restore power. As soon as an incident is detected, SPS's control room dispatchers would notify the responsible operations staff in the area(s) affected, and crews and equipment would be organized and dispatched to respond to the incident. In these cases, SPS would immediately deploy the necessary crews to restore power and notify the appropriate land management agency depending on the location of the incident. Examples of emergency maintenance include transmission structure or conductor failure due to natural hazard, fire, or human-caused damages to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the power line, or restore service if there is an outage. The equipment necessary to carry out emergency repairs is similar to that necessary to conduct routine maintenance, in most cases. Emergency response to outages may require additional equipment to complete the repairs. For example, where the site of the outage is remote, helicopters may be used to respond quickly to emergencies. SPS would adhere to the same constraints identified for routine and major maintenance activities to minimize impacts to resources, when possible.

3.4.3. Vegetation Management

SPS would need to manage vegetation to meet its requirements for conductor clearances at maximum loading (sag) and maximum blowout (sway) locations, and to minimize potential ignition sources and to provide access within the ROW. Within or adjacent to the ROW, mature vegetation would be removed under or near the conductors to provide adequate electrical clearance, as required by the NERC. Typically, woody vegetation would be removed and treated with herbicides. Slash would be left in place or disposed of in accordance with the requirements of the land management agency or landowner. If necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible. Shrubs and other obstructions would be removed regularly within the ROW.

Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as creosote and mesquite with herbicides to prevent vegetation encroachment on SPS's conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. All herbicide applications would be performed in accordance with federal, state, and local regulations, and in compliance with land management agency and/or landowner requirements. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.

Vegetation may also be removed using mechanical equipment such as chainsaws, weed trimmers, rakes, shovels, brush hooks, and mowers. Clearing efforts in heavy growth areas would involve equipment such as a masticator, a mounted brush mower, or similar. The duration of activities and the size of crew and equipment required would be dependent on the amount and size of the vegetation to be pruned or removed.

Herbicides will be used to control noxious weeds or incompatible tree and brush species (e.g., mesquite and creosote) that regenerate from the root systems after removal to meet vegetation management objectives. These activities would be performed in coordination with the land management agency or landowner in the case of private property.

3.4.4. Access Road Maintenance

Repairs to the ROW or access roads would be scheduled as a result of line inspections or would occur in response to a significantly degraded condition or an emergency situation. Where access is required for maintenance of the line, SPS would maintain the approved access roads for which it is solely responsible in a safe, useable condition. Access road repairs include grading or repair of existing maintenance access roads and work areas, and spot repair of sites subject to erosion, slumping of side slopes, inadequate drainage, flooding, or scouring. In some cases, cut and/or fill of foreign material may be required to repair the access roads into suitable condition for safe travel of maintenance repair vehicles, such as high-reach boom trucks. When an approved access road to a structure location needs improvement, heavy equipment appropriate for the required work would be used after notifying the BLM Authorized Officer. Required equipment may include a grader, backhoe, four-wheel-drive pickup truck, and a steel-tracked front-loader or bulldozer. The ROW and access used for regular maintenance activities would be stabilized and rehabilitated following the procedures laid out in the POD. SPS would coordinate with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work.

3.5. Right-of-Way Renewal or Decommissioning

3.5.1. Right-of-Way Renewal

The proposed project would have a minimum projected operation life of 50 years or longer. A ROW grant issued for 50 years with the option of renewal would be necessary for the operation, maintenance, and decommissioning of the transmission line facilities located on BLM-managed lands. At the end of the ROW grant term (50 years), SPS would have the option to renew the ROW grant past 50 years to continue operation of the line. The terms and conditions in the original ROW grant could be modified for the renewed ROW grant.

3.5.2. Project Decommissioning

At the end of the transmission line's useful life, estimated to be 50 years from construction, the necessary authorizations would be obtained from the BLM Authorized Officer to decommission the project. Future decommissioning of the transmission line would include removal of conductors and structures. All materials would be removed from the ROW. Equipment at the substations and unsalvageable materials would be disposed of at authorized sites. Regrading and revegetation of disturbed areas would be completed according to BLM, SLO, or landowner standards. The abandoned ROW would revert to the control of the landowners.

3.6. Environmental Protection Measures

The following applicant-committed environmental protection measures have been incorporated into the project design of the Proposed Action to lessen or avoid impacts to resources. These design features are organized below under the resource they are designed to protect, although some of these measures are designed to protect or mitigate impacts to multiple resources. The design features incorporate applicable BMPs, which are industry- or agency-recommended construction methods that are routinely implemented to minimize impacts to resources.

3.6.1. General

- All construction vehicle movement outside the ROW would be restricted to predesignated access, contractor-acquired access, or public roads.
- The spatial limits of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents indicating survey or construction limits would be applied to rocks, vegetation, structures, fences, etc.
- Prior to construction, an environmental awareness training would be conducted to instruct all personnel on the protection of cultural, ecological, and other natural resources, including 1) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; 2) the importance of these resources; and 3) the purpose and necessity of protecting them.
- Sensitive resource areas within the ROW or designated temporary work areas would be mapped and avoided by use of an appropriate monitor. Flagging and fencing materials would not be used because they may inadvertently draw attention to the resources being protected.

- The contractor would limit movement of crews, vehicles, and equipment on the ROW and approved access roads to minimize damage to property and disruption of normal land use activity.
- Construction vehicles and equipment would be maintained in proper operating condition, and would be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, engine enclosures, etc.).
- SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines (4.5 inches or less in diameter). The BLM would be notified if any larger aboveground lines are encountered.
- SPS would use overburden to place the necessary fill over belowground pipelines, and would leave and reclaim the overburden in place.

3.6.2. Air Quality

- All requirements of those entities having jurisdiction over air quality matters would be adhered to. Any necessary permits for construction activities would be obtained. Open burning of construction trash would not be allowed unless permitted by appropriate authorities.
- Construction-related dust disturbance would be controlled by the periodic application of water to all disturbed areas along the ROW and access roads, when necessary.

3.6.3. Soils and Vegetation

- SPS would reclaim disturbed areas per the POD using a BLM-specified seed mixture, and would work with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.
- All soils compacted by movement of construction vehicles and equipment would be 1) loosened and leveled through harrowing or disking to approximate preconstruction contours, and 2) reseeded with certified weed-free native grasses and mulched (except in cultivated fields). The specific seed mix(es) and rate(s) of application would be determined by the BLM.
- Excavated material not used in the backfilling of poles would be spread around each pole or hauled off-site or transported as fill to other locations where needed.
- In newly disturbed temporary work areas, soil would be salvaged, distributed, and contoured evenly over the surface of the disturbed area after construction completion. The soil surface would be left rough to help reduce potential wind erosion.
- Upon completion of work, all work areas except any permanent access roads/trails would be regraded as required so that all surfaces would drain naturally and blend with the natural terrain, and be left in a condition to facilitate natural revegetation, provide for proper drainage, and prevent erosion.
- SPS has enrolled in the Eddy and Lea County noxious weed control programs. Through these programs, which entail treatment of weeds in target areas identified by BLM, noxious weeds would be sprayed annually through the life of the project. The noxious weed program would apply to the length of the project regardless of landownership.
- Gravel and fill to be used must come from a weed-free source(s). Gravel pits and fill sources would be inspected to identify weed-free sources.
- Compatible vegetation would be preserved and protected from damage by construction operations to the maximum extent practicable.
- In construction areas where recontouring is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for resprouting in accordance with the reclamation plan. Vegetation not consistent with line safety and operation would be removed according to SPS vegetation management practices.
- Vegetation treatments to control the growth of woody species along the ROW would be conducted every 4 years. These treatments consist of spraying target species such as

creosote and mesquite with herbicides to prevent vegetation encroachment on SPS's conductor clearance requirements, its facilities, patrol road, and/or inhibits future operation and maintenance activities. SPS has established guidelines that their contractors are required to follow to protect birds and bird nests during these spraying events.

- If it is necessary to remove or prune trees or other vegetation in riparian areas, the riparian vegetation would be removed selectively in a manner that protects biological resources as much as possible.

3.6.3.1. Dunes and Hummocks

- Blading would occur at and between structures that have dunes or hummocks that would otherwise impede construction activities, in an area of up to 150 × 150 feet at or adjacent to those structures.
- Blading up to 60 feet in total width along the line between structures would follow a "least disturbance" path and avoid straight lines where practical.
- SPS would reclaim disturbed linear or crescent-shaped dunes (generally over 6 feet tall with at least one slipface, and being significantly longer than they are tall) to landforms of similar size and orientation in the same general areas to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- SPS would reclaim areas with disturbed hummocks (knolls or mounds, generally less than 6 feet tall) to a generally undulating surface to the extent that access can be maintained for periodic SPS patrols and regular/emergency maintenance.
- For aboveground flowlines less than or equal to 4.5 inches, SPS would construct aboveground flowline crossings by pushing adjacent soil up and over the lines, and would leave and reclaim the cover in place. For aboveground flowlines larger than 4.5 inches, SPS will notify the BLM Environmental Protection Specialist and wait for instructions.
- SPS would use overburden to place the necessary fill over belowground pipelines, and would be allowed to leave and reclaim the overburden in place.
- SPS would reclaim disturbed areas per the POD using a BLM-specified lesser prairie-chicken (*Tympanuchus pallidicinctus*; LPC) seed mixture, and would work with the BLM to take measures to discourage the patrol/maintenance road from being used as a general public access road after restoration work is complete.

3.6.4. Water Resources

- Any chemical treatments of the ROW would comply with the applicable laws and procedures of the land management agencies, the Environmental Protection Agency (EPA), and the New Mexico Environment Department (NMED).
- No wetlands and/or waters of the U.S. would be altered, crossed, filled, or cut unless previously permitted to do so by the U.S. Army Corps of Engineers or the NMED.
- Construction activities would be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. Such pollutants and wastes include but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.
- Dewatering work for structure foundations or earthwork operations adjacent to or encroaching upon streams or water courses would not be performed without prior approval by the BLM or the applicable land management agency.
- Excavated material or other construction materials would not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or could in any way encroach upon the actual water source itself.
- Wastewaters from construction operations would not enter streams, water courses, or other surface waters without use of such turbidity control methods as settling ponds, gravel

filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such wastewaters discharged into surface waters would be essentially free of settleable material. Settleable material is defined as that material that settles from the water by gravity during a 1-hour quiescent period.

- Refueling and storing of potentially hazardous materials would not occur within a 100-foot radius of a waterbody, a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water supply wells. Spill preventive and containment measures or practices would be incorporated as needed and included in the POD.
- Where access routes would need to cross aboveground flow lines (4.5 inches or less in diameter), the contractor would push adjacent soil up and over the lines. The BLM would be notified if any larger aboveground lines are encountered. The contractor would use overburden to place the necessary fill over belowground pipelines, and would leave and reclaim the overburden in place.
- Temporary culverts would be installed to cross small drainages. These would be removed after construction.
- Ground disturbance would be avoided within 200 meters of playas.

3.6.5. Wildlife and Special Status Species

- Special status species or other species of particular concern would be considered in accordance with management policies set forth by appropriate land management agencies. This may entail conducting surveys for plant and wildlife species of concern along the proposed transmission line route and associated facilities (e.g., substations, access roads, laydown yards, etc.) as agreed upon by the agencies. In cases where such species are identified, adverse impacts on the species and its habitat would be avoided to the maximum extent practical and in consultation with the agencies.
- SPS designs and constructs all new transmission facilities to raptor-safe design standards as described in its *Avian Protection Plan* (EDM International 2008), which includes avian electrocution and collision minimization practices described in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Edison Electric Institute and Avian Power Line Interaction Committee 2006).
- To the extent possible, construction activities during the migratory bird-nesting season (March–August) in suitable habitat would be avoided. Seasonal dates may vary depending on the species, current environmental conditions, and preconstruction survey results.
- If construction and maintenance activities, including mechanical or herbicide treatments of woody vegetation, cannot be avoided in the primary nesting season for migratory birds (March–August), migratory bird and nest surveys would be performed up to 2 weeks prior to commencing with those activities, and an avoidance buffer around each active nest would be implemented until the young have fledged, the size and timing of which may vary by species, but would be no less than 100 feet. This stipulation would not apply in the event of an emergency as per Xcel's Migratory Bird Special Purpose Utility Permit (USFWS 2015a).
- A 200-meter avoidance buffer would be implemented around any active burrowing owl (*Athene cunicularia*) nest burrow or active raptor nest until the young have fledged.
- The BLM may require a biological monitor near occupied nests and burrowing owl burrows identified during preconstruction surveys.
- Active raptor nests would be monitored for activity until the hatchlings fledge.
- Removal of any unoccupied raptor nests may require replacement by nest platforms.
- Foundation holes left open or unguarded would be covered to protect the public, wildlife, and livestock. If practical, temporary safety fencing may be used.
- During reclamation of disturbed areas, the seed mixture quantity for 1 mile along the Eddy to Kiowa route in Section 12 would be doubled for Sprague's pipit (*Anthus spragueii*) as identified in the POD.

- Bird flight diverters would be installed on the conductors for the crossing of the Pecos River.
- To offset potential impacts to riparian areas at the Pecos River crossing, as well as impacts to freshwater avian species that potentially nest in the vicinity, SPS will install up to 10 poles, some of which will have multiple artificial nesting platforms at locations within Section 30 of Township 22 South, Range 28 East (see the map and diagram in Appendix C). BLM will be responsible to secure all necessary access and land rights as well as associated permitting requirements, if any. Short-term and long-term maintenance of the nesting platforms will be the responsibility of BLM.

3.6.5.1. Dunes Sagebrush Lizard

- SPS would follow excavation BMPs during construction within the dunes sagebrush lizard (*Sceloporus arenicolus*; DSL) habitat boundary, as required by the BLM Resource Management Plan Amendment (2008a) and the BLM Open Trench Wildlife Removal Workshop materials (BLM 2013). This stipulation would apply to the length of the project in DSL habitat regardless of landownership.
- Any holes left open for 8 hours or less are not required to have escape ramps; however, before the hole is backfilled, a BLM-approved monitor would inspect the hole and remove all trapped wildlife and release it at least 300 feet away.
- For holes left open for 8 hours or more, escape ramps would be placed in the hole. The hole would be monitored each day by a BLM-approved monitor during the following three time periods: 1) 5:00 a.m. to 10:00 a.m., 2) 11:00 a.m. to 2:00 p.m., and 3) 3:00 p.m. to sunset. All trapped wildlife would be released at least 300 feet away.
- One BLM-approved monitor would be required for every up to 3-mile segment containing open holes in DSL habitat. A daily report (consolidate if there is more than one monitor) on the wildlife found and removed from the hole would be provided to the BLM (email is acceptable) the following morning.
- SPS and its contractors would instruct personnel working on the construction of the project to avoid intentionally harassing all animals, including the DSL and Texas horned lizard (*Phrynosoma cornutum*).

3.6.5.2. Lesser Prairie-Chicken

- Timing and noise restrictions would be applied to construction and maintenance activities within the LPC Isolated Population Area to prevent disruption of mating and nesting activities. All construction and maintenance activities would be prohibited from 3:00 a.m. to 9:00 a.m. from March 1 to June 15.
- Exceptions to these timing requirements would be considered in emergency situations such as mechanical failures. Exceptions would not be granted after March 15, or during the March 1 to June 15 period if the BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt LPC booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered for the period of March 1 to June 15, but these exceptions would not be granted if the BLM determines that there is LPC habitat, LPC sightings within 1.5 miles of the proposed location, historic leks, and/or active leks within 1.5 miles of the proposed location, or any combination of the above mentioned criteria.

3.6.5.3. Sheer's Beehive Cactus

- Workers would be instructed not to park off the roads to protect any threatened or endangered species, including Scheer's beehive cactus (*Coryphantha robustispina* ssp. *scheeri*).

3.6.6. Cultural Resources

- In consultation with appropriate land management agencies and the State Historic Preservation Officer (SHPO), specific mitigation measures for cultural resources would be developed and implemented to mitigate any identified adverse impacts. These may include project modifications to avoid adverse impacts, monitoring of construction activities, and data recovery studies.

- An archaeological construction monitor would be present during ground-disturbing activities in site-specific areas identified in the POD.
- An Unanticipated Discovery Plan would be prepared to specify the protocols to follow in the event of an unanticipated discovery of any previously unknown historic/prehistoric sites or artifacts encountered during construction. The Unanticipated Discovery Plan would identify communication protocols and immediate measures to be used to protect the site until further evaluation can be completed. The Unanticipated Discovery Plan would be prepared in coordination with the SHPO and jurisdictional land management agency.

3.6.7. Cave and Karst Resources

- SPS would notify and coordinate with the BLM Cave/Karst Resource Specialist before performing any blading in the high karst potential areas on both BLM and SLO lands on the Eddy to Kiowa line length.
- In the event that any underground voids, subsurface drainage channels, or cave passages are encountered during construction activities, construction would be halted in the immediate vicinity of the discovery, and the BLM would be notified immediately.
- Pole locations would be adjusted as necessary to avoid cave and karst features.
- The BLM would be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no further construction would be allowed until clearance has been issued by the Authorized Officer. Special restoration stipulations or realignment may be required.
- Roads would be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Soil bores would be collected at all proposed foundation structures along the centerline prior to construction. Proposed foundation locations will be based on any line angle larger than 2 degrees. The bores would be up to 50 feet deep to ensure the contractor does not drill into voids or karst features to install structures. If a void is encountered, depth of boring may exceed 50 feet to determine the depth of the void.

3.6.8. Paleontological Resources

- In the event that any fossils are encountered during construction activities, construction would be halted in the immediate vicinity, and the BLM would be notified immediately.

3.6.9. Visual Resources

- Self-weathering steel would be used to reduce visual impacts except in substations.
- Reclamation would be implemented to disguise disturbance.
- Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM.

3.6.10. Livestock Grazing and Farmland

- All fences and gates would be maintained during the construction period. Fences, gates, and walls would be replaced, repaired, or reclaimed to their original condition as required by the landowner or the land management agency in the event that they are removed, damaged, or destroyed by construction activities. Fences would be braced before cutting. Gates or enclosures would be installed only with the permission of the landowner or the land management agency, and would be removed/reclaimed following construction should it be necessary. Cattle guards would be installed on a case-by-case basis in negotiation with the landowner or land management agency.

- Prior to construction, the conditions of the water lines crossed by the proposed project would be evaluated, and appropriate protections would be put in place to maintain their function during the construction of the proposed project. If necessary, waterlines would be protected either by burying or pushing adjacent soil over the lines within the construction area to shield the lines from damage.
- The contractor would eliminate at the earliest opportunity all construction ruts that are hazardous to agricultural operations and/or movement of vehicles and equipment. Such ruts would be leveled, filled, and graded or otherwise eliminated in an approved manner. Damage to ditches, tile drains, culverts, terraces, local roads, and other similar land use features would be corrected as necessary by the contractor. Land and facilities would be restored as nearly as practicable to their original condition.
- On agricultural land, the ROW would be aligned, insofar as is practical, to reduce the impact to farm operations and agricultural production.
- In cultivated agricultural areas, soil compacted by construction activities would be decompacted except where a permanent two-track access route would be kept for future operation and maintenance activities.

3.6.11. Travel Management

- Where appropriate, signage would be installed on newly installed gates to deter users from circumventing the gates and traversing areas that were formerly inaccessible or harder to access.

3.6.12. Public Health and Safety

- The contractor would make all necessary provisions for conformance with federal, state, and local traffic safety standards, and would conduct construction operations to minimize obstruction and inconvenience to public traffic.
- During construction of the transmission lines, the ROW would be free of non-biodegradable debris. Slash would be left in place or disposed of in accordance with requirements of the land management agency or landowner.
- Towers and/or conductors and/or shield wires would be marked with high-visibility devices (e.g., marker balls or other marking devices) where required by governmental agencies with jurisdiction (e.g., the Federal Aviation Administration). Tower heights would be less than 200 feet to avoid the need for aircraft obstruction lighting.
- A Fire Protection Plan would be developed.
    - Construction vehicles would be equipped with approved spark arresters.
    - The contractor would maintain in all construction vehicles a current list of local emergency response providers and methods of contact/communication.
- An SPCC would be prepared to specify preventative procedural actions to minimize the potential impact of any unanticipated spills or releases of fuel, lubricant, or hazardous materials during construction.
    - Hazardous material would not be drained onto the ground or into streams or drainage areas. Totally enclosed containment would be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.

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Appendix A

Mapbook

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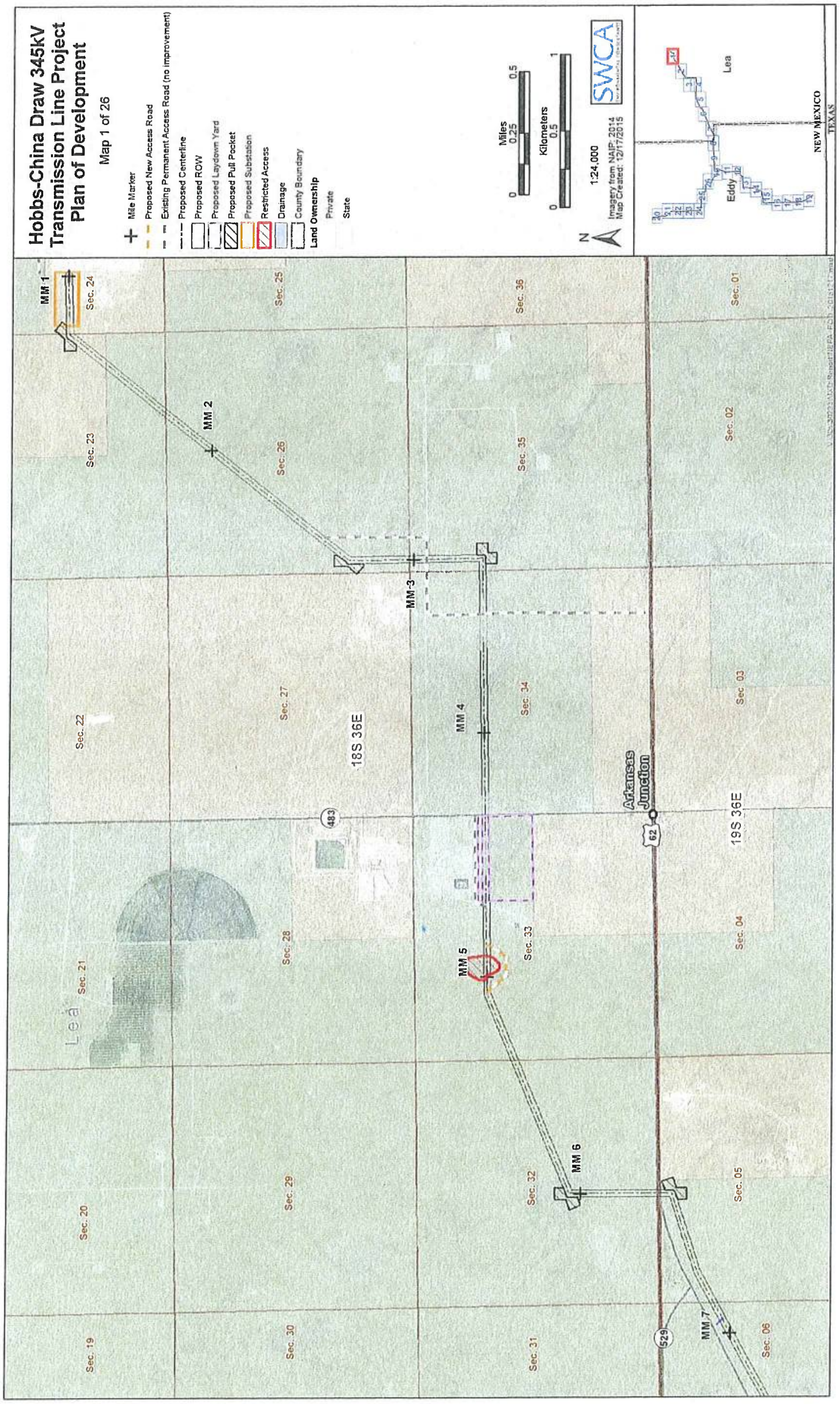
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 1 of 26
Mile Marker
Proposed New Access Road
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Laydown Yard
Proposed Pull Pocket
Proposed Substation
Restricted Access
Drainage
County Boundary
Land Ownership
Private
State
Miles
0 0.25 0.5
Kilometers
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Imagery from NAIP: 2014
Map Created: 12/17/2015
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Eddy
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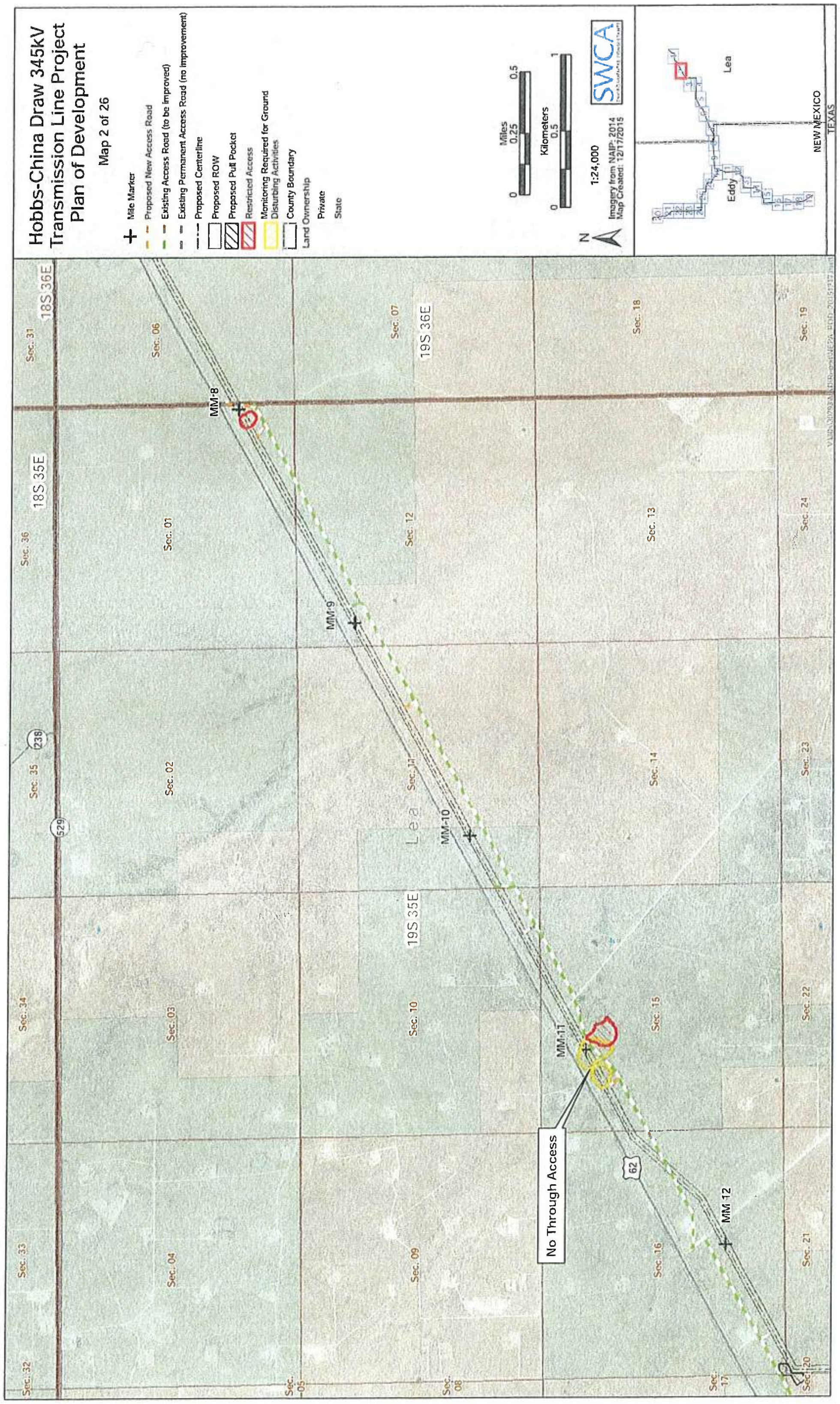
Hobbs-China Draw 345kV Transmission Line Project
Plan of Development
Map 2 of 26
Mile Marker
Proposed New Access Road
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Restricted Access
Monitoring Required for Ground Disturbing Activities
County Boundary
Land Ownership
Private
State
Miles
0 0.25 0.5
Kilometers
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Imagery from NAIP: 2014
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MM 12
No Through Access
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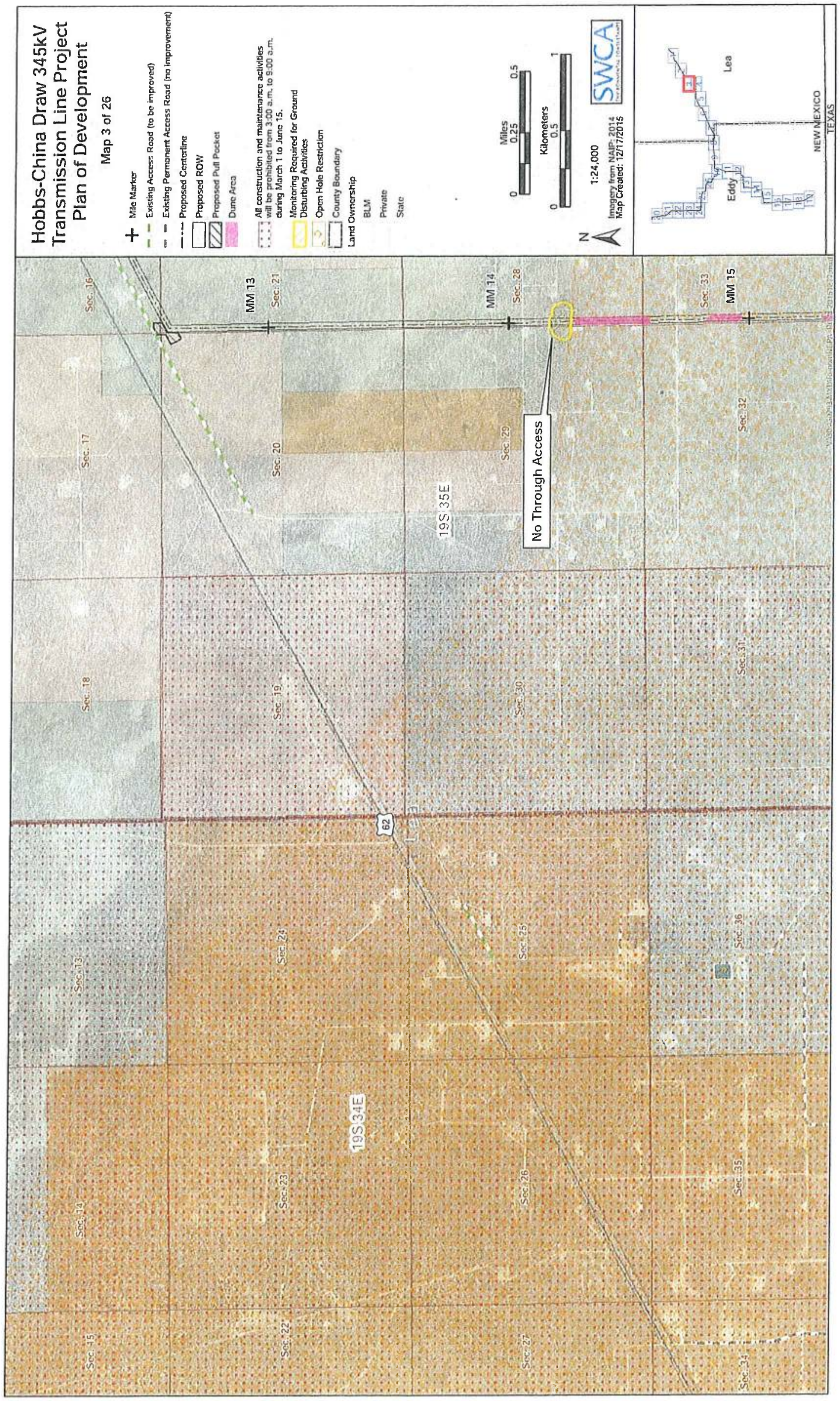
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 3 of 26
Mile Marker
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Monitoring Required for Ground Disturbing Activities
Open Hole Restriction
County Boundary
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Hobbs-China Draw 345kV Transmission Line Project
Plan of Development
Map 4 of 26
Mile Marker
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Monitoring Required for Ground Disturbing Activities
Open Hole Restriction
County Boundary
Land Ownership
BLM
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Imagery from NAIP: 2014
Map Created: 12/17/2015
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Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 5 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Open Hole Restriction
County Boundary
Land Ownership
BLM
Private
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Imagery from NAIP: 2014
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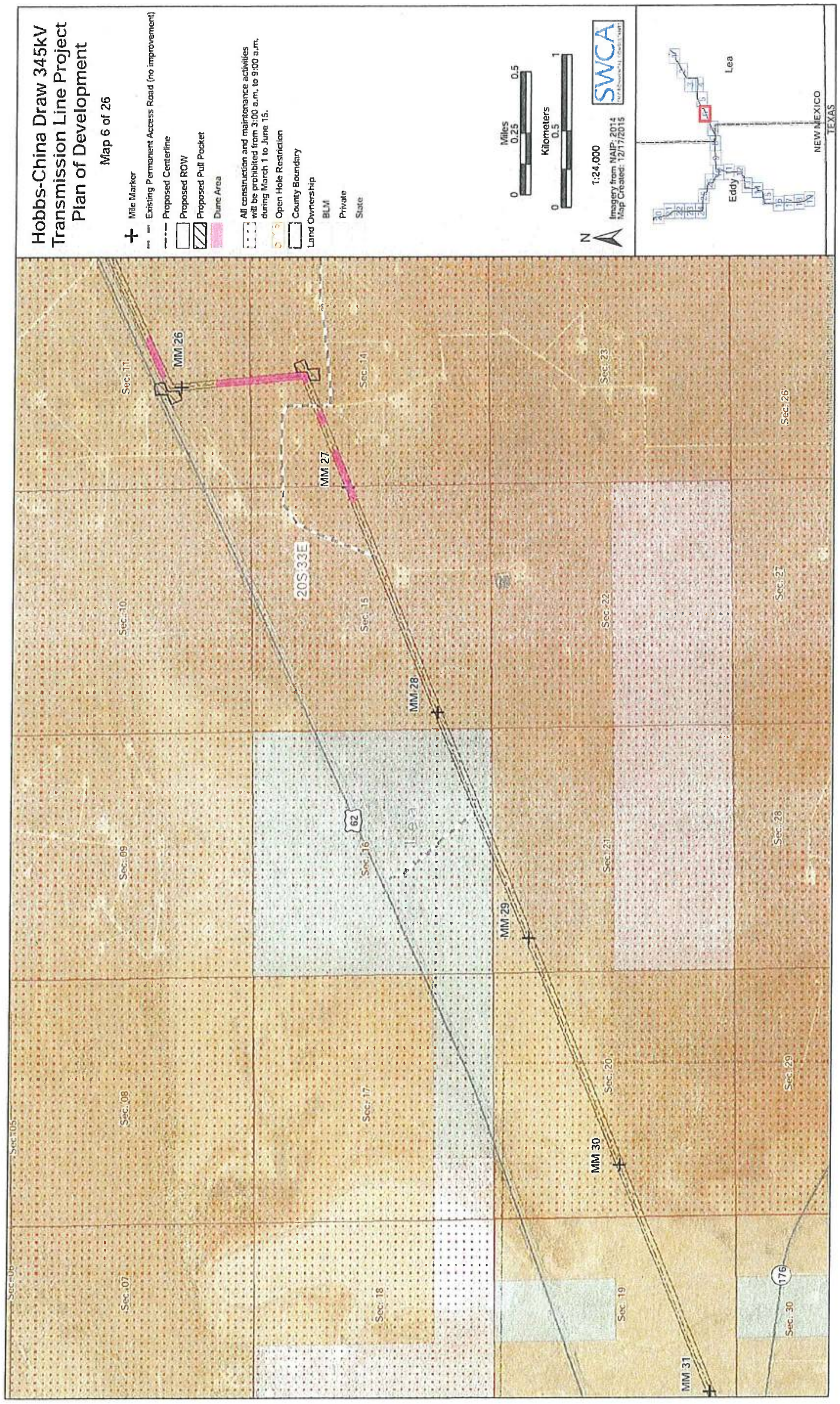
Hobbs-China Draw 345kV Transmission Line Project Plan of Development
Map 6 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
Open Hole Restriction
County Boundary
Land Ownership
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Miles
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Imagery from NAIP: 2014
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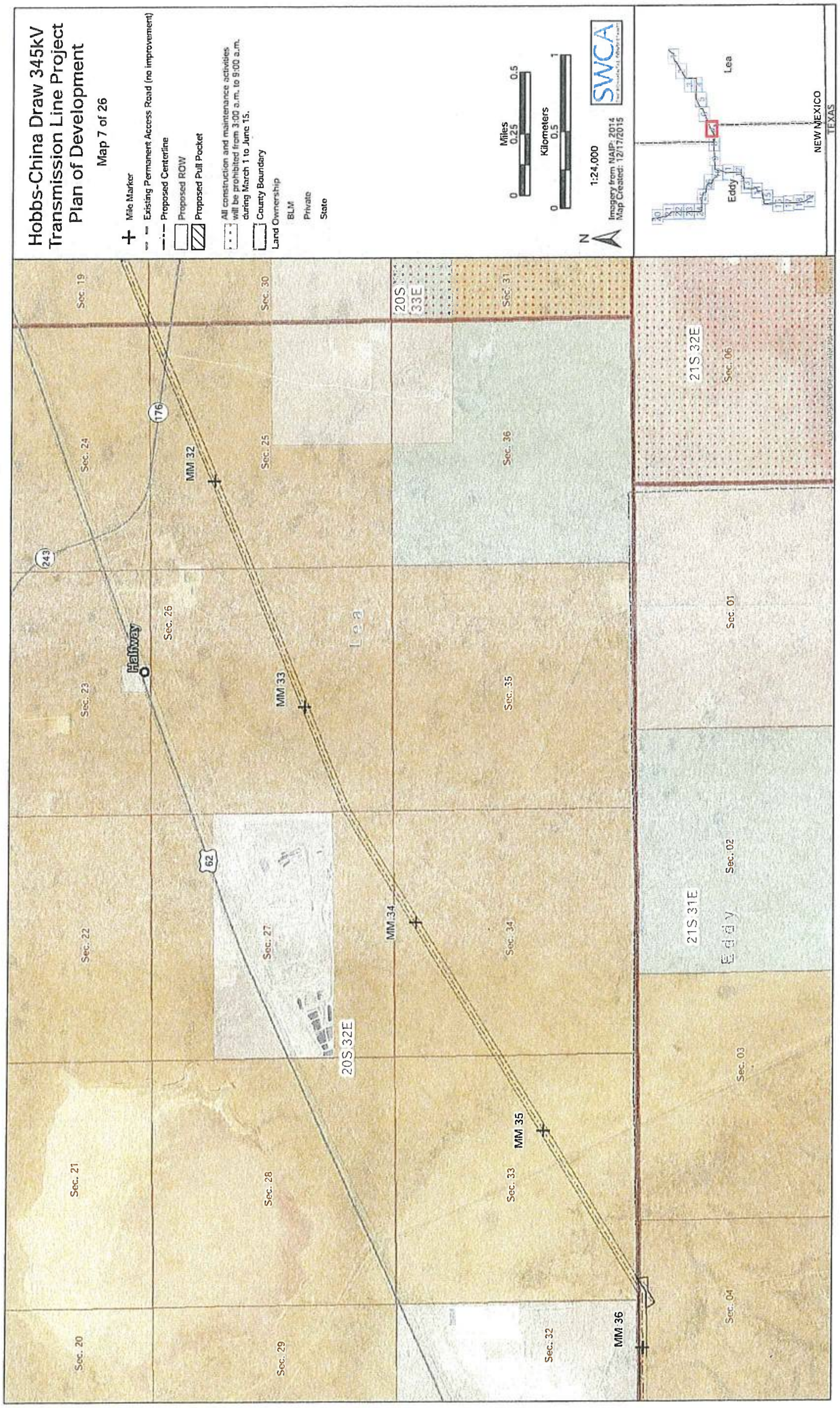
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 7 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
All construction and maintenance activities will be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15.
County Boundary
Land Ownership
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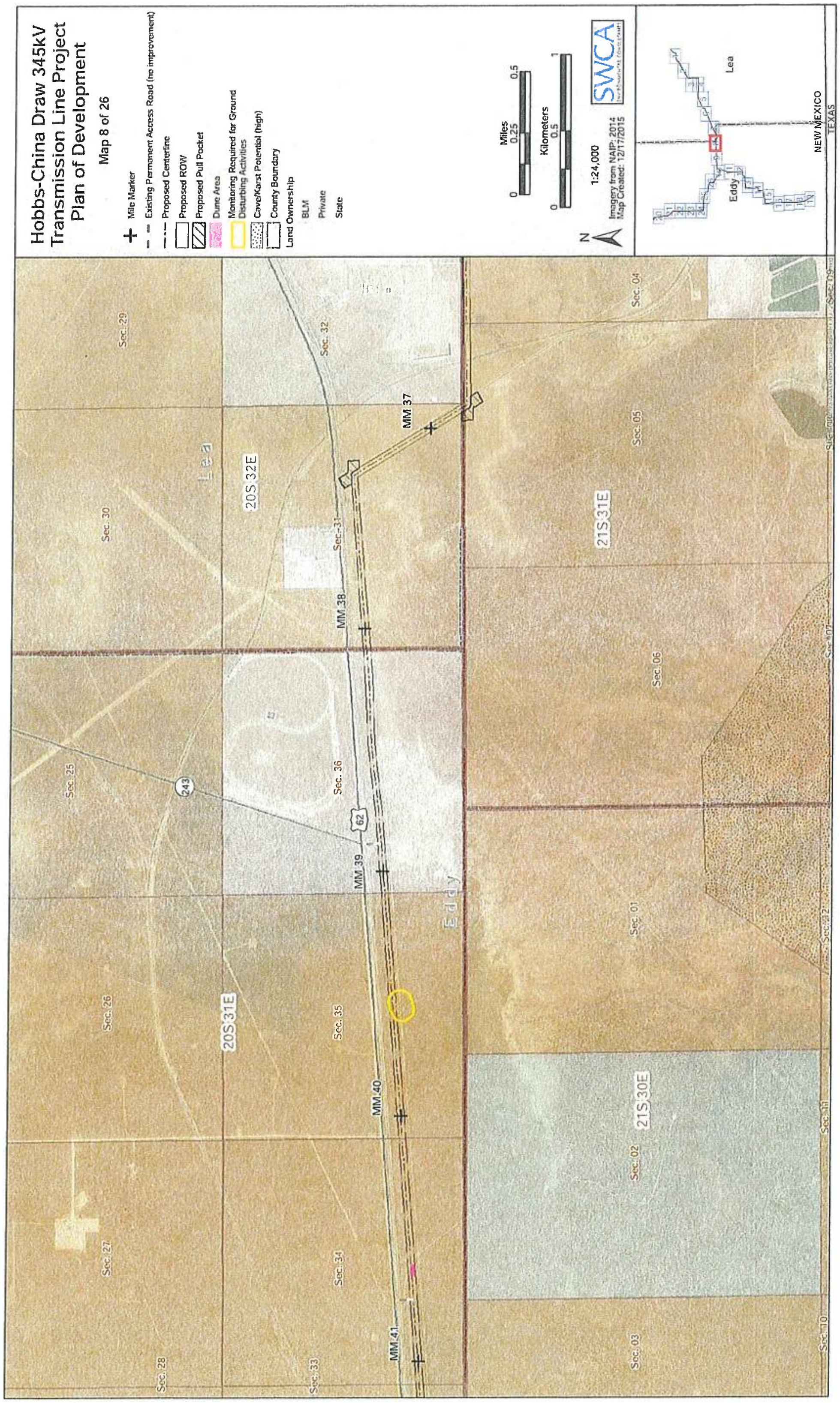
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 8 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
County Boundary
Land Ownership
BLM
Private
State
Miles
Kilometers
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Imagery from NAIP: 2014
Map Created: 12/17/2015
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Hobbs-China Draw 345kV
Transmission Line Project
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Mile Marker
Proposed New Access Road
Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
Drainage
County Boundary
Land Ownership
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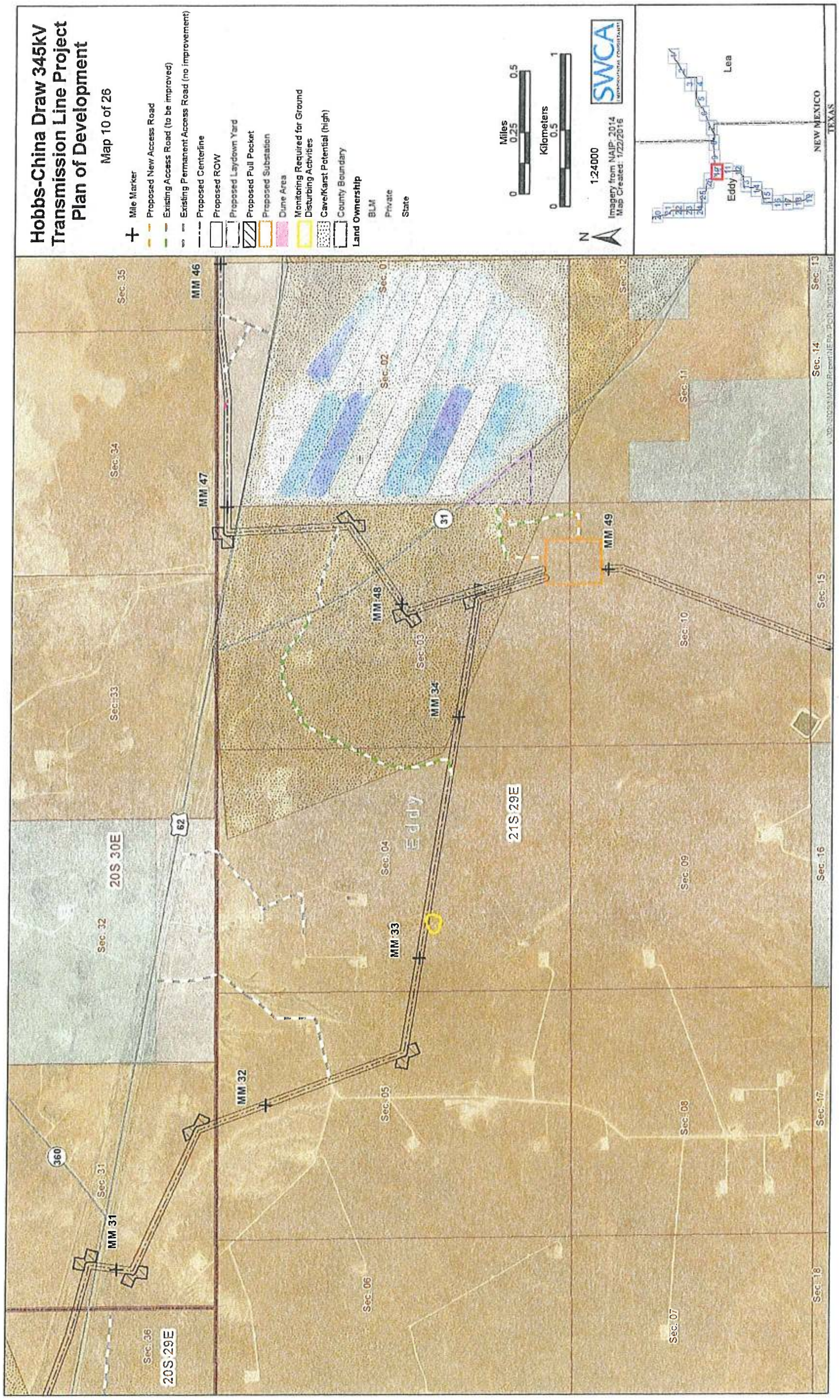
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Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Laydown Yard
Proposed Pull Pocket
Proposed Substation
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
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Land Ownership
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Transmission Line Project
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Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Cave/Karst Potential (high)
Drainage
County Boundary
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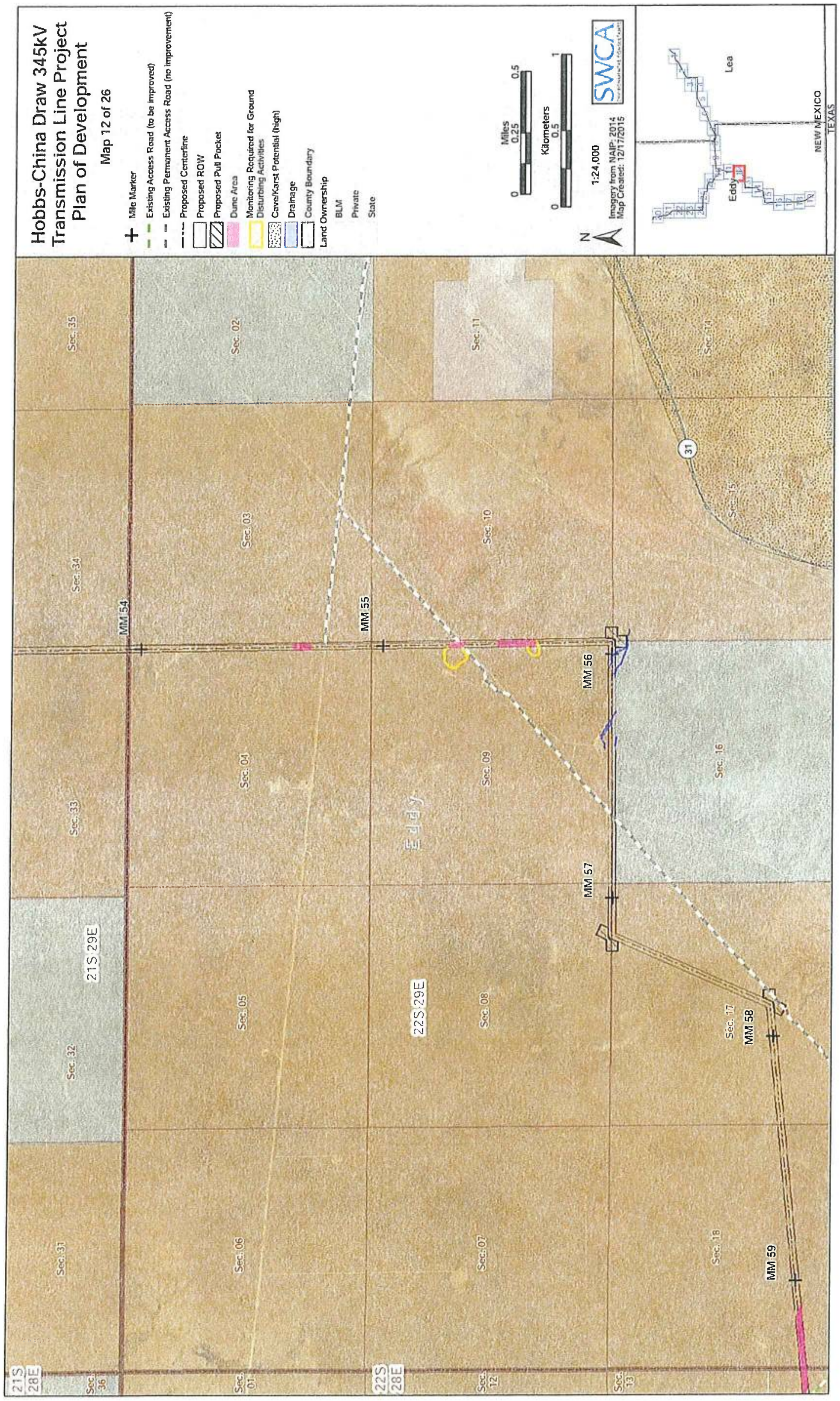
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Proposed Centerline
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Proposed Pull Pocket
Dune Area
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
Drainage
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Land Ownership
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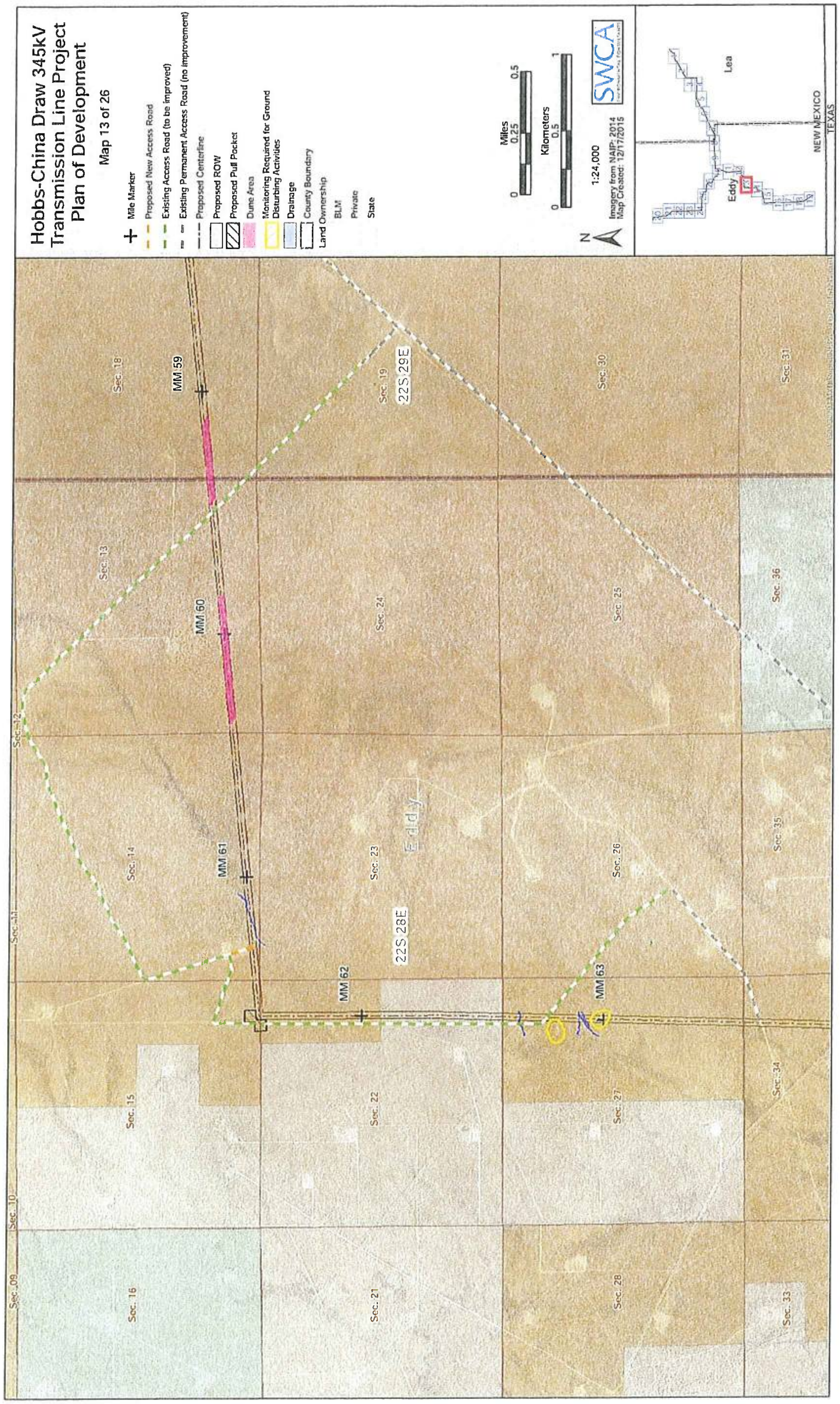
Hobbs-China Draw 345kV
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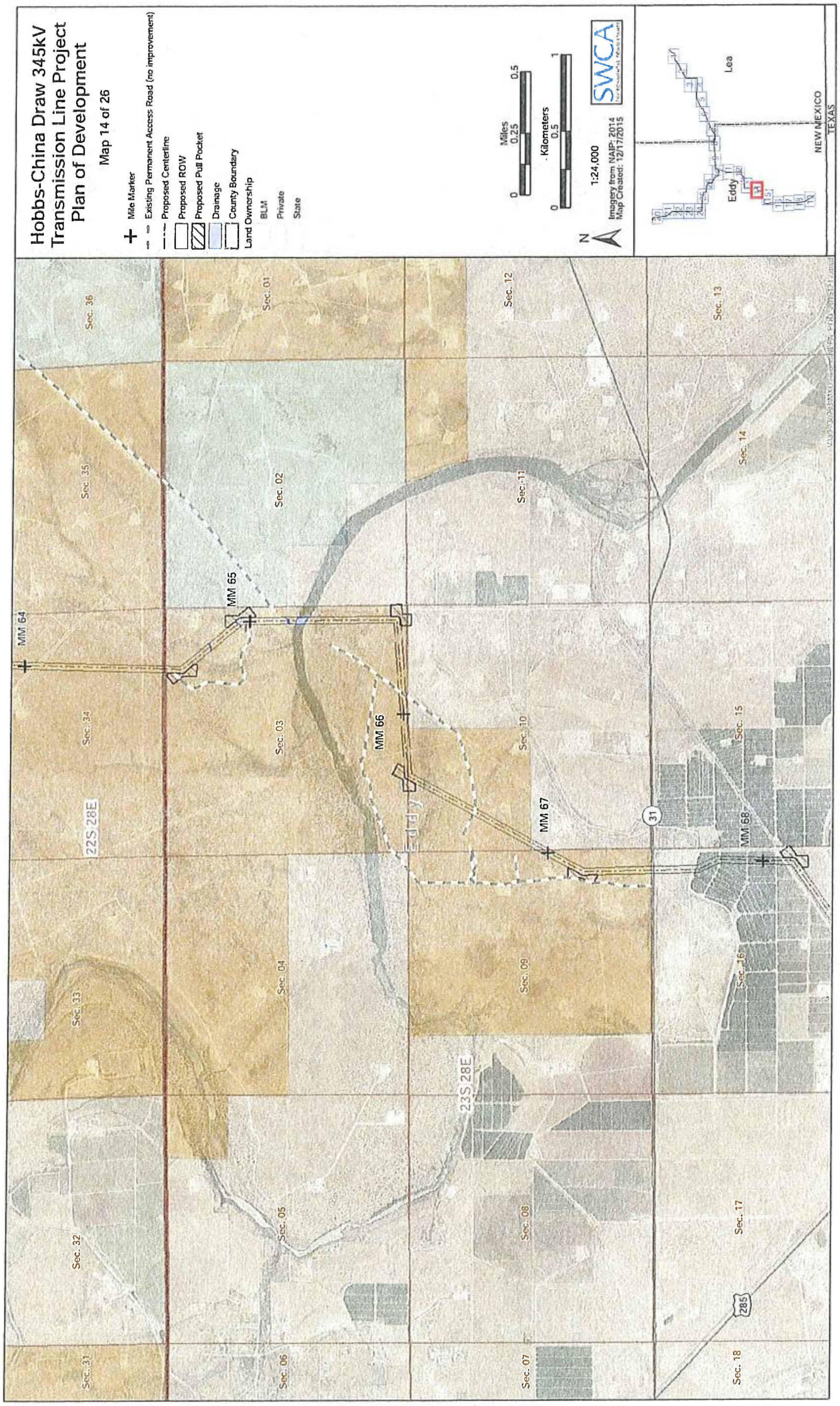
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Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Drainage
County Boundary
Land Ownership
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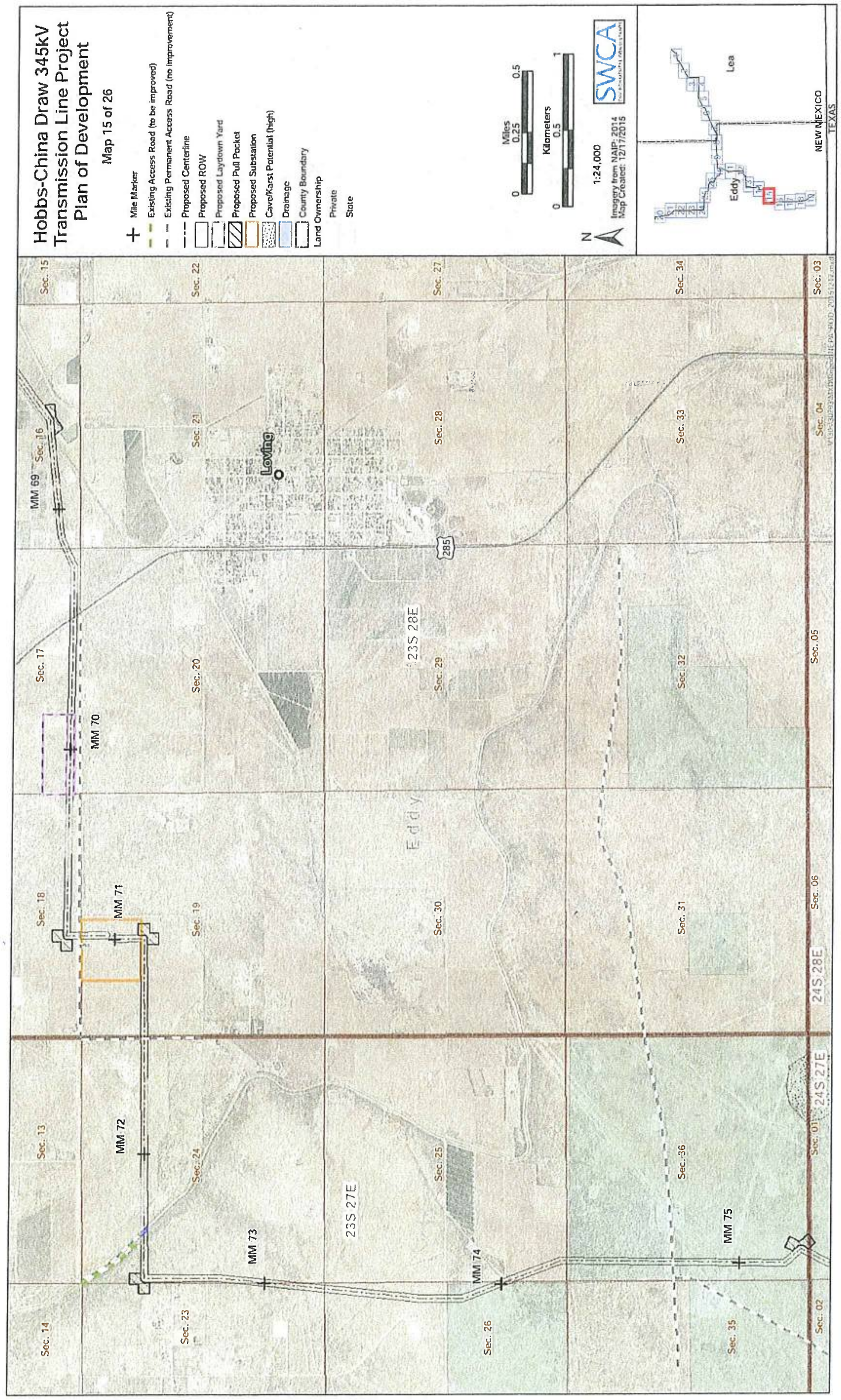
Hobbs-China Draw 345kV
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Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Laydown Yard
Proposed Pull Pocket
Proposed Substation
Cave/Karst Potential (high)
Drainage
County Boundary
Land Ownership
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Hobbs-China Draw 345kV
Transmission Line Project
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Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Restricted Access
Cave/Karst Potential (high)
Drainage
County Boundary
Land Ownership
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Hobbs-China Draw 345kV
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Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Cave/Karst Potential (high)
Drainage
County Boundary
Land Ownership
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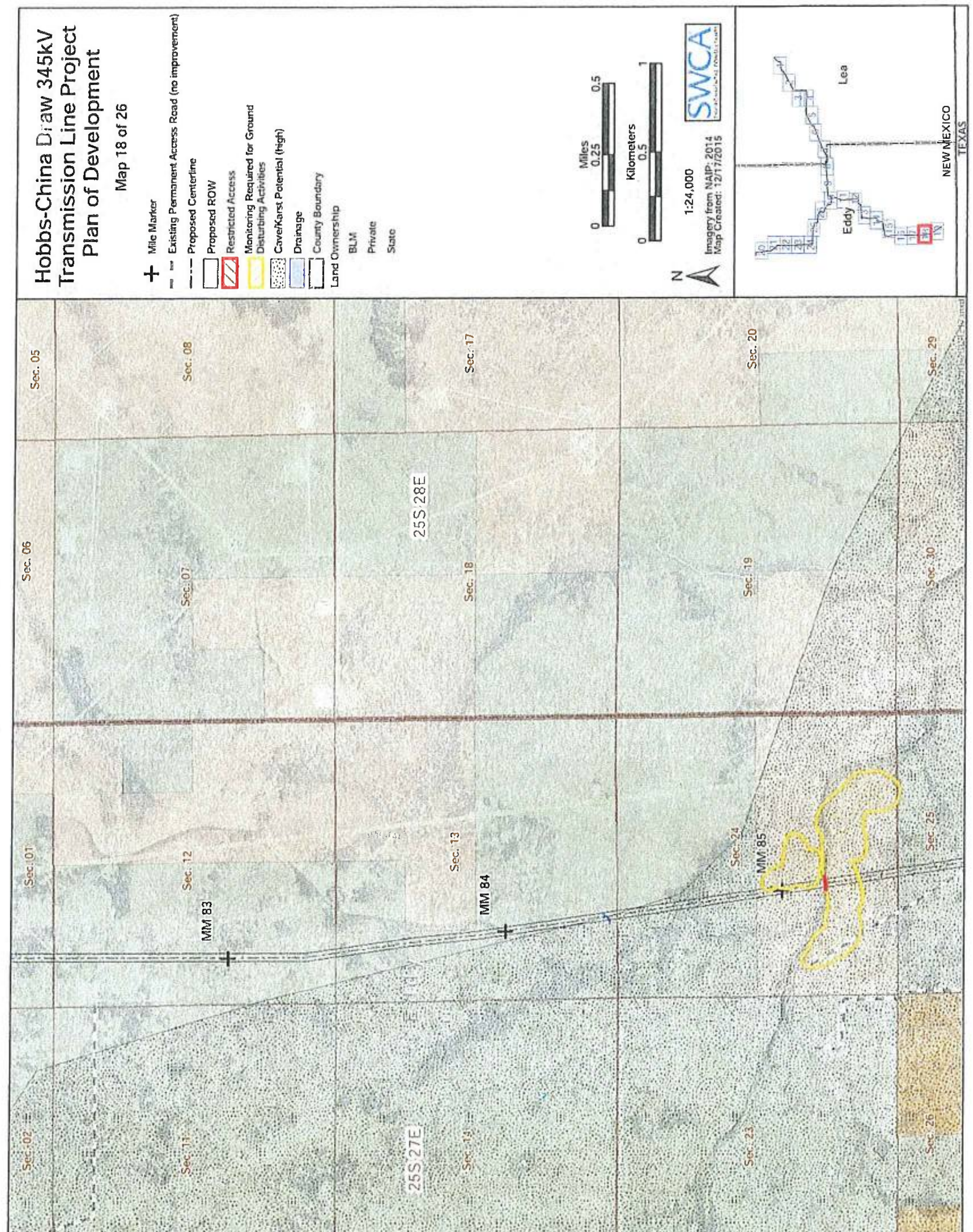
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Transmission Line Project
Plan of Development
Map 18 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Restricted Access
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
Drainage
County Boundary
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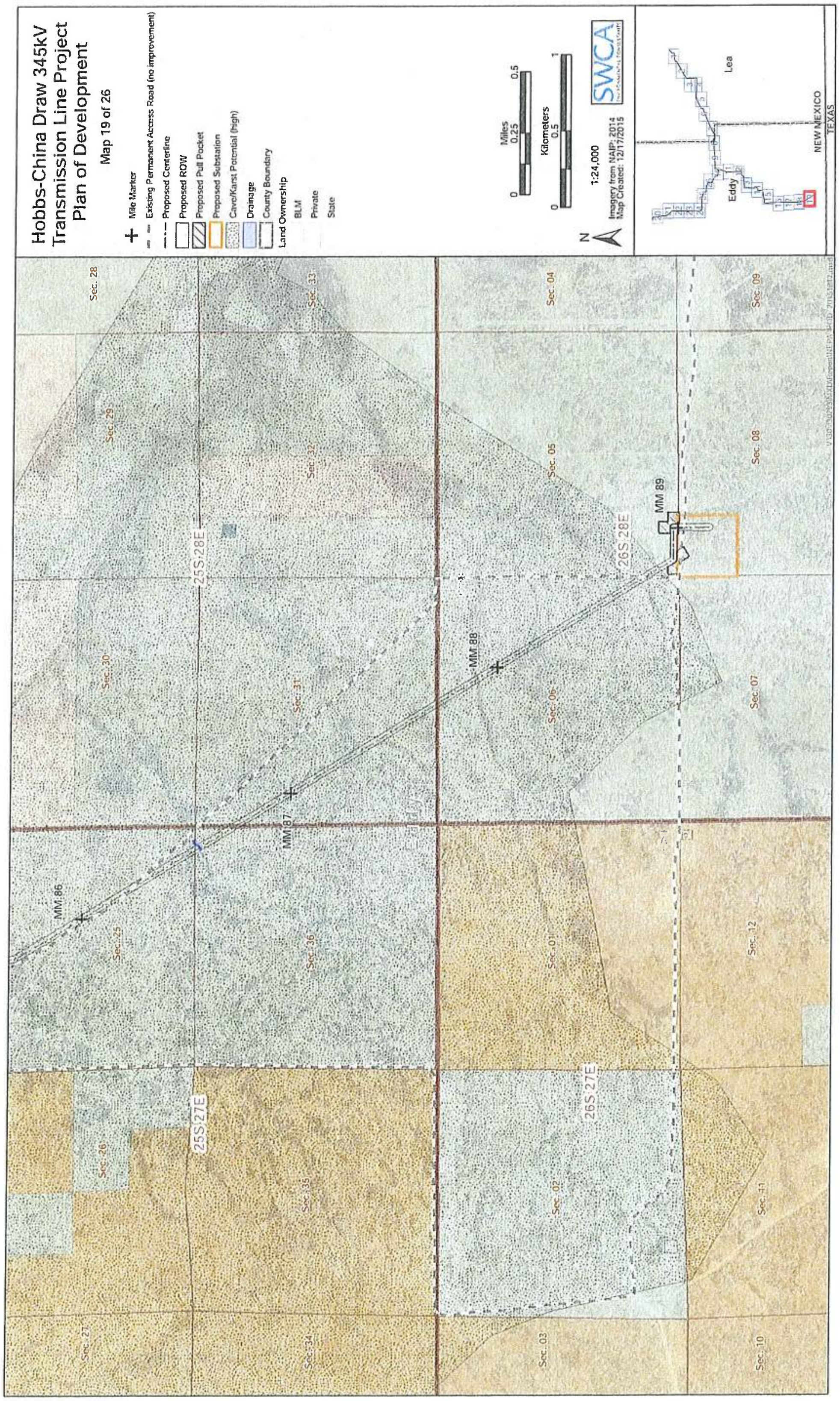
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 19 of 26
Mile Marker
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Proposed Substation
Cave/Karst Potential (high)
Drainage
County Boundary
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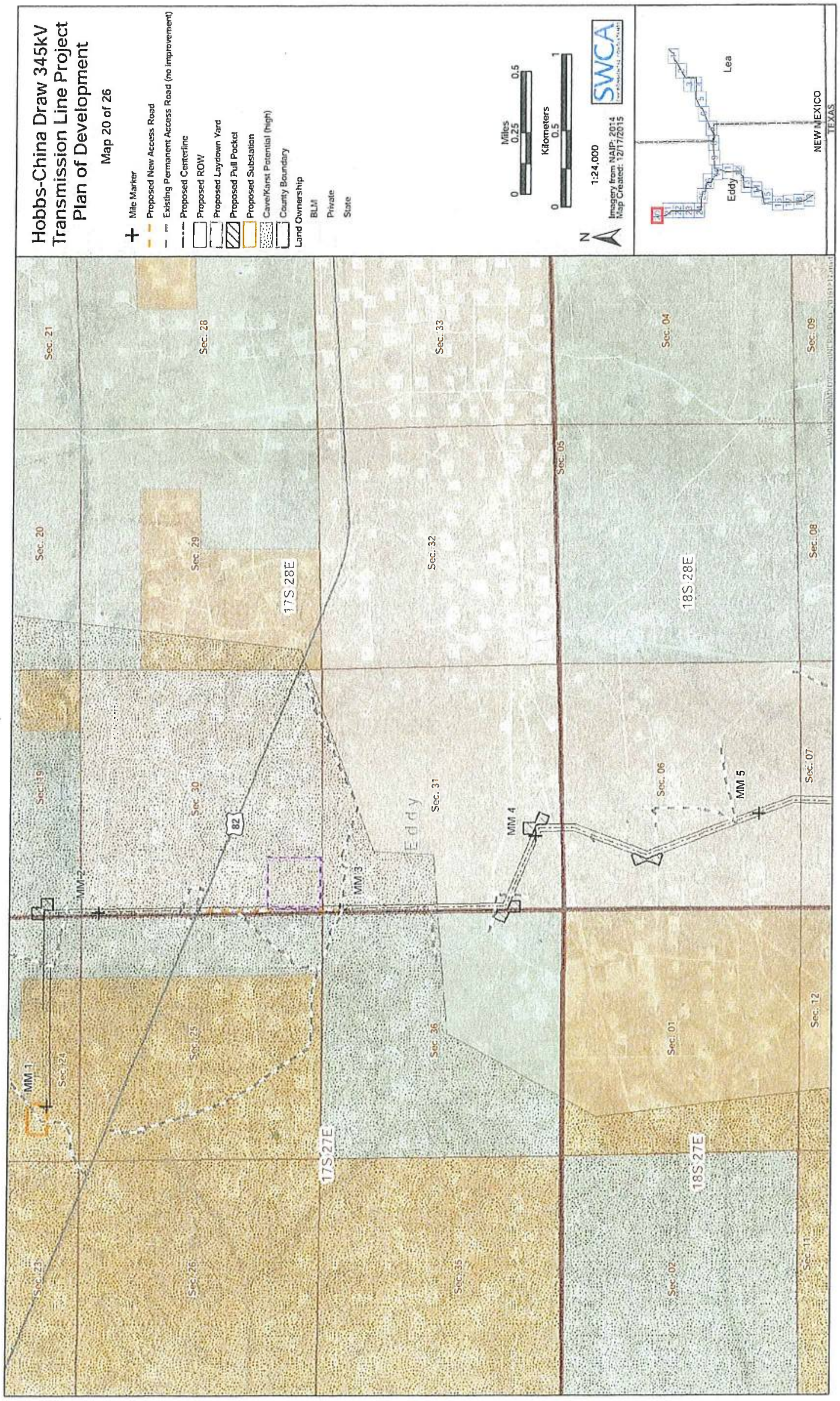
Hobbs-China Draw 345kV
Transmission Line Project
Plan of Development
Map 20 of 26
Mile Marker
Proposed New Access Road
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Laydown Yard
Proposed Pull Pocket
Proposed Substation
Cave/Karst Potential (high)
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Land Ownership
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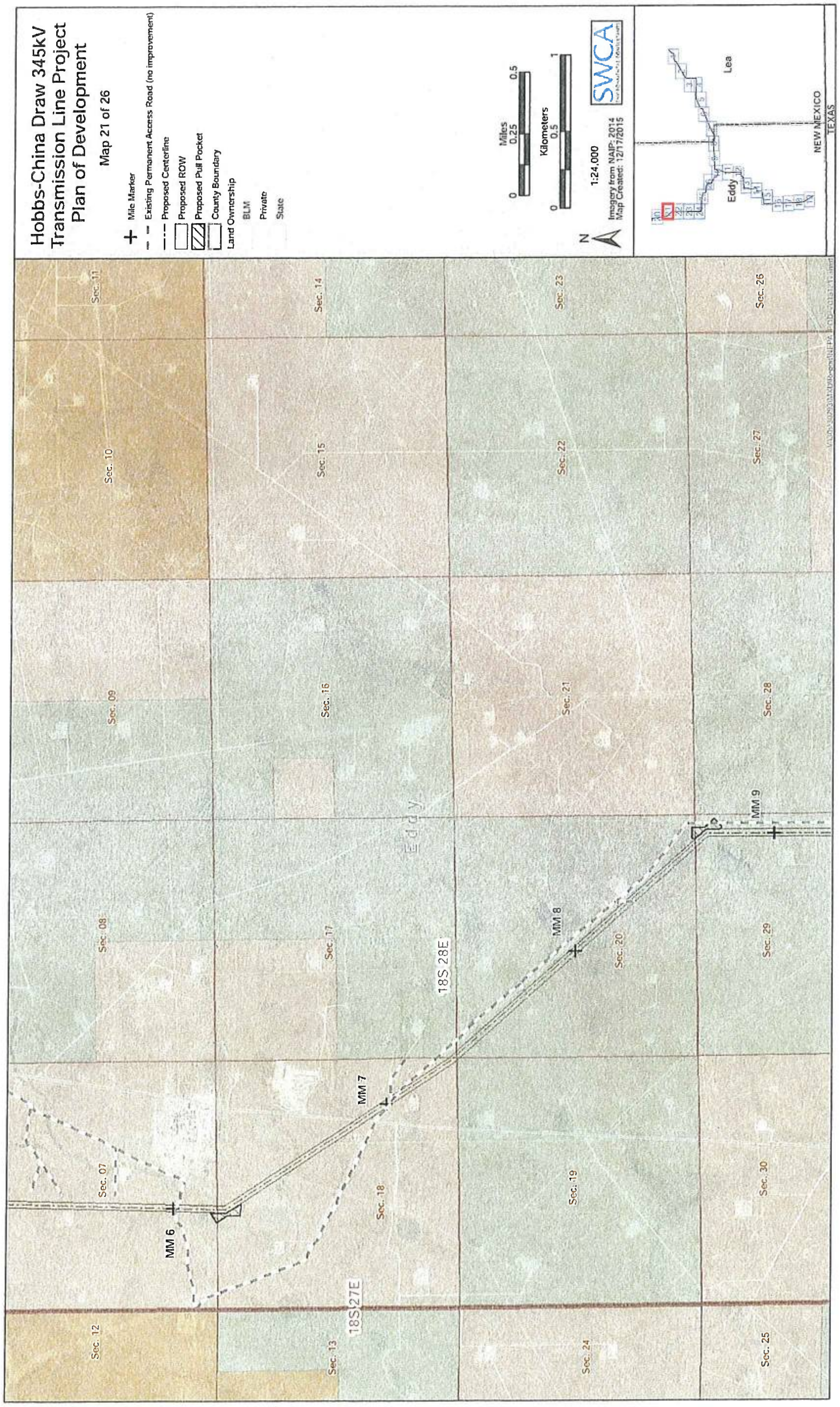
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Map 21 of 26
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Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
County Boundary
Land Ownership
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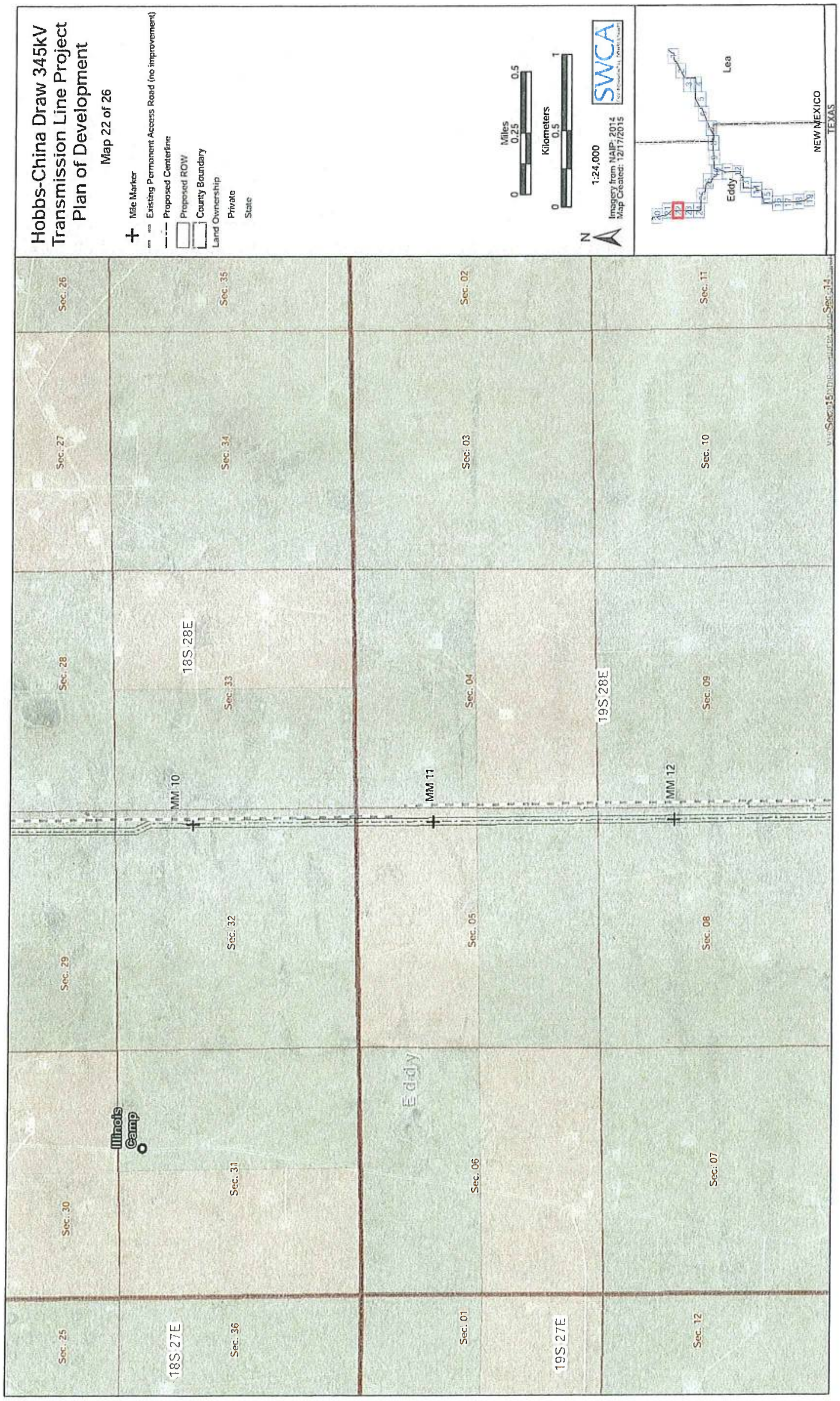
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Proposed Centerline
Proposed ROW
County Boundary
Land Ownership
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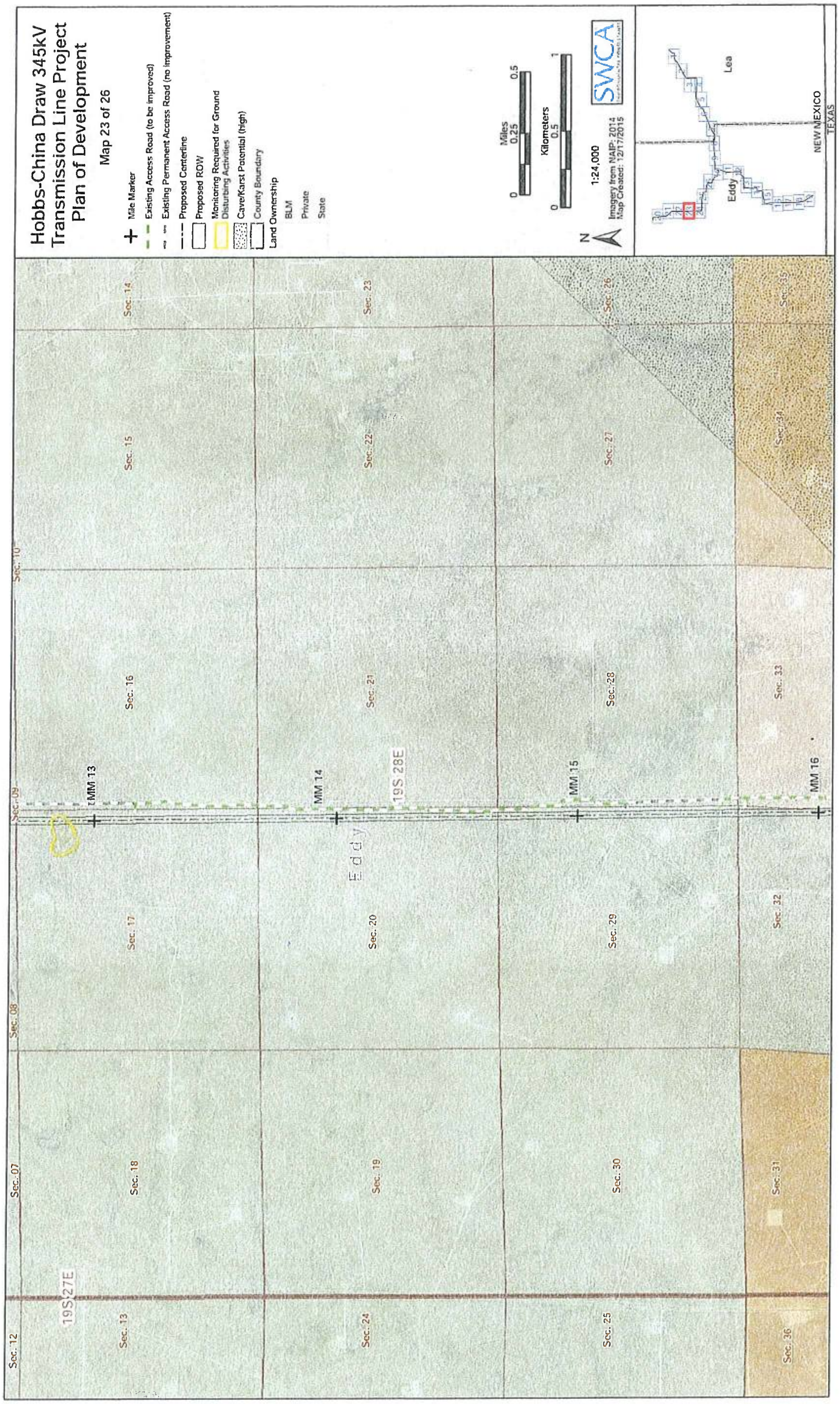
Hobbs-China Draw 345kV
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Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
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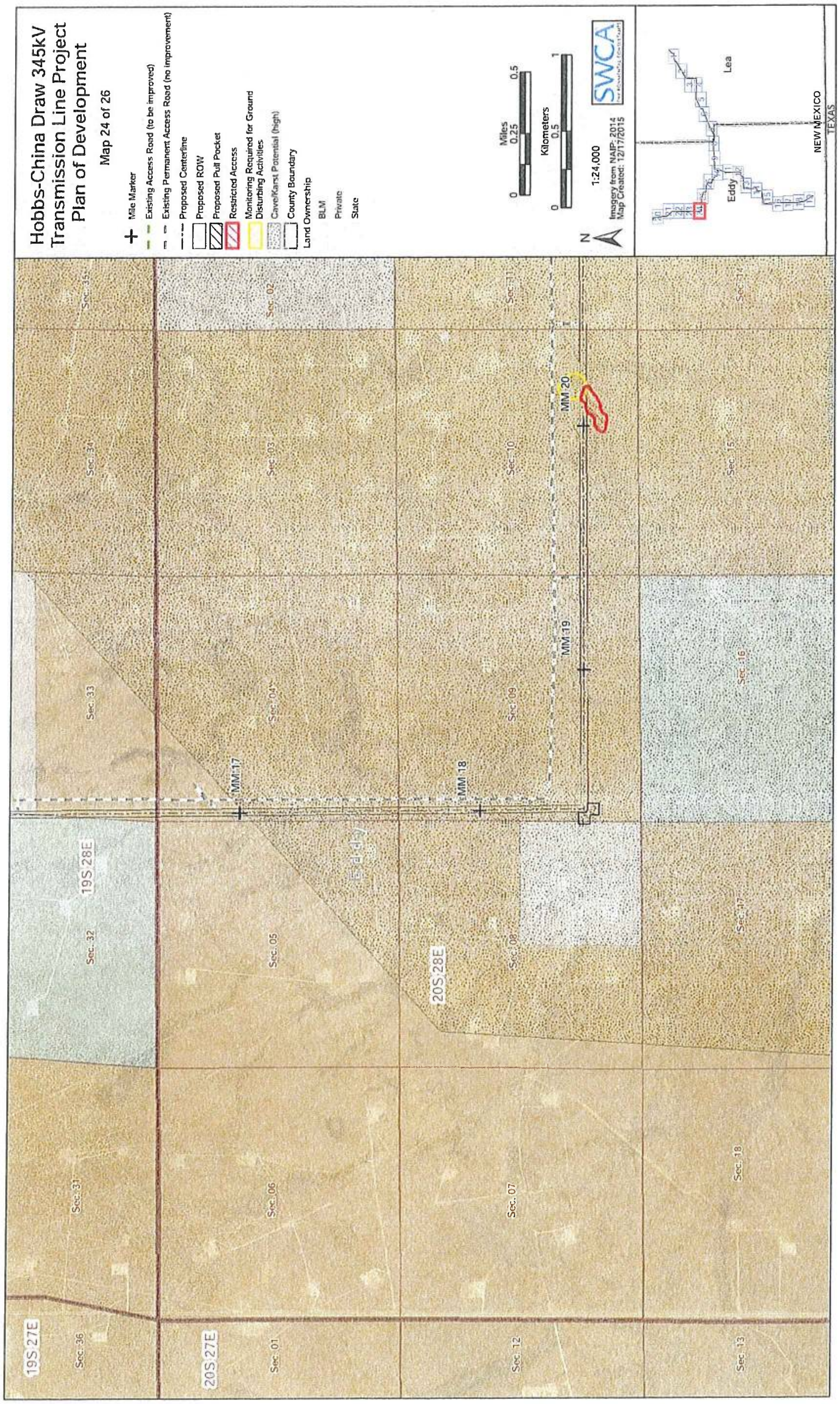
Hobbs-China Draw 345kV
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Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
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Proposed Pull Pocket
Restricted Access
Monitoring Required for Ground Disturbing Activities
Cave/Karst Potential (high)
County Boundary
Land Ownership
BLM
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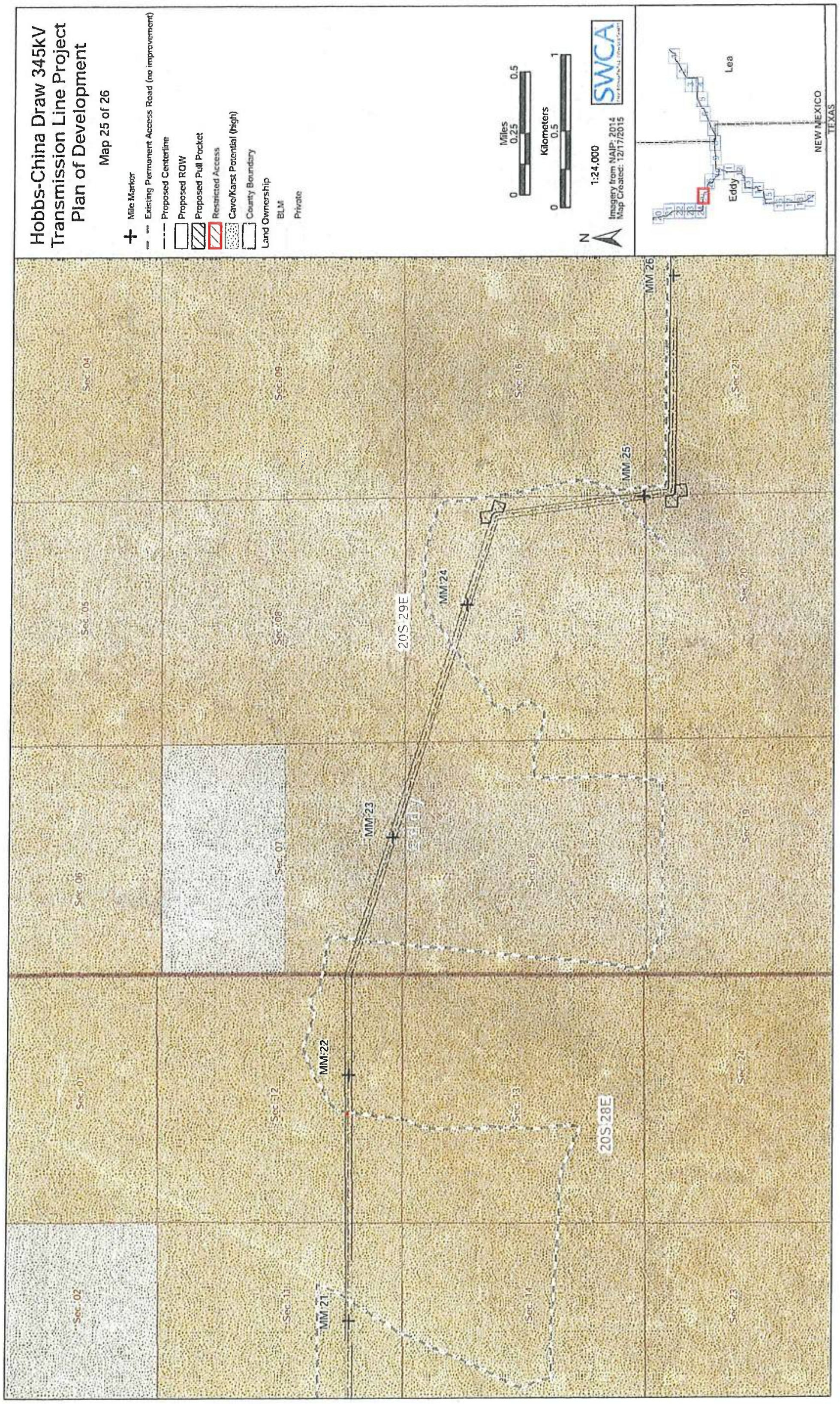
Hobbs-China Draw 345kV
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Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Restricted Access
Cave/Karst Potential (high)
County Boundary
Land Ownership
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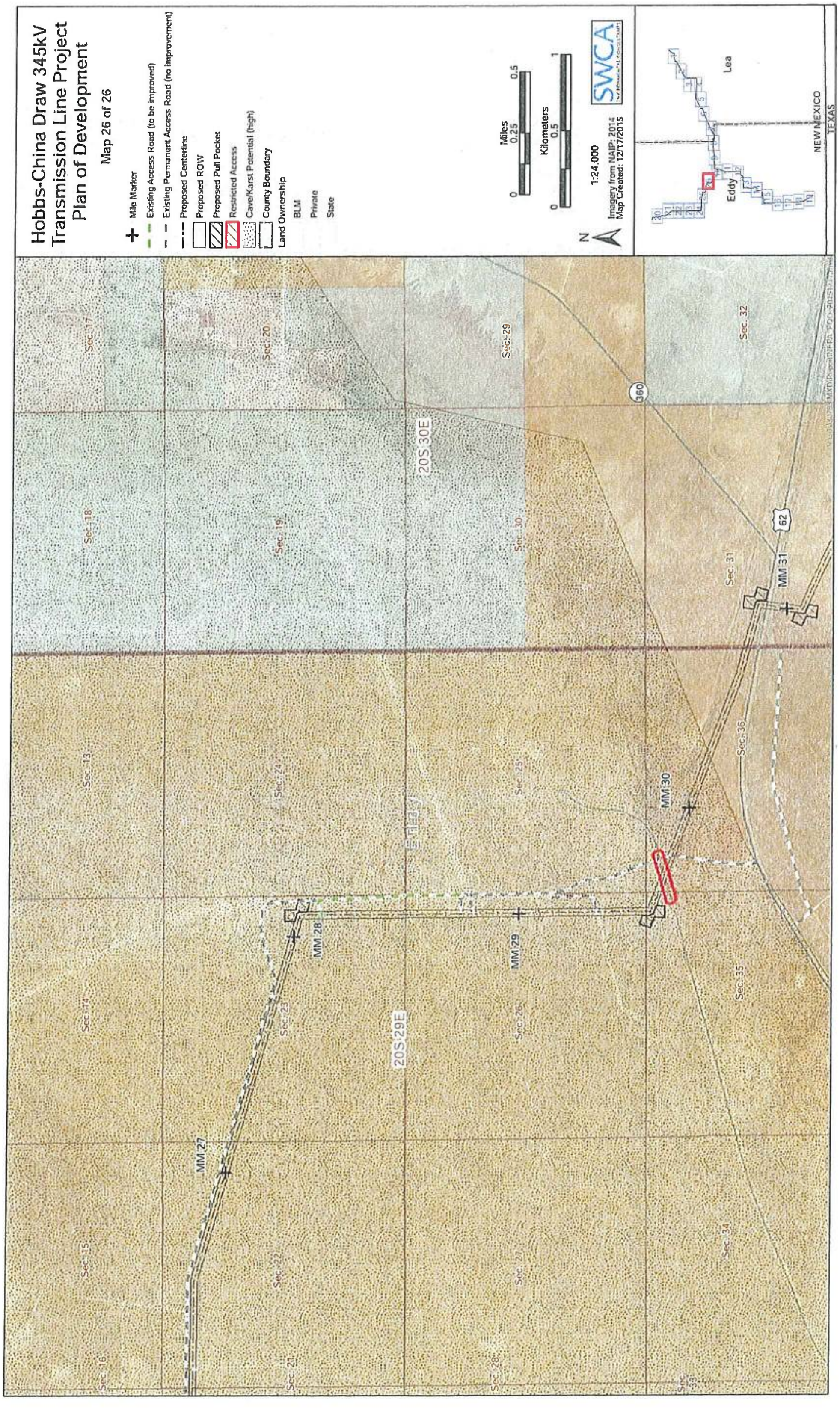
Hobbs-China Draw 345kV
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Existing Access Road (to be improved)
Existing Permanent Access Road (no improvement)
Proposed Centerline
Proposed ROW
Proposed Pull Pocket
Restricted Access
Cave/Karst Potential (high)
County Boundary
Land Ownership
BLM
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Imagery from NAIP: 2014
Map Created: 12/17/2015
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Appendix B

Variance Plan

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CONTENTS

ATTACHMENTS

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1. INTRODUCTION

The Bureau of Land Management (BLM) will be responsible for enforcing the terms and conditions of the BLM's right-of-way grant on federal lands during the term of the grant. As the lead federal agency, the BLM will also be responsible for inspecting and monitoring preconstruction and construction activities, on federal lands, as they relate to the grant. On non-federal lands, Xcel Energy, doing business as Southwestern Public Service Company (SPS or Applicant), will be responsible for inspecting and monitoring preconstruction and construction activities of the entire Hobbs China Draw 345-kilovolt (kv) Transmission Project (Project) on all lands analyzed in the Environmental Assessment (EA), and enforcing requirements related to BLM responsibilities under the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). In addition, the Project will require adherence to any federal, state, and local permits, as well as private landowner agreements (if applicable), that include conditions to construct. The responsibility of compliance monitoring and enforcement of non-federal conditions will be determined between the Applicant and the landowner on a case-by-case basis. This variance plan (VP) describes the standard protocols for variance requests and other deviations from the approved project described in the EA and Plan of Development (POD). The VP is intended to be a controlled document and may be revised as needed throughout the construction process. Authority for implementation of this VP originates from the terms, conditions, and stipulations of the BLM's right-of-way grant, the POD, the EA, the decision document and the findings of no significant impact (FONSI).

2. VARIANCE PROCEDURES (UNFORESEEN CIRCUMSTANCES)

The intent of this section is to inform SPS, BLM, Construction Contractor(s), and other Project personnel of the variance request process to minimize potential costly construction delays. It is understood by the BLM and SPS that unforeseen circumstances will occur during construction. The need for realignments to the proposed route, access roads, and/or work areas not within the permitted Project right-of-way grant and not analyzed in the EA analysis may arise. In addition, the need to make changes to construction procedures, schedule, and/or approved mitigation measures and other specific stipulations and methods may be required. Under these or similar circumstances, a variance will need to be approved by the BLM to stay in compliance.
Variance requests will be generated by the Construction Contractor(s) and provided in writing to SPS who will then review the request. SPS will evaluate the variance request and submit it to the BLM to be processed according to the process outlined herein. The variance request form (see Attachment A) will be incorporated into the preconstruction environmental training program. The variance request form will describe the variance request in detail, provide justification and documentation for the variance (including maps and photographs), calculate the proposed permanent or temporary acreage affected, describe the original disturbance acreage analyzed in the EA, and show the difference in acreage between the proposed variance and the original disturbance. It will also describe any potentially impacted resources and identify if additional resource surveys will be required. Depending on the nature of the variance request, it may be implemented in the field as soon as the approved variance is received by SPS or the Construction Contractor(s).

2.1. Level 1 Variance: Variances Accomplished through Field Resolution

A Level 1 variance is a minor field adjustment within the approved BLM right-of-way grant that conforms to the EA and POD. A Level 1 variance must meet the following criteria:

- The area of activity or change lies within the approved right-of-way area, including temporary use areas.
- The area of activity or change was previously identified and analyzed in the EA.
- The area of activity or change does not result in an increase in disturbed acres than is estimated in the EA.
- The variance creates equal to or less impact to resource values than the original location and activity (e.g., does not involve higher density wildlife habitat than the planned site, impacts to populations of sensitive plants, or impacts to cultural sites)

A Level 1 variance request will be initiated by the Construction Contractor(s) and submitted to SPS for review. The variance request form will include all attached supporting documentation. SPS will submit the variance request package to the BLM for their review who may approve these variances in the field. However, the desired adjustments or deviations will be documented in a variance request form for inclusion in the Project record.

Examples of minor field adjustments include the following:

- Relocation of erosion-control devices (note this could also require a modification to the stormwater pollution prevention plan).
- Locating temporary fences inside authorized work areas.
- Permitting water bars to be extended, if applicable, off the area designated for the transmission line, and into native vegetation "one dozer length" (this includes providing permission for construction equipment to work outside designated work areas).
- Allowing rubber-tired vehicles to use additional designated access roads (in addition to those approved in BLM-approval documents) where improvements to the road will not be necessary. *Note*: this is not intended for authorizing additional haul roads for equipment and materials.
- Temporarily (for not more than 7 days) placing parts or other assemblies outside areas designated in the EA or POD but within the authorized Project area. This does not include any surface disturbance associated with temporary storage.

2.1.1.1. Level 1 Variance Approval or Denial

The BLM can approve or deny Level 1 variance requests in the field if the results of implementing the changes are not significant and will occur within the granted right-of-way. A Level 1 variance request can be implemented in the field as soon as it is approved by the BLM. In some cases, a verbal approval can be given and followed up with a written, signed variance document.

If a Level 1 variance is denied, the BLM will inform SPS within 24 hours. SPS may choose to resubmit the request as a Level 2 variance or discontinue pursuit of the request.

2.2. Level 2 Variance: Variances Beyond Field Resolution, Not Requiring an Amendment to the Right-of-Way Grant

Level 2 variances pertain to requests that exceed the field decision authority of the BLM and may require agency resource staff review or field examinations. These alterations generally involve Project changes that will affect an area outside of the granted work area, but within the area previously surveyed and/or analyzed for cultural resources, Section 404 of the Clean Water Act, and biological resources. Such variance requests typically require review of supplemental documents, correspondence, and records to be provided with the request. Examples include the following:

- Shifting extra workspace outside the approved construction corridor a short distance but within the area previously surveyed; here, overall disturbance type and acreage remains approximately the same, and no additional cultural or biological resources could be affected.
- Using additional extra workspace outside of the previously approved work areas (within or outside the Project or off-Project right-of-way).
- Shifting temporary workspace to previously disturbed areas.
- Allowing construction or maintenance activities to be conducted in Project areas when seasonal restrictions are in place.
- Moving proposed culvert location(s) to better accommodate natural drainages. *Note*: this may also require a modification to the stormwater pollution prevention plan.
- Providing extra work space for topsoil and spoil material storage to prevent mixing of soils.
- Moving a range fence a specified distance laterally, and permanently installing it to avoid proposed construction. *Note*: this may also require an amendment to the allotment management plan, if applicable.
- Modifying seed mixes specified in the POD, typically due to unavailability.
- Modifying an access road due to safety hazards.

Variance requests may also be submitted for minor changes that will extend beyond the previously surveyed work area and corridor for sensitive resources. In these situations, additional cultural and/or biological surveys will be required. Documentation of the surveys and other applicable correspondence will need to be submitted with the variance request. If sensitive biological resources are encountered during the additional surveys, documentation of consultation with applicable agencies must be provided with the variance request. All BLM-approved stipulations (and if applicable, the terms and conditions of the biological assessment) must be adhered to for the variance to be approved.

A Level 2 variance request will be initiated by the Construction Contractor(s) and submitted to SPS for review. The variance request form will include all attached supporting documentation. SPS will submit the variance request package to the BLM for review. After consulting with the BLM resource specialists, if necessary, the BLM will provide SPS written approval or denial (including an explanation) of the request by using the spaces provide on the form. The BLM may request additional information, or a modification of the request, before the variance can be approved. In addition, SPS will be informed if an amendment to the BLM right-of-way grant will be required.

2.2.1.1. Level 2 Variance Approval or Denial

The BLM will review the variance request form and any attachments in consultation with the appropriate BLM resource specialists. If additional information or a modification to the request is required, SPS will submit the requested information within 5 business days. The BLM will provide SPS written approval of the request by using the space provided on the form within 5 business days from receipt of a complete request.

If a Level 2 variance is denied, the BLM will provide SPS a written denial (including an explanation) of the request by using the spaces provided on the form within 5 business days from receipt of a complete request. SPS may choose to resubmit the request as a Level 3 variance request, or to discontinue pursuit of the request.

2.3. Level 3 Variance: Variances Requiring an Amendment to the Right-of-Way Grant

The BLM will assist SPS in determining whether a significant proposed change, outside the approved BLM right-of-way grant, will necessitate submittal of an amendment, or whether the change can be handled with a variance request.

If the BLM determines that a proposed construction modification involves substantial deviations from the right-of-way grant, it will require a grant amendment in accordance with 43 CFR 2807.20. A variance requiring an amendment to the right-of-way grant requires completion of an application on a Standard Form 299 and a decision by the BLM Authorized Officer. SPS will prepare the Standard Form 299 with applicable supporting documentation. On approval, the package will be submitted to the appropriate BLM Project Manager. The BLM will process the amendment application pursuant to 43 CFR 2800. The BLM may request additional information, or a modification of the request, before the amendment can be approved.

Grant amendments will be reviewed by BLM staff who will consult with other federal, state, and local agencies as needed. Grant authorization amendment approvals or denials will come directly from the BLM. Approval of the grant amendment also requires issuance of an NTP addressing the amendment, if an NTP is a requirement of the original right-of-way grant. Examples of grant amendment requests include the following:

- Route realignments or facility relocations onto BLM land not analyzed in the EA and included in the right-of-way grant.
- Certain Project-wide changes to mitigation measures or reclamation procedures.
- Expansion of the Project area defined in the right-of-way grant and POD.
- Requests affecting sites potentially eligible for the National Register of Historic Places or involving state or federally protected species or their habitat.

Attachment A

Variance Request Form

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Variance Request Form

(Note: All fields shaded in yellow are to be completed as applicable.)

Variance Request No.:

		Date Submitted to SPS:	
		Date Submitted to BLM:	
Requested by:		BLM Approval Reference No.	
Request prepared by:		**Variance Type:**	
Spread:		**Variance Sequence Number:**	

Location (Use either Station or Milepost)

Station:		**To:**		**Milepost:**		**To:**
Alignment Sheet Number:				**Tract No.:**		
Landowner:				**Other Agency Jurisdiction:**		
Current Land Use/Vegetative Cover:						

Nearby Features (Waterbody, T&E Habitat, Wetland, Cultural Resource Site [distance], etc.):

☐ Noxious Weed Area ☐ Residence (distance) — **In or within 100 feet of a wetland:** ☐ Yes ☐ No

☐ T/E Species Habitat ☐ Cultural Resource Site (distance) — **In or within 100 feet of a waterbody:** ☐ Yes ☐ No

☐ Raptor Nest ☐ Water Well — **Wetland or Waterbody ID:**

☐ Other (Specify):

Net acreage affected:

To be Completed by the Construction Contractor

Variance Level: ☐ Level 1 ☐ Level 2 ☐ Level 3

Variance From: ☐ Permit ☐ POD ☐ ROW Grant ☐ EA ☐ Specification ☐ Drawing ☐ Mitigation Measure

☐ Other Describe:

Detailed Description of Variance: Attachments? ☐ Yes ☐ No Photographs? ☐ Yes ☐ No

List Attachments:

Variance Justification:

For SPS Use Only

Additional Surveys Required		**Surveyed Corridor Description**	**Additional Surveys Completed**
Cultural Survey	☐ Yes ☐ No		☐ Yes ☐ No
T&E Survey	☐ Yes ☐ No		☐ Yes ☐ No

Proof of Previous Biological and Cultural Survey Clearance

Sign-off (as appropriate)	**Name (Print)**	**Approval Signature**	**Conditions (See Attached)**
SPS			☐ Yes ☐ No
BLM			☐ Yes ☐ No
Construction Contractor			☐ Yes ☐ No

For BLM Use Only				☐ Yes ☐ No
Variance Approved:		Variance Denied:		Beyond Authority:
Signature::				
Date:				
Stipulations:				

Variance Conditions					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					

VARIANCE REPORT FORM DEFINITIONS

CODE	TYPE
AR	Request new access road
CM	Request new or different construction
MM	Request new or different mitigation method
PM	Request permit modification
RA	Request new realignment of centerline
RR	Request re-route (outside cleared footprint)
WS	Request additional temporary workspace
CY	Request additional contractor yard
BLM	BLM NEPA requirement
AG	Agency request

Appendix C

Heronry Location and Design

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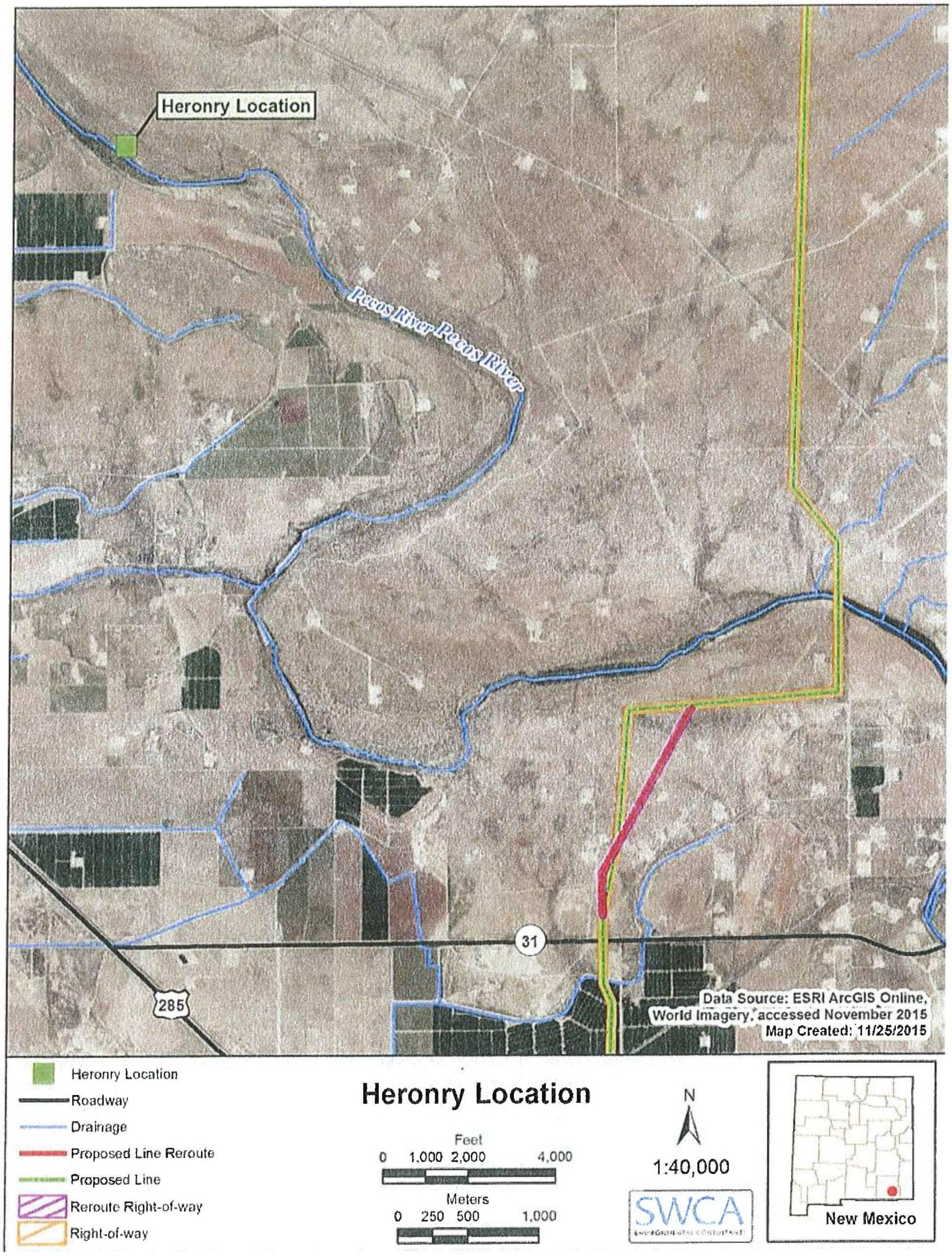
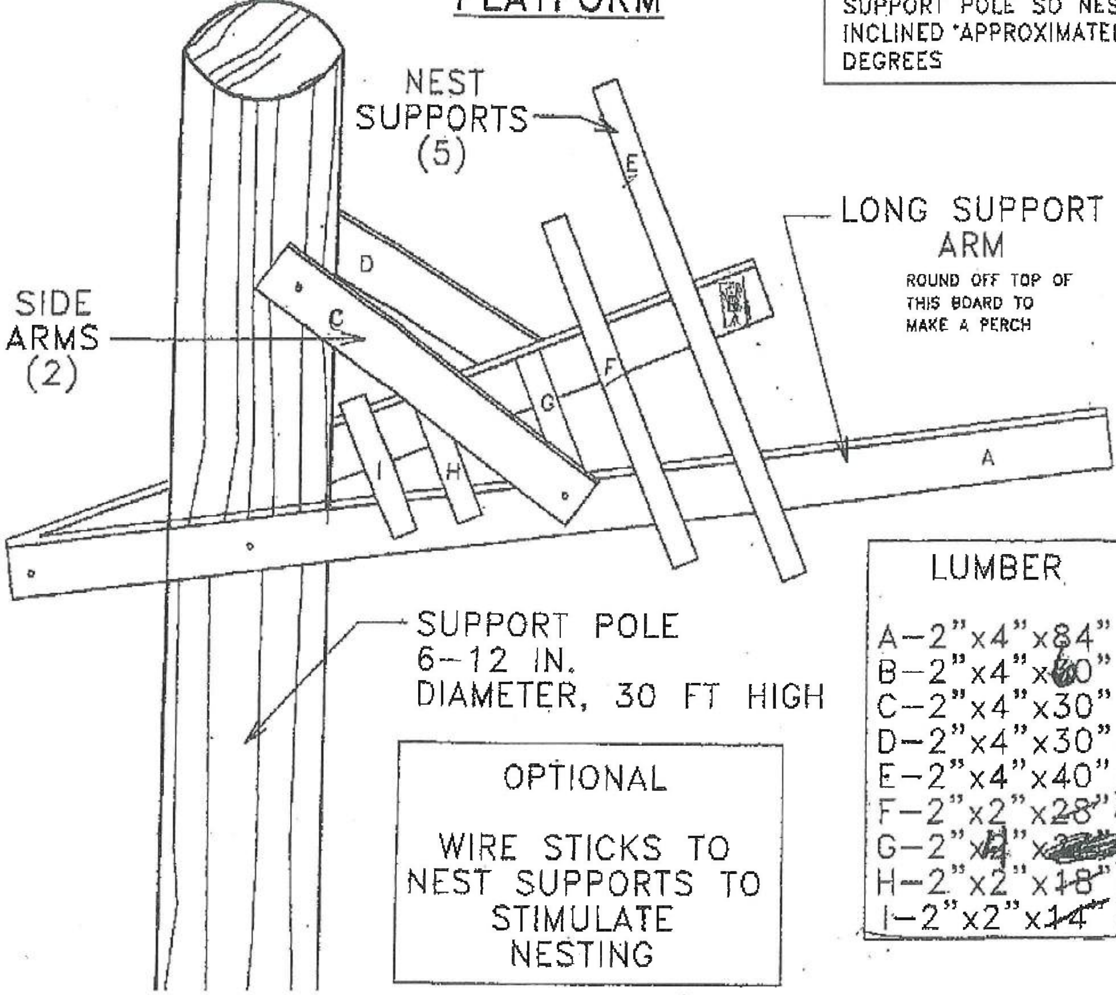

Heronry Location
Pecos River
Pecos River
31
285
Data Source: ESRI ArcGIS Online, World Imagery, accessed November 2015
Map Created: 11/25/2015
Heronry Location
Roadway
Drainage
Proposed Line Reroute
Proposed Line
Reroute Right-of-way
Right-of-way
Heronry Location
N
Feet
0 1,000 2,000 4,000
Meters
0 250 500 1,000
1:40,000
SWCA
New Mexico

BLUE HERON NEST PLATFORM

POSITION SIDE ARMS TO SUPPORT POLE SO NEST IS INCLINED APPROXIMATELY 7 DEGREES



OPTIONAL

WIRE STICKS TO NEST SUPPORTS TO STIMULATE NESTING

LUMBER

A-2"x4"x84"
B-2"x4"x60"
C-2"x4"x30"
D-2"x4"x30"
E-2"x4"x40"
F-2"x2"x~~28"~~ 44
G-2"x~~4~~"x~~[illegible]~~ 24"
H-2"x2"x~~18"~~ 32
I-2"x2"x~~14"~~ 28

NESTING PLATFORM QUANTITIES

3 - TRIPLE PLATFORMS - MATERIAL & INSTALLATION
3 - DOUBLE PLATFORMS - MATERIAL & INSTALLATION
3 - SINGLE PLATFORMS - MATERIAL & INSTALLATION

3 - TRIPLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL
3 - DOUBLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL
3 - SINGLE PLATFORMS - INSTALLATION ONLY
BLM WILL PROVIDE MATERIAL

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL COMMITMENTS

CN G2112

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