

Appendix N

DRAFT NEPA PLAN OF DEVELOPMENT

**SOUTHLINE TRANSMISSION LINE PROJECT
DRAFT: NEPA PLAN OF DEVELOPMENT**

VOLUME I

Prepared for
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
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BLM/NM/OL-14-01-1610

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Chapter 1

INTRODUCTION

1.1 INTRODUCTION

Southline Transmission, LLC (Southline), a subsidiary of Hunt Power, L.P., submitted Standard Form (SF-) 299, “Application for Transportation and Utility Systems and Facilities on Federal Lands,” to the Bureau of Land Management (BLM) for a right-of-way (ROW) to use BLM-administered public lands for a portion of the Southline Transmission Line Project (Project) on December 4, 2009. Southline amended its application on December 22, 2010 to add an additional section to the proposed Project. The Plan of Development (POD) has also been amended in response to Project changes and recommendations from the BLM, Western Area Power Administration (Western), other agencies, and public comment. This application has been assigned BLM Case File No. NMNM-124104.

Southline has also filed a Statement of Interest with Western’s Transmission Infrastructure Program (TIP) because it may seek to use Western’s borrowing authority under the 2009 amendment of the Hoover Power Plant Act (Public Law (PL) 98-381, Title III, § 301) (“the Hoover Act”) for the proposed Project. Western needs to determine whether it will provide Hoover Act funding for the proposed Southline Project, and if it does provide funding, the nature and extent of Western’s participation in the proposed Project. Western may also participate under a trust funding agreement with the Desert Southwest Region if TIP funding is not provided. In the context of making these determinations, Western will evaluate the upgrade of its existing Saguaro–Tucson and Tucson–Apache 115-kilovolt (kV) transmission lines.

1.2 PROJECT OVERVIEW

The proposed Project would consist of two sections. The first section would entail construction of approximately 240 miles of new double-circuit 345-kV transmission line in a new 200-foot ROW between the Afton Substation, south of Las Cruces, New Mexico, and Western’s Apache Substation, south of Willcox, Arizona (Afton–Apache Section or New Build Section). The second section would entail the upgrade of approximately 120 miles of Western’s existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines in a 100-foot-wide existing ROW to a double-circuit 230-kV transmission line (Saguaro–Apache Section or Upgrade Section) with up to 50 feet of new ROW in places. The Upgrade Section would originate at the Apache Substation and terminate at the Saguaro Substation northwest of Tucson, Arizona. Both new permanent ROW and temporary construction ROW would be required in the New Build Section and in some portions of the Upgrade Section for the transmission line, substations, access roads, and other permanent and temporary Project components; the anticipated ROW width for the Upgrade Section 230-kV transmission line would be 150 feet where expansion to that width is feasible.

The New Build Section (Afton–Apache) would include construction and operation of:

- 205 miles of 345-kV double-circuit electric transmission line in New Mexico and Arizona with a planned bidirectional capacity of up to 1,000 megawatts (MW). This section is defined by endpoints at the existing Afton Substation, south of Las Cruces in Doña Ana County, New Mexico, and Western’s existing Apache Substation, south of Willcox in Cochise County, Arizona;

- 5 miles of 345-kV single-circuit electric transmission line between the existing Afton Substation and the existing Luna–Diablo 345-kV transmission line;
- 30 miles of 345-kV double-circuit electric transmission line between New Mexico State Route 9 (NM 9) and Interstate 10 (I-10) east of Deming in Luna County, New Mexico, to provide access for potential renewable energy generation sources in southern New Mexico. This segment of the proposed Project is included in the analysis, but development of this segment would be determined at a later date;
- one new substation in Luna County (proposed Midpoint Substation) to provide an intermediate connection point for future interconnection requests; and
- installation of new communications equipment at, and connection to, two existing substations in New Mexico and one in Arizona.

The Upgrade Section (Apache–Saguaro) would include:

- replacing 120 miles of Western’s existing Saguaro–Tucson and Tucson–Apache 115-kV single-circuit electric wood-pole H-frame transmission lines, which date to 1951, with a 230-kV double-circuit electric steel-pole transmission line. In locations where needed and where possible, an additional 50 feet of ROW adjacent to the existing 100-foot ROW would be obtained for the new 230-kV line. This Upgrade Section is defined by endpoints at the existing Apache Substation, south of Willcox in Cochise County, Arizona, to the existing Saguaro Substation, northwest of Tucson in Pinal County, Arizona;
- 2 miles of new build double-circuit 230-kV electric transmission line to interconnect with the existing Tucson Electric Power Company (TEP) Vail Substation, located southeast of Tucson and just north of the existing 115-kV Tucson–Apache line; and
- Interconnection with and upgrade of 12 existing substations along Western’s existing lines in Arizona. Substation expansions would be required for installation of new communications equipment. In some cases expansion may require a separate yard.

1.3 PURPOSE OF THE PLAN OF DEVELOPMENT

This POD was developed to meet the requirements outlined in 43 Code of Federal Regulations (CFR) 2804.25(b). Under these requirements, the BLM may request information necessary to process a ROW application; this request for information may include a detailed construction, operation, rehabilitation, and environmental protection plan, i.e., a “Plan of Development,” and any needed cultural resource surveys or inventories for threatened or endangered species. 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. Where Western is involved in the Project, they would adopt the stipulations and measures in the POD, where appropriate.

This POD outlines the stipulations and mitigation measures (herein also Proponent Committed Environmental Measures (PCEMs)) identified in the Environmental Impact Statement (EIS) that must be followed during construction, operation, and maintenance of the proposed Project, for which the BLM and Western are the joint lead federal agencies. The POD also is intended to be used Project-wide as (1) a summary of Project environmental requirements and protection measures, and (2) a description of the processes and procedures that will be used to ensure compliance with the requirements of the BLM, Western, and other Federal, State, and/or local agencies, as appropriate.

While neither BLM nor Western has the authority to enforce the POD and its PCEMs on State or private lands, BLM and Western expect that most landowners will want the same protections afforded resources on BLM administered lands to be extended to their properties as well. Therefore, the agencies anticipate that the PCEMs and other specific stipulations and methods identified in the POD will largely be implemented over the entire length of the Project, regardless of jurisdiction. The agencies also recognize that the POD is a living document and as such provisions therein may be modified, augmented, or deleted as appropriate. For non-BLM administered lands Western will likely be the lead Federal agency overseeing implementation of and compliance with the suite of PCEMs and other environmental protections identified in the EIS and supporting documents. State and private landowners may add additional requirements to those identified in the EIS and POD, or opt out of certain measures, as negotiated by Southline and/or Western with each landowner during ROW acquisition. Certain parts of the POD will not be applicable to or appropriate for non-BLM administered lands; examples include BLM reporting requirements, stipulations specific to the BLM's ROW grant, or the BLM variance process. BLM's environmental inspection and verification process is also quite different from Western's, and Western's process would be followed on State and private lands. Regardless of which agency is the lead, or the differences in the process followed, the environmental protections identified and committed to would be implemented (with the possible exception of the landowner required additions or deletions mentioned above). On BLM administered land, all stipulations and PCEMs identified as applicable in any of the POD volumes should be adhered to for the life of the BLM ROW grant. The BLM Las Cruces District Office and the Safford and Tucson field offices have required ROW grant holders to contract with an independent entity (i.e., a compliance inspection contractor (CIC)), who will conduct environmental compliance inspections during the construction phase of the Project. The objective is to monitor for compliance with environmental stipulations designed to protect the environment and prevent impacts from exceeding those described in the EIS or other permit approvals. The CIC will monitor and oversee implementation of the POD on all BLM-administered lands, as described in Appendix A6 – Environmental Compliance Management Plan of this POD.

1.4 ORGANIZATION OF THE PLAN OF DEVELOPMENT

The POD is organized into two major volumes. Volume I contains chapters 1 through 6 and the appendices. Volume II includes engineering, mitigation, and environmental mapping, which support information presented in Volume I. Following is an overview of the information contained in these two volumes.

1.4.1 Volume I

Volume I of the POD is intended to provide the reader with a general overview of the Project and key elements of the POD (chapters 1–6) and detailed information regarding the required PCEMs, protocols, and procedures for the construction, operation, and maintenance of the transmission line and ancillary facilities (appendices). While chapters 1 through 6 provide general information, the appendices (along with the mapping materials in Volume II) are more detailed and have been designed to serve as stand-alone documents that may be readily updated and refined. Following is an outline summary of the information and materials presented in chapters 1 through 6 and the appendices of this POD.

Chapters 1 through 6 include the following information:

Chapter 1 – Introduction – Introduces the Project, discusses the purpose and organization of the POD; explains the POD's relationship to other documents; and lists required authorizations, permits, and approvals required for construction.

Chapter 2 – Roles and Responsibilities – Explains the roles and responsibilities of the Project team, and discusses Project communications and notification procedures.

Chapter 3 – Project Description – Describes the Project components/facilities (structures, foundations, conductors, access roads, substations, etc.), land requirements, construction disturbance, ROWs, and the Project's relationship with other related ROWs and utilities.

Chapter 4 – Operation and Maintenance – Provides information related to the operation and maintenance of the Project's transmission line(s) once construction is complete, including public and environmental protection and vegetation management.

Chapter 5 – Environmental Mitigation Measures – Includes a brief overview and introduction of the key environmental concerns associated with the construction of the Project and relevant mitigation measures/PCEMs to be applied in order to avoid or minimize potential effects.

Chapter 6 – Literature Cited – Provides the references and literature cited in preparing the POD.

There are four appendices (A through D), organized as presented below:

Appendix A – Construction Considerations – This appendix provides detailed information about the specifics of construction, including the following:

- A1 Flagging, Fencing, and Signage Plan
- A2 Geotechnical Investigation
- A3 Project Construction
- A4 Special Construction Techniques
- A5 Construction Workforce
- A6 Environmental Compliance Management Plan

Appendix B – Environmental Protection / Framework Plans – This appendix includes the following:

- B1 Access Road Plan
- B2 Traffic and Transportation Management Plan
- B3 Stormwater Pollution Prevention Plan
- B4 Spill Prevention, Control, and Countermeasures Plan
- B5 Historic Properties Treatment Plan
- B6 Blasting Plan
- B7 Plant and Wildlife Species Conservation Measures Plan
- B8 Erosion, Dust Control, and Air Quality Plan
- B9 Hazardous Materials Management Plan (HMMP)
- B10 Emergency Preparedness and Response Plan
- B11 Noxious Weed Management Plan
- B12 Fire Protection Plan
- B13 Stream, Wetland, Well, and Spring Protection Plan
- B14 Soil Management Plan
- B15 Reclamation, Vegetation, and Monitoring Plan
- B16 Health and Safety Plan (HASP)
- B17 Avian Protection Plan (APP)
- B18 Waste Management Plan
- B19 Helicopter Flight Plan/Flight and Safety Plan
- B20 Decommissioning Plan

Appendix C – Transmission Construction and Vegetation Management Standards – This appendix includes the following:

C1 Transmission Construction Standards

C2 Vegetation Management Standards

Appendix D – Land (Legal) Description of Proposed Route Across Federal Lands – This appendix provides a legal description of the Project facilities across Federal land.

1.4.2 Volume II

Three sets of maps form Volume II of the Final POD. These maps contain regional to detailed information, including site-specific instructions to guide the construction of the transmission line and associated facilities as described below. *Files to be included with Final POD (post Final EIS) – not included herein.*

1.5 RELATIONSHIP WITH OTHER ENVIRONMENTAL DOCUMENTS

This POD includes measures for avoidance, minimization, and mitigation of environmental impacts resulting from the implementation of this Project as identified in the EIS (called PCEMs) and approved in the BLM Record of Decision (ROD). This POD incorporates the various regulatory approvals, permits, and other authorizations that contain environmental requirements, including those measures stipulated in Resource Management Plans (RMPs) for the BLM Las Cruces District Office and the Safford and Tucson field offices. The relevant approved and proposed management plans (and plan amendments) are presented in table 1.

Table 1. Applicable BLM Land Use Plans and Planning Documents

Resource Management Plan	Plan Date	Lead Office	Project Applicability
Mimbres Resource Area*	December 1993	Las Cruces District Office	Afton–Apache
Safford District RMP	August 1991	Safford District Office	Apache–Saguaro
Las Cienegas RMP	July 2003	Tucson Field Office	Apache–Saguaro
Phoenix RMP	December 1988	Phoenix District Office, Tucson Field Office, Safford Field Office	Apache–Saguaro
Restoration Design Energy Project	January 2013	Arizona State Office	Arizona
Solar Programmatic EIS (PEIS)	October 2012	BLM Department of the Interior (DOI)	Arizona, New Mexico
West-wide Energy Corridor PEIS	November 2008	BLM DOI	Arizona, New Mexico

* The TriCounty RMP is in progress. When approved, the TriCounty RMP would amend the portion of the 1993 Mimbres RMP (BLM 1993) that covers Doña Ana County.

1.6 FEDERAL, STATE, AND LOCAL PERMITS

Table 2 provides a listing of the laws, regulations, and guidelines that are related to energy generation and development of transmission infrastructure and the associated permits and approvals.

Table 2. List of Required Federal and State Permits and Approvals

Regulatory Authority/Agency	Permit/Approval	Project Trigger	Relevant Law/Regulation
Federal			
BLM	ROW grant, land use plan amendment	Request for ROW across BLM lands	43 United States Code (U.S.C.) 1761–1771
BLM	Permit for archaeological investigations	Federal undertaking with the potential to affect historic properties	Archaeological Resources Protection Act (ARPA), Antiquities Act of 1906, Federal Land Policy and Management Act (FLPMA)
BLM	Permit for collection of paleontological resources	Potential for disturbance of paleontological resources and need for collection	Paleontological Resources Preservation Act, FLPMA
BLM <i>In consultation with Western, State Historic Preservation Offices (SHPOs), Advisory Council on Historic Preservation, tribes, other Federal, State, and local agencies and consulting parties</i>	Compliance with Section 106 of the National Historic Preservation Act (NHPA)	Potential to disturb historic properties	NHPA (16 U.S.C. 470); 36 CFR 800
Western	Determine whether Southline can upgrade Western’s lines and use existing transmission easements as part of the proposed Project; determine feasibility and impacts of proposed Project; and determine the nature of Western’s participation in the proposed Project	Proposal to upgrade a segment of Western’s transmission system and have Western obtain updated and new transmission line easements, and to use Western funding	Hoover Power Plant Act 98-381, as amended Reclamation Law, including but not limited to the Reclamation Act of 1902, 43 U.S.C. 391, Hayden O’Mahoney Amendment, 43 U.S.C. 391a-1 and 392a; the Reclamation Project Act of 1939, Section (c) 43 U.S.C. 485h(c); Flood Control Act of 1944, Section 5, 16 U.S.C. 825s; Department of Energy Organization Act, 42 U.S.C. 7152a; Energy Policy Act of 1992, 16 U.S.C. 796, 824j, 824k, and 824l; Energy Policy Act of 2005 Contributed Funds Act, 43 U.S.C. 395; Antideficiency Act, 31 U.S.C. 1341; and associated regulations, orders, and policies

Table 2. List of Required Federal and State Permits and Approvals (Continued)

Regulatory Authority/Agency	Permit/Approval	Project Trigger	Relevant Law/Regulation
Federal, cont'd.			
Bureau of Reclamation	Easement or ROW use authorization	Substation expansion	The Reclamation Act of June 17, 1902, 32 Stat. 388, 43 U.S.C. 371, et seq., specifically 32 Stat. 389, 43 U.S.C. 421 and the Flood Control Act of 1944, 58 Stat. 887, 890, 16 U.S.C. 825s, as amended and supplemented by subsequent acts or enactments; the Reclamation Project Act of 1939, 53 Stat. 1187, 43 U.S.C. 485; the Rivers and Harbors Act of August 30, 1935, 49 Stat. 1028, 1039, 33 U.S.C. 540; the Act of May 28, 1954, Ch. 12, 68 Stat. 143, and other acts specifically applicable to this project; the Act of August 1, 1888, 25 Stat. 357, 40 U.S.C. 257, repealed and reenacted as 40 U.S.C. 3113; the Act of February 26, 1931, 46 Stat. 1421, 40 U.S.C. 3114; the Department of Energy Organization Act of August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101, specifically 91 Stat. 578, 42 U.S.C. 7152; and the Omnibus Appropriations Bill of FY 2009, PL 111-8
Bureau of Indian Affairs	ROW Easement	Upgrade of existing Western line across tribal land	25 CFR 169
U.S. Forest Service	Special use permit (SUP)	Upgrade of existing Western line across Coronado National Forest	36 CFR 212.51(a)(8)
U.S. Forest Service – Coronado National Forest	SUP	Potential for disturbance of cultural resources on the Coronado National Forest	ARPA, FLPMA
U.S. Army Corps of Engineers	Section 404 permit	Impacts to jurisdictional waters of the U.S.	Clean Water Act, 33 U.S.C. 1251, et seq.
U.S. Fish and Wildlife Service	Biological opinion, concurrence, or incidental take permit	Potential impact to threatened or endangered species	Endangered Species Act, 16 U.S.C. 1531–1544
U.S. Environmental Protection Agency	National Pollutant Discharge Elimination System (New Mexico)	Stormwater management from potential discharges greater than 5 acres	40 CFR 122.26
Department of Defense (DOD)	Easement or ROW use authorization	Construction, operation, and decommissioning of transmission line across DOD-administered land	10 U.S.C. 2668
Federal Aviation Administration (FAA)	A "No-hazard Declaration" required if structure is more than 200 feet high	Location of structure relative to airports and airspace if structure is more than 200 feet high	FAA Act of 1958, 14 CFR 77

Table 2. List of Required Federal and State Permits and Approvals (Continued)

Regulatory Authority/Agency	Permit/Approval	Project Trigger	Relevant Law/Regulation
New Mexico			
New Mexico Public Regulation Commission	Application for approval of location of transmission line and certificate of public convenience and need	Construction of a transmission line greater than 230 kV	New Mexico Statutes Annotated (NMSA) 62-9-3; 17.9.592 New Mexico Administrative Code (NMAC), and NMSA 62-9-1; 17.1.2.9 NMAC
New Mexico Department of Transportation (DOT)	Access or public highway utility accommodation permit	Upgrading access roads, use of public highway to transport oversize loads, or installation of transmission lines within DOT ROW	18.31.6 NMAC, and 17.4.2 NMAC
New Mexico State Land Office	ROW or easement permit	Construction, operation of a transmission line on State lands	NMSA 19-7-57
New Mexico SHPO		Federal undertaking with the potential to affect historic properties	NHPA, Section 106 (36 CFR 800)
New Mexico State Historic Preservation Division	Permit for archaeological investigations	Potential for disturbance of cultural resources on State land	NMSA 18-6
New Mexico Department of Energy, Minerals, and Natural Resources Forestry Division	Collection permit	Displacement or removal of any State endangered plant species	NMSA 75-6-1; 19.21.2 NMAC
Arizona			
Arizona Corporation Commission	Certificate of Environmental Compatibility	Construction of a transmission line greater than 115 kV	Title 40 Arizona Revised Statutes (ARS) Chapter 2, Article 6.2 (40-360–40-360.13)
Arizona State Land Department	ROW/right-of-entry permit	Survey, construction, operation of a transmission line on State lands	ARS 37-461
Arizona DOT	Crossing or encroachment permit, permit for use of highway ROW	Construction, operation, abandonment of transmission lines within State highway ROW	ARS 28-7053, Arizona Administrative Code R17-3-501–509
Arizona SHPO		Federal undertaking with the potential to affect historic properties	NHPA, Section 106 (36 CFR 800)
Arizona State Museum (ASM)	Arizona Antiquities Act (AAA) blanket permit or Project-specific permit	Potential for disturbance of cultural resources on State land	AAA ARS 41-841 through 41-847
ASM	Permission to disturb human remains	Potential for disturbance of human or funerary objects remains on State or private land	AAA ARS 41-844 and ARS 41-865
ASM	AAA blanket permit	Potential for disturbance of paleontological resources on State land	AAA ARS 41-841

Table 2. List of Required Federal and State Permits and Approvals (Continued)

Regulatory Authority/Agency	Permit/Approval	Project Trigger	Relevant Law/Regulation
Arizona, cont'd.			
Arizona Department of Environmental Quality	Arizona Pollutant Discharge Elimination System	Stormwater management from potential discharges greater than 5 acres	ARS 49-255.01
Tohono O’odham Nation	Permit to conduct archaeological work	Potential for disturbance of cultural resources on Tohono O’odham Nation land	Title 8, Chapter 1, “Archaeological Resources Protection” (Ordinance No. 06-84) of the Tohono O’odham Nation Tribal Code
Arizona Department of Agriculture	Application for Arizona native plant and wood removal	Displacement or removal of any listed native plant species	Native Plant Law, ARS Title 3 (Chapter 7)
Local*			
Development Services, Public Works, DOT	ROW use permit, encroachment permit	Potential encroachment onto County/City ROW	Varies; County/local ordinance or municipal code
Planning and Zoning, Community Development	Special use, conditional use permits	Change zoning or land use to allow construction of the transmission line and associated facilities	Varies; County/local ordinance or municipal code
Floodplain Departments	Floodplain use permit	Construction of project facilities in flood-prone areas as defined by Federal Emergency Management Agency	Varies; County ordinance
Public Works Department	Grading/excavation/building permit	Construction	Varies; County/local ordinance or municipal code
Department of Environmental Quality, Air Quality Districts	Fugitive dust control permits	Construction	Varies; County ordinance

Note: This list is not exhaustive.

* Local permits are only examples of permits that may be required by various local agencies (County/City).

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Chapter 2

ROLES AND RESPONSIBILITIES

2.1 INTRODUCTION

The various parties involved with the construction, operation, and maintenance of the Project include the Proponent (Southline), BLM, Western, BLM's third-party CIC, all of Southline's construction contractor(s), and the environmental resource specialists/monitors. Other subcontractors may be engaged, as needed. As noted in section 1.3 of this POD, the POD is an enforceable stipulation of the BLM ROW grant for the portions of the Project on Federal lands administered by BLM. Where Western is involved in the Project, they would adopt the stipulations and measures in the POD, where appropriate.

2.1.1 The Proponent

Southline is responsible for requirements of the administration of the ROW and coordination between the Project engineer and construction contractor(s) on BLM-managed lands. Southline and their construction contractors will be responsible for the construction of the transmission line(s) and ancillary facilities in a manner that complies with the conditions outlined in the BLM ROW grant, and other required permits listed in table 2; Southline will be responsible for facility operation and maintenance. Western is responsible for administering the ROW where they are involved in the Project, which at a minimum includes the Upgrade Section of the project.¹ Western and their construction contractor will be responsible for the construction, operation, and maintenance of the Upgrade Section of the transmission line(s) and ancillary facilities in a manner that complies with the conditions outlined in Western's construction contract.

Southline will be the ultimate authority for their contractors; however, for the execution purposes of this document, it will refer specifically to the construction contractor(s) when needed to define their activities.

To help ensure construction activities are conducted in a manner that complies with all Federal, State, and local regulations, the construction contractor(s) will contract a team of environmental inspectors (e.g., biological, cultural, and paleontological resources, and dust (where applicable)) to work jointly and cooperatively with the CIC (see Section 2.1.2.1 – Compliance Inspection Contractor and Appendix A6 – Environmental Compliance Management Plan). Each of Southline's environmental inspectors will provide copies of their daily reports to the CIC as described in Appendix A6 – Environmental Compliance Management Plan.

Construction Contractor(s)

The construction contractor(s) will be responsible for the final engineering design, procurement, construction, testing, and reclamation of the Project. The construction contractor(s) will be retained by Southline to construct the transmission line(s) and ancillary facilities, including construction of new or improved roads, a communication system, and temporary work areas associated with construction activities. The construction contractor(s) will also be responsible for addressing reclamation activities, as well as addressing all environmental protection stipulations.

¹ POD v3 footnote: when Western has made a decision regarding their ultimate involvement in the Project, more detail will be included regarding their role and responsibilities.

The construction workforce may include, but is not limited to, the following:

- general contractor, specializing in transmission line construction
- substation construction contractor
- survey crews
- tree clearing crews
- road construction crews
- foundation and anchor installation crews
- structure steel haul crews
- structure assembly and erection crews
- wire installation crews
- cleanup crews
- restoration contractor/crews
- quality assurance inspectors
- drilling and blasting contractor
- restoration/reseeding subcontractor

The construction contractor's construction manager will be responsible for enforcing the contract requirements. The construction contractor(s) will be contractually bound to comply with all laws, regulations, and permit requirements, including the stipulations and PCEMs set forth in the POD. The selected construction contractor(s) will attend a preconstruction meeting with the BLM, Western, other agencies as appropriate, the CIC, and Southline following the award of the construction contract.

2.1.2 Federal Agencies

There are 104.4 miles of transmission line route that cross Federal land, including lands administered by the BLM (100.4 miles), the U.S. Forest Service (Forest Service) (0.5 mile), the Department of Defense (DOD) (0.2 mile), the Bureau of Reclamation (Reclamation) (0.4 mile), and the Bureau of Indian Affairs (BIA) (2.9 miles). Each agency has designated an officer who will provide oversight for the Project on the ROW they administer. The authorized officers for the BLM are the Las Cruces District Manager and the New Mexico State Director. Each of the authorized officers may designate certain responsibilities to their appropriate personnel, such as BLM project managers and resource specialists.

The Administrator and CEO for Western is Mark A. Gabriel, who is ultimately responsible for Western's participation in the Project. Western's designated Project Manager will provide oversight and direction for the Project as it moves from the environmental planning phase into the design and construction phase.

Each authorized Officer/administrator will be responsible for administering and enforcing the right-of-way grant and permit provisions for their respective agencies. Each authorized officer/administrator will also ensure stipulations and PCEMs included in the POD are adhered to during Project construction, operation, and maintenance, where appropriate. The authorized officer/administrator will also be responsible for written stop-and-resume-work orders, as applicable, and resolving any conflicts that arise relating to the Project on the lands they administer. Compliance will be managed by the appropriate designees of the authorized officer/administrator and resource specialists as needed, for their respective lands, in conjunction with the CIC. The process by which the BLM, Western, and Southline's

construction contractor(s) conduct environmental monitoring, compliance, and reporting activities is outlined in Appendix A6.

Compliance Inspection Contractor

The CIC will represent the BLM during the construction and reclamation phases of the Project on BLM-administered lands to ensure (1) compliance with the BLM ROW grant and (2) that environmental impacts associated with Project do not exceed estimates disclosed in the EIS and approved by the BLM in its ROD. The CIC may also coordinate with Western on those portions of the Project where Western is involved in the Project.

The CIC shall work under the direct supervision and control of the BLM during the construction and reclamation phases of the Project on BLM-managed administered lands. On those portions of the Project where Western is involved, the CIC shall take direction from Western; the CIC shall not take any direction with respect to the manner of conducting monitoring from Southline or its construction contractor(s). The CIC's primary role is to observe work activities; verify, document, and monitor compliance; and bring noncompliant situations to the attention of the appropriate party and offer recommendations on how to prevent non-compliance prior to commencement of work. The responsibilities of the CIC are outlined in detail in Appendix A6 – Environmental Compliance Management Plan.

However, the CIC and Southline's Project Manager shall work together to support the Project's timely and effective construction. All efforts shall be made to coordinate closely with Southline's Project Manager and its construction contractor(s) to report and document noncompliance concerns not otherwise identified by these parties, giving Southline's Project Manager, construction contractor(s), and CIC the opportunity to resolve the concerns. Through this collaboration, every effort shall be made to limit any work stoppage to situations involving immediate threats to sensitive resources or emergency situations. The CIC is not otherwise, at any time or way, authorized to direct work undertaken by the construction contractor(s), with the exception of stop work orders. The role of the CIC is not to direct the work of either Southline or the construction contractor(s).

Prior to construction, the CIC will develop a Project Compliance Plan, to be reviewed by the BLM and Western. This plan will describe how the Project Proponent will uphold, document, and manage environmental compliance with the terms specified in the ROW grant, the POD, landowner agreements, and all Federal, State, and local permits. The Project Compliance Plan will include, but is not limited to, the following elements:

- the roles and responsibilities of participants necessary to facilitate environmental compliance with the terms and conditions of the ROW grant and the POD in the field during construction
- a comprehensive inspection and monitoring program
- corrective procedures in the event of non-compliance
- a standard protocol for variance requests
- a communication plan describing primary channels of routine communication between parties for Project updates and compliance-related issues
- a reporting process that includes forms and reports to be completed on a regular basis during the course of construction
- a comprehensive Project-specific environmental compliance training program that may include sections prepared by specific resource specialists

The CIC will report directly to the BLM or Western as appropriate, who will coordinate with other cooperating agencies, where appropriate. The duties of the CIC in support of the Project will include:

- preparation of a Project Compliance Plan
- coordination of Notice-to-Proceed meeting(s)
- preparation and maintenance of a Key Contacts List
- periodic meetings with the BLM authorized officer and resource specialists
- daily field inspection of the Project area
- coordination with Southline's Environmental Compliance Manager and environmental inspectors (see Appendix A6 – Environmental Compliance Management Plan)
- completion of a daily compliance inspection report and submittal of a weekly summary
- completion of reports with applicable photographs to the BLM and Proponent
- attendance at weekly construction meetings
- review of variance requests
- completion of an End of Construction Project Report

The Project has the potential to affect sensitive resources; thus, required stipulations and PCEMs have been developed to minimize potential impacts to these resources. These stipulations and PCEMs are specified in the POD. The proactive implementation of these terms and requirements will facilitate timely and efficient construction of the Project while protecting sensitive resources. The CIC shall be completely knowledgeable of the POD, its associated plans, and all environmental requirements.

2.1.3 Communication Procedures and Notification Protocols

Effective communication between the parties mentioned above is a critical component to the success of the Project. Communication protocols related to environmental compliance monitoring, reporting requirements, and Project variance requests are described further in Appendix A6 – Environmental Compliance Management Plan. Additional details regarding emergency agency notification (e.g., in case of wildfire, unanticipated discoveries of cultural resources, hazardous material spill, etc.) are presented in the various plans included as appendices to the POD. The selected construction contractor(s) will attend preconstruction conferences with the BLM, Western as appropriate, and Proponent following award of the construction contract.

The CIC will develop a Project contact directory that will be updated by all parties, as needed, to provide a convenient reference during the construction phase of the Project. This contact list will include the name, agency, office phone number, cell phone number, and email address of those individuals working on the Project; this list will be updated as required.

The construction contractor will be responsible for maintaining a list of all emergency notification contacts and numbers (local law and fire officials, hospitals, etc.) for events such as wildfires, hazardous material spills, accidents, etc. Southline will be responsible for notifying private landowners of upcoming construction activities, where appropriate. After construction, Southline will be responsible for maintaining the key contacts list and for all notifications required during the operation and maintenance of the Project.

Chapter 3

PROJECT DESCRIPTION

3.1 INTRODUCTION

This section describes the Project and associated facilities, including transmission line, substation, and ancillary facilities. Specifically, this section includes descriptions of the transmission route and facility design, including tower and pole structures, foundations, hardware, communication facilities, other electrical and non-electrical hardware, substation equipment, and access roads. Also included in this section is information regarding induced currents on adjacent facilities, land requirements, and construction disturbance.

Southline proposes to construct a high-voltage electric transmission line and associated facilities in southern New Mexico and southern Arizona (see figures 1.1 through 1.9). The proposed Project, as described in this document, is based on the Agency Preferred Alternative in the Final EIS. The route would cross private, State, and public lands, including lands managed by the BLM (New Build and Upgrade sections), DOD (New Build Section only), Forest Service (Upgrade Section only), Reclamation (Upgrade Section only), New Mexico and Arizona State lands, (New Build and Upgrade sections), Arizona Game and Fish Department (AGFD) lands (New Build only), and the Tohono O’odham Nation (Upgrade Section only).

3.2 PROPOSED FACILITIES

This section describes the typical characteristics of the Project facilities, including the New Build Section 345-kV double-circuit transmission line, the Upgrade Section 230-kV double-circuit transmission line, and associated facilities, substation improvements, and ancillary facilities (e.g., access roads).

3.2.1 Transmission Structures

345-kV Structures – New Build Section

Two types of steel structures could be potentially used for the 345-kV transmission line. These include self-supporting lattice and monopole tubular structures, as shown in table 3 and figures 2 through 6.

Table 3. Typical Design Characteristics of the Proposed New Build Section 345-kV Transmission Line

Feature	Proposed (Description)	Option (Description)
General Description		
Structure type	Self-supporting steel lattice structures (see figures 2–4)	Tubular steel poles (see figures 5 and 6)
Structure height	110–170 feet	90–150 feet
Span length	1,000–1,400 feet	800–1,100 feet
Number of structures per mile*	4–5	4–6
ROW width [†]	200 feet	

Table 3. Typical Design Characteristics of the Proposed New Build Section 345-kV Transmission Line (Continued)

Feature	Proposed (Description)	Option (Description)
Electrical Properties		
Normal voltage	345,000 volts (345 kV)	
Capacity	1,000 MW (initial) 2,000 MW (ultimate)	
Circuit configuration	Double-circuit	
Conductor size [‡]	792–1,272 kcmil ACSR (two subconductors per phase)	
Shield wire size [‡]	7/16-inch extra-high-strength steel wire	
Ground clearance of conductor [§]	30 feet	

Notes: ACSR = aluminum conductor steel reinforced; kcmil = a thousand circular mils (a unit used to express large conductor sizes).

* Variable, depending on structure type and terrain.

[†] During design, a wider temporary and/or permanent ROW may be needed only in specific locations to accommodate rough terrain or long spans.

[‡] Shield wire size: one shield wire position to be occupied by optical ground wire about 0.5 inch in diameter with 48 optical fibers.

[§] Design minimum at temperature of 100 degrees Celsius.

The use of either a lattice structure or tubular steel structure would be primarily based on site-specific engineering design needs, as well as economic and visual considerations, or delivery timing.

The lattice structures would be constructed of galvanized steel with a height ranging from 110 to 170 feet and a width at the base of approximately 25 feet. The exact height of the structure would be determined by topography and design requirements for conductor clearance. The distance between each structure would depend on site-specific characteristics but would generally be an average of 1,200 feet (or approximately 4 to 5 structures per mile). Spacing between structures would be designed to allow for the longest spans practical for this type of construction. Each lattice structure would have four legs, each set on concrete foundations placed in the ground. Foundations would be up to approximately 4 feet in diameter each, and would be from approximately 18 to 50 feet deep. Foundations would be designed for each structure site consistent with geotechnical conditions. See discussion below for temporary and permanent disturbance estimates for structure foundations.

To accommodate the 345-kV line, the tubular steel poles are expected to be constructed of galvanized or self-weathering steel and would range in height from 90 to 150 feet. The exact height of the structure would be determined by topography and design requirements for conductor clearance. The tubular steel poles would have an approximate diameter at the structure base of 7 to 8 feet and would range from approximately 18 feet deep up to 50 feet deep, depending on the structure type and geological conditions. Foundation depths would be consistent with geotechnical conditions at each structure site. The distance between each structure would depend on site-specific characteristics but is expected to be an average of approximately 900 feet (or approximately 5 to 6 structures per mile). Spacing between structures would be designed to allow for the longest spans practical for this type of construction. Tubular steel poles would be set on a concrete foundation placed in the ground. See discussion below for temporary and permanent disturbance estimates for structure foundations.

Structure selection and individual structure placement would be determined during the final design phase of the Project. The height and spacing of each structure would also be determined during the final design phase of the plan and profile drawings, would be based on detailed engineering, and would depend on the type of terrain. Aerial marker spheres or aircraft warning lighting may be required in certain locations in accordance with Federal Aviation Administration (FAA) requirements. Structure height and proximity to airports are the main factors in determining whether FAA regulations would apply.

Figure 1.1. Project overview 1.

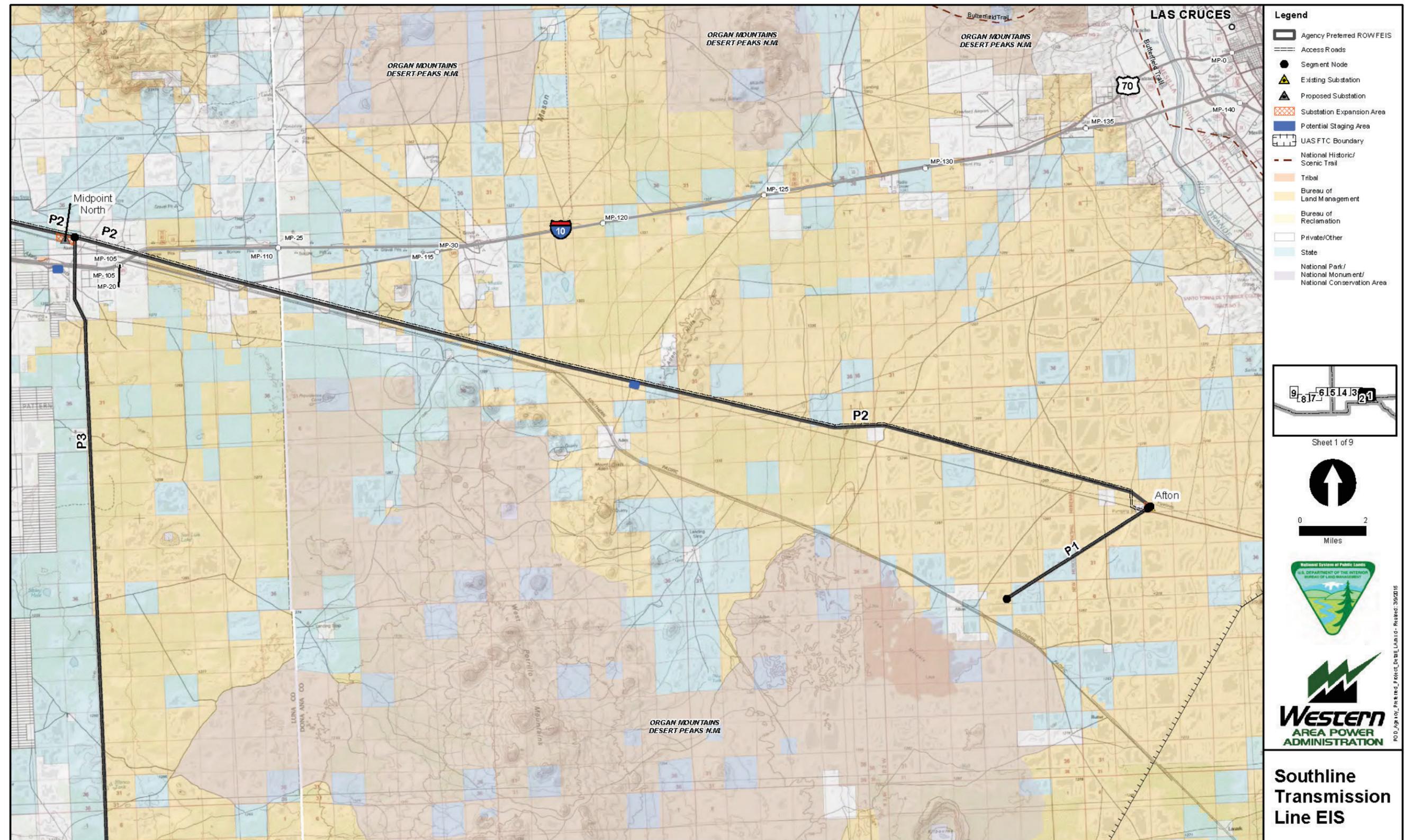


Figure 1.2. Project overview 2.

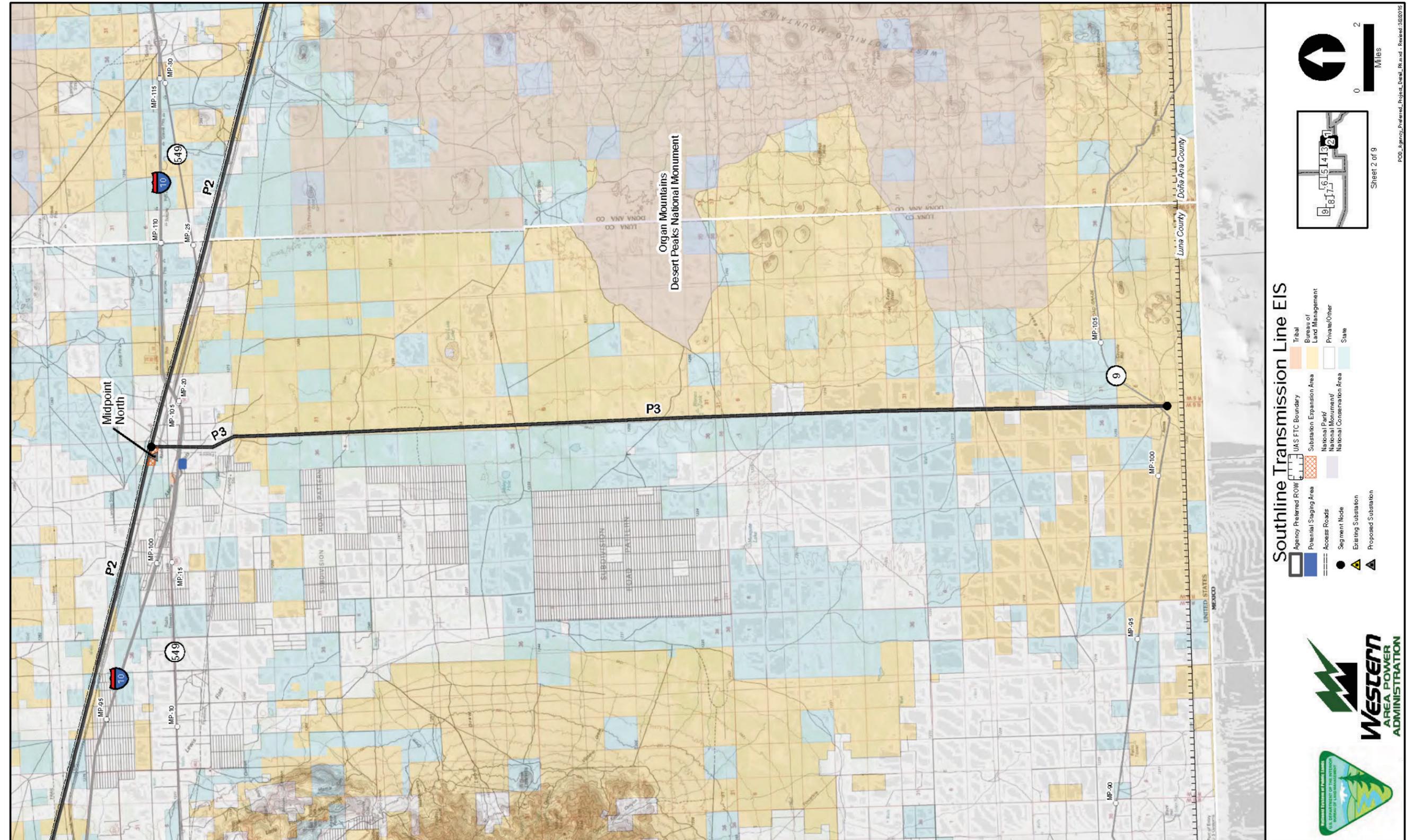


Figure 1.4. Project overview 4.

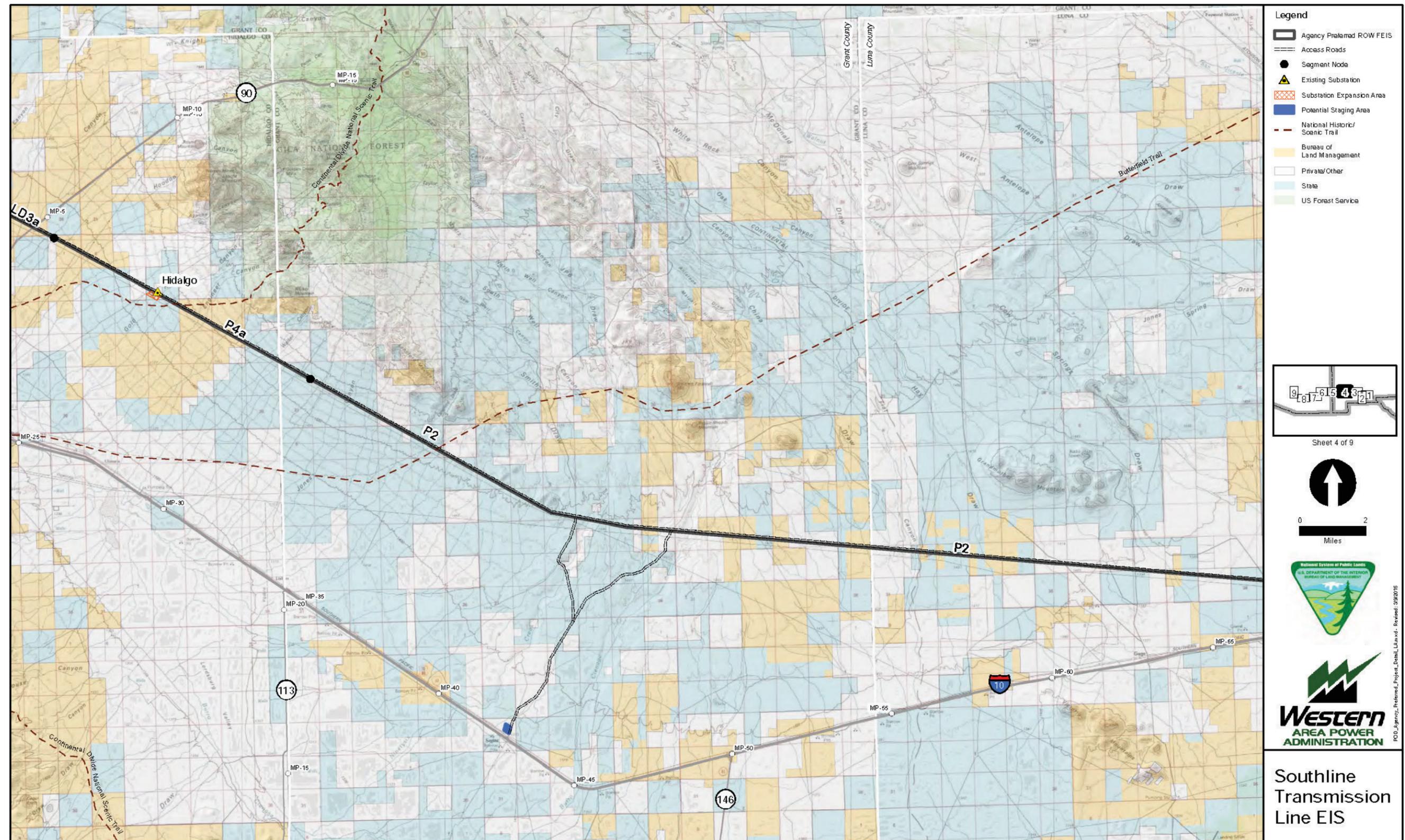


Figure 1.5. Project overview 5.

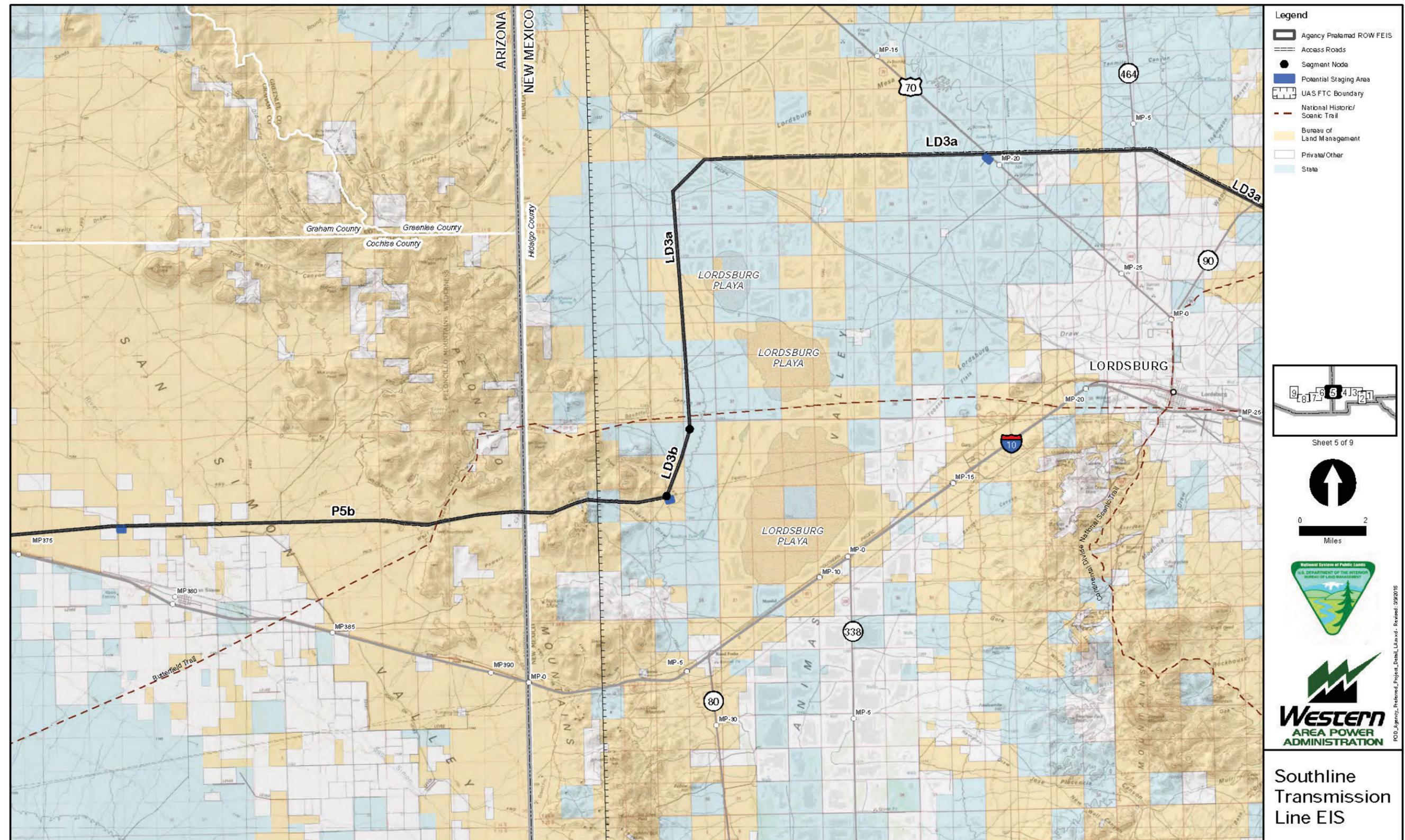


Figure 1.6. Project overview 6.

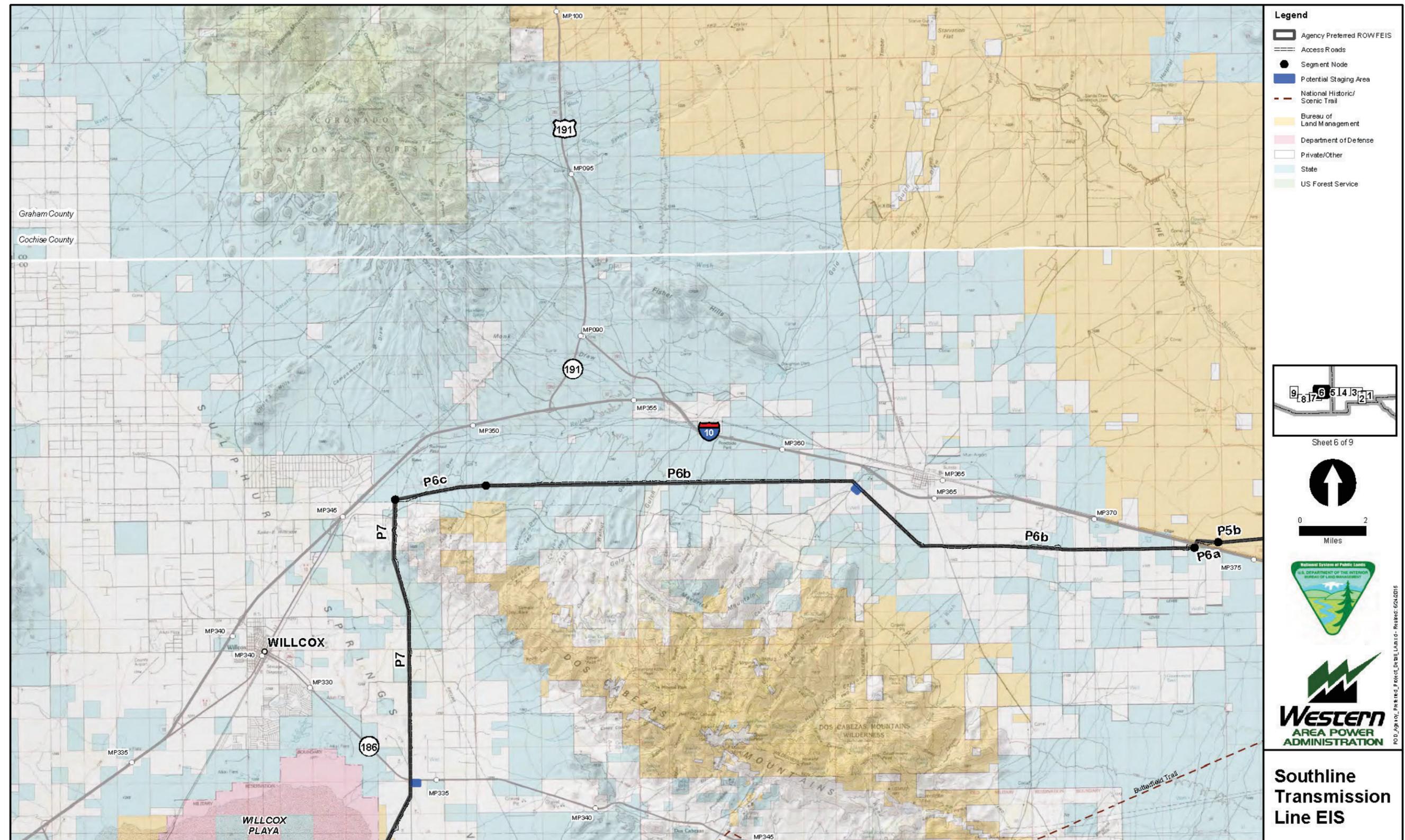


Figure 1.7. Project overview 7.

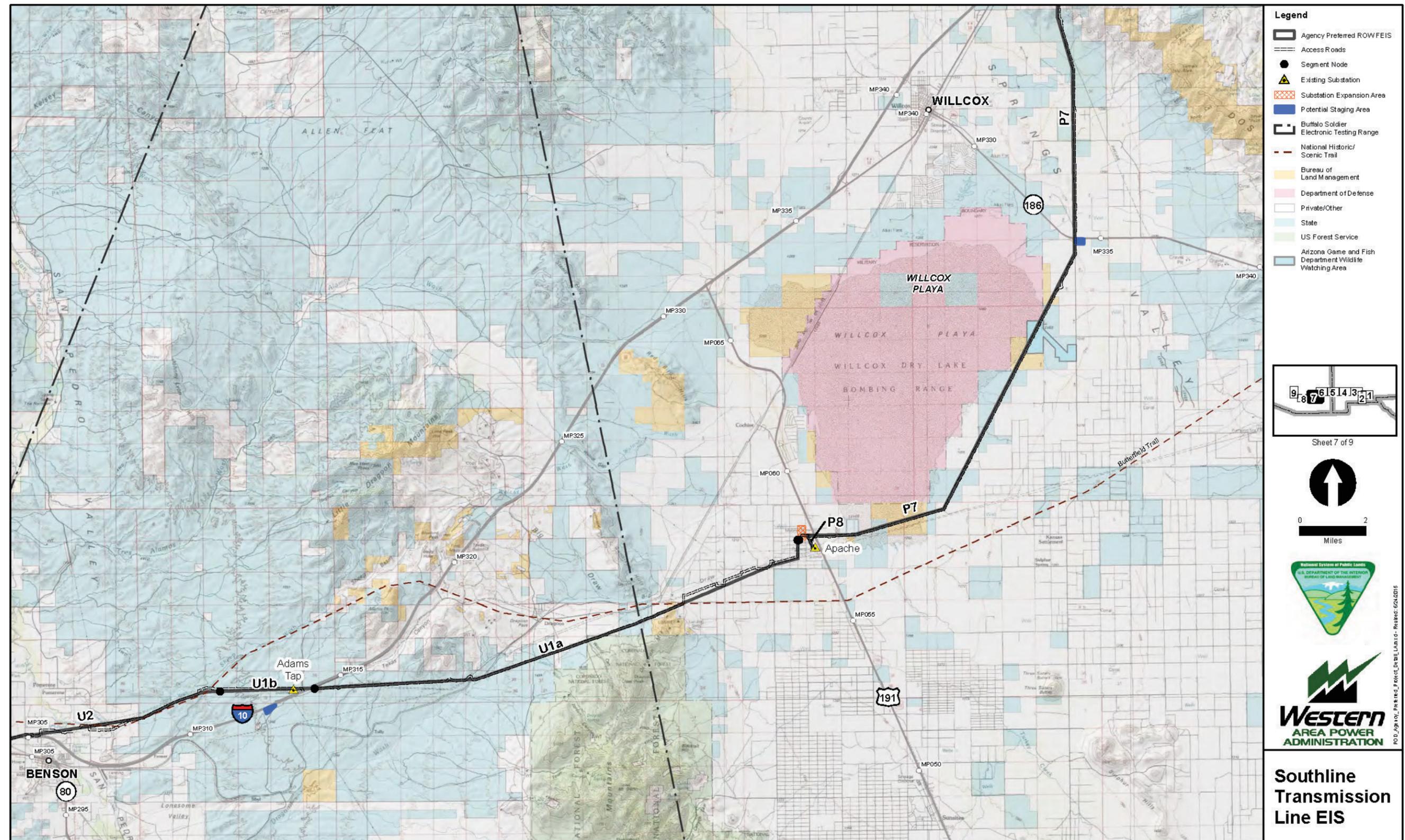


Figure 1.8. Project overview 8.

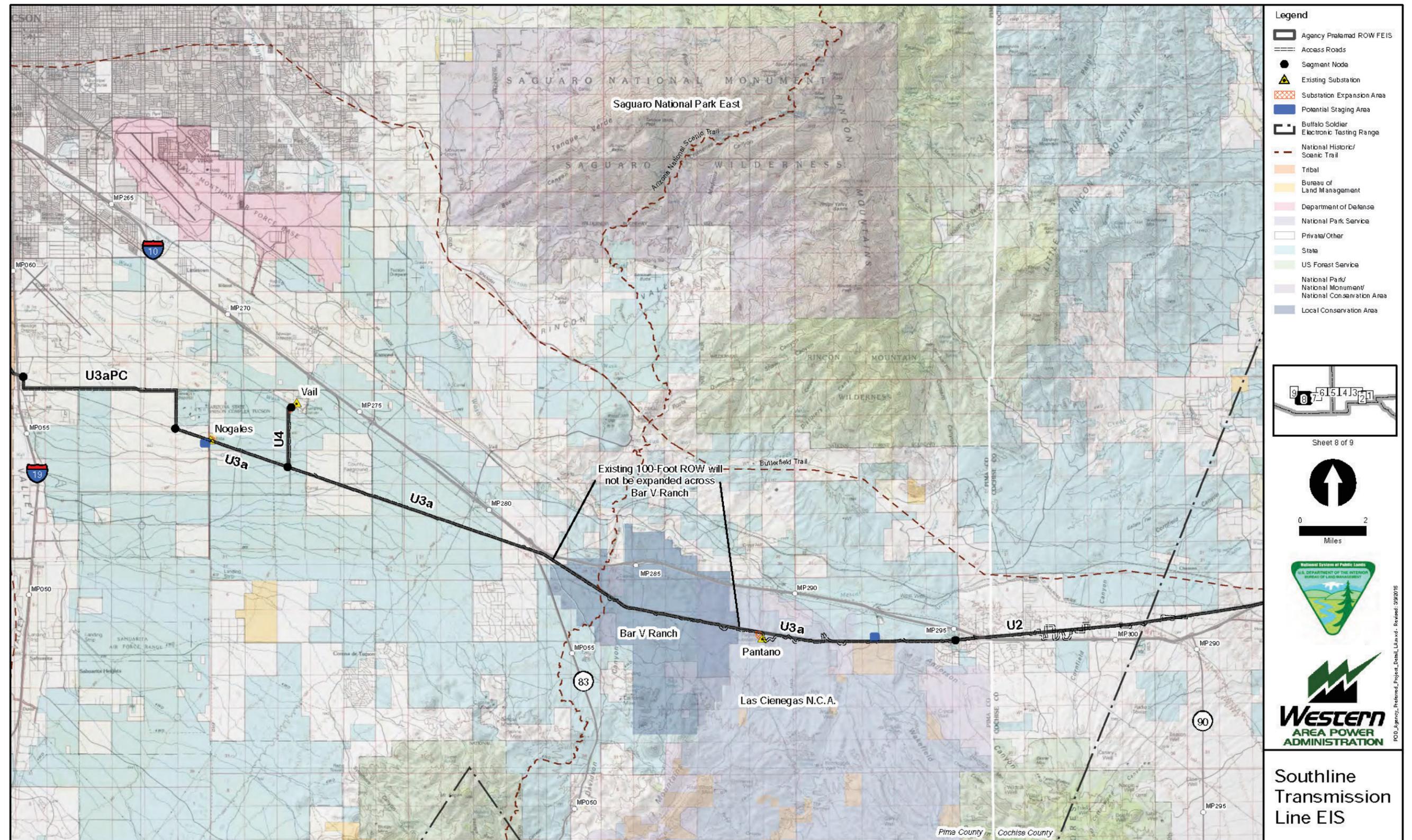
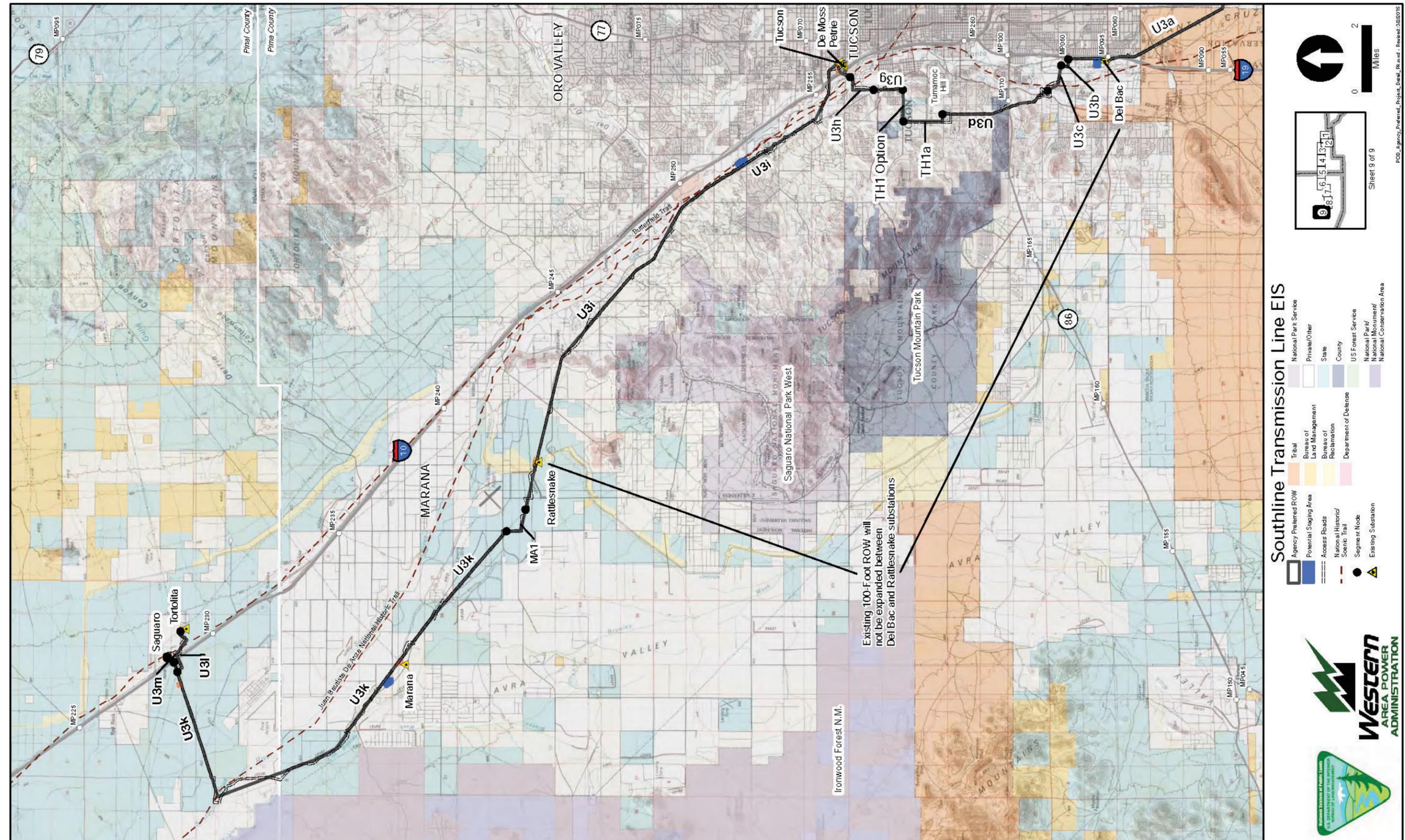


Figure 1.9. Project overview 9.



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Figure 2. Typical 345-kV tangent lattice structure diagram.

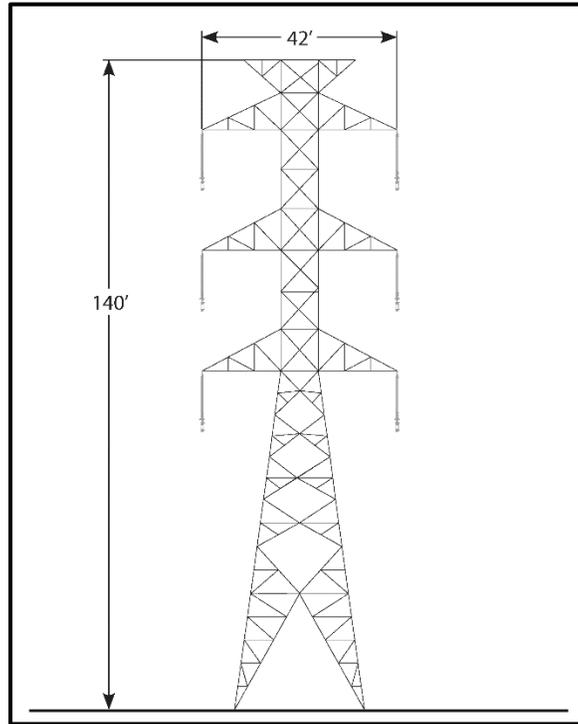


Figure 3. Typical 345-kV angle lattice structure diagram.

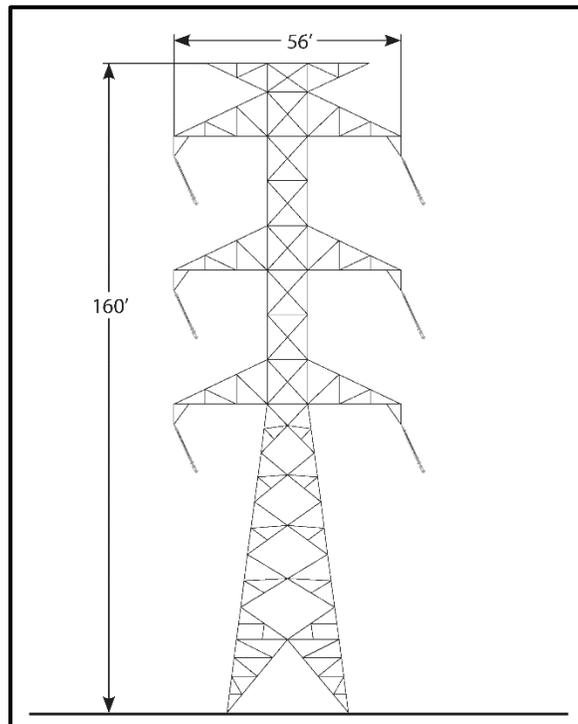


Figure 4. Typical 345-kV dead-end lattice structure diagram.

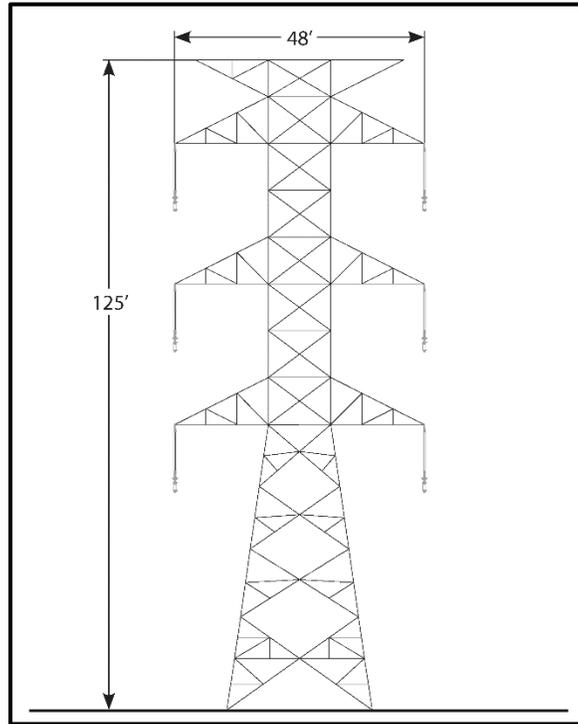


Figure 5. Typical 345-kV tangent tubular steel pole diagram.

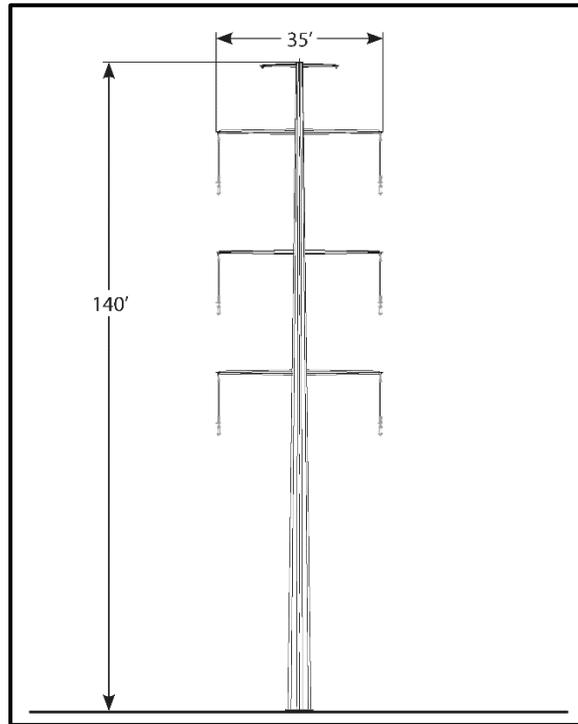
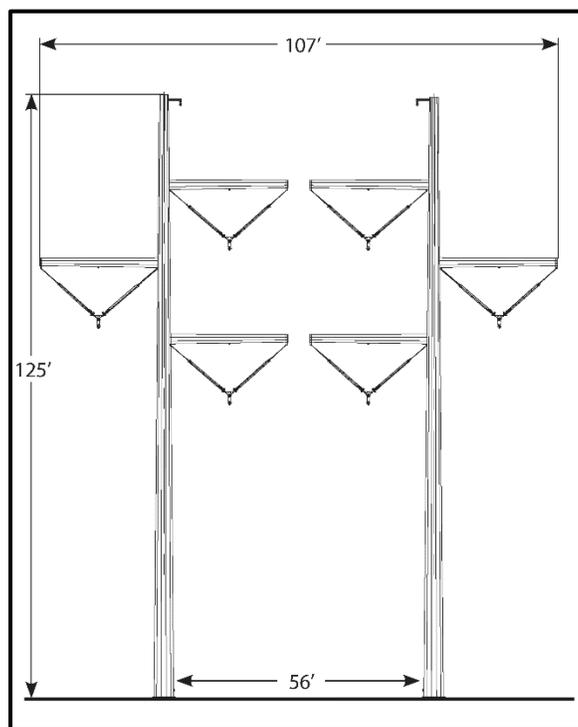


Figure 6. Typical 345-kV transposition tubular steel pole diagram.

It should be noted that the Department of Homeland Security, U.S. Customs and Border Protection, and/or DOD may have additional requirements beyond those described in chapter 5 below. Electrical properties, as described in table 3, indicate that the initial capacity on the New Build Section line would be 1,000 MW, but could ultimately be up to 2,000 MW. The proposed Project has been designed to meet a proposed Western Electricity Coordinating Council (WECC) path rating of 1,000 MW in each direction. Studies conducted to date in support of the WECC path rating (WECC 2015) indicate that the proposed Project would be limited to approximately 1,000 MW to ensure a high degree of reliability in the transmission system. If the existing system is improved and the elements limiting the proposed Project's rating are upgraded, then the Project could potentially have a higher rating in the future based on its physical capacity, which would need to be confirmed with new WECC studies and additional National Environmental Policy Act (NEPA) review as appropriate.

230-kV Structures – Upgrade Section

The 230-kV double-circuit transmission line is proposed to be tubular steel structures (figures 7–10; see also table 4). To accommodate the 230-kV line, the tubular steel structures are expected to be constructed of galvanized or self-weathering steel, with a height ranging from 100 to 140 feet. The exact height of the structure would be determined by topography and safety requirements for conductor clearance. Most tubular steel poles would have an approximate diameter at the structure base of 6 feet or less.

The distance between structures would depend on site-specific characteristics but is expected to be an average of 900 feet (or approximately 5 to 6 structures per mile). By comparison, the distance between existing structures averages approximately 700 feet. Therefore, although the proposed new structures that would be replacing the old structures would be taller, there would be fewer structures per mile. Spacing between the proposed structures would be designed to allow for the longest spans practical for this type of

construction. Each structure would be either directly embedded or foundation mounted in concrete. See discussion below for temporary and permanent disturbance estimates.

Figure 7. Typical 230-kV direct embedded tangent tubular steel pole diagram.

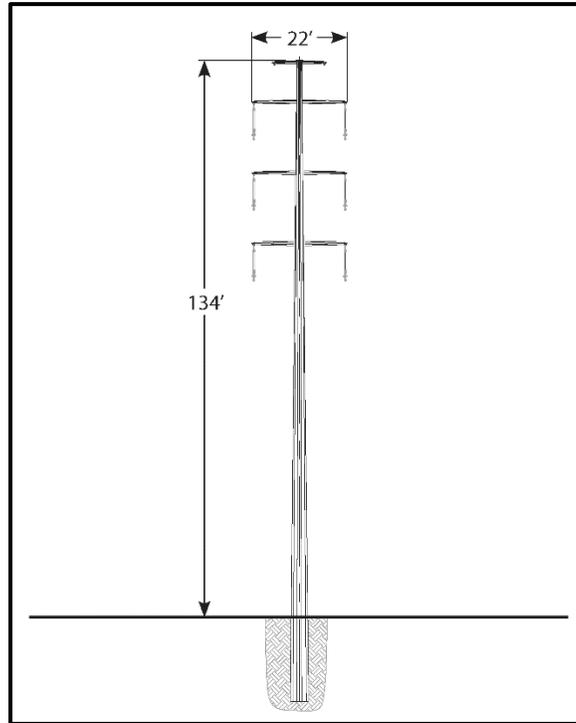


Figure 8. Typical 230-kV tangent tubular steel pole diagram (foundation type).

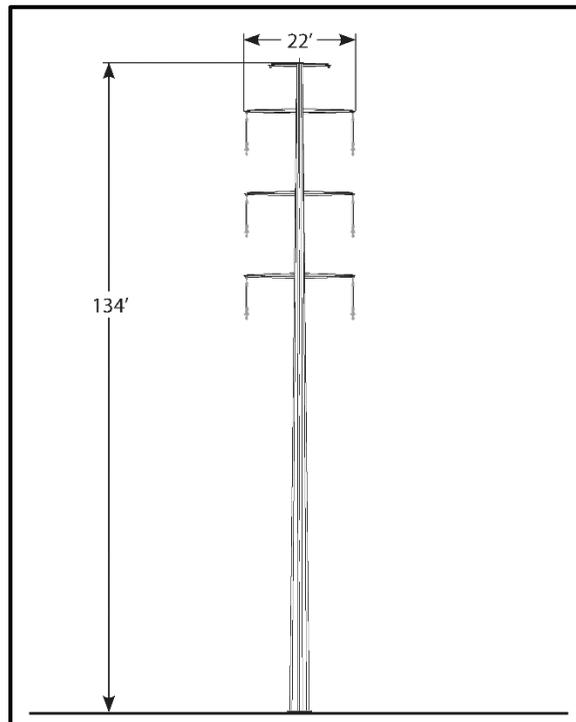


Figure 9. Typical 230-kV suspension angular tubular steel pole diagram.

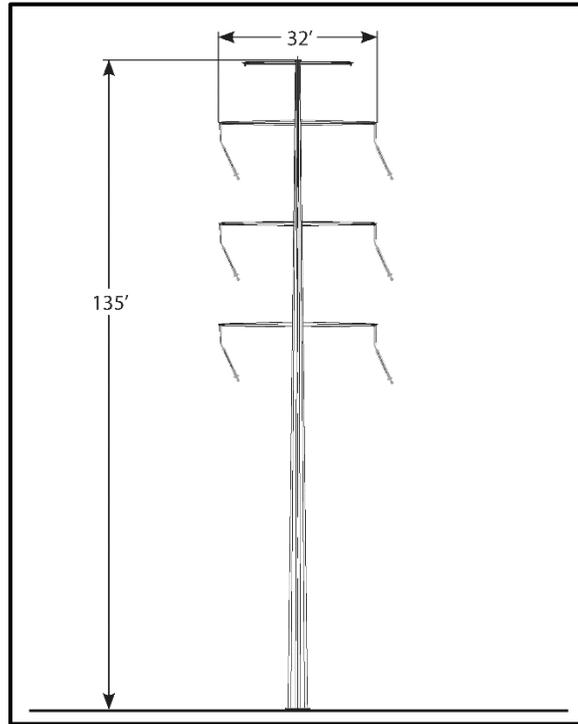


Figure 10. Typical 230-kV dead-end tubular steel pole diagram.

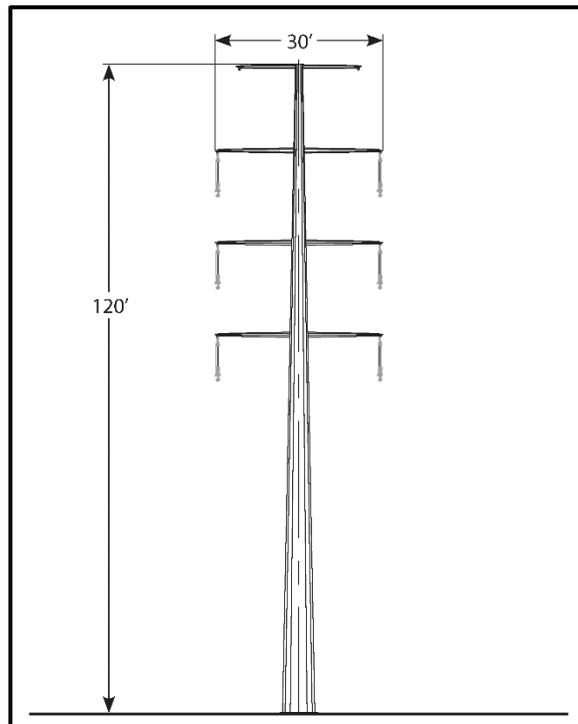


Table 4. Typical Design Characteristics of the Proposed Upgrade Section 230-kV Transmission Line

Feature	Proposed (Description)
General Description	
Structure type	Tubular steel poles (see figures 7–10)
Structure height	100–140 feet
Span length	700–1,100 feet
Number of structures per mile*	5–6
ROW width [†]	150 feet
Electrical Properties	
Normal voltage	230,000 volts (230 kV)
Capacity	1,000 MW (initial) 1,500 MW (ultimate)
Circuit configuration	Double-circuit
Conductor size	1,272–kcmil ACSR (1 subconductor per phase)
Shield wire size [‡]	7/16-inch extra-high-strength steel wire
Ground clearance of conductor [§]	28 feet

Notes: ACSR = aluminum conductor steel reinforced; kcmil = a thousand circular mils (a unit used to express large conductor sizes).

* Variable, depending on structure type and terrain.

[†] During design, a wider temporary and/or permanent ROW may be needed only in specific locations to accommodate rough terrain or long spans. Through urban Tucson, between Del Bac and Rattlesnake substations, the ROW will likely remain at the existing 100-foot width.

[‡] Shield wire size: one shield wire position to be occupied by optical ground wire about 0.5 inch in diameter with 48 optical fibers.

[§] Design minimum at temperature of 100 degrees Celsius.

Electrical properties, as described in table 4, indicate that the initial capacity on the Upgrade Section of the proposed line would be approximately 1,000 MW, but could ultimately be up to 1,500 MW. The proposed Project has been designed to meet a proposed WECC path rating of 1,000 MW in each direction. If the existing system is improved and the elements limiting the proposed Project's rating are upgraded, then the Project could potentially have a higher rating in the future based on its physical capacity, which would need to be confirmed with new WECC studies (WECC 2015).

3.2.2 Structure Foundations

Depending on soil and structure type, lattice structures and tubular steel structures are typically supported by cast-in-place drilled concrete pier foundations with detailed design to be completed once site-specific soil conditions can be evaluated. For lattice structures, steel reinforcing cages and stub angles would be installed. For tubular steel structures, either steel reinforcing cages with anchor bolts would be installed or the poles would be embedded directly into the ground. In rocky areas, foundation holes may be excavated by methods such as drilling or detonation of small charges in the drill holes used to break up the rock, or by installing special rock anchor or micro-pile type foundations. The rock anchoring or micro-pile system would be used in areas where site access is limited or where adjacent structures could be damaged as a result of rock breaking or hauling activities.

Each structure location would be evaluated individually during final engineering design to determine the recommended foundation dimensions and types. Anticipated structure type and associated foundation disturbance identified during final engineering would be accounted for in the Final POD.

Temporary and permanent land requirements for the foundations of the various types of both lattice structures and single-pole tubular steel structures for the 345-kV and 230-kV transmission lines are presented in table 5.

Table 5. Typical Structure Foundations – Temporary and Permanent Land Requirements

New Build Section	Disturbance Area
Temporary	
Structure work area	100 × 200 feet (20,000 square feet)
Wire pulling and tensioning (dead-end/angle)	200 × 500 feet (110,000 square feet)
Permanent	
Lattice (tangent)	1,225 square feet 35 × 35-foot structure base
Lattice (angle)	1,600 square feet 40 × 40-foot structure base
Lattice (dead-end)	2,025 square feet 45 × 45-foot structure base
Single-pole tubular steel pole (tangent)	40 square feet 7-foot-diameter foundation
Single-pole tubular steel pole (dead-end/angle)	100 square feet 2 poles × 8-foot-diameter foundation
Upgrade Section	
Temporary	
Structure work area	100 × 200 feet (20,000 square feet)
Wire pulling and tensioning (dead-end/angle)	150 × 500 feet (75,000 square feet)
Permanent	
Single-pole tubular steel pole (tangent)	30 square feet 6-foot-diameter foundation
Single-pole tubular steel pole (dead-end/angle)	50 square feet 8-foot-diameter foundation

3.2.3 Transmission Line Hardware

Conductors

Conductor is the wire cable strung between transmission line structures through which the electric current flows. The New Build Section 345-kV double-circuit transmission line would consist of a double-conductor bundle with two subconductors per phase; there would be three phases per circuit (six total). The subconductors are typically spaced approximately 18 inches apart in a vertical or horizontal configuration. For the 230-kV transmission line Upgrade Section, it is anticipated that one conductor per phase would be used. The conductor would be sized to provide adequate current-carrying capacity.

To minimize wind vibration flowing over the conductors, vibration dampers would be used. The type and number of dampers needed would be determined during final design. Each conductor span is anticipated to have two Stockbridge-type vibration dampers per wire; each shield wire/optical ground wire is anticipated to have four spiral dampers per wire for the 345-kV lines and two spiral dampers per wire for the 230-kV lines.

The minimum design height of the conductor aboveground at the maximum operating temperature would be 30 feet on the New Build Section and 28 feet on the Upgrade Section. Conductor phase-to-phase and phase-to-ground clearance parameters are determined in accordance with National Electric Safety Code (NESC) American National Standards Institute (ANSI) C2. This code provides recommendations for the minimum distances between the conductors and ground, crossing points of other lines and the transmission support structure and other conductors, and minimum working clearances for personnel during energized operation and maintenance activities (Institute of Electrical and Electronics Engineers 2007).

Avian Power Line Interaction Committee (APLIC) standards would be used in final design to minimize avian conflicts. The configuration of the bundle would be designed to provide adequate current-carrying capacity while minimizing interference from audible noise and to radio operations.

Insulators and Associated Hardware

Insulators, which are made of an extremely low-conducting material, such as porcelain, glass, or polymer, are used to suspend the conductors from each structure. Insulators inhibit the flow of electrical current from the conductor to the structure. The assemblies of insulators are designed to maintain appropriate electrical clearances between the conductor, the ground, and the structure. The New Build Section would have insulator assemblies that consist of single string or two strings of insulators, predominantly in the form of a “V.” The Upgrade Section would have insulator assemblies that consist of suspension strings or braced post insulators.

Overhead Ground Wire

Overhead shield wires and optical ground wires would be installed between each structure for lightning protection. Current from lightning strikes would be transferred through the ground wires and structures into the ground.

Grounding

For the New Build and Upgrade sections, a grounding system would be installed at the base of each transmission structure that would consist of copper or copper-weld ground rods embedded into the ground in immediate proximity to the structure foundation and connected to the structure by buried copper or other suitable conductor.

3.2.4 Other System Facilities

Communication Systems

The proposed Project would include a communications system consisting of a fiber-optic network necessary for control and protection of the transmission system (referred to as supervisory control and data acquisition). For redundancy purposes, a secondary communications path would be provided via a power line carrier or microwave system. The type of communication system would be determined during final design.

The communication system is needed to transfer data for operation of the line and substations. The system would be reserved for the operation of the power system only, and would not be made available for commercial use. Primary communications for relaying and control would be provided via one optical ground wire that would be installed on one of the shield wire positions on the transmission line structures.

As the optical data signal is passed through the optical fiber cable, the signal degrades with distance. Consequently, communication regeneration stations are required to amplify the signals if the distance along the cable exceeds approximately 50 miles.

Communication Regeneration Station

Approximately two new communication regeneration stations would be required along the New Build Section: one between Apache and Hidalgo substations, and one between Hidalgo Substation and a new substation facility proposed for Luna County, New Mexico (referred to as Midpoint Substation). The two new fiber-optic regeneration sites would be located next to or in the ROW such that they would be accessed by access roads already required for transmission line maintenance. The existing substations along the Upgrade Section of the Project are close enough together that required communication equipment would be located within the substation perimeter (either existing or proposed new yards, as described above).

New communication regeneration sites would typically be 100 × 100 feet, with a fenced-in area of 75 × 75 feet. A 12 × 12 × 9-foot tall building (metal or concrete) would be placed on the site, and access would be available from the transmission line access roads. Entrances above the door of each building would be lit to allow for safe entrance and exit, but the rest of the site would not be lit at night.

Microwave regeneration sites would be co-located with fiber-optic sites if possible along the Upgrade Section, and are only anticipated to be needed along the New Build Section of the Project. As above, the existing substations along the Upgrade Section of the Project are close enough together that required communication equipment would be located within the substation perimeter (either existing or proposed new yards, as described above). The two new microwave regeneration sites along the New Build Section would be located off the ROW and their final location would be determined based on line of sight between substations. These locations would be determined during final engineering but would be located such that they would be accessed by access roads already required for transmission line maintenance.

New microwave communication regeneration sites would typically be 100 × 100 feet, with a fenced-in area of 75 × 75 feet. A typical site consists of a microwave equipment building, which houses telecommunication and network equipment, backup batteries, and chargers. The building would be approximately 12 × 12 × 9 feet tall and, where possible, microwave regeneration sites would be co-located with the fiber-optic regeneration site buildings (i.e., all equipment would be housed in the same building). Buildings would be finished to minimize visual impact, and lighting at night would be limited to an entrance light above the door for security and to allow for safe entrance and exit. The site would also have a microwave antenna installed on a self-standing tower approximately 100 feet tall.

Communication Regeneration Station Distribution Supply Lines

Power would likely be provided from a local electric distribution line, located in proximity to the regeneration site. The voltage of the distribution supply line is typically 12 kV or lower and carried on wooden poles. For the estimated two new sites, it would be necessary to extend the electric distribution line from a take-off point on the existing distribution line to the new site. The location and routing of the existing distribution lines to the new sites would be determined during the final design process.

3.2.5 Other Electrical Hardware

In addition to the conductors, insulator, and overhead shield and optical ground wires, other associated hardware would be installed on the structure as part of the insulator assembly to support the conductors

and shield wires. This hardware might include clamps, shackles, links, plates, and various other pieces composed of steel and aluminum.

3.2.6 Other Non-Electrical Hardware

Other hardware not associated with the transmission of electricity may be installed as part of the Project. This hardware may include aerial marker spheres or aircraft warning lighting, which may be required for the conductor on certain spans in accordance with FAA guidelines.

3.2.7 Substations

The proposed Project involves interconnection with and upgrades of 14 existing substations along the Project route in New Mexico and Arizona, and the potential construction of the proposed Midpoint Substation.

Project design has progressed resulting in a more refined Project description. As a result, at four substation locations within the Upgrade Section where the proposed Project was anticipated to include expansion of existing facilities, these expansions would more accurately be described as “new” substations. These four substation locations are Apache, Pantano, Marana, and Saguaro. Please note that these changes are only a refinement of the project description and do not change the disturbance areas and impact estimates.

A summary of substations associated with the proposed Project, land ownership, and the respective owner/operator is provided in table 6. Of the existing substations, there are two on BLM lands (Afton and Nogales), three on State lands in Arizona (Adams Tap, Pantano, and Tortolita), one on Reclamation lands (Rattlesnake), and eight on private land (Hidalgo, Apache, Vail, Del Bac, Tucson, DeMoss Petrie, Marana, and Saguaro). The Midpoint North Substation would be on New Mexico State Land Office–administered State and private lands.

Table 6. Project Interconnection Substations (Existing and Proposed)

Interconnection Substation	Owner/Operator	Section	Land Status
Afton	El Paso Electric	New Build	BLM
Midpoint*	Southline (owner); operator TBD	New Build	New Mexico State Land Office and private
Hidalgo	El Paso Electric	New Build	New Mexico State Land Office and private
Apache*	Southwest Transmission Cooperative (SWTC) and Southline	Upgrade	Private
Adams Tap	Western	Upgrade	Arizona State Land Department
Pantano*	SWTC and Southline	Upgrade	Arizona State Land Department
Vail	TEP	Upgrade	Arizona State Land Department and private
Nogales	Western	Upgrade	BLM
Del Bac	Western	Upgrade	Arizona State Land Department
Tucson	Western	Upgrade	Private
DeMoss Petrie	TEP	Upgrade	Private
Rattlesnake	Western	Upgrade	Reclamation
Marana*	SWTC and Western	Upgrade	Private

Table 6. Project Interconnection Substations (Existing and Proposed), Continued

Interconnection Substation	Owner/Operator	Section	Land Status
Tortolita	TEP	Upgrade	Arizona State Land Department
Saguaro*	Arizona Public Service and Western	Upgrade	Arizona State Land Department and private

* Midpoint Substation is a new proposed substation that is not interconnected with an existing adjacent substation. Apache Southline, Marana Tap-Sawtooth, and Sasco substations are new substation yards proposed to interconnect with neighboring substations ; all other substations in this table are existing substations.

As shown in table 6, substations along the New Build Section include the existing Afton and Hidalgo substations, as well as the proposed Midpoint Substation in New Mexico. Substations along the Upgrade Section include Apache/Apache (Southline), Adams Tap, Pantano/Pantano (Southline), Vail, Nogales, Del Bac, Tucson, DeMoss Petrie, Rattlesnake, Marana/Marana Tap-Sawtooth, Tortolita, and Saguaro/Sasco. Substation expansions and upgrades vary by substation.

3.2.8 Preliminary Access Road Information

Access roads would be required during construction for the movement of trucks, cranes, concrete trucks, bulldozers, and other light and heavy construction equipment to and along the ROW. Access roads would also serve as the primary means of movement for construction crews and Project materials. During operation, these roads would be needed to access transmission lines, substations, and ancillary facilities for period line inspections and scheduled and emergency maintenance over the life of the Project. As such, access roads must be sufficient to support the weight of construction equipment; upon completion of the proposed Project, access roads would be used by operation and maintenance vehicles.

The proposed Project would be designed, as feasible, to use existing access roads with minimal improvement. The level of construction for access roads would range from unimproved cross-country travel to completely bladed roads (see below for a description of access types A–E). For example, unimproved cross-country travel access (two-track) would be on flat, sparsely vegetated areas, and would be used to maintain the maximum amount of native vegetation and minimize overall disturbance instead of creating new roads, as appropriate. Improvements to existing roads that would be used as access roads would occur in areas where occasional blading would be needed on rough spots and would transition to more blading with other improvements on steep, rocky, or rough country. The intent is to do no more than is necessary to get equipment in and out safely and to prevent erosion. All roads would be within designated ROW, whether inside the main transmission line ROW, or outside in a 30-foot access road ROW.

In areas where improvements are required, access roads would be graded, as needed, to provide a smooth travel surface. Such improvements could include blading, widening of the road, or installing drainage structures, such as culverts. No graveling or paving is planned. Typically, Project access roads would have a travel surface width of 12 to 16 feet but could have a maximum width of 24 feet, depending on site-specific circumstances, such as steep terrain, and where needed to accommodate expanded turning areas for cranes and pole trucks. After construction, wider parts of the access roads would be revegetated. Access road types that could be used for this Project include existing roads that require no improvements, existing roads that require improvements, and new access roads.

Access roads would be designed to go directly from structure to structure, except in difficult terrain or where sensitive resources need to be avoided. In such cases, the road would follow suitable topography from structure to structure and would be built in areas that generally cause the least amount of overall disturbance, which may be outside the ROW in cases of difficult terrain. Typically, where the line spans a

river channel, or large steep-sided wash, access may come from either side to avoid damage to riparian vegetation.

The Access Road Plan for the proposed Project assumes that five primary types of access would be used²:

- **Access Type A** – Access from adequate private roads. This type of access would be used when there is no existing road adjacent or parallel to the alignment, but where there is a patchwork of existing roads in the area that would be crossed by the proposed Project ROW, and could be used to access the ROW and get close to the structure locations. Grading between the existing roads and each structure location would only be conducted where necessary and would depend on site conditions. Grading and other improvements may not be necessary, depending on site conditions. Typically, overall disturbance would be limited to a width of 16 feet or less. The purpose of using existing access from private roads would be to minimize overall disturbance.
- **Access Type B** – Parallel to maintained public roads. This type of access would be used when the alignment roughly parallels a nearby public road that is either paved or has gravel surfacing. Short spur roads would be used from the existing roads to each structure location as described below under access type E. Except in rare cases, the existing roads would not be upgraded, but any damage to public roads from construction activities would be repaired. The purpose of access roads parallel to a nearby public road would be to consolidate and minimize overall disturbance.
- **Access Type C** – Parallel to existing utility roads. This type of access would be used when the alignment roughly parallels an existing utility that already has an existing access road. Spur roads would be used from the existing utility roads to each structure location as described below under access type E. Generally, the existing utility roads would be improved. Grading between the existing utility roads and each structure location would only be conducted where necessary and would depend on site conditions. Grading and other improvements may not be necessary, depending on site conditions. Typically, overall disturbance would be limited to a width of 16 feet or less. The purpose of access roads parallel to a utility road would be to consolidate and minimize overall disturbance.
- **Access Type D** – New down-ROW primary access. This type of access would only be used when access types A–C are not feasible. It would consist of a 16-foot-wide road (12-foot travel surface plus 2 feet on either side for berms/ditches). As much as possible, new access would be entirely within the ROW. Typically, new down-ROW access would be used if any parallel roads are more than 700 feet from the alignment. This access type would also normally be used for alignments that parallel interstate highways and railroads because the owners of those facilities generally place restrictions on the use of their ROWs; these restrictions do not allow for the addition of spur roads or their related ROW crossings and gates in ROW fences.
- **Access Type E** – Spur roads–improved and unimproved access. Spur roads would be used to connect type A, B, and C access roads to the ROW and for temporary access to stringing and splicing sites. Spur roads would be unimproved (two-track) roads except in areas where grading may be required based on terrain, with an average of one new spur road per mile for temporary access and approximately five spur roads per mile in areas where type A, B, and C access roads are used for permanent access to structure locations. Only where necessary, spur roads would be improved, and the roads would be graded to 10 to 12 feet wide. Otherwise, spur roads would not be improved in areas with flat terrain and within grassland, desertscrub, sand scrub, and sand dune vegetation communities. Vegetation on unimproved roads may be crushed by driving, but cropping or blading vegetation would not be conducted. This would avoid removal of root mass

² Draft NEPA POD Note: Access roads and staging area locations shown in figures are preliminary only (especially along segments LD3a, LD3b, and P7a) and will be refined for the final POD.

and organics in the soil (no surface soil would be removed). The purpose of unimproved spur roads would be to preserve the maximum amount of native vegetation and minimize overall disturbance.

Once design is finalized, all access roads described above would be surveyed, appropriate ROW would be acquired, and ROW would be mapped and incorporated into the Access Road Plan and Management Plan.

3.3 INDUCED CURRENTS ON ADJACENT FACILITIES

Alternating current (AC) transmission lines have the potential to induce currents on adjacent metallic structures such as other transmission lines, railroads, pipelines, fences, or structures that are parallel to, cross, or are adjacent to the transmission line. To address induced-current effects on metallic facilities or structures within 200 feet of the proposed Project center line, these structures would be properly grounded as needed. This would eliminate the electric shock potential a person may experience when touching a metallic object near the proposed Project. Typically, the NESC determines what structures beyond 200 feet or more from the center line would require grounding. If grounding were required outside the ROW, a temporary use permit would be obtained, as needed.

3.4 LAND REQUIREMENTS AND CONSTRUCTION DISTURBANCE

The proposed ROW width for the New Build Section 345-kV double-circuit transmission line is 200 feet. The anticipated ROW width for the Upgrade Section 230-kV transmission line is 150 feet except in urban Tucson between Del Bac and Rattlesnake substations, where the ROW will likely remain at the existing width of 100 feet. These ROW widths have been requested to allow for the safe movement and operation of construction, operation, and maintenance equipment and to allow for sufficient clearance between conductors and the ROW edge, as well as equipment like bucket trucks, as required by the NESC. Southline is also requesting ROWs for ancillary Project facilities and for access to the transmission line.

3.4.1 Right-of-Way / Special-use Authorization Acquisition

New permanent and temporary ROW land rights would be required for the New Build Section. The requested ROW width for the New Build Section 345-kV double-circuit transmission line is 200 feet. New and temporary ROW may be required in areas along the Upgrade Section, depending on the final design considerations. No new ROW is anticipated in the Upgrade Section across Bar V Ranch in Pima County, and between the Del Bac and Rattlesnake substations; in these areas, the tear-down and rebuild in place method of construction would be necessary because in these congested areas, an additional 50 feet of ROW is not available. Tearing the line out and rebuilding in place requires outages on the existing line while construction is accomplished.

Temporary ROWs are also being requested for construction of the proposed Project facilities. These temporary use areas would include access to work areas at transmission line structure locations, material laydown yards, tensioning and pulling areas, splicing locations, and staging areas. Construction activities would be expected to occur over a 24-month period. Where access is needed outside the transmission line ROW, permanent ROWs for access roads to structure sites are also being requested in order to conduct maintenance throughout Project operation. Where ROW acquisitions are found to be necessary, Western or Southline would negotiate rights and compensate landowners. The landowner would retain the title and use of the easement with a few restrictions.

Before the start of construction of a project element, Southline would obtain a complete project element ROW through a combination of a ROW grant, special use permit, and easements from applicable Federal, State, and local governments, tribes, and private landowners. Close coordination with all property owners and land agencies during surveys and the construction phase of the proposed Project would be important for successful completion of the proposed Project. In the early stages of the proposed Project, landowners would be contacted to obtain right-of-entry for surveys and for geotechnical drilling at selected locations. Additional landowners would be contacted as needed throughout the proposed Project for additional surveys, including geotechnical work. Each landowner along the final centerline route would be contacted to explain the proposed Project and to secure right-of-entry and access to the ROW. Geotechnical drilling on Federal lands may require additional environmental analysis and field clearance under NEPA.

All negotiations with landowners would be conducted in good faith, and the proposed Project's effect on the parcel or other landowner concerns would be addressed. ROWs for transmission line facilities on private lands would be obtained as easements. Land for substation or regeneration stations would be obtained in fee simple where located on private land. A good-faith effort would be made to purchase the land and/or obtain easements on private lands through reasonable negotiations with the landowners. If Southline is unable to negotiate an easement or obtain clear title for the land right, Western may negotiate the easement, or obtain the necessary rights through condemnation proceedings, in accordance with Federal law. Western's policy is to avoid condemnation if at all possible.

Additional ROW may be required, depending upon site geography and terrain. These areas are identified to the extent possible during the NEPA process; however, some needs might be identified during the final engineering, preconstruction, or construction phases of the proposed Project. In some areas, longitudinal access roads would be sited within the transmission line ROW. In other areas, spur roads would connect existing roads to the transmission line ROW. Specific access road locations would be identified in the POD and subject to BLM approval through the ROD, as well as through the issuance of notice to proceed from the BLM. These areas would be subject to field surveys for cultural and biological resources, including native plant surveys and salvage prior to any disturbance. Planned access roads would be surveyed and specific ROW easements obtained from the landowners. All applicable PCEMs, as well as conditions in the Framework Plans, would apply.

3.4.2 Temporary and Permanent (Long-term) Construction Disturbance

Table 7 below includes a breakdown of potential temporary and permanent construction disturbance estimates, based on the proposed Project as described above and in the EIS. The component descriptions precede this section.

Table 7. Summary of Project Components and Estimated Temporary and Permanent Disturbance by Subroute, Segment, and Local Alternative

Subroute	Total Length (miles)	Land Ownership (miles)								Access Road Type (miles)					Total Length Access Roads (miles)	Total New Disturbance Access Roads (acres) (using road types C and D at 16-foot width less any existing disturbance and road type E at 12-foot width)	Subroute Structure Ground Disturbance Estimates				Substation Expansion (acres)		Construction Laydown Yard (acres)	Total Temporary Disturbance (acres) (structure, substation, and construction laydown yards)	Total Permanent Disturbance (acres) (access, substation expansion, and structure foundations)	
		BLM	BIA	DOD	Forest Service	Reclamation	State	County	Private	A	B	C	D	E			Temporary Disturbance		Permanent Disturbance		Temp	Perm				
																	Acres	Acres/Mile	Acres	Acres/Mile						
New Build Route Group 1: Afton (New Mexico) to Hidalgo (New Mexico)																										
P1	5.1	3.0	0.0	0.0	0.0	0.0	1.9	0.0	0.2	0.0	0.0	0.0	5.1	0.0	5.1	9.9	28.7	5.6	0.5	0.1					28.7	10.4
P2	102.0	32.8	0.0	0.0	0.0	0.0	31.3	0.0	37.9	4.9	11.8	98.1	0.0	29.3	144.1	125.9	571.0	5.6	10.2	0.1			80.0	651.0	136.1	
P3	31.1	25.4	0.0	0.0	0.0	0.0	1.4	0.0	4.2	0.0	0.0	0.0	31.1	0.0	31.1	60.3	174.2	5.6	3.1	0.1			20.0	194.2	63.4	
P4a	8.9	4.2	0.0	0.0	0.0	0.0	3.7	0.0	1.1	0.0	0.0	8.8	0.0	1.9	10.7	10.2	50.0	5.6	0.9	0.1				503.0	11.1	
Total	147.1	65.5	0.0	0.0	0.0	0.0	38.3	0.0	43.4	4.9	11.8	106.9	36.2	31.2	206.3	206.3	824.0		14.7		20.0	35.0	100.0	944.0	256.0	
New Build Route Group 2: Hidalgo (New Mexico) to Apache (Arizona)																										
P5b	21.1	17.9	0.0	0.0	0.0	0.0	1.0	0.0	2.2	0.0	0.0	21.2	0.0	2.7	23.9	19.4	118.1	5.6	2.1	0.1			20.0	138.1	21.5	
P6a	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.1	0.8	0.6	4.9	5.6	0.1	0.1			20.0	24.9	0.7	
P6b	22.5	0.2	0.0	0.0	0.0	0.0	12.6	0.0	9.7	0.0	0.0	20.8	2.3	2.7	25.8	23.5	125.9	5.6	2.2	0.1				125.9	25.8	
P6c	2.8	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	2.8	0.0	0.4	3.2	2.9	15.8	5.6	0.3	0.1			20.0	35.8	3.2	
P7	22.3	2.3	0.0	0.2	0.0	0.0	8.5	0.0	11.3	0.0	0.5	22.1	0.0	3.8	26.4	21.6	125.1	5.6	2.2	0.1	0.0	0.0	20.0	145.1	23.8	
P8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.1	2.8	5.6	0.1	0.1	0.0	0.0	0.0	2.8	0.1	
LD3a	26.6	11.7	0.0	0.0	0.0	0.0	11.8	0.0	3.1	0.0	0.4	17.3	11.4	3.0	32.1	41.2	148.8	5.6	2.7	0.1			20.0	168.8	43.9	
LD3b	2.2	1.3	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	2.0	0.0	2.2	0.0	2.2	4.2	12.2	5.6	0.2	0.1			20.0	32.2	4.4	
Total	98.8	34.3	0.0	0.2	0.0	0.0	37.6	0.0	26.8	0.5	0.9	84.9	15.9	12.8	114.9	113.5	553.5		9.9		20.0	53.0	120.0	693.5	176.4	

Table 7. Summary of Project Components and Estimated Temporary and Permanent Disturbance by Subroute, Segment, and Local Alternative (Continued)

Subroute	Total Length (miles)	Land Ownership (miles)								Access Road Type (miles)					Total Length Access Roads (miles)	Total New Disturbance Access Roads (acres) (using road types C and D at 16-foot width less any existing disturbance and road type E at 12-foot width)	Subroute Structure Ground Disturbance Estimates				Substation Expansion (acres)		Construction Laydown Yard (acres)	Total Temporary Disturbance (acres) (structure, substation, and construction laydown yards)	Total Permanent Disturbance (acres) (access, substation expansion, and structure foundations)
		BLM	BIA	DOD	Forest Service	Reclamation	State	County	Private	A	B	C	D	E			Temporary Disturbance		Permanent Disturbance		Temp	Perm			
																	Acres	Acres/Mile	Acres	Acres/Mile					
Upgrade Route Group 3: Apache (Arizona) to Pantano (Arizona)																									
U1a	16.1	0.4	0.0	0.0	0.5	0.0	8.8	0.0	6.4	4.9	0.0	11.9	0.0	7.0	23.9	18.9	81.9	5.1	0.2	0.01				81.9	19.1
U1b	2.9	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	2.7	0.0	0.1	2.8	2.5	14.8	5.1	0.0	0.01			20.0	34.8	2.5
U2	15.8	0.0	0.0	0.0	0.0	0.0	3.3	0.0	12.5	1.5	0.0	21.0	0.0	7.0	29.6	28.1	80.6	5.1	0.2	0.01				80.6	28.2
U3a	30.7	0.2	2.9	0.0	0.0	0.2	19.6	0.0	7.7	0.8	0.0	36.2	0.0	3.9	40.9	32.0	156.3	5.1	0.3	0.01			60.0	216.2	32.3
Total	65.4	0.6	2.9	0.0	0.5	0.2	34.6	0.0	26.6	7.2	0.0	71.9	0.0	18.1	97.1	81.4	333.6		0.7		0.0	5.7	80.0	413.6	87.8
Upgrade Route Group 4: Pantano (Arizona) to Saguaro (Arizona)																									
U3b	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.2	0.0	0.1	0.5	0.3	2.3	5.1	0.0	0.01				2.3	0.3
U3c	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.1	0.8	0.2	4.9	5.1	0.0	0.01				4.9	0.2
U3d	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.0	3.1	0.0	1.8	0.0	1.0	5.8	2.7	17.5	5.1	0.0	0.01				17.5	2.8
U3g	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.0	0.3	0.0	0.1	1.3	0.4	4.6	5.1	0.0	0.01				4.6	0.4
U3h	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.9	0.0	0.0	0.0	0.1	1.0	0.1	5.6	5.1	0.0	0.01				5.6	0.2
U3i	18.2	0.0	0.0	0.0	0.0	0.2	2.7	0.0	15.3	7.4	0.0	12.8	0.0	2.1	22.3	13.9	93.0	5.1	0.2	0.01			20.0	113.0	14.1
U3k	16.7	0.0	0.0	0.0	0.0	0.0	10.8	0.0	5.9	3.3	0.0	15.1	0.0	5.7	24.1	21.1	85.2	5.1	0.2	0.01			20.0	105.2	21.3
U3l	1.6	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.4	0.6	0.0	0.4	0.2	0.3	1.6	1.3	7.9	5.1	0.0	0.01				7.9	1.3
U3m	0.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.4	0.0	0.0	0.0	0.1	0.5	0.1	3.0	5.1	0.0	0.01				3.0	0.2
U4	1.9	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	1.8	0.0	0.5	2.3	1.6	9.8	5.1	0.0	0.01				9.8	1.6

Table 7. Summary of Project Components and Estimated Temporary and Permanent Disturbance by Subroute, Segment, and Local Alternative (Continued)

Subroute	Total Length (miles)	Land Ownership (miles)								Access Road Type (miles)					Total Length Access Roads (miles)	Total New Disturbance Access Roads (acres) (using road types C and D at 16-foot width less any existing disturbance and road type E at 12-foot width)	Subroute Structure Ground Disturbance Estimates				Substation Expansion (acres)		Construction Laydown Yard (acres)	Total Temporary Disturbance (acres) (structure, substation, and construction laydown yards)	Total Permanent Disturbance (acres) (access, substation expansion, and structure foundations)
		BLM	BIA	DOD	Forest Service	Reclamation	State	County	Private	A	B	C	D	E			Temporary Disturbance		Permanent Disturbance		Temp	Perm			
																	Acres	Acres/Mile	Acres	Acres/Mile					
U3aPC	6.2	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	4.7	1.5	0.0	1.3	7.5	3.1	31.6	5.1	0.1	0.01					31.6	3.2
MA1	1.1	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.0	0.0	0.0	0.2	1.2	0.3	5.6	5.1	0.0	0.01					5.6	0.3
TH1a	1.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.2	0.0	1.5	0.0	0.2	1.7	0.3	7.2	5.1	0.0	0.01					7.2	0.3
TH1-Option	1.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.3	0.0	0.4	0.0	0.1	0.5	0.1	5.0	5.1	0.0	0.01					5.0	0.1
Total	55.5	0.0	0.0	0.0	0.0	0.2	18.9	0.4	36.0	18.5	6.6	33.9	0.2	11.9	71.2	47.3	283.07		0.6		36.0	45.4	40.0	359.1	93.3

Note: Segment information presented only for the Agency Preferred Alternative in the Final EIS.

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Chapter 4

OPERATION AND MAINTENANCE

4.1 INTRODUCTION

Regular inspection and maintenance of transmission lines, substations, and support systems is critical for safe, efficient, and economical operation of the Project. This section provides information describing operation and maintenance activities, including transmission line patrols, inspections, tower and wire maintenance, vegetation maintenance, maintenance of access roads, and emergency maintenance.

4.2 SYSTEM INSPECTION, MAINTENANCE, AND REPAIR

Responsibly conducted inspections and routine maintenance activities are anticipated to have minimal impacts and are usually authorized under the transmission line easements and ROW grant. While carrying out routine maintenance activities, field personnel and contractors would adhere to basic standards and guidelines contained in other sections of the Project POD, special use stipulations, and any additional requirements (such as periodic review of the implementation plans associated with operation and maintenance) identified in the decision documents that apply to the specific area where work is to be done.

With the exception of emergency maintenance activities (refer to Section 4.2.3 – Emergency Maintenance Activities), Southline and Western would coordinate with the appropriate land management agency to review any new information or specific requirements concerning cultural, paleontological, and biological resources (e.g., federally listed species, special status species, seasonal restrictions, habitat concerns, etc.), prior to initiating inspection, maintenance (including vegetation management), and/or repair activities. PCEMs (refer to Chapter 5 – Environmental Mitigation Measures) apply to construction and operation and maintenance activities. If for any reason the operation or maintenance activities require deviation from the basic standards and guidelines or those approved by the land management agency, field personnel and contractors would coordinate with the designated agency contacts prior to initiating the activity and/or during the activity if any unanticipated biological, cultural, or paleontological resource issues are encountered.

This section describes the typical activities involved in the inspection and maintenance of the transmission line. The different activities can be categorized in three groups: Routine Activities (Section 4.2.1), Major Maintenance Activities (Section 4.2.2), and Emergency Maintenance Activities (Section 4.2.3).

4.2.1 Routine Activities

Routine Inspection

Regular ground and aerial inspections would be performed in accordance with the applicable Western/Southline requirements, which are in turn based on regulations, industry standards, and best management practices (BMPs). The transmission lines and substations would be inspected for corrosion, equipment misalignment, loose fittings, vandalism, and other mechanical problems. The need for vegetation management would also be determined during inspection patrols. Annual maintenance activities are typically conducted by using helicopters, ground vehicles (4 × 4 trucks or all-terrain

vehicles), or on foot. Visual or infrared inspections of the entire Project would be conducted annually. Typically, 10 percent of all structures would be inspected during annual structure-climbing inspections, so that each structure is inspected every 10 years. Aerial inspection would be conducted by helicopter, generally in the spring and fall.

Aerial inspection by helicopter is conducted during the spring and fall of each year based on weather conditions, helicopter availability, and statutory requirements of the states served by Southline. The aerial inspections are conducted to identify ROW encroachments and conditions that pose an immediate hazard to the public or employees, or that risk immediate loss of supply or damage to the electrical system. The aerial inspections use helicopters to get an observer in a position for observation above the transmission line. The observer assesses the condition of the transmission lines and hardware to determine whether any components need to be repaired or replaced or if other conditions exist that require maintenance or modification activities. Any conditions identified are to be resolved prior to peak demand in the summer and winter months. The aerial inspections are dependent on weather, flight-control restrictions, and the extent of damage assessment required.

Ground inspections would be done on approved access roads or along the transmission line ROW to each structure as appropriate and are anticipated to occur every 2 to 3 years. The inspector would access each of the structures and check all equipment and other components that could require repairs. Inspections assess the condition of the line and hardware to determine whether any component needs to be repaired or replaced and whether other conditions exist that may require maintenance or modification. Inspections also assess any unauthorized encroachments and/or trash dumping in the ROW that could constitute a safety hazard. Inspectors performing such inspections would use conventional four-wheel-drive trucks or four-wheel-drive all-terrain vehicles, or the inspector may walk the line. The annual 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. Southline may perform minor repairs during its ground inspections such as installing new numbers, installing/repairing ground wire, or performing other minor tasks that would not involve long duration, specialized equipment, or large work crews. Climbing inspections would be conducted to coincide with bolt checking and tightening on lattice structures.

In the event of an outage or interruption in the transmission of electricity or other failure, Southline or its contractor would perform detailed inspections of the transmission line to determine the cause. The extent of activities associated with outage inspections is explained in more detail below in section 4.2.3.

Routine Maintenance

Routine maintenance activities are ordinary maintenance tasks that have historically been performed on a routine basis. In the Upgrade Section these activities have been performed following Western's standard procedures. Routine maintenance would include the replacement of individual structures, components, cables, lines, insulators, and other facilities that, due to obsolescence, age, wear, or isolated damage such as lightning or gunshot, are in need of replacement or repair. 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. Routine maintenance activities may consist of more immediate activities, where repairs must be made within a short period of time in order to ensure the line does not suffer an outage or cause safety concerns, or longer-term routine maintenance activities, where repairs may be made during regularly scheduled maintenance activities.

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 include four-wheel-drive

pickups, man-lifts, material flatbeds, line trucks, cranes, tractor trailer, high-reach boom trucks, and bulldozer/caterpillar.

Workers require access to the damaged portion of the line to allow for a safe and efficient repair of the facility. Equipment required for this work may include four-wheel-drive trucks, material (flatbed) trucks, low-reach boom trucks, high-reach boom trucks, bulldozer/caterpillar, or man lifts. Routine maintenance is scheduled and is typically required due to issues found during inspections. Typical items that may require periodic replacement on towers include conductors, insulators, shield wires, fiber-optic lines, and related equipment. It is expected these replacements would be required infrequently (every 5 to 10 years) or as determined by inspection.

Maintenance on transmission lines can often be completed safely using live-line techniques in order to avoid interruption of service to critical transmission line infrastructure. High-reach boom trucks, along with other equipment, are used to conduct these activities.

Typically, maintenance vehicles and equipment would remain within the permanent maintenance 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 land management agency 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. In such cases, reapplication of reclamation treatments may be required after completion of maintenance activities, as determined by the appropriate land management agency. All PCEMs outlined in this POD apply to design, construction, and maintenance activities as reflected in Chapter 5 – Environmental Mitigation Measures.

Routine Vegetation Management

Work areas adjacent to electrical transmission structures and along the ROW would be maintained for vehicle and equipment access necessary for operations, maintenance, and repair. Vegetation management practices along the ROW would be in accordance with NESC ANSI A300 Part 7, “American Operations Integrated Vegetation Management” (BLM’s Integrated Vegetation Management Handbook – H 1740-02, March 25) (BLM 2008), Western Order 430.1A and Order 450.3A (see Appendix C2 – Vegetation Management Standards), electric utility ROWs, and International Society of Arboriculture BMPs (Kempster 2004).

At a minimum, trees and brush, when present, would be cleared within a 10-foot radius of the base or foundation of all electrical transmission structures. 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 North American Electric Reliability Corporation (NERC) and Department of Energy. Trees and other vegetation would be removed selectively to provide the required transmission line clearance. Vegetation management activities would focus on establishing sustainable native plant communities that are compatible with the electric facilities. Establishment of vegetation would also reduce the potential for noxious weeds to become established in the ROW. If there is a conflict between the requirements of the land management agency or landowner and Western’s standard procedures for vegetation management, the land management agency or landowner requirements would be followed unless they directly result in a violation of NERC standards. Where practicable, vegetation that does not pose a fire hazard or physical impedance would not be cleared.

The proposed Project primarily crosses areas of low-growing shrubs and grasses. Where needed, vegetation would be removed using mechanical equipment, such as chain saws, weed trimmers, rakes, shovels, mowers, and brush hooks. Shrubs and other obstructions would be removed regularly near

structures to facilitate inspection and maintenance of equipment comply with NERC Reliability Standard FAC-003-1, and ensure system reliability. In limited areas, chain saws may be required for trimming larger trees. 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 trimmed or removed. It is assumed that a crew size of four with a working foreman would be able to complete 2 miles a day of vegetation maintenance. Although unlikely to be necessary, species-dependent herbicide could be applied subsequent to vegetation clearing to prevent regrowth of that vegetation and/or noxious and invasive weeds. All pesticide and herbicide applications would be performed by a licensed applicator and in accordance with all label instructions and Federal, State, and local regulations, and in compliance with land management agency and/or landowner requirements, including obtaining a Pesticide Use Permit if herbicide is used on agency-administered lands. Aerial application of herbicide would not be performed.

Routine Right-of-Way and Access Road Maintenance

Repairs to access roads within the ROW would be scheduled as a result of line inspections or would occur in response to a significantly degraded condition or an emergency situation. Ground disturbance during maintenance activities would be approved by the BLM authorized officers or would be authorized at Western's Desert Southwest Region. Where access would be required for maintenance of the line, Southline/Western shall maintain the approved access roads in a safe, usable condition, as directed in consultation with the appropriate land management agency. Required maintenance equipment may include a small bulldozer, a backhoe, a four-wheel-drive pickup truck, a front-end loader, and, on rare occasion, a motor grader. The bulldozer and loader have steel tracks or large tires, whereas the grader, backhoe, and truck typically have rubber tires.

Access road repairs include grading or repair of existing maintenance access roads and work areas and spot repair of sites subject to 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 route into a structure location would need improvement, heavy equipment appropriate for the required work would be used after notifying the appropriate land management agency. Any berms or boulders that were in place to limit access would also be reclaimed after completion of the maintenance work. Activities related to ROW repair are usually conducted outside of the rainy season.

Routine Substation and Communication Regeneration Site Maintenance

Substation and regeneration stations are unmanned stations. Monitoring and control are performed remotely. Unauthorized entry into facilities is prevented with the provision of fencing and locked gates. Warning signs would be posted and entry to the operating facilities would be restricted to authorized personnel. Remotely monitored security systems would be installed. Several forms of security would be planned for each of the locations. Security measures may include fire detection in the control building via the remote monitoring system, alarming for forced entry, and a perimeter security system coupled with remote-sensing infrared camera equipment in the fenced area of the station to provide the system operator with visual observation of disturbances at the fence line. Minimal lighting for routine needs at the substation would be provided inside the substation fence. Maintenance crews would bring adequate lighting in the event that emergency repair work is required. All lighting would be shielded downward to minimize contributions to sky glow.

Maintenance activities include equipment testing, equipment monitoring and repair, and emergency and routine procedures for service continuity and preventive maintenance. It is anticipated that maintenance at each substation would require approximately six trips per year by a two- to four-person crew. Routine

operations would require one or two workers in a light utility truck to visit the substations monthly. Typically, a major maintenance inspection would take place once per year, requiring up to 15 personnel for 1 to 3 weeks. Regeneration stations would be visited every 2 to 3 months by one individual in a light truck to inspect the facilities. Annual maintenance would be performed by a two-person crew in a light truck over a 2- to 5-day period.

4.2.2 Major Maintenance Activities

Major maintenance activities would be relatively large-scale efforts that occur on an infrequent basis. These activities require planning and budgeting in advance, as well as 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. Examples of major maintenance activities include structure relocation, conductor replacement, or access route reconstruction and relocations. Generally, these types of activities would occur on approximately 1 percent of structures annually, but may also occur during emergency outage conditions to replace damaged infrastructure.

Southline would identify proposed major maintenance activities and notify the designated contact for the appropriate land management agency before initiating major maintenance activities. Southline and the land management agency would identify what, if any, special notification or additional clearance approvals are required prior to conducting the proposed major activities.

When Southline's field personnel and contractors carry out major maintenance activities, they would be required to adhere to all standards and guidelines contained in the approved POD, terms and conditions of the ROD, any site-specific activity or timing constraints, and the requirements of any mutually agreed-upon additional clearance or special notification requirements. On BLM-administered public land, all stipulations and PCEMs identified as applicable in any of the POD volumes should be adhered to for the life of the BLM ROW grant.

4.2.3 Emergency Maintenance Activities

During the operation and maintenance of the transmission line, Southline would reduce or prevent, to the greatest extent possible, any emergency activities (defined as situations that could threaten life, property, or resources). Even so, unforeseen emergency conditions may arise. The operation of the system is remotely managed and monitored from control rooms at Southline's operation center in Arizona. Electrical outages or variations from normal operating protocols would be sensed and reported at this operation center. As well, the substations are equipped with remote monitoring, proximity alarms, and in some cases video surveillance.

Examples of emergency maintenance include activities necessary to restore power due to a 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. In an emergency, Southline must respond as quickly as possible to restore power.

In practice, as soon as an incident is detected, the 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, Southline would notify the designated contact from the appropriate land management agency concurrently with responding to the emergency. The land management agency may elect to have a representative present during emergency operations and/or to conduct a post-event site visit to evaluate Southline's response, assess impacts, and propose remedial measures for discussion.

Southline would adhere to the same constraints identified for routine and major maintenance activities to minimize impacts to resources, when possible.

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.

Southline's employees and contractors would be equipped with approved suppression tools and equipment. Southline or their construction contractor(s) would notify local fire authorities and the appropriate land management agency if a Project-related fire occurs within or adjacent to a construction area.

If Southline becomes aware of an emergency situation caused by a fire on or threatening agency-managed lands and that could damage the transmission lines or their operation, they would notify the appropriate agency contact (refer to Appendix B10 – Emergency Preparedness and Response Plan for a complete list of appropriate emergency contacts). Specific construction-related activities and safety measures would be implemented during construction of the transmission line to prevent fires and to ensure quick response and suppression if a fire occurs.

Emergencies are events requiring immediate response to a condition and may include fires, car-to-pole contact, downed poles, transformer outages, vandalism, etc. All applicable fire laws and regulations, including land management agency fire-safety standards, would be observed during the operation period. If extreme fire conditions occur, the land management agency representatives would be contacted and access could be restricted. Maintenance personnel would coordinate with the agency representatives and implement practical measures to report and suppress fires. Measures may include brush clearing, stationing a water truck at the site to keep ground vegetation moist in extreme fire conditions, enforcing red flag warnings, etc.

Chapter 5

ENVIRONMENTAL MITIGATION MEASURES

5.1 INTRODUCTION

This section briefly describes the environmental issues by resources and the framework plans to be included as appendices to this POD, when finalized. Environmental mitigation measures are referred to in the EIS as PCEMs.

5.2 SUMMARY OF ENVIRONMENTAL ISSUES BY ENVIRONMENTAL RESOURCE

The summary in this section is intended to provide an overview of the types of environmental impacts associated with the construction, operation, and maintenance of the Project and context for the design features for environmental protection in the Project description and site-specific PCEMs.

5.2.1 Air Quality

Construction of the transmission lines and substations would result in emissions of air pollutants from equipment exhaust, vehicle exhaust from travel to and from construction areas, and fugitive dust from soil disturbance. Overall, impacts on air quality from the Project construction would be temporary, localized to the vicinity of the activity, and would disperse quickly or settle. The overall level of impact would be minor.

5.2.2 Noise

Construction of the transmission line may result in audible noise from Project equipment and vehicles. Unmitigated noise levels could result as high as 83 A-weighted decibels (dBA) to sensitive receptors near proposed Project construction activities (within 100 feet); however, construction noise would be major but temporary.

Corona-generated noise for both the New Build and Upgrade sections of the proposed Project would be highest in areas where the new lines would be constructed in close proximity to existing transmission lines. Overall, because of the relatively dry nature of the area crossed by the proposed Project, the overall level of operational noise would be minimal.

5.2.3 Geology and Mineral Resources

The only potential impacts identified for geology and mineral resources would be indirect impacts to mining districts during operation and maintenance of the transmission line. The New Build Section crosses small areas of active and inactive mining districts; however, no known mines, active or inactive, would be crossed. No metal or nonmetallic resources were specifically identified within the Upgrade Section. No known mines, active or inactive, would be crossed by the Upgrade Section. The Project would not produce obvious changes to the baseline conditions of the resource, and potential impacts would be minor.

5.2.4 Soil Resources

Potential impacts to the soil resources include accelerated rates of erosion and loss of soil productivity due to the removal of soils during construction of access roads, and at structure and substation sites. Clearing of vegetation and topsoil, as well as grading, would result in newly exposed, disturbed soils that could be subject to accelerated rates of erosion by wind or water. Construction may also cause disturbance to fragile biological crusts, increasing erosion and delaying reestablishment of plant communities. Indirect impacts associated with soil removal may include invasive plant colonization, soil erosion, and reduction in soil water retention due to compaction. Overall impacts to soil resources would be minor.

5.2.5 Paleontological Resources

Potential negative impacts to paleontological resources could result from the loss of important fossils due to ground-disturbing activities during construction in sensitive geological deposits. Potential positive impacts to paleontological resources could result from the discovery of important fossils as an inadvertent result of ground-disturbing activities that would otherwise be unavailable for study. The New Build Section crosses through areas with High Sensitivity for paleontological resources, whereas the Upgrade Section is almost entirely classified as Low Sensitivity.

Overall impacts to paleontological resources would range from no impact to moderate impact. If fossils are present, adverse impacts to paleontological resources would be mitigated in accordance with applicable laws and regulations. PCEMs would include paleontological surveys of sensitive geological deposits, the development and implementation of a Paleontological Resources Treatment Plan, education of construction and maintenance personnel, construction monitoring, and preparation and curation of collected fossils.

5.2.6 Water Resources

Potential impacts to water resources include the potential for discharge of pollutants, including sediment, to groundwater or surface water, the placement of larger structures within floodplains, and potential disturbance of waters of the U.S. (WUS) or wetlands. Proper implementation of BMPs and controls would prevent discharge of pollutants. Avoidance measures during final siting would prevent most disturbances of WUS or wetlands, and impacts would be minor.

5.2.7 Biological Resources

The construction, operation, and maintenance of the Project would result in both direct and indirect effects on biological resources. Direct effects associated with construction activities would likely include (1) behavioral disturbance and the displacement of wildlife (temporary); (2) habitat loss, modification, and fragmentation, including increased potential for the establishment and spread of noxious weeds in disturbed areas (long-term); (3) the long-term displacement of individual animals; and (4) the potential for mortality, primarily for wildlife species with limited mobility (temporary).

Indirect effects associated with Project-related activities can result from the construction of permanent access roads, which can be used by the general public to access currently inaccessible habitats. This additional human presence and activity and vehicle noise can result in displacement, abandonment of habitat, behavioral disruption, and additional stress during critical periods. New access into previously inaccessible habitats can increase displacement of wildlife and mortality by legal hunting or poaching.

Public use of access roads can facilitate the spread of noxious weeds and increase the risk of human-caused wildfire. These indirect effects can be permanent.

Vegetation

The proposed Project would involve the removal of vegetation during construction activities, resulting in the direct loss of plant communities. The primary direct and indirect impacts to vegetation and special status species during construction and operation of the proposed facilities would be associated with removal and/or crushing of vegetation communities from construction of the proposed Project; decreased plant productivity from fugitive dust; and plant community fragmentation.

There would also be indirect effects resulting from the fragmentation of connected vegetation types. Edge areas have different microclimatic conditions and structure, which could lead to a different species composition than in the interior area. The introduction and colonization of disturbed areas by invasive exotic plant species also would lead to changes in vegetation communities, including the possible shift to a more wildfire-prone vegetation that favors invasive exotic species over native species.

Much of the Project is located in previously disturbed areas and with the application of PCEMs, impacts to vegetation resources would be minor. PCEMs would be applied to reduce, avoid, or otherwise provide compensation for impacts to sensitive vegetation: (1) vegetation disturbance would be minimized to the extent practicable; (2) a Reclamation, Vegetation, and Monitoring Plan would be developed and implemented; (3) a Plant and Wildlife Species Conservation Measures Plan would be developed and implemented; (4) clearing of riparian vegetation would be avoided where possible; (5) a Noxious Weed Management Plan would be developed and implemented; and (6) construction equipment would be washed prior to moving onto the construction site to limit introduction and spread of noxious weeds. Additional mitigation provided by the AGFD around the Willcox Playa Wildlife Area is also considered.

Wildlife

Potential Project-related impacts on wildlife include the loss, degradation, and/or fragmentation of habitat; collisions with and crushing by construction vehicles; loss of burrowing animals in burrows in areas where grading would occur; increased invasive and noxious weed establishment and spread; increased noise/vibration levels; increased potential for migratory birds to strike transmission lines; and increased access for off-highway-vehicle (OHV) users.

The transmission line ROW would serve as a movement corridor for some species and as a barrier to others. The proposed Project would increase the amount of edge habitat along the ROW. Effects from increased amounts of edge would include decreased habitat block size. Decreased habitat block size may negatively impact those species that require large blocks of contiguous habitat and benefit other species that use edge habitats or have more general habitat requirements.

The following impacts to general wildlife and special status species may occur with construction and operation of the proposed transmission line:

- Habitat for the northern aplomado falcon (*Falco femoralis septentrionalis*), Sprague's pipit (*Anthus spragueii*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), Mexican long-nosed bat (*Leptonycteris nivalis*), and Sonoran desert tortoise (*Gopherus morafkai*) would be impacted. Restoration of disturbed areas, measures to minimize invasive plant establishment and spread, and closure of access roads to OHV use would reduce impacts on habitat for these species.

- Segment P7 would pass northwest of Crane Lake and through the AGFD-managed Willcox Playa Wildlife Area. Mitigation (PCEMs) requested by the AGFD includes (1) funding the relocation of Crane Lake away from P7, (2) funding riparian emergent wetlands along Kansas Settlement Road, and (3) funding the management of non-native vegetation; these would be implemented to reduce the intensity of impacts to habitat in the Willcox Playa Wildlife Area.
- Potential mortality of wintering sandhill cranes (*Grus canadensis*) could occur at Willcox Playa where the proposed Project would intersect their daily migration flights to feed in agricultural fields to the south and east. There is the potential for sandhill crane collisions with the transmission line during daily migration, which could impact individual sandhill cranes. Implementing PCEMs such as the relocation of Crane Lake (see above), and installation of line marking devices, would decrease the potential for birds striking transmission lines near Willcox Playa.
- Impacts to northern Mexican gartersnake (*Thamnophis eques megalops*) proposed critical habitat at the Cienega Creek and San Pedro River crossings would be avoided through Project siting.
- Impacts on Gila chub (*Gila intermedia*) designated critical habitat downstream from the Cienega Creek crossing would be avoided through Project siting and erosion-control measures.
- Habitat for BLM Sensitive Species, New Mexico Wildlife Conservation Act Species, New Mexico Species of Greatest Conservation Need, Arizona Wildlife Species of Concern, Arizona Species of Greatest Conservation Need, and migratory birds would be lost, fragmented, and degraded. Measures to limit ground disturbance, avoid aquatic and riparian habitats, limit invasive plant establishment and spread, and restore disturbed areas would reduce impacts on habitat for these species.
- Habitat for the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) would be impacted near the Santa Cruz River crossing in segment U3k.

With the application of PCEMs, impacts to wildlife resources would be minor. PCEMs to minimize impacts to wildlife habitat could include limiting the area of disturbance and restoration of disturbed areas, and avoidance of aquatic and riparian areas. PCEMs could also include preconstruction surveys, erosion-control measures, a worker training program, and measures to limit invasive species establishment and spread.

5.2.8 Cultural Resources

Potential impacts to cultural resources such as archaeological sites, historic built environment resources, trails, and American Indian traditional use areas and sacred sites could result from construction, operation, and maintenance of the proposed Project. Loss of integrity would be the primary adverse direct or indirect impact to cultural resources. In terms of historic properties, loss of integrity often stems from alterations of a resource's characteristics that make it eligible for the National Register of Historic Places (NRHP). During construction, direct impacts would result from ground disturbance if resources are present and would be long term; indirect impacts would result from visual encroachment on a resource's setting during structure and facility installation and would be long term. During operation and maintenance, long-term visual impacts would occur from the presence of the transmission line if resources are present.

Avoidance of resources through design and micro-siting would be the preferred mitigation measure (PCEMs). Even with the application of PCEMs, there would be some major impacts to cultural resources. If avoidance is not feasible, other types of mitigation such as monitoring or data recovery would be needed. A Historic Properties Treatment Plan (HPTP) would be developed to outline all non-avoidance

mitigation. Consultation with agencies, the New Mexico and Arizona State Historic Preservation Officers, and interested parties is ongoing, including the development of a Programmatic Agreement (PA). The PA outlines steps by the agencies, the Project proponent, and other consulting parties to be taken prior to construction and during operation and maintenance of the proposed Project to comply with the National Historic Preservation Act (NHPA).

5.2.9 Visual Resources

Regional landscapes in the Project area range from developed urban and suburban landscapes to rural areas and areas of intact character. Features within the Project area include foothills, mountains, basins, playas, valleys, and agricultural development ranging across the Chihuahuan and Sonoran deserts.

The construction, operation, and maintenance of the Project would result in direct effects on visual resources where:

- Landscape scenery would be degraded by the presence of vertical elements in the landscape (transmission line structures), areas of cleared vegetation (ROW clearing), and exposed soil from the construction of new permanent access roads.
- Views from sensitive viewpoints would be adversely modified through the introduction of Project components into the landscape
- The Project would not comply with Federal agency visual management objectives where Project components would contrast with or modify the characteristic landscape to a level that would not be consistent with the established management objectives or applicable planning documents.

During Project siting and engineering and design, PCEMs, where feasible, would be applied to all areas of potential moderate/high and moderate initial impacts to reduce impact levels where necessary and effective. Even with the application of PCEMs some minor to major impacts to visual resources would remain.

5.2.10 Land Use, Including Farm and Range and Military Operations

Land Use

The proposed Project would be constructed across lands owned and managed by Federal, State, private, or other entities, under a variety of RMPs, comprehensive plans, or other land use plans. The proposed Project cross large tracts of undeveloped land, as well as urban and suburban areas. Federal and State-managed lands are generally used for grazing, farming, recreation, and open space. BLM and State lands are primarily used for grazing or recreation in open-space areas. Residential uses are located on private lands in rural areas and near small cities and towns.

Major portions of the proposed Project parallel existing linear facilities in disturbed corridors, including transmission and distribution lines, roads, and abandoned railroad ROWs. The eastern portion (New Build Section) of the proposed Project would be located in open range-type land uses, crossing mountain ranges (including the Continental Divide) and valley/basins. Farther west (Upgrade Section), the distance between the valley/basins and mountain ranges becomes less, and urban populations surround the Tucson metropolitan area.

In general, land use impacts would be minimized where linear utilities are constructed within established or designated corridors. The alignment of the transmission line route was sited to maximize the use of established utility corridors, and to avoid conflicts with incompatible land uses such as wilderness, national parks and monuments, special management areas, conservation areas, densely populated areas, and military installations. Impacts to land uses would occur in some form along portions of the route that cross undeveloped lands, irrigated agricultural lands, residential subdivisions, and areas used for industrial or military testing and training. PCEMs would be effective in avoiding or minimizing direct impacts with land uses in most conditions. There would be no direct displacement of existing land use authorizations or ROWs, or residential, business, or industrial structures. Impacts to land use, including farm and range resources and military operations, would be minor.

Farm and Range Resources

Construction of the transmission line would have direct effects on farmlands and rangelands by removing land acreage from productivity. In the Upgrade Section, the existing transmission line has already resulted in conversion of Natural Resources Conservation Service–classified farmland to non-farmable condition. The proposed Project of upgrading to monopoles may have less of an impact on farmland than the existing H-frame transmission line. Except under extraordinary circumstances, all operation and maintenance activities would occur within the transmission line ROW and access roads. These activities would not directly or indirectly impact adjacent farmlands or rangelands. Landowners would continue to have use of the land within the ROW, and no new fences would be constructed that would block access unless specifically requested by the landowner. No direct effect would occur on farmlands and rangelands during the operation and maintenance phase of the proposed Project beyond the long-term loss of lands resulting from Project construction.

Military Operations

Impacts to military operations could occur from construction, operation, and maintenance of the proposed Project where the transmission line, substations, and ancillary facilities intersect with military-owned, leased, or withdrawn (including Electronic Proving Ground) lands. These lands could include military training visual routes or areas where training is for electronics and communications. Impacts would be below thresholds since the sections that may intersect military training areas include existing transmission line facilities, and the military operations have operated in conjunction with these facilities previously.

5.2.11 Special Designations

BLM special designations include congressionally designated national wild and/or scenic rivers; national conservation areas; national byways; and national scenic, historic, or recreation trails. The BLM may also create special designations through administrative resource inventories or during the planning process, such as cooperative management areas and protection areas, outstanding natural areas, forest reserves, wilderness study areas, areas of critical environmental concern, research natural areas, special recreation management areas, special management areas, backcountry byways, and energy zones.

Impacts from construction activities would include direct ground disturbance and temporary increases in ambient noise levels in areas where the transmission line, substations, and ancillary facilities intersect or are adjacent to special designations. Overall impacts on special designations would be minor.

5.2.12 Wilderness Characteristics

The proposed Project would not directly impact wilderness characteristics (naturalness and opportunities for solitude or primitive, unconfined recreation). Potential indirect impacts could result from construction activities and temporary increases in ambient noise levels in areas where the Project is near lands with wilderness characteristics.

5.2.13 Recreation

The proposed Project would result in minor changes to the recreation setting and desired recreation experiences during construction. The changes would be minor because the majority of the segments that form the proposed Project would follow existing facilities; thus, the recreation setting and desired recreation experiences would already include/anticipate the presence of transmission lines.

Where the proposed Project does not follow existing ROWs, the recreation setting and desired recreation experiences would change from the existing conditions of undeveloped landscape to a developed landscape. This change to the recreation setting is not anticipated to preclude any desired recreation experiences since recreational opportunity for all recreational pursuits in the area would still be available within the area except within the footprints of the transmission line towers. During construction, disrupted hunting opportunities would not be a significant impact, since the areas within game management units that are outside of the proposed Project footprint would remain available for hunting. No hunting opportunities would be displaced during operation and maintenance of the proposed Project. Overall impacts from the proposed Project on recreation would be minor.

5.2.14 Socioeconomics

In general, the proposed Project would not have a significant impact on regional population or housing as a result of construction or operation. Construction of the transmission line would directly and indirectly create jobs, some of which would be filled by local workers. The addition of non-local construction workers has the potential to create isolated, short-term shortages in temporary housing, especially in the more remote portions of the project area. The proposed Project would generate State and local tax revenues during both construction and operation/maintenance; overall impacts would be minor.

5.2.15 Environmental Justice

A high proportion of the census tracts crossed by the proposed Project can be defined as environmental justice communities, meaning they either have higher minority populations or a greater proportion of residents living below the poverty line, or both. These communities may be adversely affected by localized impacts, including noise and other disruptions during the construction phase, and potentially diminished property values and visual characteristics during the operation and maintenance of the Project.

Environmental justice communities may also be positively affected by the benefits of the proposed Project, including the short-term economic stimulus from construction activities and expenditures, short-term and longer-term increases in tax revenues, and added capacity and reduced congestion for electricity transmission. Because these benefits are likely to be more geographically dispersed than the localized adverse effects, however, it is uncertain whether or not low-income and minority populations would receive disproportionate benefits from the proposed Project. Given the prevalence of low-income and minority residents throughout the area, impacts on these groups are likely inevitable from any feasible transmission line alignment. Overall impacts from the proposed Project would be minor.

5.2.16 Public Health and Safety

Potential risks to public health and safety associated with construction activities would include, but would not be limited to, electrocution, exposure to extreme weather, falling, exposure to hazardous materials, and injury from equipment and materials. The implementation of Occupational Safety and Health Administration (OSHA) safety requirements through the use of PCEMs, and other safety requirements would minimize the chance that an accident could occur. Potential impacts could occur as a result of increase of electromagnetic fields in areas where they do not currently occur. However, with implementation of the PCEMs, the impacts to public health and safety would be expected to be minor.

5.2.17 Hazardous Materials and Hazardous and Solid Waste

All construction, operation, and maintenance activities would comply with all applicable Federal, State, and local regulations regarding the use of hazardous substance. Hazardous materials would not be drained into the ground or into streams or drainage areas. Totally enclosed containment would be provided for all trash. Portable toilets will be located at designated construction sites. All construction waste, including trash, litter, garbage, and other solid waste, petroleum products, human waste, and other potentially hazardous materials would be removed and transported to a disposal facility authorized to accept such materials. PCEMs would be implemented to prevent spills and leaks of hazardous materials and provide for adequate containment and cleanup if spills and leaks do occur; no impacts are anticipated.

5.2.18 Transportation

In general, the proposed Project would cross a sparsely populated rural area in the New Build Section and in the Upgrade Section with the exception of the Tucson metropolitan area. Traffic would be generated primarily during the construction, but also minimally during the maintenance and operation phases. Continued coordination with Federal, State and local transportation agencies would ensure that the proposed Project would not impact transportation plans in the New Build and Upgrade sections. Continued coordination with airports would ensure that the proposed Project would not interfere with flight paths or airport plans adjacent to the Project area.

The proposed Project in the New Build and Upgrade sections would impact BLM roads by increasing opportunities for illegal access to roads/areas currently closed to public access. This impact would most likely occur from the construction of new access roads. The impact of increasing access to BLM roads would be considered minor.

5.2.19 Intentional Acts of Destruction

Intentional acts of destruction could include sabotage or terrorism. Predicting the occurrence of intentional acts of sabotage or terrorism or the potential damage from these acts is not possible. By constructing and operating new transmission lines, saboteurs and terrorists would have a new potential target to carry out their acts. Historically, acts of sabotage and terrorism on transmission infrastructure have been rare, and the effects of events that have occurred have not had a significant impact to adjacent lands or public health and safety. Moreover, the addition of transmission lines and associated facilities generally strengthens the reliability of delivering electricity to the general public, because if one line is affected by an intentional act of destruction or any other disruption, other lines would be available to continue the delivery of electricity. Therefore, the potential impacts from the unlikely event of an act of terrorism or sabotage would be considered minor, and no impacts are anticipated.

5.3 OVERVIEW OF PROPONENT COMMITTED ENVIRONMENTAL MEASURES (BY RESOURCE)

Activities under the proposed Project would include PCEMs that are an integral part of the proposed Project. These design features are measures included in the project design by the Proponent in order to reduce or avoid potential environmental impacts resulting from Project-related activities. The PCEMs are presented in table 8. In addition, the PCEMs also include agency mitigation measures developed by the BLM and Western, as well as based on feedback from cooperating agencies and the public. All PCEMs listed in table 8 would be followed on any route selected, as site-specific circumstances dictate.

Table 8 presents a summary of the PCEMs required for the project. PCEMs are described in table 8 for the following:

- Standard mitigation
- Reclamation (site restoration, revegetation)
- Air quality and climate change
- Cultural resources
- Hazardous materials and waste
- Health and human safety
- Land use
- Farmlands and rangeland
- Geology and minerals
- Military operations
- Noise
- Paleontology
- Recreation
- Wilderness
- Trails
- Soils
- Socioeconomics
- Transportation
- Vegetation
- Visual resources
- Water resources
- Wildlife

BLM requires that a grant holder post a surety bond to ensure compliance with the terms, conditions, and stipulations of the grant, if issued, which would include PCEMs. The grant authorization, if issued, would be contingent upon Southline's complying with a list of terms, conditions, and stipulations.

Application of PCEMs will be considered and authorized, as part of detailed design and included in the final POD and associated Framework Plans, post-EIS. Because the final POD and Framework Plans are subject to approval by the BLM Authorized Officer, and the PCEMs found in table 8 are also included in the final POD, each PCEM is subject to review and approval by the BLM authorized officer.

5.4 OVERVIEW OF APPENDIX B

Southline and Western would ensure that their respective responsibilities and the requirements for each of the following Framework Plans are implemented. These plans have been developed to cover the entire Project, regardless of the responsible entity (e.g., landowner, ROW administrator, etc.).

5.4.1 Access Road Plan

Access road planning would be finalized if the proposed Project is approved. With the approved route known, the exact location of all access roads would be refined through detailed engineering. Once road locations are known, cultural resource and biological surveys would be conducted and road locations adjusted to avoid sensitive resources discovered during the surveys. No field disturbance would occur before the completion of these surveys and the completion of any necessary mitigation or treatment measures. Although the exact locations of final access roads are not yet known, the general location of needed access is known and has been used to define the potential environmental impacts for purposes of the EIS. Access road construction and improvement would include erosion, stabilization/reclamation/revegetation, and dust control measures. Access roads would be designed to ensure that slopes do not cause erosion and that turning radii are sufficient. The road locations would also be georeferenced and the location recorded, and appropriate access rights would be obtained from the landowner.

All roads would be constructed and maintained in accordance with Western and BLM standards for access roads and specified in the Access Road Plan, to be included as a Framework Plan in the POD.

5.4.2 Traffic and Transportation Management Plan

The purpose of a Traffic and Transportation Management Plan is to describe how roads would be improved and maintained for construction of the proposed Project; and to minimize the potential impacts of construction traffic at staging areas, work areas, and other places where traffic may increase. The plan would address equipment access to and from the proposed Project ROW, drainage improvements, dust control and maintenance measures, and reclamation and abandonment of roads. This plan is generally required by the BLM as a condition of the ROW grant and sometimes is required by State or local departments of transportation.

5.4.3 Stormwater Pollution Prevention Plan

Stormwater discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb 1 or more acres are regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater program. Prior to discharging stormwater, construction operators must obtain coverage under an NPDES permit, which is administered by either the U.S. Environmental Protection Agency (EPA) (as is the case in New Mexico) or the State (as in Arizona). Construction stormwater discharges are normally permitted under the Construction General Permit, which requires compliance with effluent limits and other standard permit requirements, such as the development of a Stormwater Pollution Prevention Plan (SWPPP).

Table 8. Environmental Protection Measures by Resource

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Standard Mitigation						
	X	The boundaries of construction activities would be predetermined and staked or flagged prior to any construction activity. No permanent markings would be applied to rocks or vegetation.	X			
	X	Prior to construction, all construction personnel would be instructed on the protection of cultural and ecological resources.	X			
	X	All vehicle movement would be restricted to designated access, contracted acquired access, or public roads.	X	X	X	X
	X	To limit disturbance, existing access roads would be used to the extent practicable, provided that doing so does not additionally impact resource values. Widening and grading of roads would be kept to the minimum required for access by Project construction equipment.	X	X	X	X
	X	Structures and/or ground wire would be marked with high-visibility devices such as aerial marker balls, where required by government agencies such as the FAA.	X	X	X	
	X	Transmission line materials would be designed and tested to minimize audible noise, radio interference, electromagnetic interference (EMI), and television interference due to corona.	X	X	X	
	X	No widening or upgrading of existing roads would be undertaken in the area of construction and operations, except for repairs or modifications to make roads safely passable, where soils and vegetation are sensitive to disturbance, in areas of critical habitat for vegetation or wildlife, in areas of habitat for BLM special status species, or where such activities could harm historic properties.		X	X	
	X	During operation of the transmission lines, the ROW would be maintained free of non-biodegradable debris. Desert vegetation would be crushed in place to promote seeding and revegetation, and reduce erosion potential.			X	
	X	BLM and Western road construction specifications would be followed where unimproved spur roads cannot be employed.		X	X	
	X	Unimproved spur roads would be used to the extent practicable in areas where no grading would be warranted to access work areas, within the approved ROW. Unimproved spur roads would be used to access a site without specifically blading a road or significantly modifying the landscape. All vehicle movement would be restricted to designated access, even if that is unimproved access. Vegetation would be crushed where feasible, not cut. For all access types, soil would be compacted, but not removed, except when grading requires displacement of surface soil.		X	X	X
	X	Where new roads would be required, water bars and/or rolling dip cross-drains would be utilized to minimize erosion. Details of their use would be documented in the SWPPP.	X	X	X	
	X	Structures would be placed to avoid, and/or to allow conductors to span, sensitive features such as riparian areas, waterways, roads, trails, and cultural sites within limits of standard transmission line structure design. This would minimize the amount of sensitive features disturbed and/or reduce visual contrast.	X	X	X	
	X	Clearing of trees in and adjacent to the ROW would be minimized to the extent practicable to satisfy conductor-clearance requirements (NESC and up to 10 years' timber growth). Trees and other vegetation would be selectively removed to blend the edge of the ROW into adjacent vegetation patterns, as appropriate.		X	X	
	X	Separation between transmission lines and existing utilities, roads, and railroads would be minimized to the extent practicable. Opportunities to share portions of adjacent ROWs would also be explored.	X			
	X	All construction vehicle movement would be restricted to pre-designated access, contractor-acquired access, and public roads.		X		
	X	The width of construction and new temporary access roads would be sited to keep to the minimum needed to avoid sensitive areas and to limit ground disturbance.		X		
	X	Surface elevations would be returned to approximate pre-Project conditions, as practicable.		X		X
WILD-1		A Worker Environmental Awareness Program (WEAP) would be prepared. All construction crews and field contractors would be required to participate in WEAP training prior to starting work on the Project. The WEAP training would include instructions for crews to report any issues; a review of the special status species; WUS; riparian habitat; cultural, paleontological, and other sensitive resources that could be impacted by the proposed Project; the locations of sensitive biological resources and their legal status and protections; and measures to be implemented for avoidance of these sensitive resources. A record of all trained personnel would be maintained during the construction period.	X	X		
	X	The process by which the BLM, Western, and Southline and its construction contractor would conduct environmental monitoring, compliance, and reporting activities during construction would be described in a Project compliance plan that would be prepared by the CIC after the CIC has been selected and reviewed by BLM. After issuance of the notice to proceed, a CIC, designated by the BLM and Western, would provide environmental oversight and compliance monitoring on BLM-managed lands during Project construction to ensure compliance with all design features and mitigation measures.	X	X		

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Reclamation						
	X	A Reclamation, Vegetation, and Monitoring Plan would be developed and implemented.		X	X	X
	X	Reclamation would be accomplished with native species unless otherwise approved.		X	X	X
	X	Seeding would occur between November and March to ensure a greater chance of success. This would be tied to replacement of conserved topsoil with its natural seed stock.		X	X	X
Air Quality and Climate Change						
	X	Project activities would be in compliance with all applicable Federal, State, and local laws and regulations concerning prevention and control of air pollution during construction and operation.		X	X	
	X	An Erosion, Dust Control, and Air Quality Plan would be prepared as part of the final POD. The plan would be developed and implemented to minimize and mitigate potential air quality and climate change impacts. The Erosion, Dust Control, and Air Quality Plan would include a section detailing the Construction Emissions Mitigation Plan (CEMP). See appendix A6 of this POD for an outline of the information in the Erosion, Dust Control, and Air Quality Plan, including the CEMP.	X	X	X	X
	X	All necessary air quality permits would be obtained prior to construction or operating equipment that would result in regulated atmospheric or fugitive dust emissions.	X			
	X	Trackout control devices such as grizzly bars, wheel washers, gravel pads, etc., would be located at all entrances and exits.		X		
	X	Where implementation of these measures would have a meaningful impact on air quality, haul-truck cargo beds would be covered with tarps and travel speeds would be limited to no more than 15 miles per hour (mph) on unpaved roads.		X		
	X	Combustion emissions from mobile sources would be minimized by proper maintenance of equipment.		X	X	
AIR-1		Dust control measures consistent with all applicable State or local standards, as outlined in the Erosion, Dust Control, and Air Quality Plan, would be implemented; these include the following reasonable precautions: (1) frequent watering (no new water sources developed), stabilization, or covering (as appropriate) of excavations, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) if construction activity causes visible emissions of fugitive dust beyond the work area; (2) reduction in the amount of disturbed area where possible; (3) planting of vegetative ground cover, as appropriate, in disturbed areas after construction activities have ended; and/or (4) treatment of actively disturbed areas with BLM-approved dust palliatives.		X		
AIR-2		To reduce the potential for greenhouse gas emissions, only properly trained Project personnel would handle sulfur hexafluoride, and a sulfur hexafluoride recovery and recycling program would be implemented.		X	X	X
Cultural Resources						
	X	Cultural resources would continue to be considered during post-EIS phases of work. Specific cultural resource inventory, protection, and mitigation measures to be employed would be outlined in the Project-specific PA, in accordance with Section 106 of the NHPA. The final POD would include the signed PA and the HPTP.	X	X	X	X
	X	A Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action would be developed to outline the procedures to be followed in the event that human remains are encountered during ground disturbance. The NAGPRA Plan of Action would be applicable to discoveries of human remains on Federal and Tribal land, and compatible with State laws from Arizona and New Mexico, which protect human remains on State or private lands. For State and private lands in Arizona, "burial agreements" are developed through the Arizona State Museum with each tribe that may claim cultural affiliation to possible human remains discoveries.	X	X	X	
CR-1	X	The area of potential effects would be defined in the PA and would consist of the approved alternative corridor and appropriate buffers; all areas and ancillary features that would sustain ground disturbance (access roads, construction yards, etc.) would be subjected to a Class III, 100 percent-coverage pedestrian inventory to identify all historic properties that may be affected by the proposed Project. Survey and reporting requirements would follow BLM Handbook 8110 requirements for a Class III Intensive Field Survey (BLM 2004).	X			
CR-2		Before construction, and as described in the WEAP, Southline and its construction contractor would provide cultural resources sensitivity training to all construction personnel so that Project personnel understand the procedures in the monitoring and discovery portion of the HPTP.	X	X		
CR-3		An HPTP would be developed and implemented to avoid, minimize, and mitigate the adverse effects of the Project on historic properties. Mitigation measures may range from avoidance and preservation in place to data recovery excavations conducted before the destruction of a site if avoidance is not feasible. The HPTP would include a Monitoring and Discovery Plan detailing procedures to be followed in the inadvertent discovery of a potentially significant archaeological site or human remains.	X	X	X	
CR-4		Ground-disturbing activities and other proposed Project components would be sited to avoid or minimize direct impacts on cultural resources listed as, or potentially eligible for listing as, unique archaeological sites, historical resources, or historic properties.	X	X	X	

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Cultural Resources, cont'd.						
CR-5		Establish and maintain a protective buffer zone around each recorded archaeological site within or immediately adjacent to the ROW that would be treated as an "environmentally sensitive area" within which construction activities and personnel are not permitted.	X	X		
CR-6		Evaluate the significance of archaeological resources, buildings, and structures in the area of potential effects in terms of their eligibility for inclusion in the NRHP.	X			
CR-7		Activities would minimize ground surface disturbance within the bounds of significant archaeological sites, historical resources, or historic properties.	X	X		
CR-8		During construction, it is possible that previously unknown archaeological or other cultural resources or human remains could be discovered. Prior to construction, the Proponent would prepare a Construction Monitoring and unanticipated cultural resources Discovery Plan to be implemented if an unanticipated discovery is made.		X		
Hazardous Materials and Waste						
	X	Framework Plans prepared as part of the final POD would be developed and implemented to minimize and mitigate potential hazardous materials and waste; plans include SWPPP; SPCC Plan; Soil Management Plan; and HMMP. These plans would include requirements by the EPA, OSHA, Arizona Department of Environmental Quality, and the New Mexico and Arizona Departments of Transportation.	X	X	X	X
	X	The SWPPP would include BMPs to address the storage and handling of hazardous materials and sediment runoff during construction activities to minimize the risk of an accidental release. The SWPPP is required by, and enforced by, the EPA in New Mexico, and the Arizona Department of Environmental Quality in Arizona.	X	X	X	
	X	Construction, operation, and maintenance crew members who handle oil or other hazardous substances described in the SPCC Plan would be properly trained to deal with a spill, and appropriate spill response or containment material would be available for use at applicable work sites. Careful handling and designation of specific equipment repair and fuel storage areas, as outlined in the SPCC Plan, would reduce the potential for oil and fuel spills. In the event that there is an oil or fuel spill, immediate measures would be taken to control the spill, and the BLM, National Response Center, and/or Arizona Department of Environmental Quality or New Mexico Environment Department would be notified as defined in the SPCC Plan.	X	X	X	X
	X	Personnel, contractors, and transporters involved with hazardous materials management would be required to comply with Federal and State regulations established for the transportation, storage, handling, and disposal of hazardous substances, materials, and wastes. "Hazardous substances" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.		X	X	X
HAZ-1		The Project-specific HMMP and program would outline proper hazardous materials use, storage, and transport requirements and applicable handling procedures. EPA procedures for handling and storage of hazardous materials, OSHA requirements for proper storage and labeling on the job site, and New Mexico and Arizona Department of Transportation requirements for transportation of hazardous materials would be followed.	X	X	X	X
HAZ-2		If backfill material to be used is derived from a site that could possibly have contamination, it would be sampled and determined to be free of regulated contaminants before it is used to fill excavations. The results of any tested soils should be shared with the appropriate surface managing agency. No contaminated soils would be used as fill material for the Project.		X		
HAZ-3		New or expanded substation locations that involve the purchase or long-term leasing of land, purchased transmission line ROWs, and any other property to be acquired would be screened for environmental liabilities. The degree and level of screening would be based on knowledge or information available on the property to determine the probability of contaminants of concern or other environmental impairment. A Phase I Environmental Site Assessment would be conducted if preliminary screening indicates a reasonable risk that such environmental conditions may exist on the property and the property continues to be targeted for acquisition by the Project, consistent with American Society for Testing and Materials Standard E1527-13.	X			
HAZ-4		The Soil Management Plan would provide guidance for the proper handling, onsite management, and disposal of contaminated soil, if encountered during construction, operation, and maintenance activities. Appropriately trained personnel would be onsite during preparation, grading, and related earthwork activities to monitor the soil conditions encountered.	X	X	X	X
HAZ-5		In the event of a spill, workers in the immediate area would cease work, begin spill cleanup operations, and notify appropriate agencies as required by law and specified in the SPCC Plan. Southline and its construction contractor(s) are responsible for cleanup and assume liability for any and all releases of hazardous substances disposed on public land, in accordance with State, Federal, and local laws and regulations. Southline would immediately notify the BLM authorized officer of any and all releases of hazardous substances on public land.		X	X	X
HAZ-6		All construction and demolition waste, including trash and litter, garbage, and other solid waste, would be removed and transported to an appropriately permitted recycling or disposal facility. Southline and its construction contractor would prepare a Construction Waste Disposal Plan for all nonhazardous wastes generated during construction of the Project. The plan would contain a description of all nonhazardous solid and liquid construction wastes, recycling plans, and waste management methods to be used for each type of waste.		X		X
HAZ-7		Southline or the applicable contractors would maintain all vehicles in good working order. Equipment would be properly tuned and maintained to avoid leaks of fluids.		X	X	X
HAZ-8		Service and refueling procedures would not be conducted within 500 feet of a seep, wash, or other water body. Routine service of any vehicles or equipment would not be done within the ROW.		X	X	X

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Health and Human Safety						
HEA-1 HEA-3		The HASP and Fire Protection Plan prepared as part of the Final POD would be developed and implemented to minimize and mitigate potential health and human safety impacts. Southline and its contractors would work with the appropriate surface-managing agencies to incorporate any fire restrictions that are put into effect during construction, operation, and decommissioning of the Project.	X	X	X	X
HEA-2		Southline and its construction contractor would locate overhead and underground utilities that may reasonably be expected to be encountered during construction. If a utility service interruption is known to be unavoidable, Southline and its construction contractor would coordinate with the service provider to notify members of the public, the jurisdiction, and the service providers affected by the interruption via letters and newspapers notices published no later than 7 days prior to the first interruption. Copies of the notices would be provided to the BLM and Western following notification.	X	X		
HEA-4		All permanent metallic objects within the Project's transmission line ROWs would be grounded in accordance with industry standards.	X	X	X	
		Southline and its construction contractor would provide a safety representative at all times with the construction crews, first aid kits stored in each construction vehicle, a worker trained in first aid included in each work group during construction, and the development and implementation of a HASP.		X		
	X	The HASP would address potential situations that workers could encounter during construction and maintenance. The purpose and goal of the worker safety and environmental training would be to communicate Project-related environmental and safety concerns and appropriate work practices to all field and construction personnel prior to the start of construction, including spill prevention, emergency response measures, accident prevention, use of protective equipment, medical care of injured employees, safety education, and fire protection. Training would encompass environmental training related to road designations and speed limits, promote "good neighbor" policies, and institute BMPs for construction. The training would emphasize site-specific physical conditions to improve hazard prevention in accordance with OSHA requirements (29 CFR 1910 and/or 1926, as applicable).	X	X	X	
Land Use						
		Although disturbance to Pima County Conservation Lands would primarily occur within the existing Western ROW for the existing line, every effort would be made to minimize and avoid impacts to these lands (such as Bar V Ranch, Tumamoc Hill, etc.), to the extent practicable.		X	X	
Farmlands and Rangeland						
FARM-1	X	Fences and gates would be repaired or replaced to their original, undisturbed condition (or better), as required by the landowner, BLM authorized officer, or other land managing entity if they are damaged or destroyed by construction activities. New temporary and/or permanent gates would be installed only with the permission of the landowner or the BLM. Temporary gates not required for postconstruction access control would be removed following construction completion and in accordance with the POD.		X		X
	X	Water facilities (e.g., tanks, developed springs, water lines, wells, etc.) would be repaired or replaced to their undisturbed condition if they are damaged or destroyed by construction, operation, or maintenance activities, as required by the landowner of land management agency. Temporary watering facilities would be provided for wildlife and livestock until permanent repair or replacement is complete.		X	X	X
	X	Laydown areas and substation development would be located on previously disturbed land, where possible, to reduce the impact to farm operations and production in active farmlands. If laydown areas cannot avoid farmlands, Southline would receive approval from the landowner of the farmland to lease the land required for the laydown area.	X	X		
	X	Temporary gates would be installed to prevent livestock from escaping rangelands and accessing roadways. Fences and gates would be repaired or replaced to their original, undisturbed condition, as required by the landowner or the BLM authorized officer if they are damaged or destroyed by construction activities. Cattle guards would be installed at access points to prevent livestock from exiting unsecured gates onto roadways.	X	X		
	X	On agricultural land, ROWs would be aligned, in so far as practicable, to reduce the impact to farm operations and agricultural production. This would typically be done in conjunction with negotiating ROW agreements with landowners.	X	X		
Geology and Minerals						
GEO-1		Southline would prepare a geotechnical engineering study prior to the final project design to identify site-specific geological conditions and potential geological hazards. The data collected from the study would be used to guide sound engineering practices and mitigate potential geological hazards.	X			

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Military Operations						
DoD-1	X	The transmission line operator would work with Buffalo Soldier Electronic Testing Range (BSETR) to coordinate, and possibly limit, interconnections to the upgraded Tucson–Apache 230-kV transmission line to the extent allowed by Western’s Open Access Transmission Service Tariff and Federal Energy Regulatory Commission (FERC) Orders. The transmission line operator would work with interconnection applicants to locate any future interconnection points on Western’s upgraded Tucson–Apache 230-kV transmission line outside the BSETR and within 1 mile of its boundaries. New transmission facilities are defined to include substations, switchyards, and converter stations. Western’s Open Access Transmission Service Tariff and the Federal Power Act, as amended, provide the framework, in accordance with Federal law, to consider interconnection requests. Western’s Tariff substantively conforms with FERC Orders 888, 889, 890, 2003, and 2006, and ensures open access to Western’s transmission system on an equal footing with regulated utilities.	X			
DoD-2	X	Southline and Western would work with BSETR to identify micro-siting opportunities during Project design.	X			
DoD-3	X	The transmission line operator would coordinate with BSETR during the design phase of the proposed Project to limit EMI. The proposed Project would be constructed using the best available construction techniques and technology (i.e., use of grounding, selective conductor type and arrangement, and conductor surface gradients), to the extent feasible and reasonably economical, in order to minimize EMI.	X			
DoD-4	X	The transmission line operator would coordinate with BSETR to allow for an updated measure of the “floor value” of the proposed Project over the first 6 months of operation once the proposed line is energized. Such cooperation could include provision of real-time operating and load information to BSETR to help calibrate the floor value of EMI.	X	X	X	
DoD-5	X	The transmission line operator would coordinate with BSETR to develop reporting standards, for potential inclusion in the transmission line maintenance and inspection program, to the extent allowable by FERC and NERC reliability standards. While normal inspection maintenance would take care of typical EMI issues, specific incidents such as storm damage or vandalism would need to be responded to outside of the normal maintenance cycle. If not detectable through transmission line monitoring, the operator would need to hear from someone experiencing interference in order to respond.	X	X	X	
DoD-6	X	The transmission line operator would coordinate planned outages (curtailment of power line operations for BSETR to implement testing) with BSETR to the extent feasible in order to meet necessary contractual commitments, utility mandates, laws and regulations, and power system requirements. The operator is very limited in the timing and duration of potential outages; outages stress the rest of the system, which can cause system failures.	X		X	
X		Use the optional structure height of 90 feet in areas intersecting the military training route (MTR) VR-263, which has a 100 feet above ground level flight altitude. Additionally, do not erect any structures exceeding 200 feet in height in areas intersecting MTRs VR-260 and VR-1233. Towers crossing the MTRs should also have anti-collision lighting to the maximum extent possible in order to make the hazard of transmission lines more apparent to pilots flying low altitude at night. These measures would mitigate impacts to military training and airspace usage, as well as contribute to the safe conduct of missions.	X	X		
X		Chart the transmission lines before they are erected.	X			
X		Identify transmission structures with high-visibility markers in areas where they intersect or parallel MTRs.	X	X		
MIL-1		The appropriate military scheduler(s) and U.S. Border Patrol representative(s) would be contacted to schedule airspace usage for any construction or maintenance activity on lands that could be used by the military and/or U.S. Border Patrol for training activities or other flights. Coordination would occur with the applicable scheduling office to schedule necessary airspace usage prior to maintenance activities.	X	X		
MIL-2		The proposed Project would comply with FAA regulations, including lighting regulations, to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.	X	X	X	
Noise						
	X	Schedule construction activities and route construction traffic to minimize disruption to nearby residents and existing operations surrounding the Project.		X		
	X	Noisy construction activities (including blasting) should be limited to the least noise-sensitive times of day (daytime only between 7 a.m. and 10 p.m.) and to weekdays. In sensitive wildlife areas, they should be limited to between 1.5 hours after sunrise and 1.5 hours before sunset.		X		
	X	If warranted, in extreme circumstances, erect temporary wooden noise barriers around areas where construction equipment would disturb sensitive receptors ³ near substations. Barriers may reduce noise by 3 to 10 dBA (EPA 1971).		X		
	X	To the extent possible, locate noisy equipment away from sensitive receptors.		X		
	X	Whenever feasible, schedule noise-generating activities to occur at the same time, since additional sources of noise generally do not add noise. That is, less-frequent noise activities would be less annoying than frequent less-noisy activities.		X		
	X	If blasting or other activities that cause loud bursts of noise are required during the construction period, nearby residents would be notified in advance.		X		
	X	If possible, minimize trips for surveillance and monitoring of Project transmission lines.			X	

³ As identified in the EIS, noise sensitive receptors include residential areas, schools and day care facilities, hospitals, long-term care facilities, places of worship, libraries, parks, and recreational areas specifically known for their solitude and tranquility (such as wilderness areas).

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Noise, cont'd.						
NOI-1		Construction would comply with local noise ordinances. There may be a need to work outside the local ordinances to perform work during available line outage windows in order to take advantage of low electrical draw periods during nighttime hours. The construction contractor would comply with variance procedures required by local authorities.		X		
NOI-2		Construction equipment would be maintained in good working order in accordance with manufacturer's recommendations.		X		X
NOI-3		Idling of construction equipment and vehicles would be minimized during construction.		X		
NOI-4		Workers would be provided with appropriate hearing protection, if necessary, as described in the HASP.		X	X	X
Paleontology						
	X	The Project would avoid Potential Fossil Yield Classification (PFYC) 3 and 4 geological units where possible by spanning resource areas.	X			
PAL-1	X	In consultation with the appropriate land management agencies, Southline and its contractor would develop a Paleontological Monitoring Plan to address paleontological resources within the project area. This plan would address personnel education, predisturbance surveys, monitoring of ground disturbance, and the deposition and curation of fossils in a qualified repository.	X	X		
PAL-2		If scientifically significant fossils are encountered during construction, construction activities would be temporarily diverted away from the discovery and the authorized officer of the BLM would be notified. BLM would then implement the appropriate measures to avoid, protect, and/or recover the fossil remains.		X		
Recreation						
REC-1		Southline would not site additional workspace areas, such as contractor yards, in recreation areas in order to minimize impacts on recreational users during construction.	X	X		
REC-2		Southline and its contractor would coordinate with the BLM to display appropriate "closed" signage at the entrance to new spur roads to structure locations and access roads located on BLM-managed lands. This includes temporary signs during the construction phase of the Project and permanent signs and/or vehicle barriers that would close the spur routes to public travel during the operational phase. Signs would be removed as appropriate upon decommissioning.	X	X	X	X
REC-3		If temporary short-term closures to recreational areas are necessary for construction activities, Southline and its contractor would coordinate those closures with recreational facility owners. To the extent practicable, Southline and its construction contractor would schedule construction activities to avoid heavy recreational use periods (e.g., holidays or tournaments). Southline and its construction contractor would coordinate with the facility owner to post notice of the planned closure onsite 14 calendar days prior to the closure.	X	X	X	X
	X	Construction would be limited to certain areas of the ROW during specified hunting seasons (e.g., big-game hunting seasons) by sequencing construction activities along the ROW, in coordination with New Mexico Department of Game and Fish (NMDGF) and AGFD, in accordance with each agency's hunting regulations. Such coordination would allow the agencies to notify hunters of potential for T-line construction activities to affect their hunt. Where construction cannot avoid hunting seasons (e.g., mountain lion, "varmint," and other species with year-round hunting seasons) hunters would be required to avoid discharging firearms adjacent to the construction areas, in accordance with NMDGF and AGFD hunting regulations.	X	X		
	X	If the Arizona National Scenic Trail must be temporarily closed during construction, an alternate trail route (detour) would be provided during the closure. If it is necessary for trail users to leave the trail during the temporary closure, trail users would need to obtain permission from the Arizona State Land Department.	X	X		X
Wilderness						
	X	Wilderness Inventory Unit users would be notified by publication of the construction schedule in local media, posting the schedule at administering agency offices, posting the schedule at trailheads or other recreation access points to Wilderness Inventory Units, or other means of reaching visitors. This notification process would alert wilderness users to the potential temporary impacts of presence and sound of construction on opportunities for experiences of solitude and primitive recreation settings, and allow visitors to decide whether they want to reschedule their visit.	X	X		X
	X	Feather the edges of the shrubs and trees adjacent to the ROW when recontouring and revegetating the construction ROW in vegetation communities with a large shrub or tree component, to reduce the line or edge that would be apparent between the shrubs and trees and the grass of the reclaimed ROW.	X	X		X
Trails						
	X	In accordance with the "Design Features and Best Management Practices for National Trails and Associated Resources" (see appendix 1 in Manual 6280 (BLM 2012)), proposed projects within a National Trail Management Corridor would be designed and located in a manner that is compatible with trail purposes.	X	X		
	X	Minimize visual contrast of Project through use of Project design such as using low profile buildings; siting using the natural topography to hide or screen development, reducing the aerial extent of impact by clustering developments, using vegetative screening; mimicking the line, form, and texture of the surrounding landscape; painting infrastructure, using colors that camouflage the development and prevent glare; and other techniques developed to address the site-specific conditions (BLM 2012).	X	X		
	X	Avoid the use of dye, restrict administrative vehicle travel off of designated routes to minimize spread of exotic and invasive species with the National Trail Management Corridor, and consider alternative treatment methods such as use of backpacker sprayer (BLM 2012).	X	X		

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Soils						
SOIL-1		As appropriate and feasible, Southline and its construction contractor would implement topsoil segregation and conservation practices at substation sites and as directed by the BLM and Western.		X		
	X	In construction areas (i.e., temporary use areas, structure sites, access roads, etc.) where grading is required, surface restoration would be implemented as required by the landowner or BLM authorized officer. The method of restoration would normally consist of returning disturbed areas back to approximate their normal contour, replacing topsoil, reseeding (where required), installing cross drains for erosion control, placing water bars in the road, and/or filling ditches. The Reclamation, Vegetation, and Monitoring Plan would include final details on the details of restoration.		X		
Socioeconomics						
	X	Southline should maximize local hiring, to the extent feasible, during construction. Local hiring could both maximize local economic benefits from the proposed Project, and help reduce potential housing issues and new public service demands.	X	X		
	X	Southline would develop plans for housing the temporary construction workforce during the periods of time when construction would focus on the western portions of the New Build Section (e.g., Hidalgo County) and the eastern portion of the Upgrade Section (e.g., northeastern Cochise County). If the Proponent Alternative is selected, housing planning should also include southern Luna County. The plan should be developed with input and review from local authorities in those areas to both minimize potential impacts on housing and public services and inform the communities of potential challenges associated with construction.	X	X		
Transportation						
TRA-1		Prior to the start of construction, Southline and its construction contractor would prepare a Traffic and Transportation Management Plan for the Project to address the timing and routing of Project trips in an effort to minimize Project impacts on local streets, highways, and railroad operations.	X			
TRA-2		At least 90 days prior to any construction-related helicopter use on the Project, Southline and its construction contractor would coordinate with the FAA for review and approval of plans for any helicopter flights that would take place during construction and operation. Southline and its construction contractor would then provide information to the BLM and Western regarding the intended need and use of helicopters during construction and operation of the Project, including the Flight and Safety Plan; the estimated number of days and hours that the helicopter would operate; the type and number of helicopters that would be used; the location, size, and number of staging areas for helicopter takeoffs and landings; and written approval from property owners for use of helicopter staging areas.	X	X	X	
	X	If any existing roads were to be damaged by Southline or its construction contractor during construction activities and/or truck traffic, the road would be repaired.		X		
	X	In order to mitigate traffic impacts on primary roads in metropolitan areas, shift changes for construction crews would not occur during the peak hours for the road during construction. Oversize or overweight vehicle movements would be planned for nighttime hours, where practical and not detrimental to safety or evening residential noise levels, or those specified in permitting regulations in order to minimize traffic disruptions.	X	X		
	X	In order to reduce public access to BLM roads and adjacent lands that are not currently accessible by the public, the Proponent would fence off or place restricted access signage at new access roads, where appropriate.	X	X	X	
	X	Throughout the permitting and design phase, the Proponent would correspond with Federal, State, and local transportation agencies in order to avoid Project inconsistencies with current and future transportation plans.	X			
	X	Throughout the permitting and design phase, the Proponent would correspond with Federal, State, and local airports in order to ensure that the FAA criteria for structures near airports are met, and to avoid Project inconsistencies with identified airport plans.	X			
	X	Identify transmission structures with high-visibility markers in areas where they intersect or parallel MTRs.			X	
	X	Provide gates and fencing in areas where OHV use would be restricted due to military operations, or to protect sensitive resources.		X	X	X
Vegetation						
VEG-1	X	Efforts would be made to minimize vegetation removal and permanent loss at construction sites to the extent practicable. Access would not be graded unless necessary for erosion control or other engineering reason. Final structure and spur road locations would be selected to avoid special status vegetation to the greatest extent feasible.		X		
VEG-2	X	Southline and its construction contractor would develop a Reclamation, Vegetation, and Monitoring Plan that would guide restoration and revegetation activities for all disturbed lands associated with construction of the Project and its eventual termination and decommissioning. The plan would address all land disturbances, regardless of ownership. It would be developed in consultation with appropriate agencies and landowners and would be provided to these entities for review and input. The plan would provide details on topsoil segregation and conservation, vegetation treatment and removal, salvage of appropriate species, and revegetation methods, including use of native seed mixes, application rates, transplants, and criteria to monitor and evaluate revegetation success.	X	X	X	X
VEG-3	X	Special-status plants, including the Pima pineapple cactus (<i>Coryphantha scheeri</i> var. <i>robustispina</i>), would be avoided. Where avoidance is not possible, special status plants would be conserved by relocating plants and/or reseeding, replacing topsoil with existing topsoil that was removed, and regrading in compliance with local ordinances (Pima County, Tohono O'odham Nation). Measures to conserve special status plants would be implemented through the Reclamation, Vegetation, and Monitoring Plan.	X	X		X

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Vegetation, cont'd.						
VEG-4	X	Removal of riparian scrubland vegetation would be avoided where possible. Natural regeneration of native plants would be supported by selectively cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.		X	X	X
VEG-5	X	In consultation with local BLM field offices and local resource agencies, Southline and its construction contractor would develop and implement a Noxious Weed Management Plan.	X	X	X	X
VEG-6	(see also PPC-3 and 4)	As required, equipment would be cleaned before ingress to minimize the potential for the spread of invasive species. These details would be described in the Noxious Weed Management Plan. Buffelgrass (<i>Pennisetum ciliare</i>) would be specifically addressed in the plan, which would outline efforts to control it within areas disturbed by the proposed Project to ensure that it does not spread to adjoining lands.	X	X	X	X
	X	Preconstruction native plant inventories and surveys for noxious weed species as stipulated by the appropriate land management agency would be conducted once transmission line center line, access road, and transmission line structure sites have been located.	X			
	X	Although the 150-foot ROW across the San Xavier District of the Tohono O'odham Nation was surveyed for Pima pineapple cactus in summer 2014, additional preconstruction species-specific surveys for the Pima pineapple cactus would be conducted once transmission line center line, access road, and transmission line structure sites have been located, as needed.	X			
	X	Preconstruction coordination with Pima County, the University of Arizona, and other appropriate groups would be conducted to minimize impacts to Tumamoc globeberry (<i>Tumamoca macdougalii</i>) monitoring plots and plants on Tumamoc Hill. Measures to conserve this plant, as well as other special status plants, would be implemented through the Reclamation, Vegetation, and Monitoring Plan.	X	X		X
	X	In construction areas where grading is not required, vegetation would be left in place wherever feasible, and original contours would be maintained to avoid excessive root damage and allow for regrowth. All existing roads would be left in a condition that is equal to or better than their condition before the construction of the transmission lines, as determined by the appropriate land management agency.		X		
		Field presence/absence surveys would be conducted for special status species in locations where such species are likely to occur within the Project ROW, and specifically locations where vegetation would be impacted, prior to any actual impacts. Surveys would be conducted following established protocols by qualified biologists approved by BLM.	X			
	X	Southline and its construction contractor would provide training to all appropriate field personnel working on the Project to identify noxious weeds and prevent spread. Training would discuss known invasive and noxious weed species, known locations, identification methods, and treatment protocols. Training materials and a list of Project personnel completing the course would be provided to the BLM and Western.		X		
	X	Invasive and noxious weed populations would be mapped and reported to BLM/Western. BLM and Western would determine which areas would necessitate vehicle washing, based on the results of the invasive/noxious weed surveys.	X	X		
	X	Noxious weeds and other exotic, invasive plant species would be inventoried by a qualified biologist in the immediate proximity to any sensitive plant communities and any special status species populations. This noxious weed inventory would then provide information to supplement mitigation plans for sensitive plant communities and/or special status species habitats, to prevent the expansion of any noxious weeds or other exotic invasive plant species into those locations. Mitigation planning shall be included as part of the Plant and Wildlife Species Conservation Measures Plan.	X			
	X	Southwest Regional Gap Analysis Project plant associations (communities) that are considered to be environmentally sensitive would be included in ground-truthing field surveys, such as wetlands, riparian areas, drainages, and special status species habitats, to confirm the presence and extent of such communities. If any such sensitive plant communities are identified and documented, the first response would be a determination regarding whether the sensitive community can be avoided. If avoidance is not possible, a mitigation plan (included as part of the Plant and Wildlife Species Conservation Measures Plan) would be developed as needed for those vegetation communities, including options to reduce impacts to those communities. Exclusion zones (at least 10 feet around the perimeter of the plant community) would be delineated around any such plant communities and marked with flagging. Construction monitoring shall be employed around any such sensitive plant communities, and the biological monitor shall have the authority to halt any construction activity deemed intrusive and causing impacts beyond those stated in the mitigation plan. Any changes in construction plans that occur after the Project approval would require additional field presence/absence surveys for such sensitive plant communities and would require a variance request from the BLM if such communities are found, and the above mitigation measures would apply.	X			
	X	A compensation plan would be developed as part of the Plant and Wildlife Species Conservation Measures Plan, to meet BLM requirements and approval. The compensation plan would include calculations of compensation ratios and mitigation acreages for special status plant species requiring additional mitigation. Compensatory mitigation could include payment of an in-lieu fee; acquiring mitigation land or conservation easements; or a combination of the two.	X			
	PPC-1	For Pima pineapple cactus that cannot be avoided, Southline would purchase credits in a U.S. Fish and Wildlife Service (FWS)-approved conservation bank for Pima pineapple cactus, corresponding to the area of permanent disturbance to occupied Pima pineapple cactus habitat. Alternatively, Southline may purchase suitable mitigation lands within Pima County's Pima pineapple cactus Priority Conservation Areas.	X			
	PPC-2	In compliance with Executive Order 13112 regarding invasive species, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction shall be seeded using species native to the project vicinity.		X		
	PPC-3	Also in compliance with Executive Order 13112 regarding invasive species, all earthmoving and hauling equipment shall be washed at the contractor's storage facility prior to arriving onsite to prevent the introduction of invasive species.		X		
	PPC-4	To prevent invasive species propagules from leaving the site, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris identified prior to leaving the construction site.		X		

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Vegetation, cont'd.						
	PPC-5	Any Pima pineapple cactus that are not within the area of permanent disturbance, but are present within the Project vicinity, shall be flagged by a qualified biologist prior to the commencement of work to avoid accidental damage during construction. Flagging would be removed following construction.	X	X		
	PPC-6	Any Pima pineapple cactus that cannot be avoided would be conserved by relocating plants within the existing ROW, but outside of the area of any ongoing disturbance.	X	X		
	BO-CM (Biological Opinion-Conservation Measures)	BLM and Western would coordinate with the Arizona-Sonoran Desert Museum in salvaging for the museum's collection if individual Pima pineapple cactus cannot be relocated for some reason.	X	X		
		Preconstruction surveys for Chihuahu scurfpea and other special status plant species would occur in suitable habitat and ground disturbance in occupied habitat would be avoided to the extent practicable.	X	X		
Visual Resources						
VIS-1		In order to restore disturbed areas to an appearance that would blend back into the overall landscape, seeding and/or planting would be conducted in any area that has been cleared or disturbed during construction. Seed mix would be tailored to an area's soil type, existing vegetation, and native species.				X
VIS-2	X	The alignment of any new access roads (including unimproved spur roads) would stay within the designated access ROW and would follow the designated area's landform contours and avoid steep areas as much as feasible, provided that such alignment does not additionally impact resource values. This would minimize ground disturbance and/or reduce scarring (visual contrast).	X	X		
VIS-3		During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with the use of access roads.			X	
VIS-4	X	The Project would incorporate nonspecular conductors into the Project design to decrease reflectivity and visibility of Project features.	X	X		
	X	Non-transmission line structures such as operations and maintenance buildings, microwave equipment buildings, regeneration structures, emergency generators, and other associated structures would be treated or painted with non-reflective, flat-toned surface treatment. The color of the structures would be painted BLM Environmental Color Chart "Shadow Gray," unless otherwise directed by the authorized officer based on a field evaluation of color choices that will demonstrate better measurable performance over Shadow Gray. BLM Visual Resource Management staff shall be consulted and shall approve color selection relative to site-specific structures to be painted.		X	X	
	X	All lattice towers shall be "dulled" non-specular metal and monopoles properly color treated (BLM Environmental Color Chart "Shadow Gray").	X	X		
	X	Aerial markers or warning lights would be installed on conductors or structures if required by FAA, U.S. Customs and Border Protection, and DOD regulations for structures over 130 feet. The use of red strobe lighting would reduce potential impacts from artificial night lighting and would reduce impacts from night brightness and viewing of night skies. The minimum number and intensity of lights would be used, given that the tallest structures are under the 200-foot FAA requirement (FAA Advisory Circular 70/7460-1K (FAA 2007)). Exterior lights installed on conductors or other facilities would be aviation warning lights, or FAA L-864 aviation red-colored flashing lights with 20 to 40 flashes per minute standard flashing range.		X	X	
	X	The alignment of new access roads or cross-country routes would follow the landform contours where practicable to minimize ground disturbance and reduce visual scarring of the landscape, provided that the alignment does not affect other resource values.	X	X	X	
	X	Clearing of trees in and adjacent to the ROW would be minimized to reduce visual contrast to the extent practicable to satisfy conductor-clearance requirements. Trees and other vegetation would be removed selectively to blend the edge of the ROW into adjacent vegetation patterns, as practicable and appropriate.	X	X	X	
	X	All new or improved access that would not be required for maintenance would be closed or rehabilitated to make it less visually apparent.	X	X	X	
		Tower design may be modified, or an alternative tower type may be selected, to minimize visual contrast as appropriate (BLM 2013).	X	X	X	
	X	Standard tower design would be modified to correspond to spacing of existing transmission structures, where feasible and within the limits of standard tower design, to reduce visual contrast (BLM 2013).	X	X		
	X	At highway, canyon, and trail crossings, towers would be placed at the maximum feasible distance from the crossing within the limits of standard tower design to reduce visual impacts.	X	X		

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Water Resources						
WAT-1		A Project-specific construction SWPPP would be prepared prior to the start of construction of the transmission line and substations in compliance with Clean Water Act (CWA) Section 402, if required. The SWPPP would use BMPs to address the storage and handling of hazardous materials and sediment runoff during construction activities to minimize the risk of an accidental release. As part of the SWPPP, soil disturbance at structure construction sites and access roads would be the minimum necessary for construction and would be designed to prevent long-term erosion, through activities such as restoration of disturbed soil, revegetation, and/or construction of permanent erosion control structures. A U.S. Army Corps of Engineers permit would be obtained prior to the start of construction of the transmission line and substations for the discharge of dredged or fill material in compliance with CWA Section 404, if required. Activities in and around streams and wetlands would be designed to avoid, minimize, and mitigate impacts to WUS.	X	X		
WAT-2		Construction equipment would be kept out of flowing stream channels, unless feasible alternatives are not available. Structures would be located to avoid active drainage channels, especially downstream of steep slope areas, to minimize the potential for damage by flash flooding and mud and debris flows.	X	X		X
WAT-3		Flood-control devices would be located where required to protect structures from flooding or erosion. Appropriate design of structure foundations would be used to prevent scour or inundation by a 100-year flood and to avoid disturbed areas. The locations of transmission structures would be designed to avoid steep, disturbed, or otherwise unstable slopes. If drainages cannot be avoided by structure placement, Southline and its construction contractor would design drainage crossings to accommodate estimated peak flows and ensure that natural volume capacity can be maintained throughout construction and upon post-construction restoration.	X	X		
	X	Roads would be built as close as possible to right angles to the streams and washes. Culverts or temporary bridges would be installed where conditions warrant. All construction and operations activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks.		X		
	X	If a route is approved near the internal border, construction activities should be accomplished in a manner that does not change historic surface runoff characteristics at the international border. Copies of any hydrologic or hydraulic studies and site-specific drawings for work proposed in the vicinity of the international boundary would be submitted to the U.S. International Boundary and Water Commission.	X	X	X	X
	X	To the extent practicable, structures would be sited with a minimum distance of 200 feet from streams.	X			
Wildlife						
WILD-2		In consultation with the BLM and Western, Southline and its construction contractor would prepare and implement a Biological Monitoring Plan prior to issuance of a notice to proceed and prior to construction that would specify the level of biological monitoring to be provided throughout construction activities in all construction zones with the potential for presence of sensitive biological resources. The number of monitors and monitoring frequency would be specified for each work zone.	X	X		
WILD-3		Preconstruction surveys would be required in areas where Sonoran desert tortoise (now a separate species: Morafka's desert tortoise (<i>Gopherus morafkai</i>)), and Gila monster (<i>Heloderma suspectum</i>) are expected to occur. In consultation with the BLM and Western, Southline and its construction contractor would hire qualified biologists to conduct preconstruction surveys in ground disturbance areas within suitable habitat for appropriate special status species.	X			
WILD-4		To reduce impacts on the Sonoran (Morafka's) desert tortoise, known to exist in the western portion of the project area, only authorized biologists with a valid AGFD permit would handle desert tortoises if encountered within the Project area, following the most current desert tortoise handling guidelines published by the AGFD .		X		X
WILD-5		To reduce impacts on all species protected by the Migratory Bird Treaty Act (MBTA), (1) Southline and its construction contractor would conduct preconstruction surveys for active nests, and consult with the appropriate agencies (BLM or FWS) on a case-by-case basis when active nests are found in Project areas, unless directed to do otherwise by these same agencies; (2) a buffer would be placed around active bird nests, and nests would not be moved during breeding season, in compliance with the MBTA, unless the Project is expressly permitted to do so by the FWS or BLM, depending on the location of the nest; (3) all active nests and disturbance or harm to active nests would be reported to the FWS or BLM, upon detection; and (4) work would halt if it is determined that active nests would be disturbed by construction activities, until further direction or approval to work is obtained from the appropriate agencies.	X	X		
WILD-6		To reduce impacts on golden eagles and other raptors, Southline and its construction contractor would develop and implement an APP, in coordination with the BLM and Western for approval. The plan would be prepared in accordance with guidance provided by the FWS and in consultation with best practices such as the "Suggested Practices for Avian Protection on Power Lines" (APLIC 2006).	X	X	X	X
WILD-7		Southline and its construction contractor would follow Pima County guidelines for surveys prior to disturbance located in Pima County for western burrowing owls (<i>Athene cunicularia</i>). Surveys for western burrowing owl would also be conducted in Cochise County near agricultural fields surrounding the Willcox Playa.	X	X		
		Surveys for western burrowing owl in New Mexico would follow the NMDGF "Guidelines and Recommendations for Burrowing Owl Surveys and Mitigation" (NMDGF 2007).	X	X		
WILD-8		Final structure and spur road locations would be adjusted to avoid sensitive wildlife resources to the greatest extent feasible.	X	X	X	
AGFD-1	X	Preconstruction surveys for non-game sensitive species such as ornate box turtle (<i>Terrapene ornata</i>), western burrowing owl (<i>Athene cunicularia</i>), Texas horned lizard (<i>Phrynosoma cornutum</i>), kit fox (<i>Vulpes macrotis</i>), etc. Timing of the surveys would be determined through consultation with AGFD and NMDGF.	X			
		Preconstruction surveys for species listed under the Endangered Species Act or specified by the appropriate land management agency as sensitive or of concern would be conducted in areas of known occurrences or suitable habitat. Timing of the surveys would be determined by FWS-approved, species-specific survey protocol.	X			

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Wildlife, cont'd.						
	X	Monitoring of construction activities would be required in some areas to ensure that effects on these species are avoided during construction. If bald eagle (<i>Haliaeetus leucocephalus</i>) or golden eagle (<i>Aquila chrysaetos</i>) nests are identified during preconstruction surveys, seasonal restrictions on construction within a specified buffer would be implemented where applicable, according to FWS protocols, to comply with the Bald and Golden Eagle Protection Act. Preconstruction nesting-season surveys for migratory birds and surveys for burrowing owls in suitable habitat would be conducted as needed to comply with the MBTA.		X		
	X	Surveys for bat roosts would be conducted within 0.25 mile of the Project ROW in areas that potentially contain caves, karst features, or mines. Occupied bat roosts would be avoided.	X			
	X	Clearing, grubbing, blading, and access road improvements occurring within identified sensitive areas would be conducted outside the breeding season for most desert-nesting migratory birds.	X	X		
	X	Construction holes left open overnight would be appropriately fenced or covered to prevent damage to wildlife or livestock.		X		
	X	Except where otherwise posted or allowed, a Project speed limit of 25 mph would be designated for all construction areas, spur roads, and new access roads to minimize the potential for construction equipment collisions with wildlife. In areas with mountainous terrain and/or poor site distances, the Project speed limit would be 15 mph.		X		
	X	In construction areas where recontouring is not required, vegetation would be left in place wherever possible, to avoid excessive root damage and allow for resprouting.		X		
	X	If designated suitable bighorn sheep (<i>Ovis canadensis</i>) habitat along subroute 1.2 in segment S2 were to become occupied by bighorn sheep, then no Project facilities except transmission lines would be built in that area, if that route is selected.		X		
	X	To avoid impacting roosting bats at the Ina Road bridge, blasting activities would be restricted to less than 130 decibels (dB) at the project site. If this dB limit cannot be met, then blasting activities would be limited to after sunset when the majority of adult bats would be away from the roost foraging, and/or blasting would not occur in April or May while the bat colony is present.		X		
AGFD-2	X	Southline would fund the relocation of Crane Lake, including acquisition of land if necessary, construction of the lake and associated infrastructure, revegetation, and visitor facilities. This would include operation and maintenance costs of the lake and infrastructure for the life of the Project, with the renewal of commitment upon future renewal of the Project permit.	X	X	X	
AGFD-3	X	Southline would provide funding to improve riparian emergent wetlands on three historic ponds near Kansas Settlement Road. Wetlands would be constructed to AGFD specifications and adequately equipped with pumps, liners, and drains to ensure that wildlife values are maintained.	X	X	X	
AGFD-4	X	Southline would fund the removal of non-native flora and revegetation with native flora on the Willcox Playa Wildlife Area.	X	X	X	
	LNB-1	All paniculate agaves (<i>Agave palmeri</i> , <i>A. parryi</i> , and <i>A. chrysantha</i>) and saguaros (<i>Carnegiea gigantea</i>) would be inventoried within the proposed ROW, and the potential to avoid or salvage each plant would be assessed. The priority would be avoidance when feasible.	X	X		
	LNB-2	All suitable (e.g., healthy, undamaged, not flowering) paniculate agaves that cannot be avoided would be salvaged using methods approved by the BLM/Western and FWS, but mature agaves would be given preference for avoidance when feasible. Plants salvaged from areas of permanent disturbance would be used to reclaim areas of temporary disturbance, or replanted outside disturbed areas if necessary.	X	X		
	LNB-3	Other species of agaves, such as <i>A. schottii</i> , that are not primary food plants for nectar-feeding bats would be salvaged and used for reclamation in accordance with to the Reclamation, Vegetation, and Monitoring Plan.	X	X		
	LNB-4	Saguaros less than 15 feet in height would be salvaged, unless prevented by site-specific conditions or poor plant health. Plants salvaged from areas of permanent disturbance would be used to reclaim areas of temporary disturbance, or replanted outside of disturbed areas if necessary. Larger saguaros would be avoided whenever feasible, but would be topped or removed if necessary.	X	X		
	LNB-5	Agave and saguaro salvage would be augmented, as necessary within 3 years after completion of initial restoration activities. Augmentation would occur within the ROW in areas of higher value to bats (e.g., in the vicinity of active roosts, within areas of high concentration of agaves) to achieve a goal of no net loss of forage plants. Plant stocks from local sources or approved nursery-grown plants would be used.	X	X		
	LNB-6	Salvaged plants would be monitored following reclamation for a period of 3 years, as described in the POD. Supplementary water would be provided, if monitoring indicates that rainfall is insufficient to achieve the goal of no net loss of forage plants. Plant survival through the monitoring period would be reported annually to the BLM/Western and FWS.	X	X		
	WF-1	All non-emergency construction and maintenance in riparian woodlands at the San Pedro River, Cienega Creek, and the Santa Cruz River would take place between September 15 and March 1, to avoid disturbance of breeding or nesting southwestern willow flycatchers (<i>Empidonax traillii extimus</i>).		X		
	WF-2 YBC-2	Line marking devices would be placed at the proposed crossings of the San Pedro River, Cienega Creek, and the Santa Cruz River to minimize the potential for avian collisions with transmission lines.		X		

Table 8. Environmental Protection Measures by Resource (Continued)

PCEM	Agency	Feature by Resource	Preconstruction	Construction	Operation and Maintenance	Decommissioning
Wildlife, cont'd.						
	YBC-1	All non-emergency construction and maintenance in riparian woodlands at the San Pedro River, Cienega Creek, and Santa Cruz River would take place between September 15 and March 1, to avoid disturbance of breeding or nesting yellow-billed cuckoos (<i>Coccyzus americanus</i>).		X		
	BAT-1	Construction activities that create sudden and sporadic loud noise (e.g., blasting) within 0.5 mile of the Volcano Mine complex would be limited to Spring (preferably April 1 to May 31), depending on the presence of bats to protect maternity roosts and potential hibernacula.		X		
	BO-CM	BLM and Western would work with FWS, AGFD, and NMDGF to implement recovery actions for lesser long-nosed bat (<i>Leptonycteris yerbabuena</i>), Mexican long-nosed bat (<i>Leptonycteris curasoae</i>), southwestern willow flycatcher, and yellow-billed cuckoo.	X			
	BO-CM	BLM and Western would work with FWS, AGFD, and NMDGF to participate in recovery planning and implementation of conservation actions for northern Mexican gartersnake (<i>Thamnophis eques megalops</i>), particularly on efforts to remove harmful nonnative species from occupied northern Mexican gartersnake habitat.	X			
	BO-CM	BLM, Western, and Southline would use the smallest mesh size possible (<0.5 inch) for erosion-control products, or products that do not contain any mesh- or net-like attributes near occupied northern Mexican gartersnake habitat. BLM, Western, and Southline would refrain from using erosion-control products (such as wattles), that contain a mesh size of 0.5 inch (or 1.27 cm) within proposed critical habitat for the northern Mexican gartersnake.		X		
	BO-CM (appendix B)	Preconstruction surveys would take place in habitat classified as moderate or high suitability for the northern aplomado falcon (<i>Falco femoralis septentrionalis</i>) within the proposed ROW and a 1-mile buffer. Surveys should be conducted several times from January 15 to June 30 in order to detect breeding activity.	X			
	BO-CM (appendix B)	All existing raptor nests or other large nests found during preconstruction surveys would be preserved in place, if possible, or relocated if necessary. No relocation of active nests would occur, and no nests would be relocated until after consultation with the Federal action agencies and FWS.	X	X		
	BO-CM (appendix B)	Construction would not take place within 1 mile of occupied northern aplomado falcon nests between January 15 and September 1. Aplomado falcons are frequently observed on their breeding territories in southern New Mexico in January. Therefore, January 15 is the start date for seasonal restrictions.		X		
	BO-CM (appendix C)	Preconstruction desert tortoise surveys would be conducted in suitable habitat. A WEAP that includes information on desert tortoises would be implemented. Any desert tortoises encountered during preconstruction surveys or during construction activities would be handled in accordance with the AGFD "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects" (AGFD 2007).	X			

A SWPPP for the proposed Project would identify sources of pollutants associated with construction activity that may affect the quality of stormwater, as well as stormwater management practices to abate pollutants in stormwater discharges from the construction site both during and after construction. The SWPPP would detail structural and non-structural controls that would be put in place to minimize negative impacts caused by offsite stormwater discharges to the environment. BMPs in the plan would include specific stabilization measures and structural controls, spill prevention containment and controls, final stabilization measures to be implemented after construction, and requirements for maintenance and inspection, subject to approval by an Erosion Control Coordinator.

5.4.4 Spill Prevention, Control, and Countermeasures Plan

The Spill Prevention, Control, and Countermeasures (SPCC) Plan would address requirements for petroleum spill prevention, preparedness, response, and notification to prevent oil discharges to waters and adjoining shorelines. The EPA's SPCC rule 40 CFR 112 is part of the Oil Pollution Prevention regulation, which requires specific facilities to prepare, amend, and implement SPCC Plans. The plan would address prevention and remediation of oil, hydraulic fluid, and petroleum fuel spills, including spills that could enter WUS.

5.4.5 Historic Properties Treatment Plan

Section 106 of the NHPA requires Federal agencies to consider the effects of their undertakings on historic properties (those cultural resources presently listed or determined to be eligible for listing in the NRHP). Due to the scope and complexity of the proposed Project, and because the effects on historic properties cannot be fully determined prior to the approval of an undertaking, the BLM and Western determined early in the process that the undertaking would have an "adverse effect" on historic properties. To resolve the adverse effects, a Project-specific PA is being developed among the consulting parties.

The PA, an HPTP, and a Monitoring and Discovery Plan would be developed pursuant to the PA, and would be incorporated into the POD. The HPTP provides a framework for conducting historic resource testing and data recovery for the proposed Project. It would describe measures that would be implemented to address the avoidance of impacts, minimization of impacts, and mitigation of possible impacts to historic properties. As noted in the PA, for the purposes of Section 106 of the NHPA, decommissioning would be a new action for Section 106 review and historic properties potentially affected by decommissioning would be considered in the BLM-approved Termination and Reclamation Plan in accordance with the pertinent laws, regulations, and policies extant at the time.

5.4.6 Blasting Plan

A Blasting Plan would outline the procedures and safety measures that the proposed Project contractor would adhere to while implementing blasting activities during construction. It would identify proposed blasting techniques, as well as blasting requirements and procedures such as proposed notification of agencies and affected landowners, safety, use, storage, and transportation of explosives. These procedures must be consistent with the minimum safety requirements defined by Federal, State, and local regulations. This plan would also identify and address areas of potential environmental concern as related to blasting along the proposed Project route. The Blasting Plan would be circulated to the appropriate Federal, State, and local agencies, as appropriate.

5.4.7 Plant and Wildlife Species Conservation Measures Plan

Federal agencies are required to consider the effects of their activities on protected species. The Plant and Wildlife Species Conservation Measures Plan would outline the avoidance and minimization of impacts to special-status plant and wildlife species as related to proposed Project construction activities. It would describe specific measures to be implemented in the event that State or federally listed species, BLM sensitive species, or Forest Service special-status species or their habitats are identified within or adjacent to the proposed Project ROW. The Plant and Wildlife Species Conservation Plan would incorporate appropriate Federal, State, and local agency guidance and regulation, such as the Pima County Regional Flood Control District Regulated Riparian Habitat Mitigation Standards.

5.4.8 Erosion, Dust Control, and Air Quality Plan

In order to maintain air quality in the vicinity of construction areas, the Erosion, Dust Control, and Air Quality Plan would identify sources of fugitive dust, such as grading activities, driving on dirt roads, or wind-driven dust from exposed soil; and then provide appropriate dust mitigation measures (PCEMs) such as application of water or soil additives, control of vehicle access, vehicle speed restrictions, or even work stoppage during extreme wind. The plan would also identify sensitive receptors that could be affected by dust from work areas, and outline dust monitoring and recordkeeping responsibilities. The Erosion, Dust Control, and Air Quality Plan would incorporate appropriate Federal, State, and local agency guidance and regulation and be circulated to the appropriate agencies to verify that the proposed Project is complying with the applicable air quality rules and regulations. Applicable County Plans, Laws, Ordinances, Regulations, and Standards Related to Air Quality are discussed in chapter 3 of the EIS.

Additionally, the Erosion, Dust Control, and Air Quality Plan would include a Construction Emission Mitigation Plan (CEMP) that would include fugitive dust source controls such as:

- stabilization of open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions;
- installation of wind fencing and phased grading operations where appropriate;
- operation of water trucks for stabilization of surfaces under windy conditions; and
- prevention of spillage when hauling material and operating non-earthmoving equipment and limiting speeds to 15 miles per hour. Limiting speed of earth-moving equipment to 10 miles per hour.

The CEMP would also include mobile and stationary source controls such as:

- planning construction scheduling to minimize vehicle trips;
- limiting idling of heavy equipment to less than 5 minutes and verification through unscheduled inspections;
- maintenance and tuning of engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed; and
- where practicable, use new, clean equipment meeting the most current of applicable Federal or State Standards. In general, commit to the best available emissions control technology. Tier 4 engines should be used for Project construction equipment to the maximum extent feasible.

Lacking availability of non-road construction equipment that meets Tier 4 engine standards, the responsible agency should commit to using EPA-verified particulate traps, oxidation catalysts, and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

The CEMP would also include administrative controls such as:

- preparation of an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking; and
- development of a construction traffic management plan that maintains traffic flow and plan construction to minimize vehicle trips.

5.4.9 Hazardous Materials Management Plan

The purpose of the HMMP would be to reduce the risks associated with the storage, use, transportation, and disposal of hazardous materials anticipated to be used during the construction phase of the proposed Project. The HMMP would be required to meet BLM ROW grant conditions to provide a basic understanding of the hazards and techniques associated with the handling of hazardous materials so that the proposed Project personnel would be better able to protect their personal health, prevent damage to the environment, and comply with applicable laws, regulations, and policies.

5.4.10 Emergency Preparedness and Response Plan

The purpose of the Emergency Preparedness and Response Plan would be to help prevent emergencies, to ensure preparedness in the event emergencies do occur, and to provide a systematic and orderly response to emergencies. Emergencies may include be medical, fire, hazardous materials, extreme weather, or acts of sabotage. The plan would provide project-specific details regarding steps for various types of emergencies, including emergency notification and evacuation procedures, and would take into account the level of severity of each event.

5.4.11 Noxious Weed Management Plan

The primary focus of the Noxious Weed Management Plan would be to minimize the introduction of any noxious weed infestations, as well as the spread of weeds, during construction of the proposed Project and to eradicate noxious weeds following construction. Regulatory authority and requirements are provided by Federal regulations, including the Executive Order on Invasive Species and the Plant Protection Act, plus State regulations on noxious weeds. The plan would outline that invasive weeds are not controlled to the same standards as noxious weeds and would specifically address the elimination of buffelgrass (*Pennisetum ciliare*) from areas disturbed by the proposed Project to ensure that it does not spread to adjoining lands.

5.4.12 Fire Protection Plan

A Fire Protection Plan would help reduce the risk of fires and minimize the dangers posed by fires during construction and operation phases of the proposed Project. Because the proposed Project would be located in remote and isolated locations, the dangers posed by fire may be increased. The objective of this plan would be to eliminate causes of fire, minimize the potential loss of life and property by fire, and comply with OSHA standards on fire prevention. It also would provide information and guidelines to assist in recognizing, reporting, and controlling fire hazards.

5.4.13 Stream, Wetland, Well, and Spring Protection Plan

General water quality is protected under the Federal Clean Water Act, and a permit may be required if a project would result in discharges to regulated WUS. The purpose of a Stream, Wetland, Well, and Spring Protection Plan would be to describe measures to protect those resources from potential impacts during construction, operation, and maintenance activities. The plan would describe avoidance, minimization, and mitigation measures (PCEMs) and would be intended for use as a guide to determine the appropriate site-specific measures to be implemented during construction activities. The goals of the plan would be to prevent and control the proposed Project-related erosion and sedimentation into streams and wetlands, minimize disturbance and erosion of streambeds and banks, and protect springs and wells from Project impacts due to blasting and hazardous materials contamination. The Stream, Wetland, Well, and Spring Protection Plan would incorporate appropriate Federal, State, and local agency guidance and regulations, such as the Pima County Regional Flood Control District Regulated Riparian Habitat Mitigation Standards.

5.4.14 Soil Management Plan

A Soil Management Plan would define procedures for managing soils that are excavated during construction, along with plans for their storage and later reuse. This plan is often an appendix to a SWPPP. In addition to clean soil excavation, the plan would outline procedures for segregation of potentially contaminated soils, sampling and analysis of those soils, and disposal options if that becomes necessary. It also would define how topsoil would be segregated and stored, how stockpiles would be managed and protected, and used in site restoration. Use of topsoil for restoration activities would be described in the Reclamation, Vegetation, and Monitoring Plan. Erosion and sediment controls for excavated soil would also be discussed.

5.4.15 Reclamation, Vegetation, and Monitoring Plan

The Reclamation, Vegetation, and Monitoring Plan would be prepared for the BLM and Western to address the reconstruction of disturbed ecosystems by returning the land to a stable and productive condition. It would describe reclamation, revegetation, native plant management, and noxious and invasive weed control, with the purpose of restoring areas impacted by construction, operation and maintenance, and decommissioning. The plan would distinguish between Interim Reclamation Activities and Final Reclamation Activities with corresponding goals and objectives. Such plans typically include predisturbance site characterization, waste material management, site preparation and seeding, the use of native seeds, invasive species management, and compliance and effectiveness monitoring. Plan elements would help protect subsurface integrity and eliminate sources of ground and surface water contamination. Implementation of these elements would also maintain the biological, chemical, and physical integrity of the topsoil and subsoil, and reestablish slope stability and surface stability. The Reclamation, Vegetation, and Monitoring Plan would incorporate appropriate Federal, State, and local agency guidance and regulations, such as the Pima County Regional Flood Control District Regulated Riparian Habitat Mitigation Standards.

5.4.16 Health and Safety Plan

A HASP is not typically required by Federal law; however, section 18 of the Occupational Safety and Health Act of 1970 encourages States to develop and operate their own safety and health programs in the workplace. In New Mexico, the Occupational Health and Safety Bureau, part of the New Mexico Environment Department, has the responsibility of enforcing Occupational Health and Safety

Regulations. In Arizona, the Arizona Division of Occupational Safety and Health is responsible for enforcement and voluntary compliance.

The purpose of a HASP would be to ensure the safety of the proposed Project employees, construction personnel, and the public. The HASP would be tailored specifically for the proposed Project, and would include a description of hazards that may be encountered during the life of the proposed Project. The HASP would detail employee safety training procedures that would be used, structural and non-structural safety controls that would be put in place, personal protective equipment that would be required, emergency response procedures, protocols for Project-specific procedures such as confined space entry, and applicable standards, practices, and procedures specified by OSHA (29 CFR 1910).

5.4.17 Avian Protection Plan

An APP would be a Project-tailored plan designed to reduce avian electrocution and collision mortality that result from avian interactions with electric utility facilities. The overall goal of an APP is to reduce avian mortality. The 2005 APLIC and FWS APP Guidelines (APLIC 2005) provide a framework, along with principles and examples of APPs.

The APP would be designed as a living document to be continually evaluated and refined over the life of the proposed Project. The elements of the APP would include training, permit compliance, construction design and siting standards, nest management, a reporting system, risk assessment for evaluating the risks posed to migratory birds. The plan would also identify areas and issues of concern, mortality reduction measures, and avian enhancement options.

Examples of avian protection measures that *could* be included in the APP are:

- Marking wires (bird diverters) and/or using special structure design to increase visibility to birds;
- Applying special structural design to decrease the heights of ground wires and conductors;
- Monitoring to ensure that mitigation measures (PCEMs) are implemented; and/or
- Conducting additional avian studies, surveys, and/or monitoring to record the presence of birds and incidence of avian collisions, and provide data that could be useful to minimize the potential for collisions with the proposed Project, as well as with existing and future power lines in other locations.

Southline, BLM and Western would collaborate with agencies such as the FWS, AGFD, and NMDGF and other cooperating agencies on development of the APP, the goal of which is mitigate the collision risk and loss of productivity for all birds.

5.4.18 Waste Management Plan

The purpose of the Waste Management Plan would be to outline non-hazardous waste handling procedures to be used during the construction, operation, and maintenance phases of the proposed Project and to identify expectations for minimizing waste and recycling processes. Waste addressed in this plan would include all non-hazardous waste resulting from construction and land clearing, as well as material that is recycled, reused, salvaged, or disposed of as garbage.

The Waste Management Plan would attempt to predict the quantities and types of waste that would be generated during the construction, operation, and maintenances phases of the proposed Project, identify

the final destination of that waste, and estimate waste management costs. The Waste Management Plan would consider waste diversion goals and objectives, and would explore recycling and reuse alternatives.

5.4.19 Helicopter Flight Plan/Flight and Safety Plan

The Helicopter Flight and Safety Plan would describe the hours and estimated number of days that a helicopter would operate for construction of the proposed Project, the type and number of helicopters that would be used, and the kind of work to be performed. Additional information presented in this plan would include the location, size, and number of staging areas for helicopter takeoffs and landings, and safety measures to be implemented during helicopter operations. This plan would be reviewed and approved by the FAA prior to the commencement of helicopter operations.

5.4.20 Decommissioning Plan

The Decommissioning Plan would detail how the structures and facilities of the proposed Project would be removed after the useful life of the Project is reached, and how the affected properties would be reasonably restored in accordance with the BLM ROW grant. This plan would be a general outline of how the proposed Project would be decommissioned and how land would be restored to its original condition. Decommissioning procedures described would include the removal of structures, disposal of waste, and identification of what, if anything, may remain on the land upon completion. Restoration would include the stabilization and revegetation of the disturbance area to minimize erosion and return the land to productive use.

5.5 SELECTIVE MITIGATION BY MILEPOST

Files to be included with Final POD (post Final EIS) - not included herein.

Chapter 6

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Appendix A

CONSTRUCTION CONSIDERATIONS

Full text to be included with Final POD (post Final EIS) – text in the following section not fully developed.

APPENDIX A1 FLAGGING, FENCING, AND SIGNAGE PLAN

A1.1 Introduction

This Flagging, Fencing, and Signage Plan describes the methods that will be used in the field to delineate Southline Transmission Line Project (Project) limits of disturbance and protect sensitive environmental and cultural resources during Project construction. These methods are intended to ensure Southline Transmission, LLC (Southline, or the Proponent) personnel, the construction contractor(s), Bureau of Land Management (BLM), Western Area Power Administration (Western), compliance inspection contractor (CIC), and other monitors and visitors to the Project construction sites stay on approved access routes and within approved work areas.

As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate. The measures described in this plan are an integral part of the environmental compliance program for avoiding and minimizing impacts on sensitive resources. The objective of this plan is to provide information on the field markings (i.e., flagging, fencing, and signage) that will be used to identify approved Project travel and work areas, as well as sensitive resource areas where construction or travel is to be excluded.

A1.2 Regulatory Requirements

No Federal, State, or local laws, rules, or regulations specifically address flagging, fencing, and signage protocols for construction Projects. However, some of the Proponent Committed Environmental Measures (PCEMs) identified in the Environmental Impact Statement (EIS) for the Project (and also in table 8 in the POD), hinge on adequate field marking of work areas and/or of sensitive resource areas to avoid or reduce impacts. These PCEMs include flagging or fencing requirements to help protect vegetative cover, water quality, cultural resources, and special-status species and minimize the spread of invasive weeds.

A1.3 Methods

A1.3.1 Demarcating Project Facilities

A1.3.2 Environmental Exclusions

A1.3.3 Signing, Flagging, and Fencing Materials and Methods

Table A1-1. Signing and Flagging Scheme

Feature	Flagging or Sign Colors	Sign Text	What to Do
Project access road			
Temporary work areas (pulling sites, material yards, etc.)			
Public access			
Sensitive environmental areas			

Feature	Flagging or Sign Colors	Sign Text	What to Do
Reclamation project areas			
Wetlands			
Invasive weed cleaning stations			
Noxious weed problem areas			
Proposed structure locations			
Structure offsets			
Substation and communication regeneration station locations			
Outside edge of permitted ROW or center line			
Cadastral survey monument			
Non-authorized access road			

A1.3.2.1 SIGNING

A1.3.2.2 FLAGGING

A1.3.2.3 FENCING

A1.4 Installation, Monitoring, and Maintenance of Fencing, Flagging, and Signage

Figure A1-1. Typical Sign – PROJECT ACCESS ROAD

Figure A1-2. Typical Sign – SENSITIVE RESOURCE AREAS KEEP OUT

Figure A1-3. Typical Sign – Restoration in Progress – No Vehicle Traffic Allowed

Figure A1-4. Typical Sign – NO REFUELING

Figure A1-5. Typical Sign – DO NOT ENTER

Figure A1-6. Typical Sign – WEED CLEANING STATION

APPENDIX A2 GEOTECHNICAL INVESTIGATION

The Plan of Development (POD) for the geotechnical investigation includes detailed information on the geotechnical exploration program, including procedures the Proponent implemented during geotechnical exploration activities, and outlines the stipulations and Proponent Committed Environmental Measures (PCEMs) adopted by the Proponent to minimize potential impacts on resources and to ensure regulatory compliance. As indicated in the POD, stipulations and measures provided herein are applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt these stipulations and measures, where appropriate.

Information to be developed.

APPENDIX A3

PROJECT CONSTRUCTION

This section contains an overview of construction activities associated with the transmission line facilities. As indicated in the Plan of Development (POD), stipulations and measures provided herein are applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt these stipulations and measures, where appropriate.

Map Sets 1 and 2 of the POD will identify the transmission line route and environmental resources located within or adjacent to the transmission line corridor based on preconstruction surveys conducted prior to issuance of the ROW grant. POD Map Set 3 will identify, in more detail, access roads that will be used to access the construction ROW.

A3.1 Construction Schedule

A3.1.1 Preconstruction Activities

A3.1.1.1 SURVEYING AND STAKING

A3.1.1.2 PRECONSTRUCTION RESOURCE SURVEYS

Table A3-1. Preconstruction Resource Surveys

Survey Type and Resources	Plan Reference	Date Completed	Additional Surveys to be completed
Vegetation and Wetlands			
Special-status plants			
Wetland delineation			
Noxious weeds			
Water Resources			
Watercourse crossing inventory			
Springs/wells			
Wildlife Resources			
Bat roosts ⁴			
Sonoran desert tortoise ⁵			
Raptors and nests			
Migratory bird nests			
Cultural Resources			

⁴ There would be surveys of bat roosts within 0.25 mile of the Project ROW in areas that potentially contain caves, karst features, or mines. Occupied bat roosts would be avoided

⁵ Preconstruction desert tortoise surveys would be conducted in suitable habitat. A worker education program including information on desert tortoises would be implemented. Any desert tortoises encountered during preconstruction surveys or during construction activities would be handled in accordance with the AGFD *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (AGFD 2007).

Survey Type and Resources	Plan Reference	Date Completed	Additional Surveys to be completed
Literature search and Class III inventory			
Paleontological Resources			
Paleontological resources			

A3.1.1.3 RIGHT-OF-WAY PREPARATION

A3.1.1.4 PRECONSTRUCTION MEETING

A3.1.1.5 NOTICE TO PROCEED (BLM-ADMINISTERED LANDS ONLY)

A3.1.1.6 SPECIAL-USE AUTHORIZATION⁶

A3.2 Equipment Staging and Construction Yards

A3.3 Access Roads

A3.3.1 Snow Removal

A3.3.2 Agency Access Road Requirements

A3.3.3 Ground Disturbance/Access Levels

Table A3-2. Ground Disturbance/Access Levels

Access Levels	Description	Access Type
Level 1	Details on use of existing roads	
Level 2	Details on improvements to existing roads	
Level 3	Construct new access, flat to rolling terrain (0–8 percent slopes)	
Level 4	Construct new access, rolling terrain (8–5 percent slopes)	
Level 5	Construct new access, steep terrain (greater than 15 percent slopes)	

Table A3-3. Summary of Ground Disturbance and Vegetation Clearing

	Temporary Disturbance (acres)	Permanent Disturbance (acres)	Total Disturbance (acres)	ROW Vegetation Clearing (acres)
Total for Selected Route				

⁶ Authorization would be required for other federal lands as well.

A3.4 Transmission Line Construction

A3.4.1 Geotechnical Investigations and Soil Boring

A3.4.2 Site Access and Preparation

A3.4.2.1 AGENCY SITE PREPARATION REQUIREMENTS

A3.4.3 Install Structure Foundations

A3.4.4 Erect Support Structures

A3.4.5 String Conductors, Shield Wire, and Fiber-Optic Ground Wire

A3.4.6 Sagging and Clipping

A3.4.7 Cleanup and Site Reclamation

A3.5 Substation Construction

A3.5.1 Access Roads

A3.5.2 Clearing and Grading

A3.5.3 Foundation Installation

A3.5.4 Oil Containment

A3.5.5 Structure and Equipment Erection/Installation

A3.5.6 Conduit and Control Cable Installation

A3.5.7 Landscaping and Construction Cleanup

Attachment A: Construction Schedule⁷

⁷ Gantt Chart–type schedule

APPENDIX A4 SPECIAL CONSTRUCTION TECHNIQUES

This section provides an overview of special construction techniques that may be used on the Project depending on location and construction contractor's determination. As indicated in the Plan of Development (POD), stipulations and measures provided herein are applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt these stipulations and measures, where appropriate.

A4.1 Blasting

A4.1.1 Bat Roost Avoidance

Construction activities that create loud noise (e.g., blasting) within 0.5 mile of the Volcano Mine complex would be limited to Spring (preferably April 1 to May 31) depending on the presence of bats, to protect maternity roosts and potential hibernacula.

To avoid impacting roosting bats at the Ina Road Bridge, blasting activities would be restricted to less than 130 decibels (dB) at the project site. If this dB limit cannot be met then blasting activities would be limited to after sunset when the majority of adult bats would be away from the roost foraging, and/or blasting would not occur in April or May while the bat colony is present.

A4.2 Helicopter Activities

A4.2.1 Typical Helicopter Construction Description

A4.3 Temporary Water Use During Construction

A4.4 Shipping and Handling Guidelines for Sulfur Hexafluoride

A4.5 Literature Cited

APPENDIX A5 CONSTRUCTION WORKFORCE

A5.1 Introduction

As indicated in the Plan of Development (POD), stipulations and measures provided herein are applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt these stipulations and measures, where appropriate.

The proposed Project will be constructed primarily by contract personnel with Southline (Proponent). The Proponent will be responsible for Project administration. The Project will consist of several phases of construction at varying locations along the Project ROW. The construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel who will perform the construction tasks. Construction activities will consist of surveys, road construction, foundation installation, structure steel haul, structure assembly, structure erection, wire installation, cleanup, and road rehabilitation.

The construction contractor(s) will hold daily field meetings with their environmental monitors and the compliance inspection contractor (CIC) to review applicable environmental regulations and stipulations as well as potential environmental issues. The estimated number of workers and types of equipment required to construct the proposed transmission line are shown in tables A5-1 and A5-2.

Table A5-1. Anticipated Construction Workforce and Equipment, New Build Section

Activity	Equipment		Crew
ROW Survey	1 helicopter 2 all-terrain vehicles (ATVs)	2 pickup trucks	6
Geotechnical Investigations	1 (2-ton) drill truck 1 ATV	1 pickup truck	4
Access Road Construction	2 bulldozers (D-6 or D-8) 2 motor graders	2 pickup trucks 2 water trucks	8
Foundation Installation	3 augers 2 wagon drills 2 flatbed trucks w/ booms 2 (15-ton) hydro cranes 1 batch plant 4 concrete trucks 1 water truck	1 bulldozer (D-6) 1 front-end loader 2 dump trucks 2 (2-ton) trucks 3 pickup trucks 1 carry-all	32
Laydown Yard / Receiving	2 (40-ton) cranes 4 forklifts	2 pickup trucks	8
Structure Hauling	6 flatbed trailers 2 boom trucks	1 pickup truck 2 forklifts	10
Structure Assembly	3 (40-ton) cranes 3 carry-alls	3 (2-ton) trucks 3 pickup trucks	24
Structure Erection	2 (100-ton) cranes 2 boom trucks	2 (2-ton) trucks 2 pickup trucks	20

Table A5-1. Anticipated Construction Workforce and Equipment, New Build Section (Continued)

Activity	Equipment	Crew	
Wire Stringing	1 light helicopter 3 drum pullers 3 double-wheeled tensioners 6 wire reel trailers 2 D-8 Cats with sag winches 2 splicing trucks	2 diesel tractors 2 haul trailers 2 (30-ton) cranes 6 boom trucks 4 (2-ton) trucks 6 pickup trucks	40
Road/ROW Restoration	1 bulldozer (D-6 or D-8) 1 front-end loader with bucket 1 tractor with seeding equipment 1 motor grader	1 pickup truck 1 dump truck 1 water truck	8
Clean-up	1 flatbed truck with bucket	2 pickup trucks	6

Table A5-2. Anticipated Construction Workforce and Equipment, Upgrade Section

Activity	Equipment	Crew	
ROW Survey	1 helicopter 2 all-terrain vehicles (ATVs)	2 pickup trucks	6
Geotechnical Investigations	1 (2-ton) drill truck 1 ATV	1 pickup truck	4
Access Road Construction	1 bulldozer (D-6 or D-8) 1 motor grader	1 pickup truck 1 water truck	4
Foundation Installation	3 augers 2 wagon drills 2 flatbed trucks w/ booms 2 (15-ton) hydro cranes 1 batch plant 4 concrete trucks 1 water truck	1 bulldozer (D-6) 1 front-end loader 2 dump trucks 2 (2-ton) trucks 3 pickup trucks 1 carry-all	32
Laydown Yard / Receiving	2 (40-ton) cranes 4 forklifts	2 pickup trucks	8
Structure Hauling	6 flatbed trailers 2 boom trucks	1 pickup truck 2 forklifts	10
Structure Erection	2 (100-ton) cranes 2 boom trucks	2 (2-ton) trucks 2 pickup trucks	20
Wire Stringing	1 light helicopter 3 drum pullers 3 double-wheeled tensioners 6 wire reel trailers 2 D-8 Cats with sag winches 2 splicing trucks	2 diesel tractors 2 haul trailers 2 (30-ton) cranes 6 boom trucks 4 (2-ton) trucks 6 pickup trucks	40
Road/ROW Restoration	1 bulldozer (D-6 or D-8) 1 front-end loader with bucket 1 tractor with seeding equipment 1 motor grader	1 pickup truck 1 dump truck 1 water truck	8
Clean-up	1 flatbed truck with bucket	2 pickup trucks	6

A5.2 Construction Equipment and Traffic

A5.3 Environmental and Safety Training

APPENDIX A6 ENVIRONMENTAL COMPLIANCE MANAGEMENT PLAN

A6.1 Introduction

As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate.

The BLM and Western will be responsible for enforcement of the terms and conditions of the BLM ROW grant and other landowner agreements across Federal, State, and private lands during the term of the grant for the Southline Transmission Line Project (Project). The BLM will approve a third-party compliance inspection contractor (CIC) to act on behalf of the BLM on BLM-managed lands. The CIC may also coordinate with Western on those portions of the Project where Western is involved in the Project and oversees relevant portions of the POD.

The CIC will inspect and monitor preconstruction and construction activities, enforce the terms and conditions of the ROW or easement grants, and enforce requirements related to BLM responsibilities under the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). In addition, the Project will adhere to any terms and conditions of State and local permits, as well as private landowner agreements.

Southline Transmission, LLC (Southline, or the Proponent), has developed Proponent Committed Environmental Measures (PCEMs) to be incorporated as part of the Project. The goal of these PCEMs is to reduce or avoid potential adverse impacts to sensitive environmental resources (see the Environmental Impact Statement (EIS), and table 8 of the POD) in compliance with the terms and conditions of the ROW grant, landowner agreements, and Federal, State, and local permits. The Project ROW grant, landowner agreements, and permitting requirements are specified in the POD chapter 1 – Introduction and Appendix B – Environmental Protection Framework Plans.

A6.2 Environmental Compliance Management Plan Elements and Authority

This Environmental Compliance Management Plan (ECMP) is the primary guidance document that states how the Project participants will uphold, document, and manage compliance with the ROW on BLM lands and with other ROW or easement authorizations on non-BLM lands for which the BLM and Western have responsibilities. It describes the following essential elements:

- Roles and responsibilities of the participants
- Comprehensive inspection and monitoring program
- Documentation and corrective procedures in the event of noncompliance
- Protocols and procedures for variance requests
- Reporting requirements
- Comprehensive Project-specific environmental compliance training program

Southline's commitment to environmental compliance will be demonstrated by activities prior to, during, and following construction. The ECMP is intended to be a controlled document and may be revised as needed throughout the construction process. As previously stated, Western will adopt the ECMP where appropriate. However, because the Project will cross private, State, and Federal lands under the jurisdiction of several agencies as well as BLM land, the ECMP will be written as a comprehensive document that, where appropriate, can be applicable for all non-BLM permitting entities and landowners, as well.

A6.3 Roles and Responsibilities

This section outlines the roles and responsibilities of Southline, persons, and agencies involved in the Project in executing the ECMP, as well as detailing their reporting relationships (figure A6.1).

If additional participants become involved in the Project, they will also be required to adhere to the protocols, terms, and conditions outlined in this ECMP. Their reporting relationships would be case-specific according to their jurisdiction, expertise, and/or nature of their input but would follow the structure presented in figure A6.1. Each environmental support title depicted under the construction contractor(s) environmental team in Figure A6.1 does not necessarily have to be a separate person/position, for example the environmental trainer may also serve as the reporting coordinator.

This section also briefly discusses the variance request procedure for changes on BLM lands. However, a more detailed discussion of this process is found in Section A6.4.2 – Variance Procedures (Unforeseen Circumstances).

A6.3.1 Project Proponent

As the Proponent and grant holder, Southline is responsible for administration of the BLM ROW. Western is responsible for administering the ROW where Western is involved in the Project. As such, the Proponent is ultimately accountable for adherence to the environmental permit requirements specified in its agreements on BLM-managed lands. The Proponent is also responsible for ensuring that any adverse environmental impacts do not exceed those described in the Final EIS and approved in the POD.

The Proponent and Western are accountable for adherence to the environmental permit requirements where Western is involved. To manage this responsibility, the Proponent will maintain regular and consistent communication with the CIC and the construction contractor(s) to track the success of the implementation of the PCEMs and other compliance efforts prior to, during, and post-construction and will communicate its findings to the BLM and Western. In addition, the Proponent, as the grant holder, is responsible for ensuring that all noncompliance incidents are corrected.

The following describes the roles and responsibilities of Proponent personnel.

A6.3.1.1 PROJECT PROPONENT

A6.3.1.2 PROPONENT'S PROJECT MANAGER

Reporting

Variations

A6.3.1.3 PROPONENT'S ENVIRONMENTAL COMPLIANCE MANAGER

Reporting

Variations**A6.3.1.4 PROPONENT'S CONSTRUCTION INSPECTOR****Reporting*****A6.3.2 Agency Responsibilities*****A6.3.2.1 BLM****Reporting****Variations****A6.3.2.2 WESTERN****Reporting****Variations****A6.3.2.3 COMPLIANCE INSPECTION CONTRACTOR PROJECT MANAGER****Reporting****Variations****A6.3.2.4 ASSISTANT COMPLIANCE INSPECTION CONTRACTOR****A6.3.2.5 COMPLIANCE INSPECTION CONTRACTOR FIELD MONITORS****Reporting*****A6.3.3 Construction Contractor(s)***

The construction contractor(s) will be contractually bound to comply with all laws, regulations, and other requirements, including the PCEMs and other specific stipulations and methods set forth in the ROW grant, POD, EIS, Record of Decision, and permits (Federal, State, and local) throughout all phases of the Project. Construction personnel are required to attend environmental training prior to work on the Project. The construction contractor(s) will coordinate with the BLM/Western, the Proponent, the CIC, and construction contractor's environmental inspectors to build the Project safely and in compliance with all Project terms and conditions. If a noncompliant incident occurs, the construction contractor(s) will remedy the situation as soon as possible.

A6.3.3.1 PROJECT CONSTRUCTION CONTRACTOR**A6.3.3.2 CONSTRUCTION CONTRACTOR'S PROJECT MANAGER****Reporting****Variations**

A6.3.3.3 CONSTRUCTION CONTRACTOR'S SUPERINTENDENT(S)**Reporting****Variances****A6.3.3.4 CONTRACTOR'S CIVIL SURVEY SUPERVISOR****Reports and Variances****A6.3.3.5 CONSTRUCTION CONTRACTOR'S LEAD ENVIRONMENTAL INSPECTOR****Reporting****Variances****A6.3.3.6 CONSTRUCTION CONTRACTOR'S ENVIRONMENTAL INSPECTOR****Reporting****A6.3.3.7 CONSTRUCTION CONTRACTOR'S ENVIRONMENTAL REPORTING
COORDINATOR****Reporting****Variances****A6.3.3.8 CONSTRUCTION CONTRACTOR'S ENVIRONMENTAL TRAINING
COORDINATOR****A6.3.3.9 CONSTRUCTION CONTRACTOR'S ENVIRONMENTAL REPORTING
COORDINATOR****Reporting****Variances****A6.3.3.10 CONSTRUCTION CONTRACTOR'S ENVIRONMENTAL CREW FOREMAN****A6.4 Procedures*****A6.4.1 Compliance Levels*****A6.4.1.1 ACCEPTABLE****A6.4.1.2 PROBLEM AREA****A6.4.1.3 NONCOMPLIANCE****A6.4.1.4 RESPONSE TO NONCOMPLIANT ACTIVITIES**

Temporary Suspension

Work Stoppage Order

Grant Suspension or Termination

A6.4.2 Variance Procedures (Unforeseen Circumstances)

A6.4.2.1 LEVEL 1 VARIANCE – VARIANCES ACCOMPLISHED THROUGH FIELD RESOLUTION

Level 1 Variance Approval or Denial

Level 1 Variance Distribution

A6.4.2.2 LEVEL 2 VARIANCE – VARIANCES BEYOND FIELD RESOLUTION, NOT REQUIRING AN AMENDMENT TO THE RIGHT-OF-WAY GRANT OR SPECIAL-USE AUTHORIZATION

Level 2 Variance Approval or Denial

Level 2 Variance Distribution

A6.4.2.3 LEVEL 3 VARIANCE – VARIANCES REQUIRING AN AMENDMENT TO THE RIGHT-OF-WAY GRANT

A6.5 Communications

Effective communication between all parties involved in the Project is vital to maintain environmental compliance. Onsite personnel will remain in contact through the use of two-way radios and cellular telephones, allowing for real-time coordination between parties. Ongoing, effective communication will enable timely resolution of questions, monitoring requirements, and compliance issues prior and during to construction activities. However, oral communication will not substitute for written approvals when written approvals are necessary.

A6.5.1 Primary Inter-Party Communication Channels

A6.5.2 Daily Communications

A6.6 Training

A6.6.1 Preconstruction

A6.6.2 During Construction

A6.7 Reporting and Documentation

Several forms and reports will be completed on a daily or weekly basis during construction. The reports and forms will include:

- Daily Inspection Reports
- Problem Area Report Forms
- Noncompliance Report Forms
- Variance Request Forms
- Weekly Compliance Reports
- Weekly Training Log

A6.8 Project Closeout

A6.8.1 Reclamation and Post Construction

A6.8.2 End of Construction Project Report

A6.8.3 Construction Closeout Meeting

Appendix B

ENVIRONMENTAL PROTECTION / FRAMEWORK PLANS

Full text to be included with Final POD (post Final EIS) — not included herein.

APPENDIX B1

ACCESS ROAD PLAN

Access road planning would be finalized if the proposed Southline Transmission Line Project (the Project) is approved. With the approved route known, the exact location of all access roads would be refined through detailed engineering. Once road locations are known, cultural resource and biological surveys would be conducted and road locations adjusted to avoid sensitive resources discovered during the surveys. No field disturbance would occur before the completion of these surveys and the completion of any necessary mitigation or treatment measures.

All roads would be constructed in accordance with Western Area Power Administration (Western) and Bureau of Land Management (BLM) standards for access roads and specified in the Access Road Plan, to be included as a framework plan in the Plan of Development (POD). As indicated in the POD, framework plans are applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM ROW grant. This framework plan pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

APPENDIX B2 TRAFFIC AND TRANSPORTATION MANAGEMENT PLAN

B2.1 Introduction

This Traffic and Transportation Management Plan addresses regulatory compliance, traffic management practices, levels of right-of-way (ROW) access, and Proponent Committed Environmental Measures (PCEMs) to help reduce impacts related to transportation and the construction of temporary and long-term access within the vicinity of the Project. As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM ROW grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B2.2 Purpose

The purpose of this plan is to provide the BLM, Western, and other public agencies; the compliance inspection contractor (CIC); and the construction contractor(s) with a description of the type of access associated with the construction, operation, and maintenance of this Project and make evident the potential impacts that could be created by construction and operation of the Project. The goal of this plan is to ensure impacts from construction of the transmission line and any associated access are kept to a minimum through the use of management practices and PCEMs described throughout this appendix. These practices and measures are intended to mitigate the effects of transportation on environmental resources, roads, traffic, travel, and road safety.

B2.3 Regulatory

A number of agencies have jurisdiction over the transportation-related components of the Project. These include the BLM; New Mexico Department of Transportation; Arizona Department of Transportation; Federal Highway Administration; and local law enforcement and road departments. Encroachment permit applications will need to be filed with appropriate road agencies for those areas where the transmission line crosses public roads (e.g., Interstate 10) prior to construction.

Other permits and approvals not directly related to transportation could affect the construction, use, and/or maintenance of roads in certain areas. Persons responsible for Project transportation activities must be familiar with all relevant sections of Project's POD.

B2.4 Traffic Management Practices

B2.5 Types of Right-of-Way Access

B.2.5.1 Access Type A

Access from adequate private roads. This type of access would be used when there is no existing road adjacent or parallel to the alignment, but where there is a patchwork of existing roads in the area that would be crossed by the proposed Project ROW, and could be used to access the ROW and get close to the structure locations. Grading between the existing roads and each structure location would only be

conducted where necessary and would depend on site conditions. Grading and other improvements may not be necessary, depending on site conditions. Typically, overall disturbance would be limited to a width of 16 feet or less. The purpose of using existing access from private roads would be to minimize overall disturbance.

B.2.5.2 Access Type B

Parallel to maintained public roads. This type of access would be used when the alignment roughly parallels a nearby public road that is either paved or has gravel surfacing. Short spur roads would be graded from the existing roads to each structure location. Except in rare cases, the existing roads would not be upgraded, but any damage to public roads from construction activities would be repaired. The purpose of access roads parallel to a nearby public road would be to consolidate and minimize overall disturbance.

B.2.5.3 Access Type C

Parallel to existing utility roads. This type of access would be used when the alignment roughly parallels an existing utility that already has an existing access road. Spur roads would be graded from the existing utility roads to each structure location. Generally, the existing utility roads would be improved. Grading between the existing utility roads and each structure location would only be conducted where necessary and would depend on site conditions. Grading and other improvements may not be necessary, depending on site conditions. Typically, overall disturbance would be limited to a width of 16 feet or less. The purpose of access roads parallel to a utility road would be to consolidate and minimize overall disturbance.

B.2.5.4 Access Type D

New down-ROW primary access. This type of access would only be used when access types A–C are not feasible. It would consist of a 16-foot-wide road (12-foot travel surface plus 2 feet on either side for berms/ditches). As much as possible, new access would be entirely within the ROW. Typically, new down-ROW access would be used if any parallel roads are more than 700 feet from the alignment. This access type would also normally be used for alignments that parallel interstate highways and railroads because the owners of those facilities generally place restrictions on the use of their ROWs; these restrictions do not allow for the addition of spur roads or their related ROW crossings and gates in ROW fences.

B.2.5.5 Access Type E

Spur roads—improved and unimproved access. Spur roads would be used to connect type A, B, and C access roads to the ROW and for temporary access to stringing and splicing sites. Spur roads would be a combination of improved (bladed) and unimproved (two-track) roads, with an average of one new spur road per mile for temporary access and approximately five spur roads per mile in areas where type A, B, and C access roads are used for permanent access to structure locations. Where necessary, these spur roads would be improved, and the roads would be bladed and 10 to 12 feet wide. Otherwise, spur roads might not be improved in areas with flat terrain and within grassland, desertscrub, sand scrub, and sand dune vegetation communities. Vegetation on unimproved roads may be crushed by driving, but cropping or blading vegetation would not be conducted. This would avoid removal of root mass and organics in the soil (no surface soil would be removed). The purpose of unimproved spur roads would be to preserve the maximum amount of native vegetation and minimize overall disturbance.

B2.6 Proponent Committed Environmental Measures

B2.6.1 Transportation PCEMs:

B2.6.2 Other PCEMs:

B2.7 Other Specific Stipulations and Methods

APPENDIX B3 STORMWATER POLLUTION PREVENTION PLAN

B3.1 Introduction

In compliance with criteria in the U.S. Environmental Protection Agency's (EPA's) Clean Water Act, all construction site operators engaged in clearing, grading, and excavating activities that disturb 1 acre or more, must obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges (40 Code of Federal Regulations (CFR) 122 and 123).

NPDES Construction General Permits are issued by the EPA in New Mexico, while Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permits are issued by the Arizona Department of Environmental Quality (ADEQ). The general permits are issued only after submittal of a Notice of Intent (NOI) for construction activities, and preparation of a Stormwater Pollution Prevention Plan (SWPPP) that describes how erosion and sediment transport will be minimized to adjacent water bodies. Measures to ensure construction activities comply with State and EPA requirements for stormwater management to be incorporated into the SWPPP are outlined in this plan framework.

The construction Plan of Development (POD) will identify the party responsible for developing a Project-specific SWPPP and for obtaining coverage under the appropriate Construction General Permit by filing a NOI and appropriate fee in accordance with the NOI instructions.

B3.2 Purpose

The purpose of a SWPPP for the proposed Project is to identify and implement stormwater pollution prevention measures to reduce the quantity of impacted runoff and to deal with runoff in a manner minimizing environmental impacts during construction, operation, and maintenance of the Project.

A SWPPP is needed to minimize the volume of contaminated runoff, including sediment runoff, and to implement Proponent Committed Environmental Measures (PCEMs) in a manner minimizing environmental impacts. The SWPPP will also spell out design features for environmental protection specific to storing and handling fuel and oil, cement mix, and other materials that may contaminate stormwater. Temporary stabilization methods (silt-fences, straw bales, etc.) are not guaranteed or fail-safe measures without regular maintenance and field inspection throughout construction activities. In addition to conventional methods of erosion control there are numerous new and improved products and the construction contractor(s) is encouraged to review these progressive or improved materials in the development and implementation of a SWPPP. The proper implementation of PCEMs associated with a SWPPP is imperative during all construction activities.

Development and implementation of the SWPPP, and maintenance of the PCEMs and other stipulations presented in the SWPPP will provide the construction contractor(s) with the mechanisms for reducing soil erosion and minimizing pollutants in stormwater during construction. These activities will be conducted in an environmentally sensitive and responsible manner so no discharge of sediment or contaminants may be conveyed directly or indirectly to wetlands, waters of the U.S., or to waters of New Mexico or Arizona.

B3.3 Notification Requirements and Implementation

B3.4 Project Modifications

B3.5 Proponent Committed Environmental Measures

B3.5.1 Other Specific Stipulations and Methods

B3.6 Mitigation Maintenance, Inspection, Repair, and Monitoring

B3.7 Training

B3.8 Post-Construction Stormwater Management

APPENDIX B4

SPILL POLLUTION PREVENTION, CONTROL, AND COUNTERMEASURES PLAN

B4.1 Purpose

Southline Transmission, LLC (Southline), has developed this Spill Prevention, Control, and Countermeasures (SPCC) Plan for the Southline Transmission Line Project (Project). This SPCC Plan is not a complete plan, but rather serves as the framework document for the development of a complete SPCC Plan and will lay the foundation for both the construction and the operation and maintenance phases of the Project. The party responsible for completing the final SPCC Plan will be detailed in the construction Plan of Development (POD).

An SPCC Plan addresses prevention and control of oil, hydraulic fluid, and petroleum fuel spills, primarily spills that could enter navigable waters of the U.S. This SPCC Plan addresses four basic issues:

- design, operation, and maintenance procedures to prevent and control oil spills
- measures designed for the prevention of operational error and equipment failure involving oil, which are the causes of most spills
- control and recovery of oil spills by containment structures to prevent a spill from entering navigable waters
- oil discharge response procedures for project personnel: this encompasses countermeasures (a contingency plan) to contain, clean up, and mitigate the effects of an oil spill at or from the project

This SPCC Plan is required in defined circumstances by the U.S. Environmental Protection Agency (EPA) regulations contained in Title 40, Code of Federal Regulations, Part 112 (40 CFR 112), titled “Oil Pollution Prevention.” This SPCC Plan provides preventive procedural actions associated with spills or releases of oil, including fuel, lubricant, or heat transfer media, during construction refueling activities and during operation and maintenance. This SPCC Plan also presents applicable Proponent Committed Environmental Measures (PCEMs) that were identified in the Environmental Impact Statement (EIS) and are included in table 8 of the POD as methods to minimize the environmental impact.

B4.2 Responsibility of Implementation

The SPCC Rule, administered by the EPA, is a rule that includes requirements for oil spill prevention, preparedness, and response to prevent discharges to navigable waters and adjoining shorelines. Specifically, the rule requires facilities to prepare, amend, and implement SPCC Plans. A facility is subject to SPCC regulations if the total aboveground storage capacity of oil and oil products exceeds 1,320 gallons; or if the underground storage capacity exceeds 42,000 gallons; and if, because of its location, the facility could reasonably be expected to discharge oil into navigable waters of the United States. Containers with a capacity of less than 55 gallons of oil or oil products are exempted from the requirements under the Oil Pollution Prevention regulations.

Southline, its construction contractor(s), and their inspectors shall be responsible for the implementation of the procedural actions, PCEMs, and other specific stipulations and methods of any and all applicable SPCC Plans. The construction contractor(s) will implement the SPCC Plan to ensure compliance with applicable Federal, State, and local regulations applicable to the location of refueling, storage, waste

removal, and other activities involving fuels and petroleum products in coordination with Southline. The final plan(s) shall be reviewed by Southline as appropriate.

A key component of SPCC implementation is training. All oil-handling personnel, including construction contractor employees and subcontractors involved with transporting or handling fueling equipment or maintaining construction equipment, will be required to complete spill training before they commence work on the project. Spill training will also be required for contractor and subcontractor supervisory personnel before beginning work on the project.

Spill training programs will be conducted by the construction contractor and the site safety coordinator and will accomplish the following:

- Provide information concerning pollution control laws, regulations, and rules
- Inform personnel of the proper operation and maintenance of fueling equipment
- Inform personnel of spill prevention and response requirements, including the operation and maintenance of equipment to prevent discharges
- Describe the measures and provisions of the SPCC Plan and discharge procedure protocols
- Assign roles and responsibilities for implementing the SPCC Plan

Measures, responsibilities, and provisions of this SPCC Plan and spill training will be provided through ongoing safety briefings, which will discuss safety and spill prevention and response, including personal responsibility to initiate appropriate procedures.

B4.3 Spill Prevention

B4.4 Petroleum Spills and Emergency Response

B4.4.1 First Response / Assessment and Initiation of Action

B4.4.2 Spill Control and Containment

B4.4.3 Cleanup

B4.4.5 Disposal

B4.4.6 Documentation and Reporting

B4.4.7 Agency Notification/External Reporting

B4.4.7.1 NEW MEXICO REPORTING REQUIREMENTS

B4.4.7.2 ARIZONA REPORTING REQUIREMENTS

B4.4.8 Assessment

B4.5 Proponent Committed Environmental Measures

B4.6 Emergency Contacts

APPENDIX B5 HISTORIC PROPERTIES TREATMENT PLAN

Appendix B5 is a confidential appendix that will contain the Historic Properties Treatment Plan (HPTP) that is being developed for the Project. As identified in the Programmatic Agreement, the HPTP will provide information on the following:

- A brief description of the proposed action
- A list of the properties where data recovery is to be carried out
- A list of properties that will require archaeological monitoring during construction
- An archaeological construction monitoring plan
- Research questions to be addressed
- Methods to be used during fieldwork for data recovery
- A cultural resource unanticipated discovery plan
- Methods to be used during analysis
- Reporting and curation of artifacts
- Schedule for the submission of progress reports
- Recommendations for treatment of cultural resources during operation and maintenance of the Project
- Qualifications of consultants employed to undertake the work
- Training protocols for contractors

Content to be developed.

APPENDIX B6 BLASTING PLAN

B6.1 Introduction

A blasting plan is needed if blasting will be required on the Southline Transmission Line Project (Project) to ensure human health and safety during construction blasting operations. The blasting plan also mitigates the effects of noise and vibration, impacts to flora and fauna, and ensures compliance with myriad rules and regulations regarding the transportation, storage, handling, and use of explosives. This Blasting Plan Framework is not a complete Blasting Plan, but rather serves as the baseline document for the development of a complete Blasting Plan to be developed by the construction and blasting contractor(s).

This Blasting Plan is a framework that outlines methods to mitigate risks and potential impacts associated with blasting procedures that may be required for construction of the Project. Also included in this section is a preliminary outline for the Blasting Plan and Proponent Committed Environmental Measures (PCEMs), as identified in the Environmental Impact Statement (EIS) and table 8 of the Plan of Development (POD). These measures are developed to reduce or avoid potential environmental impacts resulting from Project-related blasting activities. The Blasting Plan is to be prepared by the construction contractor(s) and submitted to Southline Transmission, LLC (Southline, or the Proponent), the Bureau of Land Management (BLM), and Western Area Power Administration (Western), if blasting is required. Blasting on State lands or other relevant jurisdictions may require additional approval. As indicated in the POD, this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B6.2 Purpose

Once completed, the Blasting Plan will provide construction crews, the compliance inspection contractor (CIC), and environmental monitors with Project-specific information concerning blasting procedures, including the safe use and storage of explosives. The objective of the Blasting Plan is to prevent adverse impacts on human health and safety, property, and the environment that could potentially result from the use of explosives during Project construction.

B6.3 Regulatory Compliance and Procedures

The construction and blasting contractor(s) will be responsible for preparing and implementing the Blasting Plan and must comply with all applicable Federal, State, and local laws and regulations that pertain to explosives. No blasting operations will be undertaken until approval and appropriate permits have been obtained from the applicable agencies. Failure to comply with such laws could result in severe consequences.

The construction and blasting contractor(s) will comply with rules and regulations set forth by the U.S. Department of Transportation; Federal Bureau of Alcohol, Tobacco, Firearms and Explosives; Occupational Safety and Health Administration (OSHA);, and all Federal, State, county, and local rules and regulations relating to the transportation, storage, handling, and use of explosives. The construction and blasting contractor(s) will use experienced and qualified blasting personnel that will use current and professionally appropriate blasting methods and implement appropriate safety precautions. Blasting procedures will be closely monitored by the CIC. Any damages that result solely from the blasting

activity will be repaired by the construction and blasting contractor(s), or the owner will otherwise be fairly compensated.

B6.4 Blasting Plan Outline

The Blasting Plan prepared by the construction and blasting contractor(s) shall contain the information necessary to, and shall be presented in a format to meet or exceed the industry standard and meet regulatory approval. Although the Blasting Plan will provide some general specifications and procedures for blasting on the Project, site-specific plans or amendments may be necessary in some circumstances and must first be approved by Southline and any applicable governmental authority that is required. The following is a suggested outline for the Blasting Plan:

- Purpose and Scope of Blasting
- Personnel and Chain of Command, Including:
 - Blast officer and other personnel who will be present
 - Site Safety Officer
- Site, Location, and Date(s) of planned blasting
 - Description of blasting area
 - Description of bedrock and geological problems
 - Description of adjacent utility facilities
- Explosives and blast design:
 - Type, quantity, and detonator device
 - Details of subsurface strata
 - Drilling pattern and spacing
 - Other, as required
- Means of transporting, storing, securing explosives:
- Procedures:
 - Handling explosive charges
 - Setting explosive charges
 - Wiring explosive charges
 - Firing explosive charges
 - Packaging and transportation of explosive materials
- Safety Considerations:
 - General
 - Procedures
 - Traffic control
 - Fire prevention
 - Emergency and first aid
 - Required personal protective equipment (PPE)
 - Minimum standoff distances
 - Clearing and controlling access to blast danger
 - Warning signs and signals

- Minimum acceptable weather conditions
- Stray current, static electricity, and lightning
- Other, as required
- Mitigation measures for:
 - Protection of structures and utilities
 - Flying rock and debris
 - Ground vibration
 - Other, as required
- Procedures for handling misfires or other unusual occurrences
- Environmental Considerations
- Notifications for:
 - Nearby residences and businesses
 - Posted warning signs at Project entry points
 - Coordination with pipeline operators in the vicinity
 - Police, fire, and rescue
- Emergency action plan:
 - Phone numbers for ambulance, fire department, police
 - Location and phone number of nearest medical services facility
- Health and Safety Plan
- Attach a copy of Safety Data Sheet (SDS) for each explosive or other hazardous material expected to be used.
- Attach blast records, safety forms, approvals, and other relevant documents

B6.5 Safety Procedures

B6.5.1 Transportation

B6.5.2 Storage

B6.5.3 Handling

B6.5.4 Use

B6.6 Proponent Committed Environmental Measures

B6.7 Other Specific Stipulations and Methods

APPENDIX B7

PLANT AND WILDLIFE SPECIES CONSERVATION MEASURES PLAN

B7.1 Introduction

The purpose of the Plant and Wildlife Species Conservation Measures Plan for the Southline Transmission Line Project (Project) is to assist the Bureau of Land Management (BLM), Western Area Power Administration (Western), Southline Transmission, LLC (Southline, or the Proponent), the construction contractor(s), compliance inspection contractor (CIC), and other monitors in meeting their obligations to protect biological resources during the planning, design, and implementation of the proposed Project. This plan includes information on (1) regulatory requirements and agency considerations pertaining to biological resources, and (2) specific plant and wildlife species conservation Proponent Committed Environmental Measures (PCEMs) developed to reduce Project-related impacts on biological resources.

This plan provides information on anticipated impacts on plant and wildlife resources associated with the Project and identifies the PCEMs (as presented in the Environmental Impact Statement (EIS) for the Project and also in table 8 in the Plan of Development (POD)), along with stipulations, protocols, and/or techniques required to reduce these impacts. This plan does not identify PCEMs for aquatic biological resources. Protection for water resources, including PCEMs identified in Appendix B13 – Stream, Wetland, Well, and Spring Protection Plan, have met agency requirements to protect aquatic species. The plan is not intended to provide comprehensive, location-specific restrictions within the Project area.

As indicated in the POD, this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B7.2 Regulatory Framework

B7.2.1 Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) of 1973, the U.S. Fish and Wildlife Service (FWS) has authority over actions that may affect the continued existence of a species federally listed as Threatened or Endangered. Take of federally listed species is prohibited without specific exceptions or permits issued under Sections 7 or 10 of the ESA. Under the ESA, the definition of “take” includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. FWS has further defined harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Federal agencies must consult with the FWS under Section 7 of the ESA on actions they authorize, fund, or carry out to ensure these actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

BLM and Western, as the lead Federal agencies in preparation of an EIS for the Project, consulted with FWS on the potential effects of the Project on federally listed species. The FWS concurred on December 30, 2014, that the Project may affect, and is likely to adversely affect, the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), the Mexican long-nosed bat (*Leptonycteris nivalis*), Pima

pineapple cactus (*Coryphantha scheeri* var. *robustispina*), and southwestern willow flycatcher (*Empidonax traillii extimus*). The Project may affect, but is not likely to adversely affect, the Gila chub (*Gila intermedia*) and its critical habitat; Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*); northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat; and the yellow-billed cuckoo (*Coccyzus americanus*) and its proposed critical habitat. Pursuant to the Federal ESA of 1973, the FWS has authority over actions that may affect the continued existence of a species federally listed as Threatened or Endangered. Take of federally listed species is prohibited without specific exceptions or permits issued under Sections 7 or 10 of the ESA. Under the ESA, the definition of “take” includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. FWS has further defined harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Federal agencies must consult with the FWS under Section 7 of the ESA on actions they authorize, fund, or carry out to ensure these actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

B7.2.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668) applies primarily to taking, hunting, and trading activities that involve bald or golden eagles. The act prohibits the taking of any individuals of these two species, as well as any part, nest, or egg. The term “take” as used in the act includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb (16 U.S.C. 668).

B7.2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory bird, part, nest, or egg of such bird listed in wildlife protection treaties among the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Union of Soviet Socialist Republics (USSR). This act also contains a clause that prohibits baiting or poisoning of these bird species. A list of species covered by the MBTA can be found in 50 Code of Federal Regulations (CFR) 10.13. The MBTA applies to many bird species, including raptors, and protects them from prohibited activities during construction, operation, and maintenance of the Project.

B7.2.4 Bureau of Land Management – Land Use Plans

The BLM Resource Management Plans provide management guidance and desired population and habitat conditions for wildlife on BLM-administered lands. BLM Field Offices monitor habitat conditions and manage crucial wildlife habitat jointly with the Arizona Game and Fish Department (AGFD) and New Mexico Department of Game and Fish (NMDGF). The BLM manages habitat for wildlife species by assessing the ability of a land area to supply the forage, cover, water, and space requirements of wildlife. Trend studies determine the directional change of a habitat from or toward desired conditions. These habitat and trend studies (BLM Manuals 6630.2, 6630.3, and 6630.4) allow the BLM to adjust management prescriptions through grazing or other public uses to improve habitat.

B7.2.5 Bureau of Land Management – Special Status Species Management Policy

BLM Manual 6840, “Special Status Species Management Policy,” authorizes each BLM State Director to designate and protect sensitive species on lands managed by the BLM. In New Mexico, the BLM list of special status species is adopted from the Biota Information System of New Mexico (BISON-M) list of

sensitive wildlife species, and the New Mexico Rare Plant Technical Council's list of New Mexico rare plants. In Arizona, the BLM State Director has issued a list of species designated as BLM Sensitive. As stated in Instruction Memorandum No. AZ-2006-002 (BLM 2005), "BLM Sensitive species are not covered by any other 'safety net' of status designation. Therefore, the Arizona BLM Sensitive Species List does not include species that are already Federally-listed or State-listed."

The BLM affords its designated sensitive species the same level of protection as ESA Candidate Species. BLM Sensitive Species are those for which population viability is a concern, which is warranted by a downward trend in population numbers, density, or habitat conditions that would reduce a species' existing distribution. The BLM is responsible for ensuring that its actions do not further contribute to the need for Sensitive Species to become listed as threatened or endangered.

CORONADO NATIONAL FOREST – MANAGEMENT INDICATOR SPECIES POLICY

Forest Service Manual (FSM) 2670 directs each Regional Forester to designate sensitive species on public lands administered by the U.S. Forest Service (Forest Service). According to the manual, sensitive species are defined "as plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by a significant current or predicted downward trend in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce an existing distribution of the species."

The FSM 2670 also establishes the following management direction and objectives for Forest Service sensitive species:

- Maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on Forest Service-administered lands.
- Review programs and activities as part of the National Environmental Policy Act of 1969 process, through a biological evaluation, to determine their potential effect on sensitive species.
- Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.

The PCEMs described in this Plant and Wildlife Species Conservation Measures Plan will ensure that the Project is constructed, operated, and maintained in compliance with FSM 2670.

FSM 2620.5 defines Management Indicator Species (MIS) as "plant and animal species, communities or special habitats selected for emphasis in planning, and which are monitored during forest plan implementation in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent" (Forest Service 1991:6). These regulations require that certain vertebrate and/or invertebrate species present in the area be identified as MIS within the planning area (i.e., Coronado National Forest lands) and that these species be monitored, as "their population changes are believed to indicate the effects of management activities" (36 CFR 219.19(a)(1)). Standard and Guideline No. 1 for Wildlife and Fish within the Coronado National Forest Plan (Forest Service 1986:31-1) directs the Coronado National Forest to "maintain or improve occupied habitat of . . . listed threatened and endangered species, and MIS through mitigation of Forest activities." The Coronado National Forest also maintains a list of sensitive species that are known to occupy Coronado National Forest lands.

B7.2.6 Bureau of Land Management – Executive Order 13112

Executive Order 13112 (Invasive Species) requires Federal agencies prevent the introduction and spread of invasive species and “not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.”

B7.2.7 Bureau of Land Management – Executive Order 11990

Executive Order 11990 (Wetlands) requires Federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities.

B7.2.8 Sections 401, 402, and 404 of the Clean Water Act

Sections 401, 402, and 404 of the Clean Water Act regulate drainage and discharge of dredged or fill materials into waters of the U.S., including wetlands.

B7.2.9 Federal Land Policy Management Act of 1976

In accordance with the Federal Land Policy Management Act, BLM must make land use decisions based on principles of multiple use and sustained yield. As such, a grant of ROW must be limited to its necessary use and must contain terms and conditions that reflect BLM’s management responsibilities under the Federal Land Policy Management Act, including minimizing impacts on fish and wildlife habitat.

B7.2.10 Wild Free-Roaming Horses and Burros Act of 1971

Wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West; they contribute to the diversity of life forms within the Nation and enrich the lives of the American people. It is the policy of the Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found as an integral part of the natural system of the public lands.

B7.2.11 New Mexico State Requirement

B7.2.12 Arizona State Requirements

B7.2.13 Pima County Requirements

B7.3 Plant and Wildlife Concerns and Issues

B7.3.1 Plan Priorities and Goals

B7.3.1.1 DISTURBANCE AND DISPLACEMENT

Mitigation Goal

B7.3.1.2 HABITAT LOSS AND FRAGMENTATION

Mitigation Goal

B7.3.1.3 PLANT AND WILDLIFE MORTALITY

Mitigation Goal

**B7.4 Biological Resource Proponent Committed
Environmental Measures**

B7.4.1 Resources of Concern

B7.4.1.1 MIGRATORY BIRDS

**Background
Concerns**

B7.4.1.2 RAPTORS

**Background
Concerns**

B7.4.1.3 BIG-GAME HABITAT

Background

Concerns

B7.4.1.4 SPECIAL STATUS WILDLIFE SPECIES

Background

Concerns

B7.4.1.5 SPECIAL STATUS PLANT SPECIES

Background

Concerns

***B7.4.2 Plant and Wildlife Proponent Committed Environmental
Measures***

B7.4.2.1 VEGETATION PCEMS

B7.4.2.2 WILDLIFE PCEMS

B7.4.3 Other Specific Stipulations and Methods

Design and Engineering

Construction, Operation, and Maintenance

B7.4.4 Compensation Plan

APPENDIX B8 EROSION, DUST CONTROL, AND AIR QUALITY PLAN

B8.1 Introduction

This Erosion, Dust Control, and Air Quality Plan addresses regulatory compliance, environmental concerns, and Proponent Committed Environmental Measures (PCEMs) to ensure impacts associated with construction, operation, and maintenance activities on the Southline Transmission Line Project (Project) are minimized as they relate to soil conservation and air quality. As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B8.2 Purpose

This plan provides a detailed summary of the PCEMs identified in the Environmental Impact Statement (EIS) and other specific stipulations and measures to be used by Southline Transmission, LLC (Southline), and the construction contractor(s) to ensure regulatory compliance and protection of the soils and air quality that will be affected by the Project. This plan is a framework of the actions to be implemented during the construction, operation, and maintenance phases of the Project that were developed to address (1) soil erosion from wind and (2) air quality from fugitive dust and emissions from Project-related activities.

This plan first describes the concerns for impacts related to soil erosion and air quality and then presents the PCEMs and other specific measures that will be used to minimize the impacts. Determination of the appropriate control measures to use in a particular area will depend on a variety of factors, including weather conditions, selected construction techniques, site characteristics, extent of area to be disturbed, and other factors. Stormwater erosion is not covered in this plan but is discussed at length in Appendix B3 – Stormwater Pollution Prevention Plan. Proper methods for soil reclamation and revegetation are not covered in this framework plan, but are discussed at length in Appendix B15 – Reclamation, Revegetation, and Monitoring Plan.

B8.3 Regulatory Compliance

Construction, operation, and maintenance activities for the Project are subject to various regulations designed to protect environmental resources and the public from wind erosion, dust, and other possible effects on air quality. The following permits and documents contain requirements for preventing accelerated erosion and minimizing dust and emissions. Some permits appear unrelated to this topic; however, dust suppression and erosion control are conditions of those permits. Southline and the construction contractor(s) can refer to these documents, along with this plan, when assessing which PCEMs and other specific measures are appropriate for a specific area.

Since 1963, the Clean Air Act and subsequent amendments in 1970, 1977, and 1990 have provided the authority and framework for regulation of air emission sources. At a minimum, Southline and the construction contractor(s) will need to adhere to or obtain the following permits as required.

B8.3.1 State – New Mexico

B8.3.2 State – Arizona

B8.3.3 Local

B8.4 Environmental Concerns

B8.4.1 Soil Conservation and Erosion

B8.4.2 Air Quality and Dust Control

B8.5 Proponent Committed Environmental Measures

B8.6 Other Specific Stipulations and Methods

B8.7 Monitoring

APPENDIX B9 HAZARDOUS MATERIALS MANAGEMENT PLAN

B9.1 Introduction

The Hazardous Materials Management Plan (HMMP) for the Southline Transmission Line Project (Project) is intended to reduce the risks associated with the use, storage, handling, transportation, and disposal of hazardous materials (which in this document may include hazardous substances and hazardous wastes regardless of the statutory definitions of those terms). The term “hazardous materials,” as presented in this plan, will refer to hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, and materials designated as “hazardous materials” for transportation as defined in 49 Code of Federal Regulations 171.8.

This plan will identify Project-specific Proponent Committed Environmental Measures (PCEMs), as in the Environmental Impact Statement (EIS) and table 8 in the Plan of Development (POD), and other specific stipulations and methods to address spill prevention, response, and cleanup procedures for the Project. This document provides a template for the development of a detailed HMMP to be completed once the construction POD is finalized by Southline Transmission Line (Southline).

As indicated in the POD, the HMMP is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate. The HMMP will clearly identify which legal requirements apply to specific types of hazardous materials and will identify design features of the proposed action for environmental and human protection which, although not necessarily legally required, will be followed to reduce risks associated with hazardous materials. Nothing in this plan or in the final HMMP (once developed) shall be construed as an admission regarding the legal applicability of requirements or practices to any particular class of hazardous material.

B9.2 Purpose

The goal of this plan framework is to (1) minimize the potential for a spill of fuel or other hazardous material, (2) contain any spillage to the smallest possible area, (3) protect areas that are environmentally sensitive, and (4) minimize risks to human health, and (5) provide a template for the development of a detailed HMMP. This plan framework includes the following components:

- Framework for developing the HMMP
- Spill prevention procedures related to the transportation, storage, and disposal of hazardous materials
- Spill control, response, and cleanup methods
- An overview of the notification and documentation procedures to be followed in the event of a spill
- Operation and maintenance considerations
- Sample hazardous materials management forms which may be used as examples.

In general, hazardous materials will be stored in approved containers until they can be properly transported and disposed of at an approved treatment, storage, and disposal facility. Persons responsible for handling or transporting hazardous materials for the Project will be trained in the proper use/management of the materials and will be familiar with all applicable laws, policies, procedures, and the PCEMs applicable to their tasks. It is the responsibility of the construction contractor(s) to maintain file records of proper training/certification for any individual(s) who may potentially handle hazardous materials for the Project. Southline reserves the right to audit any subcontractors to ensure compliance.

B9.3 Regulatory Compliance

Major legislation pertaining to hazardous materials includes the Comprehensive Environmental Response, Compensation, and Liability Act; Resource Conservation and Recovery Act; Clean Air Act; and Clean Water Act.

Numerous other Federal, State, and local regulations also govern the use, storage, transportation, production, and disposal of hazardous materials. Some of the key requirements of these laws are outlined in:

- Occupational Safety and Health Administration (29 CFR 1900-1910 and 1926)
- Clean Water Act (40 CFR 100-149)
- Clean Air Act (40 CFR 50-99)
- Toxic Substances Control Act (TSCA) (40 CFR 700-799)
- Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act (40 CFR 300-399)
- Resource Conservation and Recovery Act (40 CFR 239–282)
- Hazardous Materials Transportation Act (49 CFR 100-199)
- State-Specific Regulations

B9.4 Framework for Developing the Hazardous Materials Management Plan

B9.4.1 Certifications, Acknowledgments, and Designation of Coordinator/ Responsible Person

B9.4.2 Facilities Description

B9.4.2.1 SITE MAP

B9.4.2.2 TYPES AND AMOUNTS OF HAZARDOUS MATERIALS

B9.4.3 Hazardous Waste and Materials Management

B9.4.3.1 RESPONSIBILITIES

B9.4.3.2 TRAINING

B9.4.3.3 LABELING AND HAZARD COMMUNICATION

B9.4.3.4 OVERVIEW OF HAZARDOUS MATERIALS AND EXPECTED PROJECT WASTE

B9.4.4 Operating Procedures

B9.4.4.1 REFUELING AND SERVICING

B9.4.4.2 TRANSPORTATION OF HAZARDOUS MATERIALS

B9.4.4.3 STORAGE AND LABELING OF HAZARDOUS MATERIALS

Storage Containers

Incompatible Materials

Ignitable or Reactive Materials

Secondary Containment

Security

Explosives

B9.4.4.4 DISPOSAL

Hazardous Waste

Container Management

Used Oil and Oil Filters

B9.4.5 Spill Contingency Plan

B9.4.5.1 SPILL EMERGENCY CONTACTS

B9.4.5.2 RESPONSE PROCEDURES

B9.4.5.3 EMPLOYEE TRAINING

B9.4.5.4 SPILL CONTINGENCY RESPONSE EQUIPMENT

B9.4.5.5 NOTIFICATION AND DOCUMENTATION

Spill Notification

New Mexico Reporting Requirements

Arizona Reporting Requirements

Spill Documentation

B9.4.6 APPENDICES TO THE HMMP

B9.4.6.1 APPENDIX A. SITE PLAN

B9.4.6.2 APPENDIX B. EMERGENCY INFORMATION FOR SPILL RESPONSE (POSTED ONSITE)

B9.4.6.3 APPENDIX C. SPILL RESPONSE PROCEDURES (POSTED ONSITE)

B9.4.6.4 APPENDIX D. SAFETY DATA SHEETS

B9.4.6.5 APPENDIX E. EXAMPLE HAZARDOUS WASTE LABELS

B9.4.6.6 APPENDIX F. TYPICAL FUEL, LUBRICANTS, AND HAZARDOUS MATERIALS

B9.5 Proponent Committed Environmental Measures

APPENDIX B10

EMERGENCY PREPAREDNESS AND RESPONSE PLAN

B10.1 Introduction

Despite an organization's best efforts, accidents, acts of nature, and other emergency situations can occur. Effective preparations for emergency and response can reduce injuries, prevent or minimize environmental impacts, protect employees and the community, reduce asset losses, and minimize downtime. An effective emergency preparedness and response program will include provisions for identification of hazards, a chain of command and responsibility, and a strategy for emergency communications.

This Emergency Preparedness and Response Plan is intended to provide methods for prevention of and response to a broad spectrum of emergency situations. This document discusses the chain of command and emergency communications strategy to be used as a guide for an Emergency Preparedness and Response Plan to be completed by Southline Transmission, LLC (Southline), and other responsible parties identified in the construction Plan of Development (POD). As indicated in the POD, this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate.

The final Emergency Preparedness and Response Plan will be approved by the BLM, Western, and other agencies as appropriate. More specific emergency procedures for blasting, hazardous materials, and fire are included in Appendix B6 – Blasting Plan, Appendix B9 – Hazardous Materials Management Plan, and Appendix B12 – Fire Protection Plan.

Emergency response procedures will be implemented for the following potential events, or similar events:

- Downed transmission lines, structures, or equipment failure
- Fires and explosions
- Spills or releases of hazardous materials
- Sudden loss of power
- Natural disasters
- Serious personal injury

B10.2 Purpose

No plan can describe specific procedures and protocols for every potential event. However, having a general plan in place with hazards identification, a chain of command and responsibility, a strategy for emergency communications, and foresight and planning can mitigate for most significant events. This is particularly true and important for the initial response phase of an emergency situation.

The purpose of an Emergency Preparedness and Response Plan is to provide clear procedures and information to enable the Proponent, the construction contractor(s), the compliance inspection contractor (CIC), and the BLM, Western, or other agency Authorized officer or his/her designated representative to prepare for and effectively respond to emergency situations. The primary objective of this plan is to

prevent adverse impacts on human health and safety, property, and the environment that could potentially occur as a result of the construction, operation, and maintenance of the Project.

B10.3 Regulatory Compliance

There are numerous regulatory drivers that call for the preparation of an Emergency Preparedness and Response Plan. Health and safety guidelines related to high-voltage transmission lines are provided by a number of sources, including the National Electric Safety Code, American National Standards Institute, American Medical Association Council on Scientific Affairs, American Conference of Governmental Industrial Hygienists, various State regulations, other organizations, and Western. The Occupational Safety and Health Administration also provides regulations for construction and operational workplace activities.

Additional regulatory drivers include the Clean Water Act (CWA) requirements for Stormwater Pollution Prevention Plans (SWPPPs) and the CWA, Oil Pollution Act requirement for a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, a.k.a. Superfund). The SWPPP (appendix B3) and SPCC Plan (appendix B4) also include response procedures for spills of oil or hazardous materials.

B10.4 Responsibilities

Southline and the construction contractor(s) are responsible for the effective response to any emergency situation or event related to the construction, operation, and maintenance of the Project. To ensure a coordinated and effective response, a chain of command will be developed as part of the Emergency Preparedness and Response Plan and followed in the event of an emergency. In the establishment of a chain of command, considerations to be taken into account include the levels of vertical and horizontal activation and the participation necessary to respond to specific situations are. In other words, does the response need to move further up the chain of command, or does the response need to broaden to include additional divisions or disciplines? Sometimes the response will be both, and higher levels of command may be needed to authorize or oversee additional divisions or disciplines. The following are factors for the establishment of a chain of command:

- Type of event (natural, injury, environmental, electrical supply/outage, external forces)
- Severity, location, and physiographic surroundings
- Multiple, interconnected, or combined events
- Anticipated duration
- Multi-division and/or multi-discipline response required
- External agency coordination
- Authority of various command levels

B10.5 Response Coordination

B10.6 Emergency Communications

B10.6.1 Emergency Contact List

In case of emergency, call 911 first. Additional potential emergency contacts are listed below and should be called as appropriate, depending on the situation (e.g., fire, injury). Further guidance on emergency response, notification, and reporting protocols are included in Appendix B3 – SWPPP, Appendix B4 – SPCC Plan, Appendix B6 – Blasting Plan, Appendix B9 – Hazardous Materials Management Plan, and Appendix B12 – Fire Protection Plan. The Emergency Contact List shall be verified at the beginning of construction and updated throughout the Project by the construction contractor(s) to ensure accurate contact information. Emergency contacts are just that – persons to be contacted to respond to an emergency. Notifications, both internal and to State and Federal agencies, may also be required on a case-by-case basis. When the emergency contact list is posted at a jobsite, it may be tailored to the locale as appropriate.

B10.7 Hazard Identifications and Key Response Criteria

APPENDIX B11

NOXIOUS WEED MANAGEMENT PLAN

B11.1 Background

The Bureau of Land Management (BLM) defines noxious weeds as “a plant that interferes with management objectives for a given area of land at a given point in time.” The New Mexico Noxious Weed Act defines noxious weeds as “any weed or plant which the board of county Commissioners acting as the governing body of the district, and with the advice of the county agent, declares to be harmful or to possess noxious characteristics.” The Arizona Department of Agriculture (ADA) defines a noxious weed as “any species of plant that is, or is liable to be, detrimental or destructive and difficult to control or eradicate and shall include any species that the director [Department of Agriculture], after investigation and hearing, shall determine to be a noxious weed.” Noxious weeds are opportunistic plant species that may aggressively colonize in disturbed areas. Once established in an area, noxious weeds typically out-compete native plants for resources and may permanently degrade the native plant community. In addition, noxious weeds often become monocultures, which may alter the local fire regime by increasing the fine fuel load. Such changes usually exclude reestablishment of the native plant community in disturbed areas, and result in a long-term or permanent change in the local ecology. Infestations of noxious weeds may also have negative economic impacts. Infestations of certain noxious weeds on rangelands may poison livestock, and infestations in agricultural fields may lower crop yields.

The format and content of this Noxious Weed Management Plan is based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 (BLM 1992) and in Section 11.0 of the Western Area Power Administration (Western) (2011) Integrated Vegetation Management Guidance Manual. This plan includes a discussion on (1) the plan purpose, goals, and objectives, (2) the noxious weed inventory, (3) noxious weed management practices, (4) postconstruction monitoring, and (5) the proper use of herbicides within the Project area. As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B11.1.1 Plan Purpose

This purpose of this Noxious Weed Management Plan is to provide preventive and treatment methods to control the potential occurrence of noxious weeds during and following construction-related activities for the Southline Transmission Line Project (Project). It is the responsibility of Southline Transmission, LLC (Southline), and the construction contractor(s), working in coordination with the compliance inspection contractor (CIC) and the BLM and Western or their designated representative, to ensure that noxious weeds are identified and controlled during construction, operation, and maintenance of Project facilities and that all Federal, State, county, and other local noxious weed requirements are satisfied. The BLM and/or Western will review and approve this Noxious Weed Management Plan prior to implementation.

B11.1.2 Goals and Objectives

The goal of this Noxious Weed Management Plan is to implement early detection, containment, and control of noxious weeds during Project construction. Information gathered by the Proponent during preconstruction surveys and provided by the BLM will be used to monitor and control the spread of

The State of Arizona has officially designated 58 weed species as noxious (USDA 2015b). The noxious weed species regulated by the State of Arizona are shown in table B11-2.

Categories for Noxious Weeds in Arizona

Table B11-2. Noxious Weed Species of Potential Concern - Arizona

Scientific Name	Common Name	State Category	Known to Occur in the Project Area

B11.3 Noxious Weed Inventory

Baseline/background information on noxious weeds

B11.4 Noxious Weed Management

B11.4.1 Identification of Problem Areas and Education

B11.4.1.1 WEED MANAGEMENT PERSONNEL REQUIREMENTS

B11.4.2 Project Specific Stipulations and Methods

B11.4.3 Additional Preventative Measures

B11.4.3.1 NOXIOUS WEED CONTROL METHODS

Mechanical Control

Manual Control

Chemical Control

B11.4.3.2 SPECIES-SPECIFIC NOXIOUS WEED CONTROL METHODS

Management Recommendations

Chemical Control

B11.4.3.3 RECLAMATION ACTIONS

B11.5 Monitoring

B11.5.1 Reclamation Monitoring

B11.5.2 Ongoing Monitoring

B11.6 Pesticide Application, Handling, Spills, and Cleanup

B11.6.1 Pesticide Application and Handling

B11.6.2 Pesticide Spills and Cleanup

B11.6.3 Worker Safety and Spill Reporting

B11.7 Literature Cited

B11.8 Attachments

Attachment B11-1 – Noxious Weed Risk Assessment Worksheet

Attachment B11-2 – Herbicides Approved For Use on Public Lands

APPENDIX B12 FIRE PROTECTION PLAN

B12.1 Introduction

This plan details measures that will be implemented to (1) reduce the risk of starting a fire and (2) suppress a fire in the event one does occur within the construction area during the Southline Transmission Line Project (Project) construction. The precautions and procedures identified in this plan are also applicable for operation and maintenance activities. However, responsibilities for management of all fires and fire prevention measures are predominantly assumed by the Bureau of Land Management (BLM), Western Area Power Administration (Western), other Agency Fire Management Officers (FMOs), and the operation and maintenance crews of Southline Transmission, LLC (Southline). As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western is involved in the Project, they may adopt this plan, where appropriate.

B12.1.1 Purpose

The risk of fire danger during construction of a transmission line is related largely to the use of vehicles and other motorized equipment operating off roadways, the handling and use of explosive materials and flammable liquids, and welding. The purpose of this plan is to outline responsibilities, notification procedures, fire prevention measures and precautions, fire suppression equipment, initial response procedures, and post-fire rehabilitation strategies related to the Project. The goal is to minimize the risk of Project-related fires and, in case of fire, provide for immediate suppression within the construction area. Other plans containing information related to fire protection include: Appendix B6 – Blasting Plan, Appendix B9 – Hazardous Materials Management Plan, and Appendix B10 – Emergency Preparedness and Response Plan.

B12.1.2 Regulatory Compliance

The Project will be subject to State, County, and federally enforced laws, ordinances, rules, and regulations that pertain to fire prevention and suppression activities. Key regulatory agencies include the BLM and other agency and local fire protection agencies in Arizona and New Mexico.

B12.2 Responsibilities

B12.2.1 Bureau of Land Management

The BLM FMO or other Agency FMO(s) will oversee all fire control activities within their prospective administrative units. The FMOs will discuss fire protection stipulations at the notice-to-proceed meeting, which will be attended by the BLM and other Agency authorized officers or his/her designated representative; the compliance inspection contractor (CIC); the construction contractor(s); the environmental inspectors; and the Proponent.

B12.2.1.1 CONSTRUCTION CONTRACTOR(S)

It will be the responsibility of the construction contractor(s) to notify Southline, the BLM and/or Western when a Project-related fire occurs within or adjacent to the construction area. The construction

contractor(s) will be responsible for any fire started, in or out of the Project area, by its employees or operations during construction. The construction contractor(s) will be responsible for fire suppression and rehabilitation. The construction contractor(s) will take safe and immediate action to prevent and suppress fires on and adjacent to the Project area that are a result of contractor activities. The construction contractor(s) will use its workers and equipment on the Project for preventing the spread of fires started by contractor activities unless the fire exceeds immediate control, at which time all construction contractor employees will exit the area to predetermined locations safe from wildfire.

All Federal, State, and county laws, ordinances, rules, and regulations that pertain to prevention, pre-suppression, and suppression of fires will be strictly adhered to by the construction contractor(s). All personnel will be advised of their responsibilities under the applicable fire laws and regulations.

Construction Crew

Designated Fire Marshall

B12.2.1.2 COMPLIANCE INSPECTION CONTRACTOR

B12.2.1.3 NOTIFICATION

Table B12-1. Fire Notification Numbers

Contact Person	Phone Number
Bureau of Land Management	To be determined
BLM Authorized Officer or Designated Representative	To be determined
Western Designated Representative	To be determined
U.S. Forest Service Authorized Officer or Designated Representative	To be determined
Bureau of Indian Affairs Authorized Officer or Designated Representative	To be determined
DOD Authorized Officer or Designated Representative	To be determined
Bureau of Reclamation Authorized Officer or Designated Representative	To be determined
New Mexico	To be determined
Arizona Interagency Fire Center	To be determined
911 – Emergency	Dial 911

B12.3 Proponent Committed Environmental Measures

B12.4 Other Specific Stipulations and Methods

B12.4.1 Activity-Related Precautions

B12.4.1.1 FIRE DANGER RATINGS

B12.4.1.2 RED FLAG WARNINGS

In addition to observation of the Fire Danger Rating scales, the National Weather Service red flag warnings for low humidity and high winds will be observed. The Fire Precaution Levels in table B12-3

will be adhered to. The red flag warnings are posted on the National Weather Service's Western Region Fire Weather website at <http://www.wrh.noaa.gov/firewx/main.php>.

Table B12-2. Fire Precaution Levels

Fire Danger Rating	No Red Flag	Red Flag
Low	Normal fire precautions	Consider additional measures and resources
Moderate	Normal fire precautions	Consider additional measures and resources
High	One engine* is require for blasting	One engine* is required for blasting, welding, cutting, and grinding AND operations will shut down from noon until 8 p.m.
Very High	One engine* is required for blasting, welding, cutting, and grinding.	Two engines* required for blasting, welding, cutting, and grinding AND operations will shut down from 10 a.m. until 8 p.m. Power saws will be shut down from 10 a.m. until 8 p.m.
Extreme	Two engines required for blasting, welding, cutting, and grinding AND operations will shut down from 10a.m. until 8 p.m. Power saws will be shut down from 10 a.m. until 8 p.m.	Unless authorized by the land jurisdictional agency, ALL OPERATIONS SHUT DOWN EXCEPT on mineral soil involving watering or equipment maintenance.

B12.4.2 Burning (Not Allowed)

B12.4.3 Blasting

B12.4.4 Welding, Cutting, Grinding, or Drilling

B12.4.5 Spark Arrestors

B12.4.6 Smoking

B12.4.7 Warning Devices

B12.4.8 Parking and Vehicle Storage Areas

B12.4.9 Signage

B12.4.10 Power Saws

B12.4.11 Equipment Refueling

B12.4.12 Access

B12.5 Minimum Fire Prevention and Suppression Equipment Required

B12.6 In Case of Fire – Initial Response and Emergency Contacts

B12.7 Post-Fire Rehabilitation Strategies

APPENDIX B13

STREAM, WETLAND, WELL, AND SPRING PROTECTION PLAN

B13.1 Introduction

The purpose of this Stream, Wetland, Well, and Spring Protection Plan is to provide measures to protect these resources from potential impacts during construction, operation, and maintenance activities for the Southline Transmission Line Project (Project). This plan incorporates Proponent Committed Environmental Measures (PCEMs) identified in the Environmental Impact Statement and also in table 8 in the Plan of Development (POD). As indicated in the POD, this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate. The goals of this plan are to:

- Control Project-related erosion and sedimentation into streams and wetlands and minimize disturbance and erosion of streambeds and banks.
- Protect springs and wells in the Project area from impacts due to blasting and hazardous materials contamination.

B13.2 Regulatory Overview

The construction, operation, and maintenance phases of the Project are subject to various regulations designed to protect environmental resources and the public. Regulations relevant to water resources are outlined below.

B13.2.1 Federal

General water quality is protected under the federal Clean Water Act (CWA) and a permit may be required if a project will result in the alteration of or discharges into jurisdictional watercourses (waters of the U.S. (WUS)) and wetlands. The U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) regulate the placement of fill into WUS under Section 404 of the CWA. WUS include lakes, rivers, streams and their tributaries, and wetlands. The Project will result in the alteration of or discharge into jurisdictional WUS. To qualify under Section 404 Nationwide Permit (NWP) 12 for Utility Line Activities, the Project will need to meet the criteria for and fall within the thresholds of this NWP. As part of meeting the conditions of NWP 12, wetland delineations will need to be prepared and a Preliminary Jurisdictional Determination obtained from the USACE for the Project. The Preliminary Jurisdictional Determination will establish where WUS may be located that may be affected by the Project. An NWP 12 is typically issued after a 30- to 45-day review of the Preliminary Jurisdictional and Wetland Delineation Report, unless the USACE requests a field review, which will extend the review period. From the date of issuance, the NWP 12 is valid for 12 months.

Requirements related to stormwater pollution under Section 402 of the CWA are handled in New Mexico by the EPA. Requirements under Section 402 are detailed in Appendix B3 – Stormwater Pollution Prevention Plan.

B13.2.2 State

B13.3 Overview of Streams, Wetlands, Wells, and Springs

B13.3.1 Streams and Drainages

Potentially jurisdictional WUS crossed by the Project will be delineated during preconstruction stream and wetland surveys and provided to the USACE to obtain a Preliminary Jurisdictional Determination. The locations of streams and drainages will be shown in the POD.

Most streams and drainages crossed by the Project are ephemeral washes that typically do not flow except in response to precipitation events. However, there are several streams identified as potentially requiring special consideration due to intermittent or perennial flow. These include the Mimbres River, the San Pedro River, and Cienega Creek, two of which are existing crossings in the Upgrade Section. **B13.3.2 Wetlands**

Wetland delineations that follow the USACE Wetland Delineation Manual (1987) and Arid West Regional Supplement (2008) will be conducted prior to construction. The USACE Wetland Delineation Manual provides technical guidelines and methods for a three-parameter approach to determine the location and boundaries of potentially jurisdictional wetlands. This approach requires an area support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a wetland. Surveyors will gather wetland determination information on data forms in the field and map wetland boundaries using geographical positioning system technology. Wetlands that meet all three parameters will be presented to the USACE for a Preliminary Jurisdictional Determination. The locations of wetlands will be shown in the POD.

B13.3.2 Wells and Springs

B13.4 Proponent Committed Environmental Measures

B13.5 Other Specific Stipulations and Methods for Streams and Wetlands

B13.5.1 Stream Crossing Methods

B13.5.1.1 VEHICULAR STREAM CROSSINGS

B13.5.1.2 WETLAND CROSSING METHODS

B13.5.2 Spill Prevention

B13.5.3 Erosion and Sedimentation

B13.5.4 Reclamation and Revegetation of Steam Crossings

B13.5.5 Storage of Soil or Organic Debris near Streams

B13.5.6 Stream Obstruction and Flash Flood Hazard

B13.5.7 Protection of Wells and Springs

B13.6 Literature Cited

APPENDIX B14 SOIL MANAGEMENT PLAN

A Soil Management Plan would define procedures for managing soils that are excavated during construction, along with plans for their storage and later reuse. This plan is often an appendix to a Stormwater Pollution Prevention Plan (SWPPP). In addition to clean soil excavation, the plan would outline procedures for segregation of potentially contaminated soils, sampling and analysis of those soils, and disposal options if that becomes necessary. It also would define how topsoil would be segregated and stored, how stockpiles would be managed and protected, and used in site restoration. Use of topsoil for restoration activities would be described in Appendix B15 – Reclamation, Vegetation, and Monitoring Plan. Erosion and sediment controls for excavated soil would also be discussed. As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate.

Content to be developed.

APPENDIX B15 RECLAMATION, REVEGETATION, AND MONITORING FRAMEWORK PLAN

B15.1 Introduction

This Reclamation, Revegetation, and Monitoring Framework Plan has been developed based on the principles and procedures established by the Bureau of Land Management (BLM) and Western Area Power Administration (Western). As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the Bureau of Land Management (BLM) as enforceable stipulations and measures of the BLM right-of-way (ROW) grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate.

Requirements for reclamation, revegetation, and monitoring on private and State lands will be negotiated between Western, Southline Transmission, LLC (Southline), and the States of Arizona and New Mexico as well as affected landowners. The intent of this plan is to provide a framework for reclamation treatments to be applied to the Project on identification of construction-related disturbance, prevent unnecessary degradation of the environment during construction, rehabilitate temporary use areas, and reclaim disturbed areas such that these areas are ecologically functional and visually compatible with the surrounding environment to the greatest extent practicable.

B15.2 Regulatory Requirements and Authorities

Authority for the reclamation practices defined in this plan is provided under the following regulations, land use plans, initiatives, and general guidelines.

B15.2.1 Guide Documents

B15.2.1.1 BLM TERMS AND CONDITIONS OF RIGHT-OF-WAY GRANTS AND TEMPORARY USE PERMITS, 43 CFR 2881.2

“The authorized officer shall impose stipulations which shall include, but not be limited to requirements for reclamation, revegetation, and curtailment of erosion of the surface of the land [and] requirements designed to control or prevent damage to the environment (including damage to fish and wildlife habitat).”

B15.2.1.2 FEDERAL LAND POLICY AND MANAGEMENT ACT, SECTION 101 (A)(8)

Requires “public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition.”

B15.2.1.3 ENDANGERED SPECIES ACT OF 1973, AS AMENDED, SECTION 7(A)(2)

Requires that federal agencies ensure any authorized action “will not result in the adverse modification” of critical habitat.

B15.3 Purpose

The purpose of this plan is to describe and recommend construction and reclamation treatment actions that will meet BLM and other agency goals and objectives under the applicable land use plans, guidelines, and initiatives described above for land health standards to recover habitat for sensitive plant species, and to provide protocols and/or requirements for implementing and monitoring required reclamation. Important actions in mitigating the effects associated with the Project include (1) minimizing to the greatest degree practicable, the effects associated with right-of-way (ROW) preparation and the construction of facilities, and (2) stabilizing temporarily disturbed construction areas to an acceptable condition to speed up natural recovery. The procedures outlined in this plan will assist in restoring plant communities to near-preconstruction conditions and associated wildlife habitat and range, preventing substantial increases in noxious weeds in the project area, minimizing Project-related soil erosion, and reducing visual impacts of sensitive areas caused by construction activities. To achieve these goals, this plan outlines actions to be applied during the preconstruction and post-construction phases of the Project.

B15.3.1 Responsible Parties

Southline will have the overall responsibility of directing and monitoring the reclamation efforts for the Project on BLM-managed lands in accordance with the stipulations in the Plan of Development (POD) and this plan. The ROW agreement holder (Western or Southline as appropriate) will have the responsibility of directing and monitoring reclamation efforts for the Project on State and private lands and may use the POD as appropriate. Southline and/or its construction contractor(s) may retain the services of a subcontractor (subject to the approval of the BLM, Western, and other agencies) who specializes in reclamation to implement the protocols identified in this plan during and following construction. It is anticipated that postconstruction reclamation monitoring would occur concurrent with the practices outlined in Appendix B11 – Noxious Weed Management Plan (as appropriate).

B15.4 Overview of Existing Environments

B15.4.1 Semidesert Grassland

B15.4.2 Chihuahuan Desertscrub

B15.4.3 Arizona Upland Subdivision of Sonoran Desertscrub

B15.4.4 Lower Colorado River Subdivision of Sonoran Desertscrub

B15.5 Reclamation Plan Methodology

B15.5.1 Identification of Reclamation Zones

B15.5.2 Identification of Reclamation Levels

B15.5.2.1 TYPES OF CONSTRUCTION ACTIVITIES AND FACILITY FEATURES

B15.5.2.2 DISTURBANCE DURATION

B15.5.2.3 DISTURBANCE TYPE

B15.5.2.4 RECLAMATION LEVELS

Reclamation Level 1 (RL1) – Minimal Level of Disturbance, Minimal Actions (Permanent)

Reclamation Level 2 (RL2) – Low Level of Disturbance, Few Actions (Temporary)

Reclamation Level 3 (RL3) – Moderate Level of Disturbance, Several Actions (Temporary)

Reclamation Level 4 (RL4) – Moderate/High Level of Disturbance, Few Actions (Permanent)

Reclamation Level 5 (RL5) – High Level of Disturbance, Maximum Actions (Temporary)

Table B15-2. Construction Component – Reclamation Levels

Construction Component	Disturbance Level	Disturbance Duration		Reclamation Level
		Permanent	Temporary	

B15.6 Reclamation Plan

B15.6.1 Right-of-Way Preparation and Preconstruction Actions

B15.6.1.1 WEED PLAN IMPLEMENTATION

B15.6.1.2 MONITORING TRANSECT SELECTION

B15.6.1.3 SELECTIVE CLEARING/FEATHERING (WIRE ZONE-BORDER ZONE TECHNIQUE)

Table B15-4. Reclamation Action Identification Table

Reclamation Level	Zone 1					Zone 2					Zone 3					Zone 4				
	RL1	RL2	RL3	RL4	RL5	RL1	RL2	RL3	RL4	RL5	RL1	RL2	RL3	RL4	RL5	RL1	RL2	RL3	RL4	RL5
Preconstruction Actions																				
Weed plan implementation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Selective clearing/feathering			X	X	X												X	X	X	X
Topsoil segregation					X					X					X					X
Windrow vertical mulch			X	X	X			X	X	X								X	X	X
Post-construction Actions																				
Earthworks		X	X	X	X			X	X	X			X	X	X		X	X	X	X
Topsoil replacement					X					X					X					X
Seeding		X	X	X	X			X	X	X			X	X	X		X	X	X	X
Alternative seeding		X	X	X	X			X	X	X			X	X	X		X	X	X	
Supplemental planting																		X		X
Vertical mulch replacement			X		X			X		X								X		X
Permeon™ (or approved equal)			X	X	X			X	X	X			X	X	X			X	X	X
Supplemental mulch				X					X				X	X	X			X	X	X
Off-highway vehicle deterrent		X	X		X			X	X				X	X			X	X		X
Signage		X	X		X			X	X				X	X				X		X
Monitoring		X	X	X	X			X	X	X			X	X	X		X	X	X	X

B15.6.1.4 TOPSOIL SEGREGATION**B15.6.1.5 WINDROW VERTICAL MULCH*****B15.6.2 Post-Construction Actions*****B15.6.2.1 EARTHWORKS****B15.6.2.2 TOPSOIL REPLACEMENT****B15.6.2.3 SEEDING****B15.6.2.4 ALTERNATIVE SEEDING****B15.6.2.5 SUPPLEMENTAL PLANTING****B15.6.2.6 VERTICAL MULCH/SLASH****B15.6.2.7 SUPPLEMENTAL MULCH****B15.6.2.8 OFF-HIGHWAY VEHICLE DETERRENTS****B15.6.2.9 SIGNAGE****B15.6.2.10 RECLAMATION MONITORING*****B15.6.3 Modifications and Field Changes*****B15.7 Reclamation Success Standards, Monitoring, and Maintenance*****B15.7.1 Reclamation Goals and Success Standards******B15.7.2 Monitoring Practices (Methodology)*****B15.7.2.1 ROUTE MONITORING**

Table B15. Reclamation Monitoring Requirements

B15.7.2.2 SITE MONITORING**B15.7.2.3 MONITORING REQUIREMENTS*****B15.7.3 Data Collection*****B15.7.3.1 QUALITATIVE (DESCRIPTIVE) INFORMATION****B15.7.3.2 QUANTITATIVE (NUMERICAL) INFORMATION**

B15.7.4 Adaptive Management and Site Release

B15.8 Literature Cited

B15.9 Attachment

Attachment B15-1: BLM Example Seed Mixes

APPENDIX B16 HEALTH AND SAFETY PLAN

A Health and Safety Plan (HASP) is not typically required by Federal law; however, section 18 of the Occupational Safety and Health Act of 1970 encourages States to develop and operate their own safety and health programs in the workplace. In New Mexico, the Occupational Health and Safety Bureau, part of the New Mexico Environment Department (NMED), has the responsibility of enforcing Occupational Health and Safety Regulations. In Arizona, the Arizona Division of Occupational Safety and Health is responsible for enforcement and voluntary compliance.

The purpose of a HASP would be to ensure the safety of the proposed Project employees, construction personnel, and the public. The HASP would be tailored specifically for the proposed Project, and would include a description of hazards that may be encountered during the life of the proposed Project. The HASP would detail employee safety training procedures that would be used, structural and non-structural safety controls that would be put in place, personal protective equipment that would be required, emergency response procedures, protocols for Project-specific procedures such as confined space entry, and applicable standards, practices, and procedures specified by the Occupational Safe and Health Administration (OSHA) (29 CFR 1910).

Content to be developed.

APPENDIX B17

AVIAN PROTECTION PLAN

An Avian Protection Plan (APP) would be a Project-tailored plan designed to reduce avian electrocution and collision mortality that result from avian interactions with electric utility facilities. The overall goal of an APP is to reduce avian mortality. The 2005 Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife (FWS) APP Guidelines (APLIC 2005) provide a framework, along with principles and examples of APPs.

The APP would be designed as a living document to be continually evaluated and refined over the life of the proposed Project. The elements of the APP would include training, permit compliance, construction design and siting standards, nest management, a reporting system, risk assessment for evaluating the risks posed to migratory birds. The plan would also identify areas and issues of concern, mortality reduction measures, and avian enhancement options.

Examples of avian protection measures that *could* be included in the APP are:

- Marking wires (bird diverters) and/or using special structure design to increase visibility to birds;
- Applying special structural design to decrease the heights of ground wires and conductors;
- Monitoring to ensure that Proponent Committed Environmental Measures (PCEMs) are implemented; and/or
- Conducting additional avian studies, surveys, and/or monitoring to record the presence of birds and incidence of avian collisions, and provide data that could be useful to minimize the potential for collisions with the proposed Project, as well as with existing and future power lines in other locations.

Southline Transmission, LLC (Southline), Bureau of Land Management (BLM), and Western Area Power Administration (Western) would collaborate with agencies such as the FWS, Arizona Game and Fish Department, and New Mexico Department of Game and Fish, and other cooperating agencies on development of the APP, the goal of which is mitigate the collision risk and loss of productivity for all birds.

Content to be developed.

APPENDIX B18 WASTE MANAGEMENT PLAN

B18.1 Waste Management Goals

B18.2 Responsibilities

B18.3 Waste Prevention, Packaging, and Recycling

B18.4 Communication and Education

B18.5 Expected Project Waste, Disposal, and Handling

Table B18-1.

Material	Quantity	Disposal Method	Handling Procedure
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B18.6 Material Disposition/Waste Disposal Companies

B18.6.1 Wastes – Location of Disposal, Timing of Pickup

B18.6.2 Recycling – Location of Disposal, Timing of Pickup

B18.7 Housekeeping

B18.8 Documentation

APPENDIX B19 HELICOPTER FLIGHT PLAN/FLIGHT AND SAFETY PLAN

The Helicopter Flight and Safety Plan would describe the hours and estimated number of days that a helicopter would operate for construction of the proposed Project, the type and number of helicopters that would be used, and the kind of work to be performed. Additional information presented in this plan would include the location, size, and number of staging areas for helicopter takeoffs and landings, and safety measures to be implemented during helicopter operations. This plan would be reviewed and approved by the Federal Aviation Administration (FAA) prior to the commencement of helicopter operations.

Content to be developed.

APPENDIX B20 DECOMMISSIONING PLAN

The Decommissioning Plan would detail how the structures and facilities of the proposed Project would be removed after the useful life of the Project is reached, and how the affected properties would be reasonably restored in accordance with the Bureau of Land Management (BLM) right-of-way (ROW) grant. This plan would be a general outline of how the proposed Project would be decommissioned and how land would be restored to its original condition. Decommissioning procedures described would include the removal of structures, disposal of waste, and identification of what, if anything, may remain on the land upon completion. Restoration would include the stabilization and revegetation of the disturbance area to minimize erosion and return the land to productive use. As indicated in the Plan of Development (POD), this plan is applicable on Federal lands administered by the BLM as enforceable stipulations and measures of the BLM ROW grant. It pertains not only to the construction of the Project, but also to the operation and maintenance phase of the Project. Where Western Area Power Administration (Western) is involved in the Project, they may adopt this plan, where appropriate.

Content to be developed.

Appendix C

TRANSMISSION CONSTRUCTION AND VEGETATION MANAGEMENT STANDARDS

Content to be developed.

APPENDIX C1 TRANSMISSION CONSTRUCTION STANDARDS

Content to be developed.

APPENDIX C2 INTEGRATED VEGETATION MANAGEMENT STANDARDS

C2.1 Introduction

Southline Transmission, LLC (Southline or the Proponent), will manage vegetation within their rights-of-way (ROWs) and in access and service roads to minimize system reliability issues, to address safety issues, and to facilitate operation and maintenance activities. The vegetation management plan complies with the National Electric Safety Code, American National Standards Institute (ANSI) A300 Part 7: American Operations Integrated Vegetation Management (Bureau of Land Management (BLM) Integrated Vegetation Management Handbook – H 1740-02. March 25, 2008), Western Area Power Administration’s (Western’s) Integrated Vegetation Management Guidance Manual, and Electric Utility Rights-of-Way and the International Society of Arboriculture (ISA) Best Management Practices. The plan is based on the North American Electric Reliability Corporation (NERC) Reliability Standard FAC-003-1. If Western has an approved vegetation management plan for the area, that plan would govern vegetation management on State and private lands.

C2.2 Objectives

Objectives of Integrated Vegetation Management (IVM) on utility ROWs are to establish sustainable plant communities that are compatible with the electric facilities. The intent is to provide stable, low-growing plant ecotypes that reduce fire risk and maintain safe access to the line and associated facilities in order to ensure safe and reliable operation of the transmission line. Objectives include:

- Meeting requirements of the NERC Reliability Standards
- Prevent operation hazards (i.e., flashovers, trees growing into contact with conductors, danger trees)
- Provide access for maintenance and repair
- Protect facilities from fire
- Control spread of noxious weeds
- Protect public and worker safety
- Protect environmental quality
- Establish stable, low-growing plant communities on transmission line ROWs
- Adhere to principles of IVM

C2.3 Regulations

Because the regulatory environment is constantly changing, coordination with the regulatory agencies is essential to ensure compliance. Noxious weed regulation often falls to the county level, and therefore contact with the county regulatory agency should be made to check on additional or more stringent requirements.

C2.3.1 NERC Standards

On July 20, 2006, the Federal Energy Regulatory Commission (FERC) issued an order certifying NERC as the Electric Reliability Organization (ERO) for the United States. NERC substantially revised and strengthened its reliability standards and established a program to monitor and enforce compliance with their standards. The standards include Standard FAC-003-1-Transmission Vegetation Management Program, which requires that a transmission owner prepare and keep current a formal transmission vegetation management program that addresses the following: schedules and types of inspections; line clearances; qualifications and training of vegetation management personnel; Proponent Committed Environmental Measures (PCEMs) where line clearances cannot be attained; a process for immediate communication of vegetation conditions that present an imminent threat; annual planning for vegetation management work; and quarterly reporting of sustained transmission outages caused by vegetation. This standard (as well as those discussed below) applies to all transmission lines operated at 200 kilovolts and above and to any lower-voltage lines designated by the operator as critical to the reliability of the electric system in the region.

C2.3.2 Federal Requirements and Policies

- The National Environmental Policy Act (NEPA)
- The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Users of restricted use (RU) pesticides should particularly note the following regulations:
 - Federal Land Management Agency Herbicide Restrictions
- The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
- The Superfund Amendments and Reauthorization Act of 1986 (SARA Title III), also known as the Emergency Planning and Community Right-To-Know Act (EPCRA):
- The Federal Occupational Safety and Health Administration (OSHA):
- The U.S. Department of Transportation (DOT)
- The Federal Noxious Weed Act of 1974 (part of the Plant Protection Act of 2000) (7 CFR Part 360)
- Federal Land Management Agency Noxious Weeds and Federal Noxious Weed Lists
- The Endangered Species Act (50 CFR)
- Presidential Memorandum Dated April 26, 1994 for the Heads of Executive Departments and Agencies and Guidance for This Memorandum From the Office of the Federal Environmental Executive (August 10, 1995; 60 *Federal Register* 40837)
- Clean Water Act (40 CFR, Chapter I, Subchapter D)

C2.3.3 State Pesticide Regulations and Requirements

C2.3.4 State Weed Control Regulations and Requirements

C2.3.5 State Fire Hazard Reduction Regulations

C2.3.6 ANSI Standards and Other Pruning Guidance

C2.4 Methods

C2.4.1 Situations Requiring Vegetation Control

C2.4.1.1 WHAT METHODS ARE AVAILABLE?

C2.4.1.2 CONSIDERATIONS IN SELECTING THE BEST METHOD

Sections C2.4.2, C2.4.3, and C2.4.4 below provide overviews of the cultural, biological, and physical/mechanical options.

Table C-1. Factors which Influence Decisions About which Specific Vegetation Control Method to Use

Safety
Line voltage (which determines conductor clearances; see Section 10.0)
Proximity to restricted or sensitive environmental areas (adjacent land use)
Treatment objective
Type and density of vegetation – target and non-target species
Expected growth rates
Size of treatment area
Anticipated costs and equipment limitations
Effectiveness of possible treatments
Landowner or land management agency
Contractual rights
Accessibility
Climate/meteorological conditions at time of treatment (e.g., rainfall)
Herbicide use regulations
Site conditions – soils, slope, drainage
Presence of sensitive species or sensitive cultural resources

Table C-2. Vegetation Control Methods: Advantages and Disadvantages

Method	Advantages	Disadvantages	Where use is most appropriate
Cultural			
1. Develop and maintain stable, low-growing vegetation cover	Long-term effectiveness Required for physical or chemical treatment decreases with time Environmental benefits, e.g., wildlife habitat	None	All ROWs
2. Prescribed fire	Creates conditions for low-growing cover Removes excessive biomass (pile burning)	Any fire hazards must be controlled Limited areas appropriate for safe use	Low-growing vegetation with no hazard to overhead lines Slash piles
Biological			
1. Introduce natural insect predators	Targets specific noxious plants Perpetual, inexpensive	Intense monitoring efforts Availability of insects Long-term control option	Specific noxious weeds that can be controlled with specific insects, e.g., musk thistle
2. Animal grazing	Effective control Cost-effective Provides nitrogen	Timely grazing management is needed Also affects valuable vegetation Soil compaction Degrades riparian areas Soil erosion on steep slopes	Where agreement exists with landowner who raises livestock – existing "rangeland"
Physical/Mechanical			
1. Manual clearing with chain saw, machete, axe, etc.	Very selective Low soil impact Minimal disturbance of riparian and other sensitive areas	Low production rates High cost; high labor requirement If done without herbicide application, plants may resprout quickly Safety concerns for workers - falls, cuts, exposure to poisonous plants, snakes, etc. Exposure to vapors, dust	In sensitive areas In areas with low to moderate stem density Where limited clearing is the only approved option
2. Mowing with "bush hog" mower; mowing grass/weeds with mower	High production rates Low cost	Not selective - removes non-target plants If done, without herbicide application, plants may resprout quickly Slope, topographic restrictions Some soil disturbance and compaction Creates slash High labor requirement for mowing	Nonsensitive visual/environmental areas High stem density of small, noncompatible brush Areas with restrictions on herbicide use Vegetation will not resprout rapidly Yard/grass areas at substations and other facilities
3. Blading/Scarification	Low cost Effective	High erosion potential due to soil disturbance Not selective High visual impact Creates slash	As "last resort" where cannot gain access due to density of brush (e.g., along access routes to reach danger trees) Non-sensitive visual/ environmental areas only

Table C-2. Vegetation Control Methods: Advantages and Disadvantages (Continued)

Method	Advantages	Disadvantages	Where use is most appropriate
4. Use of geotextile barriers	Low cost Effective, especially when placed during initial construction/landscaping	May not eliminate unwanted vegetation that remains beneath barrier (roots) Need to use during initial construction/landscaping Not always stable on slopes	Landscaped areas Level ground New construction
Chemical			
1. Nonselective Herbicides			
1A. Spray	No moisture needed to activate Relatively low cost	Spills harder to contain/clean Need to be mixed Higher drift hazard	For any non-selective situation – where "bare ground control" is needed; for certain noxious weeds if applied selectively
1B. Granules	No need for mixing Drift hazard low Simple application equipment	Often more expensive than liquid May need moisture to activate	Around substations, yards, wood poles; possibly spot-treatment of certain noxious weeds
1C. Bio-barriers	Combine effectiveness of geotextile barrier with herbicide Time-release control	Must install during initial construction to be cost effective	Initial substation/yard construction
2. Selective Herbicides			
2A. Stump treatment (spray or capsule injection)	Very selective Limited or no drift to non-target vegetation Capsule injection- no chemical mixing; exposure limited	Timing critical - must apply immediately after cutting to be effective Early spring treatments not as effective as later season Capsule injection may require training and is labor intensive	Initial clearing Maintenance clearing when trees are too tall for foliage spray Near areas sensitive to drift, runoff
2B. Selective basal bark treatment	Selective Limited drift to non-target vegetation No brownout if applied during dormant season	Need to use oil-base formulation for best penetration	Maintenance clearing if brush too tall for foliage spray or need more selectivity
2C. Selective (low-vol.) foliar application	Less costly than others because less labor intensive, no oil use	Higher potential for drift onto non-target vegetation and workers Not as effective during hot weather More potential for runoff "Brownout" causes visual impact	Maintenance treatment when brush is 12–15 feet high and mostly tall-growing species. Not near areas sensitive to drift or "brownout."
2D. Growth inhibitors (grass)	Less costly than mowing because less labor intensive Lengthens maintenance cycles	Potential for drift onto non-target vegetation	Maintenance treatment where it is not practical to mow, but ground cover is desired

Table C-2. Vegetation Control Methods: Advantages and Disadvantages (Continued)

Method	Advantages	Disadvantages	Where use is most appropriate
2E. Tree growth regulators	Control branch growth without need for frequent pruning/trimming Long-term maintenance cycles More aesthetic than directional pruning, hard pruning More cost effective than frequent trimming	Will require training or contracting for application May be less effective on smaller-diameter trees on certain species Requires some time before see results	In sensitive areas (especially visual sensitivity) Where directional pruning/trimming is not desirable but full removal is not permitted and cannot be negotiated with land management agency or landowner
All Herbicides:	Prevent resprouting of woody vegetation - lengthen maintenance cycles; reduce costs; promote stable low-growing cover; lower life-cycle cost	Environmental and safety concerns - drift to non-target organisms, water contamination, proper application	

C2.4.2 Cultural Methods

C2.4.2.1 ESTABLISHMENT OF STABLE, LOW-GROWING PLANT SPECIES

C2.4.2.2 PRESCRIBED FIRE

C2.4.3 Biological Control Methods

C2.4.3.1 ANIMAL GRAZING

C2.4.4 Physical/Mechanical Methods

C2.4.4.1 PHYSICAL METHODS

C2.4.4.2 MECHANICAL METHODS

C2.4.5 Chemical Control Methods

C2.5 Noxious Weed Management

C2.6 Revegetation/Reclamation

C2.7 Attachments

Attachment A: Standard FAC-003-1 — Transmission Vegetation Management Program

Attachment B: Western Area Power Administration Order 430.1A Right-of-Way Management Guidance for Vegetation, Encroachments, and Access Routes

Attachment C: Western Area Power Administration Integrated Vegetation Management Guidance Manual

C2.8 Literature Cited

Appendix D

LAND (LEGAL) DESCRIPTION OF PROPOSED ROUTE ACROSS FEDERAL LANDS

Content to be developed.