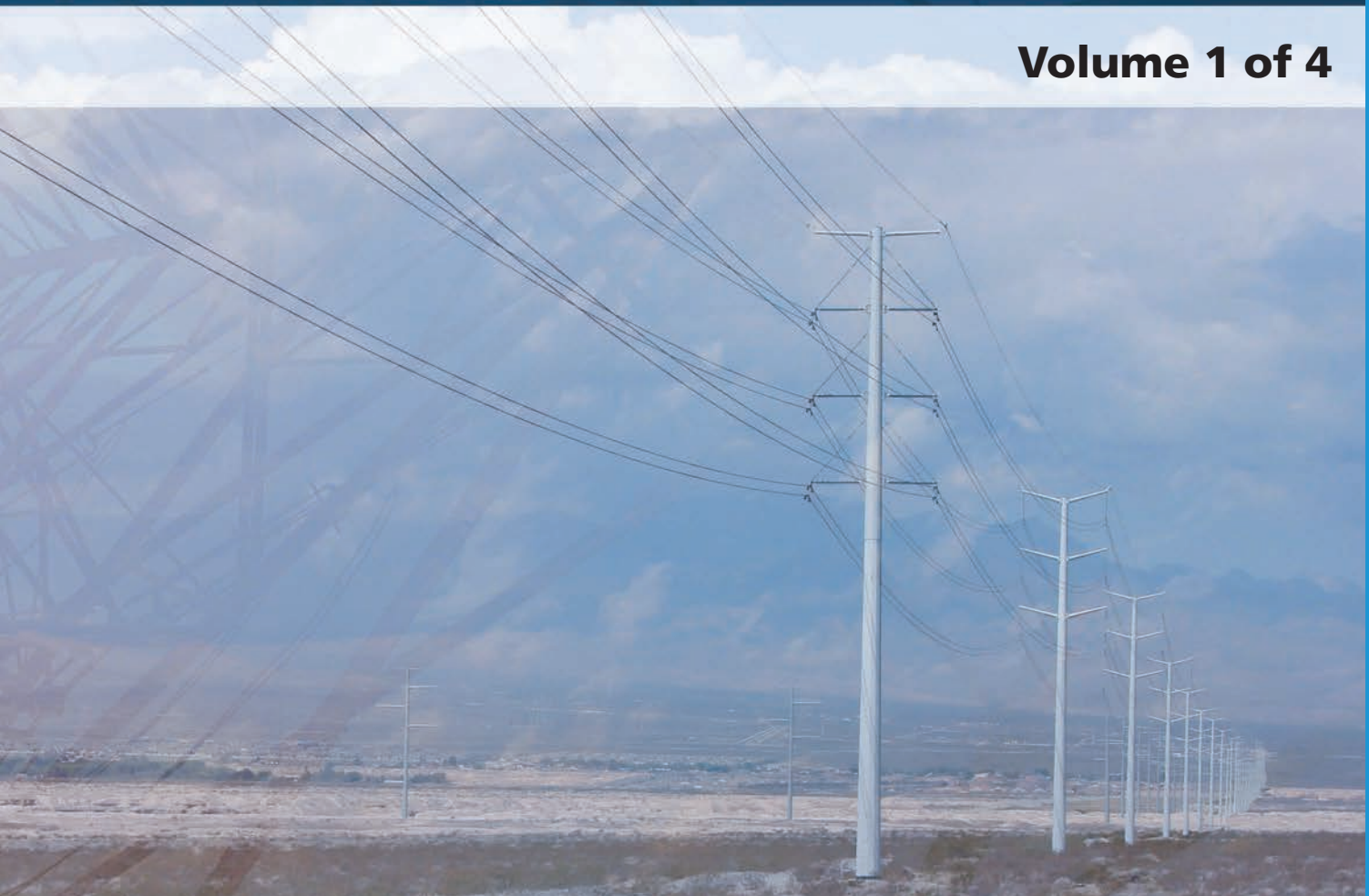
Southline Transmission Line Project

Final Environmental Impact Statement

Volume 1 of 4



BLM

WESTERN

BLM/NM/PL-14-01-1610 · DOE/EIS-0474

Western AREA POWER ADMINISTRATION

National System of Public Lands
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

October 2015

MISSION STATEMENT

The Bureau of Land Management is responsible for stewardship of our public lands. The BLM is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield of our Nation's resources within the framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife habitat, wilderness, air, and scenic quality, as well as scientific and cultural values.

WESTERN MISSION STATEMENT

Western Area Power Administration's mission is to market and deliver clean, renewable, reliable, cost-based federal hydroelectric power and related services.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
www.blm.gov/nm/lascruces

Western Area Power Administration
CORPORATE SERVICES OFFICE
P.O. Box 281213
Lakewood, Colorado 80228-8213

In Reply Refer To:
NMNM 124104
2800 (L0310)
1610

Dear Reader:

Enclosed is the Final Environmental Impact Statement (EIS) titled "Southline Transmission Line Project Final Environmental Impact Statement." This EIS has been prepared by the Bureau of Land Management (BLM) and Western Area Power Administration (Western) in accordance with the Council on Environmental Quality regulations at 40 Code of Federal Regulations (CFR) parts 1500–1508, the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976, as amended, implementing regulations, the BLM's Land Use Planning Handbook (H-1601-1), and other applicable laws and policy. The BLM and Western have agreed to be joint lead agencies and have prepared this document in consultation with several cooperating agencies.

General Information

The Final EIS has been prepared to analyze the potential impacts of the BLM's granting a right-of-way (ROW) to Southline Transmission, LLC (Southline), for the purpose of constructing and operating a 345-kilovolt (kV) overhead transmission line from the Afton Substation in New Mexico to the Saguaro Substation in Arizona. Western must decide whether or not Western's existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines would be upgraded and whether to use Western's existing transmission easements as part of the proposed Southline Transmission Line Project (Project). Also, Western will use the document as one element to consider in determining whether to fund the proposed Project under Western's Transmission Infrastructure Program and the 2009 amendments to the Hoover Act. Southline proposes the new 345-kV transmission line and upgrade of the existing Western line to 230 kV to improve reliability in southern New Mexico and Arizona, mitigate existing congestion, improve the electric capacity of transmission system in the region, and facilitate renewable generation development.

The proposed Project would be located on a combination of BLM-administered public land, New Mexico and Arizona State Trust, U.S. Bureau of Reclamation, Department of Defense, tribal, and private lands in southern New Mexico and Arizona. The proposed Project would be an approximately 360-mile-long double-circuit, overhead transmission line with a 100- to 150-foot (Upgrade Section) or 200-foot (New Build Section) ROW. The BLM-administered land within the proposed Project area is managed under the Mimbres Resource Management Plan (RMP) in New Mexico, and under the Safford RMP, Las Cienegas RMP, and Phoenix RMP in Arizona.

While potential BLM plan amendments were considered in the Draft EIS, the Agency Preferred Alternative in the Final EIS does not require a plan amendment. No plan amendments are required or proposed for any portions of the proposed Project in Arizona. To avoid confusion, the 'Draft Resource Management Plan Amendment' (RMP) language has been dropped from the title of the Final EIS as no plan amendment is proposed in the Final EIS for the Agency Preferred Alternative. Some transmission line segments, not part of the Agency Preferred Alternative, are not in conformance with the Las Cruces District Office Mimbres RMP Visual Resource Management (VRM) Class II objectives and one ROW avoidance area stipulation. Therefore, in conjunction with Southline's request for a ROW for the Project,

the EIS also analyzes potential RMP amendments that would address the identified non-conformance of those project segments if they were to be selected.

Changes Between the Draft and Final EISs

Important additions and changes made in the Final EIS:

- The 'Draft Resource Management Plan Amendment' language has been dropped from the title of the Final EIS
- BLM and Western response to comments on the Draft EIS in chapter 8
- A change in the Agency Preferred Alternative around Lordsburg Playa and south of the Tucson International Airport
- Addition of route variations near Willcox Playa and south of the Tucson International Airport
- Updated Proponent Committed Environmental Measures (PCEMs) in chapter 2
- Final Programmatic Agreement in appendix L
- Biological Opinion and amendment in appendix M
- Draft NEPA Plan of Development (POD) in appendix N
- Modification of local alternatives LD3a and LD3b to shift the routes away from VRM Class II conflicts on the west side of Lordsburg Playa
- Updated BLM proposed land use plan amendment analysis due to the modification of LD3a and LD3b as noted above.

BLM Decision and Appeal Processes

The BLM will decide whether to grant, grant with modifications, or deny the proposed ROW.
The BLM's decision will be documented in its Record of Decision (ROD). The ROD will be available electronically to all who participated in the environmental analysis and planning process, or by mail upon request.

Unlike land use planning decisions, implementation decisions (i.e., granting or denying a ROW) are not subject to protest under the BLM planning regulations, but are subject to an administrative review process following the issuance of the ROD. Appeals are filed with the Office of Hearings and Appeals, Interior Board of Land Appeals, pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. They are in full force and effect when the ROD and ROW are issued. The BLM ROD will contain the appropriate instructions for filing an appeal.

It is the BLM's practice to make comments, including names and addresses of submitters, available for public review. Before including your address, phone number, email address, or other personal identifying information with your comments or protest, please be advised that your entire comment or protest, including your personal identifying information, may be made publicly available at any time. Although you may ask us in your submission to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

Land Use Plan Amendments

As noted above, no plan amendments are required for any portions of the proposed Project in Arizona. Additionally, the Agency Preferred Alternative in the Final EIS does not require a plan amendment. However, alternative segments of the proposed Project within the Las Cruces District Office would require plan amendments if they are selected.

These alternative segments are not in conformance with the Mimbres RMP as portions of six alternative route segments would cross VRM Class II areas and portions of one of the six alternative route segments would cross a ROW avoidance area designated for the Butterfield Trail near Lordsburg Playa. Although not anticipated, if these route sections were selected the BLM would decide whether to amend the land use plan. Detailed descriptions of proposed RMP amendments can be found in section 2.10.7 of the EIS.

Western Decision Process

Western will use the analysis in this document to inform its decision making. Western's decision will include determining how to respond to the Project proposed by Southline, which would, in part, include an upgrade of two existing Western transmission lines and associated substations and the use of existing Western transmission easements. In addition, Western would consider the nature and extent of its participation in the proposed Project, and whether it will provide funding. In the context of making these determinations, Western will evaluate the upgrade of its existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines. Western will announce its decision in a ROD in the Federal Register no sooner than 30 days after publication of the Final EIS.

Final EIS Availability

The Final EIS, RODs, and supporting documents are available electronically on the BLM project website (http://www.blm.gov/nm/st/en/prog/more/lands_realty/southline_transmission.html), and are also available for public inspection during normal business hours at the affected BLM District, Field, and State offices and local libraries. A limited number of copies of the document on CD will be available, as supplies last. To request a copy, or if you have any questions regarding the Final EIS or need additional information regarding the proposed Project, please contact:

Mark A. Mackiewicz, PMP
Senior National Project Manager
BLM
(435) 636-3616

or

Mark Wieringa
NEPA Document Manager
Western Area Power Administration
(720) 962-7448

Any persons wishing to be added to a mailing list of interested parties may write or call the Project Manager at this address or phone number.

Sincerely,

Bill Childress
Authorized Officer
Las Cruces District Manager

Sincerely,

Mark A. Gabriel
Administrator
Western Area Power Administration

1 Enclosure

SOUTHLINE TRANSMISSION LINE PROJECT
FINAL ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of the Interior
Bureau of Land Management
Las Cruces District Office
Las Cruces, New Mexico
BLM Publication Index No.
BLM/NM/PL-14-01-1610

U.S. Department of Energy
Western Area Power Administration
Corporate Services Office
Lakewood, Colorado
DOE/EIS-047

October 2015

Lead Agencies: U.S. Department of the Interior, Bureau of Land Management
U.S. Department of Energy, Western Area Power Administration

Type of Action: ( ) Administrative Draft ( ) Draft (X) Final

Cooperating Agencies:

U.S. Army Corps of Engineers
U.S. Bureau of Reclamation
Department of Defense (DOD) Clearinghouse
U.S. Environmental Protection Agency
DOD Fort Huachuca
National Park Service
U.S. Forest Service, Coronado National Forest
U.S. Fish and Wildlife Service
Arizona Game and Fish Department
Arizona State Land Department
New Mexico Department of Game and Fish
New Mexico State Land Office
Cochise County, Arizona
Greenlee County, Arizona
Graham County, Arizona
City of Sierra Vista, Arizona.

Authorized Officers Responsible for the Environmental Impact Statement:

Bureau of Land Management:
William Childress, Las Cruces District Manager

Western Area Power Administration:
Mark A. Gabriel, CEO and Administrator

For Further Information, Contact:

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(435) 636-3616

or

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NEPA Document Manager
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Abstract

This Environmental Impact Statement (EIS) analyzes the impacts related to the development of the Southline Transmission Line Project, proposed by Southline Transmission, LLC (Southline). Southline proposes to construct approximately 240 miles of new double-circuit 345-kilovolt (kV) transmission line in a 200-foot right-of-way (ROW) between the Afton Substation, south of Las Cruces, New Mexico, and Western Area Power Administration's (Western's) Apache Substation, south of Willcox, Arizona (Afton–Apache Section or New Build Section). Southline also proposes to upgrade 120 miles of Western's existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines in a 100-foot existing ROW to a double-circuit 230-kV transmission line in a 100- to 150-foot ROW (Saguaro–Apache Section or Upgrade Section). The Upgrade Section would originate at the Apache Substation and terminate at the Saguaro Substation northwest of Tucson, Arizona. The transmission line route alternatives would pass through Doña Ana, Grant, Hidalgo, and Luna counties in New Mexico; and Cochise, Pima, Pinal, Graham, and Greenlee counties in Arizona. One proposed new substation could also be constructed in Luna County, New Mexico. The proposed transmission line route alternatives would require ROW, crossing Bureau of Land Management, State, or private lands, or lands managed by other entities in New Mexico and Arizona. This EIS describes the physical, biological, cultural, and socioeconomic resources in and around the proposed transmission line. The EIS considers the impacts of the proposed transmission line and its alternatives, including the "no action" alternative.

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Final Environmental Impact Statement (EIS) document has been prepared to analyze and disclose the potential effects of the proposed Southline Transmission Line Project (Project). The proposed Project would include the construction of approximately 240 miles of new double-circuit 345-kilovolt (kV) transmission line, and the upgrade of approximately 120 miles of Western Area Power Administration's (Western's) existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines to a double-circuit 230-kV transmission line. The proposed Project would be located on Federal, State, tribal, and private lands in New Mexico and Arizona. 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 proposed Project.

The BLM and Western have agreed to be joint lead agencies under the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) implementing regulations (40 CFR 1501.5(b)). This EIS is being prepared by the BLM and Western in compliance with NEPA CEQ regulations (40 CFR parts 1500–1508), Department of Energy regulations (10 CFR 1021), the Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1761–1771), and applicable U.S. Department of the Interior and BLM policies and manuals. Sixteen agencies have participated in the preparation of this EIS, including: U.S. Army Corps of Engineers; U.S. Bureau of Reclamation (Reclamation); Department of Defense (DOD) Clearinghouse; U.S. Environmental Protection Agency; DOD Fort Huachuca; National Park Service; U.S. Forest Service (Coronado National Forest); U.S. Fish and Wildlife Service; Arizona Game and Fish Department (AGFD); Arizona State Land Department; New Mexico Department of Game and Fish; New Mexico State Land Office; Cochise County, Arizona; Greenlee County, Arizona; Graham County, Arizona; and City of Sierra Vista, Arizona.

ES.2 AGENCY PURPOSE AND NEED

The following section describes the purpose of and need for BLM and Western's Federal actions associated with the proposed Project. The BLM and Western, serving as joint lead agencies, are both considering Federal actions that would need to be taken.

BLM must consider Southline's request to be granted a ROW on BLM-administered public lands for the construction, operation, maintenance, and decommissioning of the proposed transmission line. Western must consider the upgrade of two of its existing transmission lines (Saguaro–Tucson and Tucson–Apache 115 kilovolt (kV)). This environmental analysis supplies one element of many for Western to consider as it determines the extent and nature of its participation in Southline's proposed Project, and whether to fund the Project in whole or in part under the Transmission Infrastructure Program (TIP).

ES.2.1 Bureau of Land Management – Purpose and Need

The BLM has received a ROW application from Southline and must determine whether to allow the use of BLM-administered public lands for portions of the proposed Project. In accordance with FLPMA, and the BLM's ROW regulations (43 CFR 2800), the BLM must manage public lands for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources.

The Secretary of the Interior is authorized to grant ROWs for "systems for generation, transmission, and distribution of electric energy" "over, upon, under, or through [public] lands" (43 U.S.C. 1761(a)(5)).

Taking into account the BLM's multiple-use mandate, the need for the BLM action is established by the BLM's responsibility under FLPMA to respond to a request for a ROW grant while avoiding or minimizing adverse impacts to other resource values and to locate the uses in conformance with land use plans. The BLM's purpose for the proposed Project is to respond to a ROW application submitted by Southline to construct, operate, maintain, and decommission a 345-kV transmission line, substations, access roads, and associated infrastructure on public lands administered by the BLM in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws and policies.

In making its decision, the BLM must determine and consider the environmental impact on all lands crossed as a result of granting a ROW across BLM-administered public lands. The BLM must also consider existing resource management plans (RMPs) and other BLM land use plans in its decision to issue a ROW grant (43 CFR 1610.0-5(b)). The BLM will decide whether to grant, grant with modifications, or deny the application. Modifications could include granting only a portion of the Project, modifying the proposed use, or changing the route or location of the proposed facilities if the BLM determines such terms, conditions, and stipulations are in the public interest (43 CFR 2805.10(a)(1)).

The BLM would issue a Record of Decision (ROD) with all terms and conditions deemed appropriate by the BLM. The BLM decisions to be made are to:

- decide whether to grant, grant with modifications, or deny all or part of the ROW application for the transmission line, substation expansions, and associated access roads and facilities;
- decide whether one or more RMPs would be amended to allow for a ROW for the proposed transmission line and associated facilities;
- decide whether to approve proposed resource management plan amendment(s) (RMPA(s)) if the proposed Project is not approved;
- determine the most appropriate route across BLM-administered public lands for the transmission line, taking into consideration multiple-use objectives; and
- determine the terms and conditions (stipulations) that should be applied to the construction, operation and maintenance, and decommissioning of the transmission line on BLM-administered public lands.

FLPMA requires that the BLM "develop, maintain, and when appropriate, revise land use plans" (43 U.S.C. 1712). As indicated in the notice of intent (NOI) published in the Federal Register on April 4, 2012, the public was notified of the potential for a plan amendment for this Project. Plan conformance for all resources is discussed in section 1.5, and an amendment to one of the four BLM RMPs discussed in section 1.5 and section 2.3 of chapter 2 could be required, depending on the route selected on public lands where current resource management objectives would not be met by construction of the proposed Project.

Specifically, there are two conformance issues with the Mimbres RMP: (1) where portions of alternative route segments would cross visual resource management (VRM) Class II areas, and (2) where portions of the alternative route segments would cross avoidance areas designated for the Butterfield Overland Mail and Stage Route (Butterfield Trail) near Lordsburg Playa. As there was the potential for a plan amendment for the conformance issues noted above, the BLM used a multistep process fully integrated with the NEPA process and CEQ guidelines (43 U.S.C. 1600). The EIS includes an analysis of the proposed RMPAs.

A 30-day availability period for the EIS will be initiated by publication of a notice of availability (NOA) for the Final EIS. As the Agency Preferred Alternative does not require an RMPA, the potential land use planning requirements do not apply.

The BLM and Western have prepared this EIS to meet the disclosure requirements under NEPA, to facilitate public participation, to assist the BLM decision makers in determining whether to issue a ROW grant, to determine under what terms and conditions the ROW grant would be issued, and to assist Western in making its decisions regarding the proposed Project. These decisions would be documented in the agencies' RODs. The opportunity to appeal the BLM decision(s) in the ROD would be allowed as provided in 43 CFR 4 and 2801.10.

ES.2.2 Western Area Power Administration – Purpose and Need

Western needs to respond to the Project proposed by Southline, which would, in part, include an upgrade of two existing Western transmission lines and associated substations and the use of existing Western transmission easements. In addition, Southline has requested consideration of their proposed Project for funding under the amended Hoover Act of 1984, as described in more detail below. Western needs to determine the nature and extent of its participation in the proposed Project, and whether it will provide funding. In the context of making these determinations, Western will evaluate the upgrade of its existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines.

As part of its decision whether to use its amended Hoover Act borrowing authority to finance the proposed Project, Western would decide on the amount of funding, potential ownership of capacity rights on the upgrade, repayment provisions, and the nature and extent of its participation in the proposed Project. Specifically, funding would be used to construct the proposed transmission lines and substation upgrades, and remove the existing Western transmission lines. These decisions would be managed through contractual agreements that include defining the respective rights and obligations associated with ownership, construction, operation, and maintenance associated with the proposed Project; and that provide for acquisition of ROWs for the Project.

Before committing funds for construction, Western must determine that the proposed Project is in the public interest; that it would not adversely impact system reliability, system operations, or other statutory obligations; that it has at least one terminus in Western's service territory; that it will deliver, or facilitate the delivery of renewable energy; and that it is reasonable to expect that the proceeds from the Project would be adequate to repay a loan from the U.S. Treasury. The development phase would determine the feasibility of the proposed Project. Western's decision would be partially informed by the required NEPA analysis and disclosure in this EIS. If Western decides to participate in the proposed Project, Western and Southline would enter into an agreement to accomplish the upgrade.

Alternatively, Western could choose to participate with Southline with the upgrade of the two transmission lines and associated facilities and the use of its borrowing authority to advance the proposed Project. The current condition of the lines and their inclusion in Western's 10-year capital plan (Western 2012a) indicates, however, that the lines would be upgraded within the next 10 years even if Western does not participate with Southline or make use of its borrowing authority. The source of funding, the timing, and the manner of Western's participation in upgrading the lines are not expected to result in materially different environmental impacts.

Western's Federal action is to respond to Southline's proposed Project. Western must make decisions about whether to participate in the Project beyond the development phase, the nature of that participation,

and whether to allow the upgrade of its existing transmission lines and the use of its ROW easements. Western must also make decisions about the route of the Agency Preferred Alternative, and upgrades/expansions to the existing substations. Finally, Western must make a decision about using its borrowing authority to finance the Project, in whole or in part, contingent upon the successful completion of development and commercial agreements with Southline.

ES.3 CHANGES BETWEEN THE DRAFT AND FINAL EIS

Following the requirements of 40 CFR 1503, numerous minor edits to the document have been made between the Draft and this Final EIS, many in response to comments by agencies and the public. These include corrections to the text, figures, and tables, and typographical errors. The most notable difference between the Draft and Final EIS is the inclusion of route variations east of Willcox Playa and south of the Tucson International Airport. These route variations are described in chapter 2 of this EIS and were developed based on agency and public comments on concerns about impacts in these areas. These route variations include the following:

- P7a, P7b, P7c, and Pd are minor route variations in the New Build Section of the proposed Project. These variations were developed to shift segment P7 east away from Willcox Playa in order to minimize avian impacts; and
- U3aPC is a variation of the proposed Project in the Upgrade Section and was developed to shift segment U3a away from potential conflicts with Pima County economic development efforts. U3aPC was also developed to minimize ROW encroachment conflicts and dense development around the existing Western line in the Summit area. Realigning the existing line along U3aPC would reduce existing impacts and allow for safer and easier maintenance of the line in this area.

One other notable change in the Final EIS is a change in the Agency Preferred Alternative. See section ES.6 below.

ES.4 PROPOSED PROJECT (PROPONENT PREFERRED)

This section describes the Project proposed by Southline. It is important to note that Southline's proposed Project is not the same as either agency's Federal action or proposed action, terms that have specific NEPA meaning and are applied only to Federal agency activities. Federal or proposed actions are those actions agencies intend to take. In this case, both agencies' actions are reactive to Southline's proposed Project and respond to Southline's initiative within established regulations. In the case of the BLM, Southline's application for a ROW grant precipitates a process, governed by regulations, that leads to a decision to grant, grant with modifications, or deny the application. This is the BLM's Federal action, not the construction, operation, and maintenance of the transmission line. Similarly, Western is responding to Southline's proposal to upgrade two of its existing lines, use the existing ROWs, potentially obtain funding, and partner with Western in their proposed Project. Western must consider all of these issues, and make decisions on them; Western's Federal action is not to construct, operate, and maintain the proposed transmission line, although if Western does determine to participate in the proposed Project in its ROD, it would have a role in the Project. However, if not for Southline's proposed Project, neither agency would have a Federal action.

Southline worked with the Western Electricity Coordinating Council, local utilities, and other regional transmission planning groups to plan the proposed Project to help solve regional transmission needs such as congestion, reliability, capacity constraints, and limited transmission access for utilities and renewable energy zones in New Mexico and Arizona. Southline is seeking a 50-year ROW across BLM-managed

public land for the operation, maintenance, and decommissioning of the proposed Project. At the end of the ROW grant term (50 years), the responsible Project operator would have the option to renew the ROW grant past 50 years to continue operation of the line.

Southline proposes to construct a high-voltage electric transmission line and associated facilities in southern New Mexico and southern Arizona. The proposed Project would consist of two sections.

The New Build Section would entail construction of approximately 240 miles of new double-circuit 345-kV transmission line between the Afton Substation, south of Las Cruces, New Mexico, and the Apache Substation, south of Willcox, Arizona. The existing voltage in the New Mexico facilities (Afton and Hidalgo substations) is 345 kV; thus, the New Build Section is proposed as a 345-kV transmission line. Based on a typical span of 1,000 to 1,400 feet, four to five transmission line structures per mile would be required, with typical structure heights between 110 and 170 feet.

The Upgrade Section would be an upgrade of approximately 120 miles of Western's existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines to a double-circuit 230-kV transmission line originating at the Apache Substation and terminating at the Saguaro Substation, northwest of Tucson, Arizona. The Upgrade Section is proposed as a double-circuit 230-kV, which is more compatible with Arizona's 230-kV main transmission grid. In addition, the existing ROW, particularly through the more urban Tucson area, is constrained, and a 345-kV structure was determined to be too large in terms of ROW requirements. One of two methods for the Upgrade Section of the Project would be used, depending on ROW constraints: either the tear-down and rebuild-in-place method, or construction of new facilities adjacent to the existing facilities. The existing transmission facilities would be removed after construction of the new transmission line. Based on a typical span of 700 to 1,100 feet, five to six new transmission line structures per mile would be required, with typical structure heights between 100 and 140 feet.

The requested 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 up to 150 feet between the Afton Substation and the Del Bac Substation, and between the Rattlesnake Substation and the Saguaro Substation. The additional ROW would allow room for construction of the new line adjacent to the existing line so that the existing line would remain in service until the new line is energized. These ROW widths have been requested to allow for the safe movement and operation of construction and maintenance equipment and to allow for sufficient clearance between conductors and the ROW edge, as required by the National Electric Safety Code (NESC). Southline is also requesting ROWs for ancillary Project facilities and for access to the transmission line.

The proposed Project would also involve the interconnection with and expansion and upgrade of 14 existing substations along the Project route in New Mexico and Arizona, and the potential construction of a new 345-kV substation facility proposed for Luna County, New Mexico (referred to as "Midpoint Substation").

The Project would be located within Doña Ana, Luna, Grant, and Hidalgo counties in New Mexico and Graham, Greenlee, Cochise, Pinal, and Pima counties in Arizona.

ES.5 ALTERNATIVES

A range of alternative routes are analyzed in this EIS, including the Agency Preferred Alternative and the no action alternative. Alternatives are organized into four route groups using major existing substations as nodes. Route group 1 includes routing alternatives between the Afton and Hidalgo substations in New Mexico. Route group 2 includes routing alternatives between the existing Hidalgo and Apache substations

in New Mexico and Arizona. Route group 3 includes alternatives between the Apache and Pantano substations in Arizona. And finally, route group 4 includes alternatives between the Pantano and Saguaro substations in Arizona. Route groups 3 and 4 include the upgrade of the existing Western lines. Figure ES-1 is included as an overview – more detailed maps of the alternatives can be found in chapter 2 of the EIS.

Within each of the four route groups are the primary routes as proposed by Southline, called "subroutes" (the Proponent Preferred or Proponent Alternative); these are formed by a series of interconnected segments. Local alternatives and route variations were developed to route around localized resource conflicts. Names for the various routing alternatives used throughout this EIS are defined as:

- **Proponent Preferred** – Southline's preferred route as proposed in their ROW grant application (considered a subroute, composed of segments);
- **Proponent Alternative** – Southline's alternative route as proposed in their ROW grant application (considered a subroute, composed of segments);
- **Local alternative** – Localized route options proposed by Southline or developed by BLM and Western in coordination with cooperating agencies to address specific resource issues; and
- **Route variation** – Minor variations in routes developed by BLM and Western in response to comments on the Draft EIS.

ES.5.1 Route Group 1: Afton Substation to Hidalgo Substation

Route group 1 alternatives include two subroutes (subroute 1.1 (the Proponent Preferred) and subroute 1.2 (the Proponent Alternative)) and four local alternatives. Both subroutes are roughly 145 miles long. Local alternatives range between 9 and 43 miles long. All alternatives in this route group cross portions of Doña Ana, Grant, and Hidalgo counties in New Mexico. Three of the four local alternatives (A, B, and C) were identified by Southline and represent routing options developed to avoid localized environmental conflicts along the international border. The fourth local alternative (DN1) provides a co-location option with the approved, but not yet constructed SunZia Southwest Transmission Line Project (SunZia project).

ES.5.2 Route Group 2: Hidalgo Substation to Apache Substation

Like route group 1, route group 2 alternatives include two subroutes (subroute 2.1 (the Proponent Preferred) and subroute 2.2 (the Proponent Alternative)). Route group 2 includes four route variations and eight local alternatives. Both subroutes are roughly 95 miles long. Route variations and local alternatives range between 1 and 54 miles long. The alternatives in this route group cross portions of Hidalgo County in New Mexico and portions of Cochise, Greenlee, and Graham counties in Arizona. The four route variations and eight local alternatives were identified by the BLM and Western and represent routing options developed to avoid localized environmental conflicts around Lordsburg and Willcox playas.

ES.5.3 Route Group 3: Apache Substation to Pantano Substation

Route group 3 alternatives include the upgrade of the existing Western 115-kV line between the Apache and Pantano substations; the line measures approximately 70 miles between these two substations. There is one local alternative in route group 3. Route group 3 crosses portions of Cochise and Pima counties in

Arizona. The one local alternative (local alternative H) was identified by Southline and represents routing options designed to avoid residential development in the Benson area.

ES.5.4 Route Group 4: Pantano Substation To Saguaro Substation

Route group 4 alternatives include the upgrade of the existing Western 115-kV line between the Pantano and Saguaro substations; the line measures approximately 49 miles between these two substations. There is 1 route variation and 10 local alternatives in route group 4. Route group 4 crosses portions of Pima and Pinal counties in Arizona. Nine of the 10 local alternatives proposed by the BLM and Western in this route group are options for replacing the portion of the existing Western line that crosses over Tumamoc Hill in Tucson. The route variation and the 10th local alternative are routing options near the Tucson International Airport and Marana Regional Airport and were proposed by the BLM and Western to address potential conflicts with future airport expansion and economic development plans.

ES.6 SELECTION OF THE AGENCY PREFERRED ALTERNATIVE ROUTE

The Agency Preferred Alternative in the Draft EIS included segments P1, P2, P3, P4a, P7, and P8, in combination with local alternatives LD3a, LD4, and LD4-Option 5, in the New Build Section; and segments U1a, U1b, U2, U3a, U3b, U3c, U3d, U3f, U3g, U3h, U3i, U3k, U3l, U3m, and U4, in combination with local alternatives TH1a, TH1-Option, and MA1, in the Upgrade Section.

Public and agency comments on the Draft EIS expressed concern that portions of the Agency Preferred Alternative in the New Build Section (segment LD4 near Lordsburg Playa) would parallel the approved, but not yet constructed SunZia project. Additional comments on the Draft EIS included concerns about impacts to the AGFD managed Willcox Playa Wildlife Area, potential avian conflicts along the southeast side of the Willcox Playa along segment P7, as well as impacts to communities and economic development plans south of the Tucson International Airport.

The Agency Preferred Alternative for this Final EIS has changed to consider those public and agency comments, including changing the route for the Agency Preferred Alternative near Lordsburg Playa and including portions of the U3aPC route variation south of Tucson (figures ES2a and ES2b). The Agency Preferred Alternative in the Final EIS also includes additional mitigation provided by the AGFD to minimize impacts from segment P7. A description of the Agency Preferred Alternative follows.

ES.6.1 New Build Section

The BLM and Western (Agency) Preferred Alternative for the New Build Section for this EIS consists of a combination of the Proponent Preferred and local alternative segments within route groups 1 and 2. The Agency Preferred Alternative for the New Build Section would include Proponent Preferred segments P1, P2, P3, P4a, P5b, P6a, P6b, P6c P7, P8, in combination with local alternatives LD3a and LD3b for a total of 245.9 miles (see figure ES2a). Approximately 85 percent of the Agency Preferred Alternative in the New Build Section would be parallel to existing linear infrastructure such as transmission lines, gas line, and roadways.

This route was selected by the BLM and Western as the Agency Preferred Alternative because it would:

- Use existing linear ROWs by paralleling existing infrastructure and transmission lines;
- Eliminate the need for plan amendments through conformance with existing land use plans;
- Minimize impacts to military operations at and near the Willcox Playa; and
- Minimize impacts to sensitive resources, particularly near the Lordsburg Playa.

The Agency Preferred Alternative would start at the existing Afton Substation south of Las Cruces and include segments P1 and a portion of P2 between the Afton and proposed Midpoint North substations; these proposed Project segments parallel an existing El Paso Electric 345-kv transmission line. From the proposed Midpoint North Substation, the Agency Preferred Alternative extends west alongside and parallel to an existing Public Service Company of New Mexico 345-kV line and includes proposed Project segment P3 and a portion of segment P4a to the Hidalgo Substation. Segment P1 is a short (5-mile) segment (in and out loop) between the existing Afton Substation and the existing Luna–Diablo 345-kV transmission line. Segment P3 is a 31-mile-long connector segment (for interconnection to potential future solar generation), running north-south between Interstate (I-) 10 and New Mexico State Route (NM) 9, located approximately 9 miles west of the West Potrillo Mountains Wilderness Study Area (WSA).

The Agency Preferred Alternative extends west along segment P4a from the existing Hidalgo Substation, connecting to local alternatives LD3a and LD3b around the north and west sides of Lordsburg Playa. The east-west segment of LD3a parallels the existing Public Service Company of New Mexico 345-kV line. LD3b connects to segment P5b, which would roughly parallel an existing El Paso Natural Gas line for approximately 20 miles before connecting to P6a. The Agency Preferred Alternative would follow the Proponent Preferred along segments P6a, P6b, and P6c (also along existing El Paso Natural Gas lines), P7 (paralleling an existing Southwest Transmission Cooperative 230-kV transmission line) around the southeast side of the Willcox Playa, and P8, which would connect to the existing Apache Substation.

ES.6.2 Upgrade Section

The Agency Preferred Alternative for the Upgrade Section consists of a combination of the Proponent Preferred, the new route variation south of the Tucson International Airport, and local alternatives at Tumamoc Hill and near the Marana Regional Airport, within route groups 3 and 4. The Agency Preferred Alternative for the Upgrade Section would include Proponent Preferred segments U1a, U1b, U2, U3a, U3b, U3c, U3d, U3f, U3g, U3h, U3i, U3k, U3l, U3m, and U4, in combination with route variation U3aPC, as well as local alternatives TH1a and TH1-Option around Tumamoc Hill, and MA1 near the Marana Regional Airport (see figure ES2b). The Agency Preferred Alternative for the Upgrade Section would be 120.9 miles, of which 109.5 miles would be the upgrade of Western's existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines. Approximately 98 percent of the Agency Preferred Alternative in the Upgrade Section would be parallel to existing or proposed linear infrastructure such as transmission lines, gas line, and roadways.

This route was selected by the BLM and Western as the Agency Preferred Alternative because it would:

- Maximize use of the existing ROW and facilities currently utilized for Western's existing Saguaro–Tucson and Tucson–Apache 115-kV transmission lines;
- Reduce existing conflicts in the community of Summit, and minimize impacts to future Pima County economic development plans south of the Tucson International Airport;

- Address cultural resources and visual concerns regarding upgrading the existing Western line across Tumamoc Hill; and
- Minimize impacts to military training operations at the Marana Regional Airport.

The Agency Preferred Alternative would start at the existing Apache Substation south of Willcox, Arizona, and extend through Benson, upgrading the existing Western 115-kV line. The Agency Preferred Alternative between Apache and Del Bac substations includes proposed Project segments U1a, U1b, U2, U3a, and U4 as well as route variation U3aPC. From the Del Bac Substation, the Agency Preferred Alternative includes upgrading the existing Western 115-kV line north along segments U3b, U3c, and U3d. From the south side of Tumamoc Hill at Starr Pass Boulevard, the Agency Preferred Alternative would connect segment U3d to local alternative TH1a west along Starr Pass Boulevard and then turn north along Greasewood Road. Local alternative TH1a would then connect to TH1-Option east along St. Mary's Road, connecting back up to the existing Western line and ROW at segment U3g. The Agency Preferred Alternative would then include the upgrade of the existing Western line north to the Saguaro Substation (segments U3h, U3i, U3k, U3l, U3m, and U4), except for reroute using local alternative MA1 near the Marana Regional Airport.

ES7. ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Environmentally Preferred Alternative is the alternative that will promote the national environmental policy as expressed in Section 101(B) of the National Environmental Policy Act. This means that the Environmentally Preferred Alternative is the "alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ 1981:question 6a). To determine the Environmentally Preferred Alternative, BLM and Western considered the results of the environmental analyses presented in chapter 4. Each alternative was evaluated in terms of a range of potential adverse environmental impacts by route.

ES.8 PROPOSED BLM RESOURCE MANAGEMENT PLAN AMENDMENTS

No plan amendments would be required for any Project segments in Arizona. Additionally, the Agency Preferred Alternative would not require a plan amendment.

A plan amendment for the Mimbres RMP in New Mexico would be required for the portion of the alternative route segment (local alternative LD2 near the Lordsburg Playa) that parallels an avoidance area designated for the Butterfield Trail. A plan amendment would also be required for the Mimbres RMP that would change the VRM Class II designation to VRM Class III or IV for six project segments within the New Build Section that intersect VRM Class II lands. Four plan amendment alternatives have been identified for the Mimbres RMP (table ES.8-1). These options include (1) the no action, (2) modifying VRM Class II to Class III, (3) modifying VRM Class II to Class IV, and (4) allowing a ROW to parallel the Butterfield Trail in a ROW avoidance area. None of these local alternatives are proposed as part of the Agency Preferred Alternative, and no plan amendment would be required if the Agency Preferred Alternative is approved in the agency RODs.

Table ES.8-1. Draft Mimbres Resource Management Plan Amendments

Project Segment/ Local Alternative	Proposed Amendment
S5	Existing VRM Class II would be reclassified to either VRM Class III or IV.
S6	Existing VRM Class II would be reclassified to either VRM Class III or IV.
S7	Existing VRM Class II would be reclassified to either VRM Class III or IV.
C	Existing VRM Class II would be reclassified to either VRM Class III or IV.
D	Existing VRM Class II would be reclassified to either VRM Class III or IV.
LD2	Existing VRM Class II would be reclassified to either VRM Class III or IV. Also, special stipulations for ROWs in the Mimbres RMP would be modified from "facilities will not be located parallel to the Continental Divide National Scenic Trail or Butterfield Trail" to "facilities will not be located parallel to the Continental Divide National Scenic Trail or Butterfield Trail, except for a 9.1-mile-long, linear, 200-foot-wide transmission ROW at the Lordsburg Playa."

ES.9 AFFECTED ENVIRONMENT, ISSUES, AND ENVIRONMENTAL IMPACTS

Following is a summary of the information found in chapters 3 and 4. A more detailed summary and comparison of the potential impacts of the proposed Project and alternatives can be found in tables 2-15, 2-16, 2-17, and 2-18 in chapter 2.

ES.9.1 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. Construction emissions would, however, be transient, short term, and spread over large distances and multiple airsheds. Emissions from operation and maintenance activities (e.g., vehicle exhaust from travel to substations and the transmission line for routine inspection and/or repairs) would be similar in nature to those of construction emissions but would be much lower.

The proposed Project would lie within the boundaries of two nonattainment/maintenance areas, regardless of the action alternative chosen: the Rillito particulate matter 10 (PM_{10}) nonattainment area and the Tucson carbon monoxide (CO) maintenance area. The closest Class I area to the Proponent Preferred route and/or local alternatives is Saguaro National Park outside Tucson, Arizona, located approximately 1 mile from the proposed route. Pima County incorporates the National Ambient Air Quality Standards (NAAQS) by reference; specific Pima County permitting and emission limitations regulations apply for Class I areas and nonattainment areas in Pima County.

Construction of any of the Project alternatives, including the Agency Preferred Alternative, would result in emissions of all regulated pollutants below the de minimis thresholds for conducting regionally significant conformity determinations in all airsheds the proposed Project would cross or for which the Project would be within 31 miles of, including all nonattainment/ maintenance areas. Additionally, pollutant emissions are predicted to be within regulatory limits (below the applicable National, Arizona, and/or New Mexico Ambient Air Quality Standards) for construction of any of the Project alternatives. The impact intensity of the proposed Project and alternatives on air quality would be minor, including the Agency Preferred Alternative.

ES.9.2 Noise

Construction of any of the proposed Project alternatives, including the Agency Preferred Alternative, would result in audible noise from Project equipment and vehicles. Operation and maintenance activities would be similar in terms of the activities that would cause noise. However, during operation and maintenance these activities would occur much less frequently, include fewer individual noise point sources such as pieces of equipment and vehicles, and be of much shorter duration.

Unmitigated noise levels could result as high as 83 A-weighted decibels (dBA) to sensitive receptors near proposed Project construction activities (within 100 feet) under the Agency Preferred Alternative or any other Project alternative; however, construction noise would be short term, temporary, and intermittent in nature. Corona noise for both the New Build and Upgrade sections of the proposed Project and alternatives 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 and would therefore represent a minor, but long-term, impact to ambient soundscapes. The impact intensity of the proposed Project and alternatives on noise would be major but temporary, including the Agency Preferred Alternative.

ES.9.3 Geology and Mineral Resources

The proposed Project could have potential indirect impacts to mining districts during operation and maintenance. However, this impact would only have consequences in areas within active mining districts where active mines are located. Small areas of active and inactive mining districts are crossed by the New Build Section. Access to minerals can be accomplished between spans, or structures can be left on "islands," or the mining interests can have the transmission line locally rerouted. In this case, the proposed Project would not produce obvious changes in the baseline condition of the resource, and potential impacts would be local, short term, temporary, and minor. Therefore, no significant impacts to geological or mineral resources are expected. The impact intensity of the proposed Project and alternatives on geology and mineral resources would range from no impact to minor, including the Agency Preferred Alternative.

ES.9.4 Soil Resources

Potential impacts to the soil resources include disturbance to fragile biological crusts, accelerated rates of erosion by water or wind, as well as loss of soil productivity due to the removal of soils during construction of access roads, and at structure and substation sites. Limited clearing of vegetation and topsoil would result in newly exposed, disturbed soils that could be subject to accelerated erosion by wind and water. The potential for accelerated rates of erosion would be higher in areas with highly erodible soils, such as Lordsburg and Willcox playas. Indirect impacts associated with soil removal may include sediment redistribution of the soil resource as a result of wind and water erosion, invasive plant colonization, soil erosion, and reduction of soil water retention due to compaction. However, no significant impacts to soil resources are expected with the implementation of appropriate Proponent Committed Environmental Measures (PCEMs) to control erosion, including stormwater run-on and runoff prevention, silt fences and/or retention basins, topsoil management and conservation practices, and revegetation activities. The impact intensity of the proposed Project and alternatives on soil resources would range from no impact to minor, including the Agency Preferred Alternative.

ES.9.5 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 that would otherwise be unavailable for study as an inadvertent result of ground-disturbing activities. The existing Western lines between the Apache and Saguaro substations cross deposits composed almost entirely of Low Sensitivity (Potential Fossil Yield Classification (PFYC) 1–2) for paleontological resources. Within the New Build Section of the proposed Project, the southern route (subroute 1.2) is less sensitive for paleontological resources than subroute 1.1. Along subroute 1.1, more than 45 percent of the proposed Project crosses High Sensitivity (PFYC 4) soils, while only 26 percent of subroute 1.2 crosses PFYC 4 soils; however, portions of subroute 1.1 follow existing infrastructure, which may have been disturbed previously. If fossils are present, adverse impacts to paleontological resources would be mitigated in accordance with PCEMs, applicable laws, and regulations. The impact intensity of the proposed Project and alternatives on paleontological resources would range from no impact to moderate, including the Agency Preferred Alternative.

ES.9.6 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 WUS, including wetlands. Proper implementation of PCEMs and controls would prevent discharge of pollutants. Avoidance measures during final siting would prevent most disturbances of WUS or wetlands. Minor to moderate long-term impacts would occur to WUS and wetland areas that are too extensive to be fully avoided: Willcox Playa (segment P7); Stein's Creek (segment LD1); and the Santa Cruz River (segment TH3b).

In accordance with DOE regulations contained at 10 CFR 1022, "Compliance with Floodplain and Wetlands Environmental Review Requirements," this EIS includes a floodplain assessment and statement of findings that analyzes the potential floodplain impacts associated with the proposed Project (see section 4.7 of the EIS for a detailed discussion). Western has concluded that the proposed Project is consistent with the policies set forth in EO 11988 and EO 11990 and 10 CFR 1022, and conforms to applicable floodplain protection standards, provided that local approval by the floodplain administrator is received and permitting conditions are followed.

The impact intensity of the proposed Project and alternatives on water resources would range from no impact to moderate. The intensity of impacts on water resources from the Agency Preferred Alternative would be minor.

ES.9.7 Biological Resources

Vegetation

All action alternatives 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 transmission lines, substation expansions, temporary work areas, and access roads; decreased plant productivity from fugitive dust; and plant community fragmentation. Indirectly, removal of protective vegetation would also expose soil to potential wind and water erosion. This could result in further loss of soil and vegetation, as well as

increased sediment input to water resources. 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 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 more wildfire-prone vegetation, which favors invasive exotic species over native species.

PCEMs would be applied to reduce, avoid, or otherwise provide compensation for impacts to sensitive vegetation. Examples of these include the following: (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) 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 for segment P7 is also considered.

The vegetation communities impacted by the action alternatives, however, are generally common and geographically widespread, and much of the proposed Project is located within an area of existing disturbance. Therefore, impacts to vegetation communities, special status species, and noxious weeds are unlikely to be significant. The impact intensity of the proposed Project and alternatives on vegetation would be minor, including the Agency Preferred Alternative.

Wildlife

Potential Project-related impacts on wildlife include the loss, degradation, and/or fragmentation of breeding, rearing, foraging, and dispersal habitats; 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. These impacts would be minor/negligible in previously disturbed areas with low vegetative cover and would be minor in areas of new disturbance and higher vegetation density.

PCEMs to minimize impacts to wildlife habitat could include limiting the area of disturbance, restoring disturbed areas, and avoiding aquatic and riparian areas. PCEMs also include pre-construction surveys, erosion control measures, a worker training program, and measures to limit invasive species' establishment and spread. Line marking devices would be used to decrease the potential for birds striking transmission lines near Willcox Playa, where wintering sandhill cranes would have to cross the proposed Project during their daily migrations to the agricultural fields east of the playa to feed. Additional mitigation provided by the AGFD for segment P7 is also considered.

The following impacts to general wildlife and special status species may occur with construction and operation of the Agency Preferred Alternative:

- Habitat for the northern aplomado falcon (*Falco femoralis septentrionalis*), Sprague's pipit (*Anthus spragueii*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), 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.

- A known lesser-long nosed bat roost is within 0.7 mile of the proposed ROW in segment P5b (part of the Agency Preferred Alternative). Given the distance, the intervening topography and the PCEM of limiting loud construction noise (i.e., blasting) to the spring (preferably April 1 to May 31) within 0.5 mile of where the roost is located before the bats arrive at the roost would avoid direct impacts to the species and other bat species that use the area.
- 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; as a result impacts on the species would be minor and both short and long term.
- 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.

The wildlife and special status species habitat impacted by the action alternatives is common relative to the amount of surrounding available habitat, and much of the proposed Project occurs within areas of existing disturbance. In addition, the Project has been sited to avoid ground disturbance in both designated and proposed critical habitat, and PCEMs have been developed to address specific habitat impacts, such as those in the Willcox Playa Wildlife Area. Therefore, impacts to wildlife and special status species are not expected to be significant. The impact intensity of the proposed Project and alternatives on wildlife would be minor, including the Agency Preferred Alternative.

ES.9.8 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. 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.

Once a route is selected, the route and its associated access roads and facilities would be inventoried in accordance with Section 106 of the National Historic Preservation Act. Resources would then be evaluated for their National Register of Historic Places eligibility.

The Agency Preferred Alternative could impact 157 previously recorded sites, including the following four listed properties: the Valencia Site, AZ BB:13:315(ASM), the Empirita Ranch Historic District, the Los Robles Archaeological Area, and the Tumamoc Hill Archaeological District and Desert Laboratory National Historic Landmark (Tumamoc Hill). The Agency Preferred Alternative would cross the Butterfield Trail and the Juan de Bautista de Anza National Historic Trail (Anza NHT). Potential impacts to both trails are also discussed in "Special Designations."

Visual impacts to Tumamoc Hill are expected; however, the Agency Preferred Alternative has been designed, in consultation with stakeholders, to go around rather than through Tumamoc Hill to minimize visual impacts from upgrading the existing Western line across Tumamoc Hill. The removal of the existing line, which does run through the Tumamoc Hill property, would also help minimize the line's current visual impacts to a degree; however, relocating the line off Tumamoc Hill to along Greasewood Road would still result in potential visual impacts.

Mitigation of adverse direct impacts to historical properties would be developed in accordance with the Section 106 Programmatic Agreement (PA) and Southline's Plan of Development (POD). Avoidance of resources through design and micro-siting would be the preferred mitigation measure. If avoidance is not feasible, other types of mitigation such as monitoring or data recovery would be needed. A Historic Properties Treatment Plan would be developed to outline all mitigation measures (PCEMs). 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. The final PA is included in appendix L. The impact intensity of the proposed Project and alternatives on cultural resources would range from no impact to major, including the Agency Preferred Alternative.

ES.9.9 Visual Resources

The visual impact analysis included the characterization of the existing landscape and an analysis of changes to the landscape that may result from the proposed Project under each alternative and an assessment of impacts to sensitive viewers. Additionally, 106 key observation points (KOPs) were established along the potential Project routes and were used as representative viewpoints from which to assess impacts to sensitive viewers and whether the proposed changes to the visual landscape would meet BLM management objectives for visual resources. Together with scenic quality mapping, visual simulation, and field reconnaissance, each KOP was used to establish how the proposed Project would affect the existing aesthetic conditions of the landscape and how sensitive viewers would be impacted. The degree of change to the existing landscape was assessed in terms of visual contrast, based on 10 environmental factors for identifying and characterizing impacts related to viewer sensitivity and Project visibility.

The major visual impacts resulting from the proposed Project would include:

- Potential for dispersed recreation users associated with the Florida Mountains WSA to have clear views of the proposed structures due to unobstructed panoramic views within the area.

- Views from portions of the Continental Divide National Scenic Trail would be partially obstructed and within close proximity (less than 0.25 mile from the proposed transmission line).
- Scenic views from winery tasting rooms and private property along the Willcox Bench would be partially obstructed and within close proximity (less than 0.25 mile in places from route variations P7a, P7b, P7c, P7d).
- Travelers along the I-10 corridor would have sporadic views of new transmission line in some areas.
- Recreational areas such as Sentinel Peak, Anza NHT, Butterfield Trail, Arizona National Scenic Trail (Arizona NST), Santa Cruz River Bikeway, and Saguaro National Park would have varying degrees of visual impact resulting from the introduction of the proposed Project. In most cases, the proposed corridor is sited along areas that have been previously disturbed by similar structures or would replace existing structures, giving an opportunity to implement PCEMs to reduce visibility.
- The analysis of the Tumamoc Hill area, located in a historic, well-maintained residential area of Tucson, included a series of working group sessions intended to derive the best alternative to avoid impacts to the aesthetic, historic, and visually sensitive features of the area. The Agency Preferred Alternative follows existing development to avoid additional visual impacts to Tumamoc Hill. Also, the existing "H" frame line that is located within the Tumamoc Hill would be removed, thus removing the visual impacts of the existing line.

Implementation of PCEMs would be applied to reduce visual impacts, preserve sensitive views, and minimize visual contrast. Included are methods of micro-siting the corridor to follow landform contours, clearing trees and vegetation to reduce visual contrast and blend into adjacent landscape, and implementing tower and facility design to reduce visibility of the structures. However, the structures would still be visible in many situations. The impact intensity of the proposed Project and alternatives on visual resources would range from minor to major, including the Agency Preferred Alternative.

ES.9.10 Land Use, Including Farm and Range Resources and Military Operations

Land Use

The proposed Project would be constructed across lands owned and managed by Federal, State, tribal, private, or other entities, under a variety of RMPs, comprehensive plans, or other land use plans. The proposed Project and alternatives cross large tracts of undeveloped land, as well as urban and suburban areas. Approximately 75 percent of the Project alternatives considered in detail in the EIS would be parallel to existing linear facilities in disturbed corridors, including transmission and distribution lines, roads, gas lines, and abandoned railroad ROWs.

Approximately 27 percent of the Agency Preferred Alternative route would cross public lands administered by the BLM; State lands in New Mexico and Arizona form approximately 35 percent of the route; and the remaining 38 percent would cross county, private, tribal, and other non-Federal or State lands. ROW would be acquired on these lands, which 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 within the analysis area. As noted previously, approximately 85 percent of the Agency Preferred Alternative in the New Build Section, and approximately 98 percent in the Upgrade Section, would be parallel to existing or proposed linear infrastructure such as transmission lines, gas line, and roadways.

In general, land use impacts are minimized where linear utilities are constructed within established or designated corridors. The alignment of the Agency Preferred Alternative route was sited to maximize the use of established utility corridors, and to minimize conflicts with incompatible land uses such as wilderness, national parks and monuments, special management areas, conservation areas, densely populated areas, and military installations. For all segments, impacts to land uses would occur in some form along any portions of the route that cross undeveloped lands, irrigated agricultural lands, domestic farm wineries, 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, residential, business, or industrial structures.

Farmland and Range

Construction of the transmission line would have direct effects on farmlands and rangelands by removing land acreage from productivity. Except under extraordinary circumstances, all operation and maintenance activities would occur within the transmission line and access road ROWs. These activities would not directly or indirectly impact adjacent farmlands or rangelands. 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. The proposed Project would not significantly reduce farmlands or rangelands in the analysis area because farming and ranching operations are still allowable uses within the transmission line ROW. While permanent disturbance would result in a conversion of farmland to non-farmable land, temporary disturbance along the ROW would be returned to farmland. Much of the Agency Preferred Alternative parallels existing linear facilities, which have already resulted in conversion of land to non-farmable land.

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/Buffalo Soldier Electronic Testing Range (BSETR)) facilities. This could include military training visual routes (MTRs) or areas where training is for electronics and communications. Ground disturbance–based impacts on military uses would not be significant, as all operations/training occurring in visual routes is aerial in nature, and the BSETR is used for electronics and communications testing. These impacts would be below the above-ground-level thresholds since the areas that may intersect military training visual routes include existing transmission line facilities that are already below above-ground-level thresholds, and the military operations have operated in conjunction with these facilities previously. Additionally, in accordance with PCEMs noted in chapter 2, the Project would include the optional structure heights in areas intersecting some MTRs. Towers crossing the MTRs would 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.

Within the Upgrade Section near Fort Huachuca, the proposed Project could include changes to the “zero point” level for electronics and communications testing purposes on the BSETR. An upgrade of the existing line would include a higher electronic load; however, any transmission line design would use best available technology to minimize electromagnetic interference. Therefore, upgrading the existing line could potentially reduce electromagnetic interference from current levels. Additionally the Department of Defense provided specific mitigation measures (PCEMs) considered in the analysis to minimize impacts to the BSETR. Any changes to EMF would require Fort Huachuca to revise its radio frequency emitter inventory for this area to account for the new design and operation of the line. Existing transmission lines

that are currently in operation within the BSETR are already accounted for in the existing EMF calculations.

The impact intensity of the proposed Project and alternatives on land use, including farm and range resources and military operations, would range from no impact to moderate. The impact intensity for the Agency Preferred Alternative would be minor.

ES.9.11 Special Designations

Potential impacts from construction activities that would be common to all action alternatives include direct ground disturbance and temporary increases in ambient noise levels in areas where the transmission line, substations, and ancillary facilities intersect with or are adjacent to special designations.

The only BLM special designations that would be intersected by the proposed Project would be National Trails and/or Trails Recommended as Suitable for National Trail Designation. The proposed Project crosses the Continental Divide National Scenic Trail, Butterfield Trail, Arizona NST, Anza NHT, Sonoita Valley Acquisition Planning District, and approximately eight county or city parks. During construction, increases in ambient noise levels, the presence of equipment, and dust would be temporary and would decrease with the completion of construction activities; therefore, the impact would be minor. There would be no expansion of the ROW in Pima County or the City of Tucson parks and conservation areas.

There would be no direct impacts on designated wilderness areas and WSAs, as no facilities would be sited within wilderness area or WSA boundaries. The short-term, indirect impacts to wilderness areas and WSAs during construction may include impacts to air quality, noise, visual, or other resources. Potential long-term, indirect impacts to wilderness areas or WSAs could include loss of outstanding opportunities for solitude or primitive and unconfined recreation as a result of changes to the visual character of the surrounding lands; these impacts are anticipated to be minor since existing facilities (e.g., transmission lines, pipelines, roads) would also be visible. Portions of the WSAs in New Mexico could be indirectly impacted by the Project, but due to the size and rugged terrain of these areas, there would still be ample opportunity for solitude. The impact intensity of the proposed Project and alternatives on special designations would range from no impact to minor. The impact intensity for the Agency Preferred Alternative would be minor.

ES.9.12 Wilderness Characteristics

The BLM Las Cruces District Office reviewed and updated previous inventories for the Wilderness Inventory Units (WIUs) that are included in the New Build Section of the analysis area to ensure consistency with previous conclusions for wilderness characteristics (i.e., the area's size; naturalness; outstanding opportunities for solitude or primitive, unconfined recreation; and supplemental values). Potential impacts to WIUs in terms of the four criteria (size; naturalness; outstanding opportunities for solitude or primitive, unconfined recreation; and other supplemental values) that must be present in order for the land to be considered as containing wilderness characteristics are analyzed in this EIS.

Potential impacts from construction activities that would be common to all action alternatives under route groups 1 and 2 include direct ground disturbance and temporary increases in ambient noise levels in areas where the transmission line, substations, and ancillary facilities intersect with lands that possess wilderness characteristics. Increases in ambient noise levels would be temporary and would decrease with the completion of construction activities. This would be a short-term, minor impact to the opportunities for solitude and primitive, unconfined recreation in the immediate area. Ground disturbance and

temporary increases in ambient noise levels would be a minor, short-term impact to the naturalness of the immediate area. However, ground disturbance would not occur across the entire ROW.

Within route groups 1 and 2, the proposed Project and alternatives would intersect 10 inventoried WIUs. No WIUs would be intersected by the proposed Project and alternatives in route groups 3 and 4. Where the Agency Preferred Alternative intersects the WIUs, those units were determined not to include the requisite wilderness characteristics. Therefore, no impacts to lands with wilderness characteristics along the Agency Preferred Alternative are expected. If an alternative or combination of alternatives other than the Agency Preferred Alternative is chosen in the ROD, additional field verification may be required to evaluate lands with potential wilderness characteristics. The impact intensity of the proposed Project and alternatives on wilderness characteristics would range from no impact to moderate. There would be no impact to wilderness characteristics from the Agency Preferred Alternative.

ES.9.13 Recreation

Construction of the proposed Project has the potential to have negligible to minor, short-term, direct, and indirect impacts to recreation opportunities or activities, desired recreation experiences, and the recreation setting. Where the proposed Project would parallel existing linear facilities (i.e., transmission lines, gas lines, etc.), impacts would be negligible because these facilities are already factored into the existing recreation character. Where the proposed Project would not parallel existing linear facilities, the potential impacts would be minor where the existing conditions would change.

In particular, short-term, minor impacts would occur in at the intersections of the proposed Project with national trails and trails recommended as suitable for national trail designation, Aden Hills OHV area, Bar V Ranch, Tucson Mountain Park, Tumamoc Hill, Joaquin Murrieta Park, Santa Cruz River Park, and Christopher Columbus Park during construction. These short-term changes to the recreation setting would result from construction activities that would cause increased noise and fugitive dust.

Hunting opportunities (both big- and small-game) that could be disrupted by the construction of the proposed Project would not represent a significant impact to hunting overall, since the areas within game management units (GMUs) that are outside the proposed Project footprint would remain available for hunting, subject to applicable laws and regulations. BLM and Western would coordinate the timing of activities with State game and fish management agencies to further minimize impacts to hunters.
The impact intensity of the proposed Project and alternatives on recreation would range from no impact to minor. The impact intensity for the Agency Preferred Alternative would be minor.

ES.9.14 Social and Economic Conditions

In general, the proposed Project would not have a significant impact on regional population or housing as a result of construction or operation. The construction of the New Build Section would directly and indirectly support an estimated total of 481 jobs, approximately 235 of which would be expected to be filled by local workers. Construction of the Upgrade Section would directly and indirectly support an estimated total of 270 jobs, approximately 138 of which would be filled by local workers. The combined total of about 378 non-local construction workers for the New Build Section and the Upgrade Section has the potential to create isolated, short-term shortages in temporary housing. In particular, the more remote portions of the project along the western parts of the New Build Section and the eastern portion of the Upgrade Section would be the most likely to experience a temporary strain on housing resources.

The proposed Project would generate State and local tax revenues during both the construction and the continued operation/maintenance stages. The construction of the New Build Section would generate

approximately $462,000 in additional sales tax and $219,000 in State and local property taxes per year. Local governments would receive approximately $150,000 and $210,000 per year in sales and property taxes, respectively. Upon completion of the project, the New Build Section has the potential to initially generate approximately $4.2 million per year in additional property tax revenues for local governments.

The Upgrade Section of the proposed Project would generate approximately $309,000 in State and local sales tax and $214,000 in State and local property taxes per year. Local shares are estimated to be approximately $206,000 and $200,000, respectively. The initial property tax revenues upon completion of the proposed Project could be around $4.3 million per year. The impact intensity of the proposed Project and alternatives on social and economic conditions would be minor, including the Agency Preferred Alternative.

ES.9.15 Environmental Justice Conditions

Sixteen of the 19 census tracts that would be crossed by any of the alternatives for the New Build Section, including the Agency Preferred Alternative, can be defined as environmental justice communities. In the Upgrade Section, 26 of the 37 census tracts potentially impacted by the Project can be defined as environmental justice communities. Compared with the states in which they are located, these communities have either 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 operations and maintenance of the Project. However, few, if any, of these impacts would be characterized as “high.” As the proposed Project is not anticipated to result in the condemnation of multiple residential properties or result in new visual impacts in close proximity to residential properties in previously undisturbed corridors, these impacts are not expected to be high.

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. However, because these benefits are likely to be more geographically dispersed than the localized adverse effects, 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; however, these residents and the area were not unduly targeted in order to site the proposed Project. The impact intensity of the proposed Project and alternatives on environmental justice conditions would be minor, including the Agency Preferred Alternative.

ES.9.16 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 safety requirements through the use of PCEMs, along with other safety requirements, would minimize the chance that an accident could occur.

The potential for increased public exposure to EMF would occur in both the New Build and Upgrade sections. While there are currently no Occupational Safety and Health Administration standards that address exposure to EMFs, nonbinding guidelines for EMF exposure have been developed by the International Commission on Non-Ionizing Radiation Protection, the Institute of Electrical and Electronics Engineers, and the American Conference of Governmental Industrial Hygienists. As noted in

chapter 4 of the EIS, EMFs produced by the proposed Project are not expected to exceed these safety guidelines. In the New Build Section, transmission lines would be built in areas where no current transmission lines exist and therefore would create the potential for public exposure to EMF where they did not previously occur. EMF impacts in the New Build Section would be negligible because the newly introduced EMFs would occur in areas that are sparsely populated, would not be adjacent to residential areas or areas where long-term public exposure would occur, and would be further reduced by the implementation of the PCEMs. Therefore, the potential increase of public exposure to EMFs from transmission lines in the New Build Section would be negligible, especially considering that EMF exposure guidelines would be met outside the ROW.

In the Upgrade Section, the EMFs currently created by the existing transmission infrastructure do not exceed EMF exposure guidelines within the ROW. Consequently, the existing transmission infrastructure is not impacting public health and safety. The upgraded lines would generate higher EMF levels within the ROW. However, EMF levels outside the ROW are expected to be comparable to EMF levels created by the existing transmission infrastructure as a result of the double-circuit configuration's phase cancellation effect. Therefore, any increased risk of public exposure to EMFs in the Upgrade Section would also be considered negligible.

The proposed Project would have both negative and beneficial long-term impacts to public health and safety. Potential long-term, negative impacts could occur as a result of increase of EMF in areas where they do not currently occur. However, with implementation of the PCEMs and proponent-proposed measures, the impacts to public health and safety would be expected to be negligible. Construction of the proposed transmission infrastructure would also have a long-term, beneficial impact to public health and safety by improving the reliability of electricity transmission to areas that would be served by the proposed infrastructure. In the Upgrade Section, the new facilities would be constructed to modern design standards, including modern hardware and grounding systems. These new facilities would require less frequent and less intensive maintenance work than the older facilities, resulting in decreased potential for occupational accidents to occur and a reduction in fire risks. The impact intensity of the proposed Project and alternatives on public health and safety would be minor, including the Agency Preferred Alternative.

ES.9.17 Hazardous Materials and Hazardous and Solid Waste

The potential impacts to human health and the environment from preexisting hazardous materials that may be present along the proposed Project corridor, and from hazardous materials generated during construction or operation and maintenance of the Project, were analyzed. With adherence to PCEMs to ensure safe handling, storage, and use of hazardous materials, no effects are anticipated from preexisting hazardous materials or the use of hazardous materials under any of the action alternatives. The PCEMs described above would be implemented to prevent spills and leaks of hazardous materials and provide for adequate containment and cleanup if spills and leaks do occur. There would be no impact from hazardous materials and hazardous and solid waste from the proposed Project and alternatives, including the Agency Preferred Alternative.

ES.9.18 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. However, given the existing low level of traffic on primary roadways within the New Build Section and the low level of anticipated traffic during construction, only short-term, minor impacts to traffic on

primary roads would be anticipated. The additional traffic volume on primary roadways would represent a volume increase of 1 percent or less on various segments of I-10 in the New Build and Upgrade sections.

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. Similarly, continued coordination with airports and the Federal Aviation Administration would ensure that the proposed Project would not interfere with flight paths or airport plans in the New Build and Upgrade sections. Given the location of the proposed Project, it appears likely that the height of the proposed transmission structures (approximately 134 feet) would be below the runway approach surface elevations for all airports in both the New Build and Upgrade sections.

The proposed Project in the New Build and Upgrade sections would impact BLM roads and roadless areas 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 road types D (new down-ROW primary access) and E (spur roads). The impact of increasing access to BLM roads and BLM roadless areas would be considered minor. The impact intensity of the proposed Project and alternatives on transportation would be minor, including the Agency Preferred Alternative.

ES.9.19 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. There would be no impacts from the proposed Project and alternatives in terms of intentional acts of destruction.

ES.9.20 Proposed Resource Management Plan Amendments

As noted previously, a plan amendment for the Mimbres RMP would be required for the portion of the alternative route segment (local alternative LD2 near the Lordsburg Playa) that parallels an avoidance area designated for the Butterfield Trail. A plan amendment would also be required for the Mimbres RMP that would change the VRM Class II designation to VRM Class III or IV for six Project segments within the New Build Section that intersect VRM Class II lands. No plan amendments would be required for any Project segments in Arizona. Additionally, the Agency Preferred Alternative would not require a plan amendment.

Amending the Mimbres RMP to allow a 9.1-mile-long segment of the proposed Project to parallel the Butterfield Trail (local alternative LD2) would have long-term impacts to land use and special designations (trails). The impact to land use would be minor, but the impact to special designations (specifically, the Butterfield Trail) would be moderate. Land uses surrounding the proposed Project segments would not change, but the impacts would be long term since the change would persist throughout the life of the planning document and the proposed Project.

Amending the Mimbres RMP to modify the VRM Class II designation to VRM Class III or IV would be similar to the direct and indirect impacts described for visual resources. Impacts to scenic quality and viewer sensitivity would be low to be moderate and therefore would be in compliance with VRM III or VRM IV classifications. Additionally, the effect of the plan amendment to change VRM classes would not change the overall land use management of the Mimbres RMP, as described under the direct and indirect effects of land use resources.

Finally, amending the Mimbres RMP would not itself result in ground disturbance or development; this action would not directly or indirectly impact many resources beyond the direct and indirect impacts described in sections 4.2 through 4.19 of chapter 4 of this EIS. These resources would include air quality; noise and vibration; geology and mineral resources; soil resources; paleontological resources; water resources; biological resources, including vegetation and wildlife; cultural resources; farm and range resources; military operations; wilderness characteristics; recreation; socioeconomics and environmental justice; public health and safety; hazardous materials and hazardous and solid waste; transportation; and intentional acts of destruction.

ES.9.21 Cumulative Effects

The effects of the proposed Project, when taken together with past, present, and reasonably foreseeable future actions, constitute the cumulative effects of the Project and are fully analyzed in chapter 4 (see section 4.21). This analysis assumes that the proposed Project would be constructed and examines all action alternatives, including the Agency Preferred Alternative, agency local alternatives, and the Proponent Preferred and Proponent Alternative routes. Because the Project was routed, and many agency alternatives were developed, along existing and proposed linear facilities, the cumulative effects analysis considers the past, present, and reasonably foreseeable future actions that may have cumulative effects, along with the proposed Southline Project. Approximately 85 percent of the Agency Preferred Alternative in the New Build Section would parallel existing or proposed linear infrastructure; virtually all of the Agency Preferred Alternative for the Upgrade Section would use Western's existing ROW, or parallel an existing road (U3aPC, TH1a, TH1-Option, and MA1).

ES.10 SCOPING, CONSULTATION, AND COORDINATION

Though not part of the NEPA process, Southline also conducted a series of stakeholder meetings and workshops in 2011, prior to the formal scoping period. The goals of these meetings were to give the public early notification and to solicit public input from interested stakeholders that would help Southline develop a proposed Project that could be presented to the BLM in a formal ROW application. Southline met with local jurisdictions such as city administrators, county commissioners and supervisors, and State officials in both New Mexico and Arizona, as well as representatives from local community organizations and agencies within the Project area.

As required under the National Environmental Policy Act of 1969, the BLM and Western (in coordination with cooperating agencies) conducted scoping in the early stages of the EIS preparation, to encourage public participation and solicit agency and public comments on the scope and significance of the proposed Project (40 CFR 1501.7).

The public was informed about the formal application for the Project and public scoping period by an NOI published in the Federal Register on April 4, 2012. This initiated the NEPA process for the Project and began a 60-day public scoping period, during which the public had the opportunity to provide input on potential issues to be addressed in the EIS. As a result of public requests for an extension of the 60-day scoping comment period, the scoping comment period was extended by 30 days (ending on July 5, 2012).

The BLM and Western published an NOA for the Draft EIS/Draft RMPA in the Federal Register on April 11, 2014. The NOA announced the release of the Draft EIS and the beginning of a 90-day comment period. BLM and Western hosted three public open houses/hearings and one agency meeting in each state, for a total of six public open houses/hearings and two agency meetings. These were hosted to provide information on the proposed Project, answer questions about the analysis in the Draft EIS, and encourage public comments on the Draft EIS.

Consultation and coordination with Federal and intergovernmental agencies, organizations, American Indian tribes, and interested groups of individuals are important to ensure that the most appropriate data have been gathered and employed for analyses, and that agency and public sentiment and values are considered and incorporated into decision making. Throughout the preparation of the EIS, formal and informal efforts were made by the BLM and Western to involve these groups in the scoping process and in subsequent public involvement activities, formal consultation, and review of the EIS.

ES.11 OTHER DECISIONS TO BE MADE

Approximately 35 percent of the proposed Project (including alternatives) would be located on BLM-administered public land. Other portions of the Project may be located on lands administered by Reclamation (Upgrade Section only), the U.S. Forest Service (Upgrade Section only), State (New Build and Upgrade sections), and Tohono O'odham Nation (Upgrade Section only), as well as private lands.

Where the proposed Project would cross private and State lands, it would be subject to applicable land use planning regulations, zoning ordinances, or other requirements enforced by the State, county, or local jurisdiction, and Southline would need to secure any necessary permits. Acquisition of ROW on State lands would require application to the New Mexico State Land Office or Arizona State Land Department for right-of-entry and easements. Legal access or easements crossing private lands would need to be obtained from private landowners.

ES.11.1 U.S. Bureau of Reclamation

A short (0.2-mile) segment of the existing Western 115-kV line and a segment of the Agency Preferred Alternative (segment U3i), as well as the existing Western owned and operated Rattlesnake Substation in urban Tucson, are located on Federal lands administered by Reclamation. Upgrade of the existing line and expansion of the Rattlesnake Substation on Reclamation lands would require Reclamation approval. Segment U3i is part of the Agency Preferred Alternative in the Final EIS.

ES.11.2 Department of Defense

A short (0.2-mile) portion of the Proponent Preferred Alternative on the east side of Willcox Playa (segment P7) could cross DOD lands, depending on how the proposed Project is micro-sited in this area. Any applications for use of ROWs or easements on DOD lands would require DOD approval.

ES.11.3 Tohono O'odham Nation

A 2.9-mile-long segment of Western's existing 115-kV line, as well as the Agency Preferred Alternative (segment U3a), crosses lands administered by the Tohono O'odham Nation, south of the existing Del Bac Substation in urban Tucson. Upgrade of the existing line on tribal lands would require approval by the Tohono O'odham Nation. Western is currently negotiating renewal of its existing ROW and the expansion needed for the upgrade to 230-kV for that portion of the line located on allotted tribal lands. Segment U3a is part of the Agency Preferred Alternative in the Final EIS.

Figure ES1. Overview of the proposed Project and alternatives considered in detail in the EIS.

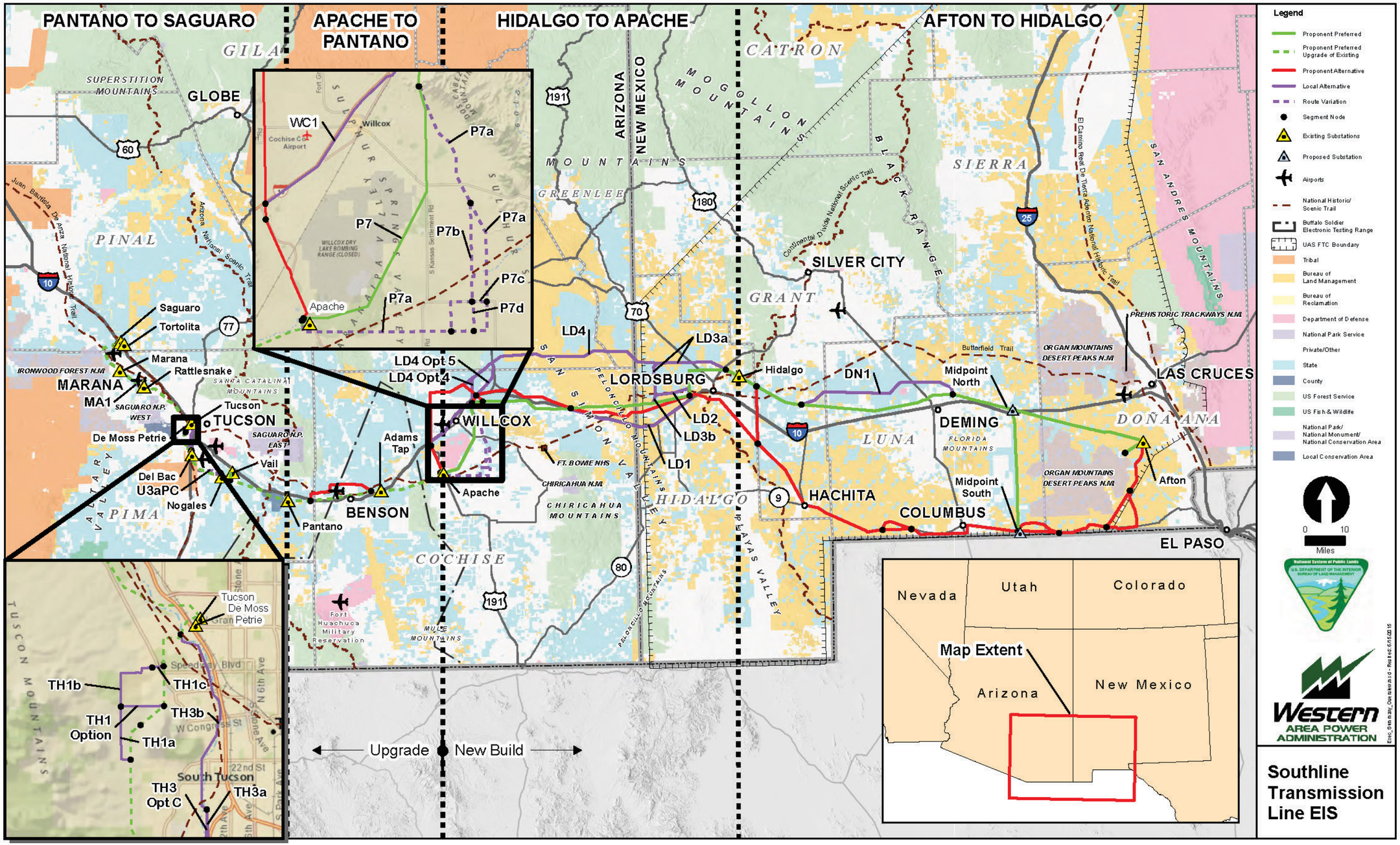


Figure ES2a. Agency Preferred Alternative – New Build Section.

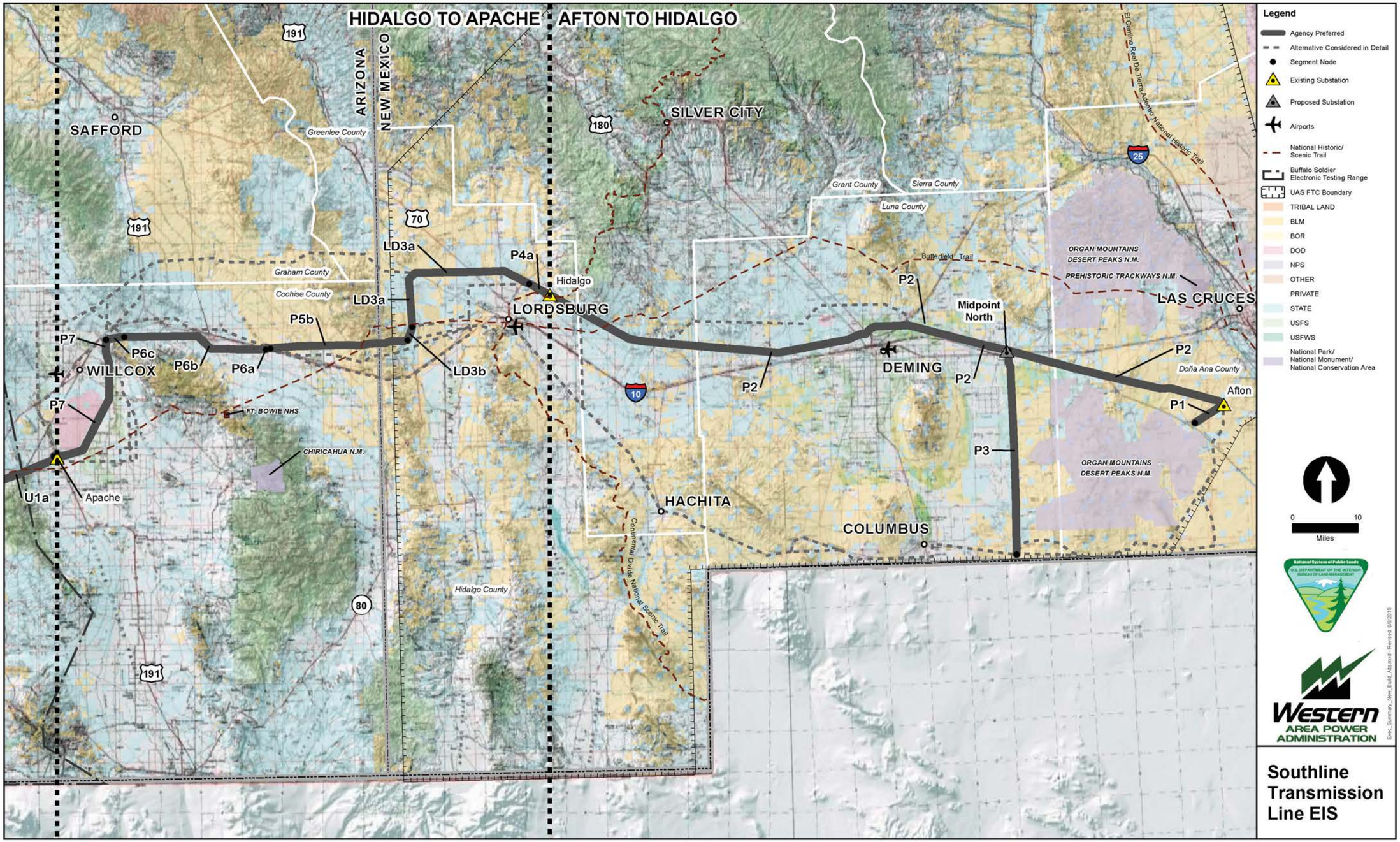
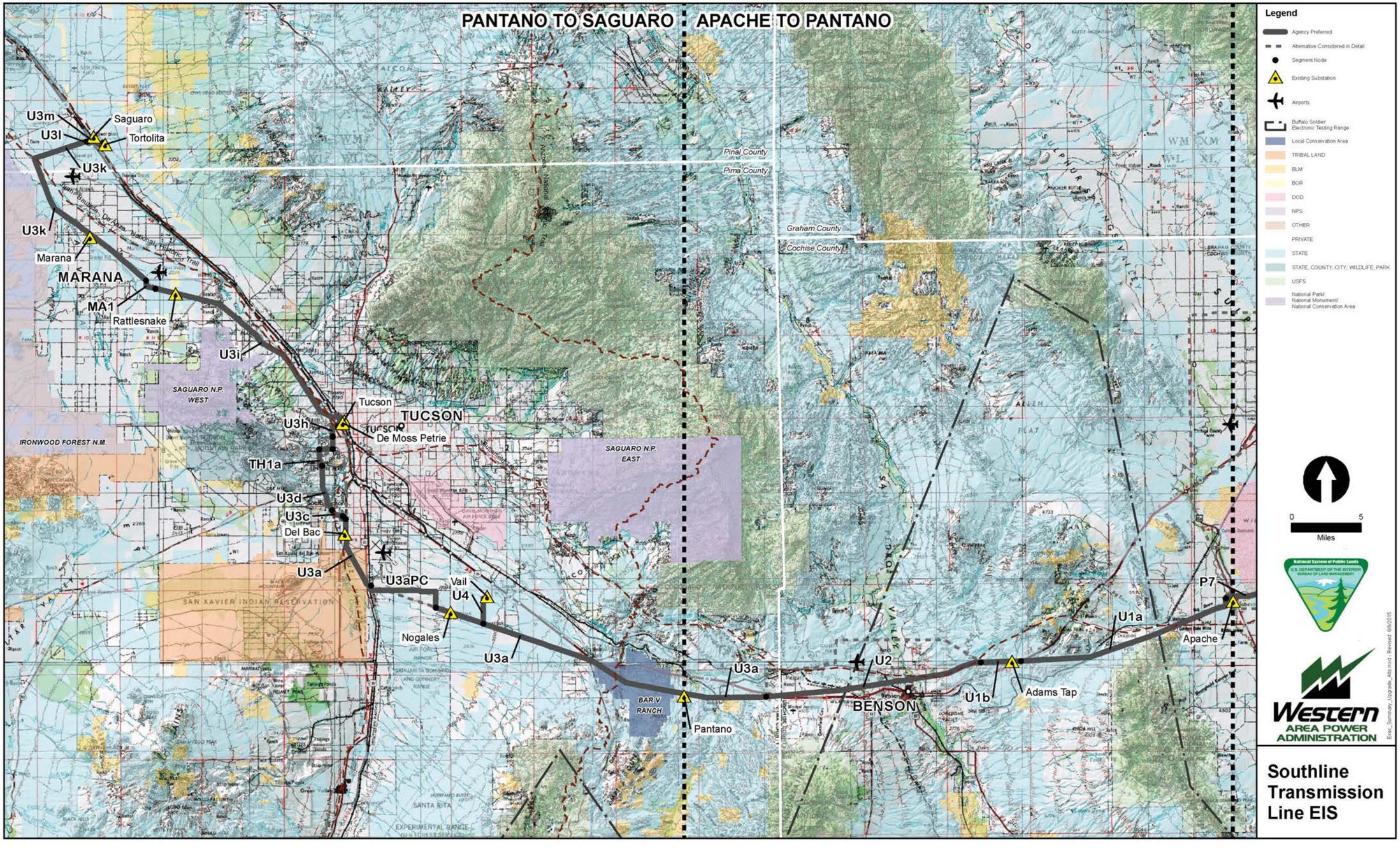


Figure ES2b. Agency Preferred Alternative – Upgrade Section.



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ACRONYMS AND ABBREVIATIONS

Document Abbreviations

Forest Plan	"Coronado National Forest Land and Resource Management Plan," as amended (Forest Service 1986a)
Las Cienegas RMP	"Approved Las Cienegas Resource Management Plan and Record of Decision" (BLM 2003)
Mimbres RMP	"Mimbres Resource Management Plan" (BLM 1993)
Phoenix RMP	"Proposed Phoenix Resource Management Plan and Final Environmental Impact Statement" (BLM 1988a)
POD	"Southline Transmission Line Project Draft: NEPA Plan of Development" (appendix N)
RDEP	"Renewable Arizona: Restoration Design Energy Project Final Environmental Impact Statement" (BLM 2012a)
Safford RMP	"Final Safford District Resource Management Plan and Environmental Impact Statement" (BLM 1991)
Solar Energy Development PEIS	"Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Arizona, California, Colorado, Nevada, New Mexico, and Utah) (FES 12-24; DOE/EIS-0403)" (BLM and DOE 2012)
Wind Energy PEIS	"Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (DOE/EIS-0386)" (BLM 2005a)
WWEC PEIS	"Programmatic Environmental Impact Statement, Designation of Energy Corridors on Federal Land in the 11 Western States" (DOE and BLM 2008)

Other Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AAC	Arizona Administrative Code
AAQS	ambient air quality standards
AC	alternating current
ACC	Arizona Corporation Commission
ACEC	Area of Critical Environmental Concern
ACGIH	American Conference of Governmental Industrial Hygienists
ACHP	Advisory Council on Historic Preservation

ACIP	Airport Capital Improvement Program
ACS	American Community Survey
ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADOA	Arizona Department of Administration
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AFB	Air Force Base
AGFD	Arizona Game and Fish Department
AGL	above ground level
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AMA	active management area
amsl	above mean sea level
ANPL	Arizona Native Plant Law
ANSI	American National Standards Institute
Anza NHT	Juan Bautista de Anza National Historic Trail
APE	area of potential effects
APLIC	Avian Power Line Interaction Committee
APP	Avian Protection Plan
APS	Arizona Public Service
APZ	accident potential zone
AQRV	air quality related value
Arizona NST	Arizona National Scenic Trail
ARPA	Archaeological Resources Protection Act
ARS	Arizona Revised Statutes
ASLD	Arizona State Land Department
ASM	Arizona State Museum
ASTM	American Society for Testing and Materials
ATC	available transfer capability
ATV	all-terrain vehicle
AUM	animal unit month
AZGS	Arizona Geological Survey
AZPDES	Arizona Pollutant Discharge Elimination System

BA	biological assessment
BEA	Bureau of Economic Analysis
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
BMP	best management practice
BO	biological opinion
BP	before present
BSETR	Buffalo Soldier Electronic Testing Range
Butterfield Trail	Butterfield Overland Mail and Stage Route; also referred to as the Butterfield Overland Trail National Historic Trail
CAA	Clean Air Act
CAP	Central Arizona Project
CBP	U.S. Customs and Border Protection
CCS	Center for Climate Strategies
CDNST	Continental Divide National Scenic Trail
CEAA	cumulative effects analysis area
CEC	Certificate of Environmental Compatibility
Census Bureau	U.S. Census Bureau
CEMP	Construction Emissions Mitigation Plan
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CGP	Construction General Permit
CH_4	methane
CIC	construction inspection contractor
CLS	Conservation Lands System
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents

CWA	Clean Water Act
CZ	Clear Zone
dB	decibels
dBA	A-weighted decibels (sound level measurement)
DC	direct current
DOC	Department of Commerce
DOD	Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
e	eligibility multipliers
EIS	Environmental Impact Statement
EMF	electromagnetic fields
EMI	electromagnetic interference
EMNRD	New Mexico Energy, Minerals, and Natural Resources Department
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct 2005	Energy Policy Act of 2005
EPEC	El Paso Electric Company
EPG	Electronic Proving Ground
EPRI	Electric Power Research Institute
ERMA	extensive recreation management area
ESA	Endangered Species Act of 1973
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
Forest Service	U.S. Forest Service
FSM	Forest Service Manual
FW	Fighter Wing

FWS	U.S. Fish and Wildlife Service
g	the acceleration due to gravity equaling 32 feet per second squared
GHG	greenhouse gas
GIL	gas-insulated line
GIS	geographic information system
GLO	General Land Office
GMU	game management unit
GPS	global positioning system
GWP	global warming potential
HAP	hazardous air pollutant
HASP	Health and Safety Plan
HDMS	Heritage Data Management System
HMMP	Hazardous Materials Management Plan
HMP	Habitat Management Plan
HPFF	high-pressure fluid-filled
HPTP	Historic Properties Treatment Plan
HS	highly safeguarded
HUC	hydrologic unit code
HUD	U.S. Department of Housing and Urban Development
I-	Interstate
IBA	Important Bird Area
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ID	interdisciplinary
IEEE	Institute of Electrical and Electronics Engineers
IFNM	Ironwood Forest National Monument
IM	Instruction Memorandum
IPCC	Intergovernmental Panel on Climate Change
IRA	Important Riparian Area
ISO	International Organization for Standardization
KGRA	known geothermal resource area

kHz	kilohertz
km	kilometer(s)
KOP	key observation point
kV	kilovolt(s)
kV/m	kilovolts per meter
lb	pounds
L_{dn}	day-night level
LUST	leaking underground storage tank
m	meter(s)
MAG	Maricopa Association of Governments
MBTA	Migratory Bird Treaty Act
mG	milliGauss
mg/L	milligram(s) per liter
MHz	megahertz
MIS	management indicator species
MOA	Military Operations Area
MP	milepost
mph	mile(s) per hour
MSCP	Multi-species Conservation Plan
MTR	military training route
mV	millivolts
MVA	megavolt ampere
MW	megawatt(s)
mya	million years ago
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation

NESC	National Electric Safety Code
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NGO	non-governmental organization
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NIISS	National Institute of Invasive Species Science
NLCS	National Land Conservation System
NM	New Mexico State Route
NMAAQS	New Mexico Ambient Air Quality Standards
NMAC	New Mexico Administrative Code
NMCRIS	New Mexico Cultural Resources Information System
NMDA	New Mexico Department of Agriculture
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NMMNH	New Mexico Museum of Natural History and Science
NMOHSB	New Mexico Occupational Health and Safety Bureau
NMOSE	New Mexico Office of the State Engineer
NMRPTC	New Mexico Rare Plant Technical Council
NMSA	New Mexico Statutes Annotated
NMSLO	New Mexico State Land Office
NMSU	New Mexico State University
NNL	National Natural Landmark
No.	number
NO_2	nitrogen dioxide
NOA	notice of availability
NOI	notice of intent
NOTAM	Notice to Airmen
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPO	Native Plant Preservation Ordinance
NPS	National Park Service

NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
NSR	New Source Review
NST	National Scenic Trail
NWI	National Wetlands Inventory
NWP	Nationwide Permit
O_3	ozone
OE/AAA	obstruction evaluation and airport airspace analysis
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
Paleobiology	Paleobiology Database
Pb	lead
PCA	Priority Conservation Area
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
PCEM	Proponent Committed Environmental Measure
PEIS	Programmatic Environmental Impact Statement
PFYC	Potential Fossil Yield Classification
PHMSA	Pipeline and Hazardous Materials Safety Administration
PL	Public Law
PLZ	potential wildlife linkage zone
PM	particulate matter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
POD	Plan of Development
ppm	part(s) per million
PPM	Proponent Proposed Measure
the Project	Southline Transmission Line Project
PSD	prevention of significant deterioration
PSSM	Power System Safety Manual

PTRCI	property of traditional religious and cultural importance
PUC	public utilities commission
RCRA	Resource Conservation and Recovery Act of 1976
RDEP	Restoration Design Energy Project
Reclamation	U.S. Bureau of Reclamation
REDA	renewable energy development area
REMA	renewable energy management area
RFFA	reasonably foreseeable future activity
RMA	recreation management area
RMP	resource management plan
RMPA	resource management plan amendment
RMZ	recreation management zone
RNA	research natural area
RngProdFY	Rangeland Productivity - Favorable Year
RngProdNY	Rangeland Productivity - Normal Year
ROD	Record of Decision
ROS	recreation opportunity spectrum
ROW	right-of-way
RPS	renewable portfolio standard
RRH	Regulated Riparian Habitat
RV	recreational vehicle
SA	salvage assessed
SATS	Southeastern Arizona Transmission Study
SCFF	self-contained fluid-filled
SDCP	Sonoran Desert Conservation Plan
SEZ	solar energy zone
SF-	Standard Form
SF_6	sulfur hexafluoride
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SIL	significant impact level
SIP	State Implementation Plan

SLRU	sensitivity level rating unit
SMA	special management area
SO_2	sulfur dioxide
Southline	Southline Transmission, LLC
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
SQRU	scenic quality rating unit
SR	State Route
SR	salvage restricted
SRI	Statistical Research, Inc.
SRMA	special recreation management area
SSURGO	Soil Survey Geographic
STIP	Statewide Transportation Improvement Plan
SunZia project	SunZia Southwest Transmission Line Project
SUP	special use permit
SVAPD	Sonoita Valley Acquisition Planning District
SWAT	Southwest Area Transmission
SWCA	SWCA Environmental Consultants
SWPPP	Stormwater Pollution Prevention Plan
SWReGAP	Southwest Regional Gap Analysis Project
SWTC	Southwest Transmission Cooperative
t/a/y	tons per acre per year
TAA	Tucson Airport Authority
TCE	trichloroethene
TCP	traditional cultural property
TDS	total dissolved solids
TEP	Tucson Electric Power Company
T factor	soil loss factor in tons
THPO	Tribal Historic Preservation Office
TIP	Transmission Infrastructure Program
TPE	total potential effect
tpy	ton(s) per year
UAS FTC	Unmanned Aircraft Systems Flight Test Center

UCMP	University of California Museum of Paleontology
UPRR	Union Pacific Railroad
U.S.	U.S. Route
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Survey
USIBWC	U.S. International Boundary and Water Commission
UST	underground storage tank
v/c	volume-to-capacity
VCRS	visual contrast rating sheet
VOC	volatile organic compound
VR	visual route
VRI	visual resource inventory
VRM	visual resource management
WEAP	Worker Environmental Awareness Program
WECC	Western Electricity Coordinating Council
WEG	Wind Erodibility Group
Western	Western Area Power Administration
WIU	Wilderness Inventory Unit
WMP	Waste Management Plan
WREZ	Western Renewable Energy Zone
WSA	wilderness study area
WUS	waters of the U.S.

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