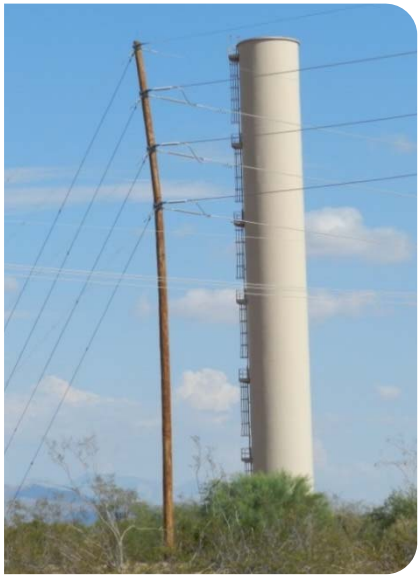
FINAL

Electric District 2 to Saguaro No. 2 115-kV Transmission Line Rebuild

ENVIRONMENTAL ASSESSMENT

(DOE/EA-1972)



Prepared by

U.S. Department of Energy
Western Area Power Administration,
Desert Southwest Region

Cooperating Agencies

U.S. Bureau of Reclamation,
Lower Colorado Region

U.S. Bureau of Indian Affairs,
San Carlos Irrigation Project

March 2015

FINAL

Environmental Assessment

Electric District 2 to Saguaro No. 2 115-kV Transmission Line Rebuild

DOE/EA-1972

Prepared by:

U.S. Department of Energy
Western Area Power Administration
Desert Southwest Region

Cooperating Agencies:

U.S. Bureau of Reclamation
Lower Colorado Region

U.S. Bureau of Indian Affairs
San Carlos Irrigation Project

March 2015

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

March 13, 2015

SUBJECT: **Notice of Availability of a Final Environmental Assessment and Notice of Floodplain and Wetland Action for the ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project, Pinal County, Arizona (DOE/EA-1972)**

Dear Interested Party:

Western Area Power Administration (Western) announces the availability of the Final Environmental Assessment (EA) for the Electric District (ED) 2 to Saguaro No. 2 Rebuild Project located near Eloy, Pinal County, Arizona. The document tracking number is DOE/EA-1972. Western prepared this document in compliance with the National Environmental Policy Act and Executive Orders 11988 – Floodplains Management and 11990 – Protection of Wetlands. Western is the lead Federal agency for this action and is working cooperatively with the U.S. Bureau of Indian Affairs - San Carlos Irrigation Project and U.S. Bureau of Reclamation.

The EA can be accessed online at the Western's Desert Southwest Region website or the U.S Department of Energy's website:

http://www.wapa.gov/dsw/environment/ED2DOEEA1972.htm

http://energy.gov/nepa/nepa-documents/environmental-assessments-ea

Reading copies are available at the Casa Grande Main Library: 449 N Drylake Street, Casa Grande, AZ 85122. Printed copies can also be obtained upon request from Western.

Western prepared this final EA after considering comments raised by the public during scoping and the comment period for the draft EA. Western's response to comments can be found in the EA in Appendix G.

Western will either issue a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to prepare an Environmental Impact Statement based on the analysis in the EA. Western anticipates making this decision by June 15, 2015 when the Memorandum of Agreement with the Arizona State Historic Preservation Officer, which is currently being prepared, is executed. Interested parties will be notified of the availability of the FONSI or NOI.

Sincerely,

Linda Marianito
Environmental Manager

Contents

Tables

Figures

Appendices

List of Acronyms

ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
AMA	Active Management Area
APP	Avian Protection Plan
ARPA	Archaeological Resources Protection Act
ARS	Arizona Revised Statutes
ASM	Arizona State Museum
BGEPA	Bald and Golden Eagle Protection Act
BIA	Bureau of Indian Affairs
BMPs	Best management practices
BP	Before present
CAP	Central Arizona Project
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DOE	Department of Energy
DPS	Distinct population segment
EA	Environmental Assessment
ED	Electrical District
EIS	Environmental impact statement
EMF	Electric and magnetic field
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Endangered Species Act
FONSI	Finding of no significant impact
FPO	Federal Preservation Officer
FR	Federal Register
GHG	Greenhouse gas
HPTP	Historic property treatment plan
IO	Isolated occurrence
KOP	Key Observation Point
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NCA	Noise Control Act of 1972
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code

NHPA	National Historic Preservation Act of 1966
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Act of 1970
PPA	Pollution Prevention Act of 1990
ROW	Right-of-way
SCIP	San Carlos Irrigation Project
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SPRR	Southern Pacific Railroad
TCP	Traditional cultural properties
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

Executive Summary

Project Location

Western proposes to rebuild the 115-kV transmission line located between the existing Electrical District (ED) 2 and Saguaro No. 2 Substations (Proposed Action). The Proposed Action is located in Pinal County, Arizona, on land managed by the U.S. Bureau of Reclamation (Reclamation), U.S. Bureau of Indian Affairs (BIA), the Arizona State Land Department, and private land near the City of Eloy and unincorporated Pinal County.

Project Participants

Western Area Power Administration (Western), a federal power marketing administration under the U.S. Department of Energy, is the lead federal agency for the Proposed Action pursuant to the National Environmental Policy Act. Reclamation and the BIA are cooperating agencies given their permitting responsibilities.

Purpose and Need

The purpose of the Proposed Action is to increase the reliability and safety of the bulk electric power system and to maintain transmission service to the three Central Arizona Project pumping plants that supply water to Pima and Pinal Counties (the Brady, Picacho, and Red Rock plants). The Proposed Action is needed so that the risk of a catastrophic failure on the ED2 to Saguaro No. 2 115-kV transmission line is reduced to the lowest practical level and the greatest long-term benefit is obtained. This line experienced five major failures in the last 10 years, including four failures in a three-year period. The most recent failure occurred in 2012 when a storm destroyed 30 structures in a three-mile section. Steel monopoles are stronger and more storm-resistant than the existing wood structures.

Proposed Action

The Proposed Action is to rebuild the 35.6-mile 115-kV transmission line located between ED2 and Saguaro Substations with 80 to 90-foot-tall weathered (rusted finish) steel monopoles and replace the conductors. The rebuilt line would have spans between poles of 700 to 1,100 feet long and would require an estimated 213 new structures. Western would replace the overhead protection ground wire with one containing fiber optic cables for utility communications. Western would place the new structures in holes that are typically 4 feet in diameter and 14 feet deep and directly embed the holes with concrete backfill. Western would use existing access roads to the extent possible and improve them as needed.

The BIA San Carlos Irrigation Project has jurisdiction by law over a portion of the project because the BIA requires an encroachment permit for the transmission line to cross the Casa Grande Canal and the Florence–Casa Grande Extension Canal located south of the ED2 Substation. The San Carlos Irrigation Project would act by issuing encroachment permits for the transmission line crossings of the irrigation facilities.

Reclamation has jurisdiction over a portion of the Proposed Action because it holds a 100 to 150-foot-wide easement for the transmission line that crosses the Arizona State Trust and private lands. Reclamation would perform any land actions that may be needed for the Proposed Action, such as acquiring an encroachment permit from the San Carlos Irrigation Project or acquiring a new or expanded right-of-way (ROW) if required.

Alternatives

The No Action Alternative was evaluated. Under this alternative, Western would continue to operate and maintain the transmission line in its existing state. Western anticipates that the No Action Alternative would require more maintenance because wood pole structures typically require more maintenance than steel structures. Reclamation would not apply for, and BIA would not issue, an encroachment permit and Reclamation would continue to hold ownership of the present ROW. The No Action Alternative would not meet the purpose and need for the project.

The existing line has 27 H-frame structures covering 3.1 miles and 434 wood single-pole structures covering 32.5 miles. The existing structures are 60 to 70 feet tall and support three 795 MCM ACSR conductors and a single overhead ground wire. The existing spans between poles are 400 to 600 feet long for single poles and 600 to 800 feet long for H-frame poles.

Western considered several alternatives including the Partial Pole Replacement Alternative 1, Partial Pole Replacement Alternative 2, Partial Pole Replacement Alternative 3, and Partial Pole Replacement Alternative 4. Western did not evaluate them further, however, because they would not meet the Proposed Action's purpose and need. The alternatives do not reduce the risk of catastrophic failure to the lowest practical level nor do they obtain the greatest long-term benefit. Although the one-time construction cost for each alternative is less than that for the Proposed Action, the annual maintenance cost would be greater.

Summary of Environmental Consequences

Western considered the following resource areas, but did not further evaluate them because there would be no adverse effects: climate change, environmental justice, farmlands (prime or unique), fuels and fire management, intentional destructive acts, land use, minerals, rangelands, recreation, socioeconomics, soils and geology, travel management and transportation, wastes, hazardous or solid, wetlands and riparian zones, wild or scenic rivers, and wilderness.

Following is a summary of the environmental consequences resulting from the Proposed Action and alternatives for each resource area.

Air Quality. Air quality impacts from the Proposed Action would be negligible. The Proposed Action would not exceed state or federal air quality standards. Short-term adverse impacts due to air emissions from construction vehicles and equipment exhaust, as well as fugitive dust generated during construction would be negligible. The Proposed Action would not impact any area designated as Class I under the Clean Air Act. Cumulative impacts to air quality from periodic transmission line maintenance would be negligible. Air quality impacts associated with the No Action Alternative would be less than those for the Proposed Action.

Cultural Resources and Native American Consultation. Western determined that a total of 25 historic properties within the project area were eligible for listing on the National Register. During construction, direct adverse impacts to historic properties would be primarily caused by ground disturbing activities. Ground disturbance related to the construction of 18 transmission line structures and additional pulling and turning structures within historic properties could result in damage or degradation to approximately 38.65 acres out of a total identified 150.53 acres of resources that are eligible for listing on the National Register. Vibrations, dust, and vehicle emissions from construction could cause indirect short-term and long-term adverse impacts including visual and noise impacts to the integrity of the setting and feeling of historic properties and damage to environmental resources and prehistoric rock art. The Proposed Action includes a series of resource protection measures that require contractors to avoid historical properties whenever possible and develop and implement an HPTP prior to performing any construction activities within the boundary of any historic property. Additionally, the dust and noise abatement measures would prevent indirect adverse effects from construction activities. Therefore, project construction would not result in damage or degradation to, or loss of resources that are eligible for listing on the National Register. Overall, Western predicts that the Proposed Action would moderately impact historic properties. While Western expects some impacts to be adverse and permanent, Western would mitigate these impacts by utilizing the archaeological testing and data recovery measures that would be outlined in the HPTP. Because Western would enact resource protection measures for inspection and maintenance work, and because impacts from such work would be similar to or less severe in nature and duration than that of new construction, impacts would be negligible during the operation and maintenance phase.

Loss of cultural resources is a concern in the project vicinity because the resources are not renewable and the Proposed Action spans an area that is highly sensitive in regard to prehistoric occupation. Future infrastructural, agricultural, and urban development projects may result in similar direct and indirect impacts to cultural resources, including damage, degradation to, or loss of resources. Individually minor but collectively significant actions (usually in the form of ground disturbance) may have a cumulative impact on cultural resources. Resource protection measures and Western's Construction Standards 13 would reduce the contribution of the Proposed Action to cumulative impacts to a minor level.

Under the No Action Alternative, there would be no construction impacts. Operation and maintenance impacts of the No Action Alternative would be similar to those described for the Proposed Action but would occur more frequently because wood poles typically require more maintenance than steel poles.

A summary of Western's consultation efforts under Section 106 of the National Historic Preservation Act is provided in Chapter 5.

Migratory Birds. Construction of the Proposed Action could cause direct adverse long-term and short-term impacts to migratory birds. Vegetation clearing and ground disturbance activities would likely result in adverse, short-term displacement of birds, but the project area has extensive similar habitats that wildlife would be able to use during the construction activities. At each work site there would be a long-term loss of approximately 0.1 acres of wildlife habitat from

the structure foundations and a small area adjacent to the new structure that would be maintained for future access. Completion of the Proposed Action would therefore result in an estimated total loss of 19 acres. Western considers this permanent loss to be minor because it would be similar to the existing transmission line footprint. During construction there would also be a short-term loss of wildlife habitat resulting from approximately 0.25 acres of temporary impacts at each new structure, 0.1 acres of which would remain a permanent loss. This would result in a total temporary loss of an estimated 28 acres. Western considers this loss to be minor because it is temporary and there are extensive similar habitats in the surrounding area that wildlife would be able to use during the construction activities. Some power lines present collision or electrocution risk to native birds. The Avian Power Line Interaction Committee (APLIC, 2012) provides guidelines on the use of various bird diverters and discusses proposed spacing for these devices to reduce risk of bird collision. Western is currently preparing an agency-wide Avian Protection Plan (APP), expected to be completed in Spring 2015, to provide direction on avian issues; standardize the techniques used to address avian issues across all regions of Western; assure compliance with legal requirements; document and track avian issues; and support design, construction, and maintenance activities in resolving avian issues at the earliest stage possible. The Proposed Action would conform to APLIC design guidelines and the APP to minimize the potential electrocution risk. The proposed location of the rebuild, in the same alignment as the existing line, would keep the risk of collision essentially unchanged. Cumulative impacts of project activities would be negligible because the actions would be diffused over a large geographic area and would be of a short-duration.

The No Action Alternative would result in no construction-related direct or indirect impacts to migratory birds. Long-term temporary operation and maintenance impacts would increase slightly during the Proposed Action because of more frequent future maintenance needs.

Noise and Sensitive Receptors. Temporary moderate increases in noise would occur during construction of the Proposed Action. Some temporary noise levels would be above the U.S. Environmental Protection Agency (EPA) identified safe levels. The duration of these noise levels would be short-term at any one location, the loudest construction noise occurring for only seconds. Therefore, construction noise would be a minor, short-term adverse impact for sensitive receptors at a distance where noise generated by the project is above EPA recommended levels. There would be no noticeable increase in noise above the existing ambient levels during operation and maintenance because the voltage of the line would remain the same. Due to the temporary nature of the activities under the Proposed Action, there would not be a cumulative substantial permanent increase in ambient noise levels near sensitive receptors. Construction noise impacts associated with the No Action Alternative would be less than those described for the action alternative because the existing structures would not be removed. Operational noise would like be similar to the Proposed Action.

Public Health and Safety. Western does not expect the Proposed Action to result in serious injuries to workers or create worker health hazards beyond regulatory limits. The Proposed Action would not result in any adverse public health and safety effects from electric and magnetic field (EMF) exposure. Western does not expect any cumulative impacts to public health and safety to occur from the Proposed Action. Impacts to public health and safety

under the No Action Alternative could occur from the deterioration of existing wooden transmission line structures and an increased fire risk, but would otherwise be the same as those described under the Proposed Action.

Threatened and Endangered Species. The Proposed Action area includes the Sonoran Paloverde–Mixed Cacti Desert Scrub that provides suitable foraging habitat and food sources for the following species: (1) the federally endangered lesser long-nosed bat; (2) the Sonoran Desert tortoise, a candidate species for federal listing; and (3) the Yellow-billed cuckoo, Western United States Distinct Population Segment. Long-term direct loss of suitable foraging habitat at each work site would be no more than 0.1 acres or 6.7 total acres. Short-term impacts would be 0.15 acres at each work site or 10.7 total acres. In addition, bald and golden eagles may use the area for foraging. The Proposed Action could affect foraging and possibly breeding success for these species. Vegetation management activities could remove or degrade food plants and could also impact foraging behavior and/or breeding success. By implementing resource protection measures, however, impacts of the Proposed Action would not likely adversely affect the threatened and endangered species. Most of the past, present, and reasonably foreseeable future projects located in the vicinity of the Proposed Action would have similar impacts to threatened and endangered species as the Proposed Action. Cumulative impacts of project activities would be negligible because the actions would be diffused over a large geographic area and would be short in duration. The No Action Alternative would result in no direct and indirect construction impacts to threatened and endangered species. Long-term temporary operation and maintenance impacts would increase slightly during the Proposed Action because of more frequent future maintenance needs for the existing wood pole structures.

Vegetation and Weeds – Invasive and Non-native. Aspen biologists observed 58 plant species in the project area, six of which are not native to Arizona. Resource protection measures require Western to prepare an invasive plant monitoring and removal plan to prevent new invasive plants from entering the project area. These measures would reduce the potential for project activities to introduce new invasive species into the area or facilitate the spread and dispersal of invasive species already present. By implementing these measures, Western would reduce construction-related soil disturbance and thereby reduce the possibility of invasive plants present within the project area from spreading and becoming more problematic. Therefore the impact of the Proposed Action would be minor. The Proposed Action is not expected to result in the loss of large patches of vegetation or completely remove any species from the ecosystem would therefore have negligible adverse impacts to the biodiversity of the project area. The Proposed Action will not create barriers to the plant propagules or seed dispersal that would disrupt gene flow between populations of a particular species; therefore it is not expected to have any direct or indirect adverse impacts to the genetic diversity of any plant species or populations. Cumulative impacts of the Proposed Action would be negligible because the actions would be diffused over a large geographic area and be reduced by resource protection measures. The No Action Alternative would result in fewer permanent and temporary direct impacts to native vegetation and a reduced potential for invasive species to be introduced into the project area. Long-term temporary operation and maintenance impacts would increase slightly during the Proposed Action because of more frequent future maintenance needs. No

impacts to non-target vegetation would occur from herbicide use during operation and maintenance activities.

Visual Resources. Due to the relatively flat topography of the Proposed Action, visibility of the transmission line ROW and existing infrastructure is greatest at foreground views. Western considers construction impacts affecting any single location to be minor because any impact on visual resources for the Proposed Action would be short-term in duration and spread throughout the area. Western prepared a visual simulation from the Picacho Peak State Park which has a moderate to high visual quality. Western determined that the long-term visual change presented by the Proposed Action was minor because of the distance between the sensitive viewpoint and the line and the color of the new poles. Western expects other visual changes to also be negligible or minor because the existing wood poles would be replaced by weathered steel poles, which are similar in color and shape as the existing poles. The cumulative change to visual contrast would be minor because cumulative development would occur adjacent to existing and similar infrastructure that appears throughout viewsheds of the area. The No Action Alternative would result in no temporary visual impacts from construction and fewer long-term impacts from operation of the line as the existing poles are shorter than those proposed in the Proposed Action. Temporary operational visual impacts would increase slightly during the Proposed Action because of more frequent future maintenance needs.

Water Quality and Floodplains. The Proposed Action could affect floodplains and water quality due to ground disturbance and construction activities. The Proposed Action would not block or impact any floodwater or natural drainage pattern. Western proposes replacing 32 poles currently within the floodplains by placing an estimated 11 poles in areas where floodplains cannot be avoided. Western would engineer the transmission towers to withstand a 100-year flood and would locate and design the towers so as to not impede flood flows. Impacts to floodplains would be negligible. Construction of the Proposed Action would include soil-disturbing activities and could lead to increased erosion and sedimentation resulting in water quality degradation. Western could avoid or minimize these potential impacts by incorporating best management practices, including Western's Construction Standard 13. Depth-to-groundwater is well below any excavation required for the Proposed Action. No impacts to groundwater would occur. Compliance with existing laws and regulations and Western Construction Standard 13 would ensure that potential water quality impacts of the Proposed Action would not combine with water quality impacts of other projects to result in cumulative impacts. The No Action Alternative would not impact floodplains or water quality within the project area.

Wildlife. Any direct and long-term permanent impacts to wildlife as a result of the Proposed Action would be limited to habitat loss and some animals being injured or killed during construction activities. At each work site, there would be a direct, long-term adverse impact from the structure foundations and an additional area at the base of each structure that would be maintained for future access of up to 0.1 acres. Western estimates that there would be a total loss of 19 acres. There may also be an additional 0.15 acres if short-term adverse impacts at each new structure location, for an estimated temporary loss of 28 acres. Vegetation clearing and ground disturbance activities would be likely to result in adverse, short-term, temporary displacement of wildlife. All impacts to wildlife habitat would be in locations where there are

extensive similar habitats in the surrounding area that wildlife would be able to utilize when moving away from the project area. The Proposed Action is not expected to result in the loss of large patches of habitat or completely remove any species from the ecosystem and therefore would have negligible adverse impacts to the biodiversity of the project area. It is not expected to create barriers to the wildlife that could disrupt gene flow between populations of a particular species and the project duration is so short-term that it is not expected to have any direct or indirect adverse impacts to species genetic diversity. Vegetation treatment, including use of low-toxicity herbicides, would result in minor impacts to wildlife. Cumulative impacts of project activities would be negligible because the actions would be diffused over a large geographic area and would be short in duration. The No Action Alternative would result in no construction-related direct or indirect impacts to wildlife or wildlife habitat. Long-term temporary operation and maintenance impacts would increase slightly during the Proposed Action because of more frequent future maintenance needs for the existing wood pole structures.

Chapter 1
Introduction: Purpose and Need for Action

1.1 Project Background

Western Area Power Administration (Western) is one of four power marketing administrations within the U.S. Department of Energy. Western operates within a 15-state region of the central and western United States, and delivers power from 57 power plants to a service area that covers approximately 1.3 million square miles and is divided into four regions. Western's Desert Southwest region is based in Phoenix, Arizona, and operates transmission lines and facilities in Arizona, California, and Nevada.

Western operates and maintains the Electrical District (ED) 2 to Saguaro No. 2 115-kV transmission line under an agreement with the Central Arizona Project (CAP). CAP is responsible for the facilities, and the U.S. Bureau of Reclamation (Reclamation) holds the easement for the transmission line. In May 2013, CAP recommended authorizing funds to replace the wood pole structures on this line to ensure transmission reliability. Western's action consists of (1) rebuilding the 35.6-mile transmission line with steel monopoles, new conductors, and new overhead protection ground wire with fiber optic cables; (2) removing the existing wood pole structures; (3) improving existing access roads and equipment work areas for safety; and (4) operating and maintaining the transmission line (Proposed Action). CAP would own the facilities Western constructs during the Proposed Action and be responsible for any future decommissioning. CAP does not foresee decommissioning this line in the next 10 years; the estimated lifespan of the Proposed Action is at least 50 years.

On November 5, 2014, Western made a determination to prepare an Environmental Assessment (EA) for the Proposed Action in accordance with the National Environmental Policy Act (NEPA) Regulations Subpart D Part 1021. Appendix C4 to Subpart D to Part 1021 – Classes of Actions that Normally Require EAs But Not Necessarily EISs of the Regulations states, "Upgrading or rebuilding more than approximately 20 miles in length of existing powerlines; or construction of powerlines (1) More than approximately 10 miles in length outside previously disturbed or developed powerline or pipeline rights-of-way or (2) more than approximately 20 miles in length within previously disturbed or developed[1] powerline or pipeline rights-of-way (ROW)." Appendix C4 applies to the Proposed Action because it entails rebuilding more than 20 miles of transmission line within a previously disturbed or developed ROW.

[1] The DOE NEPA regulations at 1021.410(g)(1) definition for previously disturbed or developed states is "…land that has been changed such that its functioning ecological processes have been and remain altered by human activity. The phrase encompasses areas that have been transformed from natural cover to non-native species or managed state, including but not limited to, utility and electric power transmission corridors and rights-of-way, and other areas where active utilities and currently used roads are readily available."

1.2 Purpose and Need

Western's mission is to "market and deliver clean, renewable, reliable, cost-based Federal hydroelectric power and related services" pursuant to its statutory authority under the Energy Reorganization Act (§7152(a)) and the Federal Power Act (§824j). To this end, Western needs to increase the reliability and safety of the bulk electric power system and maintain reliable transmission service to the three CAP pumping plants that supply water to Pima and Pinal Counties (the Brady, Picacho, and Red Rock plants).

The ED2 to Saguaro No. 2 115-kV transmission line experienced five major failures in the last 10 years, including four failures in a three-year period. The most recent failure occurred in 2012 when a storm destroyed 30 structures in a three-mile section. Western needs to reduce the risk of a catastrophic failure on the ED2 to Saguaro No. 2 115-kV transmission line to the lowest practical level and obtain the greatest long-term benefit.

1.3 Cooperating Agencies

Reclamation and the U.S. Bureau of Indian Affairs (BIA) are cooperating agencies in preparing this EA. Reclamation has jurisdiction by law over a portion of the project because it holds the transmission line ROW and land actions may be needed for the Proposed Action such as acquiring encroachment permits. An encroachment permit for the transmission line to cross the Casa Grande Canal and the Florence–Casa Grande Extension Canal is required from the BIA San Carlos Irrigation Project. This document would serve as the NEPA review for these actions.

In support of these actions, Reclamation and the BIA have participated as cooperating agencies by meeting with Western, reviewing technical reports, and providing input regarding the scope and content of the environmental analysis.

1.4 Public Involvement

1.4.1 Scoping

Western notified stakeholders of the project and solicited their comments through a scoping letter, dated March 10, 2014, and a newspaper advertisement (refer to Appendix D). Stakeholders notified included federal, tribal, state, and local governments, other interested organizations, and landowners within and near the Proposed Action area. A public scoping meeting was held on March 25, 2014 in Casa Grande, Arizona. Five comment letters were received on the project from federal agencies (U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency) and state agencies (Arizona Department of Environmental Quality Air Quality Division and Water Quality Division and the Arizona Game and Fish Department). Primary topics addressed included:

- Impacts to air quality
- Clean Water Act requirements
- Impacts to special-status species in the project vicinity
- Impacts to cultural resources and Indian sacred sites in the project area

Refer to Chapter 5 and Appendix F for information on tribal consultation and Appendix E for copies of agency correspondence.

1.5 Decisions Needed

This EA, which is the responsibility of Western, is a concise public document that serves to:

- provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI);
- aid Western's compliance with NEPA when no EIS is necessary; and
- facilitate preparation of an EIS if one is necessary (40 CFR § 1508.9).

Based on the analysis contained in this EA, weighing how each alternative meets the purpose and need, Western will determine whether the proposed ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project requires an EIS or if a FONSI can be prepared.

Chapter 2
Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action, the No Action alternative, and alternatives considered but not further evaluated. It also briefly describes projects that occur concurrently and foreseeable future projects located in the vicinity of the Proposed Action.

2.2 Proposed Action Description

2.2.1 Proposed Actions

Western's Proposed Action

Western proposes to rebuild the 35.6-mile 115-kV transmission line located between ED2 and Saguaro Substations in Pinal County, Arizona. Western proposes to rebuild the line with 80 to 90-foot-tall rusticated steel monopoles and replace the conductors (refer to Figure 2-1). The rebuilt line would have spans between poles of 700 to 1,100 feet long and would likely require an estimated 213 new structures. Western would replace the overhead protection ground wire with one containing fiber optic cables for utility communications. Western would place the new structures in holes that are typically 4 feet in diameter and 14 feet deep and directly embed the holes as described in Section 2.1.4.2. Western would use existing access roads to the extent possible and improve them as needed. Western would operate and maintain the ED2-Saguaro No. 2 115-kV transmission line.

Bureau of Indian Affairs San Carlos Irrigation Project's Proposed Action

The BIA San Carlos Irrigation Project has jurisdiction by law over a portion of the project because the BIA requires an encroachment permit for the transmission line to cross the Casa Grande Canal and the Florence–Casa Grande Extension Canal located south of the ED2 Substation. The BIA San Carlos Irrigation Project would act by issuing encroachment permits for the transmission line crossings of their irrigation facilities.

Bureau of Reclamation's Proposed Action

Reclamation has jurisdiction over a portion of the Proposed Action because it holds a 100- to 150-foot-wide easement for the transmission line that crosses the Arizona State Trust and private lands. Reclamation would perform any land actions that may be needed for the project, such as acquiring an encroachment permit from the BIA San Carlos Irrigation Project.

2.2.2 Project Location

The Proposed Action is located on the east side of Interstate 10 (I-10) near Eloy (refer to Figure 2-2 and Figures 2-3a through 2-3d for the proposed transmission structure locations). It starts at the ED2 Substation located on the east side of Eleven Mile Corner Road, half a mile south of State

Route 287. It ends at the Saguaro Substation next to the Arizona Public Service Company's Saguaro Steam Plant alongside I-10, one mile south of Exit 226 (Red Rock). The transmission line parallels portions of Eleven Mile Corner, Hanna, Brady Pump Plant, and Pecan Roads. It crosses State Route 87 at Hanna Road. Table 2-1 lists the legal sections crossed by the Proposed Action.

Table 2-1. Transmission Line Legal Description

Township	Range	Sections
6 South	8 East	30, 31
7 South	8 East	6, 7, 13, 14,15,16,17,18
7 South	9 East	7, 16, 17, 18, 21, 28, 33
8 South	9 East	4, 9 16, 20, 21, 29, 32, 33
9 South	9 East	3, 4, 10, 11, 13, 14
9 South	10 East	7, 8, 9, 16, 18, 21, 28, 33, 34
10 South	10 East	2, 3, 11, 14, 15, 23

2.2.3 Timing

Western plans to rebuild the transmission line beginning in fall 2016 and complete the work by summer 2017. The work would occur in stages so that electrical service to the pumping plants is uninterrupted starting at the ED2 Substation and working toward the Saguaro No. 2 Substation. The preliminary schedule is as follows:

- Phase I: September 2016 to mid-December 2016;
- Phase II: mid-December 2016 to the end of January 2017;
- Phase III: the end of January 2017 to mid-June 2017; and
- Phase IV: mid-June 2017 to end of June 2017.

2.2.4 Project Implementation

The following describes how Western plans to implement the Proposed Action before, during, and after construction. All of the following activities would occur during each phase listed in Section 2.2.3.

2.2.4.1 Pre-Construction

Reclamation would also apply for an encroachment permit from the BIA San Carlos Irrigation Project for crossing their canals. Other proposed pre-construction land actions include Western obtaining temporary right of entry to adjacent lands that may be used during construction.

2.2.4.2 Construction

Ground Disturbance

Ground disturbance from construction activities would occur as a result of removing existing structures, grading and drilling holes for new structures, improving existing access roads for safe vehicle and equipment access, installing/removing conductor and overhead ground wire, and removing existing guy wires. These activities would be conducted primarily within the existing transmission line ROW or at existing structure locations. However, short-term disturbance outside the ROW would be required for wire pulling, tensioning sites, and a staging area. Conductor pulling and tensioning sites would be approximately 100 feet wide by 400 feet long. Installation of 10 feet of cable trays for fiber optic lines would be required at the ED2 and

Saguaro Substations, as well as at the three pumping stations. Existing cable trays would be used whenever possible. Typical ground disturbance is shown in Table 2-2.

Table 2-2. Typical Ground Disturbance for Construction Activities

Activity	Temporary Disturbance	Permanent Disturbance
Structure footing – 115-kV steel pole (includes foundation excavation that is typically 4 feet in diameter and 14 feet deep)	up to 0.25 acre	up to 0.1 acre
Conductor pull site	0.9 acre (400 feet x 100 feet)	0 acres
Access road construction/improvement	Up to 20 feet wide	Up to 16 feet wide
Cable trays	20 square feet	0 square feet

Temporary disturbance areas for the staging area would be up to 10 acres. Temporary disturbance for the staging and assembly of equipment within the ROW would be approximately 100 feet in diameter. Permanent disturbance required for each foundation footprint would be approximately three to six feet in diameter.

The access road between structures 26/4 and 26/5 (refer to Figure 2-3c) is bisected by the McClellan Wash and currently impassable by motor vehicles. The construction contractor would drive around this area during construction to access the structures from either side of the wash.

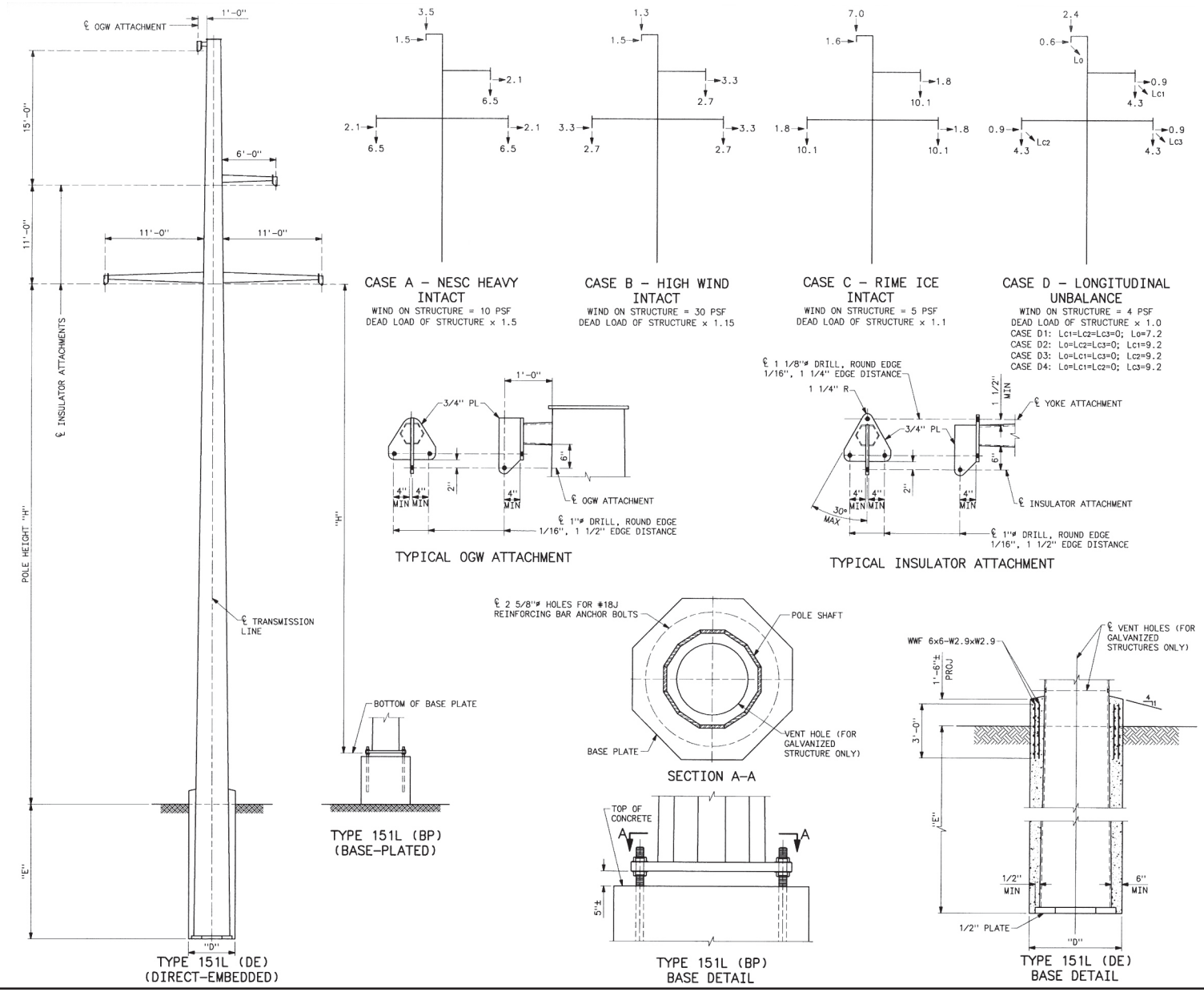
The access road near the Red Rock Pump (refer to Figure 2-3d) may be rerouted to avoid a sensitive resource. This would require moving the access road approximately 200 to 300 feet north. The reroute would be about 1,100 feet in length between approximately structures 33/5 and 34/2 and would rejoin the existing access road as soon as feasible.

Existing access roads within the ROW would require improvements, as some access roads may no longer be useable due to vegetation overgrowth and erosion. Improving existing access roads would involve brush clearing and minor grading or blading. The access road between structures 23/3 and 25/5 crosses multiple existing culverts and the dirt access road approach to the existing culverts would be improved or shored up as needed to support the weight of the construction vehicles.

For existing access roads needing repair, Western or its contractor would replace surface material lost or worn away, and grade and shape the road. Western or its contractor would control dust from equipment driving on dirt roads and confine access road repair work to the existing road prism.

No new access roads to the transmission structures would be needed. If necessary, travel using rubber tire vehicles would occur overland to reach structures not served by an existing access road.

The transmission line crosses several canals and the Santa Rosa Levee. Western or its contractor would follow the terms of the encroachment permit for these crossings. The ROW crosses buried fiber optic lines and multiple distribution lines and runs near existing gas lines. It also crosses the Union Pacific Railroad between structures 6/4 and 6/5. Western or its contractor would follow standard requirements when crossing existing structures.



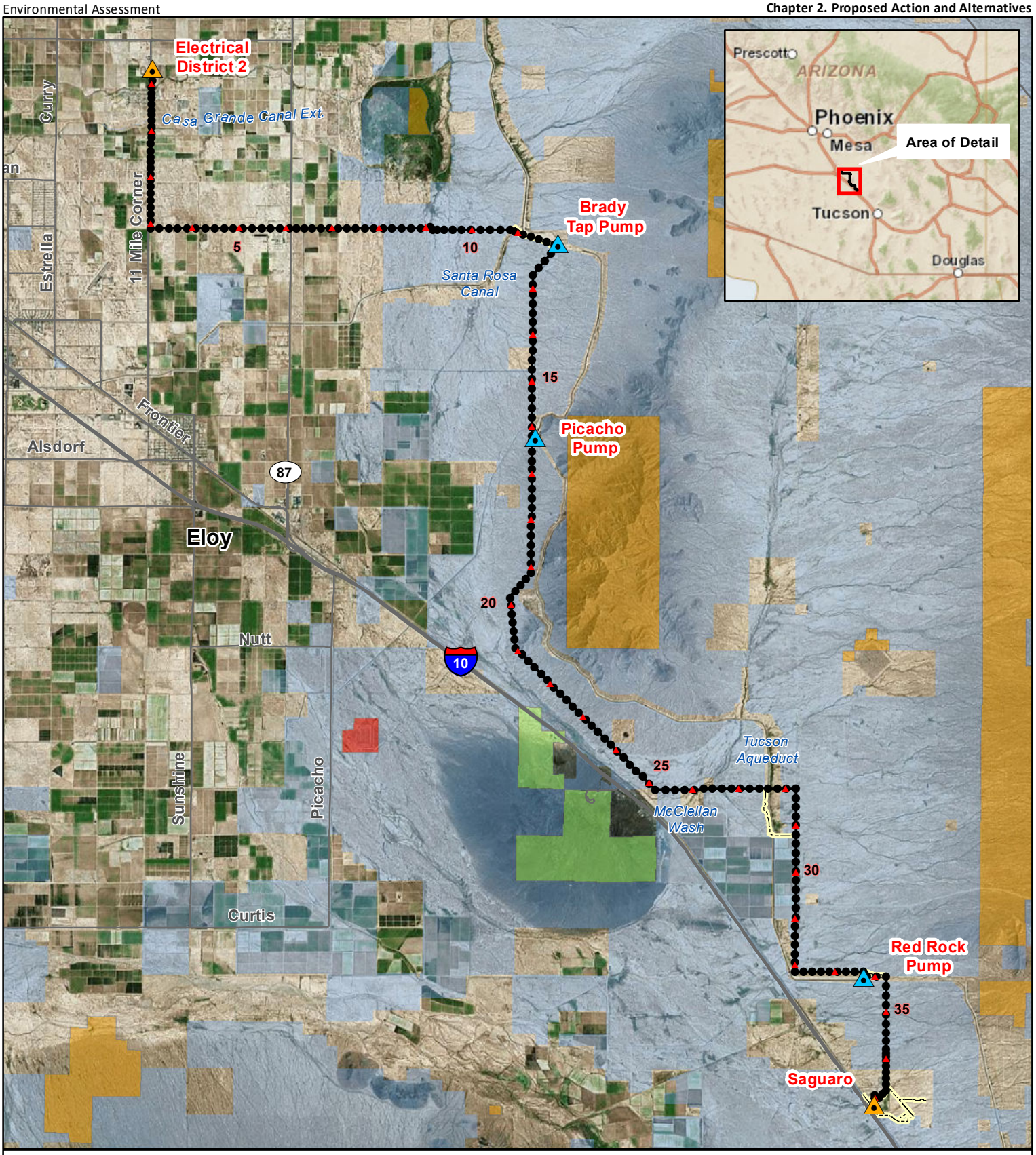
NOTES

1. LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS.
2. WIRE LOADS ARE IN KIPS AND ARE TOTAL FOR ALL SPANS.
3. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE. STRUCTURE DESIGN SHALL ACCOUNT FOR TRANSVERSE WIRE AND WIND LOADS BEING APPLIED IN EACH DIRECTION; I.E., LEFT OR RIGHT.
4. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING; GUYS ARE NOT PERMITTED.
5. WIND PRESSURE SHOWN ON LOADING DIAGRAMS ARE BASED ON A SHAPE FACTOR OF 1.0 FOR CIRCULAR SECTIONS. FOR SECTIONS OTHER THAN CIRCULAR, MULTIPLY THE PRESSURES BY THE FOLLOWING SHAPE FACTORS:
   ELLIPTICAL=1.2 (MAJOR AXIS)
   0.9 (MINOR AXIS)
   12-SIDED=1.1
   8-SIDED=1.4
   6-SIDED=1.4
   4-SIDED=2.0
6. DESIGN LOADS ARE BASED ON 795 KCM ACSR 26/7 "DRAKE" CONDUCTOR AND 1/2ø, 7-STRAND, HIGH-STRENGTH STEEL OVERHEAD GROUND WIRES.
7. SUM OF ADJACENT SPANS_____2400 FT
8. LOW POINT DISTANCE_____2000 FT
9. LINE ANGLE_____0°
10. NESC HEAVY: 1/2" RADIAL ICE, 4 PSF WIND AT 0°F.
    RULING SPAN_____1000 FT
    TENSIONS: CONDUCTOR_____13,130 LB
    OGW_____7172 LB
11. HIGH WIND: 100 MPH 3-SECOND GUST AT 60°F IN ACCORDANCE WITH NESC C2-2002.
    TENSIONS: CONDUCTOR_____12,302 LB
    OGW_____5630 LB
    WIND ON WIRES_____26 PSF
12. RIME ICE: 1 1/2" RADIAL RIME (40 PCF), 4 PSF WIND AT 30°F.
    TENSIONS: CONDUCTOR_____17,839 LB
    OGW_____11,526 LB
13. "H" INDICATES HEIGHT PORTION OF POLE STRUCTURE DESIGNATIONS LISTED IN SPECIFICATIONS. CONTRACTOR SHALL DETERMINE EMBEDMENT DEPTH "E" AND AUGER DIAMETER "D" BASED ON CRITERIA IN SPECIFICATIONS.

Figure 2-1

Proposed Action Transmission Line Structures

Western AREA POWER ADMINISTRATION



Western Area Power Administration

0 1.5 3 Miles

- Proposed Structures *
- Pumping Plant - Central Arizona Project
- Western Substation
- Mile Marker
- Access Roads
- Transmission Lines
- County Boundary

AZ Land Ownership

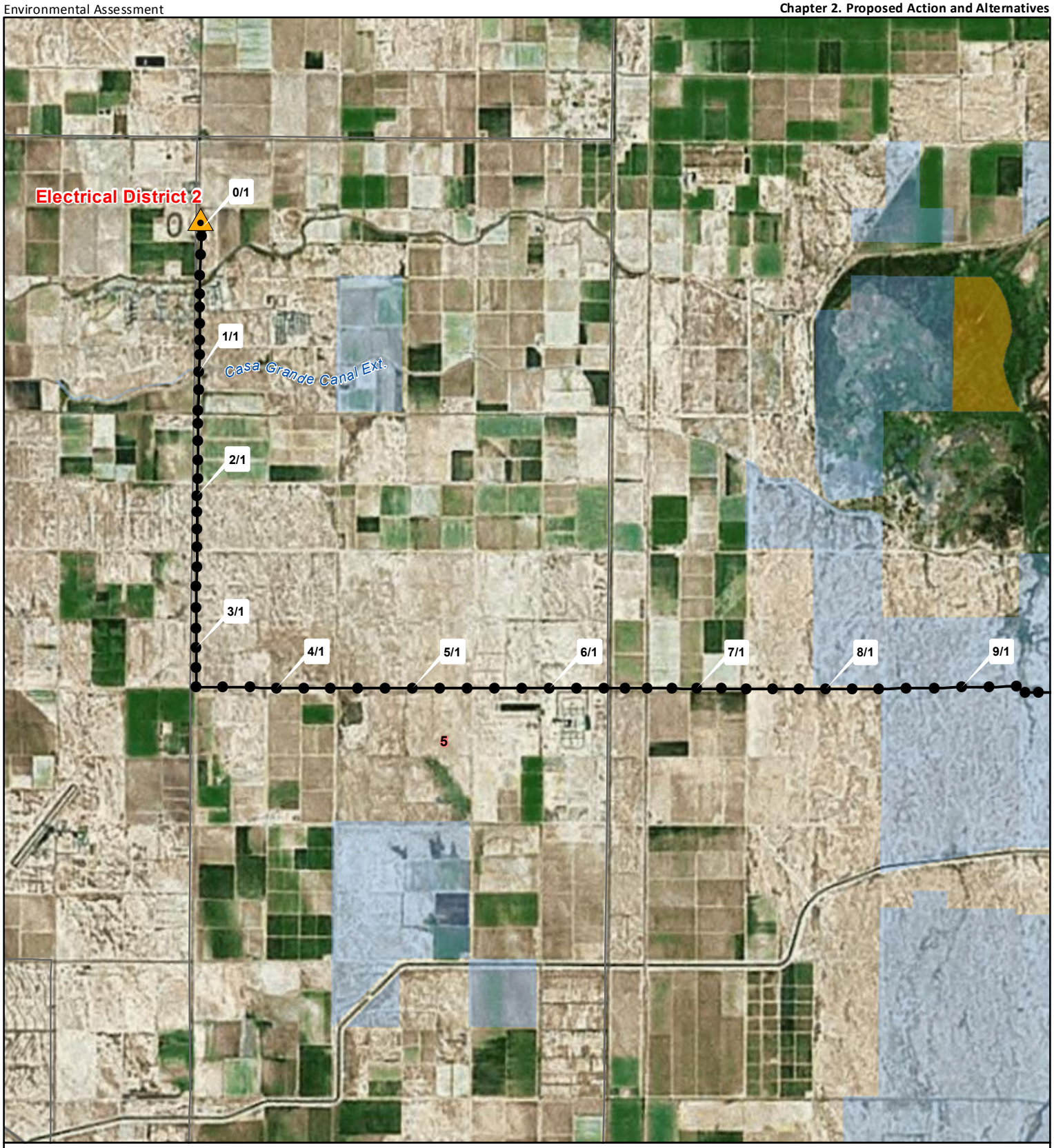
- BLM
- Local or State Parks
- Military

Figure 2-2

Proposed Action

* Based on engineering, does not represent existing poles.

This page intentionally blank.



Western Area Power Administration

1:61,330.16

0 0.5 1 Miles

Source: WAPA, Aspen EG, ESRI

- Transmission Poles
- Pumping Plant - Central Arizona Project
- Western Substation
- Access Roads
- Transmission Lines
- County Boundary

AZ Land Ownership

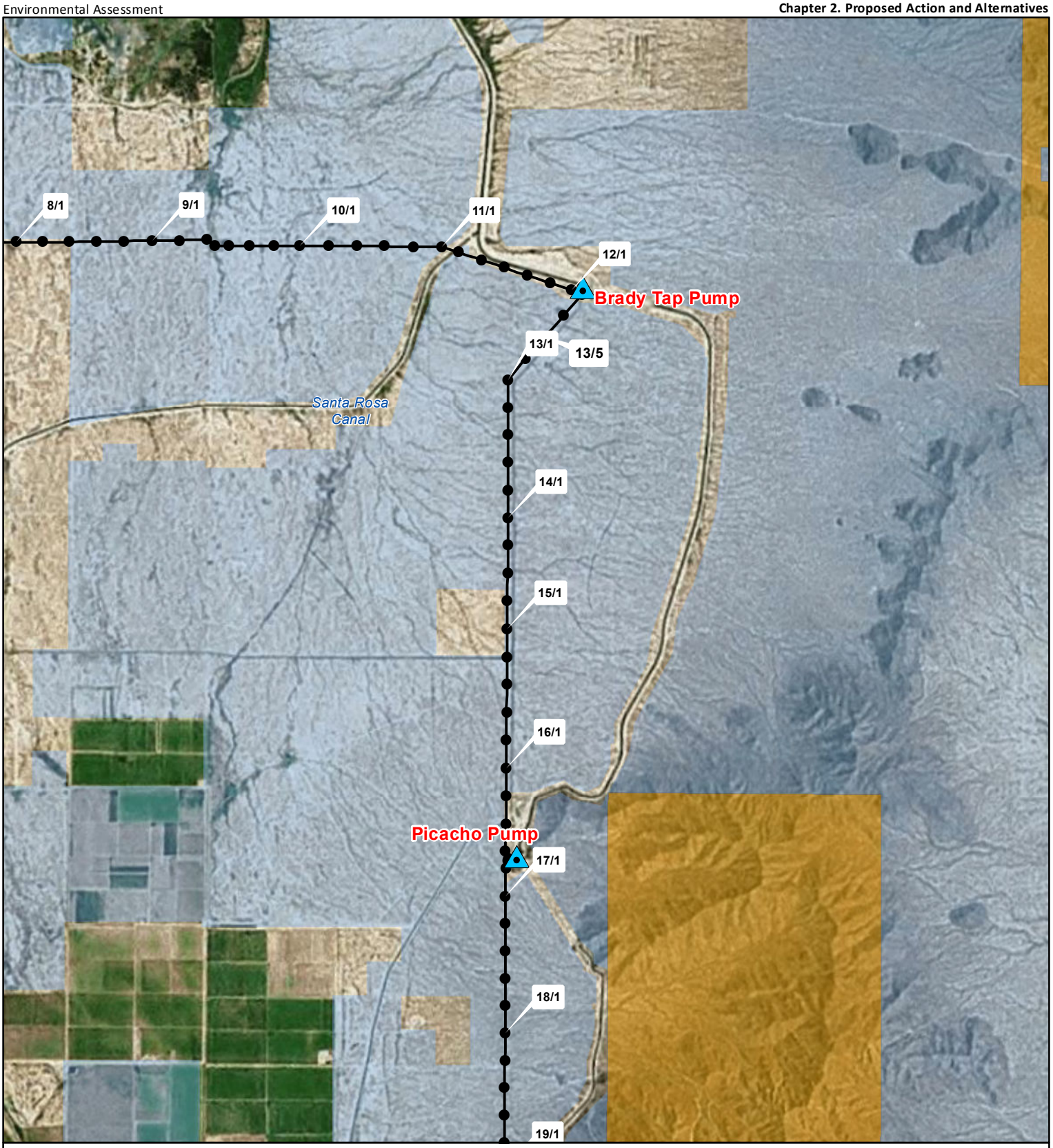
- BLM
- Local or State Parks
- Military
- State Trust

* Based on preliminary engineering, does not represent existing towers.

Figure 2-3a

Proposed Action Tower Locations

This page intentionally blank.



Western Area Power Administration

1:61,191.72

0 0.5 1 Miles

Source: WAPA, Aspen EG, ESRI

Transmission Poles
Pumping Plant - Central Arizona Project
Western Substation
Access Roads
Transmission Lines

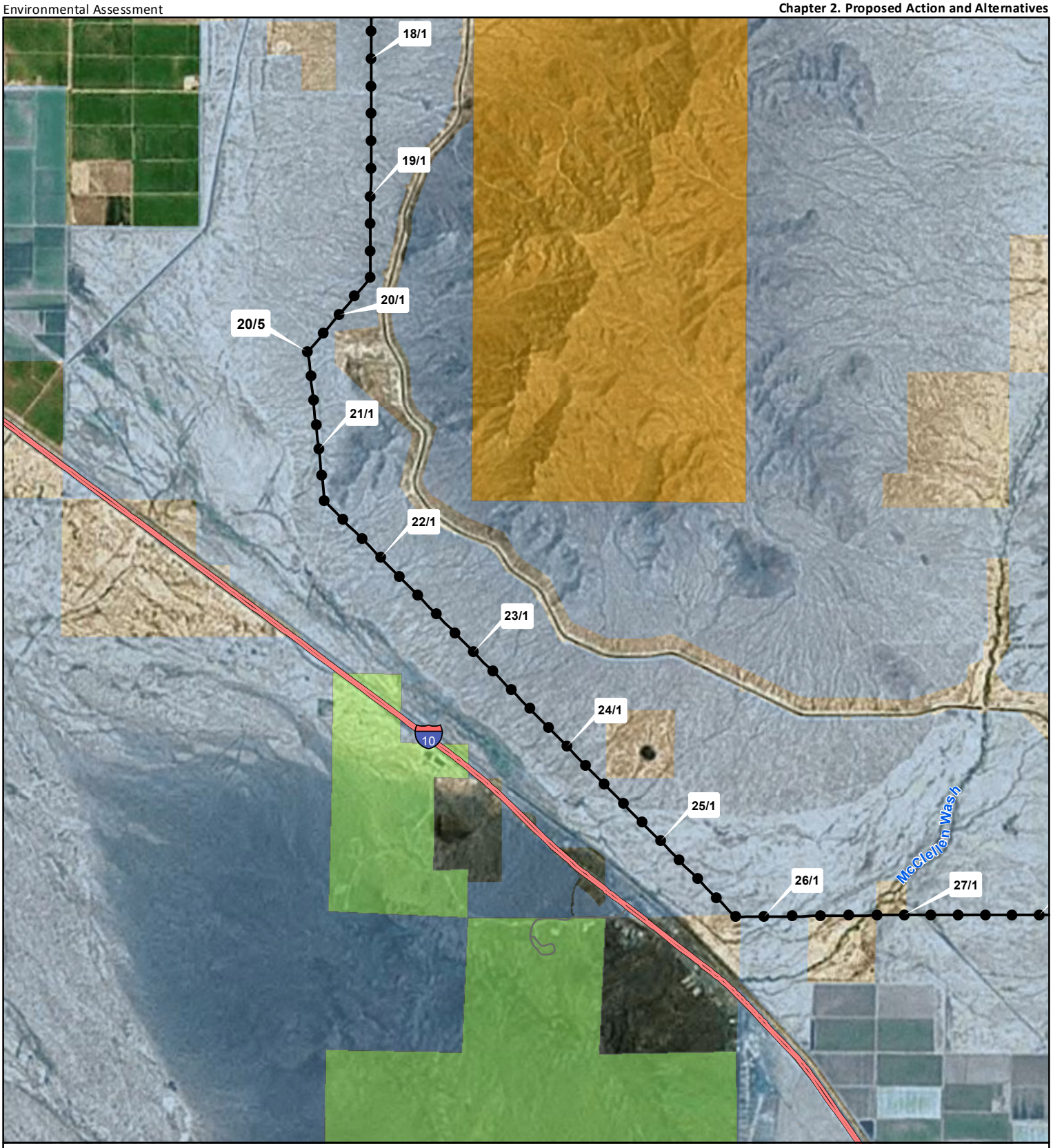
County Boundary
AZ Land Ownership
BLM
Local or State Parks
Military
State Trust

* Based on preliminary engineering, does not represent existing towers.

Figure 2-3b

Proposed Action Tower Locations

This page intentionally blank.



Western Area Power Administration

1:61,320.27

0 0.5 1 Miles

Source: WAPA, Aspen EG, ESRI

- Transmission Poles
- Pumping Plant - Central Arizona Project
- Western Substation
- Access Roads
- Transmission Lines
- County Boundary

AZ Land Ownership

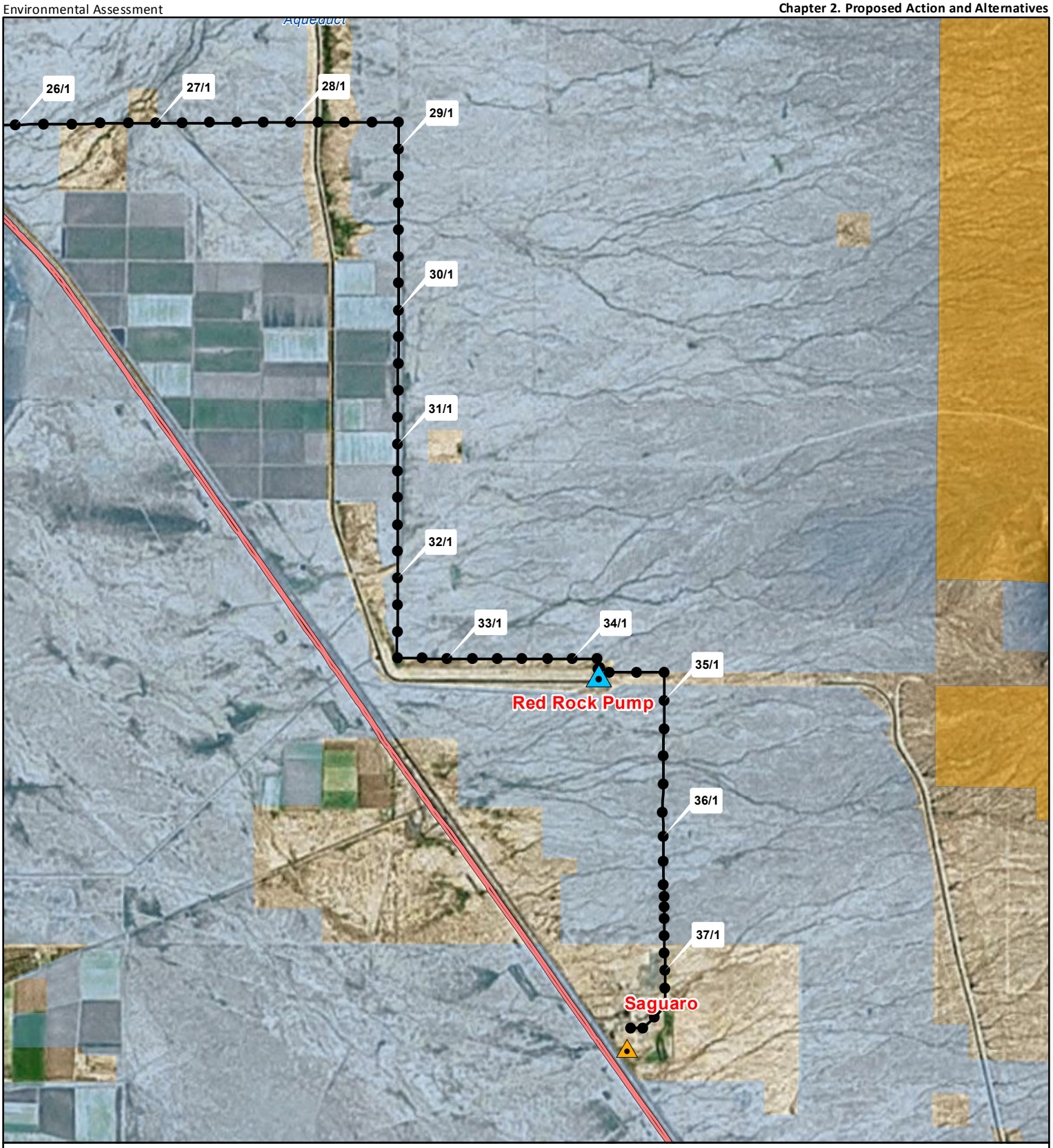
- BLM
- Local or State Parks
- Military
- State Trust

* Based on preliminary engineering, does not represent existing towers.

Figure 2-3c

Proposed Action Tower Locations

This page intentionally blank.



Western Area Power Administration

1:61,330.16

0 0.5 1 Miles

Source: WAPA, Aspen EG, ESRI

Transmission Poles
Pumping Plant - Central Arizona Project
Western Substation
Access Roads
Transmission Lines

County Boundary
AZ Land Ownership
BLM
Local or State Parks
Military
State Trust

* Based on preliminary engineering, does not represent existing towers.

Figure 2-3d

Proposed Action Tower Locations

This page intentionally blank.

Existing Infrastructure Removal

Western or its contractor would begin demolition of the existing transmission line by removing the conductors and overhead ground wires. The existing conductor would be wound onto spools, hauled away by truck, and recycled. Western or its contractor would then remove the guy wires and existing structures.

Removal of pole structures would entail either, (1) excavating a trench at the base and tipping the pole out, (2) using a pole-pusher to lift a pole straight out of the ground, or (3) cutting off the poles at ground level or up to two feet below ground level. The structures (where practicable) would be recycled, transferred to the public for other uses or disposed of at a landfill. Western or its contractor would backfill excavations with native material.

Structure Foundations Installation

To install foundations, Western or its contractor would level the structure location. Using an auger, Western or its contractor would then excavate the structure foundations to 10 to 20 feet deep with a four-foot diameter. Structures would be directly embedded so that they sit directly on the floor of the hole surrounded by concrete backfill. The concrete backfill may extend 2 feet above the ground surface. An estimated 4 cubic yards of concrete would likely be needed per structure. Assuming 213 structures, a total of 805 cubic yards would be needed requiring between 80 and 100 truckloads of concrete. A concrete truck would be parked as close to the structures as feasible to provide concrete for foundations. Western or its contractor would use any excess excavated material as backfill to refill holes or spread onsite.

New Structure Assembly and Erection

The steel monopole structures, conductor, overhead ground wire, insulators and other hardware would be delivered by truck to the transmission ROW or the staging area. Most monopoles are manufactured in three or four pieces that must be pulled together with the aid of a hydraulic jack. Figure 2-1 illustrates a typical monopole structure. Either the entire pole is framed in a staging area with cross arms, insulators, and line hardware, or these components are installed after the pole is erected. Next, the pole is set in the hole with a crane while concrete is placed around the base. Each structure is held in place with a crane or guy wire for 72 hours as the concrete foundation cures.

Conductor Stringing

To install conductors, Western or its contractor would attach stringing sheaves or travelers (pulleys) on the cross arms of each structure to the bottom of the insulator strings. A sock line (rope or lightweight wire) would be strung from structure to structure through the stringing sheaves. Western or its contractors may complete this task using a helicopter. A larger-diameter pulling line would then be attached to the end of the sock line and pulled back through the sheaves, stringing from structure to structure between pull site locations.

Using powered pulling equipment at one end and powered braking or tensioning equipment at the other end establishes the proper tension for crews to permanently “clip” conductors and ground wires onto new structure hardware, thereby maintaining the proper ground clearance

for the conductors. After conductor and ground wire are clipped onto the new porcelain insulators hanging from the cross arms, Western or its contractor would remove the stringing sheaves. The overhead protection ground wire would be installed last and would be attached to the top of the structures using a pulling technique similar to that used for the conductors. One overhead protection ground wire, which would include an integrated fiber optic cable for communications purposes, would be installed.

In some cases, individual conductor segments must be connected (spliced) together to form a continuous line, using a mechanical device or implosive sleeve. An implosive sleeve has a small, engineered implosive charge wrapped around a metallic sleeve. The two conductor segments are fed into the sleeve. The charges create an implosive compression that then joins the two conductor segments.

Construction Staging

Equipment and poles would be delivered within the existing ROWs. Western would lease three, 12 acre parcels for staging equipment and materials during construction. The first one is located at the northeast corner of Elven Mile Corner Road and 6th Place in Eloy, Arizona. Western is currently leasing this parcel for staging another project, and it was inspected for biological and cultural resources prior to use. As construction progresses, Western would select additional staging areas closer to the work area and phase out the use of previous ones. Western identified the following parcels as suitable staging areas based on their access, location and surface condition:

- A site located near the ED2 Substation previously used as a staging area for another utility's construction project
- A site located at Park Link Road and East Camino Adelante Road
- A site at Park Link Road and Pecan Road
- A site at Red Rock Road and I-10

Western would inspect these areas for biological and cultural resources prior to use.

Construction Equipment and Workforce

Construction equipment would include various rubber tire vehicles or tracked equipment ranging in size from a pickup truck to a crane, including, but not limited to: all-terrain vehicles, augers or drill rigs, backhoes, buckets or boom trucks, bulldozers, cement mixers or trucks, compressors, cranes, crew trucks, dump trucks, front-end loaders, graders, pole trucks, spool rigs, tensioners, and tractor-trailers. A helicopter may be used for conductor stringing or construction staging.

Construction would require approximately 50 workers, who may not all be on the job site at the same time. A typical work-day ranges from 5 to 10 hours per day per worker.

Disturbance Area Reclamation

Western or its contractor would complete reclamation at disturbed areas within the ROW following construction and cleanup of each construction phase per the Stormwater Pollution Prevention Plan. This would include potentially returning the Proposed Action area to its original contour and natural drainage pattern. Western would reseed as required by the Stormwater Pollution Prevention Plan.

2.2.4.3 Operation and Maintenance

Western must comply with North American Electric Reliability Council requirements regarding transmission line reliability including standards and requirements for maintenance and vegetation treatment. A summary of the transmission line operation and maintenance activities are listed in Table 2-3.

Table 2-3. Operation and Maintenance Activities

Maintenance Activity	Description
Inspection	▪ Aerial inspections by helicopter or small plane ▪ Ground inspections typically conducted by pickup truck or all-terrain vehicle ▪ Climbing inspections if needed
Vegetation Treatment	▪ Managing undesirable vegetation where clearance thresholds are established and proactively monitored ▪ Initial Vegetation Removal: ROW is cleared through removal of undesirable vegetation and danger trees outside the ROW are removed ▪ Vegetation Maintenance: ROW enhancement through management techniques to protect facilities and reduce potential for fire; for a 115-kV line, the minimum clearance between the conductor and vegetation is 21 feet[1] ▪ Vegetation Control Methods: Manual vegetation control methods include cutting with power saws, trimming or pruning, and slash disposal and fuels reduction; mechanical vegetation control methods include mowing/grinding and chipping. Herbicide control methods are also used
Access and ROW Road Maintenance	▪ Maintain safe and reliable access and ROW roads ▪ Inspect road structures including culverts, cattle guards, and fences ▪ Provide new or upgraded access road drainage facilities as necessary
Standard Western Operation and Maintenance Protocols	▪ Adhere to Best Management Practices, Standard Operating Procedures, and Project Conservation Measures[2] as applicable
Emergency Repairs	▪ Problems that need immediate repair or replacement of hardware or vegetation treatment ▪ Transmission Infrastructure failure ▪ Storm and other natural events damage

1 - The minimum clearance is based on the OSHA 29 CFR §1910.333 minimum approach distance for non-electrical workers (rounded up to the nearest foot) plus 5 feet to account for conductor and tree movement due to wind and ice loading or increased conductor sag as a result of thermal loading. In addition, another 5 feet is added to allow for an average tree growth of 12 inches per year and a re-treatment interval of not less than 5 years.

2 - Standard Best Management Practices, Standard Operating Procedures, and Project Conservation Measures are provided in Appendix A of the Parker-Davis Transmission System Programmatic Operation and Maintenance Project EA.

2.3 Resource Protection Measures

Resource protection measures (refer to Table 2-4) are part of the Proposed Action and would also apply to the alternative where applicable. Western or its contractor would be the responsible party for implementation of and compliance with the measures. Western's construction contractor would implement the *Construction Standards 13 – Environmental Quality Protection*. These standards are presented in Appendix A.

Table 2-4. Resource Protection Measures

ID	Measure	Timing
AQ-1	Minimize land disturbance. At all proposed work areas, limit the mechanical disturbance of previously undisturbed areas (including soils) to the greatest extent practicable. In new impact areas, limit the mechanical disturbance to the greatest extent practicable.	Construction
AQ-2	Suppress dust on traveled paths through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions. Within desert habitat, water applied to dirt roads and construction areas shall use the minimal amount needed to meet air quality standards.	Construction
AQ-3	Limit speeds to 25 miles per hour on stabilized unpaved roads unless it creates a visible dust emission; limit speeds to 10 miles per hour on unpaved areas within construction sites on un-stabilized roads.	Construction
AQ-3	Cover trucks when hauling soil.	Construction
AQ-4	Minimize soil track-out washing or cleaning truck wheels before leaving construction site.	Construction
AQ-5	Stabilize the surface of soil piles.	Construction
AQ-6	Create windbreaks in areas highly susceptible to fugitive dust.	Construction
AQ-7	Revegetate any disturbed land not used.	Reclamation
AQ-8	Remove unused material.	Reclamation
AQ-9	Remove soil piles via covered trucks.	Reclamation
CUL-1	Avoid construction and operation and maintenance activities near irrigation system and drainage canal features that are eligible for the National Register. Direct impacts to these features would be avoided during the siting of transmission line structures and access roads, and most other irrigation system features would be avoided to the extent practicable in siting new structures and access roads.	Pre-construction and construction
CUL-2	Avoid construction, and operation and maintenance activities near or within the boundaries of any historic property. In the event that historic properties cannot be avoided, subsurface archaeological testing must be implemented to determine the presence of any subsurface components before any ground disturbance occurs within the boundary of a historic property. If subsurface components are encountered, an archaeological treatment and monitoring program will be developed and implemented in consultation with the Arizona SHPO and any interested Tribes before construction continues.	Pre-construction, construction, and operation and maintenance
CUL-3	Requires that in the event that archaeological resources or human remains are discovered on federal land during construction and operation and maintenance of the Project, all activities must cease in the immediate vicinity of the discovery and Western's Federal Preservation Officer (FPO) and the federal land-managing agency(ies) must be immediately notified. Work should not resume until Western's FPO and the land manager archaeologist, in consultation with the Arizona SHPO and Tribes, have determined an appropriate course of action. Additionally, the FPO and federal land-managing agency(ies) must be immediately notified if human remains are found on federal land, and the Arizona SHPO and Tribes must be consulted with to determine the appropriate course of action.	Construction and operations and maintenance
CUL-4	Requires that in the event than any archaeological resource that is at least fifty years old is discovered on state, county or municipal land during construction and operation and maintenance of the Project, Western's FPO must be immediately notified and will immediately inform the Director of the Arizona State Museum, and in consultation with the Director, take immediate action to manage the preservation of the discovery as required by A.R.S. §41-844.	Construction and operations and maintenance
CUL-5	Requires that if human remains and/or funerary objects are encountered on state, county or municipal land during construction and operation and maintenance of the Project, the Applicant shall cease work on the affected area and notify the Director of the Arizona State Museum as required by A.R.S. §41-844.	Construction and operations and maintenance

Table 2-4. Resource Protection Measures

ID	Measure	Timing
CUL-6	Requires that vehicular traffic be minimized within the boundaries of historic properties during pre-construction, construction, and operations and maintenance activities and that poles be removed by cutting at the base rather than pulled from the ground.	Pre-construction, construction, and operation and maintenance
BIO-1	Due to the possibility that special-status species and nesting birds may be found in the Project area, Western will assign a qualified biologist to the Project, to conduct pre-construction clearance surveys for Sonoran Desert tortoise, burrowing owl, and other nesting birds. Pre-construction surveys will be conducted no more than 2 days in advance of any ground- or vegetation-disturbing activities in any location. Pre-construction surveys for nesting birds will be required during the nesting season (February 15 through August 31). Pre-construction surveys for burrowing owl will be required year-round in suitable habitat.	Construction
BIO-2	Biological monitor. a. A qualified biologist will be present during any vegetation clearing or soil disturbance in Sonoran Desert tortoise habitat from structure 7/4 through structure 22/2 during the tortoise activity season (March 1 to October 31). A "qualified biologist" is defined as a person with appropriate education, training, and experience to monitor project activities, provide worker education programs, and supervise or perform other implementing actions. b. Tortoise burrows and other sensitive features identified during pre-construction surveys shall be flagged and monitored by the biologist for avoidance throughout the year. c. The Biological Monitor and all workers shall regularly observe the work areas for desert tortoise. The Biological Monitor will be authorized by Western to temporarily halt Project activities if needed to prevent potential harm to Sonoran Desert tortoise or any other special-status species. d. The work supervisor will coordinate with the Biological Monitor on planned or ongoing Project activities and any specific pre-activity surveys or monitoring requirements for each activity in those areas. e. Desert tortoises in imminent harm's way may only be handled and translocated by a qualified and permitted biologist; handling will be conducted per the AGFD guidelines (AGFD 2007). f. If an active bird nest is located on or adjacent to the work site during the pre-construction survey, a Biological Monitor will designate and flag an appropriate buffer area around the nest where Project activities will not be permitted. The buffer area will be based on the bird species and nature of Project activity.	Construction
BIO-3	Project activities during the lesser long-nosed bat activity season, April 15 through October 31, will not take place at night or within 30 minutes of sunset. Cutting or removal of saguaros will be minimized to the extent practicable.	Construction: Apr. 15–Oct. 31
BIO-4	Project activities requiring the use of a helicopter will (1) not be conducted within 0.5 miles of the Picacho Mountains during golden eagle nesting season (February 15 to August 31), and (2) not be conducted within 0.5 miles of Picacho Reservoir during the Yuma ridgeway (clapper) rail nesting season (March 1 through July 31) and yellow-billed cuckoo nesting season (March 15 through August 1).	Construction
BIO-5	Western will conduct employee training to ensure that all workers on the Project site (including contractors) are aware of all applicable conservation measures for biological resources. During the training, the instructor will briefly discuss special-status species that may occur in the work areas, their habitats, and requirements to avoid or minimize impacts. In addition, all workers will be informed of civil and criminal penalties for violations of the federal ESA, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.	Construction and reclamation
BIO-6	No pets will be permitted on the work site. Workers will not be permitted to feed, harm, approach, harass, or handle wildlife at any time, except to remove animals safely from work areas.	Construction and reclamation

Table 2-4. Resource Protection Measures

ID	Measure	Timing
BIO-7	All trash and food materials will be properly contained within vehicles or closed refuse bins while on the site, and will be regularly removed from the site (at least on a weekly basis) for proper disposal. All refuse from Project activities will be removed from each work site upon completion of maintenance work. Raw cement, concrete or washings thereof, asphalt, paint, oil, solvents, or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, shall not be disposed of on-site or allowed to spill onto soil. Cleanup of any spilled material shall begin immediately.	Construction and reclamation
BIO-8	All water containers (i.e. tanks or trailers) will be securely covered to prevent wildlife from entering the containers and becoming trapped. All foundation excavations will also be securely covered while construction activities are not taking place (i.e. overnight) to prevent wildlife from falling in and becoming trapped.	Construction and reclamation
BIO-9	In order to minimize any potential electrocution hazard for golden eagles or other large birds, energized and ground conductors and hardware will be separated by 60 inches or more or will be covered.	Construction
BIO-10	To prevent new invasive plants from entering the Project area during construction and ensure that existing invasive plants are not spread during construction, Western will implement Construction Standards listed in Section 13.4 Landscape Preservation and 13.6 Noxious Weed Control (see Appendix A). To prevent, control, and remove (to the extent possible) invasive plants in the ROW during maintenance, Western will follow the guidance in Chapter 11 Noxious Weed Management of Western's Integrated Vegetation Management Guidance Manual dated January 2011. These two sources constitute Western's invasive plant plan.	Construction and reclamation
NO-1	Coordinate construction activities with landowners, including notification of construction schedule and planned activities.	Pre-construction and construction
PHS-1	Climate, geology, and soil types will be considered (including rainfall, wind, depth of aquifer, and soil permeability) in selecting the herbicide with lowest relative risk of migrating to water resources	Operations and maintenance
PHS-2	There will be no aerial application of herbicides.	Operations and maintenance
PHS-3	All herbicide spill requirements will be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures.	Operations and maintenance
PHS-4	Western will adhere to all pesticide use permit conditions, if such authorization is required by Native American Tribes, USFS, USFWS, DOD, BLM, or other landowner.	Construction and operations and maintenance
PHS-5	O&M excavations greater than 1 foot deep will be fenced, covered, or filled at the end of each working day, or have escape ramps provided to prevent injury of the public and workers.	Operations and maintenance
PHS-6	If an herbicide label stipulates a buffer zone width for protection of natural resources that differs from that specified in a PCM, the buffer zone width that offers the greatest protection will be applied.	Operations and maintenance
PHS-7	Hazardous materials will not be drained onto the ground, into streams, or into drainage areas.	Construction and operations and maintenance
PHS-8	All releases, or discharges of hazardous materials within the project area in connection with project activities will be cleaned up and/or remediated, in accordance with applicable federal, state, and local regulations.	Construction and operations and maintenance
PHS-9	All flammable vegetation will be removed a minimum of 30 feet from tower center and conductors or as required by Federal requirements, and to ensure access to towers.	Operations and maintenance
PHS-10	All herbicide applicators will have received training and be licensed in application categories.	Operations and maintenance

Table 2-4. Resource Protection Measures

ID	Measure	Timing
PHS-11	Herbicide-free buffer zones will be maintained per label instructions.	Operations and maintenance
PHS-12	All herbicide label and material safety data sheet instructions will be followed regarding mixing and application standards and equipment-cleaning standards to reduce potential exposure to the public through drift and misapplication.	Operations and maintenance
PHS-13	Western will ensure that areas treated with herbicides will be posted and re-entry intervals specified and enforced in accordance with label instructions. Herbicides and equipment will never be left unattended in areas with unrestricted access.	Operations and maintenance

2.4 No Action Alternative

The No Action Alternative provides a baseline against which impacts of the Proposed Action can be compared. Under the No Action Alternative, Western would continue to operate and maintain the ED2 to Saguaro No. 2 115-kV transmission line in its existing state. Reclamation would not apply for, and BIA would not issue, an encroachment permit and Reclamation would continue to hold ownership of the present ROW.

The line is currently composed of 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures. The existing line has 27 H-frame structures and 434 wood pole structures. The existing structures are 60 to 70 feet tall and support three 795 MCM ACSR (one thousand circular mils, aluminum conductor, steel reinforced) conductors and a single overhead ground wire. The existing spans between poles are 400 to 600 feet long for single poles and 600 to 800 feet long for H-frame structures.

The types of maintenance actions described in the Proposed Action would occur for the No Action Alternative. Western anticipates that maintenance actions would be more frequent under the No Action Alternative because wood pole structures typically require more maintenance than steel structures. This includes grading the access road approaches to McClellan Wash. Western replaced wood pole structures in kind and added guy wires in response to five major failures in the last 10 years, including four storm events that disrupted transmission service over a three year span.

2.5 Alternatives Considered but Not Further Evaluated

These alternatives were not analyzed further because they do not meet the project's purpose and need. They do not reduce the risk of catastrophic failure to the lowest practical level nor do they obtain the greatest long-term benefit. Although the one-time construction cost for each alternative is less than that for the Proposed Action, the annual maintenance cost would be greater.

Partial Pole Replacement Alternative 1

This alternative would replace existing wood poles with a steel dead-end structure every 6 or 7 structures along the entire route of the line, averaging about 2 dead-ends per mile, in order to stabilize the line. While this approach would decrease the probability of the line experiencing

another failure by increasing the number of steel structures, the majority of structures would still be wood and subject to failure. Failure of a single falling structure could cause cascading effects of up to approximately half a mile or the distance between the steel dead-ends. Annual maintenance costs for this alternative would be greater than the Proposed Action and Alternative 4, since the remaining wood pole structures require more frequent maintenance than the steel structures.

Partial Pole Replacement Alternative 2

This alternative would replace existing wood poles with a steel dead-end structure every 6 or 7 structures exclusively along the east-west sections of the line where the historical probability of a line failure is highest due to the heavy monsoon storms. This option is identical to the first alternative with the exception of limiting the pole replacements to the three east-west sections of the ED2 to Saguaro No. 2 115-kV transmission line, as shown on Figure 2-2. Except for the three east-west sections of the line, the remaining sections would not see the same increase in reliability leaving them open to failure and cascading effects from a single falling structure. Annual maintenance costs for this alternative would be greater than the Proposed Action and Alternatives 1, 3 and 4, since the remaining wood pole structures require more frequent maintenance than the steel structures

Partial Pole Replacement Alternative 3

This alternative would replace all the wooden structures along the sections of the line that are oriented in an east-west direction. A new 795 MCM ACSR conductor would be installed under this option but a new overhead protection ground wire would not be installed as the entire line would not be rebuilt. Except for the three east-west sections, the remaining sections of the line would not see the same increase in reliability, leaving them open to failure. Annual maintenance costs for this alternative would be greater than the Proposed Action and Alternative 4, since the remaining wood pole structures require more frequent maintenance than the steel structures.

Partial Pole Replacement Alternative 4

This alternative would replace all the wooden structures along the sections of the line that are oriented in an east-west direction, and replace every sixth structure along the remaining north-south portions of the line with steel dead-ends. A new 795 MCM ACSR conductor would be installed solely on the three east-west sections of the line that have experienced the most damage while the remaining portions would reuse the existing conductors. No new overhead protection ground wire would be installed under this option.

The combination of these two approaches increases the reliability along the line by completely replacing the sections of the line where the historical probability of a line failure is highest due to the heavy monsoon storms. The line could still experience a failure along the north-south portions of the line that could cause cascading effects from a single falling structure of up to approximately half a mile or the distance between the steel dead-ends. Annual maintenance costs for this alternative would be greater than the Proposed Action, since the remaining wood pole structures require more frequent maintenance than the steel structures.

2.6 Past, Present, and Reasonably Foreseeable Future Actions

Cumulative impacts are defined by the CEQ (40 CFR §1508.7) as "… the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." To determine the cumulative effects in the analysis area, a review was completed of known past, present, and reasonably foreseeable future proposed projects within 1.5 miles of the Project transmission centerline and an analysis made of their short- and long-term incremental effects on the local environment. Past projects were considered to be those completed within the last 10 years. Because planned projects are not always carried to completion, the window for future reasonably foreseeable projects was projected only for those projects anticipated to have on-site impacts within 5 years.

Table 2-5 lists the past, present, and reasonably foreseeable future actions that may have impacts that could be combined with the impacts of the Proposed Action to result in cumulative effects.

Table 2-5. Past, Present and Reasonably Foreseeable Future Actions that Occur in the Project Area

Project Name	Project Description	Status/ Schedule	Project Location
Geotechnical borings Western Area Power Administration	Geotechnical borings would be excavated for some of the proposed structure footings for the ED2 to Saguaro Rebuild. Geotechnical borings would occur at one test hole per mile, and one at every point of intersection (change of direction), for a total of 38 borings.	Completed 2014	Between the ED2 and Saguaro Substations
Rehabilitation San Carlos Irrigation Project Facilities Bureau of Reclamation Phoenix Area Office	Rehabilitation and modernization of the Bureau of Indian Affairs San Carlos Irrigation Project water delivery facilities.	Environmental Review 2014	Florence–Casa Grande Canal, Casa Grande Canal, and nearby vicinity
Pinal Central Substation and Interconnection Western Area Power Administration	The interconnection would between the Pinal Central Substation and the Western system through the 230-kV yard at ED5. The interconnection will string a second circuit onto the existing Western owned ED2-ED4 and ED4-ED5 transmission line segments.	2014-2017	From Pinal Central Substation east of ED2 Substation to ED5.
Pinal Central to Tortolita 500-kV Transmission Line Tucson Electric Power	New single-circuit 500-kV transmission line from the planned Pinal Central Substation to the existing Tortolita Substation.	Construction planned to begin in 2014 and expected to take 9-12 months.	From Pinal Central Substation, northeast of ED2 Substation to Tortolita Substation southeast of Red Rock.
ED2-ED4 115-kV Transmission Line Rebuild Western Area Power Administration	Rebuild nine miles of 115-kV wood poles to 230-kV double-circuit steel poles and 1272MCM wire.	2014	From ED2 Substation to ED4 Substation near Eloy.

Table 2-5. Past, Present and Reasonably Foreseeable Future Actions that Occur in the Project Area

Project Name	Project Description	Status/ Schedule	Project Location
Plan Amendment and Rezone Lynora Largent and Randy Largent	Plan Amendment from Moderate Low Density Residential (1-3.5 dwelling units/ acre) to Employment on about 20 acres.	2014	On the east side of North Curry Road, south of West Randolph Road. Northwest of ED2 Substation.
Robson Ranch Robson Resort Communities	Adult retirement community including golf course and clubhouse. Additional homes, commercial stores, and annexation of vacant property proposed.	2014	Intersection of State Route 84 and West Robson Boulevard, west of 11 Mile Corner and Hannah Road.
Civil War Re-enactment Arizona State Parks	Annual multi-day Civil War Re-enactment at Picacho Peak. Several thousand visitors attend the event.	March annually	At the Picacho Peak State Park.

Sources: WAPA, 2013; WAPA, 2014; Pinal County, 2014; Robson Ranch, 2014; Arizona State Parks, 2014; BOR, 2010; TEP, 2013.

Chapter 3
Affected Environment and Environmental Consequences

The Affected Environment and Environmental Consequences chapter describes the existing conditions and analyzes potential impacts to the natural, human, and cultural environment resulting from the Proposed Action and No Action Alternative. Certain issue areas were not further evaluated because they are not present in the project area or no measurable impacts would occur; these are presented in Section 3.2. Through internal and external scoping, Western and the cooperating agencies identified several issues of concern, which are evaluated in detail in Sections 3.3 through 3.12.

The term project area refers to the ROW of the transmission line, access roads, and temporary construction and staging area in the Proposed Action and the No Action Alternative.

3.1 Approach to Impact Analysis

The potential impacts of the Proposed Action and alternative are described in terms of their type, context, duration, and intensity. These terms are defined as follows:

- Type describes the impact as beneficial or adverse, direct or indirect.
  - Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - Direct: An effect on a resource by an action at the same place and time. For example, soil compaction from construction traffic is a direct impact on soils.
  - Indirect: An effect from an action that occurs later or perhaps at a different place and often to a different resource, but is still reasonably foreseeable.
  - Cumulative: Impacts to resources that are added to existing impacts from other actions.
- Context describes the area (site-specific) or location (local or regional) in which the impact would occur.
- Duration is the length of time an effect would occur.
  - Short-term impacts generally occur during construction or for a limited time thereafter, generally less than two years, by the end of which the resources recover their pre-construction conditions.
  - Long-term impacts last beyond the construction period, and the resources may not regain their pre-construction conditions for a longer period of time.

Intensity reflects the amount of impact on each resource as a result of the Proposed Action. The levels of intensity are defined as follows:

- Negligible: Impact at the lowest levels of detection with barely measurable consequences.
- Minor: Impact is measurable or perceptible, with little loss of resource integrity and changes are small, localized, and of little consequence.
- Moderate: Impact is measurable and perceptible and would alter the resource but not modify overall resource integrity, or the impact could be mitigated successfully in the short-term.
- Major: Impacts would be substantial, highly noticeable, and long-term.

3.2 Resources Considered but not Further Evaluated

Western did not further evaluate the following resources because they are not present in the project area or no measurable impacts would occur as described briefly below.

3.2.1 Climate Change

Greenhouse gases (GHGs), including carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases, are associated with climate change. In 2012, CO_2 emissions represented approximately 82 percent of all GHG emissions in the U.S. (EPA, 2014a). CO_2 is generated whenever a carbon-based fuel, such as coal, wood, natural gas, or fuel oil is burned. Sources include automobile and truck exhaust, industrial combustion sources and residential heating sources. In 2012, transportation (including cars, trucks, ships, trains, and planes) accounted for 28 percent of the GHG emissions (EPA, 2014b). In 2011, passenger cars alone were estimated to travel more than 2,000,000 million miles and represented 43 percent of the transportation emissions (EPA, 2013). By comparison, during project construction, less than 15 trucks or pieces of industrial equipment would be operated per day on discreet portions of the 35.6-mile-long project. During operation, the transmission lines would not generate GHGs. Construction of the project is temporary and, given that the workforce is less than 50 workers, would represent a negligible source of GHGs. Overall emissions from the Proposed Action would be below the level (25,000 MT) that warrants quantitative disclosure under the 2014 CEQ Revised Draft Greenhouse Gas and Climate Change Guidance (quantified project emissions are presented in Section 3.3 Air Quality). Therefore, Western did not further evaluate climate change.

3.2.2 Environmental Justice

The project area is within and proximate to four U.S. Census Tracts. In one Census Tract (Tract 20.02) the minority population exceeds 50 percent. None of the Census Tracts have low-income populations exceeding 50 percent. Because the Proposed Action and its alternative do not result in considerably adverse and unavoidable environmental impacts, no adverse impact would disproportionately burden minority or low-income populations. Furthermore, due to the linear nature of the Proposed Action, any environmental impact to adjacent populations would be similar or identical across the entire route. As such, no environmental justice impact would be disproportionate.

3.2.3 Farmlands – Prime or Unique

The majority of the project route is not actively farmed although some of the areas near the ED2 Substation are adjacent to existing farmland. Most soils in the project area, including those that are not actively farmed, are designated as prime if irrigated and unique farmlands (under the Farmland Protection Act; 7 USC 4201) due to their physical and chemical characteristics.[1]

There are 368 acres of prime farmland if irrigated and 160 acres of unique farmland in the project area. The majority of the prime farmland is not irrigated and less than 10 miles of the alignment would be adjacent to areas actively farmed.

The Proposed Action would not result in new or increased impacts to the agricultural uses along the existing corridor because any ground disturbance would be temporary and similar to ongoing maintenance activities. The rebuilt line would not preclude existing or permitted land uses. Any farmlands impacted by temporary use during construction would later be restored to pre-construction conditions. Operation and maintenance activities would be similar to those currently required. Therefore, Western did not further evaluate farmlands.

3.2.4 Fuels and Fire Management

The Proposed Action would create potential fire hazards if energized transmission lines came in contact with vegetation or other structures or if the poles were struck by lightning. The Proposed Action would replace the existing wooden poles with galvanized steel monopoles. This would reduce the number of poles along the line from 461 to an estimated 213 and would strengthen the poles. Because of this, the risk of fire hazards would be reduced to less than the existing transmission line.

To reduce or avoid fire hazards, Western would design, construct, and maintain the Proposed Action in accordance with National Electrical Safety Code (NESC) requirements, which establish clearances from other man-made and natural structures as well as tree-trimming requirements. Western would maintain the transmission line ROW in accordance with existing regulations, accepted industry practices, and standard good practices that include fire protection. Potential effects associated with lightning strikes would be further minimized by installing overhead fiber optic ground wire, which shields the conductors and reduces the risk of fire during a storm. If a fire were to occur, local public services would be available to extinguish the fire. Therefore, Western did not further evaluate fuels and fire management.

---

[1] Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage. Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables. (7 USC 4201)

3.2.5 Intentional Destructive Acts

The Proposed Action presents an unlikely target for an act of terrorism or sabotage, with an extremely low probability of attack. The Proposed Action is replacing similar existing infrastructure that has not previously been the subject of an intentional destructive act and is not a unique facility. Replacing the existing wooden poles with steel monopoles is expected to decrease the risk of intentional destructive acts (Wolter, 2014). Therefore, Western did not further evaluate intentional destructive acts.

3.2.6 Land Use

Land ownership adjacent to the project area includes private lands within unincorporated Pinal County and the Community of Eloy, and land managed by Reclamation, BIA, and the Arizona State Land Department. Figure 2-1 depicts the land ownership within the project area. Land uses adjacent and surrounding the Proposed Action include agriculture, public lands, a state park, residences, and irrigation facilities. Specific land uses of note are:

- From the ED2 Substation to a mile east of the intersection of Hanna Road and State Route 87, the ROW is surrounded by agricultural land and rural residences.
- The route crosses the Santa Rosa Canal, structure spans 11/1 and 11/2, and Tucson Aqueduct, between structure spans 28/1 and 28/2.
- The route ties into the Brady Tap Pump, Picacho Pump, and Red Rock Pump.
- The route crosses the McClellan Wash at structure spans 26/4 and 26/5.
- Between structure spans 21/3 and 25/5, the line is 0.5 miles from the Picacho Peak State Park, see Section 3.2.9, Recreation.
- Along the eastern segment of the ROW, structure 7/5 to the Saguaro No. 2 Substation, the surrounding land uses include primarily Arizona State Trust lands.

The Proposed Action would not result in new or increased impacts to the land uses along the existing corridor. As with the existing line, the rebuilt line would be compatible with existing land use plans and regulations adopted by local, state, or federal agencies and would not preclude existing or permitted uses. Any land uses impacted temporarily during construction would be restored to pre-construction conditions. Operation and maintenance activities would be similar to those required for the existing line. Therefore, Western did not further evaluate land use.

3.2.7 Minerals

For the majority of its length, the Proposed Action is located within or adjacent to a previously disturbed infrastructure corridor and would replace an existing line. There is no known unique mineral resource within the Proposed Action alignment (Pinal, 2009); therefore, Western did not further evaluate this resource.

3.2.8 Rangelands

The Proposed Action would be located within and adjacent to the following three grazing allotments managed by BLM: Balcom Grazing Allotment (34,583 acres, 432 animal unit months), Durham Wash Grazing Allotment (33,574 acres, 32 animal unit months), and the Guild Wash Grazing Allotment (11,543 acres, 0 animal unit months) (BLM, 2014a; BLM, 2014b; BLM, 2014c).

The Proposed Action would not result in new or increased impacts to rangelands along the existing corridor. As with the existing line, the rebuilt line would be compatible with existing use of the grazing allotments and would not preclude any uses. Any rangelands impacted temporarily during construction would be restored to pre-construction conditions. Operation and maintenance activities would be similar to those required for the existing line. Therefore, Western did not further evaluate rangelands.

3.2.9 Recreation

Western collected existing recreation data through review of online websites and maps. The study area analyzed by Western for recreation includes land approximately within 0.5 miles on either side of the project area. The following recreational resources were identified:

- The Central Arizona Speedway is adjacent to the ED2 Substation. The Speedway hosts car races and includes opportunities for camping.
- The Pinal Fairgrounds and Event Center is adjacent to the ED2 Substation. The 120-acre facility hosts the annual Pinal County Fair, an annual Bluegrass Festival, and other events. It provides opportunities for camping.
- The Tierra Grande Golf Course is located 0.5 miles west of the transmission line.
- The Picacho Peak State Park is 0.5 miles west of the line. The Picacho Peak State Park has hiking trails, a playground, historical markers, and a campground and is visited for its geological significance, desert environment, and historical importance (Arizona State Parks, no date). The park hosts annual re-enactments of an Arizona Civil War skirmish and the New Mexico battles of Glorieta and Val Verde (Arizona State Parks, no date).

The Proposed Action would not result in new or increased impacts to recreation areas along the existing corridor. As with the existing line, the rebuilt line would be compatible with existing uses. Any recreation impacted temporarily during construction would be restored to pre-construction conditions. Operation and maintenance activities would be similar to those currently required. Therefore, Western did not further evaluate recreation. Visual impacts are addressed in Section 3.10.

3.2.10 Socioeconomics

The Proposed Action is located primarily on unincorporated land in Pinal County. Construction would require an estimated 50 construction workers who would not be on the job site at the same time. Pinal County contains a large construction workforce in comparison to the Proposed Action's need. Should any of these workers travel from outside Pinal County, the cities of Phoenix and Tucson, which are within 50 miles of the project area, would provide additional construction

workforce if necessary. Once constructed, existing Western personnel would maintain the project. No adverse impacts to population, housing demand, or changes to existing employment patterns would occur. No residences or businesses would be relocated or displaced by the Proposed Action.

Construction could result in a nominal short-term increase in the local economy as workers purchase food and supplies from area businesses. However, due to the small number of construction workers, any beneficial impact on the nearby city of Casa Grande and Eloy employment sectors or the regional economy would be negligible.

3.2.11 Soils and Geology

Terracon Consultants, Inc. prepared a geotechnical engineering report for the ED2 to Saguaro No. 2 115-kV transmission line ROW based on drilling 38 test borings for subsurface exploration, laboratory testing, and geotechnical engineering analysis. As concluded in the report, with implementation of appropriate geotechnical recommendations, the site appears suitable for the proposed construction and operations of the project and would not result in impacts to soils and geology (Terracon, 2014). Therefore, Western does not further evaluate soils and geology. Erosion is addressed under Section 3.11, Water Quality and Floodplains.

3.2.12 Travel Management and Transportation

The project area is accessed easily via Interstate 8, Interstate 10, State Route 287 and existing local roads. Transportation of construction materials to the staging area would occur via the existing paved road network. During construction, fewer than 50 people would travel to and from the construction site on a daily basis; this limited amount would use existing transportation routes and would have no discernible impact on traffic flow rates. The transmission line conductors would be removed and restrung across State Route 87 at Hanna Road. Western would follow Arizona Department of Transportation and county procedures for any lane or road closures to avoid impacts. During operation, traffic would be limited to occasional access for routine maintenance or in response to a major outage. Therefore, Western does not further evaluate traffic and transportation because no impacts would occur.

3.2.13 Wastes – Hazardous or Solid

Project construction would not release any hazardous materials, hazardous substances, or oil at or above reportable quantities. No hazardous wastes would be generated except for a small volume of rags contaminated with oil or grease, which Western or its contractor would transport offsite for disposal at an approved waste management facility. Western or its contractor would remove the existing wooden poles from the site and recycle them. Western did not further evaluate hazardous materials and solid waste because no impacts would occur.

3.2.14 Wetlands and Riparian Zones

The Proposed Action includes upgrades of existing transmission infrastructure crossing primarily open space and irrigation/water canals. Aspen Environmental Group (Aspen) conducted an investigation of jurisdictional features, including wetlands, in July 2014. No wet-

lands were documented within the project area. Because there are no wetlands or riparian zones in the project area, Western did not further evaluate this resource.

3.2.15 Wild and Scenic Rivers

There are no wild and scenic rivers within or adjacent to the Proposed Action alignment or within the project area; therefore, Western did not further evaluate these resources.

3.2.16 Wilderness

There are no wilderness areas within or adjacent to the Proposed Action alignment or within the project area; therefore, Western did not further evaluate this resource.

3.3 Air Quality

3.3.1 Proposed Action

3.3.1.1 Affected Environment

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods, resulting in sustained exposure to any pollutants present. There are over 30 residences adjacent to the project area, all located at the northern portion of the line.

People visiting recreation areas are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. Noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Air Quality Conditions

Air quality is determined by the concentration of various pollutants in the atmosphere. The U.S. Environmental Protection Agency (EPA) Office of Air Quality Planning and Standards has established National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for six pollutants considered harmful to public health and the environment. These criteria pollutants include: sulfur dioxide, carbon monoxide, ozone, lead, particulate matter less than ten microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in diameter, and nitrogen dioxide. NAAQS place limits on acceptable ambient concentrations of these pollutants. Based on the concentration of criteria pollutants, areas of Arizona are designated as one of the following:

- Non-attainment – areas in which ambient pollutant concentration exceed federal or state standards;
- Attainment – areas meeting federal or state standards; or,
- Unclassifiable – areas where no information is available to determine if standards are met.

EPA is further authorized to classify these areas according to their degree of severity (e.g., primary, moderate, or serious).

The Arizona Department of Environmental Quality (ADEQ) regulates Pinal County. The Pinal County Air Quality Control District has jurisdiction over the local air quality. Areas having a non-attainment designation require a State Implementation Plan. The Proposed Action is located within the area designated as the West Pinal PM_{10} Non-attainment Area. Monitoring data has demonstrated violations of the PM_{10} standard, dating back to 2002. According to the EPA (EPA, 2012):

> *Pinal County's PM_{10} levels are among the worst in the country. Based on 2009–2011 certified air quality data, the Pinal County Housing monitor, located approximately 11 miles east of Casa Grande, predicts over 14 exceedances per year. For reference, more than one exceedance per year is a violation of the standard. Ambient monitors located in the new nonattainment area routinely record concentrations two to three times the level of the standard and several monitors have recorded levels approaching or exceeding the significant harm level of 600 micrograms per cubic meter (ug/m^3).*

The Proposed Arizona State Implementation Plan Revision for the West Pinal PM_{10} Nonattainment Area would allow the area encompassing the project to be considered for re-designation by the EPA to attainment for PM_{10} (ADEQ, 2013).

3.3.1.2 Environmental Consequences

Western or its contractor would implement resource protection measures as part of the Proposed Action. These measures are summarized below and the full text of the measures is presented in Table 2.2-1. The measures include recommendations for the Proposed Action that were provided by the ADEQ during scoping.

- AQ-1 requires minimization of land disturbance.
- AQ-2 requires dust suppression on unpaved access roads through wetting, use of watering trucks, chemical dust suppressants, or other reasonable means.
- AQ-3 requires limiting speeds to 25 miles per hour on stabilized unpaved roads and 10 miles per hour on un-stabilized roads.
- AQ-4 requires covering of trucks when hauling soil.
- AQ-5 requires stabilization of the surface of soil piles.
- AQ-6 requires creation of windbreaks in areas highly susceptible to fugitive dust.
- AQ-7 requires revegetation of disturbed land not used for the project.

- AQ-8 requires removal of unused material.
- AQ-9 requires removal of soil piles via covered trucks.

Sources of air pollution that would occur during construction include combustion pollutants from equipment exhaust and fugitive dust from disturbed soils becoming airborne. Construction activities associated with the transmission line rebuild would be concentrated around structure sites, temporary construction and maintenance pads, the staging area, pulling sites, and access roads along the ROW. During construction, it is anticipated that less than 15 trucks or pieces of industrial equipment would be operated per day on discreet portions of the 35.6-mile-long project. In addition, an estimated 80 to 100 concrete truck loads would be needed for the Proposed Action but would be spread throughout the 10-month construction period at different locations. Short-term and temporary air emissions from construction vehicle and equipment exhaust would be generated in the immediate vicinity of construction activities.

Table 3.3-1 shows the criteria air pollutants and greenhouse gas emissions estimates that would occur over a total duration of 10 months of construction (refer to Appendix H for calculations and supporting data). Emissions from construction activity on disturbed areas, from use of heavy-duty equipment and portable sources, and from helicopters were estimated based on the preliminary estimates of the proposed equipment fleet and duration of construction. Emissions from light-duty on-highway vehicles would be minor by comparison.

Table 3.3-1. Construction-Related Criteria Air Pollutant and GHG Emissions

Source Type	NOx (ton)	VOC (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	CO2e (MTCO2e)
Disturbed Area (Fugitive Dust)	—	—	41.8	6.3	—	—
Mobile Sources (Non-Road)	28.5	1.4	1.2	1.2	5.0	1,774.3
Portable Sources	0.7	0.4	0.0	0.0	24.9	207.3
Helicopters	0.3	0.2	0.0	0.0	0.3	134.1
Total	29.5	2.1	43.1	7.5	30.1	2,130.2

The Proposed Action would not impact any area designated as Class I under the Clean Air Act. The southern end of the corridor is approximately 15 miles north of Saguaro National Park and 50 miles west of the nearest edge of the Galiuro Wilderness Area (managed by USFS), which are the nearest designated Class I areas. The Proposed Action would not be subject to any federal New Source Performance Standards or National Emissions Standards for Hazardous Air Pollutants.

The Pinal County area is subject to intermittent, strong wind storms that can cause loose soils to become airborne, thereby creating a dust storm. Dust control measures from Western's Construction Standards, Standard 13, Environmental Quality Protection item 13.13 and measures recommended by ADEQ (refer to Table 2-4, Resource Protection Measures AQ-1 through AQ-9) would be implemented, as needed, to minimize the fugitive dust generated during construction and reduce the potential to contribute to fugitive dust or naturally occurring dust storms.

Given the small construction force and temporary nature of construction combined with implementation of the above measures, the Proposed Action would not exceed state or federal air quality standards, would not result in a declaration of non-attainment in a specific area for one or more criteria pollutants, and would not cumulatively contribute to a net increase in any criteria pollution that would result in non-attainment of the area. The Proposed Action would not result in a substantial increase of any criteria pollutant, as shown in Table 3.3-1, for which the region is in non-attainment under an applicable local, state, or federal ambient air quality standard. The Proposed Action would result in a negligible and short-term adverse impact on air quality.

Operation and maintenance activities would be temporary, intermittent, of short duration, and dispersed along the project area. Operation and maintenance impacts would decrease in comparison to the existing conditions because steel structures typically require less maintenance, and therefore reduced equipment use, than wood pole structures.

Cumulative Impacts

The past, present, and reasonably foreseeable future projects identified in Table 2-5 are located within the West Pinal PM_{10} Non-attainment Area. The majority of these projects are maintenance of existing facilities or transmission line rebuilds and upgrades which would individually result in impacts similar to those described for the Proposed Action. Air quality impacts associated with these projects would occur during construction; individually, tailpipe emissions and fugitive dust from these projects are anticipated to have a negligible impact on air quality. Each project would be responsible for implementing dust control measures during construction, pursuant to ADEQ requirements and agency or utility best management practices (BMPs). The Proposed Action's localized and temporary construction emissions would not contribute to a violation of air quality standards in combination with other past, present, and reasonably foreseeable projects in the West Pinal PM_{10} Non-attainment Area.

3.3.2 No Action Alternative

Under the No Action Alternative, Western would continue to operate and maintain the ED2 to Saguaro No. 2 115-kV transmission line in its existing state. The construction impacts of the Proposed Action would not occur. Direct air quality impacts associated with operation and maintenance would be negligible and short-term for the same reasons as described for the Proposed Action. However, these impacts would be slightly greater than the Proposed Action because wood poles typically require more maintenance than steel. Emissions from the No Action Alternative would not exceed air quality standards.

3.4 Cultural Resources and Native American Religious Concerns

Prehistory

The earliest known period of human occupation in southern Arizona is the Paleoindian period, extending between 12,000 and 10,500 years before present (BP). This period is characterized by highly mobile groups of hunter-gatherers using large fluted projectile points. The current survey yielded no Paleoindian artifacts or sites, and thus is not treated in any detail.

The subsequent Archaic period (10,500 to 2000 BP) occurred during a period of climatic warming following the end of the Pleistocene. At the beginning of the Early Archaic period the megafauna, including mammoths, camels, and ground sloths, became extinct. Throughout the period, the inhabitants of the area consisted of small groups that moved regularly across the landscape. These people depended mainly on hunting small game animals (rabbits, birds, etc.) and gathering a variety of plant foods. Over time, the route that people moved during the year became more systematic as they visited the same resources yearly. Previous surveys and excavation within and adjacent to the project area have identified several Archaic lithic concentrations. Archaic period sites are generally relatively small artifact concentrations and lack much accumulated refuse, large food-storage features, or structures.

During the Early Formative period (2000 to 1300 BP) ceramics were first produced in the area. These were initially plain wares, but redwares appeared by 1500 BP, followed by decorated pottery by 1300 BP. Agriculture became increasingly important in producing food staples during the Pioneer period (1300 to 1200 BP) and drove the construction of larger storage facilities and permanent settlements.

The best known archaeological tradition in southern Arizona is the Hohokam. This tradition initially appeared in the Salt and Gila river basins and was characterized by the development of large-scale irrigation agriculture, decorated red-on-buff pottery, distinctive symbols, ornaments made of imported materials, use of cremation, and large settlements, often containing ballcourts. The Hohokam archaeological tradition appeared during the early Colonial period (1200 to 1000 BP) and continued through the Sedentary period (1000 to 800 BP) into the Classic period (800 to 500 BP). By the end of the Classic period, southern Arizona was widely depopulated and the last large settlements were abandoned, for reasons that remain unclear. The majority of prehistoric archaeological resources identified in the project area are culturally affiliated with the Hohokam and date to these periods.

The Protohistoric period (500 to 250 BP), is the period between the abandonment of the Hohokam settlements and the arrival of the Spanish missionary Father Eusebio Francisco Kino in A.D. 1694 (256 BP). Very little is known of this period and none of the prehistoric archaeological resources identified in the project area appeared to date to the Protohistoric period.

Ethnography

The O'odham (Pima) people occupied the Middle Gila River valley west of Florence when the Spanish first entered the area. Father Kino encountered Piman speakers living along the Gila River when he arrived at Casa Grande Ruins in 1694. At that time they practiced floodwater farming. By the late 1700s, Apache raids resulted in a constriction of the O'odham territory and they shifted to irrigating their fields to grow wheat. O'odham wheat production grew to a point where they sold surpluses to the Euro-American settlers in the area. However, by the late 1880s, water was diverted from the Gila River due to Euro-American settlement and agricultural expansion, leaving the O'odham farmers with little water. This, combined with continued Apache raiding, forced some O'odham groups to congregate near permanent water sources along the Gila River and others to move northward to the Salt River. The O'odham continue to fight for water rights taken from them in the late nineteenth century. Three groups of O'odham-speakers

inhabited the region surrounding the project area: the Akimel O'odham, the Tohono O'odham, and the Hia C-eḍ O'odham. Today, four reservations occupied by O'odham are located near the project area: the Gila River Indian Community, Salt River Pima-Maricopa Indian Community, Ak-Chin Indian Community, and the Tohono O'odham Nation

History

Although Spanish explorers and missionaries, such as Father Kino, entered the Gila Valley in the late seventeenth century, there was no effort to settle there permanently. This did not change with Mexican Independence in 1821. It was not until after the Gadsden Purchase of 1853, when southern Arizona became part of the United States, that non-natives began to settle the area.

The American era (A.D. 1853–present) began with the Gadsden Purchase of 1853, when modern-day southern Arizona became part of the United States. During the Civil War, Picacho Pass, located east of the project area, was the site of one of the western most conflicts between Union and Confederate soldiers. The late 1800s saw an influx of settlement into the area, encouraged by a series of national public land laws such as the National Homestead Act (1862) and Enlarged Homestead Act (1909). By the 1870s, many settlers in the area were extensively cultivating land. While farming continues to be an important enterprise, residential development has increased rapidly over the past decade and is changing the previously rural character of the area.

Casa Grande, four miles west of the north end of the project area, became an important railroad town when it became the terminus for the Southern Pacific Railroad (SPRR) in 1879. Casa Grande housed the railroad offices, a five-track yard, and a turntable and became the transfer point for stage services to Florence and Tucson. Official rail service to Casa Grande began on May 19, 1879. After the completion of the SPRR, the development of Casa Grande and surrounding areas centered on agriculture and the acquisition of water.

Shortly after the turn of the century, residents of Casa Grande Valley devised a plan to bring more water to the valley. The San Carlos Irrigation Project (SCIP) called for the damming of the Gila River (Coolidge Dam) so that enough water could be stored to irrigate 100,000 acres in Pinal County. Congress did not approve the SCIP until 1924, and Casa Grande Valley did not receive water until 1929. In the meantime supporters of the project enthusiastically promoted Casa Grande as a future agricultural center, causing the population of Casa Grande to quadruple from 300 in 1910 to 1,200 in 1930.

Casa Grande farms produced alfalfa, wheat, barley, vegetables, cotton, citrus, and other crops. A cotton boom began in 1916, causing production in Pinal County to more than triple from 2,500 acres to 9,000 acres. The cotton boom ended in 1920 following the end of World War I. During the 1920s, farmers returned to a more diverse crop planting, which included alfalfa, wheat, barley, melons, lettuce, and other produce. However, cotton remained Arizona's most important crop.

The SCIP did not produce as hoped: water was less plentiful and more expensive than expected, forcing growers to put more pressure on the underground aquifers. Underground water was still plentiful in Pinal County during the 1930s and 1940s, especially in areas around Casa Grande, Eloy, and Coolidge. Ever-increasing use of the aquifers has severely lowered the water table in

modern times. The water depletion is so great that the Santa Cruz Valley is slowly sinking, and in the area around Picacho, many deep, irregular cracks have appeared with sediment compaction. During the early 1900s, Arizona, California, Nevada, New Mexico, Wyoming, Colorado, and Utah negotiated to share water from the Colorado River. In 1922, the Colorado River Compact was formed with Arizona, California, and Nevada in the lower basin. Arizona was the last state to approve the Compact in 1944. A portion of Arizona's Colorado River water allotment is moved through the Central Arizona Project (CAP). This canal system brings water from Lake Havasu to consumers in Maricopa, Pinal, and Pima Counties. Many of the archaeological sites within the current project area were identified during survey conducted for the CAP, primarily between 1981 and 1984.

Methods

Aspen team archaeologists conducted a cultural resources study consisting of a detailed Class I records review, an intensive Class III pedestrian survey, and an additional intensive Class III pedestrian survey and evaluation effort.

Information presented in this section was derived primarily from *A Class III Cultural Resources Inventory of 37.30 Miles (452 Acres) for the Western Area Power Administration Electrical District #2–Saguaro (ED2–SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona* (Teeter et al., 2014) and *A Class III Cultural Resources Inventory of 200 Acres and Additional Site Recording for the Western Area Power Administration Electrical District #2–Saguaro #2 (ED2–SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona* (Davis et al., 2014).

The term "survey area," as used in this section, refers to the area surveyed in two rounds of fieldwork in February and then in July and August 2014. This included a corridor consisting of 50 feet on either side of the transmission centerline within Western's ROW, 50-foot-wide access road corridors, 400-foot external radii at 24 turning structures, and a 1,000-foot by 500-foot block near McClellan Wash. Additionally, 17 resources previously recommended eligible for inclusion on the National Register were recorded up to 200 feet on both sides of the original 100-foot-wide survey corridor. In total, this encompassed 642 acres.

Records Search and Archival Research

The Class I inventory is a summary of literature, records, and other documents that provides an informed basis for understanding the nature of the cultural resources of the area surrounding the project. A Class I inventory of the project survey area and surrounding one-mile radius was conducted by the Aspen Team (Teeter et al., 2014). Cultural resources site files and inventory reports from the Arizona State Historic Preservation Office (SHPO) and the Arizona State Museum (ASM) and property listings from the Arizona Register of Historic Places (Arizona Register) were reviewed using AZSite, the state's electronic inventory of cultural resources. The National Register of Historic Places (National Register) Information System database and BLM General Land Office maps were also reviewed electronically. This record search identified 167 previously recorded sites and structures within the one-mile radius of the project survey area.

Pedestrian Survey

In February, July, and August 2014 a total of 642 acres were surveyed as described above and included land owned by Reclamation, the Arizona Department of Transportation, State Trust land, and private land. Fieldwork consisted of walking parallel transects spaced no more than 15 meters apart and mapping and recording artifacts and features with a Trimble GPS unit. Less than one quarter acre was not surveyed due to fencing. These areas were noted during the pedestrian survey, and their locations mapped in GIS.

Archaeological sites were defined according to criteria established by Arizona State Museum (ASM, 1993). A site contains the physical remains of past human activity that is at least 50 years old and consists of at least one of the following:

- 30 or more artifacts of a single type within an area 15 meters in diameter, except when all artifacts appear to have originated from a single source
- 20 or more artifacts of two or more types within an area 15 meters in diameter
- One or more features in temporal association with any number of artifacts
- Two or more temporally associated features without any artifacts

Resources may also be recorded at the discretion of the archaeologist even if they do not meet the minimum requirements. Artifacts or features that do not meet any of these criteria are considered isolated occurrences (IOs). IOs are recorded and described, but they do not qualify as sites.

Cultural resources were evaluated for National Register eligibility based on their integrity and significance under the four criteria outlined in 36 CFR 60.4 and the National Park Service Bulletin 15, *How to Apply the National Register Criteria for Evaluation*. Resources eligible for listing in the National Register must meet one or more of the following criteria; those:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Further, a property must be evaluated within an important historic context and retain integrity of those features necessary to convey its significance. Aspects of integrity that must be considered are location, design, setting, materials, workmanship, feeling, and association.

Native American Consultation

Section 106 of the National Historic Preservation Act (NHPA) specifies that, as the lead federal agency, it is Western's responsibility to ensure that consultation occurs with interested tribes to identify properties of special significance to them in the survey area. This responsibility is

reinforced by the American Indian Religious Freedom Act (Public Law No. 95-341, 92 Stat. 469) and Executive Order 13007, directing federal agencies to minimize interference with the free exercise of Native religion, and accommodate access to and use of important religious sites. Properties identified through the Tribal consultation process may include traditional cultural properties (TCP), sacred landscape or landscape elements, and traditional use areas important for Native American cultural and religious practices.

The culturally sensitive nature of traditional cultural properties often precludes tribes from revealing information regarding TCPs, sacred landscapes, or landscape elements, or traditional use areas. To this end, consultation is ongoing with the Hopi Tribe of Arizona, the Gila River Indian Community, Ak Chin Indian Community, and the Salt River Pima Maricopa Indian Community. Western's consultation efforts are described in Section 5.

3.4.1 Proposed Action

3.4.1.1 Affected Environment

Cultural Resources Identified

Cultural resources survey of the 100-foot-wide survey corridor within the existing ROW identified 33 sites that include 23 previously recorded sites and 10 newly recorded sites. The additional survey of the 24 external turning structure radii, approximately 5 miles of 50-foot-wide access road corridors, and the block survey area resulted in the identification of 2 additional previously recorded sites (Table 3.4-1).

A total of 35 cultural resources are present in the survey area. These include canals, transmission lines, road segments, structures, historic period artifact scatters, and prehistoric archaeological resources. Eight of these resources have previously been determined eligible for the National Register or Arizona Register by the Arizona SHPO and are therefore considered historic properties under the NHPA. Out of these, one, State Route 87 (AZ AA:6:63(ASM)), was recommended by Aspen team archaeologists as a non-contributing element to the property's eligibility. Three were determined eligible as contributing elements and four more were determined eligible on their own. An additional 17 resources were determined eligible by Western based on recommendations by Aspen team archaeologists: 16 under Criterion D (data potential) and one under Criteria C (artistic value or method of construction) and D.

Two resources, Sunshine Boulevard (AZ AA:2:176(ASM)) and Eleven Mile Corner Road (AZ AA:2:175(ASM)), have been determined not eligible by SHPO for the National Register of Historic Places (NRHP)/Arizona Register of Historic Places and were therefore not considered a historic properties under the NHPA. Another eight resources were determined not eligible by Western based on recommendations by Aspen team archaeologists.

Cultural resources identified and evaluated as of November 2014 within the survey area are listed and described in Table 3.4-1.

Table 3.4-1. Cultural Resources Identified in the Survey Area

ASM Site Number	Description	Cultural/Temporal Association	Land Status	NRHP Eligibility Recommendations
AZ AA:3:209(ASM)	Casa Grande Canal, an unlined irrigation canal	Euro-American/1880–present	Private	Determined eligible (Criteria A & D) as a contributing component
AZ AA:2:360(ASM)	Maintained dirt road along the Casa Grande Canal	Euro-American/pre-1928–present	Private	Determined not eligible
AZ AA:2:346(ASM)	Artifact scatter, containing ceramics, lithic debitage, ground stone, and shell.	Hohokam/A.D. 950-1200	Private	Determined eligible (Criterion D)
AZ AA:2:347(ASM)	Homestead, with foundations and artifact concentrations	Euro-American/1917–1960s	Private	Determined eligible (Criterion D)
AZ AA:2:133(ASM)	Florence–Casa Grande Canal Extension	Euro-American/1928–present	Private	Determined eligible (Criterion A and/or D) as a contributing component
AZ AA:2:361(ASM)	Cornman Road	Euro-American/pre-1913–present	Private	Determined not eligible
AZ AA:2:331(ASM)	Hanna Road	Euro-American/pre-1928–present	Private	Determined not eligible
AZ AA:2:176(ASM)	Sunshine Boulevard	Euro-American/pre-1924–present	Private	Determined not eligible
AZ AA:2:362(ASM)	Unlined, abandoned canal	Euro-American/ post-1924–pre-1992	Private	Determined not eligible
AZ AA:6:63(ASM)	State Route 87	Euro-American/1920s–present	ADOT	Determined eligible (Criterion D), but a non-contributing component
AZ T:10:84(ASM)	SPRR Wellton-Phoenix-Eloy spur railroad line	Euro-American/1926–present	Private	Determined eligible (Criterion A) as a contributing component
AZ AA:3:71(ASM)	Artifact scatter, consisting of ground stone, fire-cracked rock, cores, and a biface	Prehistoric/Archaic Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)
AZ AA:3:79(ASM)	Lithic scatter, consisting of retouched blades, debitage, and ground stone fragments	Possible Archaic/ 8000 B.C.–A.D. 200	ASLD	Determined eligible (Criterion D)
AZ AA:3:72(ASM)	Lithic scatter, consisting of a Pinto Basin point, projectile point fragment, debitage, and ground stone	Archaic/5000–1500 B.C.	ASLD	Determined eligible (Criterion D)
AZ AA:3:73(ASM)	Lithic scatter consisting of 11 flaked stone artifacts	Prehistoric/Archaic	ASLD	Determined eligible (Criterion D)
AZ AA:3:319(ASM)	Unmaintained dirt road	Euro-American/pre-1914–present	ASLD	Determined not eligible
AZ AA:3:75(ASM)	Artifact scatter, containing 70+ flaked stone, ground stone, and ceramics.	Archaic/unknown Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)

Table 3.4-1. Cultural Resources Identified in the Survey Area

ASM Site Number	Description	Cultural/Temporal Association	Land Status	NRHP Eligibility Recommendations
AZ AA:3:74(ASM)	Artifact scatter consisting of 200+ flaked-stone and ceramic fragments	Archaic/unknown Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)
AZ AA:3:320(ASM)	Two-track dirt road	Euro-American/pre1926–present	ASLD	Determined not eligible
AZ AA:3:37(ASM)	Artifact scatter consisting of flaked-stone and ceramics	Archaic/unknown Hohokam/A.D. 700–1350	ASLD, Reclamation	Determined eligible (Criterion D)
AZ AA:3:18(ASM)	Picacho Point Site: a rock art site with over 1000 elements and associated ceramic fragments. Also includes mining features and artifacts	Hohokam/A.D. 700–1350 Euro-American/1910s–1950s	Reclamation	Determined eligible (Criteria C& D)
AZ AA:7:671(ASM)	Artifact scatter, consisting of two discrete scatters of 300+ plainware sherds	Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)
AZ AA:7:672(ASM)	Artifact scatter with 70+ quartzite, rhyolite, and basalt flake, and 150+ plainware sherds.	Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)
AZ AA:7:673(ASM)	Artifact scatter with 300+ plainware sherds,1 Tucson Basin Red-on-brown sherd, 50+ flakes, ground stone, and 15+ rock features	Hohokam/A.D. 900–1150	ASLD	Determined eligible (Criterion D)
AZ AA:7:674(ASM)	Artifact scatter with 300 artifacts total (sherds, flakes, and ground stone fragments 10+ rock features	Hohokam/A.D. 700–1350	ASLD	Determined eligible (Criterion D)
AZ AA:7:32(ASM)	Artifact scatter consisting of approximately 2,000 ceramics, 1,500 flaked stone, 50 pieces of ground stone, and thousands of FCR, and 22 rock features	Hohokam/A.D. 750–950	ASLD and private	Determined eligible (Criterion D)
AZ AA:7:675(ASM)	Multicomponent artifact scatter composed of a multi-episodic historic dump and a prehistoric ceramic scatter. At least 25,000 historic artifacts and 100 prehistoric ceramic sherds	Hohokam/A.D. 700–1350 Euro-American/1950s–1970s	ASLD, Reclamation	Determined eligible (Criterion D)
AZ AA:7:62(ASM)	Prehistoric use area and habitation and a historic period artifact scatter	Archaic/unknown Hohokam/A.D. 700–1350 Euro-American/1900s	ASLD	Determined eligible (Criterion D)
AZ AA:7:506(ASM)	El Paso Natural Gas pipeline	Euro-American/1950s–present	ASLD	Determined eligible (Criteria A & D)

Table 3.4-1. Cultural Resources Identified in the Survey Area

ASM Site Number	Description	Cultural/Temporal Association	Land Status	NRHP Eligibility Recommendations
AZ AA:7:66(ASM)	Artifact scatter, previously interpreted as a resource processing site, consisting of ceramic sherds	Hohokam/A.D. 950–1150	ASLD, Reclamation	Determined eligible (Criterion D)
AZ AA:7:669(ASM)	Artifact scatter of 800+ artifacts consisting of flaked stone, ground stone, and ceramics	Hohokam/A.D. 950–1150	ASLD, Reclamation	Determined eligible (Criterion D)
AZ AA:7:68(ASM)	Artifact scatter of 2,000 flaked stone and ceramic artifacts with a reservoir and ashpit features	Hohokam/A.D. 750–1150	ASLD, Reclamation	Determined eligible (Criterion D)
AZ AA:7:639(ASM)	Saguaro Substation	Euro-American/1954–present	Private	Determined not eligible
AZ AA:7:647(ASM)	Coolidge–Saguaro 115-kV Transmission Line	Euro-American/1949–present	Private	Determined not eligible
AZ AA:2:175(ASM)	Eleven Mile Corner Road	Euro-American/pre-1928–present	Private	Determined not eligible

3.4.1.2 Environmental Consequences

The following section analyzes the direct, indirect, and cumulative impacts that could occur to historic properties from the Proposed Action. The resource protection measures applicable to cultural resources are presented below, with the full text of the measures presented in Section 2.3. Additionally, Western's Construction Standard 13 Environmental Quality Protection, Section 13.4 – Preservation of Cultural and Paleontological Resources, provides safeguards for both construction and operations and maintenance activities when dealing with both known and unknown cultural resources.

- CUL-1 requires avoiding construction and operation and maintenance activities near irrigation system and drainage canal features that are eligible for the National Register.
- CUL-2 requires avoiding construction and operation and maintenance activities near or within the boundaries of any historic property. If historic properties cannot be avoided a historic property treatment plan (HPTP) will be developed and implemented in consultation with the Arizona SHPO and any interested Tribes before any ground disturbance occurs within the boundary of any historic properties. The HPTP will mitigate impacts to historic properties using methods including but not limited to archaeological testing and data recovery.
- CUL-3 requires that in the event that archaeological resources or human remains are discovered on federal land during construction and operation and maintenance of the project, all activities must cease in the immediate vicinity of the discovery and Western's Federal Preservation Officer (FPO) and the federal land-managing agency(ies) must be immediately notified. Work should not resume until Western's FPO and the land manager archaeologist, in consultation with the Arizona SHPO and Tribes, have determined an appropriate course of action.

- CUL-4 requires that in the event than any archaeological resource that is at least fifty years old is discovered on state, county or municipal land during construction and operation and maintenance of the Project, Western's FPO must be immediately notified and will and will immediately inform the Director of the Arizona State Museum and take immediate action to manage the preservation of the discovery.
- CUL-5 requires that if human remains and/or funerary objects are encountered on state, county or municipal land during construction and operation and maintenance of the project, the Applicant shall cease work on the affected area and notify the Director of the Arizona State Museum as required by A.R.S. §41-844.
- CUL-6 requires that vehicular traffic be minimized within the boundaries of historic properties during pre-construction, construction, and operations and maintenance activities, and that poles be removed by cutting at the base rather than pulled from the ground.

Only one of the historic properties was not determined eligible under Criterion D: the SPRR Wellton-Phoenix-Eloy Spur railroad line (AZ T:10:84(ASM)) was determined eligible solely under Criterion A. Three were determined eligible under Criterion A as well as Criterion D: El Paso Natural Gas pipeline (AZ AA:7:506(ASM)), Florence–Casa Grande Canal Extension (AZ AA:2:133(ASM)), and the Casa Grande Canal (AZ AA:3:209(ASM)). Finally one was determined eligible under Criterion C for its artistic value as well as its data potential under Criterion D: the Picacho Point Rock Art Site (AZ AA:3:18(ASM)).

The primary impact to historic properties listed under Criterion D is ground disturbance, which is permanent. Impacts to properties listed under Criteria A and C can also include adverse effects to the integrity of setting, feeling, and association. These impacts may be temporary during construction or may last for the life of the transmission line. Eighteen historical properties were previously impacted from the installation of transmission poles and 16 were impacted by access roads. In total, 44 poles are currently in place within the boundaries of historic properties, see Table 3.4-2.

Table 3.4-2. Historic Properties and Current Pole Counts

Site Number	Number of Poles	Site Number	Number of Poles
AZ AA:7:68(ASM)	3	AZ AA:7:672(ASM)	1
AZ AA:7:669(ASM)	2	AZ AA:3:18(ASM)	1
AZ AA:7:66(ASM)	2	AZ AA:3:37(ASM)	1
AZ AA:7:62(ASM)	9	AZ AA:3:74(ASM)	1
AZ AA:7:32(ASM)	9	AZ AA:3:75(ASM)	2
AZ AA:7:675(ASM)	2	AZ AA:3:71(ASM)	1
AZ AA:7:32(ASM)	3	AZ AA:3:79(ASM)	1
AZ AA:7:674(ASM)	2	AZ AA:2:347(ASM)	1
AZ AA:7:673(ASM)	2	AZ AA:2:346(ASM)	1
Total Number of Poles is 44			

Potential impacts were identified based on the predicted interaction between decommissioning, construction, and operation and maintenance activities with the affected environment and the impact significance criteria described above. Western considered the resource protection measures, described above, as project features in the impact analysis.

The removal of existing poles may contribute to adverse effects to the site. Resource Protection Measure CUL-6 would require cutting the poles off rather than excavating their bases to remove them to reduce these adverse effects, as this method involves less ground disturbance.

New transmission line structures are sited within the boundaries of historical properties. Only AZ AA:2:346(ASM) and AZ AA:2:347(ASM) have new structures sited at the same location as the existing poles. While using the same locations may reduce the risk of causing new impacts to historic properties, there would still likely be direct impacts as the new poles are broader and buried deeper than the existing poles. The new transmission line structures would generate new adverse impacts to properties. Placing new poles and access roads outside of the boundaries of historic properties would not cause new impacts.

Siting the replacement transmission structures in different locations than the existing poles may cause different impacts to the integrity of setting and feeling of historic properties. Although the new poles are broader and 20 to 30 feet taller than the existing poles, the visual and auditory adverse impacts of the new structures and the conductors are similar to the impacts of the current transmission line on historic properties, and are considered long-term and minor. Additionally, dust and vehicular emissions can degrade rock art and cause adverse effects to the integrity of design, material, and workmanship. Rock art sites are often considered sacred by Native American groups and may be considered TCPs or Sacred Sites. Preventing access to these resources can be an adverse effect as well.

The Proposed Action includes a series of resource protection measures that require construction to avoid historical properties or, when not feasible, develop and implement an HPTP that includes a testing regime and data recovery prior to any ground disturbing activities. These measures also set up procedures to be followed in the event of incidental discoveries of cultural resources and would reduce the impacts described below. Additionally, the dust and noise abatement measures would reduce indirect adverse effects from construction activities.

During construction, direct adverse impacts to historic properties would be primarily caused by ground disturbing activities. Ground disturbance from construction activities would occur as a result of removing existing structures, grading and drilling holes for new structures, improving existing access roads for safe vehicle and equipment access, installing/removing conductor and overhead ground wire, and removing existing guy wires. Additionally, driving machinery through historic properties would result in ground disturbance. These activities would have the potential to cause direct adverse effects to important cultural resources. The depth of the excavations for the transmission structures could potentially reveal unanticipated cultural resources. Construction activities would be conducted primarily within the existing transmission line ROW or within the existing structures. However, ground disturbance outside the ROW would be required for wire pulling and tensioning sites. Any adverse impacts from ground disturbing activities would be permanent.

Indirect adverse impacts could include visual and noise impacts to the integrity of setting and feeling of historic properties and damage caused by vibrations, dust, and vehicle emissions from construction to historic period built environment resources and prehistoric rock art. The 20 foot increase in height between existing and replacement transmission line structures would pose an additional minor impact to the integrity of setting and feeling of historic properties. While impacts to setting and feeling would likely be temporary from construction activities and long-term from the presence of transmission line structures, damage to historic properties from vibrations, dust, and vehicle emissions would be permanent.

The construction of a new transmission line structure is estimated to include up to 0.25 acres of temporary ground disturbance and up to 0.1 acres of permanent ground disturbance (included in the temporary disturbance). The excavation of the foundation for the structure would be 4 feet diameter and 14 feet deep. Access road construction or improvement is estimated to result in a 20-foot-wide corridor of ground disturbance. The exact locations of conductor pulling or turning sites are not known. While these structures are expected to cause temporary ground disturbance over an area measuring 400 feet by 100 feet (0.9 acres), analysis of impacts from these structures on historic properties focused on how much of the property boundary was located within the potential area of disturbance of these structures. For historic properties that are eligible for listing on the National Register under Criterion D all ground disturbance could result in permanent impacts, thus the larger amount of ground disturbance is used for calculating foreseen impacts to these properties.

Ground disturbance related to the construction of 18 transmission line structures and additional pulling and turning structures within historic properties could result in damage or degradation to approximately 38.65 acres out of a total identified 150.53 acres of resources that are eligible for listing on the National Register, see Table 3.4-3. This is 25.68 percent of the total area of identified historic properties within the study area. This ground disturbance would be offset by the project cultural resources protection measures, particularly CUL-2, requiring the development and implementation of an HPTP prior to any construction activities occurring within the boundary of any historic property. Additionally, construction may have short-term indirect impacts to the integrity of feeling and setting of historic properties. This would likely be in the form of auditory, visual, and the generation of dust and machine emissions. The auditory and visual impacts would be temporary and Resource Protection Measures AQ-1 through AQ-9 would reduce the permanent impacts of dust and machine emissions to a minor level. Overall, impacts to historic properties are considered moderate; while some impacts are expected to be adverse and permanent, they can be mitigated through archaeological testing and data recovery that would be outlined in the HPTP.

Table 3.4-3. Potential Ground Disturbance to Historic Properties.

Site Number	Identified Acreage	No. of Proposed Poles	Acres of Pole Disturbance	Acres in Road Corridor	Acres in Pulling/ Turning Buffer	Total Acreage of Disturbance	Percentage Disturbed
AZ AA:7:68(ASM)	14.92	2	0.5	0.17	7.18	7.85	52.63
AZ AA:7:669(ASM)	5.96	1	0.25	0	0	0.25	4.20
AZ AA:7:62(ASM)	8.70	4	1.0	0.02	0	1.02	11.72
AZ AA:7:32(ASM)	54.89	5	1.25	0	15.42	16.67	30.37
AZ AA:7:674(ASM)	8.80	1	0.25	0	0	0.25	2.84
AZ AA:7:673(ASM)	9.27	0	0	0	0	0.00	0.00
AZ AA:7:672(ASM)	2.42	1	0.25	0	0	0.25	10.32
AZ AA:3:18(ASM)	7.16	1	0.25	0	7.16	7.41	100.00
AZ AA:3:37(ASM)	2.56	0	0	0.27	0	0.27	10.55
AZ AA:3:75(ASM)	7.93	1	0.25	0	0	0.25	3.15
AZ AA:3:72(ASM)	3.53	0	0	0	3.51	3.51	99.43

Table 3.4-3. Potential Ground Disturbance to Historic Properties.

Site Number	Identified Acreage	No. of Proposed Poles	Acres of Pole Disturbance	Acres in Road Corridor	Acres in Pulling/ Turning Buffer	Total Acreage of Disturbance	Percentage Disturbed
AZ AA:3:71(ASM)	2.45	0	0	0	0.42	0.42	17.16
AZ AA:2:347(ASM)	2.38	1	0.25	0	0	0.25	10.50
AZ AA:2:346(ASM)	1.87	1	0.25	0	0	0.25	13.40
Total	150.53	18	4.50	0.46	33.69	38.65	25.68

Impacts to cultural resources could occur during operations and maintenance activities such as grading access roads and vegetation removal. The work procedures for major repairs, such as replacement of towers or conductors, would be essentially identical to that of new construction, as described in Section 2.1.3. Because Western would enact the project resource protection measures and Construction Standards for inspection and maintenance work, and because impacts from such work would be similar to or less severe in nature and duration than that of new construction as described above, impacts would be negligible during the operation and maintenance phase of the project.

Western would minimize the cumulative impacts from operation and maintenance by implementing measures to protect or recover data regarding historic resources, prehistoric resources, and sites important to Native American heritage. These include Resource Protection Measures CUL-1 and CUL-2, which require avoiding ground disturbance near or within the boundaries of historic properties when possible and the development and implementation of an HPTP when not, and CUL-3 through CUL-5, which ensure measures would be taken to protect cultural resources and human remains accidentally discovered during construction and operation and maintenance, and that the appropriate authorities are notified of the discovery. Overall, impacts from operations and maintenance to historical properties, while adverse and permanent, would be minor.

Cumulative Impacts

To determine the cumulative effects in the analysis area, Western conducted a review of known past, present, and reasonably foreseeable future proposed projects within 1.5 miles of the project transmission centerline and an analysis made of their short- and long-term incremental effects on the local environment (see Table 2-5 for a list of projects). These projects include geotechnical borings related to the project, a 115-kV transmission line rebuild, an electric substation interconnection, and the construction of a 500-kV transmission line. Projects not related to electrical transmission include rehabilitation of the SCIP water delivery facilities, a rezoning plan amendment, the expansion of a retirement community, and an annual Civil War Re-enactment festival.

Based on aerial imagery, approximately 10 percent of the cumulative analysis area appears to have been impacted by previous development, primarily for agriculture. A total of 92 previous archaeological surveys associated with transmission line construction and infrastructure projects have been conducted in a 1-mile buffer of the Proposed Action. While not all of the surveys represent projects that have been built, the projects represent a considerable impact on cul-

tural resources in the area. These projects include construction of portions of the Santa Rosa and Tucson canals, the Western Coolidge–Saguaro transmission line, Interstate 10 and interchanges, SCIP, Eloy Airport Expansion, as well as several fiber optic lines and other small projects.

Loss of cultural resources is a concern in the project vicinity as these are not renewable resources and this is an area that is highly sensitive for prehistoric occupation. Types of resources that are generally not considered eligible for the National Register may become eligible as impacts from this and future projects make them more rare. The impacts from the construction and operation and maintenance of the Proposed Action, combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small manner to cumulative adverse impacts for cultural resources. Project resource protection measures and Western's Construction Standards 13 would reduce the contribution of the Proposed Action to cumulative impacts such that the contribution would be minor.

3.4.2 No Action Alternative

Under the No Action Alternative, Western would continue to operate and maintain the ED2 to Saguaro No. 2 115-kV transmission line in its existing state, including maintaining the existing 44 structures in the historical properties. Western anticipates that maintenance actions would be more frequent under the No Action Alternative because wood pole structures typically require more maintenance than steel structures. As Western would enact its Standard 13 Environmental Quality Protections for Cultural Resources during inspection and maintenance work, adverse impacts would be direct and long-term, but negligible under the No Action Alternative.

3.5 Migratory Birds

Aspen biologists visited the project area from July 28 through July 30, 2014 to evaluate biological resources. The field visit included reconnaissance-level surveys for plants and animals within the project area and a habitat assessment for special-status species. During the field visit, biologists checked all structures for stick nests and made incidental observations of woodpecker cavities in all wooden poles and all bird nests in the project area. The Biological Evaluation (BE; summarized in Appendix B) includes a list of all plant and animal species identified in the field.

3.5.1 Proposed Action

3.5.1.1 Affected Environment

Aspen biologists observed 28 species of migratory birds during the survey. No active nests or inactive stick nests were observed on structures, although numerous small inactive nests were observed in the project area and several old raptor nests were observed in the vicinity of the project area, primarily in saguaro cacti.

Bird habitats in the project area consist largely of intact desert scrub mapped as Sonora–Mojave Creosotebush–White Bursage Desert Scrub, Sonora–Mojave Mixed Salt Desert Scrub, Undifferentiated Barren Land, and Sonoran Paloverde–Mixed Cacti Desert Scrub. Several areas are mapped as North American Warm Desert Riparian Mesquite Bosque. The project area also has several areas mapped as Cultivated Cropland and Developed. There are a few portions of the

project area that cross irrigation canals and are mapped as Open Water. All vegetation and land cover types are described in further detail in the BE (see Appendix B).

The entire project area provides habitat for common bird species such as mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), non-native European starling (*Sturnus vulgaris*), great-tailed grackle (*Quiscalus mexicanus*), and house finch (*Carpodacus mexicanus*). The desert scrub habitats provide suitable habitat for a number of bird species such as turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), Gambel's quail (*Callipepla gambelii*), and white-winged dove (*Zenaida asiatica*). The North American Warm Desert Riparian Mesquite Bosque provides habitat for more specialized birds such as Arizona Bell's vireo (*Vireo bellii arizonae*), Lucy's warbler (*Vermivora luciae*), and black-tailed gnatcatcher (*Polioptila melanura*). The Cultivated Croplands provide habitat for additional species, such as western kingbird (*Tyrannus verticalis*), red-winged blackbird (*Agelaius phoeniceus*) and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Burrowing owls (*Athene cunicularia*) may use burrows in open desert scrub habitat and in dirt berms along irrigation canals and agricultural fields for nesting and refuge.

3.5.1.2 Environmental Consequences

Western or its contractor would implement resource protection measures as part of the Proposed Action. Those applicable to migratory birds are summarized below; full text of the measures is provided in Table 2-4.

- AQ-1 limits mechanical disturbance of previously undisturbed areas.
- BIO-1 requires pre-construction clearance surveys for nesting birds during breeding season and year-round for burrowing owl.
- BIO-2 requires the Biological Monitor to designate and flag an appropriate buffer area around an active bird nest on or adjacent to work sites.
- BIO-4 requires that helicopter activities avoid the Picacho Mountains during golden eagle nesting season and the Picacho Reservoir during Yuma Ridgeway's (clapper) rail and yellow-billed cuckoo nesting seasons.
- BIO-5 requires worker training on resource protection measures for biological resources.
- BIO-6 prohibits pets in the project area.
- BIO-9 requires that new transmission lines conform to APLIC guidelines.

Construction of the Proposed Action would cause direct, long-term and short-term adverse impacts to migratory birds related to displacement, habitat degradation, noise disturbance, collision and electrocution. These impacts would be minor as described below.

Vegetation clearing and ground disturbance activities are likely to result in adverse, short-term displacement of birds but these impacts are minor because most birds are common, widely distributed species that would flee the project area temporarily. Temporary impacts to migratory bird habitat would result from vegetation clearing at new structure locations, along existing access roads, at conductor pulling and tensioning sites, and at the laydown area. There would also be a short-term loss of wildlife habitat resulting from approximately 0.25 acres of tempo-

rary impacts at each new structure, 0.1 acres of which would remain a permanent loss. This would result in a temporary loss of an estimated 28 acres. This loss is considered minor because it is temporary and there are extensive similar habitats in the surrounding area that wildlife would be able to use during the construction activities. At each work site there would be a long-term loss of approximately 0.1 acres of wildlife habitat from the structure foundations and a small area adjacent to the new structure that would be maintained for future access. This would result in an estimated loss of 19 acres. This permanent loss is considered minor because it would be similar to the existing transmission line footprint.

Construction noise and disturbance (e.g., vehicles, compressors, welders, generators, helicopters, and implosive sleeves) may cause migratory birds to temporarily leave the area but these short-term impacts would be minor as there is extensive habitat in the surrounding area for use by the displaced wildlife. Operation and maintenance of the Proposed Action would cause occasional adverse impacts to migratory birds such as temporary displacement from feeding or congregating areas. This short-term impact would be similar to those caused by existing operation and maintenance activities.

Nesting birds may be disturbed by construction noise or human presence. Western or its contractor would conduct pre-construction nesting bird surveys and implement appropriate nest avoidance measures (Resource Protection Measures BIO-1 and BIO-2) to avoid and minimize nest abandonment, nest failure, or other impacts to nesting migratory birds from construction activities. These surveys would identify any nesting birds, including ground-nesting species (e.g., killdeer) that might nest in construction sites or staging areas and burrowing owl that may use burrows in the project area. Impacts to nesting birds would be short-term during construction and are anticipated to be minor with implementation of nest avoidance measures.

Some power lines present collision or electrocution risk to native birds. Songbirds and waterfowl have a lower potential for collisions than larger birds, such as raptors. Songbirds and waterfowl tend to fly under power lines, while larger species generally fly over lines and risk colliding with higher static lines (APLIC, 2012). Large raptors are susceptible to electrocution on power lines because of their large size and proclivity to perch on tall structures. The Avian Power Line Interaction Committee (APLIC, 2012) provides guidelines on the use of various bird diverters and discusses proposed spacing for these devices to reduce risk of bird collision.

Structure design is a major factor in causing or preventing raptor electrocutions. Electrocution occurs when a perching bird simultaneously contacts two energized or grounded conductors or an energized conductor and grounded hardware. This happens most frequently when a bird attempts to perch on a structure with insufficient clearance between the conductors or grounds. The majority of raptor electrocutions are caused by distribution lines and relatively small transmission lines, energized at voltage levels between 1-kV and 69-kV. Higher voltage transmission lines are built with wider spacing between the conductors and grounds, and present a reduced threat of electrocution. Electrocution can occur when horizontal separation is less than the wrist-to-wrist (flesh-to-flesh) distance of a bird's wingspan or where vertical separation is less than a bird's length from head to foot.

The largest bird that is likely to come in contact with the project is the golden eagle (wingspan to 7.5 feet; wrist-to-wrist length of 3.5 feet; height to 2.2 feet). The Avian Power Line Interaction Committee (APLIC, 2006) guidelines recommend 60-inch separations between energized conductors or hardware and grounded conductors or hardware to protect eagles and other large birds (e.g., red-tailed hawk, turkey vulture) from electrocution.

Western is currently preparing an agency-wide Avian Protection Plan (APP), per the guidance found in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006" (APLIC, 2006). The goal of Western's APP is to provide direction on avian issues; standardize the techniques used to address avian issues across all regions of Western; assure compliance with legal requirements; document and track avian issues; and support design, construction, and maintenance activities in resolving avian issues at the earliest stage possible. The APP will be coordinated through the Corporate Services Offices by the APP Program Coordinator, with APP Regional Contacts located in each region to support everyday functions.

The primary laws driving regulatory requirements for protecting avian species; include the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and the Endangered Species Act (ESA). Western is also obligated to comply with Executive Order (EO) 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds" and a Memorandum of Understanding (MOU) between the United States Fish and Wildlife Service (USFWS) and the Department of Energy (DOE) signed September 12, 2013. Western expects its final APP to be completed in spring 2015.

Construction of the Proposed Action would result in a net reduction of transmission pole structures, but the total length of the power line would remain unchanged. The Proposed Action would conform to APLIC design guidelines and the APP to minimize the potential electrocution risk (see Resource Protection Measure BIO-9). The proposed location of the rebuild, with is in the same alignment as the existing line, would keep the risk of collision essentially unchanged. The Proposed Action would not increase the risk of power line collision or electrocution from existing conditions. Adverse impacts would be negligible because the project would be designed to avoid collision and electrocution.

Cumulative Impacts

Table 2-5 lists past, present, and reasonably foreseeable future actions that may cumulatively impact migratory birds in the project area. The majority of these past, present, and future projects are transmission rebuilds within existing ROW. Most of these projects will be in areas with existing development or infrastructure and human presence and will have similar impacts to migratory birds as those described above. Cumulative impacts of project activities would be negligible because the actions are diffused over a large geographic area and are of short duration.

3.5.2 No Action Alternative

Construction impacts under the No Action Alternative would not occur. Operational impacts of the No Action Alternative would be slightly greater than the Proposed Action, albeit still short-term and minor, because it would require more frequent future maintenance and therefore create more potential for disturbance to migratory birds.

3.6 Noise and Sensitive Receptors

3.6.1 Proposed Action

3.6.1.1 Affected Environment

Noise is defined generally as unpleasant, unexpected or undesired sound that disrupts or interferes with normal human activities. To describe environmental noise and to assess project impacts on areas that are sensitive to noise, the A-weighted decibel (dBA) scale is customarily used. The dBA scale considers human perception, which is less sensitive to low frequencies. Decibels are logarithmic units that can be used to compare wide ranges of sound intensities.

Human activities cause noise levels to be widely variable over time. Sound levels are best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The Ldn is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

Noise levels are usually closely related to the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Sound levels typical of outdoor areas using the Ldn are listed in Figure 3.6-1.

The surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than in commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (EPA, 1974).

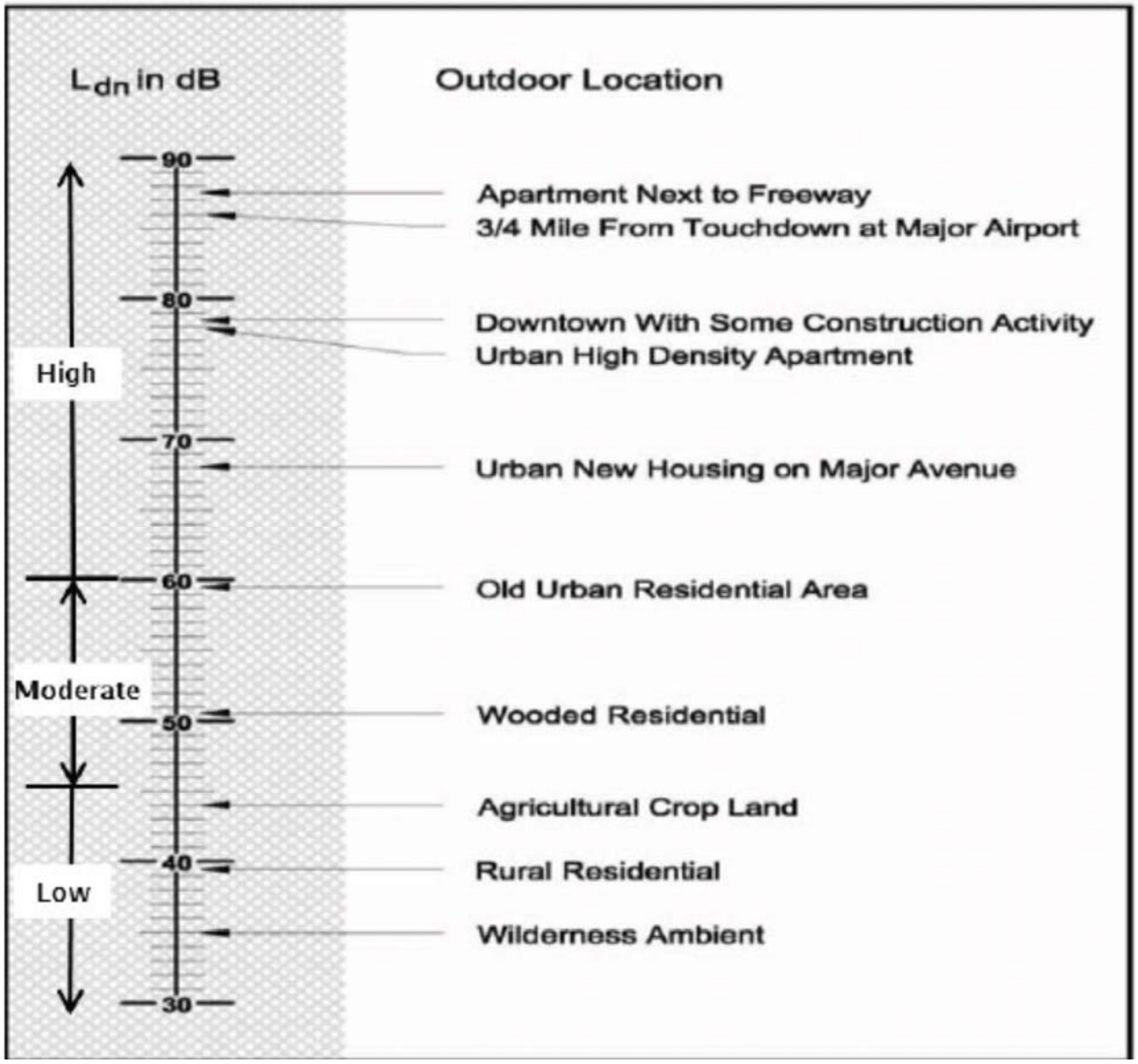
Existing Conditions and Sensitive Receptors

The project area traverses a primarily rural, desert landscape, along the foothills of the Picacho Mountains. Adjacent land use includes: open space; agriculture fields and production facilities; commercial businesses; recreation areas; and industrial infrastructure. In addition, occasional isolated homes and groups of residences are scattered along the project corridor.

Notable noise sources in the project area include:

- agricultural production activities;
- vehicular traffic on Interstate 10 (I-10), Highway 87, and Highway 287;
- intermittent rail traffic on the Union Pacific Railroad;
- air traffic from the Eloy Municipal Airport; and
- operational activities at pumping stations along the Tucson Aqueduct.

Figure 3.6-1. Typical Outdoor Sound Levels



Additionally, the existing transmission line causes corona noise, which is generated from electric corona discharge and experienced as a random crackling or hissing sound. Corona is a luminous discharge due to ionization of the air surrounding a conductor and is caused by a voltage gradient, which exceeds the breakdown strength of air. It is a function of the voltage gradient at the conductor surface. Irregularities on the surface of the conductor such as nicks, scratches, contamination, insects, and water droplets increase the amount of corona discharge. Consequently, during periods of rain and foul weather, corona discharges increase.

Noise-sensitive receptors, defined as locations or areas where human activity can be adversely affected when noise levels exceed the thresholds described above, are scattered throughout the project area. Examples of typical noise-sensitive receptors would be residences, schools, hospitals, recreational facilities, and wildlife management and conservation areas. Much of the

project area is undeveloped and does not contain sensitive receptors. There are no schools or hospitals within one mile of the Proposed Action corridor. Notable sensitive receptors identified within one mile include the following:

- Saguaro Correctional Center
- Picacho Peak State Park
- Sunscape RV Resorts
- Pinal Fairgrounds
- Tierra Grande Golf Course
- Rooster Cogburn Ostrich Ranch

3.6.1.2 Environmental Consequences

In 1974, the EPA identified safe noise levels that could be used to protect public health and welfare, including prevention of hearing damage, sleep disturbance, and communication disruption. Outdoor Ldn values of 55 dBA were identified as desirable to protect against activity interference and hearing loss in residential areas. When annual averages of the daily level are considered over a period of 40 years, the EPA identified average noise levels equal to or less than 70 dBA as the level of environmental noise that will prevent any measurable hearing loss over the course of a lifetime. A three-decibel increase in noise is considered barely noticeable to humans, a five-decibel increase is considered noticeable, and a 10-decibel increase is considered a doubling of the sound and is generally considered to be substantial. There are no noise codes applicable to transmission lines in Arizona.

Noise impacts are considered to be major if the project exposes persons to or generates noise in excess of EPA recommendations or results in a substantial permanent increase in ambient noise levels above baseline near sensitive receptors.

When determining noise, decibels are not additive in a linear fashion. For example, the introduction of 10 decibels of sound into an ambient 40 decibel background would not be discernible because the addition is less than the background sound; the introduction of 40 decibels of sound into an ambient 10 decibels background would be perceived as 40 decibels because the introduced sound is greater than the background. The introduction of 40 decibels of sound in an ambient 40 decibels background would be perceived as 43 decibels because the “doubling” of sound is perceived as a 3 decibels increase. Conversely, moving farther from a noise emitting source reduces the sound perceived from that source in a nearly linear manner.

Western or its contractor would implement the following resource protection measure as part of the Proposed Action.

- NO-1: Coordinate construction activities with landowners, including notification of construction schedule and planned activities.

During construction, noise would be generated by equipment and vehicles including cranes, trucks, and tractor graders. In addition, implosive sleeving is a stationary source of noise that would occur during construction (conductor stringing). It would be intermittent and short-term (less than a second).

Maintenance activities would generate noise similar to the current maintenance activities. Typical noise levels for proposed construction equipment are identified in Table 3.6-1. Uncontrolled noise 50 feet from construction equipment would average approximately 85 dBA, result-

ing in a temporary increase in ambient noise during working hours. Equipment noise resulting from routine maintenance activities typically ranges from 70 to 85 decibels at a distance of 50 feet. As a conservative approach, noise levels would be reduced for receptors further removed from the noise source by approximately 6 dBA for each doubling of distance from the source (OSHA, 2013). For example, at 100 feet from the ROW typical construction noise levels would be about 79 dBA.

Table 3.6-1. Typical Construction Noise Levels

Equipment or Activity Type	Noise Level at 50 feet (dBA)
Backhoe	80
Front-End Loader	80
Concrete Truck/Mixer	85
Crane	85
Flat-bed Truck	84
Grader	85
Helicopter	110
Implosive Sleeving	118 to 122 (at 200 feet)

These temporary levels are above the EPA identified safe noise levels (outdoor Ldn values of 55 dBA and average noise levels equal to or above 70 dBA over the course of a lifetime). The duration of the noise levels above the EPA criteria are short-term at any one location, the loudest construction noise (sleeving) occurring for only seconds. Therefore, construction noise would be a minor, short-term adverse impact for sensitive receptors at a distance where noise generated by the project is above EPA recommended levels.

Resource Protection Measure NO-1 would require coordination with landowners within the proposed easement and provide nearby residents with advance notice of construction activities and anticipated increase in noise. This would provide individuals an opportunity to stay indoors during hours of increased noise, thereby minimizing this impact. Overall construction noise impacts would be short-term and minor.

Operation of the transmission line would cause audible noise from corona discharge. The amount of audible noise is directly related to the amount of corona, which is affected by meteorological conditions (most notably rain). The highest calculated audible noise levels for the transmission line design during foul weather (including rain) may reach 30 dBA at the edge of the ROW (50 feet from centerline) for a single-circuit 115-kV transmission line. This noise level would occur during the infrequent occurrence of heavy rain, which would mask the noise associated with the corona. During fair weather the audible noise at the edge of the ROW would be reduced, with a maximum value of 12.5 dBA for the single-circuit line. Fair-weather and foul-weather conditions fall within the typical range of ambient noise for rural/agricultural areas (39 to 44 dB) and are not anticipated to be discernible above background ambient noise levels. Due to the expected low audible noise levels, the line noise would normally be inaudible at the edge of the ROW. There would be no noticeable permanent increase in noise above the existing ambient levels. Noise associated with the existing transmission lines, resulting from increased corona due to aging equipment and facilities, would be improved when the existing facilities are removed and replaced with new equipment.

Maintenance activities would require the use of heavy equipment similar to the equipment used for construction and would result in similar types of increased temporary noise. Maintenance activities may include use of a helicopter or small plane for inspection. A loaded helicopter flying 250 feet away produces about 95 decibels (Helicopter Association International,

1993). This temporary level is above the outdoor Ldn values identified as desirable to protect against activity interference and hearing loss in residential areas. Exposure to the heightened Ldn value could potentially result in a moderate impact to nearby sensitive receptors. Use of helicopters for aerial inspection would typically occur four times a year for a short duration of time. Maintenance actions under the No Action Alternative may occur more frequently than those under the Proposed Action, however, because the wooden poles typically require more frequent maintenance.

Cumulative Impacts

The region of influence for cumulative noise impacts includes residences located along the proposed transmission line corridors. Noise from the Proposed Action would combine with noise from the past, present, and reasonably foreseeable future projects listed in Section 2.6, Table 2-5 only if the temporary, intermittent noise increase of the Proposed Action occurred at the same time as the foreseeable projects. Due to the temporary nature of the Proposed Action construction activities, this is unlikely and cumulative increase in ambient noise levels near sensitive receptors would be minor and would not result in cumulative noise levels in excess of EPA recommendations.

3.6.2 No Action Alternative

Construction impacts under the No Action Alternative would not occur. Operational impacts of the No Action Alternative would be slightly greater than the Proposed Action, albeit still short-term and minor, because the existing line requires more frequent future maintenance than steel structures and therefore generates more noise.

3.7 Public Health and Safety

3.7.1 Proposed Action

3.7.1.1 Affected Environment

Within the project area, public safety services are provided by the City of Eloy Fire District, City of Eloy Police Department, and the Pinal County Sheriff's Office. The Banner Casa Grande Regional Medical Center is a 177-bed local acute care hospital and is located approximately 7 miles to the west of the Proposed Action. Fire hazards are addressed in Section 3.2.4, Fuels and Fire Management.

Physical Hazards

Existing physical hazards may include injury from falling trees, improper use of tools or machinery, construction site dangers, and electrocution. Particular concern has been raised over the recreational use of transmission structures by members of the public, as they can be enticing to children and some adults because they look like tall ladders. Physical hazards associated with climbing transmission line towers include blunt physical trauma and electric shock.

Electric and Magnetic Fields (EMF)

Both current and voltage are required to transmit electrical energy over a transmission line. The current, a flow of electrical charge measured in amperes, creates a magnetic field. The voltage, the force or pressure that causes the current to flow measured in units of volts or kilovolts (kV), creates an electric field. Electric fields and magnetic fields considered together are referred to as "EMF." Both fields occur together whenever electricity flows, hence the general practice of considering both as EMF exposure.

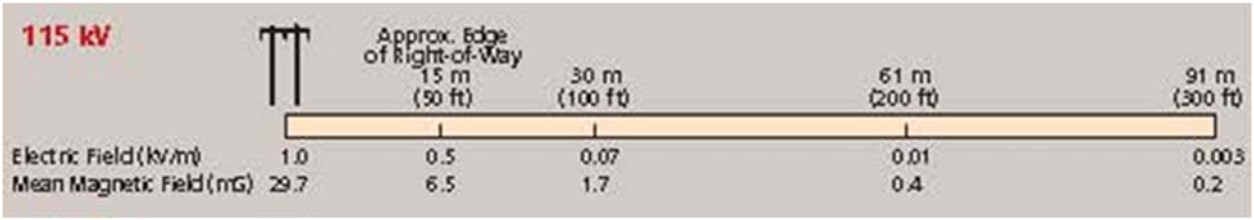
Transmission lines, like all electrical devices and equipment, produce EMFs. Electric field strength is usually constant with a given voltage; while magnetic field strength can vary depending on the electrical load, design of the transmission line, and configuration and height of conductors. Both the magnetic field and the electric field decrease rapidly, or attenuate, with distance depending on the source.

Over the past 25 years, research has not proven that power frequency EMF exposure causes adverse health effects (NIEHS, 2002). Regardless, some non-governmental organizations have set advisory limits as a precautionary measure based on the knowledge that high field levels (more than 1,000 times the EMF found in typical environments) may induce currents in cells or nerve stimulation. The International Commission on Non-Ionizing Radiation Protection has established a continuous, magnetic field exposure limit of 0.833 Gauss (833 mG [milliGauss]) and a continuous electric field exposure limit of 4.2 kilovolts per meter (kV/m) for members of the general public. The American Council of Governmental Industrial Hygienists publishes Threshold Limit Values for various physical agents. The limit for occupational exposure to 60 Hertz (Hz) magnetic fields has been set as 10 Gauss (10,000 mG) and 25 kV/m for electric fields.

Transmission lines operate at a power frequency of 60 Hz. Figure 3.7-1 shows the typical EMF levels for 115-kV transmission lines. In the home, power frequency fields (60 Hz) are associated with electrical appliances. The fields are greatest closest to the surface of the cord and appliance and drop rapidly in just a short distance. Table 3.7-1 shows typical magnetic fields from common household electrical devices.

Sources of existing EMF in the vicinity of the project area include existing transmission lines, distribution feeds to homes and businesses, commercial wiring and equipment, and common household wiring and appliances for residences and communities in the area. EMF field levels in homes and businesses vary widely with wiring configurations, the types of equipment and appliances in use, and proximity to these sources.

Figure 3.7-1. Typical EMF Levels for 115-kV Power Transmission Lines



3.7.1.2 Environmental Consequences

Table 3.7-1. Typical 60 Hertz Magnetic Field Values from Common Electrical Devices

Appliance	Magnetic Field 6 Inches from Device (mG)	Magnetic Field 2 Feet from Device (mG)
Washing machine	20	1
Vacuum cleaner	300	10
Electric oven	9	—
Dishwasher	20	4
Microwave oven	200	10
Hair dryer	300	—
Computer desktop	14	2
Fluorescent light	40	2

During construction, work would be performed according to standard health and safety practices, Western's Construction Standards 13, and OSHA policies and procedures. In addition, the installation of polymer insulators, which remain intact after being shot, reduces maintenance and electrical problems. Maintenance and repair work would be localized, minimizing the potential for serious injuries to workers or the public. Western's construction workers and linemen are trained and experienced with transmission line operations and maintenance. Western's comprehensive safety program includes an annual update of its Power System Safety Manual that provides direction and guidance for prevention of accidents that may result in personal injury, illness, property damage, or work interruption. Therefore, the Proposed Action would not result in serious injuries to workers or create worker health hazards beyond limits set by health and safety regulatory agencies or that endanger human life and/or property. Adverse impacts to worker health and safety would be short-term and negligible.

The existing transmission lines have no documented adverse public health and safety effects from EMF exposure. The project would be compliant with NESC guidance. Western's engineering, design, and operating standards on 115-kV lines, proper grounding standards, and safety practices would be implemented on the transmission line and conductive objects within, crossing, or parallel to the ROW. The electric and magnetic fields at the edge of the ROW would be about 0.5 kV/m and 6.5mG, well below the recommended guidelines of the International Commission on Non-Ionizing Radiation and the American Conference of Governmental Industrial Hygienist. The project would result in a negligible impact because it would not expose the public or workers to unusual or higher than usual levels of EMF.

Cumulative Impacts

Cumulative impacts to public health and safety would occur only if impacts of the Proposed Action combined with impacts of the foreseeable projects that occurred at the same time and in close proximity. Due to the negligible and temporary nature of the impacts of the Proposed Action, such events are unlikely. Therefore the Proposed Action would not contribute to cumulative impacts to public health and safety.

3.7.2 No Action Alternative

Under the No Action Alternative, Western would not rebuild or replace the existing, old wooden pole structures with new structures; their continued deterioration could pose a risk to public health and safety. Current operation activities may present a physical hazard to maintenance workers and, to a lesser degree, the general public. Physical hazards may include injury from

falling trees, improper use of tools or machinery, construction site dangers, and electrocution. During operation and maintenance, impacts under the No Action Alternative would be similar to those described for the Proposed Action in type and context; however, the frequency and duration of maintenance activities would be greater. There would be the same number of transmission circuits so EMF exposure under the No Action Alternative would the same.

3.8 Threatened and Endangered Species

Aspen biologists reviewed the Arizona On-line Environmental Review Tool (AGFD, 2014b), the Arizona Ecological Service List of Endangered and Threatened Species of Pinal County (USFWS, 2014a), and the Arizona Rare Plant Field Guide (Arizona Rare Plant Committee, 2001) to identify threatened and endangered species reported from the region. This review included all federally listed endangered or threatened species, candidate species, and species proposed for listing.

Aspen biologists visited the project area from July 28 through July 30, 2014 to evaluate biological resources. The field visit included reconnaissance-level surveys for plants and animals within the project area and a habitat assessment for special-status species. No threatened or endangered species were observed, but several have the potential to occur in the project area and are addressed further in the following subsections. Refer also to the BE prepared for this project (Appendix B).

3.8.1 Proposed Action

3.8.1.1 Affected Environment

The project area includes extensive desert scrub habitat, as described in Section 3.5 (Migratory Birds). The Sonoran Paloverde–Mixed Cacti Desert Scrub provides suitable foraging habitat and food sources for the federally endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*). Most of the desert scrub provides suitable habitat for Sonoran Desert tortoise (*Gopherus morafkai*), a candidate species for federal listing. Yellow-billed cuckoo (*Coccyzus americanus occidentalis*; Western United States Distinct Population Segment) are likely to migrate through the North American Warm Desert Riparian Mesquite Bosque and may utilize it as stopover or dispersal habitat. Yuma Ridegway's rail is not likely to occur in the project area because it lacks suitable habitat; however, suitable habitat is present near the project area.

Listed Threatened or Endangered Species

Lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae)*

Life History: The lesser long-nosed bat is listed as endangered under the federal Endangered Species Act (ESA) (USFWS, 1988). It is also recognized as a wildlife species of concern by Arizona Game and Fish Department (AGFD) (2014b). It is a migratory bat that winters in Mexico and Central America and breeds in the southwestern United States from mid-April through October (AGFD, 2014b). In Arizona, maternal roosts are located in caves, mines, and occasionally old buildings in the mountain ranges of the southern portion of the state, including the Picacho Mountains (AGFD, 2014b). It forages on the nectar and pollen of cactus and agave, saguaros in

particular, and occasionally on the fruit. The lesser long-nosed bat may travel up to 25 miles from roost sites to forage (Lowery et al., 2009).

Survey History: Aspen biologists did not observe the lesser long-nosed bat during field surveys. Surveys were conducted during a time of year when this species may have been in the area, but were not done at night when the bat would have been active. Focused surveys were not conducted for this species. The lesser long-nosed bat roosts and forages in the Picacho Mountains just over one mile east of the central portion of the project area.

Habitat Evaluation and Suitability: There is suitable foraging habitat for lesser long-nosed bat in the project area wherever saguaro cactus are present. These areas are mapped as Sonoran Paloverde-Mixed Cacti Desert Scrub and are located primarily in the central portion of the project area near the base of the Picacho Mountains. Because of the close proximity of roosting sites, the distance the lesser long-nosed bat can travel in a single night, and the abundance of available forage, this species is likely to forage in the project area during the active season (mid-April through October).

Yellow-billed cuckoo (*Coccyzus americanus occidentalis*; Western United States Distinct Population Segment)

Life History: The yellow-billed cuckoo is listed as threatened under the federal ESA. The listing applies to occurrences in the western states, defined as a distinct population segment (DPS), including occurrences in Arizona (USFWS, 2013). The yellow-billed cuckoo is a migratory bird that winters in South America and breeds in the United States from mid-June through August (USFWS, 2013). It is a secretive bird that nests in cottonwood-willow woodland with an understory of dense vegetation especially near water (AGFD, 2014b). In the desert Southwest, nesting habitat is invariably riparian woodland, particularly with an intact (i.e., ungrazed) understory. In Arizona, the yellow-billed cuckoo has been documented nesting is mesquite bosque, typically in close proximity to riparian vegetation. It nests in large stands of vegetation, typically greater than 100 acres, with most nesting within patches greater than 200 acres and at least 325 feet wide (USFWS, 2014b). It also occasionally nests in prune, English walnut, and almond orchards (Laymon, 1998), as well as in non-native tamarisk scrub with an overstory of willows (Wiggins, 2005). The yellow-billed cuckoo forages primarily by gleaning or sallying for flying insects (Laymon, 1998). It typically forages in the canopy and dense understory of cottonwood woodlands (Laymon, 1998).

The USFWS recently proposed critical habitat for the yellow-billed cuckoo western DPS (USFWS, 2014b). The project area is not within critical habitat; however, critical habitat unit 29: AZ–21 is at Picacho Reservoir, roughly one mile north of the project area (USFWS, 2014b).

Survey History: Aspen biologists did not observe yellow-billed cuckoo during field surveys. Surveys were conducted during a time of year when the cuckoo may have been in the area, but focused surveys were not conducted. The yellow-billed cuckoo regularly nests at Picacho Reservoir, roughly one mile north of the project area, and at several locations within the Santa Cruz River Valley, roughly four miles to the southwest of the Saguaro Substation (USFWS, 2014 and Ebird.org, 2014).

Habitat Evaluation and Suitability: There is suitable nesting habitat of adequate patch size for yellow-billed cuckoo in the project vicinity. However, the largest patches of potential nesting habitat (North American Warm Desert Riparian Mesquite Bosque) within the project area are less than 100 acres, making them unsuitable as nesting territories (BE Figure 2). The vegetation in these areas is made up of dense stands of mesquites, primarily honey mesquite (*Prosopis glandulosa*), with a dense understory of herbaceous perennials and grasses. During the survey, ponded water was present at numerous locations and an abundance of flying insects was noted. Yellow-billed cuckoos are likely to move through the project area, at least intermittently, during spring or fall migratory seasons.

Yuma Ridgeway's rail (*Rallus obsoletus yumaensis*), formerly Yuma clapper rail (*Rallus longirostris yumanensis*)

Life History: The Yuma clapper rail (*Rallus longirostris yumanensis*), was recently reclassified as the Yuma Ridgeway's rail (*Rallus obsoletus yumaensis*; Chesser et al., 2014). The Yuma Ridgeway's rail is listed as endangered under the federal ESA and threatened under the CESA. This discussion is based on the new nomenclature (Chesser et al., 2014). The Yuma Ridgeway's rail is an extremely secretive bird that is not frequently encountered. It nests along the Colorado, Virgin, Bill Williams, lower Gila, lower Salt, and lower Verde Rivers in freshwater marshes typically dominated by cattail and bulrush (AGFD, 2014b). It is also known from occasional records outside of its range including Picacho Reservoir. It is not migratory, but may disperse from nesting areas after breeding, and may be found within its range year-round. Yuma Ridgeway's rail habitat is typically a mosaic of vegetated areas interspersed with shallow (less than 12 inches) open water (USFWS, 2009). It requires large patches of marsh habitat. Outside of the breeding season its home range averages from 17 to 20 acres, but during nesting season the home ranges are reduced to 0.29 to 9.5 acres (USFWS, 2009). In addition to marsh habitat, Yuma Ridgeway's rail requires a band of riparian vegetation to provide cover on the higher ground along the fringes of the marsh (Eddleman, 1989 and USFWS, 2009). The USFWS has not designated critical habitat for Yuma Ridgeway's rail.

Survey Results: Aspen biologists did not detect Yuma Ridgeway's rail during field surveys, but did not conduct focused surveys for it. Yuma Ridgeway's rails have been extensively documented at Picacho Reservoir, approximately 1.5 miles north of the project area (Ebird.org, 2015 and USFWS, 2009).

Habitat Evaluation and Suitability: There is no suitable marsh habitat for Yuma Ridgeway's rail in the project area. The nearest occupied habitat is at Picacho Reservoir roughly 1.5 miles north of the segment between structures 7/3 and 10/1.

Candidate Species for Listing as Threatened or Endangered

Sonoran Desert tortoise *(Gopherus morafkai)*

Life History: Recent research recognizes the Sonoran Desert tortoise as a full species, distinct from the Mojave Desert tortoise (Murphy et al., 2011). The USFWS (2010a) candidate designation, however, is based on the previous understanding that desert tortoises east and west of the Colorado River were distinct populations of a single species, *G. agassizii*. The species

recognition does not change the Sonoran Desert tortoise's status as a candidate for federal listing. The Sonoran desert tortoise is included on the state list of Wildlife of Special Concern in Arizona and state law prohibits removal of desert tortoises from the wild.

The Sonoran Desert tortoise lives primarily in upland and sloping bajada landforms, between about 500 and 4,100 feet elevation, throughout much of southern and western Arizona and Sonora, Mexico. It is less common in desert lowland habitats, but intermountain valleys may be important habitat for dispersal and movement among mountain ranges in the region. It spends much of the time within burrows, either during inactive seasons or during inactive diurnal periods, for thermoregulation, nesting, and protection from predators. Thus, burrows and soils suitable for burrowing are important habitat features. Burrows are constructed beneath rocks, boulders, or shrubs, on semi-open slopes, or on the banks of washes. The Sonoran Desert tortoise also uses rocky crevices or shelves (e.g., caliche), sometimes without further altering them. This species is active during spring and late summer (March 1 to November 1), and may be active (outside the burrow) for short periods at any time of year, depending on rainfall and temperature (AGFD, 2008). The primary activity season in late summer coincides with monsoonal rainfall, when water and new plant growth are available.

Survey Results: Aspen biologists did not observe any Sonoran Desert tortoises or tortoise signs during the reconnaissance-level field survey. All USGS quads in which the project is located, except Ely North, are occupied by Sonoran Desert tortoise (USFWS, 2010a).

Habitat Evaluation and Suitability: The upland portions of the project area provide some suitable habitat for the Sonoran Desert tortoise. The areas mapped as Sonoran Paloverde–Mixed Cacti Desertscrub provide the highest quality habitat, but Sonora–Mojave Creosotebush–White Bursage Desert Scrub, Sonora–Mojave Mixed Salt Desert Scrub, and North American Warm Desert Riparian Mesquite Bosque also provide suitable habitat.

Species Protected Under the Federal Bald and Golden Eagle Protection Act

Bald eagle *(Haliaeetus leucocephalus)*

The bald eagle is a year-round resident throughout most of its range in central Arizona. The nearest known nesting site in recent years is at San Carlos Reservoir, over 50 miles northeast of the project area (AGFD, 2014a). Bald eagles are seen regularly in the project vicinity during winter. They typically forage on fish in large bodies of water and occasionally on small mammals and carrion in upland habitats. Potential winter upland foraging habitat is present throughout the project area.

Golden eagle *(Aquila chrysaetos)*

The golden eagle is a year-round resident throughout most of its range in the western United States. In the southwest, it is more common during winter months. The golden eagle breeds from late January through August (Pagel et al., 2010). In the desert, it generally nests in steep, rugged terrain, often on sites with overhanging ledges, cliffs or large trees as cover. The golden eagle is a wide-ranging predator, especially outside of the nesting season, when it has no need to return to tend eggs or feed young at the nest.

The nearest known golden eagle nest site is in the Tortolita Mountains, roughly twelve miles east of the Saguaro Substation (AGFD, 2014b). Golden eagles have been reported from Picacho Peak and are likely to nest there, less than two miles south of the project area. There is also suitable nesting habitat present in the Picacho Mountains roughly one mile to the north and east of the alignment. A possible inactive eagle nest was observed in the Picacho Mountains, although it could not be confirmed. No suitable nesting habitat was observed in the project area.

With the exception of developed areas, much of the project area is suitable golden eagle foraging habitat. Nesting golden eagles are likely to forage there during the breeding season. Wintering golden eagles, or unmated golden eagles in nesting season, are also likely to forage occasionally in the project vicinity.

3.8.1.2 Environmental Consequences

Western or its contractor would implement resource protection measures as part of the Proposed Action. The resource protection measures applicable to threatened and endangered species are summarized below with full text of the measures presented in Table 2-4.

- AQ-1 limits mechanical disturbance of previously undisturbed areas.
- AQ-2 limits the amount of water applied to dirt roads and construction areas to ensure wildlife are not drawn into the area.
- AQ-3 requires a 25 mph speed limit on paved roads and a 10 mph speed limit on unpaved areas.
- BIO-1 requires pre-construction clearance surveys for Sonoran Desert tortoise, burrowing owl, and other nesting birds during the nesting season.
- BIO-2 requires a qualified biologist to be present during any vegetation clearing or soil disturbance in Sonoran Desert tortoise habitat.
- BIO-3 requires that project activities during the lesser long-nosed bat activity season will not take place at night, or within 30 minutes of sunset. It also requires minimizing cutting or removal of saguaros to the extent practicable.
- BIO-4 requires that helicopter activities avoid the Picacho Mountains during golden eagle nesting season and the Picacho Reservoir during Yuma Ridgeway's (clapper) rail and yellow-billed cuckoo nesting seasons.
- BIO-5 requires worker training on protection measures for biological resources, including threatened and endangered species.
- BIO-6 prohibits pets in the project area. Workers are not permitted to interact with wildlife, except to safely remove animals from work areas.
- BIO-7 requires containment and proper offsite disposal of all trash, refuse, concrete, and other materials.
- BIO-8 requires covering water storage tanks and foundation excavations to prevent wildlife from becoming trapped.
- BIO-9 requires that new transmission lines conform to APLIC design guidelines.

Listed Threatened or Endangered Species

Lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae)*

Western or its contractor would not perform construction at night during the activity season for lesser long-nosed bat (mid-April through October), pursuant to BIO-3, and would thereby avoid noise and disturbance. Impacts to lesser long-nosed bat foraging behavior and possibly breeding success from construction activities would not occur.

The long-term direct loss of suitable foraging habitat at each work site would be no more than 0.1 acres or 6.7 total acres. Short-term impacts would be 0.15 acres at each work site or 10.7 total acres. In addition, vegetation treatment activities during the bat's activity season could remove an undetermined amount of foraging habitat or degrade food plants and may also impact foraging behavior and possibly breeding success. When vegetation treatment is conducted outside the activity season, impacts to foraging habitat would be minor because of the abundance of suitable foraging habitat available to bats in the surrounding areas. Because food plants would be cut and not removed per Resource Protection Measure BIO-3, impacts to foraging habitat would be temporary and negligible.

Yellow-billed cuckoo (*Coccyzus americanus occidentalis*; Western United States Distinct Population Segment)

Portions of the project area provide suitable migratory and dispersal habitat for yellow-billed cuckoo. Project activities, including noise and disturbance (e.g., vehicles, compressors, welders, and generators), may cause yellow-billed cuckoo to leave the area during migration or when they are dispersing from nest habitat, but these effects would not impact nesting success. In addition, vegetation clearing within the ROW could degrade suitable foraging or dispersal habitat, but these impacts would be negligible given the amount of surrounding habitat available to displaced cuckoos.

Resource Protection Measure BIO-4 would avoid impacts to yellow-billed cuckoo by prohibiting helicopter use within 0.5 miles of Picacho Reservoir, which would avoid any potential for impacts to nesting yellow-billed cuckoo. Project activities would not affect nesting yellow-billed cuckoo.

Yuma Ridgeway's rail (*Rallus obsoletus yumaensis*), formerly Yuma clapper rail (*Rallus longirostris yumanensis*)

There is no suitable habitat in the project area. However, there is suitable occupied habitat approximately 1.5 miles south of the project area. Most construction activities would not impact nesting Yuma Ridgeway's rail because the only suitable nesting site is at least 1.5 miles from the project area. Resource Protection Measure BIO-4 would prohibit helicopter use within 0.5 miles of the Picacho Mountains during nesting season. Any project activities taking place outside the nesting season would not disturb Yuma Ridgeways' rails.

Operation and maintenance of the Proposed Action could cause occasional adverse, short-term and minor impacts due to noise from helicopter inspections to threatened and endangered species, if they are present during the activities. These impacts would be similar in nature to those resulting from existing operation and maintenance activities.

Candidate Species for Listing as Threatened or Endangered

Sonoran Desert tortoise (*Gopherus morafkai*)

The Proposed Action implements Resource Protection Measures AQ-3, BIO-1, and BIO-3 requiring a reduced speed limit, a pre-construction clearance, and a Biological Monitor. Therefore, the Proposed Action would not result in direct impacts, including injury or mortality, to tortoises. Impacts to tortoise from habitat degradation would be negligible given the amount of surrounding habitat available to tortoises. The Proposed Action is not likely to result in a trend toward federal listing of Sonoran Desert tortoise.

Species Protected Under the Federal Bald and Golden Eagle Protection Act

Bald eagle *(Haliaeetus leucocephalus)*

The Proposed Action would not affect nesting bald eagles or foraging habitat within range of potential nest sites as these do not occur within the project area. The Proposed Action would remove 6.7 acres of wintering bald eagle foraging habitat. Construction may temporarily cause bald eagles to avoid work areas due to noise and other construction activities. Any effects on foraging behavior due to loss of habitat or displacement would be temporary and negligible given the amount of surrounding habitat available to eagles.

Golden eagle *(Aquila chrysaetos)*

The construction may cause golden eagles to avoid work areas due to noise and other project related activities. Given the eagles' ability to move away from the project area, any effects to foraging behavior would be negligible and temporary.

Most construction activities would not impact nesting golden eagle because known or suitable nesting sites are at least one mile from the project area. Resource Protection Measure BIO-4 would prohibit helicopter use within 0.5 miles of the Picacho Mountains during nesting season. Any project activities taking place outside the nesting season would not disturb nesting eagles.

Operation and maintenance of the Proposed Action could cause occasional adverse, short-term and minor impacts due to noise from helicopter inspections to threatened and endangered species, if they are present during the activities. These impacts would be similar in nature to those resulting from existing operation and maintenance activities.

Cumulative Impacts

The majority of the past, present, and future projects in Table 2-5 are transmission rebuilds within the existing ROW. Most of these projects will be in areas with existing development or infrastructure and will have similar impacts to threatened and endangered species to those described above. Cumulative impacts of project activities would be negligible because the actions are diffused over a large geographic area and are short in duration.

3.8.2 No Action Alternative

Under the No Action Alternative, the transmission line rebuild would not be completed and the existing ED2 to Saguaro No. 2 115-kV transmission line would remain unchanged. This would result in no direct and indirect construction impacts to threatened and endangered species. Long-term temporary operation and maintenance impacts would increase slightly over the Proposed Action because of more frequent future maintenance needs for the existing wood pole structures.

3.9 Vegetation and Weeds – Invasive and Non-native

Aspen biologists visited the project area from July 28 through July 30, 2014 to evaluate biological resources. The field visit included reconnaissance-level surveys for plants and animals within the project area and an inventory of invasive and non-native weeds in the project area. Biologists maintained a species list of all plants identified in the field. Vegetation types were also mapped within the project area. The BE (summarized in Appendix B) includes a list of all plant species identified in the field, describes the mapping methods, and provides more detailed descriptions of vegetation types.

3.9.1 Proposed Action

3.9.1.1 Affected Environment

Aspen biologists observed 58 plant species during the survey, six of which are not native to Arizona: Russian thistle (*Salsola tragus*), alfalfa (*Medicago sativa*), red stork's bill (*Erodium cicutarium*), Bermudagrass (*Cynodon dactylon*), upland cotton (*Gossypium hirsutum*) and Johnsongrass (*Sorghum halepense*). Four of these species (Russian thistle, red stork's bill, Bermudagrass, and Johnsongrass) are considered invasive in Arizona (AGFD, 2014c). None are considered noxious by the Arizona Department of Agriculture (AZDA, 2006).

Vegetation types in the project area include Sonora–Mojave Creosotebush–White Bursage Desert Scrub, Sonora–Mojave Mixed Salt Desert Scrub, Sonoran Paloverde–Mixed Cacti Desert Scrub, North American Warm Desert Riparian Mesquite Bosque, and Cultivated Cropland, all as described by Brown (1994). All vegetation types are described in further detail in the BE.

3.9.1.2 Environmental Consequences

Western or its contractor would implement resource protection measures as part of the Proposed Action. The resource protection measures applicable to vegetation and weeds are summarized below, with full text of the measures provided in Table 2-4.

- AQ-1 limits mechanical disturbance of previously undisturbed areas.
- AQ-7 requires that temporarily impacted areas be revegetated.
- BIO-10 requires implementation of Western's Standards listed in Section 13.4 Landscape Preservation and 13.6 Noxious Weed Control, and Western's 2011 Integrated Vegetation Management Guidance Manual.

Vegetation

Vegetation would be removed as part of the Proposed Action. Construction activities would have minor direct, long-term and short-term, adverse impacts to vegetation. Direct, long-term adverse impacts of up to 0.1 acres would take place at each new structure and an adjacent area that would be maintained for future access. Direct, short-term adverse impacts of an additional 0.15 acres may take place at each new structure. Direct, long-term adverse impacts to vegetation would also occur along access roads where vegetation would be removed to allow construction access or in areas were new spur roads are needed to access each work site but the total acreage of these impacts is unknown. This impact is expected to be minor because existing access roads would be used whenever possible. Most of these work sites were cleared in the past, when the original transmission line was built and impacts would, for the most part, be limited to these previously disturbed areas. Direct, long-term permanent impacts to vegetation would also take place at conductor pulling and tensioning sites and other similar areas. Although some of these areas would be restored or reseeded at the end of project construction, the vegetation is not likely to return to pre-project conditions for many years and these impacts are considered permanent.

Construction of the Proposed Action will remove a limited amount of habitat and the common plant species that are growing in the habitat. These impacts will be limited primarily to areas that were previously impacted by the construction and maintenance of the existing power line alignment. The Proposed Action is not expected to result in the loss of large patches of vegetation or completely remove any species from the ecosystem. Therefore, the Proposed Action would have negligible adverse impacts to the biodiversity of the project area. The Proposed Action will not create barriers to the plant propagules or seed dispersal that would disrupt gene flow between populations of a particular species; therefore it is not expected to have any direct or indirect adverse impacts to the genetic diversity of any plant species or populations.

Non-target vegetation and other sensitive habitats can be affected by the careless application of herbicides during operation and maintenance activities. The Resource Protection Measures for herbicide use (PHS-1 through 13 in Table 2-4) would ensure that impacts to non-target vegetation do not occur.

Invasive and Non-native Weeds

Project activities would occur in an area where four invasive species are relatively wide-spread. The Proposed Action would include Resource Protection Measure BIO-10 that requires Western to implement Construction Standards listed in Section 13.4 Landscape Preservation and 13.6 Noxious Weed Control to prevent new invasive plants from entering the project area during construction and ensure that existing invasive plants are not spread and follow the guidance in Chapter 11 Noxious Weed Management of Western's 2011 Integrated Vegetation Management (IVM) Guidance Manual to prevent, control, and remove (to the extent feasible) invasive plants in the ROW during maintenance. Therefore the Proposed Action would have a minor potential to introduce new invasive species into the project area or facilitate the spread and dispersal of invasive species already present. The measure would reduce the largest potential source of weed introduction, construction equipment and materials imported onto the site without thorough inspection or cleaning. In addition, the measure would reduce the spread of invasive plants present within the project as a result of construction-related soil disturbance.

Cumulative Impacts

Table 2-5 lists past, present, and reasonably foreseeable future actions that may cumulatively impact native vegetation in the project area. The majority of these past, present, and future projects are transmission rebuild work within the existing ROW. Most of these projects will be in areas with existing development or infrastructure and will have similar impacts to vegetation and weeds as described above. Cumulative impacts of project activities would be negligible because the actions are diffused over a large geographic area and are short-duration.

3.9.2 No Action Alternative

Construction impacts under the No Action Alternative would not occur. Operational impacts of the No Action Alternative would be slightly greater than the Proposed Action, albeit still short-term and minor, because it would require more frequent future maintenance and therefore more potential for disturbance to vegetation and introduction of invasive weeds.

3.10 Visual Resources

Aesthetics and visual resources refer to the components of the environment as perceived through the visual sense only. Because a person's reaction and attachment to a given visual resource are subjective, visual changes inherently affect viewers differently. Accordingly, aesthetics and visual resource analysis is a systematic process to logically assess visible change in the physical environment and the anticipated viewer response to that change. The following describes the existing landscape character of the project area, existing views of the area from one on-the-ground vantage points (key observation point), the visual characteristics of the Proposed Action, and the landscape changes that would be associated with the construction and operation of the Proposed Action (as seen from the one vantage point).

The analysis of aesthetics and visual resources utilizes resource-specific qualitative and quantitative terminology. The following defines terms used within this analysis:

- **Key Observation Point (KOP):** One or a series of points on a transportation corridor or at a public/private use area, where the view of a proposed activity would be most revealing or sensitive.
- **Viewshed:** The landscape that can be directly seen under favorable atmospheric conditions, from a KOP or along a transportation corridor.
  - Foreground View: 0–1 mile.
  - Middleground View: 1–3 miles.
  - Background View: 3–5 miles.
- **Visual Quality:** The relative worth of the overall impression or appeal of an area created by the physical features of the landscape, such as natural features (landforms, vegetation, water, color, adjacent scenery, and scarcity), and built features (roads, buildings, railroads, agricultural patterns, and utility lines). These features create the distinguishable form, line, color, and texture of the landscape composition that can be judged for scenic quality using criteria such as contrast.

Within this analysis, visual quality at the KOP and other viewsheds are discussed and qualitatively rated as follows:

- High: Where the valued natural landscape character is intact with only minute if any visual deviations. The existing natural landscape character is expressed at the highest possible level.
- Moderate: Where the valued natural landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the natural landscape character being viewed.
- Low: Where the valued natural landscape character appears moderately to heavily altered. Visual deviations (human-made structures) primarily dominate the valued landscape character being viewed with their attributes such as size, shape, color, edge effect and pattern having overwhelmed the natural landscape being viewed.

- **Visual Contrast:** Opposition or unlikeness of different forms, lines, colors, or textures in a landscape. Generally, increased visual contrast within foreground distances would be more noticeable to viewers than increased visual contrast within middle-ground and background view distances.

3.10.1 Proposed Action

3.10.1.1 Affected Environment

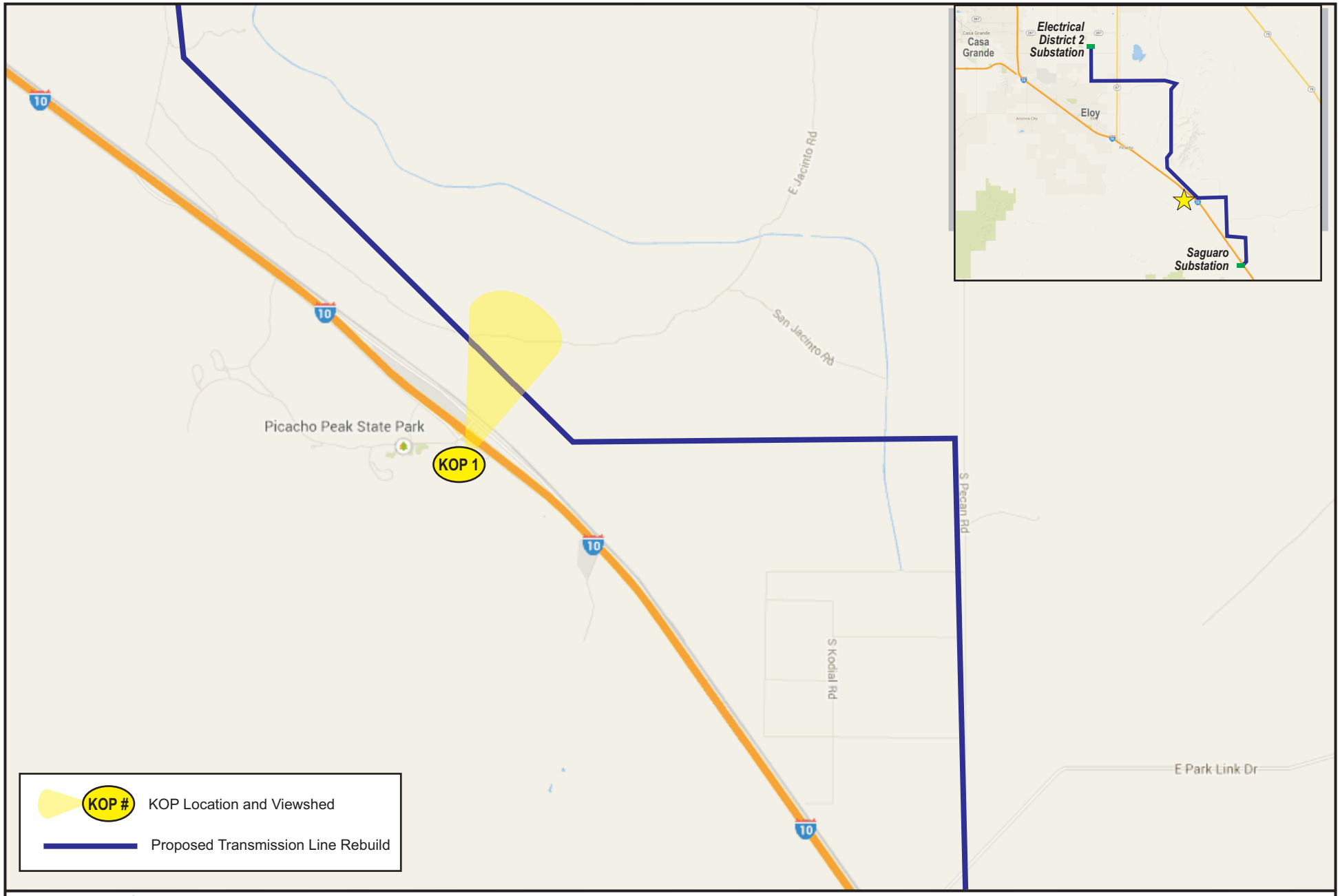
Key Observation Point

Due to the relatively flat topography along most of the project route, visibility of the transmission line ROW and existing infrastructure is greatest at foreground views. Where the route travels within the Picacho Mountains, some visibility from middleground views would also occur. Key receptors with exposure to the Proposed Action would include rural residences near the ED2 Substation, motorists on I-10 near the Picacho Peak, and visitors to the Picacho Peak State Park. KOP 1 represents the Picacho Peak State Park and motorists on I-10 where the line would be closest. Figure 3.10-1 (KOP 1) displays the location of the KOP and its representative viewshed. The viewshed from the rural residences is described qualitatively below.

Key Observation Point 1 (KOP 1) – View Looking Northeast from Picacho Peak State Park

KOP 1 is representative of views from the Picacho Peak State Park, a sensitive receptor and from I-10 where the largest number of viewers would see the Proposed Action while travelling along the road. Figure 3.10-2 depicts existing conditions at KOP 1. As shown, this KOP is from the Picacho Peak State Park at a distance of 4,800 feet from the nearest point of the ED2 to Saguaro No. 2 route. Views for motorists driving along the I-10 would be from 2,600 feet.

The visual quality of the KOP 1 viewshed is moderate to high. Visitors to the Picacho Peak State Park are provided panoramic views across a broad, flat desert basin with the Picacho Mountains and the Newman Peak in the background. The KOP 1 viewshed shows a representative view of the existing transmission corridor, which, due to the distance and color of the existing wood poles, is minimally visible from the park. The new steel poles would be slightly more



Western Area Power Administration

Figure 3.10-1
KOP 1 - Location and Viewshed

This page intentionally blank.

Existing Conditions

Simulation

Western AREA POWER ADMINISTRATION

Figure 3.10-2

KOP 1 -
Existing Conditions and Simulation

This page intentionally blank.

visible from the I-10 freeway than shown in KOP 1; however, the duration of the views would be brief as the span closest to the I-10 is less than 5 miles long and vehicles travel the I-10 at high speeds. In addition to existing transmission infrastructure, I-10 dominates the foreground viewshed from KOP1, with highway commercial signage and the existing off-ramp and structures.

Residential Area South of the ED2 Substation

The first mile of the existing line south of the ED2 Substation parallels two existing transmission lines and would be closest to rural residences (see Figure 3.10-3 for the existing setting from the corner of Eleven Mile Corner Road and Sunscape Way). This area has a built, pastoral setting. Approximately 20 residences would have immediate views of the Proposed Action. Existing fencing east of the existing line and the two existing transmission lines west of the Proposed Action partially obstruct views of the existing transmission lines from residences located both east and west of the ROW.

Adjacent Federal Land Management Agency Regulations

Bureau of Reclamation – Visual Resource Management System

The project route is located within a Reclamation easement. With respect to scenic values or visual resources of public lands under Reclamation jurisdiction, no applicable plans or regulations were identified beyond the use of photography to document resource conditions in NEPA documents (BOR, 2003).

Bureau of Land Management – Visual Resource Management System

The nearest BLM lands are located approximately 0.75 miles east of the project area (refer to Figure 2-2). By law, the BLM is responsible for ensuring that the scenic values of public lands under its jurisdiction are considered if a project may have adverse visual impacts to these lands. BLM accomplishes this through its Visual Resource Management (VRM) system (BLM, 2010). BLM's VRM system provides a way to inventory visual resources and manage those resources. Through the Visual Resources Inventory, BLM identifies the visual resources of a given area and, based upon specific standards, assigns each area to an inventory class (see BLM Manual H-8410-1).

BLM lands nearest to the project area are categorized as VRI Class II and Class IV (BLM, 2013), which are described as follows (BLM, 1986):

- **Class II Objective:** To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- **Class IV Objective:** To provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high.

3.10.1.2 Environmental Consequences

Construction impacts on visual resources for the Proposed Action would be short-term in duration and result from the presence and visual intrusion of construction activities and equipment

at work locations within the ROW and within the ED2 Substation and staging area. Construction impacts on visual resources would also result from vegetation clearance along existing access roads as needed. Vehicles, heavy equipment, project components, and workers would be visible during access road clearing, structure removal, structure erection, conductor stringing, and site/ ROW cleanup and restoration. Equipment would be used at the staging area, transmission structure construction sites, and conductor pull locations. Vegetation clearing would occur at these locations and access roads, as necessary.

Construction equipment and activities would primarily be visible to those in close proximity to the construction sites including rural residents along the first mile of the route heading south from the ED2 Substation, travelers on public roads, and more distantly from the Picacho Peak State Park. View durations from these vantage points would vary depending on location and type of work activity. Views of construction activities would range from momentary to extended views when work areas and activities remain in the field of view of travelers and residents. Construction activities would be transient and for a limited duration as construction progresses in a linear fashion along the route. Affected viewers would be aware of the temporary and short-term nature of construction activities, which could decrease their sensitivity. The Picacho Peak State Park closes annually from the end of May to mid-September. Therefore, the potential viewers of the construction activities from the park would be limited further.

Vegetation clearance and minor land-scarring from the temporary staging area, pull sites, clearing existing access roads, and transmission structure locations may be longer lasting due to the arid environment where vegetation recruitment and growth are slow. Vegetation removal is a short-term impact as regrowth would occur. Views of linear land scars or cleared access roads may introduce a temporary visual change and contrast by causing unnatural non-vegetative lines and soil color contrast from newly exposed soils. While these activities may create a short-term increase to the contrast with respect to the surrounding landscape, they would diminish over time.

Long-term visual change would result from operation of the Proposed Action associated with the removal of an existing 115-kV transmission line on wooden poles and the construction of a new 115-kV transmission line on steel poles within the same ROW.

Figure 3.10-2 depicts a visual simulation of the Proposed Action from KOP 1, which has a base-line visual quality of moderate to high. As shown, the new 115-kV structures and conductor would be more visible from I-10 and from the Picacho Peak State Park. However, because the poles would be weathered steel and the line would be over 4,800 feet from the park, the rebuild would result in a long-term, negligible to minor, adverse visual contrast when compared with the existing line. While the new conductor would be more visible against the rock back-ground, they would fade over time and the weathered steel poles would not cause view blockage of the Picacho Mountains background or distant topography. As a result, visual con-trast of the Proposed Action is minor. Existing transmission infrastructure and the I-10 trans-portation corridor substantially influence the viewing experience and viewer expectations at KOP 1. In summary, the long-term visual contrast is minor at KOP 1 in the context of the existing landscape's visual sensitivity. Upon completion of the Proposed Action, the KOP 1 viewshed visual quality would remain moderate to high.

Western
AREA POWER
ADMINISTRATION

Figure 3.10-3

Existing Residences Along Transmission ROW, Eleven Mile Corner Road and Sunscape Way

This page intentionally blank.

The Proposed Action would also remove existing H-frame wooden poles near residences south of the ED2 Substation and replace the line with new weathered steel transmission poles in the same ROW. The Proposed Action would include new insulators and other ancillary equipment such as conductor wire, overhead ground wire, and hardware that initially would be more visible than the existing equipment due to the new (more reflective) surfaces. However, the increased visibility of these features would be short-term and diminish over time as weathering of the transmission line components turn to a less reflective condition.

The existing visual quality of the viewshed from the residences south of the ED2 Substation (see Figure 3.10-3) is low to moderate. The new structures and conductor would cause a moderate increase in visual contrast resulting from transmission structure prominence, but would be located adjacent to two other existing transmission lines. Foreground views of the rebuild structures would be similar in nature to the existing lines, but due to the increased height and color/material of the conductor, the Proposed Action features would appear slightly more dominant in comparison to the removed aged wood poles, conductor, and other existing background transmission infrastructure and distant landscape features (primarily the existing residences). However, visual contrast with the background would be minor because structures are vertical with minimal bulk, and would be adjacent to an existing fence to the east and to existing transmission lines to the west. The long-term visual contrast is minor in the context of the existing landscape's visual sensitivity.

Cumulative Impacts

Table 2-4 lists past, present, and future projects that may cumulatively contribute to overall changes to viewsheds of the Proposed Action area. Very few of these projects would occur in close proximity to the KOP 1 viewshed. The majority include additional transmission or rebuild work within existing Western and Tucson Electric Power ROWs in the Eloy area, as well as within and near the ED2 Substation. Depending upon certain site-specific features (height, color, location, etc.), these projects will intensify the industrial character of the existing utility corridor by increasing the amount and appearance of infrastructure. Also, the Reclamation Rehabilitation San Carlos Irrigation Project Facilities identified in Table 2-5 will cumulatively increase the appearance of water delivery facilities crossed by the Proposed Action. While these cumulative actions would intensify and increase the overall visual prominence of infrastructure within the existing corridor and industrial character of the I-10 viewsheds, long-term cumulative visual quality along the Proposed Action corridor (including KOP 1) is low to moderate given the existing nature of the corridor. The cumulative change to visual contrast is minor, as cumulative development would occur adjacent to existing and similar infrastructure that appears throughout viewsheds of the area.

3.10.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be completed and the existing ED2 to Saguaro No. 2 115-kV transmission line would remain unchanged. This would result in no temporary construction impacts to visual resources. Temporary operational visual impacts would increase slightly over the Proposed Action because of more frequent future maintenance needs for the existing wood pole structures.

3.11 Water Quality and Floodplains

3.11.1 Proposed Action

3.11.1.1 Affected Environment

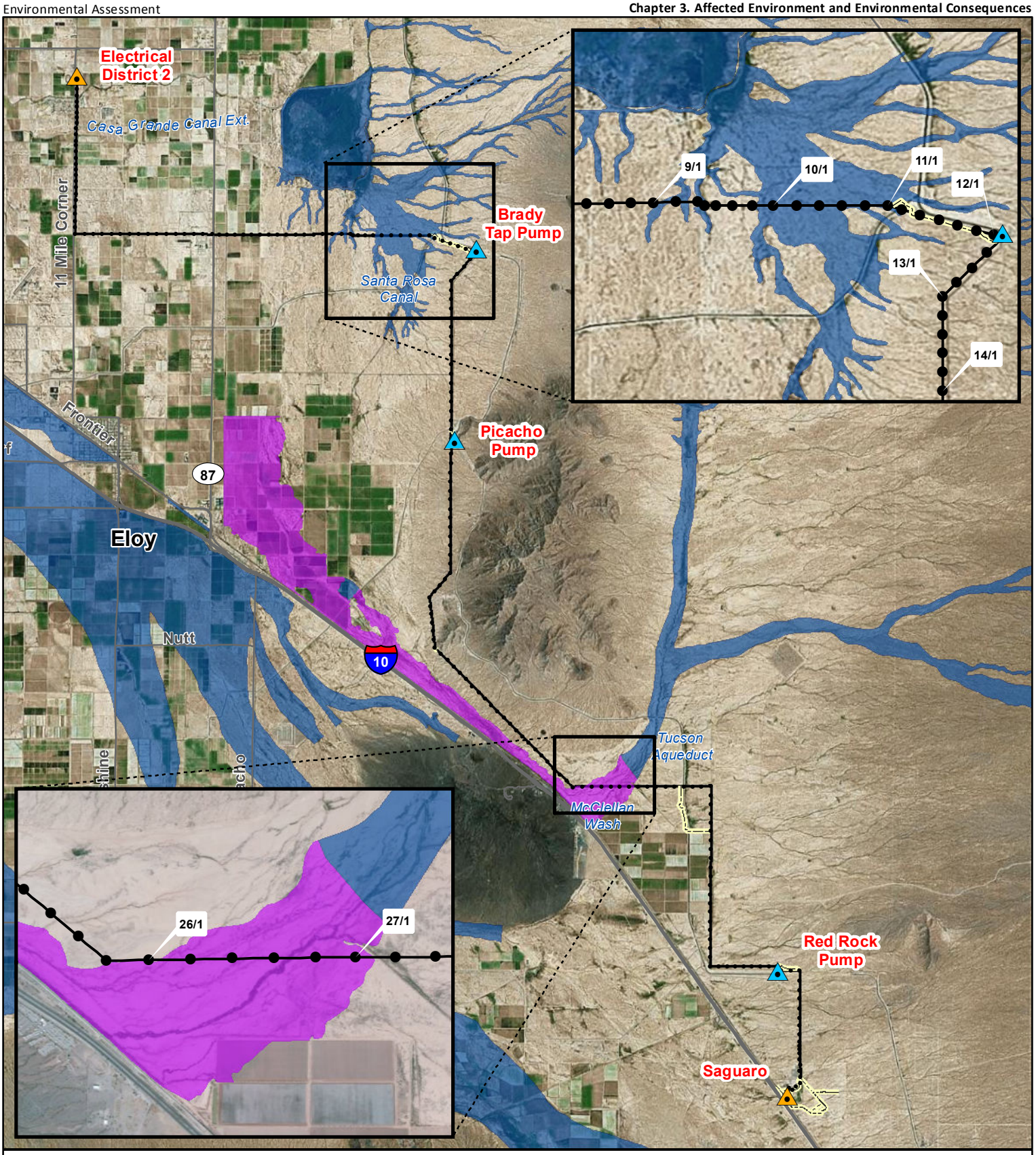
The Proposed Action would occur within the Pinal and Tucson Active Management Area (AMA) Planning Areas, as defined by the Arizona Department of Water Resources. The AMAs coincide with the underlying groundwater basins and were established pursuant to the 1980 Groundwater Management Act (ADWR, 2010). The Proposed Action straddles the boundary of the Middle Gila and Lower Santa Cruz surface water Subbasins, as defined by the USGS Watershed Boundary Dataset. Within these two Subbasins, the Proposed Action traverses four watersheds, including:

- Brady Wash-Picacho Reservoir Watershed,
- Lower McClellan Wash-Gila River Watershed,
- Santa Cruz River-North Branch Santa Cruz Wash Watershed, and
- Upper McClellan Wash Watershed (USGS, 2014).

The general topography of the project area includes the Santa Cruz Flats within the Sonoran Desert, which lie at approximately 1,640 feet above mean sea level (amsl), as well as the foothills of the Picacho Mountains, which rise to over 4,429 feet amsl to the east of the project area. Both the Santa Cruz Flats and the foothills of the Picacho Mountains are traversed by numerous ephemeral desert washes.

Average annual maximum temperatures occur in the summer months and range between 70 and 90 degrees Fahrenheit. Average annual minimum temperatures occur in the winter months and range between 40 and 55 degrees Fahrenheit. Average annual precipitation in the project area ranges between eight and 12 inches. Average annual runoff in the area is approximately 0.1 inches. (ADWR, 2010)

Floodways and Floodplains. Data for flood hazards in the project area was obtained from the National Flood Hazard Layer, which is updated monthly and incorporates all Flood Insurance Rate Map databases as well as any Letters of Map Revision. Areas subject to inundation by the one percent annual chance flood event are called Special Flood Hazard Areas (SFHAs) and are classified into several different zones. The Proposed Action crosses a Zone A SFHA associated with several small streams that leave the Picacho Mountains and flow towards the Picacho Reservoir. Zone A is an approximate delineation of the 100-year floodplain that is not based on detailed study and does not have base flood elevations determined. Under the Proposed Action, six new steel poles would replace the existing 18 wood poles within the Zone A SFHA near Picacho Reservoir (see Figure 3.11-1). The Proposed Action also crosses a Zone AE floodway associated with McClellan Wash northeast of I-10 near Picacho Peak State Park. Under the Proposed Action, five new steel poles would replace the existing 14 wood poles within the Zone AE SFHA that is associated with McClellan Wash. Zone AE is a channel and adjacent floodplain that has been determined to be subject to inundation by the one percent annual chance flood event based on detailed methods. For both Zone A and Zone AE, mandatory flood insurance purchase requirements and floodplain management standards apply. (FEMA, 2014)



Western Area Power Administration

1:180,000

0 1.5 3 Miles

Source: WAPA, Aspen EG, ESRI

- Proposed Structures*
- Pumping Plant - Central Arizona Project
- Western Substation
- Access Roads
- Transmission Lines
- County Boundary
- 100-year floodplain, detailed study
- 100-year floodplain, Zone A approximate

* Based on engineering, does not represent existing poles.

Figure 3.11-1

Proposed Action Poles Within Floodplains

This page intentionally blank.

Drainages. In addition to numerous unnamed canals and ephemeral streams and washes, several named drainages run near the project area, including:

- the Gila River, which flows from the east to the west, approximately 10 miles north of the Proposed Action;
- the Santa Cruz River, which flows from the southeast to the northwest, approximately 6 miles southwest of the Proposed Action;
- the Casa Grande Canal and the Florence–Casa Grande Extension Canal crossed by the Proposed Action near the northern portion;
- McClelland Wash and Suizo Wash near the southern portion of the Proposed Action; and
- several segments of the CAP that parallel and cross the Proposed Action.

Surface Water Quality. No waterbodies (streams or lakes) within the project area are listed on the Clean Water Act 303d list of impaired and threatened waters that have been identified and reported to the EPA. The nearest impaired waterbody is a segment of the Gila River, approximately 33 miles northeast of the Proposed Action. (ADEQ, 2014)

Waters of the United States including Wetlands. Aspen conducted an investigation of jurisdictional waters within the project area in August 2014 to determine the extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the ADEQ; please refer to the Jurisdictional Waters/Wetlands Delineation Report for a detailed discussion of the methods and results. There are no mapped hydric soils within the project area, and no portion of the project area was found to support wetlands. Numerous desert washes run through the project area and were mapped as jurisdictional non-wetland "waters of the United States." These jurisdictional non-wetland waters occupy a total of approximately 9.9 acres within the project area.

Groundwater. The project area is underlain by two groundwater sub-basins: the Eloy Subbasin within the Pinal AMA and the Avra Valley Subbasin within the Tucson AMA. Near the project area, these two Subbasins are roughly divided by the Picacho Mountains.

Productive groundwater-bearing units in the Eloy Subbasin consist of unconsolidated sands, gravels, silts, and clays that originated as alluvial deposits from the historic Gila and Santa Cruz rivers. Agricultural water use has depleted much of the upper alluvial aquifer. Recharge for the Subbasin comes primarily from underflow and infiltration along the Gila and Santa Cruz Rivers, and to a lesser extent from mountain fronts. Approximately 22 million acre-feet (maf) of groundwater is in storage to a depth of 1,000 feet below land surface (bls). Well yields of 500 to 2,000 gallons per minute (gpm) are common. Depth to groundwater ranges from 53 feet bls in the northeast of the sub-basin to more than 400 feet bls near Picacho. Drinking water standards for concentrations of fluoride, arsenic, nitrates, and other constituents have been exceeded in wells throughout the sub-basin. (ADWR, 2010)

The Avra Valley Subbasin is divided into upper and lower alluvial units. The upper unit is composed of gravel and silt and ranges in thickness from less than 100 feet to more than 1,000 feet; it is the primary water producer in the sub-basin. The lower unit contains gravel and conglomerates near the edges of the valley, transitioning to silts and mudstones near the center of the

Subbasin. Groundwater flows from the south to the north. Pre-development groundwater storage is estimated at between 17 and 24 million acre-feet to a depth of 1,000 feet bls. Well yields of 1,000 gpm are common. Drinking water standards for concentrations of volatile organic compounds, arsenic, fluoride, metals, nitrate, sulfate, and total dissolved solids have been measured in wells throughout the sub-basin. (ADWR, 2010)

3.11.1.2 Environmental Consequences

The Proposed Action would incorporate BMPs, including Western's Construction Standard 13, which is summarized below for water resource standards. The BMPs would avoid or minimize any impacts to floodplains and water quality through ground disturbance and construction activities.

Table 3.11-1. Western's Construction Standard 13 – Water Resources

Section	Subsection(s)	Summary of How Requirements will Reduce Impacts
13.1 – Contractor Furnished Data	12 – Water Pollution Permits	Water pollution permits will be submitted to the Contract Officer Representative 14 days prior to the start of work, ensuring that construction activities are approved under applicable water regulations.
13.3 – Landscape Preservation	2 – Construction Roads	The surfaces of roads no longer needed for project access will be scarified to facilitate revegetation and proper drainage, thus preventing erosion from the road surface or alignment.
13.10 – Pollutant Spill Prevention, Notification, and Cleanup	1 – General	Measures will be identified to prevent spills of pollutants and respond appropriately in the case of a spill; this will protect surface water and groundwater quality by reducing the risk that such pollutants could migrate to a drainage or to shallow groundwater.
13.16 – Prevention of Water Pollution	1 – General	Requires that surface water and groundwater are protected in compliance with applicable laws, and that waters are not obstructed or impaired unless permitted.
	2 – Permits	Requires that an NPDES permit (including SWPPP) and a dewatering permit (as applicable) are obtained from the appropriate agencies and that copies of approved permits and plans are submitted to Contract Officer Representative 14 days prior to the start of work, ensuring that construction occurs in compliance with measures to protect surface waters (NPDES) and groundwater (dewatering).
	3 – Excavated Material and Other Contaminant Sources	Excavated materials will not be stockpiled near waterways, and runoff from stockpiled and stored materials (including equipment and chemicals) will be controlled in order to protect water quality.
	4 – Management of Waste Concrete or Washing of Concrete Trucks	Ensures that concrete waste will be appropriately handled and disposed of in order to protect surface water and groundwater quality from such materials migrating to or being disposed of within them.
	5 – Stream Crossings	States that crossing of any stream or other waterway will occur in compliance with existing laws, and approval of applicable landowners and permitting agencies, thereby protecting waterways from being inappropriately altered or diverted.

Floodways and Floodplains. Construction and operation of the Proposed Action would have a negligible impact on floodways and floodplains resulting from soil disturbance associated with tower site preparation, tower removal and installation, and access road grading and improvement. The Proposed Action would place new structures outside of floodplains where possible. The Proposed Action would place an estimated 11 poles in areas where floodplains cannot be avoided. Western would engineer the transmission towers to withstand a 100-year

flood. Additionally, new structures would replace 32 existing structures and would be located and designed so as to not impede flood flows. No floodwater would be blocked, nor would floodwater be diverted outside of an existing floodplain.

Drainages. Construction and operation of the Proposed Action would not impact drainages within the project area. The Proposed Action would cross the Casa Grande Canal and the Florence–Casa Grande Extension Canal in the northern portion of the project area, as well as the CAP several times throughout the project area. No structures would be placed within these waterways or the McClellan Wash, and all necessary encroachment permits would be acquired from the appropriate authorities, including the BIA, Reclamation, and the USACE. In addition to the named canals, the Proposed Action would cross numerous ephemeral desert washes. Structures would be placed outside of stream channels and drainages where possible, and would be located and engineered so as to not block or divert the natural drainage pattern and to withstand damage due to flowing water.

Surface Water Quality. Construction and operation of the Proposed Action would not impact water quality within the project area. In conformance with Western's Construction Standard 13 (summarized above), Western or its contractor would stabilize and restore to their natural state areas of soil disturbance resulting from activities such as leveling and excavation of the transmission tower sites, grading, and improvement of existing access roads after completion of construction activities. Therefore, the soil disturbance would not lead to increased erosion and sedimentation resulting from water quality degradation. Stockpiles of excavated material would be protected from erosion, and protective measures would be taken to prevent and/or quickly respond to leaks or accidental spills of hazardous materials reducing the potential for hazardous materials such as fuel, engine oil, and lubricants or herbicides to be leaked or accidentally spilled onto the ground or into waterways during construction and/or operation of the Proposed Action. Western would obtain all required permits prior to commencement of construction activities in order to ensure protection of water quality within the project area.

Waters of the United States including Wetlands. Soil disturbance associated with tower site preparation, tower removal and installation, and access road grading and improvement would impact waters of the United States. The Proposed Action would not include the construction of any new drainage crossings. Impacts to any of the mapped Waters of the U.S. in the project area are expected to meet the conditions of a Nationwide Permit No. 3 which allows for repair, rehabilitation, or replacement of any previously authorized structure or fill activity. Drainages that are compliant with the conditions of NWP No. 3 would be conditionally certified under Section 401 of the CWA from the ADEQ. Please see Appendix B for a full discussion of potential impacts to waters of the United States as well as plans to obtain all required permits prior to commencement of construction activities.

Groundwater. No impacts to groundwater resources would occur due to construction or operation of the Proposed Action. Depth to groundwater in the project area is greater than 100 feet (ADWR, 2010). Excavation of tower footings and installation of new towers are expected to be 10 to 20 feet deep so would not require dewatering and would not impact groundwater resources. Any construction-related water (such as for dust suppression or concrete mixing) would be purchased through an appropriate water provider or authority. Groundwater resources would not be depleted by construction or operation of the Proposed Action. Western

or its contractor would quickly contain and remove any leaks or accidental spills of hazardous materials and no hazardous materials would enter the groundwater.

Cumulative Impacts

The list of cumulative projects is presented in Table 2-5. It is reasonably anticipated that industry standard BMPs would be applied to other projects in the area, to minimize or avoid potential water resources impacts. However, the Proposed Action would not result in direct adverse impacts to floodways and floodplains, and would therefore also not have the potential to combine with similar impacts of other projects, and no cumulative effects would occur.

Although the Proposed Action would be near or cross existing canals and the CAP, it would not impacts drainages during construction or operation and therefore would not have the potential to combine with similar impacts of other projects. Compliance with existing laws and regulations as well as implementation of the Western Construction Standards 13 would ensure that potential water quality impacts of the Proposed Action would not have the potential to combine with water quality impacts of other projects. Because similar water quality impacts of the Proposed Action and other actions within the project area would not have the potential to combine in location or context. No cumulative impacts to water quality and floodplains would occur.

3.11.2 No Action Alternative

Under the No Action Alternative, Western would continue to operate and maintain the ED2 to Saguaro No. 2 115-kV transmission line in its existing state. The affected environment is the same as described above for the Proposed Action because they would both occur within the same ROW. Existing poles would not be removed or replaced except to repair damaged structures. A total of 32 existing wood poles would remain within 100-year floodplains near Picacho Reservoir and Picacho Peak State Park. Access roads would require maintenance and improvement in order to retain access to the transmission line corridor. Grading and improvement of existing access roads would cause soil disturbance, and could potentially impact water resources through erosion and sedimentation. Just as under the Proposed Action, Western or its contractor would stabilize areas of soil disturbance after completion of grading and road improvement activities, would protect stockpiles of excavated material from erosion, and would take protective measures to prevent and/or quickly respond to leaks or accidental spills of hazardous materials. Western would also obtain all required permits prior to the commencement of grading and road improvement activities in order to ensure protection of water quality within the project area. Therefore, implementation of the No Action Alternative would not impact floodplains or water quality within the project area.

3.12 Wildlife

Aspen biologists visited the project area from July 28 through July 30, 2014 to evaluate biological resources. The field visit included reconnaissance-level surveys for plants and animals within the project area and a habitat assessment for special-status species. The BE (summarized in Appendix B) includes a list of all plant and animal species identified in the field.

3.12.1 Proposed Action

3.12.1.1 Affected Environment

Aspen biologists observed 37 wildlife species during the survey, including four mammals, five reptiles, and 28 birds. Wildlife habitat in the project area consists largely of intact desert scrub mapped as Sonora-Mojave Creosotebush-White Bursage Desert Scrub, Sonora-Mojave Mixed Salt Desert Scrub, Undifferentiated Barren Land, and Sonoran Paloverde-Mixed Cacti Desert Scrub. There are several areas mapped as North American Warm Desert Riparian Mesquite Bosque. The project area also has several land-use areas mapped as Cultivated Cropland and Developed. There are a few portions of the project area that cross irrigation canals and are mapped as Open Water. All vegetation and cover types are described in further detail in the BE (Appendix B).

The entire project area provides habitat for common wildlife species such as coyote (*Canis latrans*), side-blotched lizard (*Uta stansburiana*), tiger whiptail (*Aspidoscelis tigris*), common raven, non-native European starling, and great-tailed grackle. The desert scrub habitats provide suitable habitat for many species of wildlife such as zebra-tailed lizard (*Callisaurus draconoides*), desert iguana (*Dipsosaurus dorsalis*), cottontail (*Sylvilagus* sp.), round-tailed ground squirrel (*Xerospermophilus tereticaudus*), Gambel's quail, and white-winged dove. The North American Warm Desert Riparian Mesquite Bosque provides habitat for numerous additional wildlife species such as Arizona Bell's vireo and black-tailed gnatcatcher. Croplands provide habitat for additional species, such as red-winged blackbird (*Agelaius phoeniceus*) and yellow-headed blackbird (*Xanthocephalus xanthocephalus*).

3.12.1.2 Environmental Consequences

Western or its contractor would implement resource protection measures as part of the Proposed Action. The resource protection measures applicable to wildlife are summarized below with full text of the measures presented in Table 2-4.

- AQ-1 limits mechanical disturbance of previously undisturbed areas.
- AQ-2 limits the amount of water applied to dirt roads and construction areas to ensure wildlife are not drawn into the area.
- AQ-3 requires a 25 mph speed limit on paved roads and a 10 mph speed limit on unpaved areas.
- BIO-1 requires pre-construction clearance surveys for Sonoran Desert tortoise, burrowing owl, and other nesting birds during the nesting season.
- BIO-2 requires a qualified biologist to be present during any vegetation clearing or soil disturbance in Sonoran Desert tortoise habitat.
- BIO-3 requires that project activities during the lesser long-nosed bat activity season will not take place at night, or within 30 minutes of sunset. It also requires minimizing cutting or removal of saguaros to the extent practicable.

- BIO-4 requires that helicopter activities avoid the Picacho Mountains during golden eagle nesting season and the Picacho Reservoir during Yuma Ridgeway's (clapper) rail and yellow-billed cuckoo nesting seasons.
- BIO-5 requires worker training on protection measures for biological resources, including threatened and endangered species.
- BIO-6 prohibits pets in the project area. Workers are not permitted to interact with wildlife, except to safely remove animals from work areas.
- BIO-7 requires containment and proper offsite disposal of all trash, refuse, concrete, and other materials.
- BIO-8 requires covering water storage tanks and foundation excavations to prevent wildlife from becoming trapped.
- BIO-9 requires that new transmission lines conform to APLIC design guidelines.

Direct, long-term adverse impacts to wildlife would be limited to habitat loss and some animals being injured or killed during construction activities. Vegetation clearing and ground disturbance activities would likely result in adverse, short-term displacement of wildlife. Most of the species likely to be displaced, injured, or killed are common species and widely distributed. All impacts to wildlife habitat would be in locations where there are extensive similar habitats in the surrounding area that wildlife would be able to utilize when moving away from the project area. Operation and maintenance of the Proposed Action would cause occasional adverse, short-term impacts to wildlife.

Wildlife habitat loss resulting from vegetation clearing would occur at each work site, new spur roads, areas adjacent to existing access roads, and conductor pulling and tensioning sites. At each work site, there would be a direct, long-term adverse impact from the structure foundations and an additional area at the base of each structure that would be maintained for future access of up to 0.1 acres. This would result in an estimated loss of 19 acres. The Proposed Action would result in an additional 0.15 acres of short-term adverse impacts at each new structure location, for an estimated temporary loss of 28 acres. Impacts from new structures, conductor pulling, and tensioning sites would be direct and long-term because although many of these areas would be restored or reseeded at the end of project construction, the vegetation is not likely to return to pre-project conditions. Construction noise and disturbance (e.g., vehicles, compressors, welders, generators, helicopters, and implosive sleeves) may cause wildlife to temporarily leave the area, but these impacts would be short-term and there is extensive habitat in the surrounding area that wildlife would be able to utilize.

Bird collision and electrocution risk is discussed above in Section 3.6 (Migratory Birds). The Proposed Action would conform to APLIC design guidelines and the APP to minimize the potential electrocution risk (see Resource Protection Measure BIO-9). Project impacts to listed threatened or endangered wildlife, species proposed for listing or candidates for listing, as well as bald and golden eagles are addressed in Section 3.9 (Threatened and Endangered Species).

Construction of the Proposed Action will remove a limited amount of habitat and some of the common wildlife species that use the habitat. These impacts will be limited primarily to areas

that were previously impacted by the construction and maintenance of the existing power line alignment. The Proposed Action is not expected to result in the loss of large patches of habitat or completely remove any species from the ecosystem. Therefore, the Proposed Action would have negligible adverse impacts to the biodiversity of the project area. It is not expected to create barriers to the wildlife that could disrupt gene flow between populations of a particular species and the project duration is so short-term that it is not expected to have any direct or indirect adverse impacts to species genetic diversity.

Operation and maintenance of the Proposed Action would cause occasional adverse, short-term impacts to wildlife species such as temporary displacement from feeding or congregating areas. Vegetation treatment, including use of low-toxicity herbicides, would result in minor impacts to wildlife. These impacts would be similar in nature to the existing operation and maintenance activities.

Cumulative Impacts

Table 2-4 lists past, present, and reasonably foreseeable future actions that may cumulatively impact wildlife in the project area. The majority of these past, present, and future projects are transmission rebuild work within the existing ROW. Most of these projects would be in areas with existing development or infrastructure and would have similar impacts to wildlife as those described above. Cumulative impacts of project activities would be negligible because the actions would be diffused over a large geographic area and would be short in duration.

3.12.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be completed and the existing ED2 to Saguaro No. 2 115-kV transmission line would remain unchanged. The No Action Alternative would result in no construction-related direct or indirect impacts to wildlife or wildlife habitat. Operations and maintenance impacts would increase slightly over the Proposed Action because of more frequent future maintenance needs for the existing wood pole structures. The impacts would be similar to those described above for operations and maintenance.

Chapter 4
Applicable Law, Regulations, and Other Requirements

Table 4-1 summarizes applicable laws and regulations as they pertain to the project.

Table 4-1. Summary of Applicable Federal Laws, Regulations, and Guidelines

Law/Regulation	Applicability
American Indian Religious Freedom Act of 1978 (42 USC 1996)	Archaeological resources and tribal consultation
Antiquities Act of 1906 (16 USC 431 et seq.)	Archaeological resources and tribal consultation
Archaeological Resources Protection Act, as amended (ARPA; 16 USC 470aa et seq.)	Archaeological resources and tribal consultation
Arizona Native Plant Law (ARS 3-901 et seq.)	Protects native plants and regulates removal of any plants from private and public land
Bald and Golden Eagle Protection Act (16 USC Section 668)	Protects bald eagles and golden eagles.
Duty to report discoveries; disposition of discoveries; definitions (ARS 41-844)	Archaeological resources and tribal consultation on state land
Canal Act of 1890 (43 USC 945)	Federal canals
Clean Air Act, as amended (42 USC 7401 et seq.)	Air pollution prevention and control Emission levels of regulated pollutants
Clean Water Act (CWA; Sections 401, 402, 404; 33 USC 1251 et seq.)	Surface water quality; discharge or dredge or fill materials into jurisdictional waters of the U.S.
Consultation and Coordination with Indian Tribal Governments (EO 13175)	Tribal consultation
Endangered Species Act (ESA; 16 USC 1531 et seq.)	Threatened and endangered species, and critical habitat
Energy-related Projects (EO13212)	Energy-related projects
Environmental Justice (EO 12898)	Low income communities and minority communities
Federal Compliance with Pollution Control Standards (EO 12088)	Prevention, control, and abatement of environmental pollution
Floodplain Management (42 USC 4321; EO 11988)	Impacts to floodplains
Indian Sacred Sites (EO 13007)	Protection and preservation of Tribal religious practices
Migratory Bird Treaty Act (MBTA; 16 USC 703-711; EO 13186)	Protection of selected bird species including active nests (nests with eggs or chicks)
National Environmental Policy Act (NEPA) (42 USC 4321 et seq.; CEQ, 40 CFR 1500-1508)	Federal actions
Protection and enhancement of the cultural environment (EO 11593)	Preserving, restoring and maintaining the historic and cultural environment of the Nation
National Historic Preservation Act of 1966, as amended (NHPA; 16 USC 470 et seq.; 36 CFR 800)	Historic and traditional cultural properties

Table 4-1. Summary of Applicable Federal Laws, Regulations, and Guidelines

Law/Regulation	Applicability
Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; 25 USC 3001-30013 et seq.; 43 CFR 10)	Archaeological resources and tribal consultation
Noise Control Act of 1972 (NCA; 42 USC 4901 et seq.)	Noise protection
Noxious Weeds and Invasive Species (EO 13112)	Management of noxious weeds
Occupational Safety and Health Act of 1970 (OSHA; 29 USC 651 et seq.)	Health and safety standards
Pollution Prevention Act of 1990 (PPA; 42 USC 13101 et seq.)	Reducing potential for pollution sources
Protection of Wetlands (42 USC 4321; EO 11990)	Impacts to wetlands
U.S. Department of Energy, NEPA implementing procedures (10 CFR 1021)	NEPA compliance for Department of Energy actions
CEQ – Council on Environmental Quality CFR – Code of Federal Regulations USC – United States Code	EO – Executive Order et seq. – and the following FR – Federal Register	ARS – Arizona Revised Statutes

Table 4-2 summarizes permits, licenses and entitlements required for the project.

Table 4-2. Summary of Permits and Authorizations

Permitting Agency	Permit / Authorization
Arizona Department of Environmental Quality	Arizona Pollutant Discharge Elimination System Permit for construction activities
Arizona State Historic Preservation Officer	Section 106 compliance; review potential disturbance to cultural resources on State Trust Land
Arizona State Land Department	Temporary use permit for construction adjacent to existing ROW on State Trust Land
Arizona State Museum	State archaeological permits
Bureau of Indian Affairs	Encroachment permit for crossing of Casa Grande Canal and Florence–Casa Grande Extension Canal
Bureau of Reclamation	Easement or right-of-way use authorization for construction, operation, and maintenance of transmission line
U.S. Fish and Wildlife Service	ESA and BGEPA compliance

Chapter 5
Consultation and Coordination

Western invited the U.S. Army Corps of Engineers, U.S. Bureau of Indian Affairs San Carlos Irrigation Project, and U.S. Bureau of Reclamation to be cooperating agencies for this project. The U.S. Bureau of Indian Affairs and U.S. Bureau of Reclamation accepted the invitation. These agencies have been involved throughout the NEPA process, including scoping and EA development. Refer to Chapter 6 for a list of agency staff that contributed to and were consulted in the preparation of this EA. Appendix E presents copies of Western's official correspondence with affected agencies.

NHPA Section 106 Consultation

Consultation is ongoing with the contacts listed in Appendix F. A summary of Western's consultation efforts under Section 106 of the National Historic Preservation Act is presented in Table 5-1.

Table 5-1. Consultation Summary

Date	Description
3-10-14	Scoping letters were sent announcing the proposal to rebuild and upgrade the ED2-SGR2 No. 2 115-kV transmission line.
3-17-14	San Carlos Apache defer further consultation efforts to the Four Southern Tribes (Gila River Indian Community, Salt River Pima-Maricopa Indian Community, Ak-Chin Indian Community, and the Tohono O'odham Nation).
3-25-14	Hopi Tribe of Arizona requests copy of the forthcoming inventory report to aid in the consultation process.
3-31-14	Gila River Indian Community requests copy of the forthcoming inventory report to aid in the consultation process.
5-27-14	Consultation letters sent describing the results of the ROW inventory, seeking concurrence on eligibility determinations, and informing parties that effects determinations will be made after additional inventory efforts were completed for access roads, pulling stations, and additional site documentation.
6-5-14	Hopi Tribe of Arizona requests additional consultation if Western determines the project will have an adverse effect on any historic properties.
6-5-14	Arizona State Historic Preservation Office concurs with Western's eligibility determinations.
6-9-14	Gila River Indian Community concurs with Western's eligibility determinations.
6-20-14	San Carlos Irrigation Project concurs with Western's eligibility determinations.
10-3-14	Administrative Draft Environmental Assessment sent out to cooperating agencies for review.
10-6-14	Bureau of Reclamation notifies Western (via email) it has more current information that may affect the eligibility determinations for some cultural resources.
10-14-14	Western verbally and via email requests copy of most current documentation pertaining to eligibility determinations from Bureau of Reclamation. The Bureau responds by stating the information is still undergoing review by the State Historic Preservation Office.
12-2-14	GRIC responds to receipt of draft Environmental Assessment asking that Western remove the reference to lack of Traditional Cultural Properties within the project area, and that a NAGPRA Plan of Action and Arizona State Burial Agreement with the Arizona State Museum be prepared and included in the consultation materials associated with the Historic Properties Treatment Plan.

Table 5-1. Consultation Summary

Date	Description
12-11-14	Bureau of Reclamation provides Western with concordance table showing their eligibility determinations versus Western's; all cases of discrepancy have Western erring on the side of eligible; Western will stand by their original eligibility determinations.
12-19-14	Consultation letters sent describing results of additional inventory, seeking concurrence on eligibility determinations, and finding of Adverse Effect for the project.
1-5-15	Hopi Tribe of Arizona expresses desire to continue consultation but declines to participate in the proposed Memorandum of Agreement (MOA), deferring instead to the SHPO and other interested tribes.
1-14-15	San Carlos Irrigation Project concurs with 12-19-14 mailing regarding additional inventory eligibility determinations and finding of Adverse Effect.
1-15-15	Consultation letters sent inviting interested parties to enter into an MOA to mitigate adverse effects of project on cultural resources; draft MOA enclosed with this mailing.
1-21-15	San Carlos Irrigation Project requests a phone call to discuss proposed MOA.
1-26-15	Western, San Carlos Irrigation Project and Bureau of Indian Affairs have a conference call to discuss the proposed MOA. BIA defers to SCIP on this project and requests not to be included as a signatory. Various changes to legal language are requested.
1-27-15	Arizona State Historic Preservation Office requests (via phone call) a different format be used for the proposed MOA, provides a template to this effect.
1-28-15	Gila River Indian Community concurs with finding of Adverse Effect and notifies Western that the rock art component of AZ AA:3:18 (ASM) is a Traditional Cultural Property and that the proposed project is within the ancestral lands of the Four Southern Tribes.
2-9-15	Western sends consultation package to Salt River Pima-Maricopa Indian Communities, Tohono O'odham Nation, and Ak Chin Indian Communities in response to GRIC's 1-28-15 letter.

Consulting Parties

Agencies

- Arizona State Historic Preservation Officer
- Arizona State Lands Department
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Reclamation
- San Carlos Irrigation Project

Tribes

- Section 106 Consultation
  - Hopi Tribe
  - Gila River Indian Community
  - Ak Chin Indian Community
  - Salt River Pima Maricopa Indian Community
- NEPA Consultation
  - San Carlos Apache Tribe
  - Fort McDowell Yavapai Nation
  - Yavapai-Apache Nation of the Camp Verde reservation
  - White Mountain Apache Tribe

Chapter 6
Preparers and Contributors

Western Area Power Administration, Desert Southwest Region

Matthew Bilsbarrow ..... NEPA Document Manager
Johnida Dockens ..... Wildlife Biologist/Environmental Planner
Chris Garbo ..... Project Manager, Contractor to Western
Philip Garthright ..... Realty Specialist, Contractor to Western
Jeffrey Jackson ..... Realty Specialist
Jill Jensen ..... Regional Historic Preservation Officer
Jim Jennings ..... Construction Representative
Gary Kelly ..... Project Manager
Linda Marianito ..... Environmental Manager
Karen Rowe ..... Civil Engineer
Patrick Wolter ..... Security Specialist

U.S. Bureau of Indian Affairs, San Carlos Irrigation Project

Beau Goldstein ..... Acting Environmental Coordinator

U.S. Bureau of Reclamation, Lower Colorado Region

Kimberly Musser ..... Environmental Protection Specialist

Central Arizona Project

Robert Moody ..... Reliability Manager

Aspen Environmental Group

Emily Capello
Project Manager, Technical Reviewer
B.A. English and History, M.P.A. Environmental Science and Policy
13 years of experience

Beth Bagwell
Cultural Resources and Native American Religious Concerns
B.A. Anthropology and Creative Writing, M.A. Anthropology, Ph.D. Anthropology (Archaeology)
22 years of experience

Heather Blair
Technical Review/Oversight
B.S. Ecology, M.S. Conservation Biology
10 years of experience

Moselle DiPane
Noise and Sensitive Receptors, Public Health and Safety, Management Support
B.A. Geography and Natural Resource Management
3 years of experience

Evan Elliott
Cultural Resources and Native American Religious Concerns
B.A. Anthropology (Archaeology), M.A. Cultural Resources Management (Archaeology)
10 years of experience

Matthew Long
Water Quality and Floodplains
B.A. Comparative Literature, MPP Natural Resource Management, MESc, GIS/Water Resources
5 years of experience

Aubrey Mescher
Water Quality and Floodplains, Technical Review
B.A. Environmental Studies, MESM Water Resources
9 years of experience

Thomas Murphy
Technical Review/Oversight
B.A. Earth Science, M.A. Physical Geography
18 years of experience

Kati Simpson
Visual Simulation
B.A. Geography
24 years of experience

Jared Varonin
Wetlands and Riparian Zones
B.S. Ecology and Systematic Biology
13 Years of experience

Scott D. White
Migratory Birds, Threatened and Endangered Species, Vegetation and Weeds, Wildlife, Technical Review
B.A. Biology, M.A. Biology
26 years of experience

Justin M. Wood
Migratory Birds, Threatened and Endangered Species, Vegetation and Weeds, Wildlife
B.S. Biology, M.S. Biology
13 years of experience

Chapter 7
References

ADEQ (Arizona Department of Environmental Quality). 2014. Draft 2012/14 Status of Water Quality Arizona's Integrated 305(b) Assessment and 303(d) Listing Report. http://www.azdeq.gov/environ/water/assessment/assess2012_2014.html. Accessed August 27, 2014.

_____. 2013. Proposed Arizona State Implementation Plan Revision: West Pinal County PM_{10} Nonattainment Area. http://www.pinalcountyaz.gov/Departments/AirQuality/Documents/Air%20Quality%20News/November%202013%20Stakeholder%20Nonattainment/PROPOSED%20W%20Pinal%20PM10%20SIP%2028Nov%207%202013%20without%20appendices%2029.pdf. Accessed September 22, 2014.

ADWR (Arizona Department of Water Resources), 2010. Arizona Water Atlas – Volume 8: Active Management Area Planning Area. http://www.azwater.gov/AzDWR/StatewidePlanning/WaterAtlas/ActiveManagementAreas/documents/Volume_8_final.pdf. Accessed August 21, 2014.

AGFD (Arizona Game and Fish Department). 2014a. Southwestern Bald Eagle Management Committee: http://www.swbemc.org/. Accessed August 14, 2014.

_____. 2014b. Arizona Heritage Data Management System: Plant and Animal Abstracts, Distribution Maps, & Illustrations. http://www.azgfd.gov/wc/edits/hdms_abstracts.shtml

_____. 2014c. Invasive Plant Species of Arizona. Accessed through the Arizona Invasive Species Advisory Council's website: http://www.invasivespeciesinfo.gov/unitedstates/az.shtml. Accessed September 5, 2014.

_____. 2008. Recommended Standard Mitigation Measures For Projects In Sonoran Desert Tortoise Habitat. Arizona Interagency Desert Tortoise Team.

_____. 2007. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.

APLIC (Avian Power Line Interaction Committee). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.

_____. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA. 207 pp.

Arizona Rare Plant Committee. 2001. Arizona rare plant field guide: a collaboration of agencies and organizations. Washington: U.S. Government Printing Office.

Arizona State Parks. 2014. Picacho Peak State Park. http://azstateparks.com/Parks/PIPE/. Accessed June 3, 2014.

AZDA (Arizona Department of Agriculture). 2006. Prohibited, regulated and restricted noxious weeds. Published by the Plant Services Division (1 May). http://cals.arizona.edu/crops/pdfs/Arizona%20Regulated%20and%20Restricted%20Noxious%20Weeds%20030911.pdf

BLM (Bureau of Land Management). 2013. Visual Resource Inventory Classification: Sunzia Southwest Transmission Project FEIS/RMPA Figure M 9-4W. http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/more/lands_and_realty/sunzia/sunzia_feis/maps.Par.96637.File.pdf/SunZia_FEIS_Map_Volume_Figure_M_09-4W_VRIC.pdf. Accessed September 23, 2014.

_____. 1986. Manual H-8410-1 – Visual Resource Inventory. http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.31679.File.dat/H-8410.pdf. Accessed September 23, 2014.

BOR (Bureau of Reclamation). 2010. Proposed Rehabilitation San Carlos Irrigation Project Facilities: Pinal County, Arizona. http://www.usbr.gov/lc/phoenix/reports/sancarlos/scipscoping.pdf. Accessed June 3, 2014.

_____. 2003. Resource Management Plan Guidebook. February. http://www.usbr.gov/pmts/planning/. Accessed September 23, 2014.

Brennan, T. C., & A. T. Holycross. 2006. A Field Guide to Amphibians and Reptiles in Arizona. Arizona Game and Fish Department. Phoenix, AZ.

Brown, D.E. 1994. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342 pp.

Ebird.org. 2014. Locations of yellow-billed cuckoo in the vicinity of the Project area: http://ebird.org. Accessed August 20, 2014.

EPA (U.S. Environmental Protection Agency). 2014a. Overview of Greenhouse Gases. [online]: http://www.epa.gov/climatechange/ghgemissions/gases.html. Accessed September 10, 2014.

_____. 2014b. Sources of Greenhouse Gas Emissions. http://www.epa.gov/climatechange/ghgemissions/sources.html. Accessed September 10, 2014.

_____. 2013. Fast Facts U.S. Transportation Sector Greenhouse Gas Emissions 1990-2011. Office of Transportation and Air Quality, EPA-420-F-13-033a. http://www.epa.gov/otaq/climate/documents/420f13033a.pdf. Accessed September 10, 2014.

_____. 2012. U.S. EPA Fact Sheet: West Pinal County, Arizona Redesignation to Nonattainment for the 1987 24-hour PM_{10} National Ambient Air Quality Standard. May 22. http://www.epa.gov/region9/air/az/pinal/Pinal-PM10-factsheet.pdf. Accessed September 22, 2014.

_____. 1978. Protective Noise Levels, Condensed Version of EPA Levels Document. Office of Noise Abatement & Control, EPA 550/9-79-100, Washington, DC.

_____. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. Washington D.C.

FEMA (Federal Emergency Management Agency), 2014. National Flood Hazard Layer. https://hazards.fema.gov/femaportal/wps/portal/NFHLWMS. Accessed August 27, 2014.

Helicopter Association International. 1993. Fly Neighborly Guide. Produced by the Fly Neighborly Committee, Helicopter Association International. https://new.rotor.com/portals/1/Fly%202009.pdf. Accessed September 23, 2014.

Laymon, S. A. 1998. Yellow-billed Cuckoo (Coccycus americanus). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html

Lowery, S.F., S.T. Blackman, and D. Abbate. 2009. Urban Movement patterns of Lesser Long-nosed bats (Leptonycteris curasoae): Management Implications for the Habitat Conservation Plan within the City of Tucson and the Town of Marana. Prepared for the City of Tucson and Town of Marana by Arizona Game and Fish Department. http://www.tucsonaz.gov/files/ocsd/CMS1_035706.pdf

Majka, D., J. Jenness, and P. Beier. 2008. Arizona CorridorDesigner Toolbox Documentation. http://corridordesign.org/dl/tools/CD_AZ_Toolbox_Documentation.pdf

Murphy, R., K. Berry, T. Edwards, A. Leviton, A. Lathrop, and J. Riedle. 2011. The dazed and confused identity of Agassiz's land tortoise, Gopherus agassizii (Testudines, Testudinidae) with the description of a new species, and its consequences for conservation. ZooKeys. 113:39–71.

NIEHS (National Institute of Environmental Health Sciences). 2002. EMF Electric and Magnetic Fields Associated with the Use of Electric Power, Questions & Answers. http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf. Accessed August 8, 2014.

OSHA (U.S. Department of Labor, Occupational Safety & Health Administration). 2013. I: A. Physics of Sound. http://www.osha.gov/dts/osta/otm/noise/health_effects/physics.html. Accessed August 12, 2014.

Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim golden eagle technical guidance: inventory and monitoring protocols; and other recommendations in support of eagle management and permit issuance. Division of Migratory Bird Management, Arlington Virginia. 26pp.

Pinal County. 2009. Pinal County Comprehensive Plan. Adopted November 18, 2009. http://www.pinalcountyaz.gov/Departments/PlanningDevelopment/ComprehensivePlanUpdate/Documents/00%20Comprehensive%20Plan%202013.pdf. Accessed September 10, 2014.

_____. 2014. Notice of Public Hearing PZ-PA-003-14. http://www.pinalcountyaz.gov/Departments/PlanningDevelopment/Lists/NOHPZ/Attachments/156/PZPA00314.PZ00714.pdf. Accessed June 3, 2014.

Robson Ranch. 2014. Welcome to Robson Ranch Arizona. http://www.robson.com/communities/robson-ranch. Accessed June 3, 2014.

TEP (Tucson Electric Power). 2013. Tucson Electric Power: Pinal Central to Tortolita Substation 500 kV Transmission Line Final Environmental Assessment. August.

Terracon Consultants, Inc. 2014. Geotechnical Engineering Report: Western Area Power Administration 115-kV Transmission Line Rebuild Electrical District 2–Saguaro #2 Pinal County Arizona. May.

USFWS (U.S. Fish and Wildlife Service). 2014a. Threatened and Endangered Species of La Paz County, Arizona. Arizona Ecological Services. http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList.

_____. 2014b. Endangered and threatened wildlife and plants; Proposed rule for designation of critical habitat for the western distinct population segment of the yellow-billed cuckoo. Federal Register 79: 48548-48652 (15 Aug).

_____. 2013. Endangered and threatened wildlife and plants; proposed threatened status for the western distinct population segment of the yellow-billed cuckoo (Coccyzus americanus); proposed rule. Federal Register 78: 61622-61666 (3 Oct).

_____. 2010a. Endangered and threatened wildlife and plants; 12-month finding on a petition to list the Sonoran population of the desert tortoise as endangered or threatened. Federal Register 75: 78094-78146 (14 Dec).

_____. 2010b. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the Tucson Shovel-Nosed Snake (Chionactis occipitalis klauberi) as Threatened or Endangered with Critical Habitat. Federal Register 75(61):16050-16065. (31 Mar).

_____. 1988. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Two Long-nosed Bats. Federal Register 53: 38456-38460.

USGS (U.S. Geological Survey), 2014. Watershed Boundary Dataset. http://nhd.usgs.gov/wbd.html. Accessed August 27, 2014.

WAPA (Western Area Power Administration). 2014. Pinal Central Interconnection – Scope Document. 3/31/2014.

_____. 2013. Desert Southwest Region FY14 Ten-Year Appropriated Capital Program. Annual Customer Meeting. http://www.wapa.gov/dsw/Ten_Year_Capital_Program/FINAL_FY14_TYCP_Booklet.pdf. Accessed June 3, 2014.

Wiggins, D. 2005. Yellow-billed Cuckoo (Coccyzus americanus): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. http://www.fs.fed.us/r2/Projects/scp/assessments/yellowbilledcuckoo.pdf. Accessed March 14, 2013.

Wolter, Patrick. 2014. Personal communication between Mr. Patrick Wolter, Security Specialist with Western, and Mr. Matthew Bilsbarrow, Environmental Planner with Western.

Appendix A

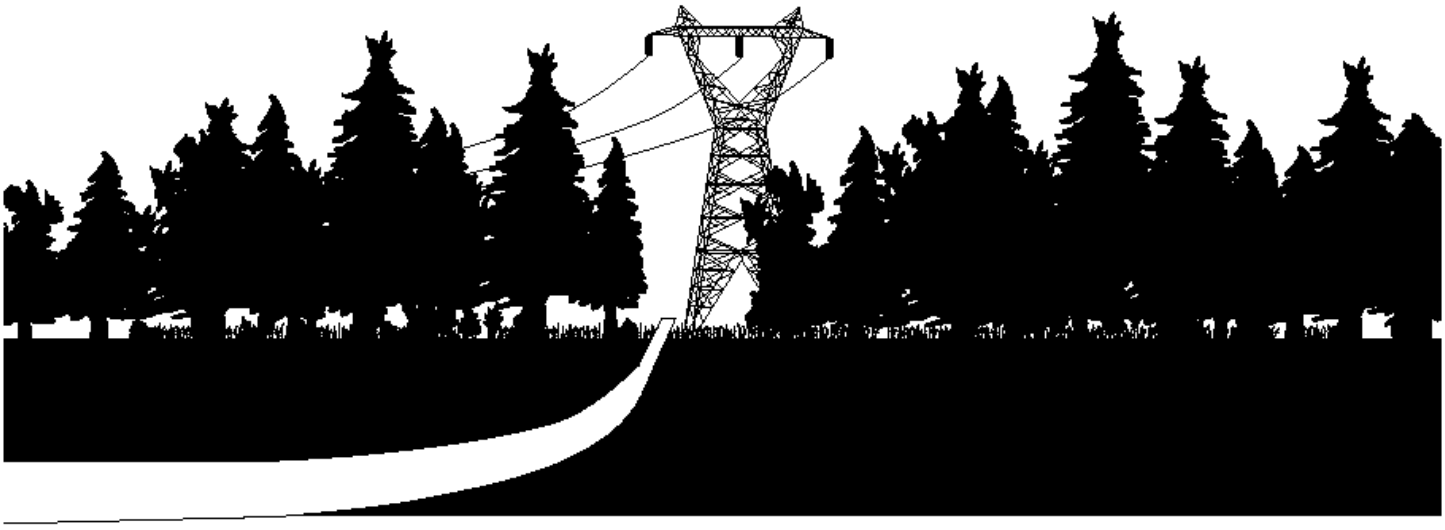
Western Area Power Administration's
Construction Standard 13

Western
AREA POWER
ADMINISTRATION

CONSTRUCTION STANDARDS

STANDARD 13

ENVIRONMENTAL QUALITY PROTECTION



September 2013

SAFETY
A HABIT TO LIVE BY

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

TABLE OF CONTENTS

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.1—REQUIRED SUBMITTALS, REPORTS, AND PLANS

1. FINAL PAYMENT: For each section below, final payment may be withheld until the referenced submittal, report, or plan is received.

SECTION 13.2--CONTRACTOR FURNISHED DATA

1. RECYCLED MATERIALS QUANTITY REPORT: Submit quantities of recycled materials listed in Section 13.7, "Recycled Materials Quantities", to the COR prior to submittal of final invoice.

2. RECOVERED AND BIOBASED MATERIAL PRODUCTS REPORT: Provide the COR the following information for purchases of items listed in Section 13.8, "Use of Recovered and Biobased Material Products".

   (1) Quantity and cost of listed items with recovered or biobased material content and quantity and cost of listed items without recovered or biobased material content prior to submittal of final invoice.

   (2) Written justification of listed items if recovered material or biobased material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

3. RECLAIMED REFRIGERANT RECEIPT: A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR prior to submittal of final invoice in accordance with Section 13.9.5, “Refrigerants and Receipts”.

4. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice in accordance with Section 13.9.8, “Waste Material Quantity Report”.

   (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.

   (2) Hazardous or Universal Wastes: Weight in pounds.

   (3) PCB Wastes: Weight in pounds.

   (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

5. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Submit the Plan as described in Section 13.11.2, "Spill Prevention Notification and Cleanup Plan”, to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

6. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Submit the Plan as described in Section 13.11.3, "Tanker Oil Spill Prevention and Response Plan”, to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

7. PESTICIDE USE PLAN: Submit a plan as described in Section 13.12.3, “Pesticide Use Plan”, to the COR for review and comment 14 days prior to the date of intended pesticide application. Review of

the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after application, submit a written report in accordance with Standard 2 – Sitework, Section 2.1.1_5, “Soil-Applied Herbicide”.

8. TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING - CONSUMER INFORMATION SHEET RECEIPT: Submit treated wood utility poles and crossarms - consumer information sheet receipts to the COR prior to submittal of final invoice (see 13.13, “Treated Wood Utility Poles and Crossarms Recycling or Disposal”).

9. PREVENTION OF AIR POLLUTION: Submit a copy of permits, if required, as described in 13.14, “Prevention of Air Pollution” to the COR 14 days prior to the start of work.

10. ASBESTOS LICENSES OR CERTIFICATIONS: Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work as described in 13.15, ”Handling and Management of Asbestos Containing Material” to the COR 14 days prior to starting work. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.

11. LEAD PAINT NOTICES: Submit a copy of lead paint notices with contractor and recipient signatures as described in 13.16, “Material with Lead-based Paint” to the COR prior to submittal of final invoice. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.

12. WATER POLLUTION PERMITS: Submit copies of any water pollution permits as described in 13.17, “Prevention of Water Pollution” to the COR 14 days prior to start of work.

13. PCB TEST REPORT: Submit a PCB test report as described in 13.18, “Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment”, prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.

14. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed as described in 13.19, “Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment”, to the COR prior to submittal of final invoice.

15. OSHA PCB TRAINING RECORDS: Submit employee training documentation records to the COR 14 days prior to the start of work as described in 13.19.1.

16. CLEANUP WORK MANAGEMENT PLAN: Submit a Cleanup Work Management Plan as described in 13.19, “Removal of Oil-contaminated Material” to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

17. POST CLEANUP REPORT: Submit a Post-Cleanup Report as described in 13.19, “Removal of Oil-contaminated Material” to the COR prior to submittal of final invoice.

SECTION 13.3--ENVIRONMENTAL REQUIREMENTS

Comply with Federal, State, and local environmental laws and regulations. The sections in this Standard further specify the requirements.

SECTION 13.4--LANDSCAPE PRESERVATION

1. GENERAL: Preserve landscape features in accordance with the contract clause titled “Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements.”

2. CONSTRUCTION ROADS: Location, alignment, and grade of construction roads shall be subject to the COR's approval. When no longer required, surfaces of construction roads shall be scarified to facilitate natural revegetation, provide for proper drainage, and prevent erosion. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.

3. CONSTRUCTION FACILITIES: Shop, office, and yard areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent and prevent impact on sensitive riparian areas and flood plains. Storage and construction buildings, including concrete footings and slabs, shall be removed from the site prior to contract completion. The area shall be re-graded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion or transport of sediment and pollutants. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.

SECTION 13.5--PRESERVATION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

1. GENERAL: Do not, at any time, remove, disturb, or otherwise alter cultural artifacts or paleontological resources (fossils). Cultural artifacts may be of scientific or cultural importance and includes, but are not limited to bones, pottery, projectile points (arrowheads), other stone or metal tools, surface features (stone circles, rock piles, etc.), glass, metal, ceramic, or other historic objects, structures and buildings (including ruins). Paleontological resources can be of scientific importance and include mineralized animals and plants or trace fossils such as footprints. Both cultural and paleontological resources are protected by Federal Regulations during Federal construction projects. Contractor shall restrict all ground disturbing activities to areas that have been investigated by Western for cultural or paleontological resources, or have been cleared in writing by the Regional Preservation Officer (RPO) and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.

2. KNOWN CULTURAL OR PALEONTOLOGICAL SITES: Following issuance of notice to proceed, Western will provide drawings or maps showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground in a manner approved by the COR in conjunction with the RPO. Instruct employees and subcontractors that vehicular or equipment access to these areas is prohibited. If access is absolutely necessary, first obtain approval from the COR in conjunction with the RPO. Western will remove the markings during or following final cleanup. For some project work, Western will require an archaeological, paleontological or tribal monitor at or near cultural or paleontological site locations. The contractor, contractor’s employees, and subcontractors shall work with the monitor to insure that sensitive areas are avoided. Where monitors are required, the monitor shall meet with the crew each morning to go over the day’s work. The monitor will also conduct awareness training for all contractors prior to any work in the field. Untrained personnel shall not be allowed in the construction area. For sensitive areas requiring a monitor, the contractor may not access those areas without a monitor being present.

3. UNKNOWN CULTURAL OR PALEONTOLOGICAL SITES: On rare occasions cultural or paleontological sites may be discovered during excavation or other earth-moving or other construction activities.

   (1) Reporting: If evidence of a cultural or paleontological site is discovered, cease work in the area immediately and notify the COR of the location and nature of the findings. If a monitor is present, the monitor should also be notified. Stop all activities within a 200-foot radius of the discovery and do not proceed with work within that radius until directed to do so by the COR.

   (2) Care of Evidence: Protect the area. Do not remove, handle, alter, or damage artifacts or fossils uncovered during construction activities.

SECTION 13.6--NOXIOUS WEED CONTROL

Comply with Federal, State, and local noxious weed control regulations. Provide a "clean vehicle policy" while entering and leaving construction areas to prevent transport of noxious weed plants and/or seed. Transport only construction vehicles that are free of mud and vegetation debris to staging areas and the project right-of-way.

SECTION 13.7--RECYCLED MATERIALS QUANTITIES

1. GENERAL: All materials generated from the project that can be recycled, shall be recycled. Record quantities of material by category that is salvaged, recycled, reused, or reprocessed, including:

   (1) Transformers, Breakers: Weight without oil.

   (2) Aluminum Conductor – Steel Reinforced (ACSR): Weight in pounds or tons.

   (3) Steel: Weight in pounds or tons.

   (4) Aluminum: Weight in pounds or tons.

   (5) Copper: Weight in pounds or tons.

   (6) Other Metals: Weight in pounds or tons.

   (7) Oil: Gallons (separate by type - less than 2 ppm PCB, 2 to 50 ppm PCB, and 50 or greater ppm PCB).

   (8) Gravel, Asphalt, Or Concrete: Weight in pounds or tons.

   (9) Batteries: Weight in pounds.

   (10) Treated Wood Utility Poles and Crossarms: Weight in pounds.

   (11) Wood construction material: Weight in pounds.

   (12) Cardboard: Weight in pounds.

   (13) Porcelain Insulators: Weight in pounds.

2. RECYCLED MATERIAL QUANTITY REPORT: Submit quantities (pounds or metric tons) of all recycled material by category to the COR within 30 days of recycling and prior to submittal of final invoice.

SECTION 13.8--USE OF RECOVERED MATERIAL AND BIOBASED MATERIAL PRODUCTS

1. RECOVERED MATERIAL PRODUCTS: If the products listed below or other products listed at http://www.epa.gov/epawaste/conserve/tools/cpg/products/index.htm are obtained as part of this project, purchase the items with the highest recovered material content possible unless recovered material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

   Construction Products:

   - Building Insulation Products
   - Carpet
   - Carpet cushion
   - Cement and concrete containing coal fly ash, ground granulated blast furnace slag, cenospheres, or silica fume
   - Consolidated and reprocessed latex paint
   - Floor Tiles
   - Flowable fill
   - Laminated Paperboard
   - Modular threshold ramps
   - Nonpressure pipe
   - Patio Blocks
   - Railroad grade crossing surfaces
   - Roofing materials
   - Shower and restroom dividers/partitions
   - Signage
   - Structural Fiberboard

2. BIOBASED MATERIAL PRODUCTS: If the products listed at http://www.biobased.oce.usda.gov are obtained as part of this project, purchase the items with the highest biobased content possible and no less than the percent indicated for each product unless biobased material products are not available: 1) competitively within a reasonable time frame, 2) meeting reasonable performance standards as defined in the Standards or Project Specifications, or 3) at a reasonable price.
   NOTE: All station service and pole mounted transformers will be bio-based oil. Western exempts purchase of bio-based large transformers rated above 5 MVA until May 13, 2015. Large transformers will be evaluated on a best value basis using life cycle cost analysis.

3. RECOVERED MATERIAL AND BIOBASED MATERIAL PRODUCTS REPORT: Provide the COR the following information for purchases of those items listed above:

   Quantity and cost of listed items with recovered or biobased material content and quantity and cost of listed items without recovered or biobased material content prior to submittal of final invoice.

   Written justification of listed items if recovered material or biobased material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

SECTION 13.8--DISPOSAL OF WASTE MATERIAL

1. GENERAL: Dispose or recycle waste material in accordance with applicable Federal, State and local regulations and ordinances. In addition to the requirements of the Contract Clause “Cleaning

Up", remove all waste material from the construction site. No waste shall be left on Western property, right-of-way, or easement. Burning or burying of waste material is not permitted.

2. HAZARDOUS, UNIVERSAL, AND NON-HAZARDOUS WASTES: Manage hazardous, universal, and non-hazardous wastes in accordance with State and Federal regulations.

3. USED OIL: Used oil generated from the Contractor activities shall be managed in accordance with used oil regulations.

4. RECYCLABLE MATERIAL: Reduce wastes, including excess Western material, by recycling, reusing, or reprocessing. Examples of recycling, reusing, or reprocessing includes, but is not limited to, reprocessing of solvents; recycling cardboard; and salvaging scrap metals.

5. REFRIGERANTS AND RECEIPTS: Refrigerants from air conditioners, water coolers, refrigerators, ice machines and vehicles shall be reclaimed with certified equipment operated by certified technicians if the item is to be disposed. Refrigerants shall be reclaimed and not vented to the atmosphere. A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR prior to submittal of final invoice.

6. HALONS: Equipment containing halons that must be tested, maintained, serviced, repaired, or disposed must be handled according to EPA requirements and by technicians trained according to those requirements.

7. SULFUR HEXAFLUORIDE (SF6): SF6 shall be reclaimed and shall not be vented to the atmosphere.

8. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice.

   (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.

   (2) Hazardous or Universal Wastes: Weight in pounds.

   (3) PCB Wastes: Weight in pounds.

   (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

SECTION 13.10--CONTRACTOR'S LIABILITY FOR REGULATED MATERIAL INCIDENTS

1. GENERAL: The Contractor is solely liable for all expenses related to spills, mishandling, or incidents of regulated material attributable to his actions or the actions of his subcontractors. This includes all response, investigation, cleanup, disposal, permitting, reporting, and requirements from applicable environmental regulation agencies.

2. SUPERVISION: The actions of the Contractor employees and subcontractors shall be properly managed at all times on Western property or while transporting Western's (or previously owned by Western) regulated material and equipment.

SECTION 13.11--POLLUTANT SPILL PREVENTION, NOTIFICATION, AND CLEANUP

1. GENERAL: Provide measures to prevent spills of pollutants and respond appropriately if a spill occurs. A pollutant includes any hazardous or non-hazardous substance that when spilled, will

contaminate soil, surface water, or ground water. This includes any solvent, fuel, oil, paint, pesticide, engine coolants, and similar substances.

2. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Provide the Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Include the following in the Plan:

   (1) Spill Prevention measures. Describe the work practices or precautions that will be used at the job site to prevent spills. These may include engineered or manufactured techniques such as installation of berms around fuel and oil tanks; Storage of fuels, paints, and other substances in spill proof containers; and management techniques such as requiring workers to handle material in certain ways.

   (2) Notification. Most States and the Environmental Protection Agency require by regulation, that anyone who spills certain types of pollutants in certain quantities notify them of the spill within a specific time period. Some of these agencies require written follow up reports and cleanup reports. Include in the Plan, the types of spills for which notification would be made, the agencies notified, the information the agency requires during the notification, and the telephone numbers for notification.

   (3) Employee Awareness Training. Describe employee awareness training procedures that will be implemented to ensure personnel are knowledgeable about the contents of the Plan and the need for notification.

   (4) Commitment of Manpower, Equipment and Material. Identify the arrangements made to respond to spills, including the commitment of manpower, equipment and material.

   (5) If applicable, address all requirements of 40CFR112 pertaining to Spill Prevention, Control and Countermeasures Plans.

3. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Provide a Tanker Oil Spill Prevention and Response Plan as required by the Department of Transportation if oil tankers with volume of 3,500 gallons or more are used as part of the project. Submit the Tanker Oil Spill Prevention and Response Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

SECTION 13.12--PESTICIDES

1. GENERAL: The term “pesticide” includes herbicides, insecticides, rodenticides and fungicides. Pesticides shall only be used in accordance with their labeling and applied by appropriately certified applicators.

2. ENVIRONMENTAL PROTECTION AGENCY REGISTRATION: Use EPA registered pesticides that are approved for the intended use.

3. PESTICIDE USE PLAN: Provide a pesticide use plan that contains: 1) a description of the pesticide to be used, 2) where it is to be applied, 3) the application rate, 4) a copy of the label, and 5) a copy of required applicator certifications. Submit the pesticide use plan to the COR for review and comment 14 days prior to the date of intended application. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after

application, submit a written final report to the COR, including the pesticide applicators report, in accordance with Standard 2 – Sitework, Section 2.1.1_5. “Soil-Applied Herbicide, (4) Final Report”.

SECTION 13.13--TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING OR DISPOSAL

Whenever practicable, treated wood utility poles and crossarms removed during the project shall be recycled or transferred to the public for some uses. Treated wood utility poles and crossarms transferred to a recycler, landfill, or the public shall be accompanied by a written consumer information sheet for treated wood as provided by Western. Obtain a receipt, part of the consumer information sheet, from the recipient indicating that they have received, read, and understand the consumer information sheet. Treated wood products transferred to right-of-way landowners shall be moved off the right-of-way. Treated wood product scrap, poles, and crossarms that cannot be donated or reused shall be properly disposed in a landfill that accepts treated wood and has signed Western’s consumer information sheet receipt. Submit treated wood utility poles and crossarms consumer information receipts to the COR prior to submittal of final invoice.

SECTION 13.14--PREVENTION OF AIR POLLUTION

1. GENERAL: Ensure that construction activities and the operation of equipment are undertaken to reduce the emission of air pollutants. Submit a copy of permits for construction activities, if required (e.g., “non-attainment” areas, state implementation plans, or Class I air-sheds), from Federal, State, or local agencies to the COR 14 days prior to the start of work.

2. MACHINERY AIR EMISSIONS: The Contractor and subcontractor machinery shall have, and shall use the air emissions control devices required by Federal, State or Local Regulation or ordinance.

3. DUST ABATEMENT: Dust shall be controlled. Oil shall not be used as a dust suppressant. Dust suppressants shall be approved by the COR prior to use.

4. SULFUR HEXAFLUORIDE EMISSIONS:

    1) General: The Contractor shall record quantities of SF6, including:

        Nameplate capacity in pounds of SF_6 containing equipment.

        Record pounds of SF_6 stored in containers, before transferring into energized equipment.

        Record pounds of SF_6 left in containers, after transferring into energized equipment.

        Pounds of SF_6 purchased from equipment manufacturers or distributors.

        Pounds of SF_6 returned to suppliers.

        Scales used to weigh cylinders must be accurate to within +/- 2 pounds and must have current calibration sticker.

    2) CONTRACTOR FIELD QUALITY TESTING AND SF_6 HANDLING:

        The Contractor shall test all functions to verify correct operation and conduct a leak test. No SF6 gas leakage shall be allowed from any equipment or storage containers.

        Atmospheric venting of SF_6 gas is not allowed.

        The Contractor shall remove all empty SF6 gas cylinders and return to supplier.

(3) CERTIFICATES OF DISPOSAL AND RECEIPTS:

1) The Contractor can use Western's Reporting Form for reporting quantities listed above.

2) The Contractor shall provide receipts of SF6 gas returned to supplier.

3) The Contractor shall submit SF6 gas Reporting Forms and copies of receipts to the COR prior to submittal of final invoice.

SECTION 13.15--HANDLING AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL

1. GENERAL: Obtain the appropriate Federal, State, Tribal or local licenses or certifications prior to disturbing any regulated asbestos-containing material. If a building or portion of a building will be demolished or renovated, obtain an Asbestos Notice of and Permit for Demolition and Renovation from the State or Tribal Department of Environmental Quality, Division of Air Quality (or equivalent). The building(s) shall be inspected by a State-Certified or Tribal accepted Asbestos Building Inspector. The inspector shall certify the presence and condition of asbestos, or non-presence of asbestos, on site as directed on the State or Tribal Demolition and Renovation Notice/Permit. The inspections shall be performed and notifications shall be submitted whether asbestos is present or not. Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work to the COR 14 days prior to work. Ensure: 1) worker and public safety requirements are fully implemented and 2) proper handling, transportation, and disposal of asbestos containing material.

2. TRANSPORTATION OF ASBESTOS WASTE: Comply with Department of Transportation, Environmental Protection Agency, and State and Local requirements when transporting asbestos wastes.

3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.

SECTION 13.16--MATERIAL WITH LEAD-BASED PAINT

1. GENERAL: Comply with all applicable Federal, State and local regulations concerning work with lead-based paint, disposal of material painted with lead-based paint, and management of these materials. OSHA and General Industry Standards apply to worker safety and right-to-know issues. Federal EPA and State agencies regulate waste disposal and air quality issues.

2. TRANSFER OF PROPERTY: If lead-based paint containing equipment or material is to be given away or sold for reuse, scrap, or reclaiming, the contractor shall provide a written notice to the recipient of the material stating that the material contains lead-based paint and the Hazardous Waste regulations may apply to the waste or the paint in some circumstances. The new owner must also be notified that they may be responsible for compliance with OSHA requirements if the material is to be cut, sanded, abraded, or stripped of paint. Submit a copy of lead paint notices with contractor and recipient signatures to the COR prior to submittal of final invoice.

3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.

SECTION 13.17--PREVENTION OF WATER POLLUTION

1. GENERAL: Ensure that surface and ground water is protected from pollution caused by construction activities and comply with applicable regulations and requirements. Ensure that streams, waterways and other courses are not obstructed or impaired unless the appropriate Federal, State or local permits have been obtained.

2. PERMITS: Ensure that:

   (1) A National Pollutant Discharge Elimination System (NPDES) permit is obtained from the US Environmental Protection Agency or State as appropriate if the disturbed construction area equals 1 acre or more. Contractor is responsible for preparation and implementation of the associated Storm Water Pollution Prevention Plan (SWPPP). Disturbed areas include staging, parking, fueling, stockpiling, and any other construction related activities. Refer to www.epa.gov/npdes/stormwater for directions and forms.

   (2) A dewatering permit is obtained from the appropriate agency if required for construction dewatering activities.

   (3) Copies of permits and plans, approved by the appropriate regulating agencies, are submitted to the COR 14 days prior to start of work.

3. EXCAVATED MATERIAL AND OTHER CONTAMINANT SOURCES: Control runoff from excavated areas and piles of excavated material, construction material or wastes (to include truck washing and concrete wastes), and chemical products such as oil, grease, solvents, fuels, pesticides, and pole treatment compounds. Excavated material or other construction material shall not be stockpiled or deposited near or on streambanks, lake shorelines, ditches, irrigation canals, or other areas where run-off could impact the environment.

4. MANAGEMENT OF WASTE CONCRETE OR WASHING OF CONCRETE TRUCKS: Do not permit the washing of concrete trucks or disposal of excess concrete in any ditch, canal, stream, or other surface water. Concrete wastes shall be disposed in accordance with all Federal, State, and local regulations. Concrete wastes shall not be disposed of on any Western property, right-of-way, or easement; or on any streets, roads, or property without the owner's consent.

5. STREAM CROSSINGS: Crossing of any stream or other waterway shall be done in compliance with Federal, State, and local regulations. Crossing of some waterways may be prohibited by landowners, Federal or State agencies or require permits.

SECTION 13.18--TESTING, DRAINING, REMOVAL, AND DISPOSAL OF OIL-FILLED ELECTRICAL EQUIPMENT

1. SAMPLING AND TESTING OF INSULATING OIL FOR PCB CONTENT: Sample and analyze the oil of electrical equipment (which includes storage tanks) for PCB's. Use analytical methods approved by EPA and applicable State regulations. Decontaminate sampling equipment according to documented good laboratory practices (these can be contractor developed or EPA standards). Use only laboratories approved by Western. The COR will furnish a list of approved laboratories.

2. PCB TEST REPORT: Provide PCB test reports that contain the information below for disposing of oil-filled electrical equipment. Submit the PCB test report for COR approval prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.

   - Name and address of the laboratory
   - Description of the electrical equipment (e.g. transformer, breaker)

- Serial number for the electrical equipment.
- Date sampled
- Date tested
- PCB contents in parts per million (ppm)
- Unique identification number of container into which the oil was drained (i.e., number of drum, tank, tanker, etc.)

3. OIL CONTAINING PCB: Comply with the Federal regulations pertaining to PCBs found at Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).

4. REMOVAL AND DISPOSAL OF INSULATING OIL AND OIL-FILLED ELECTRICAL EQUIPMENT: Once the PCB content of the oil has been identified from laboratory results, the oil shall be transported and disposed, recycled, or reprocessed according to 40 CFR 761 (if applicable), Resource Conservation and Recovery Act (RCRA) "used oil", and other applicable regulations. Used oil may be transported only by EPA-registered used oil transporters. The oil must be stored in containers that are labeled "Used Oil." Use only transporters and disposal sites approved by Western.

5. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed to the COR prior to submittal of final invoice.

SECTION 13.19--REMOVAL OF OIL-CONTAMINATED MATERIAL

1. GENERAL: Removing oil-contaminated material includes excavating, stockpiling, testing, transporting, cleaning, and disposing of these material. Personnel working with PCBs shall be trained in accordance with OSHA requirements. Submit employee training documentation records to the COR 14 days prior to the start of work.

2. CLEANUP WORK MANAGEMENT PLAN: Provide a Cleanup Work Management Plan that has been approved by applicable Federal, State, or Local environmental regulation agencies. Submit the plan to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. The plan shall address on-site excavation of contaminated soil and debris and include the following:

   - Identification of contaminants and areas to be excavated
   - Method of excavation
   - Level of personnel/subcontractor training
   - Safety and health provisions
   - Sampling requirements including quality control, laboratory to be used
   - Management of excavated soils and debris
   - Disposal methods, including transportation to disposal

3. EXCAVATION AND CLEANUP: Comply with the requirements of Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).

4. TEMPORARY STOCKPILING: Excavated material, stockpiled on site during construction, shall be stored on heavy plastic and covered to prevent wind and rain erosion at a location designated by the COR.

5. SAMPLING AND TESTING: Sample contaminated debris and areas of excavation to ensure that contamination is removed. Use personnel with experience in sampling and, in particular, with

experience in PCB cleanup if PCBs are involved. Use analytical methods approved by EPA and applicable State regulations.

6. TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIAL: The Contractor shall be responsible and liable for the proper loading, transportation, and disposal of contaminated material according to Federal, State, and local requirements. Use only transporters and disposal sites approved by Western.

7. POST CLEANUP REPORT: Provide a Post-Cleanup Report that describes the cleanup of contaminated soils and debris. Submit the report to the COR prior to submittal of final invoice. The report shall contain the following information:

   - Site map showing the areas cleaned
   - Description of the operations involved in excavating, storing, sampling, and testing, and disposal
   - Sampling and analysis results including 1) Name and address of the laboratory, 2) sample locations, 3) sample dates, 4) analysis dates, 5) contents of contaminant (e.g. PCB or total petroleum hydrocarbons) in parts per million (ppm)
   - Certification by the Contractor that the cleanup requirements were met
   - Copies of any manifests, bills of lading, and disposal certificates
   - Copies of correspondence with regulatory agencies that support completion of the cleanup

SECTION 13.20—CONSERVATION OF BIOLOGICAL RESOURCES

1. GENERAL: Federal law prohibits the “take” of endangered, threatened, proposed or candidate wildlife and plants, and destruction or adverse modification of designated Critical Habitat. Federal law also prohibits the “take” of birds protected by the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct with a protected animal or plant or any part thereof, or attempt to do any of those things without a permit from U.S. Fish and Wildlife Service. The Contractor will take precautions to avoid harming other wildlife species. Contractor shall restrict all ground disturbing activities to areas that have been surveyed by Western for natural resources and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.

2. KNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT: Following issuance of the notice to proceed, and prior to the start of construction, Western will provide training to all contractor and subcontractor personnel and others involved in the construction activity if there is a known occurrence of protected species or habitat in the construction area. Untrained personnel shall not be allowed in the construction area. Western will provide drawings or maps showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These sensitive areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground by Western. If access is absolutely necessary, the contractor shall first obtain written permission from the COR, noting that a Western and/or other Federal or state government or tribal agency biologist may be required to accompany personnel and equipment. Ground markings shall be maintained through the duration of the contract. Western will remove the markings during or following final inspection of the project.

3. UNKNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT: If evidence of a protected species is found in the project area, the contractor shall immediately notify the COR and provide the location and nature of the findings. The contractor shall stop all activity within 200 feet of the protected species or habitat and not proceed until directed to do so by the COR.

Appendix B

Biological Reports Summary

Appendix B. Biological Reports Summary

Biological Evaluation

In September 2014, biologists from Aspen Environmental Group completed the *Biological Evaluation: Electric District #2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project.* The Biological Evaluation describes the biological resources located on the right-of-way and in the vicinity of the proposed transmission line rebuild project, evaluates potential impacts to those resources, and recommends conservation measures to avoid or minimize impacts. Aspen biologists reviewed information on biological resources in the vicinity and visited the project area to evaluate biological resources and assess habitat suitability for special-status species. No federally listed species were found in the project area. However, the following species may be present in the project area or vicinity:

- federally endangered lesser long-nosed bat may forage there;
- western distinct population segment (DPS) of the yellow-billed cuckoo is proposed[1] for federal listing and is likely to migrate through the area;
- Sonoran Desert tortoise has a high likelihood of occurrence in the project area;
- bald and golden eagle have a moderate to high potential to forages in the project area and vicinity.

Conservation measures were recommended in the Biological Evaluation to reduce potential effects on these species. The Biological Evaluation is available in full on the ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project website at:

http://www.wapa.gov/dsw/environment/ED2DOEEA1972.htm.

Preliminary Jurisdictional Waters/Wetlands Delineation Report

In September 2014, Aspen biologists completed the *Preliminary Jurisdictional Waters/Wetlands Delineation Report: ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild.* The field assessment was conducted by Aspen Environmental Group from July 28 -30, 2014. The assessment was conducted to determine the extent of resources under the jurisdiction of the U.S. Army Corps of Engineers and the Arizona Department of Environmental Quality. No portion of the project area was found to support wetlands, based on the three criteria of the federal delineation methods. A total of 9.882 acres displayed evidence of hydrology or had a discernible OHWM, and were mapped as jurisdictional non-wetland “waters of the United States”.

Impacts to any of the 371 mapped drainages in the Project area are expected to meet the conditions of a NWP No. 3 which allows for repair, rehabilitation, or replacement of any previously authorized structure or fill activity.

[1] At the time of preparation of this Biological Evaluation the yellow-billed cuckoo was proposed for listing but as of November 2014 it is now listed as Threatened and is evaluated as such in the ED2-SGR No. 2 115-kV Transmission Line Rebuild Environmental Assessment.

Project activities would not occur within Outstanding Arizona Waters (OAW) and would not be conducted within one mile upstream of and/or one-half mile downstream of 303(d) impaired waters (based on the 2010 and draft 2012/2014 impaired waters list). Therefore, drainages that are compliant with the conditions of NWP No. 3 would be conditionally certified under Section 401 of the CWA from the ADEQ.

The Preliminary Jurisdictional Waters/Wetlands Delineation Report is available in full on the ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project website at:

http://www.wapa.gov/dsw/environment/ED2DOEEA1972.htm.

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

ED2-Saguaro #2 115-kV Transmission Line Rebuild

Project Description:

Western proposes to to rebuild the 35.6-mile-long 115-kV transmission line located between ED2 and Saguaro Substations with 80 to 90-foot-tall weathered (rusted finish) steel monopoles and replace the conductors. The rebuilt line would have spans between poles of 700 to 1,100 feet long and would require an estimated 213 new structures. The overhead protection ground wire will be replaced with one containing fiber optic cables for utility communications. The new structures will be placed in holes typically 4 feet in diameter and 14 feet deep and will be directly embedded with concrete backfill. Existing access roads will be used to the extent possible and improved as needed. The existing line has 27 H-frame structures covering 3.1 miles and 434 wood single-pole structures covering 32.5 miles. The existing structures are 60 to 70 feet tall and support three 795 MCM ACSR conductors and a single overhead ground wire. The existing spans between poles are 400 to 600 feet long for single poles and 600 to 800 feet long for H-frame poles. The proposed action is needed so that the risk of a catastrophic failure on the ED2 to Saguaro No. 2 115-kV transmission line is reduced to the lowest practical level and the greatest long-term benefit is obtained. This line experienced five major failures in the last 10 years, including four failures in a three year period. The most recent failure occurred in 2012 when a storm destroyed 30 structures in a three-mile-long section. Steel monopoles are stronger and more storm-resistant than the existing wood structures.

Project Type:

Energy Storage/Production/Transfer, Energy Transfer, power line/electric (maintenance to existing)

Contact Person:

Johnida Dockens

Organization:

WAPA

On Behalf Of:

OTHER_FED

Project ID:

HGIS-00292

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

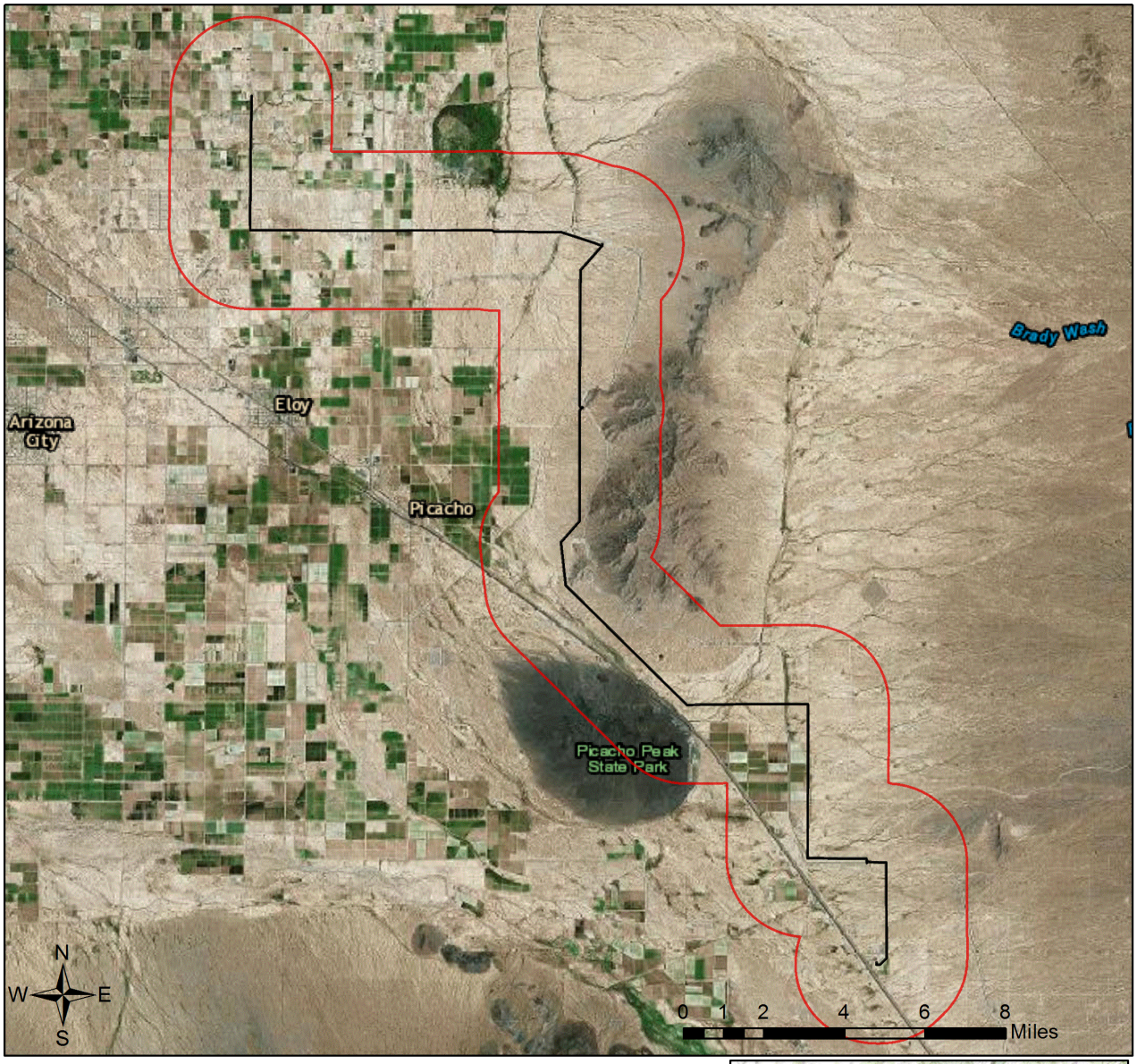
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

ED2-Saguaro #2 115-kV Transmission Line Rebuild

Aerial Image Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 300.48

Lat/Long (DD): 32.6897 / -111.4307

County(s): Pinal

AGFD Region(s): Mesa; Tucson

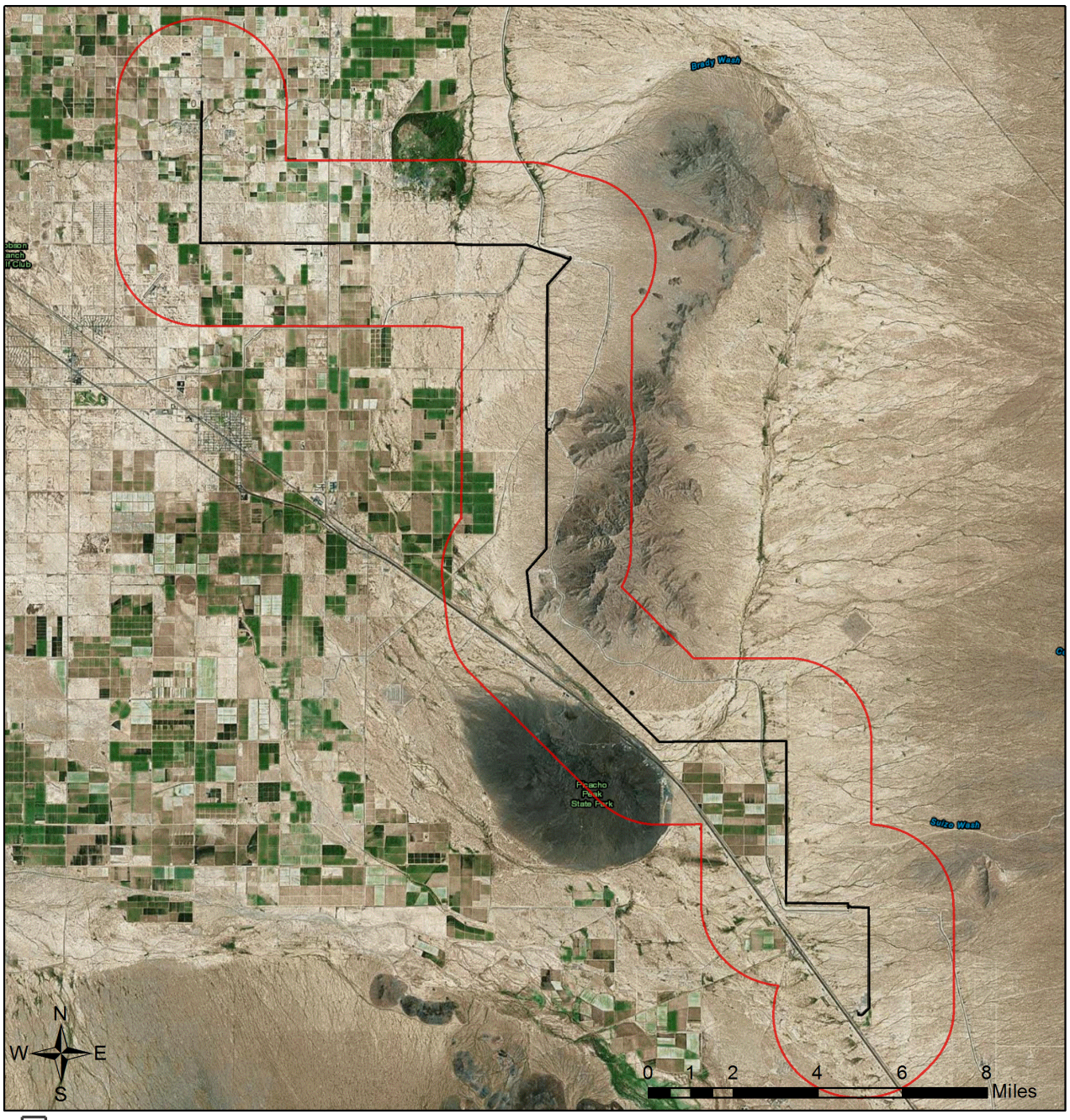
Township/Range(s): T6S, R8E; T7S, R8E; T7S, R9E +

USGS Quad(s): ELOY NORTH; PICACHO RESERVOIR +

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong),

ED2-Saguaro #2 115-kV Transmission Line Rebuild

Web Map As Submitted By User



Project Boundary

Buffered Project Boundary

Project Size (acres): 300.48

Lat/Long (DD): 32.6897 / -111.4307

County(s): Pinal

AGFD Region(s): Mesa; Tucson

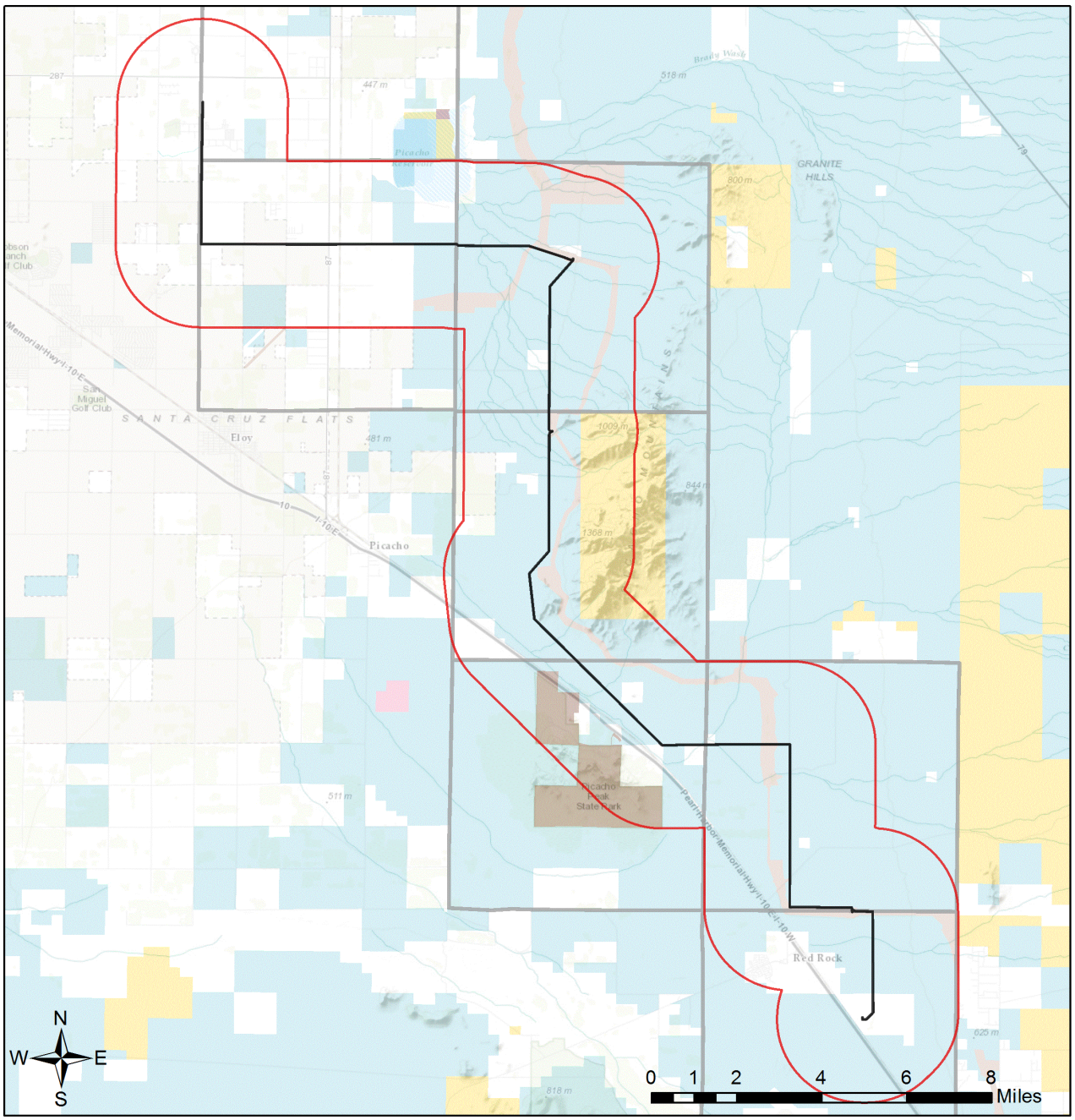
Township/Range(s): T6S, R8E; T7S, R8E; T7S, R9E +

USGS Quad(s): ELOY NORTH; PICACHO RESERVOIR +

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community Esri, HERE, DeLorme, TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

ED2-Saguaro #2 115-kV Transmission Line Rebuild

Topo Basemap With Township/Ranges and Land Ownership



- Project Boundary
- Buffered Project Boundary
- Township/Ranges
- AZ Game and Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State and Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge

Project Size (acres): 300.48

Lat/Long (DD): 32.6897 / -111.4307

County(s): Pinal

AGFD Region(s): Mesa; Tucson

Township/Range(s): T6S, R8E; T7S, R8E; T7S, R9E +

USGS Quad(s): ELOY NORTH; PICACHO RESERVOIR +

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Special Status Species and Special Areas Documented within 2 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	State	SGCN
Abutilon parishii	Pima Indian Mallow	SC	S	S	SR	
Antilocapra americana sonoriensis	10J area for Sonoran Pronghorn					
Ardea alba	Great Egret				WSC	1C
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Bat Colony						
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C*				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S		WSC	1A
Ferocactus cylindraceus	Desert Barrel Cactus				SR	
Gopherus morafkai	Sonoran Desert Tortoise	C*	S		WSC	1A
Ironwood - Picacho Linkage Design	Wildlife Corridor					
Ixobrychus exilis	Least Bittern				WSC	1C
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE			WSC	1A
Macrotus californicus	California Leaf-nosed Bat	SC		S	WSC	1B
Myotis velifer	Cave Myotis	SC		S		1B
PCH for Coccyzus americanus	Yellow-billed Cuckoo Proposed Critical Habitat					
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			WSC	1A

Note: Status code definitions can be found at http://www.azgfd.gov/w_c/edits/hdms_status_definitions.shtml.

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	State	SGCN
Aix sponsa	Wood Duck					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anthus spragueii	Sprague's Pipit	C*			WSC	1A
Aquila chrysaetos	Golden Eagle	BGA		S		1B
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Botaurus lentiginosus	American Bittern				WSC	1B
Buteo regalis	Ferruginous Hawk	SC		S	WSC	1B
Catostomus insignis	Sonora Sucker	SC	S	S		1B
Chilomeniscus stramineus	Variable Sandsnake					1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	C*				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S		WSC	1A
Colaptes chrysoides	Gilded Flicker			S		1B
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B
Crotalus tigris	Tiger Rattlesnake					1B
Euderma maculatum	Spotted Bat	SC	S	S	WSC	1B

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	State	SGCN
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Gopherus morafkai	Sonoran Desert Tortoise	C*	S		WSC	1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S	WSC	1A
Heloderma suspectum	Gila Monster					1A
Incilius alvarius	Sonoran Desert Toad					1B
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		1B
Lasiurus blossevillii	Western Red Bat		S		WSC	1B
Lasiurus xanthinus	Western Yellow Bat		S		WSC	1B
Leopardus pardalis	Ocelot	LE			WSC	1A
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE			WSC	1A
Lepus alleni	Antelope Jackrabbit					1B
Macrotus californicus	California Leaf-nosed Bat	SC		S	WSC	1B
Melanerpes uropygialis	Gila Woodpecker					1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Panthera onca	Jaguar	LE			WSC	1A
Passerculus sandwichensis	Savannah Sparrow					1B
Perognathus amplus	Arizona Pocket Mouse					1B
Perognathus longimembris	Little Pocket Mouse					1B
Phrynosoma goodei	Goode's Horned Lizard					1B
Phrynosoma solare	Regal Horned Lizard					1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake					1B
Progne subis hesperia	Desert Purple Martin			S		1B
Rallus longirostris yumanensis	Yuma Clapper Rail	LE			WSC	1A
Setophaga petechia	Yellow Warbler					1B
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Toxostoma lecontei	Le Conte's Thrasher					1B
Troglodytes pacificus	Pacific Wren					1B
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox					1B

Species of Economic and Recreation Importance Predicted within Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	State	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					

Project Type: Energy Storage/Production/Transfer, Energy Transfer, power line/electric (maintenance to existing)

Project Type Recommendations:

Minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g., microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g., livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before leaving the site. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants, https://agriculture.az.gov/. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control, http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml

Follow manufacturer's recommended application guidelines for all chemical treatments. The U.S. Fish and Wildlife Service, Region 2, Environmental Contaminants Program has a reference document that serves as their regional pesticide recommendations for protecting wildlife and fisheries resources, titled "Recommended Protection Measures for Pesticide Applications in Region 2 of the USFWS", http://www.fws.gov/southwest/es/arizona/Documents/ECReports/RPMPA_2007.pdf. The Department recommends that direct or indirect impacts to sensitive species and their forage base from the application of chemical pesticides or herbicides be considered carefully.

For any powerlines built, proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws. Limit project activities during the breeding season for birds, generally May through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season. For underground powerlines, trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated.

Based on the project type entered, coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (http://www.fws.gov/southwest/es/arizona/).

Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Project Location and/or Species Recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at http://www.fws.gov/southwest/es/arizona/ or:

Phoenix Main Office
2321 W. Royal Palm Rd, Suite 103
Phoenix, AZ 85021
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

HDMS records indicate that Western Burrowing Owls have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at: http://www.azgfd.gov/w_c/BurrowingOwlResources.shtml.

HDMS records indicate that Sonoran Desert Tortoise have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf

Analysis indicates that your project is located in the vicinity of an identified wildlife habitat linkage corridor. Project planning and implementation efforts should focus on maintaining adequate opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: http://www.corridordesign.org/arizona. Please contact your local Arizona Game and Fish Department Regional Office for specific project recommendations: http://www.azgfd.gov/inside_azgfd/agency_directory.shtml.

Appendix C

Public Involvement

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

March 10, 2014

SUBJECT: Scoping Letter for an Environmental Assessment for Western's ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project (DOE/EA-1972)

Dear Interested Party:

This letter invites you to be involved in, and provide input on, environmental issues associated with the above-mentioned Federal action, which is further described below.

Western Area Power Administration (Western) is a Federal power marketing agency within the U.S. Department of Energy (DOE) that operates and maintains transmission lines and associated facilities. Western identified the following cooperating agencies: U.S. Bureau of Indian Affairs, San Carlos Irrigation Project, U.S. Bureau of Reclamation, and U.S. Army Corps of Engineers.

Western proposes to rebuild the 35.6-mile-long Electrical District 2 (ED2) to Saguaro No. 2 115-kilovolt Transmission Line located between the existing ED2 and Saguaro substations near Eloy, Pinal County, Arizona. (A proposed project area map is enclosed.) Western's reconstruction action involves replacing 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures with steel monopoles. The existing wood structures are 60 to 70 feet tall, and the replacement steel ones are typically 60 to 75 feet tall depending on terrain. Dirt access roads will be improved as needed for use by construction and maintenance equipment.

Western proposes this project to increase the reliability and safety of the bulk electric system by replacing wood structures with steel ones to reduce the risk of a catastrophic failure on this transmission line to the lowest practical level and obtain the greatest long-term benefit. Steel monopoles are stronger, storm resistant, and can span greater distances than wood structures.

As part of the project planning tasks, Western will address the following issues before construction can begin:

- **National Historic Preservation Act:** Western will ensure that an intensive pedestrian (Class III) cultural resources survey of the project area is conducted. Western will serve as Lead Federal Agency in the Section 106 process and consult with the Arizona State Historic Preservation Officer, Indian Tribes, and consulting parties regarding this undertaking.
- **Endangered Species Act:** Western will ensure that a biological survey of the project area is conducted. Western will evaluate threatened, endangered and other special status species and their habitat potentially affected by the project and consult with the U.S. Fish and Wildlife Service as needed.
- **Clean Water Act**: Western will assess impacts to floodplains and wetlands and comply with the requirements of applicable U.S. Army Corps of Engineers Section 404 permits.
- **National Environmental Policy Act (NEPA):** Western will serve as Lead Federal Agency in the preparation of an environmental assessment (EA) for this project unless, 1) a

cooperating agency objects, or 2) if a significant impact that cannot be mitigated is identified. In these cases, Western may prepare an environmental impact statement.

We anticipate project-related construction activities could begin in April 2016, provided the above-mentioned tasks are completed and no significant environmental effects are identified. Project information is available online:

http://www.wapa.gov/dsw/environment/ED2DOEEA1972.htm

Get involved

We would like to know of any issues, concerns and suggestions you may have regarding the project. Your comments will help define issues and alternatives for consideration in the environmental review process. Comments can be provided in writing, by phone, or in person at the public scoping meeting (information below). Please submit your comments by April 11, 2014.

Mail: Western Area Power Administration, Desert Southwest Region?
ATTN.: Matthew Bilsbarrow, NEPA Document Manager
P.O. Box 6457
Phoenix, AZ 85005
Email: DSW-EA1972PublicComment@wapa.gov
Phone: (602) 605-2536
Fax: (602) 605-2630

Come to the open house

Western will host an open house to allow the public and interested parties an opportunity to learn about the project, the NEPA process, and ask questions. The meeting will be held at the following date, time and location.

Tuesday, March 25, 2014, 6–8 p.m.
Holiday Inn
777 North Pinal Avenue
Casa Grande, AZ 85122

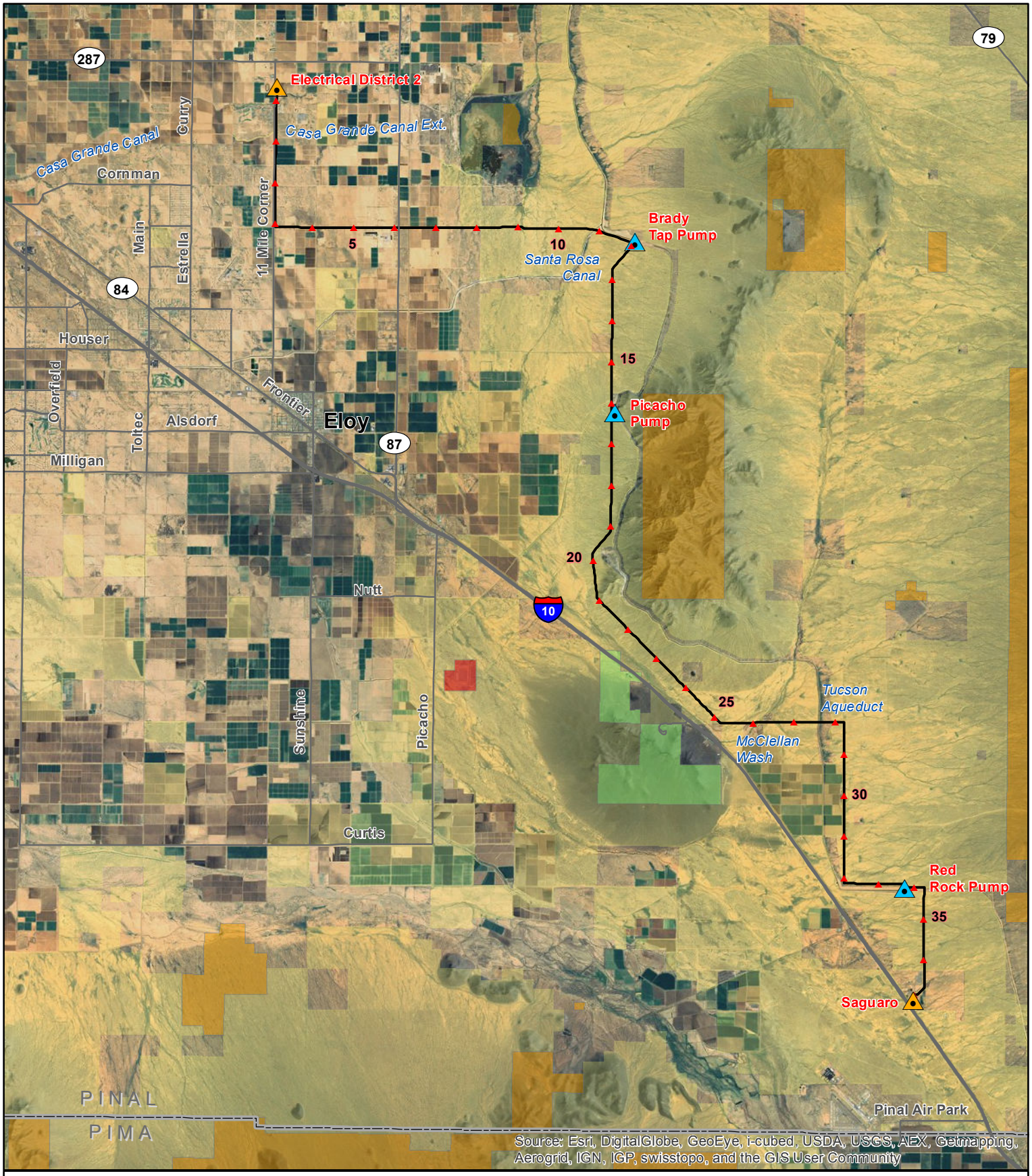
We look forward to receiving your comments on environmental issues associated with this project and hope that you will be able to attend the public scoping meeting.

Sincerely,

Linda Marianito

Linda Marianito
Environmental Manager

Enclosure (map)



Mile Marker
Pumping Plant - Central Arizona Project
Western Substation
Transmission Lines

AZ Land Ownership

BLM
Local or State Parks
Military
State Trust
County Boundary

1:200,000

0 2.5 5 Miles

Source: DWS, Aspen EG, ESRI

Existing ED2 to Saguaro No. 2 115 kV Transmission Line

DOE/EA-1972

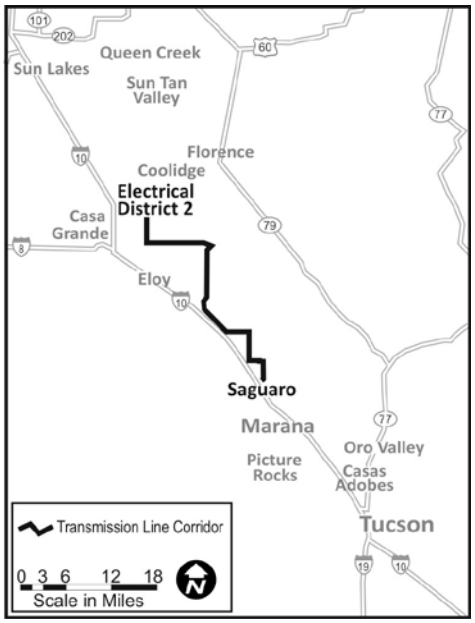
Open House

ED2-to-Saguaro No. 2 Transmission Line Rebuild Project

Learn more about the proposed rebuild of the 35.6-mile-long Electrical District 2-to-Saguaro No. 2 115-kV Transmission Line located near Eloy, Pinal County, Arizona. Western operates and maintains this transmission line under an agreement with the Central Arizona Project.

The purpose of the proposed project is to replace the current wooden structures with steel monopoles. The line currently has 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures. The proposed action increases the reliability and safety of the bulk electric system as the line experienced five major weather-related failures over the last 10 years.

Western will analyze the environmental impacts to resources in the proposed project area. Your input is encouraged to help Western identify impacts to be analyzed in the project environmental assessment.



Come to an open house:
Tuesday, March 25, 2014, 6– 8 p.m.
Holiday Inn
777 North Pinal Avenue
Casa Grande, AZ 85122

Send us your comments:
You may provide comments or input at the open house meetings, by phone, or by mail. Send comments by April 11, 2014 to:

Western Area Power Administration, Desert Southwest Region
Matthew Bilsbarrow, Environmental Planner
PO Box 6457
Phoenix, AZ 85005
Email: DSW-EA1972PublicComment@wapa.gov
Phone: 602-605-2536

For more information visit:

- http://www.wapa.gov/dsw/environment/ED2DOEEA1972.htm

For translation services, call Emily Capello at 415-696-5312 or email DSW-EA1972PublicComment@wapa.gov

Come to the Public Open House Tuesday March 25, 6 – 8 p.m.

Appendix D

Agency Correspondence

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

JAN 28 2014

Mr. Ferris Begay, Project Manager
U.S. Bureau of Indian Affairs, San Carlos Irrigation Project
13805 North Arizona Boulevard
Coolidge, Arizona 85128

Attn: Mr. Beau Goldstein

RE: Invitation to be a Cooperating Agency in the Environmental Reviews for Western's ED2 Saguaro No. 2 Transmission Line Rebuild Project for Central Arizona Project, near Eloy, Pinal County, Arizona. DOE/EA-1972

Dear Mr. Begay:

Western Area Power Administration (Western) invites your agency to be a cooperating agency (per 40 CFR 1501.6) in the National Environmental Policy Act (NEPA) process for Western's proposed Electrical District 2 (ED2) to Saguaro No. 2 115-kV Transmission Line Rebuild Project, which is being performed for the Central Arizona Project (CAP), located near Eloy, Pinal County, Arizona (Figure 1). Western operates and maintains this line, which serves three CAP pumping stations: Brady, Picacho, and Red Rock. DOE/EA-1972 is our tracking number for this NEPA effort. Your agency has jurisdiction by law over a portion of the project, because your agency requires an encroachment permit for the transmission line to cross the Casa Grande Canal and the Florence Casa Grande Extension Canal located just south of the ED2 Substation in Section 31, Township 6 South, Range 8 East on the Gila and Salt River Baseline and Meridian. Western's Matthew Bilsbarrow briefly discussed this project with Acting Environmental Coordinator Mr. Beau Goldstein on August 14, 2013.

Project Description

Western proposes to rebuild, with 60 to 75-foot-tall steel monopoles, the 35.6-mile-long, ED2 Saguaro No. 2 115-kV Transmission Line, which is composed of 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures. The conductors and overhead protection ground wire will be replaced. Existing access roads will be used to the extent possible and improved as needed. The design, operation, and maintenance of this transmission line must meet North American Electric Reliability Corporation and Western Electric Coordinating Council reliability standards, as well as National Electric Safety Code requirements and Western's Power Systems Safety Manual guidance.

Western's proposed action increases the reliability and safety of the bulk electric system so that the risk of a catastrophic failure on this transmission line is reduced to the lowest practical level and the greatest long-term benefit is obtained. This line experienced five major failures in the past 10 years, the most recent of which occurred in 2012 when a storm destroyed 30 structures in a three-mile-long section. Steel monopoles are stronger and more storm resistant than wood structures. Rebuilding the entire line provides a cost-effective opportunity to replace the overhead protection ground wire with one containing fiber optic cables to meet redundant communication requirements.

Initial Environmental Scoping

Western proposes to act as Lead Federal agency for NEPA, National Historic Preservation Act (NHPA) and Endangered Species Act (ESA) processes for this project. According to our NEPA regulations, the initial starting point for this project type is the Environmental Assessment (EA) path. Western anticipates that the EA will include analysis of the project's direct, indirect and cumulative impacts for the following resource areas: Air quality, Cultural resources, Hazardous materials, Human health and safety, Noise, Recreation, Transportation, Vegetation, Visual/ Aesthetics, Water resources/ Floodplains/ Water of the U.S., and Wildlife. The following resources areas likely do not require analysis in the EA: Agriculture/ Prime farmland, Climate change, Geology/ Soils/ Mineral resources, Intentional destructive acts, Land use, and Socio economic/ Environmental Justice. As scoping and technical analyses proceed, we may add or remove resources areas from detailed study (per 40 CFR 1501.7(a)(3)). At this point, Western plans to consider one action alternative and a no action alternative.

Western determined that this project is the type of activity that could impact historic properties should they be present, and thus meets the definition of an undertaking under the NHPA's Section 106 regulations. We determined that most of the area of potential effect for ground disturbance was previously surveyed, and we are gathering this documentation and will address any gaps.

Western determined that this project is a Federal action and will follow the ESA's Section 7 regulations. We plan to conduct a biological resources assessment of the action area and evaluate project's effects to threatened or endangered species or their habitat.

Project Schedule

Western plans to rebuild the transmission line in stages beginning in October 2016 and complete it by April 2018. Western plans to prepare a final Environment Assessment in October 2014 and issue a NEPA decision document (i.e., Finding of No Significant Impact or Determination to Prepare an Environmental Impact Statement) by December 31, 2014. Western plans to hold one public scoping meeting during either February or March 2014 and located near Casa Grande, Arizona.

Cooperating Agency Role

Western expects your agency's involvement will entail only those areas under its jurisdiction and will occur in a timely manner relative to the project schedule. This may include (per 40 CFR 1501.6(b)):

1) providing meaningful early input on defining the purpose and need, determining alternatives, and analytical methods;
2) participating in the public scoping meeting, coordination meetings and joint field reviews, as appropriate; and
3) providing timely review and comments on draft documents.

Given the scope of this environmental effort, Western does not propose preparing a Memorandum of Understanding between our two agencies.

As a cooperating agency, you have the right to expect that the NEPA, NHPA and ESA documents will enable your agency to discharge its jurisdictional responsibilities. Likewise, your agency has the obligation to tell us if, at any point in the process that your needs are not being met.

Looking Ahead

Please let Western know if your agency requires a different NEPA path (e.g., Environmental Impact Statement), has any unique procedural or documentation requirements, has data relevant to the project area or the project's impacts, or is aware of other individuals or affiliated organizations that should be contacted regarding this project. If you are not your agency's point of contact, please direct us to one.

Western will contact your agency's point of contact regarding a NEPA kickoff meeting, public scoping meeting, and status updates. If you have any questions, please contact Environmental Planner Mr. Matthew Bilsbarrow at 602-605-2536, or via email at bilsbarrow@wapa.gov or myself at 602-605-2524 or marianito@wapa.gov .

Sincerely,

Linda Marianito
Environmental Manager

Accept Western's cooperating agency invitation & Western's designation as lead Federal agency for the ED2 Saguaro No. 2 Transmission Line Rebuild Project

Sign: _____ Date: _____

Name: _____ Title: _____

Comments (e.g., reason for rejection, clarification of jurisdiction or expertise, point of contact information):

_____

_____

_____

enclosure (map figure 1)

bcc. w/enc. (map figure 1)

Marianito (G0400)
Bilsbarrow (G0420)
circulation file

Kelly (G5637)
Garbo (G5655)

Capello (Aspen) administrative record file

FILE: 5440.02 EA for ED2 SGR2 TL

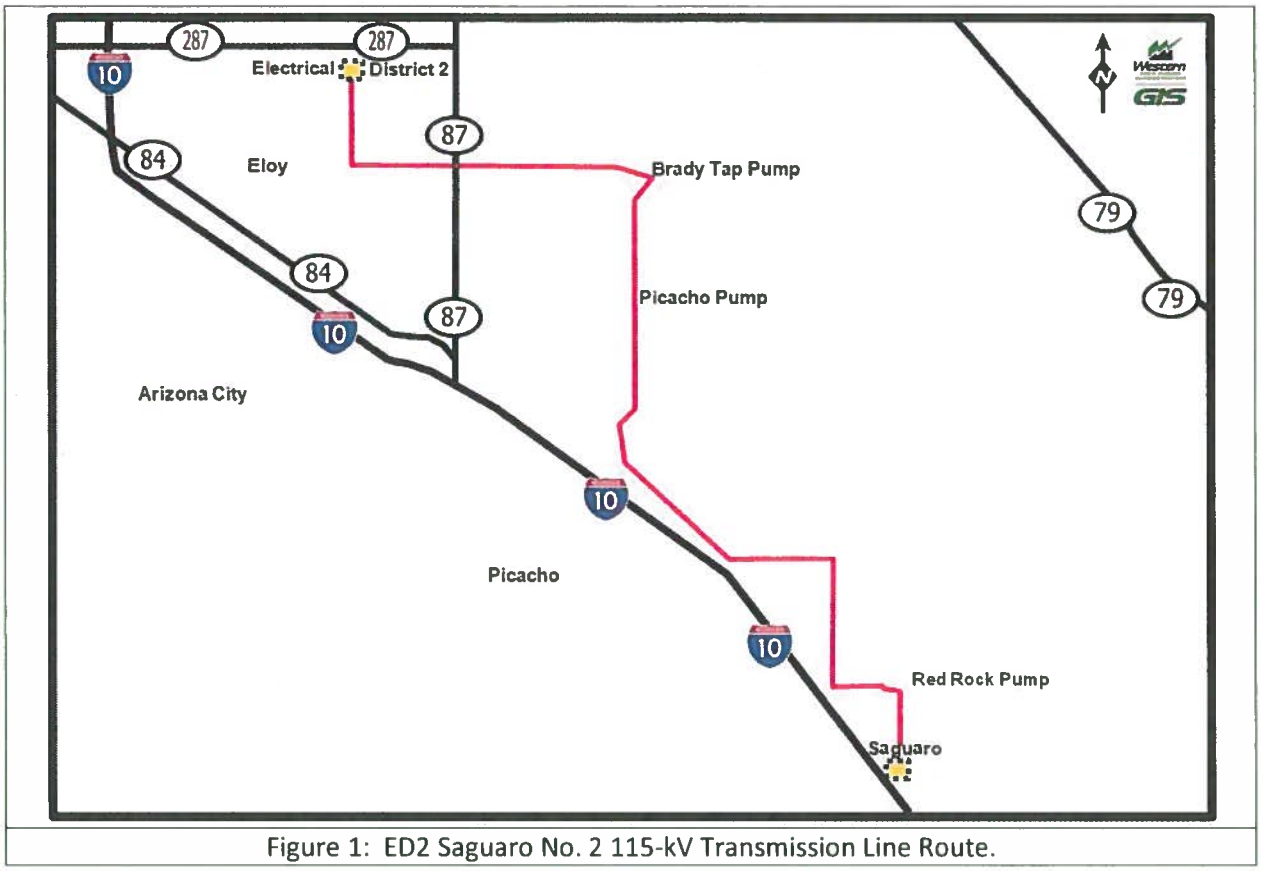


Figure 1: ED2 Saguaro No. 2 115-kV Transmission Line Route.

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

JAN 28 2014

Mr. Alexander B. Smith, Supervisory Environmental Specialist
U.S. Bureau of Reclamation, Phoenix Area Office
6150 West Thunderbird Road
Glendale, Arizona 85306-4001

RE: Invitation to be a Cooperating Agency in the Environmental Reviews for Western's ED2 Saguaro No. 2 Transmission Line Rebuild Project for Central Arizona Project, near Eloy, Pinal County, Arizona. DOE/EA-1972

Dear Mr. Smith:

Western Area Power Administration (Western) invites your agency to be a cooperating agency (per 40 CFR 1501.6) in the National Environmental Policy Act (NEPA) process for Western's proposed Electrical District 2 (ED2) to Saguaro No. 2 115-kV Transmission Line Rebuild Project, which is being performed for the Central Arizona Project (CAP), located near Eloy, Pinal County, Arizona (Figure 1). Western operates and maintains this line, which serves three CAP pumping stations: Brady, Picacho, and Red Rock. DOE/EA-1972 is our tracking number for this NEPA effort. Your agency has jurisdiction by law over a portion of the project, because your agency holds the transmission line right-of-way and land actions may be needed, such as acquiring an encroachment permit from the U.S. Bureau of Indian Affairs, San Carlos Irrigation Project for crossings of the Casa Grande Canal and the Florence Casa Grande Extension Canal located just south of the ED2 Substation in Section 31, Township 6 South, Range 8 East on the Gila and Salt River Baseline and Meridian. Western's Matthew Bilsbarrow briefly discussed this project with you on July 25, 2013.

Project Description

Western proposes to rebuild, with 60 to 75-foot-tall steel monopoles, the 35.6-mile-long, ED2 Saguaro No. 2 115-kV Transmission Line, which is composed of 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures. The conductors and overhead protection ground wire will be replaced. Existing access roads will be used to the extent possible and improved as needed. The design, operation, and maintenance of this transmission line must meet North American Electric Reliability Corporation and Western Electric Coordinating Council reliability standards, as well as National Electric Safety Code requirements and Western's Power Systems Safety Manual guidance.

Western's proposed action increases the reliability and safety of the bulk electric system so that the risk of a catastrophic failure on this transmission line is reduced to the lowest practical level and the greatest long-term benefit is obtained. This line experienced five major failures in the past 10 years, the most recent of which occurred in 2012 when a storm destroyed 30 structures in a three-mile-long section. Steel monopoles are stronger and more storm resistant than wood structures. Rebuilding the entire line provides a cost-effective opportunity to replace the overhead protection ground wire with one containing fiber optic cables to meet redundant communication requirements.

Initial Environmental Scoping

Western proposes to act as Lead Federal agency for NEPA, National Historic Preservation Act (NHPA) and Endangered Species Act (ESA) processes for this project. According to our NEPA regulations, the initial starting point for this project type is the Environmental Assessment (EA) path. Western anticipates that the EA will include analysis of the project's direct, indirect and cumulative impacts for the following resource areas: Air quality, Cultural resources, Hazardous materials, Human health and safety, Noise, Recreation, Transportation, Vegetation, Visual/ Aesthetics, Water resources/ Floodplains/ Water of the U.S., and Wildlife. The following resources areas likely do not require analysis in the EA: Agriculture/ Prime farmland, Climate change, Geology/ Soils/ Mineral resources, Intentional destructive acts, Land use, and Socio economic/ Environmental justice. As scoping and technical analyses proceed, we may add or remove resources areas from detailed study (per 40 CFR 1501.7(a)(3)). At this point, Western plans to consider one action alternative and a no action alternative.

Western determined that this project is the type of activity that could impact historic properties should they be present, and thus meets the definition of an undertaking under the NHPA's Section 106 regulations. We determined that most of the area of potential effect for ground disturbance was previously surveyed, and we are gathering this documentation and will address any gaps.

Western determined that this project is a Federal action and will follow the ESA's Section 7 regulations. We plan to conduct a biological resources assessment of the action area and evaluate project's effects to threatened or endangered species or their habitat.

Project Schedule

Western plans to rebuild the transmission line in stages beginning in October 2016 and complete it by April 2018. Western plans to prepare a final Environment Assessment in October 2014 and issue a NEPA decision document (i.e., Finding of No Significant Impact or Determination to Prepare an Environmental Impact Statement) by December 31, 2014. Western plans to hold one public scoping meeting during either February or March 2014 and located near Casa Grande, Arizona.

Cooperating Agency Role

Western expects your agency's involvement will entail only those areas under its jurisdiction and will occur in a timely manner relative to the project schedule. This may include (per 40 CFR 1501.6(b)):

1) providing meaningful early input on defining the purpose and need, determining alternatives, and analytical methods;
2) participating in the public scoping meeting, coordination meetings and joint field reviews, as appropriate; and
3) providing timely review and comments on draft documents.

Given the scope of this environmental effort, Western does not propose preparing a Memorandum of Understanding between our two agencies.

As a cooperating agency, you have the right to expect that the NEPA, NHPA and ESA documents will enable your agency to discharge its jurisdictional responsibilities. Likewise, your agency has the obligation to tell us if, at any point in the process that your needs are not being met.

Looking Ahead

Please let Western know if your agency requires a different NEPA path (e.g., Environmental Impact Statement), has any unique procedural or documentation requirements, has data relevant to the project area or the project's impacts, or is aware of other individuals or affiliated organizations that should be contacted regarding this project. If you are not your agency's point of contact, please direct us to one.

Western will contact your agency's point of contact regarding a NEPA kickoff meeting, public scoping meeting, and status updates. If you have any questions, please contact Environmental Planner Mr. Matthew Bilsbarrow at 602-605-2536, or via email at bilsbarrow@wapa.gov or myself at 602-605-2524 or marianito@wapa.gov .

Sincerely,

Linda Marianito
Environmental Manager

Accept Western's cooperating agency invitation & Western's designation as lead Federal agency for the ED2 Saguaro No. 2 Transmission Line Rebuild Project

Sign: _____ Date: _____

Name: _____ Title: _____

Comments (e.g., reason for rejection, clarification of jurisdiction or expertise, point of contact information):

_____

_____

_____

enclosure (map figure 1)

bcc. w/enc. (map figure 1)

Marianito (G0400)
Bilsbarrow (G0420)
circulation file

Kelly (G5637)
Garbo (G5655)

Capello (Aspen) administrative record file

FILE: 5440.02 EA for ED2 SGR2 TL

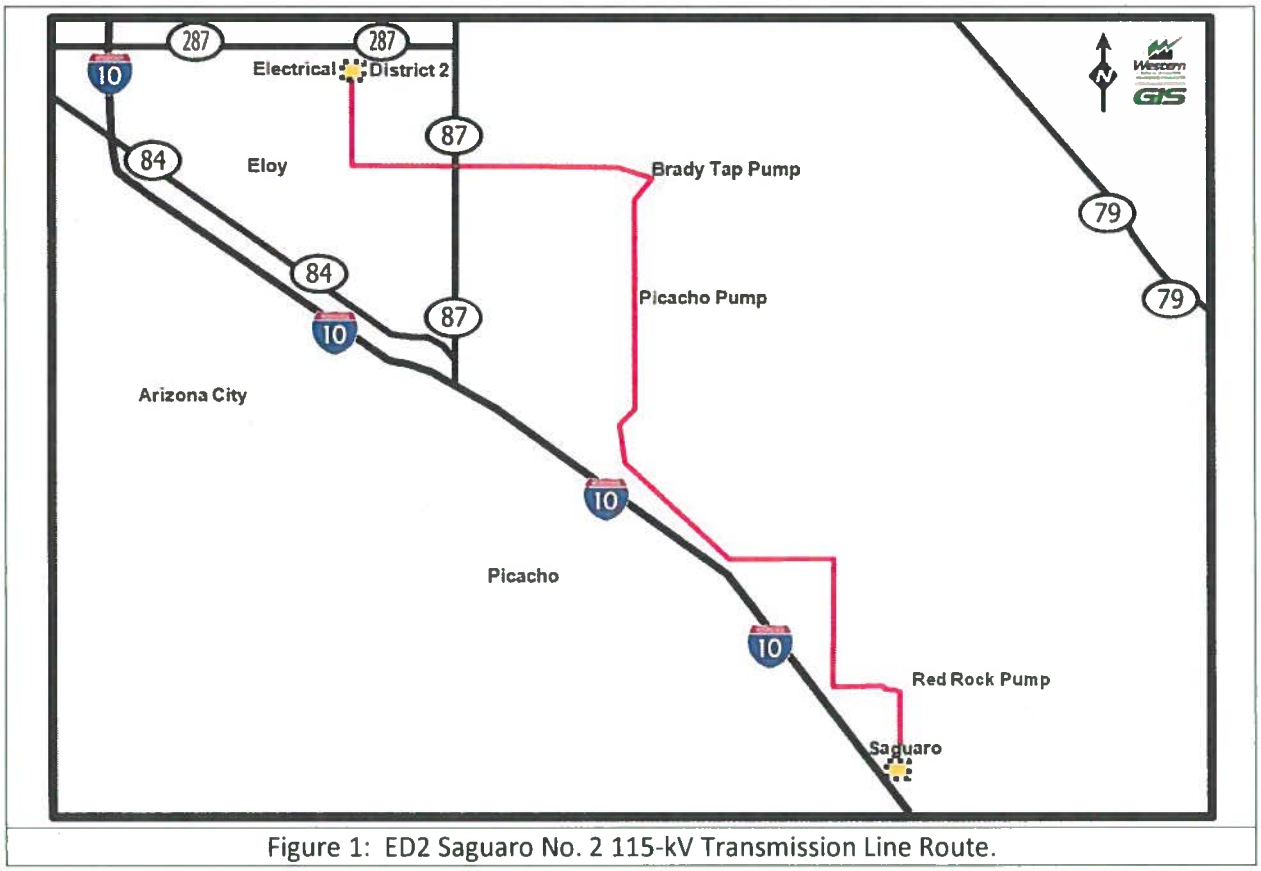


Figure 1: ED2 Saguaro No. 2 115-kV Transmission Line Route.

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

JAN 28 2014

Mr. Bill Miller
U.S. Army Corps of Engineers, Los Angeles District Office
3636 North Central Avenue, Suite 900
Phoenix, Arizona 85012-1939

RE: Invitation to be a Cooperating Agency in the Environmental Reviews for Western's ED2 Saguaro No. 2 Transmission Line Rebuild Project for Central Arizona Project, near Eloy, Pinal County, Arizona. DOE/EA-1972

Dear Mr. Miller:

Western Area Power Administration (Western) invites your agency to be a cooperating agency (per 40 CFR 1501.6) in the National Environmental Policy Act (NEPA) process for Western's proposed Electrical District 2 (ED2) to Saguaro No. 2 115-kV Transmission Line Rebuild Project, which is being performed for the Central Arizona Project (CAP), located near Eloy, Pinal County, Arizona (Figure 1). Western operates and maintains this line, which serves three CAP pumping stations: Brady, Picacho, and Red Rock. DOE/EA-1972 is our tracking number for this NEPA effort. Your agency has jurisdiction by law over a portion of the project, because your agency may require a permit. Western's initial analysis suggests that the project may meet the limits and conditions for the Nationwide Permit 12-Utility Line Activities based on an earlier study of proposed improvements to the transmission line access road crossings of McClellan Wash located near Picacho Pass in Sections 12 & 13, Township 9 South, Range 9 East on the Gila and Salt River Baseline and Meridian.

Project Description

Western proposes to rebuild, with 60 to 75-foot-tall steel monopoles, the 35.6-mile-long, ED2 Saguaro No. 2 115-kV Transmission Line, which is composed of 3.1 miles of wood H-frame structures and 32.5 miles of wood single-pole structures. The conductors and overhead protection ground wire will be replaced. Existing access roads will be used to the extent possible and improved as needed. The design, operation, and maintenance of this transmission line must meet North American Electric Reliability Corporation and Western Electric Coordinating Council reliability standards, as well as National Electric Safety Code requirements and Western's Power Systems Safety Manual guidance.

Western's proposed action increases the reliability and safety of the bulk electric system so that the risk of a catastrophic failure on this transmission line is reduced to the lowest practical level and the greatest long-term benefit is obtained. This line experienced five major failures in the past 10 years, the most recent of which occurred in 2012 when a storm destroyed 30 structures in a three-mile-long section. Steel monopoles are stronger and more storm resistant than wood structures. Rebuilding the entire line provides a cost-effective opportunity to replace the overhead protection ground wire with one containing fiber optic cables to meet redundant communication requirements.

Initial Environmental Scoping

Western proposes to act as Lead Federal agency for NEPA, National Historic Preservation Act (NHPA) and Endangered Species Act (ESA) processes for this project. According to our NEPA regulations, the initial starting point for this project type is the Environmental Assessment (EA) path. Western anticipates that the EA will include analysis of the project's direct, indirect and cumulative impacts for the following resource areas: Air quality, Cultural resources, Hazardous materials, Human health and safety, Noise, Recreation, Transportation, Vegetation, Visual/ Aesthetics, Water resources/ Floodplains/ Water of the U.S., and Wildlife. The following resources areas likely do not require analysis in the EA: Agriculture/ Prime farmland, Climate change, Geology/ Soils/ Mineral resources, Intentional destructive acts, Land use, and Socio economic/ Environmental Justice. As scoping and technical analyses proceed, we may add or remove resources areas from detailed study (per 40 CFR 1501.7(a)(3)). At this point, Western plans to consider one action alternative and a no action alternative.

Western determined that this project is the type of activity that could impact historic properties should they be present, and thus meets the definition of an undertaking under the NHPA's Section 106 regulations. We determined that most of the area of potential effect for ground disturbance was previously surveyed, and we are gathering this documentation and will address any gaps.

Western determined that this project is a Federal action and will follow the ESA's Section 7 regulations. We plan to conduct a biological resources assessment of the action area and evaluate project's effects to threatened or endangered species or their habitat.

Project Schedule

Western plans to rebuild the transmission line in stages beginning in October 2016 and complete it by April 2018. Western plans to prepare a final Environment Assessment in October 2014 and issue a NEPA decision document (i.e., Finding of No Significant Impact or Determination to Prepare an Environmental Impact Statement) by December 31, 2014. Western plans to hold one public scoping meeting during either February or March 2014 and located near Casa Grande, Arizona.

Cooperating Agency Role

Western expects your agency's involvement will entail only those areas under its jurisdiction and will occur in a timely manner relative to the project schedule. This may include (per 40 CFR 1501.6(b)):

1) providing meaningful early input on defining the purpose and need, determining alternatives, and analytical methods;
2) participating in the public scoping meeting, coordination meetings and joint field reviews, as appropriate; and
3) providing timely review and comments on draft documents.

Given the scope of this environmental effort, Western does not propose preparing a Memorandum of Understanding between our two agencies.

As a cooperating agency, you have the right to expect that the NEPA, NHPA and ESA documents will enable your agency to discharge its jurisdictional responsibilities. Likewise, your agency has the obligation to tell us if, at any point in the process that your needs are not being met.

Looking Ahead

Please let Western know if your agency requires a different NEPA path (e.g., Environmental Impact Statement), has any unique procedural or documentation requirements, has data relevant to the project area or the project's impacts, or is aware of other individuals or affiliated organizations that should be contacted regarding this project. If you are not your agency's point of contact, please direct us to one.

Western will contact your agency's point of contact regarding a NEPA kickoff meeting, public scoping meeting, and status updates. If you have any questions, please contact Environmental Planner Mr. Matthew Bilsbarrow at 602-605-2536, or via email at bilsbarrow@wapa.gov or myself at 602-605-2524 or marianito@wapa.gov .

Sincerely,

Linda Marianito
Environmental Manager

Accept Western's cooperating agency invitation & Western's designation as lead Federal agency for the ED2 Saguaro No. 2 Transmission Line Rebuild Project

Sign: _____ Date: _____

Name: _____ Title: _____

Comments (e.g., reason for rejection, clarification of jurisdiction or expertise, point of contact information):

_____

_____

_____

enclosure (map figure 1)

bcc. w/enc. (map figure 1)

Marianito (G0400)
Bilsbarrow (G0420)
circulation file

Kelly (G5637)
Garbo (G5655)

Capello (Aspen) administrative record file

FILE: 5440.02 EA for ED2 SGR2 TL

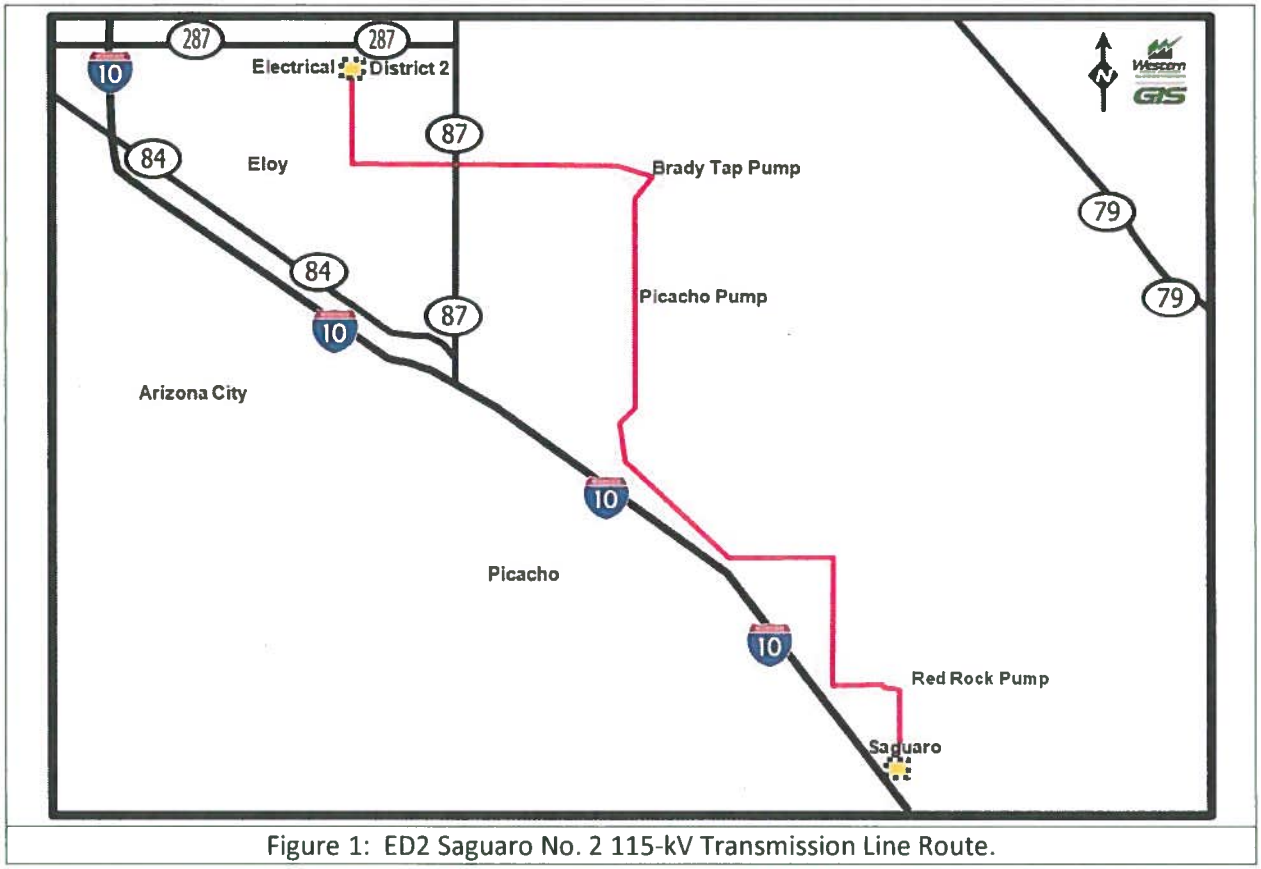


Figure 1: ED2 Saguaro No. 2 115-kV Transmission Line Route.

United States Department of the Interior

Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

AESO/SE
02EAAZ00-2015-I-0150

December 12, 2014

Ms. Linda Marianito
Environmental Manager
Western Area Power Administration
Desert Southwest Region
P.O. Box 6457
Phoenix, Arizona 85005-6457

Dear Ms. Marianito:

Thank you for your correspondence of November 12, 2014, received on November 21, 2014. This letter documents our review of the September 26, 2014 Biological Evaluation (BE) associated with Western Area Power Administration's (WAPA) proposed rebuild project of the Electric District #2 to Saguaro No. 2 transmission line in Pinal County, Arizona, in compliance with section 7 of the Endangered Species Act of 1973 (ESA) as amended (16 U.S.C. 1531 *et seq.*). Your letter concluded that the proposed project may affect, but is not likely to adversely affect, the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) and the threatened yellow-billed cuckoo (*Coccyzus americanus*). We concur with your determinations and provide our rationale below.

BACKGROUND

WAPA proposes to rebuild the 35.6-mile No. 2 115-kV transmission line located between Electric District #2 and Saguaro substations in Pinal County, Arizona. The existing line is on 27 wood H-frame and 434 single-pole wood structures that are 60 – 70 feet tall. WAPA proposes to rebuild the line with 80 to 90-foot galvanized steel monopoles and replace the conductors. The rebuild line would have spans between poles of 900 to 1,000 feet and would require an estimated 213 new structures. The new structures will be directly embedded into the ground in holes typically four feet in diameter and 14 feet deep. Existing access roads will be used to the extent possible and improved as needed.

Ground disturbance would result from removing existing structures, grading and drilling holes for new structures, improving existing access roads for safe vehicle and equipment access,

installing and removing conductors and overhead wires, and removing any existing guy wires. No blasting is anticipated. All activities would be conducted primarily within the transmission line ROW. However, short-term disturbance outside the ROW would be required for wire pulling and tensioning sites and may extend up to 400 feet from turning structures. Additionally, a 10-acre staging area would be needed for construction.
Construction equipment would include various rubber tire vehicles and track equipment ranging in size from a pickup truck to a crane, including, but not limited to: all-terrain vehicles, auger or drill rig, backhoe, bucket or boom truck, bulldozer, cement mixer or truck, compressor, crane, crew truck, dump truck, front-end loader, grader, pole truck, spool rig, tensioners, and tractor trailers. A helicopter may be used to lift pole sections into place and for conductor stringing. Construction would require up to approximately 50 workers.

Restoration and cleanup of each construction phase would be completed at disturbed areas following construction per the Stormwater Pollution Prevention Plan. Operation and maintenance activities may include periodic inspection, vegetation management, access road maintenance, and emergency repairs. Vegetation will be managed to ensure public safety and prevent vegetation from coming into contact with the conductor and will be done in accordance with WAPA's Integrated Vegetation Management Guidance Manual. Between structures, the distance of at least 21 feet will be maintained between the conductor and vegetation. Based on the predicted height of the new conductors, vegetation will be maintained at or below 15 feet in height.

The rebuild is anticipated to begin in September 2016 and be completed by June 2017. The work will occur in stages, beginning at the north end of the project. The proposed schedule will most likely have project activities occurring in lesser long-nosed bat foraging habitat and yellow-billed cuckoo habitat during a time period of mid-December to late January, a time period when it is extremely unlikely for either lesser long-nosed bats or yellow-billed cuckoos to be in the project area.

No known roosts for lesser long-nosed bats occur within the project area. However, lesser long-nosed bat foraging habitat occurs throughout the project, including saguaros, an important forage species for the lesser long-nosed bat. Potential effects to the lesser long-nosed bat include loss of forage resources and disturbance from project activities.

No nesting habitat for the yellow-billed cuckoo is present within the project area. However, yellow-billed cuckoos regularly occupy Picacho Reservoir, located approximately 1 mile to the north of a portion of the proposed project (79 FR 48548). Picacho Reservoir is proposed for designation as critical habitat for the cuckoo (79 FR 48548). Additionally, the proposed project will impact some areas of mesquite bosque that potentially proved dispersal and migration habitat for yellow-billed cuckoos.

Conservation measures have been included in the project description to reduce the effects to lesser long-nosed bat forage and disturbance impacts to migrating or dispersing yellow-billed cuckoos. These conservation measures include:

- At all proposed work areas, limit the mechanical disturbance of previously undisturbed habitats, including soils, to the greatest extent possible.
- A qualified biologist will conduct pre-construction clearance surveys for nesting migratory birds, including yellow-billed cuckoos. These pre-construction surveys will be conducted no more than two days in advance of any ground- or vegetation-disturbing activities in any location. Pre-construction nesting surveys will be required during the nesting season (February 15 – Augus 31).
- A biological monitor will be present during any vegetation clearing or soil disturbance activities. If an active bird nest is located on or adjacent to the work site, a biological monitor will designate and flag and appropriate buffer around the nest where project activities will not be allowed. The buffer area will be based on the species of bird and the nature of project activities.
- Project activities will not take place at night, beginning 30 minutes prior to sunset, during the season when lesser long-nosed bats are foraging in the area (April 15 – October 31).
- Cutting or removal of saguaros will be minimized to the extent possible. In accordance with the Arizona Native Plant Law, all saguaros will be flagged and avoided if possible. As appropriate, some saguaros may be topped, rather than removed, to maintain adequate space to conductors.
- Project construction requiring the use of helicopters will not be conducted within 0.5 mile of Picacho Reservoir during the yellow-billed cuckoo nesting season (March 15 – August 31).
- WAPA will conduct employee training to ensure that all workers on the project site (including contractors) are aware of all applicable conservation measures for biological resources. During the training, the instructor will briefly discuss special status species that may occur in the work area, their habitats, and requirements to avoid and minimize impacts. In addition, all workers will be informed of the civil and criminal penalties for violations of the ESA, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.
- To reduce the potential for electrocutions, construction will conform with Avian Power Line Interaction Committee guidelines and energized and ground conductors and hardware will be separated by 60 inches or more, or will be covered.

A complete description of the proposed action and conservation measures are found in the September 26, 2014 BE and is incorporated herein by reference.

CONCLUSION

We concur with your determination that this project may affect, but is not likely to adversely affect, the lesser long-nosed bat. We believe that effects considered will be insignificant or discountable for the following reasons:

- No lesser long-nosed bat roost sites are located within the project boundaries. Project activities will occur outside of the daily period when lesser long-nosed bats could be foraging with the project site. Therefore, any potential direct effects on the species are discountable; and

- Indirect effects related to loss of forage or habitat removal and fragmentation will be insignificant due to: 1) the small size of the impact compared to the availability of foraging habitat in the immediate vicinity of the project, 2) work will occur in areas with very low densities of saguaros, and 3) the adherence to the conservation measures, including avoiding or minimizing impacts to saguaros.

We concur with your determination that this project may affect, but is not likely to adversely affect, the yellow-billed cuckoo. We believe that effects considered will be insignificant or discountable for the following reasons:

- No yellow-billed cuckoo nesting habitat is located within the project area. The use of helicopters will be prohibited during the yellow-billed cuckoo nesting season within 0.5 mile of occupied cuckoo habitat at Picacho Reservoir. Pre-construction surveys will be conducted and any nests located would be buffered from project activities. Based on the scheduled phasing of the project, it is extremely unlikely that project activities will be occurring in suitable cuckoo habitat during the season when cuckoos would be occupying the area. Therefore, direct effects to nesting yellow-billed cuckoos will be discountable.
- Project effects to dispersal and migration habitat will be limited to areas that have been previously disturbed or are narrow stringers of mesquite trees of widths less than 200 feet and of limited total patch size. Based on the scheduled phasing of the project, it is extremely unlikely that project activities will be occurring in suitable cuckoo habitat during the season when cuckoos would be occupying the area. Should any cuckoos be in the area during project activities, nesting and migrating cuckoos can avoid disturbance effects by using adjacent, undisturbed habitat. Therefore, effects to migrating or dispersing yellow-billed cuckoos and habitat will be insignificant.

While not required to be considered during section 7 ESA consultation, we are supportive of the measures outlined in the BE to address non-listed species, including the Sonoran desert tortoise, bald and golden eagles, and other migratory birds. We strongly recommend that all of the outlined measures be implemented. Of particular value will be the on-site biological monitors monitoring for the occurrence of Sonoran desert tortoises and the implementation of the AGFD tortoise handling guidelines. In addition, the identification of active migratory bird nests and the delineation of appropriate buffers will be crucial in avoiding impacts to nesting migratory birds. We appreciate WAPA's willingness to identify and implement these important conservation measures for these non-listed trust species.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to

be reconsidered. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department. In all future correspondence on this project, please refer to the consultation number 02EAAZ00-2015-I-0150. Should you require further assistance or if you have any questions, please contact Scott Richardson at (520) 670-6150 (x 242) or Jean Calhoun (x 223).

Sincerely,

Steven L. Spangle
For Field Supervisor

cc (hard copy):
Field Supervisor, Fish and Wildlife Service, Phoenix, AZ (2 copies)
Jean Calhoun, Assistant Field Supervisor, U.S. Fish and Wildlife Service, Tucson, AZ

cc (electronic):
pep@azgfd.gov, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ (Attn: John Windes)

C:\Users\scottrichardson\Documents\Section 7-10\WAPA.Pinal Co Transmission Line Rebuild.concur.12_10_14.sr.doc

Appendix E

SHPO Correspondence

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

MAY 27 2014

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 W. Washington Street
Phoenix, AZ
85007

Re: Class III Report for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Dear Mr. Garrison:

Western is in the planning process to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line. The transmission line was constructed using wood poles (monopole and H-frame design), is approximately 36 miles long and is located in eastern Pinal County, Arizona (see attached map). It crosses Arizona State Land Department, Bureau of Indian Affairs/San Carlos Irrigation Project, Bureau of Reclamation and private lands. The transmission line's easements are held by the U.S. Bureau of Reclamation, the Central Arizona Project (CAP) owns the structures and equipment, and Western maintains and operates the line on behalf of CAP. Western anticipates a proposal to retain the current alignment of the transmission line, but to rebuild the structures with steel monopoles.

Western has determined that the proposed rebuild constitutes a federal undertaking, as defined in 36 CFR Part 800.16(y) (as revised in 2004), the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). Western is the lead federal agency for this undertaking.

Western issued a contract to Logan Simpson Design (LSD) to obtain a complete Class III archaeological survey for a 100 foot area of the right-of-way (i.e. 50 feet either side of centerline, previously inventoried areas were inventoried again and previously recorded sites were revisited). The report documenting this effort is included for your review and comment. Although the enclosed report makes some effects recommendations, Western is still in the design and engineering phase for this project and so is only seeking comment and concurrence on eligibility recommendations for the National Register of Historic Places (NRHP).

Properties Previously Determined Eligible for the NRHP

AZ AA:2:133(ASM) and AZ AA:3:209(ASM) are the Florence-Casa Grande Canal Extension and the Casa Grande Canal, respectively. Both are determined eligible for inclusion in the National Register under Criteria A and D. LSD recommends that the segments of both canals within the ED2–SGR ROW contribute to the eligibility of the historic properties.

AZ AA:6:63(ASM) is State Route 87, which has previously been determined eligible for inclusion in the National Register under Criterion D. LSD recommends that the portion of the historic property within the ED2–SGR ROW is a non-contributing component of the site.

AZ T:10:84(ASM) is the Southern Pacific Railroad Wellton-Phoenix-Eloy Spur, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. LSD recommends that the segment within the ED2–SGR ROW contributes to the eligibility of the historic property.

AZ AA:7:506(ASM) is the El Paso Natural Gas pipeline, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. The actual pipeline is buried and not visible within the project area. The April 5, 2002 Federal Register (67 FR 16364) provides an exemption for historic natural gas pipelines during the Section 106 review process.

AZ AA:7:62(ASM), AZ AA:7:66(ASM), and AZ AA:7:68(ASM) are prehistoric sites that have been determined eligible for inclusion in the National Register under Criterion D.

Sites Recommended Eligible for the NRHP

Sites AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:7:32(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:671(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), AZ AA:7:674(ASM), and AZ AA:7:669(ASM) are prehistoric sites that are recommended eligible for inclusion in the National Register under Criterion D.

Site AZ AA:2:347(ASM) is a historic homestead that is recommended eligible for inclusion in the National Register under Criterion D.

AZ AA:3:18(ASM) is a prehistoric rock art and historic mining site. LSD recommends it is eligible for inclusion in the National Register under Criteria C and D.

AZ AA:7:675(ASM) is a prehistoric artifact scatter and historic trash scatter. It is recommended eligible for inclusion in the National Register under Criterion D.

Sites Previously Determined Not Eligible for the NRHP

AZ AA:2:176(ASM)/Sunshine Boulevard, has been determined not eligible for inclusion in the National Register.

Sites Recommended Not Eligible for the NRHP

AZ AA:2:360(ASM), AZ AA:2:361(ASM), AZ AA:2:331(ASM), AZ AA:2:362(ASM), AZ AA:3:319(ASM), and AZ AA:2:320(ASM) are historic roads and AZ AA:7:639(ASM) is a historic substation. None of these sites are associated with an important event that would make them eligible under Criterion A. They are not associated with an important person in history (Criterion B), do not exhibit engineering or artistic qualities (Criterion C), and do not have the potential to yield important information (Criterion D).

Isolated Occurrences Recommended Not Eligible for the NRHP

The isolated occurrences (IOs) include prehistoric ceramics, flaked stone, ground stone, historic trash, and a rock cairn. None of the IOs are considered significant and are recommended not eligible for inclusion in the National Register.

Sites Not Located During Inventory

Three sites—AZ AA:3:76(ASM), AZ AA:3:81(ASM), and AZ AA:7:65(ASM)—were not relocated within the ED2–SGR ROW. AZ AA:3:81(ASM) was previously excavated and destroyed by the construction of the Santa Rosa Canal. AZ AA:7:65(ASM) was previously subjected to data recovery and the portion of AZ AA:7:65(ASM) within the ROW was described as an extremely sparse scatter.

If you concur with Western's eligibility recommendations we have provided for your convenience a signature line and comment field for use below. Of course you may provide separate correspondence if you desire. If we do not receive a response within 30 days we will assume you concur with our finding.

If you have any questions, concerns or wish to consult further about this undertaking please contact our archaeologist, Ms. Jill Jensen at (602) 605-2842 or myself at (602) 605-2524. Thank you for your assistance in this matter.

Sincerely,

Linda J. Marianito
Environmental Manager

Enclosures: report, map
cc: Marianito, Tromly, Jensen, Bilsbarrow
FILE 5440.4 ED2SGR2 TL

As indicated by my signature below I concur with Western's NRHP eligibility recommendations (as contained in Teeter et al 2014) for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Signature:_____ Date:_____

Affiliation:_____

Other comment:

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Patricia Hicks, Regional Archaeologist
Bureau of Reclamation
P.O. Box 61470
Boulder City, NV
89006

Steve Ross, Archaeologist
AZ State Lands Department
1616 W. Adams St.
Phoenix, AZ
85007

Garry Cantley, Regional Archaeologist
Bureau of Indian Affairs, Western Region
2600 N. Central Aveneu, 4th Floor Mailroom
Phoenix, AZ
85004-3008

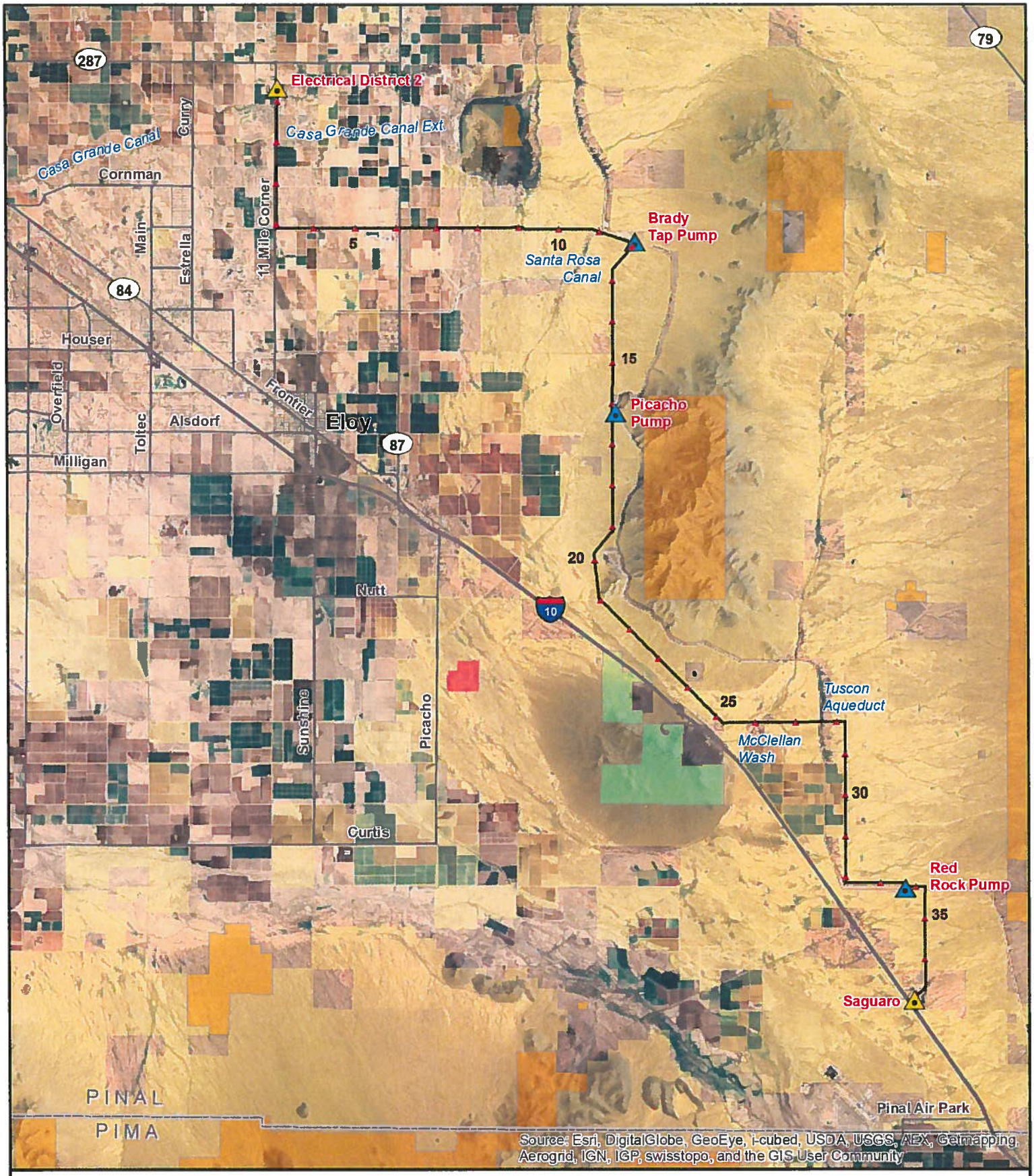
Beau J. Goldstein, Acting Environmental Coordinator
BIA SCIP
13805 North Arizona Blvd
Coolidge, AZ
85128

Mr. Herman G. Honanie, Chairman
The Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona
86039

Mr. Leigh Kuwanwisiwma, THPO
The Hopi Tribe
P.O. Box 123
Kykotsmovi, AZ
86039

Barnaby Lewis, THPO
Gila River Indian Community
P.O. Box 2140
Sacaton, AZ
85147

Gregory Mendoza, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ
85147



1:200,000

0 2.5 5 Miles

Source: DWS, Aspen EG, ESRI

Mile Marker

Pumping Plant - Central Arizona Project

Western Substation

Transmission Lines

AZ Land Ownership

BLM

Local or State Parks

Military

State Trust

County Boundary

Existing ED2 to Saguaro No. 2 115 kV Transmission Line

DOE/EA-1972

2014-0054 (119927)

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

MAY 27 2014

RECEIVED
MAY 28 2014
ARIZONA STATE HISTORIC PRESERVATION OFFICE

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 W. Washington Street
Phoenix, AZ
85007

Re: Class III Report for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Dear Mr. Garrison:

Western is in the planning process to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line. The transmission line was constructed using wood poles (monopole and H-frame design), is approximately 36 miles long and is located in eastern Pinal County, Arizona (see attached map). It crosses Arizona State Land Department, Bureau of Indian Affairs/San Carlos Irrigation Project, Bureau of Reclamation and private lands. The transmission line's easements are held by the U.S. Bureau of Reclamation, the Central Arizona Project (CAP) owns the structures and equipment, and Western maintains and operates the line on behalf of CAP. Western anticipates a proposal to retain the current alignment of the transmission line, but to rebuild the structures with steel monopoles.

Western has determined that the proposed rebuild constitutes a federal undertaking, as defined in 36 CFR Part 800.16(y) (as revised in 2004), the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). Western is the lead federal agency for this undertaking.

Western issued a contract to Logan Simpson Design (LSD) to obtain a complete Class III archaeological survey for a 100 foot area of the right-of-way (i.e. 50 feet either side of centerline, previously inventoried areas were inventoried again and previously recorded sites were revisited). The report documenting this effort is included for your review and comment. Although the enclosed report makes some effects recommendations, Western is still in the design and engineering phase for this project and so is only seeking comment and concurrence on eligibility recommendations for the National Register of Historic Places (NRHP).

Properties Previously Determined Eligible for the NRHP

AZ AA:2:133(ASM) and AZ AA:3:209(ASM) are the Florence-Casa Grande Canal Extension and the Casa Grande Canal, respectively. Both are determined eligible for inclusion in the National Register under Criteria A and D. LSD recommends that the segments of both canals within the ED2–SGR ROW contribute to the eligibility of the historic properties.

AZ AA:6:63(ASM) is State Route 87, which has previously been determined eligible for inclusion in the National Register under Criterion D. LSD recommends that the portion of the historic property within the ED2–SGR ROW is a non-contributing component of the site.

AZ T:10:84(ASM) is the Southern Pacific Railroad Wellton-Phoenix-Eloy Spur, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. LSD recommends that the segment within the ED2–SGR ROW contributes to the eligibility of the historic property.

AZ AA:7:506(ASM) is the El Paso Natural Gas pipeline, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. The actual pipeline is buried and not visible within the project area. The April 5, 2002 Federal Register (67 FR 16364) provides an exemption for historic natural gas pipelines during the Section 106 review process.

AZ AA:7:62(ASM), AZ AA:7:66(ASM), and AZ AA:7:68(ASM) are prehistoric sites that have been determined eligible for inclusion in the National Register under Criterion D.

Sites Recommended Eligible for the NRHP

Sites AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:7:32(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:671(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), AZ AA:7:674(ASM), and AZ AA:7:669(ASM) are prehistoric sites that are recommended eligible for inclusion in the National Register under Criterion D.

Site AZ AA:2:347(ASM) is a historic homestead that is recommended eligible for inclusion in the National Register under Criterion D.

AZ AA:3:18(ASM) is a prehistoric rock art and historic mining site. LSD recommends it is eligible for inclusion in the National Register under Criteria C and D.

AZ AA:7:675(ASM) is a prehistoric artifact scatter and historic trash scatter. It is recommended eligible for inclusion in the National Register under Criterion D.

Sites Previously Determined Not Eligible for the NRHP

AZ AA:2:176(ASM)/Sunshine Boulevard, has been determined not eligible for inclusion in the National Register.

Hanna Road?
AZSITE = AZ AA:2:218(ASM)

Sites Recommended Not Eligible for the NRHP

AZ AA:2:360(ASM), AZ AA:2:361(ASM), AZ AA:2:331(ASM), AZ AA:2:362(ASM), AZ AA:3:319(ASM), and AZ AA:2:320(ASM) are historic roads and AZ AA:7:639(ASM) is a historic substation. None of these sites are associated with an important event that would make them eligible under Criterion A. They are not associated with an important person in history (Criterion B), do not exhibit engineering or artistic qualities (Criterion C), and do not have the potential to yield important information (Criterion D).

Isolated Occurrences Recommended Not Eligible for the NRHP

The isolated occurrences (IOs) include prehistoric ceramics, flaked stone, ground stone, historic trash, and a rock cairn. None of the IOs are considered significant and are recommended not eligible for inclusion in the National Register.

Sites Not Located During Inventory

Three sites—AZ AA:3:76(ASM), AZ AA:3:81(ASM), and AZ AA:7:65(ASM)—were not relocated within the ED2–SGR ROW. AZ AA:3:81(ASM) was previously excavated and destroyed by the construction of the Santa Rosa Canal. AZ AA:7:65(ASM) was previously subjected to data recovery and the portion of AZ AA:7:65(ASM) within the ROW was described as an extremely sparse scatter.

If you concur with Western's eligibility recommendations we have provided for your convenience a signature line and comment field for use below. Of course you may provide separate correspondence if you desire. If we do not receive a response within 30 days we will assume you concur with our finding.

If you have any questions, concerns or wish to consult further about this undertaking please contact our archaeologist, Ms. Jill Jensen at (602) 605-2842 or myself at (602) 605-2524. Thank you for your assistance in this matter.

Sincerely,

Linda Marianito

Linda J. Marianito
Environmental Manager

Enclosures: report, map
cc: Marianito, Tromly, Jensen, Bilsbarrow
FILE 5440.4 ED2SGR2 TL

As indicated by my signature below I concur with Western's NRHP eligibility recommendations (as contained in Teeter et al 2014) for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Signature: _____ Date: 5 JUNE 14

Affiliation: AZ SHPO

Other comment:

Site number assigned to Hanna Road in survey report [i.e., AZ AA:2:331 (ASM)] differs from that in AZSITE [i.e., AZ AA:2:218 (ASM)].

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

DEC 19 2014

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Re: Finding of Effect and Class III Report Additional Inventory in Support of the Electrical District #2 – Saguaro #2 Transmission Line Rebuild
SHPO-2014-0054(119927)

Dear Mr. Garrison:

Western is in the planning process to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line. The transmission line was constructed using wood poles (monopole and H-frame design), is approximately 36 miles long and is located in eastern Pinal County, Arizona (see attached map). It crosses Arizona State Land Department, Bureau of Indian Affairs/San Carlos Irrigation Project, Bureau of Reclamation and private lands. The transmission line's easements are held by the U.S. Bureau of Reclamation, the Central Arizona Project (CAP) owns the structures and equipment, and Western maintains and operates the line on behalf of CAP. Western anticipates a proposal to retain the current alignment of the transmission line, but to rebuild the structures with steel monopoles.

Project Description

Western proposes to rebuild the 35.6-mile-long 115-kV transmission line located between ED2 and Saguaro Substations in Pinal County, Arizona. Western proposes to rebuild the line with 80 to 90-foot-tall rusticated steel monopoles and replace the conductors. The rebuilt line would have spans between poles of 900 to 1,000 feet long and would likely require an estimated 213 new structures. The overhead protection ground wire will be replaced with one containing fiber optic cables for utility communications. The new structures will be placed in holes typically 4 feet in diameter and 14 feet deep and will be directly embedded. Existing access roads will be used to the extent possible and improved as needed.

Ground disturbance from construction activities would occur as a result of removing existing structures, grading and drilling holes for new structures, improving existing access roads for safe vehicle and equipment access, installing/removing conductor and overhead ground wire, and removing existing guy wires. These activities would be conducted primarily within the existing transmission line ROW or at existing structure locations. However, short-term disturbance outside the ROW would be required for wire pulling, tensioning sites, and a staging area.

Western has determined that the proposed rebuild constitutes a federal undertaking, as defined in 36 CFR Part 800.16(y) (as revised in 2004), the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). Western is the lead federal agency for this undertaking.

Cultural Resource Inventories

Western issued a contract to Logan Simpson Design (LSD) to obtain a complete Class III archaeological survey for a 100 foot area of the right-of-way (i.e. 50 feet either side of centerline, previously inventoried areas were inventoried again and previously recorded sites were revisited). The report documenting this effort (Davis et al 2014) was previously sent to you for your review, comment, and concurrence on eligibility recommendations (previous consultation letter attached for your reference). Based on this report, Western determined there was a need to expand the inventory effort in order to more fully assess project affects on cultural resources. Western subsequently issued a contract to Aspen Environmental, who sub-contracted with LSD, for expanded documentation of previously recommended eligible sites, access roads, and pulling stations needed for stringing the conductor.

The report covering the expanded inventory effort is enclosed for your review and comment. This inventory effort expanded the documentation of 17 sites from the Teeter et al (2014) survey and updated documentation for two previously recorded sites. Consultation letters for the eligibility recommendations of the Teeter et al (2014) report were sent on 5-27-2014; no dissent was noted as a result of that letter and Western will move forward with those eligibility recommendations [with the exception of site AZ AA: 7:671(ASM), as discussed below].

ELIGIBILITY RECOMMENDATIONS

Not Eligible

AZ AA:7:647(ASM) is the previously recorded Coolidge–Saguaro 115-kV transmission line. The line connects the Coolidge and Saguaro substations, a distance of about 47 miles. The line was built in 1949 and upgraded in 1963 (Cook and Whitney 2011, as cited in Teeter et al 2014). It was built as part of the Parker-Davis Project, which generated hydroelectric power to deliver to communities in Arizona. It currently consists of wooden "H frame" poles and appears in fair condition. The portion of the transmission line within the survey area was previously recommended not eligible for inclusion in the National Register (Cook and Whitney 2011, as cited in Teeter et al 2014). Western concurs with LSD's recommendation that this site is not eligible for inclusion on the NRHP.

AZ AA:2:175(ASM) is a previously recorded 9-m-wide (30-ft) road, currently designated Eleven Mile Corner Road (see Figure 4; Appendix D). An unlabeled road is depicted on the GLO map for T7S, R8E (surveyed 1928) in the location of Eleven Mile Corner Road adjacent to the portion of the road recorded within the external radius survey area for structure 3/3. The road is not labeled; several buildings are depicted on the GLO map, but none are labeled with the residents' or owners' names. Within the survey area, AZ AA:2:175(ASM) is a paved maintained road.

Western concurs with LSD's recommendation that this site is not eligible for inclusion on the NRHP.

Change from Eligible to Not Eligible

AZ AA:7:671(ASM) is a Hohokam artifact scatter possibly associated with resource procurement consisting of at least 300 sherds from at least three vessels. Upon revisiting the site and further consideration the site appears to represent a series of pot breaks and LSD changed the site recommendation to not eligible. Western concurs with LSD's revised recommendation that this site is not eligible for inclusion on the NRHP.

EFFECTS DETERMINATION

Western has determined that the proposed undertaking will have an Adverse Effect on historic properties. How the project will affect specific historic properties and cultural resources is described below.

Adverse Effect – Historic Properties

Western has determined that the proposed undertaking has the potential to adversely affect the following historic properties: AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:32(ASM), AZ AA:7:62(ASM), AZ AA:7:66(ASM), AZ AA:7:68(ASM), AZ AA:7:669(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), AZ AA:7:674(ASM). A historic properties treatment plan (HPTP) will be crafted to address the potential for adverse effect to the historic properties.

No Adverse Effect via Avoidance – Historic Properties

AZ AA:2:133(ASM) and AZ AA:3:209(ASM) are the Florence-Casa Grande Canal Extension and the Casa Grande Canal, respectively. Both are determined eligible for inclusion in the National Register under Criteria A and D. These sites will be avoided during project implementation and so the proposed undertaking will have no adverse effect on these historic properties.

Site AZ AA:2:347(ASM) is a historic homestead that is recommended eligible for inclusion in the National Register under Criterion D. LSD recommends that the historic features present should be avoided during that ground-disturbing activities within the site boundary as these would adversely affect the site. The remainder of the site has little potential for subsurface deposits. The historic features of this site will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

AZ AA:3:18(ASM) is a prehistoric rock art and historic mining site. LSD recommends it is eligible for inclusion in the National Register under Criteria C and D. An existing fence protects the rock art within the ROW; it is unlikely that buried prehistoric deposits are present within the portion of the site that is not protected by the fence. No work is proposed within the fenced area and so the proposed undertaking will have no adverse effect on this historic property.

AZ AA:7:506(ASM) is the El Paso Natural Gas pipeline, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. The actual pipeline is

buried and not visible within the project area. The April 5, 2002 Federal Register (67 FR 16364) provides an exemption for historic natural gas pipelines during the Section 106 review process.

AZ AA:7:675(ASM) is a prehistoric artifact scatter and historic trash scatter. Most of the historic artifacts are located within bulldozer push piles. It is unlikely that historic deposits are present outside of the bulldozer push piles. The prehistoric sherds appear to be the result of pot breaks and it is unlikely that there are cultural deposits associated with the sherds. The bulldozer push piles will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

AZ T:10:84(ASM) is the Southern Pacific Railroad Wellton-Phoenix-Eloy Spur, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. This site will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

Resources Not Eligible for the NRHP

Western has determined that the following cultural resources are not eligible for inclusion on the NRHP and therefore do not require any further treatment for this undertaking:

- AZ AA:2:175(ASM) and AZ AA:2:331(ASM) are both historic roads. AZ AA:2:175(ASM) was previously determined not eligible for inclusion in the National Register. AZ AA:2:331(ASM) is recommended not eligible for inclusion in the National Register.
- AZ AA:2:176(ASM)/Sunshine Boulevard, has been determined not eligible for inclusion in the National Register.
- AZ AA:6:63(ASM) is State Route 87, which has previously been determined eligible for inclusion in the National Register under Criterion D. LSD recommends that the portion of the historic property within the ED2–SGR ROW is a non-contributing component of the site.
- AZ AA:7:639(ASM) is the historic Saguaro substation and has been determined not eligible for inclusion in the National Register.
- AZ AA:7:647(ASM) is a historic transmission line that is recommended not eligible for inclusion in the National Register.
- AZ AA:7:671(ASM) is a Hohokam artifact scatter consisting of a series of pot breaks that is recommended not eligible for inclusion in the National Register.
- Historic roads AZ AA:2:360(ASM), AZ AA:2:361(ASM), AZ AA:2:362(ASM), AZ AA:3:319(ASM) and AZ AA:2:320 (ASM) have all been determined not eligible for inclusion in the National Register.

The Isolated Occurrences include prehistoric ceramics, flaked stone, ground stone, and historic trash. None of the IOs are considered significant and are recommended not eligible for inclusion in the National Register.

Western plans to prepare a Memorandum of Agreement (MOA) to resolve the undertaking's adverse effects in consultation with consulting parties. The MOA will specify that Western will prepare a Historic Property Treatment Plan (HPTP), a Monitoring Plan, a NAGPRA Plan of Action, and a State Burial Plan. Western prefers to execute the MOA in advance of completing the HPTP so that we can conclude the National Environmental Policy Act review process. A draft Environmental Assessment (DOE/EA-1972) is currently available for public review, and the final document is expected early next year.

If you concur with Western's eligibility recommendations and determination of project effects we have provided for your convenience a signature line and comment field for use below. Of course you may provide separate correspondence if you desire. If we do not receive a response within 30 days we will assume you concur with our findings and determinations.

If you have any questions, concerns or wish to consult further about this undertaking please contact our Regional Preservation Officer, Ms. Jill Jensen at (602) 605-2842 or myself at (602) 605-2524. Thank you for your assistance in this matter.

Sincerely,

Stephen Tromly
Federal Preservation Officer

Linda J. Marianito
Environmental Manager

Enclosures: report, map, previous consultation letter
cc: Marianito, Tromly, Jensen, Bilsbarrow
FILE 5440.4 ED2SGR2 TL

References Cited:

Davis, E. et al
2014 *A Class III Cultural Resources Inventory of 200 Acres and Additional Site Recording for the Western Area Power Administration Electrical District #2–Saguaro #2 (ED2–SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-0371

Teeter, S. et al
2014 *A Class III Cultural Resources Inventory of 37.30 Miles (452 Acres) for the Western Area Power Administration Electrical District #2-Saguaro (ED2-SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-126

As indicated by my signature below I concur with Western's NRHP eligibility recommendations (as contained in Davis et al 2014) and Finding of Adverse Effect for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Signature:_____ Date:_____

Affiliation:_____

Other comment:

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Patricia Hicks, Regional Archaeologist
Bureau of Reclamation
P.O. Box 61470
Boulder City, NV
89006

Ruben Ojeda
AZ State Lands Department
1616 W. Adams St.
Phoenix, AZ
85007

Garry Cantley, Regional Archaeologist
Bureau of Indian Affairs, Western Region
2600 N. Central Aveneu, 4th Floor Mailroom
Phoenix, AZ
85004-3008

Beau J. Goldstein, Acting Environmental Coordinator
BIA SCIP
13805 North Arizona Blvd
Coolidge, AZ
85128

Mr. Herman G. Honanie, Chairman
The Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona
86039

Mr. Leigh Kuwanwisiwma, THPO
The Hopi Tribe
P.O. Box 123
Kykotsmovi, AZ
86039

Barnaby Lewis, THPO
Gila River Indian Community
P.O. Box 2140
Sacaton, AZ
85147

Gregory Mendoza, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ
85147

Dave Gifford
Bureau of Reclamation, Phoenix Area Office
Cultural Resource Management
6150 W. Thunderbird Rd.
Glendale, AZ
85306

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

DEC 19 2014

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Re: Finding of Effect and Class III Report Additional Inventory in Support of the Electrical District #2 – Saguaro #2 Transmission Line Rebuild
SHPO-2014-0054(119927)

Dear Mr. Garrison:

Western is in the planning process to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line. The transmission line was constructed using wood poles (monopole and H-frame design), is approximately 36 miles long and is located in eastern Pinal County, Arizona (see attached map). It crosses Arizona State Land Department, Bureau of Indian Affairs/San Carlos Irrigation Project, Bureau of Reclamation and private lands. The transmission line's easements are held by the U.S. Bureau of Reclamation, the Central Arizona Project (CAP) owns the structures and equipment, and Western maintains and operates the line on behalf of CAP. Western anticipates a proposal to retain the current alignment of the transmission line, but to rebuild the structures with steel monopoles.

Project Description

Western proposes to rebuild the 35.6-mile-long 115-kV transmission line located between ED2 and Saguaro Substations in Pinal County, Arizona. Western proposes to rebuild the line with 80 to 90-foot-tall rusticated steel monopoles and replace the conductors. The rebuilt line would have spans between poles of 900 to 1,000 feet long and would likely require an estimated 213 new structures. The overhead protection ground wire will be replaced with one containing fiber optic cables for utility communications. The new structures will be placed in holes typically 4 feet in diameter and 14 feet deep and will be directly embedded. Existing access roads will be used to the extent possible and improved as needed.

Ground disturbance from construction activities would occur as a result of removing existing structures, grading and drilling holes for new structures, improving existing access roads for safe vehicle and equipment access, installing/removing conductor and overhead ground wire, and removing existing guy wires. These activities would be conducted primarily within the existing transmission line ROW or at existing structure locations. However, short-term disturbance outside the ROW would be required for wire pulling, tensioning sites, and a staging area.

Western has determined that the proposed rebuild constitutes a federal undertaking, as defined in 36 CFR Part 800.16(y) (as revised in 2004), the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). Western is the lead federal agency for this undertaking.

Cultural Resource Inventories

Western issued a contract to Logan Simpson Design (LSD) to obtain a complete Class III archaeological survey for a 100 foot area of the right-of-way (i.e. 50 feet either side of centerline, previously inventoried areas were inventoried again and previously recorded sites were revisited). The report documenting this effort (Davis et al 2014) was previously sent to you for your review, comment, and concurrence on eligibility recommendations (previous consultation letter attached for your reference). Based on this report, Western determined there was a need to expand the inventory effort in order to more fully assess project affects on cultural resources. Western subsequently issued a contract to Aspen Environmental, who sub-contracted with LSD, for expanded documentation of previously recommended eligible sites, access roads, and pulling stations needed for stringing the conductor.

The report covering the expanded inventory effort is enclosed for your review and comment. This inventory effort expanded the documentation of 17 sites from the Teeter et al (2014) survey and updated documentation for two previously recorded sites. Consultation letters for the eligibility recommendations of the Teeter et al (2014) report were sent on 5-27-2014; no dissent was noted as a result of that letter and Western will move forward with those eligibility recommendations [with the exception of site AZ AA: 7:671(ASM), as discussed below].

ELIGIBILITY RECOMMENDATIONS

Not Eligible

AZ AA:7:647(ASM) is the previously recorded Coolidge–Saguaro 115-kV transmission line. The line connects the Coolidge and Saguaro substations, a distance of about 47 miles. The line was built in 1949 and upgraded in 1963 (Cook and Whitney 2011, as cited in Teeter et al 2014). It was built as part of the Parker-Davis Project, which generated hydroelectric power to deliver to communities in Arizona. It currently consists of wooden "H frame" poles and appears in fair condition. The portion of the transmission line within the survey area was previously recommended not eligible for inclusion in the National Register (Cook and Whitney 2011, as cited in Teeter et al 2014). Western concurs with LSD's recommendation that this site is not eligible for inclusion on the NRHP.

AZ AA:2:175(ASM) is a previously recorded 9-m-wide (30-ft) road, currently designated Eleven Mile Corner Road (see Figure 4; Appendix D). An unlabeled road is depicted on the GLO map for T7S, R8E (surveyed 1928) in the location of Eleven Mile Corner Road adjacent to the portion of the road recorded within the external radius survey area for structure 3/3. The road is not labeled; several buildings are depicted on the GLO map, but none are labeled with the residents' or owners' names. Within the survey area, AZ AA:2:175(ASM) is a paved maintained road.

Western concurs with LSD's recommendation that this site is not eligible for inclusion on the NRHP.

Change from Eligible to Not Eligible

AZ AA:7:671(ASM) is a Hohokam artifact scatter possibly associated with resource procurement consisting of at least 300 sherds from at least three vessels. Upon revisiting the site and further consideration the site appears to represent a series of pot breaks and LSD changed the site recommendation to not eligible. Western concurs with LSD's revised recommendation that this site is not eligible for inclusion on the NRHP.

EFFECTS DETERMINATION

Western has determined that the proposed undertaking will have an Adverse Effect on historic properties. How the project will affect specific historic properties and cultural resources is described below.

Adverse Effect – Historic Properties

Western has determined that the proposed undertaking has the potential to adversely affect the following historic properties: AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:32(ASM), AZ AA:7:62(ASM), AZ AA:7:66(ASM), AZ AA:7:68(ASM), AZ AA:7:669(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), AZ AA:7:674(ASM). A historic properties treatment plan (HPTP) will be crafted to address the potential for adverse effect to the historic properties.

No Adverse Effect via Avoidance – Historic Properties

AZ AA:2:133(ASM) and AZ AA:3:209(ASM) are the Florence-Casa Grande Canal Extension and the Casa Grande Canal, respectively. Both are determined eligible for inclusion in the National Register under Criteria A and D. These sites will be avoided during project implementation and so the proposed undertaking will have no adverse effect on these historic properties.

Site AZ AA:2:347(ASM) is a historic homestead that is recommended eligible for inclusion in the National Register under Criterion D. LSD recommends that the historic features present should be avoided during that ground-disturbing activities within the site boundary as these would adversely affect the site. The remainder of the site has little potential for subsurface deposits. The historic features of this site will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

AZ AA:3:18(ASM) is a prehistoric rock art and historic mining site. LSD recommends it is eligible for inclusion in the National Register under Criteria C and D. An existing fence protects the rock art within the ROW; it is unlikely that buried prehistoric deposits are present within the portion of the site that is not protected by the fence. No work is proposed within the fenced area and so the proposed undertaking will have no adverse effect on this historic property.

AZ AA:7:506(ASM) is the El Paso Natural Gas pipeline, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. The actual pipeline is

buried and not visible within the project area. The April 5, 2002 Federal Register (67 FR 16364) provides an exemption for historic natural gas pipelines during the Section 106 review process.

AZ AA:7:675(ASM) is a prehistoric artifact scatter and historic trash scatter. Most of the historic artifacts are located within bulldozer push piles. It is unlikely that historic deposits are present outside of the bulldozer push piles. The prehistoric sherds appear to be the result of pot breaks and it is unlikely that there are cultural deposits associated with the sherds. The bulldozer push piles will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

AZ T:10:84(ASM) is the Southern Pacific Railroad Wellton-Phoenix-Eloy Spur, which has previously been determined eligible for inclusion in the National Register under Criteria A and D. This site will be avoided during project implementation and so the proposed undertaking will have no adverse effect on this historic property.

Resources Not Eligible for the NRHP

Western has determined that the following cultural resources are not eligible for inclusion on the NRHP and therefore do not require any further treatment for this undertaking:

- AZ AA:2:175(ASM) and AZ AA:2:331(ASM) are both historic roads. AZ AA:2:175(ASM) was previously determined not eligible for inclusion in the National Register. AZ AA:2:331(ASM) is recommended not eligible for inclusion in the National Register.
- AZ AA:2:176(ASM)/Sunshine Boulevard, has been determined not eligible for inclusion in the National Register.
- AZ AA:6:63(ASM) is State Route 87, which has previously been determined eligible for inclusion in the National Register under Criterion D. LSD recommends that the portion of the historic property within the ED2–SGR ROW is a non-contributing component of the site.
- AZ AA:7:639(ASM) is the historic Saguaro substation and has been determined not eligible for inclusion in the National Register.
- AZ AA:7:647(ASM) is a historic transmission line that is recommended not eligible for inclusion in the National Register.
- AZ AA:7:671(ASM) is a Hohokam artifact scatter consisting of a series of pot breaks that is recommended not eligible for inclusion in the National Register.
- Historic roads AZ AA:2:360(ASM), AZ AA:2:361(ASM), AZ AA:2:362(ASM), AZ AA:3:319(ASM) and AZ AA:2:320 (ASM) have all been determined not eligible for inclusion in the National Register.

The Isolated Occurrences include prehistoric ceramics, flaked stone, ground stone, and historic trash. None of the IOs are considered significant and are recommended not eligible for inclusion in the National Register.

Western plans to prepare a Memorandum of Agreement (MOA) to resolve the undertaking's adverse effects in consultation with consulting parties. The MOA will specify that Western will prepare a Historic Property Treatment Plan (HPTP), a Monitoring Plan, a NAGPRA Plan of Action, and a State Burial Plan. Western prefers to execute the MOA in advance of completing the HPTP so that we can conclude the National Environmental Policy Act review process. A draft Environmental Assessment (DOE/EA-1972) is currently available for public review, and the final document is expected early next year.

If you concur with Western's eligibility recommendations and determination of project effects we have provided for your convenience a signature line and comment field for use below. Of course you may provide separate correspondence if you desire. If we do not receive a response within 30 days we will assume you concur with our findings and determinations.

If you have any questions, concerns or wish to consult further about this undertaking please contact our Regional Preservation Officer, Ms. Jill Jensen at (602) 605-2842 or myself at (602) 605-2524. Thank you for your assistance in this matter.

Sincerely,

Stephen Tromly
Federal Preservation Officer

Linda J. Marianito
Environmental Manager

Enclosures: report, map, previous consultation letter
cc: Marianito, Tromly, Jensen, Bilsbarrow
FILE 5440.4 ED2SGR2 TL

References Cited:

Davis, E. et al
2014 *A Class III Cultural Resources Inventory of 200 Acres and Additional Site Recording for the Western Area Power Administration Electrical District #2–Saguaro #2 (ED2–SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-0371

Teeter, S. et al
2014 *A Class III Cultural Resources Inventory of 37.30 Miles (452 Acres) for the Western Area Power Administration Electrical District #2-Saguaro (ED2-SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-126

As indicated by my signature below I concur with Western's NRHP eligibility recommendations (as contained in Davis et al 2014) and Finding of Adverse Effect for the Electrical District #2 – Saguaro #2 Transmission Line Rebuild

Signature:_____ Date:_____

Affiliation:_____

Other comment:

CONCUR

29 DEC 14

Arizona State Historic Preservation Office

Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

JAN 15 2015

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Re: Invitation to Enter a Memorandum of Agreement in Support of the Electrical District #2 – Saguaro #2 Transmission Line Rebuild
SHPO-2014-0054(119927)

Dear Mr. Garrison:

Western is in the planning process to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line. The transmission line was constructed using wood poles (monopole and H-frame design), is approximately 36 miles long and is located in eastern Pinal County, Arizona (see attached map). It crosses Arizona State Land Department, Bureau of Indian Affairs/San Carlos Irrigation Project, Bureau of Reclamation and private lands. The transmission line's easements are held by the U.S. Bureau of Reclamation, the Central Arizona Project (CAP) owns the structures and equipment, and Western maintains and operates the line on behalf of CAP. Western anticipates a proposal to retain the current alignment of the transmission line, but to rebuild the structures with steel monopoles.

Previous correspondence with your office included consultation on the eligibility recommendations made in the Teeter et al (2014) report, eligibility recommendations made in the Davis et al (2014) report, and Western's determination of adverse effect of this project on archaeological resources. No dissent has been noted from any of these consultation efforts. For your convenience, copies of these letters (*sans* maps) are enclosed for your reference.

Western has prepared a Memorandum of Agreement (MOA) to resolve the undertaking's adverse effects in consultation with consulting parties. The enclosed MOA specifies that Western will prepare a Historic Property Treatment Plan (HPTP), a Monitoring Plan, a NAGPRA Plan of Action, and a State Burial Plan. Western prefers to execute the MOA in advance of completing the HPTP so that we can conclude the National Environmental Policy Act review process. A draft Environmental Assessment (DOE/EA-1972) is currently available for public review, and the final document is expected early this year.

A copy of the MOA is enclosed. Please review and if you have no comments sign the appropriate page and return only the signed page to Western. Please provide comments and/or signature page to Western no later than February 17, 2015. Once all signatures have been

received Western will send out a complete copy of the MOA with photocopied signature pages to all signatories and concurring parties.

If you have any questions, concerns or wish to consult further about this undertaking please contact our Regional Preservation Officer, Ms. Jill Jensen at (602) 605-2842 or myself at (602) 605-2524. Thank you for your assistance in this matter.

Sincerely,

Linda J. Marianito
Environmental Manager

Enclosures: overview map, previous consultation letters
cc: Marianito, Tromly, Jensen, Bilsbarrow
FILE 5440.4 ED2SGR2 TL

References Cited:

Davis, E. et al
2014 *A Class III Cultural Resources Inventory of 200 Acres and Additional Site Recording for the Western Area Power Administration Electrical District #2–Saguaro #2 (ED2–SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-0371

Teeter, S. et al
2014 *A Class III Cultural Resources Inventory of 37.30 Miles (452 Acres) for the Western Area Power Administration Electrical District #2-Saguaro (ED2-SGR) 115-kV Transmission Line, from Casa Grande to Avra, Pinal County, Arizona.* ASM Accession No. 2014-126

James Garrison
State Historic Preservation Officer
Arizona State Parks
1300 West Washington Street
Phoenix, Arizona
85007

Ed Begay, Program Manager
BIA SCIP
13805 North Arizona Blvd
Coolidge, AZ
85128

Ruben Ojeda
AZ State Lands Department
1616 W. Adams St.
Phoenix, AZ
85007

Garry Cantley, Regional Archaelogist
Bureau of Indian Affairs, Western Region
2600 N. Central Aveneu, 4th Floor Mailroom
Phoenix, AZ
85004-3008

Beau J. Goldstein, Acting Environmental Coordinator
BIA SCIP
13805 North Arizona Blvd
Coolidge, AZ
85128

Mr. Herman G. Honanie, Chairman
The Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona
86039

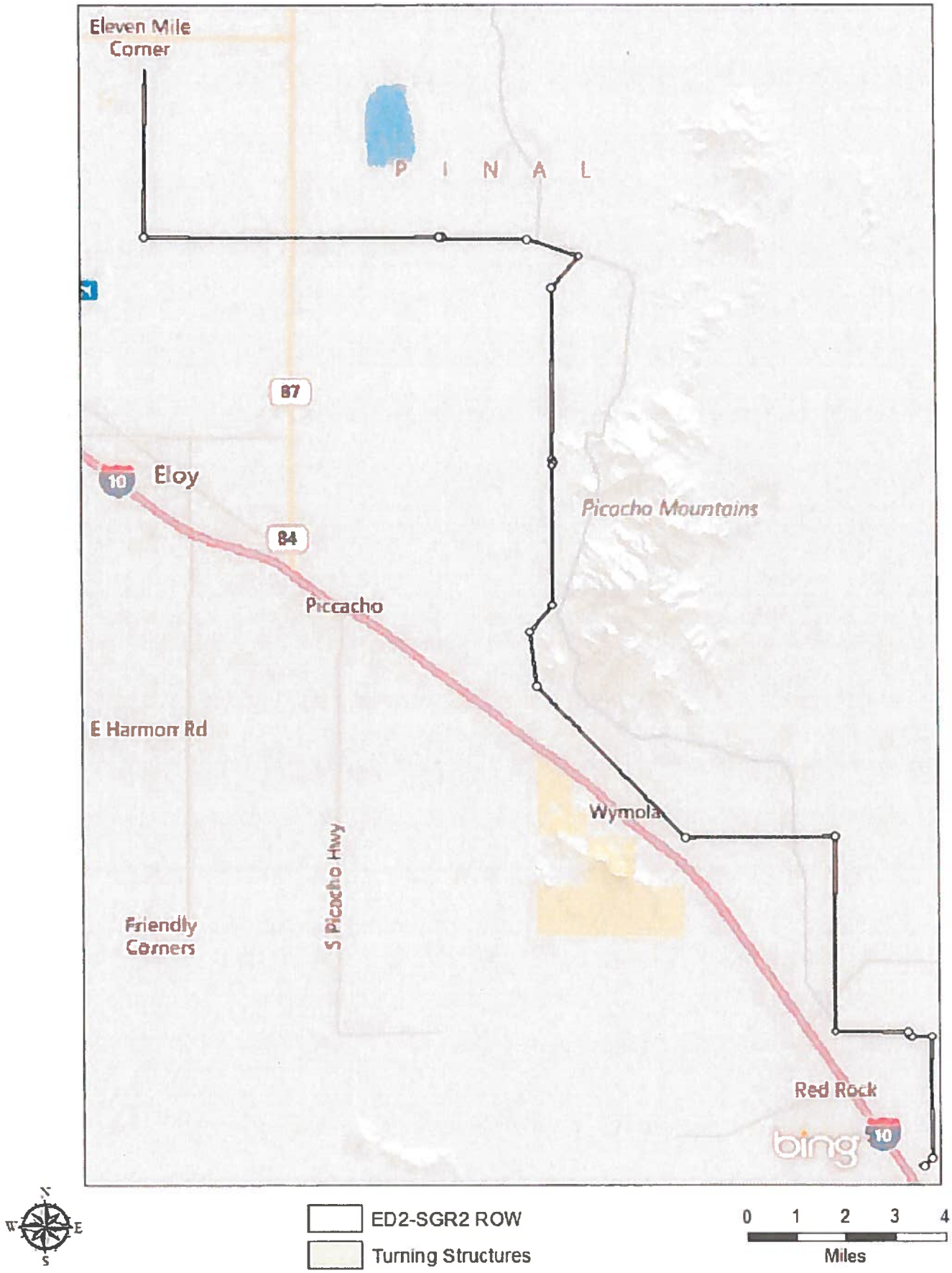
Mr. Leigh Kuwanwisiwma, THPO
The Hopi Tribe
P.O. Box 123
Kykotsmovi, AZ
86039

Barnaby Lewis, THPO
Gila River Indian Community
P.O. Box 2140
Sacaton, AZ
85147

Gregory Mendoza, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ
85147

Dave Gifford
Bureau of Reclamation, Phoenix Area Office
Cultural Resource Management
6150 W. Thunderbird Rd.
Glendale, AZ
85306

ED2-SGR Rebuild Project Overview



MEMORANDUM OF AGREEMENT
BETWEEN
THE U.S. DEPARTMENT OF ENERGY,
WESTERN AREA POWER ADMINISTRATION;
BUREAU OF RECLAMATION;
BUREAU OF INDIAN AFFAIRS;
SAN CARLOS IRRIGATION PROJECT;
ARIZONA STATE LAND DEPARTMENT;
AND
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER

REGARDING MITIGATION REQUIREMENTS ARISING FROM THE REBUILDING OF THE ED2-SGR #2 TRANSMISSION LINE

WHEREAS; the United States Department of the Energy, Western Area Power Administration, Desert Southwest Regional Office (Western) plans to rebuild the Electrical District #2 – Saguaro #2 (ED2-SGR2) transmission line retaining the current alignment but replacing the wood "H-frame" structures with steel monopoles; and

WHEREAS; Western has determined that the proposed rebuild constitutes a federal undertaking, as defined in 36 CFR Part 800.16(y) (as revised in 2004), the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) and Western is the lead federal agency for this undertaking; and

WHEREAS; the United States Department of the Energy, Western Area Power Administration, Desert Southwest Regional Office (Western) has determined that the transmission line rebuild will have the potential to cause adverse to historic properties [AZ AA:7:66(ASM), AZ AA:7:68(ASM), AZ AA:7:62(ASM), AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:32(ASM), AZ AA:7:669(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), and AZ AA:7:674(ASM)], and has consulted with the Arizona State Historic Preservation Officer (SHPO) pursuant to 36CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS; Western will begin development of a Historic Properties Treatment Plan (HPTP) within 45 days of the execution of this agreement and it will be completed prior to construction. The HPTP will be developed in consultation with the SHPO and invited consulting parties, Tribes, Arizona State Land Department, Bureau of Reclamation, and Bureau of Indian Affairs to address any adverse effects to historic properties;

THEREFORE, Western and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

Stipulations

Western will ensure that the following measures are carried out:

1. Historic Property Treatment Plan

A) Prior to implementation of the Undertaking, Western will ensure that a Historic Property Treatment Plan (HPTP) will be developed and carried out for the following historic properties: AZ AA:7:66(ASM), AZ AA:7:68(ASM), AZ AA:7:62(ASM), AZ AA:2:346(ASM), AZ AA:3:37(ASM), AZ AA:3:71(ASM), AZ AA:3:72(ASM), AZ AA:3:73(ASM), AZ AA:3:74(ASM), AZ AA:3:75(ASM), AZ AA:3:79(ASM), AZ AA:7:32(ASM), AZ AA:7:669(ASM), AZ AA:7:672(ASM), AZ AA:7:673(ASM), and AZ AA:7:674(ASM).

B) Western will invite the Consulting Parties to participate in the development of the HPTP.

2. Monitoring and Discovery Plan

Prior to the implementation of the Undertaking, Western will ensure that a Monitoring and Discovery Plan will be developed in consultation with Consulting Parties as part of the HPTP. The Monitoring portion of the plan will define how historic properties are to be avoided, either in full or in part in accordance with the HPTP. The Discovery portion of the plan will outline procedures to be followed in the event of unanticipated discoveries and burials or funerary items.

3. Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action

Prior to the implementation of the Undertaking, Western will ensure that a NAGPRA Plan of Action be developed in consultation with Consulting Parties.

4. Arizona State Burial Plan

Prior to the implementation of the Undertaking, Western will ensure that an Arizona State Burial Plan be developed in consultation with Consulting Parties.

Western will be allowed to proceed with construction within and near historic properties as soon as the HPTP, Monitoring and Discovery Plan, NAGPRA Plan of Action, and Arizona State Burial Plan are concurred upon by consulting parties and accepted as final by the SHPO.

DURATION OF THE AGREEMENT

This MOA will be in effect until Western, in consultation with the SHPO, determines that all of its terms have been satisfactorily fulfilled, not to exceed twenty-four (24) months. Upon a determination that all the terms of this MOA have been satisfactorily fulfilled, the MOA will terminate and have no further force or effect. Western will promptly provide the other signatories with written notice of its determination and termination of this MOA.

Execution of this MOA by Western and the Arizona SHPO, its subsequent transmittal to the Advisory Council on Historic Preservation (Council), and the implementation of its terms, is evidence that Western has afforded the Council an opportunity to comment on the ED2-SGR#2 transmission line rebuild and its effects on historic properties, and that Western has taken into account the effects of the Undertaking on historic properties.

Signatories

WESTERN AREA POWER ADMINISTRATION

By:_____ Date:
Stephen Tromly, Federal Preservation Officer

ARIZONA STATE HISTORIC PRESERVATION OFFICER

By:_____ Date:
James Garrison, State Historic Preservation Officer

BUREAU OF RECLAMATION

By:_____ Date:
Phoenix Area Regional Director

BUREAU OF INDIAN AFFAIRS

By:_____ Date:
Garry Cantley, Regional Archaeologist

ARIZONA STATE LAND DEPARTMENT

By:_____ Date:
Maria Baier, Land Commissioner

SAN CARLOS IRRIGATION PROJECT

By:_____ Date:
Ed Begay, Project Manager

Concurring Parties

HOPI TRIBE OF ARIZONA

By:_____ Date:
Leroy N. Shingoitewa, Chairman

GILA RIVER INDIAN COMMUNITY

By:_____ Date:
Gregory Mendoza, Governor

Appendix F

Tribal Government Contacts Summary

Appendix F. Tribal Government Contacts Summary

LeRoy Shingoitewa, Chairman Hopi Tribe of Arizona P.O. Box 123 Kykotsmovi, AZ 86039	Leigh Kuwanwisiwma, THPO Hopi Tribe of Arizona P.O. Box 123 Kykotsmovi, AZ 86039
Ruben Balderas, President Fort McDowell Yavapai Nation P.O. Box 17779 Fountain Hills, AZ 85269	Gary Loutzenheiser, Cultural Development Department Fort McDowell Yavapai Nation P.O. Box 17779 Fountain Hills, AZ 85269
David Kwail, Chairman Yavapai-Apache Nation of the Camp Verde Reservation 2400 W. Datsi Camp Verde, AZ 86322	Chris Coder, Archaeologist Yavapai-Apache Nation of the Camp Verde Reservation 2400 W. Datsi Camp Verde, AZ 86322
Ronnie Lupe, Chairman White Mountain Apache Tribe P.O. Box 1150 Whiteriver, AZ 85941	Mark Altaha, THPO White Mountain Apache Tribe P.O. Box 507 Fort Apache, AZ 85926
Louis Manuel, Jr. Chairperson Ak Chin Indian Community 42507 W. Peters and Nall Road Maricopa, AZ 85238	Caroline Antone, Cultural Resource Manager Ak Chin Indian Community 42507 W. Peters and Nall Road Maricopa, AZ 85238
Gregory Mendoza, Governor Gila River Indian Community P.O. Box 97 Sacaton, AZ 85147	Barnaby Lewis, THPO Gila River Indian Community P.O. Box 2140 Sacaton, AZ 85147
Diane Enos, President Salt River Pima-Maricopa Indian Community 10005 E. Osborn Scottsdale, AZ 85256	Shane Anton, Cultural Program Supervisor Salt River Pima-Maricopa Indian Community 10005 E. Osborn Scottsdale, AZ 85256
Terry Rambler, Chairman San Carlos Apache Tribe P.O. Box 0 San Carlos, AZ 85550	Vernelda Grant, THPO San Carlos Apache Tribe P.O. Box 0 San Carlos, AZ 85550
Ned Norris, Chairman Tohono O'odham Nation of Arizona Cultural Affairs Office P.O. Box 837 Sells, AZ 85634	Peter Steere, THPO Tohono O'odham Nation of Arizona Cultural Affairs Office P.O. Box 837 Sells, AZ 85634
Ed Begay, Program Manager Bureau of Indian Affairs San Carlos Irrigation Project 13805 North Arizona Blvd Coolidge, AZ 85128	Beau J. Goldstein, Acting Environmental Coordinator Bureau of Indian Affairs San Carlos Irrigation Project 13805 North Arizona Blvd Coolidge, AZ 85128

Appendix G

Response to Comments on the Draft EA

Appendix G. Response to Comments on the Draft EA

The Draft Environmental Assessment (EA) for the ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project was distributed for review and comment on November 20, 2014. This Appendix summarizes the comments received during the 34-day public comment period and presents responses to those comments. All those who commented on the Draft EA are listed below.

Commenters on the Draft EA

- Arizona Department of Environmental Quality, Air Quality Division – Lisa Tamczak (November 26, 2014)
- Arizona Game and Fish Department – Ginger Ritter (December 17, 2014)
- Arizona Department of Environmental Quality, Water Quality Division – Wendy LeStarge (December 19, 2014)
- United States Environmental Protection Agency—Kathleen Martyn Goforth (December 19, 2014)
- Arizona State Land Department—Vanessa P. Hickman (December 23, 2014)
- United States Bureau of Reclamation, Lower Colorado Region – Kimberly Musser (December, 2014)

In addition, the Gila River Indian Community provided input through the Section 106 consultation process as described in Chapter 5 of the Final EA.

Table G-1. Summary of Comments Received on the Draft EA				
Commenter	**Comment #**	**Comment Summary**	**Response**	**Revisions to the EA?**
Public Agencies				
Arizona Department of Environmental Quality, Air Quality Division	1-1	The commenter states that the Project area is "located in a nonattainment area for 10-micron particulate matter (Pm10)" and that "as described, it may have a de minimis impact on air quality."	The construction emissions would be confined to a 10-month duration in the West Pinal (Moderate) PM10 Nonattainment Area. The impact of PM10 emissions from the proposed action would be de minimis and would not exceed the relevant General Conformity Rule applicability threshold of 100 tons per year of PM10.	No
	1-2	The commenter anticipates disturbance of particulate matter during construction and recommends specific measures to reduce its impact.	The recommended measures are listed as Resource Protection Measures in Table 2-3 of the Final EA.	No
	1-3	The commenter provides the Arizona Administrative Codes applicable to reduce particulate matter disturbance.	The Arizona Administrative Codes applicable to air quality resources were used in preparing the Resource Protection Measures in Table 2.3 of the Final EA.	No
Arizona Game and Fish Department	2-1	The commenter states that resource protection measures in Chapter 3 of the Draft EA "are sufficient to minimize impacts to species within the project vicinity."	Thank you for the comment. It has been noted and will be included in the administrative record for this EA.	No
	2-2	The commenter summarizes the performance standards of the invasive species removal plan (as recommended in Resource Protection Measure BIO-10) and requests that existing invasive species be removed to the extent possible to help control and reduce invasive species from spreading.	Resource Protection Measure BIO-10 was revised to state that Western will follow the guidance on noxious weed management in Western's 2011 Integrated Vegetation Management Guidance Manual which includes the removal, to the extent feasible, of existing invasive species within the Project area.	Yes
Arizona Department of Environmental Quality Water Quality Division	3-1	The commenter states that the "ADEQ does not see any impact related to water quality in Arizona that was not addressed" in the Draft EA.	Thank you for your comment. It has been noted and will be included in the administrative record for this EA.	No

Table G-1. Summary of Comments Received on the Draft EA

Commenter	Comment #	Comment Summary	Response	Revisions to the EA?
United States Environmental Protection Agency	4-1	The commenter expresses concern about the proposed project's potential direct and cumulative impacts on air quality, climate change and public/worker health and safety. The commenter states that additional information is needed before it can be determined whether or not these impacts are significant.	Thank you for your comment. The following responses and associated revisions to the EA provide the information requested within the administrative record for this EA.	No
	4-2	The commenter states that per the General Conformity Rule, Federal actions must comply with national ambient air quality standards by demonstrating that every action that it undertakes, approves, permits, or supports will conform to the appropriate state implementation plan. The commenter also states that General Conformity establishes de minimis emissions levels in tons per year based on the severity of the an area's air quality problem and that (1) if emissions are anticipated to be below these levels the project may proceed and (2) if emissions are expected to exceed these levels, a general-conformity determination must be made.	The construction emissions would be confined to a10-month duration in the West Pinal (Moderate) PM10 Nonattainment Area, where the relevant General Conformity Rule applicability threshold is 100 tons per year of PM10. The PM10 emissions from the Proposed Action would be below the threshold level.	No
	4-3	The commenter states that the Draft EA does not provide sufficient information to determine whether the project would be in compliance with state and Federal air quality regulations. The Final EA should disclose potential impacts from degradation of air quality. To this end, the commenter provides a list of recommendations, which are summarized as follows: ■ Quantify Emissions: Estimate emission of criteria pollutants from the proposed project and describe and estimate emissions from potential construction activities and mitigation measures. ■ General Conformity: Determine if the emissions will be below or above de minimis levels and, if so, perform a general conformity determination. ■ Specify Emission Sources: Specify the emission sources and use this information to identify appropriate mitigation measures and areas in need of focus. ■ Equipment Emissions Mitigation Plan (EEMP): Identify the need for an EEMP and include specific requirements for all construction-related engines. ■ Fugitive Dust Control Plan: Identify the need for a Fugitive Dust Control Plan and how that plan will meet the requirements of the	Table 3.3-1 was added to Section 3.3.1.2 of the Final EA to provide quantified emissions of criteria pollutants and their sources to verify that emissions from the proposed action would not be above the de minimis levels for criteria pollutants and the levels warranting quantification of GHG. Additional emissions controls, including the preparation of an EEMP, would not be necessary. See response to Comment 4-2 above pertaining to General Conformity. Dust control measures from Western's Construction Standards, Standard 13, Environmental Quality Protection item 13.13 and measures recommended by ADEQ (refer to Table 2 3, Resource Protection Measures AQ 1 through 9) would be	Yes

Table G-1. Summary of Comments Received on the Draft EA				
Commenter	**Comment #**	**Comment Summary**	**Response**	**Revisions to the EA?**
		Arizona Administrative Code R18-2-604-607.	implemented, as needed, to minimize fugitive dust generated during construction. As such, a Fugitive Dust Control Plan would not be necessary.	
	4-4	The commenter states that the 2014 CEQ Revised Draft Greenhouse Gas and Climate Change Guidance supersedes the 2010 Draft Guidance that was referenced in Section 3.2.1 (Climate Change) of the Draft EA. The commenter summarizes the revised draft guidance and makes the following recommendations: ■ Estimate the GHG emissions and use the projected emission to distinguish between the proposed action, alternatives, and mitigations. ■ Consider how climate change could affect the projected area, specifically within sensitive areas, and assess how the projected impacts of the project could be exacerbated by climate change.	Section 3.2.1 of the Final EA was revised to reflect the 2014 CEQ Revised Draft Greenhouse and Climate Change Guidance. Table 3.3-1 was added to Section 3.3.2.1 of the Final EA to provide quantification of GHG to reflect current guidance on GHG emissions and estimated GHG emissions related to the Proposed Action and demonstrate that the emissions would be below the level (25,000 MT) that warrants quantitative disclosure under the 2014 guidance. By improving the transmission line to increase reliability and to maintain transmission service, the Proposed Action would improve the resilience of basic infrastructure during extreme weather. This would improve the resilience of not only the electric system but also the water supply system that relies on electric transmission service. Reducing the potential of these systems to experience catastrophic failures would improve public health and safety in extreme weather events.	Yes

Table G-1. Summary of Comments Received on the Draft EA				
Commenter	**Comment #**	**Comment Summary**	**Response**	**Revisions to the EA?**
	4-5	The commenter provides information regarding Valley Fever and recommends the Final EA "consider that contracting Valley Fever is a possibility by the workers and describe any additional mitigation or prevention measures that may be used, including a Worker Protection and Safety Plan".	Although the risk of contracting Valley Fever cannot completely avoided in the desert southwest, work would be performed according to standard health and safety practices (refer to Section 3.7 of the EA). This includes providing training, direction, and guidance to workers for preventing personal injury or illness. This includes implementing the best approaches for dust control to reduce the risks of Valley Fever.	No
Arizona State Land Department	5-1	The commenter requests that "any forthcoming activities adhere to all applicable laws and are conducted after obtaining the proper permits and authorizations."	Thank you for your comment. It has been noted and will be included in the administrative record for this EA.	No
United States Bureau of Reclamation: Lower Colorado Region	6-1	The commenter recommends that Resource Protection Measure BIO-1 in the Final EA be revised to include burrowing owls and other nesting birds.	Resource Protection Measure BIO-1 was revised to include burrowing owl and other nesting birds.	Yes
	6-2	In regards to Resource Protection Measure BIO-4, the commenter notes that the federally endangered Yuma ridgeway rail may also be found at Picacho Reservoir.	Resource Protection Measure BIO-4 was revised to include restriction on helicopter use within 0.5 miles of Picacho Reservoir during Yuma Ridgeway's (clapper) rail nesting season.	Yes
	6-3	The commenter recommends placing bird diverters on segments of the proposed transmission line near bird habitat and using transmission line covers to avoid bird collision and electrocution, respectively.	The proposed transmission line will conform to APLIC (Avian Power Line Interaction Committee) design guidelines to minimize risk to birds of collision and electrocution. Locations for installation of bird diverters will be determined during final engineering and guided by Western's Avian Protection Plan (APP). Information on the APP has been added to Section 3.5.1.2 of the Final EA.	Yes

Table G-1. Summary of Comments Received on the Draft EA				
Commenter	**Comment #**	**Comment Summary**	**Response**	**Revisions to the EA?**
	6-4	The commenter notes that Yuma clapper rail was listed in their results from the Arizona Game and Fish Department's On-line Environmental Review Tool, but it wasn't included in the EA. The commenter requests that the updated results be included in the Final EA.	Yuma Ridgeway's (clapper) rail information was added to Section 3.8.1 of the Final EA. An updated AGFD Online Environmental Review Tool Report was added to Appendix B of the Final EA.	Yes
	6-5	The commenter notes that the Yellow-billed cuckoo is listed as threatened under the Federal Endangered Species Act and requests that Section 3.8 (Threatened and Endangered Species) in the Final EA be revised to reflect the correct listing status.	Section 3.8.1 of the Final EA was revised to include the current listing status for the yellow-billed cuckoo.	Yes
	6-6	The commenter requests the Bald and Golden Eagle Protection Act be incorporated into Table 4-1 of the Final EA.	The Bald and Golden Eagle Protection Act was added to Table 4-1 in the Final EA.	Yes
	6-7	The commenter states that the Sonoran desert tortoise is also protected by state law.	Arizona state status and legal protection for the Sonoran desert tortoise was added to Section 3.8.1.1 of the Final EA.	Yes
	6-8	The commenter notes that the Yellow-billed cuckoo is listed as threatened under the Federal Endangered Species Act and requests that Appendix B (Biological Reports Summary) in the Final EA be revised to reflect the correct listing status.	At the time the Biological Evaluation was prepared, Yellow-billed cuckoo was a candidate for listing; the Biological Evaluation will not be revised. The current listing status is reflected in the Final EA and the species was evaluated as such.	No
	6-9	The commenter notes that the cultural sites in the Bureau of Reclamation records are not consistent with those presented in the EA. The commenter recommends that an agency records check should be completed.	Western received a concordance table showing Bureau of Reclamation's site eligibility determinations. In all cases of discrepancy, Western erred on the side of eligible; Western will stand by its original eligibility determinations.	No
	6-10	In regards to Resource Protection Measure CUL-2, which recommends development of a historic treatment plan, the commenter states that Reclamation needs to be consulted on any treatment plans.	Western concurs that the Bureau of Reclamation needs to be consulted on any treatment plans and sent project effects letters to BOR during the week of 12/08/2014.	No

Table G-1. Summary of Comments Received on the Draft EA				
Commenter	**Comment #**	**Comment Summary**	**Response**	**Revisions to the EA?**
	6-11	The commenter identifies the mistype "and will and will" on page 3-18 of the Draft EA.	This mistype on page 3-18 was corrected in the Final EA.	Yes
	6-12	The commenter requests that the term "minimize" on page 3-18 in the Cultural Resources impact statement CUL-6 be defined.	Western will define "minimize" in the Monitoring and Discovery Plan that will be prepared as part of the Historic Properties Treatment Plan (HPTP).	No
	6-13	The commenter identifies that the last paragraph of page 3-18 of the Draft EA discusses Resource Protection Measure CUL-6 as including "the cutting of poles" but that the measure itself (CUL-6 in Table 2-3) does not include this phrase.	Resource Protection Measure CUL-6 was modified to include "the cutting of poles."	Yes
	6-14	The commenter requests that more specific information on the plans for treatment and mitigation be provided when available for the four Reclamation sites that would be disturbed, as identified in Table 3.4-3 of the Draft EA.	Western will prepare and execute a Memorandum of Agreement for the Proposed Action with the Arizona State Historic Preservation Officer (SHPO) in order to complete the NEPA process. This MOA will specify that a Historic Properties Treatment Plan, developed in consultation with the BOR, will be prepared for the sites that would be disturbed by the project including those on BOR land.	No
Organizations				
Gila River Indian Community	7-1	The commenter recommends the statement "no TCPs [Traditional Cultural Properties] identified" be removed in the Final EA.	The statement "no TCPs identified" was removed from the Final EA.	Yes
	7-2	The commenter recommends the preparation of a NAGPRA Plan of Action and the establishment of an Arizona State Burial Agreement with the Arizona State Museum prior to ground disturbance occurring.	Western will prepare a NAGPRA Plan of Action and Arizona State Burial Agreement as part of preparing a Memorandum of Agreement with the Arizona SHPO.	No

Comment Set 1
Arizona Department of Environmental Quality Air Division

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Henry R. Darwin
Director

November 26, 2014

Western Area Power Administration
Mr. Matthew Bilsbarrow
NEPA Document Manager
P.O. Box 6457
Phoenix, AZ 85005

RE: Pinal County: Scoping Letter for the Electric District 2 to Saguaro No. 2 Transmission Line Rebuild Project

Dear Mr. Bilsbarrow:

The ADEQ Air Quality Division has reviewed your letter dated November 12, 2014, requesting a scoping letter for the Electric District 2 to Saguaro No. 2 Transmission Line Rebuild Project. Your project is located in a nonattainment area for 10-micron particulate matter (PM_{10}). As described, it may have a de minimis impact on air quality. Disturbance of particulate matter is anticipated during construction. Considering prevailing winds, to comply with other applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided for consideration: 1-1

1-2

REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

This action, plan or activity may temporarily increase ambient particulate matter (dust) levels. Particulate matter 10 microns in size and smaller can penetrate the lungs of human beings and animals and is subject to a National Ambient Air Quality Standard (NAAQS) to protect public health and welfare. Particulate matter 2.5 microns in size and smaller is difficult for lungs to expel and has been linked to increases in death rates; heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections; asthma attacks and cardiopulmonary obstructive disease (COPD) aggravation. It is also subject to a NAAQS.

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

Comment Set 1, cont.
Arizona Department of Environmental Quality Air Division

I. Site Preparation and Construction
   A. Minimize land disturbance;
   B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air;
   C. Cover trucks when hauling soil;
   D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
   E. Stabilize the surface of soil piles; and
   F. Create windbreaks.

II. Site Restoration
   A. Revegetate any disturbed land not used;
   B. Remove unused material; and
   C. Remove soil piles via covered trucks.

1-2 cont.

The following rules applicable to reducing dust from open areas, dry washes or riverbeds, roadways and streets are enclosed:

- ☐ Arizona Administrative Code R18-2-604 and R18-2-605
- ☐ Arizona Administrative Code R18-2-804

1-3

Should you have further questions, please do not hesitate to call me at (602) 771-2375, or Lhamo LeMoine at (602) 771-2373.

Very truly yours,

Lisa Tomczak

Lisa Tomczak, Manager
Air Quality Planning Unit

Enclosures (2)

cc: Sherri Zendri, Administrative Counsel
Lhamo LeMoine, Administrative Secretary
File No. 332688

Comment Set 1, cont.
Arizona Department of Environmental Quality Air Division

applicant being a customer. Permits issued under this subsection shall comply with the requirements in subsection (D)(3) and be in a format prescribed by the Director. Each delegated authority shall:

1. Maintain a copy of each permit issued for the previous five years available for inspection by the Director;
2. For each permit currently issued, have a means of contacting the person authorized by the permit to set an open fire if an order to extinguish open burning is issued; and
3. Annually submit to the Director by May 15 a record of daily burn activity, excluding household waste burn permits, on a form provided by the Director for the previous calendar year containing the information required in subsections (D)(3)(e) and (D)(3)(f).

H. The Director shall hold an annual public meeting for interested parties to review operations of the open outdoor fire program and discuss emission reduction techniques.

I. Nothing in this Section is intended to permit any practice that is a violation of any statute, ordinance, rule, or regulation.

Historical Note
Adopted effective May 14, 1979 (Supp. 79-1). Amended effective October 2, 1979 (Supp. 79-5). Correction, subsection (C) repealed effective October 2, 1979, not shown (Supp. 80-1). Former Section R9-3-602 renumbered without change as Section R18-2-602 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-602 renumbered to R18-2-802, new Section R18-2-602 renumbered from R18-2-401 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 10 A.A.R. 388, effective March 16, 2004 (Supp. 04-1).

R18-2-603. Repealed

Historical Note
Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-603 renumbered without change as Section R18-2-603 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-603 renumbered to R18-2-803, new Section R18-2-603 renumbered from R18-2-403 effective November 15, 1993 (Supp. 93-4). Repealed effective October 8, 1996 (Supp. 96-4).

R18-2-604. Open Areas, Dry Washes, or Riverbeds

A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.

B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.

C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

Historical Note
Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).

R18-2-605. Roadways and Streets

A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.

B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

Historical Note
Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

R18-2-606. Material Handling

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note
Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

R18-2-607. Storage Piles

A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.

B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note
Section R18-2-607 renumbered from R18-2-407 effective

1-3 cont.

Comment Set 1, cont.
Arizona Department of Environmental Quality Air Division

ARTICLE 8. EMISSIONS FROM MOBILE SOURCES (NEW AND EXISTING)

R18-2-801. Classification of Mobile Sources

A. This Article is applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations.

B. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

Historical Note
Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-801 renumbered to Section R18-2-901, new Section R18-2-801 renumbered from R18-2-601 effective November 15, 1993 (Supp. 93-4).

R18-2-802. Off-road Machinery

A. No person shall cause, allow or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

B. Off-road machinery shall include trucks, graders, scrapers, rollers, locomotives and other construction and mining machinery not normally driven on a completed public roadway.

Historical Note
Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-802 renumbered to Section R18-2-902, new Section R18-2-802 renumbered from R18-2-602 effective November 15, 1993 (Supp. 93-4).

R18-2-803. Heater-planer Units

No person shall cause, allow or permit to be emitted into the atmosphere from any heater-planer operated for the purpose of reconstructing asphalt pavements smoke the opacity of which exceeds 20%. However three minutes' upset time in any one hour shall not constitute a violation of this Section.

Historical Note
Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-803 renumbered to Section R18-2-903, new Section R18-2-803 renumbered from R18-2-603 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note
Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).

R18-2-805. Asphalt or Tar Kettles

A. No person shall cause, allow or permit to be emitted into the atmosphere from any asphalt or tar kettle smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%.

B. In addition to complying with subsection (A), no person shall cause, allow or permit the operation of an asphalt or tar kettle without minimizing air contaminant emissions by utilizing all of the following control measures:

1. The control of temperature recommended by the asphalt or tar manufacturer;
2. The operation of the kettle with lid closed except when charging;
3. The pumping of asphalt from the kettle or the drawing of asphalt through cocks with no dipping;
4. The dipping of tar in an approved manner;
5. The maintaining of the kettle in clean, properly adjusted, and good operating condition;
6. The firing of the kettle with liquid petroleum gas or other fuels acceptable to the Director.

Historical Note
Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-805 renumbered to Section R18-2-905, new Section R18-2-805 renumbered from R18-2-605 effective November 15, 1993 (Supp. 93-4).

ARTICLE 9. NEW SOURCE PERFORMANCE STANDARDS

R18-2-901. Standards of Performance for New Stationary Sources

Except as provided in R18-2-902 through R18-2-905, the following subparts of 40 CFR 60, New Source Performance Standards (NSPS), and all accompanying appendices, adopted as of July 1, 2006, and no future editions or amendments, are incorporated by reference as applicable requirements. These standards are on file with the Department and shall be applied by the Department. These standards can be obtained from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop SSOP, Washington D.C. 20402-9328.

1. Subpart A - General Provisions.
2. Subpart D - Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971.
3. Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978.
4. Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.
5. Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.
6. Subpart E - Standards of Performance for Incinerators.
7. Subpart Ea - Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced after December 20, 1989 and on or Before September 20, 1994.
8. Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after September 20, 1994 or for Which

1-3 cont.

Comment Set 2
Arizona Department of Environmental Quality Air Division Page 5

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

December 17, 2014

Western Area Power Administration
Mr. Matthew Bilsbarrow, NEPA Document Manager
P.O. Box 6457
Phoenix, AZ 85005

Re: Notice of Availability of a Draft Environmental Assessment for Public Comment and Notice of Floodplain and Wetland Action for the ED2 to Saguaro No. 2 115-kV Transmission Line Rebuild Project, Pinal County, Arizona (DOE/EA-1972)

Dear Mr. Bilsbarrow:

The Arizona Game and Fish Department (Department) received the letter dated November 12, 2014, inviting the Department to review and comment on the Environmental Assessment (EA) for the ED2 to Saguaro No. 2 Rebuild Project located near Eloy, Arizona. The Department appreciates Western Area Power Administration's (Western) efforts in developing the EA and incorporating stakeholders in the process.

The Department reviewed the EA's resource protection measures in Chapter 3 to avoid and minimize impacts to these species and their associated habitats. We believe these measures are sufficient to minimize impacts to species within the project vicinity. We appreciate Western's efforts to prevent the spread of invasive plants within the project area. We understand your plan is "to prevent new invasive plants from entering the Project area during construction and ensure
that existing invasive plants are not spread, an invasive plant monitoring and removal plan will
be prepared. The plan will be prepared prior to Project construction and will be implemented throughout the duration of the Project. The plan should be written to adequately (1) prevent new invasive plant infestations, (2) monitor invasive plants, and (3) control existing invasive plant infestations within the Project area." We request that existing invasive species be removed to the extent possible to help control and reduce invasive species from spreading.

2-1

2-2

The Department appreciates the opportunity to provide comment on the EA. If you have any questions regarding this letter, please contact me at (623) 236-7606 or GRitter@azgfd.gov.

Sincerely,

Ginger Ritter
Project Evaluation Program Specialist, Habitat Branch

cc: Laura Canaca, AGFD, Project Evaluation Program Supervisor, Habitat Branch
Kelly Wolff-Krauter, AGFD, Habitat Program Manager, Region VI

AGFD # M14-11242723

Comment Set 3
Arizona Department of Environmental Quality Water Division

From: Wendy S. LeStarge [mailto:LeStarge.Wendy@azdeq.gov]
Sent: Friday, December 19, 2014 2:00 PM
To: DSW-EA1972PublicComment
Cc: Linda C. Taunt
Subject: ED2 to Saguaro No. 2 Transmission Line Rebuild Project (DOE/EA-1972)

On behalf of Linda Taunt, Technical Advisor for the Water Quality Division, Arizona Department of Environmental Quality (ADEQ), ADEQ does not see any impacts related to water quality that have not been addressed already in the Draft Environmental Assessment. Thank you for the opportunity to participate in the review process. 3-1

Wendy LeStarge
Environmental Rules Analyst
Arizona Department of Environmental Quality
Water Quality Division
(602) 771-4836

Comment Set 4
Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco. CA 94105-3901

DEC 19 2014

Matthew Bilsbarrow
Western Area Power Administration
Desert Southwest Region
P.O. Box 6457
Phoenix, Arizona 85005

Subject: Environmental Assessment for Western's ED2 to Saguaro No. 2 115kV Transmission Line Rebuild Project (DOE/EA-1972), Pinal County, Arizona

Dear Mr. Bilsbarrow:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Assessment for the proposed Western's ED2 to Saguaro No. 2 115kV Transmission Line Rebuild Project. Our review and comments are provided pursuant to the National Environmental Policy Act and the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508).

The EPA's detailed comments provide specific recommendations regarding analyses and documentation that should be considered prior to making a determination regarding the significance of potential impacts from the proposed transmission line rebuild project. This additional analysis and documentation will assist the Western Area Power Administration in determining whether a "Finding of No Significant Impact" can be supported at the completion of the Final Environmental Assessment. The EPA has concerns about the proposed project's potential direct and cumulative impacts on air quality, climate change and public/worker health and safety. Additional information is needed before it can be determined whether or not these impacts are significant. 4-1

We appreciate the opportunity to review this Draft EA and are available to discuss our comments. When the Final EA is released for public review, please send one hard copy and one electronic copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 972-3521, or Scott Sysum at (415) 972-3742 or sysum.scott@epa.gov.

Sincerely,

For Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures:
1. EPA's Detailed Comments

Comment Set 4, cont.
Environmental Protection Agency

US EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR WESTERN'S ED2 TO SAGUARO NO. 2 115KV TRANSMISSION LINE REBUILD PROJECT, PINAL COUNTY, ARIZONA, DECEMBER 19, 2014

The U.S. Environmental Protection Agency understands that the Western Area Power Administration intends to prepare a Final Environmental Assessment and a Finding of No Significant Impact for the proposed project. The EPA recommends that the Final EA provide additional analyses, include supporting documentation, and identify specific minimization or mitigation measures, as detailed below.

Air Quality

The General Conformity Rule ensures that Federal actions comply with the national ambient air quality standards. In order to meet this Clean Air Act requirement, a Federal agency must demonstrate that every action that it undertakes, approves, permits or supports will conform to the appropriate state implementation plan. 4-2

The federal general conformity rules establish de minimis, or maximum, emissions levels in tons per year based on the severity of an area's air quality problem. If air emissions from a proposed federal action are anticipated to be below de minimis levels, then the project may proceed. If, on the other hand, emissions are expected to exceed the de minimis levels, a general-conformity determination must be made by the federal agency involved.

The Draft Environmental Assessment states (p. 3-8): "The project is located within the area designated as the West Pinal PM10 Non-attainment Area. Monitoring data has demonstrated violations of PM10 standard, dating back to 2002." 4-3

The Draft EA does not provide any estimates of emissions of criteria pollutants or greenhouse gases for the construction or life of the project. The Final EA should provide a detailed discussion of potential air quality impacts of the proposed project, including cumulative and indirect impacts. Such an evaluation is necessary to assure compliance with State and Federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.

Recommendations:

- *Quantify Emissions* – The Final EA should estimate emissions of criteria pollutants from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project. The Final EA should describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions.

- *General Conformity* – Using the emissions estimates, determine if the emissions will be below or above de minimis levels. If emissions are above de minimis levels, perform a general conformity determination.

- *Specify Emission Sources* – The Final EA should specify the emission sources, by pollutant, from mobile sources, stationary sources, and ground disturbance. This source-specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.

- *Equipment Emissions Mitigation Plan* – The Final EA should identify the need for an EEMP. An EEMP would identify actions to reduce diesel particulates, carbon monoxide,

1

Comment Set 4, cont.
Environmental Protection Agency

hydrocarbons, and NOx associated with construction activities. We recommend that the EEMP require that all construction-related engines:

- Are tuned to the engine manufacturer's specification in accordance with an appropriate time frame.
- Do not idle for more than five minutes (unless it is necessary for the operating scope of the equipment and operation).
- Are not tampered with in order to increase engine horsepower.
- Include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project site.
- Use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area.
- Include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, generators, compressors, graders, bulldozers, and dump trucks.

4-3 cont.

- *Fugitive Dust Control Plan* - The Final EA should identify the need for *Fugitive Dust Control Plan* and how that plan will meet the requirements of the Arizona Administrative Code R18-2-604-607.

Climate Change

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Global warming is caused by emissions of carbon dioxide and other heat-trapping gases. Global warming can affect weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates, resulting in climate change.

4-4

On p. 3-2 the DEA states: "In 2012, transportation (including cars, trucks, ships, trains, and planes) accounted for 28 percent of the GHG emissions (EPA, 2014b). In 2010, passenger cars, alone, were estimated to travel more than 2,000,000 million miles and represented 43 percent of the transportation emissions (EPA, 2013). By comparison, during project construction, less than 25 trucks or pieces of industrial equipment would be operated per day on discreet portions of the 35.6-mile-long project. During operation, the transmission lines would not generate GHGs. Construction of the project is temporary and, given the workforce is less than 50 workers, would represent a negligible source of GHGs. Therefore, climate change is not further evaluated."

On December 18, 2014, the Council on Environmental Quality released revised draft guidance for public comment that describes how Federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their National Environmental Policy Act reviews. The revised draft guidance supersedes the draft greenhouse gas and climate change guidance released by CEQ in February 2010. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.

> CEQ recognizes that many agency NEPA analyses to date have concluded that GHG emissions from an individual agency action will have small, if any, potential climate

2

Comment Set 4, cont.
Environmental Protection Agency

change effects. Government action occurs incrementally, program-by-program and step-by-step, and climate impacts are not attributable to any single action, but are exacerbated by a series of smaller decisions, including decisions made by the government. Therefore, the statement that emissions from a government action or approval represents only a small fraction of global emissions is more a statement about the nature of climate change challenge, and is not an appropriate basis for deciding whether to consider climate impacts under NEPA. Moreover, these comparisons are not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations[1].

4-4 cont.

The CEQ also suggests that if an agency determines that evaluating the effects of GHG emissions would not be useful in the decision making process and the public to distinguish between the proposed action, alternatives and mitigations, the agency should document the rationale for that determination.

Recommendations:
The Final EA should estimate the GHG emissions and use the projected emission to distinguish between the proposed action, alternatives and mitigations.

The Final EA should consider how climate change could affect the project area, specifically within sensitive areas, and assess how the projected impacts of the project could be exacerbated by climate change.

Valley Fever

Valley Fever (Coccidioidomycosis) has a relatively high disease rate in Arizona. Of the estimated 150,000 U.S. infections per year, approximately 60% occur in Arizona, making this the focal point of the disease. Since the Arizona Department of Health Services made it a reportable disease in 1997, the rate of new Valley Fever cases has more than quadrupled over the last decade from 36 cases per 100,000 population in 1999 to 155 cases per 100,000 in 2009. More than 90% of the reported cases occur within a narrow 200 mile corridor generally following Interstate 10, stretching from Northwest Maricopa County to Green Valley in the southern part of Pima County. Valley fever cases continue to occur predominantly in the most populated counties: Maricopa, Pinal, and Pima. Valley Fever is not mentioned in the Draft EA.

4-5

Recommendation:
The Final EA should consider that contracting Valley Fever is a possibility by the workers and describe any additional mitigation or prevention measures that may be used, including a Worker Protection and Safety Plan.

[1] Council on Environmental Quality. *Guidance on Considering Climate Change in NEPA Reviews*. Dec 2014.Print.

3

Comment Set 5
Arizona State Land Department

Janice K. Brewer
Governor

Vanessa P. Hickman
State Land
Commissioner

ARIZONA STATE LAND DEPARTMENT

December 23, 2014

Western Area Power Administration
Matthew Bilsbarrow, NEPA Document Manager
P.O. Box 6457
Phoenix, Arizona 85008

RE: Electric District to Saguaro No. 2 115-kV Transmission Line Rebuild Project

Dear Mr. Bilsbarrow:

Thank you for the opportunity to comment on the Environmental Assessment for the Electric District to Saguaro No. 2 Rebuild Project located near Eloy, Pinal County, Arizona (Project). The Arizona State Land Department (Department) appreciates the ability to discuss this issue from our unique perspective.

Pursuant to the 1910 Enabling Act, Article X of the Arizona Constitution, and Title 37 of the Arizona Revised Statutes, the Department is tasked with the inviolable fiduciary duty of managing 9.2 million acres of State Trust land for the benefit of common schools and other institutions. We fulfill this mandate by putting State Trust lands to their "highest and best use" in order to generate revenue for K-12 education. Given this role, we must responsibly assess all potential impacts to State Trust lands.

Given our mission and the existence of State Trust interests within the Project's boundaries, we respectfully request that any forthcoming activities adhere to all applicable laws and are conducted after obtaining the proper permits and authorizations. 5-1

The Department appreciates being included in this process and welcomes further discussion on this matter.

Respectfully,

Vanessa P. Hickman
State Land Commissioner

Serving Arizona's Schools and Public Institutions since 1915

1616 West Adams Phoenix, AZ 85007 www.azland.gov

Comment Set 6
Bureau of Reclamation

REVIEW COMMENTS	AGENCY	DATE	ACTION
Division:	Document Title:		A – CONCUR D – DO NOT CONCUR E – EXCEPTION X – DELETE (Explain D,E,X)
PROJECT: POC:	LOCATION:		

CMT NO.	DWG NO OR REF	REVIEWER Bureau of Reclamation	PHONE	Action By	
1	Table 2-3/Bio-1	Due to the possibility that special-status species and nesting birds may be found in the Project area, Western will assign a qualified biologist to the Project, to conduct pre-construction clearance surveys for Sonoran Desert tortoise, *burrowing owls,* and *other* nesting birds.			6-1
2	3.5.1.2	BIO-4 requires that helicopter activities avoid the Picacho Mountains during golden eagle nesting season and the Picacho Reservoir during yellow-billed cuckoo nesting season. *The federally endangered Yuma ridgeway rail (Rallus obsoletus yumanensis)* [**Formerly known as the Yuma clapper rail**] *may also be found at Picacho Reservoir. The area is infrequently surveyed but the presence of water can create suitable breeding and nesting habitat.*			6-2
3	3.5.1.2	*Incorporate bird diverters on power lines near the Picacho Mountains, Picacho Reservoir, canals and open water areas, and other habitat that attracts birds.* *Incorporate transmission line covers when needed to prevent electrocution of raptors.*			6-3
4	3.8	Incorporate the results from the Arizona Game and Fish Department On-line Environmental Review Tool into the appendices. A Bureau of Reclamation biologist also used the Arizona Game and Fish Department's (AGFD) Online Environmental Review Tool but got different results than what was presented in the Draft EA. It is recommended that evaluation of the Yuma clapper rail be included because it was listed as potentially occurring near the project location. As mentioned above, suitable nesting and breeding habitat may be found within the Picacho Reservoir. Reclamation requests that the AGFD online tool output be included in the EA			6-4
5	3.8	Species Proposed for Listing as Threatened or Endangered Yellow-billed cuckoo (Coccyzus americanus occidentalis; Western United States Distinct Population Segment) ▪ The YBC should not be under species proposed for listing because it is listed as threatened. ▪ Life History: The yellow-billed cuckoo **is listed** as threatened under the federal ESA. The **proposed listing** would apply to occurrences in the western states, defined as a distinct population segment (DPS), including occurrences in Arizona (USFWS, 2013).			6-5
6	Table 4-1	The Bald and Golden Eagle Protection Act needs to be incorporated into the list.			6-6
7	13-20	The Sonoran desert tortoise is also protected by state law.			6-7
8	Appendix B	western distinct population segment (DPS) of the yellow-billed cuckoo **is proposed for federal listing** and is likely to migrate through the area; ▪ It is listed as threatened			6-8
9		General comment: The EA site data is inconsistent with Bureau of Reclamation records. Reclamation has completed a number of internal site assessments along the CAP over the past few years. An agency records check would have resolved the current site data inconsistencies and should be completed.			6-9
10		PP: 3-17, Cul-2 Agency needs to be consulted on any treatment plans			6-10
11		PP:3-18, Cul 4, typo: "*and will and will*"			6-11

FH FORM 1598 PAGE 1 OF 2

Comment Set 6, cont.
Bureau of Reclamation

12		PP: 3-18, Cul-6 Define minimize		
13		PP: 3-18, last para No mention of cutting poles in Cul-6 (good idea though) only minimize traffic		
14		PP: 3:21, Table 3.4-3 Four Reclamation sites will have poles placed in them or other disturbance. Need more specific info as to treatment/mitigation plan when available.		

6-12

6-13

6-14

FH FORM 1598 PAGE 2 OF 2

Appendix H

Air Quality Emissions Calculations and Supporting Data

Table H-1. PM10 Emissions From Construction, Overall – Proposed Action

Area and Duration Known	PM10 factor (ton/acre-months)		PM10 (ton)	PM2.5 (ton)
28 acres (new structures, temporary disturbance)				
10 acres (staging, temporary disturbance)				
10 months (total duration)				
380 acre-months				
	0.11	Disturbed Area: Subtotal	41.8	6.3

Ref: MRI 1996 (BACM PM10 emission factors; minimal earthmoving, average conditions)
0.15 PM2.5 portion of airborne PM10 (EPA AP-42 Sec 13.2.5)

Table H-2. AQ-GHG Emissions From Construction Equipment – Proposed Action, 15 pcs per typical day

Non Road (Diesel) Mobile Sources

	Count (# units)	Power (hp)	EPA NR-009d hp Class	BSFC (lb/hp-hr)	Profile (%) Load	Diesel Use per # (lb/hr)	Diesel Use per # (gal/hr)	Non-road Engines - Emission Factors: NOx (g/hp-hr)	HCs (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	CO (g/hp-hr)	SOx (g/hp-hr)	CO2 (kg/gal)	CH4 (kg/gal)	N2O (kg/gal)
Misc. small tools	1	30	25 - 50	0.408	0.74	9.1	1.3	4.7279	0.2789	0.3389	0.3287	1.5323	0.1084	10.15	0.0015	0.0001
Compressor or other tools	1	75	75 - 100	0.408	0.74	22.6	3.2	5.5988	0.5213	0.4730	0.4588	2.3655	0.1082	10.15	0.0015	0.0001
Lifts; Excavators	5	150	100 - 175	0.367	0.74	40.7	5.8	5.6523	0.3384	0.2799	0.2715	0.8667	0.0974	10.15	0.0015	0.0001
Loaders; Backhoes; Graders	5	250	175 - 300	0.367	0.74	67.9	9.6	5.5772	0.3085	0.2521	0.2445	0.7475	0.0975	10.15	0.0015	0.0001
Crane; Drill Rig	3	315	300 - 600	0.367	0.74	85.5	12.2	6.0153	0.2025	0.2008	0.1948	1.3060	0.0975	10.15	0.0015	0.0001

	Fuel Use (gal/hr)	Emission Rates: NOx (lb/hr)	HCs (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO (lb/hr)	SOx (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)
Misc. small tools	1.0	0.23	0.01	0.02	0.02	0.07	0.01	21.3	0.0031	0.0002
Compressor or other tools	2.4	0.69	0.06	0.06	0.06	0.29	0.01	53.3	0.0079	0.0005
Lifts; Excavators	21.4	6.92	0.41	0.34	0.33	1.06	0.12	479.1	0.0708	0.0047
Loaders; Backhoes; Graders	35.7	11.37	0.63	0.51	0.50	1.52	0.20	798.5	0.1180	0.0079
Crane; Drill Rig	27.0	9.27	0.31	0.31	0.30	2.01	0.15	603.6	0.0892	0.0059

							In service (hr per #)	NOx (ton)	HCs (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
Overall Use/Activity, 200 days, 10 hrs/day			Non Road : Subtotal				2000	28.5	1.4	1.2	1.2	5.0	0.5	1,774.3	0.2622	0.0175
Non-handheld (under 25hp, gasoline)	4	6	Class II, SV	0.868	0.74	3.85	0.6	4.5000	5.5000	0.0600	0.0582	387.0200	0.0114	8.81	0.0014	0.0001
Misc. Portable (over 25hp, gasoline)	4	50	Ph 1, 4-stroke	0.484	0.74	17.91	2.9	1.5100	0.5900	0.0600	0.0582	29.8600	0.0064	10.15	0.0015	0.0001

Table H-2. AQ-GHG Emissions From Construction Equipment – Proposed Action, 15 pcs per typical day, *continued*

Non Road (Gasoline) Portable Sources (generators, welders, landscaping)

							Non-road Engines - Emission Factors								
(# units)	(hp)	EPA NR-010f	BSFC (lb/hp-hr)	Profile (%) Load	Gasoline Use per # (lb/hr)	Gasoline Use per # (gal/hr)	NOx (g/hp-hr)	HCs (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	CO (g/hp-hr)	SOx (g/hp-hr)	CO2 (kg/gal)	CH4 (kg/gal)	N2O (kg/gal)
							Emission Rates								
						Fuel Use (gal/hr)	NOx (lb/hr)	HCs (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO (lb/hr)	SOx (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)
Non-handheld (under 25hp, gasoline)						1.9	0.18	0.22	0.00	0.00	15.15	0.00	36.0	0.0057	0.0004
Misc. Portable (over 25hp, gasoline)						8.6	0.49	0.19	0.02	0.02	9.74	0.00	192.6	0.0285	0.0019
						In service (hr per #)	NOx (ton)	HCs (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
Overall Use/Activity, 200 days, 10 hrs/day	Portable Subtotal					2000	0.7	0.4	0.0	0.0	24.9	0.0	207.3	0.0310	0.0021

Trip lengths (examples):

Town of Casa Grande is approximately 11 miles from the northern end of the Proposed Project, and
City of Tucson northern limits are approximately 27 miles from the southern end of the Proposed Project.

Diesel Emission Factors:

Ref: USEPA, Exhaust and Crankcase Emission Factors for Non-road Engine Modeling --Compression-Ignition, NR-009d. (EPA-420-R-10-018, July 2010)
NR-009d: Table A4, Steady-State Emission Factors; BSFC = in-use adjusted fuel consumption
GHG: CCAR General Reporting Protocol, Carbon Dioxide Emission Factors for Transport Fuels (Distillate/Diesel) 1/2009.
Diesel Fuel Density: (2.205 lb/kg) * 1000 kg / [7.46 barrel * 42 gal/barrel] = 7.04 lb/gal
Basis: average hp and load factor from OFFROAD model; historic sulfur fuel content up to 300 ppm (mandatory 15 ppm).
Assumption: contractor diesel engines are Tier 1 or better (model year 1996 or newer).

Gasoline Emission Factors:

Ref: USEPA, Exhaust Emission Factors for Non-road Engine Modeling --Spark-Ignition, NR-010f. (EPA-420-R-10-019, July 2010)
NR-010f: Table 5, Emissions and BSFCs for Class II Non-handheld Small SI Engines & Table 6; BSFC = in-use adjusted fuel consumption
Spark-Ignition Engines <25 hp, Non-handheld, Class II, Phase 1 (1997 or newer)
GHG: CCAR General Reporting Protocol, Carbon Dioxide Emission Factors for Transport Fuels (Motor Gasoline) 1/2009.
Motor Gasoline Fuel Density: (2.205 lb/kg) * 1000 kg / [8.53 barrel * 42 gal/barrel] = 6.16 lb/gal

Table H-3. AQ-GHG Emissions From Construction Helicopter Activity – Proposed Action

	Count (# units)	Power (hp)	Mean Op. (%) Power	Mean Op. (hp)	Fuel Use per # (kg f/sec)	Fuel Use per # (kg f/hr)	Fuel Use per # (gal/hr)	NOx (g/kg f)	HCs (g/kg f)	PM10 (g/kg f)	PM2.5 (g/kg f)	CO (g/kg f)	SOx (g/kg f)	CO2 (kg/gal)	CH4 (kg/gal)	N2O (kg/gal)
Hughes/MD500 (SHP < 600)	1	420	0.80	336	3.119E-02	112.3	36.4	5.74	7.13	0.18	0.18	8.88	—	9.57	0.00027	0.00031
Bell 222 two-engine (600 < SHP < 1000)	2	715	0.80	572	4.443E-02	159.9	51.9	7.77	4.02	0.23	0.23	4.92	—	9.57	0.00027	0.00031

	Emission Rates								
	NOx (lb/hr)	HCs (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO (lb/hr)	---	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)
Hughes/MD500 (SHP < 600)	1.42	1.77	0.04	0.04	2.20	---	767.97	0.02	0.02
Bell 222 two-engine (600 < SHP < 1000)	5.48	2.83	0.16	0.16	3.47	---	2188.02	0.06	0.07

		In service (hr per #)	NOx (ton)	HCs (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	---	CO2 (MT)	CH4 (MT)	N2O (MT)
Overall Use/Activity, 10 days, 10 hrs/day	Helicopters : Subtotal	100	0.3	0.2	0.0	0.0	0.3	---	134.1	0.0038	0.0043

Ref: Swiss Confederation, DETEC and FOCA "Guidance on the Determination of Helicopter Emissions," 2009
GHG Factors: http://www.eia.gov/oiaf/1605/coefficients.html
Jet fuel : 6.8 lb/gal

	Emission Rates						GWP AR4:	25	298
	NOx (ton)	HCs (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MTCO2e)	CH4 (MTCO2e)	N2O (MTCO2e)
Disturbed Area : Subtotal	---	---	41.8	6.3	---	---	---	---	---
Non Road : Subtotal	28.5	1.4	1.2	1.2	5.0	0.5	1,774.3	6.6	5.2
Portable : Subtotal	0.7	0.4	0.0	0.0	24.9	0.0	207.3	0.8	0.6
Helicopters : Subtotal	0.3	0.2	0.0	0.0	0.3	---	134.1	0.1	1.3
	NOx (ton)	HCs (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2e (MTCO2e)		
Total	29.5	2.1	43.1	7.5	30.1	0.5	2,130.2	—	—