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Parker-Davis Transmission System Routine Operation and Maintenance Project and Proposed Integrated Vegetation Management Program

Programmatic Environmental Assessment

DOE/EA-1982




Prepared for

Western Area Power Administration

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

Technical Assistance by

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Contents

Tables

Figures

Appendices

1.0 Introduction

The Western Area Power Administration, Desert Southwest Region (Western) markets and delivers federal hydroelectric power to nearly 70 municipalities, cooperatives, federal and state agencies, and irrigation districts. Most power sold by Western is generated from power plants operated at Hoover, Parker, and Davis Dams; from hydroelectric projects in the Bureau of Reclamation's (Reclamation) Lower Colorado Region, and the federal portion of power generated at the Navajo Generating Station near Page, Arizona. Western's Desert Southwest Region (DSW) operates and maintains more than 80 substations and 3,500 miles (5,633 kilometers) of transmission line to market and deliver power to its customers. Within this region, Western owns, operates, and maintains 69-kilovolt (kV), 115-kV, 230-kV, 345-kV, and 500-kV, transmission lines in 11 counties in Arizona; San Bernardino, Riverside, and Imperial counties in California; San Juan County in New Mexico; and Clark County in Nevada.

Western is proposing to continue current operations and maintenance (O&M) activities and the implementation of an Integrated Vegetation Management (IVM) program on the Parker-Davis Transmission System, in the DSW. Western refers to this as the Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Project (Proposed Action). Western's Transmission Vegetation Management Program (Western 2011) uses an adaptive management approach that incorporates environmentally protective practices to control potentially hazardous vegetation. These include physical and mechanical control. Chapter 2 – Proposed Action and Alternatives, provides additional details on these vegetation control methods.

1.1 Purpose and Need for Action

On August 10, 1996, during a period of high temperatures and high electricity demand, a transmission line sagged into filbert trees near Portland, Oregon, leading to a cascade of power outages as far away as southern California. Executive Order (EO) 13212, *Actions To Expedite Energy-Related Projects* (May 18, 2001), declared the safe and environmentally sound increased production and transmission of energy to be essential to the well-being of the American people, and called for the improvement and streamlining of cooperation among federal agencies to expedite projects that will increase the production, transmission, or conservation of energy. In August 2003, high temperatures resulting in high electricity demand caused a widespread power outage in the Northeast and Midwest, affecting approximately 45 million people in the United States and 10 million people in Ontario, Canada. The U.S.-Canada Power System Outage Task Force found that, again, transmission line sag into overgrown trees in rural Ohio caused the outage.

In response to these widespread outages, Congress enacted the Energy Policy Act of 2005 (Public Law 109-58), which authorized the Federal Energy Regulatory Commission (FERC) to certify an "Electric Reliability Organization" (ERO) to create mandatory and enforceable reliability standards, subject to FERC review and approval. FERC certified the North American Electric Reliability Corporation (NERC) as the ERO. The Energy Policy Act of 2005 also requires federal agencies to expedite approvals to allow owners or operators of transmission facilities access to the facilities to comply with applicable standards, including vegetation management standards.

NERC began enforcing its Reliability Standard, FAC-003-1, "Transmission Vegetation Management Program" (NERC Standard) on June 18, 2007. The NERC Standard was revised as FAC-003-2, "Transmission Vegetation Management" and was approved on May 28, 2013. To enhance Western's compliance with NERC's Transmission Vegetation Management Reliability Standard, industry standards, and

Western's policy and guidance, Western proposes to improve the way it manages vegetation along its rights-of-way (ROWs) on the Parker-Davis Transmission System.

Western's policy on Transmission Vegetation Management Program (Western Order 450.3A) specifies that:

> *Western's desired condition beneath and adjacent to its transmission line facilities is characterized by stable, low growth plant communities free from noxious or invasive plants. These communities will typically be comprised of herbaceous plants and low growing shrubs which ideally are native to the local area. Vegetation on the bordering areas of transmission line rights-of-way can be managed so that increased tree height is allowed in relation to an increasing distance from the transmission line.*

Western is developing its IVM program to ensure: (1) reliable, uninterrupted service to customers; (2) safe transmission and distribution of power along existing transmission lines; and (3) protection against wildfires that could result from vegetation coming into contact with or arcing to the transmission lines. Western's proposed vegetation management project includes routine vegetation management and danger tree removal. Failure to address vegetation clearance and fuels hazards could result in wildfires from transmission line flashovers, arcing, major power outages, or injury to life or property. Proper management of vegetation within the Project ROWs can minimize the chance of fire ignition by reducing available wildfire fuel sources.

The goal of Western's Parker-Davis Transmission System maintenance program is to streamline the regulatory process for ROW maintenance and balance environmental protection with system reliability and compliance with the National Electric Safety Code, Western Systems Coordinating Council requirements, North American Electric Reliability Council reliability standards, Institute of Electrical and Electronics Engineers standards, and Western directives for maintaining system reliability and protection of human safety.

Western's objectives are to maintain its transmission system to:

- Protect against operational hazards;
- Provide access for maintenance;
- Protect facilities from fire;
- Control the spread of noxious weeds and protect environmental quality;
- Adhere to principles of Western's Integrated Vegetation Management Program (including WAPA Order 430.1A Right-of-Way Management Guidance for Vegetation, Encroachments, and Access Routes, WAPA Order 450.3A Transmission Vegetation Management Program, and Western's Integrated Vegetation Management Guidance Manual);
- Establish and maintain stable, low-growing plant communities under the ROW;
- Develop a technically and economically efficient program;
- Protect public and worker safety;
- Maintain sound relationships with landowners and managers; and
- Streamline regulatory permitting activities.

The need for the Proposed Action is:

- Eliminate the threat for vegetation to interfere with the lines and towers;
- Control vegetation cost effectively to benefit the public and natural ecosystems;
- Maintain the transmission lines, access roads, and other legal ROWs to facilitate safe and year-round access to transmission-line structures and associated facilities; and
- Comply with FERC Order 785 and NERC Electric Reliability Standards FAC-003 (Vegetation Management) and PRC-005-1 (Protection System Maintenance).

1.2 Parker-Davis Transmission System Location and Description

The Parker-Davis Transmission System includes 53 substations and 1,534 miles of transmission line, containing 9,993 transmission structures. Table 1-1 provides transmission line voltages for segments of the system, as shown in Figure 1-1. Table 1-1 also includes the number of substations in each state.

Table 1-1. Parker-Davis Transmission System Components by Geography

Nevada	
▪ Henderson-Mead #1 (230-kV)	▪ Davis-Mead (230-kV)
▪ Henderson-Mead #2 (230-kV)	▪ 5 substations
North/Central Arizona	
▪ Davis-Prescott (230-kV)	▪ Liberty-Parker #1 (230-kV)
▪ Griffith-Peacock (230-kV)	▪ Liberty-Parker #2 (230-kV)
▪ Davis-Prescott (230-kV)	▪ Parker-Kofa (161-kV)
▪ Davis-Mohave Electric Kingman Tap (69-kV)	▪ Parker-Planet Tap (69-kV)
▪ Davis-Parker #1 (230-kV)	▪ Parker-Havasu Pump (230-kV)
▪ Peacock-Prescott (230-kV)	▪ Lone Butte–Phoenix (230-kV)
▪ Griffith-McConnico (230-kV)	▪ Liberty-Phoenix (230-kV)
▪ South Point–Topock (230-kV)	▪ Agua Fria–White Tanks–Orme (230-kV)
▪ Pinnacle Peak–Prescott (230-kV)	▪ Liberty-Sundance (230-kV)
▪ Parker-Kofa (161-kV)	▪ Liberty–Lone Butte (230-kV)
▪ Parker-Planet Tap (69-kV)	▪ 25 substations
▪ Parker-Havasu Pump (230-kV)	
South Arizona	
▪ Rogers-Coolidge (230-kV)	▪ Electric District 2–Electric District 4 (115-kV)
▪ Phoenix-Test Track (230-kV)	▪ Electric District 5–Test Track (230-kV)
▪ Coolidge-Sundance #1 (230-kV)	▪ Electric District 4–Saguaro (115-kV)
▪ Coolidge-Sundance #2 (230-kV)	▪ Electric District 5–Saguaro #1 (115-kV)
▪ Coolidge–Electric District 2 (115-kV)	▪ Saguaro-Oracle (115-kV)
▪ Coolidge-Oracle (115-kV)	▪ Saguaro-Tucson (115-kV)
▪ Santa Rosa–Pinal Central (230-kV)	▪ Tucson-Apache (115-kV)
▪ Kofa-Gila-Welton (161-kV)	▪ Gila-Yuma Tap (34.5-kV)
▪ Gila-Knob (161-kV)	▪ Gila-Welton Mohawk (161-kV)
▪ Dome Tap-Welton Mohawk Ligurta (161-kV)	▪ Welton Mohawk-Welton Mohawk #3 (34.5-kV)
▪ Welton Mohawk-Welton Mohawk #1 (34.5-kV)	▪ Test Track-Saguaro (230-kV)
▪ Maricopa–Test Track (69-kV)	▪ 19 substations
California	
▪ Parker-Headgate (161-kV)	▪ Headgate Rock–Blythe (161-kV)
▪ Parker-Blythe #2 (161-kV)	▪ Gene Tie-Parker (230-kV)
▪ Blythe-Knob (161-kV)	▪ 4 substations

1.3 Scope of this Environmental Assessment

This environmental assessment (EA) evaluates and presents the potential environmental consequences from implementing the Proposed Action and the No Action Alternative. The Proposed Action and the No Action Alternative include methods and management approaches and are described in Chapter 2. Chapter 3 presents a detailed description of the affected environment and a comprehensive analysis of environmental consequences for the Proposed Action and No Action Alternative for 16 resource areas (e.g., air quality, cultural resources). Section 4 includes a discussion of the cumulative impacts for the Proposed Action and No Action Alternative.

1.4 Scoping

Western conducted a comprehensive scoping process for the Proposed Action to solicit input on the scope of the EA and to identify issues, concerns, and suggestions that should be considered in the environmental assessment. A Scoping Letter was issued on February 28, 2014, which started a 30-day scoping period for the Proposed Action (February 28 through April 4, 2014), and included information about the Proposed Action as well as the date, location, and time of scoping meetings. The letter was filed with the Nevada State Clearinghouse and was distributed to more than 1,100 entities including federal, state, and local agencies, property owners, libraries, and non-governmental organizations. Scoping also included the following:

- **Public Scoping Meetings.** Three public scoping meetings were held as part of scoping. The meetings all included meeting handouts, factsheets, comment forms, and poster boards to provide information on the location and scope of the Proposed Action. The meetings were held as noted below:
  - Tuesday, March 18, 2014, 6:00-8:00 pm; Suddenlink Community Center, Bullhead City, AZ
  - Wednesday, March 19, 2014, 6:00–8:00 pm; The Lounge, Yuma Civic Center, Yuma, AZ
  - Thursday, March 20, 2014, 6:00-8:00 pm; DoubleTree Suites, Tucson, AZ
- **Newspaper Advertisements.** Western published newspaper ads with information about the Proposed Action and the scoping meetings in three newspapers. The newspapers included the Arizona Daily Star (March 3), the Yuma Daily Sun (March 3), and the Mohave Daily News (March 4).
- **Agency and Tribal Consultation.** Western sent 61 letters to 36 Indian Tribes with information regarding the Proposed Action and sent cooperating agency invitation letters to nine Indian tribes, six federal agencies, and one county.

As a result of scoping, Western received nine written comment letters by mail/email and oral comments at one of the public scoping meetings regarding the Proposed Action. Resource agencies requested that Western address direct and indirect impacts on wildlife species and provided recommendations on migratory birds, raptors, herbicide use, and federally threatened and endangered species. There was also a concern about visual impacts and a request to identify mitigation measures that address “Dark Sky” lighting practices, screening of all lights, avoiding light pollution, and a lighting plan. A few property owners have asked that Western address overgrown vegetation, requested a 48-hour advance notice from Western for gate access, and requested safe access and protection of surrounding vegetation during ROW maintenance activities.

Cooperating Agencies

The Parker-Davis Transmission System passes through three states and lands managed by the U.S. Department of Interior [i.e., Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), Bureau of Reclamation (Reclamation), and National Park Service (NPS)], U.S. Department of Agriculture (USDA) [i.e., U.S. Forest Service (USFS)], Indian reservations, and Arizona State Trust lands. Under National Environmental Policy Act (NEPA) regulations, the Bureau of Reclamation (Reclamation) and the Coronado National Forest are cooperating agencies in preparing this EA.

1.5 Decisions Needed

This EA is intended to be a concise public document that:

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

Based on the analysis in this EA, Western will determine whether the Proposed Action requires an EIS or if a FONSI can be prepared.

Legend

- Substation
- Pumping Plant *
- Maintenance Facility
- Transmission Line

* Not considered property types.

Label	Transmission Line Name	Label	Transmission Line Name
1	Henderson-Mead #1	26	Liberty-Sundance
2	Henderson-Mead #2	27	Liberty-Lone Butte
3	Davis Mead	28	Phoenix-Test Track
4	Davis-Prescott	29	Coolidge-Sundance #1
5	Griffth-Peacock	30	Coolidge-Sundance #2
6	Davis-Prescott	31	Coolidge-Electrical District 2
7	Davis-Mohave Electric Kingman Tap	32	Coolidge-Oracle
8	Davis-Parker #1	33	Santa Rosa-Pinal Central
9	Peacock-Prescott	34	Test Track-Saguaro
10	Griffith-Mcconnico	35	Maricopa-Test Track
11	South Point-Topock	36	Kofa-Gila-Welton
12	Pinnacle Peak-Prescott	37	Electrical District 2-Electrical District 4
13	Parker-Headgate	38	Electrical District 5-Test Track
14	Parker-Kofa	39	Gila-Knob
15	Parker-Blythe #2	40	Dome Tap-Wellton Mohawk Ligurta
16	Parker-Planet Tap	41	Welton Mohawk-Welton Mohawk #1
17	Gene Tie-Parker	42	Gila-Yuma Tap
18	Parker-Havasu Pump	43	Electrical District 4-Saguaro
19	Liberty-Parker #1	44	Gila-Welton Mohawk
20	Liberty-Parker #2	45	Welton Mohawk-Welton Mohawk #3
21	Blythe-Knob	46	Electrical District 5-Saguaro #1
22	Lone Butte-Phoenix	47	Saguaro-Oracle
23	Rogers-Coolidge	48	Saguaro-Tucson
24	Liberty-Phoenix	49	Tucson-Apache
25	Agua Fria-White Tanks-Orme	50	Headgate Rock-Blythe

Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Project

Figure 1-1 Parker-Davis System Overview Map

0 20 40 Miles

1:2,000,000

Aspen Environmental Group

2.0 Proposed Action and Alternatives

2.1 Introduction

Western's O&M program has been developed to safely and reliably operate and maintain the electric transmission systems, including the existing Parker-Davis Transmission System transmission lines. The Proposed Action would occur on an existing transmission line and access road (ROWs), and at substations and maintenance facilities. O&M activities would include aerial and ground patrols to locate and correct problems, regular and preventive maintenance, inspections and repairs to protect against operational hazards, and road repair to provide access for maintenance and emergencies. The IVM program would manage vegetation to protect facilities from fire, control the spread of noxious weeds to protect environmental quality, establish and maintain stable, low-growing plant communities in the ROW for fault protection, and protect public and worker safety around transmission lines and other facilities.

The Proposed Action and the No Action Alternative have been retained for full analysis in this EA. Refer to section 2.2 for a detailed description of the Proposed Action. Section 2.3 describes the No Action Alternative and section 2.4 describes the alternatives considered and eliminated from full evaluation in the EA.

2.2 Proposed Action Description

The Proposed Action would include O&M activities (Table 2-1 through 2-3), inspections, and access road maintenance. The proposed Integrated Vegetation Management Program is described in Section 2.2.2.

2.2.1 Operations and Maintenance Activities

The need for repairs, replacement, and other preventative maintenance procedures to the Parker-Davis Transmission System transmission infrastructure would be based on the results of inspections or other reports. Examples of transmission system repairs, replacement, and preventative maintenance could include: replacing insulators; tightening, replacing, or repairing towers/poles or hardware; and replacing existing conductors. These activities would be performed wherever damage, deterioration, or insufficiency of transmission lines or facilities poses a threat to safety or reliability. The type of equipment needed for these activities could include a light-duty helicopter, pickup truck, bulldozer, backhoe, bucket truck, and hand tools, and would depend on the required repair or maintenance. Some activities may require work outside of the ROW (e.g., hazard tree removal, conductor pulling and tensioning sites, washout repair, installation of culverts, etc.). Western would coordinate with the applicable land management agency or landowner for work outside of the ROW.

Operation and Maintenance Activity Categories

The following is a list of the Transmission System O&M activities according to their associated activity category. Activities were grouped by categories based on potential impacts. Category A and B actions are minor or routine maintenance activities with little to no potential for impacts, while Category C actions typically involve ground disturbance and heavy equipment.

Tables 2-1 through 2-3 provide details of activities conducted within each of the O&M Categories identified below:

- **Category A – Inspection and Minor Maintenance Activities**. Category A maintenance activities are primarily inspection-type actions, with some minor repairs that would not cause substantial soil or other disturbance. Substation and facility maintenance activities included in Category A are restricted to the existing fenced substation or facility perimeter.
- **Category B – Routine Maintenance Activities**. Category B maintenance activities include some of the typical repair tasks that occur along transmission lines. Category B maintenance equipment may include rubber-tired vehicles such as bucket trucks, backhoes, front-end loaders, cranes, auger trucks, bobcats, and pole trucks.
- **Category C – Minor Additions or Modifications to Existing Infrastructure**. Category C tasks are generally activities that would disturb large areas and would use heavy equipment to complete particular tasks. Category C maintenance equipment may include the use of light-duty helicopters, steel-tracked and/or rubber-tired bulldozers, graders, backhoes, and front-end loaders.

Table 2-1. Category A – Inspection and Minor Maintenance Activities

Substation and Facilities Maintenance	
▪ Building maintenance including interior and exterior painting; and roof, ceiling, floor, window, and door maintenance ▪ Substation inspections ▪ Maintenance and replacement of transformers and breakers ▪ Servicing and testing of equipment at existing substations, including oil change-outs ▪ Installation or replacement of brushings ▪ Cleaning or replacement of capacitor banks ▪ Maintenance or installation of switches (manual and motor-operated), interrupters, voltage regulators, reactors, reclosers, and valves ▪ Replacement of wiring in substations and switch yards ▪ Replacement of existing substation equipment including regulators, capacitors, switches, wave traps, radiators, instrument transformers, and lightning arresters ▪ Adjustments and cleaning disconnect switches	▪ Installation of cut-out fuses ▪ Placement of temporary transformer ▪ Maintenance, installation, and removal of solar power array and controller ▪ Installation of foundation for storage buildings above ground mat within existing substation yard ▪ Maintenance or installation of propane tanks within a substation yard ▪ New footings ▪ Ground mat repairs ▪ Clearing vegetation by hand within the fenced property boundary of a substation ▪ Application of herbicides (including pesticides) within the fenced property boundary of a substation ▪ Main station battery bank maintenance and installation ▪ Remediation of small spill of oil (less than 1 gallon)
Transmission Line Maintenance	
▪ Ground and aerial patrols ▪ Climbing inspection and tightening hardware on wood and steel transmission line structures ▪ Ground wire maintenance ▪ Aircraft warning device maintenance (e.g., light beacons, aerial marker balls, etc.) ▪ Insulator maintenance ▪ Bird guard maintenance ▪ Cross arm maintenance on wood pole transmission line structures ▪ Emergency hand removal and/or pruning of danger trees or vegetation ▪ Maintenance or replacement of hardware on wood and steel transmission line structures	▪ Maintenance or replacement of steel members of steel transmission line structures ▪ X brace and knee brace maintenance Dampener maintenance ▪ Wood pole testing ▪ Ground rod maintenance ▪ Armor rod maintenance and clipping-in structures ▪ Conductor maintenance ▪ Wood preservative maintenance on wooden pole structures ▪ Emergency placement of rocks at bases of poles or structures to stabilize small eroded areas ▪ Antenna maintenance ▪ Structure mile-marker maintenance ▪ Remediation of small spill of oil (less than 1 gallon)

Table 2-1. Category A – Inspection and Minor Maintenance Activities

Protection, and Communication System Maintenance	
▪ Generator maintenance ▪ Maintenance and inspection of microwave radio towers and dishes ▪ Maintenance and inspection of communication towers, antennae, and appurtenant equipment ▪ Panel additions and removals, wiring changes, and controls modifications	▪ Maintenance and inspection of parabolic dishes ▪ Light beacon maintenance ▪ Refilling of propane tanks, and maintenance of associated gauges and switches ▪ Above-ground foundation and footings maintenance

Table 2-2. Category B – Routine Maintenance Activities*

Transmission Line Maintenance	
▪ Maintenance and repair of existing culverts ▪ Installation of new culverts (for areas outside of jurisdictional waters) ▪ Installation of new foundation for storage building at existing facilities ▪ Cross arms replacements on wood pole structures ▪ Remove soil deposition around tower legs ▪ Ground anchors maintenance ▪ Wood pole maintenance and replacement ▪ Fill in erosional features on access roads ▪ Remediation of small spill of oil and hazardous materials (up to 10 gallons)	▪ Grading existing access roads (within existing road footprint) ▪ Installation of minor rip-rap on washes, creeks, and rivers ▪ Place fill or rock(s) around existing culverts ▪ Place fill or rock(s) around existing towers or structures ▪ Vehicle and equipment staging ▪ Installation and repair of fences and gates ▪ Installation of underground and overhead water, power, communication, or ground electrical line (less than 100 feet) ▪ Hand removal and/or pruning of danger trees or vegetation ▪ Mechanical vegetation management by means of bulldozers, masticators, or other mechanical equipment ▪ Spacer/dampener replacement
Substations, Facilities, and Protection and Communication System Maintenance	
▪ Foundations or footings maintenance ▪ Installation of underground and overhead water, power, communication, or ground electrical line (less than 100 feet) ▪ Installation or replacement of antennas to existing structures	▪ Maintenance and repair of existing culverts ▪ Remediation of small spill of oil and hazardous materials (up to 10 gallons)

Table 2-3. Category C – Minor Additions or Modifications to Existing Infrastructure

Transmission Line and Communication System Maintenance	
▪ Adding access roads to structures (approximately 300 feet or less in length) ▪ Relocation of existing access roads within the ROW ▪ Installation of new culverts (for areas within jurisdictional waters) ▪ Erosion control projects at existing facilities ▪ Replacing existing conductor ▪ Installation of rip-rap to recontour washes, creeks, or rivers	▪ Tower/pole relocation/realignment/replacement ▪ Installation of temporary inset guard structures and shoo-flys ▪ Installation of underground and overhead water, power, or communication line (greater than 100 feet) ▪ Remediation of small spill of oil and hazardous materials (greater than 10 gallons) ▪ Application of approved herbicides

2.2.1.1 Inspections

Western would continue conducting aerial, ground, and climbing inspections of its existing transmission infrastructure under this O&M program.

Aerial Inspections

Aerial inspections would be conducted at least twice a year by helicopter or small plane over the entire transmission system to check for hazard trees[1] or encroaching vegetation, as well as to locate damaged or malfunctioning transmission equipment. Typically, aerial patrols occur between 50 and 300 feet above, and adjacent to the transmission line, depending on the land use, topography, and infrastructure requirements. In general, the aerial inspections would pass over each segment of the transmission line (span between each structure) within a one to two minute period.

Ground Inspections

Annual ground inspections would check access to the ROW, transmission structures and hardware, tree clearances, fences, gates, locks, and would ensure that each structure would be readily accessible in the event of an emergency. Ground inspections would allow for closer assessment of infrastructure not possible by air, and identify redundant or overgrown access roads that should be permanently closed and/or returned to their natural state. Ground inspections would typically be conducted by driving a pickup truck or all-terrain vehicle (ATV) within the ROW and on access roads. Detailed ground inspections would be performed on 50 percent of all lines with wood pole structures annually, and 33 percent of all lines with steel structures annually, for 100 percent inspection every 2 or 3 years, respectively.

Climbing Inspections

Western uses climbing inspections on transmission line structures if aerial or ground inspections find problems. Typically, such activities would involve the use of a pickup truck, ATV, or bucket truck to access the inspection site. Access is via designated routes and along the transmission ROW.

2.2.1.2 Emergency Repairs

Existing aerial and ground inspections often identify problems that may require immediate repair or replacement of transmission line hardware or vegetation management. Transmission infrastructure failure can also require immediate repairs. Furthermore, storms and other natural events may result in necessary emergency repairs of the Parker-Davis Transmission System. Typically, emergency repairs would follow Western BMPs, SOPs, and PCMs when possible. These standard Western practices are discussed in Section 2.2.5 (Standard Western O&M Procedures) and listed in detail within Appendix A. However, if compliance with a standard Western protocol would require delayed repair of a transmission line, pole, etc., and it is an emergency situation (possibility of people without power or safety issues), then these measures may not be implemented. Safety related BMPs, SOPs, and PCMs would always be instituted.

2.2.1.3 Access and ROW Road Maintenance

As part of the O&M program (Proposed Action), Western would maintain safe and reliable access and ROW roads to the existing Parker-Davis Transmission System infrastructure. Western would notify land managers before work begins and would comply with applicable specifications. Western would also take into account land-manager guidelines.

[1] Trees located within or adjacent to the easement or permit area that present an immediate hazard to the facility or have the potential to encroach within the safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor.

When necessary, ditches, existing culverts, and inlet assemblies will be cleared of debris. Slash and debris may be scattered, but will not be placed near or in stream channels, culvert inlets, or ditches.

The following paragraphs describe Western's general approach to maintaining its existing access roads, road structures (gates, etc.), and roadway drainage systems.

Repairing Access and ROW Roads

To maintain safe access, associated road structures would be routinely inspected and maintained. Road structures in need of repair could include bridges, culverts, cattle guards, and fences. If a structure needs to be modified, maintenance activities would be designed to reduce erosion and sedimentation in streams and washes.

While repairing access and ROW roads, it would be Western's goal to adhere to the following BMPs (refer to Appendix A):

- To the maximum extent practicable, be consistent with applicable specifications of the land manager;
- Minimize the amount of disturbance to plants and soils by equipment;
- Work diligently to minimize the time disturbed soils are exposed;
- Divert run-off away from exposed soils and into vegetated areas;
- Provide adequate run-off channels;
- Trim slopes to stable configurations;
- Annual road inspections, if resources are available; and
- Mitigate damage created by emergency repairs as soon as possible to prevent further damage and erosion.

If an existing ROW or access road has become unusable (erosion, protected species, protected cultural site, etc.), then a new road or at least a road detour would need to be constructed or used.

New or Upgraded Culvert and Ditch Design

In the event new or upgraded access roadway drainage facilities are necessary, the following identifies typical plans of culverts, water bars, and rolling drain dips to prevent erosion of access roads and maintain adequate stormwater flows.

Culverts. Western understands the potential for adverse environmental effects if a culvert is installed without consideration of existing biological resources. Therefore, Western would consider the following guidelines when constructing new culverts:

- When appropriate, low-water crossings would be installed instead of a culvert;
- Applicable permits (including national regulatory permits for wetlands and state water-quality certification) would be obtained;
- Biological and cultural surveys would be completed as required before installing or replacing culverts, and
- If needed, erosion and sediment controls would be installed on disturbed soils as soon as possible (i.e., before site work was finished) consistent with the terms and conditions of all applicable permits.

Culvert diameters would be appropriately sized to handle the normal high water or bankfull condition in accordance with established engineering practices. The angle or slope of the culvert would be equal to the stream grade to maintain an acceptable water velocity for fish passage.

Water Bars. A water bar is a ridge that directs water off the road. Water bars would be spaced approximately 200 feet apart for roads with a grade under 6 percent, approximately 125 feet apart for grades between 6 and 10 percent, and approximately 50 feet apart for grades between 10 and 13 percent.

Rolling Drain Dips. A rolling drain dip allows for cross-drainage. It consists of a shallow dip followed by a hump, along with an earth berm at the edge of one side of the road.

2.2.2 Integrated Vegetation Management

Western's IVM program identifies the appropriate vegetation maintenance approach (also referred to as prescription) to meet the desired condition stated in Section 1.1. IVM is a practice of managing undesirable vegetation (i.e., those that have the potential of growing to a height that is not compatible with safe ROW maintenance) in which clearance thresholds are established and proactively monitored. For those areas that are in violation of the threshold, possible control options are evaluated, selected, and implemented. Control options are based on worker and public safety, environmental impact, effectiveness, site characteristics, and economics. If the ROW is not in an acceptable condition, the Proposed Action includes an initial treatment to establish a desired ROW condition. If the ROW is in an acceptable condition, Western would maintain it at that state as discussed under the Vegetation Maintenance section below.

The IVM program includes hazard tree removal to prevent power outages. Through the IVM program, Western works with the land managers (owner or appropriate agency) to follow additional requirements.

For the Parker-Davis Transmission System, Western would adopt a two-step approach of initial treatment and maintenance to ROW vegetation management. Figure 2-1 shows typical vegetation along existing DSW transmission lines. Figure 2-2 shows a typical Western ROW after vegetation clearance. A majority of the Parker-Davis Transmission System is within the Sonoran Desert, the hottest of all of the deserts in North America (Bowers 1993).

Western's intent is to establish and maintain ROWs that minimize vegetative threats to the safe and reliable operation of the transmission system, and ultimately require infrequent (i.e., about once every 5 years) treatments for vegetation management. Achieving Western's desired ROW condition (see Section 1.2) is a process that may take several iterations of vegetation treatment over an extended period. Once achieved, the desired condition will be proactively maintained through ongoing corridor vegetation management.

Initial Vegetation Removal

Western has not completed any substantial removal of vegetation from the ROWs (except for individual hazard trees) since construction (approximately 50+ years). Trees and taller shrubs are incompatible with Western's desired condition, as described above and in WAPA Order 450.3A and Western's IVM Guidance Manual (2011). Therefore, Western would remove nearly all vegetation (except grasses, forbs, and some small shrubs) within the ROWs to safely and reliably operate the transmission facilities. Figure 2-2 is an illustration of the desired appearance of a ROW after initial treatment.

Figure 2-1. Typical vegetation along the Pinnacle Peak-Prescott transmission line

Figure 2-2. Typical ROW after vegetation clearance

In addition to vegetation removal within the limits of the ROWs, danger trees outside of the ROW would also be removed. Removal of danger trees outside of the ROW may require modification to the existing ROW agreement or authorization from the land owner or land managing agency. Danger trees are defined as trees located within or adjacent to the right-of-way that present a hazard to employees, the public, or power system facilities.

Characteristics used in identifying a danger tree include but are not limited to the following:

- Encroachment within the safe distance to the conductor as a result of the tree bending, growing, swinging, or falling toward the conductor (Figure 2-4 through 2-7);
- Deterioration or physical damage to the root system, trunk, stem or limbs, and/or the direction and lean of the tree;
- Vertical or horizontal conductor movement and increased sag as a result of thermal, wind, and ice loading;
- Exceeding facility design specifications;
- Potential for arcing with Project facilities in the event of wildfire, or providing wildfire fuel within the ROW; and
- Other threats to the electric power system facilities or worker/public safety.

Vegetation Maintenance

Once the ROWs have been cleared of undesirable vegetation, the IVM program would maintain the desired condition within the ROW (Section 1.1). Federal energy standards require vegetation inspections and treatment to maintain transmission lines in safe and reliable operating conditions (NERC Reliability Standard FAC-003. Vegetation clearance distances required by NERC FAC-003 are provided in Western Order 430.1B, Right-of-Way Management Guidance for Vegetation, Encroachments, and Access Routes. The required clearances vary by line voltage and are presented in Table 2-4.

Vegetation maintenance includes the removal of danger trees as described in the sections below. As the ROWs are managed to achieve Western's desired condition and clearance standards, it is anticipated that low-growing vegetation (e.g., grasses and forbs, some small shrubs) would become the predominant condition within the ROWs and the occurrence of danger trees and other tall-growing vegetation within and adjacent to the ROWs would decline over time, thus reducing the need for additional vegetation removal.

Table 2-4. TRANSMISSION. Line ROW Minimum Clearance Requirements for Vegetation After Treatment

Line Voltage	Minimum Clearance Between Conductor and Vegetation
69 kV	20 feet
115 kV	21 feet
138 kV	22 feet
161 kV	22 feet
230 kV	23 feet
345 kV	26 feet
500 kV	29 feet

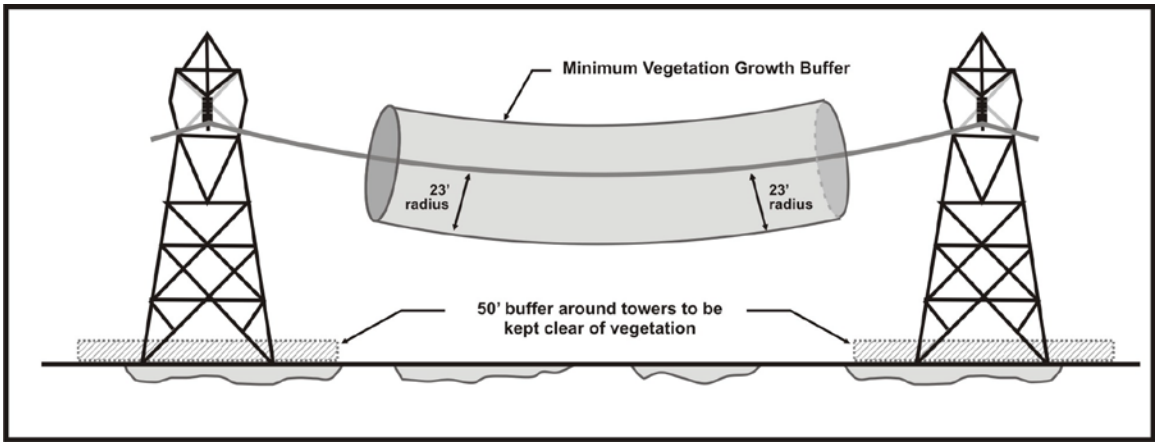
Note: The minimum clearance is based on the OSHA 29 CFR §1910.333 minimum approach distance for non-electrical workers (rounded up to the nearest foot) plus 5 feet to account for conductor and tree movement due to wind and ice loading or increased conductor sag as a result of thermal loading. In addition, 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. In situations where more rapid tree growth can be expected because of species or better than average growing conditions, a distance (either horizontal or vertical) greater than 5 feet is required.

Western would conduct routine vegetation maintenance for the Project ROW according to an approximately 5-year vegetation maintenance cycle. Routine vegetation maintenance would include identification and removal of vegetation within the ROWs that are incompatible with Western's desired condition. Western would use aerial patrols, ground patrols, or light detection and ranging surveys (LiDAR) to identify routine vegetation maintenance needs. Routine vegetation management activities would be conducted in accordance with seasonal restriction Project Conservation Measures (PCM) identified in Appendix A. Growth cycles specific to target species for the Project would be considered according to the 5-year maintenance cycle. Vegetation that would conflict with Western's desired condition within the 5-year routine maintenance cycle would be removed.

Western's vegetation management manual (Western 2011) requires that a minimum of 50 feet around concrete footers of transmission structures be maintained free of shrubs, trees, or other such vegetation (grasses and/or forbs in this area would be acceptable) that could pose a potential fire threat to transmission structures or associated hardware. This 50-foot clearance area is intended to provide a fire break to minimize arcing of electricity or burning of structures during a fire under or near the transmission lines. Clearing around the footers of the Project transmission structures may also be necessary to provide access for Project maintenance vehicles. This clearance area would also maintain the integrity of the transmission structures by minimizing the potential for trees or vegetation falling on the structures. This work would occur within the permitted ROWs. Figure 2-3 shows the approach for vegetation management for a 230 kV line.

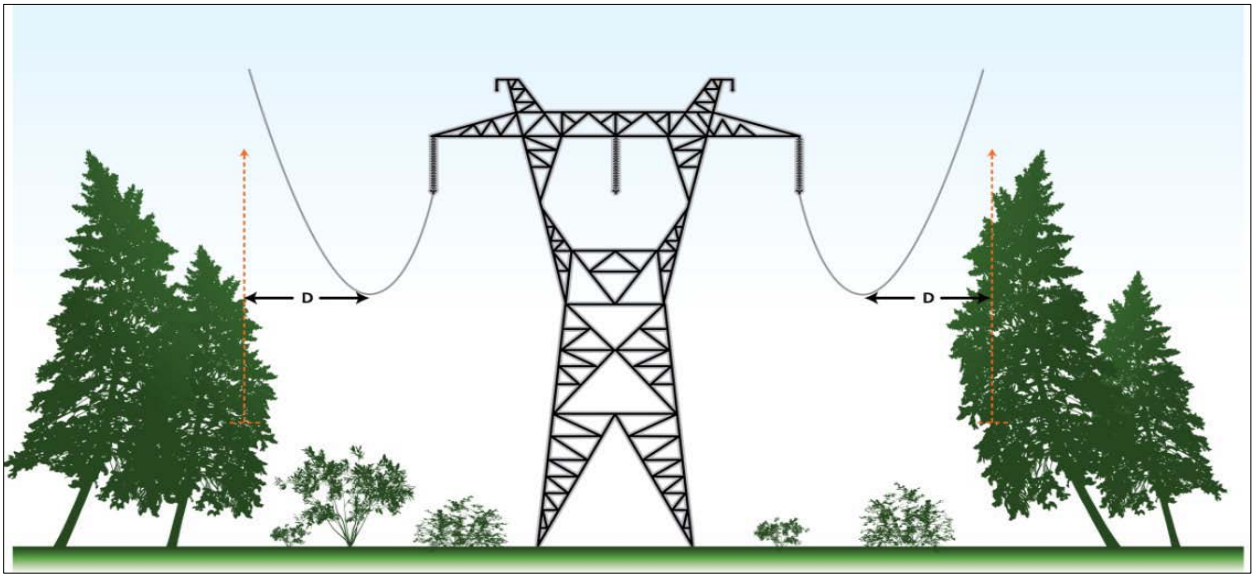
All vegetation removal during routine vegetation maintenance activities would be done using either mechanical or manual removal methods, as described below. As with initial vegetation removal, where routine vegetation maintenance identifies areas of the Project requiring vegetation treatment, mechanical methods would be the preferred and predominant method to be used within the ROWs. Similarly, disposal of vegetation removed during routine vegetation maintenance would also be done in accordance with the procedures identified in Section 2.1.1.2, dependent upon the method of removal applied at a given location.

Figure 2-3. Buffered Vegetation Management Approach for 230-kV Line



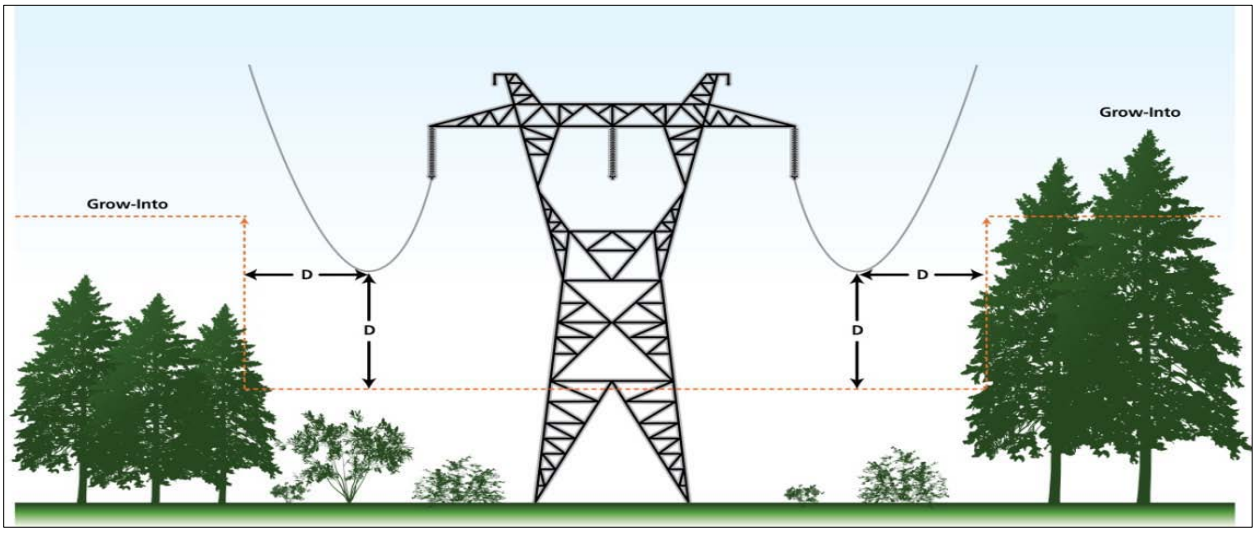
Bend-in trees (Figure 2-4) are located along the right-of-way; they have tops or branches that bend down or could bend down into the minimum clearance distance to the transmission line conductor.

Figure 2-4. Bend-In Trees



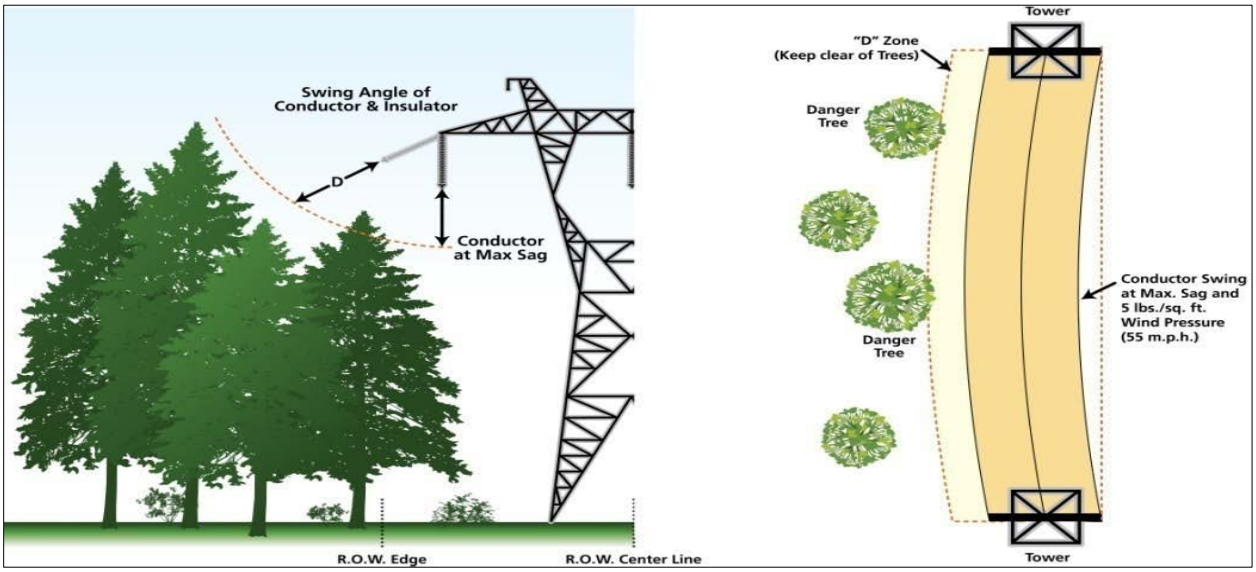
Grow-in trees (Figure 2-5) are located within and/or adjacent to the right-of-way; they have grown, or will grow, horizontally and vertically into the minimum clearance distance to the conductor

Figure 2-5. Grow-In Trees



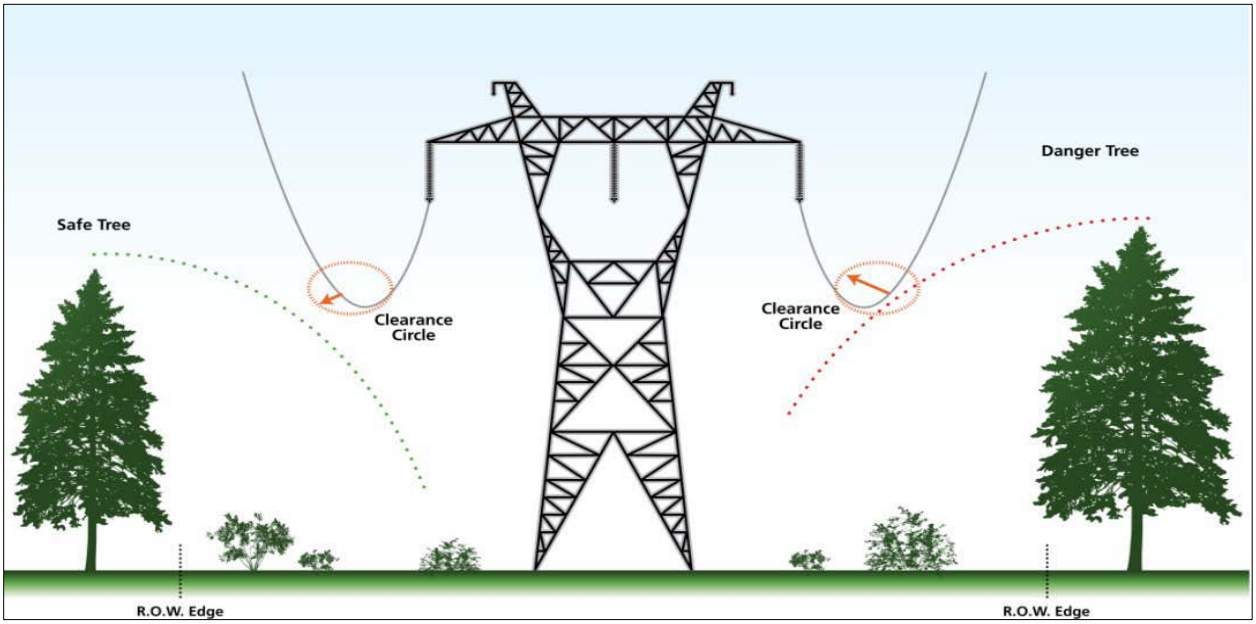
Swing-in trees (Figure 2-6) are located off and adjacent to the right-of-way; their branches would, or could, violate the minimum clearance distance to the conductor because of the conductor being blown toward the tree.

Figure 2-6. Conductor Swing



Fall-in trees (Figure 2-7) are any trees that, if they were to fall toward the transmission line, would extend into the minimum clearance distance to the conductor.

Figure 2-7. Fall-In Trees



The Proposed Action includes use of a combination of vegetation management practices that are consistent with the principles of IVM and land manager goals and policies (WAPA 2011). Depending on the area and the requirements, Western would develop specific prescriptions to manage vegetation along the ROWs. The following paragraphs describe the general vegetation control methods.

Manual Vegetation Control Methods

Manual vegetation control is defined as the application of powered and non-powered handheld tools or installation of synthetic or natural barriers to manage vegetative growth. The primary benefit of manual methods is selectivity; only unwanted or target vegetation is removed, while non-target vegetation is not disturbed. Another advantage to manual control is the lighter footprint on the landscape and the ability to mitigate potential impacts to sensitive cultural or biological areas. The primary disadvantages of manual methods are that they are labor intensive and only effective in vegetation with relatively low density. The manual vegetation control techniques currently employed by Western are described below.

Cutting. The most common manual method is cutting with power saws. Western uses this technique when access is limited, or when only a few trees need to be cut, or in sensitive areas where cutting is selective. Cutting would be used as appropriate based on species and site. For species that do resprout, which includes most deciduous trees such as quaking aspen (*Populus tremuloides*), sprouts can rapidly resurge to original height within a growing season in some cases, to several years and at much greater density in other cases. Access for subsequent manual treatments is thereby hindered, and concerns about fire survivability of the facilities increase.

Western follows its manual cutting operations with slash disposal techniques designed to hasten natural decomposition and improve aesthetic appeal. The slash is typically lopped and scattered uniformly across the treated area. Alternatively, branches and small trees might be mechanically chipped and the chips spread over the ROW or deposited in piles. Stems too large for chipping are lopped and scattered in the ROW, as the situation requires.

Trimming. Trimming or pruning is the removal of selected branches from tree trunks to prevent them from growing into transmission lines. Western uses this labor-intensive technique in special situations where it is desirable to leave trees in place where easement contracts and land and resource management plans dictate trimming criteria. To protect the transmission line, trimmed trees must be cut to the applicable standards. Because of the extreme hazards associated with trimming trees near energized power lines, and Western's experience from several accidents and fatalities, this technique has limited applicability. Selective thinning or removal of excessively tall trees to achieve or retain vegetation screening is often another acceptable approach in sensitive areas.

Slash Disposal/Fuels Reduction. Manual cutting operations by Western are sometimes followed by slash disposal techniques designed to reduce fire hazards or to improve aesthetic appeal. Slash refers to the debris left within the vegetation treatment area. Depending on land manager preference, access limitations, and fire safety, the slash can be treated by one of the following methods: it can be chipped and left on site; removed from the site; or lopped and scattered.

Mechanical Vegetation Control Methods

Mechanical vegetation control typically uses self-propelled machine platforms with various interchangeable treatment-head attachments to remove or control target vegetation along transmission line and access route ROWs. Depending on the particular equipment attachment and skill of the operator, these methods are selective or nonselective (all plants in the path of the machine are affected). Rubber-tired mechanical equipment platforms are generally limited to operating on slopes

less than 30 to 35 percent. Specialized tracked equipment platforms, with articulating control cabins, are typically used on slopes up to 60 percent. Both types of specialized equipment platforms can operate with very low ground pressures. However, site-specific obstacles such as rocks or other extreme terrain can reduce their efficiency.

Mowing/Grinding. Western uses mechanized heavy equipment with high-speed rotary blades to cut, chop, or shred woody vegetation in ROWs. Target vegetation is typically cut off at ground level, encouraging the selection and recovery of low-growing plant communities consisting of grasses, forbs, and other herbaceous plants. Examples of this type of mowing equipment are Fecon, brush-hog, Track-Mack, and Hydro-Ax. Western rarely uses mowing, but the technique has been used where appropriate.

Chipping. Chipping is the process of feeding limbs and other woody debris through a mechanical chipper. The chipper can be used to spread the material back onto the ROW. When strategically placed in the ROW, chipped material keeps nutrients in the ecosystem, helps retain soil moisture, can help control erosion, and can help retard the regrowth of undesirable plant species. This method can be used effectively to control vegetation, improve the aesthetics of the treated area, reduce undesirable fuel loads, and protect soil and water resources. Chipped vegetation will be spread to a depth of no greater than 4 inches.

Herbicide Control Methods

Under the Proposed Action, Western may also employ the use of herbicides for vegetation management. Western would coordinate with land managers and local agencies to ensure that its use of herbicides would be consistent with approved herbicides (i.e., BLM or USFS approved). An herbicide is a chemical used to kill or suppress the growth of plants. The most satisfactory classification of herbicides is based upon how they are used for noxious weed control and how they work. Accordingly, herbicides are classified into two major types:

- Selective herbicides kill certain plants but do not significantly affect the most desirable plants. For example, some selective herbicides kill broadleaf plants (including brush) but do not affect grasses.
- Nonselective herbicides are chemicals that are generally toxic to plants without regard to species.

Plants differ in susceptibility to any specific chemical, and the choice of herbicide and application rate depends on the species to be controlled.

Western proposes using only herbicides that have been approved for use (by applicable land management agencies such as BLM or USFS) in ROW maintenance (including access roads) based on evaluations of toxicity, solubility, soil absorption potential, and persistence in water and soil. These herbicides must be registered for use by the U.S. Environmental Protection Agency. Western would use only employees or contractors with required applicator licenses/certificates. Further, Western would coordinate with land managers and local agencies to ensure that its use of herbicides would be consistent with the agencies' approved herbicides and recommended application procedures. For example, Appendix B includes the reference table *Herbicides Approved for Use on BLM Lands* in Accordance with the 17 Western States Programmatic Environmental Impact Statement (EIS) Record of Decision (ROD) and Oregon EIS ROD. This table provides a comprehensive list of herbicides approved for use on land managed by the Bureau of Land Management within all states included in the Action Area. In addition, a detailed memorandum, Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service (USFWS 2007), was prepared by the USFWS to provide recommended pesticide protection measures used to protect federally listed species, species proposed for listing, and critical habitat designated under the Endangered Species Act.

The full text of this memorandum can be accessed through the USFWS website at the following web address:

http://www.fws.gov/southwest/es/arizona/documents/ecreports/rpmpa_2007.pdf

Western would follow strict safety procedures and applicable Best Management Practices (BMPs), Standard Operating Procedures (SOPs), and Project Conservation Measures (PCMs) while applying herbicides. These standard Western practices are discussed in Section 2.2.5 (Standard Western O&M Procedures) and listed in detail within Appendix A. As part of the Proposed Action, applicable standard practices for herbicide use would include:

- Reviewing federal and applicable state pesticide regulations for restrictions on use of particular herbicides;
- Reviewing interagency agreements for herbicide type or application method restrictions;
- Using herbicides approved by the respective land management agency or owner;
- Observing site conditions to match specific herbicides and application methods to those conditions, including the plants that are to be controlled, seasonal limitations, presence of sensitive environmental areas (such as listed and/or sensitive species, habitat, and wetlands), presence/proximity of non-target vegetation, presence/proximity of crops, and vegetation conditions (such as height and amount of tall-growing brush);
- Reviewing and implementing Western's environmental protection requirements and the individual risk assessment for each proposed herbicide;
- Following all restrictions and guidance listed on the herbicide label;
- Calibrating equipment to ensure proper mixture and volume of herbicide;
- Selecting the proper nozzle tip to avoid overspray;
- Handling herbicides carefully to avoid accidental spills and ensure worker and public safety;
- Adjusting herbicide application methods and equipment based on wind speed and direction, which could include avoiding application on windy days when drift potential exceeds that which is recommended on the label; and
- Providing the land manager with the following information after completion of a particular activity: herbicide used, amount (including concentration), location of application, and method and date of application.

There are several different ways to apply herbicides, and the method selected depends on the type of control needed, the type of vegetation, and the site situation (i.e., site conditions, location). Application methods Western would use include stump treatment, basal spray treatment, foliage spray treatment, soils treatment, and under-surfacing materials treatment. Refer to Appendix A for additional details regarding these application methods.

Stump Treatment. This type of treatment is used when vegetation is cut to the ground. This method is primarily used after initial clearing and during maintenance clearing to prevent regrowth by sprouting.

Basal Spray Treatment. This treatment method involves spraying the lower part of the stem and the exposed roots of incompatible vegetation with an oil- or wax-based formula. Basal spray treatment would be used on re-sprouting species and nonnative and invasive plant species. This method is more

selective than a foliage spray and does not cause immediate brownout of vegetation. In general, this treatment is prescribed where:

- Brush is too tall to use foliage spray without causing unacceptable drift;
- The ROW is adjacent to cropland, residences, susceptible vegetation, or other sensitive areas, and drift is a problem; and
- The ROW contains a high density of compatible species, and a foliage spray cannot be applied without injuring the compatible cover.

Foliar Spray Treatment. Foliar spraying is a common method of applying herbicides on brush up to 15 feet tall. This method uses a water- or wax-based formulation that is applied to the entire plant's foliage and stems. Because it is sprayed into the air, drift can be a problem under certain atmospheric conditions. Also, most foliage sprays cause immediate brownout of vegetation. This method would not be used in areas where drift and brownout are concerns (e.g., adjacent to cropland, residences, susceptible vegetation, or other environmentally or visually sensitive areas).

Documentation and Reporting. Per federal regulations (refer to Appendix A for details), Western would document and report information pertaining to herbicide application within the ROW and associated facilities. This information could include herbicide type, quantity, application method, and application area. Reporting format and frequency would be decided in coordination with the land manager.

2.2.3 Projected O&M and IVM Frequency

Aerial inspections would be performed a minimum of every 6 months by flying a helicopter at 50 to 300 feet above the conductors. Ground patrols would be conducted semi-annually using a pickup truck to drive along lines. Western would also conduct periodic climbing inspections of antenna towers.

During either type of patrol, problems could be identified that may require immediate repair or replacement of transmission line hardware or vegetation management. Emergency repairs would occur as needed and determined by inspections or system disruption.

Western would prioritize areas that need maintenance according to public and worker safety, transmission reliability, environmental protection, and funding. Based on past O&M activities, Western assumes that O&M activities would occur on an annual basis as follows for the Parker-Davis Transmission System; the estimate is an average per year over the entire Action area:

- 500 to 1,000 acres of vegetation would be managed in ROW and access roads;
- 10 to 20 miles of access roads would be stabilized/graded;
- 3 to 5 culverts would be repaired or replaced;
- 10 to 20 miles of communication equipment, including fiber-optic cable, would be installed or maintained;
- 4 to 8 towers or poles would be relocated or stabilized (towers would be relocated adjacent to existing tower or poles);
- Communication sites would be inspected once a year; and
- Herbicides would be applied to approximately 150 acres per year (approximately XX percent of the entire system acreage).

2.2.4 Standard Western O&M and IVM Protocols

Western has developed BMPs, SOPs, and PCMs (see Appendix A) as part of its existing O&M activities. Western developed these protocols to proactively protect sensitive resources. Following these protocols is considered part of the Proposed Action. Western and its contractors will follow all BMPs, SOPs, and PCMs at all times during all Proposed Action activities. Western's personnel would monitor maintenance activities to make sure that the contractor was complying with the applicable BMPs, SOPs, and PCMs. Western would also conduct follow-up inspections of the ground-disturbance activity sites

Applicable BMPs, SOPs, and PCMs are provided in Appendix A, and generally discussed below.

Best Management Practices

The use of BMPs is a standard method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark by Western. In addition, a BMP can evolve to become better as improvements are discovered. BMPs are used to describe Western processes of developing and following a standard way of conducting their O&M activities.

Standard Operating Procedures

SOPs would be followed for every O&M activity, regardless of the activity category, throughout the Proposed Action. All Western O&M personnel would participate in annual training that includes SOPs, environmental laws and regulations, and applicable agency requirements. SOPs would be included as part of the contract with any contractor selected to conduct O&M activities. Prior to conducting the O&M activity, Western's O&M personnel would review the SOPs with the selected contractor to make sure the intent and background of each procedure was clearly understood. In addition, Western's O&M personnel would monitor the contractor during maintenance activities, and conduct follow-up inspections of the job site at periodic intervals after the work had been completed.

Project Conservation Measures

Western has developed PCMs to protect natural resources (Appendix A). PCMs have been developed for special-status species and cultural resources. PCMs include, among other things, identification of limited operating periods, pre-construction flagging of sensitive resource areas, and equipment restrictions.

2.2.5 Regulatory Coordination

Western is proposing to streamline the regulatory process for O&M activities under the Proposed Action, by proactively identifying the sensitive resources that occur in the Parker-Davis Transmission System ROWs and access roads through this NEPA process. Western would coordinate with the resource agencies and land managers for each major maintenance project, providing a description of the maintenance task and coordinating with them regarding BMPs, SOPs, PCMs, and all mitigation measures approved as part of the Proposed Action.

2.3 No Action Alternative

Under the No Action Alternative, Western would continue to maintain its infrastructure, ROWs, and access roads, as defined under existing authorizations and other agreements. The current management approach to vegetation would be reactive and largely involve hazard tree removal.

2.3.1 Operations and Maintenance Activities

In compliance with *Western's Guidelines, Requirements, Inspections, and Procedures* (GRIP) *19*, Western has been conducting aerial, ground, and climbing inspections and maintenance of its existing transmission infrastructure since initial construction of the Parker-Davis Transmission System. Maintenance activities have included all of the activities listed in tables 2-3 to 2-4. Under this alternative, these actions would continue to occur at the same frequency identified in Section 2.2.3.

The BMPs, SOPs, and PCMs identified in Section 2.2.4 and Appendix A are currently used for maintenance actions and would continue under this alternative.

Western would continue to evaluate individual actions with NEPA analysis (i.e., categorical exclusion or EA), required consultation, and land owner or land managing agency (as required).

2.3.2 Vegetation Management

Under the No Action Alternative, Western would continue its need-driven management approach using current methods for ROW maintenance. Under a need-driven management approach, Western would trim, mow, clear, remove, and dispose of vegetation along ROW segments as control needs are identified through periodic line patrols. Western would perform vegetation management using the current mix of manual and mechanical methods to control vegetation on transmission line and access road ROWs.

Western uses pre-emergent, post-emergent, and UV inhibitor herbicides at substations throughout DSW. Herbicides are applied using either hand tools or vehicular mounted equipment within the substation and extending 5 feet outside the perimeter fence (where possible). Vegetation is also cut and pulled to achieve a bare earth standard in the substations. Workers applying the herbicide are licensed applicators and follow the manufacturer's instructions and all federal, State, and local codes and regulations. A biological monitor is used at some substations to ensure sensitive species are not inadvertently sprayed. A Pesticide Use Permit would be obtained for any herbicide use on BLM land.

Manual vegetation management would be the same as described under Section 2.2.2. Mechanical vegetation management (mowing) would continue to occur at substations. Recently, Western conducted hazard tree removal along the Prescott-Pinnacle Peak line with 5,800 hazard trees removed using chainsaws. This type of hazard tree removal would continue under the No Action Alternative.

2.4 Comparison of Alternatives

Table 2-5 provides a summary of the environmental effects of the Proposed Action compared to the No Action alternative. The full analysis of the proposed action and the No Action alternative are provided in Chapter 3 of this EA.

Table 2-5. Environmental Impact Summary by Alternative

Impact Topic	Proposed Action	No Action
Land Use and Aviation	Temporary and short-term disruptions to land uses; aerial inspections would not be expected to pose increased risk to aviation facilities or airspace	Same as Proposed Action, but potential disruptions to land uses associated with vegetation management would be less
Recreation	Temporary access restrictions and disruptions; temporary and permanent changes to visual quality of some recreation areas	Same as Proposed Action, but potential disruptions associated with vegetation management would be less
Human Health and Safety	SOPs and IVM program would help avoid or minimize adverse fire hazards; use of vehicles and equipment can present physical hazards	Same as Proposed Action, except that the potential for fire hazards from overgrown vegetation would be greater, but there would be less potential for physical hazards.
Visual / Aesthetics	Maintenance activities would cause visual changes, but impacts would only be considered adverse at locations with high visual quality	Same as Proposed Action, but potential visual changes associated with vegetation management would be less
Noise	Temporary noise and vibration would be minimal and localized within ROWs and access roads	Same as Proposed Action, but potential noise and vibrations associated with vegetation management activities would be less
Cultural Resources	The majority of Category A and B O&M activities are exempt from cultural resources work. Potential adverse effect of Category C and IVM activities would be avoided and minimized by the PAs, BMPs and SOPs	potential adverse effects to cultural resources associated with vegetation management would be less, as these efforts would be less aggressive and would potentially involve less ground disturbance when compared to the Proposed Action
Wildlife	Adverse effects on wildlife would be minimal with the implementation of Western BMPs, SOPs, and PCMs	Effects would be similar to the Proposed Action
Special-Status Species	Effects on Special-Status Species would range from no impacts to short-term, adverse effects which would be minimized with the implementation of Western BMPs, SOPs, and PCMs	Impacts to special-status species associated with vegetation management would be less than the Proposed Action.
Vegetation	Maintenance activities may result in temporary and permanent loss of habitat because vegetation would be removed for maintenance activities and access road maintenance. Vegetation clearing and herbicide use would typically be a short-term impact since vegetation would grow back; however, this may contribute to the introduction of noxious weeds. Western would implement SOPs and PCMs to reduce impacts to vegetation. For example, by requiring that seeds from ground-disturbing equipment be cleaned off before moving between work sites. Impacts to vegetation resulting from the Proposed Action would be minor, adverse, both short- and long-term.	Effects to vegetation from vegetation management activities would be less

Table 2-5. Environmental Impact Summary by Alternative

Impact Topic	Proposed Action	No Action
Water Resources / Floodplains / Waters of the U.S.	Compliance with regulatory and permit requirements, and adherence to Western SOPs, PCMs, and BMPs would ensure that effects on floodplains, drainages, water quality, waters of the U.S., and groundwater are negligible	Same as Proposed Action, but vegetation management activities would be less aggressive. So the potential for soil disturbance, increased erosion and sedimentation, disturbance of jurisdictional waters, and accidental release of hazardous materials would be reduced
Geology / Soils / Minerals	Adverse impacts associated with geology could occur if construction is performed on steeper, unstable slopes, disturbing the subsurface and causing slope failure, slumps, or landslides of rock; adverse impacts to soils could occur if the overall soil structure is affected; adverse impacts to mineral resources may occur if the loss of availability of a mineral resource is created by Project activities such as limiting access, removing a mineral site, or using the resource for the Project, making it unavailable to the area	Same as Proposed Action, but vegetation management activities would be less, resulting in less potential for adverse impacts to geological resources, soils, and mineral resources
Air Quality	Air quality impacts from the Proposed Action would be minimal, as maintenance activities would be temporary, intermittent, of short duration, and dispersed along the Project ROW	Same as Proposed Action, but vegetation management activities would be les, and therefore, would result in less potential for adverse air quality impacts
Hazardous Materials	The potential for public exposure to hazardous herbicides is considered very low; adverse impacts to surface water could occur if an accidental release of herbicides drifts or flows into surface water; with implementation of Public Health SOPs, adverse impacts from use of herbicides, or potential exposure to fuels or hazardous waste would be minimized or avoided	Same as Proposed Action, but vegetation management activities would be less, and therefore, would result in less potential for impacts associated with hazardous materials
Intentional Destructive Acts	The incidence of an intentional destructive act is speculative, and could occur at any location along the 1,534-mile ROW or at substations. Based on past occurrences, if an act were to take place, it would likely result in minor or negligible environmental impacts.	Same as the Proposed Action

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

3.1.1 Resources Analyzed

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the Proposed Action. Direct, indirect, and cumulative effects are analyzed for each resource topic carried forward. Potential impacts are described in terms of type, context, duration, and intensity.

The potential effects are examined as they relate to the following 14 resource areas:

3.2 Land Use and Aviation
3.3 Recreation
3.4 Human Health and Safety
3.5 Visual/Aesthetics
3.6 Noise
3.7 Cultural Resources
3.8 Wildlife
3.9 Special-status Species
3.10 Vegetation
3.11 Water Resources/Floodplains/Waters of the U.S.
3.12 Geology/Soils/Minerals
3.13 Air Quality
3.14 Hazardous Materials
3.15 Intentional Destructive Acts

3.1.2 Resources Not Evaluated

As described in the "Environmental Consequences" chapter in this EA, Western takes a "hard look" at all potential impacts by considering the direct, indirect, and cumulative effects of the Proposed Action on the environment, along with connected and cumulative actions. In those cases where impacts are either not anticipated or are expected to be negligible, the issues and impact topics are dismissed from detailed analysis. As described in NEPA regulations, NEPA analysis should focus on issues that are truly significant to the action in question, rather than amassing needless detail (Council on Environmental Quality (CEQ) NEPA regulations, 40 CFR 1500.1 (b)). This section identifies the impact topics dismissed from detailed analysis in this EA and provides the rationale for the dismissal. Generally, issues and impact topics are dismissed from detailed analysis for one or more of the following reasons:

- The resource does not exist in the analysis area.
- The resource would not be affected by the proposal, or the likelihood of impacts are not reasonably expected (i.e., no measurable effects)
- Through the application of mitigation measures, there would be minor or less effects from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Because the Parker-Davis Transmission System is an existing transmission line system, the activities associated with maintaining a transmission system are limited in time and scope, and the study area is well defined and has been previously disturbed, Western has determined that the Proposed Action would have little or no adverse effect on some resources in the study area. Resource areas falling into this category include Climate Change, Environmental Justice, Prime and Unique Farmlands, Socioeconomics, and Transportation. These issue areas have not been carried forward for full analysis.

3.1.2.1 Climate Change

Although climatologists cannot be certain of the specific long-term consequences, it is clear that the planet is experiencing global climate changes that affect ocean currents, sea levels, polar sea ice, and global weather patterns. Although this is likely affecting precipitation patterns, it would be speculative to predict localized changes in temperature, precipitation, or other weather facets, in part because many of the variables are not fully understood. The actions proposed in this EA would not measurably contribute to overall greenhouse gas emissions. Therefore, the possible effects of the Proposed Action on climate change are dismissed from further analysis.

3.1.2.2 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed activities would not take place in areas where minorities and low-income populations and communities could realize disproportionate health or environmental effects. Therefore, this topic has been dismissed from further analysis.

3.1.2.3 Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality directed federal agencies to assess the effect of their actions on farmland soils classified as prime or unique by the U.S. Department of Agriculture's Natural Resources Conservation Service. Prime or unique farmland is defined as soil that produces general crops such as common foods, forage, fiber, and soil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. Maintenance on existing transmission lines would have little to no effect on prime and unique farmlands.

3.2.1.4 Socioeconomics

Almost all of the existing transmission lines have been in place for over 40 years and maintenance along the lines is not expected to affect social and economic values. Western would utilize existing employees and contractors already conducting maintenance activities along the Parker-Davis Transmission System. The activities described in Section 2.0 would maintain the existing transmission system and are not proposed to expand the system. Therefore, maintenance on existing transmission lines and ROWs would not stimulate new development or growth and would not change existing socioeconomic patterns of the areas proximate to activities.

3.1.2.5 Transportation

O&M activities and vegetation management along existing transmission lines and at substations is not expected to have measureable effects on transportation. While some maintenance activities identified in Section 2.0 may require temporary lane closures or disruptions (limited only to areas where lines cross public roadways), any such disruption would be short-term. Furthermore, maintenance of existing aviation safety lighting and marker balls would ensure continued air navigation safety with respect to existing transmission lines and infrastructure.

3.2 Land Use and Aviation

Land use refers to the use of land for various activities, including commercial, industrial, recreational, agricultural, and residential. Adopted plans and development regulations control the type of land use and the intensity of development or activities permitted. Changes in land-use patterns that result from development can affect the character of an area and result in physical impacts to the environment.

3.2.1 Affected Environment

This section describes in general terms the current conditions for land use and aviation within the Action area.

3.2.1.1 Land Use

The Project traverses lands within 11 counties in Arizona, southeastern California, and southern Nevada. Much of the Proposed Action area includes open space, which is mostly unoccupied or undeveloped land, with the exception of scattered rural homes and communities or industrial and commercial development. In general, the open space is primarily characterized by desert landscape with sparse and natural vegetation. The remaining land is located on private and agriculture lands, and in urban areas. The urban areas include a variety of residential, commercial, and industrial development.

Table 3.2-1 identifies land ownership, as well as the predominant land use types, within each region. Most of the Project is located on land under the jurisdiction of federal and state resource and land management agencies, including the BLM, National Park Service (NPS), the USFS, the Reclamation, and the Arizona State Lands Department. The federal and state land is mostly open space including designated conservation, wildlife management, and recreation areas. Major designated federal lands in the Proposed Action area include the Lake Mead National Recreation Area, the Prescott National Forest, and the Cibola, Bill Williams River, and Kofa National Wildlife Refuges. In addition, the Project crosses the Yuma Proving Ground, a military installation owned by the United States Army, and seven Indian reservations.

Table 3.2-1 Overview of Land Ownership, Miles of Transmission Line, and Land Use Types by Geographic Region

Jurisdiction/Land Management Agency	Miles Traversed[1]	Predominant Land Use Types adjacent to ROWs
Nevada		
U.S. Bureau of Land Management	28.79	Open space (recreation); urban residential; rural residential; semi-rural residential
U.S. Bureau of Reclamation	1.50	
National Park Service	26.36	
North/Central Arizona		
U.S. Bureau of Land Management	314.48	Open space (recreation and conservation); urban residential; rural residential; semi-rural residential; urban industrial; commercial; agriculture; military; and tribal lands
U.S. Bureau of Reclamation	6.68	
National Park Service	13.87	
U.S. Army	17.91	
USDA Forest Service	13.21	
U.S. Fish and Wildlife Service	5.07	
Tribal Lands	47.47	
Arizona State Land Department	148.73	

Table 3.2-1 Overview of Land Ownership, Miles of Transmission Line, and Land Use Types by Geographic Region

Jurisdiction/Land Management Agency	Miles Traversed[1]	Predominant Land Use Types adjacent to ROWs
La Paz County	11.79	
Maricopa County	99.26	
Mohave County	103.41	
Pinal County	9.90	
Yavapai County	59.90	
Southern Arizona		
U.S. Bureau of Land Management	31.63	Open space (recreation); urban residential; rural residential; semi-rural residential; urban Industrial; semi-rural industrial; commercial; military; and tribal lands
U.S. Bureau of Reclamation	1.10	
U.S. Army	5.38	
USDA Forest Service	0.50	
Tribal Lands	12.54	
Arizona State Land Department	141.83	
Cochise County	18.13	
Maricopa County	17.02	
Pima County	39.13	
Pinal County	151.17	
Yuma County	25.37	
California		
U.S. Bureau of Land Management	126.40	Open space (recreation and conservation); rural residential; semi-rural residential; rural industrial; semi-rural industrial; commercial; agriculture; and tribal lands.
Tribal Lands	32.43	
State Trust Lands	3.90	
Imperial County	3.93	
Riverside County	21.28	
San Bernardino County	11.99	

Applicable Land Use Plans and Policies

Because the Action area cross is large, this EA does not identify every land-use plan and policy that potentially applies. Specific locations of activities conducted under the Proposed Action have not yet been identified, so the applicability of plans and policies cannot be precisely determined. Moreover, land-use plans and policies along the ROWs and access roads could be revised during the course of activities.

As described above, the Action Area includes BLM, NPS, Reclamation, Tribal, National Forest System, and Arizona State Trust lands. Activities in these areas would be subject to the plans and policies of federal and state agencies, tribal governments, and the requirements for areas with special designations. Major federal resource management plans in effect within the Action Area include the Desert Tortoise Management Plan, the Prescott National Forest Land and Resource Management Plan, the Lake Mead National Recreation Area General Management Plan, the Kofa Mountains Complex Adaptive Predation Management Plan, and various BLM planning area specific Resource Management Plans. As these plans are revised, Western would work with the land managers to follow updated provisions.

The Action Area crosses numerous local agency jurisdictions, such as counties and cities, which have adopted general plans and zoning ordinances. The Action area also crosses several Indian reservations

and the Yuma Proving Ground. During O&M activities under the Proposed Action, Western would continue to coordinate with the tribal governments, the U.S. Army, and local agency jurisdictions to enhance compatibility with applicable plans and policies of these agencies.

3.2.1.2 Aviation

Subpart B, Section 77.13 of the guidelines of the Federal Aviation Administration (FAR Part 77) requires an applicant to submit FAA Form 7460-1 (Notice of Proposed Construction or Alteration) if any of the following would occur:

- Construction of new structures or equipment more than 200 feet above ground, or
- If objects would penetrate the imaginary surface extending outward and upward at a ratio of 100 to 1 from a public or military airport runway out to a horizontal distance of 20,000 feet.

The application must be submitted to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the Project area for review and approval of the action (FAA, 2008).

There are numerous civil and private airfields within one mile of the Project ROW. These airfields are listed in Table 3.2-2, below, by each geographic region within the Action area. The Action area also includes a portion of the Yuma Proving Ground, and area where aircrafts conduct military test operations.

Table 3.2-2. Civil and Private Airfields within 1.0 Mile of the Project

Nevada	▪ Boulder City Municipal Airport	
North/Central Arizona	▪ Laughlin-Bullhead International Airport ▪ Yuma International Airport ▪ Kingman Airfield ▪ Lake Havasu City Airport	▪ Phoenix Goodyear Airport ▪ Gila Port Airport ▪ Dunton Ranch Airport
Southern Arizona	▪ Tucson International Airport ▪ Potters Field Airstrip ▪ Martin Ranch Airstrip ▪ Y Strip Airport	▪ Avra Valley Airport ▪ Ammon Airport ▪ Carranza Farm Airstrip
California	▪ Blythe Airport ▪ Aha-Quin Airport ▪ WR Byron Airport	

3.2.2 Environmental Consequences from the Proposed Action

This section examines the potential impacts to land use and aviation.

3.2.2.1 Land Use

The implementation of activities under the Proposed Action would be temporary and short-term, but could disrupt residential, recreational, or agricultural uses in areas along the Project ROW (see Table 3.2-1). Implementation of land use SOPs would include actions such as notifying affected land owners and recreation users and posting signage in areas requiring temporary closure for vegetation management activities, minimizing noxious weeds by cleaning seeds from ground-disturbing equipment, and repairing damage caused during maintenance activities. Additionally, SOPs for aesthetics, noise, air quality, and recreation would help reduce potential nuisance impacts to adjacent land uses and aviation activities.

Western would coordinate with the affected land management agencies to ensure that activities under the Proposed Action would be consistent, to the maximum extent practicable, with the applicable land use plans and regulations of the entities listed in Table 3.2-1. The Action Area includes local agency jurisdictions, such

as counties and cities, which have adopted general plans and zoning ordinances. Western would follow these applicable plans and policies to the greatest extent feasible.

3.2.2.2 Aviation

The Proposed Action may include alteration to existing transmission structures or construction of new transmission infrastructure (Categories B and C), which could have the potential to conflict with aviation safety. Therefore, these activities may be subject to the requirements of FAR Part 77 (see Section 3.2.1.2). If required, Western's notification to the FAA would ensure that new or modified infrastructure poses no hazard to aircraft. Western would complete aerial inspections of the ROW by helicopter or small plane at least twice a year. Aerial inspections would not be concentrated in one area for an extended period and would not occur within restricted airspace. Aerial inspections would not be expected to pose increased risk to aviation facilities or airspace.

3.2.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts to land use and aviation from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. Potential disruptions to land uses associated with vegetation management would be less under the No Action alternative.

3.3 Recreation

3.3.1 Affected Environment

The largest recreation areas crossed by, or adjacent to, the Project include BLM, NPS, and National Forest System lands. These include national recreation and conservation areas, national forests, and wilderness areas. In addition, local and regional recreation areas are associated with residential and urban areas throughout the Action Area. Table 3.2-1 (above) provides information on lands traversed (in miles) by the Proposed Action.

3.3.1.1 Nevada

The Action Area crosses, or is adjacent to, approximately 26 miles of NPS land in this area. The Lake Mead NRA is managed by the NPS and includes Lake Mead and the surrounding area. The year-round recreational opportunities include boating, fishing, hiking, and sightseeing.

The Action Area in this region also crosses approximately 29 miles of BLM land, including the Sloan Canyon National Conservation Area. This Conservation Area was designated to protect the Sloan Canyon Petroglyph Site, which contains sensitive cultural resources (BLM 2014a). This site attracts visitors who also use this area for hiking and sightseeing. The remainder of the BLM land provides opportunities for dispersed recreational activities such as off-highway vehicle (OHV) use, hiking, camping, hunting, and sightseeing. BLM-designated Wilderness Areas (WA), however, are limited to non-motorized recreation activities. There are several BLM-designated WAs adjacent to the Project area in this region including the Spirit Mountain WA, the Ireteba Peaks WA, and the El Dorado WA.

3.3.1.2 Northern and Central Arizona

The Proposed Action traverses approximately 13 miles of National Forest System lands and approximately 14 miles of NPS land in this area. The northern most portion of Prescott National Forest (NF) is traversed by the Action Area in this region. The Prescott NF provides recreational opportunities including hiking, backcountry camping, mountain biking, hunting, and horseback riding. Due to the high elevation of the terrain, most recreational visitors are present during the summer months (USFS 2014). The Action Area is adjacent to and then crosses two segments of the Lake Mead NRA. The Lake Mead NRA is managed by the NPS and includes Lake Mead and the surrounding area. The year-round recreational opportunities include boating, fishing, hiking, and sightseeing.

The Action area in this region crosses large sections of BLM and Arizona State Trust lands. These areas are open for public use and provide opportunities for dispersed recreational activities such as OHV riding, hiking, camping, hunting, wildlife observation, and sightseeing. In addition, the Action area in this region is adjacent to and crosses approximately 5 miles of National Wildlife Refuges (NWRs). The Kofa NWR is adjacent to the Proposed Action and attracts year-round visitors providing opportunities for recreational activities such as hiking, sightseeing, hunting, and wildlife observation. Large portions of the Kofa NWR are designated WAs, including portions that are adjacent to the Action area, and are limited to non-motorized recreation.

A few of the larger BLM WAs adjacent to the Action area include Warm Springs WA, Gibraltar Mountain WA, Rawhide Mountains WA, and Hassayampa River Canyon WA. Recreation in these areas is limited to non-motorized activities.

3.3.1.3 Southern Arizona

The Action area in this region traverses approximately 31.5 miles of BLM land, which attracts year-round visitors and provides opportunities for recreational activities such as hiking, sightseeing, hunting, and wildlife observation. Large portions of the Kofa NWR are adjacent to the Proposed Action and are designated WAs, including portions that are limited to non-motorized recreation. A segment of the Action Area in this region is adjacent to the Imperial NWR, which provides recreational activities such as boating, sightseeing, hunting, and wildlife observation.

3.3.1.4 California

The Action Area in this region crosses approximately 126 miles of BLM land, which provides opportunities for dispersed recreational activities, such as OHV riding, hiking, camping, hunting, and sightseeing. BLM WAs adjacent to the Action area include the Riverside Mountains WA, the Big Maria Mountains WA, and the Palo Verde Mountains WA. Recreation in these areas is limited to non-motorized activities. The Action area is also adjacent to the Cibola NWR, which provides recreational activities such as boating, hiking, sightseeing, hunting, and wildlife observation.

3.3.2 Environmental Consequences from the Proposed Action

Category A activities, such as ground and aerial inspections and manual vegetation clearing within fenced facility perimeters, could restrict access to recreation areas and cause disruptions. In addition, recreationists could experience indirect and temporary nuisances from increased noise levels from construction equipment and during aerial inspections, changes to the visual quality of an area from vegetation clearing, or risks to human health and safety from exposure to dust and odors from maintenance equipment. Category A activities would be temporary, and activities would occur over the entire Action area. For example, ground patrols would be conducted semi-annually, aerial inspections would be performed at least twice a year, there

would be periodic climbing inspections of antenna towers, and emergency repairs would occur as needed. Impacts to recreationists would not be concentrated in one area for an extended period.

Category B activities could include the installation or replacement of culverts or wood poles, cutting and dropping hazardous trees, or installation of fiber optic lines on existing transmission towers. These activities could permanently change the existing infrastructure and the visual quality of established recreation areas, such as trails or other facilities. Construction-related disruptions could be a nuisance and could degrade the experience of recreation facility users. However, based on past O&M activities, Western assumes that routine maintenance activities would occur on an annual basis. Therefore, these types of activities would occur for a short period at various locations within the entire Action area and would not be concentrated in one area for extended periods.

Category C activities, such as the use of heavy equipment or light duty helicopters for the addition of new access roads or tower and pole replacement and realignment, may disrupt recreational activities and degrade the experience of recreation facilities. The new infrastructure under Category C could alter the existing infrastructure along the Project ROW or change recreational areas. However, disruptions to recreation activities associated with Category C activities would be minimal due to the short duration and infrequency of the activities.

Western would coordinate with affected land management agencies, such as the BLM, NPS, USFWS, and USFS, to ensure that the public is informed of trail blockages by equipment or for safety purposes, and trail users would be directed to alternate trails or facilities. In places like the Lake Mead NRA, Kofa NWR, or the Prescott NF, Western would ensure that nuisance to recreationists or conflicts with established recreational areas would be avoided or minimized. In addition, Western would strive to ensure that Category B and C maintenance activities would preserve the natural surrounding and natural landscape for recreationists.

3.3.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts to recreation areas and facilities from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. Potential disruptions to recreation areas associated with vegetation management would be less under the No Action alternative.

3.4 Human Health and Safety

The study area for human health and safety includes the Parker-Davis transmission line ROW, substations, and access roads.

3.4.1 Affected Environment

This section examines the existing conditions and potential environmental effects on human health and safety from physical hazards, fire hazards, and electric and magnetic fields (EMF). Section 3.14 addresses the affected environment and environmental consequences of hazardous materials, and therefore will not be discussed in this section.

3.4.1.1 Fire Hazards

Within the ROW, typical fire hazards include ignition of fuel sources (primarily vegetation) caused by sparks from routine maintenance vehicles, tools, or personnel. In addition, lack of adequate ROW maintenance and clearance (i.e., vegetation or trees too close to transmission lines) could lead to fires. Fires outside of the ROW could start for various reasons and later move into the ROW, endangering system operation. These risks are greatest in highly vegetated areas surrounding the ROW, primarily within mountainous areas of North/Central Arizona study area.

3.4.1.2 Physical Hazards

Current operational 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.

3.4.1.3 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, creates an electric field. Electric fields and magnetic fields considered together are referred to as "EMF." Both fields occur together whenever electricity flows. Therefore, it is general practice to consider both as EMF exposure.

Transmission lines, like all electrical devices and equipment, produce EMFs. Electric field strength is usually constant with a given voltage; 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.

There is public interest and concern about the potential health effects to workers and the general public from exposure to EMF from power lines. While there is uncertainty about the health effects of EMF, the balance of scientific evidence to date indicates that these fields do not cause disease. No federal regulations have established environmental limits on the strengths of fields from power lines; however, the Federal Government continues to conduct and encourage research on the EMF issue. Other sources of EMF in the study area include distribution feeds to homes and businesses, commercial wiring and equipment, and common household wiring and appliances for residences and communities in the area. In the home, power frequency fields (60 Hz) are associated with electrical appliances.

3.4.2 Environmental Consequences from the Proposed Action

3.4.2.1 Fire Hazards

Power line fires continue to be a main source of some of the most destructive wildfires throughout the western United States (Mitchell 2009). A major reason for this is that programs that only focus on hazard tree removal do not effectively facilitate risk reduction of wildfire ignitions (Guugenmoos 2003). Transmission line corridors with vegetation maintained to reduce the risk of high-intensity wildfire can be valuable resources for limiting the spread of and thus destruction caused by large, high-intensity wildfires that ignite from other sources. For example, in 2002 firefighters used a well-maintained transmission line corridor to create a backfire to successfully stop the spread of one of the biggest fires in Arizona history, the Rodeo-Chedeski Fire (Johnstone 2008).

Equipment used in the ROW, particularly during mechanical vegetation clearance, may ignite a spark, starting a fire. Fire hazards may also be present due to vegetation being close to transmission lines, or falling on and breaking, transmission lines and other structures. Public Health SOPs in Appendix A, Table 2, state that Western and its contractors will comply with applicable federal and state regulations for fire suppression, including having equipment on site, including a water tank and hose with adequate gallon requirements, the use of spark arrestors on all internal and external combustion engines, and daily knowledge of fire hazard levels. These SOPs would help avoid or minimize fire hazards. In addition, with the continued implementation of vegetation management, adequate clearance from vegetation to transmission lines and structure would be in place.

3.4.2.2 Physical Hazards

During Proposed Action activities, use of vehicles and equipment can present dangers and cause injury to maintenance crew workers. Some ROWs and access roads have restricted access, thereby minimizing or avoiding public exposure to potential effects. Proper training on mechanical tools and equipment used during proposed O&M activities will minimize accidents from occurring.

Western's Public Health SOPs state that structures and/or shield wire will be marked with highly visible devices in identified locations as required, workers will be required to wear high-visibility vests and hardhats, and excavations greater than one foot deep will be fenced, covered, or filled at the end of each working day, or have escape ramps. BMPs state that areas containing extremely dense vegetation with species like cacti, mesquite, tamarisk, and poison ivy will be closed, if necessary to ensure crew safety.

3.4.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts associated with fire and physical hazards from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, the vegetation management under the Proposed Action is more aggressive than the No Action alternative, so the potential for fire hazards from overgrown vegetation would be greater under the No Action Alternative. However, the increase in activities as a result of the IVM program may result in the potential for increased physical hazards under the Proposed Action in comparison to the No Action alternative.

3.5 Visual/Aesthetics

The section describes the affected environment with respect to visual quality and sensitivity, and examines the potential impacts of the Proposed Action and No Action Alternative on visual resources.

The analysis of aesthetics and visual resources uses resource-specific qualitative and quantitative terminology. The following are terms used in the analysis:

- **Viewshed:** The landscape that can be directly seen under favorable atmospheric conditions, from a vantage point or along a transportation corridor.
- **Visual Quality:** The relative subjective value 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 visual contrast at the criterion.

The analysis discusses visual quality and qualitative rating as follows:

- High: Where the valued natural landscape character is intact with only minute or no visual deviations from natural conditions. 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 (urbanized). Visual deviations (human-made structures) primarily dominate the visual landscape character and have overwhelmed any previous natural landscape.

- **Visual sensitivity:** The concern by viewers with changes to visual quality. Visual sensitivity is generally higher in natural or unmodified landscapes.

The visual resources study area includes viewsheds where program activities would be seen from sensitive viewing locations.

3.5.1 Affected Environment

3.5.1.1 Existing Visual Conditions

This section characterizes the current conditions in the Action area for visual quality and sensitivity. The Project crosses a wide variety of land use types and natural terrain. In general, much of the route travels through open space characterized by unmodified, unique, and varying landscapes. These areas tend to have a high visual quality due to the presence of unmodified landscapes and unique landforms, vegetation patterns, and waterforms. Other portions travel through or near residential or urban development. The visual resources in these areas tend to be of moderate quality due to the presence or high concentration of obstruction to viewsheds.

The following subsections describe the conditions of the visual resource study area within each geographic region defined in Table 1-1 in Section 1.3. The visual quality and sensitivity described in the following subsections were based on the land use and development patterns described in Section 3.2.

Nevada

Most of the Action area in this region is adjacent to and crosses the Sloan Canyon National Conservation Area (NCA), El Dorado and Ireteba Peaks WAs on BLM lands, and the Lake Mead NRA on NPS lands. In general, these areas are characterized by mostly undeveloped land comprised of open vistas, semi-rugged terrain, and pristine waterbodies. Therefore, the visual quality tends to be high due to the presence of unobstructed views and unique and scenic landscapes. In addition, visual sensitivity tends to be high as these areas provide natural and scenic views. Portions of the Action Area also cross areas of urban development south of the City of Las Vegas, like the Cities of Henderson and Boulder City. These areas are characterized as highly modified landscapes comprised of densely populated residential development and sprawling commercial and industrial facilities. These areas tend to have a moderate to low visual quality and sensitivity due to the obstruction of viewsheds and the unnatural character of the landscape.

North/Central Arizona

Much of the Action area in this region is located on open space comprised of undeveloped desert or forested landscapes. A segment of the Project passes through the Prescott National Forest (NF) which is characterized by rugged terrain covered by dense forests. A portion of the Project is adjacent to the Kofa NWR, which is comprised of undeveloped, moderately rugged terrain with sparse vegetation cover. These areas area tend to have a high visual quality and sensitivity, especially those within the Prescott NF and Kofa NWR, as they are comprised of mostly natural landscapes and provide varying, scenic vistas.

Southern Arizona

This region includes the highest percentage of urban development and agricultural land throughout the Project area. The Action area passes through the Phoenix and Tucson metropolitan areas where visual quality and sensitivity tends to be moderate to low due to the highly modified landscape. The remainder of the Action area in this region crosses open space characterized by an undeveloped desert landscape where visual quality tends to be higher due to the unobstructed views.

California

The Action area in this region is located primarily on undeveloped land characterized by a desert landscape with sparse vegetation cover. This includes the Big Maria Mountains and Riverside Mountains Wilderness Areas which are comprised of rugged terrain with a vast and scenic viewshed. The Action area is also adjacent to the Cibola NWR which includes mostly undeveloped landscapes with lush vegetation along the Colorado River. This area has a high visual quality and sensitivity due to the natural, unique, and scenic landscape. A portion of the Project ROW in this region also passes through the City of Blythe where the landscape is dominated by sprawling residential and commercial development and agriculture fields. This area tends to have a lower visual quality and sensitivity due to the modified landscape.

3.5.1.2 Adjacent Federal Land Management Agency Regulations

Bureau of Land Management – Visual Resource Management System

Over 500 miles of the Project cross BLM lands. 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. BLM accomplishes this through its Visual Resource Management (VRM) system (BLM 2010).

BLM's VRM system provides a way to identify and evaluate scenic values to determine the levels of management. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings.

The BLM VRM guidelines are often used by the NPS and the Reclamation for visual resource assessment as the Reclamation and the NPS do not have formalized guidance procedures for assessing visual resources.

U.S. Forest Service – Scenery Management System

The Project crosses the northern most portion of the Prescott National Forest managed by the USFS. The USFS has defined the Scenery Management System for the inventory and analysis of the aesthetic values of National Forest lands (USFS 1995). The Scenery Management System establishes the following:

- Common terminology.

- Consistent procedures for inventory, analysis, and synthesis.
- Standards and guidelines for scenery management.
- Techniques for monitoring.

3.5.2 Environmental Consequences from the Proposed Action

Maintenance activities conducted under the Proposed Action would cause a visual change. However, impacts would only occur at locations with high visual quality and if the maintenance activity resulted in visual contrast that could dominate a rare, unique, scenic, or sensitive viewshed, or if there is conflict with or violation of a formal visual resources plan or policy, applicable to the study area and approved or adopted by the federal, state, or local agency that has jurisdiction.

Western SOPs related to aesthetics would be implemented as part of the Proposed Action and are intended to minimize visual impacts. As shown in Appendix A, SOPs for reducing potential aesthetic impacts include:

- Material storage and staging areas will be selected to minimize views from public roads, trails, and nearby residences, to the extent feasible. During O&M, the work site will be kept clean of debris and construction waste. For areas where excavated materials will be visible from sensitive viewing locations, excavated materials will be disposed of in a manner that is not visually evident, in coordination with the land owner and in compliance with applicable regulations.
- Replacement structures and hardware (e.g., conductors and insulators) will be replaced in kind, to the extent feasible, while ensuring that structures and hardware that are visible from sensitive viewing locations will have colors, finishes, and textures to most effectively blend into the visible landscape. If structures are visible from more than one sensitive viewing location, and backdrops are substantially different from different vantage points, the darker color will be selected, because dark colors tend to blend into landscape backdrops.
- Maintenance operations will be conducted to limit unnecessary scarring or defacing of the natural surroundings and preserve the natural landscape to the extent possible. To preserve vegetative screening from public areas, tree removal and vegetation clearing will be minimized along state highways and near recreation sites, and wherever possible along scenic roadways.

A majority of the Parker-Davis Transmission System lines have been in place since the 1940s and 1950s and are an existing component of viewsheds facing the ROW. Project activities could affect scenic quality from the temporary visual intrusion of construction vehicles, equipment helicopters, storage materials, and workers. Permanent visual change would mostly occur from vegetation clearing and new access road construction.

Vantage points available within 0.5 mile of the transmission lines afford the greatest viewing opportunities from the foreground and middle ground. Some project features would be visible in the background (4 miles to horizon), but all background landscapes would also be seen in greater detail from closer distances and from other vantage points. Therefore, the study area of this visual analysis is limited to foreground and middle ground views of the ROW and access roads. Furthermore, visual changes associated with operation and maintenance activities are not considered adverse at viewsheds where the visual quality is considered low.

3.5.2.1 Category A – Inspection and Minor Maintenance

Category A activities would have little to no adverse visual effect on views with existing vegetation and landscape, and would not substantially degrade scenic quality. There would be no substantial dominant visual change to viewsheds with high or moderate visual quality as seen from sensitive viewer locations. Furthermore, implementation of SOPs identified above and in Appendix A would ensure no conflict with visual standards identified by a federal land-management agency, and no long-term dominant visual change to sensitive viewsheds.

3.5.2.2 Category B – Routine Maintenance

Since Western will not substantially modify the height or structure location of a transmission line, no adverse long-term impacts would occur to visual resources from Category B activities. Tree clearing along the edge of the transmission ROW and vegetation clearing along access roads could alter the visual quality of the foreground. These visual changes could make the industrial nature of the ROW more prevalent. However, due to the relatively small impacted area of the landscape and the limited viewshed, these activities would minimally impact the visual quality. Implementation of SOPs would help reduce damage to the visual landscape that might conflict with viewsheds with high to moderate visual quality.

Where activities would occur adjacent to federal lands, Western would work proactively with the BLM and USFS to ensure SOPs and Category B activities would not conflict with agencies' visual plans or standards. Therefore, Category B activities would not substantially degrade the scenic quality of a visually important landscape; cause substantial dominant visual changes in the landscape seen by highly sensitive viewer locations; or cause a visual interruption that would dominate a unique viewshed or scenic view.

3.5.2.3 Category C – New Infrastructure

Category C activities have the greatest potential to degrade or alter the scenic quality of a visually important landscape such as recreational areas identified in Section 3.5.1.1. Where Category C activities would occur adjacent to these federal recreational areas, Western would work with the BLM and USFS to ensure SOPs and Category C activities would not conflict with agencies' visual plans or standards.

Clearing of vegetation and establishing low-growing plants may make transmission ROWs and access roads more visible within the viewshed. However, because these areas would be relatively small and within or near an established transmission corridor, these low elevation visual changes would not typically cause substantial dominant changes in the landscape seen from highly sensitive viewer locations, or be expected to cause visual degradation at locations with high to moderate visual quality. Certain activities, such as new access roads, new large culverts, transmission structure realignment (placement of structures in locations not currently occupied by a pole/tower), and larger installations of rip rap would result in a permanent increase to visual contrast. However, these activities would typically occur within or adjacent to an already established transmission ROW. Therefore, the overall effect to the visual quality of the foreground and middleground is expected to be moderate to low.

As identified in Appendix A, Western will incorporate visual screening and other design techniques, to the maximum extent feasible, to reduce visual contrast of new or altered facilities where public viewsheds are impacted. The implementation of SOPs and coordination with affected federal agencies (conducting all necessary VRM and Scenery Management System studies) would ensure that visual changes associated with Category C activities are minimized to the greatest extent feasible at viewsheds considered with high to moderate visual quality.

During Proposed Action scoping, the Nevada Division of State Lands and the State Land Use Planning Agency expressed concern about the potential for transmission lighting to impact adjacent viewers within Nevada. Mitigation Measure 3.5-1 is recommended to reduce impacts and address this concern.

MM 3.5-1 If new or altered transmission facility lighting (aviation safety lights or other) is installed in Nevada as part of operation and maintenance of the Parker-Davis Transmission System, Western will coordinate with the Nevada Division of State Lands and the State Land Use Planning Agency to ensure the use of "Dark Sky" lighting practices, screening of lights, and other feasible measures are implemented to minimize light pollution of adjacent lands.

3.5.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW. Ultimately, potential visual impacts from the No Action Alternative would be similar to those described above for the Proposed Action. The implementation of SOPs identified above and within Appendix A would ensure potential visual impacts are minimized and aesthetic changes to sensitive viewsheds and areas with high visual quality are in compliance with applicable guidelines and performance standards.

Vegetation management under the No Action alternative would continue to be a need-driven management approach where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action Alternative, so alterations of the visual quality due to vegetation management may be slightly less under the No Action alternative.

3.6 Noise

This section describes the affected environment of the Project in terms of noise, and examines the potential impacts to noise levels caused by the Proposed Action and No Action Alternative. The assessment of noise impacts uses specific terminology not commonly used. To facilitate a general understanding of the analysis, these terms are discussed below and are summarized in Table 3.6-1. The analysis area used in this EA for noise impacts includes an area within one mile from the Project ROW, where program activities may be heard by sensitive receptors.

To describe noise and to assess project impacts on areas that are sensitive to it, a measurement scale that simulates human perception is customarily used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the bothersome aspects of noise. Noise is measured in decibels, which are logarithmic units that conveniently compare wide ranges of sound intensities. The A-weighted decibel scale (dBA) is used in most noise criteria.

Table 3.6-1. Summary of Acoustical Terms

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (a measure of force per square meter).
A-Weighted Sound Level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.

Table 3.6-1. Summary of Acoustical Terms

Term	Definition
Ambient Noise Level	The composite noise from all sources resulting in the normal, existing level of environmental noise at a given location. The ambient level is typically defined by the Leq level.
Equivalent Noise Level (Leq)	The average A-weighted noise level, on an equal energy basis, during the measurement period.
Day-Night Average Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after the addition of 10 decibels between the hours of 10:00 p.m. and 7:00 a.m. to account for receptor sensitivity to evening noise.
Intrusive Noise	Noise that intrudes over and above the ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver.

Community 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.

Typical Ldn noise levels occurring over a 24 hour day/night period are:

- 35 dBA or below in Wilderness Areas,
- 50 to 60 dBA in small towns or wooded or lightly used residential areas,
- 75 dBA in busy urban areas, and
- 85 dBA near major freeways and airports.

Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, high noise levels are considered adverse to public health.

3.6.1 Affected Environment

3.6.1.1 Existing Transmission Line Noise

Current maintenance activities along the Project right-of-way (ROW) generate short-term and temporary noise that does not contribute to overall ambient noise conditions along the transmission corridors. Operation of transmission lines creates corona discharge noise that can affect the ambient noise conditions proximate to the line. Corona effect is the ionization of air that occurs at the surface of the energized conductor and suspension hardware due to very high electric field strength at the surface of the metal during certain conditions. Corona generates audible noise during operation of transmission lines. The noise is generally characterized as a crackling, hissing, or humming noise.

Operational corona noise is typically most audible near transmission lines at 345 kilovolts (kV) and above and is less noticeable on lines operated at lower voltages. As shown in Table 1-1, no Project transmission lines exceed 230-kV. For voltages similar to 230-kV, corona noise is not expected to significantly contribute to ambient noise conditions except in rare circumstances where a residence is located very close to a transmission line. The audible noise from transmission lines is expected to be lower than the typical ambient noise at locations beyond the edge of the ROW.

3.6.1.2 Noise-sensitive Receptors

Noise-sensitive receptors describe locations or areas where human activity can be adversely affected when noise levels exceed the thresholds described above. Examples of noise-sensitive receptors would be residences, schools, hospitals, wildlife management and conservation areas, and recreational

facilities. The sensitive receptors identified along the Project ROW were based on the land use and development patterns described in Section 3.2 above.

3.6.1.3 Existing Noise Conditions

A wide range of noise sources occur along the Project ROW. Much of the route travels through rural, unoccupied land. Other portions travel proximate to residential receptors. Surrounding land uses, described in Section 3.2 above, contribute many other noise sources. Noise levels in the Action Area are highest near major transportation facilities, especially highway and freeway crossings, and near other localized noise sources such as airports, industrial operations, and military grounds. Noise-sensitive receptors are distributed throughout the Project area. The most common sensitive receptors in the vicinity of the Project area include residences, schools, hospitals, recreation areas, wildlife management areas, and ecological conservation areas.

The following subsections provide information on major noise sources and common noise-sensitive receptors within the study area in each of the geographic regions identified in Table1-1 in Section 1.3.

Nevada

The majority of the Action area in this region is adjacent to and cross BLM land, including the Sloan Canyon NCA and El Dorado and Ireteba Peaks WAs, as well as NPS land including the Lake Mead Recreation Area. The remainder of the project area is located on private land including open space, and residential and urban development within the Boulder City and the City of Henderson. The most common noise-sensitive receptors in this region include visitors to the wilderness, conservation and recreation areas, as well as residences, schools, and hospitals in urban areas that are close to the project area. Major localized noise sources include OHV activities on BLM land, motorized boating activities on Lake Mead, and aviation activities at the Boulder City Municipal Airport. Elevated noise levels are found along the US Highway 95 corridor, which parallels segments of the Project ROW.

North/Central Arizona

Much of the Project area in this region crosses sparsely populated areas on BLM, USFS, and Arizona State Trust lands where noise levels tend to be low. Localized noise sources in these areas include OHV activities, and oil and gas extraction activities within the Prescott National Forest. Multiple segments of the Project area pass through urban areas, including the City of Prescott and a portion of the City of Phoenix, where noise levels are elevated within areas of dense population and development.

The project area also crosses the Yuma Proving Ground, where military testing operations can produce elevated noise levels depending on the equipment used to conduct the operation. Elevated noise levels also occur along the Interstate 40, Interstate 17, and Interstate 10 corridors. Common noise-sensitive receptors include residences, schools, and hospitals mostly concentrated within the urban areas. A segment of the Project area is adjacent to the Kofa NWR where common noise-sensitive receptors include wildlife and visitors to the NWR. This segment is also adjacent to Arizona State Route 95, which has elevated noise levels.

Southern Arizona

This region includes the highest percentage of urban development throughout the Project area. The project area passes through the Phoenix and Tucson metropolitan areas, where noise levels tend to be elevated due a concentration of human activity. The remainder of the project area in this region crosses open space on BLM and Arizona State Trust lands where human activity is minimal and noise levels tend

to be low. Localized noise may occur on BLM lands in areas of concentrated OHV activities. Elevated noise levels also occur along the Interstate 10 corridor. Common noise-sensitive receptors include residences, schools, and hospitals mostly concentrated within the urban areas.

California

The Project area crosses open space and areas of industrial development on BLM land as well as areas of urban and residential development associated with the City of Blythe. The areas of open space are sparsely populated and tend to have low noise levels. Localized noise sources include OHV activities and construction activities associated with large-scale solar and wind development on BLM land adjacent to segments of the Project area. Elevated noise levels occur within areas of urban and residential development within the City of Blythe, as well as along the Interstate 10 corridor. Common noise-sensitive receptors include residences, schools, and hospitals within the City of Blythe.

3.6.2 Environmental Consequences from the Proposed Action

There are two basic considerations for evaluating noise and vibration impacts from the Proposed Action. First, temporary noise and vibration levels generated during operation and maintenance activities must comply with the applicable federal, state, or local standards or regulations. Noise impacts on the surrounding community are enforced through local ordinance, supported by nuisance complaints and subsequent investigation. The second measure of impact is a permanent increase in noise levels above the ambient level from the introduction of a new source of noise. A permanent increase in ambient noise levels due to a new noise source can create an impact on people at sensitive receptor locations.

Typically, groundborne vibrations generated by man-made activities attenuate rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source (FTA 2006). Given the typical width of the Project ROW and access roads, coupled with distances to occupied structures, the potential for vibration impacts are considered minimal as part of the Proposed Action.

In general, noise impacts from the Proposed Action would be minimal. Maintenance activities would be temporary, intermittent, of short duration, and dispersed along the Project ROW. The Proposed Action would not involve the installation of significant stationary sources of permanent noise.

Adherence to Western SOPs related to noise would ensure temporary noise and vibration would be minimal and localized within the ROW and access road. As shown in Appendix A, key SOPs for reducing potential noise impacts include:

- All vehicles and equipment will be equipped with required exhaust-noise-abatement devices.
- For long-term O&M activities confined to a specific area, Western's Natural Resources Department will be contacted to evaluate local thresholds and all requirements of those agencies having jurisdiction over noise matters.

As described earlier in Section 3.6.1, sensitive receptors (primarily residential and recreation areas) and sensitive habitats are sporadically located near the Project ROW. These locations may be temporarily disturbed during an aerial inspection by a helicopter or minor maintenance activity associated with Category A activities. However, aerial inspections occur a minimum of two times per year and would disturb an area along the ROW for less than one minute. As Category A activities would not increase the number or frequency of aerial inspections, these project activities would not change noise levels from existing conditions. Furthermore, other maintenance tasks identified under Category A would be completed within a short timeframe. As a result, there are no noise impacts expected from Category A activities.

Equipment noise resulting from Category B activities, typically ranging from 70 to 85 dB at a distance of 50 feet (FTA 2006), would be temporary and short-term. Such noise would attenuate approximately 4 dB per doubling of distance, accounting for both hard and soft surfaces adjacent to the work area (FTA 2006). Due to the nature of Category B activities, noise generated would generally be of a longer duration than activities described for Category A. Should sensitive noise receptors be located within 1,500 feet of the work area, the potential exists for these receptors to be temporarily impacted by the noise generated from these activities. Due to the short duration and minimal scope of Category B activities, noise or vibration generated by maintenance would not substantially affect sensitive receptors or conflict with applicable noise guidelines and performance standards.

Temporary noise impacts associated with Category C would be similar to those described for Category B, but possibly of a longer duration. While some activities included within Category C would result in both upgraded and new transmission lines, the Project does not include voltage greater than 230 kV. Therefore, no permanent corona noise impacts are expected from new or upgraded transmission facilities that would permanently increase ambient noise.

3.6.3 Environmental Consequences from the No Action Alternative

In the absence of the Proposed Action, Western would continue to conduct routine maintenance activities along the Project ROW, requiring negotiations documented in a categorical exclusion for each particular maintenance task. Ultimately, potential noise impacts from the No Action Alternative would be similar to those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action Alternative, so potential noise and vibrations due to vegetation management activities may be less under the No Action alternative.

3.7 Cultural Resources

Cultural resources can reflect the history, diversity, and culture of the region and people who created them. They are unique in that they are often the only remaining evidence of the activity that occurred historically. The Action area is rich in cultural resources that could be affected by O&M activities without adequate protections in place. This section considers and evaluates the potential impacts of the Proposed Action on cultural resources. Cultural Resources encompass archaeological, traditional (or ethnographic), and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Cultural resources include sites of important events, traditional cultural places and sacred sites, and places associated with an important person.

Three kinds of cultural resources, classified by their origins, are considered in this assessment: prehistoric, ethnographic, and historic. Prehistoric archaeological resources are associated with the human occupation and use of North America prior to prolonged European contact. In the Western United States, the prehistoric period began over 12,000 years ago and ranges between 1692 when the first Europeans settled in Arizona and 1769 when Europeans first settled in California. Ethnographic resources represent the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. Historic-period resources, both archaeological and architectural, are associated with Euro-American exploration and settlement of an area and the beginning of a written historical record.

Numerous laws, ordinances, regulations, and standards on federal, state, and local levels seek to protect and manage cultural resources. The key federal law regarding cultural resources is the National Historic Preservation Act of 1966 (NHPA), as amended [16 USC 470 et seq.] Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on such historic properties. Federal agencies must meet their Section 106 responsibilities as set forth in the regulations (36 CFR Part 800). These regulations require federal agencies to conduct the necessary studies or consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may be affected to determine if they are eligible for the NRHP, and to assess whether such historic properties would be adversely affected. The federal agency is required to consult with the following parties: SHPO/THPO; Indian tribes (federally recognized); representatives of local governments; and additional consulting parties (e.g., the public, state recognized Indian tribes). These above-mentioned parties participate in the entire Section 106 process, including historic property identification, assessment of adverse effects, and resolving adverse effects.

Other federal legislation pertinent to cultural resources includes National Environmental Policy Act (NEPA), the Archaeological Resources Protection Act (ARPA), as amended [16 USC 470aa-mm], the American Antiquities Act [16 USC 431-433], the Executive Order on Protection and Enhancement of the Cultural Environment [EO 11593], Executive Order 13007 Indian Sacred Sites, and the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 300). The Proposed Action covers land managed by BLM, USFS, and NPS. Federal land managing agencies have specific guidance for managing cultural resources within their jurisdiction. State regulations relevant to cultural resources include the California Environmental Quality Act (CEQA), the Arizona Antiquities Act (AAA) (as amended), and the Arizona State Historic Preservation Act.

3.7.1 Affected Environment

The Project traverses lands within much of Arizona and a small part of southeastern California and southern Nevada. These areas can be broken into three areas that share similar environments and similar cultural resources: Colorado River, Northern Uplands, and Southern Lowlands. The key historic-era resource in the Project area is the Parker-Davis Transmission System itself, portions of which were constructed more than 50 years ago, which Western considers to be a historic district eligible for the NRHP. Additional information about this resource is available in *Western Area Power Administration, Desert Southwest Region's Facilities Historic Context Statement* (Western 2014). Other types of historic-era resources common in the region include resources associated with transportation (stage stops, roads, railroad lines); power generation and transmission (dams, transmission lines, substations); agriculture (irrigation canals, farmsteads, ranches); mining for gold, silver, and copper (adits, camps); and WWII era maneuvers (tank tracks, fox holes, ammunition, food cans, camps).

The entire region is particularly sensitive for prehistoric resources. The direct descendants of the prehistoric Native American peoples of the area still live locally, and these resources are considered an important part of their current religious and secular lives. The following discussion provides a very brief overview of the kinds of prehistoric resources common in each area. It is beyond the scope of the current discussion to summarize the decades of research has taken place in the Project area. Instead, references to key texts are provided.

3.7.1.1 Colorado River

For the purposes of this discussion the Colorado River portion of the Parker-Davis Transmission System extends along the Colorado River in Arizona, California, and Nevada from Henderson to Yuma. The river is one of the few permanent water sources in a very dry environment, and therefore this area has been

the focus of human activity and occupation for thousands of years. The prehistoric peoples of this area are known as the Patayan. They built permanent villages along the river and practiced floodwater farming of wild grasses, corn, beans, and squash. Geological formations along the river were excellent sources of stone for the manufacture of projectile points and ground stone. The dry environment of this region has preserved miles of ancient trails demonstrating this was an important trade route both from north to south on either side of the river and east to west. The ceramics, obsidian, shell beads and other materials found along these trails provide evidence of long distance trade with the Pacific Coast, central Arizona and New Mexico. The trails and other related features such as cairns, earth figures, cleared circles, rock rings, rock art sites, and artifact scatters appear to be elements of ceremonial centers, located along a route extending between sacred places, representing the cosmology and iconography of the local people (Castetter and Bell 1951; Ezzo and Altschul 1993; McGuire and Schiffer 1982; Schaefer and Laylander 2007; Stone 1991; Sutton et al. 2007). Historically, the native peoples of the area were part of two competing alliances; Mohave, Quechan, Chemehuevi, Yavapai, and Kamia were allied against the Halchidhoma, Maricopa, Pima, Papago, and Cocopah in the east, and the Cahuilla, Diegueño, and Serrano in the west. Today some of the tribal communities that have historic ties to the region include the: Chemehuevi Reservation, Colorado River Indian Tribe, Fort Mojave Indian Tribe, Fort Yuma Quechan Indian Nation, Kaibab Band of Paiutes, Las Vegas Tribe of Paiute, Moapa Band of Paiute, Cocopah Indian Tribe, Morongo Band of Mission Indians, San Manuel Band of Mission Indians, Twenty-Nine Palms Band of Mission Indians, and Agua Caliente Band of Cahuilla Indians.

3.7.1.2 Arizona – Northern Uplands

The Northern Uplands portion of the Parker-Davis Transmission System extends from west to east from Davis Dam through Kingman and Prescott, Arizona. Several prehistoric groups were present in this area including the Patayan, the Hohokam (discussed below), the Anasazi, and the Sinagua. All occupants of the northern uplands were hunters and gatherers and later dry farmers. They occupied small villages with pit-houses and masonry walled structures. Sometimes hilltop forts and Hohokam style ball courts were constructed (Downum 2012). Historically, the native peoples living in this area included: Havasupai, Hopi, Mohave, Navajo, Yavapai, Walapai, and Western Apache. Some of the tribal communities that have historic ties to the region include: Havasupai Tribe, Hopi Tribe, Hualapai Tribe, McDowell Yavapai Nation, Navajo Nation, Pueblo of Zuni, San Carlos Apache Tribe, Tonto Apache Tribe, Yavapai-Apache Nation, Yavapai Prescott Indian Tribe, and White Mountain Apache Tribe.

3.7.1.3 Arizona – Southern Lowlands

The Southern Lowlands portion of the Parker-Davis Transmission System extends east from Parker Dam, through Phoenix and Tucson, Arizona. The human use of this very dry area has focused on the Salt, Gila, and Santa Cruz Rivers. The prehistoric peoples of the area are known as the Hohokam. The Hohokam are known for their intensive agriculture and extensive irrigation systems, ball courts, platform mounds, multi-story adobe structures, specialized ceramic production, and long-distance trade networks focused on ocean shell. Greater Phoenix has been built over the remains of prehistoric fields, irrigation systems and associated villages – much of which is still intact underneath modern structures (Bayman et al. 2013; Fish and Fish 2008). Historically the native peoples living in this area included Halchidhoma, Maricopa, Pima, Papago, Yavapai and Western Apache. Some of the tribal communities that have historic ties to the region include: Ak Chin Indian Community, Gila River Indian Community, Fort McDowell Yavapai Nation, Pascua Yaqui Tribe, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, San Javier Tohono O'Odham, Tonto Apache Tribe, Tohono O'Odham Nation, and White Mountain Apache Tribe.

3.7.1.4 Cultural Resources within the Proposed Action Study Area

The Project cultural resources study area consists of those locations where the operation and maintenance of power system, including vegetation management, might adversely impact cultural resources. This includes Parker-Davis Transmission System ROW, access roads, and substations with an additional 100-foot buffer on either side. The majority of Western's Parker-Davis Transmission System ROWs have been inventoried for cultural resources (roughly 71 percent, or about 923 miles of ROW), although the bulk of these inventories took place more than 10 years ago (before 2004) and were completed well after construction of the transmission line and are therefore out of date. A review of available data in online repositories for all cultural resources information in Arizona and Nevada showed there are at least 811 known cultural resources in Arizona and 24 resources in Nevada within Parker Davis system ROWs. However, this information is incomplete and must be supplemented in order for impacts to cultural resources to be avoided or mitigated.

3.7.2 Environmental Consequences from the Proposed Action

Conducting O&M activities and managing vegetation along the ROWs may adversely affect cultural resources. In general direct permanent impacts are associated with the damage or destruction of a resource as a result of ground disturbance. Indirect, usually temporary, impacts are associated with increased access to a resource that may result in vandalism changes to the setting of a resource as a result of the addition or removal of plants or structures in the vicinity. These impacts are currently avoided or minimized through Western's programmatic agreements (PAs) with the Arizona State Historic Preservation Office (SHPO), the California SHPO, and the Nevada SHPO (in draft) (see Appendix D). These agreements identify which activities require cultural resources studies and which activities are exempt. It should be noted, however, that the three PAs while similar, are not identical.

In general, most Category A activities (Inspection and Minor Maintenance) are exempt from further cultural resources work unless it involves maintenance and repair to historic buildings or structures (greater than 45 years old or older). Many Category B activities (Routine Maintenance) are exempt unless they involve ground disturbance outside of substations or in sediments that have not been already disturbed by previous Western construction activities. Finally, most Category C activities (Additions to Existing Infrastructure) require cultural resources studies. The PAs require that an annual report summarizing the actions taken under the PAs be submitted to the signatories, that an annual resource awareness and sensitivity training for maintenance personnel be conducted, and that a formal plan for monitoring and inadvertent discoveries be developed. In addition, the PAs that all Western and contract cultural resources staff conducting studies associated with these projects must meet the Secretary of the Interior Qualification Standards and must have all of the appropriate federal and state permits. Finally, the exact procedures that are required and the thresholds for a determination of No Adverse Effect are identified. These procedures are consistent with Section 106 and include: identification of a formal Area of Potential Effect (APE), Class I inventory (historic research and inventory of previous research in and around the APE), Class II (sample) pedestrian survey for an APE previously surveyed, or Class III (100 percent) pedestrian survey for an APE that has never been surveyed, 30-day review of the resulting technical report for tribal and agency signatories, formal evaluations and determinations of eligibility for all resources in the APE, and if necessary the development of mitigation in consultation with tribal and agency signatories. The DSW Historic Context Statement (Western 2014) discussed above, supplements the PAs and provides more specific guidance when components of the Parker-Davis Transmission System itself must be evaluated and impacts must be mitigated.

Therefore, potential adverse effects to cultural resources associated with IVM program under the Proposed Action would be avoided and minimized by the PAs, BMPs, and SOPs.

3.7.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts to cultural resources from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, potential adverse effects to cultural resources associated with vegetation management would be greater under the Proposed Action, as these efforts would be more aggressive and would potentially involve more ground disturbance.

3.8 Wildlife

This section describes the general wildlife in the Action area and assesses the potential impacts to wildlife from the Proposed Action and No Action Alternative. The term "general wildlife" refers to all mammal, bird, invertebrate, reptile, and amphibian species that are not protected under state or federal laws or regulations. Section 3.9 presents information and analyses for special-status wildlife, and Section 3.10 presents information and analysis for vegetation. Data presented in this section were compiled from a literature review and recent field work conducted throughout the project area. Appendix E includes the Biological Assessment (BA) for the Project.

3.8.1 Affected Environment

The majority of the Project is within Arizona. The components of the system that are in Nevada are limited to the southernmost portion of the state from the Henderson area at Lake Mead south along the El Dorado Mountains to the border with Arizona. The westernmost segments of the system parallel the Colorado River and extend into eastern California.

The Project's approximately 1,500 miles of transmission lines, substations, and associated infrastructure cross a variety of habitats. Common vegetation includes various types of desert scrub, pinyon-juniper woodland, and grassland. Rocky, dry mountainous areas with sparse vegetation are also common. Desert riparian scrub is found in ephemeral drainages, and riparian woodlands and wetlands are found along portions of the Colorado River, San Pedro River, Bill Williams River, and lakes and reservoirs along the system. Chaparral and montane woodlands occur at higher elevations. Extensive agricultural areas are located along the Colorado River floodplain in Arizona and California. Ruderal and developed lands are common in urbanized areas such as Henderson, NV; Laughlin, NV; Bullhead City, AZ; Lake Havasu City, AZ; Kingman, AZ; Blythe, CA; Prescott, AZ; the greater Phoenix metropolitan area; and Tucson, AZ.

Wide-ranging wildlife such as common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), great-tailed grackle (*Quiscalus mexicanus*), house finch (*Carpodacus mexicanus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), rabbits, and ground squirrels occur across the habitats in the system, including open space and urbanized areas. Turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), Gambel's quail (*Callipepla gambelii*), and white-winged dove (*Zenaida asiatica*) are common birds system wide.

Common bats such as the Mexican free-tailed bat (*Tadarida brasiliensis*) are also widespread in habitats ranging from desert scrub through pinyon-juniper woodlands and pine-oak forests at higher elevations. Agriculture, riparian habitat, and open water also support high densities of flying insects and serve as feeding areas for a variety of bats.

Reptiles such as the banded gecko (*Coleonyx variegatus*), gopher snake (*Pituophis catenifer*), and rattlesnake (*Crotalus* spp.) occur in a variety of desert habitats. Others are restricted to particular habitats; for example, the sidewinder (*Crotalus cerastes*) is found on sandy soils in desert scrubs and dunes.

Natural lands in the system area support less common mammals such as porcupine (*Erethizon dorsatum*), elk (*Cervus canadensis*), javelina (*Tayassu* [*Pecari*] *tajacu*), desert kit fox (*Vulpes macrotis*), mountain lion (*Felis concolor*), black bear (*Ursus americanus*), and bighorn sheep (*Ovis canadensis*). Native habitats provide important movement and migration lands for large mammals and other wildlife. More than 100 butterfly species migrate through southern Arizona during the summer, including the two-tailed swallowtail (*Palilio [Pterourus] multicaudatus*). The Action Area is within a broad bird migratory pathway linking Canada and Mexico, and numerous birding "hotspots" are found throughout the area.

Open water and riparian habitats, especially along the Colorado River; support a concentration of migratory birds. Native amphibians including Baja California treefrog (*Pseudacris hypochondriaca*) and red-spotted toad (*Anaxyrus punctatus*), and invasive species such as the Rio Grande leopard frog (*Lithobates berlandieri*) and American bullfrog (*L. catesbeianus*) also inhabit the lower Colorado River. Open waters throughout the Action Area support many gamefish species, including various species of bass (*Micropterus* spp.), sunfish (*Lepomis* spp.), catfish (*Ictalurus* spp., *Pylodictis olivaris*, and *Ameiurus* spp.), and trout (*Oncorhynchus* spp., *Salvelinus* spp., and *Salmo trutta*).

3.8.2 Environmental Consequences from the Proposed Action

Conducting O&M activities and managing vegetation along the ROWs may affect wildlife directly or indirectly as both short-term and long-term impacts. Impacts may occur directly through wildlife mortality on access roads or in weed abatement areas; loss or degradation of occupied habitat; disruption of bird breeding and consequent loss of eggs, chicks, or fledglings; or wildlife injury or death from direct or indirect contact with herbicides. Indirect impacts may include habitat fragmentation or altered hydrology leading to vegetation changes (e.g., surface runoff from upland vegetation removal or access road maintenance).

The following sections describe the types of general impacts that are possible due to implementation of the Proposed Action. Western would minimize impacts as part of the Project (see Appendix A).In addition, environmental laws and regulations and applicable agency requirements will be included in the annual training program for Western O&M personnel. Western will coordinate with regulatory and land-management agencies (see Section 2.2.6) to ensure that specific actions have the lowest potential for adverse effect. Potential effects of herbicide use will be minimized through measures described in Section 2.2.2.1.

Impacts to general wildlife were assessed by evaluating the potential of the Proposed Action to violate applicable laws or regulations. The Federal Endangered Species Act protects certain wildlife species that have been formally listed as threatened or endangered, and the states of Arizona, Nevada, and California recognize additional species as protected at the state levels; these special-status species are discussed in Section 3.9.

The following federal laws were considered in the impact assessment for general wildlife:

- The National Environmental Policy Act (NEPA; 42 U.S.C. Section 4321 *et seq*.), which requires consideration of impacts of federal actions on a variety of resources;
- The Federal Migratory Bird Treaty Act (MBTA; 16 U.S.C. Sections 703-712), which protects all migratory birds against take ; and
- The Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. §§ 668-668d) prohibits take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*).

3.8.2.1 Vegetation Management Effects to Wildlife

Habitat Loss and Degradation

Vegetation management activities would include initial removal of nearly all vegetation (except grasses, forbs, and some small shrubs) within the ROWs, and subsequent maintenance of vegetation to safely and reliably operate the transmission facilities. "Danger trees" outside of the ROWs would also be removed as needed. As the ROWs are managed to achieve Western's desired condition and clearance standards, it is anticipated that low-growing vegetation (e.g., grasses and forbs, some small shrubs) would become the predominant condition within the ROWs and the numbers of trees, including danger trees within and adjacent to the ROWs would decline over time, thus reducing the need for additional vegetation removal. Although habitats would be converted in some areas from taller vegetation (chaparral, woodland, or forest) to shorter shrublands and grasslands, these altered habitats would still be available to general wildlife. Habitat conversion would be limited to the area of the ROWs, and native habitats would remain intact in the surrounding areas. In addition, habitat within the Project area has been previously disturbed and degraded to varying degrees through past management practices. Relative to the amount and type of habitats available, additional project-related habitat loss or alteration is unlikely to be substantial, given Western's commitment to regulatory compliance.

Conversion of shrublands, forests, and woodlands to more open, low-growing vegetation would remove or degrade habitat for some wildlife, but improve it for other species. For example, tree-dwelling species such as tree squirrels and many forest birds would generally be replaced in the ROWs by ground-dwelling species such as ground squirrels and quail. Removal of "danger trees" would cause a localized decline in nesting habitat for woodpeckers and other birds that nest in old woodpecker cavities. Removal of these trees also may lead to a localized decline in downed logs, which provide habitat for many reptiles, amphibians, and small mammals. However, these effects would be limited to the ROWs and immediate vicinity and would only indirectly affect surrounding habitat (see habitat fragmentation, below).

The Proposed Action is designed to create permanent changes in habitat conditions through conversion of existing conditions to stable, low-growing vegetation. This strategy requires short-term disturbances to create long-term vegetation changes. It is intended to reduce the need for more frequent as-needed vegetation management activities and, therefore, long-term reductions in disturbance to local wildlife (see Section 3.8.3, below).

Western would minimize habitat loss and degradation impacts to wildlife, including avoiding vegetation removal and other activities around caves, mine tunnels, and rock outcrops to minimize disturbance to bats; and leaving work areas in a condition that would facilitate natural regrowth of desired, low-growing vegetation.

Habitat Fragmentation

While open areas and habitat edges are beneficial for some wildlife, linear openings also fragment habitats. Habitat fragmentation creates more habitat patches that are smaller than the original tract, and changes habitat attributes and characteristics (Garrison 2005). Depending on the size and shape of the original tract and the size and shape of the new opening, the new patches may become too small to support certain species. Fragmentation of primary habitat types can hinder regional wildlife movements, potentially reducing interactions between individuals and changing long-term population dynamics. This effect may increase the chance of localized extinction for certain populations (Kupfer et al. 1997, Krauss et al. 2010). Effects of fragmentation on the movement or dispersal of organisms is crucial to community composition and diversity (Opdam 1991, Perault and Lomolino 2000, Franklin et al. 2002).

The proposed vegetation management work would alter local habitat along the linear ROWs, but is not expected to create barriers to wildlife movement. In addition, the existing access routes and previous transmission line work on the ROWs has caused similar alterations in the past. Therefore, the Proposed Action is not likely to substantially increase the impacts of habitat fragmentation that have already occurred.

Herbicide Use

Wildlife could be exposed to and adversely affected by herbicides through being directly sprayed; inhaling spray mist or vapors; drinking or living in herbicide-contaminated water, eating herbicide-contaminated seeds or vegetation; or consuming animals, such as mice or grasshoppers, that have themselves consumed contaminated vegetation. Some chemicals may bio accumulate as they move up the food chain, with effects being greater to top predators than to animals lower on the food chain.

The potential for wildlife to be affected depends on the toxicity of the herbicide to a given species, herbicide persistence in the environment, length of exposure, and the exposure amount. The amount of chemical to which an animal is exposed is largely a function of its feeding habits. Small herbivorous mammals, insects, and birds that feed on insects or vegetation (seeds, fruits, etc.) would be more susceptible to herbicide exposure.

The U.S. Environmental Protection Agency (EPA) has standards for formula registration and application methods intended to reduce risks in the environment to an acceptable level. Appendix B lists herbicides approved for use on BLM lands; these or similar types of herbicides would be used under the Proposed Action. Herbicides approved for use by Western are low in toxicity to wildlife and most have a minimal potential to bioconcentrate. At least one herbicide, Diuron, approved for use by Western has a low to moderate potential to bioconcentrate in fish tissue when used in aquatic systems (BLM 2007).

The end effect of herbicide use with the Proposed Action is the ability to promote stable, low-growth vegetation, which results in a long-term reduction in required vegetation maintenance (Section 3.8.3, below). Because of the low toxicity of herbicides Western proposes for use, and Western's Project activities that dictate safe herbicide use, the effects to wildlife would be minimal.

Wildlife Disturbance, Injury, and Mortality

Vegetation removal and maintenance would primarily be manual (e.g., cutting and trimming) and mechanical (e.g., mowing and chipping). If vegetation management is done during the bird breeding season, disturbance to nesting birds could cause loss of eggs, chicks, or nestlings, which would violate the MBTA. Manual and mechanical vegetation removal can also injure or kill wildlife or destroy burrows or nests. Pets brought to project sites by workers can injure or kill wildlife. Feeding wildlife either deliberately or via trash left in work areas can result in illness or attract predatory species that prey on

wildlife in the area. Western would require that crews receive training about sensitive biological resources, vehicles stay on designated roads to the extent feasible and maintain safe speeds, prohibit pets at project sites, prohibit deliberate or inadvertent wildlife feeding (e.g., by leaving trash in work areas), and require protection of nesting birds, thereby minimizing potential wildlife disturbance, injury, and mortality.

3.8.2.2 Operation and Maintenance Effects to Wildlife

Transmission System O&M activities are classified into three categories based on intensity. Typical activities in each category are listed in Table 2-1. General O&M impacts to wildlife are similar to those described for vegetation management, and include habitat loss, degradation, and fragmentation; and wildlife disturbance, injury, and mortality. Disturbance to nesting birds or direct loss of nests, eggs, and nestlings could violate the MBTA, even for birds that are not otherwise special-status species. In addition, disturbance to nesting bald or golden eagles or direct losses of nests, eggs, and nestlings could violate the BGEPA.

Category A – Inspection and Minor Maintenance

Category A activities are primarily inspection-type actions, with some minor repairs that would not cause substantial soil, habitat, or noise disturbance (see Section 2.2.2.3 for more detail). They could lead to short-term noise and minor disturbance impacts, but likely would not cause substantial impacts to wildlife. Western would require that crews receive training about sensitive biological resources; vehicles stay on designated roads to the extent feasible and maintain safe speeds; prohibit pets at project sites, prohibit deliberate or inadvertent wildlife feeding, and require protection of nesting birds.

Category B – Routine Maintenance

Category B activities such as pole replacements, installation of new culverts, and mechanical vegetation management have greater potential to adversely affect wildlife, because they may occur in areas where existing conditions do not include regular human disturbance, and because they may disturb more ground. Western's Category A activities as well as measures to avoid wildlife entrapment in excavations, minimization of nighttime activities to only emergency situations to avoid disturbing nocturnal wildlife, and implementation of measures to minimize bird mortality and injury on transmission facilities would ensure that no substantial impacts to general wildlife occur.

Western would also minimize off-road travel; implement standard erosion- and sediment-control measures; minimize noisy O&M activities near caves, mine tunnels, and rock outcrops; and isolate in-stream activities from the active flowing stream.

Category C – New Infrastructure

Category C activities such as construction of new access roads, reconductoring, tower replacement, and installation of underground or overhead facilities would likely impact wildlife. These actions are generally those maintenance activities that would disturb large areas and would use heavy equipment.

Equipment used may include light-duty helicopters, steel-tracked and rubber-tired bulldozers, graders, backhoes, and front-end loaders. As stated above, impacts to wildlife would be both direct and indirect and include mortality, disturbance, habitat modification, and displacement. Pre-construction surveys and monitoring would be implemented as part of the proposed action and would ensure potential impacts would be minor.

3.8.3 Environmental Consequences from the No Action Alternative

The No Action Alternative would result in impacts that are largely the same as those under the Proposed Action; however, the No Action Alternative could lead to higher levels of repeated disturbance, rather than the less frequent disturbance with the vegetation management approach of the Proposed Action. The No Action Alternative would result in less loss of forest habitats as a result of vegetation clearing and type-conversion.

Under the No Action alternative, Western would implement the same SOPs and BMPs as the Proposed Action. Therefore, adverse effects to wildlife during maintenance activities would be similar to the Proposed Action.

3.9 Special-Status Species

This section presents a description of special-status species that could occur within the Action area, and an assessment of the potential impacts that could occur from implementation of the Proposed Action and No Action alternative. Information presented in this section is based on data gathered through a literature review, and was provided by biologists from the AZGFD and USFWS. Appendix E includes the Biological Assessment for the Project. Species-specific surveys were not conducted for the purpose of the Proposed Action but results from previous species-specific surveys in the Action Area were used whenever possible.

For purposes of this document, special-status species are defined as those plants or animals (invertebrates, fish, amphibians, reptiles, birds, and mammals) whose geographic range and native habitats overlap with the Project area and that are:

- federally or state-listed, proposed for listing, or candidates for listing as threatened or endangered, or
- identified by a land management agency (i.e., BLM, USFS, State of Arizona, etc.) as sensitive.

The statute regulating the federal listing of species is the Endangered Species Act (ESA) of 1973 (16 United States Code 1531 et seq.), as amended. The ESA provides for the conservation of federally listed plant and animal species and their habitats. The ESA directs federal agencies to conserve listed species and imposes an affirmative duty on these agencies to ensure that their actions are not likely to jeopardize the existence of a listed species or adversely modify their habitat.

3.9.1 Affected Environment

The list of special-status species considered in this document was generated through Environmental Conservation Online System (ECOS; 2013), the Arizona Ecological Services Office website, the Ventura Fish and Wildlife Office website, the Southern Nevada Fish and Wildlife office, and through scoping letters. Table 3.9-1 lists those species reasonably expected to occur within the Action area (within 0.25 mile). Those species whose range does not overlap the Action area and/or that do not have suitable habitat within the Action area were excluded from further analysis. Detailed discussion of the wildlife habitats present in the Action area, that may also be utilized by special-status species, are described above in section 3.8 (Wildlife) and are discussed for each special-status species below.

Species that were present, or whose probability of occurrence was possible, are analyzed in more detail following Table 3.9-1.

The potential for occurrence of special-status species within the Action area was categorized using the following criteria:

- None – Project is well outside the known geographic and elevation range, or lacks suitable habitat necessary for the species, or both. Plants with highly restricted ranges are considered to have no potential to occur if the proposed Project is outside its known range, even if the required habitat characteristics are present on-site.
- Unlikely – Project may contain suitable habitat for this species but is outside its known geographic and/or elevation range.
- Possible – Project is within the geographic and elevation range and has suitable habitat for the species.
- Present – The species has been documented within the Action area by Western, a land management agency, or other entity.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
AMPHIBIANS				
Arizona Treefrog *Hyla wrightorum*	C	AZ: Cochise	Madrean oak woodlands, savannah, pine oak woodlands, and mixed conifer forests; from 5,000-8,500 ft. Known from less than 20 localities in the Huachuca Mountains and adjacent Canelo Hills.	None. The geographic range of this species is outside of the Action area.
California red-legged frog *Rana draytonii*	T CH	CA: San Bernardino	Occupies dense, shrubby or emergent riparian vegetation associated with deep still or slow-moving waters. Closely associated with deep pools with dense overhanging willows and intermixed cattails. Frogs aestivate in small mammal burrows and moist leaf litter. Species range and CH occurs along coastal areas of California.	None. Action area is outside the dispersal range from known metapopulations. No CH occurs in the Action area.
Chiricahua leopard frog *Lithobates chiricahuensis*	T CH	AZ: Cochise, Pima, Pinal, Yavapai	Streams, rivers, backwaters, ponds, or stock tanks in oak or pine woodlands, chaparral, or grasslands in montane regions of central and southeastern Arizona from 3,300 to 8,900 feet. The Chiricahua leopard frog is now often restricted to springs, livestock tanks, and streams in the upper portions of watersheds where non-native predators either have yet to invade or habitats are marginal. Suitable habitat could occur along the San Pedro River.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Relict leopard frog *Lithobates (Rana) onca*	C	AZ: Mohave NV: Clark	Occurs in permanent streams, springs, and spring-fed wetlands at elevations below 2,000 feet. Prefers relatively open shorelines where dense vegetation does not dominate. Breeds in pools or slow-moving side areas of streams, with or without emergent vegetation. A few scattered individuals observed at Willow Beach fish hatchery in Arizona. Small, isolated populations may also occur in Lake Mead NRA and in springs below Hoover Dam in Nevada.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Sonoran Tiger Salamander *Ambystoma mavortium stebbinsi*	E	AZ: Cochise	Stock tanks and impounded cienegas; rodent burrows, rotted logs, and other moist cover sites; from 4,000- 6,300 ft. Populations occur within the headwaters of the Santa Cruz and San Pedro Rivers. These include San Rafael Valley and in the foothills of the east slope of the Patagonia and Huachuca Mountains and Fort Huachuca.	None. The Action area is outside of the geographic range of the species.
BIRDS				
California condor *Gymnogyps californianus*	E/XN	AZ: Mohave, Yavapai	Occupies canyon, gorge, and cliff habitats. Condors in northern Arizona and southern Utah are part of a nonessential experimental population when they are within the designated 10(j) area.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
California least tern *Sterna antillarum browni*	E	AZ: Maricopa, Mohave	Open, bare, or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems (USFWS 2009aa). Breeding documented in Maricopa County, while transient migrants have been recorded in Pima and Mohave counties, Arizona (USFWS 2009aa). Elevations below 2,000 feet (USFWS 2014c).	Unlikely. Although the species has been documented in Arizona the Action area does not contain the species typical habitat.
Masked bobwhite *Colinus virginianus ridgwayi*	E	AZ: Pima	Desert grasslands with diversity of dense native grasses, forbs, and brush from 1,000 to 4,000 feet. Species is closely associated with Prairie acacia (*Acacia angustissima*). Reintroduced populations on the Buenos Aires National Wildlife Refuge.	None. The geographic range of this species is outside of the Action area.
Mexican spotted owl *Strix occidentalis lucida*	T CH	AZ: Maricopa, Mohave, Yavapai	Found in canyons and dense multi-storied closed canopy forests with many snags and downed logs. Patchily distributed in forested subalpine and montane coniferous forest, throughout Arizona at elevations from 4,100 to 9,000 feet.	Unlikely. The vegetation, topography, and elevation suitable for the species do not occur in the Action area. No CH occurs in the Action area.
Northern aplomado falcon *Falco femoralis septentrionalis*	XN	AZ: Cochise	Grassland and savannah from 3,500 to 9,000 ft. Non-essential experimental population designated in Arizona and New Mexico in 2006 (71 FR 42298). Species formerly nested in southwestern U.S., now rarely occurs. Good habitat has low ground cover and mesquite or yucca for nesting platforms.	Unlikely. Although the Action area is within the historical range of the species and suitable habitat parameters may be present, the species has not been seen in Arizona since an observation in Cochise County in 1977 (AZGFD 2001a, ebird 2014).

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Southwestern willow flycatcher *Empidonax traillii extimus*	E CH	AZ: La Paz, Maricopa, Mohave, Yavapai CA: Riverside, San Bernardino, Imperial NV: Clark	Found in the middle to lower San Pedro River, along the Little Colorado, Gila, Verde, and Salt Rivers (AZGFD 2002a, 2012b). Cottonwood-willow and tamarisk vegetation communities along rivers and streams.	Present. The Action area is within the typical range of the species and suitable habitat parameters may be present. This species was detected nesting along the Bill Williams River in the Action area in 2012 (McLeod and Pellegrini 2013).
Sprague's pipit *Anthus spragueii*	C	AZ: La Paz, Maricopa, Yuma	Requires grassland habitat for breeding and wintering. Nests in short-grass plains, mixed grass prairie, alkaline meadows, and wet meadows where the vegetation is intermediate in height and provides dense cover. More common in native grasslands than areas with introduced grasses.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Yellow-billed cuckoo *Coccyzus americanus*	T PCH	AZ: La Paz, Maricopa, Mohave, Yavapai, Yuma NV: Clark	All counties of Arizona but generally found in southern and central portions (AZGFD 2011a, 2012b). Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries) below 6,500 feet (FWS 2013a, 2013c).	Present. The Action area is within the typical range of the species and suitable habitat parameters may be present. This species was detected along the Bill Williams River in the Action area in 2012 (McNeil et al. 2013).
Yuma clapper rail *Rallus longirostris yumanensis*	E	AZ: La Paz, Maricopa, Mohave, Yuma CA: Riverside, San Bernardino, Imperial NV: Clark	This large marsh bird species is primarily found along the Colorado River from Yuma to Lake Mead. Also known from the Virgin, Bill Williams, and lower Salt, Verde, and Gila Rivers. Populations along the Gila River may be migratory (FWS 2010a). Elevations below 4,500 feet (FWS 2013g). Freshwater and brackish marshes with tall, dense emergent vegetation (FWS 2013g).	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
FISH				
Beautiful shiner *Cyprinella Formosa*	T	AZ: Cochise	Small to medium sized streams and ponds with sand, gravel, and rock bottoms; below 4,500 feet. Virtually extirpated in the United States, with the exception of a few populations on San Bernardino National Wildlife Refuge.	None. Species not known to occur in the Action area.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Bonytail chub *Gila elegans*	E CH	AZ: La Paz, Mohave, Yuma CA: San Bernardino NV: Clark	Warm, swift, turbid mainstem rivers of the Colorado River basin, reservoirs in lower basin. Population augmentation is occurring in Lake Mohave and Lake Havasu. Action area is within the Lower Basin Recovery Unit. Critical Habitat on Lower Colorado River from Hoover Dam to Davis Dam, and the Colorado River and its 100-year floodplain from the northern boundary of Havasu National Wildlife Refuge (NWR) to Parker Dam, including portions of the Bill Williams River (LCR MSCP 2004).	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present. Bonytail have been reintroduced below Parker Dam as part of the LCR MSCP (L. Fitzpatrick pers. comm.).
Colorado pikeminnow *Ptychocheilus lucius*	E CH	AZ: Maricopa, Yavapai CA: San Bernardino	Occupies pools, deep runs, and eddy habitats. High spring flows are necessary to maintain characteristics of suitable habitat. Extirpated from the Lower Colorado River Basin. Reintroduced populations exist in the Gila River subbasin, where it persists in small numbers in the Verde River (USFWS 2002).	None. The geographic range of this species is outside of the Action area.
Desert pupfish *Cyprinodon macularius*	E CH	AZ: Maricopa, Yavapai CA: Imperial, Riverside	Shallow springs, small streams, and marshes. Tolerates saline and warm water. Extirpated from Arizona. Along with the Gila topminnow, has been stocked at nearly fifty locations (AZGFD, 2014a). Nearest known reestablished site is located in Agua Fria National Monument in Arizona (Voeltz and Bettaso 2003). In California, found in the Salton Sea and tributaries (Black 1980).	None. The geographic range of this species is outside of the Action area. CH does not occur within the Action area.
Gila chub *Gila intermedia*	E CH	AZ: Pima, Pinal, Yavapai	Found in pools in smaller streams, springs, cienegas and artificial impoundments, such as man-made impoundments (USFWS 2005*b*). Nearest extant populations occur in tributaries of the Agua Fria and upper Verde rivers (AZGFD 2002b, 2012b).	None. The geographic range of this species is outside of the Action area.
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E	AZ: La Paz, Maricopa, Yavapai	Occurs in small streams, springs, and cienegas below 4,500 feet elevation, primarily in shallow areas with aquatic vegetation and debris for cover. Remaining native populations primarily in Santa Cruz River; reintroduced populations occur throughout Arizona.	None. The geographic range of this species is outside of the Action area.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Gila trout *Oncorhynchus gilae*	T	AZ: Yavapai	In Arizona this fish is found in the Blue River (tributary to San Francisco River), lower Gila River (Frye Creek and Frye Mesa Reservoir), and Grapevine Creek (tributary to the Agua Fria River) (AZGFD 2002d). Introduced in Dude Creek, Arizona. Gila trout are found in moderate to high gradient perennial mountain streams above 5,400 feet elevation with stream temperatures below 77°F. (AZGFD 2014b).	None. The geographic range of this species is outside of the Action area.
Headwater chub *Gila nigra*	C	AZ: Yavapai	This fish is endemic to the Gila River basin of Arizona and New Mexico in the middle and headwater reaches of middle-sized streams (AZGFD 2010d; BISON-M 2011ac). Known from 13 streams within Yavapai, Gila, and Graham counties of Arizona (FWS 2006aa). Elevations range from 3,000 to 6,700 feet.	None. The geographic range of this species is outside of the Action area.
Humpback chub *Gila cypha*	E CH	AZ: Mohave	Restricted to deep, swift, canyon-bound regions of the mainstem and large tributaries of the Colorado River Basin. Extirpated below Hoover Dam (LCR MSCP 2004*b*).	Unlikely. No Parker-Davis transmission lines cross the Colorado River or Lake Mead above the Hoover Dam. The area is outside the geographic range of this species. No CH occurs in the Action area.
Loach minnow *Tiaroga cobitis*	E CH	AZ: Yavapai	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important. This small fish was once common throughout much of the Gila River system including portions of the Gila, Blue, Tularosa, White, Verde, Salt, San Pedro, and San Francisco rivers in Arizona and New Mexico, as well as some of their tributaries. Present populations are geographically isolated and inhabit the upstream ends of their historical range (FWS 2012ab) at elevations below 8,000 feet (FWS 2012ab).	None. The geographic range of this species is outside of the Action area.
Razorback sucker *Xyrauchen texanus*	E CH	AZ: La Paz, Maricopa, Mohave, Yavapai, Yuma CA: Imperial, Riverside, San Bernardino NV: Clark	This large fish is found in Lake Mohave, Green River Basin and the Upper Colorado River Basin (AZGFD 2002f) at elevations below 6,000 feet (FWS 2009ab). Historically razorback suckers inhabited the Colorado, Gila, Salt, Verde, and San Pedro Rivers. Presently natural adult populations exist only in Lake Mohave, Lake Mead, and Lake Havasu.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.CH occurs in the Action area. Razorback sucker have been reintroduced in the Project area (L. Fitzpatrick pers. comm.).

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Roundtail chub *Gila robusta*	C	AZ: La Paz, Maricopa, Mohave	In Arizona, this fish occurs in tributaries of the Little Colorado, Bill Williams, Salt, Verde, Gila (Eagle Creek), and San Pedro (Aravaipa Creek) rivers (AZGFD 2002c). Cool to warm waters of rivers and streams at elevations from 1,210 to 7,220 feet. Cool to warm waters of rivers and streams, often occupy the deepest pools and eddies of large streams. (FWS 2010c).	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Sonora chub *Gila ditaenia*	T	AZ: Pima	The Sonora chub is native to southeastern Arizona and northern Mexico (USFWS 1992). In Arizona, the species is only known to exist in California Gulch and Sycamore Canyon in Santa Cruz County (USFWS 2013). Critical Habitat has been designated in Santa Cruz county, AZ, approximately 50 miles south of the Tucson-Apache transmission line.	None. The Action area is outside of the geographic range of the species.
Spikedace *Meda fulgida*	E CH	AZ: Yavapai	Moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities over sand and gravel substrates. Recurrent flooding and natural hydrograph important.	None. The Action area is outside of the geographic range of the species.
Virgin River Chub *Gila seminude (=robusta)*	E CH	AZ: Mohave	The Virgin chub is an extremely rare minnow, occurring only in the Virgin River system of southwestern Utah, southern Nevada, and northwestern Arizona (USFWS 2014b).	None. The Action area is outside of the geographic range of the species.
Woundfin *Plagopterus argentissimus*	E CH	AZ: Maricopa, Mohave NV: Clark	Runs and quiet waters adjacent to riffles over sand and gravel substrates. Native populations and CH only in Virgin River. Reintroduced in portions of the Verde, Gila, San Francisco River, Hassayampa River, and Tonto Creek.	None. The Action area is outside of the geographic range of the species. No CH occurs in the Action area.
Yaqui catfish *Ictalurus pricei*	T CH	AZ: Cochise	Moderate to large streams with slow current over sand and rock bottoms; from 4,000 to 5,000 ft (FWS 2010d). Critical habitat includes all aquatic habitats on San Bernardino National Wildlife Refuge (49 FR 34490).	None. The Action area is outside of the geographic range of the species.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Yaqui chub *Gila purpurea*	E CH	AZ: Cochise	Deep pools of small streams near undercut banks and debris; pools associated with springheads, and artificial ponds; from 4,000 to 6,000 ft. Introduced populations exist in Leslie Canyon, in San Bernardino National Wildlife Refuge, and ponds and mainstem of West Turkey Creek in the Chiricahua Mountains. Critical habitat includes all aquatic habitats on San Bernardino National Wildlife Refuge (49 FR 34490).	None. The Action area is outside of the geographic range of the species.
INVERTEBRATES				
Huachuca springsnail *Pyrgulopsis thompsoni*	C	AZ: Cochise	Aquatic areas, small springs with vegetation and slow to moderate flow; from 4,500 to 7,200 ft. Individuals found on firm substances (roots, wood, and rocks) (FWS 2013a). Populations found on Fort Huachuca.	None. The geographic range of this species is outside of the Action area.
Page springsnail *Pyrgulopsis morrisoni*	C	AZ: Yavapai	The Page springsnail occurs in springs, seeps, marshes, spring pools, outflows, and diverse lotic (flowing) waters, at approximately 3,510 feet elevation. All extant populations are known to exist only within the Oak Creek Springs complex and in springs along Spring Creek (USFWS 2013d).	None. The Action area is outside of the geographic range of the species.
San Bernardino springsnail *Pyrgulopsis bernardina*	T CH	AZ: Cochise	Springs with firm substrate composed of cobble, gravel, woody debris, and aquatic vegetation. This small snail is found in small seeps near San Bernardino Ranch in Arizona (AZGFD 2006a, 2007). Elevation of 3,806 feet (FWS 2013a).	None. The Action area is outside of the geographic range of the species.
MAMMALS				
Black-Footed ferret *Mustela nigripes*	XN	AZ: Yavapai	No known natural populations exist in Arizona (BISON-M 2011ad). Two re-introduction sites in Arizona (Aubrey Valley and Espee Ranch) (FWS 2012ae). Associated with prairie dogs, there only known food source (BISON-M 2011ad).	None. This species is extremely rare, there are no known prairie dog colonies within the proposed Project, and the Project ROW is distant from re-introduction sites.
Desert Bighorn Sheep *Ovis canadensis nelsoni*	AZS	AZ: Throughout state CA: Imperial, Riverside, San Bernardino NV: Clark	Open shrublands and conifer forest, remote mountains; scattered populations in desert mountains and surrounding ranges.	Present. Species documented in the Action area (e.g., Aspen 2012).

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Hualapai Mexican vole *Microtus mexicanus hualpaiensis*	E	AZ: Mohave	Occurs in grass or grass-sedge habitats along permanent or semi-permanent waters with some riparian or ponderosa pine overstory (USFWS 1991). Found at elevations between approximately 3,000 and 8,400 feet (AZGFD 2003*b*).Confirmed in the Hualapai Mountains; possible in Prospect Valley and the Music Mountains. Until further studies are complete, the range of the subspecies is considered by the USFWS to be restricted to the Hualapai Mountains (USFWS 2008c).	Unlikely. Within the Action area, the Griffith-Peacock corridor occurs on the northern edge of the Hualapai Mountains at approximately 1,000 feet elevation. The analysis area is not within the species typical range.
Jaguar *Panthera onca*	E CH	AZ: Cochise, Pima	The largest native cat to the Western Hemisphere, it historically is known from as far north as central Arizona, but currently known from Santa Rita, Baboquivari Mountains and the Peloncillo Mountains of Arizona. Elevations range from 1,600 to 9,000 feet (USFWS 2014c).	Unlikely. Although suitable habitat parameters may be present, the analysis area is not within the species' typical range. Critical habitat exists 2.4 miles south of the Tucson-Apache line, east of Nogales, AZ.
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E	AZ: Maricopa, Yuma	Desert scrub habitat with agave and columnar cacti present as food plants. Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Ocelot *Leopardus pardalis*	E	AZ: Cochise, Maricopa, Pima, Pinal	Humid tropical and subtropical forests, savannahs, and semiarid thornscrub below 8,000 feet. May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover.	Unlikely. The geographic range and habitat requirements of this species do not occur in the Action area. There are no forest or dense woodland present except at major drainage crossings.
Sonoran pronghorn *Antilocapra americana sonoriensis*	E, XN	AZ: Maricopa, Pima, Yuma	Broad intermountain alluvial valleys with creosotebush-bursage and palo verde-mixed cacti associations. Reintroduced (non-essential experimental) herd is located at Kofa NWR.	Unlikely. The reintroduced pronghorn herd at Kofa NWR currently occupies the King Valley. The King Valley is separated from the Parker-Gila corridor by the Castle Dome Mountains. Endangered population is not present in the Action area.
PLANTS				
Acuna cactus *Echinomastus erectocentrus var. acunensis*	E PCH	AZ: Maricopa	In Maricopa County, known from the Sand Tank Mountains on BLM lands within the Sonoran Desert National Monument, south of Interstate 8, in an area less than 62 acres in size (USFWS 2013).	None. Action area is not within the range of this species. No PCH occurs in the Action area.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Arizona cliffrose *Purshia subintegra*	E	AZ: Maricopa, Mohave, Yavapai	Occurs only on limestone derived from Tertiary lakebed deposits in chaparral and associated ecotonal habitat.	None. Although chaparral habitat occurs near the Mead-Perkins corridor in the vicinity of the Mohave-Yavapai county line, no suitable habitat or known populations occur in the Action area.
Arizona Hedgehog cactus *Echinocereus triglochidiatus var. arizonicus*	E	AZ: Maricopa, Pinal	Usually among boulders in oak woodlands and chaparral between 3,450 and 4,600 feet elevation; Central Arizona, from Pinal and Gila counties. This includes the Pinal, Dripping Springs, Superstition and Mescal mountains. It also can be found in the highlands between Globe and Superior (AZGFD 2003e).	None. The geographic range of this species is outside of the Action area.
Canelo Hills ladies'-tresses *Spiranthes delitescens*	E	AZ: Cochise, Pima	Found in the upper San Pedro watershed on finely grained, highly organic, saturated soils of cienegas at 5,000 ft.	None. The geographic range of this species is outside of the Action area.
Cochise Pincushion cactus *Coryphantha robbinsiorum*	T	AZ: Cochise	Grows on gray limestone hills in semidesert grassland with small shrubs, agave, other cacti, and grama grass, in southeastern Cochise County and adjacent Sonora, Mexico; at 4,200 ft.	None. The geographic range of this species is outside of the Action area.
Fickeisen plains cactus *Pediocactus peeblesianus var. fickeiseniae*	E PCH	AZ: Mohave	Cold-adapted cactus which retreats into the soil during cold and dry seasons. Endemic to Kaibab limestone soils on the Colorado Plateau. 47,123 acres of critical habitat are proposed in northern Coconino and Mohave counties (USFWS 2013a).	None. Suitable soil types do not occur within the Action area. No PCH occurs in the Action area.
Gierisch mallow *Sphaeralcea gierischii*	E	AZ: Mohave	Gierisch mallow is a perennial, flowering member of the mallow family. S. gierischii is only found on gypsum outcrops associated with the Harrisburg Member of the Kaibab Formation in northern Mohave County, Arizona.	None. The geographic range of this species is outside of the Action area.
Holmgren milk-vetch *Astragalus holmgreniorum*	E	AZ: Mohave	Holmgren milk-vetch occurs at elevations between 2,480 and 2,999 feet in areas that drain to the Santa Clara and Virgin Rivers.	None. The geographic range of this species is outside of the Action area.
Huachuca water-umbel *Lilaeopsis schaffneriana var. recurva*	E	AZ: Cochise, Pima	Cienegas, perennial low-gradient springs, and other wetlands from 3,500 to 6,500 feet. Within these habitats, the species occurs on saturated soil or in standing water from 2 to 10 inches deep in shaded or unshaded sites.	Unlikely. Although the Action area is within the former range of this species, changes in hydrology have eliminated suitable habitat within the Action area.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Jones Cycladenia *Cycladenia humilis var. jonesii*	T	AZ: Mohave	Long-lived herbaceous perennial in the Dogbane family (Apocynaceae) which grows 4 to 6 inches (10 to 15 centimeters) tall. It occurs between 4,390 to 6,000 feet elevation in plant communities of mixed desertscrub, juniper, or wild buckwheat-Mormon tea (USFWS 2008). Only known Arizona population is located near Fredonia, Arizona.	None. The geographic range of this species is outside of the Action area.
Kearney's blue star *Amsonia kearneyana*	E	AZ: Pima	West-facing drainages in the Baboquivari Mountains from 3,600 to 3,800 feet.	None. The geographic range of this species is outside of the Action area.
Las Vegas buckwheat *Eriogonum corymbosum var. nilesii*	C	NV: Clark	Found on sandy, gypsum-rich soils, typically with exposed soils having a cryptogamic soil crust. Historically known from Las Vegas Valley, Gold Butte, and Muddy Mountains in Clark County.	None. The geographic range of this species is outside of the Action area.
Nichol's Turk's Head cactus *Echinocactus horizonthalonius var. nicholii*	E	AZ: Maricopa, Pima, Pinal	Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountainsides. Geographic range for this species is restricted to the Vekol and Waterman Mountains; from 2,400 to 4,100 feet.	None. The Action area is outside of the geographic range of the species.
Pima Pineapple cactus *Coryphantha scheeri var. robustispina*	E	AZ: Pima	Sonoran desertscrub or semi-desert grassland communities from 2,300 to 5,000 feet; occurs most commonly in open areas on flat ridge tops or areas with less than 10-15% slope. The range extends east from the Baboquivari Mountains to the western foothills of the Santa Rita Mountains. The northernmost boundary is near Tucson.	Present. Species documented in the Action area (AZGFD 2001d, LSD 2012).
Peirson's milk-vetch *Astragalus magdalenae var. peirsonii*	T CH	CA: Imperial	Occurs on slopes and hollows of windblown dunes in Sonoran Desertscrub habitat. Found at Algodones Dunes in Imperial County (USFWS 1998a).	None. The Action area is outside of the geographic range of the species.
Siler Pincushion cactus *Pediocactus sileri*	T	AZ: Mohave	The cacti are found growing on elevations between 2,800 and 5,400 feet, in the Great Basin Desert Shrub community. The geographic range extends from southeast of Fredonia, extreme northwestern Coconino County, Arizona, west for about 70 air miles in north-central Mohave County, Arizona (USFWS 2009).	None. The Action area is outside of the geographic range of the species.
Wright's Marsh thistle *Cirsium wrightii*	C	AZ: Cochise	Wet, alkaline soils of seeps, marshy areas, and streams; 3,450 to 8,500 feet elevation. Species has been extirpated from Arizona (USFWS 2010).	None. The Action area is outside of the geographic range of the species.

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
REPTILES				
Banded Gila Monster *Heloderma suspectum cinctum*	BLMS NVP	AZ: Western and southern portions of state CA: Imperial, Riverside, San Bernardino NV: Clark	Found mainly below 5,000 feet, with habitat requirements of desert wash, spring and riparian habitats with complex rocky landscapes of upland desert scrub. Occasionally found in gentler terrain and alluvial fans. Species is secretive and difficult to locate, spending greater than 95% of their lives underground (NDOW 2012).	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Flat-tailed horned lizard *Phrynosoma mcallii*	CA	AZ: Yuma	Occupies sandy areas in creosotebush-white bursage habitats.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Mojave Desert tortoise *Gopherus agassizii*	T CH	AZ: Mohave CA: Imperial, Riverside, San Bernardino NV: Clark	Occurs in Mohave desertscrub north and west of the Colorado River. Habitat ranges from flatlands to rocky slopes and bajadas.	Present. Species documented in the Action area (Aspen 2012).
Narrow-headed gartersnake *Thamnophis rufipunctatus*	PT PCH	AZ: Yavapai	Found along and below the Mogollon Rim in Arizona. Inhabits clear, rocky streams using predominantly pool and riffle habitat that includes cobbles and boulders.	Unlikely. The geographic range and habitat requirements of this species do not occur in the Action area. No CH occurs in the Action area.
New Mexican Ridge-Nosed rattlesnake *Crotalus willardi obscurus*	T CH	AZ: Cochise	Primarily canyon bottoms in pine-oak communities; from 5,000-6,600 ft. Occurs in extreme southeastern Arizona, in the Huachuca, Santa Rita, Patagonia, and Whetstone mountains and the Canelo Hills (Thirkhill and Starrett 1992; McCrystal et al. 1996).	Unlikely. The geographic range and habitat requirements of this species do not occur in the Action area. No CH occurs in the Action area.
Northern Mexican gartersnake *Thamnophis eques megalops*	T PCH	AZ: La Paz, Mohave, Yavapai	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests. Core population areas in Arizona include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area.	Possible. The Action area is within the typical range of the species and suitable habitat parameters may be present.
Sonoran desert tortoise *Gopherus morafkai*	C	AZ: La Paz, Maricopa, Mohave, Yavapai, Yuma	Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran Desertscrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.	Present. Species documented in the Action area (AZGFD 2010c).

Table 3.9-1. Special-Status Species Reasonably Expected to Occur in the Action area.

Species Name	Status[1]	Occupied Counties within Action area	Habitat and Range	Probability of Occurrence in Action area
Sonoyta Mud turtle *Kinosternon sonoriense longifemorale*	C	AZ: Pima	Ponds and streams near 1,100 feet. The Sonoyta mud turtle occurs only in pond and stream habitat at Quitobaquito Springs in Organ Pipe Cactus National Monument, Arizona and in the nearby Rio Sonoyta, Sonora, Mexico.	None. The Action area is outside of the geographic range of the species.

Notes: AA = Action area; AZS = Arizona Sensitive Species; C = candidate; CA = Conservation Agreement; CH = designated critical habitat occurs in Action area;
E = endangered; BLMS= BLM Sensitive Species; NVP = Nevada Protected Species; PCH = proposed critical habitat occurs in Action area; PE = Proposed Endangered; PT = Proposed Threatened; T = threatened; XN = experimental, non-essential

3.9.1.1 Amphibians

There are two special-status amphibian species with known occurrences and/or designated critical habitat within the Action area. These locations are limited to the extreme southeast and northwest portions of the Parker-Davis Transmission System.

Chiricahua Leopard Frog

Life History: The Chiricahua leopard frog was listed as threatened in 2002 with critical habitat designated in 2012 (USFWS 2012b). The frog occurs in central and southeastern Arizona, southwestern New Mexico, and south into Mexico. Populations are also found on the Mogollon Rim in Arizona and into New Mexico in mountainous areas as well in in the southern portions of Arizona in the various mountain ranges south into Sierra Madre, Mexico (AZGFD 2011b; USFWS 2012b). Historically, it occurred in a variety of wetland habitats, but is now restricted primarily to stock tanks and other man-made waters, as well as headwater streams, ciénegas, and springs that lack introduced predators (USFWS 2014d). The most serious threats to this species include predation by nonnative organisms (i.e., bullfrogs, fish, etc.), fungal skin disease, and habitat degradation and destruction.

Chiricahua leopard frogs are aquatic habitat generalists that use areas with water including cienegas, streams, rivers, springs, and livestock tanks where non-native predators are not present or are present at low levels. The adults of the species feed primarily on arthropods and other invertebrates and may eat some vertebrate species including small fish; the larvae feed on algae, plant tissue, and organic matter (AZGFD 2011b; FWS 2012b).

Habitat Evaluation and Suitability: The Action area is within the known geographic range and elevation range for the Chiricahua leopard frog. Suitable habitat for the species could be present within the Action area where perennial aquatic features are present. No designated critical habitat for the species is present in the study area. The portions of the Action area that are most likely to support habitat would be at the San Pedro River and Cienega Creek crossings; however, the lack of a permanent or intermittent water source at these locations makes it unlikely that the species would inhabit the area. However, the perennial portion of the San Pedro River, over 6 miles upstream (south), and Las Cienegas National Conservation Area, 5 miles upstream (south) from the Action area, could support this species.

Relict Leopard Frog

Life History: The relict leopard frog is a relatively small leopard frog closely related to the lowland leopard frog (*Lithobates yavapaiensis*). The relict leopard frog was considered extinct in the 1950s, but several populations were rediscovered in 1991 (USFWS 2002*b*). Adult relict leopard frogs inhabit

permanent streams, springs, and spring-fed wetlands below about 1,900 feet. Some individuals may use open shorelines that have areas free of dense vegetation. Relict leopard frogs breed in pools or slow-moving areas of streams. The species is currently limited to springs and streams free of non-native predators (AZGFD 2003d, Brennan and Holycross 2006).

Historically, relict leopard frogs like streams, springs, and wetlands associated with the mainstem Lower Colorado, Virgin, and Muddy Virgin rivers (Relict Leopard Frog Conservation Team 2005, Brennan and Holycross 2006). Several populations have been discovered at springs, including six on lands managed by the National Park Service at Lake Mead NRA in Nevada and one on private lands in Arizona near Littlefield, Mohave County. The Littlefield population and one of the Lake Mead NRA populations have since become extirpated. As of 2005, the relict leopard frog was known to occur only within two general areas near the Overton Arm of Lake Mead, Nevada, and in Black Canyon, Nevada, below Hoover Dam. All known extant populations occur within perennial spring habitats (Relict Leopard Frog Conservation Team 2005). Further, no known populations currently exist within the Action area (Michael Boyles, NPS, pers. comm.).

Habitat Evaluation and Suitability: Within the Action area, relict leopard frogs are possible, most likely during dispersal events, generally in spring and wetland habitats from the Black Canyon area of Lake Mohave northward. However, within this area, suitable habitat is limited and the steel lattice towers are located above the high water mark of the reservoir. No springs occur within the Action area where it overlaps the range of the relict leopard frog.

3.9.1.2 Birds

There are five special-status bird species with known occurrences and/or designated critical habitat within the Action area.

California Condor

Life History: The California condor occupies rocky canyons, gorges, and mountains, relying on high perches for roosting and for the creation of updrafts to provide lift in flight. Historically, the range of the species included most of western North America. Condors scavenge opportunistically on carcasses of large mammals such as deer, elk, and bighorn sheep. Condors typically forage within about 50 miles of their nest sites, but may travel up to 150 miles in a day.

The California condor was listed as endangered in 1967, in a law predating the ESA. Critical habitat has been designated for the species in California only. The primary threats to the species include lead poisoning and shooting. In late 1996, six condors were released into the wild on the Vermillion Cliffs at the southwestern corner of the Paria Plateau of northern Arizona, approximately 165 miles northeast of Kingman, Arizona. This population is considered an experimental nonessential population. Condors within this 10(j) experimental area are treated as proposed species under the ESA. This population area is bounded by Interstate 40 on the south, U.S. Highway 191 on the east, Interstate 70 on the north, and Interstate 15 and U.S. Highway 93 on the west. By the end of 2011, approximately 73 California condors were present within, and in the vicinity of, the Arizona/Utah population area (Southwest Condor Review Team 2012). Suitable canyon and gorge habitat for California condors is limited to northern portions of the Action area, primarily along the Colorado River. Portions of the Davis-Prescott transmission corridor are located within the 10(j) population area for condors.

Habitat Evaluation and Suitability: No known condor records exist within the Action area. The nearest reported condor sighting is from northwest of Sedona, Coconino County, Arizona roughly 30 miles northeast of the Proposed Project (eBird 2014). Additional sightings from Charleston Peak west of Las

Vegas, Clark County, Nevada, and from the Grand Canyon West Skywalk, Coconino County, Arizona are roughly 50 miles from the Action area (eBird 2014).

Southwestern Willow Flycatcher

Life History: The willow flycatcher is a summer resident throughout much of North America and an obligate riparian species, breeding in mesic areas with standing water or saturated soils. The southwestern willow flycatcher (SWFL) breeds from west Texas to Southern California and from southern Nevada, Utah, and Colorado to northern Mexico. The SWFL is an obligate riparian species, breeding in mesic areas with standing water or saturated soils.

In the desert southwest, SWFL s begin arriving on territories in late April to early May. Flycatcher territories occur within two disjunct habitat types in Arizona: tamarisk and mixed riparian habitats below 4,000 feet; and willow thickets in broad, flat drainages above 7,000 feet in elevation. Southwestern willow flycatchers are typically found along rivers with wide, dense riparian habitat consisting of a multi-layer structure and trees of varying size and age classes.

The SWFL was listed as federally endangered in 1995. In 2005, the USFWS designated critical habitat for the SWFL throughout the Southwest. Designated critical habitat includes riparian areas and streams within the 100-year floodplain, totaling 208,973 acres.

Surveys for SWFL s were conducted statewide within Arizona, including the Lower Colorado River (LCR), by the AZGFD, U.S. Geological Survey, and other state and federal agencies from roughly 1993 through 2006 (see Ellis et al. 2008 and others). In addition, Western conducted surveys for SWFL s in the LCR floodplain near the Black Point Mesa Communications Site in Imperial County, California, in 2013. Two SWFL nests were found in the Action area, between the Bill Williams River and the Parker–Planet Tap corridor (McLeod and Pellegrini 2013).

Habitat Evaluation and Suitability: Suitable habitat for SWFL s in the Action area is limited to patches of riparian woodland and scrubland habitats associated with the LCR, the Bill Williams River, the San Pedro River, Cienega Creek, and the Gila River. Along the Bill Williams River the habitat is occupied and nesting is likely. The patches of suitable habitat at the remaining crossings, patch size and structure does not currently contain elements of suitable breeding habitat for SWFL s. Numerous desert washes containing riparian scrubland habitat dissect transmission line corridors in the Action area; however, these are typically dry and do not contain standing water or saturated soils. However, SWFL s may use these patches for migration or during post-breeding dispersal.

Designated critical habitat for the SWFL occurs at Bill Williams NWR. Western's Parker Dam-Planet Tap 69-kV transmission line crosses or is adjacent to suitable riparian woodland habitat for a total of about one linear mile within the NWR, including crossing 0.3 mile of designated WIFL critical habitat. At the Parker Dam-Planet Tap crossing, no structures are located within the riparian woodland habitat; the transmission line spans the Bill Williams River and the associated riparian woodlands.

Sprague's Pipit

Life History: Sprague's pipit breeds in Alberta, Saskatchewan, and Manitoba, Canada to Montana, North Dakota, South Dakota, and Minnesota. The species winters in southeastern Arizona, southern New Mexico, northern Mexico, and further east into the southeast United States. In Arizona, the species winters along the lower Colorado River, in grass and alfalfa near Phoenix and Sierra Vista, and in San Rafael, Sonoita, and Sulphur Springs grasslands (USFWS 2010a). The Sprague's pipit was listed as a candidate species on September 15, 2010 (USFWS 2010b).

Native grassland is used extensively by Sprague's pipits throughout their life cycle, particularly during the breeding season. Sprague's pipits are limited to large blocks (72 acres) of native grassland; grasslands are also preferred habitat of wintering Sprague's pipits, although they may use non-native grasslands to a greater extent. Little, if any, data are available for habitat preferences during migration (Jones 2010).

Habitat Evaluation and Suitability: Although Sprague's pipit does not breed in the Action area, birds may use larger tracts of agricultural lands and semidesert grasslands during the migration and winter seasons. According to eBird (2014), Sprague's pipit have been reported outside Phoenix, in the Santa Cruz flats area southeast of Casa Grande, southeast of Tucson, and along the Colorado River from Yuma to Bullhead City, Arizona. Native grasslands within the Action area are limited to small pockets of semidesert grassland, primarily along the Tucson-Apache transmission line.

Yellow-billed Cuckoo

Life History: The yellow-billed cuckoo (YBCU) was listed as federally threatened in 2014. Primary threats to the species continue to be habitat loss from clearing and removal or alteration and fragmentation of riparian forest for agriculture, urban development, flood control, invasion of exotic species, and water management practices (USFWS 2013*f*).

Historically, western YBCUs were found from southern British Columbia through the states of Washington, Oregon, California, and eastward to the Rocky Mountains. They were considered locally common and widespread in Arizona and California; locally common but restricted to a few river reaches in New Mexico; common locally in Oregon and Washington; and local and uncommon in arid and semiarid portions of scattered drainages in western Colorado, western Wyoming, Idaho, Nevada, and Utah, and probably uncommon and local in British Columbia. Currently, western YBCUs breed locally in California, Arizona, New Mexico, extreme western Texas, Sonora, Chihuahua, and south irregularly to Zacatecas, Mexico (Johnson et al. 2006).

In the arid Southwest, YCBUs are primarily restricted to densely wooded rivers and streams and damp thickets with relatively high humidity. Western YBCUs nest primarily in wide, cottonwood-willow-dominated woodlands greater than 50 acres in size, and at low to moderate elevations (USFWS 2013*f*). In Arizona, this species is primarily found along low-elevation drainages where stands of multi-storied native riparian woodlands occur (Corman and Wise-Gervais 2005). Approximately 70 percent of Arizona Breeding Bird Atlas observations were in lowland riparian woodlands that often contained some combination of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. In southeastern Arizona, YBCUs also occurred along intermittent drainages with dense stands of velvet mesquite and netleaf hackberry (Corman and Wise-Gervais 2005). YBCUs in California rarely used riparian habitat patches smaller than 200 acres in size, especially if those patches were spatially isolated from other similar habitat patches (USFWS 2013*f*). YBCUs begin migration to the Southwest during mid-May to mid-June and breed during mid-June to the end of August with the peak of breeding about June 15 to August 15.

Foraging habitat for cuckoos is characterized by high foliage volume of cottonwoods, but may also use stands of smaller mesquite trees or tamarisk (Johnson et al. 2006, Laymon 2011). Little is known about habitats used by YBCUs in migration. Migrating YBCUs may use a variety of habitat types including coastal scrub and hedgerows. They may also be found in smaller riparian patches than those typical of nesting habitat (USFWS 2013*f*). Several YBCUs were documented in the Action area, between the Bill Williams River and the Parker–Planet Tap corridor in 2012 (McLeod and Pellegrini 2013).

Habitat Evaluation and Suitability: Within the Action area, cottonwood-willow-dominated vegetation typical of YBCU breeding habitat is restricted to the Parker-Planet Tap corridor within Bill Williams NWR, the Gila-North Gila corridor at the Gila River crossing in Yuma, Arizona, and the San Pedro River and Cienega Creek crossings east of Tucson. The suitable habitat along the Bill Williams River should be assumed to be occupied. Because little is known about foraging and migration habitat use by YBCUs, the species may occur at a number of corridor crossings over drainages containing riparian woodland vegetation within the Action area.

Yuma Clapper Rail/Ridgeway's Rail

Life History: The clapper rail is widespread in coastal areas of North, Central, and South America. Twenty-four subspecies of clapper rail are currently recognized. The Yuma clapper rail (YCRA) has recently been renamed Ridgeway's rail but to avoid confusion will be referred to as the Yuma clapper rail in this document (Chesser et al 2014). The YCRA is one of three endangered western clapper rail subspecies. Territory formation begins in March and April, with the breeding season lasting through September (AZGFD 2006b; Corman and Wise-Gervais 2005). The wintering range is not fully known (Anderson and USFWS 1983), although recent studies indicate that the majority of birds winter along the LCR (AZGFD 2006b).

The YCRA occurs in freshwater and brackish marshes. Characteristics of the soil-water interface zone may be more important than vegetation composition within occupied territories. Water depth at occupied YCRA sites is typically less than 11.8 inches, with areas of deep water rarely used (AZGFD 2006b). YCRAs tend to occupy relatively large (greater than 19 acres) areas of emergent vegetation. Cattail (*Typha* spp.) is the predominant species associated with YCRA territories; giant bulrush *(Scirpus californicus)* is also common in territories along the Colorado River. Common reed *(Phragmites australis)* and tamarisk may occur in association with cattail habitat (USFWS 1983).

The present range of the Yuma clapper rail in the U.S. includes portions of Arizona, California, and Nevada. Occupied habitats exist in the LCR from the Southerly International Boundary with Mexico to the upper end of Lake Mead at the Grand Canyon, the Virgin River (a tributary to Lake Mead) in Nevada, the Lower Gila River from its confluence with the LCR to the vicinity of the Phoenix metropolitan area in Arizona, and the Imperial Valley/Salton Sea area in California (USFWS 2010a).

Habitat Evaluation and Suitability: Little suitable habitat for the YCRA occurs within the Action area. At most crossing locations within the LCR and its floodplain, Western infrastructure spans wetland habitat and is located outside of active river channels. Currently, suitable YCRA habitat within the Action area is restricted to the Gila-North Gila corridor at the Gila River crossing in Yuma, Arizona.

3.9.1.3 Fish

There are three special-status fish species with known occurrences and/or designated critical habitat within the Project area. These locations are limited to the LCR and adjacent tributaries.

Bonytail chub

Life History: The bonytail is endemic to the Colorado River Basin. It occupies mainstem rivers, and a variety of habitats within reservoir systems. Within riverine systems, bonytail typically occupy pools and eddies. Bonytail found in reservoirs, namely Lake Mohave, appear to prefer more lake-like habitats than riverine habitats nearer to Hoover Dam. Habitat preferences in reservoir systems are likely related to temperature and current gradients caused by cold-water releases. Prey items include chironomid and caddisfly larvae and mayfly nymphs (USFWS 1990).

The bonytail was listed as endangered on May 23, 1980. Critical habitat was designated for the bonytail on April 20, 1994. The critical habitat comprises portions of the Colorado, Green, and Yampa rivers in Colorado and Utah, and portions of the Colorado River in Arizona (USFWS 1994*a*). Threats to the bonytail are largely due to the combined effects of changes to natural river flows, alterations in temperature and sediment regimes, the introduction of nonnative fish, and other human-influenced disturbances.

Historically, bonytail were distributed throughout the Colorado River and its main tributaries, including the Green River in Utah and Wyoming, and the Colorado, Gila, Salt, and Verde rivers in Arizona. Currently, bonytail occur as isolated populations in the Yampa, Green, and Colorado rivers in the upper Colorado River, and in Lake Mohave in the LCR. Some individuals may persist in Lake Mohave between Parker Dam and Davis Dam (AZGFD 2001b). Reintroductions have occurred below Parker Dam as part of the LCR MSCP activities.

Habitat Evaluation and Suitability: Suitable habitat for bonytail occurs in the mainstem and backwaters of the LCR within the Action area. In addition, designated critical habitat occurs from Hoover Dam to Parker Dam. Western's transmission lines span the LCR in several locations (see Section 5.2); of these, four crossing locations overlap designated critical habitat: near Monkey Hole within the Lake Mead National Recreation Area (NRA) (Mead-Perkins/Mead-Liberty corridor); about 5 miles north of Davis Dam (Davis-Mead); at Laughlin, Nevada, below Davis Dam (Davis-McCullough); and about 0.5 mile north of Parker Dam (Black Mesa-Parker and North Havasu-Parker).

Razorback Sucker

Life History: The razorback sucker is endemic to the Colorado River Basin. The species uses a variety of habitat types from mainstem channels to slow backwaters of medium and large streams and rivers. Spawning occurs over a variety of substrates, from silt to cobble, starting in the late winter through the spring. Prey items include algae, insect larvae, plankton, and detritus (AZGFD 2002*f*).

The razorback sucker was listed as endangered on November 22, 1991. Critical habitat was designated on April 20, 1994. Within the Action area, designated critical habitat consists of the Colorado River from Lake Mead to Davis Dam; and from Parker Dam to Imperial Dam (USFWS 2005*c*). Threats to razorback sucker include habitat modification due to dam operation (i.e., cold-water releases), habitat loss, and altered migration corridors; the introduction of nonnative fish species; pesticides; and pollutants (USFWS 2005*c*).

Historically, the razorback sucker was distributed throughout the Colorado River Basin. The current distribution of razorback sucker includes the Green, upper Colorado, and San Juan River subbasins; LCR between Lake Havasu and Davis Dam; reservoirs of Lakes Mead and Mohave; and small tributaries of the Gila River subbasin. In the Lower Colorado River Basin, wild razorback suckers occur in Lake Mead and Lake Mohave; as of 2002, the largest population of razorback suckers was found in Lake Mohave (USFWS 2002*a*). Some individuals may persist below Lake Mohave to Imperial Dam (USFWS 2005*c*). The species has been reintroduced in the LCR below Parker Dam as part of LCR MSCP activities.

Habitat Evaluation and Suitability: Western's transmission lines span the LCR at numerous locations, including several within designated critical habitat: near Monkey Hole within the Lake Mead National Recreation Area (Mead-Perkins/Mead-Liberty corridor); about 5 river miles north of Davis Dam (Davis-Mead); immediately south of Parker Dam (numerous); about 5 river miles south of Parker Dam (Parker-Headgate and Parker-Bouse); and below the California State Route 62/Arizona State Route 72 bridge crossing at Parker, Arizona (Blythe-Headgate). At the crossings above Parker Dam, all of Western's structures consist of steel lattice towers. Below Parker Dam, transmission structures are generally wood

H-frame or light-duty, steel H-frame. In all cases, the structures and towers are located above the high water mark of the reservoir; no infrastructure is located within the active channel of the LCR.

Roundtail Chub

Life History: The roundtail chub is one of several species in the genus *Gila* found in the LCR basin. Roundtail chub occupy cool to warm water in mid-elevation streams and rivers, often occupying the deepest pools in larger waters. Roundtail chub are present in waters where cover in the form of boulders, root balls, and submerged trees and branches are present (AZGFD 2002c, USFWS 2009). The roundtail chub is a candidate for listing under the ESA. Threats to the species include habitat loss and competition with and predation by nonnative fish.

Historically, the roundtail chub occurred throughout the entire Colorado River basin from Wyoming to Sonora, Mexico. Subsequently, populations in the upper and lower basins were physically separated by the construction of Glen Canyon Dam. The current range of the species includes following: Chevelon and East Clear creeks (tributaries of the Little Colorado River); several tributaries of the Bill Williams River basin; the Salt River and four of its tributaries; the Verde River and five of its tributaries; Aravaipa Creek (tributary of the San Pedro River); and Eagle Creek (tributary of the Gila River) (AZGFD 2002c). Roundtail chub are not currently known to occur in the mainstem LCR. Roundtail chub do not occur in California or Nevada.

Habitat Evaluation and Suitability: The Action area crosses several tributaries to the Bill Williams River that are occupied by roundatil chub. Within the Action area, these tributaries are upstream of the occupied reaches and dry, therefor they do not provide suitable habitat.

3.9.1.4 Mammals

There are two special-status mammals with known occurrences and/or designated critical habitat within the Project area.

Desert Bighorn Sheep

Life History: Desert bighorn sheep are recognized as sensitive by the BLM and are fully protected under the California Fish and Game Code except where designated otherwise by the California Department of Fish and Wildlife. They inhabit in the mountains of California, Nevada, Arizona, and Utah deserts. Threats to desert bighorn sheep include habitat loss or degradation; limited availability of water sources; barriers to local or regional movement (e.g., highways and aqueducts); disease spread by domestic livestock; and natural predation by mountain lions in some populations.

Habitat Evaluation and Suitability: Suitable desert bighorn sheep habitat occurs throughout the Action area. Desert bighorn sheep were observed on the Henderson-Mead #1 and #2 transmission lines (Aspen 2012) and also on the Davis-Mead transmission line (Aspen 2013). They are likely to be present throughout much of the Action areas, at least seasonally.

Lesser Long-Nosed Bat

Life History: Lesser long-nosed bats are migratory in portions of their range with some populations in Mexico that are non-migratory (Lowery et al. 2009). Populations that occur in Arizona and New Mexico migrate south in September/October to Mexico and Central America. Breeding activities take place in the southern part of the species' range. In spring, the species migrates north and females form maternity colonies in April and May. These colonies may contain hundreds or thousands of female bats.

Young are born in May and are capable of flying by the end of June. Maternity colonies disband in July. Roosts are generally found in caves and mines with some occurrences in old buildings (AZGFD 2011c).

The lesser long-nosed bat was listed as endangered in 1988 without critical habitat. Threats to the species include degradation or loss of roost sites, and the excessive harvesting of agaves (AZGFD 2011*c*).

Lesser-long nosed bats are found in southern Arizona and extreme southwestern New Mexico and range south through western Mexico to Honduras and El Salvador (FWS 1997). Current population numbers of lesser long-nosed bats exceed the levels known and recorded at the time of listing in 1988 (FWS 2007a). Numbers of lesser long-nosed bats at most of the roost sites in both the United States and Mexico are stable or increasing; however, the number of known roost sites has not increased significantly.

Habitat Evaluation and Suitability: Suitable habitat for the lesser long-nosed bat occurs in the Sonoran Desertscrub portions of the Action area, although only portions of the Action area in western and central Maricopa County are within the current range of the species. The species has been recorded in several mountain ranges of southeastern Arizona. Recent surveys for *Leptonycteris* species identified additional roost locations in the Picacho Mountains, within 8 miles of Electrical District #5–Saguaro #1 in the Action area (AZGFD 2011c). In addition, the lesser long-nosed bat may travel up to 25 miles from roost sites to forage (Lowery et al., 2009) making it highly likely that they forage in the Action area. Approximately 60 miles of transmission line are located both within the known range and suitable habitat for lesser long-nosed bat.

3.9.1.5 Plants

Pima Pineapple Cactus

Life History: The Pima pineapple cactus is found in south-central Arizona and north-central Sonora, Mexico. Within Arizona the species is found in Pima and Santa Cruz counties; its range is bounded by the Santa Rita Mountains to the east, Baboquivari Mountains to the west, City of Tucson to the north, and the Arizona/Mexico border to the south (AZGFD 2001d). Pima pineapple cactus has been documented along the Tucson-Apache transmission line.

Pima pineapple cactus is found in alluvial basins and on ridges in desert grasslands and Sonoran desertscrub with little to no slope and sparse vegetation, between 2,300 and 4,500 feet. The species blooms only once—at midday on one day—per year and reproduces both asexually and by seed. Pollination is by small black and white bees (AZGFD 2001d).

Habitat Evaluation and Suitability: Suitable habitat for Pima pineapple cactus is present in the Action area, in particular, along the Tucson–Apache transmission line where it is known to be present (LSD 2012). A total of thirteen Pima pineapple cactus were found in the Action area in 2012 (LSD 2012).

3.9.1.6 Reptiles

Banded Gila Monster

Life History: This species is rarely observed, which is the primary reason for its protected classification by the State of Nevada (NDOW 2012). The bulk of the Gila monster's range is in western and southern Arizona, continuing to southern Sonora, Mexico, but it can also be found in extreme southeastern California, southern Nevada, extreme southwestern Utah, and southwestern New Mexico. The northern form is the banded gila monster and the southern form is the reticulate gila monster.

The Gila monster is most commonly found in mountain foothills below 5,000 feet dominated by saguaros and palo verde trees. It also uses washes that extend down into valleys. It may use burrows dug by other animals, or construct burrows of its own. Little information exists on detailed distribution and relative abundance.

Habitat Evaluation and Suitability*:* No Gila monsters have been observed within the Action area. There is suitable habitat in eastern California and throughout much of Arizona. The entire Action area, except for the developed areas, provides suitable habitat.

Flat-tailed Horned Lizard

Life History: Flat-tailed horned lizards are associated with the creosotebush *(Larrea tridentata)*-white bursage *(Ambrosia dumosa)* series of Lower Sonoran Desertscrub. They have also been documented within mixed scrub series. In California, flat-tailed horned lizards occupy a broad range of habitats including sandy flats and hills, badlands, salt flats, and gravelly soils. In Arizona, the species appears to primarily occupy sandy and hardpan flats. The primary prey item for flat-tailed horned lizards is ants, particularly harvester ants.

The range of the flat-tailed horned lizard extends from the Coachella Valley in California to extreme southwest Arizona and southward into Baja California and northwest Sonora, Mexico. Within this range, suitable habitats are highly fragmented due to agricultural and urban development.

Habitat Evaluation and Suitability: No flat-tailed horned lizards have been observed within the Action area. However, occurrence records for the species are known from the Yuma area in Yuma County, Arizona. Much of the southwest portion of the Action area comprises creosotebush-white bursage habitat association. Sandy or hard pack areas are more localized. Sandy dune areas occur within portions of Western's corridors in Imperial, La Paz, San Bernardino, and Yuma counties. The Parker-Blythe line crosses through dune habitat north of Blythe, and the Parker-Gila line crosses through the La Posa Plain, although these areas are outside of the current known range for the species. Approximately 13 miles of the Gila-Sonora line, and 6 miles of the Sonora-Wellfield line are located within or immediately adjacent to the Yuma Management Area for flat-tailed horned lizards, south of Yuma, Arizona.

Mojave Desert Tortoise

Life History: The Mojave Desert tortoise is listed as threatened under the ESA, and includes all tortoises in Nevada and California and in Arizona north and west of the Colorado River. It occupies sandy loam to rocky soils in valleys, bajadas, and hills in Mojave desertscrub and the Lower Colorado River Valley subdivision of the Sonoran Desert. It is typically found in plant communities dominated by creosote bush, other shrubs, and small cacti; and in some areas, abundant Joshua trees (*Yucca brevifolia*). Burrows are excavated below vegetation more often than below rocks and boulders and may reach depths of more than 30 feet, though caves in washes and shallow pallets are also commonly used. The USFWS (1994b) describes desert tortoise habitat suitability as sufficient space to support viable populations and provide for movements, dispersal, and gene flow; sufficient quantity and quality of forage species and soil conditions that provide for the growth of such species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality. Friable soils, such as sand and fine gravel, are important for burrow excavation.

Habitat Evaluation and Suitability: Western has conducted numerous surveys for Mojave Desert tortoise within suitable habitat in the Action area. These surveys identified Mojave Desert tortoise within the Action area in Nevada and California; the Action area does not overlap the range of the species within Arizona.

Northern Mexican Gartersnake

Life History: The northern Mexican gartersnake was designated as a threatened species under the ESA in 2014. Critical habitat was proposed in 2013 (USFWS 2013*b*). Threats to the species include habitat loss, the introduction of nonnative predators, and population fragment and isolation (AZGFD 2012a).

The northern Mexican gartersnake is a native riparian obligate. It generally inhabits wetlands and cienegas, large-river riparian woodlands and gallery forests. Occupied riparian habitats tend to be characterized by dense grass and herbaceous ground cover. A healthy native prey base and the absence of nonnative predator species are considered important to the persistence of northern Mexican gartersnake. Typical prey includes native fish and leopard frogs (*Lithobates* spp.), although small mammals, lizards, and treefrogs (*Hyla* spp.) may also serve as supplemental food sources (USFWS 2006).

Habitat Evaluation and Suitability: Historically, northern Mexican gartersnake occurred in Arizona within the Santa Cruz, San Pedro, Colorado, Salt, Agua Fria, Rio Yaqui, and Verde River watersheds. The subspecies also once occurred within the upper Gila River watershed in New Mexico, but is now believed to be extirpated within the state. The species is currently found across portions of Arizona including the middle and lower reaches of Tonto Creek, over 100 miles east of the Action area, the middle and upper reaches of the Verde River, roughly 20 miles east of the Action area, and in the middle and upper reaches of Cienega Creek drainage, less than one mile north of the Tucson–Apache transmission line, within the Action area (AZGFD 2012a, USFWS 2013h). It is also found in isolated wetlands in the southeastern part of the state (AZGFD 2012a, USFWS 2013h). Northern Mexican gartersnake has also been documented recently within the Bill Williams River drainage immediately upstream of the Parker–Plant Tap transmission line, within the Action area (L. Fitzpatrick, pers. comm. 2013). The only suitable habitat within the Action area is along the Parker–Planet Tap transmission line.

Sonoran Desert Tortoise

Life History: The Sonoran desert tortoise is usually associated with rolling, often rocky terrain in the foothills of, and within, desert mountain ranges where the relief provides naturally occurring shelter sites (Fritts and Jennings 1994, Germano et al. 1994). The tortoise's coloration, shape, and rocklike appearance are a natural camouflage (AZGFD 2010c). Sonoran desert tortoises often use natural shelter sites and may modify them for use as shelter. Such sites include caliche bank holes along arroyos, rock crevices, spaces under and among boulder piles and debris piles created by woodrats (*Neotoma* spp.), and thick vegetation (Germano et al. 1994).

The Sonoran desert tortoise is a candidate for listing under the ESA (USFWS 2010*a*). Threats to the Sonoran desert tortoise include habitat loss, degradation, and fragmentation. Other threats include disease, increased predation, and increased risk of wildfire associated with the introduction and spread of non-native plant species (USFWS 2010*a*).

The current range of the Sonoran desert tortoise includes suitable habitat south and east of the Colorado River in Arizona, as well as in Mexico south to the Rio Yaqui in Sonora. The Germano et al. (1994) distribution map for the species includes virtually all hilly and mountainous Arizona upland habitat, excluding intermontane valleys. The San Pedro River drainage is the easternmost population. Some tortoises observed in southeastern Cochise County, Arizona, are likely released pets (AZGFD 2010*c*).

Habitat Evaluation and Suitability: Within the Action area, the Sonoran desert tortoise occurs in Arizona from Davis Dam south and east, except extreme western Yuma County and much of the Gila River floodplain. About 50 percent of the Mojave and Sonoran Desertscrub habitat in the project area occurs in Arizona. Rocky slopes and bajadas containing adequate forage, such as annual and perennial grasses, forbs, and succulents, make up suitable habitat for Sonoran desert tortoises in the Action area. Developed urban and agricultural land use areas are not considered suitable. The majority of suitable habitat for Sonoran desert tortoises is found along the Liberty-Parker Oracle area (Coolidge-Oracle, Oracle-Saguaro, Oracle-Tucson) corridors.

3.9.2 Environmental Consequences from the Proposed Action

The Proposed Action has the potential to adversely affect special-status species, both in the short and long term. These changes can include habitat loss and degradation, habitat fragmentation, human presence, and noise. Impacts can be direct or indirect, temporary or permanent. Direct impacts result directly from Project-related activities on the landscape such as alteration, disturbance, or removal of biological resources. Indirect impacts are unintentional consequences of Project-related impacts and may occur later in time. An example of an indirect impact could be increased nest parasitism as a result of habitat fragmentation. Permanent impacts are considered to be any impacts that would last for the life of the transmission line. Resources may be able to recover, following decommissioning. Temporary impacts are those that occur only during project-related activities such as disturbance from machinery noise.

Impacts would be minimized through implementation of the BMPs, PCMs, and SOPs listed in Appendix A. These efforts are part of the Proposed Action and would be implemented when necessary.

3.9.2.1 Amphibians

Chiricahua Leopard Frog

The Chiricahua leopard frog is primarily found in wetlands and waterways. Leopard frogs have been found far from water when they are dispersing; however, project-related impacts are anticipated to be negligible.

The Proposed Action would not occur within or near Chiricahua leopard frog habitat or designated critical habitat; therefore, no direct effects on the species from the proposed Project are anticipated. The nearest wetted reach of the San Pedro River is more than 6 miles upstream (south of the Action area) and outside of the potential dispersal distance for the species. The nearest wetted reach of Cienega Creek is approximately 5 miles upstream from the proposed Project, and outside the potential dispersal distance for the species. Potential impacts on habitat downstream from increased erosion and sedimentation would be avoided through the implementation and monitoring of erosion control measures; therefore, no indirect effects on the species from the proposed Project are anticipated.

Relict Leopard Frog

Occurrence records for relict leopard frogs indicate the species is not known in the Action area. Category A activities are short in duration, do not involve heavy equipment, and will not result in new ground disturbance. Therefore, due to the limited scope of Category A activities, and the lack of known frog records, injury or mortality due to vehicle strikes are not expected.

Category B and C activities may result in the alteration or removal of canopy trees and other vegetation within suitable habitat that interferes with transmission lines. Removal of this vegetation will alter the habitat and may disrupt behaviors or cause the frogs to leave the area because of noise associated with

the activities. In addition, some Category B and C activities, such as access road repairs and footing maintenance, have the potential to indirectly affect frog habitat due to sediment runoff from earthwork. However, including buffer areas for activities occurring near wetlands and springs would ensure no impact to suitable habitat. Impacts to the Relict leopard frog resulting from the Proposed Action are expected to be negligible.

3.9.2.2 Birds

California Condor

Project activities are unlikely to directly affect condors, as O&M activities will not impact known roosting or nesting areas. Although unlikely, condors may be directly impacted by collision with lines or facilities, and some Category B and C activities (e.g., tree removal) may result in the loss of potential roost trees. Roosting or nesting condors may be affected by project-related noise disturbance; however, noise effects are unlikely due to the limited nature of project activities and the low density of ROW corridors within the condor range. Effects may occur if new roosting or nesting areas are identified in proximity to the Action area such that nesting behaviors are disrupted by O&M activities.

Though California condors have been not observed in the Action area, they may occur in the area during foraging activities. In the unlikely event that a condor does forage in, perch in, or pass through the Action area, project-related activity may disrupt normal behavior and cause condors to leave the immediate area. However, nearby habitat is expansive and is as suitable or more suitable for foraging and perching activities than habitat within the Action area; therefore, change in behavior as a result of project activities would be negligible. In addition, Western would avoid directly or indirectly affecting condors by requiring awareness training and avoidance of activities during sensitive nesting periods. Impacts to California condors are expected to be negligible.

Southwestern Willow Flycatcher

Direct effects to WIFLs resulting from the Proposed Action, although unlikely, may include collision with the overhead wires. WIFLs may be impacted by noise disturbance, which disrupts normal breeding behavior, primarily along the Bill Williams River where nesting has been documented within the Action area (McLeod and Pellegrini 2013). In addition, seasonal avoidance of suitable habitat, per the LCR MSCP, will be implemented where feasible; protocol surveys will be conducted prior to project activities that may occur during the avoidance period. Therefore, direct effects to WIFLs would be negligible. Other potential impacts from noise associated with O&M and IVM activities could include changes to habitat use patterns, increased utilization of adjacent habitats, increased stress responses, decreased immune responses, and changes in predator-prey relationships (Gordon and Uetz 2012; Grubb and King 1991; Herrera-Montes and Aide 2011; Pater et al. 2009; Slabbekoorn and Ripmeester 2008; Weisenberger et al. 1996). These responses may vary depending on the nature, duration, rate of onset, sound level, number of events, and level of background noise in the study area. Migrating and dispersing birds may also be impacted by noise disturbance however; these effects would be short-term, as birds could move away from the noise to other suitable riparian woodland or scrubland habitats adjacent to work areas.

Category B and C activities may result in the alteration or destruction of suitable and critical habitat. Vegetation management activities may result in the removal of canopy trees and other vegetation within riparian woodland habitat. Within the Bill Williams River, San Pedro River, and Cienega Creek riparian corridors, these routine activities are expected to occur infrequently (every 2 to 5 years), and will be restricted to those trees or vegetation which interfere with the O&M of the transmission line.

Because the transmission line structures at Bill Williams River crossing are located on the canyon edges above the river, the conductors are high enough that the need for IVM within the riparian corridor is unlikely.

Access road improvements may occur along the Parker-Planet Tap and Tucson-Apache corridor; however, due to the inaccessible terrain through the Bill Williams, San Pedro and Cienega riparian area, Western or APS does not maintain an access road within the ROW in the active channel area. Access road improvements elsewhere along the corridor would occur on existing road grades.

Within the Action area, IVM activities are expected to occur every 2 to 5 years, and will be restricted to those trees or vegetation which interfere with the operation and maintenance of the transmission line, and will be conducted outside of the WIFL breeding period. In addition, much of the riparian scrubland and woodland habitat in the Action area is already cleared or highly modified, given that the majority of the transmission line corridors were established more than 30 years ago and have been regularly maintained over that time. In these areas, trees and shrubs may regenerate and encroach upon the ROW and need to be cut or trimmed, or treated for permanent removal. However, potential habitat modifications would not be from a natural, pristine condition, but from an already managed condition to a new condition that would be designed to require less management over the long term.

The Proposed Action would have short-term negligible impacts to the southwestern willow flycatcher and its critical habitat.

Sprague's Pipit

Sprague's pipits may occur within the Action area during migration and the wintering months. Direct effects on Sprague's pipit from the proposed Project include collision with the overhead wires, although these effects are unlikely given the rarity of the species in the Action area. Sprague's pipits are susceptible to habitat fragmentation. However, because project activities are for ongoing O&M and IVM activities in disturbed ROWs, no new fragmentation to native or agricultural grasslands will occur as a result of this project. The Proposed Action would have negligible impacts on the Sprague's pipit.

Yellow-Billed Cuckoo

Direct effects to YBCUs resulting from the proposed Project, although unlikely, may include collision with the overhead wires. YBCUs may be impacted by noise disturbance which disrupts normal breeding behavior. However, no breeding records for YBCUs are known from the Action area. In addition, seasonal avoidance of suitable habitat, per the LCR MSCP, will be implemented where feasible; presence/absence surveys will be conducted prior to project activities which may occur during the avoidance period. Therefore, direct effects to YBCUs will be minimized or avoided. Migrating and dispersing birds may also be impacted by noise disturbance which alters normal foraging behavior; however, these effects would be short-term, as birds could move away from the noise to other suitable foraging habitats adjacent to work areas.

Category B and C activities may result in the alteration or destruction of suitable and critical habitat. Vegetation management activities may result in the removal of canopy trees and other vegetation within riparian woodland habitat. Within the Bill Williams River, San Pedro River, and Cienega Creek riparian corridors, these routine activities are expected to occur infrequently (every 2 to 5 years), and will be restricted to those trees or vegetation which interfere with the O&M of the transmission line. Because the transmission line structures at Bill Williams River crossing are located on the canyon edges above the river, the conductors are high enough that the need for IVM within the riparian corridor is unlikely.

Access road improvements may occur along the Parker-Planet Tap and Tucson-Apache corridor; however, due to the inaccessible terrain through the Bill Williams, San Pedro and Cienega riparian area, Western or APS does not maintain an access road within the ROW within the active channel area. Access road improvements elsewhere along the corridor would occur on road grades. Access within the Gila River riparian habitat at the Gila-North Gila corridor would likely consist primarily of shrub clearance and improvement of existing grades. Therefore, little to no effect to canopy trees is expected as a result of access road work.

Generally, IVM activities are expected to occur every 2 to 5 years and will be restricted to those trees or vegetation which interfere with the operation and maintenance of the transmission line, and will be conducted outside of the YBCU breeding period. In addition, much of the riparian scrubland and woodland habitat in the Action area is already cleared or highly modified, given that the majority of the transmission line corridors were established more than 30 years ago and have been regularly maintained over that time. In these areas, trees and shrubs may regenerate and encroach upon the ROW and need to be cut or trimmed, or treated for permanent removal. However, potential habitat modifications would not be from a natural, pristine condition, but from an already managed condition to a new condition that would be designed to require less management over the long term.

The Proposed Action would have short-term negligible impacts to the yellow-billed cuckoo.

Yuma Clapper Rail/Ridgeway's Rail

Project activities within or adjacent to the Gila River crossing could affect Yuma clapper rail or its habitat. Effects to YCRA resulting from Category A activities would be limited to noise disturbance, which may disrupt normal breeding behaviors and potentially result in nest failure. However, seasonal avoidance of suitable habitat, per the LCR MSCP, will be implemented; therefore, effects to nesting YCRAs will be avoided. Project-related noise and other activities at the Gila River crossing outside the nesting season could affect YCRA during foraging or dispersal. However, there is an extensive swath of similar foraging and dispersal habitat available upstream and downstream of the Action area. YCRAs in the vicinity during project activities would be able to move away from the disturbance.

Category B and C activities may require some vegetation clearing along the access road to structures on the north side of the Gila River channel but still within the riparian corridor. However, no work would occur within wetland habitat; IVM activities would be limited to above the active channel. Generally, within the Action area where it crosses the LCR floodplain and its associated riparian corridors, IVM activities are expected to occur every 2 to 5 years, will be restricted to vegetation which interferes with the operation and maintenance of the transmission line, and will be conducted outside of the YCRA breeding period.

The Proposed Action could have short-term impacts to the Yuma clapper rail that would be negligible.

3.9.2.3 Fish

It is not anticipated that special-status fish species or their critical habitat would be impacted because of Project-related activities. There would be no direct impacts to waterways, as Western would require that machinery remain outside of wetlands, creeks, rivers, and tanks. Western would not allow debris to fall into streams, creeks, or rivers. This would allow water flow to remain unimpeded. Additionally, as the Proposed Action would not typically result in a bare-ground condition within the ROW, the level of sediment transported to creeks and rivers would be negligible. Thus these indirect impacts are not likely to impact the special-status fish species known to occur within the Project area.

Bonytail Chub

Bonytail may persist within the LCR between Hoover Dam and Parker Dam. However, Western's infrastructure is not located within occupied or suitable habitat for bonytail; the transmission lines span the LCR at all crossing locations, and all transmission line structures and facilities are located in upland habitat above full pool elevation. O&M activities will not occur within the LCR, although inspection overflights or other aerial O&M activities may occur on conductors or overhead ground wire spanning the LCR. Impacts to bonytail or its habitat resulting from these overhead activities are not anticipated. Therefore, direct effects to bonytail or its habitat will not occur as a result of project activities.

Some Category B and C activities, such as access road repairs and footing maintenance, have the potential to affect bonytail habitat due to sediment runoff from earthwork. However, Western's use of erosion control measures will alleviate impacts to suitable or designated critical habitat.

The Proposed Action is not expected to impact the bonytail chub, its suitable habitat, and its critical habitat.

Razorback Sucker

Razorback suckers are known to occur at several locations within the Action area where Western's infrastructure spans the LCR. Suitable and designated critical habitat occurs at several transmission line crossings along the LCR. However, Western's infrastructure is not located within occupied or suitable habitat for razorback suckers; the transmission lines span the LCR at all crossing locations, and the infrastructure is above the full pool elevations. O&M activities will not occur within the LCR, although inspection overflights or other aerial O&M activities may occur on conductors or overhead ground wire spanning the LCR. Therefore, direct effects to the razorback sucker or its habitat will not occur as a result of Project activities.

Some Category B and C activities, such as access road repairs and footing maintenance, have the potential to indirectly affect razorback sucker habitat due to sediment runoff from earthwork. However, Western's use of erosion control measures will ensure no impact to suitable or designated critical habitat.

The Proposed Action is not expected to impact razorback sucker, its suitable habitat, and its critical habitat.

Roundtail Chub

Although suitable habitat occurs at several transmission line crossings along the LCR and its tributaries, roundtail chub are not known to occur within the Action area. In addition, Western's infrastructure is not located within occupied or suitable habitat for roundtail chub; the transmission lines span the LCR at all crossing locations, and the existing infrastructure is above the full pool elevations. O&M activities will not occur within the LCR, although inspection overflights or other aerial O&M activities may occur on conductors or overhead ground wire spanning the LCR. If new populations are discovered or reintroduced in the mainstem LCR, Western SOPs and PCMs for other species would provide protection for roundtail chub.

Roundtail chub upstream of the Action area are physically isolated from downriver habitat by Alamo Dam and intermittent dry streambeds; therefore, effects to roundtail chub potentially occurring in this area would be discountable. Project activities will have no direct effects to the roundtail chub or its habitat.

Some Category C activities, such as footing maintenance, have the potential to indirectly affect currently unoccupied roundtail chub habitat due to sediment runoff from earthwork. However, Western's use of erosion control measures will ensure no impact to suitable habitat.

The Proposed Action is not expected to impact roundtail chub or its suitable habitat.

3.9.2.4 Mammals

Desert Bighorn Sheep

Habitats throughout much of the Proposed Action area are suitable for bighorn sheep. Project activities will cause some habitat degradation but these impacts will be negligible because the footprint of the transmission lines and access roads on the landscape are relatively minor in relation to the large habitat area required by this species. Project activities could cause noise and human disturbance which could cause bighorn sheep to temporarily leave the area. Pre-activity clearance survey, worker training, prohibiting pets, and enforcing speed limits would minimize potential Project impacts to desert bighorn sheep. Impacts to bighorn sheep would be negligible to minor and short-term.

Lesser long-nosed Bat

Because of the lack of roost sites within the Action area, project activities will not directly affect known roost sites. Project activities will occur more than 15 miles from the nearest known roost locations; therefore, project-related noise disturbances would not affect roosting bats. Although bats may forage in the southeastern extent of the Action area, project activities will be restricted to daytime hours and would not affect foraging individuals.

Category A activities involve little to no ground disturbance and have no effect on the bat. Project activities in Category B and C may result in the removal or topping of individual saguaros in some cases (e.g., where tall saguaros or agave flowering stalks encroach within unsafe distances of conductors). However, Western would require the avoidance of forage species wherever practicable. Removal or topping will be limited to small numbers of forage plants and will occur periodically throughout the year and in dispersed locations. Small saguaros and agaves would be replanted outside of work areas where feasible. Therefore, effects to forage plants will be negligible relative to the remaining suitable forage species in the habitat surrounding the project area. The Proposed Action would have negligible to minor impacts to the lesser long-nosed bat.

3.9.2.5 Plants

Pima Pineapple Cactus

Disturbance to Pima pineapple cactus habitat would occur during O&M activities along the ROW, particularly when ground disturbance is necessary. Disturbance could occur from maintaining access roads, pulling and tensioning sites, and structure work areas. Ground disturbance may directly affect the Pima pineapple cactus through direct loss of individual plants and may indirectly affect the species by facilitating the establishment and spread of invasive plant species.

Ground-disturbing activities could lead to increased establishment and spread of invasive plant species, which can compete with the Pima pineapple cactus for space and resources and could modify fire regimes in habitat that could lead to increased mortality for the species and degradation of habitat. Measures to minimize the establishment and spread of invasive plant species would minimize the potential for indirect effects on the Pima pineapple cactus from the proposed Project.

Prior to ground-disturbing or vegetation clearing activities in Pima pineapple cactus habitat a protocol-level survey will occur. Identified cactus will be flagged prior to work commencing to ensure avoidance. The Proposed Action would have minor impacts to the Pima pineapple cactus.

3.9.2.6 Reptiles

Banded Gila Monster

Since this species is rarely observed and spends more than 95 percent of its time underground (NDOW 2012), the likelihood of impacts occurring during non-ground disturbing activities would be low. However, the possibility of mortality by vehicle strikes does exist. It is more likely the Gila monster would be encountered during excavation and other ground disturbing activities. Implementation of Nevada Department of Wildlife's (NDOW) reporting protocol (2012), which requires that workers and personnel (1) know how to identify Gila monsters and distinguish them from other lizards, (2) report any observations of Gila monsters to NDOW, (3) be alert to consequences of a Gila monster bite, and (4) be aware of protective measures provided under state law. Pre-construction surveys would reduce the possibility of Gila monster mortality during O&M activities. The Proposed Action could have negligible to minor impacts to the banded Gila monster.

Flat-tailed horned lizard

Flat-tailed horned lizards may be present in suitable habitats in the Yuma area. Lizards may be directly affected by injury or mortality due to crushing during project activities. Noise and vibrational disturbance may cause flat-tailed horned lizards to avoid the work areas; however, these effects would be short-term and temporary.

Category B and C activities may result in disturbance to sandy substrates and creosotebush-bursage habitats. Category B activities will be largely restricted to existing disturbed roads and work pads that have been compacted over years of O&M activities; therefore, new effects to loose or sandy soils would be minimal. Category C activities involving new work sites may result in compaction and disturbance to active dune areas and loose, sandy soils. However, this habitat type would be expected to recover to pre-construction conditions without additional restoration measures. Seasonal avoidance and pre-construction surveys would be implemented to alleviate potential effects to flat-tailed horned lizard and its habitat. The Proposed Action would have negligible to minor impacts to the flat-tailed horned lizard.

Mojave Desert Tortoise

Mojave Desert tortoises are likely to occur in large portions of the Action area west of the LCR. Tortoises may be directly affected by all project activities due to injury or crushing resulting from increased human activity and vehicle traffic. The Workers Environmental Awareness Program (WEAP) and reduced speed limits on roads would avoid and minimize these effects. Tortoises and burrows would be avoided wherever possible. Per Western Project requirements (see Appendix A), Western's O&M activities would be planned outside of the tortoise activity season, as feasible, to reduce the likelihood of tortoise interactions with workers and equipment. In addition, Category A activities will conducted primarily without the use of heavy equipment, allowing for better visibility and ease of vehicle maneuvering in work areas. Many of these activities provide for flexibility in staging, allowing for avoidance of burrows and other habitat features.

Ground disturbing activities associated with Category B and C activities present an increased risk to tortoises resulting from vehicle strikes and the potential destruction of burrows. These activities may result in the "take" of tortoises resulting from the capture, handling, or relocation of desert tortoises

found in harm's way; however, the primary goal would be avoidance of tortoises and burrows wherever possible. With implementation of pre-construction surveys and reduced speed limits, impacts to tortoises would be minimized. If discovered in work areas, tortoises would only be handled and relocated by qualified individuals as authorized by the USFWS and following accepted protocols. Litter control programs and monitoring watering activities will alleviate potential predator attractants.

Category B and C activities may also result in an increase of noxious and invasive plant species in the area following ground disturbing activities. The introduction of invasive species can cause the displacement of native forage species for tortoises, as well as increase fine fuels and the risk of fire. Maintenance equipment may facilitate the spread of existing noxious or invasive species in the Project area by incidentally transporting seeds and plant parts. However, vehicle washing would reduce or eliminate these effects.

Category A activities will involve little to no ground disturbance and therefore will not affect designated critical habitat. Category B may result in more ground disturbing activities than Category A, however, these activities will occur within disturbed ROWs, including access roads and work pads associated with transmission line structures. Developed areas, such as roads, are not considered critical habitat as they do not contain the Primary Constituent Elements (PCEs) of suitable tortoise habitat. Therefore, new effects to critical habitat resulting from Category B activities are likely to be temporary and negligible in acreage.

Category C activities may result in new disturbance to critical habitat outside of established work areas. These new disturbance areas would likely be variable in size, and temporary to permanent depending on the nature of the activity. Temporary work areas would be restored to pre-work contours where feasible. Permanent habitat loss may occur as a result of activities such as the installation of inset structures, new or repaired footings, erosion control features, or new antenna towers. This type of work would involve localized disturbance in small (1- to 2-acre) patches and occur infrequently.

Overall, the Proposed Action would have minor impacts to the Mojave Desert tortoise and its associated critical habitat. Any habitat losses, temporary or permanent, or potential take of the species resulting from Proposed Action would require consultation with the USFWS.

Northern Mexican Gartersnake

Gartersnakes may be directly affected by injury or mortality due to crushing or vehicle strikes. Given the limited area of suitable habitat and lack of species records within the Action area, direct effects to gartersnakes from Category A activities are unlikely to occur. In addition, Category A activities are short in duration, do not involve heavy equipment, and will not result in new ground disturbance. In addition, a WEAP and restricted IVM activities in suitable habitat will avoid and minimize potential impacts to gartersnakes.

Category B and C activities may result in the alteration or destruction of suitable and proposed critical habitat. Vegetation management activities may result in the removal of canopy trees and other vegetation within riparian woodland habitat. Within the Bill Williams River, San Pedro River, and Cienega Creek riparian corridors, these routine activities are expected to occur infrequently (every 2 to 5 years), and will be restricted to those trees or vegetation which interfere with the O&M of the transmission line. Because the transmission line structures at the crossing location are located on the edges above the river, the conductors are high enough that the need for IVM within the riparian corridor is unlikely. Access road maintenance and improvements may occur along these corridors; however these actions occur on existing road grades.

The Proposed Action has the potential for minor impacts to the northern Mexican gartersnake and its proposed critical habitat. Any habitat loses, temporary or permanent, or potential take of the species resulting from the Proposed Action would require consultation with the USFWS.

Sonoran Desert Tortoise

Sonoran desert tortoises are likely to occur in large portions of the Action area east of the LCR. Tortoises may be directly affected by all project activities due to injury or crushing resulting from increased human activity and vehicle traffic. The WEAP and reduced speed limits on roads would alleviate these effects. Tortoises and burrows would be avoided wherever possible. Western's O&M activities would be planned outside of the tortoise activity season, as feasible, to reduce the likelihood of tortoise interactions with workers and equipment. In addition, Category A activities will be conducted primarily without the use of heavy equipment, allowing for better visibility and ease of vehicle maneuvering. Many of these activities provide for flexibility in staging, allowing for greater avoidance of burrows and other habitat features than Category B and C activities. Ground disturbing activities associated with Category B and C activities present an increased risk to tortoises resulting from vehicle strikes and the potential destruction of burrows. These activities may result in the capture, handling, or relocation of desert tortoises found in harm's way; however, the primary goal would be avoidance of tortoises and burrows wherever possible.

Although Category B activities may result in increased ground-disturbing activities than Category A, these activities will occur within existing disturbed ROWs, including existing access roads and work pads associated with transmission line structures. Therefore, new effects to suitable habitat are likely to be temporary and negligible in acreage. Category C activities may result in new disturbance to suitable habitat outside of established work areas. These new disturbance areas would likely be variable in size, temporary to permanent depending on the nature of the activity, and minimal relative to available suitable habitat outside of the ROWs. Litter control programs and monitoring watering activities will alleviate potential predator attractants.

Overall, the Proposed Action would have minor impacts to the Sonoran desert tortoise.

3.9.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts to special-status species resulting from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. Potential impacts to special-status species associated with vegetation management would be less under the No Action alternative.

3.10 Vegetation

This section characterizes the environmental setting for vegetation. It discusses in general terms the vegetation near Western's transmission lines, communication facilities, and access roads. Appendix E includes the Biological Assessment for the Project.

3.10.1 Affected Environment

Descriptions of the vegetation communities that occur within the analysis area are provided in the following sections. The terms biotic communities and plant associations are also used below. All three terms—vegetation communities, biotic communities, and plant associations—are defined based on the presence of dominant plant species that characterize the species composition and physical structure of the landscapes.

The planning area is diverse in terms of biotic communities, ranging from Lower Colorado River Sonoran Desertscrub to Madrean Evergreen Woodland. Much of the area vegetation is Mohave and Sonoran desertscrub and semidesert grassland, which comprise 92 percent of the vegetation within the ROWs of the Parker-Davis System. The largest yucca species, the Joshua tree, characterizes the Mohave Desert ecoregion, a transitional desert between the higher and cooler Great Basin Desert and the lower, hotter Sonoran Desert. The Sonoran Desert ecoregion occurs in the southern part of the planning area where the saguaro is the characteristic plant and biodiversity is quite high. The Colorado Plateau Shrublands and Arizona Mountains Forests ecoregions are characterized by chaparral, conifer woodlands and higher elevation grasslands.

The map of biotic communities of the Southwest produced by Brown and Lowe (1980) and based on biotic communities described in Brown (1982) shows nine communities within the Action area. Acreage calculations by biotic community presented below were derived for the total analysis area of the Parker-Davis System.[1] In descending order of coverage, these communities are Lower Colorado River Subdivision of Sonoran Desertscrub (21,504 acres), Arizona Upland Subdivision of Sonoran Desertscrub (4,928 acres), Mohave Desertscrub (4,544 acres), Great Basin Conifer Woodland (2,176 acres), Semidesert Grassland (2,176 acres), Chihuahuan Desertscrub (320 acres), Interior Chapparal (320 acres), Plains and Great Basin Grassland (192 acres), and Madrean Evergreen Woodland (64 acres). A description of each of these communities is provided in the following paragraphs.

3.10.1.1 Sonoran Desertscrub – Lower Colorado River Subdivision

The Lower Colorado River Subdivision comprises 60 percent of the analysis area and covers large areas of the southern and western parts of the biotic community in Arizona, California, Baja California, and Sonora, Mexico. This subdivision is a shrub-dominated community situated topographically below the Arizona Upland Subdivision (Brown 1982). This community is the hottest and driest part of the Sonoran Desert, with average annual rainfall between 1.2 and 11.3 inches. Dominant shrub species include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), and saltbush (*Atriplex spp.*). Other shrubs and small trees are present in washes and along small drainages. Common small trees include mesquite (*Prosopis spp.*), palo verde (*Parkinsonia spp.*), ironwood (*Olneya tesota)*, and smoketree (*Psorothamnus spinosus*). In the Action area, this community exists along the southwestern and central portions of the Project area.

3.10.1.2 Sonoran Desertscrub – Arizona Upland Subdivision

The Arizona Upland Subdivision comprises only 0.4 percent of the analysis area but covers large areas of the northern and eastern parts of the Sonoran Desertscrub biotic community in Arizona and Sonora, Mexico. This subdivision is a cactus-dominated community situated topographically above the Lower Colorado River Subdivision and below Semidesert Grassland (Brown 1982). As with other communities,

[1] The acreage calculation was based on a ROW width of 200 feet.

the upper and lower elevation limits of this community vary substantially over its distribution. The lower edge of this subdivision is generally between about 1,000 and 2,100 feet, whereas the upper contact with Semidesert Grassland is generally between 2,950 and 3,300 feet. Average annual rainfall in this community ranges from 7.9 to 16.7 inches. This community is dominated by a high diversity of cactus, and most of the woody shrubs have thorns. Common cactus species include saguaro (*Carnegiea gigantea*), chollas (*Cylindropuntia* spp.) and prickly pears (*Opuntia* spp.), barrel cactus (*Ferocactus* spp.), hedgehog cactus (*Echinocereus* spp.), and pincushion cactus (*Mammillaria* spp.). Some common small trees and shrubs include palo verde, ironwood, velvet mesquite (*Prosopis velutina*), acacias (*Acacia* spp.), and creosote bush. In the analysis area, this community stretches from Tucson to Parker, Arizona.

3.10.1.3 Mohave Desertscrub

The boundary between Mohave desertscrub and Arizona Upland and Lower Colorado River Sonoran desertscrub is often difficult to discern. Mohave desertscrub covers a transitional zone between the higher and cooler Great Basin desert and the lower, hotter Sonoran desert. While many of the same plants found in other deserts occur here, some are indicative of the Mohave Desert such as the Joshua tree and certain cacti and endemic ephemeral plants, most of which are winter annuals (Brown, 1982). The community is shrub-dominated and creosote bush and bursage are often dominant species. Mohave desertscrub covers most of the Detrital Valley, Lake Mohave and Sacramento Valley basins at elevations below about 3,500 feet that receive 5 to 11 inches of annual rainfall.

3.10.1.4 Great Basin Conifer Woodland

These forests cover the high elevation plateaus of northern Arizona and the high elevation ranges of southeastern Arizona. Great Basin conifer (pinyon-juniper) woodlands cover large areas below the ponderosa pine forest at elevations between about 5,000 and 7,500 feet that receive about 12 to 20 inches of annual precipitation. Pinyon pine (*Pinus edulis*) dominates at higher elevation while junipers (*Juniperus* spp.) are the dominant species at lower and drier areas that may include open grasslands. Bark beetle infestations have killed large areas of pinyon pine southeast of Valle and smaller areas south of the South Rim in the Coconino Plateau Basin. Approximately 100 miles of the Parker-Davis System transects this vegetative community northwest of Prescott, Arizona.

3.10.1.5 Semidesert Grassland

The Semidesert Grassland biotic community comprises six percent of the analysis area and covers large areas of southeast Arizona, southwest New Mexico, West Texas, and northern parts of Sonora and Chihuahua, Mexico. This perennial, grass-shrub-dominated community is situated topographically above desertscrub communities and below evergreen woodland, chaparral, or plains grassland (Brown 1982). The upper and lower elevation limits of this community vary substantially over its distribution. The lower contact with desert scrub is generally between about 3,600 and 4,600 feet, while the upper contact with evergreen woodland or chaparral is generally between 4,920 and 5,580 feet. Average annual rainfall in this community ranges from 9.8 to 17.7 inches. This community is dominated by a variety of grasses and seasonally abundant forbs. Common shrub species include mesquites, Mormon tea (*Ephedra* spp.), mimosas (*Mimosa* spp.), catclaw acacia (*Acacia greggii*), and ocotillo (*Fouquieria splendens*). Common leaf succulents include agaves (*Agave* spp.), yuccas (*Yucca* spp.), and sotols (*Dasylirion* spp.).

Wildfire is a natural disturbance within this community, and Semidesert Grassland is characterized by low-severity fire that occurs every 0 to 35 years. Human development and fire suppression has changed the vegetative structure of this community in specific areas, particularly on and bordering the Coconino

National Forest. This community is interspersed with Chihuahuan Desertscrub and occurs south of Prescott and east of Nogales, Arizona.

3.10.1.6 Chihuahuan Desertscrub

The Chihuahuan Desertscrub biotic community comprises one percent of the analysis area and covers large areas of southern New Mexico and West Texas, smaller areas of southeast Arizona, and a large part of the State of Chihuahua, Mexico. This community is centered in the highland plains and basins of northern Mexico, below the Semidesert Grassland community (Brown 1982). This biotic community is dominated by basin and range topography, and most of this community is underlain by limestone. The lower elevation limit of Chihuahuan Desertscrub is around 1,300 feet, while its upper limit is generally between 4,600 and 5,250 feet. Average annual rainfall in this community ranges from 7.9 to 11.8 inches. Large areas of this desert are dominated by three shrubs: creosotebush, tarbush (*Flourensia cernua*), and viscid acacia (*Acacia neovernicosa*). Honey mesquite (*Prosopis glandulosa*) and saltbush (*Atriplex* spp.) are common in some areas. Common leaf succulents include agaves, yuccas, and sotols. Within the analysis area, this community occurs in the San Pedro and Cienega Creek basins.

3.10.1.7 Interior Chapparal

Interior chaparral occupies mid-elevation foothill, mountain slopes and canyons (3,500-6,000 feet) from Kingman, Arizona in the northwest to areas north of Tucson, Arizona. It is bordered by ponderosa pine or pinyon-juniper woodlands and shrublands at the upper elevations, and semi-desert grasslands at the lower elevations. Interior Chaparral vegetation has a uniform dense structure dominated by shrubs with thick, often stiff, waxy evergreen leaves. Chaparral communities typically are a mix of several shrubby species such as mountain-mahogany (*Cercocarpus spp.*), Sonoran scrub oak (*Quercus turbinella*), and manzanita (*Arctostaphylos spp.*) and commonly include cactus, agave, and yucca. Chaparral plants are well adapted to drought conditions. The Parker-Davis Transmission lines cross this vegetative community south of Prescott, Arizona in the Prescott Valley.

3.10.1.8 Madrean Evergreen Woodland

The Madrean Evergreen Woodland biotic community comprises less than one percent of the analysis area but is widespread in southeast Arizona, eastern Sonora, and western Chihuahua. This community is dominated by small evergreen tree species and is situated topographically above the Semidesert Grassland (Brown 1982). The lower elevation limit of this community is about 4,800 feet in the proposed Project vicinity. Average annual rainfall in this community ranges from about 13.0 to 40.2 inches. This community is dominated by a variety of oak (*Quercus* spp.), pines (*Pinus* spp.), and junipers. In the analysis area, this community is found only at the north end of the Dragoon Mountains, southwest of Willcox, Arizona.

3.10.1.9 Plains and Great Basin Grassland

Plains grasslands, primarily composed of mixed or short-grass communities, are widespread in the planning area at elevations above 4,000 feet that receive between 11 and 18 inches of annual precipitation. These areas are located primarily in the Coconino Plateau, Kanab Plateau, Shivwits Plateau, Bonita Creek, Cienega Creek, San Rafael and Upper San Pedro basins. On the Arizona Strip, Great Plains grassland, which is drier and receives a larger percentage of annual rainfall in the winter and spring, transitions with plains grasslands (Brown, 1982). In some areas, native bunchgrasses have been replaced by Eurasian annual species such as cheatgrass due to grazing and fire-suppression practices (Grahame and Sisk, 2002).

Vegetation consists mostly of grasses and forbs with interspersed shrubs. Dominant grass species may include, Western wheatgrass (*Pascopyrum smithii*), spike muhly (*Muhlenbergia wrightii*), black grama (*Bouteloua eriopoda*), Indian ricegrass (*Achnatherum hymenoides*), threeawns (*Aristida spp.*), blue grama (*Bouteloua gracilis*), fescues (*Festuca spp.*), needle grass (*Achnatherum* spp.*)*, bottlebrush squirreltail (*Distichlis spicata*), James' galleta (*Pleuraphis jamesii*), dropseed (*Sporobolus dryptandrus)*, Sandberg bluegrass (*Poa secunda*), and tobosa grass (*Pleuraphis mutica*). Shrub species may include, but are not limited to, saltbush, snakeweed (*Gutierrezia sarothrae*), rabbitbrush (*Ericameria nauseosa*), winterfat (*Krascheninnikovia*spp.*)*, buckwheat (*Fagopyrum esculentum*), and juniper. The piñon-juniper woodland and madrean evergreen woodland is often intermixed with this grassland in the Action area.

3.10.2 Environmental Consequences from the Proposed Action

Several types of vegetative communities occur within the Action area, as described in the previous section. Western must manage the vegetation throughout its system to comply with federal laws, regulations, and directives, including those for maintaining system reliability and public and worker safety. The following sections identify potential impacts to vegetation resulting from vegetation removal and management, right-of-way maintenance activities, and O&M activities. PCMs to minimize potential impacts to vegetation were considered as a part of the analysis of environmental consequences.

The Action area has a variety of habitats requiring vegetative maintenance. The lower growing plant communities such as grassland and scrub would require little maintenance. Conversely, other parts of the Action area, particularly in the upper elevation areas (i.e., Central highlands, Colorado plateau), include densely forested coniferous areas that would require more maintenance. Under the Proposed Action, these conifer forests would be replaced by low-growing plant native communities over time, which would require less maintenance in the long-term.

3.10.2.1 Impacts Resulting from Vegetation Management

Activities related to initial vegetation removal would have an impact on vegetation. All vegetation within the ROWs was removed or altered from its natural state during construction of the Parker-Davis Transmission System in the 1940s and 1950s. Since that time, successional vegetation growth has occurred within the ROWs, resulting in establishment of large woody species such as trees in the right-of-way. Under the Proposed Action, most of the current vegetation would be removed throughout the ROW, resulting in a change of the mid-late seral to subclimax successional status of the Action area to a pre-successional condition. This change would be permanent until the transmission lines are decommissioned.

Vegetation management is anticipated to occur on a 5-year cyclical basis throughout the entire Action area. The primary impact resulting from both mechanical and manual methods of vegetation management and danger tree removal could include increased disturbance to surrounding non-target vegetation (e.g., trees falling on vegetation outside the right-of-way). Additionally, sensitive plant communities such as riparian habitats or wetlands, special-status plants, and trees that should remain in place will be marked prior to vegetation management activities to minimize impacts to those resources.

Many common weeds are found throughout the Action area and control of these species is not pratical. Noxious and invasive weeds that are either currently absent from the Action area or have a narrow distribution present the greatest concern. As provided in Section 2 and Appendix A of this EA and the BA (Appendix E), Western would minimize impacts from noxious and invasive weeds and reduce the potential for these problematic species to spread. Utility mowers, tracks, or other off-road equipment

would be free of soil, weeds, vegetative matter, or other debris that could harbor seeds prior to entering the Action area.

Impacts to Vegetation and Wetlands from Herbicide Application

Herbicides kill or damage plants by inhibiting or disrupting basic plant processes. Impacts from herbicide treatment to non-target vegetation result from misuse. Herbicides can unintentionally contact vegetation by drift, leaching, or spilling. The degree to which a habitat is impacted depends on the selectivity (type) of the herbicide, application treatment, and accidental contact. Refer to Section 2.2.2 for additional information on the herbicides proposed for use within the Action area and the proposed methods of application.

Type of herbicide (selective or non-selective). Impacts to non-target vegetation depend on the selectivity of the herbicide and whether or not the correct herbicide has been chosen for the vegetation type. Non-selective herbicides are toxic to plants regardless of species and have more potential to adversely affect non-target vegetation.

Application spray treatment (stump, basal, and foliar). Stump treatment is highly selective and causes little effect to non-target vegetation. Basal and foliar treatments are more broadly applied and can come in contact with non-target vegetation or habitats, including cropland, special-status species, and wetlands. Applying a broadcast application of non-selective herbicide can have highly detrimental effects to overall diversity, composition, and soil chemistry, and can cause a monoculture of weedy vegetation. Using a selective herbicide coupled with a selective application technique would result in the least amount of damage to non-target vegetation and sensitive habitats.

Accidental spills and careless application. Non-target vegetation and other sensitive habitats can be affected by the careless application of herbicides. This would include using the wrong size spray nozzle, the wrong herbicide, not clearly marking and avoiding sensitive areas, and misusing and carelessly applying herbicides. The technician must be familiar with non-target vegetation and sensitive species and habitats that may be affected and must correctly apply the herbicide to avoid impacts to non-target species. Although unlikely, a large spill may result in the removal of hundreds of cubic yards of soil, along with the loss of plants. The SOPs and PCMs for herbicide use would ensure that impacts to non-target vegetation and sensitive habitats do not occur.

Impacts from the Spread of Noxious Weeds or from Invasive Plant Species

Routine maintenance and operation of the transmission line may contribute to the spread of noxious weeds and invasive plant species. The introduction of low-growing native plants may temporarily promote the invasion of grasses during initial establishment that would compete against native herbaceous and woody species both within and outside of the ROW. As the native low-growing vegetation becomes established noxious weeds and invasive plants should become less of a problem and they will likely only remain a problem in areas that are periodically disturbed the vegetation management activities. Western is required to comply with the Federal Noxious Weed Act of 1974, as amended by section 15, Management of Undesirable Plants on Federal Lands, 1990, which mandates each federal land-management agency to:

- designate a lead office and person trained in the management of undesirable plant species;
- establish and fund an undesirable-plant management program;
- complete and implement cooperative agreements with state agencies; and
- establish integrated management systems to control undesirable plant species.

Additionally, to prevent impacts from the spread of noxious weeds or from invasive plant species, Western would implement SOPs (Appendix A) and follow the IVM Program.

3.10.2.2 Operation and Maintenance Effects to Vegetation

Category A O&M activities are minor actions that would not cause substantial soil or habitat disturbance (see table 2-2for more detail). Category B and C O&M activities have potential to cause more substantial soil and habitat disturbance (see table 2-3 to 2-4 for more detail). Equipment used for all O&M activities has the potential to contribute to the introduction of noxious weeds by inadvertently transporting noxious weed seeds when the equipment is moved between locations. It may also spread noxious weeds along an established ROW as the equipment moves from an area with established weeds into areas where the weed may be absent. Maintenance activities may result in temporary and permanent loss of habitat because vegetation would be removed for maintenance activities and access road maintenance.

Vegetation clearing and herbicide use would typically be a short-term impact since vegetation would grow back; however, this may contribute to the introduction of noxious weeds. The introduction of low-growing native plants may promote the invasion of grasses, as described above in section 3.10.2.1 (Impacts Resulting from Vegetation Management), that would compete with native herbaceous and woody species. Western would reduce impacts by requiring that seeds from ground-disturbing equipment be cleaned off before moving between work sites.

Impacts to vegetation resulting from the Proposed Action would be minor, both short- and long-term.

3.10.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts to vegetation species resulting from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. Potential impacts to vegetation associated with vegetation management would be less under the No Action alternative.

3.11 Water Resources/Floodplains/Waters of the U.S.

This section characterizes the environmental setting for both surface and ground water resources that are crossed by or adjacent to the Parker-Davis Transmission System (Action area) components, including: transmission lines, substations, communication facilities, and access roads.

3.11.1 Affected Environment

The continental United States is divided into 18 Hydrologic Regions (HR) as defined by the USGS Watershed Boundary Dataset (WBD), a component of the National Hydrography Dataset (NHD). The Action area lies almost entirely within the Lower Colorado HR, although small portions of the western edge of the Action area cross into the Great Basin HR and the California HR. These Hydrologic Regions are further divided into Hydrologic Subregions (HSR). The majority of the Action area falls within three HSRs: the Lower Colorado, the Lower Gila, and the Middle Gila. An additional four HSRs contain small portions of the Action area: the Central Nevada Desert Basins and Lower Colorado-Lake Mead HSRs to

the north, the Southern Mojave-Salton Sea HSR to the west, and the Salt HSR to the east. Within these HSRs, the Action area crosses 33 Subbasins, which are watersheds with an average size of 700 square miles.

3.11.1.1 Topography and Climate

The Action area crosses mostly flat deserts, shallow valleys, and isolated, relatively small mountain ranges. Steeper topography and more prominent mountains border the area along the eastern boundary. In the north, the Action area parallels the El Dorado Mountains, between the Black Mountains and the McCullough Range. Heading due south, it crosses the Mojave Valley, Parker Valley, Palo Verde Mesa, and the La Posa and Castle Dome Plains, which are bordered by the Chocolate Mountains to the west and the Kofa Mountains and Gila Desert to the east. The northeast section of the Action area crosses the Black Mountains, Sacramento Valley, the Hualapai Mountains and Valley, the Cottonwood, Juniper, Bradshaw, and New River Mountains, and terminates in Paradise Valley north of Phoenix, AZ. The southeast segment of the Action area crosses the Buckskin Mountains, the Cactus Plain, the Harcuvar Mountains, McMullen Valley, the Hassayampa Plain and Santa Cruz Flats, and terminates in the Galiuro Mountains at the easternmost edge of the Action area. The Gila Mountains and the San Francisco Plateau bound the Action area on the east and northeast edges, the Sonoran Desert underlies the southern area, and the Mojave Desert lies to the west.

Climate in the Action area varies with topography; the deserts are the driest and hottest, while the mountainous areas receive more rainfall and are considerably cooler. Average annual precipitation ranges from less than five inches in the southwestern desert portion of the Action area to a maximum of 25 inches in the northeastern mountainous region. In the deserts, summer maximum temperatures regularly exceed 110 degrees Fahrenheit, and winter minimum temperatures fall to the low 40s to upper 30s. In the mountains, summer maximum temperatures reach the mid-90s, and winter lows drop to the mid-30s. (PRISM)

3.11.1.2 Floodplains and Floodways

Most of the floodplains within the Action area are small and not based on detailed studies, but rather are approximate zones of potential flooding designated as Zone A, or the 100-year floodplain. Due to the small size and narrow widths of the vast majority of the floodplains within the Action area, most Proposed Action activities would occur outside of 100-year floodplains. The majority of potential flooding within the Action area is associated with the Colorado River, the Gila River, and the Santa Cruz River. The most substantial floodplains traversed by the Proposed Action are located along the Santa Cruz River and on the Santa Cruz Flats, northwest of Tucson, AZ.

3.11.1.3 Waterbodies

Nearly 2,000 named waterbodies, as well as thousands of unnamed streams and washes, fall within the Action area. Due to the high summer temperatures and low annual average precipitation, most streams within the Action area do not flow year-round. The Action area is broadly defined by two major rivers and their associated watersheds: the Colorado River, which runs north to south along the western portion of the area, and the Gila River, which runs east to west through the central portion of the area. Aerial photography and the NHD were used to identify major waterbodies within the Action area. These major waterbodies and their general location are listed here, and the quality of these waters is discussed below.

Within the Lower Colorado-Lake Mead HSR, major waterbodies that cross or lie adjacent to the Action area include Lake Mead and the Colorado River. No major waterbodies exist near the Action area within the Central Nevada Desert Basins HSR. The Salt River crosses the Action area within the Salt HSR, near

Phoenix, AZ. The Colorado River Aqueduct and the All-American Canal lie close to the Action area within the Southern Mojave-Salton Sea HSR.

Major waterbodies within the Lower Colorado HSR include: the All-American Canal, the Bill Williams River, Chemehuevi Wash, the Colorado River and Aqueduct, Lake Havasu, Lake Mojave, Milpitas Wash, Piute Wash, Sacramento Wash, Standard Wash, Trout Creek, and Warm Springs Wash.

Within the Lower Gila HSR, major waterbodies include: the Agua Fria River, Gila River, Hassayampa River, New River, and Lake Pleasant. Major waterbodies within the Middle Gila HSR include: Cienega Creek, the Gila River, Queen Creek, the San Pedro River, Santa Cruz River, and Santa Rosa Wash.

3.11.1.4 Surface Water Quality

There are relatively few waterbodies (streams or lakes) within the Action area that are listed on the Clean Water Act (CWA) 303d list of impaired and threatened waters that have been identified and reported to the U.S. Environmental Protection Agency (USEPA). In the northern portion of the Action area, the Colorado River, from Hoover Dam to Lake Mohave, is listed as impaired by selenium, but no Total Maximum Daily Load (TMDL) has been developed. Additionally, the Colorado River from Lake Mohave south to the Nevada-California state line is listed as impaired for water temperature, but no TMDL exists.

In the southwest portion of the Action area, the Colorado River, from Imperial Reservoir to the Gila River, is listed as impaired by selenium; no TMDL exists. The Colorado River, from the Main Canal to the Mexico border, is listed as impaired by selenium and a lack of dissolved oxygen. A TMDL for nitrogen and phosphorus was developed in 1992 to address the problem of low dissolved oxygen. The Gila River, from Coyote Wash to Fortuna Wash, is listed as impaired by boron and selenium; no TMDLs have been developed. The Palo Verde Outfall Drain and Lagoon are listed as impaired by pesticides and pathogens; no TMDL exists.

In the northeastern portion of the Action area, Watson Lake is listed as impaired by nitrogen, high acidity, and low dissolved oxygen. No TMDLs have been developed. In the central portion of the Action area, west and southwest of Phoenix, the Gila River is listed as impaired by numerous constituents, including: pesticides (chlordane, DDT, and toxaphene), toxic inorganics (boron), and metals (selenium). In the same location, the Salt River (from the 23rd Avenue WWTP outfall to the Gila River) and the Painted Rock Reservoir are also listed as impaired by pesticides. No TMDLs have been developed for these waterbodies.

In the easternmost portion of the Action area, near the Galiuro Mountains, the San Pedro River is listed as impaired by nitrates and pathogens (E. Coli). No TMDLs have been developed.

3.11.1.5 Waters of the U.S. including Wetlands

Thousands of named and unnamed streams that could qualify as Waters of the U.S. lie within the Action area. This analysis did not formally delineate potentially jurisdictional waters for the entire Action area. The United States Army Corps of Engineers (USACE) has determined that Nationwide Permit (NWP) No. 3 would apply to the Proposed Action. This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure. Based on NWP No. 3, pre-construction notification to the district engineer is required prior to removal of accumulated sediments and debris in the vicinity of existing structures and/or the placement of new or additional riprap to protect the structure. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer.

3.11.1.6 Groundwater

The Action area is generally hot and dry, and groundwater resources are used extensively to provide water for both urban and agricultural uses. Many of the groundwater basins within the Action area are in overdraft conditions, and most of the basins are actively managed to ensure the continued and sustainable use of the available resources.

Within Arizona, the Action area is underlain by 20 groundwater basins, including: Agua Fria, Big Sandy, Bill Williams, Butler Valley, Cienega Creek, Hualapai Valley, Lake Havasu, Lake Mojave, Lower Gila, McMullen Valley, Parker, Phoenix AMA, Pinal AMA, Prescott AMA, Sacramento Valley, Tucson AMA, Upper San Pedro, Verde River, Wilcox, and Yuma (ADWR, 2013). Within California, the Action area is underlain by 11 groundwater basins, including: Amos Valley, Arroyo Seco Valley, Calzona Valley, Needles Valley, Ogilby Valley, Palo Verde Mesa, Palo Verde Valley, Quien Sabe Point Valley, Rice Valley, Vidal Valley, and Yuma Valley (CDWR, 2012). Within Nevada, the Action area is underlain by four groundwater basins, including: Black Mountains Area, Colorado Valley, Eldorado Valley, and Las Vegas Valley (NDWR, 2010).

3.11.2 Environmental Consequences from the Proposed Action

Potential impacts to water resources were evaluated based on a comparison of the baseline condition of the affected environment and the likely effects of the Proposed Action.

3.11.2.1 Floodplains and Drainages

No impacts to floodplains or drainages would occur under the Proposed Action. New structures, such as transmission poles and towers, would only be installed to replace damaged structures. These new structures would be designed and located so as not to impede floodwaters or impact the functionality of existing flood control structures or otherwise alter the natural drainage pattern. Western will consult with the USACE and other agencies with floodplain responsibility as needed prior to the relocation of any structure or access road. All fill or riprap placed within a stream or river channel will be limited to the minimum area required for access or protection of existing facilities.

3.11.2.2 Surface Water Quality

The Proposed Action would include soil-disturbing activities, such as grading and improvement of existing access roads, relocation or stabilization of existing transmission poles or towers, repair or replacement of existing culverts, and mechanical removal of vegetation. This soil disturbance could lead to increased erosion and sedimentation. Additionally, potentially hazardous materials such as fuel, engine oil, and lubricants could be leaked or accidentally spilled onto the ground or into waterways during inspection and maintenance activities associated with the Proposed Action. Improper storage or application of herbicides could contaminate surface waters through direct contact or transport via runoff.

The Action area is crossed in several places by waters that are listed as impaired. It is possible that these waters could be impacted adversely by activities associated with the Proposed Action. However, the potential for impacts to these waters would be the same as that for all other waters within the Action area, and would be negligible.

As described in Appendix A, Western would minimize any potential impacts to surface water quality and would ensure that any potential impacts would be negligible. Western practices, procedures, and conservation measures related to the protection of water quality include: avoidance of wet soils and areas recently subjected to heavy rains, restoration and/or re-vegetation of disturbed areas to minimize erosion and ensure proper drainage, proper selection, handling and application of herbicides to minimize the potential for surface water contamination (including avoidance of identified wetlands), minimization of grading and other soil disturbing activities, appropriate reporting and cleanup of accidental releases of hazardous materials, prohibition of discharge of contaminants to surface waters, installation of erosion control devices and compliance with a Storm Water Pollution Prevention Plan (SWPPP), and the maintenance of adequate buffer zones around jurisdictional waters, including wetlands.

3.11.2.3 Waters of the U.S. including Wetlands

Jurisdictional waters may be found throughout the Action area. Western would maintain an appropriate buffer around wetlands, seeps, springs, ponds, lakes, rivers, streams, marshes, and their associated habitats. When feasible, all maintenance activities would be routed around wet areas. In-stream work would be conducted during no-flow or low-flow conditions. Prior to activities within or near jurisdictional waters, Western would perform an impact assessment, which would identify and quantify the acreage of each jurisdictional area, and would provide creation, restoration, or preservation mitigation consistent with permitting requirements.

3.11.2.4 Groundwater

Impacts to groundwater could occur if an accidental release of hazardous materials infiltrates into the subsurface aquifer, or if shallow or perched groundwater is intercepted during construction and dewatering activities are required. Several proposed activities would require motorized vehicles and equipment that use potentially hazardous materials. These activities include ground inspections, integrated vegetation management, access and ROW road maintenance, transmission system maintenance and upgrades, and emergency repairs. Excavation for replacement tower installation or other construction activity may intercept shallow groundwater and require pumping to continue to work. If improperly conducted, these dewatering activities could introduce contaminants into the groundwater.

All releases or discharges of hazardous materials within the Action area in connection with Proposed Action activities would be cleaned up and/or remediated, in accordance with applicable federal, state, and local regulations. Accidental discharges of hazardous materials would be reported to Western's dispatch and Environmental Affairs Department immediately. There would be no storage of hazardous materials within the Action area without approval from the authorized officer. All herbicide spill requirements would be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures. Contractors would submit a spill response plan that is approved by Western. Dewatering work would be performed in compliance with CWA Section 401, and contaminated water would not be discharged to either surface waters or groundwater. Western would ensure that potential impacts to groundwater would be negligible.

3.11.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue to conduct routine maintenance activities along the Project ROW and at substations. Potential impacts associated with water resources from O&M activities would be the same as those described above for the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. The potential for soil disturbance, increased erosion and sedimentation, disturbance of jurisdictional waters, and accidental release of hazardous materials may be less under the No Action alternative.

3.12 Geology/Soils/Mineral Resources

This section characterizes the environmental setting for the Project area for geology, soils, and mineral resources. It discusses in general terms the geology, soils, and mineral resources near Western's transmission lines, communication facilities, and access roads.

3.12.1 Affected Environment

The affected environment discussion is split into four project areas, based on the geographical and geological context: California/Southwest Arizona, South Central Arizona, West/Central Arizona, and Nevada.

3.12.1.1 California/Southwest Arizona

Geology

This section of the Project area is the most geologically diverse, exhibiting a mixture of geological units. The southernmost part of this area is mostly Quaternary deposits, including older alluvium, lake, playa, and terrace deposits on the California side, while the Arizona side includes mixtures of younger alluvium. Many pockets of Tertiary volcanic flow rocks, undivided Tertiary sedimentary rock, undivided pre-Cenozoic metasedimentary and metavolcanic rocks of great variety, schist of various types, and Mesozoic granite mixtures are present.

The northernmost part of this area is less dominated by Quaternary deposits, and contains a more diverse mix of various geologic units, including undivided Tertiary sedimentary rock, complexes of Precambrian igneous and metamorphic rocks, Tertiary volcanic flow rocks, mixed Tertiary sedimentary rocks, undivided pre-Cenozoic metasedimentary and metavolcanic rocks, and undated granitic rocks.

The central parts of this area cross large areas of Quaternary deposits, with similar geologic units found in the north and south mixed in, but to a lesser degree (CGS, 2010a; AZGS, 2013).

Seismicity

The Project ROW appears to cross several faults on the Arizona side, though these faults are not recently active (AZGS, 2013 & USGS, 2012). There are no known active faults that underlie the Project ROW on the California side (CGS, 2010).

Soils

The sole general soil type on the southwest Arizona side are aridisols[2], while the California side includes aridisols, entisols[3], and miscellaneous areas (USDA NRCS, 2013). The miscellaneous areas are large regions of rock outcrops.

Mineral Resources

On the California side, the main mineral resources found within the area are gypsum, gold, and construction sand and gravel (USGS, 2009a). The southwest Arizona side contains construction sand and gravel as the main mineral resource (USGS, 2009).

3.12.1.2 Nevada

Geology

The Nevada project area is the smallest of the four, and therefore one of the least geologically diverse. Quaternary deposits containing older alluvium are present for most of the area, with granite deposits of various ages and Tertiary intrusive rocks in smaller pockets throughout (SWReGAP, 1996).

Seismicity

A total of eight faults underlie the Project ROW within the Nevada project area (USGS, 2012a). These faults do not appear to be recently active (USGS, 2012).

Soils

The only two general soil types within the Nevada portion of Project include entisols and aridisols (USDA NRCS, 2013).

Mineral Resources

Titanium, dimension stone, and construction sand and gravel are the main mineral resources found within this area (USGS, 2008).

3.12.1.3 South Central Arizona

Geology

The project area south of Tucson is a repeating, sequential pattern of Quaternary deposits, with younger and older alluvium, mixtures of volcanic rock, carbonate-dominated formations, and shale-dominated formations. North of Tucson to the Phoenix area, the geologic deposition is much simpler, largely dominated by Quaternary deposits containing younger alluvium, with smaller pockets containing mixtures of volcanic rocks (AZGS, 2013).

[2] Aridsols are a soil order that contains a very low concentration of organic matter and is water deficient. These soils form in an arid or semi-arid climate and are common in desert regions.

[3] Entisols are a soil order that contains weakly developed soils, typically not showing profile development beyond the A horizon. These soils are essentially unaltered from their parent material.

Seismicity

The Project ROW appears to cross a detachment fault, just north of Tucson, though this fault does not appear to be recently active (AZGS, 2013; USGS, 2012).

Soils

The dominant general soil type are aridisols, with small areas of entisols mixed throughout, as well as one large patch of inceptisols[4] (USDA NRCS, 2013).

Mineral Resources

Crushed stone, clay, construction sand and gravel, copper, gypsum, perlite, vermiculite, and salt are the main mineral resources found within this area (USGS, 2009).

3.12.1.4 North/Central Arizona

Geology

The more centrally located area, northwest of Phoenix, contains a large percentage of Quaternary deposits, with younger alluvium, and numerous pockets of more diverse geologic units, specifically on the far western edge. These pockets include mixtures of volcanic rock, including Precambrian units and carbonate-dominated formations. The western end contains Quaternary volcanic rock flows, symbolizing relatively recent volcanic activity.

The area north of Phoenix and traveling west to the Nevada state line is a much larger region, though it does not display much diversity. It is mainly composed of Quaternary deposits containing younger and older alluvium, numerous complexes of Precambrian igneous and metamorphic rocks, Tertiary volcanic flow rocks, as well as Quaternary volcanic rock flows, symbolizing relatively recent volcanic activity (AZGS, 2013).

Seismicity

There are no known active faults that underlie the Project ROW for the North/Central Arizona project area (AZGS, 2013).

Soils

The more centrally located area, northwest of Phoenix, is dominated by the general soil type aridisols, with small inclusions of entisols mixed throughout. The area north of Phoenix, and traveling west to the Nevada state line, is much more diverse, including aridisols, inceptisols, vertisols,[5] entisols, alfisols,[6] and a small miscellaneous area, which is a rock outcrop.

[4] Inceptisols are a soil order having the weakest appearance of horizons and alteration of parent material. These soils are a step further in development from Entisols.

[5] Vertisols are a soil order containing high contents of clay minerals, exhibiting darker colors and variable organic matter content. These soils shrink and swell as they change water content.

[6] Alfisols are a soil order that exhibit well developed, contrasting soil horizons, normally enriched in aluminum and iron-bearing minerals. These soils normally form under forest communities and grass savannahs.

Mineral Resources

Crushed stone, construction sand and gravel, gypsum, dimension sandstone, and clay are the main mineral resources found within this area (USGS, 2009).

3.12.2 Environmental Consequences from the Proposed Action

3.12.2.1 Geology

Impacts associated with geology could occur if construction is performed on steeper, unstable slopes, disturbing the subsurface and causing slope failure, slumps, or landslides of rock. Activities may also occur in seismically active areas, and project activities may therefore be subject to hazards associated with seismic activity. Such activities would not differ from ongoing operations and maintenance along the transmission line and ROW.

Western would ensure that a certified professional geotechnical engineer will be on site to evaluate the potential for geotechnical hazards and unstable slopes, if a structure needs to be relocated or modified, as well as avoiding work on slopes over 35 percent, unless the threat of erosion is minimal.

3.12.2.2 Soils

Adverse impacts to soils could occur if the overall soil structure is affected. This can arise from heavy machinery compacting soils, destroying composition and inhibiting future plant growth. Excavation for construction activities disturbs soils, elevating soil erosion and sediment transport rates. Vegetation removal destabilizes soils and slopes, also leading to elevated erosion and sediment transport rates. A variety of proposed operations involve the use of major equipment that may disturb and erode soils. These activities include ground inspections, integrated vegetation management, access and ROW road maintenance, transmission system maintenance and upgrades, and emergency repairs. Vegetation clearance is a major component of the Project, and will occur along the access roads and transmission line ROWs as needed. Installment of new towers and transmission upgrades may also occur, involving excavation and digging.

Western would ensure that impacts would be minimized or avoided by preventing soil erosion, ensuring soil conditions are left to facilitate proper vegetation regrowth, and minimizing disturbance and removal of soils and vegetation as much as possible. In addition, mastication machinery would not be used in areas that have recently received heavy rain, to avoid rutting in wet soils.

3.12.2.3 Mineral Resources

Impacts to mineral resources may occur if the loss of availability of a mineral resource is created by Project activities such as limiting access, removing a mineral site, or using the resource for the Project, making it unavailable to the area. Due to the nature of the Project, which is comprised of continued maintenance of transmission line facilities, potential impacts to mineral resources would be temporary and site-specific, limited to potential access restrictions associated with the presences of construction vehicles and equipment on access roads.

3.12.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue its need-driven management approach using current methods for ROW and transmission line maintenance. Impacts associated with geology, soils, and minerals would be the same as the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. Impacts to geology, soils, and mineral resources due to vegetation management activities may be less under the No Action alternative.

3.13 Air Quality

3.13.1 Affected Environment

The following sections describe the affected environment for air quality for each of the four study regions identified in Section 1 (Introduction), Figure 1-1 and described in section 1.2. Because the Project is dispersed throughout each of the four study areas, the affected environment is presented for those air quality districts containing the transmission system.

3.13.1.1 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 of time, resulting in sustained exposure to pollutants present. Recreational land uses 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. In addition, 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.

3.13.1.2 Air Quality Conditions

Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards (AAQS) and region-wide pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. Toxic air contaminants (TACs) refer to a category of air pollutants that pose a present or potential hazard to human health, but that tend to have more localized impacts than criteria air pollutants. Reactive organic gasses (ROG) and nitrogen oxides (NOx) are also regulated as criteria pollutants because they are precursors to ozone formation. Certain ROGs may also qualify as TACs. Two subsets of particulate matter are: inhalable particulate matter less than 10 microns in diameter (PM10) and fine particulate matter less than 2.5 microns in diameter (PM2.5). Several of the gaseous criteria pollutants (nitrogen oxides [NOx], ROG, sulfur oxides [SOx]) and other pollutants such as ammonia also react together in the atmosphere to create fine aerosol secondary particulate matter.

The quality of surface air (air quality) is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects on public health. The degree of air quality degradation is then compared to the ambient air quality standards. The Action area crosses air basins within three states: Arizona, California, and Nevada. Applicable AAQS include the National, California, and Nevada Ambient Air Quality Standards (NAAQS, CAAQS, and Nevada AAQS). The applicable AAQS relevant to the

Project are provided in Table 3.13-1. As shown, Arizona only uses the NAAQS, with both the NAAQS and the state specific AAQS applying in California and Nevada.

Table 3.13-1. National, California, and Nevada Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[1]	California Standards	Nevada Standards	Health Effects
Ozone (O_3)	1-hour	—	0.09 ppm	0.12 ppm	Breathing difficulties, lung tissue damage
	8-hour	0.075 ppm	0.07 ppm	—	
Respirable particulate matter (PM10)	24-hour	150 µg/m3	50 µg/m3	150 µg/m3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	—	20 µg/m3	50 µg/m3	
Fine particulate matter (PM2.5)	24-hour	35 µg/m3	—	—	Increased respiratory disease, lung damage, cancer, premature death
	Annual	12 µg/m3	12 µg/m3	—	
Carbon monoxide (CO)	1-hour	35 ppm	20 µg/m3	—	Chest pain in heart patients, headaches, reduced mental alertness
	8-hour	9.0 ppm	9.0 ppm	▪ <5,000' above mean sea level = 9 ppm ▪ >5,000' = 6 ppm ▪ elevation = 35 ppm	
Nitrogen dioxide (NO_2)	1-hour	0.100 ppm	0.18 ppm	—	Lung irritation and damage
	Annual	0.053 ppm	0.03 ppm	0.053 ppm	
Sulfur dioxide (SO_2)	1-hour	0.075 ppb	0.25 ppm	—	Increases lung disease and breathing problems and asthmatics
	3-hour	—	—	0.5 ppm	
	24-hour	0.14 ppm	0.04 ppm	0.14 pm	
	Annual	0.03 ppm	—	0.03 ppm	

ppm = parts per million; µg/m3 = micrograms per cubic meter; "—" = no standard

1 - Arizona uses the NAAQS and has no separate AAQS, while California and Nevada are subject to the NAAQS and the separate state AAQS shown.

Source: ADEQ 2014a, CARB 2014a; BAQP 2014a.

The Project crosses the jurisdictions of the following regional and local air quality districts within the four study regions (refer to Section 1, Figure 1-1):

- **Nevada Study Region:** Nevada Bureau of Air Quality Planning (BAQP), Clark County Department of Air Quality
- **Arizona Study Regions:** Arizona Department of Environmental Quality (ADEQ), Maricopa County Air Quality Department, Pinal County Air Quality Control District, and Pima County Department of Environmental Quality
- **California Study Region:** California Air Resources Board (CARB), Mojave Desert Air Quality Management District (MDAQMD), and Imperial Air Pollution Control District (IAPCD)

The USEPA, ADEQ, CARB, BAQP, and local air districts classify an area as being in attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards presented in Table 3.13-1, respectively. Table 3.13-2 identifies the most currently available attainment status for the Project area. For the portion of the system within Arizona, segment names are provided for those in nonattainment areas (refer to Section 1.0, Table 1-1 and Figure 1-1).

Table 3.13-2. Attainment Status for Parker-Davis System Study Regions

ARIZONA STUDY REGIONS			
Pollutant		State and Federal	
Ozone	1-hour	—	
	8-hour	*Marginal Nonattainment:* Phoenix-Mesa Region (Maricopa and Pinal Counties) *Unclassifiable/Attainment*: All other areas	
PM10		*Serious Nonattainment:* Phoenix Planning Area (Maricopa and Pinal Counties) *Moderate Nonattainment:* West Pinal Planning Area (Pinal County), Rillito Planning Area(Pima County), Ajo Planning Area (Pima County), Yuma Planning Area (Yuma County) *Attainment/Maintenance:* Bullhead City (Mohave County) *Unclassifiable/Attainment:* All other areas	
PM2.5		*Nonattainment:* West Central Pinal Region (Pinal County) *Unclassifiable/Attainment:* All other areas	
CO		*Attainment/Maintenance:* Phoenix Region (Maricopa County), Tucson Region (Pima County) *Unclassifiable/Attainment*: All other areas	
NO_2		Unclassifiable/Attainment	
SO_2		Unclassifiable/Attainment	
CALIFORNIA STUDY REGION			
MDAQMD			
Pollutant		State	Federal
Ozone	1-hour	Moderate Nonattainment	—
	8-hour	Nonattainment	Unclassifiable/Attainment
PM10		Nonattainment	*Moderate Nonattainment:* San Bernardino County *Unclassifiable/Attainment:* All other areas
PM2.5		Unclassified	Unclassifiable/Attainment
CO		Unclassified	Unclassifiable/Attainment
NO_2		Attainment	Unclassifiable/Attainment
SO_2		Attainment	Unclassified
IAPCD			
Pollutant		State	Federal
Ozone	1-hour	Moderate Nonattainment	—
	8-hour	Nonattainment	Marginal Nonattainment
PM10		Nonattainment	Serious Nonattainment: Imperial Valley Planning Area Unclassifiable/Attainment: All other areas
PM2.5		Attainment	Unclassifiable/Attainment
CO		Attainment	Unclassifiable/Attainment
NO_2		Attainment	Unclassifiable/Attainment
SO_2		Attainment	Unclassified
NEVADA STUDY REGION			
Pollutant		State	Federal
Ozone	1-hour	Attainment	—
	8-hour	—	Attainment (Maintenance)
PM10		Serious Nonattainment	Attainment and Serious Nonattainment

Table 3.13-2. Attainment Status for Parker-Davis System Study Regions

PM2.5	Unclassified	Unclassifiable/Attainment
CO	Attainment	Attainment and Attainment (Maintenance)
NO_2	Attainment	Unclassifiable/Attainment
SO_2	Unclassified	Unclassified

"—" = no standard
Source: USEPA, 2014; ADEQ, 2014b; CARB, 2014b; Clark County, 2014a.

3.13.1.3 Valley Fever

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of *arthroconidia* (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte (an organism, especially a fungus or bacterium, which grows on and derives its nourishment from dead or decaying organic matter) in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne.

The Project is located entirely within areas designated as endemic for Valley Fever, as follows (CDC 2014):

- **Nevada Study Region:** Suspected Endemic within this entire area.
- **North/Central Arizona Study Region:** Mildly Endemic to the north and along the western boundary, Moderately Endemic within the central portion, and Highly Endemic within the south central portion of this study region.
- **South Arizona Study Region:** Mildly Endemic along the western boundary and Highly Endemic within the central and eastern portions of this study region.
- **California Study Region:** Suspected Endemic within this entire area.

Agricultural workers, construction workers, and other people who are outdoors and are exposed to wind, dust, and disturbed topsoil are at an elevated risk of contracting Valley Fever.

3.13.2 Environmental Consequences from the Proposed Action

In general, air quality impacts from the Proposed Action would be minimal. Maintenance activities would be temporary, intermittent, of short duration, and dispersed along the Project ROW. The Proposed Action would not involve the installation of significant stationary source of air pollution. Western would ensure mobile source emissions and ground disturbance would be minimal and localized, and would not cause air basin or district-wide changes to air quality. Western's activities toward decreasing air quality impacts include:

- Western will adhere to requirements of agencies having jurisdiction over air quality, and will obtain required permits.
- Machinery and vehicles will be kept in good operating condition and as equipment ages, it will be replaced with equipment meeting the most recent emission standards; required emissions-control equipment will be maintained for vehicles and equipment, per applicable EPA, Arizona, California, and Nevada standards.

- Idle equipment will be shut down when not in use; visible emissions from stationary generators will be controlled.
- Dust-control measures will be implemented during ground disturbing activities, road construction and maintenance, and as needed during other activities. Trucks transporting loose material will be covered or maintain at least 2 feet of freeboard and will not create visible dust emissions.
- Grading activities will cease during periods of high winds (as determined by local air quality management districts).
- Major operations will be avoided on days when the local Air Quality Index (AQI) is expected to exceed 150.[7]

3.13.2.1 Category A – Inspection and Minor Maintenance

Some examples of Category A activities that could affect air quality include ground and aerial patrols; emergency manual removal and pruning of danger trees or vegetation; and maintenance and inspection of towers, conductors, and insulators. The primary cause of air quality impacts associated with these activities is exhaust from vehicles and fugitive dust emissions from vehicle travel over transmission line ROW unpaved roads. Removal of vegetation could also lead to the localized emission of fugitive dust when bare ground is disturbed.

Potential emission impacts would be avoided or minimized through implementation of the air quality SOPs (as identified above and in Appendix A). While all SOPs are applicable, those most relevant for Category A activities include: (1) adhere to all daily emission thresholds for agencies having jurisdiction over the work area, (2) the requirement that all equipment be kept in good operating condition to reduce exhaust emissions for all machinery and vehicles (such as chainsaws, trucks, and graders); (3) the prohibition against idling equipment that is not in active use; and (4) the requirement that vehicles and equipment maintain emissions-control equipment and be permitted as required.

3.13.2.2 Category B – Routine Maintenance

The Category B activity that would be most likely to cause air quality effects is emissions from equipment use and fugitive dust from ground disturbing activities.

The increased exhaust emissions and potential for dust emissions during Category B activities would be avoided or minimized by: 1) adhering to all daily emission thresholds for agencies having jurisdiction over the work area (as identified above in Section 3.13.1.2); 2) utilizing dust-control measures such as water or chemical suppressants for road construction activities; 3) re-seeding of ground surfaces that have been significantly disturbed to prevent wind erosion; 4) regular watering of exposed soils and unpaved access roads during maintenance activities; and 5) cessation of grading activities during periods of high wind.

3.13.2.3 Category C – New Infrastructure

Category C activities have the largest potential to cause air quality impacts. This is due to increased emissions from potential use of large equipment, use of more pieces of equipment, and the potential for larger disturbance areas. Dust emissions would also be increased with the addition of new access roads.

[7] The AQI is an index for reporting daily air quality. The AQI measures from 0-500, with higher AQI values indicating greater levels of air pollution. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 150 represents unhealthy air quality for all population, with members of sensitive groups possibly experiencing more serious effects.

Similar to grading an existing access road, new road construction could cause fugitive dust emissions (possibly of greater magnitude than simple grading). Construction of a new access road would require the use of heavy machinery that would emit exhaust that could adversely affect air quality. The relocation or realignment of towers or poles under Category C could also produce similar air quality impacts; both through fugitive dust emissions and equipment emissions.

Western would avoid or minimize the effects of the activities under Category C by using reasonably practicable methods and devices to control, prevent, and minimize atmospheric emissions of air contaminants. To further reduce local impacts of project activities, Western would avoid major operations on days when the local AQI is expected to exceed 150 (see footnote 7). However, as shown in Table 3.13-2, the Project ROW crosses areas of nonattainment with criteria pollutants. To ensure major projects do not result in noncompliance with general conformity, Mitigation Measure 3.13-2 is proposed.

MM 3.13-2 Major operation and maintenance activities occurring in nonattainment and attainment/ maintenance areas shall first conduct emission estimates to ensure compliance with applicable general conformity regulations.

3.13.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue routine maintenance activities along the Project ROW, requiring negotiations documented in a categorical exclusion for each particular maintenance task. The activities conducted under the No Action Alternative would be the same as those conducted under the Proposed Action. Therefore, impacts to air quality under the No Action Alternative would be similar to impacts under the Proposed Action.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, because vegetation management under the Proposed Action is more aggressive than the No Action alternative, potential air quality impacts due to vegetation management activities may be less under the No Action alternative.

3.14 Hazardous Materials

3.14.1 Affected Environment

The following section describes the affected environment for hazardous materials used currently within the Project area. Hazardous substances are defined by federal and state regulations to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14).

3.14.1.1 Herbicides

Western's "Transmission Vegetation Management" used under current maintenance activities was created in response to new federal standards, and was subsequently approved on May 28, 2013. The vegetation management program focuses on the removal of vegetation to protect facilities from fire, control the spread of noxious weeds to protect environmental quality, establish and maintain stable, low-growing plant communities in the ROW, and establish activities to protect public and worker safety around transmission lines and other facilities. A main aspect of current vegetation management with respect to hazardous materials is the use and application of herbicides.

Current Western maintenance practices within the Project ROW include the use of herbicides for vegetation management. All herbicides currently used by Western are registered for use by the USEPA, California Department of Pesticide Regulation, Arizona Department of Agriculture, and Nevada Department of Agriculture. Other local agencies and land managers may have additional requirements or restrictions to follow. Special restrictions may also be set forth on federally owned land.

3.14.1.2 Miscellaneous Fuel

Equipment currently employed in the operation and maintenance activities require fuel (such as diesel fuel and gasoline) and other general substances for upkeep of equipment (such as oil and grease). This equipment includes several different types of trucks, dozers, ATVs, chainsaws, and other brush-cutting tools. California Department of Toxic Substances, ADEQ, and Nevada Division of Environmental Protection serve as the main state regulatory agencies for toxic substances control. These agencies are only involved if a substantial spill of these substances occurs and contaminates soil, water and other resources. These substances are used as necessary within the ROW and maintenance staging areas.

3.14.2 Environmental Consequences from the Proposed Action

3.14.2.1 Herbicides

For a detailed description on Western's herbicide application procedures, see Section 2.2.2.1. Herbicide use under the Proposed Action would be limited to within the ROW and access road boundaries. Herbicide applicators and other maintenance workers would be those exposed to herbicides during normal application and use. If a spill were to occur, herbicide applicators and maintenance workers will be exposed to a more substantial level of herbicide. Direct and indirect exposure to the public is possible, but limited to either touching or consuming plants that have been treated with herbicide, eating animals that have consumed herbicide-treated plants, drinking water that may have been contaminated by herbicide runoff or spills, or airborne drift. The potential for public exposure is considered very low. Both the ROW and access roads are private, restricting and prohibiting public access, thereby minimizing or avoiding public exposure to these potential hazards.

As discussed in Sections 3.11.2.1 (Groundwater) and 3.11.2.2 (Surface Water), impacts to surface water could occur if an accidental release of herbicides drifts or flows into surface water. Vegetation management may affect water quality by decreasing the natural buffer and filtration capabilities that vegetation provides within the ROW where herbicide would be applied. This may cause surface water runoff and sediment loading in surface water. Western would minimize or avoid these effects through compliance with the SWRCB runoff control measures and compliance with the SWPPP. Western would further provide proper management of herbicides to avoid overspray and potential contamination of surface water or land outside the ROW and application area. Compliance with federal agency regulations listed in section 3.14.1.1., also would minimize or reduce impacts from use of herbicides. Western also requires training and licensing of herbicide applicators, compliance with herbicide label and material safety data sheet instructions, assessment of climate, geology, and soil types before selecting and applying herbicide, herbicide spill cleanup requirements, and several other measures. BLM-approved herbicides listed under Appendix B will be applied only on BLM land, ensuring use of unapproved herbicides does not occur.

3.14.2.2 Miscellaneous Fuel

Maintenance workers may be exposed to fuels, greases, and other hazardous materials during maintenance activities included under the Proposed Action. If an accidental spill occurs, maintenance workers will be responsible for the cleanup and proper disposal of contaminated soil spoils. As discussed in Sections 3.11.2.1 (Groundwater) and 3.11.2.2 (Surface Water), impacts would be minimized or avoided. For hazardous materials and stormwater runoff, Western would conduct daily vehicle inspections for fluid leaks, compliance with the SWRCB runoff control measures, and compliance with the SWPPP. Western would further provide proper management of hazardous materials to avoid contaminating surface water by hazardous materials, and would place fill and riprap and use bridges at stream crossings whenever possible. Western prohibits some activities within 100 feet from surface waters, and requires culvert or other in-stream work to be done during no-flow or low-flow season.

Western's spill response plans and measures for providing training to all crews and workers, including hazardous materials pre-maintenance awareness training and annual awareness training related to hazardous materials, and general cleanup/remediation of all hazardous materials in accordance with applicable federal, state, and local regulations help further reduce impacts.

3.14.2.3 Other Hazardous Waste

Other hazardous wastes, such as contaminated soil spoils and treated wood poles, may be generated during Proposed Action activities. Western would ensure that hazardous wastes be properly disposed of consistent with all applicable regulations, thereby minimizing or avoiding impacts associated with miscellaneous hazardous waste.

3.14.3 Environmental Consequences from the No Action Alternative

Under the No Action Alternative, Western would continue its need-driven management approach using current methods for ROW, transmission line, and substation maintenance.

Vegetation management under the No Action alternative would continue to be need-driven where vegetation control needs are identified through periodic line patrols. Therefore, vegetation management under the Proposed Action is more aggressive than the No Action alternative. The increase in activities as a result of the IVM program may result in the potential for increased use of herbicides and other fuels under the Proposed Action in comparison to the No Action alternative.

3.15 Intentional Destructive Acts

3.15.1 Affected Environment

The DOE Office of NEPA Policy and Compliance issued guidance on the need to consider intentional acts of destruction (e.g., terrorism, vandalism) in NEPA documents (DOE 2006). Power transmission facilities are part of America's critical infrastructure and are considered to be possible targets of intentional acts of destruction. Potential aggressors include terrorists hoping to cause disruption, or activists targeting facilities for other reasons. A more likely occurrence is acts of opportunity, such as individuals shooting at or vandalizing insulators or structures.

3.15.2 Environmental Consequences from the Proposed Action

Similar to other overhead electrical transmission and substation infrastructure, intentional destructive acts may be directed at Western's transmissions system and facilities within the project area. Destroying a tower or equipment could disrupt the supply of electricity, in turn affecting utility customers and end users. The extent and duration of this impact would depend upon the specific role and relationship of damaged or destroyed equipment to and within the overall infrastructure network (i.e., the potential for cascading effects), as well as upon the degree of damage. However, as opposed to acts of terrorism, vandalism and theft are more likely forms of destruction. Although potentially costly, such acts do not usually disrupt the provision of electricity or have significant environmental effects.

The incidence of an intentional destructive act is speculative, and could occur at any location along the 1,534-mile ROW or at substations. Based on past occurrences, if an act were to take place, it would likely result in minor or negligible environmental impacts.

3.15.3 Environmental Consequences from the No Action Alternative

Impacts for the No Action Alternative would be the same as those described in the Proposed Action.

4.0 Cumulative Effects

As defined by Council on Environmental Quality (CEQ) Regulations at 40 CFR Part 1508.7, cumulative impacts are those that "*result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (Federal or non-Federal) or individual who undertakes such other actions*." Therefore, a cumulative impact analysis captures the effects that result from the Proposed Action in combination with the effects of other actions in the Proposed Action's region of influence.

4.1 Cumulative Impact Analysis

The cumulative analysis is based on the recommended methodology for the assessment of cumulative impacts, which was developed jointly by the U.S. Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), and the California Department of Transportation within "*Defining Cumulative Impact, Approach and Guidance*" (EPA, FHWA, and California Department of Transportation, 2005). This methodology identifies eight steps for a cumulative impact analysis, as utilized within this section:

1. **Identify resources to consider in the cumulative impact analysis**. Chapter 4 addresses the Proposed Action's impacts on the following resources: Land Use and Aviation, Recreation, Human Health and Safety, Visual/Aesthetics, Noise, Cultural Resources, Wildlife, Special-status Species, Vegetation, Water Resources/Floodplains/Waters of the U.S., Geology/Soils/Mineral Resources, Air Quality, Hazardous Materials, and Intentional Destructive Acts.
2. **Define the study area for each resource**. Defining the study area for each resource is a critical step in the cumulative impact analysis and is not always the same for each environmental resource. The geographic boundary for each resource is described under the Affected Environment subsections in Chapter 3.0 (Affected Environment and Environmental Consequences) for each resource area.
3. **Describe the current health and historical context for each resource**. Chapter 3, Affected Environment and Environmental Consequences, describes the current status of the resources along with a background of the resource on how it reached its current condition. The current status of the resource takes into account past and present projects within each resource's study area. Table 4-1 lists the cumulative projects considered in the cumulative impact analysis. This table contains past, present, and reasonably foreseeable actions.
4. **Describe direct and indirect impacts of the proposed project that might contribute to a cumulative impact**. The individual impacts of the Proposed Action are described in Section 3. The results of Proposed Action impacts are brought forward into this chapter for the discussion of cumulative impacts.
5. **Identify other reasonably foreseeable actions that affect each resource**. As described under Step 3, Table 4-1 lists cumulative projects considered in the cumulative impact analysis for the Proposed Action. This table includes past, present, and reasonably foreseeable future actions in the study area defined for each resource listed in Step 1. Due to the ongoing timeframe of Operation and Maintenance activities defined in the Proposed Action, reasonably foreseeable actions will include projects anticipated to be completed by 2025.

6. **Assess potential cumulative impacts**. The cumulative impact analysis is primarily qualitative due to the absence of detail for most of the reasonably foreseeable future projects in the study area. The assessment discussion indicates whether the Proposed Actions could have additional cumulative impact, when considered in conjunction with the listed cumulative projects, and describes the anticipated extent of the Proposed Action's contribution to the cumulative impact expected to result from past, present, and reasonably foreseeable future actions. Because ROWs are linear in nature, relatively narrow, and spread out over a large geographic area, a ROW maintenance program would only be expected to contribute relatively minor impacts when considered together with other actions in a Project area.
7. **Report the results**. The cumulative impact assessment results are presented for each resource in Section 4.2.
8. **Assess the need for mitigation**. Western policy is to avoid impacts when possible and reduce impacts when avoidance is not possible. Mitigation measures to avoid or reduce impacts are listed in Section 3 by resource area. In addition to avoiding or reducing impacts resulting from the Proposed Action, these mitigation measures would avoid or reduce cumulative impacts.

4.2 Cumulative Projects

Table 4-1 lists cumulative projects that were identified in the study area based on readily available information. A search was conducted within each county and federal regulatory agency jurisdiction encompassing the study area. The number of search results obtained and the amount of detail acquired about each project varies due to the extent of information made available by each information source. Current status of these cumulative projects may change and proposals for new projects may be developed. Table 4-1 provides cumulative projects as divided by the Parker-Davis Transmission System (as discussed in Section 1, Table 1-1) by Nevada, North/Central Arizona, South Arizona, and California. The table indicates the responsible agency, name, location, description, and timeframe for each project.

Table 4-1. Cumulative Project List

Responsible Agency	Project Name	Location	Status	Description	Timeframe
NEVADA					
Bureau of Land Management/ Clark County	Techren Boulder City Solar Project	15 miles southeast of Las Vegas and 7 miles southwest of Boulder City, Clark County	Approved, Record of Decision 3/21/13.	Construction and maintenance of a new 300 MW photo-voltaic solar facility on 2,200 acres of Boulder City Land with 104 acres of Federal Transmission Corridor	Present
Bureau of Land Management	Copper Mountain Solar North Project	Mobile Valley, 8 miles west of Maricopa, Maricopa County	Operation and Maintenance	Construction and maintenance of a new 300 MW photo-voltaic solar facility on 1,730 acres.	Present
Bureau of Land Management	Copper Mountain III Transmission Project	Copper Mountain Solar North Project to the existing Merchant and McCullough Substations Boulder City, Clark County	Operation and Maintenance	Construction and maintenance of a 230-kV generation power line from the Copper Mountain Solar North Project to the Merchant and McCullough Substations.	Present
Bureau of Land Management	Ivanpah to El Dorado Transmission Project	Ivanpah substation in eastern San Bernardino, County to the Eldorado Substation in Boulder City, Clark County	Operation and Maintenance	Construction, maintenance, and upgrade of 35-mile double-circuit 220-kV transmission line and construction of the new Ivanpah 220/115-kV substation.	Present
Bureau of Land Management	Southwest Intertie Project-Southern Portion	Harry Allen Substation in Las Vegas, Clark County, to the Thirtymile Substation in Ely, White Pine County	Operation and Maintenance	Construction and maintenance of 235 miles of new 500-kV transmission line and associated facilities.	Present
Bureau of Land Management	One Nevada Transmission Line Project	Harry Allen Substation in Las Vegas, Clark County, Nevada to a new substation in Robinson Summit, White Pine County	Operation and Maintenance	Construction and maintenance of 236 miles of new 500-kV transmission line and associated facilities.	Present
Nevada Public Utilities Commission	Townsite Solar Project	Boulder City, Clark County	Approved 6/2013; Environmental review	Construction and maintenance of a 180 MW photovoltaic solar facility, 2.45 gen-tie line, and associated facilities.	Reasonably Foreseeable
Nevada Public Utilities Commission	Dry Lake Bed South	Boulder City, Clark County	Approved 6/2013; Environmental review	Construction and maintenance of a 350-MW photovoltaic solar facility, generation line, and associated facilities	Reasonably Foreseeable

Table 4-1. Cumulative Project List

Responsible Agency	Project Name	Location	Status	Description	Timeframe
NORTH/CENTRAL ARIZONA					
Bureau of Reclamation/ Central Arizona Water Conservation District	Central Arizona Project	Colorado River at Lake Havasu on Arizona's western border to agricultural land in Maricopa, Pinal, and Pima Counties, and to several Arizona communities, including the metropolitan areas of Phoenix and Tucson.	Operation and Maintenance	Existing 336-mile-long water delivery system including 14 pumping plants and 1 pump/generating plant, 10 siphons carrying water under riverbeds and large washes, 3 tunnels, more than 45 turnouts connecting the CAP aqueduct with customers' delivery systems, and a large storage reservoir.	Present
Bureau of Land Management	Sonoran Solar Project	Southwest of Phoenix in the Little Rainbow Valley, and south of Buckeye, Maricopa County.	Approved; Record of Decision 12/19/11. Under construction.	Construction and maintenance of a new 300 MW photo-voltaic solar facility on 2,013 acres.	Present
Bureau of Land Management	Quartzsite Project	10 miles north of Quartzsite and adjacent to Arizona State Route 95, La Paz County.	Approved; Record of Decision 5/2013. Under Construction.	Construction and maintenance of a 100-MW-concentrated solar power tower on 1,675 acres.	Present
Bureau of Land Management	Maricopa Solar Park	8 miles west of the Maricopa, Maricopa County.	Environmental review; Draft EIS expected in summer 2014.	Construction and maintenance of a new 300-MW photo-voltaic solar facility on 1730 acres.	Reasonably Foreseeable
Bureau of Land Management	Hyder Valley Solar Project	Hyder Valley, north of Interstate 8, east Hyder, Maricopa County.	Environmental review; Record of Decision anticipated in spring 2014.	Construction and maintenance of a new 325-MW concentrated solar thermal facility. Two phases of construction planned; Phase 1 plans call for a 200-MW power plant, with a 28-month estimated construction period. Phase 2 would be a 125-MW power plant to be built over 24 months.	Reasonably Foreseeable
Bureau of Land Management	Mojave County Wind Farm	40 miles northwest of Kingman, Arizona.	Approved; Record of Decision 6/28/13	Construction and maintenance of a 500-MW wind farm on 35,329 acres.	Reasonably Foreseeable
Bureau of Land Management	Searchlight Wind Energy Project	Searchlight, Clark County, Nevada.	Approved; Record of Decision 5/16/13	Construction and maintenance of a 200-MW wind farm on 9,300 acres.	Reasonable Foreseeable
National Forest Service	Prescott-Poland-Childs P-25-0 APS 69kV Sub-transmission Line Permit Reissue	Prescott to Poland Junction to Childs, Arizona.	Approved 4/13/12	Reissuing of a 50-year permit for Arizona Public Service to continue operation and maintenance of 23-mile 69-kV sub-transmission line.	Reasonably Foreseeable

Table 4-1. Cumulative Project List

Responsible Agency	Project Name	Location	Status	Description	Timeframe
SOUTH ARIZONA					
Bureau of Reclamation	Yuma TS-8 to San Luis 69kV Transmission Project	TS-8 Substation in Yuma, Arizona to San Luis Substation in San Luis, Arizona, Yuma County.	Operation and Maintenance	Construction and maintenance of 19.5 miles of new 69kV transmission line and 12/69kV substation.	Present
Bureau of Land Management	Sun Valley to Morgan Transmission Project	Sun Valley Substation in Buckeye, Arizona to the Morgan Substation in Peoria, Arizona.	Record of Decision 01/2014, Pre-construction.	Construction and maintenance of 38-mile electric transmission system, consisting of a single series of tower structures holding two high-voltage circuits – a single-circuit 500-kV transmission line and a single-circuit 230-kV line.	Reasonably Foreseeable
Bureau of Land Management	SunZia Southwest Transmission Project	New SunZia East substation in Corona, Lincoln County to the Pinal Central Substation in Coolidge, Pinal County.	FEIS published in 6/14/13. Record of Decision on hold until 3rd party independent study is completed.	Construction and operation of 515 miles of new 500-kV transmission line.	Reasonably Foreseeable.
Bureau of Land Management	Southline Transmission Project	Las Cruces, New Mexico to Tucson, Arizona.	Draft EIS published 4/11/14	Construction or re-build of 360 miles of new or rebuilt 345-kV transmission line.	Reasonably Foreseeable
Western Area Power Administration	Gila to North Gila Transmission Line Rebuild and Upgrade Project	Gila to North Gila Substations, Yuma, Yuma County.	FONSI signed 3/21/2014	Rebuild and upgrade of two parallel, 4.8-mile-long transmission lines.	Reasonably Foreseeable

Table 4-1. Cumulative Project List

Responsible Agency	Project Name	Location	Status	Description	Timeframe
CALIFORNIA					
California Public Utilities Commission/Bureau of Land Management	Devers- Palo Verde No.2 Transmission Project	Devers substation in North Palm Springs, Riverside County to Valley substation in the unincorporated portion of Riverside County.	Approved Petition for Modification 11/20/09. Under construction.	Construction and maintenance of 153 miles of new 500-kV transmission line and expansion of the Colorado River Substation.	Present
Bureau of Land Management	Desert Sunlight Solar Energy Project	Six miles north of Desert Center, Riverside County.	Approved; Record of Decision 8/8/11. Under Construction	Construction and maintenance of a new 550-MW photovoltaic solar facility.	Present
Bureau of Land Management/ California Energy Commission	Genesis Solar Energy Project	25 miles west of Blythe, Riverside County.	Under construction, partially energized	Construction and maintenance of a new 370-MW solar-power tower facility.	Present
Bureau of Land Management	Ivanpah Solar Electric Generating System	4.5 miles southwest of Primm, Nevada in San Bernardino County, California.	Operation and maintenance	Construction and maintenance of a new 370-MW solar power tower facility.	Present
Bureau of Land Management	Desert Harvest Solar Energy Project	Six miles north of Desert Center, Riverside County.	Approved; Record of Decision 3/13/13.	Construction and maintenance of a new 150-MW photovoltaic solar facility.	Reasonably Foreseeable
California Energy Commission	Blythe Solar Energy Project	Two miles north of U.S. Interstate-10 and eight miles west of the City of Blythe, Riverside County.	Presiding Member's Proposed Decision and petition to amend 1/15/14 (change in ownership and technology).	Construction and maintenance of a new 500-MW photovoltaic solar facility.	Reasonably Foreseeable
Bureau of Land Management	McCoy Solar Energy Project	13 miles northwest of the city of Blythe, Riverside County.	Petition to amend approval on hold (change of ownership)	Construction and maintenance of a new 750-MW photovoltaic solar facility.	Reasonably Foreseeable
Bureau of Land Management	Palen Solar Energy Project	10 miles east of Desert Center	Presiding Member's Proposed Decision12/13/13	Construction and maintenance of a new 500-MW parabolic-trough solar facility.	Reasonably Foreseeable

4.2.1 Past Actions

The effects of past actions may warrant consideration in the analysis of the cumulative effects of a proposal for agency action. CEQ interprets NEPA and CEQ's NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive and significant relationship to those effects. However, NEPA analyses are not required to routinely list and separately analyze all individual past actions within the cumulative effects analysis area. Only those past actions that are relevant and useful because of their cause and effect relationship with the resources of concern should be included. Generally, an adequate cumulative effects analysis can be focused on the aggregate effects of past actions without delving into the historical details of individual past actions.

For this programmatic analysis, the following is a general description of the past actions that could combine with the Proposed Action to result in cumulative effects. In recent years (i.e., 2005 through early 2014), the Salt River Project (SRP) has completed construction of three major transmission lines in western Arizona, and Southern California Edison (SCE) has completed construction of one transmission line (adjacent to its Devers-Palo Verde #1 Transmission Line built in the 1980s) in southeastern California. These transmission line projects are conducting ongoing operation and maintenance activities that may result in similar temporary effects as the Proposed Action. In particular, temporary nuisance impacts, such as increased dust, noise, or traffic levels, would result from maintenance activities. However, all of these past actions have plans and mitigation measures in place to help minimize or avoid potential nuisance impacts of operations and maintenance activities. In addition, it would be difficult to predict overlapping schedules of the Proposed Action with the operations and maintenance activities of these past projects.

4.3 Cumulative Effects of the Proposed Action

The following sections discuss the cumulative effects that could occur from the Proposed Action when considered with past, present, and reasonably foreseeable future actions. However, all ROW maintenance activities would occur within a narrow corridor crossing Arizona, Nevada, and California.

4.3.1 Land Use and Aviation

Cumulative impacts to land use and aviation could occur when impacts of the Proposed Action are combined with impacts from other projects adjacent to the Project. There are several proposed projects and existing aviation facilities (see Table 3.2-2) near the Project area that could increase cumulative effects on land use and aviation. Cumulative effects on federal, state, tribal, and military lands could involve conflicts with existing land use plans and policies, and the disruption of access to private properties and public areas. In addition, potential cumulative impacts to land use and aviation could include the generation of noise, dust, and odors that could affect landowners, business owners, patrons, recreationists, and other land uses that are near the Proposed Action. However, the proposed ROW maintenance would occur for short periods and would not change land use outside of, and adjacent to, the ROW. Furthermore, Western BMPs, PCMs, and SOPs would avoid or minimize any impacts to land uses, aviation activities, and conflicts with land use plans and policies.

4.3.2 Recreation

Cumulative effects of the Proposed Action could occur if program activities combine with impacts from other projects adjacent to the Project area and disturb or displace recreation experiences. Cumulative impacts associated with the Proposed Action may also include increased noise levels, aesthetic impacts, impacts to human health and safety, or other environmental impacts that could conflict with recreation activities. However, due to the nature of program activities included in the Proposed Action, cumulative impacts are expected to be brief, local, and infrequent. In addition, Western would implement BMPs, PCMs, and SOPs for recreation, noise, aesthetics, and human health and safety, which would avoid or minimize cumulative impacts.

4.3.3 Human Health and Safety

Cumulative effects on human health and safety could result from physical hazards, fire hazards, and electric and magnetic fields from the Project, as well as other current or reasonably foreseeable future projects in the area. With regards to fire hazards, the Project lowers the potential for fires by maintaining vegetation within the ROW and ensuring operational safety. Therefore, the contribution to cumulative effects regarding fire hazards from the Project is actually a reduction. Overall hazards associated with the proposed Project will be localized, and no other current projects are located immediately adjacent to the ROW. Therefore, cumulative impacts regarding human health and safety are minimal. In addition, with the implementation of BMPs, PCMs, and SOPs, the contribution of Western's actions to cumulative effects on human health and safety would be minimized or avoided.

4.3.4 Visual/Aesthetics

Aesthetic impacts from the Proposed Action are primarily limited to temporary visual interruption from equipment and workers and permanent changes to the visual quality and viewsheds where new infrastructure, access roads, and vegetation clearance would occur. Such changes in visual contrasts and landscape appearances would primarily be visible in the foreground and slightly visible in the middleground, most notably in any areas with high to moderate visual quality. While Proposed Action activities could cause minor impacts to aesthetics in the work area; Parker-Davis Transmission System infrastructure has been in place for many years within an established ROW and is an existing component of the visual quality at any proximate viewshed. Cumulative aesthetic impacts could occur if projects identified in Table 4-1 were to combine with Proposed Action activities and further degrade the visual quality of any sensitive viewsheds. When reviewing the locations of cumulative projects identified in Table 4-1, many cumulative development projects are a considerable distance from the Parker-Davis Transmission System.

The greatest concern for potential adverse visual impacts would be in public viewsheds with high to moderate sensitivity where new access roads, new large culverts, transmission structure realignment (placement of structures in locations not currently occupied by a pole/tower), and larger installations of rip rap would result in a permanent increase to visual contrast. However, Western would implement BMPs, PCMs, and SOPs and Mitigation Measure 3.5-1 to minimize adverse aesthetic impacts to the extent feasible. As identified in Appendix A, Western will incorporate visual screening and other design techniques, to the maximum extent feasible, to reduce visual contrast of new or altered facilities where public viewsheds are impacted. Therefore, while some activities would generate visual contrast over existing conditions, because these locations are expected within or near an established and developed utility corridor, cumulative effects on aesthetic resources are not considered adverse.

4.3.5 Noise

Cumulative effects to noise could result from project activities, but would be limited to future projects identified in Table 4-1 that would occur proximate and simultaneous to maintenance work locations. Land uses near maintenance work locations would also dictate what cumulative noise levels would be considered acceptable or unacceptable. Temporary noise disturbance from the Proposed Action could occur in sensitive wildlife areas such as national parks and forests. Some residential communities could also be impacted by short-term noise disturbances. However, when reviewing the locations of cumulative projects identified in Table 4-1, it is unlikely overlapping cumulative noise effects would occur. This is due to the distance between most projects identified in Table 4-1 and the Parker-Davis Transmission System. Furthermore, Western would implement BMPs, PCMs, and SOPs to reduce noise at maintenance work areas, thereby reducing the Proposed Action's localized contribution to cumulative noise effects.

4.3.6 Cultural Resources

Cultural resources are non-renewable. Individually minor but collectively significant actions (usually in the form of ground disturbance) may have adverse effects on cultural resources. These impacts may result in a substantially adverse change in the significance of a resource, potentially jeopardizing its eligibility for listing on the NRHP. The total number of cultural resources within the proposed Project ROW and associated cultural resources study area is unknown. However, previous research in the vicinity suggests that there is a high potential to discover previously unknown resources within the study area. In addition, Western considers the Parker-Davis Transmission Line itself to be a historic district, components of which are eligible for the NRHP. With the implementation of the three PAs, BMPs, and SOPs, the contribution of Western's actions to cumulative effects on cultural resources would be minimized or avoided. Cultural resources that could not be avoided would be evaluated for significance, and significant resource would be subject to research and analysis to mitigate impacts. Although these measures would reduce most individual impacts, research and analysis cannot recover all the information value of a resource. Furthermore, some impacts, particularly impacts to resources with cultural and spiritual significance (such as sacred sites and traditional cultural properties), cannot be mitigated. The proposed Project O&M and vegetation management impacts, when combined with impacts from past, present, and reasonably foreseeable projects, may contribute in a small but substantial way to the cumulative adverse impacts for cultural resources.

4.3.7 Wildlife

The geographic scope for potential cumulative impacts to wildlife include the entire Project area, as described in Section 3.8.1. Potential cumulative effects to wildlife could include harassment, injury, and mortality; and habitat loss, modification, and degradation. These cumulative effects could occur when vegetation and other wildlife habitats are permanently or temporarily affected by multiple projects, and when multiple projects are implemented in the same general area at the same time increasing the magnitude of noise, general disturbance, and other effects. The effects of the Proposed Action, along with other construction projects in the Project area, could increase the displacement of wildlife due to habitat loss and disturbance from construction activities. Additional impacts could result from disruption of breeding and consequent loss of eggs, young animals, fledglings, or breeding adults through noise or human disturbance, collision mortality on roads, increased predation and competition due to loss of cover or increase in opportunistic predators that use the altered habitat or its edges, or direct or indirect contact with herbicides and mechanical equipment. However, Western's SOPs and PCMs, identified in Tables 2 and 3 of Appendix A and described in Section 3.8, minimize the Proposed Action's potential to result in these adverse impacts, and the contribution of Western's actions to cumulative effects is not adverse.

4.3.8 Special-status Species

The geographic scope for potential cumulative impacts to special-status species includes the entire Project area, as described in Section 3.8.1. Potential cumulative effects to special-status species could include harassment, injury, and mortality; and habitat loss, modification, and degradation. These cumulative effects could occur when suitable special-status species habitats are affected, either short-term or long-term, by multiple projects. They could also occur when multiple projects are implemented in the same general area at the same time increasing the magnitude of noise, general disturbance, and other effects. The effects of the Proposed Action, along with other construction projects in the Project area, could increase the displacement of special-status species due to habitat loss and disturbance from construction activities. Additional impacts could result from disruption of breeding and consequent loss of eggs, young animals, fledglings, or breeding adults through noise or human disturbance, collision mortality on roads, increased predation and competition due to loss of cover or increase in opportunistic predators that use the altered habitat or its edges, or direct or indirect contact with herbicides and mechanical equipment. However, Western's SOPs and PCMs, identified in Tables 2 and 3 of Appendix A and described in Section 3.8, minimize the Proposed Action's potential to result in these adverse impacts, and the contribution of Western's actions to cumulative effects is not adverse.

4.3.9 Vegetation

The geographic scope for potential cumulative impacts to vegetation include the entire Project area, as described in Section 3.8.1. Potential cumulative effects to vegetation could include removal, type conversion, or degradation. These cumulative effects could occur when vegetation are permanently or temporarily affected by multiple projects, and when multiple projects are implemented in the same general area at the same time increasing the magnitude of noise, general disturbance, and other effects. The effects of the Proposed Action, along with other construction projects in the Project area, could increase the loss or degradation of vegetation. Implementation of Western's SOPs and PCMs, identified in Tables 2 and 3 of Appendix A and described in Section 3.8, will minimize the Proposed Action's potential to result in these adverse impacts, and the contribution of Western's actions to cumulative effects is not adverse.

4.3.10 Water Resources/Floodplains/Waters of the U.S.

Cumulative effects to water resources may occur if other projects located within the same geographic and temporal scope of the Project include activities that could result in similar impacts as the Project. These activities may include soil disturbance, substantial alternation of drainage patterns, and accidental release of hazardous materials. Resulting cumulative impacts could include modification channel flow, increased erosion and sedimentation, and impedance or re-directions floodwaters, disturbance of jurisdictional waters, or contamination of surface waters. In addition, an accidental release of hazardous materials from cumulative projects that is allowed to infiltrate into a groundwater aquifer could result in cumulative impacts to the aquifer. The probability of these impacts occurring in unison is low, and several of the identified impacts associated with the Project are localized. Furthermore, with the implementation of BMPs, PCMS, and SOPs, the contribution of Western's actions to cumulative adverse effects on water resources would be negligible.

4.3.11 Geology/Soils/Minerals

Cumulative effects to geology, soils, and minerals may occur if numerous projects have similar operations, which may involve construction on steeper slopes, resulting in landslides of rock,

construction activities that may increase soil erosion or compact soils, and/or operations which may limit access to minerals. In order for these effects to occur and result in a substantial cumulative effect, these impacts would need to occur in close proximity in location and time. The nature of these impacts is temporary, and with the implementation of BMPs, PCMs, and SOPs, the contribution of Western's actions to cumulative effects on geology, soils, and minerals would be minimized or avoided.

4.3.12 Air Quality

Cumulative development within the Project area could result in cumulative air quality impacts. As shown in Table 3.13-2, portions of each study region within Arizona, California, and Nevada are in nonattainment for ozone and PM10. Additionally, portions of Arizona are in nonattainment for PM2.5 and CO. There is a possibility that pollutant emissions from Proposed Action maintenance activities could overlap with other projects in the work area resulting in an adverse cumulative impact on ambient air quality.

The Proposed Action could result in short-term and localized dust and exhaust emissions temporarily increasing criteria pollutant emissions, thus reducing air quality in nonattainment areas. However, the project alone would not result in any permanent impacts to air quality in the Project area. There would be no substantial permanent sources of emissions from the Proposed Action. The implementation of SOPs and proposed Mitigation Measures 3.13-1 and 3.13-2 would ensure maintenance activities do not have a direct adverse impact on ambient air quality. Furthermore, it should also be noted that transmission system improvements, including those that would improve access/use of renewable energy sources identified in Table 4-1 would likely reduce air pollutant emissions from the energy generation sector within the study area as a whole. Therefore, incremental cumulative effects to air quality would not be adverse.

4.3.13 Hazardous Materials

Cumulative effects from hazardous materials may occur if a large abundance of hazardous materials, such as herbicide, gasoline, engine oil, and other toxic pollutants, were spilled or not handled appropriately. Any potential spills associated with the Project would be localized, and no other current projects are located immediately adjacent to the ROW. Therefore, cumulative impacts regarding hazardous materials are minimal. In addition, with the implementation of SOPs, the contribution of Western's actions to cumulative effects associated with hazardous materials would be minimized or avoided.

4.3.14 Intentional Destructive Acts

As opposed to acts of terrorism, vandalism and theft are more likely forms of destruction. The likelihood of multiple and simultaneous destructive acts affecting public infrastructure are highly unlikely. Although potentially costly, such acts do not usually disrupt the provision of public services and utilities (i.e., water, electricity, etc.) or have substantial environmental effects. Therefore, cumulative effects would be minimal.

5.0 Compliance with Environmental Laws and Regulations

Table 5-1 summarizes laws, regulations, and guidelines that apply to the Project. Table 5-2 summarizes the required permits and authorizations for the Project.

Table 5-1. Summary of Applicable Federal Laws, Regulations, Executive Orders, and Policies

Law/Regulation	Applicability
FEDERAL	
Aeronautics and Space Title 14 Code of Federal Regulations (CFR), part 77 Objects Affecting Navigable Airspace (14 CFR 77)	Activities affecting federal airspace and aviation
American Indian Religious Freedom Act of 1978 (42 USC 1996)	Archaeological resources and tribal consultation
Archaeological Resources Protection Act, as amended (ARPA; 16 USC 470aa et seq.)	Archaeological resources and tribal consultation
Bald and Golden Eagle Protection Act	Protection of bald and golden eagles
Canal Act of 1890 (43 USC 945)	Federal Canals
Clean Air Act (42 USC 7401 et seq.)	Air pollution prevention and control emission levels of regulated pollutants
Clean Air Act General Conformity Requirements	Conformity requirements, the conformity review process, and the conformity determination process
Clean Air Act General Conformity Requirements and the National Environmental Policy Act Process (DOE)	
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 (including wetlands) of the U.S.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	Use of hazardous materials
Consultation and Coordination with Indian Tribal Governments (EO 13175)	Tribal consultation
DOE Environmental Justice Strategy	Establish/maintain integrated approach for identifying, tracking, and monitoring environmental justice
DOE Floodplain and Wetland Environmental Review Requirements (10 CFR Parts 1021 and 1022)	Revised floodplain and wetland environmental review requirements to add flexibility and remove unnecessary procedural burdens
DOE Land and Facility Use Policy	DOE policy to manage all of its land and facilities as valuable national resources
DOE NEPA Implementing Procedures	Revised regulations intended to improve DOE's efficiency in implementing NEPA requirements
DOE Policy 450.2A, Identifying, Implementing and Complying with Environment, Safety and Health Requirements, dated 05/15/96	Framework for identifying, implementing, and complying with environment, safety, and health requirements
DOE Policy 141.1: Management of Cultural Resources	Ensure programs and field elements integrate cultural resources management into their missions and activities. Raise level of awareness and accountability concerning the importance of DOE's cultural resource-related legal and trust responsibilities.
DOE Order 5400.1, General Environmental Protection Program, dated 11/09/88	Environmental-protection program requirements, authorities, and responsibilities

Table 5-1. Summary of Applicable Federal Laws, Regulations, Executive Orders, and Policies

Law/Regulation	Applicability
DOE Order 5480.4, Environmental Protection, Safety, and Health Protection Standards, dated 05/15/84	Requirements for the application of mandatory environmental protection standards
Endangered Species Act (ESA; 16 USC 1531 et seq.)	Threatened and endangered species, and critical habitat
Actions to Expedite Energy-Related Projects (EO 13212)	Energy-related projects
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-income Populations	Disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority and low-income populations.
Executive Order 13007, Indian Sacred Sites	Protection and preservation of Tribal religious practices
Federal Aviation Administration (FAR Part 77)	Safe, efficient use, and preservation of the navigable airspace
Federal Compliance with Pollution Control Standards (EO 12088)	Prevention, control, and abatement of environmental pollution
Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), As described in 40 CFR parts 150-180	Regulates the manufacture, use, storage, and disposal of chemicals, including herbicides
Federal Land Policy and Management Act	Governs management of public lands administered by the BLM and U.S. Forest Service
Invasive Species (EO 13112)	Management of noxious weeds
Federal Occupational Safety and Health Act (OSHA; 29 USC 651 et seq.)	Health and safety standards
Fish and Wildlife Coordination Act	Protection of wildlife
Floodplain Management (42 USC 4321; EO 11988)	Impacts to floodplains
Hazardous Materials Transportation Act	Transport of hazardous materials (herbicides) in significant quantities
Migratory Bird Treaty Act (MBTA; 16 USC 703-711; EO 13186)	Protection of bird species
National Environmental Policy Act (NEPA) (42 USC 4321 et seq.; CEQ, 40 CFR 1500-1508)	Federal Undertakings
National Historic Preservation Act (NHPA) (EO 11593)	Protection and enhancement of the cultural environment
National Historic Preservation Act of 1966, as amended (NHPA; 16 USC 470 et seq.; 36 CFR 800)	Historic and traditional cultural properties
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
Presidential Memorandum Dated April 26, 1994 for the Heads of Executive Departments and Agencies (60 FR 40837)	Landscaping, pollution-prevention and water-conservation guidance
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

Table 5-1. Summary of Applicable Federal Laws, Regulations, Executive Orders, and Policies

Law/Regulation	Applicability
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 undertakings
Western Area Power Administration (WAPA) Order 430.1, Right-of-Way Management Guidance for Vegetation, Encroachments, and Access Routes, dated 03/18/08	Maintenance and safe operation of Western ROWs
WAPA Order 450.3A, Transmission Vegetation Management Program, dated 03/13/08	Western approach to transmission vegetation management
STATE	
Nevada*	Nevada Administrative Code, Chapter 503 – Hunting, Fishing and Trapping; Miscellaneous Protective Measures
Arizona*	Arizona Native Plant Law; Arizona Revised Statutes Title 17 (Game and Fish)
California*	California Environmental Quality Act; California Endangered Species Act; California Public Resources Code Section 21083.4 (oak woodlands conservation); California Code of Regulations, Title 14, section 460 (protected furbearing mammals); Fish and Game Code sections 3511, 4700, 5050, and 5515 (fully protected species); Fish and Game Code sections 3503, 3503.5, and 3513 (birds, raptors, and their nests); Fish and Game Code section 4150 (nongame mammals); Fish and Game Code section 1900 et seq. (California Native Plant Protection Act); California Food and Agriculture Code section 80001 et seq. (California Desert Native Plants Act)
Federal and State Water Quality Regulations and Programs	Streambed Alteration (Fish and Game Code sections 1600-1616); Porter-Cologne Water Quality Control Act

*For lands outside of Western ROW only
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

Table 5-2. Summary of Permits and Authorizations

Permitting Agency	Permit / Authorization
Arizona Department of Agriculture	Arizona Native Plant Law compliance
Arizona State Historic Preservation Office	Section 106 compliance; review and approve potential disturbance to cultural resources on State Trust Land
Arizona Department of Environmental Quality	Compliance with Sections 401 of the Clean Water Act
Arizona State Land Department	Right-of-way permit for construction of transmission line on State Trust Land

Table 5-2. Summary of Permits and Authorizations

Permitting Agency	Permit / Authorization
California Air Resources Board	Portable Equipment Registration Program (PERP) permits for portable, not self-propelled, stationary fossil-fueled equipment to ensure compliance with California State and local air quality regulations
Arizona Department of Environmental Quality: Maricopa County Air Quality Department Pima County Department of Environmental Quality Pinal County Air Quality Control District	Applicable State and local air quality permits to ensure compliance with the federal Clean Air Act, and State/local air quality regulations
California Air Resources Board: Mojave Desert Air Quality Management District Imperial Air Pollution Control District Nevada Bureau of Air Quality Planning: Clark County Department of Air Quality	Fugitive dust control plans as necessary based on local/State regulations for construction projects.
California Department of Fish and Wildlife	California Endangered Species Act compliance; Fish and Game Code Section 1600-1603 compliance
California State Historic Preservation Office	Section 106 compliance; review and approve potential disturbance to cultural resources on State Trust Land
California State Water Resources Control Board	Compliance with Sections 401 of the Clean Water Act
Federal Aviation Administration	Submittal of FAA Form 7460-1 is required for new infrastructure or construction equipment exceeding 200-feet in height or meeting 7460-1 standards. Replacement or addition of marker balls and aviation hazards lights shall be conducted in conjunction with FAA Advisory Circular 70/7460-1K: Obstruction Marking and Lighting.
Federal Highway Administration	Permit to cross Federal Aid Highway; 4(f) compliance
Nevada Department of Wildlife	Permit to move protected species out of harm's way during construction (CGR 399)
Nevada Division of Environmental Protection	Compliance with Sections 401 of the Clean Water Act Temporary Permit for Working in Waterways
Nevada State Historic Preservation Office	Section 106 compliance; review and approve potential disturbance to cultural resources on State Trust Land
U.S. Army Corp of Engineers	Individual, Nationwide, and Regional General Permit(s) for Compliance with Section 404 of the Clean Water Act
U.S. Bureau of Land Management	Visual Resource Management System compliance for ensuring that the scenic values of BLM administered public lands are considered before allowing uses that may have negative visual impacts
U.S. Bureau of Reclamation	Easement or right-of-way use authorization for construction, operation, and maintenance of a transmission line across Reclamation-administered land
U.S. Environmental Protection Agency	Floodplain use permit
U.S. Fish and Wildlife Service	ESA compliance
U.S. Forest Service	Scenery Management System compliance for ensuring that the scenic values of USFS administered public lands are considered before allowing uses that may have negative visual impacts

6.0 Monitoring and Adaptive Management

The monitoring and adaptive management plan is intended to ensure the success of the Project while minimizing impacts. Western's 2007 IVM Program requires monitoring of O&M activities to ensure that the desired results are produced including reliable operation of Western's electric transmission system. To this end, Western continuously monitors its vegetation management practices to achieve the following IVM performance objectives:

- Protect public and worker safety;
- Prevent operational hazards, such as tall-growing trees on transmission line ROWs;
- Maintain unimpaired access to transmission facilities and ROWs;
- Protect substations, switchyards, and microwave stations from fire hazards;
- Control the spread of noxious weeds and invasive plants in compliance with state and county regulations;
- Manage vegetation growth in a technical and efficient manner;
- Protect environmental quality of water, wildlife, and aesthetic resources;
- Establish stable, low-growing plant communities native to the local area on transmission line ROWs;
- Use integrated vegetation management methods to meet objectives;
- Adhere to principles of Western's Integrated Vegetation Management Program (including WAPA Order 430.1A Right-of-Way Management Guidance for Vegetation, Encroachments, and Access Routes, WAPA Order 450.3A Transmission Vegetation Management Program, and Western's Integrated Vegetation Management Guidance Manual);
- Maintain sound relationships with landowners and managers; and
- Streamline regulatory permitting activities.

Where an O&M activity does not meet the performance objectives, adaptive management practices are implemented to modify the activity to be in compliance. This is achieved by implementing the following program objectives, in concert with the standard operating procedures and project conservation measures presented in Appendices A and B:

- Clearly delegate responsibility for monitoring reports;
- Delineate clear vegetation management objectives;
- Maintain schedules that are consistent with vegetation growth cycles and vegetation control management activities;
- Provide for groundwater and surface-water monitoring; and
- Meet guidelines for processing information and feedback.

7.0 Terms and Acronyms

AAQS	Ambient Air Quality Standards
ADEQ	Arizona Department of Environmental Quality
APE	Area of Potential Effect
AQI	Air Quality Index
ARPA	Archaeological Resources Protection Act of 1979
ATV	All-Terrain Vehicle
BA	Biological Assessment
BAQP	Bureau of Air Quality Planning
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMPs	Best Management Practices
BOR	Bureau of Reclamation
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CI	Coccidioides Immitis
CO	Carbon Monoxide
CWA	Clean Water Act
EA	Environmental Assessment
ECOS	Environmental Conservation Online System
EIS	Environmental Impact Statement
EMF	Electric and Magnetic fields
EO	Executive Order
EPA	Environmental Protection Agency
ERO	Electric Reliability Organization
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FONSI	finding of no significant impact
HR	Hydrologic Regions
HSR	Hydrologic Subregions
HUC	Hydrologic Unit Code
IAPCD	Imperial Air Pollution Control District
IVM	Integrated Vegetation Management
MDAQMD	Mojave Desert Air Quality Management District
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area

NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NF	National Forest
NHD	National Hydrologic Dataset
NHPA	National Historic Preservation Act
NO2	Nitrogen Dioxide
NPS	National Park Service
NRA	National Recreation Area
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
O3	Ozone
PCMs	Project Conservation Measures
PERP	Portable Equipment Registration Program
PM	Particulate Matter
PM10	Inhalable Particulate Matter
PM2.5	Fine Particulate Matter
ROD	Record of Decision
ROG	Reactive Organic Gases
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SO2	Sulfur Dioxide
SOPs	Standard Operating Procedures
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WA	Wilderness Areas
WAPA	Western Area Power Administration
WEAP	Workers Environmental Awareness Program

8.0 List of Preparers and Persons Consulted

This section lists the preparers of this environmental assessment (EA) and the persons and organizations consulted. Table 8-1 lists the team members from Western and their respective roles. Table 8-2 lists Aspen Environmental Group's (Western's NEPA contractor) EA section authors and their project roles, education/certifications, and years of experience. Table 8-3 lists the agencies and/or persons consulted when preparing the EA.

Table 8-1. Western Area Power Administration, Desert Southwest Region

Name	Role
Sean Heath	NEPA Document Manager, Project Description
Johnida Dockens	Environmental Planner, Biological Resources
Jill Jensen	Regional Historic Preservation Officer, Cultural Resources
Linda Marianito	Environmental Manager
Scott Paulson	Vegetation Manager

Table 8-2. Aspen Environmental Group, Contractor to Western

Name	Project Role	Education/Certifications	Years of Experience
Negar Vahidi	Project Manager	B.A. Political Science (with Highest Honors) Master of Public Administration (MPA)	18
William Walters, P.E.	Air Quality	B.S. Chemical Engineering, Professional Engineer (P.E.)	25
Scott D. White	Wildlife	B.A. Biology M.A. Biology	24
Elizabeth Bagwell, Ph.D.	Cultural Resources	Ph.D. Archaeology (Anthropology) M.A. Archaeology (Anthropology) Certificate – Archaeological Technology B.A. Anthropology and Creative Writing	23
Scott Debauche, CEP	Project Description, Human Health and Safety, Visual/Aesthetics Noise, Air Quality, Hazardous Materials	B.S. Urban Planning Board Certified Environmental Planner (CEP) #12040973	18
Justin Wood	Special-Status Species, Vegetation	M.S., Biology B.S., Biology	13
Jared Varonin	Floodplains, Waters of the U.S.	B.S. Ecology and Systematic Biology, Certified Fisheries Professional	12
Matthew Long	Water Resources/ Floodplains/Waters of the U.S.	Master of Public Policy (MPP) Master of Environmental Science (MESc) B.A., Comparative Literature	8
Aubrey Mescher	Water Resources, Geology/Soils/Mineral Resources	B.A. Environmental Studies MESM Water Resources	8
Susanne Huerta, AICP	Land Use and Aviation, Recreation	B.A. Geography Masters of Urban Planning American Institute of Certified Planners (AICP)	7
Jennifer Lancaster	Wildlife	B.S. Biology M.S. Biology	7

Table 8-2. Aspen Environmental Group, Contractor to Western

Name	Project Role	Education/Certifications	Years of Experience
Teagan Lowe	Water Resources, Geology/Soils/Mineral Resources, Human Health and Safety, Noise, Hazardous Materials	B.A. Environmental Studies M.S. Geology with an emphasis in Environmental Science	4
Moselle DiPane	Land Use and Aviation, Recreation	B.A. Geography and Natural Resource Management	2
Emily Chitiea	Document Production, Editor	B.A. English Literature	2
Mark Tangard	Document Production	B.A. Geography	40

Table 8-3. Agencies/Persons Consulted

Name	Title	Agency	Issue Area
Federal			
Patricia L. McQueary	Senior Regulatory Project Manager	U.S. Army Corps of Engineers (USACE), St. George Regulatory Office	Waters of the U.S.; Clean Water Act (CWA) Section 404 compliance
Therese Bradford	South Coast Branch Chief, Carlsbad Field Office	USACE Regulatory Office, Los Angeles District	Waters of the U.S.; CWA Section 404 compliance
Sallie Diebolt	Regulatory Branch Chief	USACE Arizona Regulatory Office	Waters of the U.S.; CWA Section 404 compliance
Marcy Leavitt	Regulatory Branch Chief	USACE New Mexico Regulatory Office	Waters of the U.S.; CWA Section 404 compliance
Nevada			
Jean Stone	Environmental Scientist III	Nevada Division of Environmental Protection	Waters of the U.S.; CWA Section 401 compliance
California			
Jay Mirpour	Region Program Manager	State Water Resources Control Board, Colorado River Basin Region	Waters of the U.S.; CWA Section 401 compliance
Arizona			
Robert Scalamera	Project Manager	Arizona Department of Environmental Quality	Waters of the U.S.; CWA Section 401 compliance
New Mexico			
Abe Franklin	Program Manager	New Mexico Environment Department Surface Water Quality Bureau	Waters of the U.S.; CWA Section 401 compliance

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10.0 Appendices

Appendix A

Western BMPs, SOPs, etc.

Table 1. Summary of Best Management Practices (BMPs) from Applicable Western Programmatic Agreements

Table 2. Summary of Standard Operating Procedures (SOPs)

Table 3. Summary of General Plant and Wildlife Project Conservation Measures (PCMs)

Table 4. Summary of Water Project Conservation Measures (PCMs)

Appendix B

Herbicides Approved for Use on BLM Lands in Accordance with the 17 Western States PEIS ROD and Oregon EIS ROD

Appendix C

Scoping Summary

Appendix D [To be provided with Final EA]

Western's Programmatic Agreements

Appendix E [To be provided with Final EA]

Biological Assessment

Appendix A

Western BMPs, SOPs, and PCMs

Appendix A, Table 1.	**Summary of Best Management Practices (BMPs) from Applicable Western Programmatic Agreements with the Advisory Council on Historic Preservation (ACHP) and State Historic Preservation Officers (SHPOs) from AZ, CA, and NV**
State/ Program/ Date	BMPs
Arizona/ Maintenance and Minor Construction Activities at Existing Western Transmission Lines, Facilities and Properties/ 2013/ Appendix D	Best Management Practices 1) Where the RPO or FPO determines that extremely dense vegetation prevents a Class III survey or where vegetation coverage provides low ground visibility <20% or where vegetation becomes a concern for crew safety such as dense areas of cacti, mesquite, tamarisk, etc., or poison oak –areas within this exclusion will be subject to close reconnaissance from surrounding areas. Areas >1 acre or >0.25 mile long that cannot be surveyed due to vegetation coverage, the RPO or FPO will consult with the land managing agency to discuss monitoring, or post-activity survey or other options if the proposed project cannot be redesigned to avoid these areas per Stipulation IV.B(2). 2) Where due to the scale of the project removal of vegetation using hand tools is not feasible, and where mechanical means of vegetation removal will use mastication machinery, the following requirements for BMP are in place: A: Mastication equipment will not be used within historic properties. B: A qualified archaeologist will monitor mastication activities in areas that cannot be surveyed to be available for discovery situations and to conduct post activity survey to identify the presence of historic properties 3) Maintenance vehicles will stay on established access roads which may be within or outside the transmission line ROW. In the event of overland travel by anything other than an off-road vehicle the incident will be reported to the Environmental Manager per Stipulation VII of the PA.
California/ Routine Operation and Maintenance Activities and Other Routine Activities at Western Facilities in California/ 2010/ Appendix C	For project areas where dense vegetation prevents a Class III survey and where due to the scale of the project area vegetation removal by hand is not feasible, mechanical means of vegetation removal using mastication machinery as defined in Appendix A may be used provided the following requirements for best management practices (BMP) are in place: 1) Western will require mastication operators to prevent blading devices from removing vegetation at ground level to avoid soil disturbance. Mowed vegetation will not be cut below 6 inches. 2) Mastication equipment will not be used within area recently subjected to heavy rains to prevent rutting in wet soils from equipment tires. 3) A qualified archaeologist will be on site during mastication activities to monitor survey areas being cleared of vegetation. If cultural resources are found, ground disturbing activities will cease in the area until an assessment and the significance of the find is made. Results of the monitoring and survey activities will be provided in the annual report.
Nevada/ Maintenance and Minor Construction Activities at Existing Western Transmission Lines, Facilities, and Properties in Nevada/2014/Appendix E	Best Management Practices 1) Where the RPO or FPO determines that extremely dense vegetation prevents a Class III survey or where vegetation coverage provides low ground visibility <20% or where vegetation becomes a concern for crew safety such as dense areas of cacti, mesquite, tamarisk, etc., or poison oak –areas within this exclusion will be subject to close reconnaissance from surrounding areas. Areas >1 acre or >0.25 mile long that cannot be surveyed due to vegetation coverage, the RPO or FPO will consult with the land managing agency to discuss monitoring, or post-activity survey or other options if the proposed project cannot be redesigned to avoid these areas per Stipulation IV.B(2). 2) Where the scale of vegetation removal with hand tools is not feasible, and where mechanical vegetation removal will use mastication machinery, the following requirements for BMP are in place: A: Mastication equipment will not be used within historic properties. B: A qualified archaeologist will monitor mastication activities in areas that cannot be surveyed to be available for discovery situations and to conduct post activity survey to identify the presence of historic properties. 3) Western's historic property avoidance measures for all non-exempt undertakings covered under this PA are as follows: • Western, whenever possible will redesign undertakings to avoid historic properties. In addition, archaeological monitoring will occur to ensure avoidance of historic properties present within the APE. In addition to archaeological monitoring, tribal

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State/ Program/ Date	BMPs
Nevada/ Maintenance and Minor Construction Activities at Existing Western Transmission Lines, Facilities, and Properties in Nevada/2014/Appendix E (cont.)	cultural monitoring may occur in certain circumstances, determined appropriate during tribal consultation. Archaeological monitors will coordinate with the crew supervisor or maintenance inspector assigned by Western as the point of contact regarding scheduled training and monitoring. Coordination with the supervisor or inspector is necessary to evaluate the location and condition of historic properties recommended for monitoring. • Prior to maintenance activities, Western's archaeologist or contractor monitoring archaeologist will complete background research on any historic property scheduled for monitoring. Research will provide information concerning the type of resource, location of artifacts and/or feature(s), and past investigations, including any previous monitoring, testing, or data recovery. Documentation of historic properties by the archaeological monitor before maintenance activities begin will consist of a boundary evaluation, photographic documentation of the current conditions, and field checking of relevant features near the maintenance activity. • Blue and white flagging, recognized by Western as demarcating sensitive areas, will be used to mark the boundary and a 30-meter buffer. Prior to ground disturbing activities, the monitor will document artifacts/features within the proposed maintenance work area, but no collections will occur. Flagging and other markings shall be removed as soon as possible to avoid calling undue attention to historic properties. • Western's archaeologist or contractor will at times also monitor within the boundaries of known historic properties, where Western determined that the undertaking is a type that would not affect the qualities that make the property eligible to the NRHP. • As part of continued coordination with Western's supervisor or inspector, the supervisor will contact the monitoring archaeologist when the project is completed. The monitoring archaeologist will then examine the monitored historic properties to take final photographs, assess condition, and remove the flagging, staking and signage within 2 weeks of project completion. • Maintenance vehicles will stay on established access roads which may be within or outside the transmission line ROW, In the event of overland travel by anything other than an off road vehicle the incident will be reported to the Environmental Manager per Stipulation VI of the PA.

Appendix A, Table 2. Summary of Standard Operating Procedures (SOPs)	
Issue Area[1]	SOPs
Aesthetics	• Select material storage and staging areas to minimize views from public roads, trails, and nearby residences, to the extent feasible. During O&M, the work site will be kept clean of debris and construction waste. For areas where excavated materials will be visible from sensitive viewing locations, excavated materials will be disposed of in a manner that is not visually evident, in coordination with the land owner (as appropriate), and in compliance with applicable regulations. • Replacement structures and hardware (e.g., conductors and insulators) will be replaced in kind, to the extent feasible, while ensuring that structures and hardware that are visible from sensitive viewing locations will have colors, finishes, and textures to most effectively blend into the visible landscape. If structures are visible from more than one sensitive viewing location, and backdrops are substantially different from different vantage points, the darker color will be selected, because dark colors tend to blend into landscape backdrops. • Maintenance operations would not unnecessarily scar or deface the natural surroundings and will preserve the natural landscape to the extent possible. To preserve vegetative screening from public areas, tree removal and vegetation clearing will be minimized along state highways and near recreation sites, and wherever possible along scenic roadways. • Western will incorporate visual screening and other design techniques, to the maximum extent feasible, to reduce visual contrast of new or altered facilities where public viewsheds with moderate to high sensitivity are impacted.
Air Quality	• Grading activities will cease during periods of high winds (as determined by local air quality management districts). • Major operations will be avoided on days when the local Air Quality Index is expected to exceed 150.
Biological and Vegetation Resources	• Mortalities or injuries to wildlife that occur from project- or maintenance-related actions will be reported immediately to the Western Environmental Affairs or other designated point of contact, who will instruct O&M personnel on the appropriate action, and who will contact the appropriate agency if the species is listed. The phone number for Western Environmental Affairs or designated point of contact will be provided to maintenance supervisors and to the appropriate agencies. • To protect nesting birds (birds not specifically protected by PCMs but protected by the Migratory Bird Treaty Act), whose nests could occur within the ROW, Western and its subcontractors will perform Category B&C O&M activities outside the nesting season, which runs from February 15 to July 31 in the Basin and Range region and from April 15 to August 31 in the Central Highlands and Colorado Plateau regions. Southern Nevada's breeding bird season runs from February 15 to August 31. Alternatively, if work will occur during this avoidance period, a qualified biologist will conduct nesting-bird surveys prior to project activities. For special-status birds, see specific PCMs. • If an active nest is discovered, the qualified biologist will establish a buffer zone (in which O&M activity is not allowed) to avoid disturbance in the vicinity of the nest. Maintenance activities will not take place until the biologist has determined that the nestlings have fledged or that maintenance activities will not adversely affect adults or newly fledged young. • Alternatively, the qualified biologist will develop a monitoring/mitigation plan that permits the maintenance activity to continue in the vicinity of the nest while monitoring nesting activities to ensure that the nesting birds are not disturbed. • When Western finalizes an avian protection plan, Western will follow the guidance in that document. • Measures described in the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee 2006) and Reducing Avian Collisions with

[1] SOPs have been grouped together by primary issue area to which they are applicable. However, many SOPs are applicable to multiple issue areas and would be implemented by Western, as applicable.

Appendix A, Table 2. Summary of Standard Operating Procedures (SOPs)	
Issue Area[1]	SOPs
Biological Resources (cont.)	Power Lines: The State the Art in 2012 (Avian Power Line Interaction Committee 2012) will be implemented during O&M activities to minimize bird mortality and injury. When Western finalizes an avian protection plan, Western will follow the guidance provided therein. Bio • O&M activities must conform to Western's Integrated Vegetation Management Environmental Guidance Manual. • The spread of noxious weeds will be minimized. Western will clean seeds from ground-disturbing equipment before moving between work sites. • All incompatible/non-desirable 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. • To protect roosting bats within the ROW, Western and its subcontractors will minimize activities around caves, mine tunnels, and rock outcrops and will avoid removal of vegetation in these areas.
Cultural Resources	• Contract crews will complete cultural resources pre-maintenance awareness training to ensure they are aware of the locations of cultural resource sites; maintenance methods to be used in areas with sensitive cultural resources; and restrictions required in cultural resources areas (i.e., SOPs and PCMs). Crews will be educated on the Archaeological Resources Protection Act, which makes it a federal offense to willfully damage or remove artifacts or materials from an archaeological site. Supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance. • Western crews will complete annual awareness training to ensure they are familiar with sensitive cultural resources and associated SOPs and PCMs. Supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. Further, Western crews will have access to the O&M GIS database in the field to be able to identify sensitive resources and associated PCMs. • Operation of vehicles or heavy construction equipment will be avoided in areas that are not designated transmission line and legal access road ROWs or other established transportation routes. This measure will minimize the possibility of disturbing unmapped cultural resources. • Upon discovery of potential buried cultural materials, work within 50 feet of the find will be halted and the discovery will be reported immediately to the Western Natural Resources Department or other designated point of contact. Western will comply with provisions in the National Historic Preservation Act and consult with the Arizona, Nevada and California State Historic Preservation Officers and tribes to determine measures to avoid the resource or mitigate during maintenance activities. • Upon inadvertent discovery of potential buried human remains, work within 50 feet of the find will be halted and the discovery will be reported immediately to the Western Natural Resources Department or other designated point of contact. Western will comply with provisions in the NHPA and the Native American Graves Protection and Repatriation Act (NAGPRA; 43 CFR Part 10) and consult with the SHPO and tribes to determine measures to avoid the resource or mitigate during maintenance activities.
Geology and Soils	• If Western needs to modify or relocate a structure, Western will have a certified professional geotechnical engineer evaluate the potential for geotechnical hazards and unstable slopes. • Upon completing ground-disturbing work, work areas will be left in a condition that facilitates natural and appropriate vegetation regrowth, provides for proper drainage, and prevents erosion. • Wet areas will be avoided to the extent practicable and activity will be minimized during winter and other wet periods to prevent damage (e.g., rutting, erosion, soil compaction). If wet areas cannot be avoided, Western will use wide-track or balloon tire vehicles and equipment or timber mats.

Appendix A, Table 2. Summary of Standard Operating Procedures (SOPs)	
Issue Area[1]	SOPs
Geology and Soils (cont.)	• Use of ground-disturbing mechanical equipment to remove vegetation will be avoided on continuous slopes over 35 percent, unless the threat of erosion was minimal because of bedrock, or reseeding will be performed. Short distances on slopes up to 40 percent will be allowable. • Where soil has been severely disturbed and the establishment of vegetation will be needed to minimize erosion, measures, as approved by the federal land manager, will be implemented to establish an adequate cover of native grass or other native vegetation as needed. Perennial vegetation is preferred to annual vegetation. Mulch and seed will be certified weed-free to prevent the spread of noxious weeds. Soil preparation, seeding, mulching, and fertilizing will be repeated as necessary to insure soil stabilization and revegetation acceptable to the federal land manager. • Disturbance and removal of soils and vegetation will be limited to the minimum area necessary for access and O&M activities. Grading will be minimized to the extent possible. When required, grading will be conducted such that run-off waters flow predominantly away from watercourses/washes to reduce the potential for material to enter the watercourse/wash. • At completion of work and at the request of the land owner/manager, work areas except access roads will be left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion.
Land Use	• Damage (e.g., to fences and gates) during maintenance activities will be repaired or replaced, and restored to their preconstruction condition. • Western will notify affected land owners for vegetation management and encroachment activities, as appropriate. Western will post proper signage in areas requiring temporary closure or limited access due to O&M activities. • Western will coordinate, as necessary, with federal, state, and local land use authorities, for each proposed activity to ensure Western's activities are consistent with land use plans and policies.
Noise	• All vehicles and equipment will have required exhaust-noise-abatement devices. • For long-term O&M activities confined to a specific area, Western's Environmental Affairs Department will be contacted to evaluate local thresholds and all requirements of those agencies having jurisdiction over noise matters.
Public Health and Hazardous Materials	• Contractors must submit a spill response plan that is approved by Western. Clean-up actions and costs resulting from contractor misconduct will be the responsibility of the contractor and approved by Western's Natural Resources Department. • All contract crews will complete hazardous materials pre-maintenance awareness training to ensure they are aware of SOPs and PCMs, as wells as pertinent regulations and the consequences for non-compliance. All supervisors and field personnel will have on file a signed agreement that they have completed the training, and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance. • All hazardous wastes will be properly disposed of consistent with all applicable regulations. • Discovery of, or the accidental discharge of hazardous materials will be immediately reported to Western's dispatch and Environmental Affairs Department. • There will be no storage of hazardous materials in the project area without approval from the authorized officer. • Upon termination of the permit, a report will be submitted to determine whether there had been site contamination and if so, that the remediation met compliance with applicable laws.

Appendix A, Table 2. Summary of Standard Operating Procedures (SOPs)	
Issue Area[1]	SOPs
Public Health and Hazardous Materials (cont.)	• 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. • There will be no aerial application of herbicides. • All herbicide spill requirements will be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures. • 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. • 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. • 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. • Hazardous materials will not be drained onto the ground, into streams, or into drainage areas. • 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. • 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. • All herbicide applicators will have received training and be licensed in application categories. • Herbicide-free buffer zones will be maintained per label instructions. • 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. • 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. • All construction waste, including trash and litter, other solid waste, petroleum products, and other potentially hazardous material will be removed in accordance with applicable federal, state, and local regulations. • Western will contact the appropriate regional notification center at least two days prior to proposed excavation. This will result in an Underground Service Alert notifying the utilities that have buried lines within 1,000 feet of the proposed maintenance activities. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. All underground electric, water, gas, cable, or telecommunications lines within the vicinity of the proposed excavation will be marked. Western will avoid impacts to marked utility locations, and will coordinate with utility owners, to avoid impacts from project activities.
Recreation	• Western will direct members of the public to alternate trails or recreation areas if blocked by machinery or for safety purposes. Western will coordinate such re-direction with the land management agency(ies).
Transportation	• All lane closures or obstructions on major roadways associated with maintenance activities will be restricted to off-peak periods to minimize traffic congestion and delays, and will be coordinated with authorities (e.g., ADOT, Caltrans). • For identified locations, structures and/or shield wire will be marked with highly visible devices (e.g., lights and marker balls) where required by governmental agencies (e.g., Federal Aviation Administration) with jurisdiction.

Appendix A, Table 2. Summary of Standard Operating Procedures (SOPs)	
Issue Area[1]	SOPs
Water Quality	• If Western needs to relocate a structure or access road, Western will consult with the USACE, as needed. Bridges will be used at new stream crossings wherever possible. Discharges of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the United States may be subject to USACE regulations under the Clean Water Act, and could require a permit. Western Natural Resources Department will be contacted. • Sediment-control devices, such as placement of native rock, will be used at all dry wash crossings. • Run-off from the maintenance site will be controlled and will meet the State Water Resources Control Board storm water requirements in the Storm Water Pollution Prevention Plan. • Impacts to areas under the jurisdiction of the USACE will be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible and the action is not covered under nationwide or other permits, Western will obtain 404/401 permits applicable to the action, as necessary. Western will perform an impact assessment for the O&M activity, which will identify and quantify the acreage of each jurisdictional area (wetland, riparian, etc.). Western will provide creation, restoration, or preservation mitigation consistent with the 404/401 permitting requirements. • All contaminated discharge water created by O&M activities (e.g., concrete washout, pumping for work-area isolation, vehicle wash water, drilling fluids) will be contained and disposed of in accordance with applicable federal, state, and local regulations. • All fill or rip-rap placed within a stream or river channel will be limited to the minimum area required for access or protection of existing Western facilities. • Vehicles will be inspected daily for fluid leaks before leaving the staging area. • Run-off control structures, diversion ditches, erosion-control structures, and energy dissipaters will be cleaned, maintained, repaired, and replaced to meet the standards set by applicable permits and the Storm Water Pollution Prevention Plan, or where such a plan is inapplicable, similar standards set by Western or the applicable federal land manager. • Excavated soil will be backfilled and tamped at the location of excavation and used to provide positive drainage, or will be hauled off site to an area appropriate for disposal of excavated material, in accordance with federal, state, and local regulations and in coordination with the land owner. • Non-biodegradable debris will not be deposited in the ROW.

Appendix A, Table 3. Summary of General Plant and Wildlife Project Conservation Measures (PCMs)		
Issue Area	Activity Category	PCM
Special Status Plant Species	A	• Follow SOPs.
	B	• If special status plant species are present, vehicle access will be permitted only on established roads until the site has been cleared by a qualified biologist. Off-road travel will be avoided to the extent possible. • A qualified biologist will mark plant populations (including appropriate buffer zone) prior to O&M activity. • Herbicide use will be prohibited at all times in the vicinity of this species with the exception of direct application to target vegetation. • Ground disturbing activities require a survey by a qualified biologist to mark existing plant populations or clear the site. Ground disturbance will be prohibited within the flagged boundary unless otherwise directed by the qualified biologist. • Standard erosion- and sediment-control measures will be installed for all ground-disturbing activities in compliance with best management practices adopted by Western to prevent impacts to plants. • A description of the O&M activity, including location and duration, will be kept on file at Western's Environmental Affairs Department in support of USFWS reporting requirements.
	C	• Follow all measures listed for A and B. • Prior to site mobilization, Western will provide notification of the O&M activity to the federal land manager, land owner, or agency.
Special Status Wildlife and Fish Species (See conservation measures in Programmatic Biological Opinion)	A, B and C	• Follow SOPs at all times • If a special-status species habitat cannot be avoided, the following will be implemented. • Protocol-level preconstruction surveys will be required or species presence will be assumed. • For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at Western's Environmental Affairs Department in support of USFWS reporting requirements. • Off-road travel will be minimized. Vehicle speeds will not exceed 25 mph on access and maintenance roads and 20 mph on unimproved access routes.
Wetlands	A	• Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction or as determined by qualified personnel based on personal observation of the soils.

Appendix A, Table 4. Summary of Water Project Conservation Measures (PCMs)		
Issue Area	Activity Category	PCM
Wetlands (cont.)	B and C	• Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction, or as determined by a qualified biologist based on personal observation of the soils). • If vegetation-management activities are proposed within 250 feet of a seasonal wetland, a qualified biologist will be present at all times to ensure the protection of the work-area limits below OR qualified personnel will clearly fence the limits of the work area, according to limits presented in the following, prior to the maintenance activity. (The herbicide restriction measures described above supersede those below where they are different.) - Mixing or application of pesticides, herbicides, or other potentially toxic chemicals will be prohibited. - Herbicide application to target vegetation by direct application methods (e.g. injection or cut-stump treatment) will be prohibited within 50 feet in the monsoon (generally July 1 to September 15) or winter rainy season (December 1 to January 31). - Herbicide application by basal spray and foliage spray methods will be prohibited within 100 feet in all seasons. - Manual clearing of vegetation (chainsaw, axe, clippers) will be allowed up to the edge of the pool or seasonal wetland in the wet seasons; a buffer will not be necessary in the dry seasons. • Mechanical clearing of vegetation (heavy-duty mowers, crawler tractors, or chippers) will be prohibited within 100 feet in the wet seasons; a buffer will not necessary in the dry season. • All equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from a grassland, or seasonal wetland, and no closer than 200 feet unless a bermed (no ground disturbance) and lined refueling area is constructed and hazardous-material absorbent pads are available in the event of a spill. Vehicles will be inspected daily for fluid leaks before leaving the staging area. • When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas. • For ground-disturbing activities, a 100-foot (wet season) or 50-foot (dry season) buffer zone from the edge of the wetland will be maintained and the wetland will be protected from siltation and contaminant run-off by use of erosion control. Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap wildlife. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. All fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed. - When feasible, ground-disturbing activities, such as installation or repair of underground components (water, power, communication, or ground electrical line) or soil borings, will maintain a 250-foot buffer zone.
	A	• The following activities will be prohibited at all times within 100 feet of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats: - vehicle access, except on existing access and maintenance roads - dumping, stockpiling, or burying of material - mixing of pesticides, herbicides, or other potentially toxic chemicals

Appendix A, Table 4. Summary of Water Project Conservation Measures (PCMs)		
Issue Area	Activity Category	PCM
		- open petroleum products • All equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from a seep, spring, pond, lake, river, stream, marsh, or their associated habitats. Vehicles will be inspected daily for fluid leaks before leaving the staging area. • When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas.
Seep, Spring, Pond, Lake, River, Stream, and Marsh	B and C	• The following activities will be prohibited at all times within 100 feet of a seep, spring, pond, lake, river, stream, or marsh, and their associated habitats: - vehicle access, except on existing access and maintenance roads - dumping, stockpiling, or burying of any material, except as required for specific O&M activities (e.g., rip-rap) - mixing of pesticides, herbicides, or other potentially toxic chemicals - open petroleum products • Equipment will be stored, fueled, and maintained in a vehicle staging area 300 feet or the maximum distance possible from a seep, spring, pond, lake, river, stream, marsh, or their associated habitats. Vehicles will be inspected daily for fluid leaks before leaving the staging area. • When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas. • For vegetation management or maintenance within 100 feet of a seep, spring, pond, lake, river, stream, or marsh, or their associated habitats, the following work-area limits will be provided (the herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different): - Only manual-clearing of vegetation will be permitted - Basal and foliar application of herbicides will be prohibited. Only direct application treatments (e.g. injection and cut-stump) of target vegetation will be allowed using herbicide approved for aquatic use by the U.S. EPA and in coordination with the federal land manager. • In-stream work, such as culvert replacement or installation, bank re-contouring, or placement of bank protection below the high-water line, will be conducted during no-flow or low-flow conditions to avoid impacts to water flow, and will be restricted to the minimum area necessary for completion of the work. • Equipment used below the ordinary high-water mark will be free of exterior contamination (i.e., grass clumps, mud, etc.). • For ground-disturbing activities, a 100-foot buffer zone will be maintained from the edge of the seep, spring, pond, lake, river, stream, marsh, or their associated habitats for protection from siltation and run-off of contaminants by use of erosion-control measures. • Erosion-control materials will be of a tightly woven natural fiber netting or similar material that will not entrap reptiles and amphibians (e.g., coconut coir matting). No monofilament plastics will be used for erosion control near seasonal wetlands. Erosion-control measures will be placed between the outer edge of the buffer and the activity area. Fiber rolls and hay bales used for erosion control will be certified as free of noxious weed seed.

Appendix A, Table 4. Summary of Water Project Conservation Measures (PCMs)		
Issue Area	Activity Category	PCM
		• Seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed, and will be composed of native species or sterile nonnative species. • Western will obtain 404 discharge and 401 water-quality permits prior to maintenance activities that must take place within jurisdictional wetlands or other waters of the US. These will be coordinated with USACE, Nevada Division of Environmental Protection, California State Water Resources Control Board, and Arizona Department of Environmental Quality, as needed. • Dewatering work for maintenance operations adjacent to or encroaching on seeps, springs, ponds, lakes, rivers, streams, or marshes will be conducted to prevent muddy water and eroded materials from entering the water or marsh. • Stream crossings will be constructed such that they permit fish to pass and reduce the potential for stream flows to increase scour, washout, or disruption of water flow. Wherever possible, stream crossings will be located in stream segments without riparian vegetation, and structure footings will be installed outside of stream banks. If Western needs to modify existing access roads or install new access roads, they will be built at right angles to streams and washes to the extent practicable. • Trees providing shade to water bodies will be trimmed only to the extent necessary and will not be removed unless they present a specific safety concern. Trees that must be removed will be felled to avoid damaging riparian habitat. They will be felled out of and away from the stream maintenance zone and riparian habitat, including springs, seeps, bogs, and other wet or saturated areas. Trees will not be felled into streams in a way that will obstruct or impair the flow of water, unless instructed otherwise. Tree removal that could cause stream-bank erosion or increase water temperatures will not be conducted in and around streams. Tree removal in riparian or wetland areas will be done only by manual methods.

Appendix B

Herbicides Approved for Use on BLM Lands in Accordance with the 17 Western States PEIS ROD and Oregon EIS ROD

*Herbicides Approved for Use on BLM Lands in Accordance with the 17 Western States PEIS ROD and Oregon EIS ROD**

Update September 25, 2012

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Bromacil	AK, AZ, CA, CO, ID, MT, ND,	Bromacil 80DF	Alligare, LLC	81927-4	Y
	NE, NM, NV, OK, OR-East, SD,	Hyvar X	DuPont Crop Protection	352-287	Y
	TX, UT, WA, WY	Hyvar XL	DuPont Crop Protection	352-346	Y
Bromacil +	AK, AZ, CA, CO, ID, MT, ND,	Bromacil/Diuron 40/40	Alligare, LLC	81927-3	Y
Diuron	NE, NM, NV, OK, OR-East, SD,	Krovar I DF	DuPont Crop Protection	352-505	Y
	TX, UT, WA, WY	Weed Blast Res. Weed Cont.	Loveland Products Inc.	34704-576	N
		DiBro 2+2	Nufarm Americas Inc.	228-227	Y
		DiBro 4+4	Nufarm Americas Inc.	228-235	N
		DiBro 4+2	Nufarm Americas Inc.	228-386	N
		Weed Blast 4G	SSI Maxim	34913-19	N
Chlorsulfuron	AK, AZ, CA, CO, ID, MT, ND,	Alligare Chlorsulfuron	Alligare, LLC	81927-43	N
	NE, NM, NV, OK, OR-East, SD,	Telar DF	DuPont Crop Protection	352-522	Y
	TX, UT, WA, WY	Telar XP	DuPont Crop Protection	352-654	Y
		Nufarm Chlorsulf SPC 75 WDG Herbicide	Nufarm Americas Inc.	228-672	N
		Chlorsulfuron E-Pro 75 WDG	Nufarm Americas Inc.	79676-72	N
Clopyralid	AK, AZ, CA, CO, ID, MT, ND,	Spur	Albaugh, Inc.	42750-89	Y
	NE, NM, NV, OK, OR, SD, TX,	Pyramid R&P	Albaugh, Inc.	42750-94	N
	UT, WA, WY	Clopyralid 3	Alligare, LLC	42750-94-81927	Y
		Cody Herbicide	Alligare, LLC	81927-28	Y
		Reclaim	Dow AgroSciences	62719-83	N
		Stinger	Dow AgroSciences	62719-73	Y
		Transline	Dow AgroSciences	62719-259	Y
		CleanSlate	Nufarm Americas Inc.	228-491	Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Clopyralid +	AK, AZ, CA, CO, ID, MT, ND,	Commando	Albaugh, Inc.	42750-92	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Curtail	Dow AgroSciences	62719-48	N
	UT, WA, WY	Cutback	Nufarm Americas Inc.	71368-72	N
2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Agrisolution 2,4-D LV6	Agriliance, L.L.C.	1381-101	N
	NE, NM, NV, OK, OR, SD, TX,	Agrisolution 2,4-D Amine 4	Agriliance, L.L.C.	1381-103	N
	UT, WA, WY	Agrisolution 2,4-D LV4	Agriliance, L.L.C.	1381-102	N
		2,4-D Amine 4	Albaugh, Inc./Agri Star	42750-19	Y
		2,4-D LV 4	Albaugh, Inc./Agri Star	42750-15	Y
		Solve 2,4-D	Albaugh, Inc./Agri Star	42750-22	Y
		2,4-D LV 6	Albaugh, Inc./Agri Star	42750-20	N
		Five Star	Albaugh, Inc./Agri Star	42750-49	N
		D-638	Albaugh, Inc./Agri Star	42750-36	N
		Alligare 2,4-D Amine	Alligare, LLC	81927-38	N
		2,4-D LV6	Helena Chemical Company	4275-20-5905	N
		2,4-D Amine	Helena Chemical Company	5905-72	N
		2,4-D Amine 4	Helena Chemical Company	42750-19-5905	N
		Opti-Amine	Helena Chemical Company	5905-501	N
		Barrage HF	Helena Chemical Company	5905-529	N
		HardBall	Helena Chemical Company	5905-549	N
		Unison	Helena Chemical Company	5905-542	N
		Clean Amine	Loveland Products Inc.	34704-120	N
		Low Vol 4 Ester Weed Killer	Loveland Products Inc.	34704-124	N
		Low Vol 6 Ester Weed Killer	Loveland Products Inc.	34704-125	N
		Saber	Loveland Products Inc.	34704-803	N
		Salvo	Loveland Products Inc.	34704-609	N
		Savage DS	Loveland Products Inc.	34704-606	Y
		Aqua-Kleen	Nufarm Americas Inc.	71368-4	N
		Aqua-Kleen	Nufarm Americas Inc.	228-378	N
		Esteron 99C	Nufarm Americas Inc.	62719-9-71368	N
		Weedar 64	Nufarm Americas Inc.	71368-1	Y
		Weedone LV-4	Nufarm Americas Inc.	228-139-71368	Y
		Weedone LV-4 Solventless	Nufarm Americas Inc.	71368-14	Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
2,4-D - cont.	AK, AZ, CA, CO, ID, MT, ND,	Weedone LV-6	Nufarm Americas Inc.	71368-11	Y
	NE, NM, NV, OK, OR, SD, TX,	Formula 40	Nufarm Americas Inc.	228-357	Y
	UT, WA, WY	2,4-D LV 6 Ester	Nufarm Americas Inc.	228-95	Y
		Platoon	Nufarm Americas Inc.	228-145	N
		WEEDstroy AM-40	Nufarm Americas Inc.	228-145	Y
		Hi-Dep	PBI Gordon Corp.	2217-703	N
		2,4-D Amine	Setre (Helena)	5905-72	N
		Barrage LV Ester	Setre (Helena)	5905-504	N
		2,4-D LV4	Setre (Helena)	5905-90	N
		2,4-D LV6	Setre (Helena)	5905-93	N
		Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA	Y
		Clean Crop Low Vol 6 Ester	UAP-Platte Chem. Co.	34704-125	N
		Salvo LV Ester	UAP-Platte Chem. Co.	34704-609	N
		2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120	N
		Clean Crop LV-4 ES	UAP-Platte Chem. Co.	34704-124	N
		Savage DS	UAP-Platte Chem. Co.	34704-606	Y
		Cornbelt 4 lb. Amine	Van Diest Supply Co.	11773-2	N
		Cornbelt 4# LoVol Ester	Van Diest Supply Co.	11773-3	N
		Cornbelt 6# LoVol Ester	Van Diest Supply Co.	11773-4	N
		Amine 4	Wilbur-Ellis Co.	2935-512	N
		Lo Vol-4	Wilbur-Ellis Co.	228-139-2935	N
		Lo Vol-6 Ester	Wilbur-Ellis Co.	228-95-2935	N
		Base Camp Amine 4	Wilbur-Ellis Co.	71368-1-2935	N
		Base Camp LV6	Wilbur-Ellis Co.	2935-553	N
		Broadrange 55	Wilbur-Ellis Co.	2217-813-2935	N
		Agrisolution 2,4-D LV6	Winflied Solutions, LLC	1381-101	N
		Agrisolution 2,4-D Amine 4	Winfield Solutions, LLC	1381-103	N
		Agrisolution 2,4-D LV4	Winfield Solutions, LLC	1381-102	N
		Phenoxy 088	Winfield Solutions, LLC	42750-36-9779	N
		Rugged	Winfield Solutions, LLC	1381-247	N
		Shredder E-99	Winfield Solutions, LLC	1381-195	N

	STATES WITH APPROVAL				
ACTIVE	**BASED UPON CURRENT**			**EPA REG.**	**CA**
INGREDIENT	**EIS/ROD**	**TRADE NAME**	**MANUFACTURER**	**NUMBER**	**REG. ****
Dicamba	AK, AZ, CA, CO, ID, MT, ND,	Dicamba DMA	Albaugh, Inc./Agri Star	42750-40	N
	NE, NM, NV, OK, OR, SD, TX,	Vision	Albaugh, Inc.	42750-98	N
	UT, WA, WY	Cruise Control	Alligare, LLC	42750-40-81927	N
		Banvel	Arysta LifeScience N.A. Corp.	66330-276	Y
		Clarity	BASF Corporation	7969-137	Y
		Vision	Helena Chemical Company	5905-576	Y
		Rifle	Loveland Products Inc.	34704-861	Y
		Banvel	Micro Flo Company	51036-289	Y
		Diablo	Nufarm Americas Inc.	228-379	Y
		Vanquish Herbicide	Nufarm Americas Inc.	228-397	Y
		Vanquish	Syngenta	100-884	N
		Sterling Blue	Winfield Solutions, LLC	7969-137-1381	Y
Dicamba +	AK, AZ, CA, CO, ID, MT, ND,	Range Star	Albaugh, Inc./Agri Star	42750-55	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Weedmaster	BASF Ag. Products	7969-133	Y
	UT, WA, WY	Brush-Rhap	Helena Chemical Company	5905-568	N
		Latigo	Helena Chemical Company	5905-564	N
		Outlaw	Helena Chemical Company	5905-574	N
		Rifle-D	Loveland Products Inc.	34704-869	N
		KambaMaster	Nufarm Americas Inc.	71368-34	N
		Veteran 720	Nufarm Americas Inc.	228-295	Y
		Weedmaster	Nufarm Americas Inc.	71368-34	Y
		Brash	Winfield Solutions, LLC	1381-202	N
Dicamba +	AZ, CO, ID, MT, ND, NE, NM,	Distinct	BASF Corporation	7969-150	Y
Diflufenzopyr	NV, OK, OR, SD, TX, UT,	Overdrive	BASF Corporation	7969-150	N
	WA, WY				

NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Diquat	AK, AZ, CA, CO, ID, MT, ND,	Alligare Diquat	Alligare, LLC	81927-35	Y
	NE, NM, NV, OK, SD, TX, UT,	NuFarm Diquat SPC 2 L Herbicide	Nufarm Americas Inc.	228-675	N
	WA, WY	Diquat SPC 2 L Herbicide	Nufarm Americas Inc.	79676-75	Y
		Diquat E-Ag 2L	Nufarm Americas Inc.	79676-75	Y
		Reward	Syngena Professional Products	100-1091	Y
Diuron	AK, AZ, CA, CO, ID, MT, ND,	Diuron 80DF	Agriliance, L.L.C.	9779-318	N
	NE, NM, NV, OK, OR, SD, TX,	Diuron 80DF	Alligare, LLC	81927-12	Y
	UT, WA, WY	Karmex DF	DuPont Crop Protection	352-692	Y
		Karmex XP	DuPont Crop Protection	352-692	Y
		Karmex IWC	DuPont Crop Protection	352-692	Y
		Direx 4L	DuPont Crop Protection	352-678	Y
		Direx 80DF	Griffin Company	1812-362	Y
		Direx 4L	Griffin Company	1812-257	Y
		Diuron 4L	Loveland Products Inc.	34704-854	Y
		Diuron 80 WDG	Loveland Products Inc.	34704-648	N
		Diuron 4L	Makteshim Agan of N.A.	66222-54	N
		Diuron 80WDG	UAP-Platte Chem. Co.	34704-648	N
		Vegetation Man. Diuron 80 DF	Vegetation Man., LLC	66222-51-74477	N
		Diuron-DF	Wilbur-Ellis	00352-00-508-02935	N
		Diuron 80DF	Winfield Solutions, LLC	9779-318	N
Fluridone	AK, AZ, CA, CO, ID, MT, ND,	Avast!	SePRO	67690-30	Y
	NE, NM, NV, OK, OR, SD, TX,	Sonar AS	SePRO	67690-4	Y
	UT, WA, WY	Sonar Precision Release	SePRO	67690-12	Y
		Sonar Q	SePRO	67690-3	Y
		Sonar SRP	SePRO	67690-3	Y
Glyphosate	AK, AZ, CA, CO, ID, MT, ND,	Aqua Star	Albaugh, Inc./Agri Star	42750-59	Y
	NE, NM, NV, OK, OR, SD, TX,	Forest Star	Albaugh, Inc./Agri Star	42570-61	Y
	UT, WA, WY	GlyStar Gold	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Original	Albaugh, Inc./Agri Star	42750-60	Y
		Gly Star Plus	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Pro	Albaugh, Inc./Agri Star	42750-61	Y

	STATES WITH APPROVAL				
ACTIVE	**BASED UPON CURRENT**			**EPA REG.**	**CA**
INGREDIENT	**EIS/ROD**	**TRADE NAME**	**MANUFACTURER**	**NUMBER**	**REG. ****
Glyphosate - cont.	AK, AZ, CA, CO, ID, MT, ND,	Glyphosate 4 PLUS	Alligare, LLC	81927-9	Y
	NE, NM, NV, OK, OR, SD, TX,	Glyphosate 5.4	Alligare, LLC	81927-8	Y
	UT, WA, WY	Glyfos	Cheminova	4787-31	Y
		Glyfos PRO	Cheminova	67760-57	Y
		Glyfos Aquatic	Cheminova	4787-34	Y
		ClearOut 41 Plus	Chem. Prod. Tech., LLC	70829-3	N
		Accord Concentrate	Dow AgroSciences	62719-324	Y
		Accord SP	Dow AgroSciences	62719-322	Y
		Accord XRT	Dow AgroSciences	62719-517	Y
		Accord XRT II	Dow AgroSciences	62719-556	Y
		Glypro	Dow AgroSciences	62719-324	Y
		Glypro Plus	Dow AgroSciences	62719-322	Y
		Rodeo	Dow AgroSciences	62719-324	Y
		Showdown	Helena Chemical Company	71368-25-5905	Y
		Mirage	Loveland Products Inc.	34704-889	Y
		Mirage Plus	Loveland Products Inc.	34704-890	Y
		Aquamaster	Monsanto	524-343	Y
		Roundup Original	Monsanto	524-445	Y
		Roundup Original II	Monsanto	524-454	Y
		Roundup Original II CA	Monsanto	524-475	Y
		Honcho	Monsanto	524-445	Y
		Honcho Plus	Monsanto	524-454	Y
		Roundup PRO	Monsanto	524-475	Y
		Roundup PRO Concentrate	Monsanto	524-529	Y
		Roundup PRO Dry	Monsanto	524-505	Y
		Roundup PROMAX	Monsanto	524-579	Y
		Aqua Neat	Nufarm Americas Inc.	228-365	Y
		Credit Xtreme	Nufarm Americas Inc.	71368-81	Y
		Foresters	Nufarm Americas Inc.	228-381	Y
		Razor	Nufarm Americas Inc.	228-366	Y
		Razor Pro	Nufarm Americas Inc.	228-366	Y
		GlyphoMate 41	PBI/Gordon Corporation	2217-847	Y
		AquaPro Aquatic Herbicide	SePRO Corporation	62719-324-67690	Y
		Rattler	Setre (Helena)	524-445-5905	Y

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Glyphosate - cont.	AK, AZ, CA, CO, ID, MT, ND,	Buccaneer	Tenkoz	55467-10	Y
	NE, NM, NV, OK, OR, SD, TX,	Buccaneer Plus	Tenkoz	55467-9	Y
	UT, WA, WY	Mirage Herbicide	UAP-Platte Chem. Co.	524-445-34704	Y
		Mirage Plus Herbicide	UAP-Platte Chem. Co.	524-454-34704	Y
		Gly-4 Plus	Universal Crop Protection Alliance, LLC	72693-1	Y
		Gly-4 Plus	Universal Crop Protection Alliance, LLC	42750-61-72693	Y
		Gly-4	Universal Crop Protection Alliance, LLC	42750-60-72693	Y
		Glyphosate 4	Vegetation Man., LLC	73220-6-74477	Y
		Agrisolutions Cornerstone	Winfield Solutions, LLC	1381-191	Y
		Agrisolutions Cornerstone Plus	Winfield Solutions, LLC	1381-192	Y
		Agrisolutions Rascal	Winfield Solutions, LLC	1381-191	N
		Agrisolutions Rascal Plus	Winfield Solutions, LLC	1381-192	N
		Cornerstone 5 Plus	Winfield Solutions, LLC	1381-241	Y
Glyphosate +	AK, AZ, CA, CO, ID, MT, ND,	Landmaster BW	Albaugh, Inc./Agri Star	42570-62	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Campaign	Monsanto	524-351	N
	UT, WA, WY	Landmaster BW	Monsanto	524-351	N
Hexazinone	AK, AZ, CA, CO, ID, MT, ND,	Velpar ULW	DuPont Crop Protection	352-450	N
	NE, NM, NV, OK, OR, SD, TX,	Velpar L	DuPont Crop Protection	352-392	Y
	UT, WA, WY	Velpar DF	DuPont Crop Protection	352-581	Y
		Velossa	Helena Chemical Company	5905-579	Y
		Pronone MG	Pro-Serve	33560-21	N
		Pronone 10G	Pro-Serve	33560-21	Y
		Pronone 25G	Pro-Serve	33560-45	N
Hexazinone +	AK, AZ, CA, CO, ID, MT, ND, NE,	Westar	DuPont Crop Protection	352-626	Y
Sulfometuron methyl	NM, NV, OK, OR, SD, TX, UT,	Oustar	DuPont Crop Protection	352-603	Y
	WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide (sulfometuron methyl) is prohibited.					

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Imazapic	AZ, CO, ID, MT, ND, NE, NM,	Panoramic 2SL	Alligare, LLC	66222-141-81927	N
	NV, OK, OR, SD, TX, UT, WA,	Plateau	BASF	241-365	N
	WY	Nufarm Imazapic 2SL	Nufarm Americas Inc.	71368-99	N
Imazapic +	AZ, CO, ID, MT, ND, NE, NM,	Journey	BASF	241-417	N
Glyphosate	NV, OK, OR, SD, TX, UT, WA,				
	WY				
Imazapyr	AK, AZ, CA, CO, ID, MT, ND,	Imazapyr 2SL	Alligare, LLC	81927-23	N
	OR, NE, NM, NV, OK, SD, TX,	Imazapyr 4SL	Alligare, LLC	81927-24	N
	UT, WA, WY	Ecomazapyr 2SL	Alligare, LLC	81927-22	N
		Arsenal Railroad Herbicide	BASF	241-273	N
		Chopper	BASF	241-296	Y
		Arsenal Applicators Conc.	BASF	241-299	N
		Arsenal	BASF	241-346	N
		Arsenal PowerLine	BASF	241-431	N
		Stalker	BASF	241-398	N
		Habitat	BASF	241-426	Y
		Polaris	Nufarm Americas Inc.	228-534	Y
		Polaris AC	Nufarm Americas Inc.	241-299-228	Y
		Polaris AC	Nufarm Americas Inc.	228-480	Y
		Polaris AC Complete	Nufarm Americas Inc.	228-570	Y
		Polaris AQ	Nufarm Americas Inc.	241-426-228	Y
		Polaris RR	Nufarm Americas Inc.	241-273-228	N
		Polaris SP	Nufarm Americas Inc.	228-536	Y
		Polaris SP	Nufarm Americas Inc.	241-296-228	Y
		Polaris Herbicide	Nufarm Americas Inc.	241-346-228	N
		Habitat Herbicide	SePRO	241-426-67690	Y
		SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23	N
		Ecomazapyr 2 SL	Vegetation Man., LLC	74477-6	N
		Imazapyr 2 SL	Vegetation Man., LLC	74477-4	N
		Imazapyr 4 SL	Vegetation Man., LLC	74477-5	N

	STATES WITH APPROVAL				
ACTIVE	**BASED UPON CURRENT**			**EPA REG.**	**CA**
INGREDIENT	**EIS/ROD**	**TRADE NAME**	**MANUFACTURER**	**NUMBER**	**REG. ****
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Mojave 70 EG	Alligare, LLC	74477-9-81927	N
Diuron	OR, NE, NM, NV, OK, SD, TX,	Sahara DG	BASF	241-372	N
	UT, WA, WY	Imazuron E-Pro	Etigra, LLC	79676-54	N
		SSI Maxim Topsite 2.5G	SSI Maxim Co., Inc.	34913-22	N
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage Clearstand	DuPont Crop Protection	352-766	N
Metsulfuron methyl	OR, NE, NM, NV, OK, SD, TX,				
	UT, WA, WY				
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage HWC	DuPont Crop Protection	352-765	N
Sulfometuron methyl +	OR, NE, NM, NV, OK, SD, TX,	Lineage Prep	DuPont Crop Protection	352-767	N
Metsulfuron methyl	UT, WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide (sulfometuron methyl) is prohibited.					
Metsulfuron methyl	AK, AZ, CO, ID, MT, ND, OR,	MSM 60	Alligare, LLC	81927-7	N
	NE, NM, NV, OK, SD, TX, UT,	AmTide MSM 60DF Herbicide	AmTide, LLC	83851-3	N
	WA, WY	Escort DF	DuPont Crop Protection	352-439	N
		Escort XP	DuPont Crop Protection	352-439	N
		MSM E-Pro 60 EG Herbicide	Etigra, LLC	81959-14	N
		MSM E-AG 60 EG Herbicide	Etigra, LLC	81959-14	N
		Patriot	Nufarm Americas Inc.	228-391	N
		PureStand	Nufarm Americas Inc.	71368-38	N
		Metsulfuron Methyl DF	Vegetation Man., L.L.C.	74477-2	N
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND,	Cimarron X-tra	DuPont Crop Protection	352-669	N
Chlorsulfuron	NE, NM, NV, OK, OR-East, SD,	Cimarron Plus	DuPont Crop Protection	352-670	N
	TX, UT, WA, WY				

	STATES WITH APPROVAL				
ACTIVE	**BASED UPON CURRENT**			**EPA REG.**	**CA**
INGREDIENT	**EIS/ROD**	**TRADE NAME**	**MANUFACTURER**	**NUMBER**	**REG. ****
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND,	Cimarron MAX	DuPont Crop Protection	352-615	N
Dicamba + 2,4-D	NE, NM, NV, OK, OR, SD, TX,				
	UT, WA, WY				
Picloram	AZ, CO, ID, MT, ND, NE, NM,	Triumph K	Albaugh, Inc.	42750-81	N
	NV, OK, OR, SD, TX, UT, WA,	Triumph 22K	Albaugh, Inc.	42750-79	N
	WY	Picloram K	Alligare, LLC	42750-81-81927	N
		Picloram K	Alligare, LLC	81927-17	N
		Picloram 22K	Alligare, LLC	42750-79-81927	N
		Picloram 22K	Alligare, LLC	81927-18	N
		Grazon PC	Dow AgroSciences	62719-181	N
		OutPost 22K	Dow AgroSciences	62719-6	N
		Tordon K	Dow AgroSciences	62719-17	N
		Tordon 22K	Dow AgroSciences	62719-6	N
		Trooper 22K	Nufarm Americas Inc.	228-535	N
Picloram +	AZ, CO, ID, MT, ND, NE, NM,	GunSlinger	Albaugh, Inc.	42750-80	N
2,4-D	NV, OK, OR, SD, TX, UT, WA,	Picloram + D	Alligare, LLC	42750-80-81927	N
	WY	Picloram + D	Alligare, LLC	81927-16	N
		Tordon 101M	Dow AgroSciences	62719-5	N
		Tordon 101 R Forestry	Dow AgroSciences	62719-31	N
		Tordon RTU	Dow AgroSciences	62719-31	N
		Grazon P+D	Dow AgroSciences	62719-182	N
		HiredHand P+D	Dow AgroSciences	62719-182	N
		Pathway	Dow AgroSciences	62719-31	N
		Trooper 101	Nufarm Americas Inc.	228-561	N
		Trooper P + D	Nufarm Americas Inc.	228-530	N
Picloram +	AZ, CO, ID, MT, ND, NE, NM,	Trooper Extra	Nufarm Americas Inc.	228-586	N
2,4-D +	NV, OK, OR, SD, TX, UT, WA,				
Dicamba	WY				

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Sulfometuron methyl	AK, AZ, CA, CO, ID, MT, ND,	SFM 75	Alligare, LLC	81927-26	Y
	OR, NE, NM, NV, OK, SD, TX,	Oust DF	DuPont Crop Protection	352-401	N
	UT, WA, WY	Oust XP	DuPont Crop Protection	352-601	Y
		SFM E-Pro 75EG	Etigra, LLC	79676-16	Y
		Spyder	Nufarm Americas Inc.	228-408	Y
		SFM 75	Vegetation Man., L.L.C.	72167-11-74477	Y
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide (sulfometuron methyl) is prohibited.					
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Landmark XP	DuPont Crop Protection	352-645	Y
Chlorsulfuron	NE, NM, NV, OK, OR-East, SD,				
	TX, UT, WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide (sulfometuron methyl) is prohibited.					
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Oust Extra	DuPont Crop Protection	352-622	N
Metsulfuron methyl	OR, NE, NM, NV, OK, SD, TX,				
	UT, WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide (sulfometuron methyl) is prohibited.					
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NE,	Alligare Tebuthiuron 80 WG	Alligare, LLC	81927-37	Y
	NM, NV, OK, OR-East, SD, TX,	Alligare Tebuthiuron 20 P	Alligare, LLC	81927-41	Y
	UT, WA, WY	Spike 20P	Dow AgroSciences	62719-121	Y
		Spike 80DF	Dow AgroSciences	62719-107	Y
		SpraKil S-5 Granules	SSI Maxim Co., Inc.	34913-10	Y
Tebuthiuron +	AZ, CA, CO, ID, MT, ND, NE,	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	Y
Diuron	NM, NV, OK, OR-East, SD, TX,	SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16	Y
	UT, WA, WY				

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Triclopyr	AK, AZ, CA, CO, ID, MT, ND,	Triclopyr 4EC	Alligare, LLC	72167-53-74477	Y
	OR, NE, NM, NV, OK, SD, TX,	Triclopyr 3	Alligare, LLC	81927-13	Y
	UT, WA, WY	Triclopry 4	Alligare, LLC	81927-11	Y
		Element 3A	Dow AgroSciences	62719-37	Y
		Element 4	Dow AgroSciences	62719-40	Y
		Forestry Garlon XRT	Dow AgroSciences	62719-553	Y
		Garlon 3A	Dow AgroSciences	62719-37	Y
		Garlon 4	Dow AgroSciences	62719-40	Y
		Garlon 4 Ultra	Dow AgroSciences	62719-527	Y
		Remedy	Dow AgroSciences	62719-70	Y
		Remedy Ultra	Dow AgroSciences	62719-552	Y
		Pathfinder II	Dow AgroSciences	62719-176	Y
		Trycera	Helena Chemical Company	5905-580	Y
		Relegate	Nufarm Americas Inc.	228-521	Y
		Relegate RTU	Nufarm Americas Inc.	228-522	Y
		Tahoe 3A	Nufarm Americas Inc.	228-384	Y
		Tahoe 3A	Nufarm Americas Inc.	228-518	Y
		Tahoe 3A	Nufarm Americas Inc.	228-520	Y
		Tahoe 4E	Nufarm Americas Inc.	228-385	Y
		Tahoe 4E Herbicide	Nufarm Americas Inc.	228-517	Y
		Renovate 3	SePRO Corporation	62719-37-67690	Y
		Renovate OTF	SePRO Corporation	67690-42	Y
		Ecotriclopyr 3 SL	Vegetation Man., LLC	72167-49-74477	N
		Triclopyr 3 SL	Vegetation Man., LLC	72167-53-74477	N
Triclopyr +	AK, AZ, CA, CO, ID, MT, ND,	Everett	Alligare, LLC	81927-29	Y
2,4-D	OR, NE, NM, NV, OK, SD, TX,	Crossbow	Dow AgroSciences	62719-260	Y
	UT, WA, WY	Candor	Nufarm Americas Inc.	228-565	Y
		Aquasweep	Nufarm Americas Inc.	228-316	N
Triclopyr +	AK, AZ, CA, CO, ID, MT, ND,	Prescott Herbicide	Alligare, LLC	81927-30	Y
Clopyralid	OR, NE, NM, NV, OK, SD, TX,	Redeem R&P	Dow AgroSciences	62719-337	Y
	UT, WA, WY	Brazen	Nufarm Americas Inc.	228-564	Y

*** Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as,**					
creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, county restrictions, etc.					
**** Just because a herbicide has a Federal registration, and is approved under the current EIS, it may or may not be registered for use in California. This**					
column identifies those formulations for which there is a California registration.					

Appendix C

Scoping Summary

Aspen Environmental Group

5020 Chesebro Road, Suite 200, Agoura Hills, CA 91301-2285
Tel. 818-597-3407, Fax 818-597-8001, www.aspeneg.com

PROJECT MEMORANDUM

Date: April 10, 2014
To: Sean Heath, Environmental Protection Specialist
DSW Western Area Power Administration
From: Sandra Alarcón-Lopez, Public Involvement Specialist

Re: Scoping Process for the Environmental Assessment (EA) of Western's Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Program

This memorandum summarizes the activities conducted as part of the scoping process for the Parker-Davis Transmission System Project EA. The scoping process commenced on February 28, 2014 and ended on April 4, 2014. All activities are listed with the associated dates of distribution/filing/publication, as applicable. In addition, all documents prepared as part of the scoping process are attached to this memorandum.

PROJECT MAILING LIST

The project mailing list was prepared using the lists of names and addresses included in the following sources:

- DSW Western Area Power Administration List (property owners);
- Stakeholder's Directory (2012); and
- Agencies and library contact information added by Aspen.

At the start of scoping, the mailing list included over 1,100 entries. The mailing list was updated to include addresses obtained at the public scoping meetings and to remove or correct contact names/addresses based on the Scoping Letter mailing.

SCOPING LETTER

- Western issued the Scoping Letter (Attachment #1) on February 28, 2014 (NV SCH# EA 2014-112)
- 15 copies of the Scoping Letter were sent to the Nevada State Clearinghouse via overnight mail commencing a 30-day public scoping period (February 28th through April 4th)
- The Scoping Letter was distributed via certified mail to a total of 18 addresses consisting of state and county agencies on February 28, 2014.
- Aspen distributed Scoping Letters to 501 contacts (property owners) on the mailing list.
- Western distributed Scoping Letters to the remaining contacts (616 including property owners, 10 state and federal agencies, 12 libraries, and 9 non-governmental organizations).

COOPERATING AGENCY AND CONSULTATION LETTERS

- Western sent 61 consultation letters to 36 Indian tribes and nine separate letters to Indian tribes with an invitation to be a cooperating agency.
- Six federal agencies and one county were sent cooperating agency invitation letters (USFWS, NPS, BOR, BLM, USFS, Yuma Proving Ground, and Pima County, AZ).

NOTICES

Public Scoping Meeting Notice

- The Scoping Letter described above included notice of the public meetings. See distribution above.

Newspaper Advertisement

A newspaper advertisement (Attachment #1) was published in the following newspapers on the following dates:

- Arizona Daily Star – Monday March 3rd
- Yuma Daily Sun – Monday March 3rd
- Mohave Daily News – Tuesday March 4th

PUBLIC SCOPING MEETINGS

Three public scoping meetings were conducted. The first one was held on Tuesday, March 18, 2014 6:00 pm at the Suddenlink Community Center in Bullhead City, AZ. The second one was held on Wednesday, March 19, 2014 6:00 pm at the Lounge, Yuma Civic Center in Yuma, AZ. The third and final meeting was conducted on Thursday, March 20, 2014 6:00 pm at the Double Tree Suites in Tucson, AZ. Western managed and provided staff support at all three meetings, Aspen provided support and participated in March 18 and 19 scoping meetings. The following information was part of the three public scoping meetings:

- **Meeting Sign-in Sheet** – to record contact names and addresses of all meeting attendees for use in future mailings.
- **Four poster boards** with information about the project to give attendees an opportunity to ask questions about the project.

  The boards addressed: project description, CEQA/NEPA environmental processes, project location map, and information on the purpose of scoping and how to provide comments.
- **Fact Sheet** summarizing key components of the project and provided as a handout.
- **Scoping Comment Form** provided as a handout so attendees could provide comments at the meeting or mail in their comments.

Based on the sign-in sheets at each public scoping meeting, three (3) people attended the March 18th Bullhead, AZ meeting, seven (7) people attended the March 19th Yuma, AZ meeting; and one (1) person attended the March 20th Tucson, AZ meeting.

SCOPING RELATED MATERIALS

The following scoping related documents and materials are provided in Attachment #1 to this memorandum for your records:

- Scoping Letter
- Scoping EA Notice filed with the Nevada State Clearinghouse
- Newspaper Advertisements (Proof of Publications)
- Meeting Sign-in Sheets
- Scoping Meeting Poster Boards
- Comment Form

SUMMARY OF PUBLIC COMMENTS RECEIVED

Summaries of scoping comments are provided below. A copy of the comment letters are provided in Attachment #2 to this memorandum for your records.

Comment Letters Received During Public Scoping Period

US Department of Interior, Fish and Wildlife Service

- The letter requested comprehensive discussion of potential direct and indirect impacts of the project on species listed pursuant to the Endangered Species Act. The letter also mentions that portions of the project cross creeks and rivers that support aquatic and/or riparian habitat at or downstream of the crossings. EA should include conservation measures.

Arizona Game and Fish Department

- The letter asks that two species (desert bighorn sheep and Sonoran desert tortoise) be considered in the EA and that the Department would like to be involved in the process providing input and expertise.

Nevada State Historic Preservation Office

- The letter is asking that future scoping documents address the development of Programmatic Agreements (PA) for DOE and Western compliance with Section 106 and the public's opportunity to comment unless a separate public meeting is conducted during the preparation of the PA.

Nevada Department of Conservation and Natural Resources Division of Water Resources

- The Department supports the proposal as written but does notes that certain permits or other requirements may need to be met on this project.

Nevada Department of Wildlife

- This Department provided comments and recommendations regarding migratory birds, raptors, herbicide use, the Gila monster, and federally threatened and endangered species.

Nevada Division of State Lands and the State Land Use Planning Agency

- The letter requests that the EA address cumulative visual impacts (temporary and permanent) relative to any development activities.
- The letter identified mitigation measures that should be required such as the use of "Dark Sky" lighting practices, screening of all lights, avoiding light pollution onto adjacent lands, lighting plan, and other measures.

Cooperating Agency and Consultation Letters Received During Public Scoping Period

- Four Indian Tribes submitted responses to the consultation letters with two tribes requesting additional information.
- **Coronado National Forest** and the U.S Department of the Interior **Bureau of Reclamation** submitted letters accepting the invitation to be cooperating agencies for this project. Pima County submitted a letter declining the invitation to be a cooperating agency.

Comments Received via mail

Mr. James Lucas, Property Owner

- Mr. Lucas shares Western's concern with overgrown vegetation and stated that no vegetation control or road maintenance has occurred since 1996.

Comments Received via Email

Mr. Dale Kemper, Property Owner

- Property owner would like a 48-hour advance notice from Western for gate access to be unlocked and a party present if necessary. Preferred method of contact would be via email or a telephone call.

Mr. Gary Turley, Property Owner

- Property owner is asking that safe access be a priority for all current and future transmission line ROW's with consideration given so that vegetation and surrounding plant life is not compromised.

Comments Received at the Public Scoping Meeting

Mr. Bob Black, Yuma Property Owner

- Property owner is waiting for the EA to be published in September, 2014.

Attachment 1

Parker-Davis Transmission System Project

Scoping Related Materials

1. Scoping Letter - February 28, 2014
2. Nevada State Clearinghouse Notice (NV #SCH EA 2014-112) February 28, 2014
3. Newspaper Advertisements
4. Meeting Sign-in Sheets – March 18th, 19th & 20th, 2014
5. Scoping Meeting – Four Poster Boards
6. Comment Sheet Form

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

February 28, 2014

SUBJECT: **Scoping Letter for Environmental Assessment of Western's Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Project (DOE/EA-1982)**

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 that operates and maintains transmission lines and associated facilities. Western proposes Operations and Maintenance (O&M) activities and the implementation of an integrated vegetation management program on the Parker-Davis Transmission System, in the Desert Southwest Region (see attached map).

The Parker-Davis Transmission System currently consists of 53 substations, 9,993 structures (i.e., poles, towers), and 1,534 miles of transmission line. These actions would occur within existing, legal rights-of-way (ROW) on existing transmission line and access roads, as well as at substations / maintenance facilities associated with the power system. The proposed O&M activities would consist of aerial and ground patrols to locate and correct problems, regular and preventive maintenance, inspections and repairs to protect against operational hazards, and road repair to provide access for maintenance and emergencies. The integrated vegetation management program would manage vegetation to protect facilities from fire, control the spread of noxious weeds to protect environmental quality, and establish and maintain stable, low-growing plant communities in the ROW.

Western proposes these actions to maintain existing transmission line and access road ROWs, to ensure system reliability, and to establish and maintain safe all-weather access to transmission line structures and appurtenant facilities. Western will serve as Lead Federal Agency in the preparation of an environmental assessment for this project.

We would like to know of any issues, concerns, and suggestions you may have regarding the proposed actions. Your comments will help define issues and alternatives for consideration in the environmental review process. Comments can be provided in writing (via U.S. mail or e-mail), by phone, or in person at the public open house meetings (information below).

Please submit your comments by April 4, 2014.

Mail: Western Area Power Administration
ATTN.: Sean Heath, Environmental Protection Specialist
Desert Southwest Region
615 S. 43rd Avenue
Phoenix, AZ 85009
Email: DSW-ParkerDavisProEA@wapa.gov
Phone: (602) 605-2592

Western will host three public open house meetings to allow the public and interested parties an opportunity to learn about the proposed project, the NEPA process, ask questions, and provide comments. The meetings will be held at the following dates, times, and locations:

Tuesday, March 18, 2014, 6:00-8:00 pm
Suddenlink Community Center
2380 3rd Street
Bullhead City, AZ 86442

Wednesday, March 19, 2014, 6:00–8:00 pm
The Lounge, Yuma Civic Center
1440 West Desert Hills Drive
Yuma, AZ 85365

Thursday, March 20, 2014, 6:00-8:00 pm
DoubleTree Suites
7051 S. Tucson Blvd.
Tucson, AZ, 85756

We look forward to receiving your comments on this project and hope that you will be able to attend one of the public open house meetings.

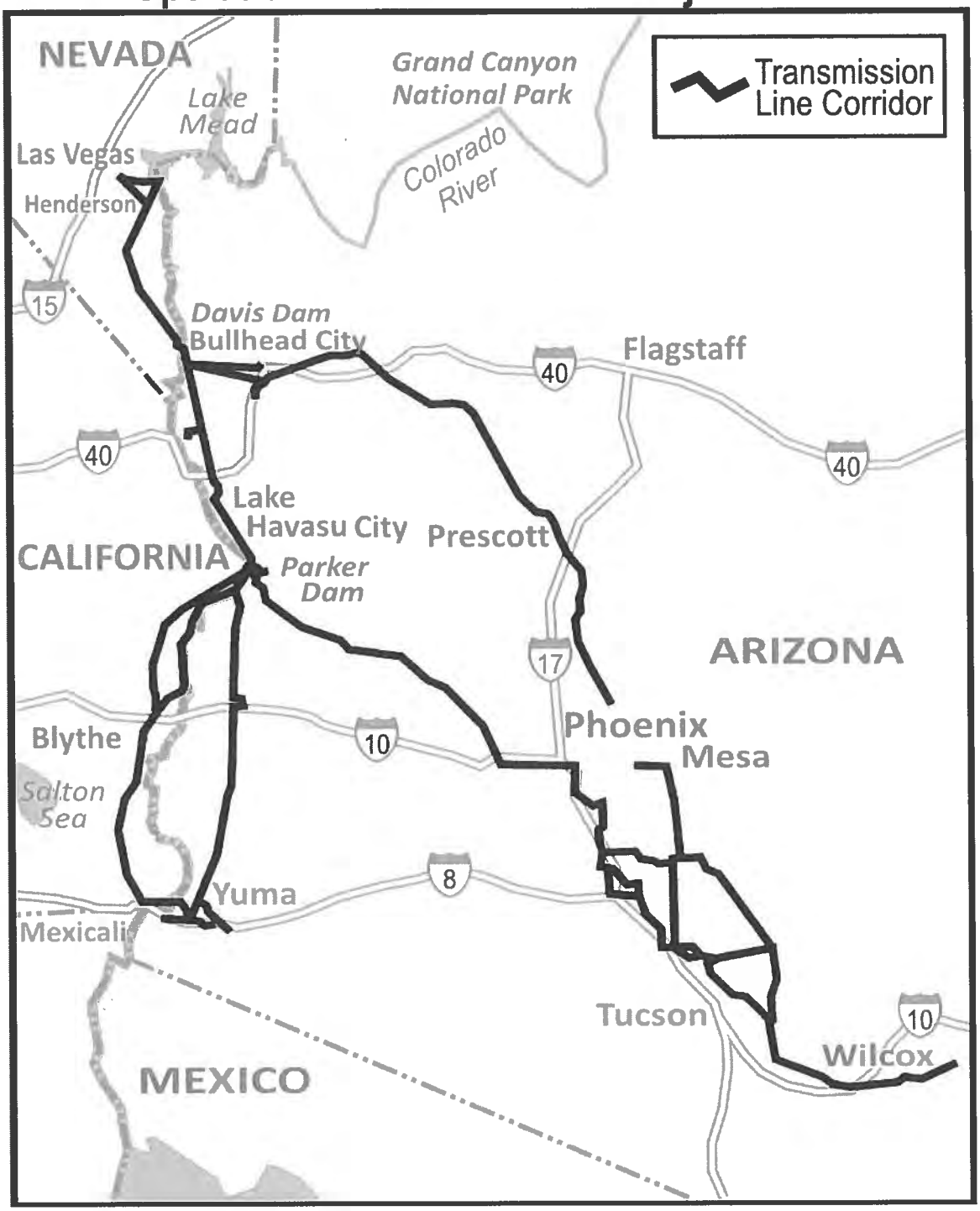
Sincerely,

Linda Marianito

Linda Marianito, Environmental Manager

Enclosure (map)

Parker-Davis Transmission System Operation and Maintenance Project Area



FW: Nevada State Clearinghouse Notice E2014-112 (Scoping - EA Western's Parker-Davis Transmission System)

Heath, Sean <heath@wapa.gov> on behalf of
DSW-ParkerDavisProEA <DSW-ParkerDavisProEA@wapa.gov>

Tue 3/18/2014 6:35 AM

To:parker- Davis Project <parker-davis@aspeneg.com>;

Sean Heath
Environmental Protection Specialist
Desert Southwest Region
Western Area Power Administration
615 S. 43rd Avenue
Phoenix, AZ 85009
(602) 605-2592 | Office
(602) 329-8371 | Cell

From: Skip Canfield [mailto:scanfield@lands.nv.gov]
Sent: Friday, March 14, 2014 9:43 AM
To: DSW-ParkerDavisProEA
Subject: Nevada State Clearinghouse Notice E2014-112 (Scoping - EA Western's Parker-Davis Transmission System)

NEVADA STATE CLEARINGHOUSE
Department of Conservation and Natural Resources, Division of State Lands
901 S. Stewart St., Ste. 5003, Carson City, Nevada 89701-5246
(775) 684-2723 Fax (775) 684-2721

TRANSMISSION DATE: 03/14/2014

U.S. Department of Energy

Nevada State Clearinghouse Notice E2014-112
Project: Scoping - EA Western's Parker-Davis Transmission System

Follow the link below to find information concerning the above-mentioned project for your review and comment.
E2014-112 - http://clearinghouse.nv.gov/public/Notice/2014/E2014-112.pdf

- **Please evaluate this project's effects on your agency's plans and programs and any other issues that you are aware of that might be pertinent to applicable laws and regulations.**

- **Please reply directly from this e-mail and attach your comments.**

- **Please submit your comments no later than Thursday April 3rd, 2014.**

Clearinghouse project archive

Questions? Skip Canfield, Program Manager, (775) 684-2723 or nevadaclearinghouse@lands.nv.gov

____No comment on this project ____Proposal supported as written
AGENCY COMMENTS:

Signature:

Date:

Requested By:

Distribution:
- 99ABW Nellis
- Division of Emergency Management
Alan Jenne - Department of Wildlife, Elko
Alex Lanza -
Alisanne Maffei - Department of Administration
Bette Hartnett - State Energy Office
Bill Thompson - Department of Transportation, Aviation

Bill Whitney - Washoe County Planning
CPT Brian Brian Hunsaker - Nevada National Guard
Cory Lytle - Lincoln County
Craig Mortimore - Wild Nevada
D. Bradford Hardenbrook - Department of Wildlife, Las Vegas
Dagny Stapleton - NACO
Dave Marlow -
David David - UNR Bureau of Mines
David Mouat - Desert Research Institute
Denesa Johnston - Fire Marshal
Ed Foster - Department of Agriculture
Ed Rybold - NAS Fallon
Elizabeth A. Harrison - Tahoe Resource Team - Division of State Lands
Gary Derks - Division of Emergency Management
J Crandell - Colorado River Commission of Nevada
James D. Morefield - Natural Heritage Program
Jason Van Havel - NDOT
Jason Woodruff - PUCN
Jennifer Newmark -
Jennifer Scanland - Division of State Parks
Jered McDonald - Legislative Counsel Bureau
Jim Balderson - NDEP
John Christopherson - Nevada Division of Forestry
John Muntean - UNR Bureau of Mines
John Tull - NDOW
Jon Price - UNR Bureau of Mines
Karen Beckley - State Health Division
Kevin Hill - Nevada State Energy Office
Kirk Bausman - Hawthorne Army Depot
Linda Cohn - National Nuclear Security Administration
Lindsey Lesmeister - NDOW
Lowell Price - Commission on Minerals
Mark Enders - NDOW
Mark Freese - Department of Wildlife
Mark Harris, PE - Public Utilities Commission
Michael Visher - Division of Minerals
Mitch Ison - NDOT
Nancy Boland - Esmeralda County
Pete Anderson - Division of Forestry
Peter Lassaline - NDEP
Rebecca Palmer - State Historic Preservation Office
Rich Harvey - Division of Forestry
Rich Perry - Nevada Division of Minerals
Robert Martinez - Division of Water Resources
Sandy Quilici - Department of Conservation & Natural Resources
Sherry Rupert - Indian Commission
Shimi Mathew - Nellis AFB
Skip Canfield - Division of State Lands
Stephen Foree - NDOW

Steve Endacott - City of Fallon
Terri Compton - Department of Transportation
Terry Rubald - Nevada Department of Taxation, Local Government, Centrally Assessed Property
Tim Rubald - Nevada Sagebrush Ecosystem Team
Timothy Mueller - Department of Transportation
Tod Oppenborn - Nellis Air Force Base
Warren Turkett - Colorado River Commission of Nevada
Wes Henderson - Nevada League of Cities
Zip Upham - NAS Fallon

ARIZONA DAILY STAR

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Capanear, being first duly sworn deposes and says: that she is the Advertising Representative of **TNI PARTNERS,** a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached ad was printed and

Legal Notice

published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit: march 3, 2014

Debbie Capanear

Subscribed and sworn to before me this 14 day of march, 2014

Lydia Fimbres
Notary Public

LYDIA FIMBRES
Notary Public - Arizona
Pima County
My Comm. Expires Oct 18, 2015

My commission expires

AD NO. 8177512

Open House

Parker-Davis Transmission System
Programmatic Operation and Maintenance Project

Western Area Power Administration

Learn more about the proposed Operations and Maintenance activities and the implementation of an integrated vegetation management program on the Parker-Davis Transmission System (map below) at a public open house meeting. The purpose of the proposed project is to maintain existing transmission lines, to ensure system reliability, and establish and maintain access to transmission line structures and facilities.

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.

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Bullhead City, AZ 86442

Wednesday, March 19, 2014, 6 – 8 pm
The Lounge, Yuma Civic Center
1440 W. Desert Hills Drive
Yuma, AZ 85365

Thursday, March 20, 2014, 6 – 8 pm
Doubletree Suites
7051 S. Tucson Blvd.
Tucson, AZ 85756

Send us your comments:
You may provide comments or input at the open house meetings, by phone, or by mail. Send comments by April 4, 2014 to:

Western Area Power Administration
Sean Heath, Environmental Protection Specialist
615 S. 43rd Avenue, Phoenix, AZ 85009
Email: DSW-ParkerDavisProEA@wapa.gov
Phone: 602.605.2592

For translation services, call Sandra Alarcón-Lopez at 562.947.5259 or email DSW-ParkerDavisProEA@wapa.gov.

Public Open House • Tuesday March 18 • Wednesday March 19 • Thursday March 20, 2014 • 6 – 8 pm

ARIZONA DAILY

Tucson, Arizo

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Capanear, being first du
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Pima County, State of Arizona,
circulation in said City, County,
and that the attached ad was prir

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published correctly in the enti
Arizona Daily Star on each of t
wit:

March 3, 201

Debbie Capanear

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Lydia Fimbres
Notary Public

LYDIA FIMBRES
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Public Open House • Tuesday March 18 • Wednesday March 19 • Thursday March 20, 2014 • 6 – 8 pm

AFFP
PARKER DAVIS AD

Affidavit of Publication

STATE OF ARIZONA }
COUNTY OF YUMA } SS

Joni Brooks or Kathy White, being duly sworn, says:

That she is Publisher or Business Manager of the Yuma Sun, a daily newspaper of general circulation, printed and published in Yuma, Yuma County, Arizona; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

March 03, 2014

That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Publisher or Business Manager

Subscribed to and sworn to me this 3rd day of March 2014.

Virgen P Perez, Notary, Yuma County, Arizona

My commission expires: May 10, 2017

OFFICIAL SEAL
VIRGEN P. PEREZ
Commission # 163644
Notary Public - State of Arizona
YUMA COUNTY
My Comm. Expires May 10, 2017

00005076 00021388

ASPEN ENVIRONMENTAL GROUP
8801 FOLSOM BLVD., SUITE 290
SACRAMENTO, CA 95826

Open House
Parker-Davis Transmission System
Programmatic Operation and Maintenance Project

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For translation services, call Sandra Alarcón-Lopez at 562.947.5259 or email DSW-ParkerDavisProEA@wapa.gov.

Public Open House •Tuesday March 18•Wednesday March 19• Thursday March 20, 2014•6 – 8 pm

Daily March 3, 2014 - 00021388

Open House

Parker-Davis Transmission System

Programmatic Operation and Maintenance Project

Western AREA POWER ADMINISTRATION

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Western Area Power Administration
Sean Heath, Environmental Protection Specialist
615 S. 43rd Avenue, Phoenix, AZ 85009
Email: DSW-ParkerDavisProEA@wapa.gov
Phone: 602.605.2592

For translation services, call Sandra Alarcón-Lopez at 562.947.5259 or email DSW-ParkerDavisProEA@wapa.gov.

Public Open House • Tuesday March 18 • Wednesday March 19 • Thursday March 20, 2014 • 6 – 8 pm

Publish: March 4, 2014
23912

Proof of Publication

STATE OF ARIZONA)
County of Mohave) ss

Sherry Milks, being first duly sworn, says that during the publication of notice, as herein mentioned, he/she was and now is the **Legal Clerk** of the ***MOHAVE DAILY NEWS.*** Six times weekly newspaper published on Sunday, Monday, Tuesday, Wednesday, Thursday, and Friday of each and every week at the city of Bullhead City, in said County.

That said newspaper was printed and published as aforesaid on the following dates, to-wit:

March 4, 2014

That the **OPEN HOUSE** of which the annex copy is a printed and true copy, was printed and inserted in each and every copy of said newspaper printed and published on the dates aforesaid, and in the body of said newspaper and not in a supplement thereto.

Sherry Milks
Clerk

Subscribed and sworn to before me this 18

day of March, 2014

Laura J. Sullivan-Burger
Notary Public

My commission expire 10-2-2016

LAURA J SULLIVAN-BURGER
Notary Public - Arizona
Mohave County
My Comm. Expires Oct 2, 2016

March 18, 2014 Bullhead City

Parker-Davis Transmission System

Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Western AREA POWER ADMINISTRATION

Sign-in Sheet - Public Scoping Meeting for NEPA Review

Please print or write legibly. Thank you.

Name	Faye Streier	**Organization**	Bureau of Reclamation
Address	P.O. Box 61470 Boulder City, NV 89006		
Email	fstreier@usbr.gov	**Phone**	702-293-8132
Name	Anthony Miller	**Organization**	Nevada Dept of Wildlife
Address	4747 Vegas Dr Las Vegas, NV 89108		
Email	AJMILLER@ndow.org	**Phone**	702-484-5127
Name	Rusty Lee	**Organization**	BLM - Needles Field Office
Address	1303 S. Hwy 95, Needles CA 92363		
Email	rtlee@blm.gov	**Phone**	760-326-7020
Name		**Organization**	
Address			
Email		**Phone**	
Name		**Organization**	
Address			
Email		**City**	
Name		**Organization**	
Address			
Email		**Phone**	
Name		**Organization**	
Address			
Email		**Phone**	
Name		**Organization**	
Address			
Email		**Phone**	

**This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety.*

March 19, 2014 Yuma

Parker-Davis Transmission System

Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Western Area Power Administration

Sign-in Sheet - Public Scoping Meeting for NEPA Review

Please print or write legibly. Thank you.

Name	Anna Pinnell	**Organization**	U.S. Bureau of Reclamation
Address	7301 Calle Agua Salada		
Email	apinnell@usbr.gov	**Phone**	928-343-8514
Name	Cary Meister	**Organization**	Yuma Audubon Society
Address	PO Box 6395 Yuma, AZ 85366-6395		
Email	yasconservation@yahoo.com	**Phone**	928-782-3552
Name	Rod Black	**Organization**	Yuma Audubon
Address	1317 W Hillside Pl		
Email	Rod4039@Gmail.com	**Phone**	—
Name	Jim Kerley	**Organization**	KDC of Yuma
Address	6720 Missile		
Email	JvKerley@Hotmail	**Phone**	928 246-6926
Name	Nancy Meister	**Organization**	
Address	PO Box 6395		
Email		**City**	Yuma, 85366
Name	GREG FERGUSON	**Organization**	BOARD OF SUPERVISORS
Address	198 S. MAIN		YUMA CO.
Email	GREG.FERGUSON@YUMACOUNTY.GOV	**Phone**	928 373-1010
Name	RUSSELL MCCLOUD	**Organization**	BOARD OF SUPERVISORS
Address	198 S. MAIN		YUMA CO.
Email		**Phone**	
Name		**Organization**	
Address			
Email		**Phone**	

**This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety.*

Parker-Davis Transmission System

Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Western AREA POWER ADMINISTRATION

Sign-in Sheet - Public Scoping Meeting for NEPA Review

Please print or write legibly. Thank you.

Name Linda L. Dunlavey	Organization BLM - TFO
Address 3201 E Universal Way Tucson, AZ	
Email ldunlavey@blm.gov	Phone 520-258-7240
Name	**Organization**
Address	
Email	**Phone**
Name	**Organization**
Address	
Email	**Phone**
Name	**Organization**
Address	
Email	**Phone**
Name	**Organization**
Address	
Email	**City**
Name	**Organization**
Address	
Email	**Phone**
Name	**Organization**
Address	
Email	**Phone**
Name	**Organization**
Address	
Email	**Phone**

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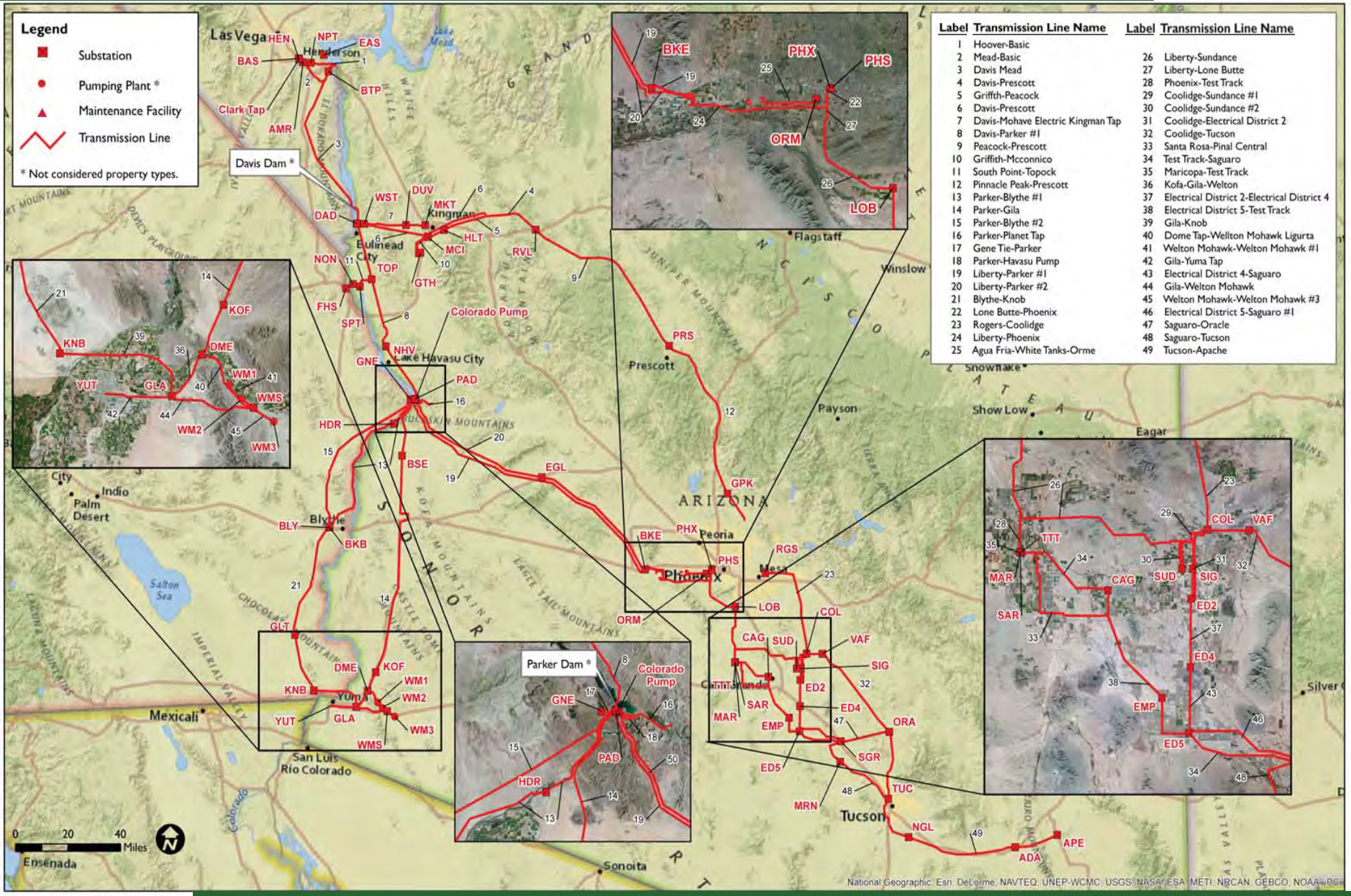
PROJECT OVERVIEW MAP



Label	Transmission Line Name	Label	Transmission Line Name
1	Hoover-Basic		
2	Mead-Basic	26	Liberty-Sundance
3	Davis Mead	27	Liberty-Lone Butte
4	Davis-Prescott	28	Phoenix-Test Track
5	Griffth-Peacock	29	Coolidge-Sundance #1
6	Davis-Prescott	30	Coolidge-Sundance #2
7	Davis-Mohave Electric Kingman Tap	31	Coolidge-Electrical District 2
8	Davis-Parker #1	32	Coolidge-Tucson
9	Peacock-Prescott	33	Santa Rosa-Pinal Central
10	Griffith-Mcconnico	34	Test Track-Saguaro
11	South Point-Topock	35	Maricopa-Test Track
12	Pinnacle Peak-Prescott	36	Kofa-Gila-Welton
13	Parker-Blythe #1	37	Electrical District 2-Electrical District 4
14	Parker-Gila	38	Electrical District 5-Test Track
15	Parker-Blythe #2	39	Gila-Knob
16	Parker-Planet Tap	40	Dome Tap-Welton Mohawk Ligurta
17	Gene Tie-Parker	41	Welton Mohawk-Welton Mohawk #1
18	Parker-Havasu Pump	42	Gila-Yuma Tap
19	Liberty-Parker #1	43	Electrical District 4-Saguaro
20	Liberty-Parker #2	44	Gila-Welton Mohawk
21	Blythe-Knob	45	Welton Mohawk-Welton Mohawk #3
22	Lone Butte-Phoenix	46	Electrical District 5-Saguaro #1
23	Rogers-Coolidge	47	Saguaro-Oracle
24	Liberty-Phoenix	48	Saguaro-Tucson
25	Agua Fria-White Tanks-Orme	49	Tucson-Apache

Parker-Davis Transmission System

Programmatic Operations and Maintenance, and Integrated Vegetation Management Program

Western AREA POWER ADMINISTRATION

NEPA PROCESS

ENVIRONMENTAL ASSESSMENT (EA) PROCESS	ANTICIPATED SCHEDULE
Determination to Prepare an EA	January 2014
Public Scoping for EA	March 2014
Conduct Environmental Studies and Prepare Draft EA	Spring 2014
Draft EA Publication	Early Summer 2014
Public Review of Draft EA	Summer 2014
Final EA Publication	Late Fall 2014
Western Decision: Finding of No Significant Impact or Determination to Prepare an EIS	Winter 2014
Project Implementation (depending on Western's Decision)	Ongoing O&M Activities

Western AREA POWER ADMINISTRATION

Parker-Davis Transmission System

Programmatic Operations and Maintenance, and Integrated Vegetation Management Program

PUBLIC INVOLVEMENT DURING SCOPING

What is Scoping?

Scoping is required to satisfy the National Environmental Policy Act (NEPA) for federal actions. The NEPA scoping process triggers the start of the environmental review process and provides the public an opportunity to become involved early in the process.

Scoping is an opportunity for the public and governments (local, state, federal, tribal) to advise Western on the scope and content of the issues to be addressed in the environmental document. Your comments can help Western:

- **Identify the people and organizations interested in the project**
- **Identify the issues to be analyzed in the environmental document**
- **Identify gaps in data and information needs**

Suggestions for Effective Participation in Scoping

1. **Review project information available at the scoping meeting, and on the project web site: http://www.wapa.gov/dsw/environment/DOEEA1982.htm**
2. **Ask questions at the scoping meetings to understand the project and the NEPA environmental review process.**
3. **Suggest reasonable alternatives to the project that meet the purpose and need and measures that may help avoid or minimize possible impacts to the human environment.**
4. **Submit written comments to explain important issues that the environmental document should address or analyze.**

The following is a list of resource topics that will be analyzed during the NEPA process. The list might be revised based on public input. Let us know which issues you think are important and which may not need to be studied.

Land Use/Aviation
Agriculture/Prime Farmland
Recreation
Human Health and Safety
Visual/Aesthetics
Noise
Wildlife
Cultural Resources
Water Resources/Floodplains/Waters of the U.S.
Air Quality
Climate Change
Socio Economic/Environmental
Transportation
Intentional Destruction Acts
Geology/Soils
Mineral Resources
Hazardous Materials

How to Get Involved

Public scoping comments will be accepted through April 4, 2014. You can submit comments by filling out a comment card at tonight's meeting; by sending a letter, fax or email; or by calling Western.

Email: DSW-ParkerDavisProEA@wapa.gov
Phone: (602) 605-2592
Fax: (602) 605-2589
Mail: Western Area Power Administration
Sean Heath, Environmental Protection Specialist
615 S. 43rd Avenue
Phoenix, AZ 85009

You will also have an opportunity to comment on the Draft Environmental Assessment when it is available in Summer 2014.

Western AREA POWER ADMINISTRATION

Parker-Davis Transmission System

Programmatic Operations and Maintenance, and Integrated Vegetation Management Program

PROPOSED ACTION

Operations and Maintenance (O&M) activities and the implementation of an integrated vegetation management program on the Parker-Davis Transmission System.

Purpose and Need

Western proposes to maintain existing right-of-ways (ROW) to ensure system reliability and to establish and maintain safe all-weather access to transmission line structures and facilities.

Activities Under the Proposed Action

- O&M activities at the existing 53 substations, 9,993 structures, and 1,534 miles of transmission line
  - Regular aerial and ground patrols
  - Integrated vegetation management
  - Repair access roads
- Climbing inspections to identify deterioration in hardware
- Herbicide control methods
- Transmission system maintenance including replacing insulators; tightening, replacing, or repairing towers/poles or hardware; and looking for ROW encroachments
- Equipment/system updates including new conductors, capacitor banks, transformers, breakers, small solar power arrays, and other electrical equipment

Western AREA POWER ADMINISTRATION

Parker-Davis Transmission System

Programmatic Operations and Maintenance, and Integrated Vegetation Management Program

Scoping Comments

Parker-Davis Transmission System

Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Western AREA POWER ADMINISTRATION

Please print or write legibly. Thank you for your comments.

For more information, please visit the project web site: http://www.wapa.gov/dsw/environment/DOEEA1982.htm

Date: _____

Name*: _____

Affiliation (*if any*):* _____

Address:* _____

City, State, Zip Code:* _____

Telephone Number:* _____

Email:* _____

Comment:* _____

Please send me notifications by: ☐ **email** ☐ **mail** ☐ **I do not want to be on the project mailing list**

**This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety.*

Your comments will help Western determine the scope and content of the environmental document and identify alternatives and measures to reduce impacts. Submit comments by mail using this comment sheet (fold, stamp, and mail); attach additional sheets if needed. Comments must be postmarked by April 4, 2014. Comments may also be submitted by email to DSW-ParkerDavisProEA@wapa.gov or by phone (602) 605-2592.

Place
Postage
Here

Sean Heath, Environmental Protection Specialist
Western Area Power Administration
Desert Southwest Region
615 S. 43rd Avenue
Phoenix, AZ 85009

Attachment 2

Summary of Agency & Public Comments Received

Agency

1. **U.S Department of Interior, Fish & Wildlife Service - April 3, 2014**
2. **Arizona Game and Fish Department - April 4, 2014**
3. **Nevada State Historic Preservation Office - April 3, 2014**
4. **Nevada Department of Conservation and Natural Resources, Division of Water Resources - March 26, 2014**
5. **Nevada Department of Wildlife – March 27, 2014**
6. **Nevada Division of State Lands and the State Land Use Planning Agency – April 4, 2014**

Public

1. **James Lucas – March 11th, 2014**
2. **Dale Kemper - February 28th, 2014**
3. **Gary Turley - March 11th, 2014**
4. **Bob Black - March 18th, 2014**

United States Department of the Interior
U.S. 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

In reply refer to:
AESO/SE
02EAAZ00-2014-TA-0138
02EAAZ00-2014-CPA-0020

April 3, 2014

Ms. Linda Marianito, Environmental Manager
Western Area Power Administration
Post Office Box 6457
Phoenix, Arizona 85005-6457

Dear Ms. Marianito:

Thank you for your correspondence of February 28, 2014, received in our office March 12, 2014. This letter documents our response to your "Scoping Letter for Environmental Assessment of Western's Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Project (DOE/EA-1982)" under the authority of the National Environmental Policy Act (NEPA) (40 CFR part 1503). In addition, we provide recommendations, as technical assistance, under the authority of section 7 of the Endangered Species Act of 1973 (ESA) as amended (16 U.S.C. 1531 et seq.).

The Parker-Davis Transmission System consists of 53 substations, 9,993 structures (poles or towers), and 1,534 miles of transmission line. Operation and maintenance (O&M) and integrated vegetation management would occur within existing legal rights-of-way (ROW) on existing transmission line and access roads, as well as at substations and maintenance facilities associated with the power system. The proposed O&M activities would consist of aerial and ground patrols to locate and correct problems, regular and preventative maintenance, inspections and repairs to protect against operational hazards, and road repair to provide access for maintenance and emergencies. The integrated vegetation management program would manage vegetation to protect facilities from fire, control the spread of noxious weeds to protect environmental quality, and establish and maintain low-growing plant communities in the ROW.

We recommend that the environmental assessment include a comprehensive discussion of potential direct and indirect impacts of the project on species listed pursuant to ESA, including southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Pima pineapple cactus (*Coryphantha scheeri var robustispina*), Gila chub (*Gila intermedia*); species proposed for listing, including yellow-billed cuckoo (*Coccyzus americanus*) and northern Mexican gartsersnake (*Thamnophis eques megalops*); and other sensitive species such as the Sonoran desert tortoise (*Gopherus morafkai*), Tucson shovel-nosed snake, (*Chionactis occipitalis klauberi*), western

burrowing owl (*Athene cunicularia)*, and the non-essential population of Sonoran pronghorn (*Antilocapra americana sonoriensis)*; and that measures to avoid and minimize impacts to these species and associated habitat be included.

Portions of the Parker-Davis Transmission System cross the Colorado, Bill Williams, Gila, Agua Fria, and San Pedro rivers and Granite Creek, Big Bug Creek, and Williamson Valley Wash. These streams support aquatic and/or riparian habitat at or downstream from the crossings. We recommend that the environmental assessment include measures to avoid and minimize direct and indirect impacts of the project to sensitive species and habitat value associated with stream crossing areas. We recommend that routine maintenance and vegetation management along transmission lines avoid the nesting season for migratory birds. We recommend that road maintenance activities include refurbishing or installing erosion control features, such as water bars, to reduce erosion of sediment from transmission line roads into downstream watercourses.

We recommend inclusion of conservation measures to protect habitat value of forage plants for nectar feeding lesser long-nosed bats, including saguaros (*Carnegiea gigantea*) and paniculate agaves (*Agave palmeri, Agave parryi, and Agave deserti*), such as relocation of movable plants. We recommend that the analysis consider the highly variable growth rates of vegetation, dependent largely on availability of soil moisture, in establishing a vegetation management program so that habitat values of slow growing tall plants are not unnecessarily reduced.

Lastly, we recommend you follow our *Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service* (available at http://www.fws.gov/southwest/es/arizona/Documents/ECReports/RPMPA_2007.pdf) for any application of herbicides for vegetation management.

Thank you for the opportunity to provide scoping comments and technical assistance on this proposed project. In all future correspondence on this project, please refer to project number 02EAAZ00-2014-TA-0138. In keeping with our trust responsibility to American Indian Tribes, and pursuant to Secretarial Order 3206, we encourage you to invite any Tribe affected by the proposed action and Bureau of Indian Affairs to participate in the consultation process and, by copy of this letter, are notifying potentially affected tribes and the BIA. We also encourage you to continue to coordinate this project with the Arizona Game and Fish Department.

Should you require further assistance or if you have any questions, please contact Bill Werner (x217) or Brenda Smith (928-556-2157). Thank you for your continued efforts to conserve endangered species.

Sincerely,

Brenda H. Smith

for Steven L. Spangle
Field Supervisor

cc: (electronic copy)
Director, Chemehuevi Cultural Resources Center, Havasu Lake, CA
Manager, Cultural Resources, Cocopah Tribe, Somerton, AZ
Director, Museum, Colorado River Indian Tribes, Parker, AZ
Director, Aha Makav Cultural Society Fort Mojave Indian Tribe, Mohave Valley, AZ
Tribal Historic Preservation Officer, Gila River Indian Community, Sacaton, AZ
Director, Hopi Cultural Preservation Office, Kykotsmovi, AZ
Program Manager, Tribal Historic Preservation Office, Hualapai Tribe, Peach Springs, AZ
Assistant Attorney General, Pascua Yaqui Tribe, AZ
Historic Preservation Officer, Quechan Tribe, Yuma, AZ
Director, Cultural Resources Department, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
Director, San Carlos Tribal Historic Preservation Office, San Carlos, AZ
Director, Cultural Resources, White Mountain Apache Tribe, Whiteriver, AZ
Tribal Archaeologist, Yavapai-Apache Nation, Camp Verde, AZ
Director, Cultural Research Program, Yavapai-Prescott Indian Tribe, Prescott, AZ
Branch Chief, Environmental Quality Services, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Fish and Wildlife Biologists, Fish and Wildlife Service, Tucson, Phoenix, AZ
(Scott Richardson, Marit Alanen, Jeff Servoss, Susan Sferra, Julie Crawford, Erin Fernandez-Timbadia)
(Ryan Gordon, Greg Beatty, Lesley Fitzpatrick)
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Region III, Arizona Game and Fish Department, Kingman, AZ
Regional Supervisor, Region IV, Arizona Game and Fish Department, Yuma, AZ
Regional Supervisor, Region V, Arizona Game and Fish Department, Tucson, AZ

W:\William Werner\Brendas Signature\LWAPA Parker_Davis O and M and Veg Maintenance 040314 02EAAZ00_2014_TA.docx:cgg

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

April 4, 2014

Western Area Power Administration
Attn: Mr. Sean Heath
Desert Southwest Region
615 S. 43rd Ave.
Phoenix, AZ 85009

Re: EA for Western's Parker-Davis Transmission System Programmatic Operation and Maintenance and Integrated Vegetation Management Project (DOE/EA-1982)

Dear Mr. Heath:

The Arizona Game and Fish Department (Department) received the letter dated February 28, 2014 inviting the Department to be involved and provide input on environmental issues associated with the above-mentioned Federal action. The Department supports Western Area Power Administration's (Western) efforts in developing an EA and incorporating stakeholders in the process.

The Department has identified at least two species that should be considered in development of the EA, desert bighorn sheep and Sonoran desert tortoise. Due to the coarse scale of the map, it is difficult for the Department to assess other species that may be impacted at this time. However, the Department would like to be involved in this process and provide input when there is more information available. We will provide our expertise in identifying potentially affected resources, evaluating impacts, and developing alternatives and mitigation strategies, if necessary. If you have any questions regarding this letter, please contact me at 623-236-7606.

Sincerely,

Ginger Ritter
Project Evaluation Program Specialist, Habitat Branch

cc: Laura Canaca, AGFD, Project Evaluation Program Supervisor, Habitat Branch
Bill Knowles, AGFD, Habitat Program Manager, Region IV

AGFD #M14-03065817

Skip Canfield

From: Rebecca Palmer
Sent: Thursday, April 03, 2014 4:39 PM
To: Skip Canfield
Cc: Julie Ernstein
Subject: RE: Nevada State Clearinghouse Notice E2014-112 (Scoping - EA Western's Parker-Davis Transmission System)

The SHPO has reviewed the scoping document and recommends that any future public scoping documents should address the development of Programmatic Agreements for DOE and Western compliance with Section 106 and the public's opportunity to comment, unless the agency plans a separate public scoping process during the preparation of the Programmatic Agreement.

Rebecca Palmer
Administrator, SHPO
775.684.3443

From: scanfield@lands.nv.gov [mailto:scanfield@lands.nv.gov]
Sent: Friday, March 14, 2014 9:42 AM
To: Alan Jenne; clytle@lincolnnv.com; Brad Hardenbrook; James Morefield; cohnl@nv.doe.gov; Mark Freese; Sandy Quilici; tcompton@dot.state.nv.us; tmueller@dot.state.nv.us; Tod.oppenborn@nellis.af.mil; zip.upham@navy.mil; Alex Lanza; Dave Marlow; Shimi.Mathew@nellis.af.mil; craig.mortimore@wildnevada.org; njboland.nev@gmail.com; Jennifer Crandell; Elizabeth A. Harrison; 99abw.ccy@nellis.af.mil; whenderson@nvleague.org; dstapleton@nvnaco.org; ddavis@unr.edu; munteanj@unr.edu; jprice@unr.edu; Karen Beckley; Rebecca Palmer; Mark Harris; ed.rybold@navy.mil; Sherry Rupert; kirk.bausman@us.army.mil; Denesa Johnston; Robert K. Martinez; Jennifer Scanland; gderks@dps.state.nv.us; dmouat@dri.edu; Alisanne Maffei; bthompson@dot.state.nv.us; Richard Ewell; Skip Canfield; brian.hunsaker@us.army.mil; Bette Hartnett; mison@dot.state.nv.us; Warren Turkett; Michael Visher; J ered.McDonald@lcb.state.nv.us; Jim R. Balderson; Peter Lassaline; jvanhavel@dot.state.nv.us; Lindsey Lesmeister; Stephen Foree; Mark Enders; John C. Tull; John Christopherson; Richard M. Perry; Tim Rubald; Kevin J. Hill; Jason Woodruff; BWhitney@washoecounty.us; endacottsteve@charter.net; Edward Foster; Jennifer Newmark; Lowell Price; Pete Anderson; Rich Harvey; Terry Rubald
Subject: Nevada State Clearinghouse Notice E2014-112 (Scoping - EA Western's Parker-Davis Transmission System)

NEVADA STATE CLEARINGHOUSE
Department of Conservation and Natural Resources, Division of State Lands
901 S. Stewart St., Ste. 5003, Carson City, Nevada 89701-5246
(775) 684-2723 Fax (775) 684-2721

TRANSMISSION DATE: 03/14/2014

U.S. Department of Energy

Nevada State Clearinghouse Notice E2014-112
Project: Scoping - EA Western's Parker-Davis Transmission System

Follow the link below to find information concerning the above-mentioned project for your review and comment.

E2014-112 - http://clearinghouse.nv.gov/public/Notice/2014/E2014-112.pdf

- **Please evaluate this project's effects on your agency's plans and programs and any other issues that you are aware of that might be pertinent to applicable laws and regulations.**

- **Please reply directly from this e-mail and attach your comments.**

- **Please submit your comments no later than Thursday April 3rd, 2014.**

Clearinghouse project archive

Questions? Skip Canfield, Program Manager, (775) 684-2723 or nevadaclearinghouse@lands.nv.gov

____No comment on this project ____Proposal supported as written

AGENCY COMMENTS:

Signature:

Date:

Requested By:

Distribution:
- 99ABW Nellis
- Division of Emergency Management

Alan Jenne - Department of Wildlife, Elko
Alex Lanza -
Alisanne Maffei - Department of Administration
Bette Hartnett - State Energy Office
Bill Thompson - Department of Transportation, Aviation
Bill Whitney - Washoe County Planning
CPT Brian Brian Hunsaker - Nevada National Guard
Cory Lytle - Lincoln County
Craig Mortimore - Wild Nevada
D. Bradford Hardenbrook - Department of Wildlife, Las Vegas
Dagny Stapleton - NACO
Dave Marlow -
David David - UNR Bureau of Mines
David Mouat - Desert Research Institute
Denesa Johnston - Fire Marshal
Ed Foster - Department of Agriculture
Ed Rybold - NAS Fallon
Elizabeth A. Harrison - Tahoe Resource Team - Division of State Lands
Gary Derks - Division of Emergency Management
J Crandell - Colorado River Commission of Nevada
James D. Morefield - Natural Heritage Program
Jason Van Havel - NDOT
Jason Woodruff - PUCN
Jennifer Newmark -
Jennifer Scanland - Division of State Parks
Jered McDonald - Legislative Counsel Bureau
Jim Balderson - NDEP
John Christopherson - Nevada Division of Forestry
John Muntean - UNR Bureau of Mines
John Tull - NDOW
Jon Price - UNR Bureau of Mines
Karen Beckley - State Health Division
Kevin Hill - Nevada State Energy Office
Kirk Bausman - Hawthorne Army Depot
Linda Cohn - National Nuclear Security Administration
Lindsey Lesmeister - NDOW
Lowell Price - Commission on Minerals
Mark Enders - NDOW
Mark Freese - Department of Wildlife
Mark Harris, PE - Public Utilities Commission
Michael Visher - Division of Minerals
Mitch Ison - NDOT
Nancy Boland - Esmeralda County
Pete Anderson - Division of Forestry
Peter Lassaline - NDEP
Rebecca Palmer - State Historic Preservation Office
Rich Harvey - Division of Forestry
Rich Perry - Nevada Division of Minerals
Robert Martinez - Division of Water Resources
Sandy Quilici - Department of Conservation & Natural Resources
Sherry Rupert - Indian Commission
Shimi Mathew - Nellis AFB
Skip Canfield - Division of State Lands
Stephen Foree - NDOW
Steve Endacott - City of Fallon
Terri Compton - Department of Transportation
Terry Rubald - Nevada Department of Taxation, Local Government, Centrally Assessed Property
Tim Rubald - Nevada Sagebrush Ecosystem Team

Timothy Mueller - Department of Transportation
Tod Oppenborn - Nellis Air Force Base
Warren Turkett - Colorado River Commission of Nevada
Wes Henderson - Nevada League of Cities
Zip Upham - NAS Fallon

Nevada State Clearinghouse
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5003
Carson City, NV 89701
775-684-2723
http://clearinghouse.nv.gov
www.lands.nv.gov

DATE: 3/26/2014
Division of Water Resources

Nevada SAI # E2014-112

EA Western's Parker-Davis Transmission System

_____No comment on this project X Proposal supported as written

AGENCY COMMENTS:

All waters of the State belong to the public and may be appropriated for beneficial use under the provisions of Nevada Revised Statutes (NRS) Chapters 533 and 534 and not otherwise.

Any water used on the described project for construction, dust control, or maintenance should be provided by an established utility or under permit or waiver issued by the State Engineer's Office. Treated effluent is considered water as referred to in NRS Chapter 533, and is subjected to appropriation for beneficial use under procedures described in NRS Chapter 533, and specifically NRS § 533.440. Any water or other boreholes located on the project lands are the responsibility of the owner of the property and must be plugged and abandoned as required in Chapter 534 of the Nevada Administrative Code. If artesian water is located in any well or borehole it shall be controlled as required in NRS 534.060(3).

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

BRIAN SANDOVAL
Governor

TONY WASLEY
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

March 27, 2014

NDOW-SR#: 14-109
SAI#: E2014-112

Sean Heath, Environmental Protection Specialist
Western Area Power Administration
615 S. 43rd Avenue
Phoenix, AZ 85009

Re: Scoping - Environmental Assessment of Western Area Power Administration Parker-Davis Transmission System - Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Dear Mr. Heath,

The Nevada Department of Wildlife (NDOW) appreciates this scoping opportunity for the subject environmental assessment. The following comments and recommendations are offered regarding potential effects to wildlife resources associated with the proposed actions occurring in Nevada.

- State of Nevada authorization is required to handle and/or remove wildlife out of harm's way in the project area. In keeping, in part, with Nevada Revised Statute 503.597 and Nevada Administrative Codes 503.093 and 503.0935, a Special Purpose Permit should be obtained if such a need is warranted. Additional to U.S. Fish & Wildlife authorization required for moving federally-listed threatened and endangered species out of harm's way, a State of Nevada Special Purpose Permit is also required. Application instructions can be presently obtained online at: http://www.ndow.org/uploadedFiles/ndoworg/Content/Forms_and_Resources/Instructions-Special-Purpose-Permit.pdf. A copy is enclosed. The NDOW's local contact for application assistance is Biologist Jason Jones who can be reached at 702.486.5127 x3718 or at jljones@ndow.org.
- The Gila monster is a State of Nevada protected reptile (NAC 503.080) and may be encountered as part of proposed project activities. To avoid conservation conflicts with this species, somewhat similar in habits to the desert tortoise, NDOW's Gila monster encounter protocol is also enclosed. The protocols are easily incorporated into project worker education and monitoring endeavors. The Gila monster protocols are also accessible online at: http://www.ndow.org/uploadedFiles/ndoworg/Content/Wildlife_Education/Publications/2012-Gila-Monster-Status-Identification-Reporting-Protocol-Observations.pdf
- Birds protected under the Migratory Bird Treaty Act (MBTA), including eagles and hawks, are also State protected (NAC 503.050). Ground disturbing activities should avoid the breeding and nesting season which occurs generally between March 1 and July 31, although several species like raptors, verdin, phainopepla and cactus wren may begin earlier in February. If seasonal avoidance is not practicable, then survey by a qualified biologist of the project site prior to any ground disturbing activities to determine if nesting is underway is recommended. In the event an active nest (containing eggs or young) is discovered or frequently attended by adult birds, a buffer area around the nest appropriate for the species involved must be identified and avoided until

young birds have fledged. This measure is consistent with preventive actions advocated by the U.S. Fish & Wildlife Service (Service) concerning MBTA-protected birds. An example of species-specific guidance for the burrowing owl can be accessed at: http://www.azgfd.gov/pdfs/w_c/owl/burrowingowlclearanceprotocol.pdf.

- Avoidance of herbicide application during the breeding season for all wildlife is recommended.
- If active raptor nests are encountered the Department requests information including location setting and UTM coordinates, species, and if young are present. This information should be directed to Biologist Christy Klinger at 702.486.5127 x3717 or Christy@ndow.org.

Thank you for this scoping opportunity. As planning moves forward we look forward to continued involvement in the NEPA process inclusive of review of appropriate and reasonable considerations for wildlife and wildlife-related activities. For additional assistance on this letter, please contact Biologist Anthony Miller at the Department's Southern Region Office in Las Vegas. He can be reached by phone at 702.486.5127 x3613, or by e-mail at ajmiller@ndow.org.

Sincerely,

D. Bradford Hardenbrook
Supervisory Habitat Biologist
Southern Region, Nevada Department of Wildlife
4747 Vegas Drive, Las Vegas, Nevada 89108
702.486.5127 x3600; 702.486.5133 FAX
bhrdnbrk@ndow.org

AJM: DBH

cc: Nevada State Clearinghouse
NDOW, Files

PERTINENT STATUTES AND REGULATIONS

LCB File No. R148-12 Special Purpose Permit

1. The Department may issue a special purpose permit pursuant to NRS 503.597 which authorizes the handling, moving or temporarily possessing any wildlife which is classified as protected for the purpose of reducing or eliminating the risk of harm to the wildlife that may result from any lawful activity conducted on land where the wildlife is located.

2. An applicant for a special purpose permit must include on his application:

(a) The name and date of birth of the applicant;
(b) The physical or mailing addresses and telephone number of the applicant;
(c) The name, address and telephone numbers of the place of employment of the applicant;
(d) The driver's license number, the state that issued the driver's license and the date of issue of the driver's license of the applicant, if the applicant holds a driver's license;
(e) The name of the company or other entity that the applicant is representing, if different from the employer of the applicant;
(f) The name of each person who, at the direction of the applicant, will handle, move or temporarily possess the wildlife under the authority of the special permit;
(g) The common and scientific name and the number of each species of wildlife, or nests or eggs thereof, to be handled, moved or temporarily possessed;
(h) The manner in which each specimen of wildlife will be handled, moved or temporarily possessed;
(i) The locations at which and the dates when the wildlife are to be handled, moved or temporarily possessed;
(j) The locations at which or to which the wildlife will be handled, moved or temporarily possessed, if any;
(k) A brief synopsis, not to exceed five pages, of the purpose and justification for the handling, moving or temporary possession of the wildlife; and
(l) The signature of the applicant and the date on which the applicant signed the application.

3. A special permit in subsection 1 must be valid for not more than 1 year. Upon its approval of the application and submission of the fee, the Department shall issue the special purpose permit based on a calendar year.

4. Based on its evaluation of the application, the Department may make such stipulations and conditions on the use and scope of the special permit as the Department deems appropriate. A violation of a stipulation or condition is cause for the cancellation of the special permit.

5. Not later than 30 days after expiration of a special permit specified in subsection 1, the holder of the special permit shall submit to the Department a report which includes, without limitation:

(a) A list of each species of wildlife which is classified as protected that was handled, moved or temporarily possessed, for each such species:
    (1) The number of wildlife handled, moved or temporarily possessed at each location where the wildlife was handled, moved or temporarily possessed; and
    (2) The date on which the wildlife was handled, moved or temporarily possessed; and
(b) Any other information which the Department requires.

6. A special permit specified in subsection 1 which is issued by the Department for the handling, movement or temporary possession of:

(a) A migratory bird that is protected by the Migratory Bird Treaty Act, as amended, 16 U.S.C. §§ 703 et seq.; or

(b) A species of wildlife that is listed as threatened or endangered by the United States Fish and Wildlife Service,

is not valid for the handling, movement or temporary possession of the migratory bird or the threatened or endangered species until the Department receives a copy of the federal permit and/or the biological opinion issued by the United States Fish and Wildlife Service to the applicant for handling, movement or temporary possession of the migratory bird or threatened or endangered species.

WHERE TO SEND APPLICATION

Nevada Department of Wildlife
License Office – Special Purpose Permit
4600 Kietzke Lane – D-135, Reno, NV 89502

INSTRUCTIONS
SPECIAL PURPOSE PERMIT

Fee: ☐ **$200.00 – 1 Year Permit (22.05)**

LEGAL AUTHORITY: **NRS 503.597; LCB File No. R148-12**

WILDLIFE DEFINED: Any wild mammal, wild bird, fish, reptile, amphibian, mollusk, or crustacean found naturally in a wild state, whether indigenous to Nevada or not and whether raised in captivity or not.

PERMIT REQUIREMENT: Upon the written permit of the Department, a person may handle, move or temporarily possess any wildlife which is classified as protected for the purpose of reducing or eliminating the risk of harm to the wildlife that may result from any lawful activity conducted on land where the wildlife is located. Permits expire December 31 of each year.

WHERE TO OBTAIN APPLICATION: An application for a permit may be obtained from any Department office located, Elko, Las Vegas, Reno, or on the website at www.ndow.org under the License Office section.

PROCESSING TIME: All applications are subject to a statewide review process. Allow 4 to 6 weeks for processing. Applications submitted with incomplete Applicant Information section will be returned to the client and could cause a delay in the approval and issuance of the permit.

DENIAL OF APPLICATION: Whenever an application is denied, the Department shall notify the applicant in writing of the reason for the denial.

FEDERAL PERMIT REQUIREMENTS: An applicant must submit a copy of his federal permit(s), issued by the U.S. Fish and Wildlife Service with his application that involve threatened or endangered species, or migratory birds protected by the Migratory Bird Treaty Act.

GENERAL RESTRICTIONS, CONDITIONS, AND REQUIREMENTS

POSSESSION OF PERMIT. A copy of the state permit and federal permit (if required) must be in the possession of the permittee while removal, relocating or transporting wildlife specimens.

TRESPASS. The permit does not authorize trespass and/or collection activities on state or federal wildlife refuges or reserves, or other public and private property without permission from the landowner or custodian.

ANNUAL REPORTS. A report of all removal, relocating and salvage activities listing: date of capture/relocated of each species; the number of specimens of each species which were captured/relocated; the habitat type where each specimen was taken; the sex of each specimen; and a description of the location of capture/relocated for each specimen by of the following method:

- UTM coordinates, NAD 83, Zone 11, rounded to the nearest meter. -

Reports must be submitted to:

Nevada Department of Wildlife
License Office – Scientific Collection
4600 Kietzke Ln D135
Reno, NV 89502

COMMERCIALIZATION PROHIBITED. Wildlife collected under the authority of a special purpose permit must not be sold, bartered, traded, or converted to personal use.

NEVADA DEPARTMENT OF WILDLIFE
Southern Region
4747 W. Vegas Drive, Las Vegas, Nevada 89108
Phone: 702-486-5127, Fax: 702-486-5133

7 September 2012

GILA MONSTER STATUS, IDENTIFICATION AND REPORTING PROTOCOL FOR OBSERVATIONS

Gila Monster Status

- Per Nevada Administrative Code 503.080, the Gila monster (*Heloderma suspectum*) is classified as a Protected reptile.

- Per Nevada Administrative Codes 503.090, and 503.093, no person shall capture, kill, or possess any part thereof of Protected wildlife without the prior written permission by the Nevada Department of Wildlife (NDOW).

This species is rarely observed relative to other species which is the primary reason for its Protected classification by the State of Nevada. The USDI Bureau of Land Management has recognized this lizard as a sensitive species since 1978. Most recently, the Gila monster was designated as an *Evaluation* species under Clark County's Multiple Species Habitat Conservation Plan (MSHCP). The evaluation designation was warranted because inadequate information exists to determine if mitigation facilitated by the MSHCP would demonstrably cover conservation actions necessary to insure the species' persistence without protective intervention as provided under the federal Endangered Species Act.

The banded Gila monster (*H.s. cinctum*) is the subspecies that occurs in Clark, Lincoln, and Nye counties of Nevada. Found mainly below 5,000 feet elevation, its geographic range approximates that of the desert tortoise (*Gopherus agasizii*) and is coincident to the Colorado River drainage. Gila monster habitat requirements center on desert wash, spring and riparian habitats that inter-digitate primarily with complex rocky landscapes of upland desert scrub. They will use and are occasionally encountered out in gentler terrain of alluvial fans (bajadas). Hence, Gila monster habitat bridges and overlaps that of both the desert tortoise and chuckwalla (*Sauromalus ater*). Gila monsters are secretive and difficult to locate, spending >95% of their lives underground.

The Gila monster is the only venomous lizard endemic to the United States. Its behavioral disposition is somewhat docile and avoids confrontation. But it will readily defend itself if threatened. Most bites are considered illegitimate and consequential to harassment or careless handling. These lizards are not dangerous unless molested or handled and should not be killed.

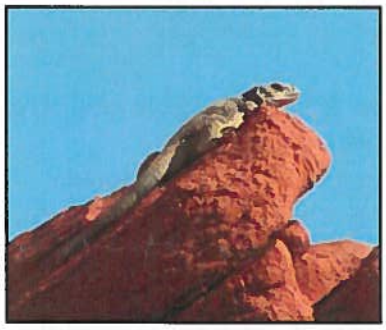
Scant information exists on detailed distribution and relative abundance in Nevada. The Nevada Department of Wildlife (NDOW) has ongoing management investigations addressing the Gila monster's status and distribution, hence additional distribution, habitat, and biological

information is of utmost interest. In assistance to gathering additional information about Gila monsters in Nevada, NDOW will be notified whenever a Gila monster is encountered or observed, and under what circumstances (see Reporting Protocol below).

Identification

The Gila monster is recognizable by its striking black and orange-pink coloration and bumpy, or beaded, skin. In keeping with its namesake, the banded Gila monster retains a black chain-link, banded appearance into adulthood. Other lizard species are often mistaken for the Gila monster. Of these, the non-venomous western banded gecko (*Coleonyx variegatus*) and non-venomous chuckwalla are most frequently confused with the Gila monster. All three species share the same habitats.

The western banded gecko is often mistakenly identified as a baby or juvenile Gila monster. Western banded geckos do have a finely granular skin and pattern that can be suggestive of the Gila monster to the untrained eye. However, western banded gecko heads are somewhat pointed at the snout and the relatively large eyes have vertical pupils. Snouts of Gila monsters are bluntly rounded and the smallish eyes have round pupils. Newly hatched Gila monsters are about 5-6 inches long with a vivid orange and black, banded pattern. Adult western banded geckos are at best cream to yellow and brown in pattern and do not exceed 5 inches.



Both juvenile and adult chuckwallas are commonly confused with the Gila monster. Juvenile chuckwallas have an orange and black, banded tail. Although banding of the tail fades as chuckwallas mature, their large adult size (up to 17 inches) rivals that of the Gila monster. Adult chuckwallas have a body shape somewhat suggestive of the Gila monster, but they lack the coarsely beaded skin and black and orange body pattern of the Gila monster.

Reporting Protocol for Gila Monster Observations

Field workers and personnel in southern Nevada should at least know how to: (1) identify Gila monsters and be able to distinguish it from other lizards such as chuckwallas and western banded geckos (see Identification section above); (2) report any observations of Gila monsters to the Nevada Department of Wildlife (NDOW); (3) be alerted to the consequences of a Gila monster bite resulting from carelessness or unnecessary harassment; and (4) be aware of protective measures provided under state law.

1) Live Gila monsters found in harms way on the construction site will be captured and then

detained in a cool, shaded environment (≤85°F) by the project biologist or equivalent personnel until a NDOW biologist can arrive for documentation, marking and obtaining biological measurements and samples prior to releasing. Despite that a Gila monster is venomous and can deliver a serious bite, its relatively slow gate allows for it to be easily coaxed or lifted into an open bucket or box carefully using a long handled instrument such as a shovel or snake hook (*Note: it is not the intent of NDOW to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points*). A clean 5-gallon plastic bucket with a secure, vented lid; an 18"x 18"x 4" plastic sweater box with a secure, vented lid; or, a tape-sealed cardboard box of similar dimension may be used for safe containment. Additionally, written information identifying the mapped capture location, Global Positioning System (GPS) coordinates in Universal Transverse Mercator (UTM) using the North American Datum (NAD) 83 zone 11. Date, time, and circumstances (e.g. biological survey or construction) and habitat description (vegetation, slope, aspect, substrate) will also be provided to NDOW.

2) Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses will not be covered by NDOW. However, NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location (GPS coordinates in UTM using NAD 83 Z 11).

3) Should NDOW's assistance be delayed, biological or equivalent acting personnel on site should detain the Gila monster out of harms way until NDOW personnel can respond. **The Gila monster should be detained until NDOW biologists have responded**. Should NDOW not be immediately available to respond for photo-documentation, a digital (5 mega-pixle or higher) or 35mm camera will be used to take good quality images of the Gila monster in situ at the location of live encounter or dead salvage. The pictures will be provided to NDOW at the address above or the email address below along with specific location information including GPS coordinates in UTM using NAD 83 Z 11, date, time and habitat description. Pictures will show the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); (3) a clear, overhead close-up of the head (head should fill camera's field of view and be in sharp focus).

Please contact NDOW Biologist Jason L. Jones at 702-486-5127 x3718
or by e-mail at jljones@ndow.org for additional information regarding these protocols.

FW: State Agency Comments E2014-112 Scoping - EA Western's Parker-Davis Transmission System

Heath, Sean <heath@wapa.gov> on behalf of
DSW-ParkerDavisProEA <DSW-ParkerDavisProEA@wapa.gov>

Mon 4/7/2014 9:13 AM

To:parker- Davis Project <parker-davis@aspeneg.com>;

Cc:Negar Vahidi <NVahidi@aspeneg.com>;

2 attachments

E2014-112 SHPO (Scoping - EA Western's Parker-Davis Transmission System).pdf; E2014-112 NDWR (Scoping - EA Western's Parker-Davis Transmission System).pdf;

From: Skip Canfield [mailto:scanfield@lands.nv.gov]
Sent: Friday, April 04, 2014 11:41 AM
To: DSW-ParkerDavisProEA
Cc: Skip Canfield
Subject: State Agency Comments E2014-112 Scoping - EA Western's Parker-Davis Transmission System

The Nevada State Clearinghouse received the attached comments and the comments below regarding this proposal,
http://clearinghouse.nv.gov/public/Notice/2014/E2014-112.pdf

Skip Canfield
Nevada State Clearinghouse
State Land Use Planning Agency

Nevada Division of State Lands
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5003
Carson City, NV 89701
775-684-2723
http://clearinghouse.nv.gov
www.lands.nv.gov

The Nevada Division of State Lands and the State Land Use Planning Agency offer the following comments:

Please consider the cumulative visual impacts from development activities **(temporary and permanent)**. Some notable activities include proliferation of new roads, poorly-sited and designed structures, lack of co-location of infrastructure and improper lighting, to name a few.

The following mitigation measures should be required:

Utilize appropriate lighting:

- Utilize consistent lighting mitigation measures that follow "Dark Sky" lighting practices.
- Effective lighting should have screens that do not allow the bulb to shine up or out. All proposed lighting shall be located to avoid light pollution onto any adjacent lands as viewed from a distance. All lighting fixtures shall be hooded and shielded, face downward, located within soffits and directed on to the pertinent site only, and away from adjacent parcels or areas.
- A lighting plan should be submitted indicating the types of lighting and fixtures, the locations of fixtures, lumens of lighting, and the areas illuminated by the lighting plan.
- Any required FAA lighting should be consolidated and minimized wherever possible.

In addition, the following mitigation measures should be employed.

Utilize building materials, colors and site placement that are compatible with the natural environment:

- Utilize consistent mitigation measures that address logical placement of improvements and use of appropriate screening and structure colors. Existing utility corridors, roads and areas of disturbed land should be utilized wherever possible. Proliferation of new roads should be avoided.
- For example, the use of compatible paint colors on structures reduces the visual impacts of the built environment. Using screening, careful site placement, and cognitive use of earth-tone colors/materials that match the environment improve the user experience for others who might have different values than what is fostered by built environment activities.
- Federal agencies should require these mitigation measures as conditions of approval for all permanent and temporary applications.

Skip Canfield
State Land Use Planning Agency

March 11, 2014

To Whom It May Concern:

In response to your letter (see attached), the following reply is tendered for your consideration.

My wife and I share your concern regarding the overgrown vegetation and the erosion of any usable roadway for your projected usage and access for maintenance and operations of the overhead transmission lines.

Currently, the road within your R.O.W., is simply non-existant due to runoff from rains. The vegetation has overgrown to a point where it has become a fire hazard of the first order. Our land east of your right-of-way is cleared and kept cleared by myself to protect our dwellings.

Since we first bought this land in 1996, there has never been any attempt to maintain this area in regard to vegetation control or road maintenance by any agency. I don't mean this as a critical remark, but just as a matter of fact.

When and if this concern is realized and the needed maintenance is accomplished by your organization, I would assist in maintaining that area in a state of acceptability, as long as I am able.

Sincerely,

James R. Lucas

James R. Lucas
25082 E. Desert Hills Rd.
P.O. Box 2358
Florence, Az. 85132
520-858-6643/520-560-3886

FW: Input about Letter Dated 2/28/14

Heath, Sean <heath@wapa.gov> on behalf of
DSW-ParkerDavisProEA <DSW-ParkerDavisProEA@wapa.gov>

Wed 3/5/2014 10:09 AM

To parker- Davis Project <parker-davis@aspeneg.com>;

Sean Heath
Environmental Protection Specialist
Desert Southwest Region
Western Area Power Administration
615 S. 43rd Avenue
Phoenix, AZ 85009
(602) 605-2592 | Office
(602) 329-8371 | Cell

From: Dale [mailto:kemper.dale@cox.net]
Sent: Tuesday, March 04, 2014 12:00 PM
To: DSW-ParkerDavisProEA
Cc: Paulsen, Scott
Subject: Input about Letter Dated 2/28/14

As much as I dislike WAPA access I am aware that the easement gives them the right. I recommend notifying property owners about 48-hours in advance when you will or may require access so we can unlock gates and be present at that time if we desire. Notification by telephone or email would be great.

Thanks,
Dale Kemper
480-844-0875
Kemper.dale@cox.net

FW:

DELETE REPLY REPLY ALL FORWARD

Heath, Sean <heath@wapa.gov> on behalf of DSW-ParkerD mark as unread

Wed 3/12/2014 8:55 AM

To: parker- Davis Project;

Bing Maps + Get more apps

Sean Heath
Environmental Protection Specialist
Desert Southwest Region
Western Area Power Administration
615 S. 43rd Avenue
Phoenix, AZ 85009
(602) 605-2592 | Office
(602) 329-8371 | Cell

From: Turley Gary B [mailto:Gary.Turley@srpnet.com]
Sent: Tuesday, March 11, 2014 2:06 PM
To: DSW-ParkerDavisProEA
Subject:

To whom it may concern,
I am very supportive of establishing and maintaining safe access to all existing and future transmission line ROW's as well as the vegetation that will help protect, maintain and beautify these areas.
Thank you for your interest.
Gary Turley

Scoping Comments

Parker-Davis Transmission System

Programmatic Operation and Maintenance, and Integrated Vegetation Management Program

Western AREA POWER ADMINISTRATION

Please print or write legibly. Thank you for your comments.

For more information, please visit the project web site: http://www.wapa.gov/dsw/environment/DOEEA1982.htm

Date: March 19, 2014

Name*: ROD BLACK

Affiliation (*if any*):* Yuma Audubon

Address:* 1317 W Hillside pl

City, State, Zip Code:* Yuma AZ 85364

Telephone Number:*

Email:* Rod4039@Gmail.com

Comment:* NOT AT This Time - WAITING for EA pub in Sept 2014 -

Please send me notifications by: ☐ email ☐ mail ☐ I do not want to be on the project mailing list

**This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety.*

Your comments will help Western determine the scope and content of the environmental document and identify alternatives and measures to reduce impacts. Submit comments by mail using this comment sheet (fold, stamp, and mail); attach additional sheets if needed. Comments must be postmarked by April 4, 2014. Comments may also be submitted by email to DSW-ParkerDavisProEA@wapa.gov or by phone (602) 605-2592.

Appendix D

Western's Programmatic Agreements

[To be provided with Final EA]

Appendix E

Biological Assessment

[To be provided with Final EA]