

August 2011  
DOE/EA-1864

**Department of Energy  
Western Area Power Administration  
Finding of No Significant Impact  
and Floodplain Statement of Findings  
Electrical District 5 – Palo Verde Hub Project  
Maricopa and Pinal Counties, Arizona**

**Summary** - The U.S. Department of Energy (DOE) Western Area Power Administration (Western) along with southern Arizona electrical providers propose to acquire transmission line rights, build and operate a new transmission segment, upgrade an existing line segment, and expand three substation facilities between the Palo Verde Hub Substation near the community of Arlington and the Electrical District 5 (ED5) Substation near Picacho Peak in Maricopa and Pinal Counties, Arizona (the ED-5-PVH Project).

Western is the Federal agency responsible for preparing the environmental assessment (EA). The EA, titled "Draft Environmental Assessment Electrical District 5-Palo Verde Hub Project (DOE/EA-1864)", was distributed on June 9, 2011, for review by Federal, state, tribal, and local agencies that have jurisdiction or permitting authority for the Proposed Action. In response to comments received, a final EA was prepared to clarify and correct information in the draft EA. The final EA is approved concurrently with this finding of no significant impact (FONSI).

Based on findings and analysis in the EA, Western has determined that with resource protection measures, the ED5-PVH Project (Proposed Action) would not result in any significant environmental impacts. Therefore, preparation of an environmental impact statement (EIS) will not be required. The basis for this determination is described in this FONSI.

Additional information and copies of the EA and FONSI are available to all interested persons and the public through the following contact:

Linette King  
Desert Southwest Region  
Western Area Power Administration  
P.O. Box 6457  
Phoenix, AZ 85005-6457  
Phone: (602) 605-2434  
Fax: (602) 605-2630  
E-mail: [lking@wapa.gov](mailto:lking@wapa.gov)

For general information on DOE National Environmental Policy Act (NEPA) activities contact:

Carol M. Borgstrom  
Director, Office of NEPA Policy and Compliance, EH-42 U.S.  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585  
Phone: (202) 586-4600 or (800) 472-2756

**Purpose and Need** – Western’s mission is to market and deliver low-cost power and maintain the effectiveness and integrity of its transmission system. This mission aligns with the mission of the DOE to ensure America’s security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions (DOE 2011).

Demand for electricity continues to grow in south central Arizona and the existing transmission grid across the region is aging and increasingly operating at its full capacity during peak periods of electric use. Western and other utilities have identified the need to improve system reliability and enhance transfer capability between the Palo Verde Hub Substation and the ED5 Substation. At the request of its customers, Western is coordinating with other utilities to ensure adequate and reliable electric service to the area. This project would help supply energy to customers and improve electric system reliability by enabling delivery of electricity from existing and new generating resources, including renewable resources.

**Project Description** – Western and numerous southern Arizona utility districts and public utilities, are cooperating to plan, design, fund, and construct the Proposed Action. The Proposed Action is described by line segments that extend between substation facilities or between geographic locations. The four line segments and three substations along with the planned action can further be described:

**1) Palo Verde Hub - Pinal West (PVH-PW) Segment**, Western proposes to acquire transmission line rights from ED3 and ED4 to send power over the existing line;

**2) Pinal West - Test Track (PW-TTT) Segment**, Western proposes to acquire transmission line rights from ED3 and ED4 to send power over the line which will be constructed separately by the other utilities before the Proposed Action is constructed;

**3) Test Track – Thornton Road (TTT-Thornton Rd) Segment**, Western proposes to construct, own, and operate a new 230-kV line as an underbuild circuit to the 500-kV transmission line from Duke Substation to Thornton Road planned by the other utilities ;

**4) Thornton Road – ED-5 (Thornton Rd-ED-5) Segment**, Western proposes to upgrade a 230-kV line segment by installing a second 230-kV circuit (double circuited) to the planned 230-kV transmission line upgrade;

**5) Casa Grande Substation**, Western proposes to expand the existing 2.2 acres substation to 10.52 acres;

**6) ED5 Substation**, Western proposes to expand the existing 3.4 acres substation up to 9.3 acres; and

**7) Test Track Substation**, Western proposes to expand the existing 2.7 acres substation to 3.8 acres.

The Proposed Action would provide transmission access to a major market hub (PVH) and

enhance the viability of renewable resource development in Pinal County. Specifically, this project is located in and would provide a tie between the Western Renewable Energy Zones AZ\_WE and AZ\_SO.

Disturbed surfaces would be restored to the original contour following construction and cleanup as required by the Arizona State Land Department (ASLD). All disturbed soil, other than surfaces intended for permanent access roads, would be seeded with native species free of invasive seed.

**Agency Consultation and Public Participation Process** – In January 2011 notification letters were sent to eight tribes describing the project, requesting feedback, and offering involvement in the project. Western sent letters in February 2011 to notify Federal, state, local, agencies of the Proposed Action.

Western solicited public/agency comment through a public open house that was advertised in local newspapers for the City of Maricopa, the City of Casa Grande, and the Town of Eloy. The newspaper ads also included a Notice of Floodplain involvement to comply with the DOE Compliance with Floodplain-Wetlands Environmental Review Requirements under 10 CFR part 1022. A public open house meeting was held on March 9, 2011 in Casa Grande's Parks and Recreation facility.

Western distributed a draft EA for pre-approval review of the proposed project on June 9, 2011, to the federal, tribal, and state resource agencies. Copies were also placed in the libraries of the Maricopa, Casa Grande, and Maricopa for public viewing as well as posted on two websites: [http://nepa.energy.gov/draft\\_environmental\\_assessments.htm](http://nepa.energy.gov/draft_environmental_assessments.htm) and <http://www.wapa.gov/dsw/environment>. Comments received were incorporated into the final EA and considered in Western's determination of whether an EIS is required. The final EA is approved concurrently with this FONSI.

Several responses were received as a result of the agency/public scoping process and Draft EA review. At the request of the City of Maricopa and City of Casa Grande, Western provided project information to confirm the Proposed Action did not conflict with planned municipal projects. Western held a teleconference with the Arizona Game and Fish Department in March 2011 to discuss comments the agency made in a response to the scoping letter. At the public open house no attendees opposed the project. Two agencies, ASLD, and Arizona Department of Environmental Quality, and the White Mountain Apache Tribe responded to the Draft EA with letters stating that no major concerns were raised and no further action would be required. The Gila River Indian Community (GRIC) sent a letter with no major concerns; however, they stated that a GRIC dust control plan / air quality permit maybe required. Western determined through a conversation with the GRIC air quality specialist that no GRIC permit is required.

Consultation with the Arizona State Historic Preservation Office (SHPO) in accordance with procedures provided in Section 106 of the National Historic Preservation Act (36 CFR Part 800, "Protection of Historic Properties") was conducted for actions to the line segments. Western determined that the Proposed Action will not adversely affect historic properties. Western received concurrences on its findings of no adverse effect from the Arizona SHPO.

Western contacted eight Indian tribal governments regarding this project to determine if

they had concerns or issues regarding cultural resources, traditional cultural properties, or religious practices. Western sent letters and followed up with phone calls/emails to GRIC, Ak-Chin Indian Community, Tohono O'odham Nation, Salt River Pima-Maricopa Indian Community, Colorado River Indian Tribes, Hopi Tribe, San Carlos Apache Nation, and White Mountain Apache Tribe. Tribes were also offered opportunities to participate in site visits and to review and comment on draft cultural resource survey reports. In June 2011 all eight tribes listed previously received a transmittal memo and a CD of the Draft EA for the ED5-PVH project for their review and comments.

**Alternatives** - DOE's NEPA regulations require that an EA include a discussion of the No Action Alternative (10 CFR 1021.362 (c)). Under the No Action Alternative, Western would not build or upgrade the transmission segments, or acquire transmission rights, or expand and improve the three substations. No Federal American Recovery and Reinvestment Act funding would be used to design and construct the TTT-Thornton Rd transmission line segments or to upgrade the Thornton Rd-ED5 Transmission Line to a double-circuit 230-kV line. Western and the cooperating utilities would continue to operate and maintain their systems as they currently exist.

**Environmental Impacts** – Findings on the impacts and their significance resulting from the Proposed Action are based on information contained in the EA. In reaching conclusions about the Proposed Action's environmental impacts, Western considered resource protection measures and construction practices as defined in the EA. The existing environmental conditions and potential environmental impacts were identified and evaluated for the following resources: floodplains, land use and ownership, visual resources, biological resources (including vegetation, wildlife, threatened or endangered species, sensitive and special status species, birds protected under the Migratory Bird Treaty Act), cultural resources, socioeconomic and environmental justice, public health and safety, and intentional destructive acts. Cumulative impacts are also addressed in the EA.

Western has concluded that the Proposed Action would not result in any significant impacts. The basis for Western's conclusion is summarized below.

Floodplains. The EA includes a floodplain assessment, as required by the DOE Floodplain/Wetlands Environmental Review Requirements (10 CFR part 1022). Under the Proposed Action, the majority of the planned project does not occur within the 100-year floodplain. Any work within the floodplain primarily would occur along the existing roadway alignments, and impacts due to the installation of new or replaced pole structures and pulling stations would be relatively minor and are not expected to change the floodplain base elevation. The existing 3.4 acres ED5 substation exists within the 100-year floodplain. Up to approximately 5.90 acres of additional ground disturbance would occur within the 100-year floodplain due to the expansion of the ED5 substation. The Pinal County Floodplain Administrator will be provided an opportunity to review and comment on the project design to ensure that the project does not modify the floodplain. Western has determined that the Proposed Action conforms to applicable floodplain protection standards.

Land Use and Ownership. Land ownership includes privately owned lands, state trust lands managed by ASLD, Federal lands managed by the Bureau of Land Management (BLM), and tribal lands. Portions of the line cross the jurisdictional boundaries of the Town of Buckeye,

the City of Goodyear, the City of Casa Grande and the Town of Eloy. The segments are within Maricopa County and Pinal Counties.

The existing 130-foot ROW for the PVH-PW line segment was obtained from BLM, ASLD, and private landholders in 2004. The ROW for the other line segments was acquired previously and varies in width from 100 to 600 feet. Work activities for the Proposed Action would take place within the existing ROW and Western-approved work areas. Additional land to expand the three Western substations would be acquired from private-landowners. Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to land use and ownership.

Visual Resources. The project area is in the Sonoran Desert section of the Basin and Range Lowlands Province in central Arizona, which is characterized by mountain ranges extending north and south with long, linear valleys between the ranges. The project area landscape consists of broad, open, flat to undulating terrain sparsely vegetated with desert scrub, as well as developed irrigated agricultural fields. These areas are back-dropped by the Gila Bend and Maricopa Mountains to the south and the Sierra Estrella Mountains and Buckeye Hills to the north and east.

For line segments under lands managed by BLM the visual quality is managed and falls under a Visual Resource Management (VRM) objective Class II and IV which is managed to partially retain the existing character of the landscape. There can be a moderate level of change to the landscape from Project activities. Most of the Project Area contains Class IV landscapes. The objective of VRM Class IV is to provide for management activities that may require major modifications to the existing landscape.

The more sensitive viewing areas in the PVH-PW segment would not be impacted by the project since the transmission line currently exists in this area and no ground-disturbing or visually evident activities would occur. Because this segment is existing, there would be no conflict with the BLM VRM goals in this area.

The new transmission line associated with the PW-TTT and TTT-Thornton Rd segments are not in a location that would be highly visible by the general public. It would be noticeable in the immediate foreground but would not be a dominant visual element in the overall landscape. Similarly, the Thornton Rd-ED 5 segment would have additional conductors strung on existing structures, thus not changing the visual characteristics. The expansion of the substations would slightly increase the scale of built features in the environment but the increase would not be visually evident. Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to visual resources.

## Biological Resources.

*Vegetation.* Vegetation would be impacted by installing new structures, clearing pulling sites, and grading the substation properties. Vegetation removal would only occur when necessary and would be minimized by using existing roads, spanning riparian areas, and utilizing previously disturbed land for substation expansions. Impacts to vegetation at pulling sites would be temporary and limited to the duration of construction. Up to 15.62 acres of available habitat would be permanently lost from the expansion and fencing of the substations. However, the habitat surrounding the existing substations has been previously altered and is of low quality. Removal of large vegetation could impact nesting birds, although the need to remove trees and shrubs throughout the majority of the corridor is low. Any loss of vegetation or introduction of noxious weeds would be minimized through implementation of resource protection measures. Vegetation removal associated with the Proposed Action would not result in a loss of any population of sensitive plants that would jeopardize the continued existence of that population and would not result in a species being listed or proposed for listing as endangered or threatened.

*Wildlife.* While the Proposed Action would temporarily impact wildlife species directly and indirectly during construction, the direct wildlife population loss would not result in species being listed or proposed for listing as endangered or threatened. In the agricultural areas, lack of native habitat and vegetative structure reduces species diversity. Habitat loss due to site clearing, removal of snags or dense vegetation near washes or riparian areas would be kept to a minimum to provide foraging and nesting habitat for wildlife. The dense riparian scrubland patch located on the Thornton Rd-ED5 segment, may require clearing and/or trimming of mesquite, ironwood, and palo verde trees that may house migratory bird nests. Western would comply with the Migratory Bird Treaty Act of 1918.

*Threatened or Endangered Species.* Within the Proposed Action area there is no designated critical habitat or large areas of suitable habitat for threatened and endangered species. The Proposed Action would not jeopardize the continued existence of a Federally-listed species, lower a species status, adversely modify critical habitat, or modify habitat used by a special status species for resting, nesting, feeding, or escape cover. Resource protection measures would be implemented to minimize impacts to threatened or endangered species.

*Sensitive and Special Status Species.* Two sensitive and special status species are listed for the project area, the cactus ferruginous pygmy-owl and the western burrowing owl. The pygmy-owl can be found in dense desertscrub or semidesert grassland community; however, the project area is located north of the current range for the pygmy-owl and only patches of low-quality habitat exist along washes in the area. The burrowing owl inhabits well drained areas with underground burrows in agricultural fields, vacant lots, deserts, and grasslands. While this project may impact individuals of these species, it is unlikely to impact overall population viability or contribute to a trend toward Federal listing.

Based on the above findings, Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to biological resources.

Cultural Resources. Ten cultural resource surveys identified 81 prehistoric and historic-period cultural properties in the project area. Twenty-three sites are eligible for listing in the National Register of Historic Places (NRHP) and four (4) are recommended for testing to determine eligibility. Under the Proposed Action, there would be no damage or loss of a site of archaeological, tribal, or historical value that is listed, or eligible for listing, in the NRHP. Western has determined the Proposed Action will have no adverse affect on historic properties.

The Arizona SHPO concurred with Western's determinations of eligibility and finding of no adverse effect for different line segments for the Proposed Action (May 5, 2011 and March 16, 2011). To avoid impacts to cultural resources, an archeological monitor will be present during construction at eligible sites and potentially eligible sites. Fencing will be erected around these sites prior to work in these areas. Western has determined, with these special compliance conditions, the Proposed Action would not cause a significant direct, indirect, or cumulative impact to cultural resources

American Spiritual Concerns. Western contacted eight Indian tribal governments regarding the ED5-PVH project to determine if they had concerns or issues regarding cultural resources, traditional cultural properties, or religious practices. Letters were sent and followed up with phone calls to the GRIC, Ak-Chin Indian Community, Tohono O'odham Nation, Salt River Pima-Maricopa Indian Community, Colorado River Indian Tribes, Hopi Tribe, San Carlos Apache Nation, and White Mountain Apache Tribe. Responses were received from the Ak-Chin Indian Community, Hopi Tribe, Tohono O'odham Nation, and White Mountain Apache Tribe. Ak-Chin and White Mountain Apache requested further involvement only if human remains were encountered during construction. The Hopi Tribe requested continued involvement through project scope changes and future consultation.

The Proposed Action would not lead to the loss, destruction or inaccessibility of a traditional cultural property or a sacred site. The Proposed Action would not have an unmitigated adverse effect to traditional cultural properties. The resource protection measures for cultural resources would be implemented to minimize construction impacts to archaeological sites. Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to Native American spiritual concerns.

Socioeconomics and Environmental Justice/Title IV. The US Bureau of Census data confirmed that no protected populations are within the Proposed Action area. The transmission line segments and substations are generally located within agricultural or desertscrub environs with scattered housing nearby. The new transmission line segments do not cross or pass through communities and would not impede the movement of people, goods, or services between communities. Furthermore, the project would not limit access to public facilities. No measureable socioeconomic effects or effect on minority or low-income populations are expected. Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to socioeconomic resources.

Public Health and Safety. Due to the rugged terrain and remote nature of the project area, potential impacts to public health and safety would remain minimal. Specific actions have been identified for implementation during construction so the Proposed Action would not result in serious injuries to the public or workers in the area or interfere with emergency response capabilities or resources. During construction, standard health and safety practices would be conducted following Occupational Safety and Health Administration (OSHA) policies and procedures.

Population density in the project area is low, and few if any individuals would experience long-term exposure to electric and magnetic fields (EMF). The electric field would remain at a level that is below recommended levels of exposure for any of the governmental or non-governmental organizations involved in EMF studies. The magnetic field would increase for new segments under the Proposed Action due to the construction of a new transmission line segment. Even with the larger magnetic field inherent due to an increase in voltage, the EMF

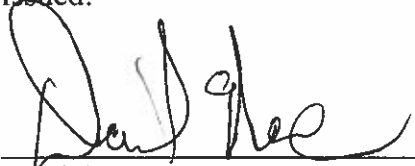
would still be below recommended levels of exposure. Due to remoteness and low population in the vicinity of the transmission line, there are no sensitive land uses such as schools and hospitals, emergency communications, or electronic health/safety devices close to the infrastructure that would be affected by implementing the Proposed Action. Western has determined that the Proposed Action would not cause a significant direct, indirect, or cumulative impact to public health and safety.

Intentional Destructive Acts. Power transmission lines and substations, like other elements of the US energy infrastructure, could be the target of vandals, terrorist attacks, or sabotage. Acts of vandalism and theft are more likely to occur than acts of sabotage and terrorism. Theft frequently involves equipment and salvageable metal at substations and switchyards. Vandalism often includes shooting insulators or electrical equipment in substation yards. Sabotage and terrorism would most likely include destruction of key transmission line components with the intent of interrupting the electrical grid.

The presence of high voltage transmission lines would tend to discourage theft and vandalism. While acts of opportunity are likely to occur in remote areas, such as the shooting of insulators, thefts are more likely to involve substation and switchyard equipment that contains salvageable metal such as copper and aluminum. Vandalism and theft within substations would be minimized by fencing and potential surveillance devices. If a substation has a control room this would be secured as well. Western is improving substation security by adding or upgrading monitoring and surveillance equipment within the substation and control room at all substations, especially their more remote sites. Western has determined that the Proposed Action would not likely increase the likelihood of intentional destructive acts.

**Determination** — The analyses contained in the EA indicate that the Proposed Action, implemented with the resource protection measures, is not a major Federal action significantly affecting the quality of the human environment. Western has determined that preparation of an EIS is not required.

Issued:



Darrick Moe  
Regional Manager  
Desert Southwest Region  
Western Area Power Administration  
U.S. Department of Energy

8/9/11  
Date