

**Dave Johnston Tap
to
Sidney Substation Transmission Line
Reconductor Project**

Environmental Assessment DOE/EA-2149

*Converse, Goshen, and Platte Counties, Wyoming, and
Cheyenne, Scotts Bluff, and Morrill, Counties,
Nebraska*



**Western Area
Power Administration**

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Acronyms

BLM	Bureau of Land Management
BOR	Bureau of Reclamation
BNSF	Burlington Northern – Santa Fe
DOD	Department of Defense
CWA	Clean Water Act
DJT-SD	Dave Johnson Tap – Sidney Transmission Line
DOE	U.S. Department of Energy
EA	Environmental Assessment
EMFs	electric and magnetic fields
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
kV	kilovolt
mG	milligauss
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Protection Act
NDPW	Nebraska Department of Parks and Wildlife
NFIP	National Flood Insurance Program
NPS	National Park Service
NRCS	Natural Resources Conservation Service
O&M	Operation and Maintenance
ROW	Right-of-Way
RMR	Rocky Mountain Customer Service Region
SFHAs	Special Flood Hazard Areas
SHPO	State Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOCs	Volatile organic carbons
WAPA	Western Area Power Administration
WDEQ	Wyoming Department of Environmental Quality
WDOT	Wyoming Department of Transportation
WHO	World Health Organization

Chapter 1: Introduction

Western Area Power Administration (WAPA) is one of four power marketing administrations within the U.S. Department of Energy (DOE). WAPA's mission is to market and deliver clean, renewable, reliable, cost-based federal hydroelectric power and related services. WAPA's vision is to continue to provide premier power marketing and transmission services to WAPA customers, as well as contribute to enhancing America's energy security and sustaining the nation's economic vitality. WAPA's customers include Federal and State agencies, cities and towns, rural electric cooperatives, public utility districts, irrigation districts and Native American tribes. They, in turn, provide retail electric service to millions of consumers in the West.

WAPA is proposing to reconductor 210 miles of existing transmission line starting from the Dave Johnston Tap in Converse County, Wyoming, east of Casper, Wyoming, running through Platte and Goshen Counties, Wyoming, and Scotts Bluff, Morrill, and Cheyenne Counties, Nebraska, and ending at the Sidney Substation near the town of Sidney, Nebraska.

For transmission line reconductor projects greater than 20 miles in length, DOE's National Environmental Policy Act (NEPA) implementing regulations (10 CFR 1021) require agencies to prepare an Environmental Assessment (EA) to analyze and disclose the projected consequences of the action on the human and natural environments.

Background

WAPA's 115-kilovolt (kV) Dave Johnston Tap – Sidney (DJT-SD) transmission line running between the Dave Johnston Tap and Sidney Substation was constructed in the 1950s to deliver electricity to customers in western Nebraska and Eastern Wyoming. The 210-mile long section of line being studied begins at the Dave Johnson Tap in Converse County, Wyoming, passes through Platte, and Goshen Counties, Wyoming along with Scotts Bluff, and Morrill Counties, Nebraska, and ends at the Sidney Substation in Cheyenne County, Nebraska (see Figure 1).

Substations and taps bound and sectionalize the DJT-SD transmission line into line segments, each named as follows: Dave Johnston Tap –Wagonhound Tap (DJT-WHD); Wagonhound Tap – Glendo Substation (WHD-GLD); Glendo Substation – Whiterock Substation (GLD-WHK); Whiterock Substation – Lingle Tap (WHK-LIT); Lingle Tap – Lyman (LIT-LY); Lyman – Stegall Substation (LY-SG); Stegall Substation – Gering Substation(SG-GS); Gering Substation – McGrew Tap (GS-MG); McGrew Tap – Bridgeport Tap (MG-BPT); Greenwood Tap –Dalton Tap (GWD-DA), and Dalton Tap – Sidney Substation (DA-SD), here-in-after referred to as the DJT-SD transmission line.

The DJT-SD transmission line is over 65 years old. Many of the wood H-frame structures from the original construction are still in use today but have deteriorated from age, weathering, and rot. These structures have required increased levels of maintenance to ensure worker safety and line reliability. In addition, the deteriorated structures pose an increased risk of failure and potential wildfire ignition.

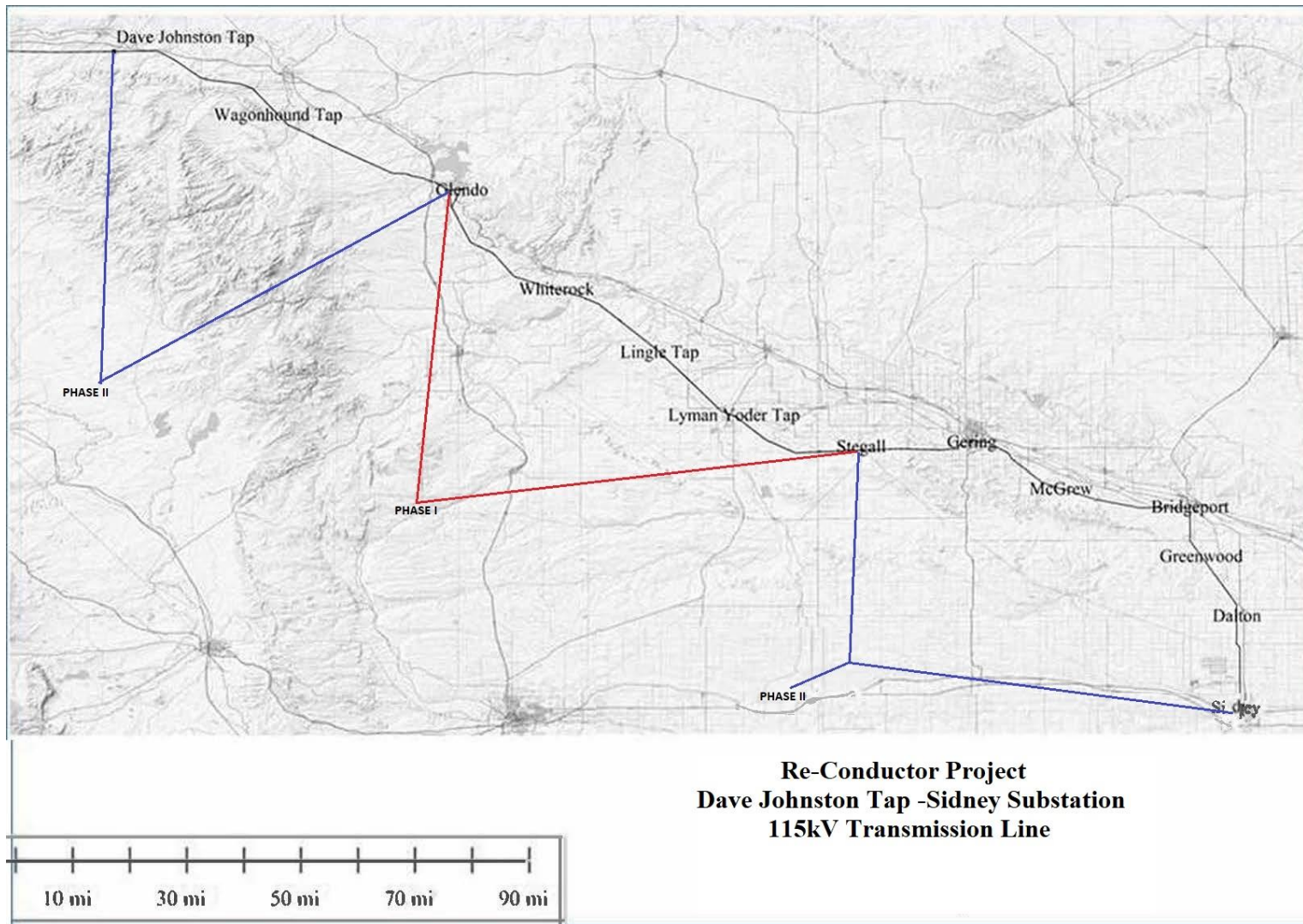
The DJT-SD transmission line is one of the older lines in WAPA’s Rocky Mountain Customer Service Region (RM CSR) and is a key element in providing reliable power service to WAPA’s customers in the region.

Purpose and Need

The purpose of the DJT-SD transmission line reconductor, hereinafter referred to as “Proposed Action” is to safeguard WAPA’s ability to provide reliable and cost-efficient electric power to customers, as defined in WAPA’s mission statement.

This work is required because the line is at the end of its useful service life and is experiencing structure and conductor failures, and unscheduled outages. These inhibit WAPA’s ability to provide reliable power to customers and threatens the environment with possible wildfires which threatens both wildland firefighters and WAPA maintenance workers’ safety.

Figure 1: Project Location and Phases



Chapter 2: Proposed Action and Alternatives

This chapter describes the action WAPA proposes to apply the “Proposed Action” to the project, as well as describe the Alternative Actions that were considered, but dismisses because of certain undesirable criteria associated with the alternative action.

Proposed Action: Reconductor

WAPA’s “Proposed Action” would be to reconductor the 210-mile-long DJT-SD 115-kV transmission line and replace approximately 30 failing structures “in-kind”. The DJT-SD transmission line is a combination of transmission line segments in series between the Dave Johnston Tap and the Sidney Substation. The lines in series are as follows: Casper – Glendo North and South (CPL-GLD_S/CAS-GLD_N), Glendo – Whiterock North and South (GLD-WRK_N/GLD-WRK_S), Whiterock – Stegall North and South (WRK-SG_N/WRK-SG_S), Stegall – Gering North and South (SG-GS_N/SG-GS_S), Bridgeport – Gering (BPT-GS), and Sidney – Bridgeport (SD-BPT), segments.

This action entails:

- Increase line integrity by replacing the failing existing conductors with new conductors,
- Replace approximately 30 existing wooden structures that are deteriorated with new in-kind wooden structures, and
- Installing new fiber Optic Grounding Wire (OPGW) communication capability to one of the overhead ground wires.

This option offered the least amount of impact overall to the environment of the Alternative options posed. Typical reconductor construction activities are outlined in the table below.



Table 2-1: Typical Reconductor Construction Activities

Activity	Description
Clearing	Remove vegetation within the right-of-way (ROW), (Phase II conditions as described in NERC FAC-003-4 and the RMR IVMP).
Grading	No grading or new roads would be constructed.
Remove and replace existing deteriorated structures	Unclip conductors (over-head power line) from the existing structures and lower to the ground. Remove existing crossarms and other equipment from the poles.
	Pull the old poles out of the ground using cranes or other heavy equipment. In sensitive habitats or wetlands, the poles would be removed by cutting off the poles at the ground surface. Poles would be placed on a roadway to be picked up for disposal off site.
Assemble new structures	Transport new structures to staging areas and/or haul to their new pole locations.
	Auger holes for any new pole locations.
	Erect wood pole structures into the holes, crossarms, bedrails, Insulators, insulator strings, and guy wires.
	String and tension new conductors onto the pole structures.
Clean up	Load and haul away old wood structures, wire, and other materials for recycling and re-use. Used conductor wire would be recycled as scrap metal.

The impacts of the Proposed Action would occur during a concentrated 4-month construction phase, followed by less intense routine maintenance. The No Action option described in “Alternative 1” would have no dedicated construction phase but more frequent and extensive routine maintenance activities. The total Rebuild project described in “Alternative 2” would have a much longer construction phase than the reconductor by over a year and a half and much more intense than Alternative 1.

The DJT-SD transmission line is approximately 210 miles in length with an average ROW width for the following transmission lines (CPL-GLD.S/CAS-GLD.N, GLD-WRK.N/GLD-WRK.S, WRK-SG.N/WRK-SG.S, and SG-GS.N/SG-GS.S) of 225 feet. The BPT-GS and SD-BPT segments have a 160-foot ROW width. These ROW widths are centered on the transmission line.

WAPA’s current ROW easement footprint is approximately 5,175 acres, which includes the conductor pulling sites. WAPA would not be acquiring any additional ROW or easements. Only current access roads and access or established overland routes would be necessary to conduct the needed actions. A breakdown of each activity and the anticipated disturbance area is presented below.

Table 2-2: Disturbance Area (Proposed Action)

Construction Activity	Estimated Size of Disturbance (total 25.59 acres)
<i>Temporary Disturbance</i>	
Wire pulling sites	Less than 0.5 acres per site and 62 wire pulling locations equals approximately 15.5 acres. Some would be within the ROW and others would extend out from angle structure locations and would likely be outside the permitted ROW; Landowners have been notified.
Structure assembly	Less than 0.5 acres per structure and 30 structures equals approximately 7.5 acres. Landowners for locations outside the permitted ROW have been notified.
Crane set-up and operation	1800 square feet per site at every structure location, approximately 30 sites equal approximately 1.25 acres.
Guy wire installation	500 square feet per site at angle and dead-end structures, approximately 30 sites equal less than 0.34 acre. These would be unhooked temporarily for angle structure replacement.
<i>Permanent Disturbance</i>	
New access roads	No new access roads or routes would be constructed.
Existing access roads and routes	Remove existing vegetation within roadbed and Danger Trees or Vegetation as per NERC FAC-003-4. (as needed)
Structure sites (replacing structures in their existing locations)	18 square feet per structure and 30 structures equal less than 1 acre. No new structures would be installed.

Construction Timing

Construction activities for the DJT-SD transmission line Proposed Action are planned to begin in January 2021 and end by July 2021. The Project would be broken out into two phases.

Construction timing would occur in two phases allowing cultural resource surveys to be conducted and confirmed by the State Historic Preservation Officers (SHPO) ahead of the work crews on Phase 2. The cultural resource surveys have been completed and concurred by SHPO for Phase 1 of the project.

Phase 1 would be the length of transmission line between the Glendo Substation and the Stegall Substation and would take place beginning approximately January 15, 2021.

Phase 2 would include the lines from the Glendo Substation to the Dave Johnston Tap, and the lines from the Stegall Substation to the Sidney Substation. Work on these segments would begin after approximately March 3, 2021. As stated above, work on Phase 2 would not begin until the cultural resource surveys have been completed and concurred by SHPO.

Access Points/Roads/Right-of-Way

WAPA's standard construction procedures for transmission lines require the movement of vehicles and equipment within the existing ROW and on designated access routes or roads. The transmission line would stay within the existing ROW and pole structures would be replaced in the existing holes. No additional structures are planned to be installed and, therefore, no new impacts are expected.

Personnel and Equipment

The proposed work would involve various personnel and equipment over a six-month period. The average crew is 10-18 persons and there may be more than one crew working at various points at any given time. Equipment would include mobile hydraulic cranes, aerial-lifts (bucket trucks), digger trucks, front-end loaders and skid-steer loaders, truck-tractors with trailers, pickups with or without trailers, utility trucks, and passenger vehicles. Construction vehicles, equipment and pole deliveries would access the line using existing access roads and routes. All staging and stockpiling areas would occur in previously disturbed areas. Locations would be coordinated with the appropriate landowner or manager.

Site Clearing/Grading

The Project area was cleared and leveled when the original transmission line was constructed, and routine maintenance has continued to grade the existing access routes or ROW roads and removed vegetation from the ROW. Due to the prairie and farmland landscape in the Project area, minimal clearing or grading is expected. However, all “Danger Trees” or “Danger Vegetation” as defined by NERC FAC-003-4 would be removed along the ROW.

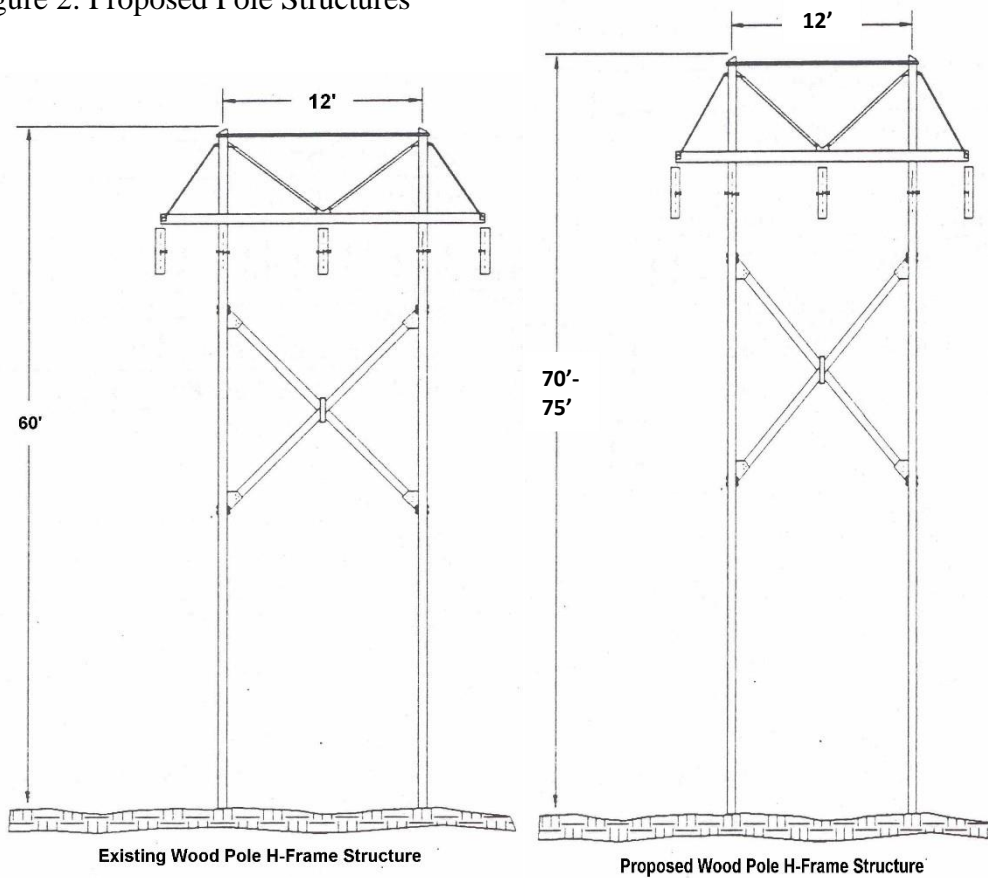
Pole Excavation and Replacement

WAPA proposes to remove and replace approximately 30 existing wooden H-frame pole structures and replace them with new H-frame wooden pole structures. The new poles would be 10 to 15 feet taller than the existing structures. No new structures would be added to the line. Only “in-kind” replacement would occur with failing structures.

The span length between existing structures would remain the same. The normal span length between structures is 700 to 800 feet.



Figure 2: Proposed Pole Structures



The existing poles would be pulled from their holes using cranes or a hydraulic jack rigged as an attachment to a skid-steer loader. Crews would assemble new structures within the ROW. In areas where the structure location has shifted, crews would use an auger to dig new holes that are roughly 3 feet wide and up to 12 feet deep. Next, crews would position the poles into the holes using cranes. Dirt removed from the existing holes would be used to back fill around the new poles.



Conductor Stringing and Tensioning

At specific stringing sites, a tensioner and puller would be used to remove the old conductors and to pull in new ones. The new conductor would comply with all current electrical standards and would be tightened to allow them to sag to a safe point above ground level, without becoming too taut during cold temperatures.

The current overhead ground wire would be replaced in-kind with a new ground wire containing a fiber optic ground wire (OPGW) to enhance WAPA's communication system.

Disposal

Old poles would be hauled away in the proper environmentally responsible manner and disposed of as per Environmental Protection Agency (EPA) regulations at an approved landfill. All associated hardware, including guying, guy rods, insulators, and conductor and overhead ground wire, would also be reused, recycled, or disposed of as appropriate. Waste construction materials and rubbish from construction areas would be collected, hauled away, and disposed of at approved sites (i.e., an EPA permitted landfill).

Site Restoration and Compensation

Disturbed areas would be restored to pre-construction condition when work is completed. Restoration activities may include re-grading disturbed areas to their original contour, replacing stockpiled topsoil, and reseeding with a regionally native seed mix where revegetation is required. Surfaces would be scored to provide for proper drainage, revegetation, and prevent erosion. WAPA would provide compensation to landowners where construction activities result in damage to crops and property.

Operation and Maintenance (O&M)

System dispatchers at WAPA's Watertown Operations Center would continue to direct routine, daily operation of the transmission line. The dispatchers would use communication facilities to operate circuit breakers, which control the transfer of power through the lines. Currently aerial patrols of the line are conducted two times each year. Ground patrols are completed once a year, as weather permits. These patrols would continue as part of WAPA's routine maintenance program. Routine maintenance work is usually done April through November. Climbing inspections may also be conducted, with each structure being climbed and inspected approximately every five years. In emergencies or in case of a failure, crews would rapidly repair or replace damaged facility components.

At the end of the transmission line's useful life, WAPA would consider whether the line should be rebuilt, upgraded, or dismantled and removed.

Alternatives Studied

WAPA reviewed several alternatives. These alternatives were eventually dismissed from full analysis because they were not feasible due to environmental impacts, technical requirements, or financial constraints.



Alternative 1: Conduct Basic O&M – No Action

DOE requires EAs assess the No Action Alternative. Under this No Action Alternative, no coordinated upgrade of the existing structures and line would take place. Under this action the line would be maintained and operated at its current level of 115-kV within the existing ROW and repairs to individual structures would take place on an as-needed basis as they fail regular inspection for proper safe function. These replacements would increase in frequency over time as the transmission line further ages. The wood poles at each structure were tested using an IML Resistograph. Inspection by resistograph for each pole was conducted at breast height and below ground using a 45-degree adapter. The instrument was designed for use on wooden utility poles. This test method identifies defects located in the interior of the poles that cannot be identified from the outside. The testing system is based on a drilling resistance measuring method. The variation in resistance results in increases and decreases in the amount of torque applied to the drill shaft.

A drilling needle penetrates the wooden pole with a regular advance speed, and the drilling resistance is measured and then compared to a pre-existing scale. On this transmission line there were 30 structures with one or more poles that failed the test. These structures would be replaced in their entirety.

The line breakage issues in WAPA's grid system would not be addressed, the frequent repairs would become even more common, and continued maintenance of the line would become increasingly expensive. This would threaten WAPA's ability to provide reliable and cost-efficient electric power to customers. The risk of wildfires caused by line or structure failure would increase, with higher associated risks to life and property, and to firefighters and maintenance crews.

O&M

O&M operations would continue as described in the Proposed Action.

Access Points/Roads/Right-of-Way

WAPA's standard construction procedures for transmission lines require the movement of vehicles and equipment within the ROW. The transmission line alignment would stay within the existing alignment ROW.

Pole Replacement

Crews would replace deteriorating wood pole structures individually, as they fail regular inspection for proper safe function. A hydraulic pole jack rigged as an attachment to a skid-steer loader and a hydraulic crane would be used to remove old poles. New poles would normally be placed in the same hole as the existing pole. Equipment used to install new poles would be the same as described for the Proposed Action.

Equipment Replacement

Other transmission structure components would need replacement over the next several years. Examples of these types of repairs include restapling the pole ground wire and reattaching or replacing cross braces, crossarms, conductor or overhead ground wire hardware, insulator strings, and old anchor rods.



Summary of No Action

The current line is in poor condition due to age and past repairs for conductor line breakage during storm events. This area experiences wind gusts in excess of 100 miles per hour and sustained winds of 15-20 miles per hour most of the year. In 2020 one of the conductors broke during a storm event resulting in 200+ acre grass fire near Gering, Nebraska. If WAPA continues to conduct basic routine maintenance as events occur there is a high potential for the line to experience a catastrophic failure leaving a large population without power for an extended period and would likely result in a wildfire. Fires could destroy large numbers of wooden structures and cause extended outages. The risk to firefighters' and our maintenance crews' lives and health would be much higher.

Maintenance needs and costs would continue to rise as the line further ages. Therefore, WAPA has determined that this option is not feasible due to its potential to cause extended power outages, wildfires threatening human life and health to the local environmental resources, and compromised air quality caused by a prairie fire.

Alternative 2: Total Rebuild

WAPA considered rebuilding the transmission line in its entirety. This action would require a 1.5 to 2-year construction phase resulting in a long-term outage on the line requiring local utilities to supplement power. The power would have to be derived from petroleum or coal power during the outage, not environmentally clean hydro power as it is currently. This action would also increase power costs to WAPA customers to balance the new material and labor costs associated with the rebuild as well as the power purchases during the construction outages. The ROW would need to be expanded to accommodate newly designed larger structures.

Summary of Total Rebuild

WAPA determined this alternative was not environmentally friendly due to the fact the entire ROW would need to be de-vegetated by a masticating brush remover, grade new structure pads, and grade new access roads. In addition, the cost to rebuild the entire line with all new components, materials and labor were also cost prohibitive to its customers. An end game effect of a the total rebuild alternative would be that the transmission line would be in an "outage condition" for over six months requiring WAPA's customers to seek out less environmentally friendly sources of power such as coal or petroleum generated power, which would in turn would adversely affect air quality (i.e., increase production of greenhouse gasses). These larger structures would create a larger upstream face causing flood plain impacts. This action is Likely to Adversely Affect over a long-term period of time both vegetation communities, the floodplain, and create habitat segmentation. Therefore, WAPA has determined that this option is not feasible due to its potential to adversely impact the environment.



Chapter 3: Affected Environment and Environmental Consequences

This chapter would first describe the existing resources and conditions within the Project area, then describe the potential impacts the Proposed Action, or Alternative Actions, would have on those resources. Regardless, any possible impacts to resources would be reduced by the use of WAPA's *Standard Mitigation Measures for Construction, Operation and Maintenance of Transmission Lines* (Appendix A) and *Construction Standard 13, Environmental Quality Protection* (Appendix B).

Air Quality

The EPA has set National Ambient Air Quality Standards (NAAQS) for six pollutants: sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, particulate matter, and lead (called "criteria pollutants"). Volatile organic carbons (VOCs) are also monitored. There are no permanent EPA NAAQSs (site(s)) near the project area. The closest EPA site is located 30 miles northwest of Douglas, Wyoming (Converse County). No permanent sites are located in Nebraska near the project site.

The Project area is primarily rural and air quality is mainly affected by agricultural activities and transportation corridors. There are no hazardous air pollutant generators within Converse, Goshen, Platte, or Scott Bluff counties. Air Quality reports submitted by the Wyoming Department of Environmental Quality (WDEQ) and the Nebraska Department of Environment and Energy as well as its Department of Environmental Quality (NDEQ) indicate the air quality in both states are within the NAAQS limits (EPA, 2019a).

Environmental Impacts: Proposed Action and Alternative Actions

Both the Proposed Action and Alternative 1 would result in similar impacts to air quality, however Alternative 2's impact would be a much longer duration. The types of expected impacts include:

- Increase in fugitive dust during construction and maintenance activities.
- Release of emissions (criteria pollutants, VOCs, and greenhouse gasses) from construction and maintenance vehicles.

Fugitive dust may be a nuisance to persons or dwellings and could damage crops or cultivated fields. Fugitive dust and emissions may temporarily affect air quality in the local area but would not be expected to result in a measurable impact on local, regional, and national climate or air quality.

Impacts would be minimized by the use of several environmental commitments, such as:

- Vehicles and machinery would be equipped with air emission control devices required by Federal and state regulations or ordinances.
- Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, would not be operated until repairs or adjustments are made.
- Dust abatement and dust control measures such as road watering and speed limits would be implemented. WAPA's Construction Standards do not allow oil to be used as a dust suppressant.

Solid and Hazardous Waste

There are neither hazardous waste generators nor active waste disposal facilities or landfills near the Project area. A waste transfer station is located in Gering, Nebraska, that provides disposal services for the geographic area. However, all solid waste is transferred to Waste Management – Pheasant Point Landfill near Lincoln, Nebraska.

Environmental Impacts: Proposed Action and Alternative Actions

Neither the Proposed Action nor either Alternatives would generate hazardous wastes. However, the Proposed Action and both the Alternatives would generate solid waste materials. Examples include conductor and overhead ground wire, hardware, and porcelain insulators. Examples of recycling, reusing, or reprocessing materials would include salvaging conductors, ground wires, hardware, and other metals. Treated wood poles that are removed would be disposed in a landfill that accepts treated wood.

Burning or burying waste materials on the ROW is not permitted. WAPA would remove all waste materials from the construction area and ROW.

Additionally, WAPA requires all construction activities use methods that would prevent entrance, or accidental spillage of fuels, petroleum products, chemicals, solid matter contaminants, debris, and any other pollutants and wastes into streams, flowing or dry watercourses, lakes, and underground water sources. WAPA's construction standards also require a Spill Prevention, Notification, and Cleanup Plan to be implemented prior to work.

Transportation and Traffic

The existing transmission line largely parallels Interstate Highway 90, as well as Interstate Highway 25, Wyoming Hwy 26, and Nebraska Hwy 385. Interstate Highway 90 runs east and west and is a principal traffic artery that passes through or near the towns of Glendo, Torrington, Gering, Bridgeport, and Sidney.

The Burlington Northern – Santa Fe (BNSF) Railway has a rail line that parallels Interstate Hwy 90 in some areas, and it traverses or parallels the Project area in some locations.

Environmental Impacts: Proposed Action and Alternative Actions

The Proposed and Alternative 2 Actions would temporarily have more of an impact on transportation and traffic than the No Action Alternative because a larger number of equipment and vehicles would need to be used during the construction timeframe. However, the No Action Alternative would still expect to result in intermittent and localized traffic increases during routine O&M. With any of the actions, WAPA would use traffic control plans, flagmen, and signage as needed during periods of heavy equipment delivery to maintain the safety and flow of public traffic. WAPA would schedule construction operations to offer the least possible obstruction and inconvenience to public traffic (i.e., avoid peak commuting times). Construction activity near railroad lines would be coordinated with BNSF to ensure no disruption to their service.

When weather and ground conditions permit, WAPA would repair all WAPA-caused ruts that are hazardous to farming operations and to movement of agricultural equipment by leveling, filling, grading, or harrowing the area back to existing conditions.

Soils

The Wyoming and Nebraska series consists of very deep, somewhat excessively drained soils formed in gravelly, water-sorted material derived from red and gray sandstone, siltstone, and shale. The survey area is in the southern part of the Northern Rolling High Plains. Much of the area can be characterized as rolling prairies. The Laramie Mountains occur in the southern portion of the area. Elevation ranges from about 4,600 feet where the North Platte River leaves the area in the southeast corner of Wyoming and the southwest corner of Nebraska to 8,100 feet in the Laramie Mountains. Most of the area is between 4,600 and 6,100 feet in elevation (Bryce and others). The survey area is drained by the North Platte River and its tributaries. Other minor drainages include LaPrele Creek, Deer Creek, Boxelder Creek, La Bonte Creek, Antelope Creek, Sand Creek, Shawnee Creek, and Wagon Hound Creek (Thomas R. Eschner and others).

Environmental Impacts: Proposed Action and Alternative Actions

The Proposed Action and Alternatives have the potential to impact soils anywhere within the existing ROW. The types of impacts that would be expected include soil compaction, increased erosion, or erosion potential; however, these would be limited since no excavation is planned. The full scope of the structure replacement would include removing the existing (poles) structures, re-auguring the existing structure holes, installing the new wood structures, backfilling the structure holes, and installing new hardware.

Within the existing ROW soils were previously disturbed during original construction of the transmission line. No new roads or installation of additional structures are proposed inside or outside the ROW with the Proposed Action or the No Action Alternative. Alternative 2 would require new roads and additional new structures.

The types of activities that could impact soils are:

- existing access road use,
- pole excavation, assembly, and replacement,
- hole re-use, and
- equipment and vehicle use during routine O&M and, for the Proposed Action, during wire tensioning and stringing.

To reduce soil impacts, WAPA would adopt the following environmental commitments:

- Move crews and equipment within the existing ROW, including historically approved access routes, or overland routes.
- Use only the minimum area necessary for access ways (12 to 15 feet wide).
- In hay meadows, alfalfa fields, pastures, and cultivated lands, ruts, scars, and compacted soils would have the soil loosened and leveled by scarifying, harrowing, discing, or other standard methods. In agricultural areas, all ruts would be eliminated and areas that are hard packed as a result of construction operations would be loosened, leveled, and reseeded.
- All work would occur in the ROW, any overland travel off established roads would be minimized to within the ROW. Any damage caused by vehicles in these areas would be re-graded so that all surfaces drain naturally, blend with the natural terrain, and to help with natural revegetation and prevent erosion.
- Any excess topsoil graded in these areas would be removed, stockpiled, and disposed of offsite.



- Erosion control measures would be implemented on disturbed areas, including areas that must be used for maintenance operations (access ways and areas around structures).
- Structures have been located and designed to conform with the terrain.
- Water bars or small terraces would be maintained across all ROW and access roads on hillsides to prevent water erosion and to facilitate natural revegetation.
- No new access roads would be required.

Water Resources

The Project area is located in the Platte River water basin. The Platte River flows in a southeast direction from North Platte, Nebraska, to near Kearney, Nebraska, and then in a northeast direction to Columbus, Nebraska. Between Columbus and Fremont, the Platte River flows in an easterly direction before turning to flow south and then east-northeast to join the south-southeast oriented Missouri River. Major Platte River tributaries from the north include the Elkhorn and Loup Rivers (EPA 2001). The existing transmission line parallels the Platte River and spans numerous unnamed coulees, washes, wetlands, streams, and irrigation or ditches. The North Platte is not a federally designated wild and scenic river.

Wetlands are scattered throughout the entire Project area (U.S. Fish and Wildlife Service (USFWS) 2019b). Most of these wetland complexes are small (1 to 5 acres) freshwater emergent wetlands or freshwater alkaline ponds dominated by herbaceous perennial plants. No structures are located in mapped wetlands; therefore, no impacts are expected in wetlands.

The Northern Great Plains aquifer system underlies most of eastern Wyoming, (U.S. Geological Survey (USGS) 2019a). The Ogallala aquifer system underlies most of Nebraska. Both aquifers are shallow water table aquifers surrounded by sand, silt, clay, and gravel. These major aquifers are found in sandstones from the Tertiary age (USGS 2000). Unconsolidated sand and gravel deposits, some of which are highly permeable and have a very shallow ground-water flow system, overlie the aquifer system. Groundwater wells typically draw from these sand and gravel aquifers. The typical depth to water level ranges from 15 to 25 feet below the land surface (USGS 2019b).

There are several locations where the transmission line crosses a flood zone as it parallels the North Platte River. These locations occur within “Areas of Minimal Flood Hazard,” where there is minimal chance of flooding during a 500-year flood event (Federal Emergency Management Agency (FEMA) 2019).

Environmental Impacts: Proposed Action and Alternative Actions

Regardless of the Action, WAPA’s standard practice is to span across water resources and flood prone areas whenever possible. WAPA purposefully aims to install structures at least 300 feet from rivers, streams, ephemeral (intermittent) streams, ponds, lakes, and reservoirs. WAPA is not proposing to install any new structures in wetlands or within riparian zones. Therefore, there is no need to complete a survey of the water resource (Clean Water Act) Nationwide Permit 12 would cover all actions proposed for this project.

WAPA's current maintenance activities are typically authorized under NWP 12, which allows for activities necessary for the construction, maintenance, repair, and removal of utilities lines and associated facilities in waters of the U.S., so long as those activities do not result in the loss of more than 0.5 acres of U.S. waters. WAPA expects future maintenance activities, as part of either alternative, would also qualify for coverage under NWP 12. If an activity is not allowable under NWP 12, WAPA would pursue an individual permit. The permit conditions would stipulate any requirements to minimize water resource impacts.

Although WAPA does not expect to encounter groundwater during structure replacement activities, there is evidence of shallow groundwater aquifers in the area, so the potential for groundwater contamination does exist. Studies on pole preservatives have shown that fluctuations in the water table can result in leaching of the preservatives into the water table. These studies concluded chemical leaching from wood poles is not detectable in downgradient groundwater (Electric Power Research Institute 1997).

Indirect impacts, like sedimentation or pollution from spills and leaks, would be minimized by:

- Avoiding work within and near water resources.
- Use of the commitments described in the Soils section to curtail erosion and runoff.
- Obtaining a permit for stormwater discharges associated with construction activities from the WDEQ or NDEQ prior to construction. The provisions of the permit would be implemented to reduce stormwater runoff during construction.
- Disallowing stockpiling or depositing excavated material near water perimeters (banks or shorelines) where they could be washed away by high water or storm runoff.
- Implementing the work practices and precautions outlined in WAPA's Construction Stormwater Management Plans and Spill Prevention, Control, and Countermeasure and Spill Prevention, Notification, and Cleanup plans. These plans outline measures that would be used to prevent spills, notification protocols for any spills, and employee awareness training.
- Only in-kind culvert replacement and crossing maintenance is authorized.
- If necessary, a National Pollutant Discharge Elimination System Permit (NPDES) for the Prevention of Stormwater Pollution from Construction Projects would be obtained. The current plan would not impact water resources.

Vegetation

Wyoming's grasslands are classified as either shortgrass prairie or mixed-grass prairie. Shortgrass prairie occurs mainly in the southeast corner of the state and extends south into Colorado. Buffalo grass and blue grama are the two predominant grass species in shortgrass prairie. Mixed-grass prairie is common across much of eastern Wyoming. Common mixed-grass prairie plant species in Wyoming include needle and-thread, western wheatgrass, blue grama, Sandberg's bluegrass, prairie Junegrass, upland sedges, and Indian rice grass (Knight 1994). Nebraska grassland is dominated by upland tallgrass prairie populated by little bluestem, needlegrass, prairie drop-seed, Junegrass, and side-oats grama. Site visits along the transmission line ROW have also identified the presence of species typical of the mixed grass prairie, rangeland, and native grasses common to the majority of Wyoming and Nebraska.

Woodlands and shrublands are very sparse across the Project area, but the species found include buffaloberry, chokecherry, snowberry, and sagebrush. Rocky Mountain juniper can dominate the canopy. Aspen, paper birch or boxelder maple are commonly present in portions of the northwestern Great Plains (Burkhardt and Tisdale 1976, Miller et al. 2005).

Wyoming has designed 30 “noxious weed” species throughout the state (Wyoming Department of Agriculture 2019).

Wyoming noxious weeds are:

1. Field bindweed
2. Canada thistle
3. Leafy spurge
4. Perennial sowthistle
5. Quackgrass
6. Hoary cress
7. Perennial pepperweed
8. Ox-eye daisy
9. Skeletonleaf bursage
10. Russian knapweed
11. Yellow toadflax
12. Dalmatian toadflax
13. Scotch thistle
14. Musk thistle
15. Common burdock
16. Plumeless thistle
17. Dyers woad
18. Houndstongue
19. Spotted knapweed
20. Diffuse knapweed
21. Purple loosestrife
22. Saltcedar
23. Common St. Johnswort
24. Common Tansy
25. Russian olive

Nebraska has designed ten “noxious weed” species throughout the state (Nebraska Weed Control Association Noxious Weed Control Act, section 2-955, 2020).

1. Salt Cedar
2. Purple Loosestrife
3. Phragmites
4. Leafy Spurge
5. Canadian Thistle
6. Musk Thistle
7. Plumless Thistle
8. Spotted and Diffuse Knapweed
9. Japanese Knotweed
10. Sericea Lespedeza



Invasive Weed Management

To prevent the transport of non-native and invasive plants and animals, including noxious weeds and aquatic nuisance species, work crews must thoroughly wash all vehicles and equipment (trailers, trucks, UTVs, etc.) before entering the action area and working on the project.

WAPA Incorporated Weed Prevention and Control Measures

Best Management Practices (BMPs) for weed control would be used to reduce the spread of noxious weeds and to increase the effectiveness of treatment. The following lists BMPs that should be considered for use within WAPA's service area:

- Identify high priority weed species between June 15 and July 15 of the year.
- Report new infestations to the appropriate resource manager before August 30 of any year.
- Treat intensely when a new or small patch is found; monitor the site periodically and repeat physical removal of the weed or treat with herbicides.
- Inspect roads before maintenance to prevent the spread of weeds by vehicles or equipment.
- Inspect bare soil or disturbed sites frequently for weeds.
- Understand the biology of the weed, including the growth stage, to identify the best and most effective management practices.
- Use seed, hay, and mulch that are certified weed-free.
- Avoid the introduction of ornamental flowers that are on State or county invasive species lists.
- Reseed areas immediately after disturbance with an appropriate mix of native sourced, competitive species.
- Avoid transporting weed seeds on clothing, vehicles, and equipment.
- Avoid driving in noxious weed infested areas with your vehicle and then traveling to unaffected areas; restrict travel to established roads and trails.
- Whenever possible, wash or otherwise clean all construction and maintenance equipment before moving between sites.
- Drought causes plants to shut down their growth process. Spraying weeds during dry periods is not recommended because effectiveness is greatly reduced. Treat after rainfall if the weed is still in the proper growth stage for control.
- Not all herbicides work equally on all weeds nor can every herbicide be used in every situation. Read the label, use the information provided in the WAPA weed management plan, and consult licensed applicators for the most effective treatment method, and to conduct the application of the chemicals.



1. WAPA's completed and approved vegetation management guidance can be used in lieu of entering into good neighbor Weed Management Plans, when there is an opportunity, with Federal, State, or local government entities. This practice would help to ensure consistency throughout WAPA.
2. The vegetation management guidance (NERC FAC-003-4) includes any or all the following:
 - 1) Site-Specific Weed Inventories
 - 2) Integrated Approaches for Control
 - a. Mechanical Control (Manual, Mowing)
 - b. Biological Control (Introduce Natural Insect Predators, Grazing)
 - c. Chemical Control (Herbicides, Fertilizers)
 - d. Cultural Control (mulching, establishment of compatible stable plant communities, etc.)
 - 3) Herbicide Application Certification Requirements
 - 4) Environmental Protection Requirements and Best Management Practices
 - 5) New Vegetation Control Methods Procedures
 - 6) Monitoring and Reporting Procedures

Environmental Impacts: Proposed Action and Alternative Actions

The Proposed Action and Alternatives would impact vegetation. The types of impacts would be similar between the alternatives, but the timing and intensity of impacts would be different. As stated in the Project description the impacts of the Proposed Action and Alternative 2 would occur during a concentrated construction phase followed by less intense routine maintenance. Alternative 2's construction phase would be up to 3 times as long as then Proposed Action. Whereas the No Action alternative would have no dedicated construction phase but more frequent emergency repairs, which would often be conducted in bad weather permanently impacting vegetation on overland access routes. Under Alternative 1 outages would be longer and at a greater safety risk to crews.

The vegetation in the existing ROW was cleared and leveled during construction of the original transmission line; however, surface conditions have changed over time and some locations may need to be recovered by clearing vegetation. For the most part WAPA would stay in the footprint of the access roads and disturbance would be limited to those and the immediate vicinity of structures being replaced.

Vegetation that recovered or grew since original construction would again be disturbed at wire pulling sites and structure assembly and staging areas under all these actions.

These disturbances would occur throughout the life of the transmission line. Vegetation along the entire ROW would be disturbed intermittently during on-going O&M activities any such disturbance would be confined to the managed ROW and exiting access roads. The types of vegetation that would be impacted are primarily pre-disturbed communities, such as cropped areas, previously cropped areas, non-native haylands, pasture or other grassland with majority non-native species. Additionally, both alternatives present a risk of introducing or spreading noxious weeds.

In order to minimize vegetation impacts, WAPA would adopt the following environmental commitments, in addition to the measures listed in the Soils section:

- Implement a "clean vehicle policy" while entering and leaving construction areas to prevent transport of noxious weed plants and/or seed. Transport only construction vehicles that are free of mud and vegetation debris to staging areas and the Project ROW.
- Removal of vegetation would be within the ROW to remove Danger Trees and Vegetation.
- WAPA's Integrated Vegetation Management Guidance Manual would be used to control and reestablish vegetation.
- Clearing for access roads would be limited to only those trees and shrubs necessary to permit the passage of equipment.
- Reseed disturbed areas with regionally native grass mixture.
- Use EPA registered herbicides and apply in accordance with their labeling and by appropriately licensed applicators.
- Construction staging areas would be in previously disturbed areas, where possible, and in a manner to preserve trees and vegetation to the maximum practicable extent.
- Provide compensation to landowners where construction activities result in damage to crops, per the terms of the easement.

Fish and Wildlife

The review of the species and habitats that could be present in the lineal Project area included the US Fish and Wildlife service (USFW) records and both the State of Wyoming's Game and Fish Department (WGFD) and Nebraska's Game and Parks Commission (NGPC) records bases. Wyoming and Nebraska are home to an abundance of wildlife species. The mixed grass prairies, native remnant prairies, grassland, and riparian areas along the length of the Project provide habitat for most of the common species of Wyoming and Nebraska. From insects, fish, birds, and mammals, the Project area encompasses suitable habitat for a large array of species.

Typical wildlife in the area include prairie dogs, white-tailed deer, mule deer, pronghorn, coyote, cottontail rabbit, fox, mink, badger, skunk, beaver, raccoon, and muskrat. Pronghorn, jackrabbit, prairie dog, mule deer, cattle, and house cat were the mammals observed during field visits to the site.

Western Wyoming and Nebraska has suitable breeding habitat for many bird species and is a seasonal home to migrants. Waterfowl, shorebirds, and other wildlife species find the Platte River, located near the transmission line ROW, attractive as summer breeding habitat and as a spring and fall migration stop. Peak concentrations can reach 100,000 waterfowl in the fall and 20,000 in the spring. The principal waterfowl nesting species are Canada geese, mallards, pintails, blue-winged teal, shovelers, and gadwall. Other common birds include eared, western, and pie-billed grebes, double-crested cormorants, great blue herons, black-crowned night herons, American bitterns, killdeer, plovers, sandpipers, willets, yellowlegs, marbled godwits, and American avocets. Most other birds species are high prairie species, and riparian associates, such as ferruginous hawk, golden eagle, sharp-tailed grouse and sage grouse, gray partridge, mourning dove, black-billed magpie, horned lark, western meadowlark, lark bunting, grasshopper sparrow, and chestnut-collared longspur. Along the Platte River typical herpetofauna are the snapping turtle, spiny softshell turtle, smooth green snake, frogs, garter snakes, and prairie rattlesnake (USFWS 2006).

Federally Listed Species and Critical Habitats

Federally endangered and threatened species, as well as designated critical habitat, are protected under the Endangered Species Act of 1973 (ESA). Designated Critical Habitat is a specific habitat which is essential to the conservation of the species. Federal agencies are required to ensure that a Federal action does not jeopardize the continued existence of any listed species or significantly alter its critical habitat.



The following avian observations were recorded during field visits:

red-tailed hawk	blue-winged teal	northern harrier
lark bunting	northern flicker	rough legged hawk
eastern kingbird	gray catbird	ring-necked pheasant
prairie falcon	tri-colored blackbird	mountain bluebird
brown-headed cowbird	American robin	sharp-tailed grouse
boblink	killdeer	common nighthawk
greater yellowleg	clay-colored sparrow	willet
turkey vulture	brown thrasher	great-horned owl
western meadowlark	American white pelican	Eurasian collared doves
Say's phoebe	chestnut collared longspur	
ring-necked duck	ferruginous hawk	

The following endangered, threatened, proposed, and candidate species are reported for Project area (USFWS 2019a):

Table 3-1: ESA Species

Nebraska		
<i>Species</i>	<i>Listing Designation as Endangered</i>	<i>Effect</i>
Whooping crane	Endangered	None
Pallid sturgeon	Endangered	None
Least tern	Endangered	None
<i>Listing Designation as Threatened</i>		
Piping Plover	Threatened	None

Wyoming		
<i>Species</i>	<i>Listing Designation as Endangered</i>	<i>Effect</i>
Whooping crane	Endangered	None
Least tern	Endangered	None
Pallid Sturgeon	Endangered	None
Blowout Penstemon	Endangered	None
<i>Listing Designation as Threatened</i>		
Piping Plover	Threatened	None
Preble's Meadow Jumping Mouse	Threatened	None
Ute Ladies'-tresses	Threatened	None
Western Prairie Fringed Orchid	Threatened	None

Critical Habitats

There are no critical habitats designated by USFWS within the Project area.

State Designated Species

There are no documented occurrences within the proposed Project area identified per WGFD records. NDGF does not list any State species of concern or other protected species.

Environmental Impacts: Proposed Action and Alternative Actions

Physical impacts to wildlife habitat are described in the Vegetation Section. Indirectly, the wildlife habitat fragmentation from the original transmission line construction is an existing impact that would continue at the same intensity. With the exception of Alternative 2, no new habitat fragmentation is expected beyond the short-term construction impacts to structure replacement and vegetation removal for both the Proposed Action and the Alternative 1.

Impacts to wildlife would be short term and intermittent in nature. During construction and maintenance activities, wildlife behavior would be modified by human presence and localized avoidance behaviors and displacement would be expected. During operation of the transmission line, no wildlife response would be expected.

Operation of the transmission line poses a collision risk to birds. Design of the transmission line and necessary grounding clearances requires spacing and grounding equipment that would prevent bird electrocutions, which are almost entirely a distribution voltage line issue.

Collision avoidance devices that are already in place on the existing transmission lines, or similar devices, would be replaced in kind in the same locations the current devices are located.

WAPA would implement the following environmental commitments to minimize impacts to all wildlife:

- Delay vegetation management activities in grasslands until July 15 or later to protect ground-nesting birds, including their nests and young broods. Site-specific level analyses would determine the earliest vegetation management date for each segment.
- Protect standing dead trees that are 10” diameter breast height or more for cavity-dependent wildlife species. This guideline does not apply in areas where tree presence would be detrimental to public and worker safety or reliability of the transmission line.
- Implement WAPA’s Avian Protection Plan, including training of construction personnel. This training would be designed to comply with WAPA’s Construction Standard 13, with a focus on explanations regarding sensitive areas in the vicinity of the transmission line ROW.
- WAPA would prepare Plan and Profile drawings showing sensitive areas located on or immediately adjacent to the transmission line ROW or facility. These areas would be considered avoidance areas. Prior to any construction activity, the avoidance areas would be marked on the ground in a manner approved by WAPA. If access is absolutely necessary, the WAPA biologist may be required to accompany personnel and equipment.
- If evidence of a protected species or habitat is found, construction crews would immediately cease work and provide the location and nature of the findings to the WAPA biologist.
- In accordance with the USFWS guidelines, bird flight diverters would have already been installed to increase visibility for whooping cranes in several locations. If these devices were installed, they would be re-installed at the same locations on the newly strung conductor.



Federally Listed Species: Possible Impacts (Proposed Action)Review of **Endangered Species** with potential for occurrence in the proposed Project area:

1. Least Tern: No critical habitat has been designated for this species. Project is located outside of the occurrence range of this species according to the Wyoming Natural Diversity Database (WYNDD). In addition, the Proposed Action would not lead to consumptive use of water or have the potential to affect water quality in the Platte River System, therefore there would not be impacts to threatened and endangered species inhabiting the downstream reaches of this river system. Species and critical habitat not present; **NO EFFECT**.
2. Whooping Crane: Project is located outside the designated critical habitat for this species. Project is located within the irregular occurrence range of this species according to the Wyoming Natural Diversity Database (WYNDD). However, the project area does not provide the preferred migration stopover habitat (wide shallow river flats and crop fields) for this species, and “ebird” does not have any records of this species within over 35 miles of the project area. In addition, the project would not lead to consumptive use of water or have the potential to affect water quality in the Platte River System, therefore there would not be impacts to threatened and endangered species inhabiting the downstream reaches of this river system. The Proposed Action would not change the existing collision risk, and the new conductors could be more visible than the existing ones Species and critical habitat not present; **NO EFFECT**.
3. Pallid Sturgeon: No critical habitat has been designated for this species. Project is located outside of the occurrence range of this species (using shovelnose sturgeon as a surrogate species) according to the Wyoming Natural Diversity Database (WYNDD). In addition, the Proposed Action would not lead to consumptive use of water or have the potential to affect water quality in the Platte River System, therefore there would not be impacts to threatened and endangered species inhabiting the downstream reaches of this river system. Species and critical habitat not present; **NO EFFECT**.

Review of **Threatened species** with potential for occurrence in the proposed Project area:

1. Piping Plover: Project is located outside the designated critical habitat for this species. Project is located within the irregular occurrence range of this species according to the Wyoming Natural Diversity Database (WYNDD). However, the project area does not provide suitable habitat (sparsely vegetated marshes, spoil islands, reservoir beaches, alkali lakes, and rivers) for this species, and eBird.org does not have any records of this species within 35+ miles of the project area. In addition, the Proposed Action would not lead to consumptive use of water or have the potential to affect water quality in the Platte River System, therefore there would not be impacts to threatened and endangered species inhabiting the downstream reaches of this river system. Species and critical habitat not present; **NO EFFECT**.



2. Preble's Meadow Jumping Mouse: Project is located outside the designated critical habitat for this species. In addition, the project does not meet any of the three habitat requirements outlined in the USFWS (2018) Preble's Meadow Jumping Mouse (PMJM) Recovery Plan of well-developed riparian vegetation, relatively undisturbed adjacent grassland communities, and a nearby water source. Furthermore, all ground-disturbing work within Phase 1 would be completed prior to May 5, which is the earliest documented date of emergence by this species from hibernation. All work in Phase II is located outside of PMJM habitat. Species and critical habitat not present; **NO EFFECT.**
3. Ute ladies'-tresses: No critical habitat has been designated for this species. This species requires moist meadows associated with perennial stream terraces, alluvial banks, point bars, floodplains, or oxbows, irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, at elevations between 4,300 and 6,850 feet. No suitable habitat exists near the proposed Project. **NO EFFECT**
4. Blowout Penstemon: No critical habitat has been designated for this species. This species is found in sand blow-outs associated with the sand hills of Nebraska. All the known representatives of this species are found north of the Platte River in Nebraska. The Project ROW is located south of the Platte River and does not cross any sand hill habitat. No suitable habitat exists near the proposed Project. **NO EFFECT**
5. Western Prairie Fringed Orchid: No critical habitat has been designated for this species. Project is located outside of the known range of this species according to the U.S. Fish and Wildlife Service, and the project area does not provide suitable habitat (moist tallgrass prairies and sedge meadows) for this species. In addition, the Proposed Action would not lead to consumptive use of water or have the potential to affect water quality in the Platte River System, therefore there would not be impacts to threatened and endangered species inhabiting the downstream reaches of this river system. Species and critical habitat not present; **NO EFFECT.**

Migratory Birds

Most birds are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures.



Construction activities for both Phase 1 and 2 of this proposed Project have been scheduled to avert any impacts to migratory birds. The following list is of the USFWS Bird Species of Conservation Concern (BCC):

BCC Species	Breeding Date and location
Bald Eagle	(See paragraph below on Eagles)
Brewer's Sparrow	May 15 to August 10
Burrowing Owl	March 15 to August 31
Cassin's Sparrow	August 1 to October 10
Clark's Grebe	January 1 to December 31
Ferruginous Hawk	March 15 to August 15
Golden Eagle	(See paragraph below on eagles)
Lark Bunting	May 10 to August 15
Lesser Yellowlegs	Breeds elsewhere
Long-billed Curlew	April 1 to July 31
Marbled Godwit	May 1 to July 31
Pinyon Jay	February 15 to July 15
Red-headed Woodpecker	May 10 to September 10
Sage Thrasher	April 15 to August 10
Semipalmated Sandpiper	Breeds elsewhere
Whimbrel	Breeds elsewhere
Willet Tringa	April 20 to August 5
Willow Flycatcher	May 20 to August 31

Eagles and Raptors

When activities are scheduled during nesting season and overlap with known breeding areas, WAPA would evaluate eagle and raptor nesting status prior to the start of construction. If the territory is active, WAPA would limit activities within 0.25 miles and up to one mile of an active nest between February 1 and July 31, or until chicks have fledged. The buffer size and timing restrictions would be evaluated on a site-specific basis. For instance, if other features on the landscape (such as topographic barriers) provide disturbance protection, or if the site experiences routine disturbance and monitoring demonstrates a tolerance for human presence.

If WAPA determines that limiting activities to this timeframe is impossible, disturbance would be documented and submitted to USFWS in WAPA's annual special use utility permit (Permit Number: MB24372C-2) report. If the territory is inactive, the seasonal timing restriction would be lifted.

Sensitive Species

The Proposed Action and Alternative 1 may impact individuals or habitat but would not contribute to a trend towards Federal listing or cause loss of viability to the population or species due to the temporary and confined nature of construction activities and the nature of work associated with the Project. However, the Alternative 2 could cause irreparable segmentation or destruction of habitat.

If a grouse lek were discovered within 0.5 to 1 mile of WAPA's ROW, WAPA would conform to timing restrictions (April 15 to August 1), in accordance with the WYGFD, NDGP and USFWS guidance, this applies to all actions.

Land Use

While land use varies along the transmission line ROW, dryland farming and livestock grazing are the main uses. In Converse, Goshen, Platte, and Scotts Bluff Counties, much of the land use supports the petroleum, natural gas, and agricultural (primarily the livestock and crop industries) economies. The transmission line passes by the towns of Douglas, Glendo, Torrington, Gering, Bridgeport, and Sidney, where the land use in these areas varies among residential, commercial, industrial, and there are no encroachment issues that would affect the Project. Each of the counties has developed zoning ordinances to guide future land use and development.

The Farmland Protection Policy Act protects farmland from being converted to non-agricultural uses. The provisions of this act identify prime and unique farmlands for protection. Prime farmlands are those lands that have the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable erosion. Unique farmlands are composed of land other than prime farmland that are used for producing specific high-value food and fiber crops. Converse, Goshen, Platte, and Scotts Bluff, Counties contain interspersed prime and unique farmlands; however, these areas are sparsely located along the Project ROW, and the ROW is an existing utility easement.

Environmental Impacts: Proposed Action

Construction and operation of the transmission line would occur, primarily, within the existing ROW and would not alter or impede present land uses. Existing land uses would not be affected by either the Proposed Action or No Action alternative, except for the possible temporary disruption of farming activities. This would be minimized by timing construction activities to avoid planting and harvesting seasons to the extent practicable. WAPA would compensate landowners for any crop losses due to constructing, operating, or maintaining the line, as specified in WAPA's existing easement terms.

Because the Proposed Action would be reconducting an existing line in an existing ROW, there may be some minor minimal impacts to current crops in the field. However, there would be no long-term effects to the land other than those already existing from the initial installation of the transmission line. WAPA's environmental commitments listed in the previous sections (Soils, Solid and Hazardous Waste, and Water Resources) would minimize soil erosion and potential impacts from spills. The Alternative 2 Action would impact all aspects of land use, i.e. large areas of grading.

Cultural Resources

A Class III cultural resource inventory was conducted for Phase 1 of this Project and the Wyoming and Nebraska SHPOs, along with all other consulting parties, have been consulted regarding this undertaking. Additionally, a Class III cultural resource inventory is being conducted for Phase 2 of this Project and the Wyoming and Nebraska SHPOs, as appropriate, along with all other consulting parties, would be consulted regarding this undertaking prior to any work moving forward past the Phase 1 Project boundaries. This consultation is expected to be completed by March 3, 2021.



Any sites would be compiled into a separate report and the number of sites would be listed in that report. As with Phase 1, an avoidance map(s) would be provided to the field crews, or contractor, to prevent any possible impacts to known “environmentally sensitive exclusion areas” within Phase 2 of the Project. The surveys that were conducted on the transmission lines afforded a buffer of 50 feet on both sides of the ROW to reduce the risk of impacts to known sites. All sites were identified if present, in the ROW; therefore, all eligible sites would be avoided.

Environmental Impacts: Proposed Action and Alternative Actions

A consultation was performed with the Wyoming and Nebraska SHPOs, the Bureau of Land Management – Casper Field Office (BLM-CFO), the National Park Service – Scottsbluff National Monument (NPS), the Department of Defense-Camp Guernsey (DOD), and the Bureau of Reclamation – Wyoming Area Office (BOR-WAO). Per RMR’s cultural Programmatic Agreement (PA) this maintenance action required a full Section 106 survey and consultation. As a result, the SHPO’s determined that there is a finding of *no adverse effect to historic properties* for Phase 1 of this project currently. The consultation on Phase 2 would not be complete until March 3, 2021. Until that date, and only when a finding of no adverse effect to historic properties is issued by the SHPO’s, no work would occur on Phase 2.

WAPA has prepared an Archeological Monitoring and Controlled Testing Plan (treatment plan) that outlines the process for handling any newly identified sites along the transmission line and avoiding impacts to known sites.

The treatment plan requires that both alternatives implement:

1. Construction crews would be monitored to the extent possible to prevent vandalism or unauthorized removal or disturbance of cultural artifacts or materials from sites.
2. Survey or subsurface testing of any new structure, access road, or ground disturbing locations prior to construction.
3. “No work” areas and 100-foot buffer zones surrounding unevaluated and National Register of Historic Places (NRHP) eligible sites. These areas would be considered avoidance areas. Prior to any construction activity, the avoidance areas would be marked on avoidance maps. All WAPA crews, contractors, and others accessing the Project site would be issued maps to notify them that vehicular or equipment access to these environmentally sensitive exclusion areas is prohibited. These areas would be flagged in the field prior to actions.
4. No Archaeological monitoring of pole replacements within existing unevaluated and NRHP eligible site boundaries is planned; however, monitoring may occur at random locations throughout the project’s timeline;
 1. Tribes would be consulted regarding the proposed undertaking.
 2. Should any unknown cultural resources be encountered or any cultural resources inadvertently discovered during implementation of the proposed action during construction, work within 100 feet of the discovery area must halt immediately and an RMR archaeologist must be contacted immediately. Work around the area of discovery must not resume until notification to proceed is provided by an RMR.



5. If any possible human remains are discovered during implementation of the proposed action, work within 100 feet of the discovery area must halt immediately and an RMR archaeologist must be notified immediately (no later than 24 hours from the time of discovery). A reasonable effort must be made to protect the remains from looting and/or further damage. Work in the area of discovery must not resume until notification to proceed is provided by an RMR archaeologist.
6. The treatment plan would be used for consultation purposes with other Federal and State agencies that manage land along the ROW.

Generally, impacts to cultural resources could potentially occur during all Project activities, including site preparation, access road use, structure removal, and installation, and on-going O&M. Increased traffic can lead to destruction of sites by unauthorized vehicles driving over the site surface. Increased pedestrian traffic can also lead to vandalism of sites including artifact collection, destroying existing standing structures, and “impacting” sites and sacred areas.

Specifically, Phase 1 of the Proposed Action contains 38 known cultural resources and 21 isolated findings. Phase 1 would require 15 new structures (meaning, a wooden transmission line structure with three poles instead of two). None of the footprints of these structures are located within a surveyed site boundary. However, avoidance maps would be provided as pulling sites, landing zones and heavy, tracked vehicles are not authorized within “environmentally sensitive exclusion areas”.

For Phase 2 of the Proposed Action, the cultural survey is complete, the report and initiated consultation is scheduled to be completed by March. 3, 2021. No work would occur on the Phase 2 portion of this project until clearance from the state of Wyoming and Nebraska SHPO’s is received.

No new structure locations are being proposed for the Proposed Action or Alternative 1. Any changes to the locations or additional to the number of poles or guy wires would be subject to the requirements of the treatment plan and to continued consultation as per Section 106 of the National Historic Preservation Act (NHPA). However, Alternative 2 would have the greatest impact on cultural resources, i.e. mitigation for “environmentally sensitive exclusion areas” that could not be avoided with new structure placement or new access roads.

Visual Resources

The visual environment where the existing transmission line lays contains mostly rolling, rural landscapes. Portions of the transmission line pass near or through the towns of Gering and Sidney. No changes are being proposed to the visual aspect of the transmission line.

Environmental Impacts: Proposed Action and Alternative Actions

The Proposed and No Action Alternative would occur within the existing alignment, no new impacts to the viewshed are expected. The Proposed Action would result in some poles being replaced; however, they are in-kind structures. The Alternative 2 would require expansion of the ROW to access new structure pad locations. Construction and O&M activities would cause short-term visual impacts due to the presence of vehicles, vegetation removal, and general human activity.

Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” directs Federal agencies to develop strategies to identify and address disproportionately high and adverse impacts of programs, policies, and activities on minority and low-income populations.

Environmental Impacts: Proposed Action and Alternative Actions

The Proposed Action or either Alternatives are not expected to have adverse impacts to any population, including minority or low-income populations.

Health and SafetyElectrical and Magnetic Fields

Natural and man-made sources of electric and magnetic fields (EMFs) are commonplace in the United States. Man-made sources of EMFs within the Project area include the existing WAPA substation and transmission line, various other utility-owned power lines, as well as ordinary household appliances such as kitchen appliances, hairdryers, electric shavers, computers, wireless networks, cellular phones, microwaves, and remote controls. Because EMFs are vector quantities, they have a strength and a specific direction. The strength of an EMF decreases substantially with increasing distance from the source.

Potential health effects from EMF have been extensively studied. Some studies found a weak link between EMF exposure and a slightly increased risk of childhood leukemia, while others have not. Studies that have been conducted on adults show no evidence of a link between EMF exposure and adult cancers, such as leukemia, brain cancer, and breast cancer (National Institute of Environmental Health Sciences, 2018).

There are currently no Federal or State regulations on maximum EMF intensity. However, the EPA, International Commission on Non-ionizing Radiation Protection, and the Institute of Electrical and Electronics Engineers recommends that you limit your exposure to 0.5 milliGaus (mG) to 2.5 mG. For a 115-kV transmission line, the expected EMF levels are:

Table 3-2: EMF Levels with Increasing Distance from a Power Transmission Line

Transmissi on Line Voltage (kV)	Electric Field (kV)				Average Magnetic Field (mG)			
	At the Sour ce	100- Feet Away	200- Feet Away	300- Feet Away	At the Source	100- Feet Away	200- Feet Away	300- Feet Away
115	1.0	0.07	0.01	0.003	29.7	1.7	0.4	0.2

Source: Bonneville Power Administration, 1994

The greatest hazard from a transmission line is primary shocks or direct electrical contact with the conductors. Primary shocks can result in bodily harm. Extreme caution should be exercised to avoid primary shocks resulting from line strikes with equipment (e.g., drill rigs, farm equipment, and electrical service equipment).

Steady-state currents are those that flow when a person contacts a poorly grounded or ungrounded metallic object, providing a path for the induced current to flow to the ground. These shocks could cause an involuntary and potentially harmful movement but cause no direct bodily harm. Steady-state current shocks are infrequent and represent a nuisance rather than a hazard. These shocks can only occur in close proximity to an energized line. WAPA properly grounds all permanent potential sources of these shocks near its transmission lines such as fences.

Corona Noise

Modern transmission lines are designed, constructed, and maintained so that during dry conditions the lines generate minimal noise. Corona-generated audible noise is a crackling/hissing noise. During dry weather, noise from transmission lines is generally indistinguishable from background noise. Under wet conditions however, moisture collecting on the lines increase noise. Occasional corona humming noise at 60 hertz and higher is easily identified and, therefore, may cause complaints from nearby residents. Although corona noise could be an issue where transmission lines run through populated areas, there are no design-specific regulations to limit audible noise from transmission lines.

Environmental Impacts: Proposed Action and Alternative Actions

In 2007 the World Health Organization (WHO) completed a review of health implications from magnetic fields and concluded, “virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level EMF and changes in biological function or disease status” (WHO, 2007). It is WAPA’s policy to design and construct transmission lines that reduce the EMF to the maximum extent feasible. WAPA’s policy is to apply any necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW, to the mutual satisfaction of the parties involved.

The Proposed Action and Alternative 2 would replace existing conductors with new ones. The No Action Alternative would not change EMF exposure from the existing conditions. However, existing sources of corona noise from loose or worn hardware would be corrected with the installation of new conductors with the Proposed Action or Alternative 2. Therefore, some lessening of corona noise would be expected from the both the Proposed Action and the Alternative 2.

The ROW would keep future unsafe development from encroaching on the transmission line, which in turn would reduce the potential for EMF or noise effects to adjacent structures and inhabitants. WAPA’s existing ROW ranges between 75 and 80 feet. At 100 feet away from a 115-kV transmission line, the exposure limits are well within the EPA recommendations. Exposures within the ROW are expected to be short-term, such as during O&M activities, driving under the line for farming/ranching activities, or other transient activities. Long-term exposure above the EPA recommended levels is not expected. The majority of the line runs through areas with few, or no, residents. Therefore, there would be no Long-term EMF or noise effect potential impacts to adjacent structures or inhabitants.

Various techniques, such as shielding, exist for eliminating adverse impacts on radio and television reception. WAPA would address individual complaints concerning radio and television interference as needed.

Floodplain Review

About 50 percent of the transmission line is located within an "Area of Minimal Flood Hazard," associated with the Platte River, where there is minimal chance of flooding during a 500-year flood event (Federal Emergency Management Agency [FEMA] 2019). The remaining 50 percent of the transmission line is located outside of the floodplain.

The U.S. Congress passed the National Flood Insurance Act of 1968 in response to increasing losses from flood hazards nationwide, which resulted in establishing the National Flood Insurance Program (NFIP). The Act was subsequently expanded by the Flood Disaster Protection Act of 1973 in which floodplain areas and flood risk zones within the U.S. were identified as part of the Act.

The NFIP identified floodplain areas through flood insurance studies, consisting of hydrologic and hydraulic studies of flood risks which are administered by the Federal Emergency Management Agency (FEMA). FEMA prepares Flood Insurance Rate Maps that depict the spatial extent of flood hazard areas within Special Flood Hazard Areas (SFHAs). Flood hazard areas within the Project area are associated with the Platte River and its tributaries. Although SFHAs have been designated to describe the potential for flooding events, those applicable to the DJT-SD Transmission Line Project area are limited to those within the ROW.

Environmental Impacts: Proposed Action and Alternative Actions

Taking into consideration the Proposed Action and Alternative 1 do not propose to add or remove any transmission line structures or appurtenances to the project area, the neither would add or remove any impact to the floodplain. The Alternative 2 would create more impact via larger structures.

Global Climate Change

Reconductoring the existing transmission line would result in temporary construction equipment dust and Global Climate Change (GHG) emissions during the construction period. Emissions resulting from subsequent O&M activities would decrease compared with existing levels as less future maintenance would be required. The level of dust and GHG emissions from the Proposed Action would be short term negligible and would not contribute to global climate change.

Environmental Impacts: Proposed Action and Alternative Actions

Taking into consideration that the project itself, reconductoring an existing transmission line, would not add to the GHC levels in the atmosphere and therefore the proposed actions would be negligible in terms of adding to the Global Climate Change in that it won't release any further GHC's to the atmosphere. Since the Alternative 2 would require more equipment, and for a longer duration than the Proposed Project, it could impact GHC levels in the atmosphere.

Chapter 4: Public Involvement and Coordination

The project proposes to replace the existing transmission line in-kind within the existing utility ROW and would not result in any “significant environmental impacts”. Additionally, the project is not expected to be controversial in nature and is not located in an environmentally sensitive area. Therefore, in accordance with CEQ and regulatory requirements, WAPA did not hold a public comment process given the project would not cause any “significant environmental impacts”.

All landowners would be contacted before the Project commences by WAPA Lands personnel. WAPA would notify both private and government landowners, via hard copy letters, of the Project based on the current list available of landowners available from the local county community development GIS tax lot records.



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APPENDIX A: EXAMPLE PHOTOS OF TYPICAL LINE RECONDUCTOR ACTIVITIES



Photo 1: Guy wire installation



Photo 2: ROW used to traverse from structure to structure. As well as an example of the typical landscape of Eastern Wyoming and Western Nebraska.



Photo 3: Grading at a structure site to level crane set-up.



Photo 4: The structure in the foreground is an example of the structure design that WAPA is proposing to install. The structures in the background are the original structures, which WAPA is proposing to replace (up to 30 deteriorated structures).





Photo 5: Typical earth disturbance at pole locations during hole auguring.



Photo 6: Equipment and disturbance during installation of structures.

APPENDIX B: STANDARD MITIGATION MEASURES FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF TRANSMISSION LINES

These are standard practices applied to all projects. Some of these provisions would not be applicable to this project, so they should be viewed in the context of “if this condition or situation occurs, then this practice would be followed.” The standard measures have been developed to deal with all anticipated scenarios, and not all would apply to this specific project.

1. The contractor would limit the movement of its crews and equipment to the ROW, including access routes. Movement would be limited on the ROW to minimize damage to grazing land, crops, or property, and would avoid marring the land.
2. When weather and ground conditions permit, the contractor would obliterate all contractor-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts would be leveled, filled, and graded, or otherwise eliminated in an approved manner. In hay meadows, alfalfa fields, pastures, and cultivated productive lands, ruts, scars, and compacted soils would have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land would be corrected. Before final acceptance of the work in these agricultural areas, all ruts would be obliterated, and all trails and areas that are hard-packed because of contractor operations would be loosened, leveled, and reseeded. The land and facilities would be restored as nearly as practicable to their original conditions.
3. Water bars or small terraces would be constructed across all ROW and access roads on hillsides to prevent water erosion and to facilitate natural revegetation.
4. The contractor would comply with all Federal, State, and local environmental laws, orders, and regulations. Prior to construction, all supervisory construction personnel and heavy equipment operators would be instructed on the protection of cultural and ecological resources.
5. The contractor would exercise care to preserve the natural landscape and would conduct its construction operations to prevent any unnecessary disturbance, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, approved construction roads, or excavation operations, all trees, native shrubbery, and vegetation would be preserved and would be protected from damage by the contractor's construction operations and equipment. The edges of clearings and cuts through tree, shrubbery, or other vegetation would be irregularly shaped to soften the undesirable visual impact of straight lines
6. Upon completion of the work, all work areas except access roads would be scarified or left in a condition which would facilitate natural revegetation, provide for proper drainage, and prevent erosion. All disturbance, scarring, damage, or defacing of the landscape resulting from the contractor's operations would be repaired by the contractor.
7. Construction staging areas would be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. Upon abandonment, all storage and construction buildings, including any concrete footings and slabs, and all construction materials and debris



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would be removed from the site. The area would be regraded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that would facilitate natural revegetation, provide for proper drainage, and prevent erosion.

8. Barrow pits would be excavated so that water would not collect and stand therein. Before being abandoned, the sides of barrow pits would be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent undisturbed terrain into the pit or barrow area giving a natural appearance. Waste piles would be shaped to provide a natural appearance.
9. Construction activities would be performed by methods that would prevent entrance, or accidental spillage, of solid matter contaminants, debris, any other objectionable pollutants and wastes into streams, flowing or dry watercourses, surface waters, and underground water sources. Such pollutants and waste include, but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, aggregate processing tailing, mineral salts, and thermal pollution.
10. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or watercourses, would be conducted in a manner to prevent muddy water and eroded materials from entering the streams or watercourses by construction of intercepting ditches, bypass channels, barriers, settling ponds, or other approved means.
11. Excavated material or other construction materials would not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse and surface water perimeters where they can be wasted away by high water or storm runoff or can in any way encroach upon the actual watercourse itself.
12. Waste waters from concrete batching, or other construction operations would not enter streams, watercourses, or other surface waters without the use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters would be essentially free of settleable material and would be covered by the appropriate permit. For these specifications, settleable material as defined as that material which would settle from the water by gravity during a 1-hour quiescent detention period.
13. The contractor would utilize such practicable methods and devices as are reasonably available to control, present, and otherwise minimize atmospheric emissions or discharges of air contaminants.
14. The emission of dust into the atmosphere would not be permitted during the manufacture, handling, and storage of concrete aggregate, and the contractor would use such methods and equipment as necessary for the collection and disposal, or prevention, of dust during these operations. The contractor's methods of storing and handling cement and pozzolans would also include means of eliminating atmospheric discharges of dust.



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15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, would not be operated until repairs or adjustments are made.
16. The contractor would prevent any nuisance to persons or damage to crops, cultivated fields, and dwellings from dust originating from his operations to the extent practicable. Oil and other petroleum derivatives would not be used for dust control. Speed limits would be enforced, based on road conditions, to reduce dust problems.
17. To avoid nuisance conditions due to construction noise, all internal combustion engines used in connection with construction activity would be fitted with an approved muffler and spark arrester.
18. Burning or burying waste materials on the ROW or at the construction site would not be permitted. The contractor would remove all other waste materials from the construction area. All materials resulting from the contractor's clearing operations would be removed from the ROW.
19. The contractor would make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and would conduct its construction operations to offer the least possible obstruction and inconvenience to public traffic.
20. WAPA would apply necessary mitigation (proper grounding) to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW to the mutual satisfaction to the parties involved.
21. Structures would be carefully located to avoid sensitive vegetative conditions, including wetlands, where practical.
22. ROW would be located to avoid sensitive vegetation conditions including wetlands where practical or, if they are linear to cross them, at the least sensitive feasible point.
23. Removal of vegetation would be minimized to avoid creating a swath along the ROW.
24. Topsoil would be removed, stockpiled, and respread at all heavily disturbed areas not needed for maintenance access.
25. All disturbed areas not needed for maintenance access would be reseeded using mixes approved by the landowner or land management agency.
26. Erosion control measures would be implemented on disturbed areas, including areas that must be used for maintenance operations (access ways and areas around structures).
27. The minimum area would be used for access ways (12 feet to 15 feet wide, except where overland access is required).
28. Structures would be located and designed to conform with the terrain. Leveling and benching of the structure sites would be the minimum necessary to allow structure assembly and erection.



29. ROW would be located to utilize the least steep terrain and, therefore, to disturb the smallest area feasible.
30. Careful structure location would ensure spanning of narrow flood prone areas.
31. Structures would not be sited on any potentially active faults.
32. Structure sites and other disturbed areas would be located at least 300 feet, where practical, from rivers, streams (including ephemeral streams), ponds, lakes, and reservoirs.
33. New access ways would be located at least 300 feet, where practical, from rivers, ponds, lakes, and reservoirs.
34. At crossings of perennial streams by new access ways, culverts of adequate size to accommodate the estimated peak flow of the stream would be installed. Construction areas would minimize disturbance of the stream banks and beds during construction. The mitigation measures listed for soil/vegetation resources would be performed on areas disturbed during culvert construction.
35. If the banks of ephemeral stream crossings are sufficiently high and steep that breaking them down for a crossing would cause excessive disturbance, culverts would be installed using the same measures as for culverts on perennial streams.
36. Blasting would not be allowed.
37. Power line structures would be located, where practical, to span small occurrences of sensitive land uses, such as cultivated areas. Where practicable, construction access ways would be located to avoid sensitive conditions.
38. ROW would be purchased at fair market value and payment would be made of full value for crop damages or other property damage during construction or maintenance activities.
39. The power line would be designed to minimize noise and other effects from energized conductors.
40. The precise location of all structure sites, ROW, and other disturbed areas would be determined in cooperation with landowners or land management agencies.
41. Crossing of operating railroads by construction vehicles or equipment in a manner that would cause delays to railroad operations would be avoided. Construction would be coordinated with railroad operators. Conductors and overhead wire string operations would use guard structures to eliminate delays.

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42. Before construction, WAPA would perform a Class III (100 percent of surface) cultural survey on all areas to be disturbed, including structure sites and new access ways. These surveys would be coordinated with the appropriate landowner or land management agency. A product of the survey would be a Cultural Resources Report recording findings and suggesting mitigation measures. These findings would be reviewed with the State Historic Preservation Offices and other appropriate agencies, and specific mitigation measures necessary for each site or resource would be determined. Mitigation may include careful relocation of access ways, structure sites, and other disturbed areas to avoid cultural sites that should not be disturbed, or data recovery. The contractor would be informed of the need to cease work within 100 feet of the location if cultural resource items are discovered.
43. Construction activities may be monitored, or sites may be flagged to prevent inadvertent destruction of any cultural resource for which the agreed mitigation was avoidance.
44. Construction crews may be monitored to the extent possible to prevent vandalism or unauthorized removal or disturbance of cultural artifacts or materials from sites where the agreed mitigation was avoidance.
45. Should any cultural resources that were not discovered during the Class III Survey be encountered during construction, ground disturbance activities at that location would be suspended within 100 feet of the site until the provisions of the National Historic Preservation Act and enabling legislation have been carried out.
46. Construction activities would be monitored, or significant locations flagged, to prevent inadvertent destruction of for all sensitive resource avoidance areas, and the specific reason for avoidance would not be given.
47. Clearing for existing access roads would be limited to only those trees necessary to permit the passage of equipment.
48. Access roads would follow the lay of the land rather than a straight line along the ROW where steep features would result in a higher disturbance.



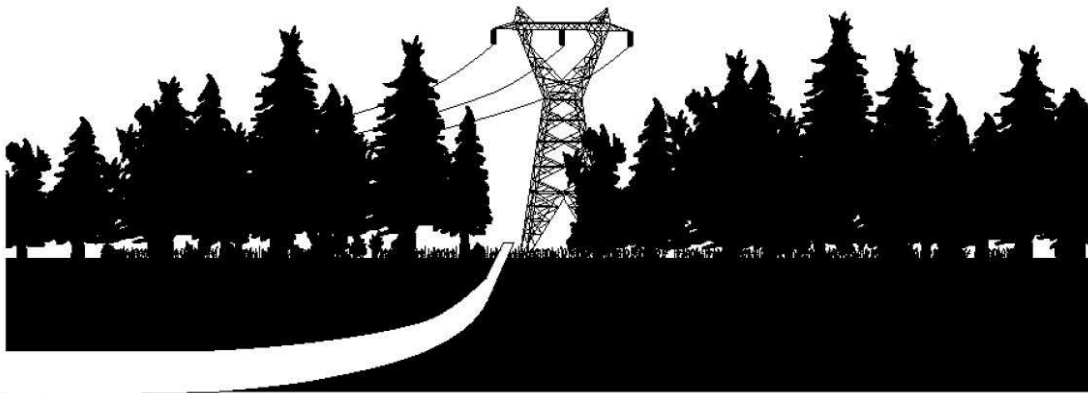
APPENDIX C: CONSTRUCTION STANDARD 13, ENVIRONMENTAL QUALITY PROTECTION



Western Area
Power Administration

CONSTRUCTION STANDARDS

STANDARD 13 ENVIRONMENTAL QUALITY PROTECTION



September 2016



STANDARD 13 – ENVIRONMENTAL QUALITY PROTECTION

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SECTION 13.1 – REQUIRED SUBMITTALS, REPORTS, AND PLANS

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

SECTION 13.2 – CONTRACTOR FURNISHED DATA

1. RECYCLED MATERIALS QUANTITY REPORT: Submit quantities of recycled materials listed in Section 13.7, "Recycled Materials Quantities", to the COR prior to submittal of final invoice.
2. RECOVERED AND BIOBASED MATERIAL PRODUCTS REPORT: Provide the COR the following information for purchases of items listed in Section 13.8, "Use of Recovered Material and Biobased Material Products".
 - (1) Quantity and cost of listed items with recovered or biobased material content and quantity and cost of listed items without recovered or biobased material content prior to submittal of final invoice.
 - (2) Written justification of listed items if recovered material or biobased material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.
3. REFRIGERANT RECEIPT: The contractor shall provide a record of all refrigerant usage, recycling, or disposal on WAPA HVAC systems. In the event refrigerant is either charged into or removed and reclaimed from a WAPA HVAC system, the contractor shall provide either a record of usage or a receipt from the EPA-certified refrigerant reclaimer including whether it was either added to or reclaimed from the equipment, the date, and the amount and type of refrigerant used to the COR prior to submittal of final invoice.
4. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice in accordance with Section 13.9.8, "Waste Material Quantity Report".
 - (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.
 - (2) Hazardous or Universal Wastes: Weight in pounds.
 - (3) PCB Wastes: Weight in pounds.
 - (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).
5. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Submit the Plan as described in Section 13.11.2, "Spill Prevention Notification and Cleanup Plan", to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.
6. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Submit the Plan as described in Section 13.11.3, "Tanker Oil Spill Prevention and Response Plan", to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.



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7. PESTICIDE USE PLAN: Submit a plan as described in Section 13.12.3, "Pesticide Use Plan", to the COR for review and comment 14 days prior to the date of intended pesticide application. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after application, submit a written report in accordance with Standard 2 – Sitework, Section 2.1.1_5, "Soil-Applied Herbicide".
8. TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING - CONSUMER INFORMATION SHEET RECEIPT: Submit treated wood utility poles and crossarms - consumer information sheet receipts to the COR prior to submittal of final invoice (see 13.13, "Treated Wood Utility Poles and Crossarms Recycling or Disposal").
9. PREVENTION OF AIR POLLUTION: Submit a copy of permits, if required, as described in 13.14, "Prevention of Air Pollution" to the COR 14 days prior to the start of work.
10. SULFUR HEXAFLUORIDE (SF6) EMISSIONS: A receipt from the SF6 gas supplier stating that the gas was reclaimed, the amount of SF6, and the date shall be submitted to the COR prior to submittal of final invoice in accordance with Section 13.14.4(3), "Certificates of Disposal and Receipts".
11. ASBESTOS LICENSES OR CERTIFICATIONS: Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work as described in 13.15, "Handling and Management of Asbestos Containing Material" to the COR 14 days prior to starting work. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.
12. LEAD PAINT NOTICES: Submit a copy of lead paint notices with contractor and recipient signatures as described in 13.16, "Material with Lead-based Paint" to the COR prior to submittal of final invoice. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.
13. WATER POLLUTION PERMITS: Submit copies of any water pollution permits as described in 13.17, "Prevention of Water Pollution" to the COR 14 days prior to start of work.
14. PCB TEST REPORT: Submit a PCB test report as described in 13.18, "Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment", prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.
15. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed as described in 13.18, "Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment", to the COR prior to submittal of final invoice.
16. OSHA PCB TRAINING RECORDS: Submit employee training documentation records to the COR 14 days prior to the start of work as described in 13.19.1.
17. CLEANUP WORK MANAGEMENT PLAN: Submit a Cleanup Work Management Plan as described in 13.19, "Removal of Oil-contaminated Material" to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.
18. POST CLEANUP REPORT: Submit a Post-Cleanup Report as described in 13.19, "Removal of Oil-contaminated Material" to the COR prior to submittal of final invoice.



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SECTION 13.3 – ENVIRONMENTAL REQUIREMENTS

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

SECTION 13.4 – LANDSCAPE PRESERVATION

1. GENERAL: Preserve landscape features in accordance with the contract clause titled "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements." Exercise care to preserve the natural landscape and conduct activities to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the project vicinity. Except where clearing is required for permanent works, approved construction roads, or excavation operations, vegetation shall be preserved and shall be protected from damage by project operations and equipment.
2. CONSTRUCTION ROADS: Location, alignment, and grade of construction roads shall be subject to the COR's approval. When no longer required, surfaces of construction roads shall be scarified to facilitate natural revegetation, provide for proper drainage, and prevent erosion. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.
3. CONSTRUCTION FACILITIES: Shop, office, material lay down and material and equipment storage areas, and yard areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent and prevent impact on sensitive riparian areas and flood plains. Storage and construction buildings, including concrete footings and slabs, shall be removed from the site prior to contract completion. The area shall be re-graded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion or transport of sediment and pollutants. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.

SECTION 13.5 – PRESERVATION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

1. GENERAL: Do not, at any time, remove, disturb, or otherwise alter cultural artifacts or paleontological resources (fossils). Cultural artifacts may be of scientific or cultural importance and include, but are not limited to bones, pottery, projectile points (arrowheads), other stone or metal tools, surface features (stone circles, rock piles, etc.), glass, metal, ceramic, or other historic objects, structures and buildings (including ruins). Paleontological resources can be of scientific importance and include mineralized animals and plants or trace fossils such as footprints. Both cultural and paleontological resources are protected by Federal Regulations during Federal construction projects. Contractor shall restrict all ground disturbing activities to areas reviewed/investigated and approved WAPA by the Regional Preservation Officer (RPO) and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.
2. KNOWN CULTURAL OR PALEONTOLOGICAL SITES: The contractor shall ensure that all construction activities avoid the boundaries of specific cultural, historic, or scientific sites. Following issuance of notice to proceed, WAPAWAPA will provide drawings or maps that indicate the areas of avoidance in relation to the project area. Prior to any construction activity, the avoidance areas shall be marked on the ground in a manner approved by the COR in conjunction with the RPO. When avoidance is not possible, the Contractor shall provide WAPA a 90-day notice of their inability to avoid historic properties. WAPA will consult with the appropriate authorities and the contractor will not be permitted to work within or near the boundaries of the historic property until the RPO approves of the work and the COR directs the contractor to proceed. Instruct employees and subcontractors that vehicular or equipment access to these areas is prohibited. If access is absolutely necessary, first



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obtain approval from the COR in conjunction with the RPO. WAPA will remove the markings during or following final cleanup.

3. **WORKING WITH CULTURAL, PALEONTOLOGICAL, OR TRIBAL MONITORS:** For some project work, WAPA will require an archaeological, paleontological or tribal monitor at or near cultural or paleontological site locations. The contractor, contractor's employees, and subcontractors shall work with the monitor to insure that sensitive areas are avoided. Where monitors are required, the monitor shall meet with the crew each morning to go over the day's work. The monitor will also conduct awareness training for all contractors prior to any work in the field. Untrained personnel shall not be allowed in the construction area. For sensitive areas requiring a monitor, the contractor may not access those areas without a monitor being present.
4. **UNKNOWN CULTURAL OR PALEONTOLOGICAL SITES:** On rare occasions cultural or paleontological sites may be discovered during excavation or other earth-moving or other construction activities.
 - (1) **Reporting:** If evidence of a cultural or paleontological site is discovered, cease work in the area immediately and notify the COR of the location and nature of the findings. If a monitor is present, the monitor should also be notified. Stop all activities within a 200-foot radius of the discovery and do not proceed with work within that radius until directed to do so by the COR.
 - (2) **Care of Evidence:** Protect the area. Do not remove, handle, alter, or damage artifacts or fossils uncovered during construction activities.
5. **SPECIAL CONSIDERATIONS:** Refer to Division 13 of the Project Specifications for site-specific requirements including, but not limited to, known and unknown cultural or paleontological resources.

SECTION 13.6 – NOXIOUS WEED CONTROL

Comply with Federal, State, and local noxious weed control regulations. At Contractor's expense, obtain required permits and conduct required notifications. Provide a "clean vehicle policy" while entering and leaving construction areas to prevent transport of noxious weed plants and/or seed. Transport only construction vehicles that are free of mud and vegetation debris to staging areas and the project right-of-way. All seed mixes and mulch used for reclamation activities will be certified weed-free.

SECTION 13.7 – RECYCLED MATERIALS QUANTITIES

1. **GENERAL:** All materials generated from the project that can be recycled, shall be recycled. Record quantities of material by category that is salvaged, recycled, reused, or reprocessed, including:
 - (1) Transformers, Breakers: Weight without oil.
 - (2) Aluminum Conductor – Steel Reinforced (ACSR): Weight in pounds or tons.
 - (3) Steel: Weight in pounds or tons.
 - (4) Aluminum: Weight in pounds or tons.
 - (5) Copper: Weight in pounds or tons.
 - (6) Other Metals: Weight in pounds or tons.
 - (7) Oil: Gallons (separate by type - less than 2 ppm PCB, 2 to 50 ppm PCB, and 50 or greater ppm PCB).



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- (8) Gravel, Asphalt, Or Concrete: Weight in pounds or tons.
 - (9) Batteries: Weight in pounds.
 - (10) Treated Wood Utility Poles and Crossarms: Weight in pounds.
 - (11) Wood construction material: Weight in pounds.
 - (12) Cardboard: Weight in pounds.
 - (13) Porcelain Insulators: Weight in pounds.
 - (14) Glass: Weight in pounds.
 - (15) Fluorescent Bulbs: Weight in pounds.
 - (16) Ballasts: Weight in pounds.
2. RECYCLED MATERIAL QUANTITY REPORT: Submit quantities (pounds or metric tons) of all recycled material by category to the COR within 30 days of recycling and prior to submittal of final invoice.

SECTION 13.8 – USE OF RECOVERED MATERIAL AND BIOBASED MATERIAL PRODUCTS

1. RECOVERED MATERIAL PRODUCTS: If the products listed below or other products listed at <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program> are obtained as part of this project, purchase the items with the highest recovered material content possible unless recovered material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

Example include:

- (1) Building Insulation Products.
- (2) Carpet.
- (3) Carpet cushion.
- (4) Cement and concrete containing coal fly ash, ground granulated blast furnace slag, cenospheres, or silica fume.
- (5) Consolidated and reprocessed latex paint.
- (6) Floor Tiles.
- (7) Flowable fill.
- (8) Laminated Paperboard.
- (9) Modular threshold ramps.
- (10) Nonpressure pipe.



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- (11) Patio Blocks.
 - (12) Railroad grade crossing surfaces.
 - (13) Roofing materials.
 - (14) Shower and restroom dividers/partitions.
 - (15) Signage.
 - (16) Structural Fiberboard.
2. **BIOBASED MATERIAL PRODUCTS:** If the products listed at <https://www.biopreferred.gov/BioPreferred/faces/pages/ProductCategories.xhtml> are obtained as part of this project, purchase the items with the highest biobased content possible and no less than the percent indicated for each product unless biobased material products are not available: 1) competitively within a reasonable time frame, 2) meeting reasonable performance standards as defined in the Standards or Project Specifications, or 3) at a reasonable price.

NOTE: All station service and pole mounted transformers will be bio-based oil. WAPA large transformers will be evaluated on a best value basis using life cycle cost analysis.

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

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

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

SECTION 13.9 – DISPOSAL OF WASTE MATERIAL

- 1. **GENERAL:** Dispose or recycle waste material in accordance with applicable Federal, State and local regulations and ordinances. In addition to the requirements of the Contract Clause "Cleaning Up", remove all waste material from the construction site. No waste shall be left on WAPA property, right-of-way, or easement. Burning or burying of waste material is not permitted.
- 2. **HAZARDOUS, UNIVERSAL, AND NON-HAZARDOUS WASTES:** Manage hazardous, universal, and non-hazardous wastes in accordance with State and Federal regulations.
- 3. **USED OIL:** Used oil generated from the Contractor activities shall be managed in accordance with used oil regulations.
- 4. **RECYCLABLE MATERIAL:** Reduce wastes, including excess WAPA material, by recycling, reusing, or reprocessing. Examples of recycling, reusing, or reprocessing includes, but is not limited to, reprocessing of solvents; recycling cardboard; and salvaging scrap metals.
- 5. **REFRIGERANTS AND RECEIPTS:** Refrigerants from air conditioners, water coolers, refrigerators, ice machines and vehicles shall be reclaimed with certified equipment operated by certified technicians if the item is to be disposed. Refrigerants shall be reclaimed and not vented to the atmosphere. A

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receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR prior to submittal of final invoice.

6. HALONS: Equipment containing halons that must be tested, maintained, serviced, repaired, or disposed must be handled according to EPA requirements and by technicians trained according to those requirements.
7. SULFUR HEXAFLUORIDE: SF₆ gas shall be reclaimed and shall not be vented to the atmosphere. See Section 13.14.4(3)
8. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice.
 - (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.
 - (2) Hazardous or Universal Wastes: Weight in pounds.
 - (3) PCB Wastes: Weight in pounds.
 - (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

SECTION 13.10 – CONTRACTOR'S LIABILITY FOR REGULATED MATERIAL INCIDENTS

1. GENERAL: The Contractor is solely liable for all expenses related to spills, mishandling, or incidents of regulated material attributable to his actions or the actions of his subcontractors. This includes all response, investigation, cleanup, disposal, permitting, reporting, and requirements from applicable environmental regulation agencies.
2. SUPERVISION: The actions of the Contractor employees and subcontractors shall be properly managed at all times on WAPA property or while transporting WAPA's (or previously owned by WAPA) regulated material and equipment.

SECTION 13.11 – POLLUTANT SPILL PREVENTION, NOTIFICATION, AND CLEANUP

1. GENERAL: Provide measures to prevent spills of pollutants and respond appropriately if a spill occurs. A pollutant includes any hazardous or non-hazardous substance that when spilled, will contaminate soil, surface water, or ground water. This includes any solvent, fuel, oil, paint, pesticide, engine coolants, and similar substances.
2. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Provide the Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Include the following in the Plan:
 - (1) Spill Prevention Measures: Describe the work practices or precautions that will be used at the job site to prevent spills. These may include engineered or manufactured techniques such as installation of berms around fuel and oil tanks; storage of fuels, paints, and other substances in spill proof containers; and management techniques such as requiring workers to handle material in certain ways.



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- (2) Notification: Most States and the Environmental Protection Agency require by regulation that anyone who spills certain types of pollutants in certain quantities notify them of the spill within a specific time period. Some of these agencies require written follow up reports and cleanup reports. Include in the Plan the types of spills for which notification would be made, the agencies notified, the information the agency requires during the notification, and the telephone numbers for notification.
 - (3) Employee Awareness Training: Describe employee awareness training procedures that will be implemented to ensure personnel are knowledgeable about the contents of the Plan and the need for notification.
 - (4) Commitment of Manpower: Equipment and Material. Identify the arrangements made to respond to spills, including the commitment of manpower, equipment and material.
 - (5) If applicable, address all requirements of 40CFR112 pertaining to Spill Prevention, Control and Countermeasures Plans.
3. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Provide a Tanker Oil Spill Prevention and Response Plan as required by the Department of Transportation if oil tankers with volume of 3,500 gallons or more are used as part of the project. Submit the Tanker Oil Spill Prevention and Response Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

SECTION 13.12 – PESTICIDES

1. GENERAL: The term “pesticide” includes herbicides, insecticides, rodenticides and fungicides. Pesticides shall only be used in accordance with their labeling and applied by appropriately certified applicators.
2. ENVIRONMENTAL PROTECTION AGENCY REGISTRATION: Use only EPA-registered pesticides that are approved for the intended use and location. Follow all applicable label directions.
3. PESTICIDE USE PROPOSAL: Provide a pesticide use proposal that contains: 1) pesticide(s) proposed (include mixtures and surfactants), 2) treatment site, 3) intended rate of application, 4) a copy of labels and Safety Data Sheets, and 5) a copy of required applicator certifications. Submit the pesticide use proposal to the COR for review and comment 14 days prior to the date of intended application. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after application, submit a written final report to the COR, including the pesticide applicators report, in accordance with Standard 2 – Sitework, Section 2.1.1 5. “Soil-Applied Herbicide, (4) Final Report”.

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

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



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accepts treated wood and has signed WAPA's consumer information sheet receipt. Submit treated wood utility poles and crossarms consumer information receipts to the COR prior to submittal of final invoice.

SECTION 13.14 – PREVENTION OF AIR POLLUTION

1. **GENERAL:** Ensure that construction activities and the operation of equipment are undertaken to reduce the emission of air pollutants. Submit a copy of permits for construction activities, if required (e.g., "non-attainment" areas, State implementation plans, or Class I air-sheds), from Federal, State, or local agencies to the COR 14 days prior to the start of work. The contractor shall fulfill the conditions under any applicable locally prepared Environmental Impact Statements (EISs) or Environmental Assessments (EAs) conducted for the project under the National Environmental Protection Act (NEPA).
2. **MACHINERY AIR EMISSIONS:** The Contractor and subcontractor machinery shall have, and shall use the air emissions control devices required by Federal, State or Local Regulation or ordinance.
3. **DUST ABATEMENT:** Dust shall be controlled. Oil shall not be used as a dust suppressant. Dust suppressants shall be approved by the COR prior to use.
4. **SULFUR HEXAFLUORIDE EMISSIONS:**
 - (1) **GENERALGENERALGENERAL:** WAPA complies with State, Federal, and local regulations regarding Mandatory Greenhouse Gas Reporting 40 CFR Part 98. The Contractor shall provide the information required by this section to the COR as described.
 - (2) The Contractor shall record quantities of SF₆ gas, including:
 - a. Nameplate capacity in pounds of SF₆ gas containing equipment.
 - b. Record pounds of SF₆ gas stored in containers, before transferring into energized equipment.
 - c. Record pounds of SF₆ gas left in containers, after transferring into energized equipment.
 - d. Pounds of SF₆ gas purchased from equipment manufacturers or distributors.
 - e. Pounds of SF₆ gas returned to suppliers.
 - f. Scales used to weigh cylinders must be accurate to within +/- 2 pounds and must have current calibration sticker.
 - (3) **CONTRACTOR FIELD QUALITY TESTING AND SF₆ GAS HANDLING:**
 - a. The Contractor shall test all functions to verify correct operation and conduct a leak test. No SF₆ gas leakage shall be allowed from any equipment or storage containers.
 - b. Atmospheric venting of SF₆ gas is not allowed.
 - c. The Contractor shall remove all empty SF₆ gas cylinders and return to supplier.
 - (4) **CERTIFICATES OF DISPOSAL AND RECEIPTS FOR SF₆ GAS:**
 - a. The Contractor can use WAPA's Reporting Form for reporting quantities listed above.



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- b. The Contractor shall provide receipts of SF₆ gas returned to supplier.
 - c. The Contractor shall submit SF₆ gas Reporting Forms and copies of receipts to the COR prior to submittal of final invoice.
5. PROTECTION OF STRATOSPHERIC OZONE: The contractor shall comply with all State, Federal, and local regulations regarding ozone depleting substances and the Protection of Stratospheric Ozone, including, but not limited to 40 CFR 82. Contractors performing work on HVAC systems shall be trained and certified according to the regulations, and releases of ozone depleting substances to the atmosphere shall be prevented. The contractor shall provide reclaimed refrigerant receipts to the COR in accordance with section 13.2.3 of this document.

SECTION 13.15 – HANDLING AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL

- 1. GENERAL: Obtain the appropriate Federal, State, Tribal or local licenses or certifications prior to disturbing any regulated asbestos-containing material. If a building or portion of a building will be demolished or renovated, obtain an Asbestos Notice of and Permit for Demolition and Renovation from the State or Tribal Department of Environmental Quality, Division of Air Quality (or equivalent). The building(s) shall be inspected by a State-Certified or Tribal accepted Asbestos Building Inspector. The inspector shall certify the presence and condition of asbestos, or non-presence of asbestos, on site as directed on the State or Tribal Demolition and Renovation Notice/Permit. The inspections shall be performed and notifications shall be submitted whether asbestos is present or not. Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work to the COR 14 days prior to work. Ensure: 1) worker and public safety requirements are fully implemented and 2) proper handling, transportation, and disposal of asbestos containing material.
- 2. TRANSPORTATION OF ASBESTOS WASTE: Comply with Department of Transportation, Environmental Protection Agency, and State and Local requirements when transporting asbestos wastes.
- 3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts from a landfill approved to accept asbestos if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.

SECTION 13.16 – MATERIAL WITH LEAD-BASED PAINT

- 1. GENERAL: Comply with all applicable Federal, State and local regulations concerning work with lead-based paint, disposal of material painted with lead-based paint, and management of these materials. OSHA and General Industry Standards apply to worker safety and right-to-know issues. Federal EPA and State agencies regulate waste disposal and air quality issues.
- 2. TRANSFER OF PROPERTY: If lead-based paint containing equipment or material is to be given away or sold for reuse, scrap, or reclaiming, the contractor shall provide a written notice to the recipient of the material stating that the material contains lead-based paint and the Hazardous Waste regulations may apply to the waste or the paint in some circumstances. The new owner must also be notified that they may be responsible for compliance with OSHA requirements if the material is to be cut, sanded, abraded, or stripped of paint. Submit a copy of lead paint notices with contractor and recipient signatures to the COR prior to submittal of final invoice.
- 3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts from a landfill if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.



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SECTION 13.17 – PREVENTION OF WATER POLLUTION

1. GENERAL: Ensure that surface and ground water is protected from pollution caused by construction activities and comply with applicable regulations and requirements. Ensure that streams, waterways and other courses are not obstructed or impaired unless the appropriate Federal, State or local permits have been obtained.
2. PERMITS: Ensure that:
 - (1) A National Pollutant Discharge Elimination System (NPDES) permit is obtained from the US Environmental Protection Agency or State as appropriate if the disturbed construction area equals 1 acre or more. Contractor is responsible for preparation and implementation of the associated Storm Water Pollution Prevention Plan (SWPPP). Disturbed areas include staging, parking, fueling, stockpiling, and any other construction related activities. Refer to <https://www.epa.gov/npdes/npdes-stormwater-program> for directions and forms.
 - (2) A dewatering permit is obtained from the appropriate agency if required for construction dewatering activities.
 - (3) Copies of permits and plans, approved by the appropriate regulating agencies, are submitted to the COR 14 days prior to start of work.
3. EXCAVATED MATERIAL AND OTHER CONTAMINANT SOURCES: Control runoff from excavated areas and piles of excavated material, construction material or wastes (to include truck washing and concrete wastes), and chemical products such as oil, grease, solvents, fuels, pesticides, and pole treatment compounds. Excavated material or other construction material shall not be stockpiled or deposited near or on streambanks, lake shorelines, ditches, irrigation canals, or other areas where run-off could impact the environment.
4. MANAGEMENT OF WASTE CONCRETE OR WASHING OF CONCRETE TRUCKS: Do not permit the washing of concrete trucks or disposal of excess concrete in any ditch, canal, stream, or other surface water. Concrete wastes shall be disposed in accordance with all Federal, State, and local regulations. Concrete wastes shall not be disposed of on any WAPA property, right-of-way, or easement; or on any streets, roads, or property without the owner's consent.
5. STREAM CROSSINGS: Crossing of any stream or other waterway shall be done in compliance with Federal, State, and local regulations. Crossing of some waterways may be prohibited by landowners, Federal or State agencies or require permits.

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

1. SAMPLING AND TESTING OF INSULATING OIL FOR PCB CONTENT: Sample and analyze the oil of electrical equipment (which includes storage tanks) for PCB's. Use analytical methods approved by EPA and applicable State regulations. Decontaminate sampling equipment according to documented good laboratory practices (these can be contractor developed or EPA standards). Use only laboratories approved by WAPA. The COR will furnish a list of approved laboratories.
2. PCB TEST REPORT: Provide PCB test reports that contain the information below for disposing of oil-filled electrical equipment. Submit the PCB test report for COR approval prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.
 - (1) Name and address of the laboratory.



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- (2) Copies of Chain of Custody Form(s).
 - (3) Description of the electrical equipment (e.g. transformer, breaker).
 - (4) Serial number for the electrical equipment.
 - (5) Date sampled.
 - (6) Date tested.
 - (7) PCB contents in parts per million (ppm) by Aroclor type.
 - (8) Unique identification number of container into which the oil was drained (i.e., number of drum, tank, tanker, etc.)
3. OIL CONTAINING PCB: Comply with the Federal regulations pertaining to PCBs found at Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).
 4. REMOVAL AND DISPOSAL OF INSULATING OIL AND OIL-FILLED ELECTRICAL EQUIPMENT: Once the PCB content of the oil has been identified from laboratory results, the oil shall be transported and disposed, recycled, or reprocessed according to 40 CFR 761 (if applicable), Resource Conservation and Recovery Act (RCRA) "used oil", and other applicable regulations. Used oil may be transported only by EPA-registered used oil transporters. The oil must be stored in containers that are labeled "Used Oil." Use only transporters and disposal sites approved by WAPA.
 5. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed to the COR prior to submittal of final invoice.

SECTION 13.19 – REMOVAL OF OIL-CONTAMINATED MATERIAL

1. GENERAL: Removing oil-contaminated material includes excavating, stockpiling, testing, transporting, cleaning, and disposing of these material. Personnel working with PCBs shall be trained in accordance with OSHA requirements. Submit employee training documentation records to the COR 14 days prior to the start of work.
2. CLEANUP WORK MANAGEMENT PLAN: Provide a Cleanup Work Management Plan that has been approved by applicable Federal, State, or Local environmental regulation agencies. Submit the plan to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. The plan shall address on-site excavation of contaminated soil and debris and include the following:
 - (9) Identification of contaminants and areas to be excavated.
 - (10) Method of excavation.
 - (11) Level of personnel/subcontractor training.
 - (12) Safety and health provisions.
 - (13) Sampling requirements including quality control, laboratory to be used.
 - (14) Management of excavated soils and debris.
 - (15) Decontamination procedures for personnel and equipment.
 - (16) Disposal methods, including transportation to disposal.
3. EXCAVATION AND CLEANUP: Comply with the requirements of Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).



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4. **TEMPORARY STOCKPILING:** Excavated material, stockpiled on site during construction, shall be stored on plastic with appropriate thickness and covered to prevent wind and rain erosion at a location designated by the COR.
5. **SAMPLING AND TESTING:** Sample contaminated debris and areas of excavation to ensure that contamination is removed. Use personnel with experience in sampling and, in particular, with experience in PCB cleanup if PCBs are involved. Use analytical methods approved by EPA and applicable State regulations.
6. **TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIAL:** The Contractor shall be responsible and liable for the proper loading, transportation, and disposal of contaminated material according to Federal, State, and local requirements. Use only transporters and disposal sites approved by WAPA.
7. **POST CLEANUP REPORT:** Provide a Post-Cleanup Report that describes the cleanup of contaminated soils and debris. Submit the report to the COR prior to submittal of final invoice. The report shall contain the following information:
 - (1) Site map showing the areas cleaned.
 - (2) Description of the operations involved in excavating, storing, sampling, and testing, and disposal.
 - (3) Sampling and analysis results including 1) Name and address of the laboratory, 2) sample locations, 3) sample dates, 4) analysis dates, 5) contents of contaminant (e.g. PCB or total petroleum hydrocarbons) in parts per million (ppm).
 - (4) Certification by the Contractor that the cleanup requirements were met.
 - (5) Copies of any manifests, bills of lading, and disposal certificates.
 - (6) Copies of correspondence with regulatory agencies that support completion of the cleanup

SECTION 13.20 – CONSERVATION OF BIOLOGICAL RESOURCES

1. **GENERAL:** Federal law prohibits the “take” of endangered, threatened, proposed or candidate wildlife and plants, and destruction or adverse modification of designated Critical Habitat. Federal law also prohibits the “take” of birds protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct with a protected animal or plant or any part thereof, or attempt to do any of those things without a permit from U.S. Fish and Wildlife Service. The Contractor will take precautions to avoid harming all wildlife species and native plants. Contractor shall restrict all ground disturbing activities to areas that have been surveyed by WAPA for natural resources and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.
2. **KNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT:** Following issuance of the notice to proceed, and prior to the start of construction, WAPA will provide training to all contractor and subcontractor personnel and others involved in the construction activity if there is a known occurrence of protected species or habitat in the construction area. Untrained personnel shall not be allowed in the construction area. WAPA will provide drawings or maps showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These sensitive areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be



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marked on the ground by WAPA. If access is absolutely necessary, the contractor shall first obtain written permission from the COR, noting that a WAPA and/or other Federal or State government or tribal agency biologist may be required to accompany personnel and equipment. Ground markings shall be maintained through the duration of the contract. WAPA will remove the markings during or following final inspection of the project.

3. UNKNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT: On rare occasions a protected species or habitat may be discovered during the project. If evidence of a protected species is found in the project area, the contractor shall immediately notify the COR and provide the location, date and nature of the findings. The contractor shall stop all activity within 200 feet of the protected species or habitat and not proceed until directed to do so by the COR.
4. MIGRATORY BIRDS AND RAPTORS: Under the Migratory Bird Treaty Act of 1918, migratory bird species and their nests and eggs are protected from injury or death. Impacts to migratory bird nests shall be avoided during the nesting season(s) identified in Division 13 of the Project Specifications. If construction activities occur during the nesting season, WAPA will survey the construction area for migratory bird nests prior to construction activities and establish appropriate buffers around any nests that may potentially be disturbed. If work must be conducted within these buffers, a WAPA-supplied biological monitor will be on site for construction activities within the buffers. If the biological monitor determines that activities are likely to cause nest impacts or nest abandonment, then construction activities in the area shall be postponed until nestlings have fledged or the nest is no longer active.
5. SPECIAL CONSIDERATIONS: Refer to Division 13 of the Project Specifications for site-specific requirements including, but not limited to, known and unknown migratory birds and raptors.

