



**Navajo Nation**  
**Through Its Department of Water Resources Water Management Branch**  
**October 8, 2024**

**TO:** All Interested Bidders

**FROM:** Brown and Caldwell

**SUBJECT:       ADDENDUM #1 NOTICE**

Let this memorandum serve as a notice of additional information regarding the **“LeChee Water System Improvements (WSI) Project Navajo Nation Bid Number 24-07-3430LE”**.

Below are questions collected from firms interested in this invitation for bid with responses as follows:

1. Does the Navajo Tax 6% apply to 65% or 100% of the Contract?

**Answer: 100%**

2. In the rock areas will blasting be allowed?

**Answer: No. The Geotechnical Engineering Study Amendment Report issued in Exhibit A of Volume 1 contains information on equipment for ripping through the rock.**

3. In the soils report section 5.5.3 granular bedding required shows a gradation 30% -60% rock retained on the 3/8" sieve and 85%-100% retained on #4 sieve. This bedding specification will create a very costly bedding material. PVC manufacturer JM Eagle recommends *“For PVC pipes 6" in diameter and greater, limit particle size in the embedment zone to 1-1/2" or less. For pipe diameters less than 6", limit particle size in the embedment zone to 3/4" or less. For the final backfill zone, particle size should be limited to three inches or less”* This would appear to be a very costly non-essential. This gradation spec would also create a leach line around waterline. Is it necessary to have rock in the pipe embedment zone?

**Answer: The Type A Material in Specification 31 23 00 has been changed. See Table Below. This is the gradation that will be used for bedding material.**



| U.S. standard sieve size | Percent by weight passing |
|--------------------------|---------------------------|
| 3/4 inch                 | 100                       |
| 3/8 inch                 | 70-100                    |
| No. 4                    | 55-100                    |
| No. 10                   | 35-95                     |
| No. 20                   | 20-80                     |
| No. 40                   | 0-55                      |
| No. 100                  | 0-2                       |

4. In the soils report section 5.5.4 it calls out 100% of trench backfill passing a #4 sieve. Section 5.5.1 structural fill allows for a 3" minus material for the structural fill. This coincides with the JM Eagle recommendation of 3" minus. Would the 3" minus native material qualify for trench backfill?

Answer: A 3" minus material matching the 5.5.1 structural fill gradation is appropriate for general trench backfill above the bedding zone. It is anticipated that the native material would qualify for trench backfill above the pipe embedment zone.

5. Can the site soil along the alignment which does meet bedding/ trench backfill requirements be transported to areas where the site soil does not meet bedding / trench backfill requirements?

Answer: Yes, at contractors cost and engineers' review and approval.

6. Is there any special permits required for the bore that goes under Antelope Canyon?

Answer: There are no special permits required for where the Horizontal Directional Drilling that is required across the Antelope Wash.

7. Is there any special permit required by the Park Service near the intake?

Answer: No.

8. Could the engineer provide a list of permits/fees required to operate on tribal land?

Answer: The three permits/documents required to operate on tribal lands include the Tribal Access Agreement (TAA), the Land Withdrawal Designation (LWD), and Navajo Nation EPA permit. These permits have already been acquired and the fees have been paid. These permits/documents are contained in Appendix C and Appendix D of Volume 1 with the Division 0 Bidding and Contracting Requirements documents.

Other permits required include an Arizona Department of Transportation (ADOT) permit for crossing State Route 98 contained in Appendix I, and BIA Road Crossing Permits contained in Appendix J. These permits have been coordinated as far as they can be taken up to this point. The winning bidder will need to complete these permits by providing the necessary contact information, insurance information, etc.



There are two major powerline crossings that will require License Agreements/permits. One of these is owned by Western Area Power Administration (WAPA) and the other one is owned by Los Angeles Department of Water and Power (LADWP). These permits/agreements are currently under coordination with these agencies. The winning bidder will need to complete the process with these Powerline Easement Owners by providing the necessary contact information, insurance, specifications on equipment that will be crossing under these powerlines, etc. There is no application fee required for the WAPA License Agreement. It is a 1-page application form. Attached is a 3 paged PDF document that contain an Information Sheet, a blank License Application form and an example of how to complete the Application, that needs to be completed, signed and returned to WAPA. Also included is a PDF GIS site map, indicating the approximate location of the crossing and an informal brochure. Brown and Caldwell will coordinate with the winning bidder in finalizing the permitting process on all required permits.

9. The GAC is specified as F400 "or equal." Would you mind clarifying via addendum that any equal must be "US mined and manufactured reagglomerated bituminous coal"?

Answer: See specification 46 61 16 Section 2.01.D

10. Excavation of rock is somewhat unknown and could be a significant cost. Should there be a unit quantity price for the rock that is excavated?

Answer: Yes. Add as item F24 to bid form a cost per cubic foot of rock excavated. See attached revised bid form page with F24 added.

11. Has the existing high voltage power been disconnected from the existing intake facility? If so, is there any risk of it being reconnected?

Answer: The existing intake facility has been disconnected for the high voltage power. There is no power to the existing building and there is no risk of this high voltage power being reconnected.

12. Is it possible to get autocad files for this project?

Answer: CAD files will not be provided to bidders. We will provide the BIM model for the Water Treatment Plant and Intake Electrical and Control buildings. Fill out the attached electronic release form and send to Corwin Willmore and the BIM Model will be provided. CAD files will be available to the successful bidder.

13. The contact for qualified 30" concrete bar wrapped pipe connection/tapping contractor is Jeff Maichel. His cell phone number is 281-546-7681. See also web page: [Linestop.com](http://Linestop.com) | [International Flow 40 Yrs. of Line Stop Exp.](http://InternationalFlow.com)

14. Section 46 43 76 had been revised as follows:

- a. Section 46 43 76 Paragraph 1.01.A.1 is hereby revised as follows:
  1. *Included Plate Settler Equipment in one (1) new plate settler tank.*
- b. Section 46 43 76 Paragraph 1.04.B is hereby revised as follows:



- B. *Plate settler equipment, including plate modules (or packs), frames, effluent trough and pipe as discussed on drawing M-70-301, and support system shall be installed in a new plate settler tank at the LeChee Water Treatment Plant located in LeChee, Arizona*
1. *The plate settler system shall be installed in the tank for the purpose of removing solids from membrane backwash water.*

15. Section 46 61 16 has been revised as follows:

- a. Section 46 61 16 Paragraph 2.01.D is hereby revised as follows: add the following in the table below the last entry:

|   |     |
|---|-----|
| <i>Screen Size (US Sieve)(Percent Weight)(Larger than No. 12)(Max</i>   | 5.0 |
| <i>Screen Size (US Sieve)(Percent Weight)(Smaller than No. 40)(Max)</i> | 4.0 |





# Electronic Record Release

6975 Union Park Center #490  
Salt Lake City, Utah 84047  
Tel: 801-316-9800

The information contained in the PDF Bid Documents are the only approved information for use in bidding or otherwise. Information in electronic format (BIM files) may not be accurate or complete. The provided BIM files should not be relied upon by the Contractor or others for any purpose. Guarantees or warranties regarding information contained in the BIM files or for the accuracy of the information translated for use with the end users' software is disclaimed. If there is a discrepancy between the Bidding Documents and the BIM files, the stamped and sealed Bidding Documents shall govern.

Brown and Caldwell is providing the engineering design drawings in electronic format (BIM files) for the convenience of the Owner and Bidder. The electronic copy is not a part of the Bid Documents. Users of this electronic product are cautioned that the accuracy of electronic copies may be compromised by electronic media degradation, errors in format translation, file corruption, operator inexperience, and/or file modification. Brown and Caldwell is not responsible for any undetectable alteration, transmission error, conversion, media degradation, software error, or interference with the transmission of this work product.

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|   |       |
|---|-------|
| <b>Acceptance of Electronic Record Release Terms and Conditions:</b>  |       |
| Instructions: Review this Electronic Records Release and then sign and return a copy to Brown and Caldwell.   |       |
| Description: This electronic BIM file transfer includes the <b>LeChee Water System Improvements</b> drawings. In general, future updates to the design drawings, including any design changes, will not be issued in BIM format. This transfer is a snapshot of the working project BIM files at the time of the Bidder's request, and is being provided for convenience only. These BIM files are <u>not</u> to supplement the Bidding Documents, and are <u>not</u> to be reproduced under any circumstances. |       |
| Company:  | _____ |
| Name:   | _____ |
| Title:  | _____ |
| Signature:  | _____ |
| <b>Return to the attention of: Corwin Willmore, Brown and Caldwell, Project Engineer</b>  |       |

**INFORMATION SHEET AND LICENSE AGREEMENT APPLICATION**

**CONCERNING THE USE OF WAPA'S'S TRANSMISSION LINE EASEMENTS**

It is the policy of the Western Area Power Administration (WAPA) to operate and maintain its transmission lines in a manner that considers the safety of the public, restrictions covered in the original easement, WAPA's maintenance and access needs along the easement, and the protection and reliability of the transmission line systems. Anyone wishing to construct any facility or specify a use, whether above ground or underground, on a WAPA transmission line easement should, prior to construction, file an application with *Lands, Desert Southwest Region, P. O. Box 6457, Phoenix, AZ 85005-6457*, to determine whether WAPA has any objection to the proposal. Certain activities can adversely impact WAPA's structures and impede access within our easements and they include, but are not limited to, the following:

1. Temporary or permanent structures should not be erected within WAPA's easement area. Structures, by way of example, shall include but are not limited to, buildings, mobile homes, truck or recreational vehicle parking or storage, signs, light standards, fire hydrants, storage tanks, septic tanks, swimming pools, tennis courts, ungrounded playground equipment, or similar facilities.
2. Excavation/trenching should not be performed within 50 feet of any of WAPA's transmission line structures (towers/poles). *If excavation is approved by WAPA within 50 feet of a structure due to construction constraints, a WAPA Power Marketing letter agreement may be required for cost recovery of monitoring expenses.*
3. Existing trees and vegetation within the easement must be kept at a maximum height of 10 feet and 50 feet away from towers and poles. Planting new vegetation within the easement must have WAPA's concurrence.
4. Any fencing that is constructed across WAPA's right of way must have a 16 foot dual lock gate installed at each end of the right of way area. Metal fencing must be properly grounded. WAPA must maintain access within its transmission line easements.
5. The gradient within the easement area must not be steeper than a 6:1 (run to rise). This shall include, but is not limited to water retention areas, transition from all roadways, at gate locations, as well as along any access way to the transmission line structures and mid-span areas. Large and heavy-line maintenance equipment requires a smooth transition from any roadway onto the right of way area. Rolled curbs or dedicated drives at a minimum of 16 feet wide must be provided within the WAPA's right of way.
6. Drilling or conducting of mining operations shall not be permitted within the easement without concurrence from WAPA.
7. The character of the existing topography must not be appreciably changed, normal farming practices excluded.
8. Roadways and utilities running longitudinally along WAPA's right of way should be approved by WAPA due to construction constraints.
9. Long-term ( overnight) or storage parking shall not block access to WAPA structures or impede access.
10. Within WAPA's easements, WAPA shall have access over this facility with vehicles that have a 42 kip axle load (42,000 lbs.).

WAPA will enter into a license agreement with the applicant that summarizes the proposed use of the right of way, sets forth the responsibilities of the parties, and evidences WAPA's concurrence in the use.

In order to best consider your request, please complete the right of way use application form attached and please give all of the pertinent details of your proposal, to include plans, profiles, drawings, and landscaping and lighting plans, if applicable. On your drawings, please depict WAPA's easement, structure locations and structure number, if known:

# Exhibit

Western Area Power Administration  
Desert Southwest Region  
ATTN: Lands G5600 - Lands & Realty  
P.O. Box 6457  
Phoenix, AZ 85005-6457

## LICENSE AGREEMENT APPLICATION

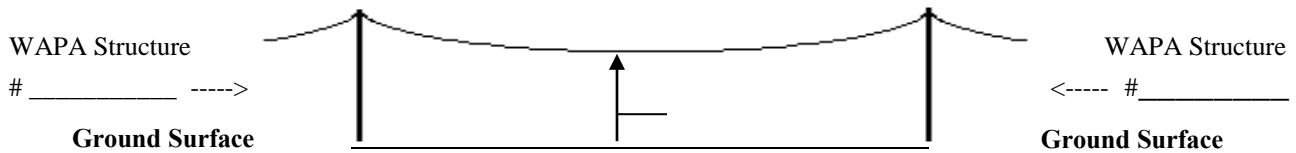
Date: \_\_\_\_\_ WAPA Transmission Line: \_\_\_\_\_

Description of Proposal (Narrative): \_\_\_\_\_  
\_\_\_\_\_

Location: Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

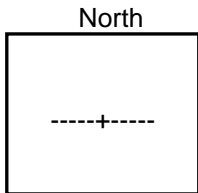
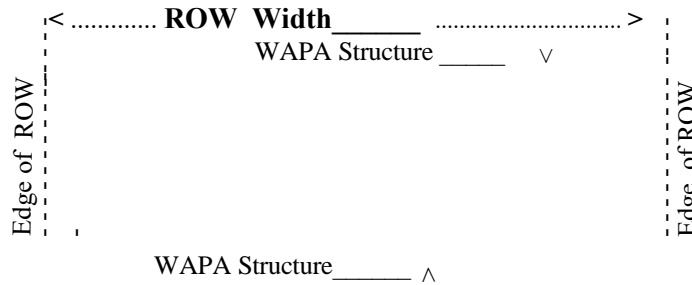
County: \_\_\_\_\_ State: \_\_\_\_\_, Longitude: \_\_\_\_\_ Latitude: \_\_\_\_\_

**PROFILE:** Show the location, height (feet), and distance (feet) from the nearest transmission line structure.



### PLAN VIEW:

Show the location and dimensions (in feet) of the proposed facility in relation to the center conductor of the transmission line.



Show NORTH by arrow at (+) in block at left And show approximate location in 1/4 Section at right.

|       |       |
|-------|-------|
| NW1/4 | NE1/4 |
| SW1/4 | SE1/4 |

**Attach other drawings and information as appropriate.**

NOTE: Induced voltages and currents may occur on facilities constructed or placed under or near high voltage transmission lines, therefore, the Licensee shall be responsible for the protection of personnel and equipment in their design, construction, operation and maintenance of the facilities described in this application.

### Company or Party Owning the Facility

APPLICANT:

\_\_\_\_\_  
Name: (Please Print) *Can be engineer or representative*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address: \_\_\_\_\_

\_\_\_\_\_  
Phone: \_\_\_\_\_

\_\_\_\_\_  
Email: \_\_\_\_\_





# Exhibit

Western Area Power Administration  
Desert Southwest Region  
ATTN: Lands G5600 - Lands & Realty  
P.O. Box 6457  
Phoenix, AZ 85005-6457

## LICENSE AGREEMENT APPLICATION

**Will be provided by WAPA**

Date: \_\_\_\_\_ WAPA Transmission Line: \_\_\_\_\_

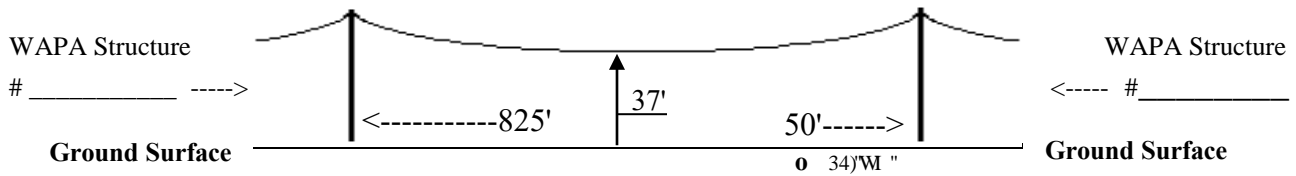
Description of Proposal (Narrative): \_\_\_\_\_  
\_\_\_\_\_

Location: Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

County: \_\_\_\_\_ State: \_\_\_\_\_, Longitude: \_\_\_\_\_ Latitude: \_\_\_\_\_

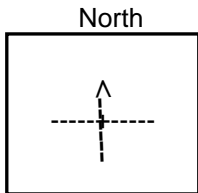
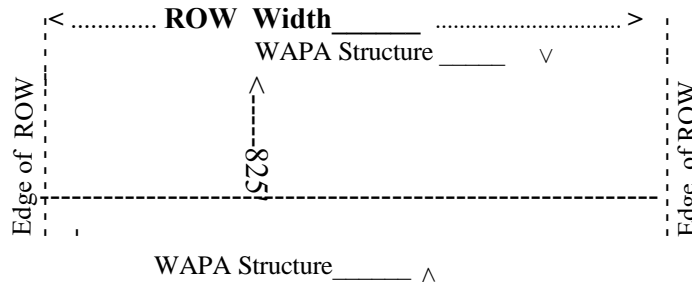
Can be D,M,S  
or DD format

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**Company or Party Owning the Facility**

APPLICANT: \_\_\_\_\_

Name: (Please Print) \_\_\_\_\_  
*Can be engineer or representative*

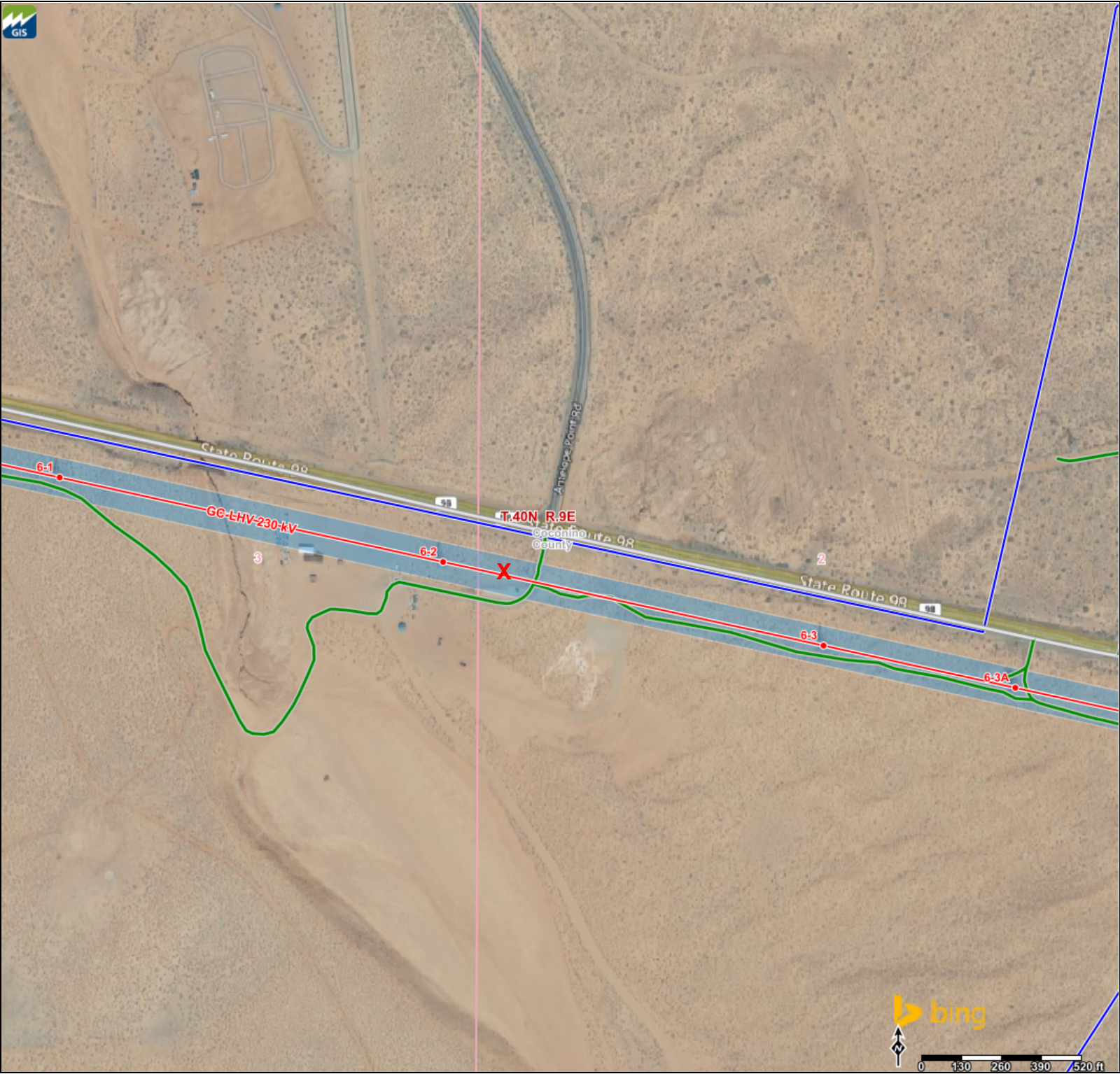
Signature \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_





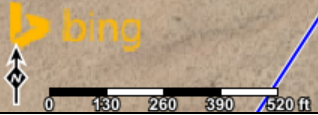
**Desert Southwest Region**

**Western Area Power Administration**  
 An agency of the U.S. Department of Energy

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Scale 1:3,907  
 8/21/2024 8:29 A.M.

- Proposed and Re-route Structure
- Transmission Structure
- Distribution Structure
- Sectionalizing Cabinet
- De-Energized Structure
- Non-WAPA Structure
- U.S. Electric Power Substations (HIFLD)
- U.S. Electric Power Substations (Unofficial)
- Proposed or Re-route Line
- Transmission Line
- Transmission Bus Line
- Distribution Line
- Underground Line
- De-Energized Line
- Non-WAPA Transmission Line
- Documented Access Road
- ROW Maintenance Road
- General Use Access Road
- Proposed New Access Road
- Non WAPA Documented Access Road
- Public Road
- Abandon Road
- U.S. Electric Power Transmission Lines (HIFLD)
- U.S. Electric Power Transmission Lines (Unofficial)
- IU Accuracy Unknown -
- Right of Way (ROW)
- Township & Range
- Sections
- Proposed Facility / Substation / Switchyard
- Facility / Substation / Switchyard
- De-Energized Facility / Substation / Switchyard
- Non-WAPA Facility / Substation / Switchyard
- States
- Counties
- Microsoft BING Aerials and Labels





Living and Working Around  
**HIGH-VOLTAGE  
POWER LINES**

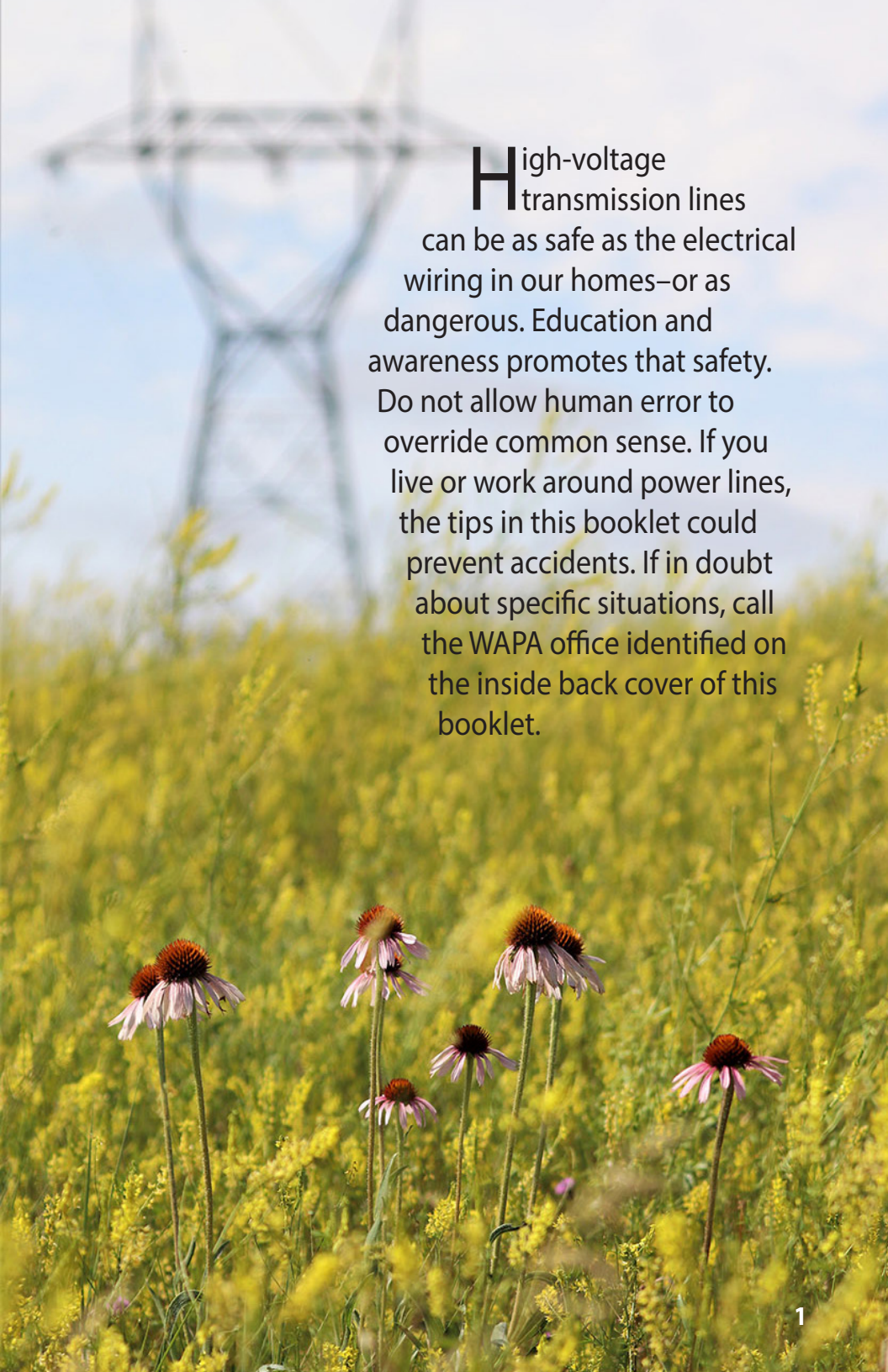


Western Area  
Power Administration

Rev. Nov 2021

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**H**igh-voltage transmission lines can be as safe as the electrical wiring in our homes—or as dangerous. Education and awareness promotes that safety. Do not allow human error to override common sense. If you live or work around power lines, the tips in this booklet could prevent accidents. If in doubt about specific situations, call the WAPA office identified on the inside back cover of this booklet.



## SAFETY FIRST

Western Area Power Administration's (WAPA) facilities meet or exceed the rules of the National Electrical Safety Code and applicable state and local restrictions. Serious accidents involving transmission lines can be avoided if simple precautions are taken. Treat all electrical systems—from the 120-volt wiring in your home to a 500,000-volt transmission line—with respect. The most significant risk of injury from a transmission line is the danger of electrical contact. Electrical contact between an object and an energized conductor (wire) can occur even when the two do not touch. High-voltage transmission lines can create an electrical arc across an air gap.

For example, during operation of a 500,000-volt line, arcing can occur across a distance of seven feet or more. This distance varies with line operating voltage. Unlike wiring at home, conductors of overhead transmission lines are not covered by electrical insulating materials.

Injuries occur more frequently with lower voltage power lines (12,500 to 115,000 volts) than with higher voltage lines because contact is more likely. The electrical conductors of lower voltage lines are closer to the ground, smaller, and less noticeable. However, injury caused by contact with a 12,500-volt line can be just as serious as that from a 500,000-volt line.

## SAFETY NOTES

The National Electrical Safety Code specifies a minimum safe clearance distance for each level of electric transmission voltage. WAPA lines are built so that clearance between line conductors and the ground meet or exceed Code minimums.

Due to their weight, transmission line wires sag, or droop, between their supporting structures. These wires usually come closest to the ground halfway between supporting structures, and clearance is usually greatest near supporting towers or poles.

Vehicles and large equipment (including antennas, etc.) need to stay at least 15 feet away from power lines. This includes harvesting combines, bale wagons, stack movers, cranes, derricks, and booms traveling under all WAPA lines that pass over roads, driveways, parking lots, cultivated fields, or grazing lands.

Operate farm equipment under or near power lines with care. Operating equipment that can be extended inside the minimum 15-foot clearance needs to be done with extreme care, including bale wagons, stack movers, dump bed trucks, cranes, or derricks. When in doubt, contact WAPA for review and specific requirements.

The 15-foot minimum is a federal Occupational Safety and Health Administration requirement (29CFR 1910.269). The clearance maintains safety for operators and laborers alike. Please note that transmission line sag increases when it becomes heated by load and ambient temperatures. What was safe to drive under in December could mean disaster in July.

Lines owned by other utilities may have different height limitations.

Contact WAPA if the need to move your equipment would exceed this in normal use.

## INDUCED VOLTAGES

Under certain conditions, a noticeable voltage can be induced on objects such as a large vehicle, a fence, metal building, or irrigation system. This can happen when the object is near a high-voltage transmission line and is insulated from the ground.

When an induced voltage is present, touching a vehicle, wire fence, metal building, or irrigation system can result in a sensation similar to the shock you may receive when you walk cross a nylon carpet and then touch a doorknob. The static discharge from the rug is momentary. The sensation from a voltage induced by an alternating-current power line is similar, but may continue to be felt as long as contact with the object is maintained.

The magnitude of an induced voltage depends on the voltage of the transmission line, the amount of power being transmitted, distance from the conductor, size or length of the object, and its orientation to the line. Shocks caused by an induced voltage do not usually present a hazard; for this reason, we refer to them as nuisance shocks. However, methods to remove the possibility of hazards are identified later on in this booklet.

Safe practices for various situations—including those involving irrigation systems and wire fences—are discussed below.

## SAFETY DOs & DON'Ts

Don't bring yourself, any object you are holding, or machine you are operating too close to an overhead line.

Don't try to calculate how close you can come to a transmission line.

Don't put yourself or any object higher than 13 feet above the ground in pedestrian areas or 15 feet above the ground in other areas when under a power line.

Don't discount induced voltage. Noticeable voltage can be induced when an object such as a large vehicle, fence, metal building, or irrigation system is near a high-voltage transmission line and is insulated from the ground. Touching the object may result in a shock.

Do operate farm equipment with care when under or near power lines.

Do contact the WAPA office closest to you if in doubt about transmission line clearance.

## USING THE RIGHT-OF-WAY

Before a transmission line is built, WAPA negotiates with the landowner for the right to cross the land as required for the construction, operation, and maintenance of the line. WAPA acquires easement rights to construct, operate, and maintain a transmission line and the right to keep the easement clear of all structures, trees, brush, vegetation,

and any uses that may interfere with the operation or maintenance of the line. Most farm crops can be grown safely under transmission lines.

Generally, the individual landowner retains the right to use the land in ways that do not interfere with the rights granted to WAPA. Call the nearest WAPA office if you plan to landscape, change the existing topography, or install items such as fences, gates, light standards, drain fields, septic systems, underground pipe, irrigation systems, roads, cables, parking areas, storage areas, signs, storage tanks, tennis courts, radio and TV antennas, or any other improvements within the right-of-way. Construction or placement of residences, mobile homes, wells, sheds, machinery, buildings, barns, recreational vehicles, swimming pools, or any other temporary or permanent structures is prohibited within the right-of-way. This minimizes possible safety hazards.

## IRRIGATION SYSTEMS

Many types of irrigation systems have been operated safely near WAPA power lines for years. However, use caution when storing, handling, and installing irrigation pipe, and in operating spray irrigation systems near power lines. Irrigation pipe should be moved in a horizontal position under and near all power lines to keep it away from overhead conductors. Plastic pipe (especially when dirty) should be considered conducting material.

Equipment used to install irrigation systems should be kept away from WAPA transmission lines if the equipment exceeds 15 feet in height. If you need to



exceed this height, contact WAPA first. If you are working near a line, supplement normal precautions by assigning one person to act as a “safety watcher” to warn other workers against unsafe moves such as equipment coming too close to the transmission line.

Observe great caution when moving a mobile high-pressure irrigation system under a transmission line. The small wheelbases of some of these systems tend to make them unstable. If one should tip while under a line, its boom could be lifted into a conductor.

Static voltage that occurs when unloading irrigation pipe near a transmission line is induced and, in this case, a nuisance rather than a hazard. To reduce or eliminate this nuisance, unload the pipe at least 50 feet away from the nearest conductor. If pipe stacked on a rubber-tired vehicle are unloaded under a transmission line, the possibility of nuisance shocks can be reduced by grounding. Clip one end of a wire to a metal rod driven into the ground and the other end to a pipe on the bottom of the stack.

Avoid all situations where a solid stream of water can come in contact with an electrical conductor. Should this occur, a person in contact with the irrigation system, or standing very near it (5 feet or so), may receive a severe shock. When asked, WAPA will help determine safe operating distance for installation or operation of an irrigation system to avoid hazardous situations.





If a sprinkler malfunctions and a solid stream of water reaches a conductor, turn off the water at its source—by switching off the pump—before attempting to correct the problem.

Nozzle risers should be equipped with spoilers or automatic shutoffs. This will prevent a solid stream from striking a conductor if a nozzle breaks or falls off.

Equipment with smaller diameter or fine mist spray nozzles do not usually present a problem. A broken water spray will not conduct a significant amount of current. However, spray containing fertilizer is much more conductive. Additional precautions should be taken if spraying water mixed with fertilizer near transmission line conductors.

High-volume irrigation systems using large nozzles and high pressure to sprinkle big areas are of special concern. Nozzle diameters vary from 3/4 inches to 1-15/16 inches, and water pressures range from 80 to 100 pounds per square inch. Thus, a solid stream discharged from one of these nozzles may reach heights of 30 to 35 feet and go as far as 200 feet. When this system is in operation, keep a safe distance between it and a transmission line. It should not be operated near a transmission line. Even when installation and operation of central pivot circular irrigation

systems within WAPA's easement is specifically authorized by WAPA, those near transmission lines can develop hazardous

shock potentials during operation and maintenance. To eliminate these hazards:

- Provide a good electrical ground for the pivot point.
- Park or perform maintenance on the center pivot system only when the pipe is at right angles to the power line to minimize voltages induced on the system.
- Do not touch the sprinkler pipe or its supporting structures when the system is operating under or parallel to and near a transmission line.

Contact WAPA for assistance in safely locating, operating, and maintaining irrigation systems near transmission lines.

## UNDERGROUND PIPES, TELEPHONE CABLES, AND ELECTRIC CABLES

Underground pipes and cables are compatible with transmission lines if properly installed and maintained. Generally, underground pipes and cables may pass under a line. However, they should be installed at an angle of 60 degrees or more to the transmission line centerline (a right angle crossing is best). Pipes and cables should not be installed closer than 50 feet to a transmission line structure or the buried grounding system. Only in special situations should underground pipe and cable be located closer. Contact the nearest WAPA office before installing any pipe or cable that crosses a WAPA transmission line right-of-way.

## WIRE FENCES

Ungrounded barbed wire and woven wire fences can become electrically charged when located near transmission lines. Normally, the voltage will not be noticeable. WAPA's practice is to ground wire fences if the fence crosses the right-of-way or parallels the line within 150 feet of the transmission line centerline. These fences are grounded with a ground rod driven to a depth of not less than 5 feet into the ground and fastened with clamps to the fence wires. Non-electric fences on wood or concrete posts are grounded each 1/8 mile, and non-electric fences on metal posts are grounded each 1/4 mile. Metallic gates are grounded at the hinge end and electrically bonded to the fence. Fences crossing under a line are grounded on each side of the right-of-way. Electric fences are grounded through lightning arresters designed for use with electric fences. These grounding practices will avoid any possibility of a hazard. If nuisance shocks are experienced when contacting a fence or gate, or if you have any questions about the need for grounding, call the nearest WAPA office.

## VEHICLES

A vehicle under an extra-high-voltage line (345,000 volts or above) will not normally carry induced voltage because of semiconducting tires. To further reduce potential shock, attach a chain that touches the ground to the vehicle. If the vehicle is parked on a nonconductive surface such as dry rock, a nuisance shock could still be experienced. An electric spark from an induced voltage could

ignite gasoline vapor that is created during refueling a vehicle, although WAPA has never had a report of a refueling accident. The possibility of such an accident is remote.

However, WAPA recommends that vehicles be at least 70 feet from the nearest conductor of an extra-high-voltage line when refueling. If a vehicle cannot be moved, connect the metal fuel can to the vehicle with a jumper wire before removing the cap. This lessens the possibility of an explosion. Nonconductive (plastic) containers should not be used in these situations.

## LIGHTNING

Lightning will usually strike the highest object. In rural areas, this may be a power line tower or conductor.

Transmission facilities are designed to withstand lightning strikes by channeling them to ground at the tower. When lightning strikes a tower, damage is usually much less than if a barn or tree had been hit.

Play it safe. Stay away from power lines and other tall objects during electrical storms. Lightning is dangerous if one is standing near where it enters the ground.

## FIRES

Smoke and hot gases from a large fire can create a conductive path for electricity. A fire burning under a transmission line could cause an electric current to arc through the smoke and

hot gases from the conductor to the ground, endangering people and objects near the arc. Field burning and other large fires in and around transmission lines can damage transmission lines and cause power outages. Water and other chemicals used to extinguish those fires should never be directed toward a transmission line.

## KITE FLYING

Kite flying within the transmission line right-of-way easement area is extremely dangerous and discouraged in close proximity of all lines. Always fly a kite so the wind will carry it away from power lines.

Use dry string, wood, and paper when flying a kite. Never use strings or kites or balloons made with metal, including aluminized mylar plastic and ornamental string with strands of metal foil inside.

If your kite gets snagged in a power line, do not pull the string or climb the tower or pole. Drop the string immediately and call the nearest electric utility.

## MODEL AIRPLANES AND DRONES

Model airplane and drone flying is prohibited and dangerous within the transmission line right-of-way easement area.

Always fly model airplanes and drones well away from power lines.

Use only monofilament fishing line or other nonconductive material for a hand line.

If your model airplane or drone gets caught in a power line:

- If it has a handline, let go of it.
- Do not try to pull it down or climb up after it.
- Call the nearest electric utility.

## VANDALISM AND SHOOTING

When hunting, look for power lines before you shoot to avoid severing conductors or breaking insulators.

Insulators, normally made of porcelain, are easily broken. Not only can broken insulators cause flashovers, an insulator string hit by gunfire could pull apart and let the conductor fall to the ground creating a serious hazard to anyone close to the line. It could also cause a power outage and a fire in dry areas.

Unfortunately, vandalism is the frequent cause of insulator damage. Hunters beware: Most land beneath power lines is privately owned. Making insulators and conductors fair game is illegal and can be extremely hazardous.

Anyone causing willful damage to power facilities or property along rights-of-way can be prosecuted by the federal government, the property owner, or both.





Report broken insulators and damaged conductor, or any other damage you see, to the nearest WAPA office identified on the back cover of this brochure.

## METAL OBJECTS

When mounting an antenna on a large vehicle, do not let it extend more than 15 feet above the ground.

If you have an antenna installed where it could fall into a power line, request WAPA or your local utility to assist you in moving it to a safer location.

Before raising the mast or when sailing a boat, check the allowable clearance under any transmission line. We recommend that all masts or guy wires above the deck be connected electrically to an underwater metallic part such as the keel or centerboard. This precaution, reduces the hazard to passengers from lightning strikes or accidental contact with a power line and may save your life. If your boat is going to contact a power line, stay low in the boat and avoid touching metal surfaces or guy wires until the contact with the line is broken.

## TREES AND LOGGING

Logging, tree cutting, or pruning should not be done within WAPA's rights-of-way without first getting permission from the nearest WAPA office. Logging near transmission lines can be very hazardous and requires special caution. If you should come upon a tree that has fallen into a power line, stay away from it.

If you should accidentally cause a tree to fall into a line, run for your life! Do not go back to retrieve your saw or equipment. Call the nearest WAPA office or local utility immediately. If you have trees on or close to the right-of-way that need to be cut, contact WAPA. It is safer to have WAPA remove the trees for you than to do it yourself.

Trees or logs stacked within the rights-of-way may not be public property. People removing trees and logs without permission could be stealing and may be prosecuted.

## CLIMBING

Do not under any circumstances climb on power line poles, towers, or guy wires. Such activities can be extremely hazardous.

## PACEMAKERS

Under some circumstances, voltages and currents from household and other electrical devices may interfere with the operation of some implanted cardiac pacemakers. Studies have also shown that electric fields from power lines could affect a few models with monopolar implant and that are sensitive to the electric power frequency (60 Hz). No such cases have been reported to WAPA.

As a precaution, persons with pacemakers who have reason to be outdoors near high-voltage facilities should consult with a physician to determine whether their particular model

may be susceptible to 60-Hz interference. (People inside vehicles or buildings are largely shielded from power line electric fields.)

If a person with a pacemaker is in an electrical environment and the pacemaker begins to produce a regularly spaced pulse that is not related to a normal heartbeat, the person should leave the environment and consult a physician.

Experience shows that the magnetic fields created by transmission lines have not affected the performance of cardiac-demand pacemakers. This experience is supported by a September 1976 statement from the Food and Drug Administration's Bureau of Radiological Health: "Any possible problems with pacemaker malfunction from electromagnetic interference have been generally eliminated through the development of pacemakers which are highly resistant to such interference. Virtually all presently manufactured pacemakers are not susceptible to interference from sources of electromagnetic radiation encountered in the environment."

Tests indicate a monopolar pacemaker implanted in the abdominal area is the most sensitive to an electromagnetic field. Only 3 percent of all the pacemakers in use are this type. If you are uncertain about the type of pacemaker you have, consult a physician.

## EXPLOSIVES

If you plan to detonate explosives near a WAPA transmission line, notify WAPA well in advance.

As a general rule, do not use electric detonating devices when blasting within 1,000 feet of a power line. Non-electric methods of detonation will avoid the danger of accidentally discharging an electric blasting cap.

## CONCERNING TOWERS AND CONDUCTORS

- Do not climb towers.
- Do not shoot or otherwise damage insulators.
- Never touch or get near a fallen line.
- Do not attempt to dismantle tower steel members.
- Do not cut or remove tower or pole ground wires.
- Do not apply additional loads to tower members for temporary support of a structure or vehicle.
- Stay away from towers and lines during extreme wind storms, thunderstorms, ice storms, or under other extreme conditions.

Preventive measures include:

- Stay away from and report broken or damaged insulators to WAPA or your

nearest electrical utility.

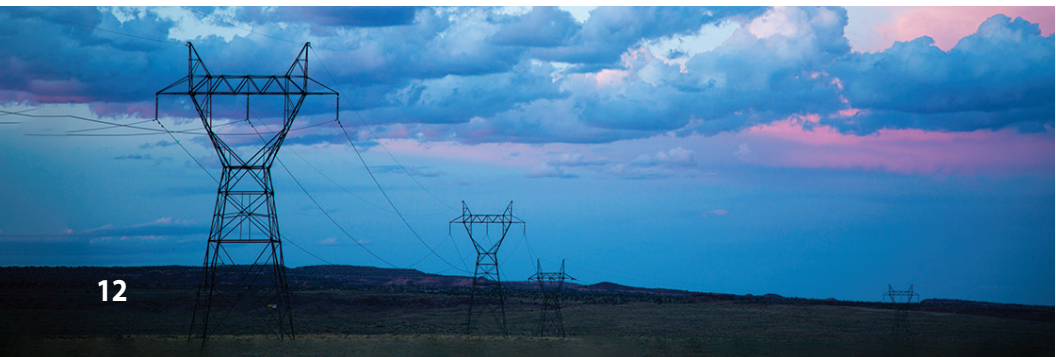
- Stay away from and report broken, damaged, or abnormally low hanging lines to WAPA or your nearest electrical utility.

**Never climb towers or poles.**

## CONCLUSION

We live in an age of electric power. Almost everything we do requires electricity. High-voltage power lines have become about as commonplace as the wiring in our homes and are just as safe. Nevertheless, every year people are killed or seriously injured by power lines and wiring. In almost every case, lives could have been saved and injuries avoided if the basic safety practices outlined in this booklet had been followed. WAPA and your local utilities make every effort to design and build power lines that are safe to live and work around.

Ultimately, however, the dangers of high-voltage lines depends upon people behaving safely around them. No line can practicably be made safe from a person who, through ignorance or foolishness, violates the basic principles of safety. So, please, take time now to learn the practices outlined in this booklet and share your knowledge with your family, friends, and colleagues. Your own life, or that of a loved one, might well hang in the balance.





## CONTACT US

Call or write your local WAPA office or Public Affairs in Lakewood, Colorado, to share your comments or to find out more about WAPA.

### **WESTERN AREA POWER ADMINISTRATION**

P.O. Box 281213  
Lakewood, CO 80228-8213  
720-962-7050

### **COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER**

1800 South Rio Grande Ave.  
Montrose, CO 81404-4800  
801-524-5493

### **DESERT SOUTHWEST REGIONAL OFFICE**

P.O. Box 6457  
Phoenix, AZ 85005-6457  
602-605-2525

### **ROCKY MOUNTAIN REGIONAL OFFICE**

P.O. Box 3700  
Loveland, CO 80539-3003  
970-461-7200

### **SIERRA NEVADA REGIONAL OFFICE**

114 Parkshore Drive  
Folsom, CA 95630-4710  
916-353-4416

### **UPPER GREAT PLAINS REGIONAL OFFICE**

P.O. Box 35800  
Billings, MT 59107-5800  
406-255-2800

[www.wapa.gov](http://www.wapa.gov)  
[publicaffairs@wapa.gov](mailto:publicaffairs@wapa.gov)



## Advertisement for Bids<sup>1</sup>

Project Name: **Navajo Nation Western Navajo Pipeline Phase 1 – LeChee Water System Improvements (WSI) Project**

Owner: **Navajo Nation, through its Department of Water Resources Water Management Branch, Route 12 NE, NTUA Rd, Bldg. 2793, Fort Defiance, AZ 86504**

Funded by: **Navajo Nation**

Sealed Bids for the construction of the **Contract: LeChee Water System Improvements (WSI), Navajo Nation Bid Number 24-07-3430LE** which includes:

- **LeChee Intake Facility:**
  - Demolition of existing equipment at existing Lake Powell Intake Facility including the removal of existing submersible pumps and booster pumps,
  - Install two new 700 gallon per minute (gpm) submersible and two 700 (gpm) booster pumps at existing Intake Facility,
  - Construct new control building with site improvements, miscellaneous telemetry system and backup generator,
- **LeChee Water Treatment Plant:**
  - Construct new 500,000-gallon raw water storage tank with meter and transducer vault,
  - Construct new 1 million gallon per day (1 MGD) Membrane Water Treatment Plant Building that includes chlorine feed system room, electrical room, process mechanical room, and administrative office area.
  - Construct new 320,000-gallon finished water tank,
  - Construct settling basin structure,
  - Construct solids settling vault and associated meter and valve vault,
  - Construct storm water retention basin,
  - Construct chemical drying beds,
  - Construct and Install yard piping, site improvements, and miscellaneous telemetry items.
- **LeChee Pump Station No. 3 and Pipeline:**
  - Construct approximately 30,936 LF of 12-inch potable water line,
  - Construct a 600 gpm Pump Station No. 3 and site improvements with miscellaneous telemetry items.
  - Construct and install yard piping and connection to existing LeChee tanks with miscellaneous telemetry items.

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<sup>1</sup>This document is a MODIFIED version of EJCDC® C-111 Suggested Advertisement for Bids for Construction Contracts, Copyright © 2013 by the National Society of Professional Engineers, American Society of Civil Engineers, and American Council of Engineering Companies, or is based in part on excerpts from EJCDC documents. Those portions of the text that originated in the published EJCDC documents remain subject to the copyright.

Each bid response shall be submitted in accordance to Section 00200 Instructions to Bidders of the Bid Documents and received by Navajo Nation Water Management Branch (Lucinda Davis, 928-349-1194 Cell, 928-729-4003 Office, lgdavis@navajo-nsn.gov, P.O. Box 678, Fort Defiance, AZ 86504) until **4:00 p.m. local time on October 29, 2024**, and then at said office publicly opened and read aloud. No late, facsimiled, or electronic mailed bids will be accepted.

Bids will be received for a single prime Contract. Bids shall be on a unit price basis as indicated in the Bid Form.

To ensure delivery by the due date and time, all bids should be addressed to:

PHYSICAL ADDRESS: NNDNR - DWR Water Management Branch  
*ATTN: Lucinda Davis*  
Navajo Route 12 NE, NTUA Rd, Bldg. 2793  
Fort Defiance, Arizona 86504

MAILING ADDRESS: NNDNR- DWR Water Management Branch  
P.O. Box 678  
Fort Defiance, Arizona 86504

A mandatory Pre-Bid Conference and site visit will be held on **September 13, 2024 at 9:00 a.m.** MDT (8 a.m. Arizona time) at the LeChee Chapter House. Those that would like to attend can contact Steve Brenchley ([sbrenchley@brwncald.com](mailto:sbrenchley@brwncald.com), 801-316-9813) or Corwin Willmore ([cwillmore@brwncald.com](mailto:cwillmore@brwncald.com), 801-316-9836). Attendance at the Pre-Bid Conference is mandatory to qualify to submit a Bid Proposal. Questions regarding bid documents are due to Brown and Caldwell on **September 27, 2024**. Answers to Questions will be provided by **October 11, 2024**.

Preference will be applied to qualified Indian-owned businesses in accordance with the Navajo Preference (NNBOA) laws as specified in the Navajo Business and Procurement Act (12 N.N.C. § 1501 et seq.); the Navajo Nation Procurement Act (12 N.N.C. § 301 et seq.); Navajo Business Opportunity Act (5 N.N.C. § 201 et seq.) and other applicable statutory and regulatory requirements.

Suppliers, brokers, agents, subsidiaries, successors, and assigns shall be fully subject to the requirements and provisions of the Navajo Nation Business Opportunity Act.

Electronic Copies of the Contract Documents may be obtained from Brown and Caldwell (Corwin Willmore, (801) 316-9836, [cwillmore@brwncald.com](mailto:cwillmore@brwncald.com)), 6975 Union Park Center, Suite 490, Midvale, Utah.

Engineer: Brown and Caldwell, 6975 Union Park Center, Suite 490, Midvale, UT 84047

Advertised: **August 29, 2024**

**\*\*END OF SECTION\*\***