



# RIVERSIDE - SOUTH HUDSON

## TRANSMISSION IMPROVEMENTS PROJECT

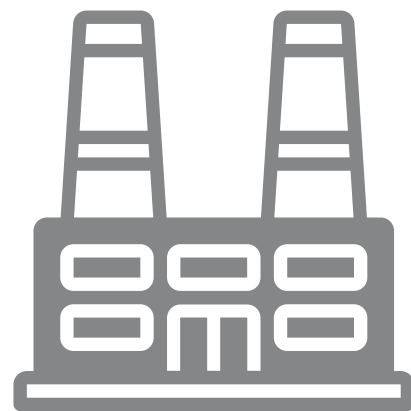
## WELCOME TO OUR VIRTUAL OPEN HOUSE

As a result of the COVID-19 pandemic and social distancing recommendations made by the Centers for Disease Control and Prevention (CDC), PSO invites you to attend this virtual open house in order to minimize in-person contact. PSO remains committed to listening to your concerns and answering your questions, but we are also committed to keeping our customers and employees safe and healthy. We welcome your feedback via telephone and email as we strive to make the most informed decisions possible.

# HOW THE SYSTEM WORKS

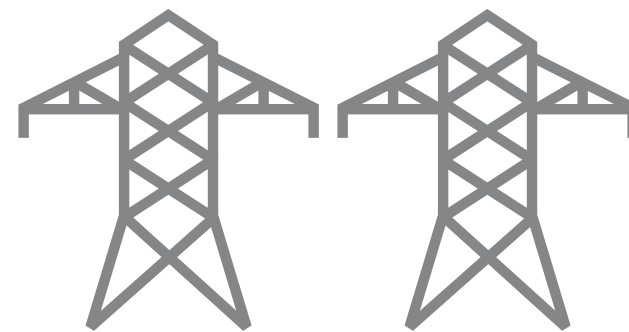
## HIGH VOLTAGE

LOCAL TRANSMISSION >>



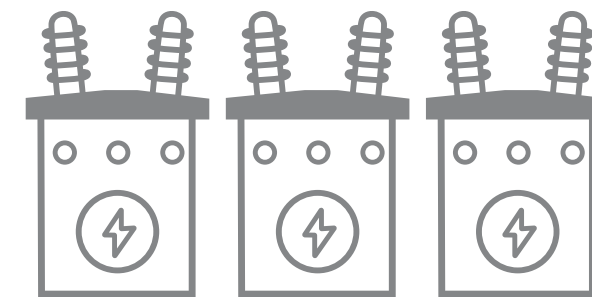
### 1) GENERATION STATIONS

PSO produces electricity at coal, natural gas, and wind power stations and then transports it long distances over transmission lines.



### 2) EHV TRANSMISSION

Extra-high Voltage (EHV) electric transmission lines are generally 345-kilovolt (kV) on PSO's system.



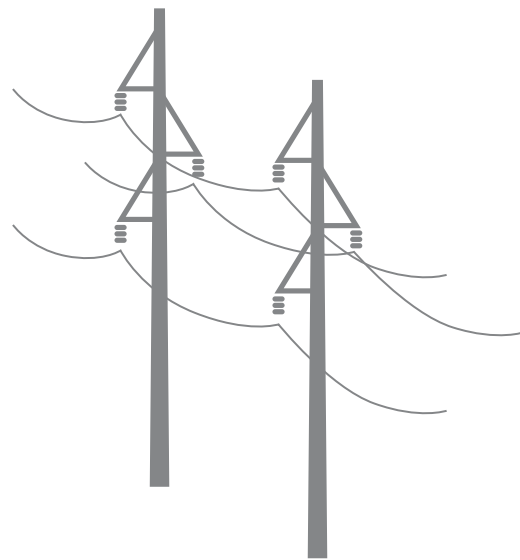
### 3) SUBSTATIONS

Substations direct the flow of electricity and either decrease or increase voltage levels for transport.

# HOW THE SYSTEM WORKS

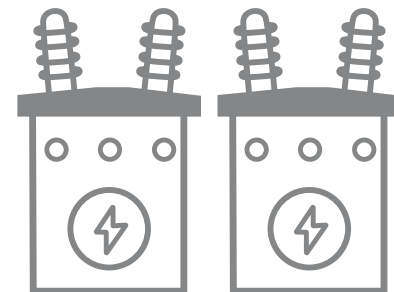
## LOCAL TRANSMISSION

DISTRIBUTION >>



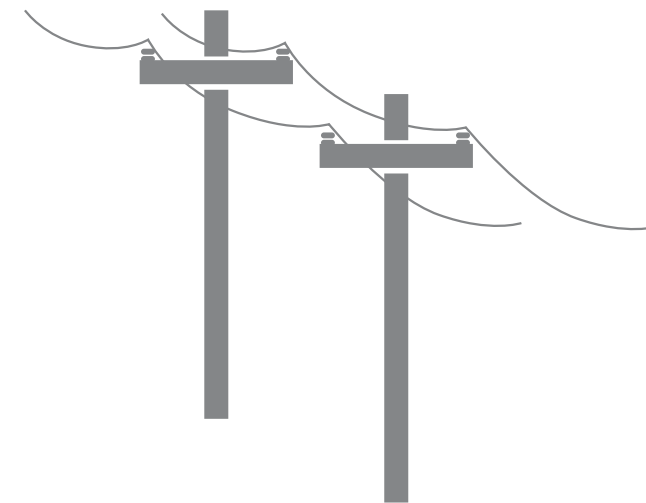
### 4) LOCAL TRANSMISSION

PSO typically uses 69-kV and 138-kV transmission lines to move power shorter distances - for example, to different parts of a city or county.



### 5) SUBSTATION

Substations transform 69-kV and 138-kV electricity into lower distribution level voltages such as 34.5 kV, 12 kV, or 7.2 kV.



### 6) PRIMARY DISTRIBUTION

These main lines (also called circuits) connect substations to large parts of the community.

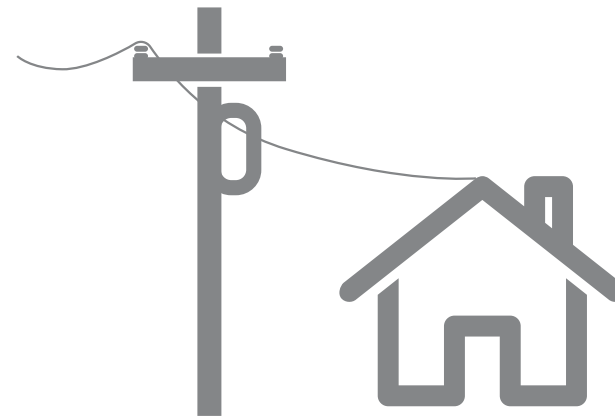
# HOW THE SYSTEM WORKS

## DISTRIBUTION



### 7) LATERAL DISTRIBUTION

These smaller capacity lines deliver electricity to neighborhoods and other smaller groups of customers.



### 8) INDIVIDUAL SERVICE

Smaller transformers step down voltage to levels customers can use -- typically 120 or 240 volts for individual residences.

**TO USE AN ANALOGY, ELECTRIC TRANSMISSION IS SIMILAR TO OUR NATIONAL ROAD SYSTEM. THREE KINDS OF POWER LINES EXIST BETWEEN POWER PLANTS AND HOMES AND BUSINESSES:**

- Extra-high Voltage (EHV) lines are like electrical interstate highways.
- High-voltage local transmission lines are like four-lane roads.
- Distribution lines are like two-lane roads that eventually connect to your driveway.

# PROJECT NEED & BENEFITS

## WHY IS THE PROJECT IMPORTANT TO OUR COMMUNITY?

### ENHANCING RELIABILITY

The project enhances system reliability by strengthening the line against severe weather impacts and decreasing the likelihood of widespread community power outages.

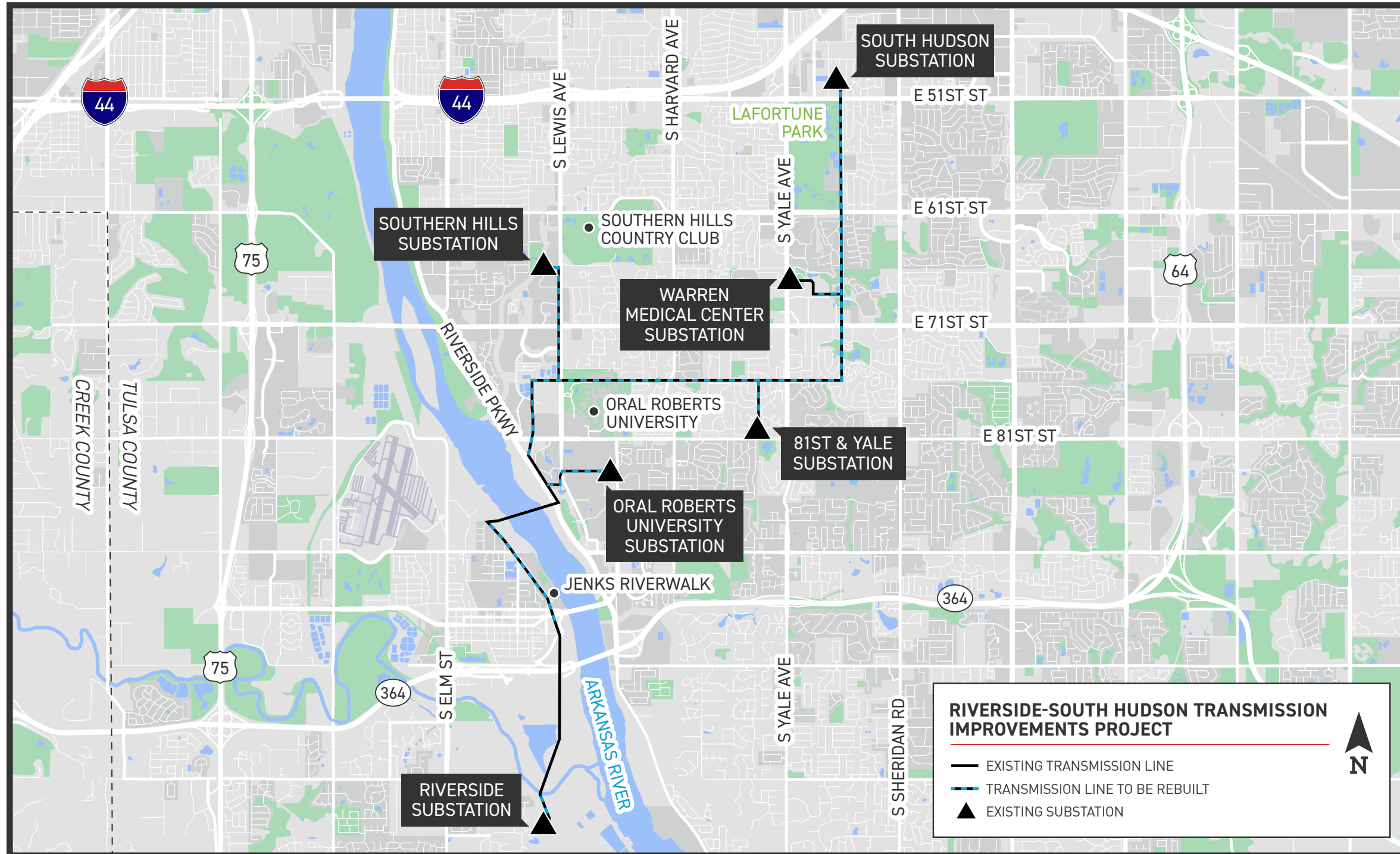
### MEETING MODERN STANDARDS

The project upgrades the line to meet modern standards by replacing wooden poles from 1950 with modern steel poles.

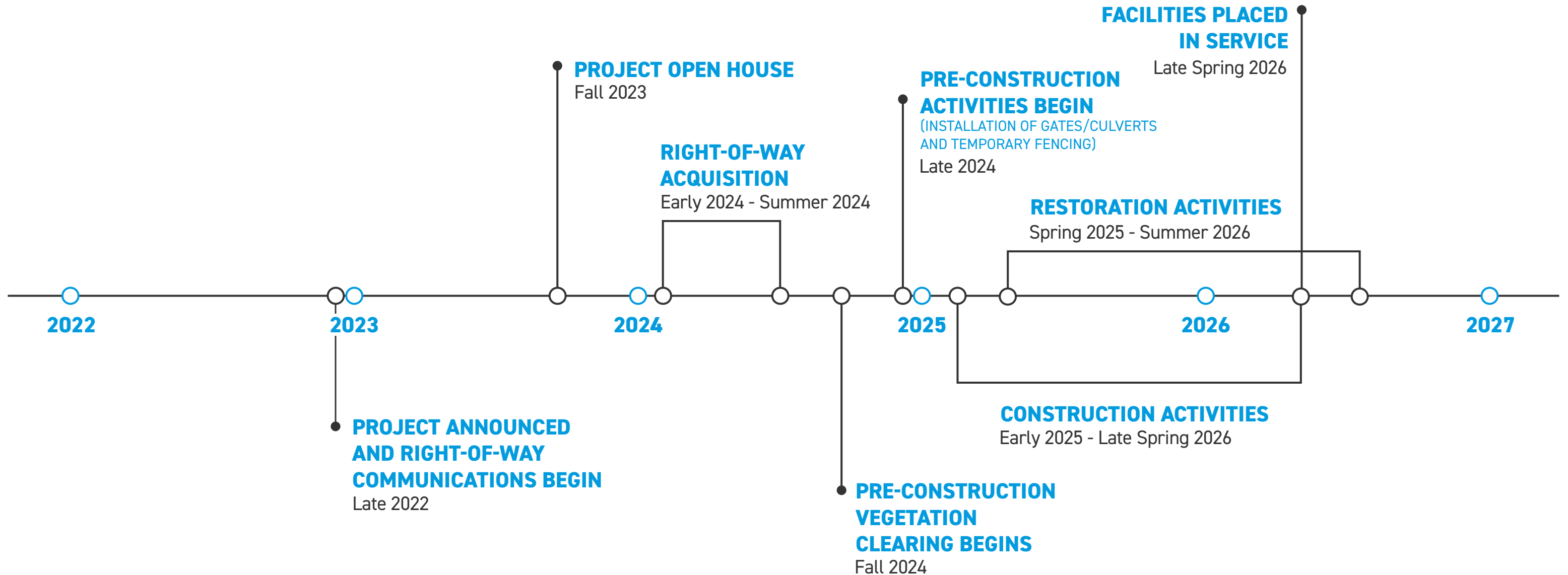
### ACCOMMODATING GROWTH

The project supports the area's growing electrical load and future economic development.

# PROJECT MAP



# PROJECT SCHEDULE



\*Timeline subject to change.



# TYPICAL STRUCTURES

## CURRENT VS. PLANNED



Current Structure



Current Structure

Crews plan to install steel single poles on this project.

### Current:

Typical Structure Height: **Approximately 60-70 feet\***

Structure Material: **Wood**

### Planned:

Typical Structure Height: **Approximately 95 feet\***

Typical Distance Between Structures:

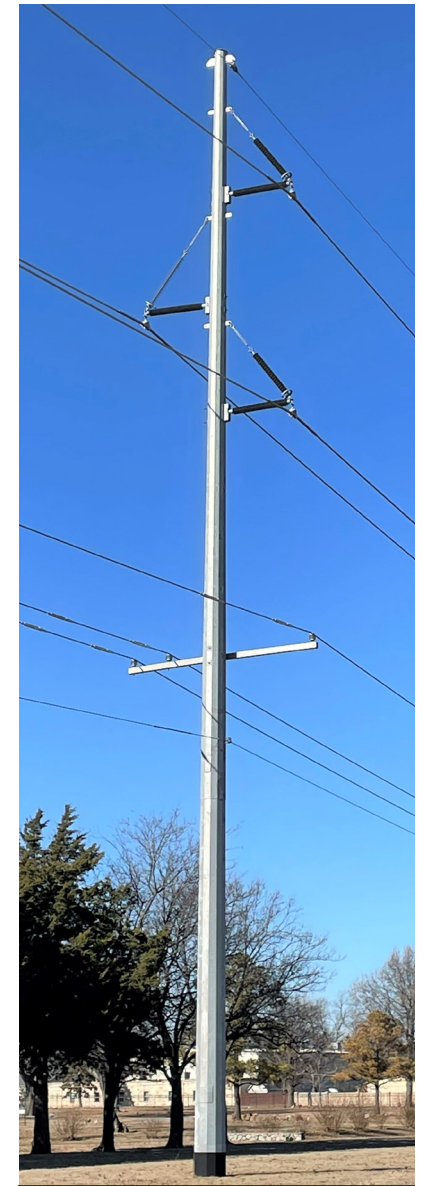
**Approximately 300 feet\***

Structure Material: **Steel**

\*Exact structure design, height and right-of-way requirements may vary.



Planned Structure



Planned Structure



# RIGHT-OF-WAY

## PSO HAS TWO KEY PHILOSOPHIES THAT PERTAIN TO POWER LINE RIGHTS-OF-WAY:



**1** Routes should cause the least possible disturbance to people and the environment.



**2** Property owners should be fairly compensated for any land rights that must be acquired.

# RIGHT-OF-WAY

PSO studies the land and, wherever possible, proposes routes that reduce impacts on property owners. PSO reaches out to landowners in the following ways:

## TO GAIN RIGHT-OF-ENTRY TO BEGIN:

- Environmental assessments
- Appraisal work
- Land surveying, soil boring and other field activities
- Cultural and historic resource reviews

## TO SECURE RIGHT-OF-WAY AND COMMUNICATE:

- Landowner compensation
- Terms and conditions of easement
- Width of the right-of-way

## TO OUTLINE PSO'S CONSTRUCTION PROCESS WITH A SPECIFIC FOCUS ON:

- Property restoration
- Damage mitigation as appropriate

# CONSTRUCTION FAQ

## PROJECT COMPONENTS & BENEFITS

The project involves:

- Rebuilding about 10 miles of 138-kilovolt (kV) transmission line between the South Hudson Substation in Tulsa and the Riverside Substation in Jenks. This includes rebuilding about 7.5 miles of the 138-kV Riverside - South Hudson transmission line and about 2.5 miles of lines connecting other south Tulsa substations to the Riverside - South Hudson transmission line.
- Upgrading substation equipment

The project upgrades the line to meet current standards by replacing deteriorating wooden poles from 1950 with modern steel poles. This strengthens the line against severe weather impacts and reduces the likelihood of large, community-wide power outages.

## TRAFFIC CONTROL

PSO representatives work to ensure public safety and minimize inconveniences during construction. Crews plan to:

- Close road lanes as needed
- Use flaggers and signs to aid traffic flow on city streets during the day
- Open road lanes at night if safety allows

## DAILY CONSTRUCTION SCHEDULE

Construction typically takes place Monday - Sunday during daytime hours (7 a.m. - 7 p.m.), weather permitting.

## PUBLIC SAFETY TIPS

- Keep your distance from construction workers and equipment
- Stay outside of temporary safety barriers
- Be aware of uneven or slippery surfaces
- Slow down when driving in the area and make sure your headlights are on
- Watch for posted signs
- Watch for road closures and traffic detours
- Follow flaggers' instructions

## WHAT TO EXPECT DURING CONSTRUCTION

### CONSTRUCTION SITE PREPARATION: Late 2024 - Early 2025

Crews mark utilities and pole locations along the power line route. Crews may remove fences, woody-stemmed vegetation and other obstructions from the right-of-way area where necessary.

Crews also:

- Install fences around the construction area for the public's safety
- Remove parts of sidewalks at various pole locations
- Remove soil to make room for the larger bases of the new poles

### CONSTRUCTION ACTIVITY: Early 2025 - Late Spring 2026

Crews place pole sections along the right-of-way corridor prior to pole installation.

At most pole locations, crews:

- Assemble the pole and place it near the installation area
- Install and stabilize the base of the pole
- Install and secure the pole
- Install wires on the poles along the power line route
- Remove existing structures and wires

### FACILITIES PLACED IN SERVICE: Late Spring 2026

Crews place the facilities in service after finishing pole and wire installations.

### POST-CONSTRUCTION AND SITE RESTORATION: Spring 2025 - Summer 2026

Restoration crews follow construction crews throughout the project to restore sidewalks and other neighborhood properties to as close to their pre-construction condition as possible. Right-of-way agents also work with landowners to address any other property damages.

\*Schedule subject to change based on weather or other factors.

# VEGETATION MANAGEMENT



## THE GOALS OF PSO'S VEGETATION MANAGEMENT PROGRAM ARE TO:

- Protect our system and minimize outages
- Minimize any adverse environmental impacts
- Ensure compliance with all applicable laws and regulations
- Perform our work as safely as possible
- Maintain a positive relationship with land owners and the public

## WHAT IS VEGETATION MANAGEMENT?

The practice of controlling the growth of trees and other woody stemmed vegetation in line corridors and around substations, while maintaining respect for the environment.

## WHY IS IT DONE?



To minimize power outages caused by trees and other plants coming into contact with power lines.





# CONSTRUCTION PROCESS



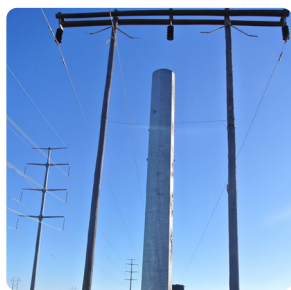
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Crews clear the right-of-way by removing fences and installing temporary fences and gates around the construction corridor. Crews also remove woody-stemmed vegetation and other obstructions from the right-of-way where necessary.



2

Crews place pole sections along the right-of-way corridor prior to pole installation.



3

Construction vehicles travel up and down the right-of-way corridor. Crews install and stabilize the new pole base.



4

Crews install and secure the pole, assembling the remaining sections.



5

Crews install new conductor (wires) on the poles along the power line route.



6

Crews remove existing structures/poles and conductor (wires).



7

Restoration crews follow construction crews throughout the project to restore sidewalks and other neighborhood properties to as close to their pre-construction condition as possible. Right-of-way agents also work with landowners to address any other property damages.





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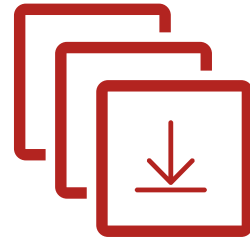
## TRANSMISSION IMPROVEMENTS PROJECT

## THANK YOU!

Thank you for visiting the project virtual open house. For more information and project updates please visit the project website, or contact us with any additional questions.



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OPEN HOUSE**



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SLIDE DECK**



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WEBSITE**