



# BLANCHARD - NORTH MARKET TRANSMISSION IMPROVEMENTS PROJECT

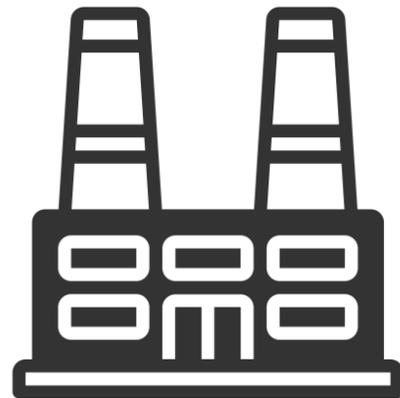
## WELCOME TO OUR VIRTUAL OPEN HOUSE

Southwestern Electric Power Company representatives invite you to attend this open house to learn more. We welcome your feedback via telephone and email as we strive to make the most informed decisions possible.

# HOW THE SYSTEM WORKS

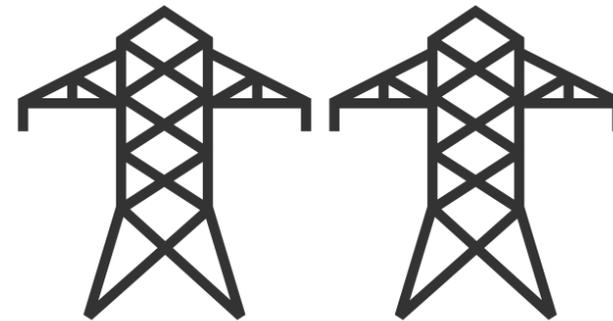
## HIGH VOLTAGE

LOCAL TRANSMISSION >>



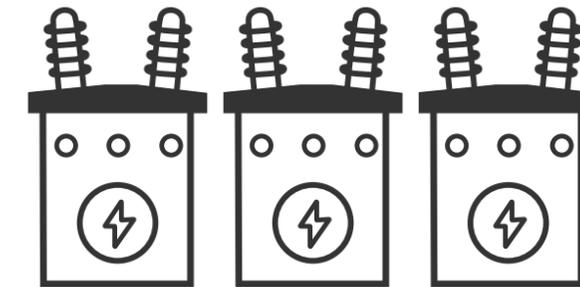
### 1) GENERATION STATIONS

Utilities produce electricity at coal, natural gas, nuclear, wind and hydroelectric power stations and then transport it long distances over transmission lines.



### 2) EHV TRANSMISSION

Extra High Voltage (EHV) electric transmission lines are generally 345 kilovolt (kV) on SWEPCO's system.



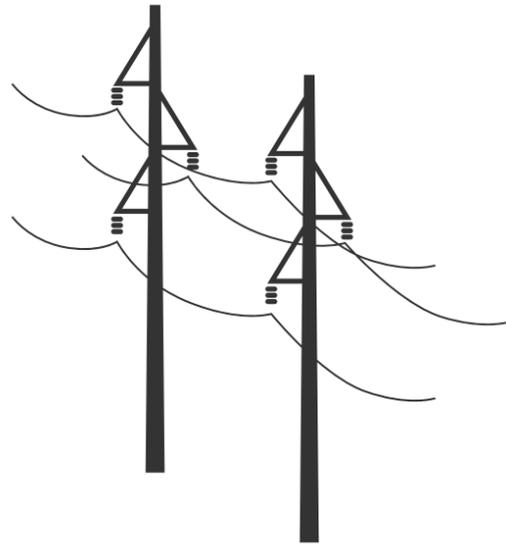
### 3) SUBSTATIONS

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

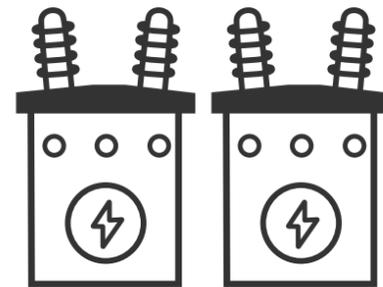
# HOW THE SYSTEM WORKS

## LOCAL TRANSMISSION

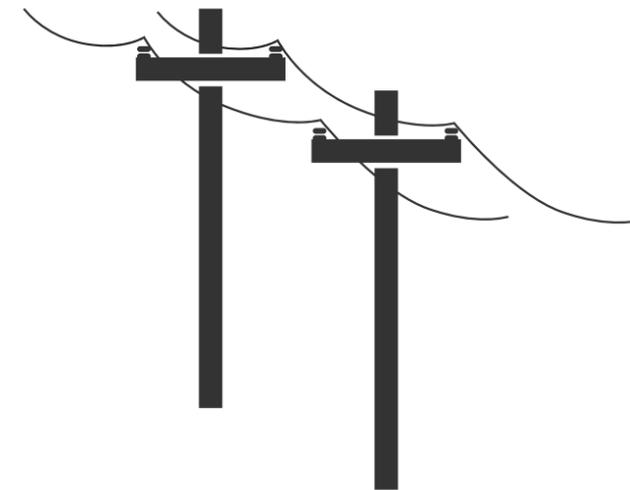
DISTRIBUTION >>



SWEPCO typically uses 69 kV, 138 kV and 161 kV transmission lines to move power shorter distances -for example, to different parts of a city or county.



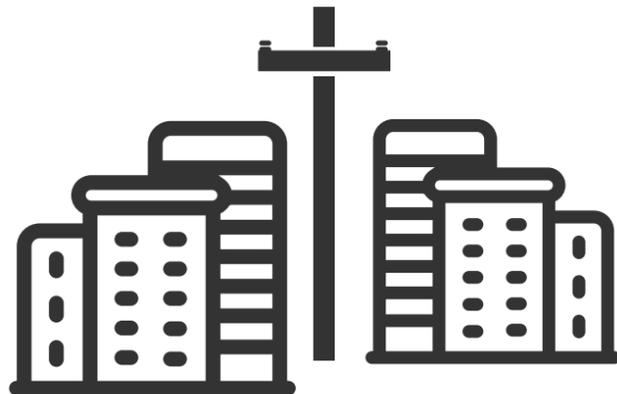
Substations transform 69 kV and 138 kV electricity into lower distribution level voltages such as 34.5 kV, 12 kV, or 7.2 kV.



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

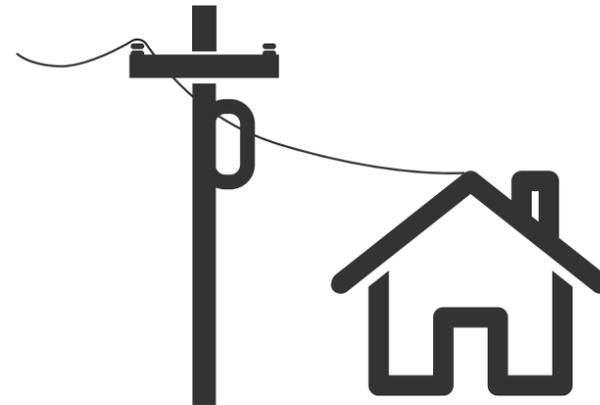
# HOW THE SYSTEM WORKS

## 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. 120/240 volts is typical for an individual residence.

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 lines (EHV) 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?

### THE PROJECT INVOLVES

- Rebuilding about 13.5 miles of 69-kilovolt transmission line
- Removing or trimming vegetation within SWEPCO's right-of-way for the safe construction and maintenance of the transmission line

### WHY IS THE PROJECT IMPORTANT TO OUR COMMUNITY?

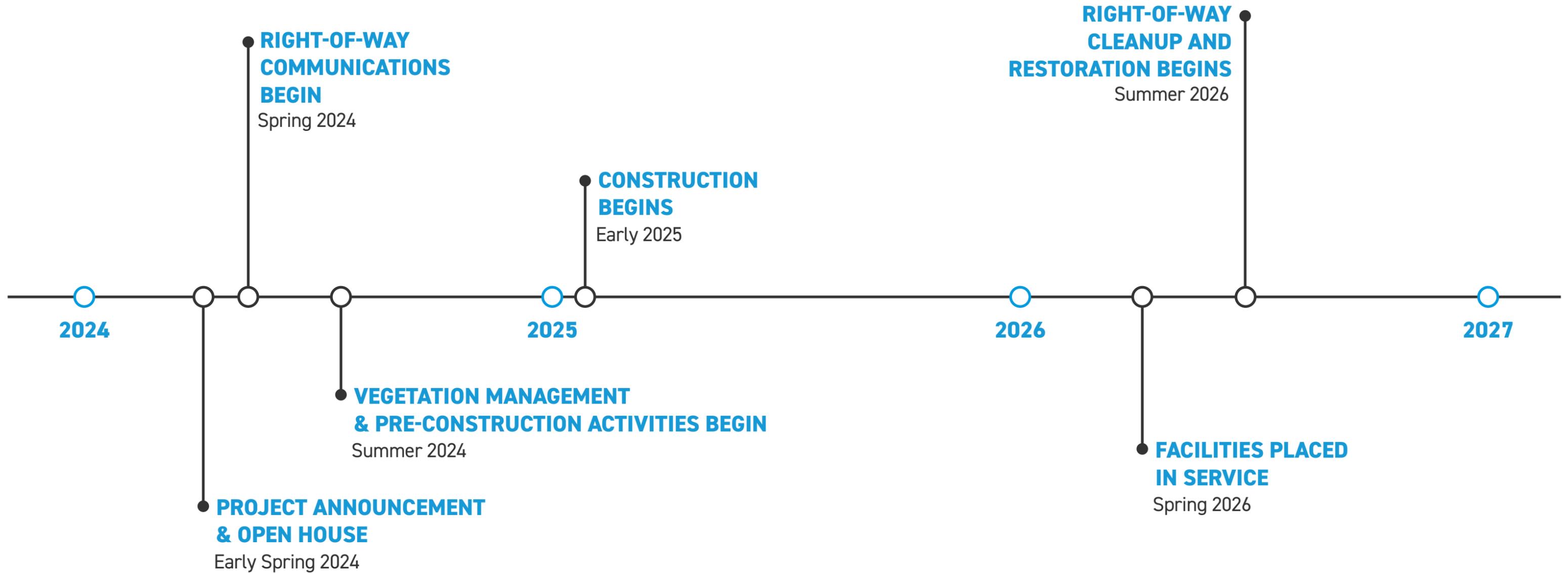
#### **Improves Regional Reliability**

Areas supported by the Blanchard - North Market transmission line have experienced a number of outages over the past decade due to severe weather, fallen trees and equipment-related failures. The project decreases the likelihood and severity of wide, community-sustained outages.

#### **Modernized Aging Infrastructure**

The project replaces deteriorating wooden structures that were installed more than 60 years ago with modern steel single-poles. This improves system dependability and decreases the frequency of maintenance along the line.

# PROJECT SCHEDULE



\*Timeline subject to change. Crews plan to stop work on the transmission line during summer months to accommodate peak loads and customer use.

# TYPICAL STRUCTURES



## TYPICAL STRUCTURES

SWEPCO crews plan to install single-pole steel structures.

Typical Structure Height: 75 feet

Typical Distance Between Structures: 400 feet

# RIGHT-OF-WAY

## SWEPSCO 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

SWEPCO studies the project area to determine the areas most affected and reach out to the landowners in the following ways:

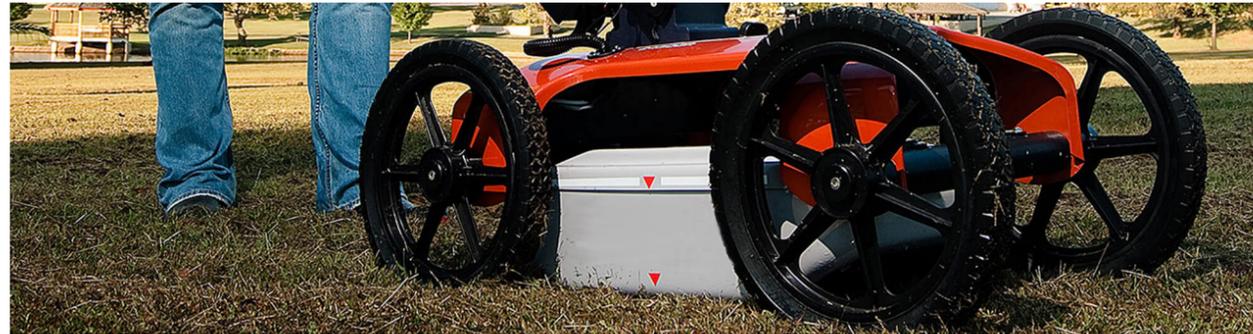
## **TO SECURE NECESSARY RIGHT-OF-WAY AND COMMUNICATE:**

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

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

- Property restoration
- Damage mitigation as appropriate

# FIELD ACTIVITIES



## GROUND PENETRATING RADAR

Ground Penetrating Radar (GPR) helps identify the location of underground utilities. A device that looks similar to a lawnmower, and is nondestructive to the soil, uses radio frequencies to detect objects below the ground's surface. Maps and images are created from the data.



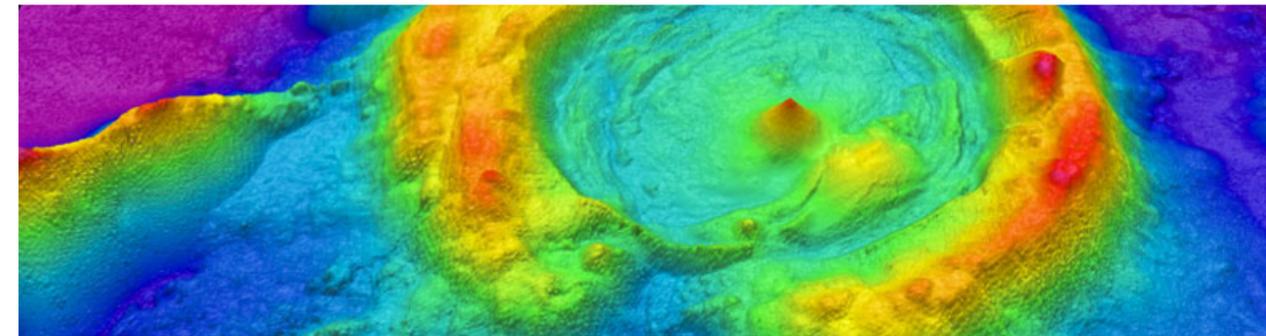
## HYDRO EXCAVATION

Crews use hydro excavation (hydrovac) in areas where many underground utilities are located near each other. This process involves using pressurized water to break down soil to expose underground utilities. Afterward, crews backfill the area. The process helps prevent damage to underground infrastructure while gathering important information.



## HELICOPTER

Challenging terrain or other restrictions/obstructions can make accessing certain parts of a project area difficult. In these locations, crews use helicopters to install structures, string conductors, perform line work and maintain electric facilities. Company representatives work with local media outlets to communicate these activities to the public.



## LIDAR

LiDAR (Light Detection and Ranging) uses laser pulses to measure the distance of an object to the source. The data points result in digital 3D maps for accurate design and engineering. LiDAR surveying crews use mobile (car or aerial vehicle) or static (tripod) equipment.

# FIELD ACTIVITIES



## SOIL BORINGS

Field crews use a drill to bring up soil samples and then backfill the holes. Testing the core samples helps determine soil conditions in the area. Soil conditions and types can affect structure location and foundation design.



## ENVIRONMENTAL SURVEY

Surveyors collect information about the habitats and physical attributes of the project area. They also look for ecological concerns like wetlands, flood plains and forests. This process can help protect endangered species, such as the Indiana Bat and American Burying Beetle.



## CULTURAL RESOURCE SURVEY

Field crews walk the area and conduct multiple excavation tests to identify historical and archaeological artifacts. Landowners also provide information about their property to survey crews.



## UNMANNED AERIAL VEHICLES (DRONES)

Unmanned aerial vehicles (UAVs), or drones, perform aerial inspections and safely gather data and detailed images of electric facilities. Company employees and vendors comply with all commercial Federal Aviation Administration (FAA) guidelines. Company representatives work with local media outlets to communicate these activities to the public.

# FIELD ACTIVITIES



## STAKING

- Field crews use staking to mark the project area, identify utility equipment and pinpoint future structure locations. This process essentially transfers engineering and construction plans to the field.
- Right-of-way crews use staking to identify parcel boundaries, easement boundaries and other utility locations within the company's rights-of-way.
- Environmental crews use staking to identify wetlands or other environmentally sensitive areas.



## FIELD SURVEY

- Field survey crews help determine an appropriate route for a new transmission line by identifying constraints within the project area.
- Engineers conduct extensive studies of the terrain and soil to determine what types of structures and foundations are most suitable. They also gather information to create digital 3D maps of the project area to help engineer and design the project.

# VEGETATION MANAGEMENT



## THE GOALS OF SWEPCO'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.

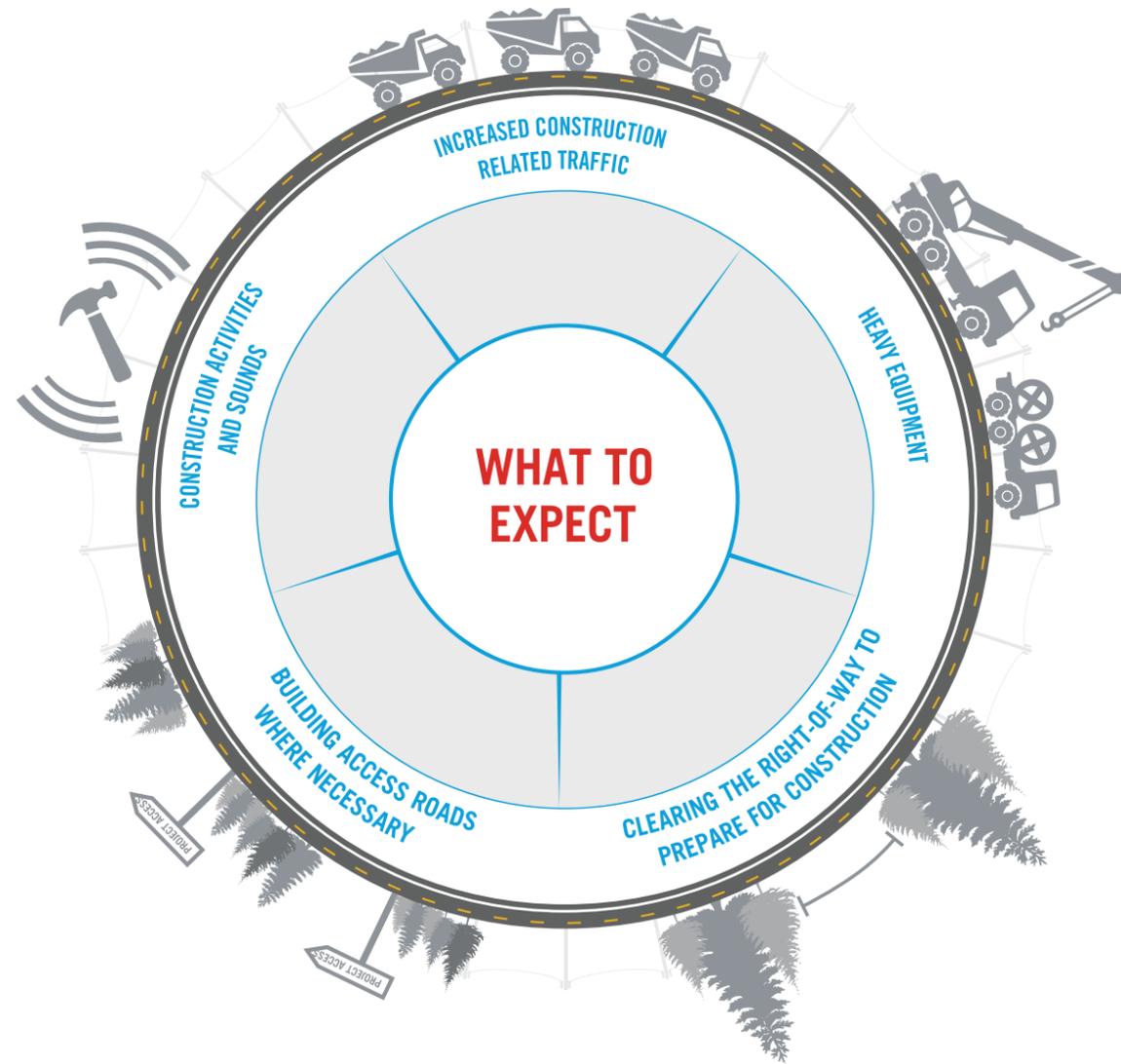
## WHY IS IT DONE?



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



# CONSTRUCTION PROCESS



SWEPCO understands the work related to transmission grid improvements can sometimes be an inconvenience. That's why we make every effort during the construction process to be respectful of the environment and our neighbors, while safely working to ensure reliable electric service.

SWEPCO plans to work with individual property owners throughout the construction process. Team members will provide details of upcoming work and listen to customer feedback on how we can lessen the impact of our work. In the event damages should occur during the construction process, we will work to restore property as close to its original state as possible.

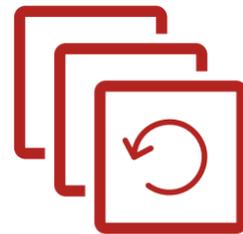


# BLANCHARD - NORTH MARKET

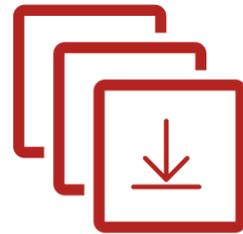
## TRANSMISSION IMPROVEMENTS PROJECT

## 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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