ANGSTROM-GRISSOM
POWER IMPROVEMENTS PROJECT

AEP TEXAS
An AEP Company
BOUNDLESS ENERGY

PROJECT NEED AND BENEFITS

WHY IS THE PROJECT IMPORTANT TO OUR COMMUNITY?

INCREASED CAPACITY

Upgrading the area's electric transmission grid ensures safety and reliability for the growing industrial sector in San Patricio, Bee and Refugio counties.

CUSTOMER BENEFITS

High-capacity electric transmission lines provide industrial customers with the power they need to grow, supporting economic development within the region.

MEETING FUTURE NEEDS

The system needs to be upgraded in order to meet the demand of the area's industrial growth. At AEP Texas, we are committed to serving customers along the Texas Gulf Coast by investing in a reliable, resilient grid.

HOW THE SYSTEM WORKS

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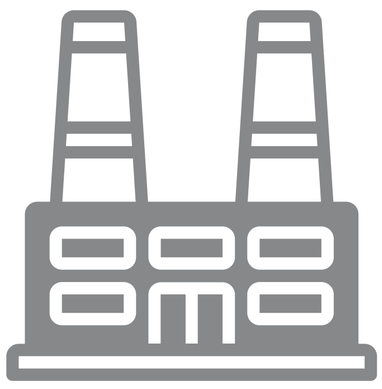
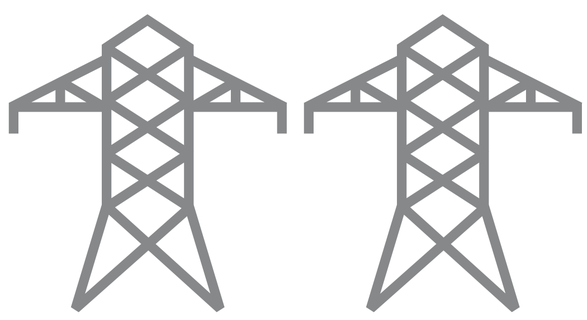


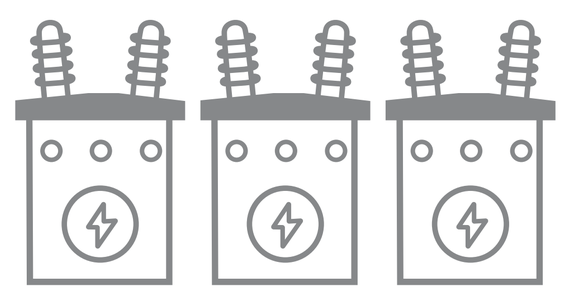
1) GENERATION STATIONS

AEP Texas produces electricity at coal, natural gas, nuclear, wind and hydro-electric power stations and then transports it long distances over transmission lines.



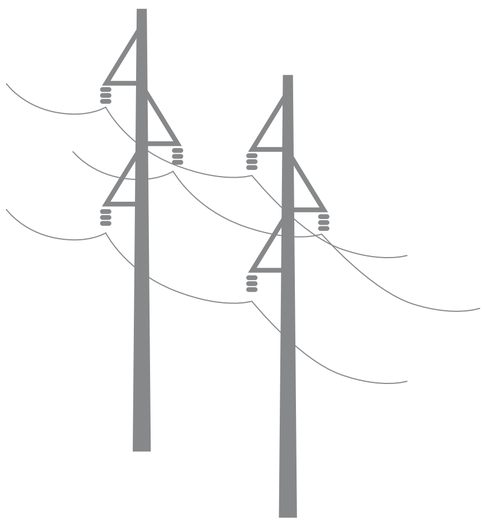
2) EHV TRANSMISSION

Extra High Voltage (EHV) electric transmission lines are generally 765 kilovolt (kV), 500 kV, and 345 kV on AEP Texas' system.



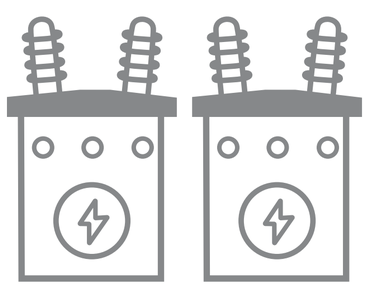
3) SUBSTATIONS

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



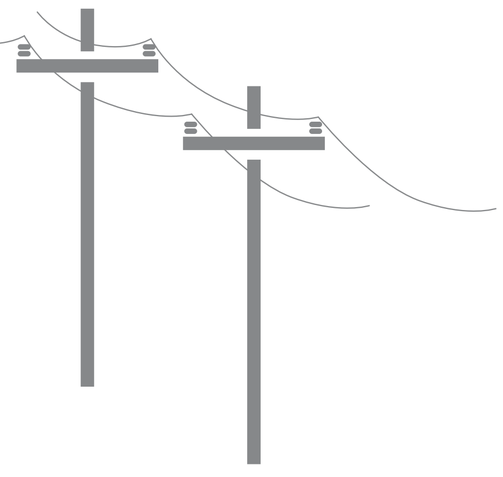
4) LOCAL TRANSMISSION

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



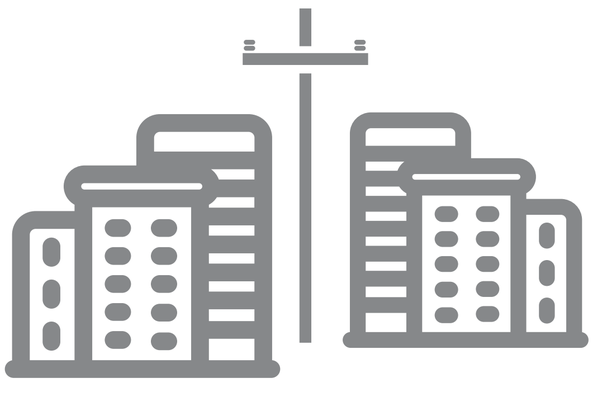
5) SUBSTATION

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



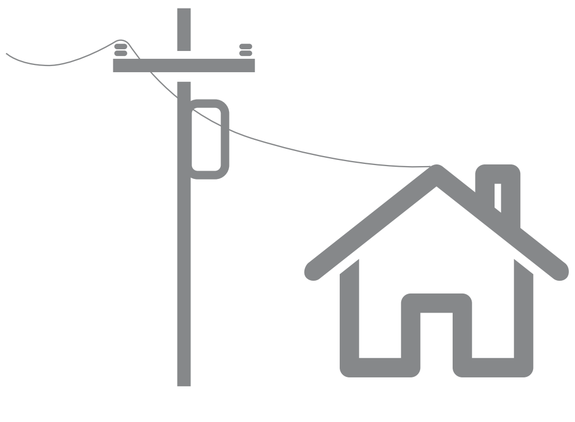
6) PRIMARY DISTRIBUTION

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



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.

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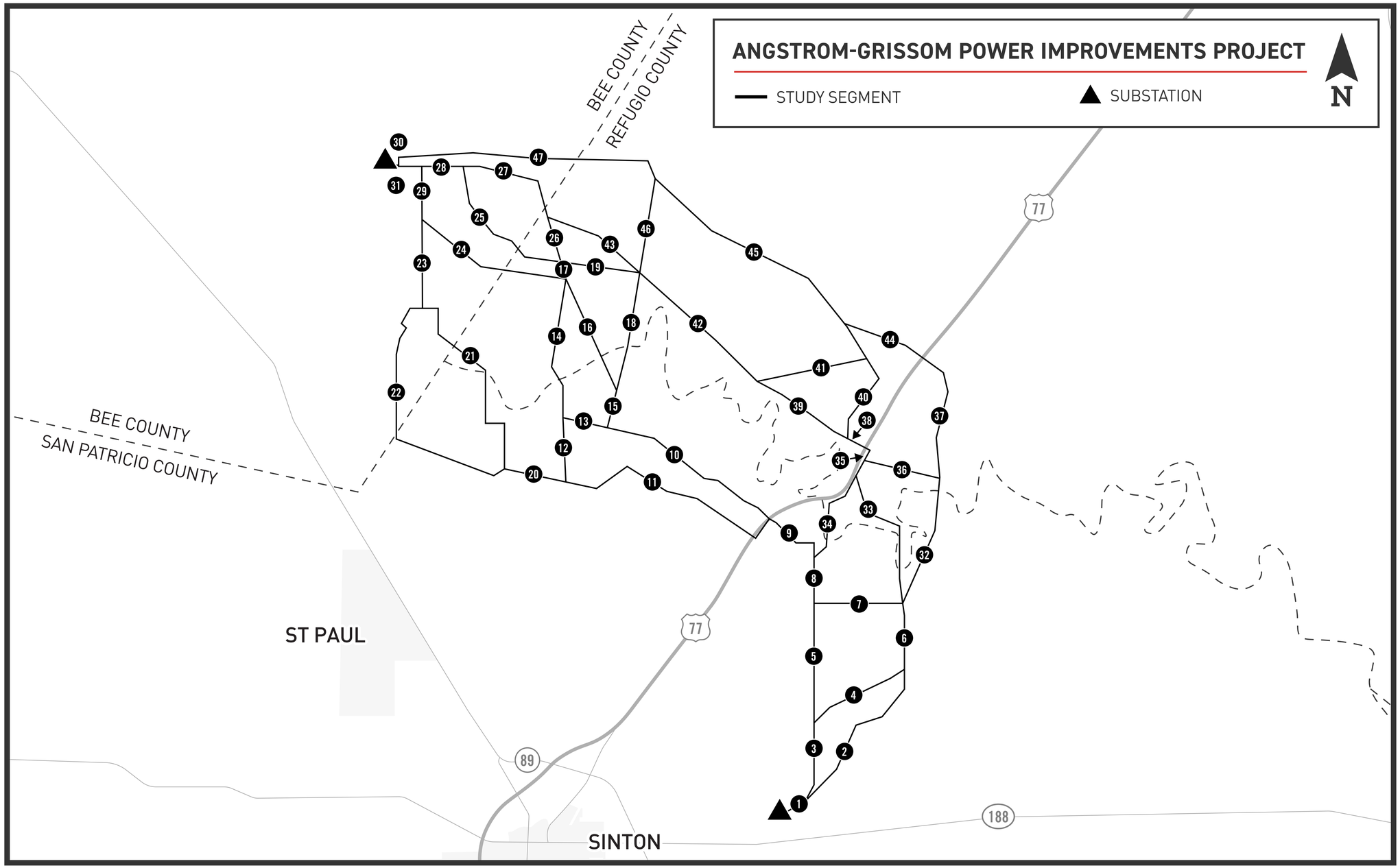

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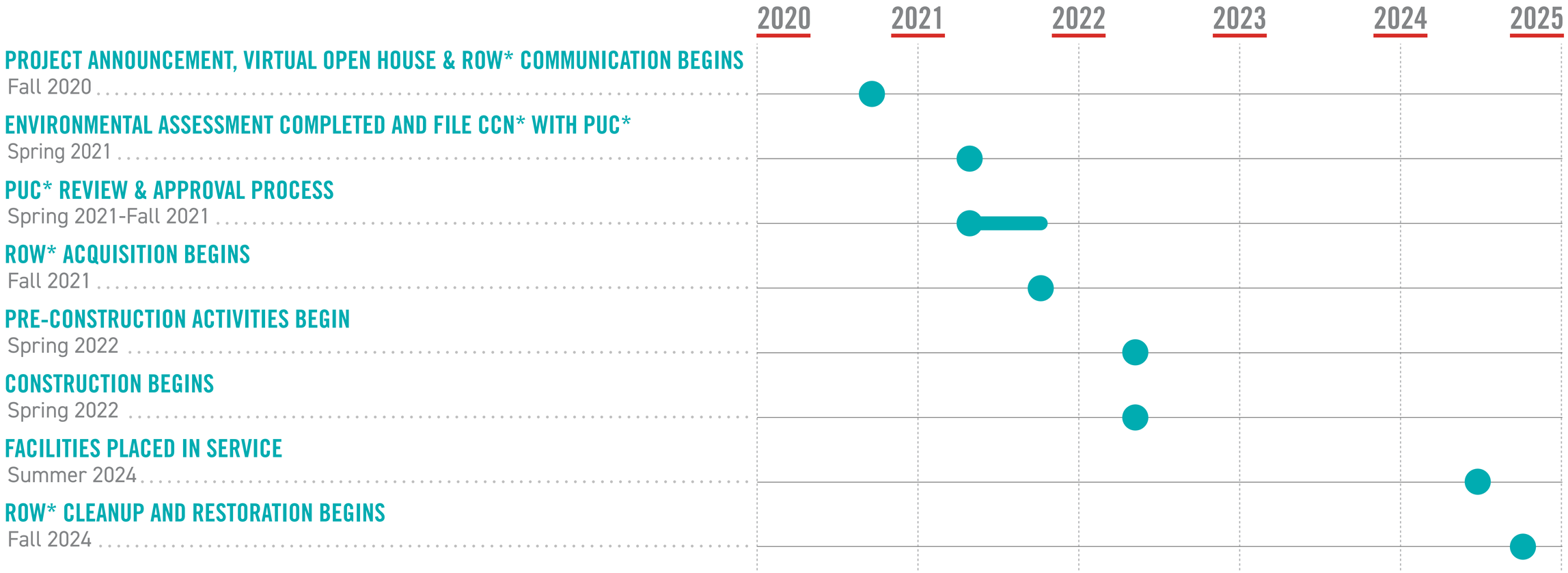
PROJECT SCHEDULE



*__ROW:__ Right-of-Way; __PUC:__ Public Utility Commission of Texas; __CCN:__ Certificate of Convenience and Necessity

Note: Timeline subject to change.

TRANSMISSION
ROUTING PROCESS

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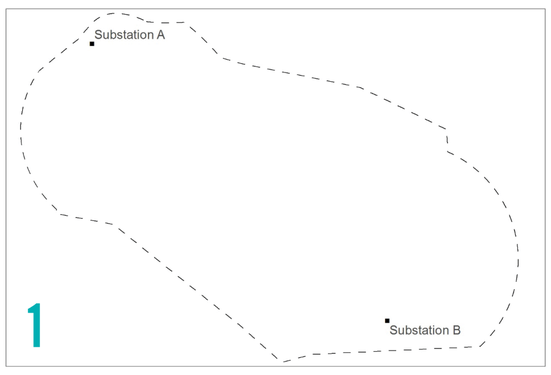
AEP Texas implements a comprehensive siting process that takes into account land use, the environment, public input, and engineering guidelines to develop a transmission line route. This process is inherently iterative with route segments changing over time as more information is gathered. Below is a discussion of the terminology used at each stage in the process.

1) STUDY AREA

AEP Texas develops a Study Area for the Project that incorporates the two end points and the area in between.

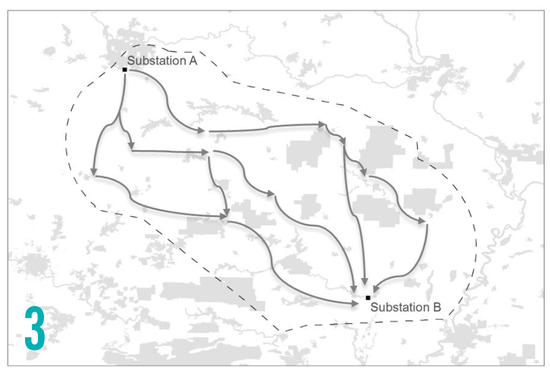


2) DATA GATHERING

Data is gathered for the defined study area including environmental, land use, historic and cultural resources, existing infrastructure and sensitive areas.

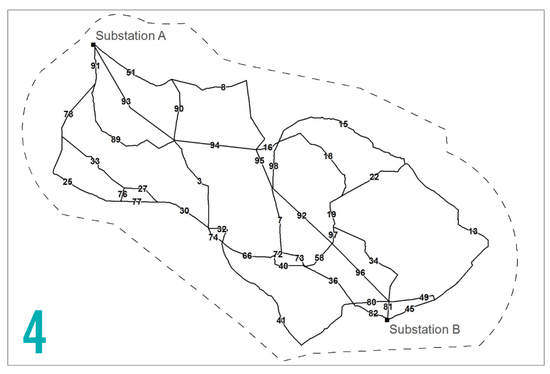
3) CONCEPTUAL ROUTES

The Routing Team uses this information to develop Conceptual Routes adhering to a series of general routing and technical guidelines.



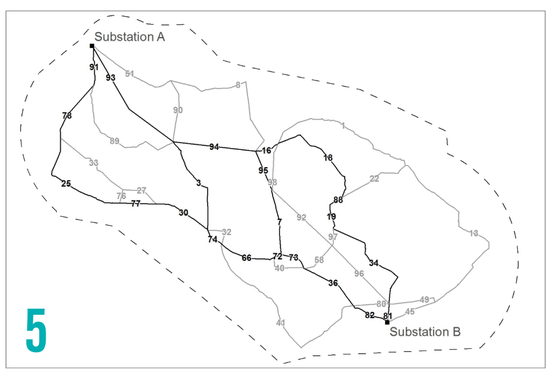
4) STUDY SEGMENTS

Where two or more Potential Study Segments intersect, a node is created, and between two nodes, a link is formed. Together, the network formed by these links is referred to as Potential Study Segments.



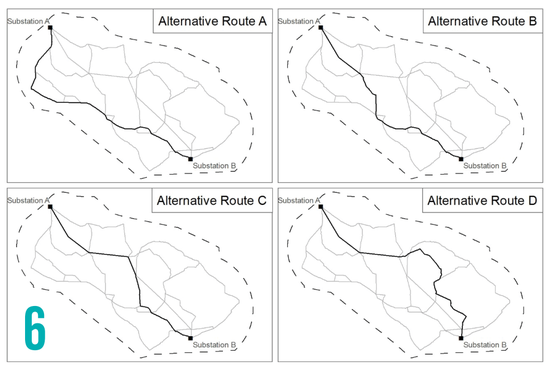
5) REFINED STUDY SEGMENTS

As more information is gathered, the Study Segments are refined. Some Study Segments are eliminated or modified, leaving the Refined Study Segments for further consideration



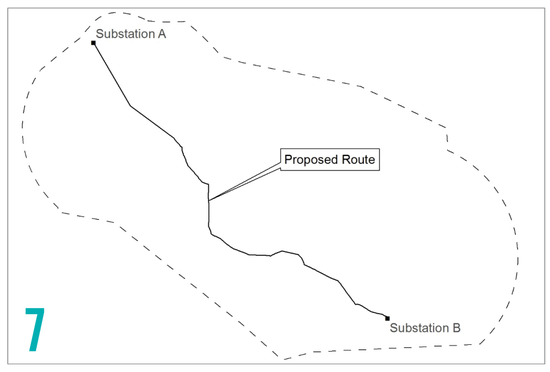
6) ALTERNATIVE ROUTES

After public input is incorporated, the Refined Study Segments are further evaluated and a selection of the most suitable segments is assembled into Alternative Routes.



7) PROPOSED ROUTE

Potential impacts are assessed and compared with land uses, natural and cultural resources, and engineering and construction concerns for all the Alternative Routes. Ultimately, a Proposed Route is selected from the Alternative Routes that minimizes the effect of the Project on the natural and human environment, while avoiding circuitous routes, extreme costs, and non-standard design requirements.



TRANSMISSION
ROUTING PROCESS

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ENVIRONMENTAL ASSESSMENT & ROUTING STUDY:

DEFINE STUDY AREA

- Based on the end points for the transmission line
- Large enough for an adequate number of geographically diverse routes

IDENTIFY ROUTING CONSTRAINTS

- Obtain aerial photos of the study area
- Request information from federal, state, and local agencies
- Gather information regarding natural, cultural, and human resources
- Gather data from published literature and on-ground inspection
- Gather property boundary information from public records
- Identify potential constraint areas such as communities, subdivisions, airports
- Identify environmental and land-use constraints
- Identify compatible routing opportunities such as existing utility corridors

ESTABLISH ALTERNATIVE ROUTES:

INVITE PUBLIC INVOLVEMENT (VIRTUAL OPEN HOUSE)

- Notify landowners of project and virtual open house
- Provide maps showing potential preliminary routing links
- Hold virtual open house to describe the project and solicit input
- Evaluate input from open house meeting attendees and questionnaires
- Respond to inquiries
- Evaluate any additional input from the public, local officials, and agencies
- Revise preliminary routing links as necessary
- Produce alternative routes using retained links for final review

EVALUATE ALTERNATIVE ROUTES CONSIDERING FACTORS SUCH AS:

- Environment
- Compatible Easements
- Parks & Recreational Areas
- Engineering Constraints
- Land Use
- Apparent Property Lines
- Historical & Archaeological
- Cost

SELECT ALTERNATIVE ROUTES FOR FILING

RIGHT-OF-WAY ACTIVITIES

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AEP TEXAS 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, and

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

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

TO GAIN RIGHT-OF-ENTRY TO BEGIN:

- Environmental assessments
- Appraisal work
- Land surveying, soil boring and below grade study
- 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 AEP TEXAS' CONSTRUCTION PROCESS WITH A SPECIFIC FOCUS ON:

- Property restoration
- Damage mitigation as appropriate

ENVIRONMENTAL AND LAND USE CRITERIA

FOR TRANSMISSION LINE EVALUATION

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LAND USE

Length of alternative route (miles)
Number of habitable structures[1] within 500 feet of the right-of-way (ROW) centerline
Length of ROW using existing transmission line ROW
Length of ROW parallel to existing transmission line ROW
Length of ROW parallel to other existing ROW (roadways, railways, etc.)
Length of ROW parallel to apparent property lines[2]
Length of ROW across parks/recreational areas[3]
Number of additional parks/recreational areas[3] within 1,000 feet of the ROW centerline
Length of ROW across cropland
Length of ROW across pasture/rangeland
Length of ROW across land irrigated by traveling systems (rolling or pivot type)
Length of ROW parallel to existing pipeline ROW (<500 feet from ROW centerline)
Number of pipeline crossings
Number of transmission line crossings
Number of U.S. and state highway crossings
Number of farm-to-market road crossings
Number of cemeteries within 1,000 feet of the ROW centerline
Number of FAA registered airports[4] with at least one runway more than 3,200 feet in length located within 20,000 feet of the ROW centerline
Number of FAA registered airports[4] having no runway more than 3,200 feet in length located within 10,000 feet of the ROW centerline
Number of private airstrips within 10,000 feet of the ROW centerline
Number of heliports within 5,000 feet of the ROW centerline
Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline
Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of the ROW centerline

AESTHETICS

Estimated length of ROW within foreground visual zone[5] of U.S. and state highways
Estimated length of ROW within foreground visual zone[5] of farm-to-market roads
Estimated length of ROW within foreground visual zone[5][6] of park/recreational areas[3]

ECOLOGY

Length of ROW through upland woodlands/brushlands
Length of ROW through bottomland/riparian woodlands
Length of ROW across NWI mapped wetlands
Length of ROW across known habitat of federally listed endangered or threatened species
Length of ROW across open water (lakes, ponds)
Number of stream crossings
Number of river crossings
Length of ROW parallel (within 100 feet) to canals, streams, or rivers
Length of ROW across 100-year floodplains

CULTURAL RESOURCES

Number of recorded cultural sites crossed by ROW
Number of additional recorded cultural sites within 1,000 feet of ROW centerline
Number of National Register of Historic Places listed sites crossed by ROW
Number of additional National of Register Historic Places listed sites within 1,000 feet of ROW centerline
Length of ROW through areas of high archeological site potential

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 500 feet of the centerline of a transmission project.

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria.

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project.

[4] As listed in the Chart Supplement South Central U.S. (FAA 2019a formerly known as the Airport/Facility Directory South Central U.S.) and FAA 2019b.

[5] One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of U.S. and state highway criteria are not "double-counted" in the length of ROW within the foreground visual zone of FM roads criteria.

[6] One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of parks/recreational areas may overlap with the total length of ROW within the foreground visual zone of U.S. and state highway criteria and/or with the total length of ROW within the foreground visual zone of FM roads criteria.

AGENCIES CONTACTED

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FEDERAL

- Federal Aviation Administration
- Federal Emergency Management Agency
- National Parks Service
- Natural Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S Department of Defense Siting Clearinghouse
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service

STATE

- Railroad Commission of Texas
- Texas Commission on Environmental Quality
- Texas Department of Transportation
    - Aviation Division
    - District Engineer
    - Environmental Affairs Division
    - Planning and Programming
- Texas General Land Office
- Texas Historical Commission
- Texas Parks & Wildlife Department
- Texas Water Development Board

LOCAL

- Bee, Refugio, and San Patricio County Officials
- Bee, Refugio, and San Patricio County Historical Commission
- Refugio County Drainage District #1
- San Patricio County Drainage District
- San Patricio County Floodplain Manager
- Sinton ISD
- Skidmore-Tynan ISD
- Woodsboro ISD
- Bee County Community Affairs Director
- Refugio County Historical Society
- Coastal Bend Council of Governments

TRANSMISSION LINE
PROJECT REVIEW PROCESS

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A transmission addition is determined necessary for service reliability or connection of new load/generation.

TRANSMISSION ROUTING PROCESS:

ENVIRONMENTAL ASSESSMENT AND ROUTING STUDY

- Define study area
- Identify routing link constraints

ESTABLISH PRELIMINARY ROUTING LINKS

- Invite public involvement (Virtual Open House)
- Finalize links, develop routes

SELECT ALTERNATIVE ROUTES FOR FILING

PUBLIC UTILITY COMMISSION OF TEXAS (PUC) APPROVAL PROCESS:

AEP TEXAS FILES APPLICATION AT PUC

- Direct mail notice of application to landowners, local public officials, and electric utilities
- Publication of notice in local newspaper
- 45-Days intervention period

IF NO HEARING IS REQUESTED

- Application approved administratively in 80 days

IF HEARING IS REQUESTED

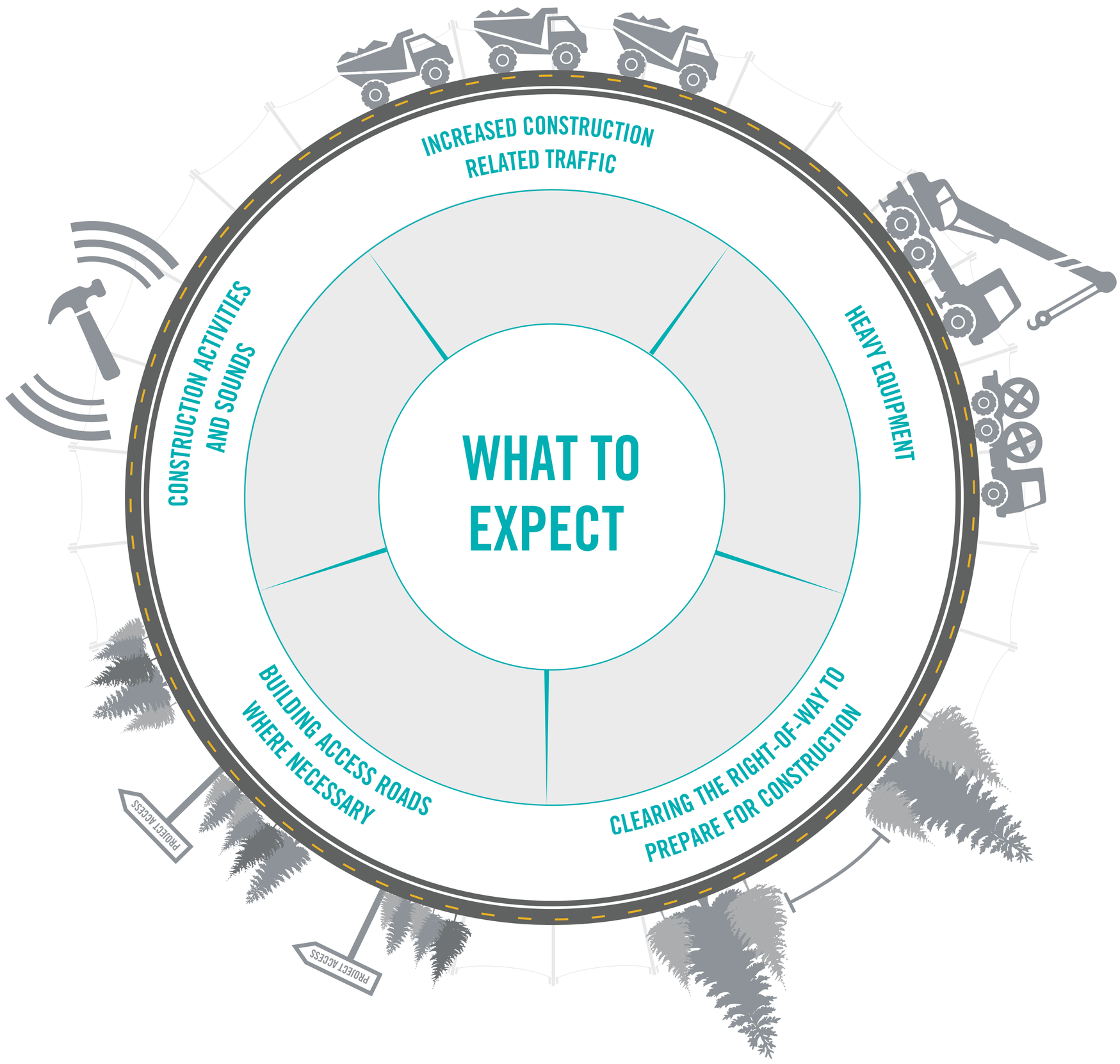
- Application processed within one year
- Hearing by administrative law judge (ALJ)
- ALJ makes recommendation to PUC

PUC MAKES THE FINAL DECISION:

- Approve or deny application
- If approved, decides location of approved route

CONSTRUCTION PROCESS

AEP Texas 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.



AEP Texas 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.