



**Ranchtown Substation Project
Open House Displays
08/16/2012**

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Constraints Map

Routing and Siting Process

- ❖ Routing and Siting Process Highlights
- ❖ Timeline
- ❖ Constraints Map

Routing and Siting Process Highlights

Determine a need for the project

- By utility planners and engineers

Define the study area

- Based on end points for transmission lines

Gather data, identify constraints, propose preliminary alternative route segments

- Obtain aerial photos of the study area
- Gather property boundary information
- Identify environmental/land-use constraints and opportunities
- Send letters to federal, state and local agencies requesting information about the study area
- Gather information regarding natural, cultural and human resources
- Assess easement/right-of-way features/concerns
- Evaluate alternative transmission structures

Invite public involvement

- Notify landowners and interested parties
- Advertise open house in newspapers
- Hold open house to explain the project and solicit input on preliminary sites
- Respond to inquiries
- Evaluate public and agency input

Refine preliminary alternatives, propose primary alternative routes

Evaluate primary alternative routes considering:

- Environment
- Land use
- Engineering
- Cost
- Feasibility

Recommend preferred route to Board of Trustees for approval

Timeline

Gather information and land use data

In Progress

Send letters to landowners

August 2012

Hold Open House

August 16, 2012

**Complete evaluation
Public input, environment, land use,
engineering**

September 2012

**Recommend route to the
CPS Energy Board of Trustees
Notify landowners and interested parties**

October 2012

Apply for City Ordinance

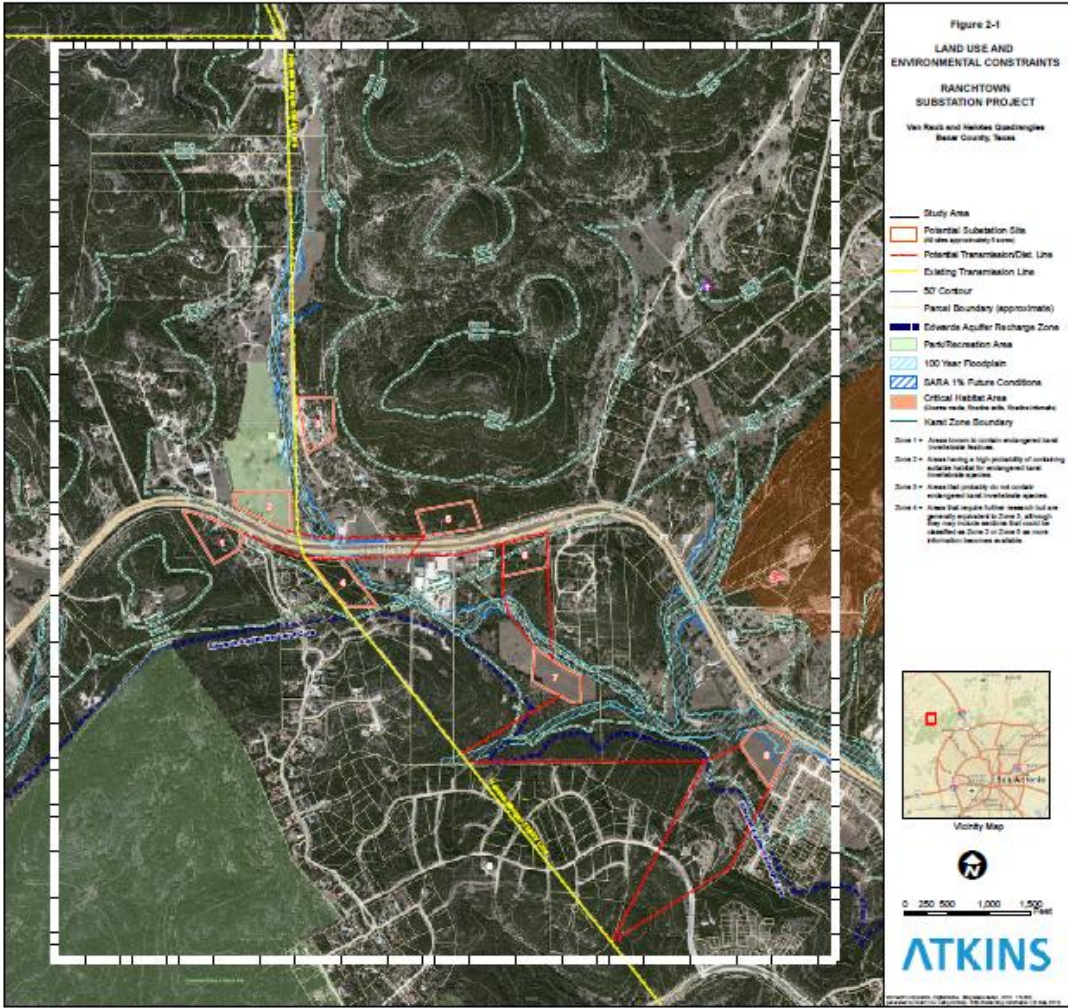
December 2012

Start construction

Mid 2014

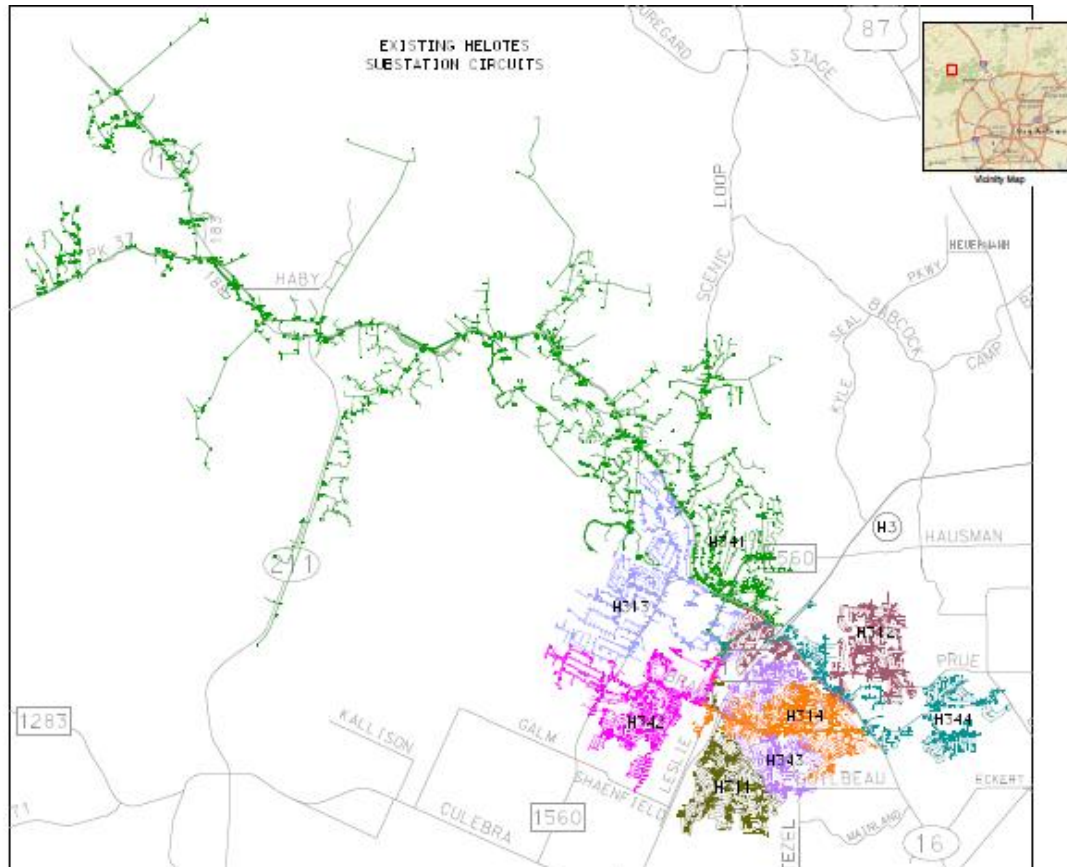
Complete construction

June 2015



Scope, Purpose and Need

- ❖ Existing Helotes Substation Circuits Map
- ❖ Proposed Ranchtown & Helotes Substation Circuits Map
- ❖ Scope, Purpose and Need
- ❖ Generation to Customer Diagram
- ❖ Constraints Map



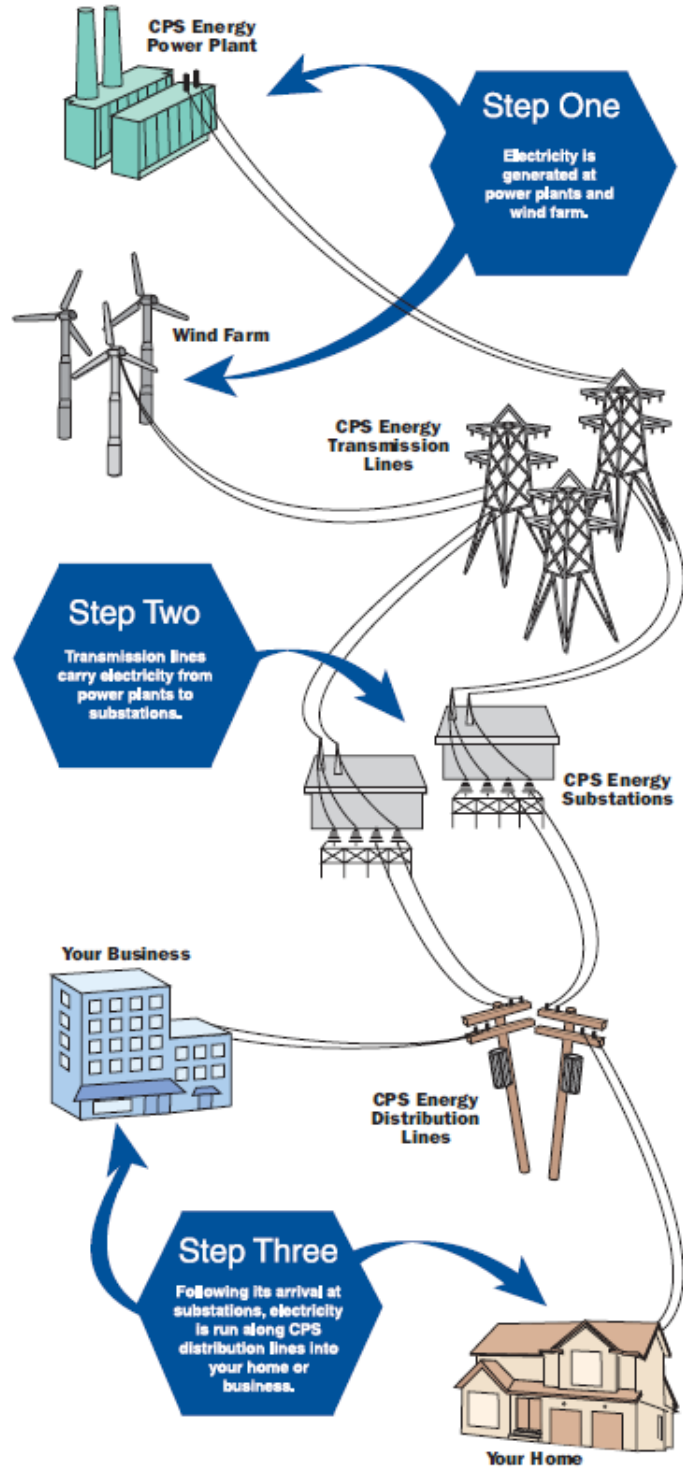
Scope

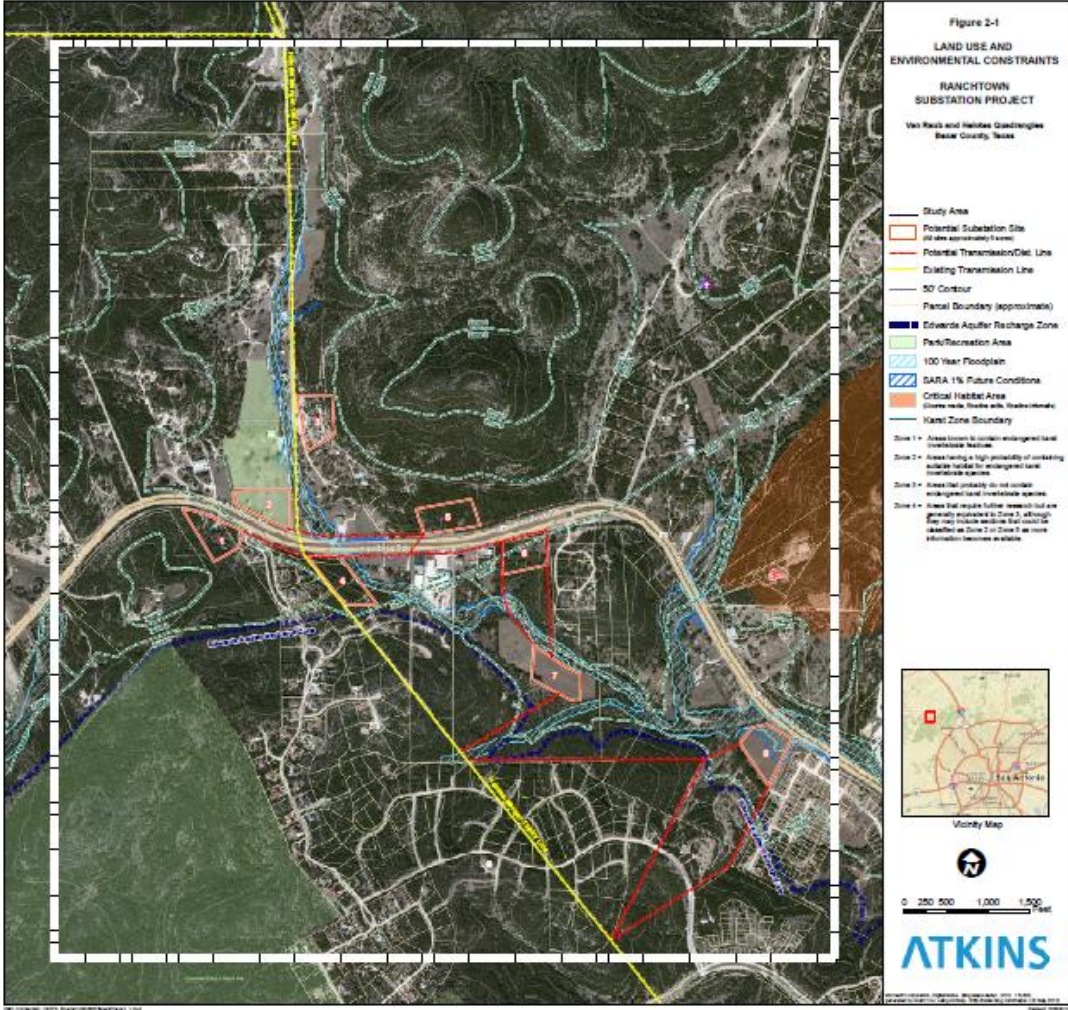
- Construct a new substation with two initial power transformers and one four-feeder distribution switchgear NW of San Antonio & Helotes along St Hwy 16 in Bexar County.
- Connect to the existing Helotes – Menger transmission line to serve the new substation.
- Sized for four line terminals, three power transformers and 138kV capacitor bank

Purpose and Need

- The new substation is needed to maintain electrical reliability and improve this area's electric system with shorter circuits that reduce exposure to outages. The new circuits also create strong backbones and sufficient field ties to adjacent substation circuits that will prevent major loss of customer load in faulted conditions.
- The new substation will help relieve load from other surrounding substations and reduce the risk of overloading circuits.
- The new substation is needed to meet an increasing demand for electricity in the area.
- The existing circuit has more overhead line miles than any in our system and is more than ten times longer than a typical circuit.

Generation to Customer Diagram





Environmental

- ❖ Environmental and Land Use Criteria
- ❖ Local, State and Federal Agencies Contacted/ Notified
- ❖ Constraints Map
- ❖ Constraints Map

Environmental and Land Use Criteria

Land Use

Number of:

- Habitable Structures¹ within 300 ft
- Schools within 1,000 ft
- Parks/recreational areas² within 1,000 ft
- FAA-registered airports within 20,000 ft
- Private airstrips within 10,000 ft
- Heliports within 5,000 ft
- Commercial AM radio transmitters within 10,000 ft
- FM radio transmitters and other electronic installations within 2,000 ft

Aesthetics

Site within foreground visual zone³ of:

- U.S. and State Highways
- Parks/recreational areas²
- Churches, Schools, and Cemeteries

Ecology

Site in:

- Potential Golden Cheeked Warbler/Black Capped Vireo Habitat
- Within 300ft of potential Golden Cheeked Warbler/Black Capped Vireo Habitat
- Potential wetlands
- Areas known or having a high probability of endangered karst invertebrate species
- Edwards Aquifer Recharge Zone
- 100-year floodplains

Cultural Resources

- Recorded historic and prehistoric sites within 1,000 ft
- National register-listed or determined-eligible sites within 1,000 ft
- Percent of site within areas of high archeological/historical site potential

¹ Residences, businesses, schools, churches, hospitals, nursing homes, etc.

² Defined as parks and recreational areas owned by governmental body or an organized group, club, or church.

³ One-half mile, unobstructed.

Local, State and Federal Agencies Contacted/Notified

Local

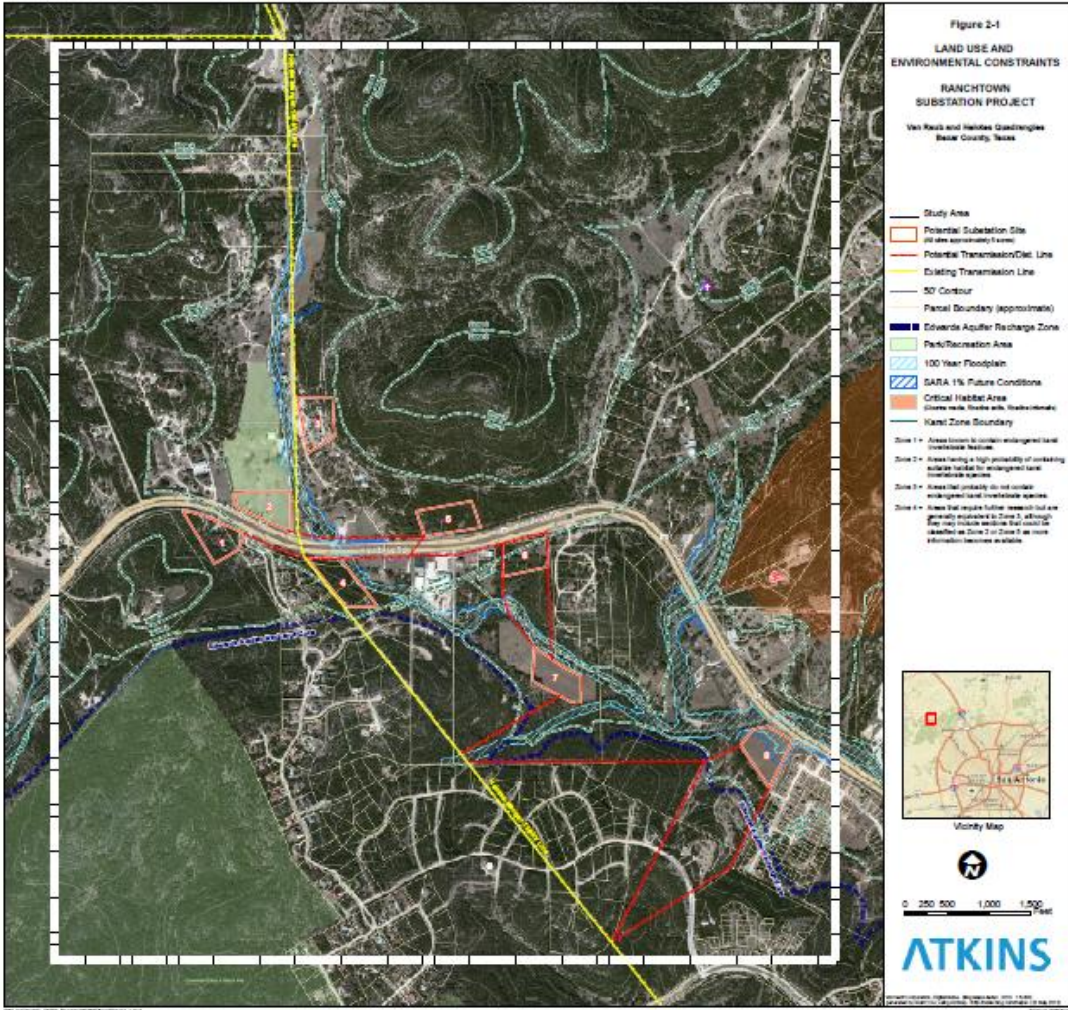
- City of San Antonio: Mayor, Council Members, Capital Improvement Management Services (CIMS), Public Works, Public Utilities, and the Chief Financial Officer
- City of Helotes
- San Antonio River Authority
- Area School Districts
- Alamo Area Council of Governments (AACOG)
- San Antonio Conservation Society
- San Antonio Water System (SAWS)
- Bexar Metropolitan Water District
- Bexar County: Judge, Commissioners, Chief of Staff, Floodplain Coordinator, Infrastructure Services, Government Relations, Economic Development and Special Programs
- Edwards Aquifer Authority

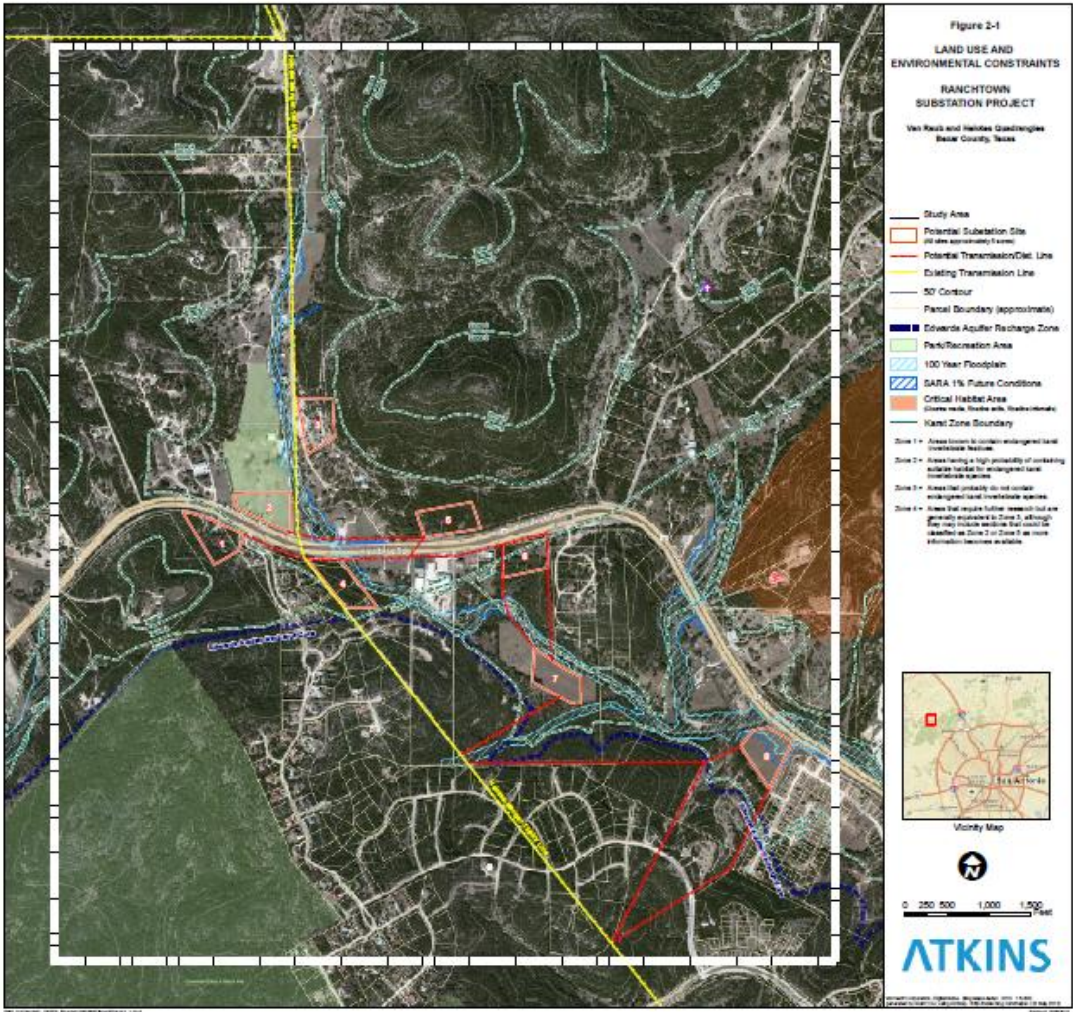
State

- Texas Department of Transportation: Aviation Division and Environmental Affairs Division
- Texas Parks and Wildlife Department
- Texas Water Development Board
- Texas Commission on Environmental Quality
- Texas Historical Commission
- Texas Senate
- Texas House of Representatives

Federal

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Federal Emergency Management Agency
- Federal Aviation Administration
- Natural Resources Conservation Service
- U.S. House of Representatives





Right-of-Way

- ❖ Sample 30' Easement Clearing
- ❖ Acquisition
- ❖ Sample Easement Clearing
- ❖ Constraints Map

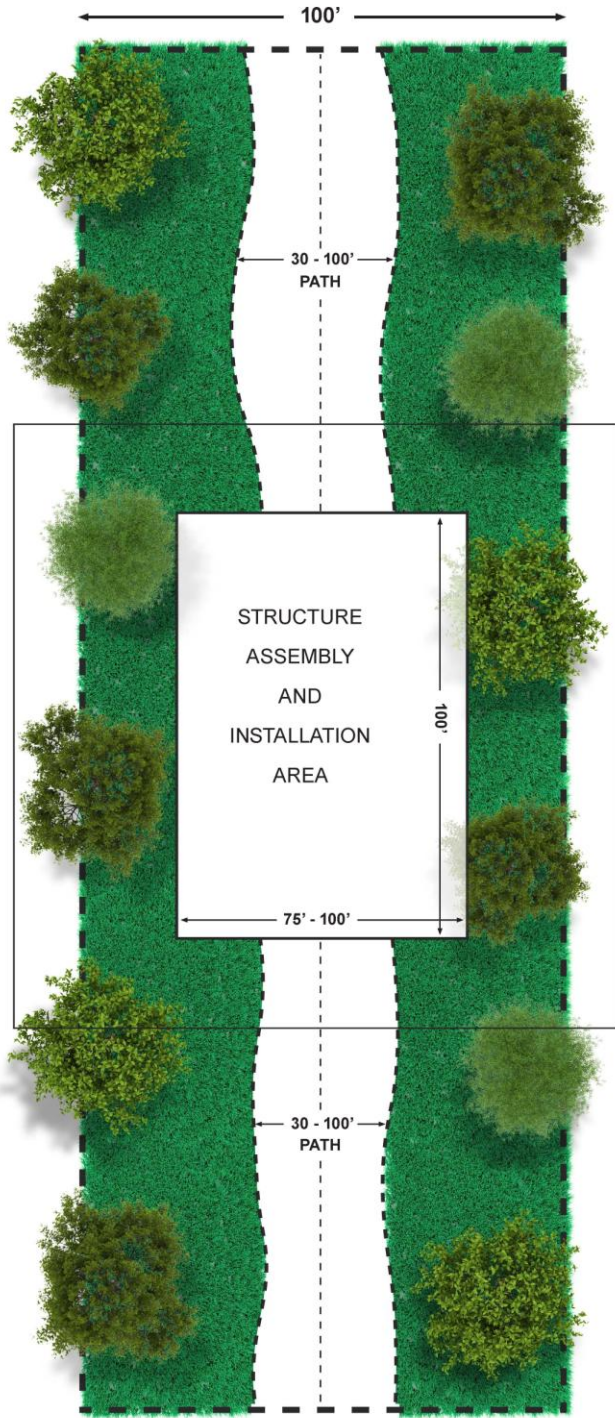
**Sample 30 Ft.
Easement Clearing**

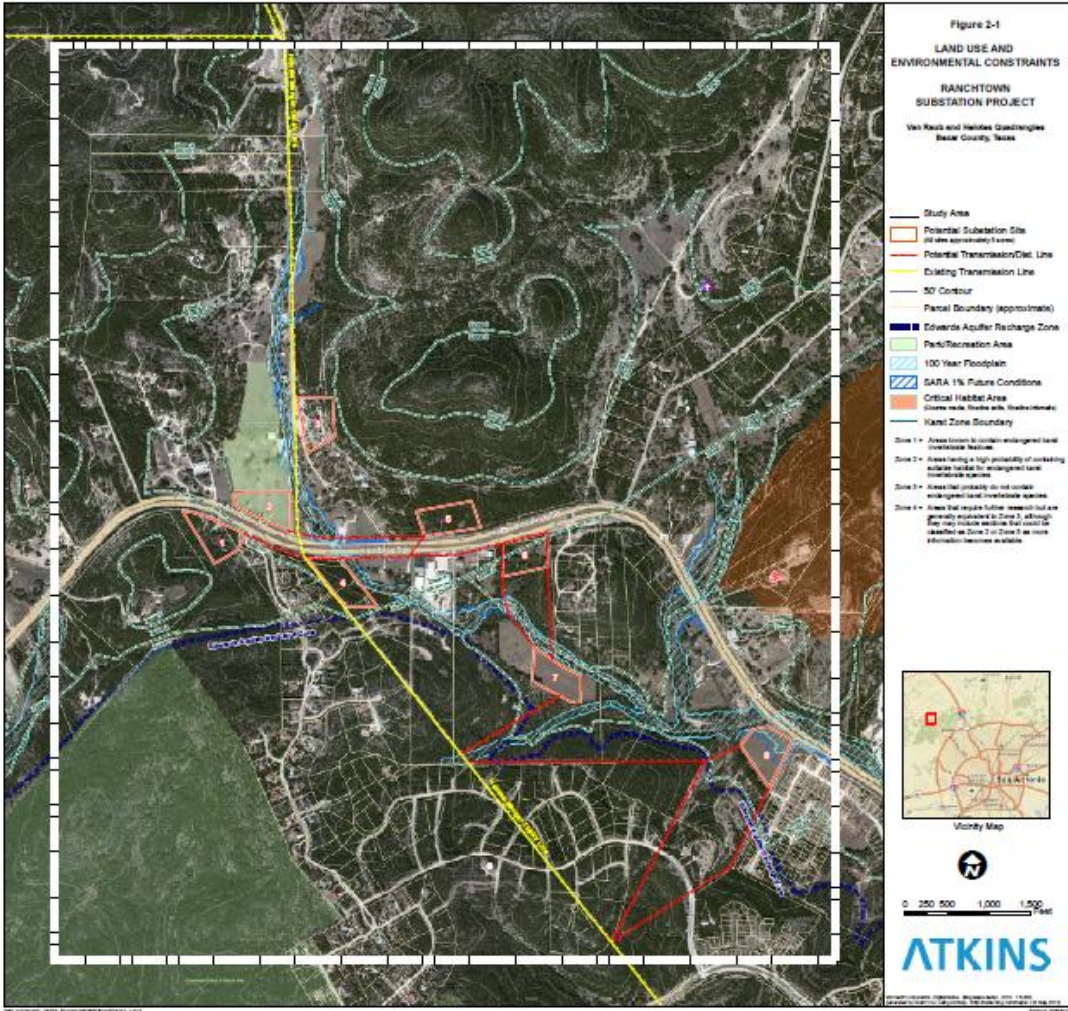


Acquisition

- Contact property owner
- Obtain permission to conduct survey(s)
- Survey establishes boundaries of substation/easement
(Simultaneously perform environmental/ cultural surveys)
- Substation/easement area is defined/ described by Registered Professional Land Surveyor
- Value of substation/easement established by independent appraiser
- Negotiate with property owner for substation site/easement or right-of-way for utility use

Sample Easement Clearing





Substation

- ❖ Substation Facts
- ❖ Typical Substations
- ❖ Typical Pole Structure
- ❖ Constraints Map
- ❖ Constraints Map

Substation Facts

Existing Substations

- As of 2012, there are 103 existing substations in the CPS Energy service area.
- Substations operate on either 345-kV or 138-kV transmission voltages and either 34.5-kV or 13.2-kV distribution voltages.

New Substations

- The general location for a substation is determined by the demand for electricity in that area.
- A substation site must have access to public roadway.
- A substation site must have access to transmission and distribution lines.
- Site conditions for a substation are:
 - Location –not located in a floodplain
 - Size –approx. 5 acres
 - Terrain –relatively flat
 - Soil –natural soil, void of fill and waste

Typical Substations



Typical Pole Structure

