OBJECTIVES & TAKEAWAYS

• SUPPORT CUSTOMER GROWTH
• PROVIDE MIDTOWN SUBSTATION UPDATE
  o GAIN UNDERSTANDING OF THE CHALLENGES WITH A FULLY DEVELOPED URBAN AREA
  o DISCUSS A STRATEGIC SITE THAT PROVIDES THE BEST OPTION WITH LEAST DISRUPTION
AGENDA

• MIDTOWN SUBSTATION OVERVIEW
• OPEN HOUSE DETAILS & FEEDBACK
• NEXT STEPS
WE ARE GROWING

PLAN OF ACTION

• Enhance the electric system to serve our customers

• Prepare for the future by building:
  o New substations
  o New transmission lines

• Engage with community through our public input process

The City of San Antonio’s (COSA) SA Tomorrow Plan projects the population will increase by 1 million by the year 2040.
MIDTOWN SUBSTATION

PROJECT NEED

- Serve Midtown & North Central regional areas - identified in COSA’s SA Tomorrow plan
- Increase capacity in the northern downtown area to support residential and commercial growth
  - Pearl Office Complex 1 & 2
  - Gray Street: mixed-use development
  - Broadway & Newell Streets: hotel/office
  - Jefferson Bank Headquarters
- Strengthen reliability
- Target date: Jan 2023
STRATEGIC SITE
MIDTOWN SUBSTATION

No displacement of residents or businesses

- A strategic purchase option currently exists on property
- Property Size:
  - 2.1 acres

Strategic substation site (2215 Belknap Place)
GOVERNANCE PROCESS

We are in the Public Involvement Phase – gathering/evaluating public input
PUBLIC INVOLVEMENT

OPEN HOUSE PARTICIPATION

• Invitations sent 2 weeks prior
  o 98 owners and residents within 350 feet notified
  o Neighborhood associations

• 27 registered attendees
  o 12 questionnaires submitted

• Governmental representatives
  o State Representative Diego M. Bernal
  o US Congressman Joaquin Castro
  o District 1 Councilman Roberto C. Treviño

Midtown Open House – Sept. 19, 2019

Valuable opportunity to visit with customers one-on-one during Open House to answer questions and obtain feedback
CUSTOMER CONCERNS & FEEDBACK

• Property Values & Aesthetics
• Increased Traffic
• Flooding & Drainage
• Electric & Magnetic Fields

We are working with customers to answer their concerns through additional outreach and mitigation efforts
SUBSTATION DESIGN
PROPERTY VALUE & AESTHETICS

Proposed Midtown Substation site – aerial view

Anticipated compact Gas-Insulated Substation (GIS) design example for Midtown
DECORATIVE WALL TYPES
ENHANCED AESTHETICS

Dresden Substation – decorative concrete wall
(artwork provided by COSA)

Exeter Substation – decorative concrete wall

Additional customer feedback to build a living wall & dog park
NEXT STEPS
PROJECT APPROVAL

• Board Operations Oversight Committee update
  Dec 5, 2019
• Informational presentation:
  o Citizens Advisory Committee (CAC)
    Jan 8, 2020
  o Board of Trustees
    Jan 27, 2020
• Board public input session (tentative date)
  Feb 13, 2020
• Board project approval
  Mar 30, 2020
Thank You
Appendix
<table>
<thead>
<tr>
<th>Acronym or Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arc Flash</td>
<td>An arc flash is the light and heat produced as part of an arc fault, a type of electrical explosion or discharge that results from a low-resistance connection through air to ground or another voltage phase in an electrical system.</td>
</tr>
<tr>
<td>Citizens Advisory Committee (CAC)</td>
<td>The 15-member Citizens Advisory Committee provides a channel for two-way communication between the community and the utility. City of San Antonio council members nominate 10 of the 15 members, one representing each district. The other five members are at-large candidates interviewed and nominated by the CAC from those submitting applications and resumes. The CPS Energy Board of Trustees appoints all members to the committee. Members can serve up to three two-year terms. The CAC meets monthly with the primary goal of providing judicious advice from a customer perspective on utility-related projects and programs.</td>
</tr>
<tr>
<td>Electric &amp; Magnetic Field (EMF)</td>
<td>Electric and magnetic fields are invisible areas of energy that are associated with the use of electrical power and various forms of natural and man-made lighting</td>
</tr>
<tr>
<td>Gas-Insulated Substation (GIS)</td>
<td>High-voltage substation in which the major structures are contained in a sealed environment with sulfur hexafluoride gas as the insulating medium.</td>
</tr>
<tr>
<td>Gas-Insulated Switchgear (GIS)</td>
<td>Compact metal encapsulated switchgear consisting of high-voltage components such as circuit-breakers and disconnectors, which can be safely operated in confined spaces.</td>
</tr>
<tr>
<td>Acronym or Word</td>
<td>Definition</td>
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<td>-----------------------------------------------------</td>
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<tr>
<td>National Institute of Environmental Health Sciences (NIEHS)</td>
<td>The National Institute of Environmental Health Sciences (NIEHS) conducts research into the effects of the environment on human disease.</td>
</tr>
<tr>
<td>Substation</td>
<td>Steps-down the 138,000 transmission voltage (138 kV) to 34,500 (34.5 kV) &amp; 13,800 (13.8 kV) distribution voltages to distribute to customers.</td>
</tr>
<tr>
<td>Transmission Line</td>
<td>A three phase system of conductors that conduct electric power between power plants, switchyards, and substations. Transmission voltages are higher to reduce line losses when transmitting power over long distances.</td>
</tr>
</tbody>
</table>
SUBSTATION DESIGN
STANDARD VS COMPACT

Standard Air-Insulated Substation (AIS)

Anticipated compact Gas-Insulated Substation (GIS) design for Midtown
GAS-INSULATED TECHNOLOGY

BENEFITS

- **Safety**
  - Arc-flash proof
- **Security**
  - Physical security increased as system is in a building
- **Environmental**
  - Protect against external wild life
  - Less impervious cover (drainage)
  - Sensors continuously monitor insulating gas
- **Reliability/Resiliency**
  - Not susceptible to external elements
  - No major maintenance for 25 years under normal operations conditions
  - Operating life cycle greater than 50 years
- **Affordability**
  - Less property required provides cost savings
  - Higher initial capital costs but lower O&M costs
  - Cost savings of displacing of residents & businesses

A 145 kV class GIS operated at 115 kV located in an enclosure in an urban area (high-side arrangement)
GOVERNANCE STRUCTURE

CPS Energy Board of Trustees

Board Operations Oversight Committee

President & CEO and Executive Committee

Working Committee

Project Team

CAC

Board

- Provides input & approves project

CPS Energy

- Leads R&S process
- CEO & Chiefs level provides oversight
- VPs & Sr. Executives level - provides ongoing review of R&S process

Project Team will meet with Committees at different stages of the project for oversight & guidance

Provides input to team & support of project to Board
GOVERNANCE COMMITTEES

Executive Committee:

- Paula Gold-Williams – President & CEO
- Cris Eugster – Chief Operating Officer
- Felecia Etheridge – Chief Customer Engagement Officer
- Carolyn Shellman – Chief Legal Officer & General Counsel
- Fred Bonewell – Chief Security, Safety & Gas Solutions Officer
- Vivian Bouet – Chief Information Officer
- Delores Lenzy-Jones – Chief Financial Officer & Treasurer
- Frank Almaraz – Chief Administration & Business Development Officer

Working Committee:

- Paul Barham – SVP, Delivery Engineering Integ Planning Substation & Transmission
- Kathleen Garcia – VP, Government & Regulatory Affairs & Public Policy
- Maria Garcia – VP, Community Engagement
- Jonathan Tijerina – Sr. Dir., Corporate Communications & Marketing
- Shanna Ramirez – Interim VP, Integrated Security
- Curt Brockmann – Interim VP, Compliance Ethics & Facilities Master Plng
- Shon Essman – Sr. Mgr., Engineering & Transport Services
- Gary Gold – VP, Accounting
AGENCY LIST

LOCAL

• City of San Antonio
• Alamo Area Council of Governments
• Edwards Aquifer Authority
• Alamo Soil and Water Conservation District
• San Antonio River Authority
• Bexar County Judge
• Bexar County Commissioners
• Bexar County Floodplain Administrator
• World Heritage Office
• Area School Districts
• Other Counties/Cities/Towns
AGENCY LIST

STATE

• Texas Department of Transportation
  o Aviation Division
  o Environmental Affairs
• Texas Water Development Board
• Texas Parks & Wildlife Department
• Texas Historical Commission
• Texas Commission on Environmental Quality
• Texas General Land Office
• Railroad Commission of Texas
AGENCY LIST

FEDERAL

- Natural Resources Conservation Service
- U.S. Army Corps of Engineers, Ft. Worth District
- U.S. Environmental Protection Agency
- Federal Emergency Management Agency
- Federal Aviation Administration
- National Parks Service
- U.S. Fish & Wildlife Service
- U. S. Department of Defense Siting Clearinghouse
MIDTOWN
LOAD FORECAST PROFILE

LOAD PROFILE

YEAR

MW


Expected Area Load
Planning Capacity
CUSTOMER FEEDBACK

HEALTH EFFECTS

Concern:
What are health effects due to electric & magnetic field (EMF)

Response:

• EMF exposure exists in homes and workplace
• According to the National Institute of Environmental Health Services (NIEHS):
  o Overall scientific evidence for human health risk from EMF exposure is weak
  o No consistent pattern of biological effects from exposure to EMF has emerged from laboratory studies with animals or with cells
  o EMF produced by substation equipment is typically indistinguishable from background levels beyond the perimeter
• No federal or state EMF regulations exist
• The transmission line will not introduce additional EMF levels since the transmission line already exist
**CUSTOMER FEEDBACK**

**PROPERTY VALUE & AESTHETICS**

**Concern:**
Decrease in property value due to new substation not aligning with neighborhood characteristics

**Response:**

- Substation design includes plans to improve aesthetics
  - Install decorative wall
  - Install Gas-Insulated Substation (GIS) technology versus Air-Insulated Substation (AIS)
    - Smaller footprint
    - Enclosed building to house high-voltage substation equipment
CUSTOMER FEEDBACK

FLOODING

Concern:
Potential flooding issues in the area as a result of the project

CPS Energy Response:

• Site is designed by a licensed professional engineer
• Design will not discharge onto adjoining residential properties
• Offsite runoff draining onto the site will be routed through substation property
• Design will abide by all COSA requirements regarding storm water runoff
• Permitting process requires review and approval by COSA developmental services department
CUSTOMER FEEDBACK

TRAFFIC

Concern:
Increased vehicular traffic due to new substation

Response:
• Will construct two driveways from the following streets:
  o San Pedro Rd
  o Belknap Rd
• Primary entrance from San Pedro side after site construction is complete
• After project completion, less traffic expected than compared to current use