# CPS Energy – San Antonio South Reliability Project – ERCOT Independent Review (EIR) Status Update

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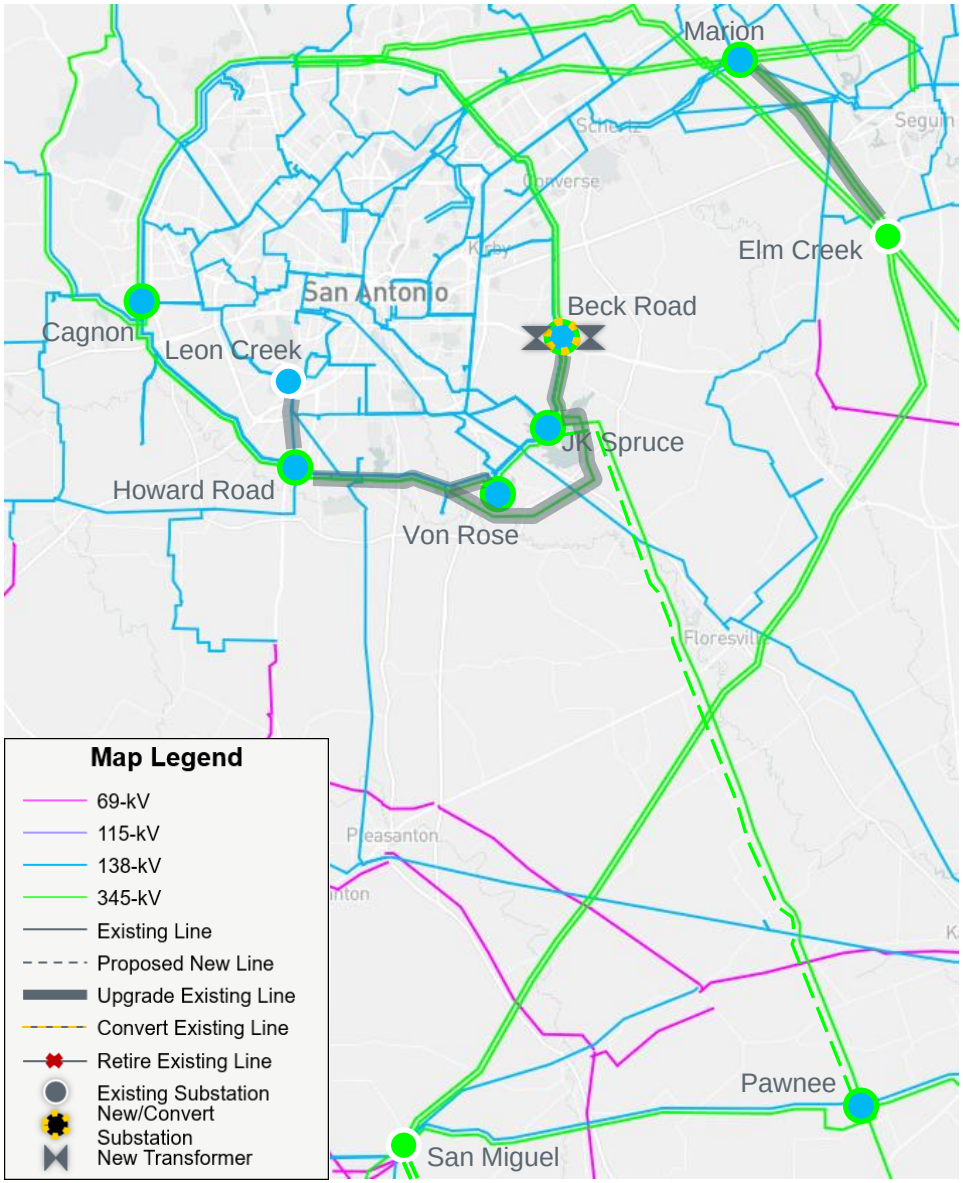
# Recap

- CPS Energy (CPS) submitted the San Antonio South Reliability Project for Regional Planning Group (RPG) review in December 2022
  - This Tier 1 project is estimated to cost $281 million and will require a Certificate of Convenience and Necessity (CCN)
  - Estimated in-service date: June 2027
  - Addresses thermal overloads in the San Antonio area
  - CPS has expressed need for “critical status designation”
- CPS Provided an overview presentation and ERCOT provided the study scope and then status updates at the January, February, and March RPG Meetings
  - https://www.ercot.com/calendar/01252023-RPG-Meeting
  - https://www.ercot.com/calendar/02142023-RPG-Meeting
  - https://www.ercot.com/calendar/03222023-RPG-Meeting
- This project is currently under ERCOT Independent Review (EIR)

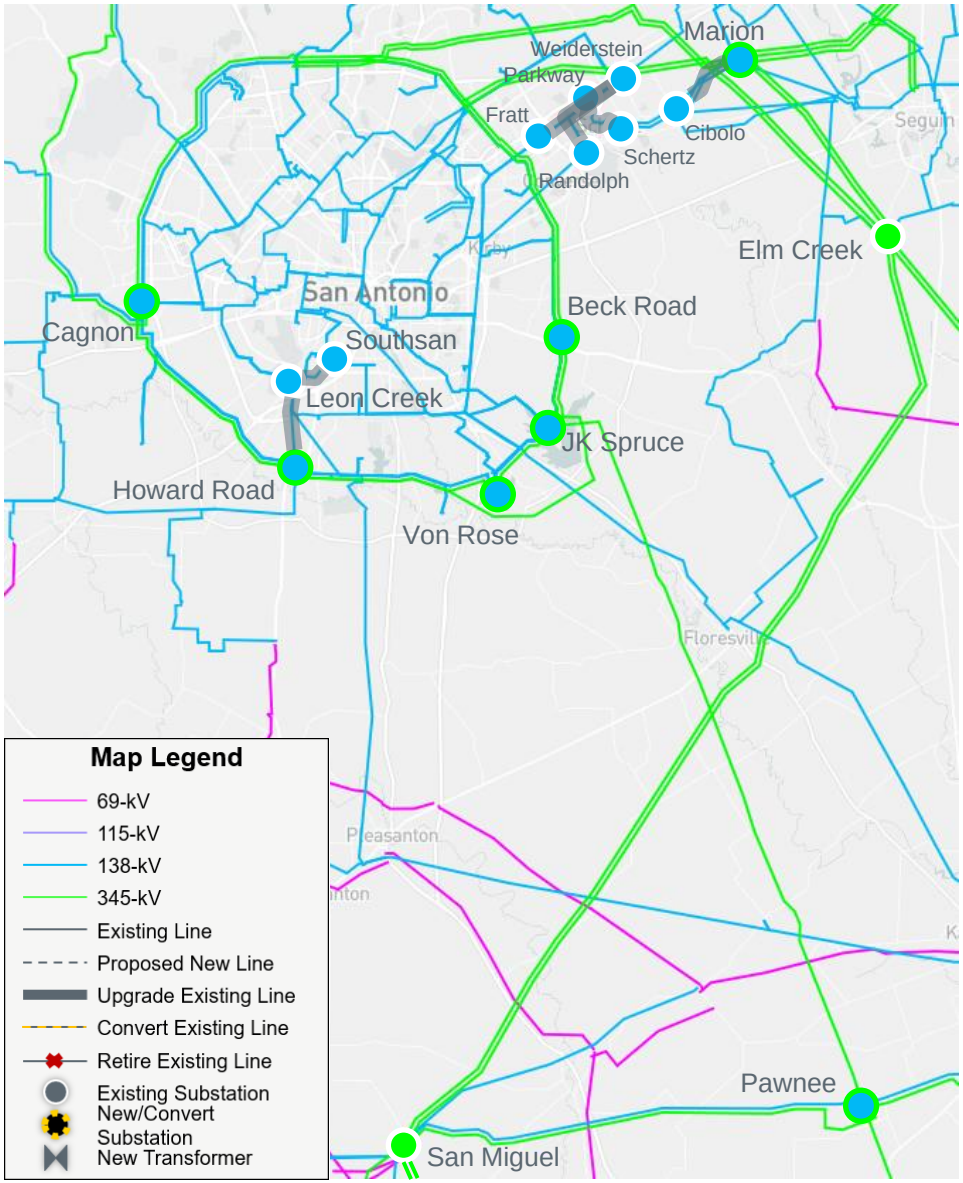
# Recap - Option 3

- Rebuild 45.8-mile Spruce to Pawnee 345-kV line to a double circuit transmission line
- Rebuild 35-mile Howard Rd to Spruce and Howard Rd to Von Rose 345-kV transmission lines
- Rebuild 13.9-mile Elm Creek to Marion 345-kV double circuit transmission line
- Rebuild 5.2-mile Beck to Spruce 345-kV double circuit transmission line
- Build Beck Road 345/138-kV switchyard and install two 600-MVA autotransformers



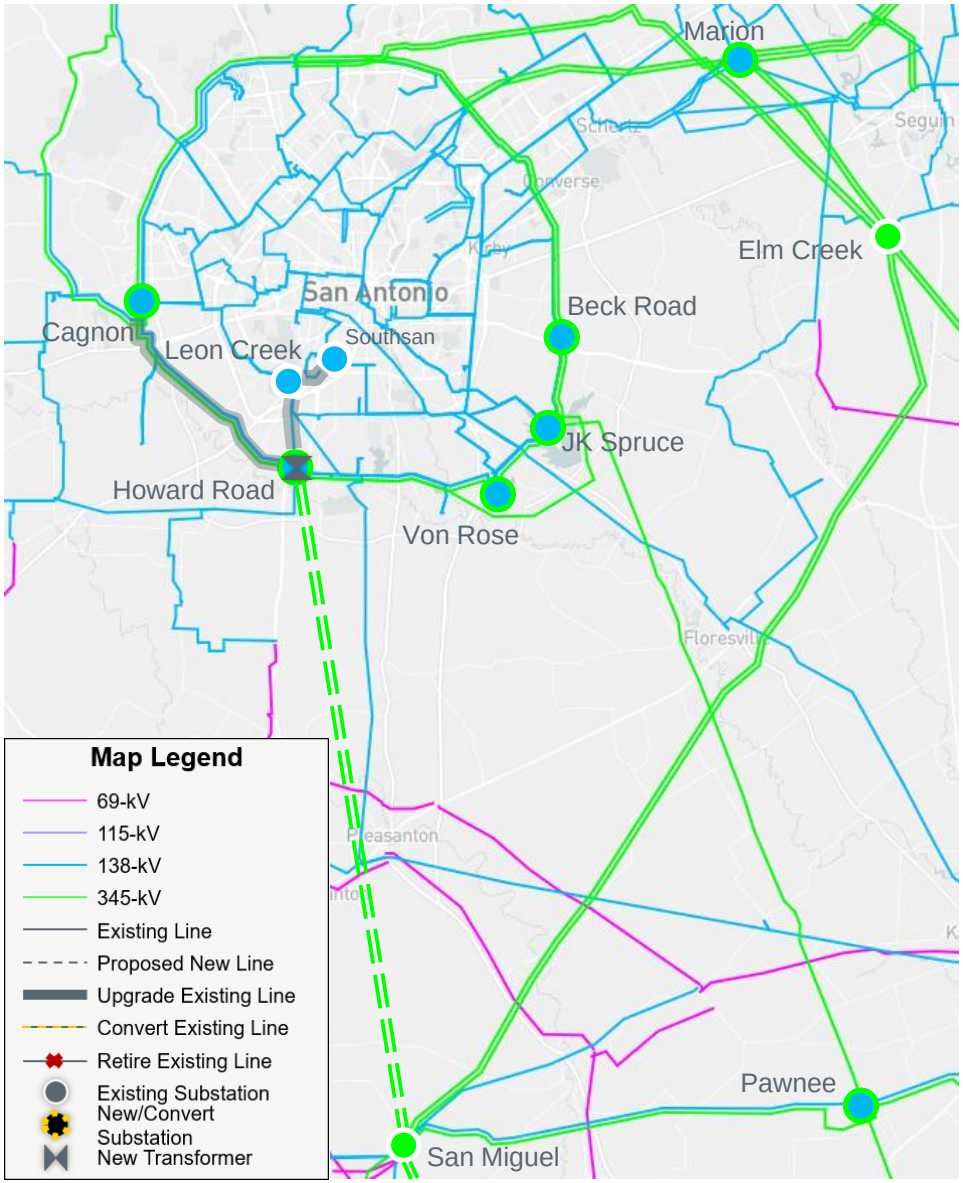
# Recap - Option 4

- Rebuild 4.9-mile Howard Rd to Leon Creek 138-kV transmission line
- Rebuild 2.9-mile Leon Creek to Southsan 138-kV transmission line
- Rebuild 4.1-mile Fratt to Parkway 138-kV transmission line
- Rebuild 5.5-mile Randolph to Weiderstein 138-kV transmission line
- Rebuild 4.8-mile Marion to Cibolo Double Circuit 138-kV transmission line
- Rebuild 2.8-mile Schertz to Parkway 138-kV transmission line



# Recap - Option 5 – CPS-Preferred Option with Additional Upgrades

- Construct new 50-mile Howard Road – San Miguel 345-kV double circuit transmission line
- Rebuild 14.9-mile Cagnon to Howard Road 345-kV double circuit transmission line
- Rebuild 4.9-mile Howard Road to Leon Creek 138-kV transmission line with a minimum Rate A of 698 MVA
- Add a third 600-MVA 345/138-kV autotransformer at Howard Road substation
- Rebuild 2.9-mile Leon Creek to Southsan 138-kV transmission line



# Analyses Performed

- Long Term Load Serving Capability Assessment
- Maintenance Outage Scenario Analysis
- 2022 Summer Peak Operations Case Sensitivity

# Long Term Load Serving Capability Assessment

- Scenario 1
  - Adjusted load up in substations in the Study Area (San Antonio area)
  - Adjusted conforming load down outside of the South Central weather zone to balance power
- Scenario 2
  - Adjusted load up in substations in the Study Area (San Antonio area)
  - Adjusted wind generation up in the Southern weather zone
- Based on N-1 contingency

| | Incremental Load Serving Capability (MW) | |
|---|---|---|
| **Option** | **Scenario 1** | **Scenario 2** |
| Basecase | 353 | 359 |
| 3 | 813 | 845 |
| 4 | 393 | 403 |
| 5 | 510 | 534 |

# Maintenance Outage Scenario Analysis

- ERCOT conducted planned maintenance outage analysis on all short-listed options to compare relative performance of the options
  - Load levels in the South and South Central Weather zones were scaled down based on the historical non-summer peak data, in order to mimic the non-summer peak load condition
  - Based on the review of system topology of the area, ERCOT tested 9,966 N-2 contingencies as a proxy for N-1-1, and then tested the applicable violating contingencies with system adjustments
- The following 138-kV Transmission Line constraints were observed

| Option | Thermal Loading* | Voltage Violation |
|---|---|---|
| Option 3 | Reduced | None |
| Option 4 | Increased | None |
| Option 5 | Reduced | None |

* Thermal constraints seen in the basecase were either reduced or increased for each option

# 2022 Summer Peak Operations Case Sensitivity

- ERCOT conducted a sensitivity analysis based on the 7/20/2022 Summer Peak Operations Case
- Critical contingencies and circuits seen in the N-1 Reliability Study, Maintenance Outage Scenario Analysis, and Long Term Load Serving Capability Assessment were monitored under N-0 and N-1 conditions

| Option | N-0 Loading on Spruce to Pawnee 345-kV Line (% MVA Limit) | N-1 Loading on Spruce to Pawnee 345-kV Line (% MVA Limit) |
|---|---|---|
| Basecase | 62 | 102 |
| Option 3 | 27 | 37 |
| Option 4 | 62 | 102 |
| Option 5 | 47 | 54 |

# Comparison of Short-listed Options

| | Option 3 | Option 4 | Option 5 |
|---|---|---|---|
| Met ERCOT and NERC Reliability Criteria | Yes | Yes | Yes |
| Improved Long Term Load Serving Capability | Yes (Better) | Marginally | Yes |
| Improved Performance in Summer Peak Operations Case Sensitivity | Yes | No | Yes |
| Improved Operational Flexibility | No | No | Yes |
| Provides an additional transfer path from South | No | No | Yes |
| Requires CCN (miles) | No | No | Yes (~50) |

# Next Steps and Tentative Timeline

- ERCOT will request cost estimates and feasibility assessments from CPS
- ERCOT will continue to evaluate options and provide status updates at future RPG meetings
  - ERCOT may perform a congestion analysis based on the recommended transmission upgrades to ensure that the identified transmission upgrades do not result in new congestion within the study area
  - Generation addition sensitivity analysis (Planning Guide (PG) section 3.1.3 (4) (a))
  - Load scaling sensitivity analysis (PG 3.1.3 (4) (b))
- Tentative timeline
  - Final recommendation – Q2 2023

# Thank you!


Stakeholder comments also welcomed through:

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