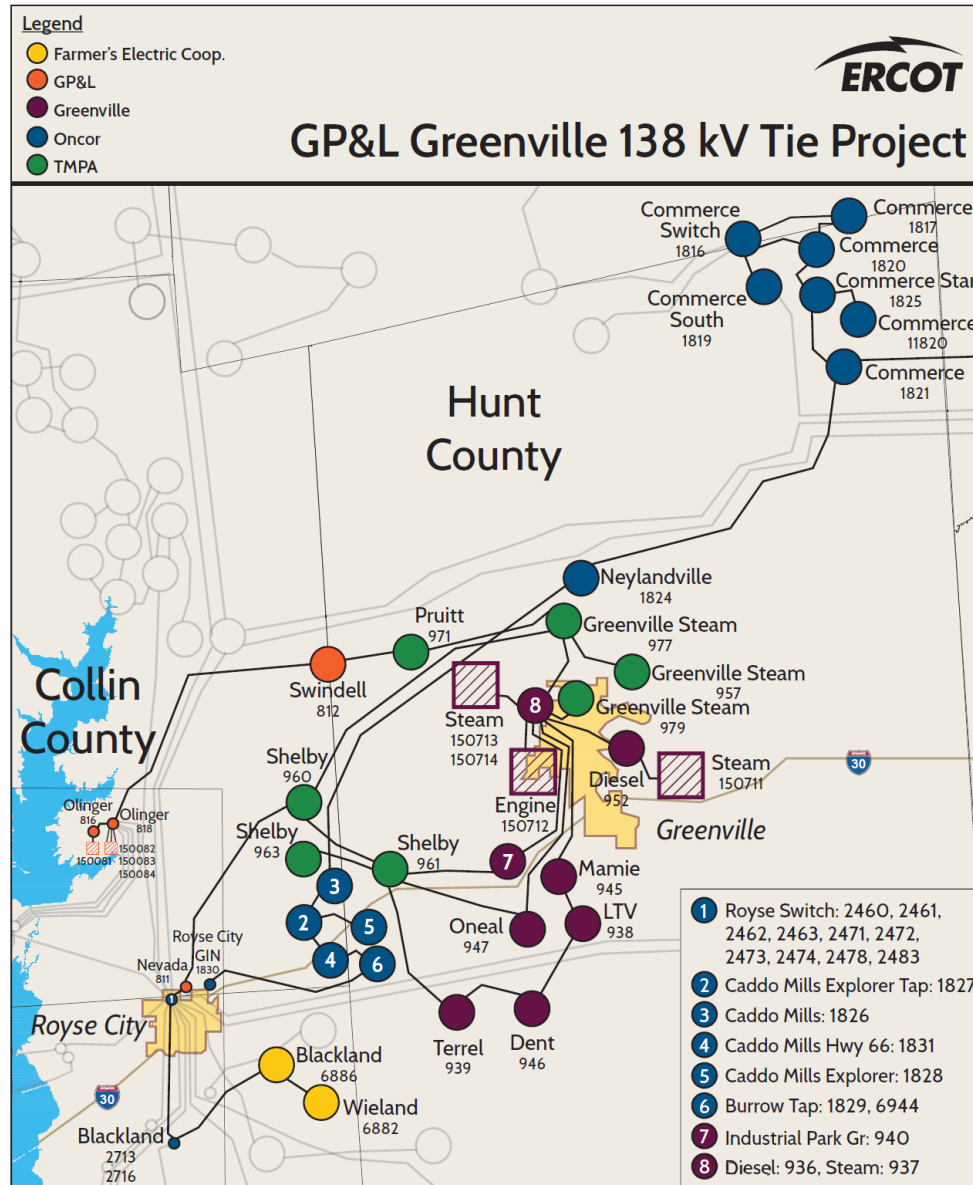


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# **Greenville Area Upgrade Project – ERCOT Independent Review Update**

**RPG Meeting  
May 19, 2015**

# Area of Concern



# Base Case Model

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- **Base Case**
  - 2014 RTP North-North Central Case for 2020 Summer Peak posted on Dec 29, 2014.
- **Project Options from Submittal**
  - Three study cases identified based on the RPG submittal by Garland Power and Light.

# Reliability Analysis

- **N-1 Contingency Analysis**

- Contingency definitions in 2014 RTP's 2020 Reliability Case
- Select line segment outages in the Hunt area
- Modeled the study with the Greenville Powerlane Plant offline as a sensitivity
- Modeled the tripping of the Greenville Engine plant as an additional sensitivity

Bus of Interest	RTP Worst N-1	Sensitivity Worst N-1	Sensitivity + Tripping Worst N-1
Terrell 69 kV (Greenville)	0.93	0.92	0.89

# Reliability Analysis

- **N-1-1 Base Case Contingency Analysis**
  - Hunt area 138 kV line and transformer outages (~360 contingency pairs)

N-1-1 Contingency	NERC Category	Islanded Load
Event 1	P6	144.4
Event 2	P6	144.4
Event 3	P6	125.5

# Project Options Studied

- Option 1: Hunt County Interchange converting existing 69 kV line to 138 kV
  - Build Hunt County Interchange substation under Commerce - Royse 69 kV line
  - Install 69/138 kV transformer at Hunt County Interchange
  - Convert 69 kV line to 138 kV from Hunt to Commerce Switch (~15 miles)
  - Build Hunt - Greenville Steam 138 kV line (~3.5 miles)
  - Tap Greenville - Mamie 69 kV line into Hunt (~0.5 miles)
- Option 2: Hunt County Interchange with new 138 kV line
  - Build Hunt County Interchange substation under Commerce - Royse 69 kV line
  - Tap Hunt substation into Commerce - Royse 69 kV line
  - Install 69/138 kV transformer at Hunt County Interchange
  - Build 138 kV line from Hunt to Commerce Switch (~12 miles)
  - Build Hunt - Greenville Steam 138 kV line (~3.5 miles)
  - Tap Greenville - Mamie 69 kV line into Hunt (~0.5 miles)
- Option 3: Dent Road Substation
  - Expand Dent 69 kV substation to 69/138 kV
  - New 69/138 kV Dent transformer
  - Build Dent - Shelby 138 kV line (~3.5 miles)
  - Build Dent - Wieland 138 kV line (~5 miles)

# Overall Comparison

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- **N-1 Analysis**

- All studied options resolved the base case and sensitivity study voltage issues in the Greenville area.
- Option 2 additionally resolved the low voltage issues in the nearby Oncor system.

- **N-1-1 Analysis**

- All studied options resolved the islanding of Greenville.
- Options 1 and 2 had no N-1-1 thermal violations related to Greenville.

- **Cost**

- Submitted options range in cost from \$15.5 to \$29.4 million

# Next Step

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- **ERCOT will complete the studies and update the cost estimates**
- **Final EIR report with the recommendation – June 10, 2015**



