



**Status Update on Oncor Flat Iron – Barr  
Ranch – Pegasus South 138-kV Line  
Project**

**ERCOT Independent Review**

**Md Moinul Islam**

**RPG Meeting  
November 9, 2021**

# Recap

- Oncor submitted the Flat Iron – Barr Ranch – Pegasus South 138-kV Line Project for RPG review in June 2021 to address the reliability issues primarily driven by the new confirmed load additions due to the expansion of oil and gas industries in the area
  - This is a Tier 2 project that is estimated to cost \$50.7 Million
  - Expected in-service date of the proposed project: Summer 2024
  - The proposed RPG project requires a Certificate of Convenience and Necessity (CCN)
- ERCOT presented the study scope, reliability issues and transmission upgrade option to address the reliability issues at the RPG meetings:
  - [August RPG Meeting - Study Scope](#)
  - [September RPG Meeting - Reliability Issues](#)
  - [October RPG Meeting - Transmission Upgrade Options](#)
- In this presentation, ERCOT will present the recommended system improvement option

# Recap

- All four transmission upgrade options resolved the reliability issues as identified in this ERCOT Independent Review (EIR). The details of four transmission upgrade options can be found in Appendix A
- ERCOT also performed an N-1-1 analysis for selected planned maintenance outages in the area to evaluate the performance of four transmission upgrade options

Performance Comparison	Option 1	Option 2	Option 3	Option 4
Thermal Overloads (Mileage)	Yes (7.2)	Yes (44.4)	No	No
Low Voltages (# of Bus)	Yes (47)	Yes (11)	Yes (1)	No
Unsolved Cases (# of Case)	Yes (1)	No	No	No

# Comparison of Transmission Upgrade Options

- Based on the EIR and input from the TSP, comparison of the four transmission upgrade options is summarized as follows:

Comparison	Option 1	Option 2	Option 3	Option 4
Meet NERC and ERCOT Reliability Criteria	Yes	Yes	Yes	Yes
Provide Operational Flexibility for Maintenance Outages	No	No	No	Yes
Provide Network Service, and Allow Better Future Load Growth	No	Yes	No	Yes
Cost Estimates (\$Million)*	135.9	54.6	43	63.1

\* The cost of the placeholder capacitor bank at Pronghorn is excluded from all four transmission upgrade options. Based on the input from the TSP about several load interconnections in the area, the size and exact location of a reactive device will be addressed independently in the near future

- Based on the comparison, ERCOT prefers Option 4 for this EIR

# Recommended Option

- ERCOT recommends Option 4 that consists of the following transmission upgrades
  - New 138-kV line from Flat Iron to Barr Ranch to ONC90025\_TAP to Pegasus South 138-kV Line (15 mi) on double-circuit structures with single-circuit in place
  - New 138-kV line from Skywest to Johnson Draw POD (2.8 mi)
  - Upgrade the existing 138-kV line from Pegasus South to Pleasant Farm (9.4 mi) with normal and emergency ratings of 614 MVA
  - Estimated cost: \$63.1 M
  - Estimated new right-of way (ROW): 17.8 miles
- Based on the input from the TSP about several load interconnections in the area, the size and exact location of a reactive device will be addressed independently in the near future

# Congestion Analysis

- Congestion analysis was performed for the preferred Option 4 using the latest 2021 RTP 2026 economic case
- Option 4 did not result in any new congestion within the study area

## Next Step

- As requested by Oncor, ERCOT designates the recommended project “critical” to the reliability of the system per PUCT Substantive Rule 25.101(b)(3)(D)
- Tentative Timelines
  - EIR Report to be posted in the MIS – Q4 2021



Stakeholder Comments Also Welcome Through:

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# Appendix A - Transmission Upgrade Options

- **Option 1**

- Upgrade the following 52.3 mi of 138-kV lines with normal and emergency ratings of 614 MVA
  - Tall City – Pecan Grove 138-kV CKT 1 (7.5 mi)
  - Pecan Grove – South Midland 138-kV CKT 1 (7.7 mi)
  - South Midland – Cottonfield Sub 138-kV CKT 1 (1 mi)
  - Cottonfield Sub – Pronghorn 138-kV CKT 1 (8.9 mi)
  - Buffalo – Triangle 138-kV CKT 1 (3.5 mi)
  - Triangle – Roughneck Tap 138-kV CKT 1 (5.3 mi)
  - Roughneck Tap – Germania POD 138-kV CKT 1 (4.2 mi)
  - Germania POD – Yosemite 138-kV CKT 1 (1.7 mi)
  - Yosemite – Blue Acres 138-kV CKT 1 (6.8 mi)
  - Blue Acres – South Midland 138-kV CKT 1 (5.7 mi)
- New 138-kV lines with normal and emergency ratings of 614 MVA on double-circuit structures with single-circuit in place
  - Barr Ranch to Flat Iron (6.2 mi) and Pegasus South to ONC90025\_TAP (4.4 mi)

# Appendix A - Transmission Upgrade Options

- **Option 2**

- New 138-kV line with normal and emergency ratings of 614 MVA on double-circuit structures with single-circuit in place
  - Flat Iron to Barr Ranch to ONC90025\_TAP to Pegasus South (15 mi)
- Upgrade the existing 138-kV line from Pegasus South to Pleasant Farm (9.4 mi) with normal and emergency ratings of 614 MVA

- **Option 3**

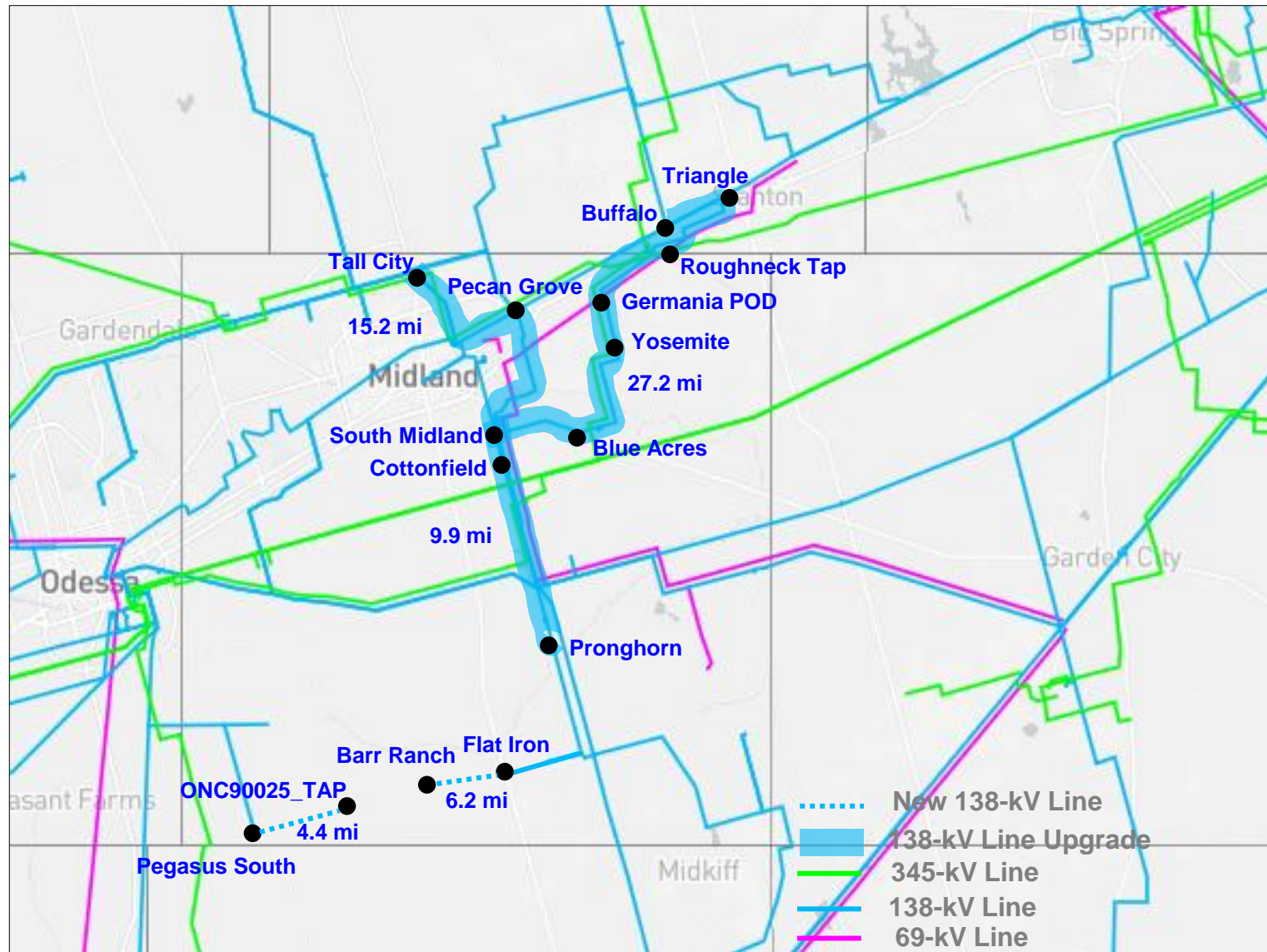
- New 138-kV lines with normal and emergency ratings of 614 MVA on double-circuit structures with single-circuit in place
  - Skywest to Johnson Draw POD (2.8 mi)
  - Barr Ranch to Flat Iron (6.2 mi)
  - Pegasus South to ONC90025\_TAP (4.4 mi)

# Appendix A - Transmission Upgrade Options

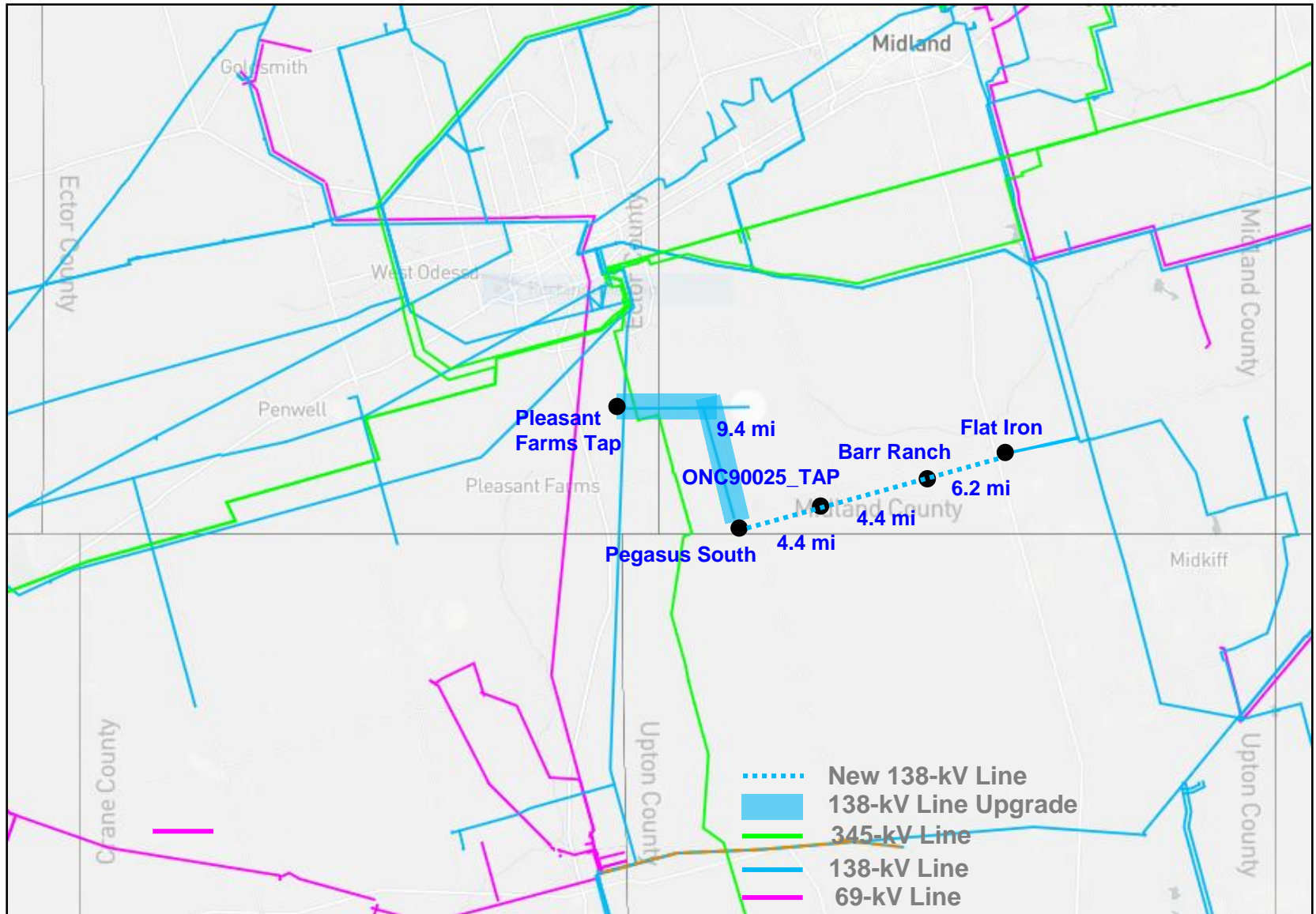
- **Option 4**

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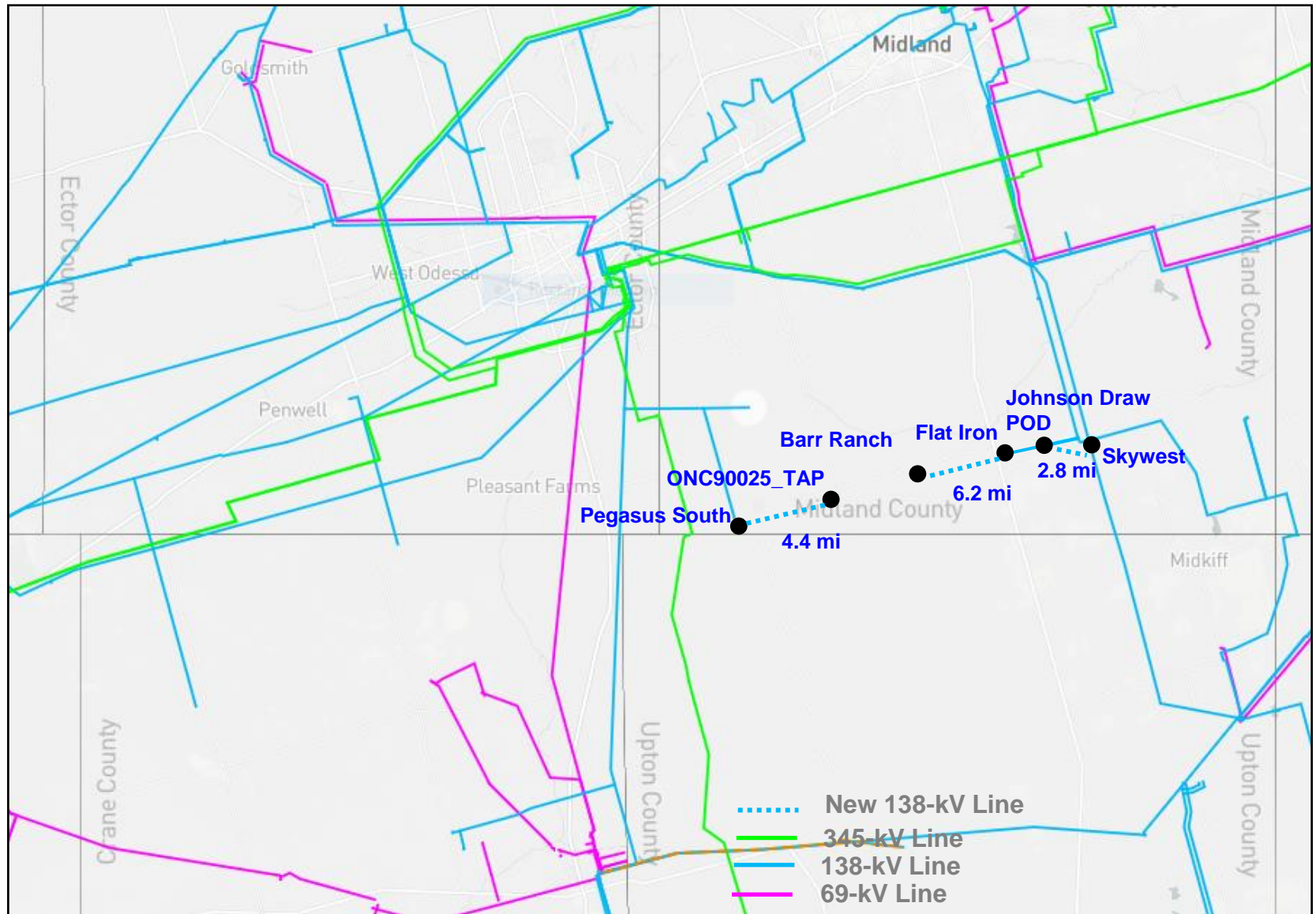
# Appendix A: Option 1



# Appendix A: Option 2



# Appendix A: Option 3



# Appendix A: Option 4

