



**AEPSC Aransas Pass to Rincon 69-kV
Line Rebuild Project – ERCOT
Independent Review Study**

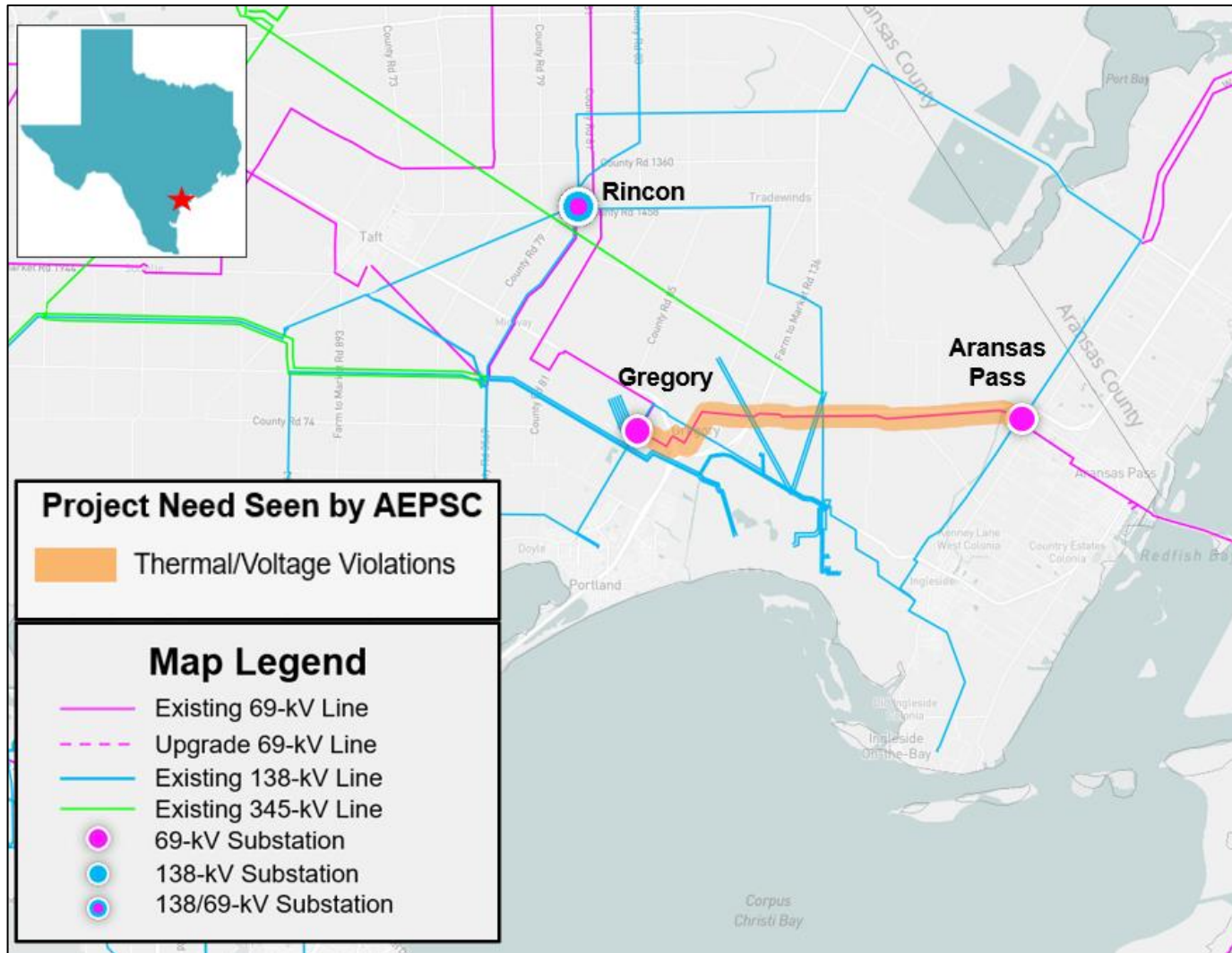
Travis Head

RPG Meeting
April 29, 2025

Recap – Introduction

- Aransas Pass to Rincon 69-kV Line Rebuild Project for Regional Planning Group (RPG) review in November 2024
 - This is a Tier 2 project with an estimated cost of \$33.0 million and will require a Certificate of Convenience and Necessity (CCN)
 - Estimated in-service date (ISD) is June 2026
 - This project is needed to address post-contingency thermal overloads in the San Patricio County
- AEPSC presented a project overview and ERCOT provided a project scope at the January 2025 RPG Meeting
 - <https://www.ercot.com/calendar/01282025-RPG-Meeting>
- ERCOT provided a project update March RPG Meeting
 - <https://www.ercot.com/calendar/03182025-RPG-Meeting>
- This project is currently under ERCOT Independent Review (EIR)

Recap – Study Area Map with Project Need Seen by AEPSC



Recap – Preliminary Results of Reliability Assessment – Updated Base Case

Contingency Category	Unsolved Power Flow	Voltage Violations	Thermal Overloads
P1	None	None	None
P2, P4, P5	None	None	None
P3 (G-1+N-1)*	None	None	None
P6.2 (X-1+N-1)**	None	None	None
P7	None	None	None

*G-1 Generators tested: Midway Wind, Nueces Bay Repower Stg 7, and Papalote Creek Wind II

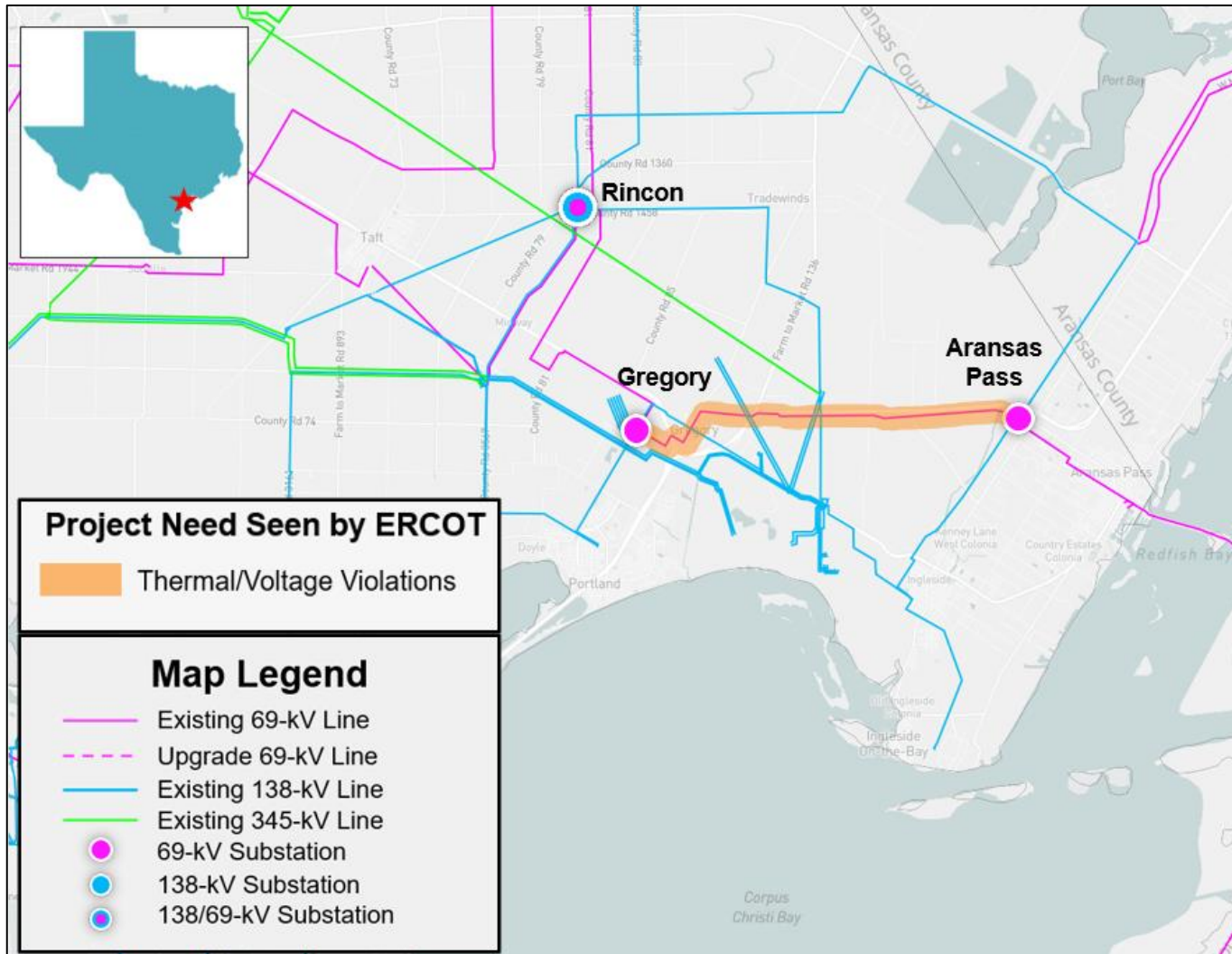
**X-1 Transformers tested: Lon Hill and Whitepoint 345/138-kV transformers

Preliminary Results of Planned Maintenance Outage Evaluation

- ERCOT conducted planned maintenance outage evaluation on the options
 - Load level in the South and South-Central Weather Zones were scaled down to 90.1% and 83.6% of their summer peak loads in the study base case, respectively based on ERCOT load forecast and historical load, in order to mimic the off-peak load condition
 - N-2 contingencies were tested as a proxy for N-1-1. Any applicable violating contingencies were further tested with system adjustments
 - The transmission elements in the San Patricio County were monitored in the maintenance outage evaluation
- Planned maintenance outage analysis results

Option	Voltage Violations	Thermal Overloads	Unsolved Power Flow
Base	None	1	None
1	None	None	None
2	None	None	None
3	None	None	None

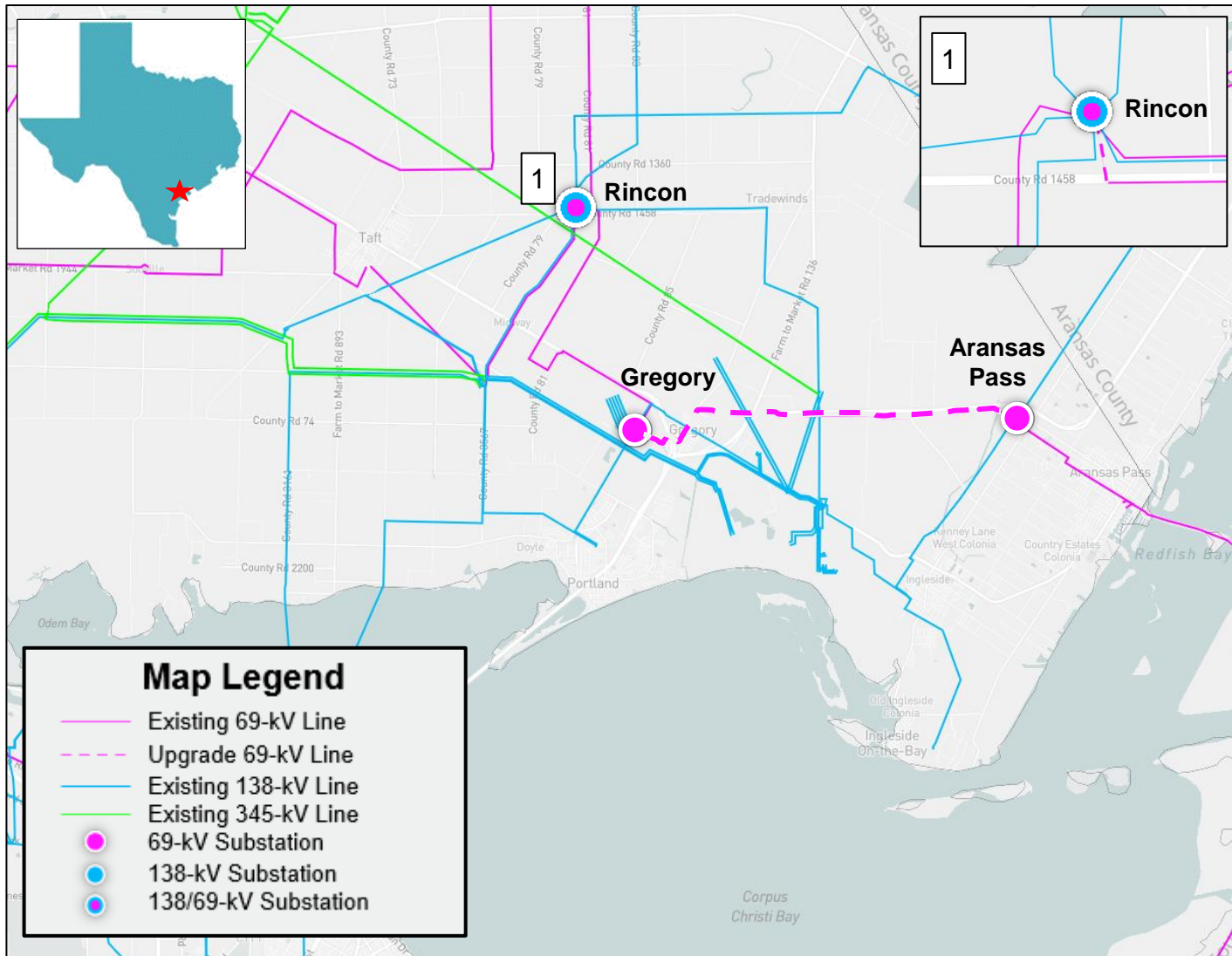
Study Area Map with Project Need Seen by ERCOT



Option 1 – AEPSC Proposed Project

- Rebuild the existing Aransas Pass to Gregory 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 8.5-mile
- Rebuild the existing Gregory to Rincon 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 0.03-mile
- Upgrade the existing Gregory substation to at least 2,000 A capable station. Replace bus-tie switch at Gregory with bus-tie breaker
- Upgrade the existing Gregory 69-kV transmission line terminal at Aransas Pass to at least 2,000 A capability
- Upgrade Gregory 69-kV line terminal at Rincon to at least 2,000 A capability

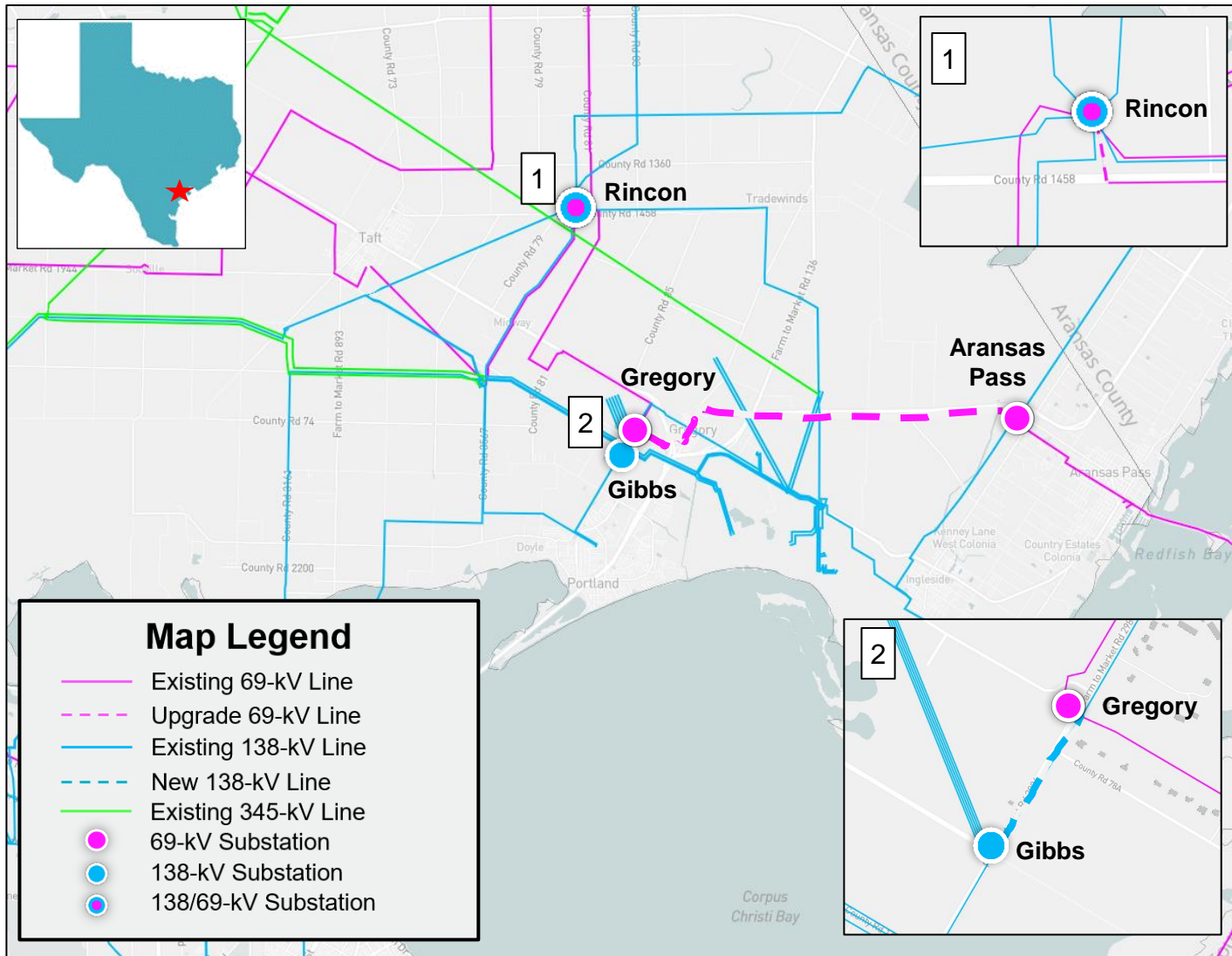
Option 1 – AEPSC Proposed Project



Option 2 – ERCOT Option

- Build a new Gregory to Gibbs 138-kV transmission line, normal & emergency ratings of at least 239 MVA, approximately 0.36-mile
- Install a new 138/69-kV transformer, normal & emergency ratings of at least 239 MVA
- Rebuild the existing Aransas Pass to Gregory 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 8.5-mile
- Rebuild the existing Gregory to Rincon 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 0.03-mile
- Upgrade the existing Gregory substation to at least 2,000 A capable station. Replace bus-tie switch at Gregory with bus-tie breaker
- Upgrade the existing Gregory 69-kV transmission line terminal at Aransas Pass to at least 2,000 A capability
- Upgrade Gregory 69-kV line terminal at Rincon to at least 2,000 A capability

Option 2 – ERCOT Option



Option 3 – ERCOT Option

- Build a new Ingleside – Dupont Switch to Ingleside 138-kV double-circuit transmission line, normal & emergency ratings of at least 478 MVA, approximately 3.25-mile
- Rebuild the existing Ingleside substation to at least 2,000 A capable station
- Install a new 138-kV line terminal at Ingleside – Dupont Switch to at least 2,000 A capability

Preliminary Results of Reliability Assessment – Options

	N-1		G-1+N-1*		X-1+N-1**	
Option	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations
1	None	None	None	None	None	None
2	None	None	None	None	None	None
3	None	None	None	None	None	None

*G-1 Generators tested: Midway Wind, Nueces Bay Repower Stg 7, and Papalote Creek Wind II

**X-1 Transformers tested: Lon Hill and Whitepoint 345/138-kV transformers

Preliminary Cost Estimate and Feasibility Assessment

- Transmission Service Providers (TSPs) performed feasibility assessments and provided preliminary cost estimates for the three options

Option	Cost Estimates (~\$M)	CCN Required (~Miles)	Feasibility
1	34.0	1.00	Yes
2	52.0	1.36	Yes
3	48.0	3.25	Yes

Long-Term Load-Serving Capability Assessment

- Adjusted load up in substations in the Study Area
- Adjusted conforming load down outside of the South and South Central Weather Zones to balance power
- Based on N-1 contingency limits

Option	Incremental Load-Serving Capability (~MW)
1	38.99
2	39.96
3	41.04

Comparison of Options

	Option 1	Option 2	Option 3
Meets ERCOT and NERC Reliability Criteria	Yes	Yes	Yes
Improves Long-Term Load-Serving Capability	Yes	Yes	Yes
Requires CCN (~miles)	Yes (1.00)	Yes (1.36)	Yes (3.25)
Project Feasibility	Yes	Yes	Yes
Cost Estimate* (~\$M)	34.0	52.0	48.0

*Cost estimates were provided by the TSP

ERCOT Preferred Option

- Option 1 is selected as the ERCOT preferred option because it:
 - Addresses the project need in the study area
 - Is the least expensive option and requires the least amount of CCN mileage
 - Improves Long-Term Load-Serving Capability

Additional Analyses

- Congestion Analysis
 - Congestion analysis was performed for the preferred option using the 2024 RTP 2029 economic case
 - The preferred option did not result in any new congestion within the study area

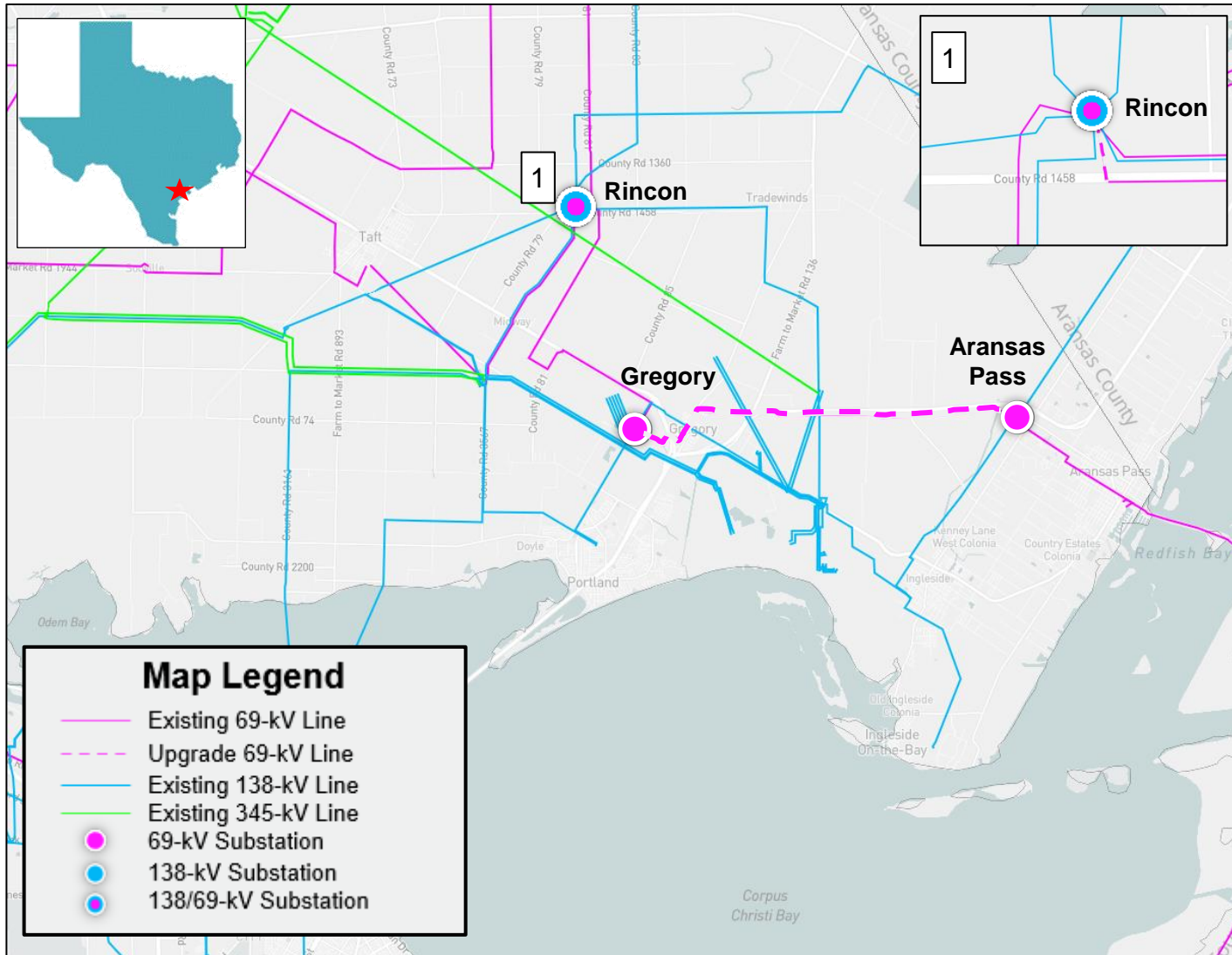
ERCOT Recommendation

- ERCOT recommends Option 1
 - Estimated Cost: approximately \$34.0 million
 - Expected ISD: June 2026
 - CCN filling will be required to:
 - Rebuild the existing Aransas Pass to Gregory 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 8.5-mile

ERCOT Recommended Option

- Rebuild the existing Aransas Pass to Gregory 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 8.5-mile
- Rebuild the existing Gregory to Rincon 69-kV transmission line to 138-kV capable, but operational at 69-kV, normal & emergency ratings of at least 239 MVA, approximately 0.03-mile
- Upgrade the existing Gregory substation to at least 2,000 A capable station. Replace bus-tie switch at Gregory with bus-tie breaker
- Upgrade the existing Gregory 69-kV transmission line terminal at Aransas Pass to at least 2,000 A capability
- Upgrade Gregory 69-kV line terminal at Rincon to at least 2,000 A capability

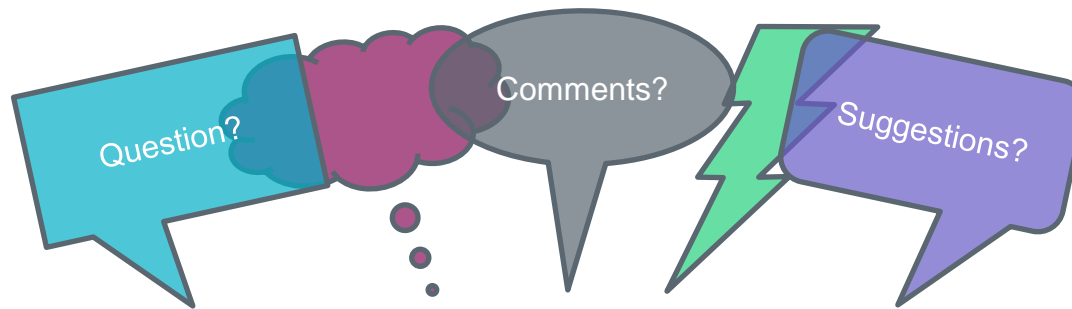
Map of ERCOT Recommended Option



Next Steps and Tentative Timeline

- Tentative Timelines
 - EIR Report will be posted in the MIS in May

Thank you!



Stakeholder comments also welcomed through:

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