# Rayburn Electric Cooperative Canton Loop - ERCOT Independent Review Study Status Update

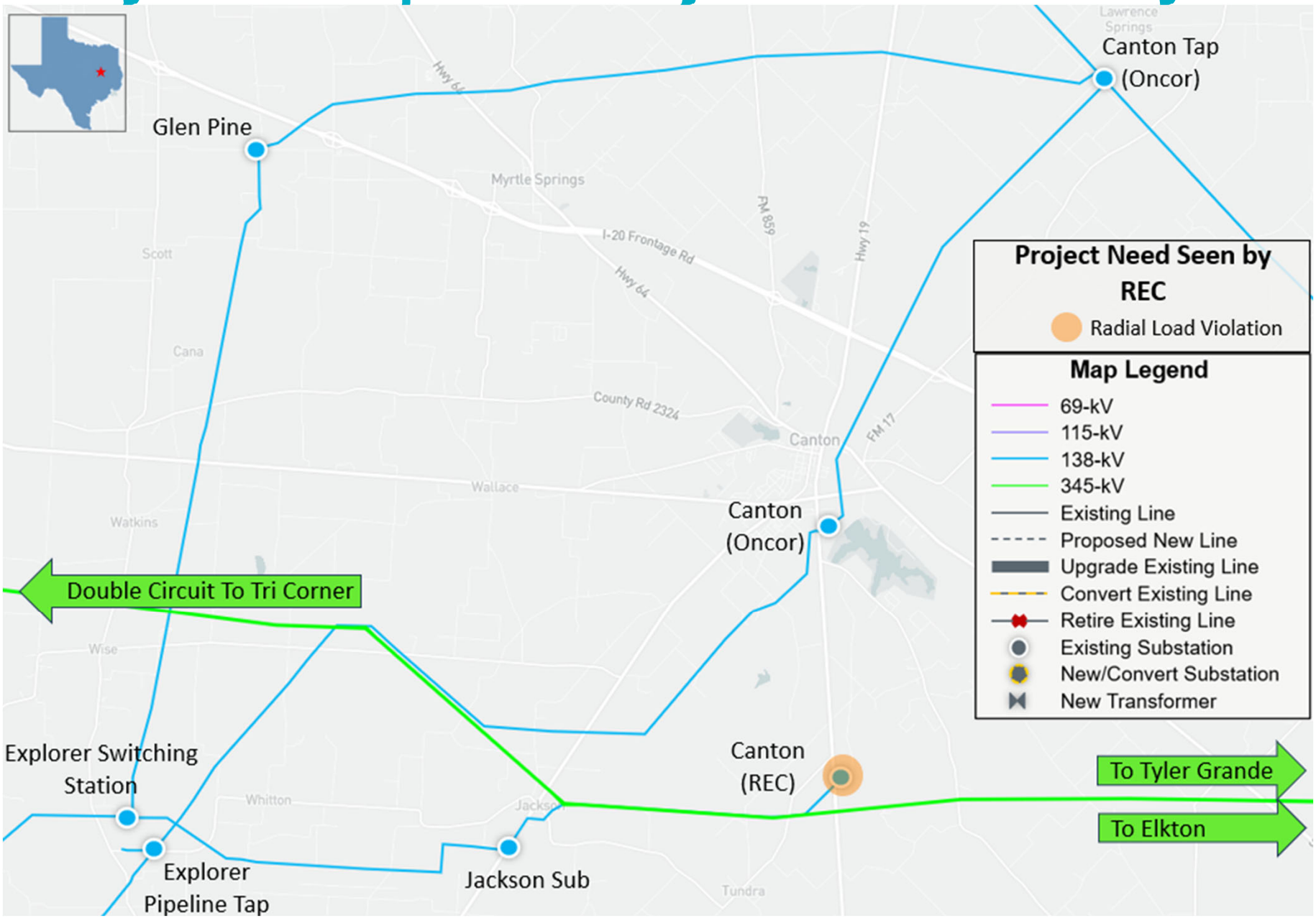
Ben Richardson

RPG Meeting
June 11, 2024

# Introduction

- Rayburn Electric Cooperative (REC) submitted the Canton Area Loop Project for Reginal Planning Group (RPG) review in March 2024
  - This Tier 2 project is estimated at $22.6 million and will require a Convenience and Necessity (CCN)
  - Estimated completion date is October 2026
  - To address REC planning criteria to limit radial load to less than 20 MW
  - Provide “Looped Service” for REC Canton Switchyard
- ERCOT presented study scope for this ERCOT Independent Review (EIR) at the May RPG Meeting:
  - https://www.ercot.com/calendar/05142024-RPG-Meeting
  - This project is currently under ERCOT Independent Review (EIR)

# Study Area Map with Project Need Seen by REC



# Preliminary Results of Reliability Assessment – Need Analysis

- ERCOT conducted steady-state load flow analysis for the study base case according to the NERC TPL-001-5.1 and ERCOT Planning Criteria to identify project need

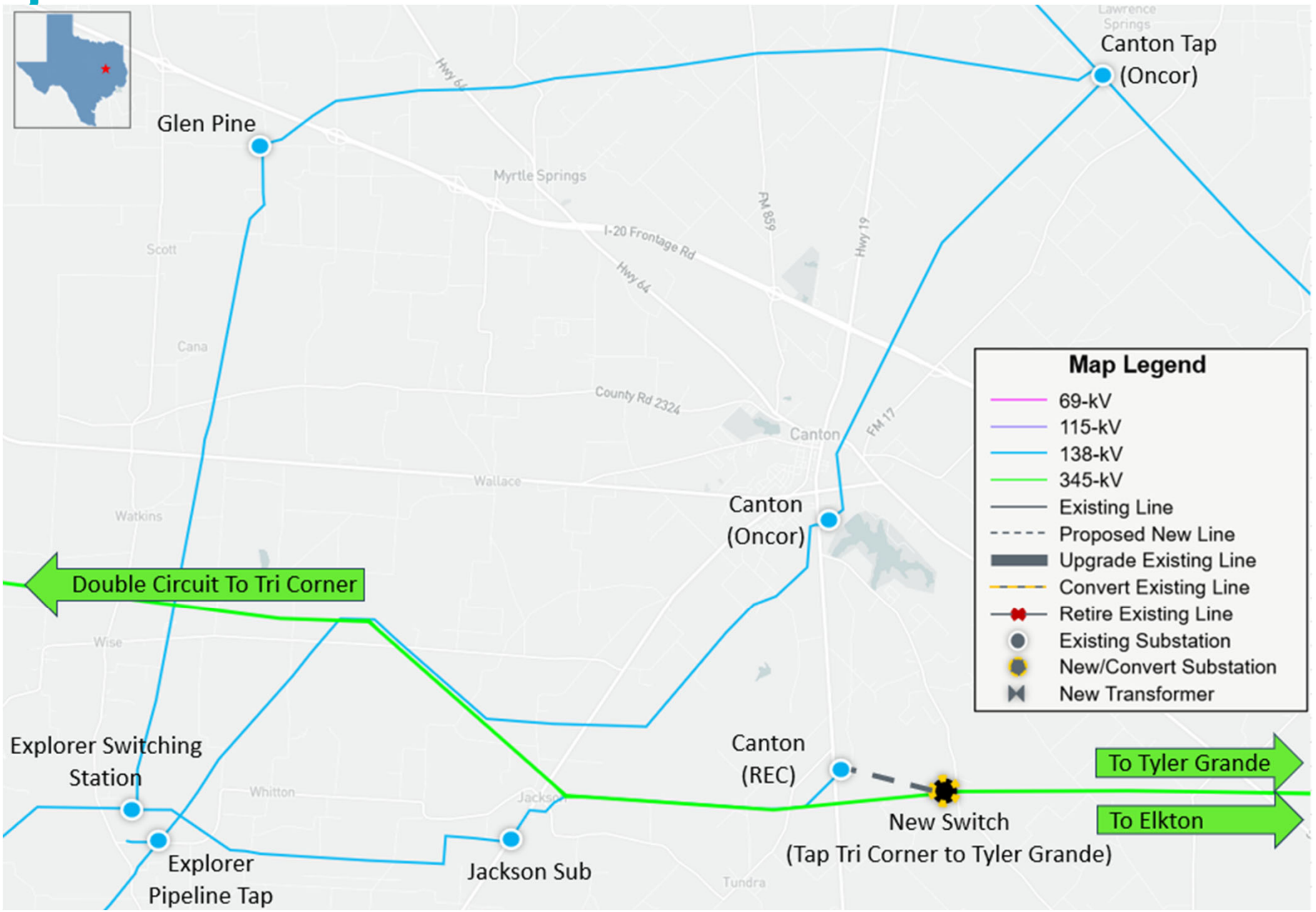
| Contingency Category | Voltage Violations | Thermal Violations | Unsolved Power Flow |
|---|---|---|---|
| N-0 (P0) | None | None | None |
| N-1 (P1, P2-1, P7) | None | None | None |
| G-1+N-1 (P3)* | None | None | None |
| X-1+N-1 (P6-2)** | None | None | None |

* G-1: Trinidad Unit 6 and Glenpine Solar
** X-1: Elkton, Tyler Grande, Forest Grove, and Sulphur Springs 345/138-kV autotransformers

# Option 1

- Construct a new 345/138-kV Switchyard, at a tap point on the Tri Corner to Tyler Grande 345-kV line
- Upgrade Canton 138-kV (REC) to  3-breaker ring bus configuration
- Construct a new approximately 0.4-mile Canton (REC) to new 345/138-kV Switchyard 138-kV transmission line with ratings of at least 669/752 MVA Normal/Emergency Rating

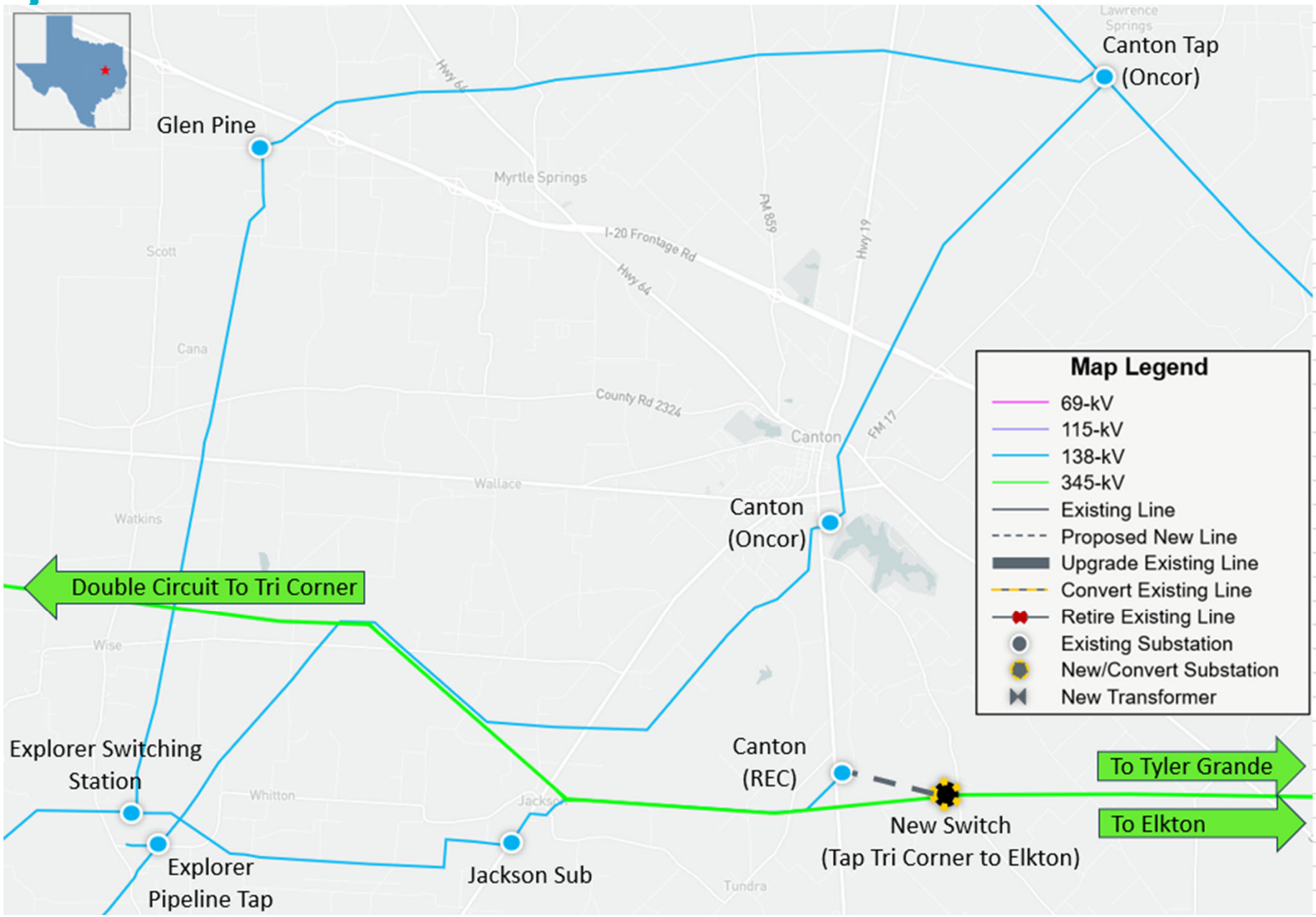
# Option 1


Glen Pine
Canton Tap
(Oncor)
Canton
(Oncor)
Double Circuit To Tri Corner
Explorer Switching
Station
Explorer
Pipeline Tap
Jackson Sub
Canton
(REC)
New Switch
(Tap Tri Corner to Tyler Grande)
To Tyler Grande
To Elkton
Map Legend
69-kV
115-kV
138-kV
345-kV
Existing Line
Proposed New Line
Upgrade Existing Line
Convert Existing Line
Retire Existing Line
Existing Substation
New/Convert Substation
New Transformer
Myrtle Springs
Scott
Cana
Wallace
Watkins
Wise
Whitton
Canton
Tundra
I-20 Frontage Rd
Hwy 64
County Rd 2324
FM 859
Hwy 19
FM 17

# Option 2

- Construct a new 345/138-kV Switchyard, at a tap point on the Tri Corner to Elkton 345-kV line
- Upgrade Canton 138-kV (REC) to  3-breaker ring bus configuration
- Construct a new approximately 0.4-mile Canton (REC) to new 345/138-kV Switchyard 138-kV transmission line with ratings of at least 669/752 MVA Normal/Emergency Rating

# Option 2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Cana
Wallace
Watkins
Wise
Whitton
Jackson
Tundra
Canton
Lawrence
Springs
I-20 Frontage Rd
Hwy 64
Hwy 19
FM 859
FM 17
County Rd 2324

# Option 3

- Construct a new Oncor 138-kV Switchyard, with 3-breaker ring bus configuration, at a tap point between Canton (Oncor) and Explorer Pipeline Tap
- Upgrade Canton 138-kV (REC) to  3-breaker ring bus configuration
- Construct a new approximately 4.2-mile Canton (REC) to new Oncor Switchyard 138-kV transmission line with ratings of at least 669/752 MVA Normal/Emergency Rating

# Option 3


Canton Tap
(Oncor)
Glen Pine
Myrtle Springs
I-20 Frontage Rd
Hwy 64
Scott
Cana
County Rd 2324
Canton
Wallace
Watkins
Wise
Whitton
Tundra
Canton
(Oncor)
New Switch
(Oncor)
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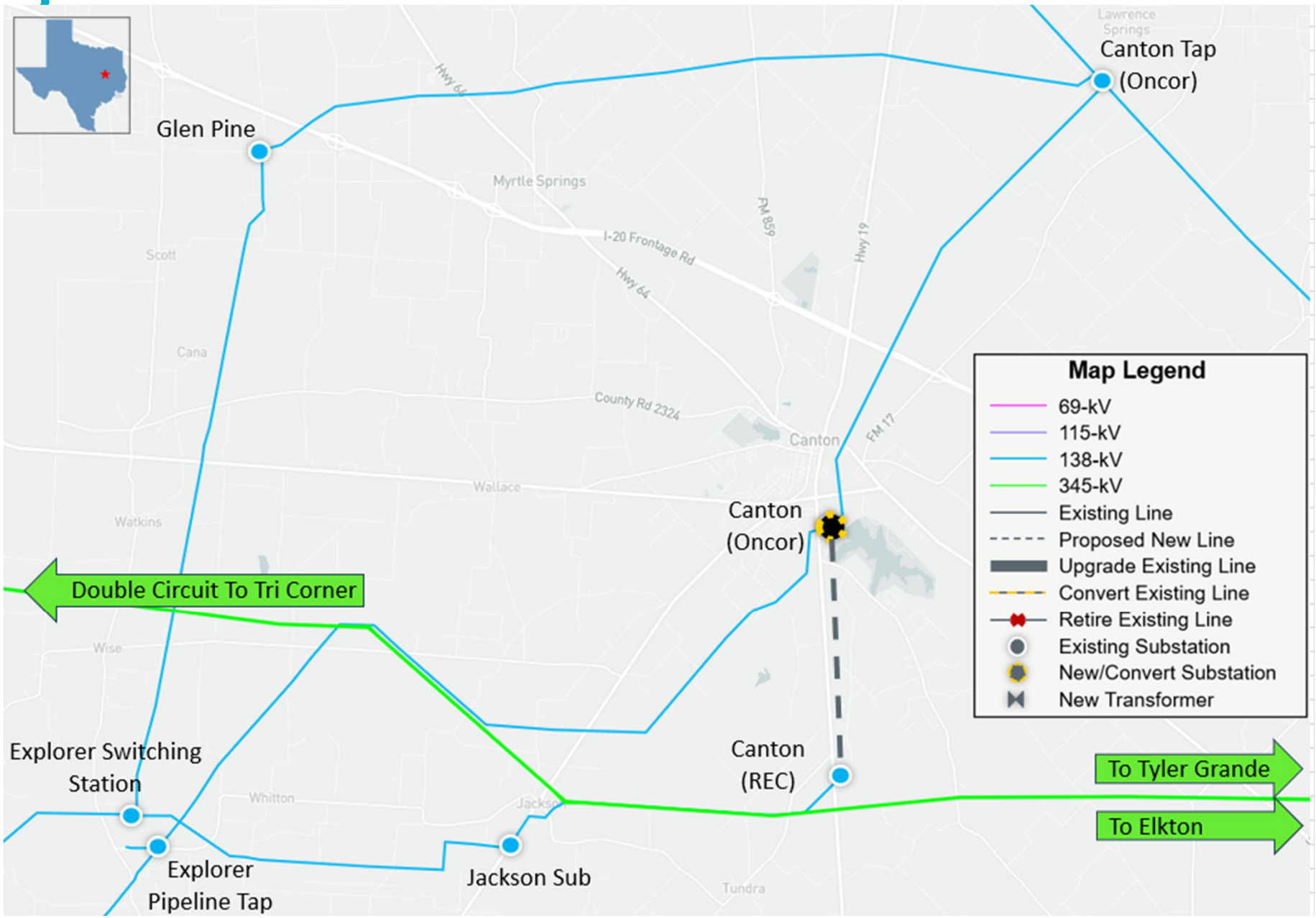
Explorer Switching
Station
Explorer
Pipeline Tap
Jackson Sub
Canton
(REC)
To Tyler Grande
To Elkton
Map Legend
69-kV
115-kV
138-kV
345-kV
Existing Line
Proposed New Line
Upgrade Existing Line
Convert Existing Line
Retire Existing Line
Existing Substation
New/Convert Substation
New Transformer

# Option 4

- Upgrade existing Oncor 138-kV Canton Substation, with 3-breaker ring bus configuration
- Upgrade Canton 138-kV (REC) to  3-breaker ring bus configuration
- Construct a new approximately 4.2-mile Canton (REC) to upgraded Oncor Canton Substation138-kV transmission line with ratings of at least 669/752 MVA Normal/Emergency Rating

# Option 4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Retire Existing Line
Existing Substation
New/Convert Substation
New Transformer

# Preliminary Results of Reliability Assessment – Options

| Option | N-1 | | G-1 + N-1 | | X-1 + N-1 | |
|---|---|---|---|---|---|---|
| | Thermal Violations | Voltage Violations | Thermal Violations | Voltage Violations | Thermal Violations | Voltage Violations |
| Base Case | None | None | None | None | None | None |
| Option 1 | None | None | None | None | None | None |
| Option 2 | None | None | None | None | None | None |
| Option 3 | None | None | None | None | None | None |
| Option 4 | None | None | None | None | None | None |

# Next Steps

- Project evaluation
  - ERCOT may also perform the following studies:
    - Planned maintenance outage
    - Long-term Load Serving Capability Assessment
  - The TSP will provide the Cost Estimate and Feasibility Assessment
- Congestion analysis
  - Congestion analysis may be performed based on the recommended transmission upgrades to ensure that the identified transmission upgrades do not result in new congestion within the study area

# Deliverables

- Tentative Timeline
  - Final Recommendation – Q3 2024

*Thank you!*


Stakeholder comments also welcomed through:

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