

PUBLIC



Lubbock Power & Light (LP&L) West Loop Project (25RPG037) – ERCOT Independent Review (EIR) Recommendation

Travis Head

Regional Planning Group (RPG) Meeting
October 20, 2026

Introduction

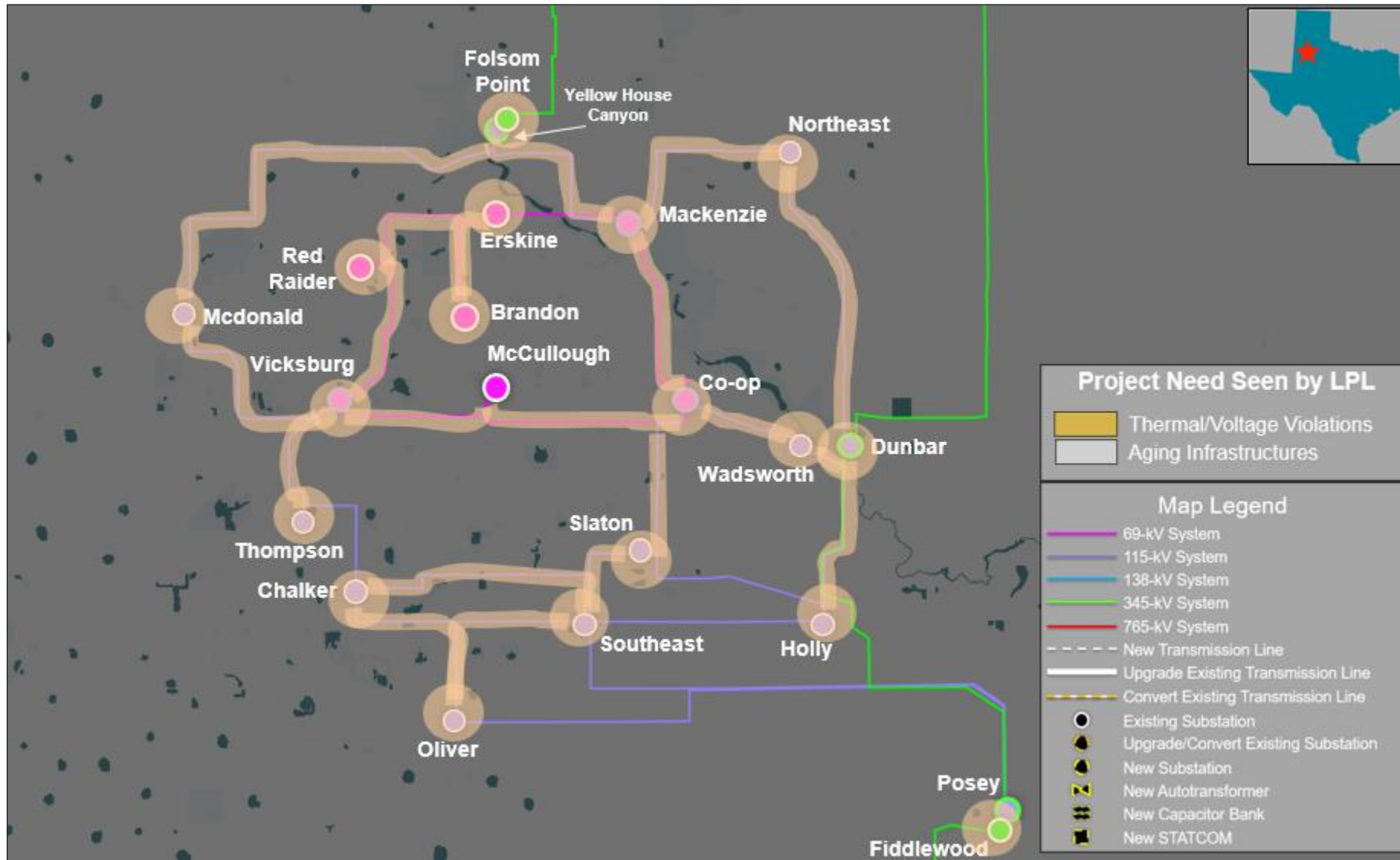
Lubbock Power & Light (LP&L) submitted the West Loop Project (25RPG037) for Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) review in October 2025

- This is a Tier 1 project with an estimated cost of approximately \$309.0 million and would require a Certificate of Convenience and Necessity (CCN)
- Estimated in-service date (ISD) is Summer 2030
- Addresses post-contingency thermal overloads and voltage violations seen by LP&L in the Lubbock County in the North Weather Zone and meet LP&L Planning Criteria

This project is currently under ERCOT Independent Review (EIR)

- LP&L presented a project overview and ERCOT provided the EIR scope at the [January 2026 RPG Meeting](#)
- ERCOT provided EIR a status update at the previous RPG Meetings:
 - [June 2026 RPG Meeting](#)
 - [July 2026 RPG Meeting](#)
 - [August 2026 RPG Meeting](#)
 - [September 2026 RPG Meeting](#)

Study Area Map with Project Needs Seen by LP&L



Study Assumptions

Study Region

- This project is located in the Lubbock County in the North Weather Zone and all the transmission elements that are electrically close were monitored

Steady-State Base Case

- Final [2025 Regional Transmission Planning \(RTP\)](#) 2030 summer peak load case, published on Market Information System (MIS) on December 22, 2025, was updated to construct the study base case

Transmission Updates

- No new transmission projects, based on February 2026 [Transmission Project and Information Tracking \(TPIT\) report](#) or recently approved RPG projects, were added to the base case
- No transmission projects identified in the 2025 RTP in the study area that have not been approved by RPG were removed

Generation Updates

- No new generation that met ERCOT Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the June 2030 (ISD) in the study area at the time of the study, but not already modeled in the RTP cases, was added to the case based on April 2026 [Generator Interconnection Status \(GIS\) report](#) published in MIS in May 2026
- All generation was dispatched consistent with the 2025 RTP methodology

Load and Reserve Updates

- Loads in the study region were revised based on Transmission Service Provider (TSP) Attestation Letter provided by LP&L in April 2026, approximately 198 MW of load in the study region was updated to create the study base case
- The reserve was kept consistent with the 2025 RTP

Contingencies & Criteria

Contingencies for Study Region

- NERC Reliability Standard TPL-001-5.1 and [ERCOT Planning Criteria](#)
 - P0 (System Intact)
 - P1, P2-1, P7 (N-1 conditions)
 - P2-2, P2-3, P4, and P5 (Extra High Voltage (EHV) only)
 - P3: (G-1+N-1) (G-1: list in [Appendix A](#))
 - P6-2: (X-1+N-1) (X-1: list in [Appendix A](#))

Criteria

- Monitor all 60-kV and above busses, transmission lines, and transformers in the study region (excluding generator step-up transformers)
- Thermal
 - Use Rate A for normal conditions
 - Use Rate B for emergency conditions
- Voltage
 - Voltages exceeding their pre-contingency and post-contingency limits
 - Voltage deviations exceeding 8% on non-radial load buses

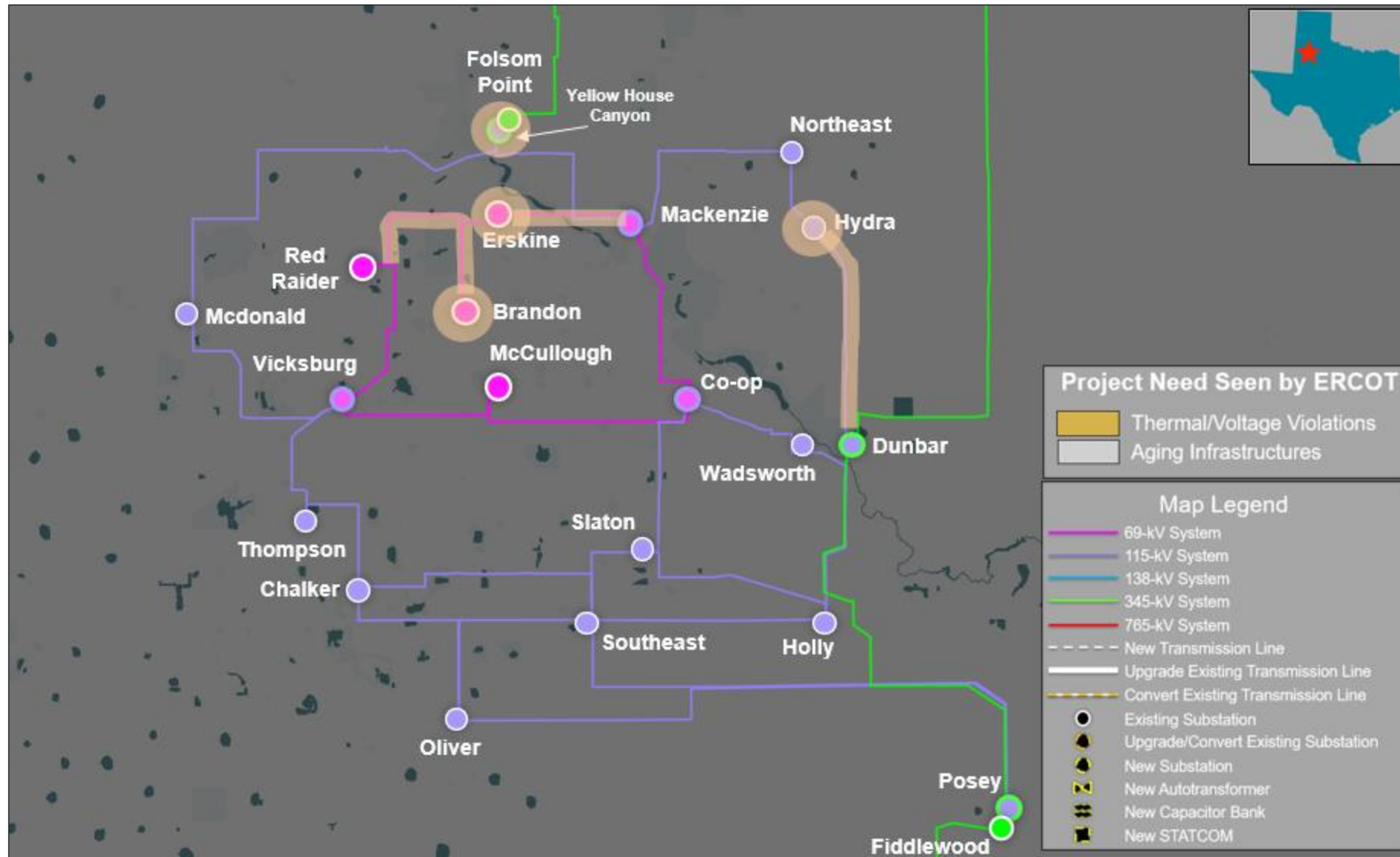
Results of Reliability Assessment – Base Case

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

Contingency Category	Thermal Overloads	Voltage Violations	Unsolved Power Flow
P1	None	None	None
P2, P4, P5	None	None	None
P3: (G-1+N-1)*	None	None	None
P6-2: (X-1+N-1)*	4	5	None
P7	None	None	None
Total	4	5	None

* See [Appendix A](#) for the list of generators and transformers being tested for (G-1+N-1) and (X-1+N-1) analyses, respectively

Study Area Map with Project Needs Seen by ERCOT



Results of Maintenance Outage Evaluation – Base Case

ERCOT conducted a maintenance outage analysis on the study base case to identify the project need

- Load levels the North, North Central, West, and Far West Weather Zones were scaled down based on the historical non-summer peak data to 81.7%, 75.5%, 83.3%, and 96.2%, respectively, in order to mimic the non-summer peak load condition
- Based on the review of system topology of the study area, ERCOT tested N-2 contingency combinations, and then tested all applicable contingency violations with system adjustments (N-1-1)

Option	Thermal Overloads	Voltage Violation	Unsolved Power Flow
Base	11	22	2

Key Takeaway: Several thermal overloads, voltage violations, and unsolved power flows were observed in the N-1-1 analysis of the study base case

Results of Peak-Load Maintenance Outage Sensitivity – Base Case

ERCOT conducted a peak-load maintenance outage analysis on the study base case to identify the project need to accommodate LP&L's planning criteria

- Based on the review of system topology of the study area, ERCOT tested N-2 contingency combinations, and then tested all applicable contingency violations with system adjustments (N-1-1)
- Non-critical load, as designated by LP&L, was opened (turned off) to resolve any remaining reliability violations, if possible

Option	Thermal Overloads	Voltage Violation	Unsolved Power Flow
Base	12	None	None

Key Takeaway: Several thermal overloads were observed in the N-1-1 analysis of the study base case

List of Options Considered

ERCOT evaluated the following options to resolve the reliability violation seen in the study area by ERCOT:

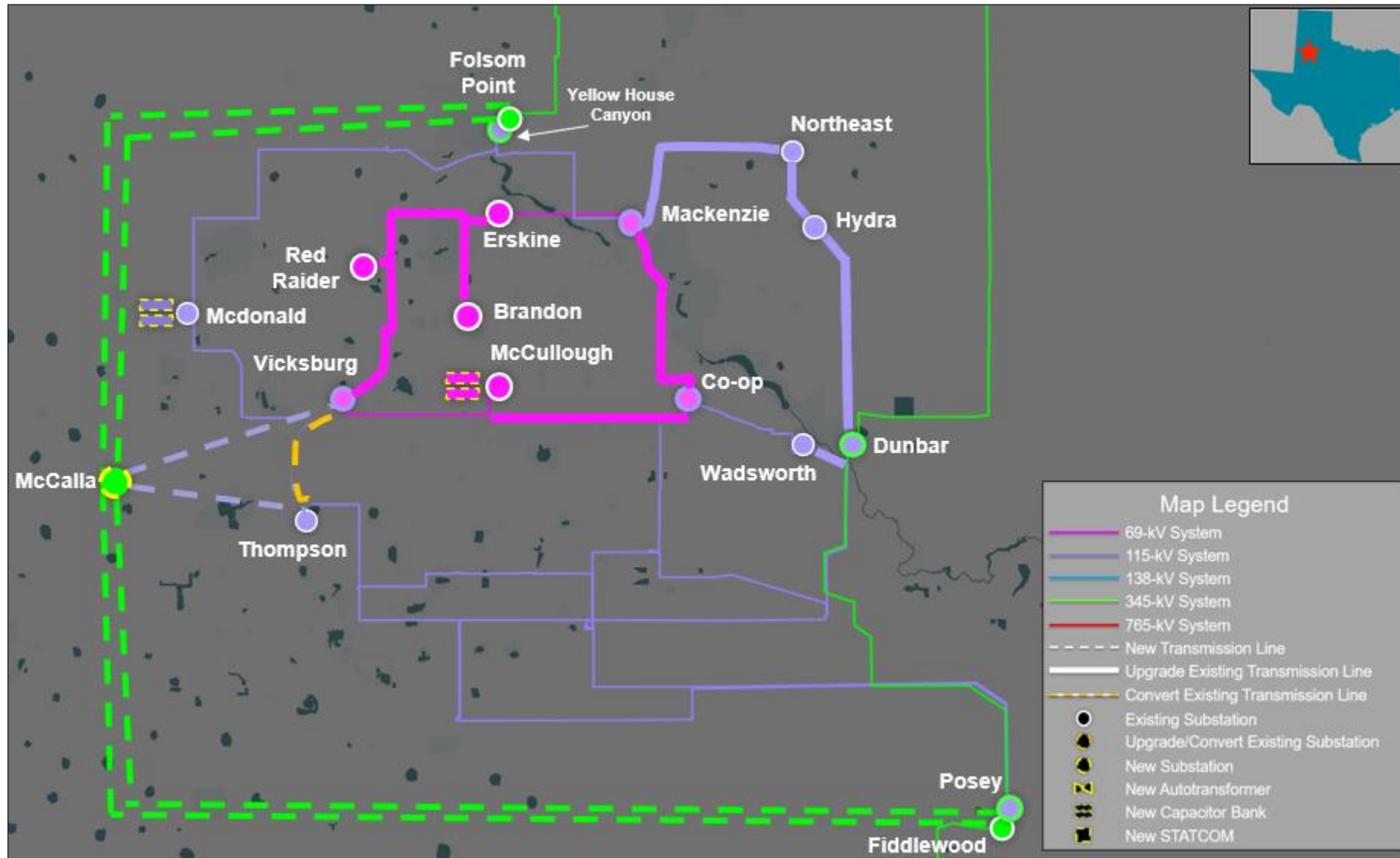
- Option 1 – LP&L Proposed Project
- Option 1A – ERCOT Alternative Option
- Option 2 – ERCOT Alternative Option
- Option 3 – ERCOT Alternative Option
- Option 4 – ERCOT Alternative Option
- Option 5 – ERCOT Alternative Option

Option 1 Summary of Upgrades

Overall Project Summary

- One (1) new 345-kV substation
- Two (2) new 345/115-kV autotransformers
- Construct approximately 64.0 circuit-miles of new 345-kV double-circuit transmission lines
- Construct approximately 10.0 circuit-miles of new 115-kV transmission lines on double-circuit capable structures
- Rebuild approximately 9.4 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 9.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 5.4 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Two (2) sized capacitors (70 MVAR total)
- Disconnect one (1) existing 115-kV transmission line

Option 1 – LP&L Proposed Project

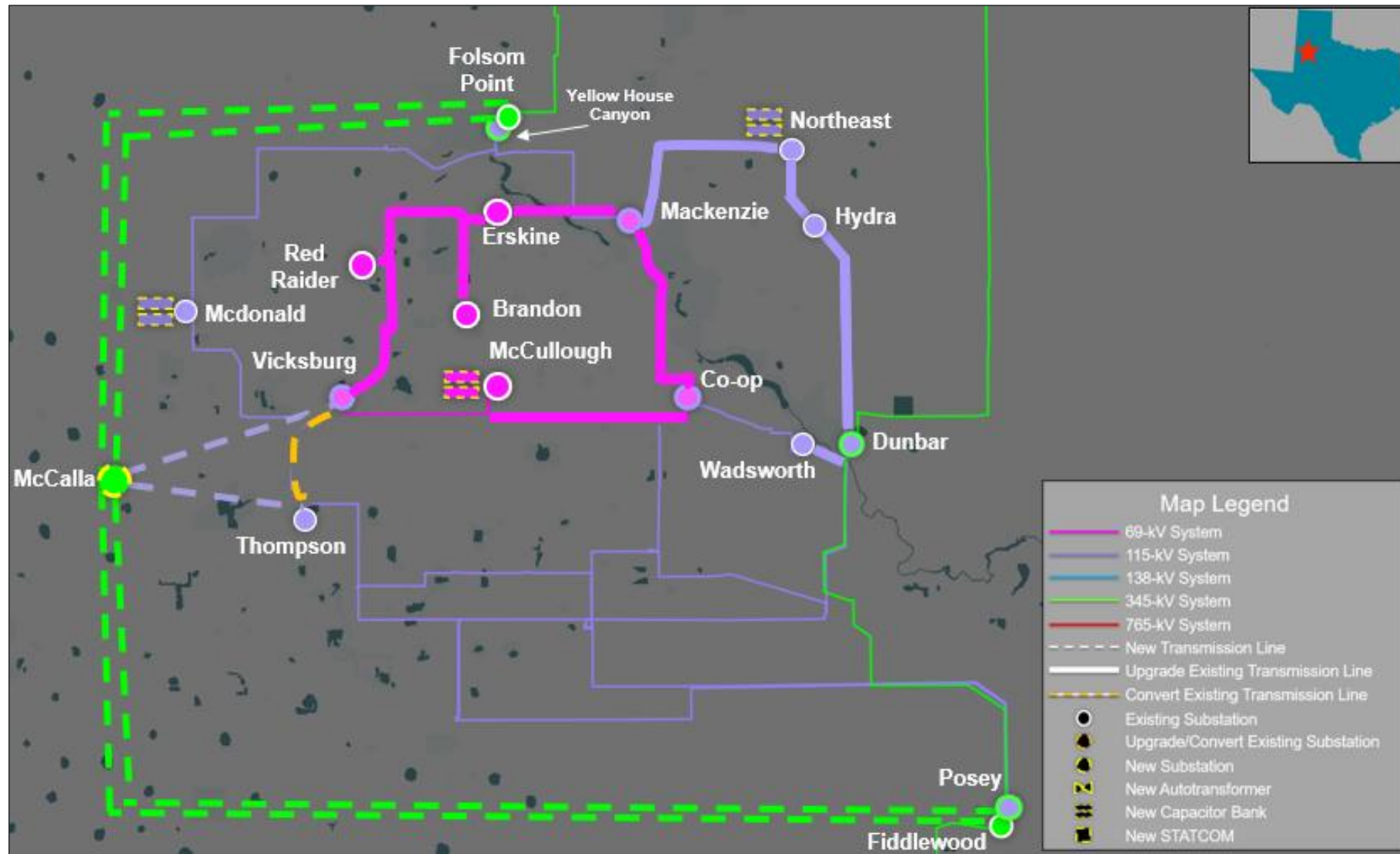


Option 1A Summary of Upgrades

Overall Project Summary

- One (1) new 345-kV substation
- Two (2) new 345/115-kV autotransformers
- Construct approximately 64.0 circuit-miles of new 345-kV double-circuit transmission lines
- Construct approximately 10.0 circuit-miles of new 115-kV transmission lines on double-circuit capable structures
- Rebuild approximately 9.4 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 9.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 8.5 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Three (3) sized capacitors (110 MVAR total)
- Disconnect one (1) existing 115-kV transmission line

Option 1A – LP&L Proposed Project

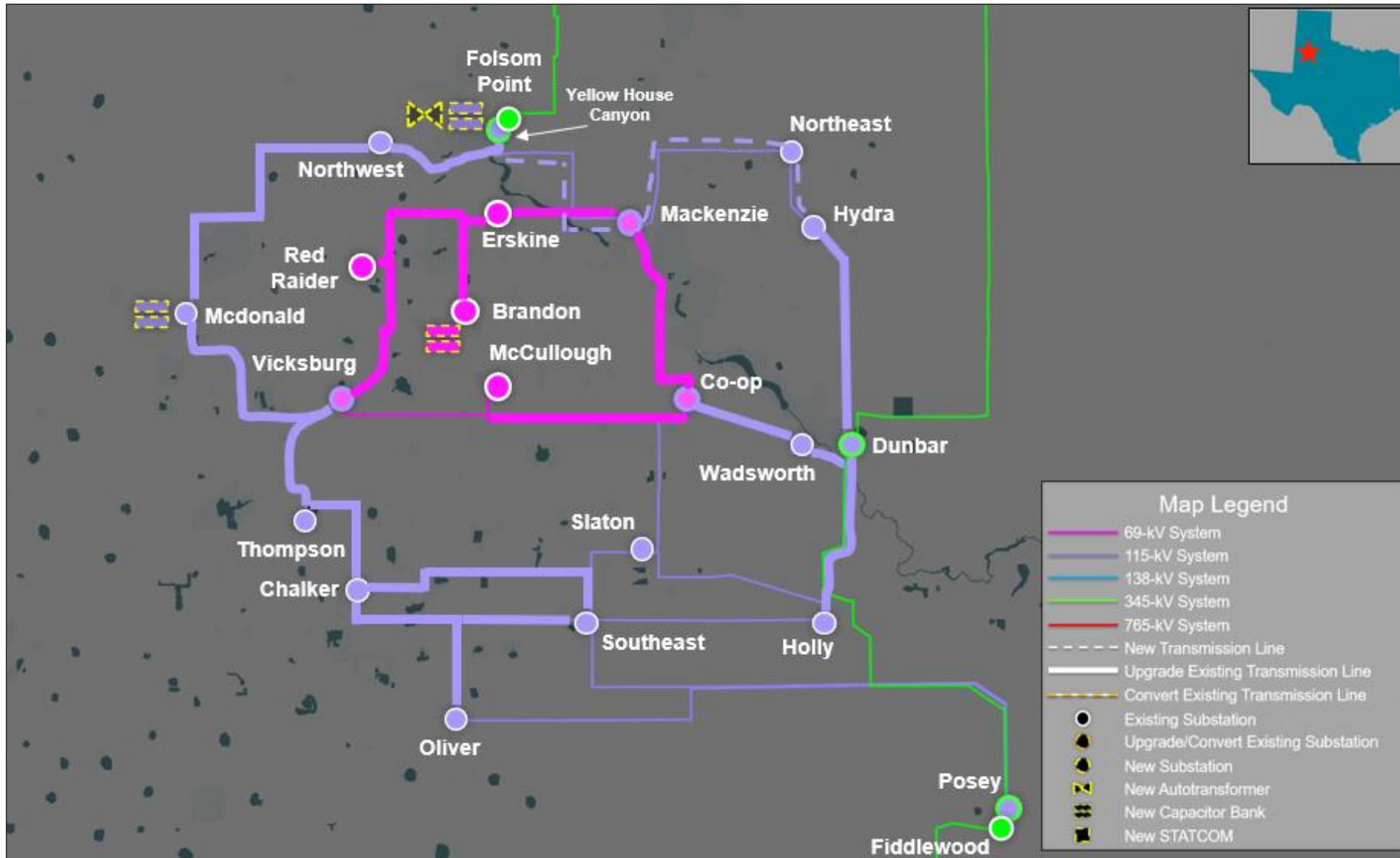


Option 2 Summary of Upgrades

Overall Project Summary

- One (1) new 345/115-kV autotransformer
- Construct approximately 8.4 circuit-miles of new 115-kV transmission lines on double-circuit capable structures
- Rebuild approximately 44.3 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 9.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 7.9 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Three (3) sized capacitors (110 MVAR total)

Option 2 – ERCOT Alternative Option

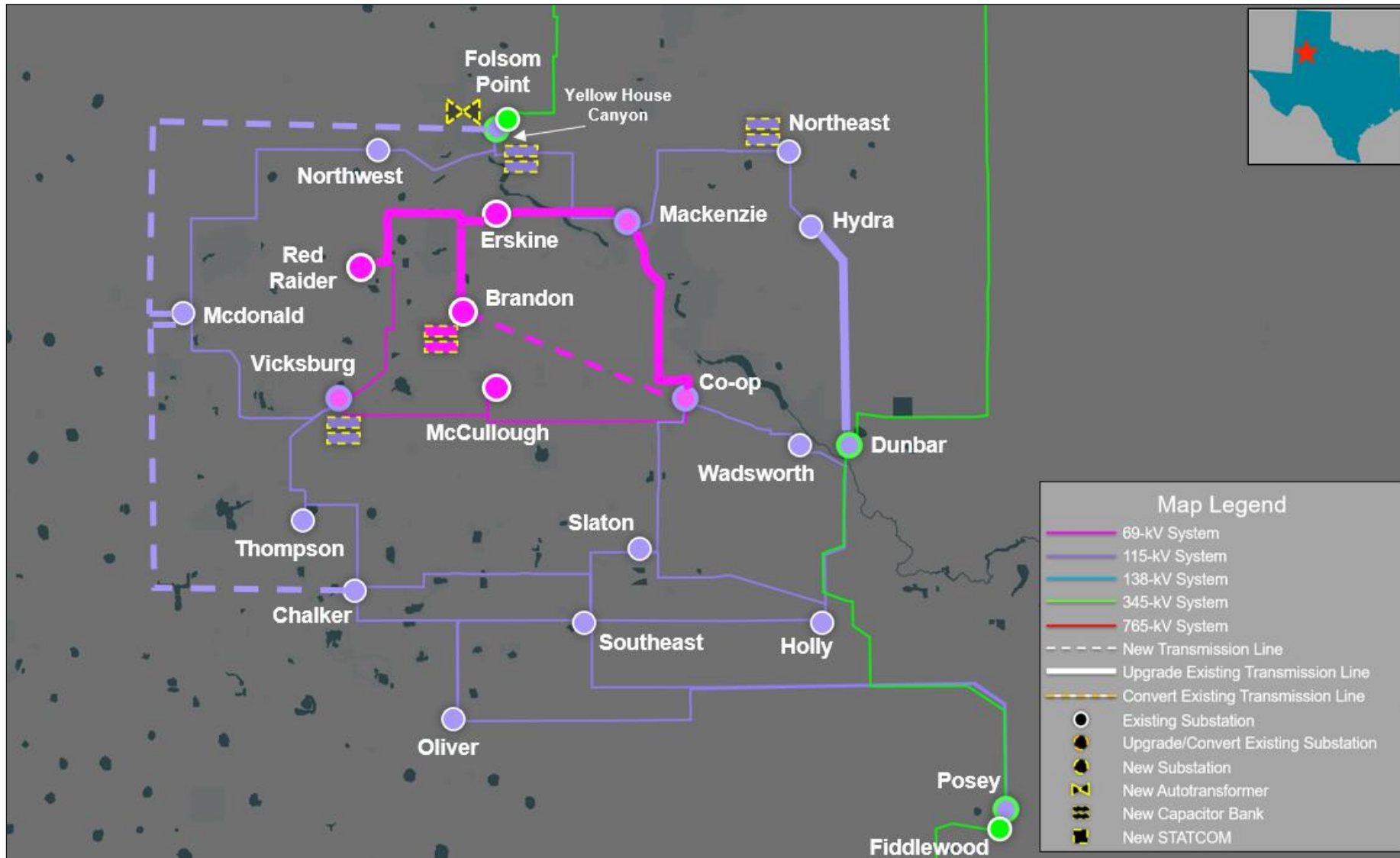


Option 3 Summary of Upgrades

Overall Project Summary

- One (1) new 345/115-kV autotransformer
- Construct approximately 13.5 circuit-miles of new 115-kV transmission lines on single-circuit capable structures
- Construct approximately 5.5 circuit-miles of new 69-kV transmission lines on single-circuit capable structures
- Rebuild approximately 3.7 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 9.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 7.9 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Four (4) sized capacitors (140 MVAR total)

Option 3 – ERCOT Alternative Option

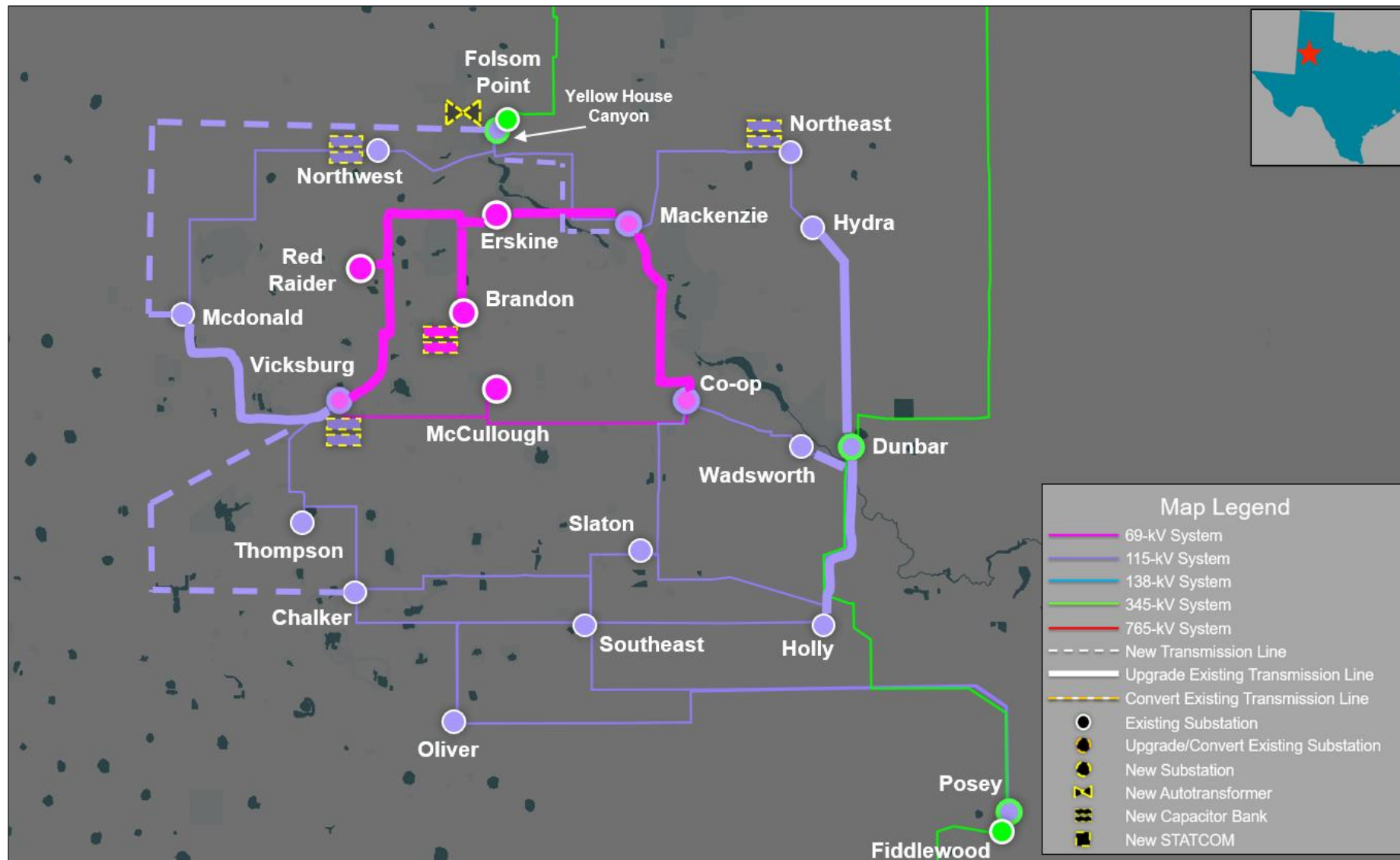


Option 4 Summary of Upgrades

Overall Project Summary

- One (1) new 345/115-kV autotransformer
- Construct approximately 10.9 circuit-miles of new 115-kV transmission lines on single-circuit capable structures
- Rebuild approximately 11.9 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 6.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 8.9 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Four (4) sized capacitors (130 MVAR total)

Option 4 – ERCOT Alternative Option

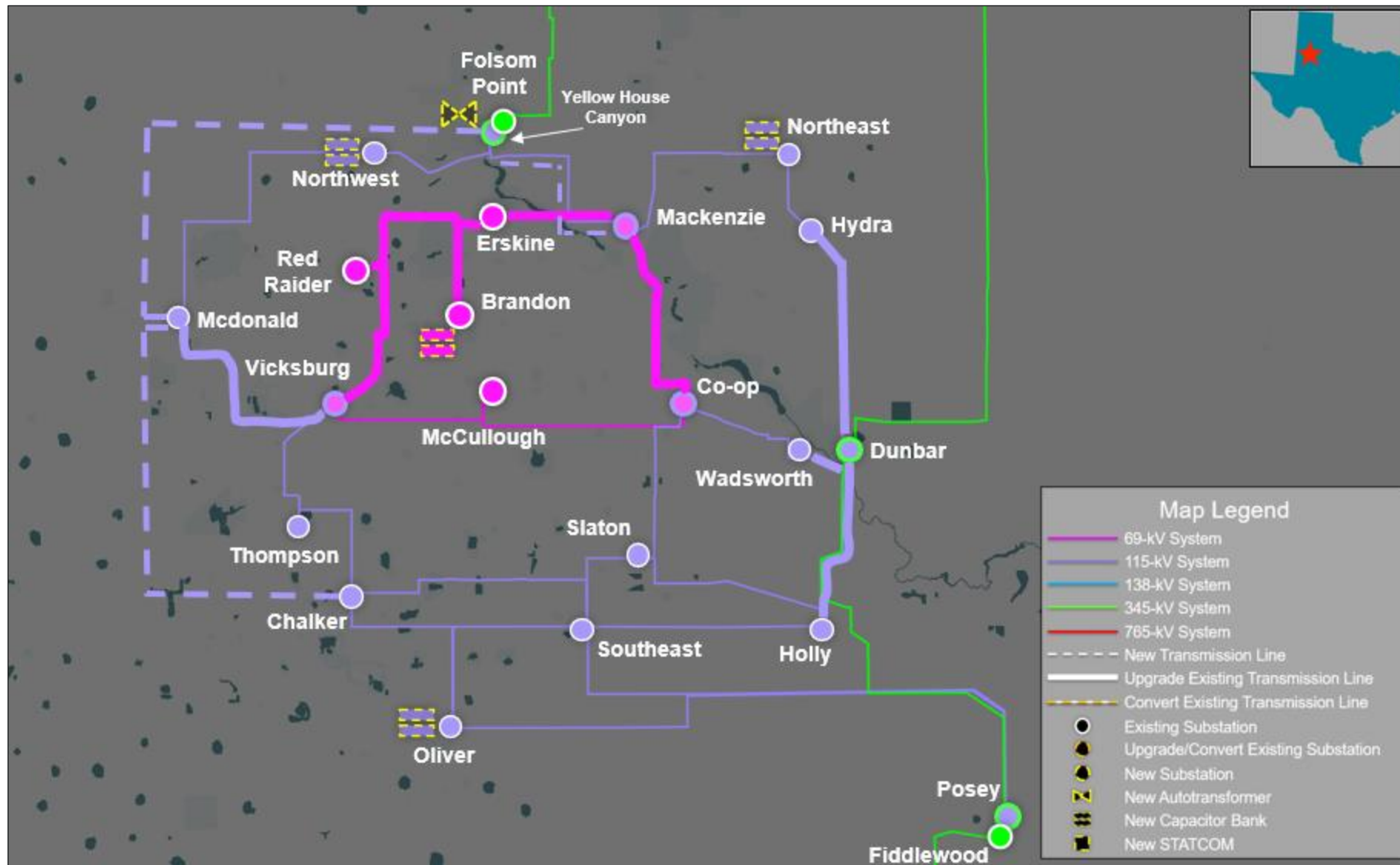


Option 5 Summary of Upgrades

Overall Project Summary

- One (1) new 345/115-kV autotransformer
- Construct approximately 13.5 circuit-miles of new 115-kV transmission lines on single-circuit capable structures
- Rebuild approximately 11.9 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 6.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 8.9 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Four (4) sized capacitors (130 MVAR total)

Option 5 – ERCOT Alternative Option



Results of Reliability Assessment – Options

ERCOT conducted steady-state load flow analysis for the all the option cases according to the NERC Reliability Standard TPL-001-5.1 and ERCOT Planning Criteria to evaluate the proposed project and alternatives options

Option	N-0		N-1		(G-1+N-1)*		(X-1+N-1)*		Unsolved Power Flows
	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations	
1	None	None	None	None	None	None	1	None	None
1A	None	None	None	None	None	None	None	None	None
2	None	None	None	None	None	None	None	None	None
3	None	None	None	None	None	None	None	None	None
4	None	None	None	None	None	None	None	None	None
5	None	None	None	None	None	None	None	None	None

Key Takeaway: Option 1A, Option 2, Option 3, Option 4, and Option 5 observed no reliability violations while Option 1 continued to show violations

Results of Maintenance Outage Evaluation – Options

ERCOT conducted maintenance outage analyses on all five options to compare the relative performance

- Load levels the North, North Central, West, and Far West Weather Zones were scaled down based on the historical non-summer peak data to 81.7%, 75.5%, 83.3%, and 96.2%, respectively, in order to mimic the non-summer peak load condition
- Based on the review of system topology of the study area, ERCOT tested N-2 contingency combinations, and then tested all applicable contingency violations with system adjustments (N-1-1)

Option	Thermal Overloads	Voltage Violation	Unsolved Power Flow
1	1	5	None
1A	None	None	None
2	1	5	None
3	2	None	None
4	None	None	None
5	None	None	None

Key Takeaway: Several thermal overloads and/or voltage violations were observed in the N-1-1 analysis of Option 1, Option 2, and Option 3 while Option 1A, Option 4, and Option 5 observed no violations

Cost Estimate and Feasibility Assessment

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

Option	Cost Estimates (~\$Million)	CCN Required (~miles)	Feasibility	Expected ISD (Year)
1	312.5	42.0	Yes	2030
1A	326.5	42.0	Yes	2030
2	170.4	0.0	Yes	2030
3	125.5	19.0	No	N/A
4	117.8	10.9	No	N/A
5	129.2	16.9	Yes	2030

Key Takeaway: Option 5 is the lowest cost option of the feasible options

Short-Listed Options

Based on the reliability results and the cost estimates and feasibility assessment, Option 1A and Option 5 were short-listed for further evaluation

Long-Term Load-Serving Capability Assessment

ERCOT conducted a long-term load-serving capability assessment on the two short-listed options to compare relative performance of the options

- Adjusted load up in the study area, excluding non-scalable loads in the area
- Adjusted conforming load down outside of the study area to balance power
- Based on N-1 contingency

Option	Incremental Load-Serving Capability (~MW)
1A	471.9
5	325.4

Key Takeaway: Option 1A provides more incremental load-serving capability than Option 5

Results of Peak-Load Maintenance Outage Sensitivity – Options

ERCOT conducted a peak-load maintenance outage analyses on the two short-listed options to compare the relative performance to accommodate LP&L's planning criteria

- Based on the review of system topology of the study area, ERCOT tested N-2 contingency combinations, and then tested all applicable contingency violations with system adjustments (N-1-1)
- Non-critical load, as designated by LP&L, was opened (turned off) to resolve any remaining reliability violations, if possible

Option	Thermal Overloads	Voltage Violation	Unsolved Power Flow
1A	None	None	None
5	None	None	None

Key Takeaway: No violations were observed in the N-1-1 analysis of the two short-listed options

Comparison of Short-Listed Options

	Option 1A	Option 5
Meets ERCOT and NERC Reliability Criteria	Yes	Yes
CCN Needed (~miles)	42.0	16.9
Construction Feasibility (Based on TSP assessment)	Yes	Yes
Capital Cost Estimates* (~\$M)	326.5	129.2
Improves Long-Term Load-Serving Capability (~MW)	471.9	325.4
Meets LP&L Planning Criteria	Yes	Yes
Expected ISD (Year)	2030	2030

* Cost estimates were provided by the TSP(s)

Key Takeaways:

- Option 5 observed no reliability violations and met the project need
- Option 5 is the least-cost option
- Option 5 requires the least amount of CCN mileage

ERCOT Preferred Option

Option 5 was selected as the ERCOT preferred option because it:

- Addresses the project need in the study area
- Meets both ERCOT and NERC reliability criteria
- Is the least-cost option
- Requires the least amount of CCN mileage
- Improves long-term load-serving capability for future load growth in the area

Additional Analyses

Congestion Analysis

- Congestion analysis was performed for the preferred option using the 2025 RTP 2030 economic sensitivity case
- The ERCOT preferred option did not result in significant new congestion within the study area

Generation Addition Sensitivity Analysis

- ERCOT performed a generation addition sensitivity, per ERCOT Planning Guide Section 3.1.3(4)(a). Based on a review of the [July 2026 GIS report](#), no units were found within the study area that could have an impact on the preferred option

Load Scaling Sensitivity Analysis

- Planning Guide Section 3.1.3(4)(b) requires an evaluation of the potential impact of load scaling on the criteria violations seen in this EIR. Starting 2024, ERCOT RTP adopted a new methodology of having one summer peak case for each study year with non-coincident peaks for each of the Weather Zones, which would eliminate the load scaling impact. The study case did not include load scaling as such load scaling sensitivity analysis is no longer needed

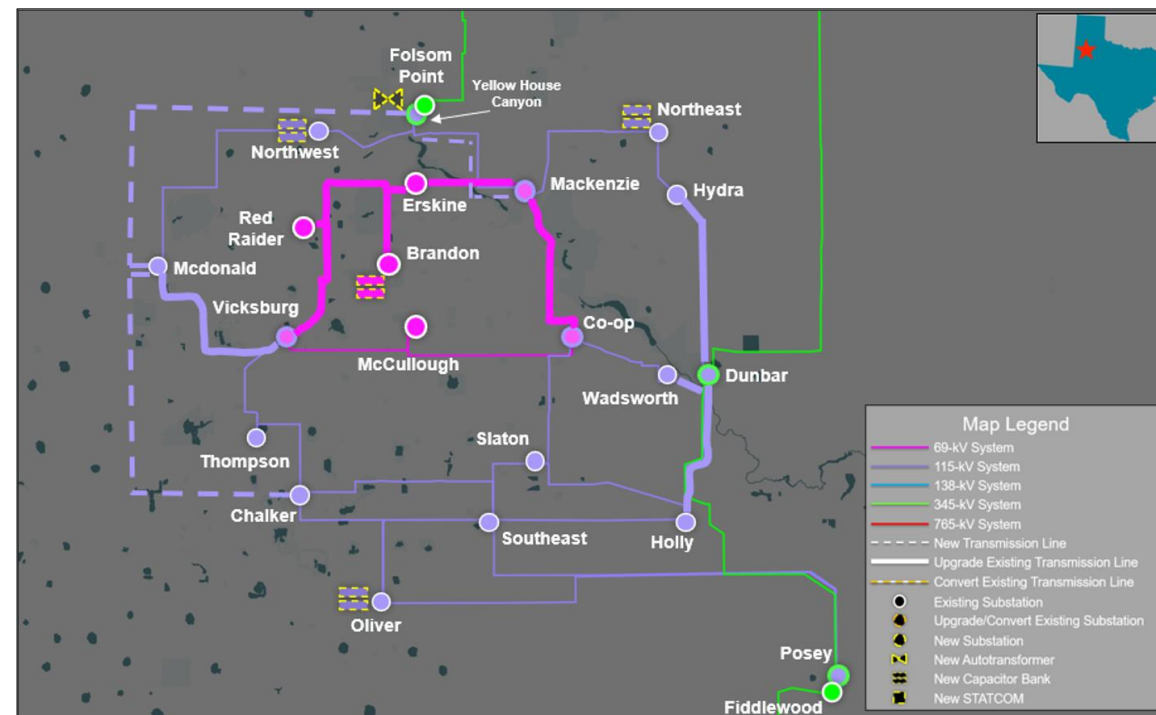
Subsynchronous Oscillations (SSO) Assessment

- SSO Assessment was conducted for the preferred option per ERCOT Nodal Protocol Section 3.22.1.3
- ERCOT found no adverse SSO impacts to the existing and planned generation resources at the time of this study

ERCOT Recommendation

ERCOT recommends Option 5

- Estimated Cost: approximately \$129.2 million
- Expected ISD: December 2030
- CCN filling would be required for the 16.9 miles of new right of way (ROW) for
 - New Yellow House Canyon to McDonald 115-kV transmission line on single-circuit structures
 - New McDonald to Chalker 115-kV transmission line on single-circuit structures
- Based on the cost estimate provided by the TSP(s), the preferred project is categorized as Tier 2 project (ERCOT Protocol 3.11.4.3)



ERCOT Recommendation Summary

Summary of Upgrades

- One (1) new 345/115-kV autotransformer
- Construct approximately 13.5 circuit-miles of new 115-kV transmission lines on single-circuit capable structures
- Rebuild approximately 11.9 circuit-miles of existing 115-kV transmission lines on single-circuit structures
- Rebuild approximately 6.1 circuit-miles of existing 69-kV transmission lines on double-circuit capable structures
- Rebuild approximately 8.9 circuit-miles of existing 69-kV transmission lines on single-circuit structures
- Four (4) sized capacitors (130 MVar total)

ERCOT Recommendation Details

Recommended Upgrades

- Install one new 345/115-kV autotransformer at the existing Yellow House Canyon 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Yellow House Canyon to McDonald 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 7.5 miles
- Construct a new McDonald to Chalker 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 6.0 miles
- Construct a new Mackenzie to Yellow House Canyon 115-kV transmission line on double-circuit structures with two circuits in place, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
- Rebuild the existing McDonald to Vicksburg 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.0 miles
 - The existing infrastructure is approximately 40 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Dunbar to Hydra 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

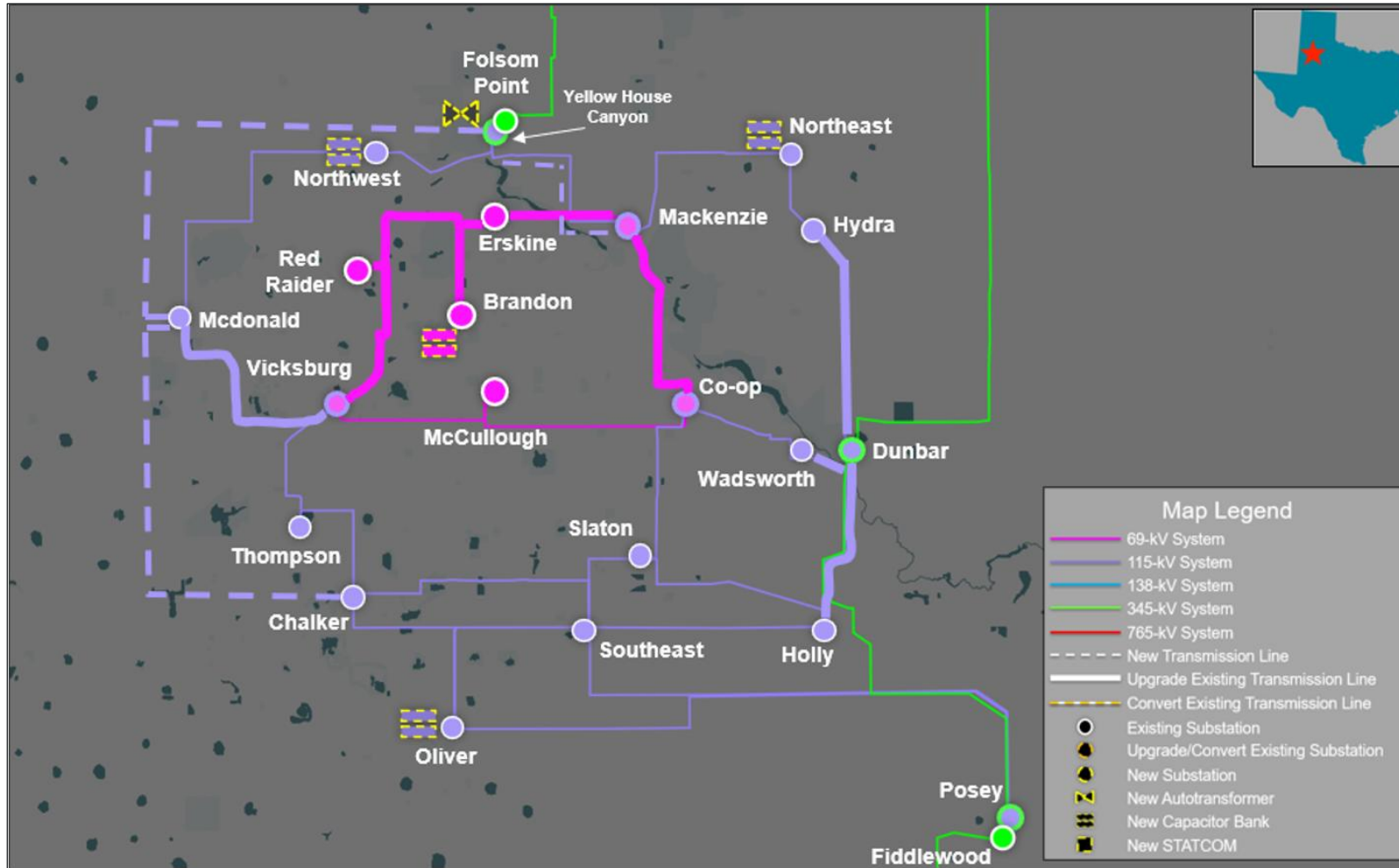
ERCOT Recommendation Details (Continued)

- Rebuild the existing Holly to Dunbar 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.9 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

ERCOT Recommendation Details (Continued)

- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 230 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Install a 30 MVAR sized capacitor at the existing Oliver 115-kV substation
- Install a 40 MVAR sized capacitor at the existing Northeast 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Northwest 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Brandon 69-kV substation

Map of ERCOT Recommendation



Deliverables and Next Step

Tentative Timelines

- EIR report to be posted in the MIS in October 2026

Key Takeaway: EIR report to be posted in the MIS in October 2026

Thank you! Questions/Comments?

Travis.Head@ercot.com

Robert.Golen@ercot.com

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Appendix

- Appendix A: G-1 Generators and X-1 Transformers List
- Appendix B1: Option 1 Details – LP&L Proposed Project
- Appendix B2: Option 1A Details – ERCOT Alternative Option
- Appendix B3: Option 2 Details – ERCOT Alternative Option
- Appendix B4: Option 3 Details – ERCOT Alternative Option
- Appendix B5: Option 4 Details – ERCOT Alternative Option

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Appendix A: List of G-1 Generators and X-1 Transformers Tested

Generator	Transformer
South Plains Wind 2 U1	Dunbar 345/115-kV
Tahoka Wind 1	Posey 345/115-kV
	Yellow House Canyon 345/115-kV

Appendix B1: Option 1 Details – LP&L Proposed Project

Option 1 Details

- Construct a new McCalla 345/115-kV substation with a breaker and a half configuration with nine 345-kV breakers and six 115-kV breakers with room to expand to a third row at the 115-kV voltage level. All terminals and associated equipment will meet or exceed 3200 A for 345-kV and 3000 A for 115-kV
- Install two new 345/115-kV autotransformers at the new McCalla 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Folsom Point to McCalla 345-kV double-circuit transmission line on double-circuit structures with normal and emergency ratings of at least 1912 MVA, approximately 14.0 miles
- Construct a new Fiddlewood to McCalla 345-kV double-circuit transmission line on double-circuit structures with normal and emergency ratings of at least 1912 MVA, approximately 18.0 miles
- Install two 345-kV circuit breakers at the existing Folsom Point 345-kV substation with ratings of at least 3200 A
- Install two 345-kV circuit breakers at the existing Fiddlewood 345-kV substation with ratings of at least 3200 A
- Disconnect the existing Vicksburg to Thompson 115-kV transmission line
- Construct a new Vicksburg to McCalla 115-kV transmission line on double-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 5.5 miles
- Construct a new Thompson to McCalla 115-kV transmission line on double-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.5 miles

Appendix B1: Option 1 Details – LP&L Proposed Project (Continued)

Option 1 Details

- Rebuild the existing Vicksburg to Red Raider 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 130.0 MVA, approximately 1.9 miles
 - The existing infrastructure is approximately 36 years old with current normal and emergency ratings of 84.3 MVA and 92.8 MVA, respectively
- Rebuild the existing Mackenzie to Northeast 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Northeast to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B1: Option 1 Details – LP&L Proposed Project (Continued)

Option 1 Details

- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.0 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing McCullough to Co-op 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.5 miles
 - The existing infrastructure is approximately 50 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

Appendix B1: Option 1 Details – LP&L Proposed Project (Continued)

Option 1 Details

- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.5 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Install a 115-kV circuit breaker at the existing McDonald 115-kV substation with ratings of at least 3000 A
- Install a 69-kV circuit breaker at the existing McCullough 69-kV substation with ratings of at least 2000 A
- Install a 40 MVAR sized capacitor at the existing McDonald 115-kV substation
- Install a 30 MVAR sized capacitor at the existing McCullough 69-kV substation

Appendix B2: Option 1A Details – LP&L Proposed Project

Option 1A Details

- Construct a new McCalla 345/115-kV substation with a breaker and a half configuration with nine 345-kV breakers and six 115-kV breakers with room to expand to a third row at the 115-kV voltage level. All terminals and associated equipment will meet or exceed 3200 A for 345-kV and 3000 A for 115-kV
- Install two new 345/115-kV autotransformers at the new McCalla 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Folsom Point to McCalla 345-kV double-circuit transmission line on double-circuit structures with normal and emergency ratings of at least 1912 MVA, approximately 14.0 miles
- Construct a new Fiddlewood to McCalla 345-kV double-circuit transmission line on double-circuit structures with normal and emergency ratings of at least 1912 MVA, approximately 18.0 miles
- Install two 345-kV circuit breakers at the existing Folsom Point 345-kV substation with ratings of at least 3200 A
- Install two 345-kV circuit breakers at the existing Fiddlewood 345-kV substation with ratings of at least 3200 A
- Disconnect the existing Vicksburg to Thompson 115-kV transmission line
- Construct a new Vicksburg to McCalla 115-kV transmission line on double-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 5.5 miles
- Construct a new Thompson to McCalla 115-kV transmission line on double-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.5 miles

Appendix B2: Option 1A Details – LP&L Proposed Project (Continued)

Option 1A Details

- Rebuild the existing Vicksburg to Red Raider 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 130.0 MVA, approximately 1.9 miles
 - The existing infrastructure is approximately 36 years old with current normal and emergency ratings of 84.3 MVA and 92.8 MVA, respectively
- Rebuild the existing Mackenzie to Northeast 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Northeast to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B2: Option 1A Details – LP&L Proposed Project (Continued)

Option 1A Details

- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.0 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing McCullough to Co-op 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.5 miles
 - The existing infrastructure is approximately 50 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B2: Option 1A Details – LP&L Proposed Project (Continued)

Option 1A Details

- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.5 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Install a 115-kV circuit breaker at the existing McDonald 115-kV substation with ratings of at least 3000 A
- Install a 69-kV circuit breaker at the existing McCullough 69-kV substation with ratings of at least 2000 A
- Install a 40 MVAR sized capacitor at the existing McDonald 115-kV substation
- Install a 30 MVAR sized capacitor at the existing McCullough 69-kV substation
- Install a 40 MVAR sized capacitor at the existing Northeast 115-kV substation

Appendix B3: Option 2 – ERCOT Alternative Option Details

Option 2 Details

- Install one new 345/115-kV autotransformer at the existing Yellow House Canyon 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Mackenzie to Yellow House Canyon 115-kV transmission line on double-circuit structures with two circuits in place, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
- Construct a new Northeast to Hydra 115-kV transmission line on double-circuit structures with two circuits in place, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.0 miles
- Rebuild the existing McDonald to Vicksburg 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.0 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Dunbar to Hydra 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B3: Option 2 – ERCOT Alternative Option Details (Continued)

Option 2 Details

- Rebuild the existing Vicksburg to Red Raider 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 130.0 MVA, approximately 2.7 miles
 - The existing infrastructure is approximately 36 years old with current normal and emergency ratings of 84.3 MVA and 92.8 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

Appendix B3: Option 2 – ERCOT Alternative Option Details (Continued)

Option 2 Details

- Rebuild the existing McCullough to Co-op 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.5 miles
 - The existing infrastructure is approximately 50 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Mackenzie to Northeast 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 230 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Northwest to Yellow House Canyon 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 239.0 MVA and 239.0 MVA, respectively
- Rebuild the existing Northwest to McDonald 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 5.4 miles
 - The existing infrastructure is approximately 18 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B3: Option 2 – ERCOT Alternative Option Details (Continued)

Option 2 Details

- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA and 258.6 MVA respectively, approximately 3.1 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Rebuild the existing Holly to Dunbar 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.9 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Co-op to Wadsworth 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.1 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B3: Option 2 – ERCOT Alternative Option Details (Continued)

Option 2 Details

- Rebuild the existing Vicksburg to Thompson 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Thompson to Chalker 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.2 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 239.0 MVA and 239.0 MVA, respectively
- Rebuild the existing Chalker to Oliver 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 7 years old with current normal and emergency ratings of 239.0 MVA and 239.0 MVA, respectively
- Rebuild the existing Chalker to Southeast 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.8 miles
 - The existing infrastructure is approximately 22 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B3: Option 2 – ERCOT Alternative Option Details (Continued)

Option 2 Details

- Rebuild the existing Southeast to Oliver 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Install a 30 MVAR sized capacitor at the existing Yellow House Canyon 115-kV substation
- Install a 50 MVAR sized capacitor at the existing McDonald 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Brandon 69-kV substation

Appendix B4: Option 3 – ERCOT Alternative Option Details

Option 3 Details

- Install one new 345/115-kV autotransformer at the existing Yellow House Canyon 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Yellow House Canyon to McDonald 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 7.5 miles
- Construct a new McDonald to Chalker 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 6.0 miles
- Construct a new Co-op to Brandon 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 5.5 miles
- Rebuild the existing Dunbar to Hydra 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

Appendix B4: Option 3 – ERCOT Alternative Option Details (Continued)

Option 3 Details

- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 230 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively

Appendix B4: Option 3 – ERCOT Alternative Option Details (Continued)

Option 3 Details

- Install a 30 MVAR sized capacitor at the existing Yellow House Canyon 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Oliver 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Brandon 69-kV substation
- Install a 50 MVAR sized capacitor at the existing Northeast 115-kV substation

Appendix B5: Option 4 – ERCOT Alternative Option Details

Option 4 Details

- Install one new 345/115-kV autotransformer at the existing Yellow House Canyon 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Yellow House Canyon to McDonald 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 7.5 miles
- Construct a new Vicksburg to Chalker 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
- Construct a new Mackenzie to Yellow House Canyon 115-kV transmission line on double-circuit structures with two circuits in place, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
- Rebuild the existing McDonald to Vicksburg 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.0 miles
 - The existing infrastructure is approximately 40 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Dunbar to Hydra 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B5: Option 4 – ERCOT Alternative Option Details (Continued)

Option 4 Details

- Rebuild the existing Holly to Dunbar 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.9 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Vicksburg to Red Raider 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 130.0 MVA, approximately 2.7 miles
 - The existing infrastructure is approximately 36 years old with current normal and emergency ratings of 84.3 MVA and 92.8 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

Appendix B5: Option 4 – ERCOT Alternative Option Details (Continued)

Option 4 Details

- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 230 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Install a 30 MVAR sized capacitor at the existing Vicksburg 115-kV substation
- Install a 40 MVAR sized capacitor at the existing Northeast 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Northwest 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Brandon 69-kV substation

Appendix B5: Option 5 – ERCOT Alternative Option Details

Option 5 Details

- Install one new 345/115-kV autotransformer at the existing Yellow House Canyon 345/115-kV substation with normal and emergency ratings of at least 350 MVA and 420 MVA respectively
- Construct a new Yellow House Canyon to McDonald 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 7.5 miles
- Construct a new McDonald to Chalker 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 6.0 miles
- Construct a new Mackenzie to Yellow House Canyon 115-kV transmission line on double-circuit structures with two circuits in place, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.4 miles
- Rebuild the existing McDonald to Vicksburg 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 4.0 miles
 - The existing infrastructure is approximately 40 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Dunbar to Hydra 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 3.7 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively

Appendix B5: Option 5 – ERCOT Alternative Option Details (Continued)

Option 5 Details

- Rebuild the existing Holly to Dunbar 115-kV transmission line on single-circuit structures, with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 2.9 miles
 - The existing infrastructure is approximately 25 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Wadsworth to Dunbar 115-kV transmission line on single-circuit structures with normal and emergency ratings of at least 391.8 MVA and 431 MVA respectively, approximately 1.3 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 198.0 MVA and 217.7 MVA, respectively
- Rebuild the existing Vicksburg to Red Raider 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 130.0 MVA, approximately 2.7 miles
 - The existing infrastructure is approximately 36 years old with current normal and emergency ratings of 84.3 MVA and 92.8 MVA, respectively
- Rebuild the existing Mackenzie to Erskine 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 235 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 6 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively

Appendix B5: Option 5 – ERCOT Alternative Option Details (Continued)

Option 5 Details

- Rebuild the existing Erskine to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 2.5 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Red Raider to Brandon 69-kV transmission line on double-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 118.8 MVA and 130.6 MVA respectively, approximately 3.6 miles
 - The existing infrastructure is approximately 53 years old with current normal and emergency ratings of 69.1 MVA and 71.7 MVA, respectively
- Rebuild the existing Mackenzie to Co-op 69-kV transmission line on single-circuit structures to 115-kV capable, but operational at 69-kV, with normal and emergency ratings of at least 230 MVA, approximately 3.1 miles
 - The existing infrastructure is approximately 31 years old with current normal and emergency ratings of 118.8 MVA and 130.6 MVA, respectively
- Install a 30 MVAR sized capacitor at the existing Oliver 115-kV substation
- Install a 40 MVAR sized capacitor at the existing Northeast 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Northwest 115-kV substation
- Install a 30 MVAR sized capacitor at the existing Brandon 69-kV substation