TNMP Galveston Region Project – ERCOT Independent Review Status Update

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RPG Meeting
December 16, 2025

Introduction

- Texas New Mexico Power (TNMP) submitted the Galveston Region Project for Regional Planning Group (RPG) review in December 2024
  - This Tier 1 project is estimated to cost $133.73 million and will not require a Certificate of Convenience and Necessity (CCN) filing
  - Estimated in-service date (ISD) is June 2028
  - Addresses the thermal overloads and voltage violations under planned maintenance outage condition in the Galveston and nearby counties in the Coast Weather Zone
- TNMP provided an overview presentation and ERCOT provided the study scope at the February 2025 RPG Meeting
  - https://www.ercot.com/calendar/02242025-RPG-Meeting-_-Webex
- TNMP provided ERCOT the load agreement contracts and Officer Letter to assert the load additions in September 2025
- ERCOT provided the status update at the November 2025 RPG Meeting
  - https://www.ercot.com/calendar/02242025-RPG-Meeting-_-Webex
- This project is currently under ERCOT Independent Review (EIR)

Study Assumptions

- Study Region
  - Coast weather zone, focusing on the transmission elements in the Galveston and Brazoria Counties
- Steady-State Base Cases
  - Summer Peak: Final 2024RTP_2030_SUM_12202024
  - Maintenance: Final 2024RTP_2030_MaintenanceOutage_12202024
- Transmission (based on June 2025 TPIT report)
  - See Appendix A for the list of transmission projects that were added
  - See Appendix B for the list of placeholder project that was removed
- Generation (based on August 2025 GIS report)
  - See Appendix C for the list of generation projects added
- Load
  - Additional 303.9 MW of load was added to the study base case

Year	4% Annual Growth Rate*	Agreement Contracts	TSP Attestation Letter	Total
2030	194.9 MW	92 MW	17 MW	303.9 MW

* 194.9 MW load addition under 4% Annual Growth Rate was provided through TSP Attestation Letter.

Summary of Reliability Need Assessments

- No reliability violations under NERC TPL-001-5.1 and ERCOT Planning Criteria under summer peak condition
- Preliminary need analysis results under planned maintenance outage condition

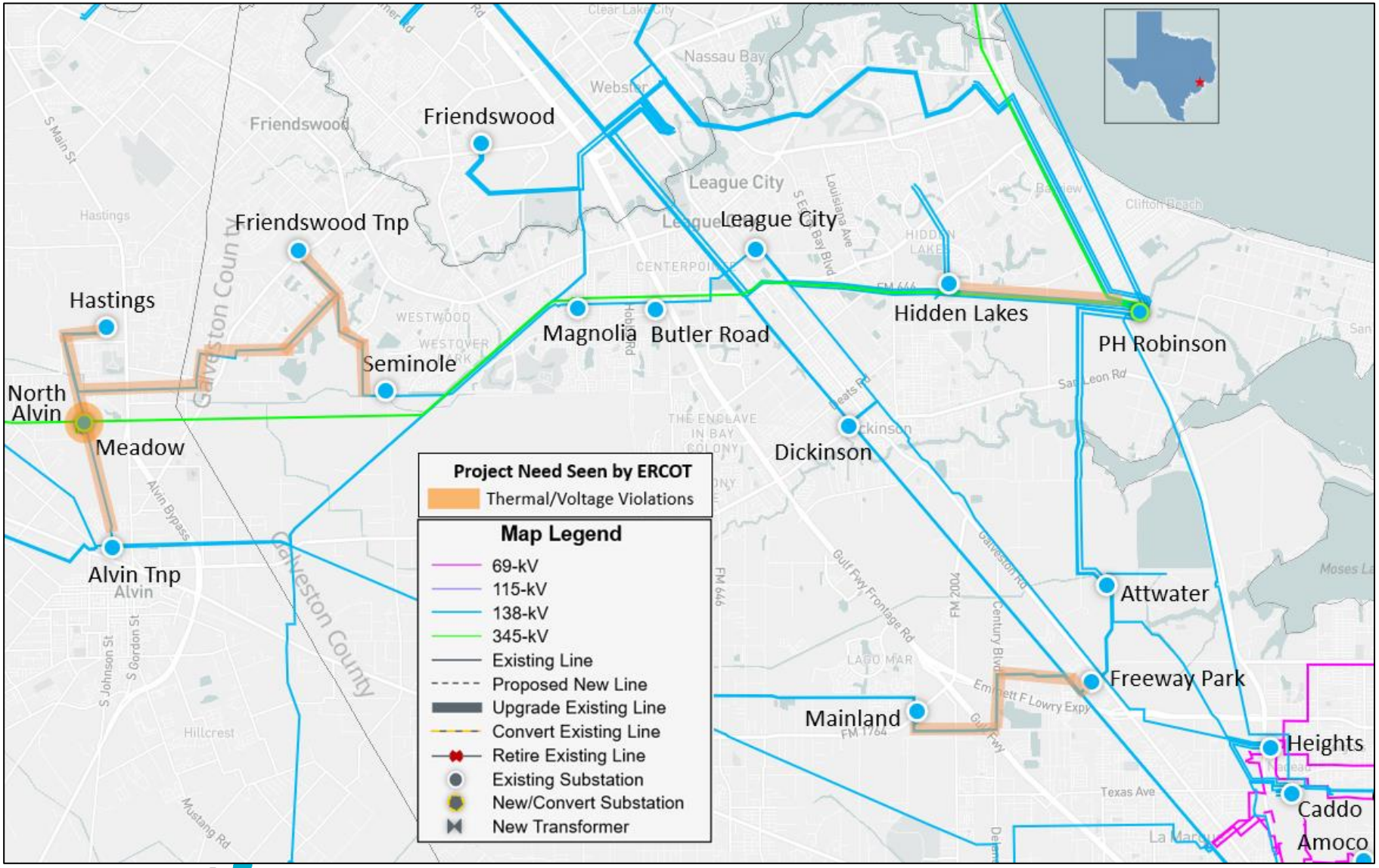
Contingency Category	# of Unsolved Contingencies	# of Thermal Overloads	# of Bus Voltage Violations
N-1-1 (P6-1, P6-3)	None	3	None

- Preliminary need analysis results under Minimum Deliverability Criteria

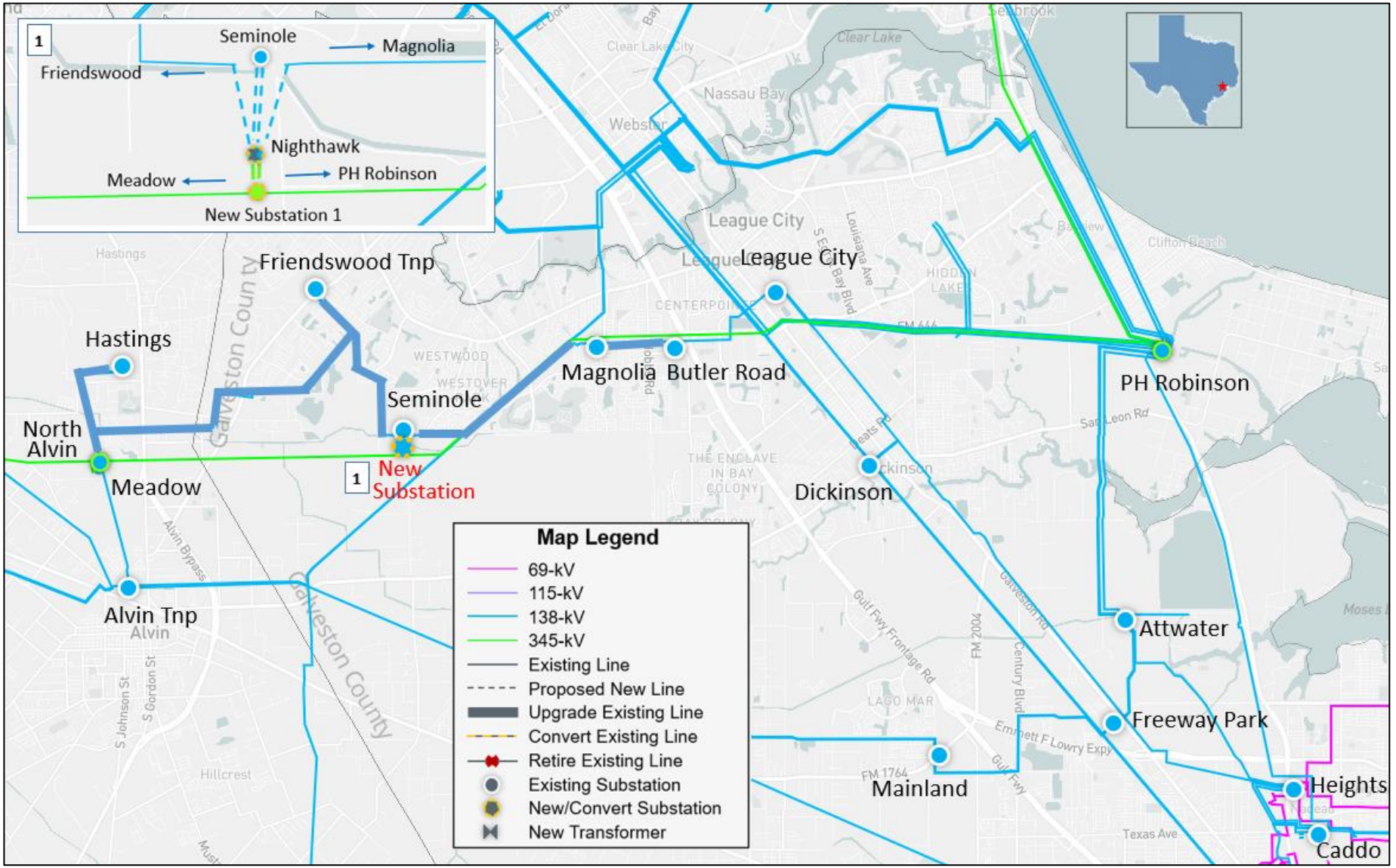
Contingency Category	# of Unsolved Contingencies	# of Thermal Overloads	# of Bus Voltage Violations
N-0 (P0)	None	1	None
N-1 (P1, P2-1, P7)	None	1	None
X-1+N-1 (P6-2)*	None	2	None

*X-1 Transformers tested: PH Robinson 345/138-kV T2 and Meadow 345/138-kV T2

Study Area Map with Violations Seen by ERCOT



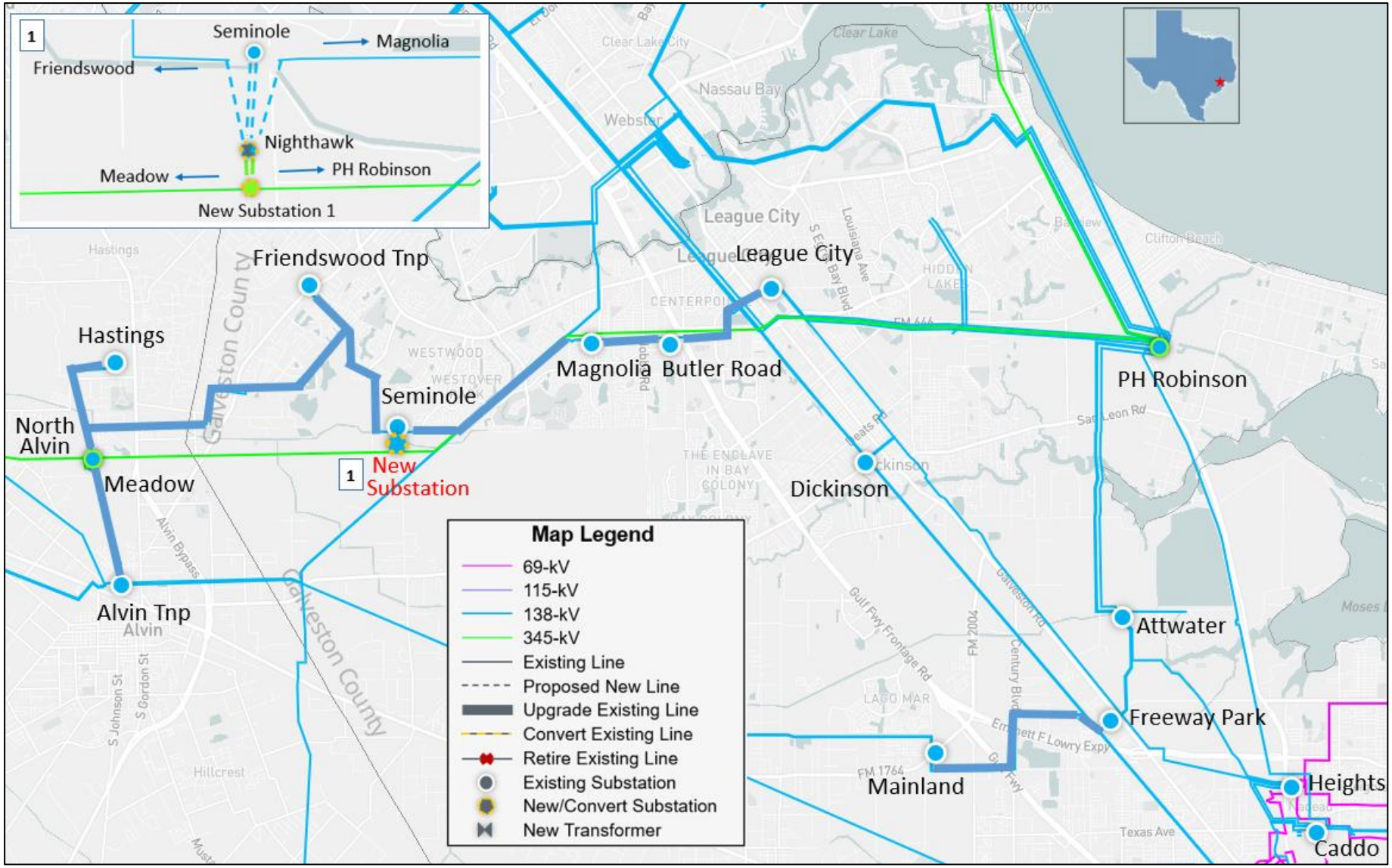
Option 1 – Project Proposed by TNMP



Option 1 – Project Proposed by TNMP

- Build a new 345-kV New Substation 1 approximately 12.49-mile from the existing PH Robinson 345/138-kV substation. The New Substation 1 will be designed with six 345-kV, 5000 A breakers in breaker-and-a-half bus arrangements and interconnected by cutting the substation into the existing PH Robinson to Meadow 345-kV transmission line
- Build a new Nighthawk 345/138-kV substation near the New Substation 1. The Nighthawk 345/138-kV substation will be designed with four 345-kV, 5000 A breakers and ten 138-kV, 3200 A breakers in breaker-and-a-half bus arrangements
  - Install two 345/138-kV autotransformers with normal and emergency ratings of at least 668 MVA and 750 MVA, respectively, for each transformer
- Install two new 345-kV tie-lines to connect the New Substation 1 and new Nighthawk on separate structures with normal and emergency ratings of at least 2987 MVA for each tie-line, approximately 0.12-mile
- Re-configure the existing Seminole to Friendswood Tnp and Seminole to Magnolia 138-kV transmission lines to be routed through the new 138-kV Nighthawk substation
- Build a new double-circuit jumper from the new 138-kV Nighthawk substation to the existing Seminole substation with normal and emergency ratings of at least 717 MVA, approximately 1.69-mile
- Upgrade the existing Butler Road to Magnolia to Seminole (Nighthawk) to Friendswood Tnp to Hastings to North Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 17.27-mile

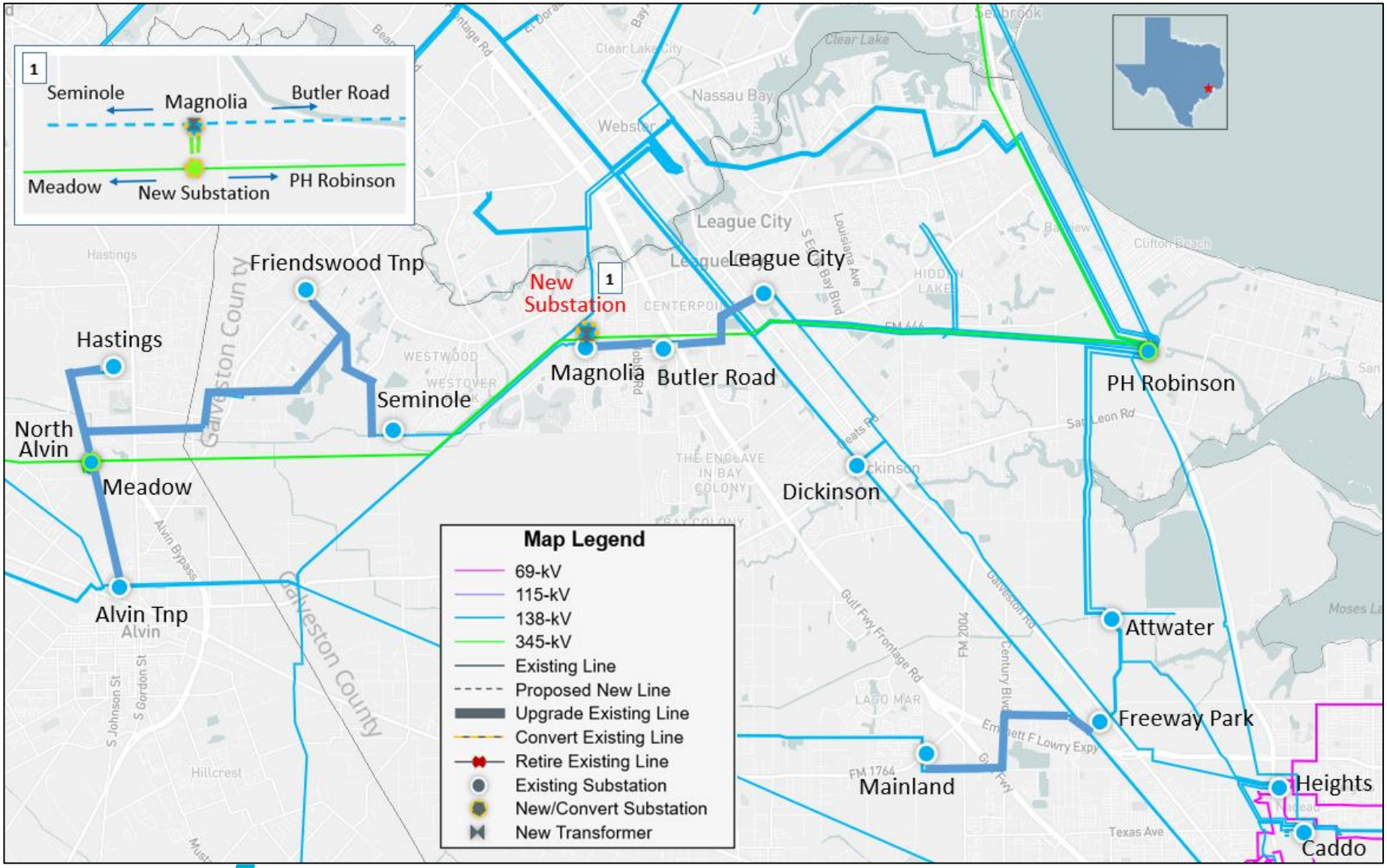
Option 1A – Modification to Option 1



Option 1A – Modification to Option 1

- Build a new 345-kV New Substation 1 approximately 12.49-mile from the existing PH Robinson 345/138-kV substation. The New Substation 1 will be designed with six 345-kV, 5000 A breakers in breaker-and-a-half bus arrangements and interconnected by cutting the substation into the existing PH Robinson to Meadow 345-kV transmission line
- Build a new Nighthawk 345/138-kV substation near the New Substation 1. The Nighthawk 345/138-kV substation will be designed with four 345-kV, 5000 A breakers and ten 138-kV, 3200 A breakers in breaker-and-a-half bus arrangements
  - Install two 345/138-kV autotransformers with normal and emergency ratings of at least 668 MVA and 750 MVA, respectively, for each transformer
- Install two new 345-kV tie-lines to connect the New Substation 1 and new Nighthawk on separate structures with normal and emergency ratings of at least 2987 MVA for each tie-line, approximately 0.12-mile
- Re-configure the existing Seminole to Friendswood Tnp and Seminole to Magnolia 138-kV transmission lines to be routed through the new 138-kV Nighthawk substation
- Build a new double-circuit jumper from the new 138-kV Nighthawk substation to the existing Seminole substation with normal and emergency ratings of at least 717 MVA, approximately 1.69-mile
- Upgrade the existing League City to Butler Road to Magnolia to Seminole (Nighthawk) to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 21.40-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile

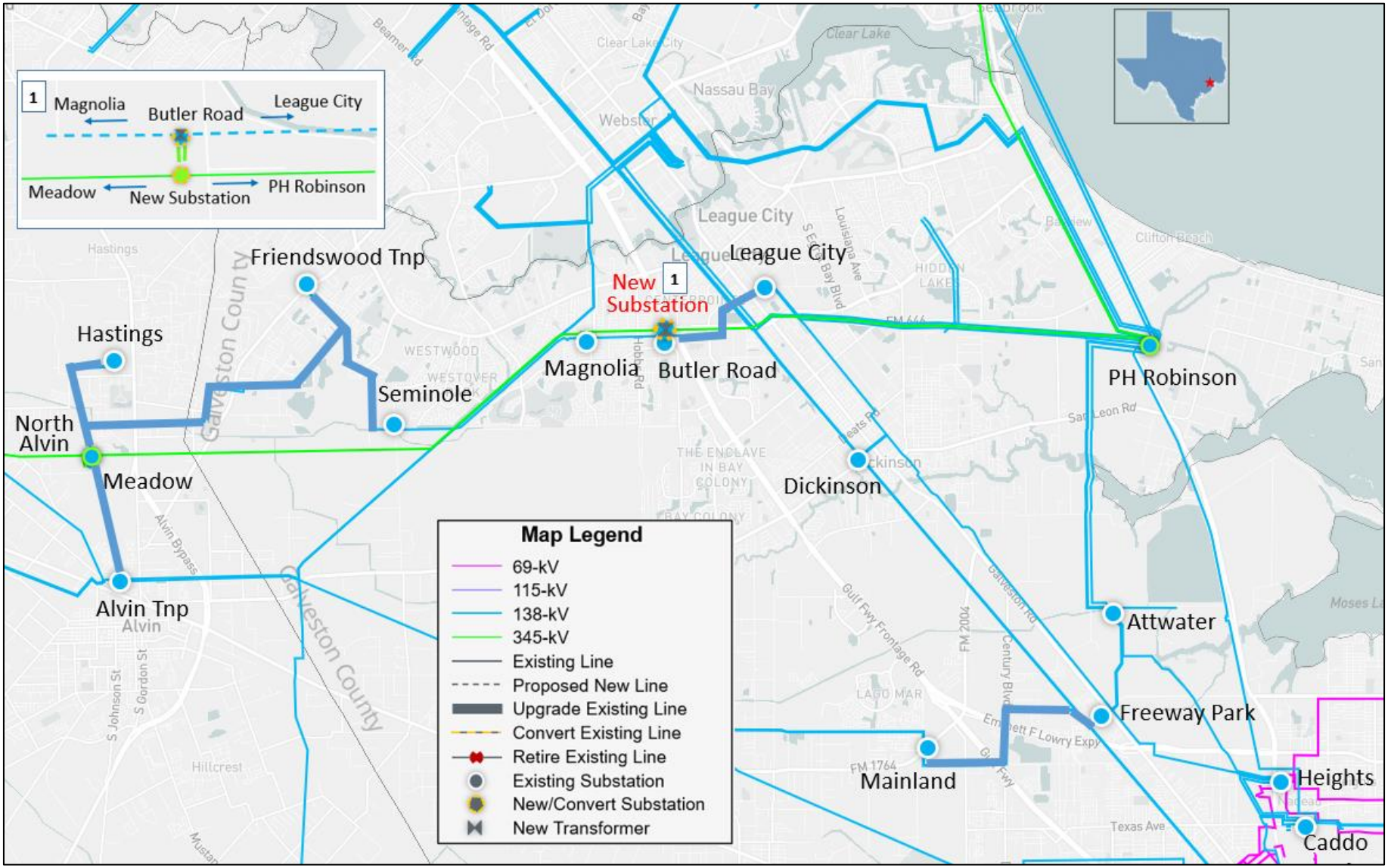
Option 2 – 345-kV Source to Magnolia



Option 2 – 345-kV Source to Magnolia

- Build a new 345-kV New Substation approximately 9.28-mile from the existing PH Robinson 345/138-kV substation. The New Substation will be designed with six 345-kV, 5000 A breakers in breaker-and-a-half bus arrangements and interconnected by cutting the substation into the existing PH Robinson to Meadow 345-kV transmission line
- Rebuild the existing Magnolia 138-kV substation to a 345/138-kV substation. The Magnolia 345/138-kV substation will be designed with four 345-kV, 5000 A breakers and ten 138-kV, 3200 A breakers in breaker-and-a-half bus arrangements
  - Install two 345/138-kV autotransformers with normal and emergency ratings of at least 800 MVA and 1067 MVA, respectively, for each transformer
- Install two new 345-kV tie-lines to connect the New Substation and Magnolia 345/138-kV substation on separate structures with normal and emergency ratings of at least 2987 MVA for each tie-line, approximately 0.01-mile
- Upgrade the existing League City to Butler Road to Magnolia and Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 18.10-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.00-mile

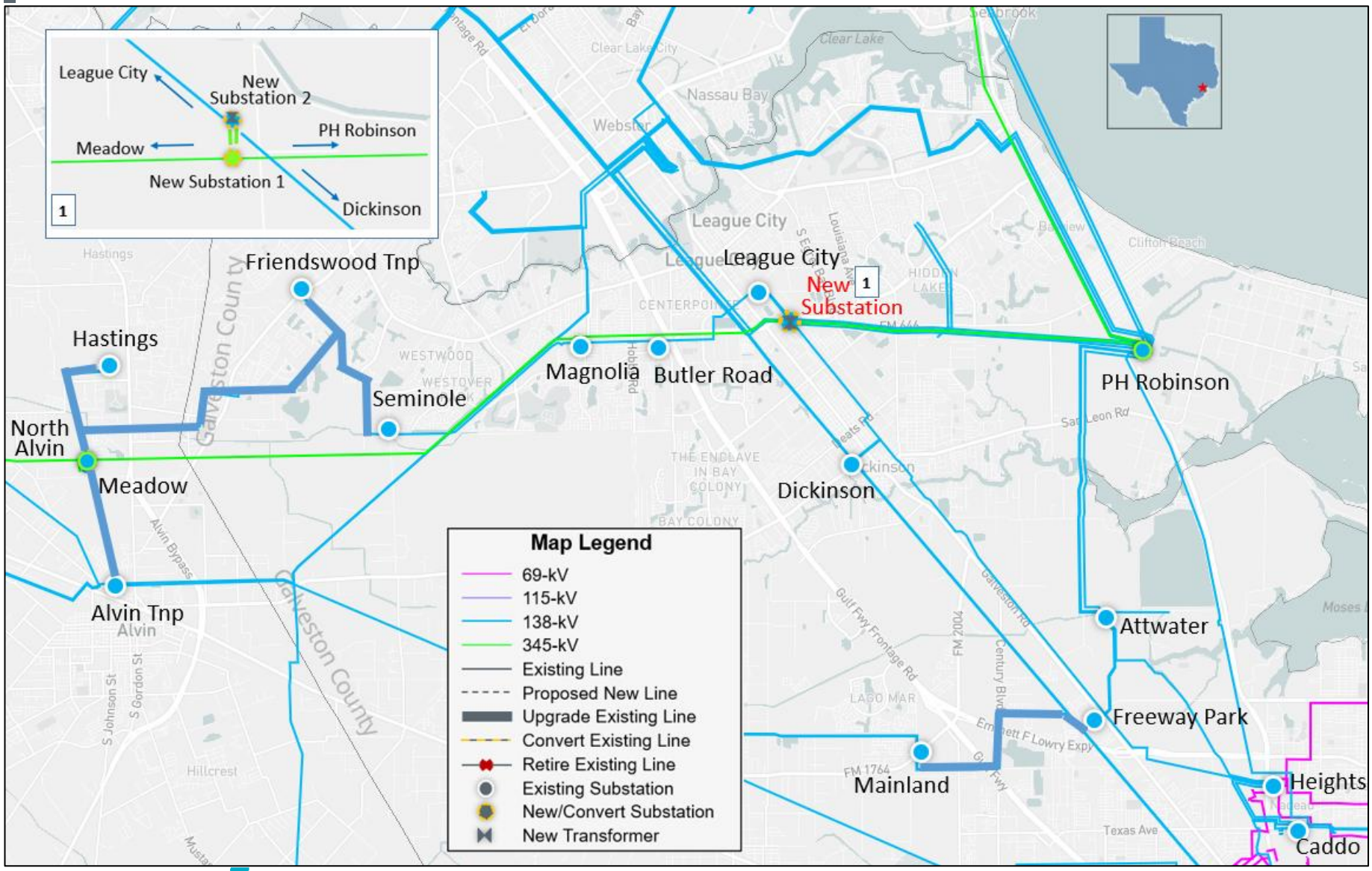
Option 3 – 345-kV Source to Butler Road



Option 3 – 345-kV Source to Butler Road

- Build a new 345-kV New Substation approximately 7.80-mile from the existing PH Robinson 345/138-kV substation. The New Substation will be designed with six 345-kV, 5000 A breakers in breaker-and-a-half bus arrangements and interconnected by cutting the substation into the existing PH Robinson to Meadow 345-kV transmission line
- Rebuild the existing Butler Road 138-kV substation to a 345/138-kV substation. The Butler Road 345/138-kV substation will be designed with four 345-kV, 5000 A breakers and ten 138-kV, 3200 A breakers in breaker-and-a-half bus arrangements
  - Install two 345/138-kV autotransformers with normal and emergency ratings of at least 800 MVA and 1067 MVA, respectively, for each transformer
- Install two new 345-kV tie-lines to connect the New Substation and Butler Road 345/138-kV substation on separate structures with normal and emergency ratings of at least 2987 MVA for each tie-line, approximately 0.01-mile
- Upgrade the existing League City to Butler Road and Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 16.64-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile

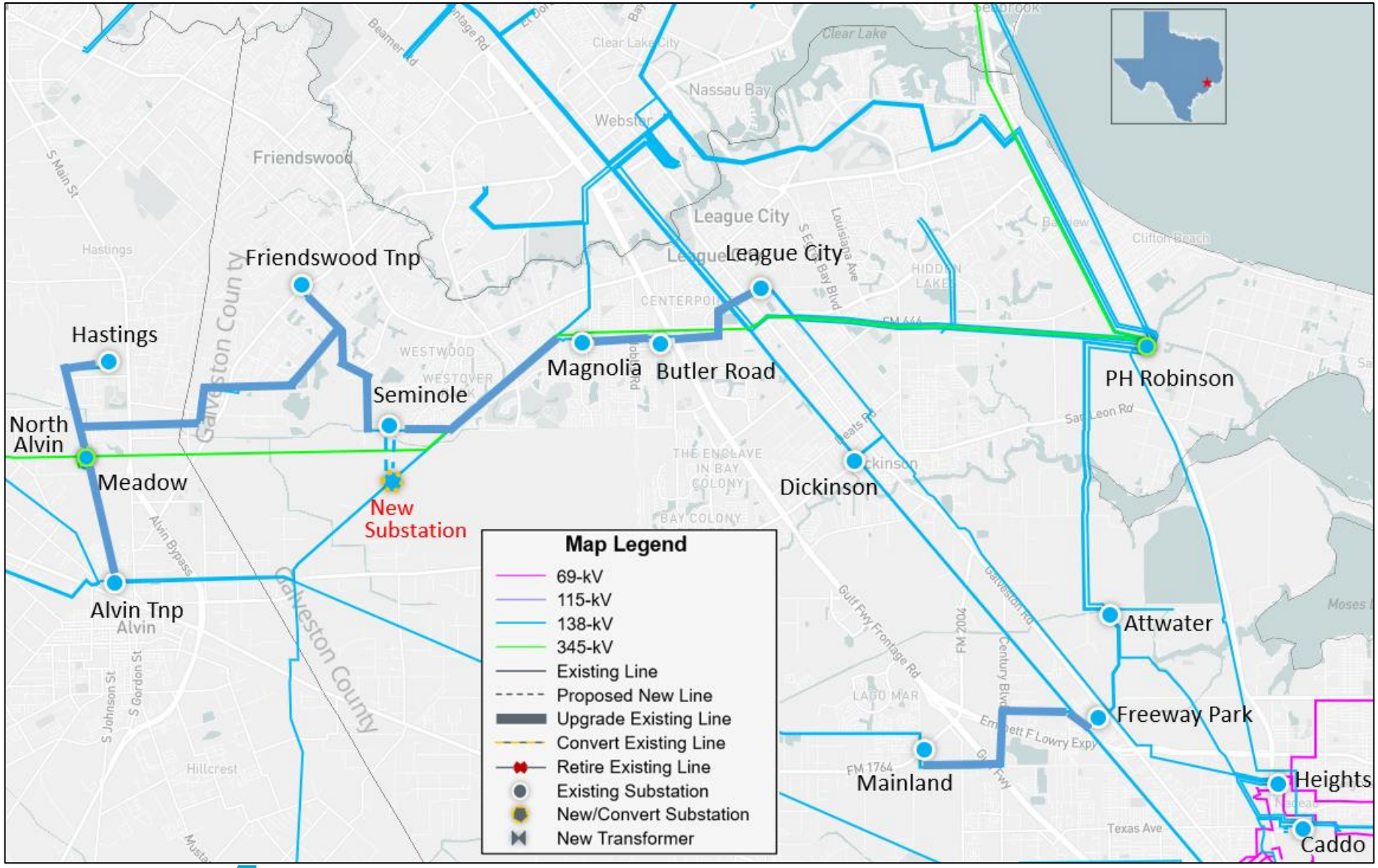
Option 4 – 345-kV Source to League City



Option 4 – 345-kV Source to League City

- Build a new 345-kV New Substation 1 approximately 5.58-mile from the existing PH Robinson 345/138-kV substation. The New Substation 1 will be designed with six 345-kV, 5000 A breakers in breaker-and-a-half bus arrangements and interconnected by cutting the substation into the existing PH Robinson to Meadow 345-kV transmission line
- Build a new 345/138-kV New Substation 2, next to the New Substation 1, cutting into the existing League City to Dickinson 138-kV transmission line, approximately 0.70-mile southeast of the existing League City 138-kV substation. The New Substation 2 will be designed with four 345-kV, 5000 A breakers and ten 138-kV, 3200 A breakers in breaker-and-a-half bus arrangements
  - Install two 345/138-kV autotransformers with normal and emergency ratings of at least 800 MVA and 1067 MVA, respectively, for each transformer
- Install two new 345-kV tie-lines to connect the New Substation 1 and New Substation 2 on separate structures with normal and emergency ratings of at least 2987 MVA for each tie-line, approximately 0.01-mile
- Upgrade the existing Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 14.45-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile

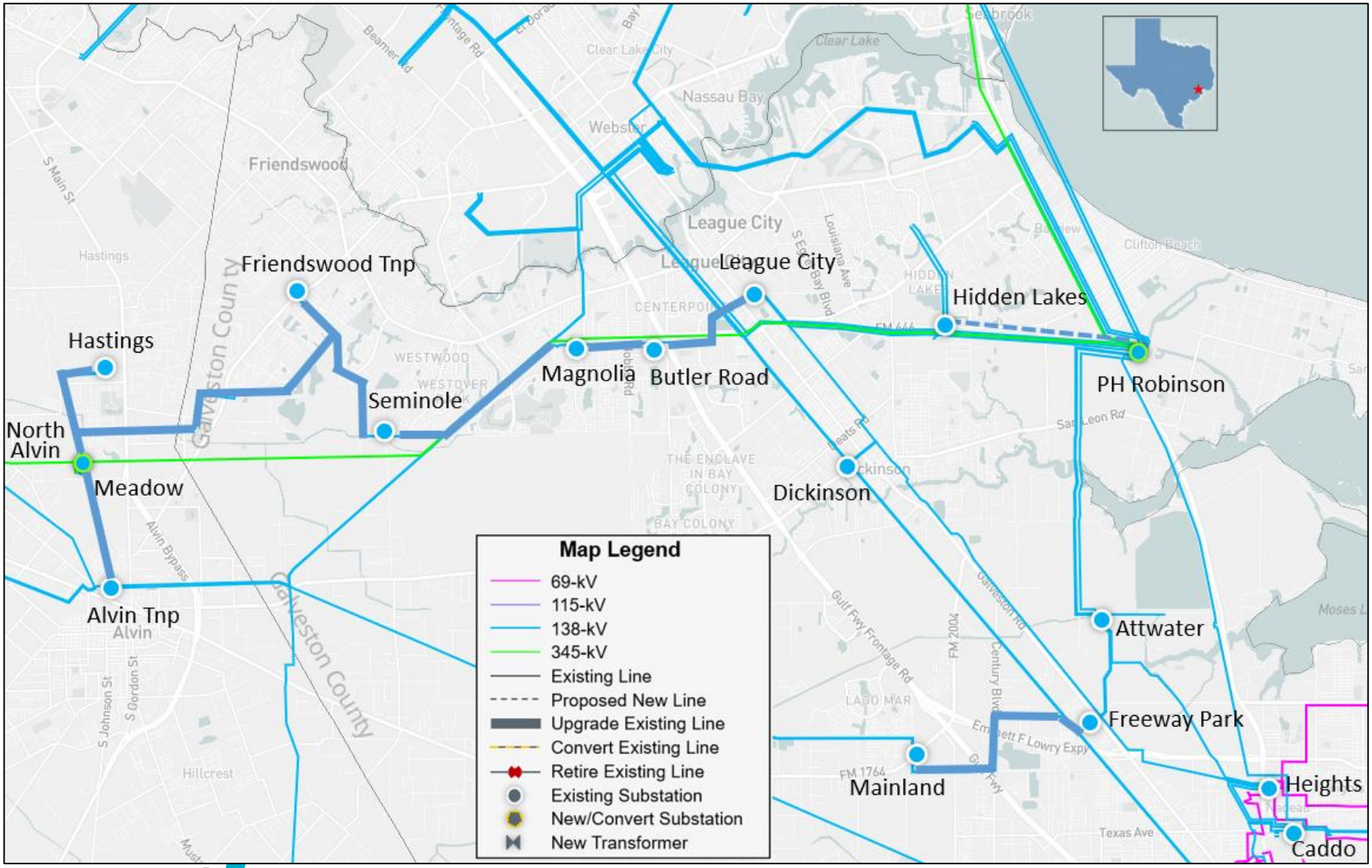
Option 5 – 138-kV Source to Seminole



Option 5 – 138-kV Source to Seminole

- Build a new 138-kV New Substation at the junction of the existing 138-kV transmission lines of Alta Loma to PH Robinson (approximately 12.67-mile from PH Robinson), Webster to Mustang Bayou (approximately 7.80-mile from Webster) and Webster to Limburg (approximately 7.80-mile from Webster)
- Build a new 138-kV double-circuit transmission line connecting the new 138-kV New Substation to the existing Seminole 138-kV substation with normal and emergency ratings of at least 717 MVA for each circuit, approximately 0.74-mile
- Upgrade the existing League City to Butler Road to Magnolia to Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 21.40-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile

Option 6 – New 138-kV Transmission Line



Option 6 – New 138-kV Transmission Line

- Upgrade the existing League City to Butler Road to Magnolia to Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 21.40-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile
- Upgrade the existing Meadow 345/138-kV transformer A1 with normal and emergency ratings of at least 800 MVA and 1000 MVA, respectively
- Add a 138-kV second circuit on the existing PH Robinson to Hidden Lakes 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 3.1-mile

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
1A	None	None	None	None	None	None
2	None	None	None	None	None	None
3	None	None	None	None	None	None
4	None	None	None	None	None	None
5	1	None	1	None	None	None
6	None	None	None	None	None	None

* G-1 Generator tested: Amoco Oil Combined Cycle Train 2
** X-1 Transformers tested: PH Robinson 345/138-kV T2 and Meadow 345/138-kV T2

Planned Maintenance Outage Scenario Analysis – Options

- Preliminary results of planned maintenance outage analysis

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

Minimum Deliverability Analysis – Options

- Preliminary results under Minimum Deliverability Criteria

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

Summary of Reliability Assessment – Options

- Preliminary results under NERC TPL-001-5.1 and ERCOT Planning Criteria

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

- Option 1A, Option 2 , Option 3 , Option 4, and Option 6 were short-listed for further evaluations

Long-Term Load-Serving Capability Assessment

- Assumptions
  - Adjusted load up in the study area (Galveston County and nearby area), excluding Flexible Loads in the area
  - Adjusted conforming load down outside of the Coast Weather Zone to balance power
  - Based on N-1 contingency
- Preliminary Findings

Option	Incremental Load-Serving Capability (~MW)
1A	1453
2	1081
3	469
4	189
6	985

Cost Estimate and Feasibility Assessment

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

Option	Cost Estimates (~$M)	CCN Required (~miles)	Feasibility
1A	$172.5	No	Yes
2	N/A	N/A	No
3	N/A	N/A	No
4	N/A	N/A	No
6	$95.9	No	Yes

  - Based on inputs from the TSPs, Option 2 , Option 3 and Option 4 are deemed infeasible due to no physical space available for the new facilities or ability to acquire land. These options will be removed from the options comparison

Comparison of Short-Listed Options

	Option 1A	Option 6
Meets ERCOT and NERC Reliability Criteria	Yes	Yes
Improves Long-Term Load-Serving Capability	Yes (Better)	Yes
Requires CCN	No	No
Cost Estimate* (~$M)	172.5	95.9
Feasible	Yes	Yes

* Cost estimate was provided by the Transmission Service Providers (TSPs) and includes the estimated capital cost with energized construction work.

- Option 1 better improves long-term load-serving capability
- Option 6 is the least cost option

Preferred Option

- Option 6 was selected as the ERCOT preferred option because it
  - Addresses the project need in the study area
  - Meets both ERCOT and NERC reliability criteria
  - Improves long-term load-serving capability for future load growth in the area
  - Is the least cost solution
- Based on the ERCOT independent review, ERCOT will reclassify this RPG project to a Tier 2 project

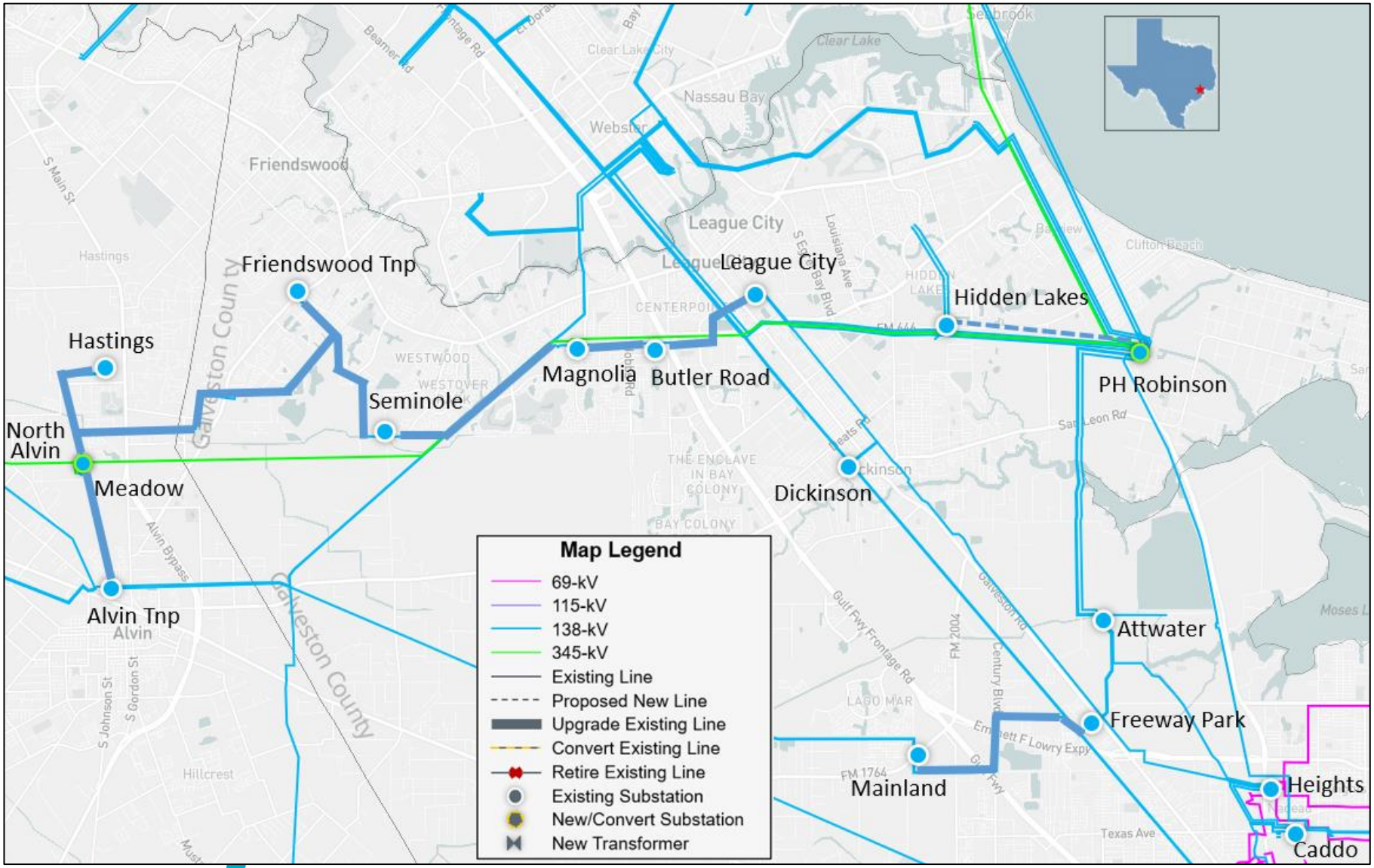
Additional Analysis

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

ERCOT Recommendation

- ERCOT recommends Option 6
  - Estimated Cost: approximately $95.9 million
  - Expected ISD: December 2028
  - No CCN filling will be required

Map of ERCOT Recommended Option



ERCOT Recommended Option

- Upgrade the existing League City to Butler Road to Magnolia to Seminole to Friendswood Tnp to Hastings to North Alvin to Alvin 138-kV transmission lines with normal and emergency ratings of at least 717 MVA, approximately 21.40-mile
- Upgrade the existing Freeway Park to Mainland 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 4.0-mile
- Upgrade the existing Meadow 345/138-kV transformer A1 with normal and emergency ratings of at least 800 MVA and 1000 MVA, respectively
- Add a 138-kV second circuit on the existing PH Robinson to Hidden Lakes 138-kV transmission line with normal and emergency ratings of at least 717 MVA, approximately 3.1-mile

Next Steps and Tentative Timeline

- Tentative timeline
  - EIR report to be posted in the MIS in December 2025

Thank you!

Stakeholder comments also welcomed through:

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Appendix A – Transmission Projects

- List of transmission projects added to study base case based on June 2025 TPIT report

RPG/TPIT No	Project Name	Tier	Project ISD	From County
87594	Rebuild League City-Dickinson 138kV with 2-795 ACSS	Tier 4	Nov-24	TNMP
87889	Install 2x 40 MVAR Cap bank at League City	Tier 4	May-25	TNMP
91285	TNMP Lago Mar Substation	Tier 4	Sep-25	TNMP

Appendix B – Transmission Projects

- List of transmission project removed from the study base case

RTP Project ID	Project Name	County
2024-MORC-C3	Choctaw Tap TNP (39095) to Texas City Main TNP (39140) 69-kV Line Upgrade	Galveston

Appendix C – Generation Projects

- List of generation projects added to study base case based on August 2025 GIS report

GINR	Project Name	Fuel	Projected COD	Capacity (~MW)	County
19INR0042	Long Point Solar	SOL	04/01/2026	120.7	Brazoria
21INR0443	Cottonwood Bayou Storage	OTH	12/03/2025	153.0	Brazoria
22INR0546	Enchanted Rock NEWPP	GAS	06/06/2025	30.0	Harris
22INR0558	Callisto II Energy Center	OTH	07/01/2026	203.2	Harris
23INR0150	Cradle Solar	SOL	12/31/2025	200.9	Brazoria
23INR0290	Zeya BESS	OTH	12/01/2026	255.3	Galveston
23INR0358	Castor BESS	OTH	12/31/2025	205.4	Brazoria
24INR0128	Desna BESS	OTH	03/31/2026	205.5	Brazoria
24INR0329	XE Murat [Adlong] Storage	OTH	07/24/2025	60.1	Harris
24INR0405	Crowned Heron BESS	OTH	09/30/2025	154.2	Fort Bend
24INR0456	FRIENDSWOOD ENERGY GENCO	GAS	08/29/2025	143.7	Harris
24INR0460	Evelyn Battery Energy Storage System	OTH	08/21/2025	221.3	Galveston
24INR0482	NRG THW GT 345 (TEF -Due Diligence)	GAS	05/01/2026	456.0	Harris
24INR0493	Crowned Heron BESS 2	OTH	03/31/2026	154.2	Fort Bend
24INR0584	Houston IV BESS	OTH	06/03/2026	164.6	Harris

Appendix C – Generation Projects (Cont.)

- List of generation projects added to study base case based on August 2025 GIS report (cont.)

GINR	Project Name	Fuel	Projected COD	Capacity (~MW)	County
25INR0102	Austin Bayou Solar	SOL	06/01/2027	502.5	Brazoria
25INR0103	Elio BESS	OTH	08/05/2027	317.2	Brazoria
25INR0262	Shepard Energy Storage	OTH	07/01/2027	256.4	Galveston
25INR0300	Wizard BESS	OTH	10/21/2025	150.8	Galveston
25INR0421	Aldrin 138 BESS	OTH	07/01/2027	207.0	Brazoria
25INR0425	Aldrin 345 BESS	OTH	12/01/2027	362.0	Brazoria
25INR0467	Bocanova Power	OTH	08/15/2025	150.5	Brazoria
26INR0189	Skipjack Energy Storage	OTH	04/05/2027	150.6	Brazoria
26INR0226	First Capitol BESS	OTH	05/01/2026	257.5	Brazoria
26INR0333	VERTUS ENERGY STORAGE	OTH	02/01/2026	207.3	Galveston
26INR0405	Buffalo Creek BESS	OTH	06/01/2026	251.4	Fort Bend