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PROJECT NO. 55999

REPORTS OF THE ELECTRIC RELABILITY COUNCIL OF TEXAS	**§**	**PUBLIC UTILITY COMMISSION**
	§	
	§	**OF TEXAS**

ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.'S
NOTICE OF ENDORSEMENT OF A TIER 2 TRANSMISSION PROJECT

Pursuant to Protocol Section 3.11.4.9(1), Electric Reliability Council of Texas, Inc. (ERCOT) files this Notice of the ERCOT Regional Planning Group (RPG)'s endorsement of a Tier 2 transmission project submitted by CPS Energy (CPS), as reflected in Attachments A and B. CPS is the ERCOT-registered Transmission Service Provider (TSP) responsible for the transmission project. ERCOT is prepared to provide the Commission with any additional information it may request regarding this matter.

Dated: August 07, 2024

Respectfully Submitted,

/s/ Katherine Gross

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Attachment A

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August 7, 2024

George J. Tamez
Director, Transmission Planning & Operations Engineering
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

RE: CPS Energy Omicron Reliability Project

Dear Mr. Tamez,

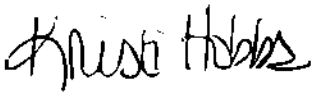
On July 26, 2024, the Electric Reliability Council of Texas (ERCOT) endorsed the following Tier 2 transmission project in accordance with ERCOT Protocol Section 3.11.4:

CPS Energy Omicron Reliability Project:

- Construct new transmission line extensions from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line, approximately 5-mile. Create a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit, both new 138-kV transmission lines will require a new Right of Way (ROW);
- Rebuild the existing Leon Creek to Pearsal 138-kV transmission line with normal and emergency ratings at least 478 MVA, approximately 1.7-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Crossroads 138-kV substation; and
- Rebuild the existing Omicron to Rafter 138-kV transmission line with normal and emergency ratings at least 570 MVA, approximately 1.7-mile.

Should you have any questions please contact me at any time.

Sincerely,



Kristi Hobbs
Vice President, System Planning and Weatherization
Electric Reliability Council of Texas

cc:

Pablo Vegas, ERCOT
Woody Rickerson, ERCOT
Prabhu Gnanam, ERCOT
Robert Golen, ERCOT
Brandon Gleason, ERCOT

ERCOT Independent Review of the CPS Energy (CPS) Omicron Reliability Project

Document Revisions

Date	Version	Description	Author(s)
07/26/2024	1.0	Final Draft	Sarah Gunasekera
		Reviewed by	Robert Golen, Prabhu Gnanam

Executive Summary

CPS Energy (CPS) submitted the Omicron Reliability Project to the Regional Planning Group (RPG) in February 2024. CPS proposed this project to address thermal and voltage planning criteria violations associated with increased customer load at the 138-kV Omicron substation in the West San Antionio area, located in Bexar County in the South Central (SC) weather zone.

The CPS proposed project was estimated to cost $42.5 million and was classified as a Tier 2 project per ERCOT Protocol Section 3.11.4.3. The proposed project would require a Certificate of Convenience and Necessity (CCN) application.

ERCOT performed an Independent Review, identified thermal overloads and voltage violations in the San Antonio Area, and evaluated six different transmission project options.

Among the six different transmission project options evaluated in the Independent Review, ERCOT recommends Option 1B to address the reliability violations based on the study results described in Sections 5 and 6 of this report. Option 1B consists of the following:

- Construct a new approximately 5-mile line extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit; these transmission lines will require a new Right of Way (ROW);
- Rebuild the existing Leon Creek to Pearsal 138-kV transmission line with normal and emergency ratings at least 478 MVA, approximately 1.7-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Crossroads 138-kV substation; and
- Rebuild the existing Omicron to Rafter 138-kV transmission line with normal and emergency ratings at least 570 MVA, approximately 1.7-mile; This upgrade was identified based on the congestion analysis described in Section 7 of this report.

The cost estimate for this Tier 2 project is approximately $45.7 million. A CCN application will be required for the construction of the new 138-kV extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line due to approximately 5.0 miles of new ROW. The expected In-Service Date (ISD) of this project is June 2027.

CPS will work with ERCOT as early as practical to develop outage plans needed for construction and implement Constraint Management Plans (CMP) based on expected operational conditions for the time period when construction outages are planned.

Table of Contents

1 Introduction

In February 2024, CPS Energy (CPS) submitted the Omicron Reliability Project to the Regional Planning Group (RPG) to address NERC TPL-001-5.1 and ERCOT planning criteria thermal and voltage violations due to new load at the Omicron substation. This project is in the South Central (SC) Weather Zone in Bexar County.

The CPS proposed project was classified as Tier 2 project pursuant to ERCOT Protocol Section 3.11.4.3, with an estimated cost of $42.5 million. One or more Certificate of Convenience and Necessity (CCN) applications will be required for the construction of new 138-kV transmission lines from Omicron Substation to the 138-kV Cagnon to Howard transmission line and from the Talley Rd substation to Ranchtown substation due to approximately 19.3 miles of new Right of Way (ROW). The expected In-Service Date (ISD) of the project is June 1, 2027.

ERCOT conducted an Independent Review for this RPG project to identify any reliability needs in the area including the thermal overloads and voltage violations under post contingency and maintenance outage conditions and evaluate various transmission upgrade options. This report describes the study assumptions, methodology, and the results of ERCOT Independent Review of the project.

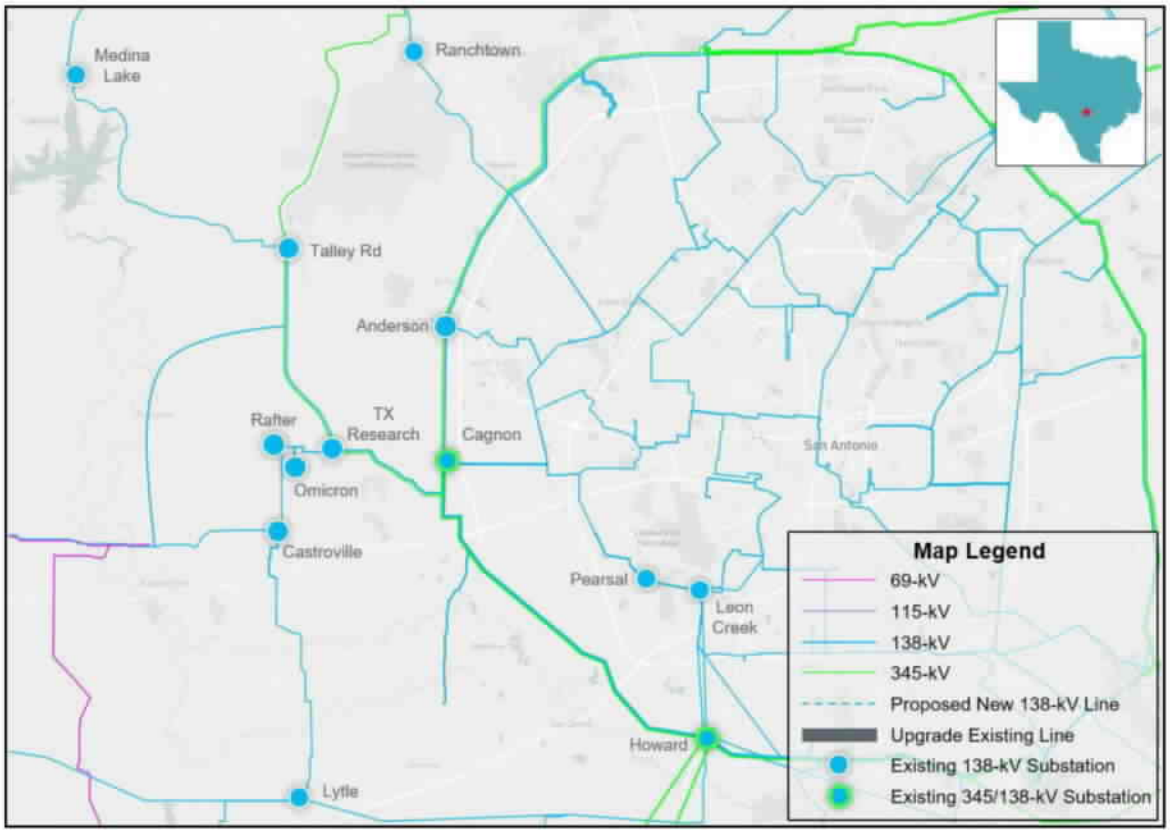


Figure 1.1: Map of Transmission System in the west San Antonio Area

2 Study Assumptions and Methodology

ERCOT performed studies under various system conditions to identify any reliability issue and to determine transmission upgrades to support the proposed Omicron Reliability Project if an upgrade is deemed necessary. This section describes the study assumptions and criteria used to conduct the independent study.

2.1 Study Assumptions for Reliability Analysis

This project is in the SC Weather Zone in Bexar County. Bandera and Medina Counties were also included in the study because of their electrical proximity to the proposed project.

2.1.1 Steady-State Study Base Case

The Final 2023 Regional Transmission Plan (RTP) cases, published on the Market Information System (MIS) on December 22, 2023, were used as reference cases in this study. Year 2029 Summer was selected for the long-term outlook. The steady-state study base case was constructed by updating transmission, generation, and loads of the following 2029 Summer Peak Load case for the for South and South Central (SSC) Weather Zones:

- Case: 2023RTP_2029_SUM_SSC_12222023[1].

2.1.2 Transmission Topology

Transmission projects within the study area with ISD by May 2029 were added to the study base case. The ERCOT Transmission Project Information and Tracking (TPIT)[2] report posted in February 2024 was used as reference. The added TPIT projects are listed in Table 2.1. These are classified as Tier 1, Tier 2, Tier 3, and Tier 4 projects.

Table 2.1: List of Transmission Projects Added to the Study Base Case

RPG/TPIT No	Project Name	Tier	Project ISD	County
22RPG026	Wimberley Loop project	Tier 2	5/1/2027	Blanco, Hays
23RPG003	Eagle Ford Large Load Interconnection Project	Tier 3	12/4/2025	DeWitt
23RPG004	Lockhart to Luling 69-kV Transmission Line Overhaul Project	Tier 4	6/30/2025	Caldwell
23RPG015	Cuero Substation Upgrade Project	Tier 4	5/15/2024	DeWitt
23RPG028	Rio Medina Project	Tier 2	1/1/2027	Medina
23RPG032	San Antonio South Reliability II Project	Tier 1	5/1/2029	Guadalupe, Wilson, Atascosa
72500	Rio Lago - New 138kV Substation	Tier 4	11/30/2024	Bandera
72268	CPSE_New Ingram Rd Substation	Tier 4	5/1/2025	Bexar
71873	CPSE_Hill Country Auto# 2 Impedance Upgrade	Tier 3	6/1/2025	Bexar
73063	Big Foot to Lytle: Convert to 138 kV	Tier 4	9/20/2025	Medina, Frio
76242	Lytle: Build new 138 kV terminal	Tier 4	9/20/2025	Medina

[1] 2023 Regional Transmission Plan Postings: https://mis.ercot.com/secure/data-products/grid/regional-planning
[2] TPIT Report: https://www.ercot.com/gridinfo/planning

RPG/TPIT No	Project Name	Tier	Project ISD	County
76768	Upgrade Pearson -Pearsall	Tier 4	12/1/2025	Frio, Medina
67992D	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	1/31/2026	Bexar
76790	Upgrade Pearsall Auto	Tier 4	5/1/2027	Frio
73417	LCRATSC_Schumansville_SheriffsPosse_Storm Hardening	Tier 4	5/15/2025	Guadalupe, Comal
73793	LCRATSC_McCartyLaneEast_Zorn_TL_Storm_ Hardening	Tier 4	5/15/2025	Hays, Guadalupe

Transmission projects, listed in Table 2.2, identified in the 2023 RTP as placeholders for projects within the study area that are not approved by RPG were removed from study base case.

Table 2.2: List of Transmission Projects Removed from the Study Base Case

RTP Project Index	Project Name	County
2023-SC5	Beck Road 345/138-kV Substation Expansion	Bexar
2023-SC10	Wiseman 138-kV Substation Addition and CPS Multiple Cap Bank Additions	Bexar, Comal
2023-SC16	Hondo to Hondo Creek Switching Station 138-kV Line Upgrade	Medina
2023-SC19	South to Central Texas 345-kV Double-Circuit Line Additions	San Patricio, Bee, Karnes, Wilson, Guadalupe, Comal, Hays, Travis, Williamson
2023-SC20	Pearson - Natalia - Devine - Moore - Pearsall 69-kV Line Rebuild	Frio, Medina
2023-SC21	Big Foot to Lytle 69-kV to 138-kV Line Conversion	Frio, Medina
2022-S3	Pearsall 138/69-kV Transformer Upgrade	Frio
2023-S3	Oaks Sub 138/69-kV Transformer Upgrade	Atascosa
2023-S4	Poteet Sub to Oaks Sub 69-kV Line Upgrade	Atascosa
2023-S5	Poteet Sub to Pearsall Switching Station 69-kV Line Upgrade	Atascosa, Frio
2023-S6	Rossville Substation Cap Bank Addition	Atascosa

2.1.3 Generation

Based on the January 2024 Generator Interconnection Status (GIS)[3] report posted on the ERCOT website on February 2024, generators in the study area that met Planning Guide Section 6.9(1) conditions with Commercial Operations Date (COD) prior to June 1, 2027, were added to the study base case. These generation additions are listed in Table 2.3. All new generation dispatches were consistent with the 2024 RTP methodology.

[3] GIS Report: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER

Table 2.3: List of Generation Added to the Study Base Case Based on the January 2024 GIS Report

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
22INR0366	LIBRA BESS	Other	3/30/2024	206.2	Guadalupe
22INR0422	Ferdinand Grid BESS	Other	5/31/2026	202.7	Bexar
23INR0154	Ebony Energy Storage	Other	4/30/2024	203.5	Comal
23INR0381	Soportar ESS	Other	3/15/2025	102.1	Bexar
23INR0483	Rio Nogales CT1 Rotor Replacement	Gas	6/8/2023	3.1	Guadalupe
24INR0427	CPS AvR CT1 Rotor Replacement	Gas	2/15/2024	11.3	Bexar

The status of each unit that was projected to be either indefinitely mothballed or retired at the time of the study was reviewed. The units listed in Table 2.4 were opened (turned off) in the study base case to reflect their mothballed/retired status.

Table 2.4: List of Generation Opened to Reflect Mothballed/Retired/Forced Outage Status

Bus No	Unit Name	Max Capacity (~MW)	Weather Zone
110941	SL_SL_G1	65.0	Coast
110942	SL_SL_G2	65.0	Coast
110943	SL_SL_G3	30.0	Coast
110944	SL_SL_G4	30.0	Coast
140042	WFCOGEN_UNIT4	17.0	North
130121	SGMTN_SIGNALM2	6.6	Far West
132931	TOSBATT_UNIT1	2.0	Far West

Generation listed in Table 2.5 were closed (turned on) in the study base case to reflect the change in their Generation Resource as these resources are returning to year-round service.

Table 2.5: List of Generation Closed to Reflect Returning to Service Status

Bus No	Unit Name	Max Capacity (~MW)	Weather Zone
110020	WAP_GT2	71.0	Coast
150023	MCSES_UNIT8	568.0	North-Central
110261	TGF_TGFGT_1	78.0	Coast

2.1.4 Loads

Loads in the SC Weather Zone were updated based on the new confirmed loads in the study area. Minimum reserve requirements were maintained consistent with the 2023 RTP.

2.2 Long-Term Load-Serving Capability Assessment

ERCOT performed long-term load-serving capability assessment under base case and higher load conditions to compare the performance of the study options.

In the higher load condition evaluation, the loads in the study area were increased (customer with non-scalable loads remained at the same level as in the base case), and conforming loads outside of SSC Weather Zone were decreased to balance power.

2.3 Maintenance Outage Scenario

ERCOT developed an off-peak maintenance season scenario to further evaluate the study options.

The load level in the SSC Weather Zones was reduced to 86% of its summer peak load level in the study base case. This scaling is meant to reflect assumed off-peak season loads based on ERCOT load forecast for future years as well as historical load in the SSC Weather Zone.

2.4 Study Assumptions for Congestion Analysis

Congestion analysis was conducted to identify any new congestion in the study area with the addition of the preferred transmission upgrade option.

The 2023 RTP 2028 economic case was updated based on the April 2024 GIS[4] report for generation updates and the February 2024 TPIT[5] reports for transmission updates to conduct congestion analysis. The 2028 study year was selected based on the proposed ISD of the project.

New generation additions listed in Table A.1 in Appendix A were added to the economic base case. Transmission projects listed in Table A.2 in Appendix A were also added to the economic base case. All generation listed in Table 2.4 were opened in the study base case to reflect their mothballed/retired status.

2.5 Methodology

This section lists the Contingencies and Criteria used for project review along with tool used to perform the various analyses.

2.5.1 Contingencies and Criteria

The reliability assessments were performed based on NERC Reliability Standard TPL-001-5.1, ERCOT Protocols, and ERCOT Planning Criteria[6].

Contingencies[7] were updated based on the changes made to the topology as described in Section 2.1 of this document. The following steady-state contingencies were simulated for the study region:

- 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: generation outages) {Leon Creek U1, San Miguel U1, Sunray Solar U1, JK Spruce U1}; and

[4] GIS Report: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER
[5] TPIT Report: https://www.ercot.com/gridinfo/planning
[6] ERCOT Planning Criteria: http://www.ercot.com/mktrules/guides/planning/current
[7] Details of each event and contingency category is defined in the NERC reliability standard TPL-001-5.1

- P6-2: X-1 + N-1 (X-1: 345/138-kV transformers only) {Cagnon X1, Howard Road X1, Hill Country X1}.

All 69-kV and above buses, transmission lines, and transformers in the study region were monitored (excluding generator step-up transformers) and the following thermal and voltage limits were enforced:

- Thermal
  - Rate A (normal rating) for pre-contingency conditions; and
  - Rate B (emergency rating) for post-contingency conditions.
- Voltages
  - Voltages exceeding pre-contingency and post-contingency limits; and
  - Voltage deviations exceeding 8% on non-radial load buses.

2.5.2 Study Tool

ERCOT utilized the following software tools to perform this independent study:

- PowerWorld Simulator version 23 for Security Constrained Optimal Power Flow (SCOPF) and steady-state contingency analysis and
- UPLAN version 12.3.029978 to perform congestion analysis.

3 Project Need

Steady-state reliability analysis was performed in accordance with NERC TPL-001-5.1 and ERCOT Planning Criteria described in Section 2.5 of this document. This analysis indicated two thermal overloads under X-1+N-1 contingency in the study area. Under the X-1 scenario with the Cagnon Auto Transformer 1 taken out of service, a thermal violation on the Cagnon to Anderson 138-kV line was observed. Under the X-1 scenario with the Hill Country Transformer 1 taken out of service, a thermal violation on the Howard to Von Rose 345-kV line was observed. Fifty-seven low voltage violations were observed in the study area under P7 contingency, and one low voltage violation was observed under P1 contingency. These violations were also seen under G-1+N-1 and X-1+N-1 contingency conditions. These issues are summarized in Table 3.1, Table 3.2, and Table 3.3 while visually illustrated in Figure 3.1.

Table 3.1: Reliability Issues Seen Under NERC TPL-001-5.1 and ERCOT Planning Criteria in the Study Area

NERC Contingency Category	Voltage Violations	Thermal Overloads	Unsolved Power Flow
P0: N-0	None	None	None
P1, P2-1, P7: N-1	58	None	None
P3: G-1+N-1	None[8]	None	None
P6-2: X-1+N-1	None[8]	2	None

[8] Violations seen in the base case under N-1 were also seen under G-1 and X-1 scenarios and are not double counted in this table.

Table 3.2: Thermal Overloads Observed in the Study Area

NERC Contingency Category	Overloaded Element	Voltage Level (kV)	Length (~miles)	Max Loading %
P6-2: X-1+N-1	Cagnon to Anderson	138	4.6	101.2
P6-2: X-1+N-1	Von Rose to Howard	345	12.6	102.1

Table 3.3: Low Bus Voltage Violations Observed in the West San Antonio Area

NERC Contingency Category	Bus Name	Voltage Level (kV)	Voltage (pu)
P7: N-1	36TH Street	138	0.86
P7: N-1	Anderson	138	0.85
P7: N-1	Braunig Bus 1	138	0.88
P7: N-1	Braunig Bus 2	138	0.87
P7: N-1	Cagnon Bus 1	345	0.87
P7: N-1	Cagnon Bus 2	138	0.85
P7: N-1	Cagnon Bus 3	138	0.86
P7: N-1	Cagnon Bus 4	138	0.86
P7: N-1	Castroville	138	0.86
P7: N-1	Chavanea	138	0.87
P7: N-1	Crossroads	138	0.85
P7: N-1	Grissom	138	0.85
P7: N-1	Harlanda	138	0.88
P7: N-1	Helotes	138	0.85
P7: N-1	Hill Country Bus 1	345	0.88
P7: N-1	Hill Country Bus 2	138	0.86
P7: N-1	Hill Country Bus 3	138	0.86
P7: N-1	Hill Country Bus 4	138	0.86
P7: N-1	Howard Bus 1	345	0.87
P7: N-1	Howard Bus 2	138	0.87
P7: N-1	Hunt_Ln	138	0.86
P7: N-1	Leon Creek	138	0.88
P7: N-1	Lytle Bus 1	138	0.87
P7: N-1	Lytle Bus 2	138	0.87
P7: N-1	Mauermann	138	0.87
P7: N-1	MedinaBS	138	0.87
P7: N-1	Palo Alto	138	0.88
P7: N-1	Pearson Switching Station	138	0.86
P7: N-1	Pinn_Rd	138	0.86
P7: N-1	Pleasonton	138	0.91
P7: N-1	Potranco	138	0.85
P7: N-1	Quihi Tap	138	0.87
P7: N-1	Quintana	138	0.88
P7: N-1	Rafter	138	0.85
P7: N-1	Ranchtwn	138	0.86
P7: N-1	Rossville Sub	138	0.78

NERC Contingency Category	Bus Name	Voltage Level (kV)	Voltage (pu)
P7: N-1	Shepherd Rd	138	0.86
P7: N-1	Skyline Bus 1	138	0.87
P7: N-1	Skyline Bus 2	138	0.87
P7: N-1	Skyline Bus 3	138	0.87
P7: N-1	Skyline Bus 4	345	0.88
P7: N-1	Somerset	138	0.87
P7: N-1	Southsan	138	0.88
P7: N-1	Tally_Rd	138	0.86
P7: N-1	Toyota	138	0.87
P7: N-1	Trumbo	138	0.89
P7: N-1	TXResrch	138	0.85
P7: N-1	UTSA Bus 1	138	0.85
P7: N-1	UTSA Bus 2	138	0.85
P7: N-1	UTSA Bus 3	138	0.85
P7: N-1	Valley	138	0.87
P7: N-1	Vlsi	138	0.85
P7: N-1	Wstside	138	0.86

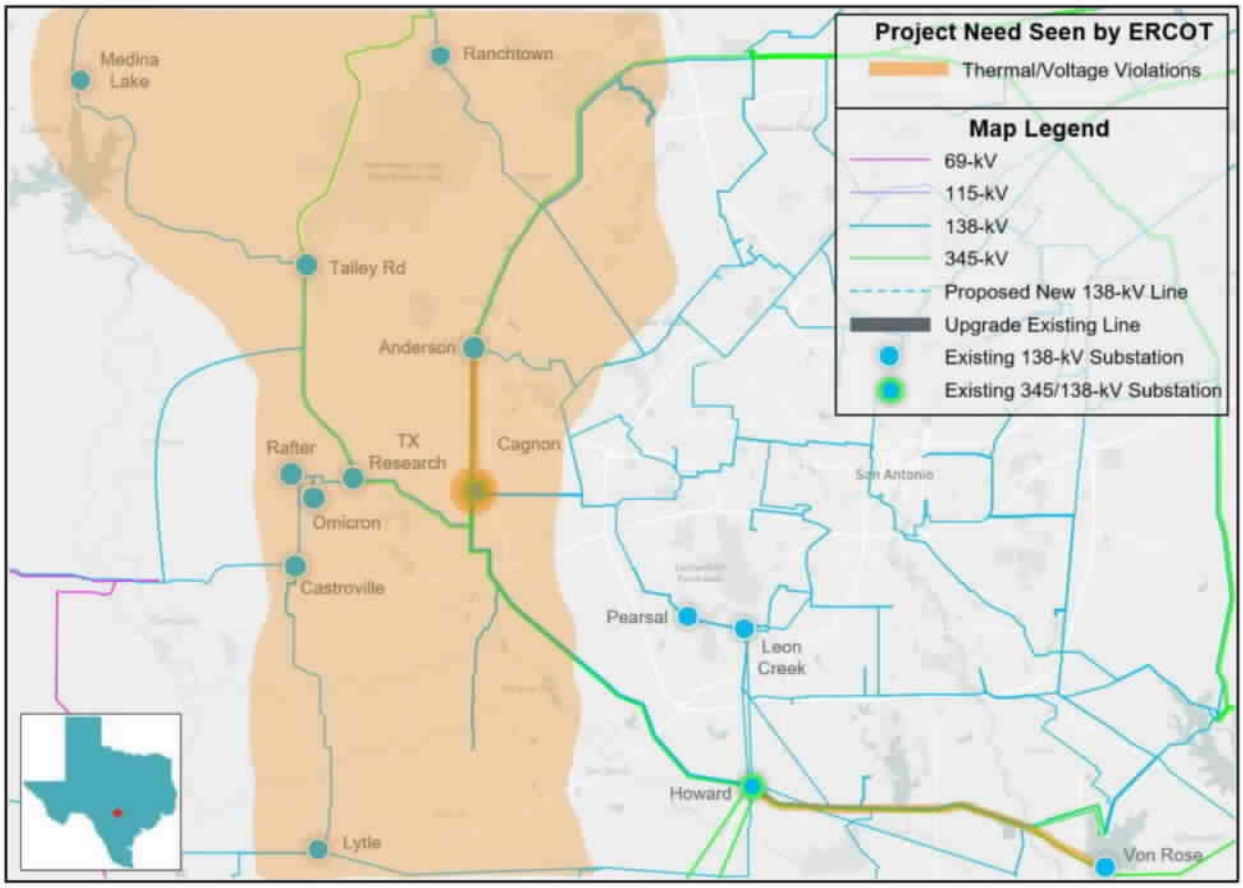


Figure 3.1: Study Area Map Showing Project Need Seen by ERCOT

4 Description of Project Options

ERCOT evaluated six system improvement options to address the thermal overloads and voltage violations that were observed in the study base case in the West San Antonio Area.

ERCOT coordinated with the local Transmission Service Provider (TSP) to add capacitor banks throughout the study area to resolve the voltage violations identified in Table 3.3. The thirteen (13) capacitor bank additions and their respective capacitor size that were recommended by the TSP are listed in Table 4.1. The approximate locations of the capacitor bank additions are seen in Figure 4.1 These capacitors were added to all initial six project options.

Table 4.1: Capacitor Bank Additions

Substation	Capacity (MVAr)
Rafter	28.57
Cagnon Rd	50.00
Hill Country	50.00
Potranco	28.57
Ranchtown	28.57
Anderson	50.00
Grissom Rd	50.00
Castroville	28.57
Bulverde	14.30
Grandview	28.57
Omicron	42.85
Eastside	50.00
Crossroads	28.57

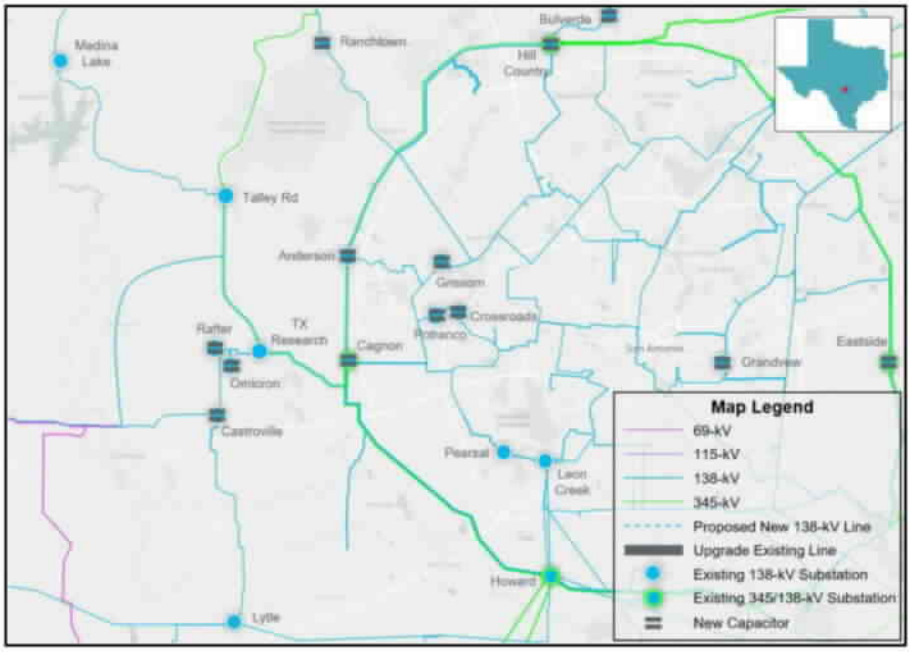


Figure 4.1: Map of Study Area with Capacitor Bank Additions

Option 1 (CPS Proposed Solution) consists of the following:

- Construct a new approximately 5-mile line extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit;
- Construct a new Talley Rd to Ranchtown 138-kV transmission line with normal and emergency ratings of at least 570 MVA, approximately 14.3-mile;
- Rebuild the existing Leon Creek to Pearsal 138-kV transmission line with normal and emergency ratings of at least 478 MVA, approximately 1.7-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

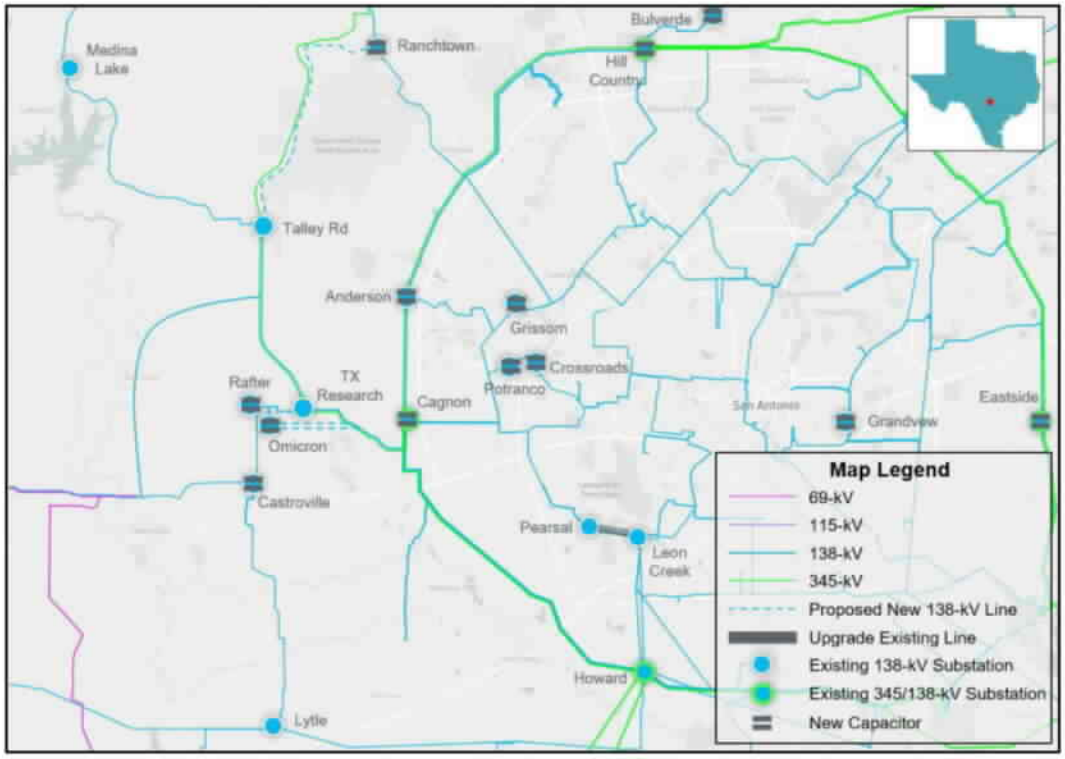


Figure 4.2: Map of Study Area with Option 1

Option 1A consists of the following:

- Construct a new approximately 5-mile line extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

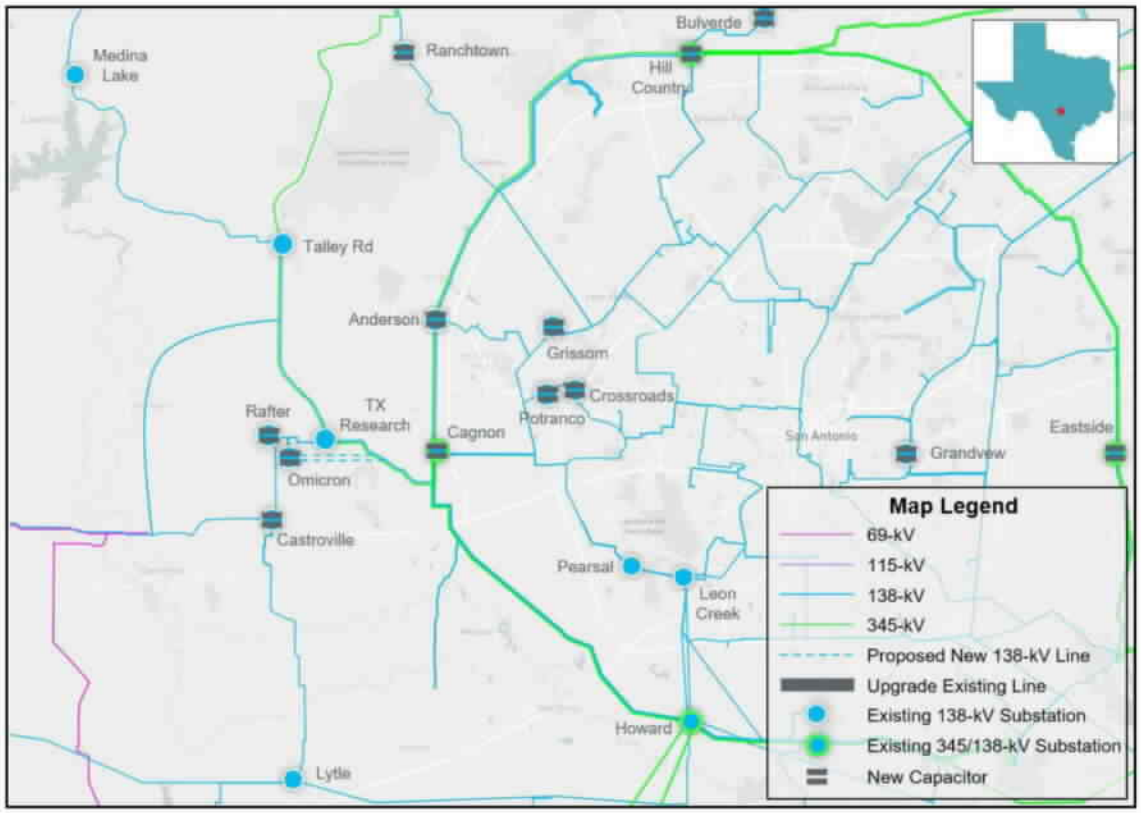


Figure 4.3: Map of Study Area with Option 1A

Option 1B consists of the following:

- Construct a new approximately 5-mile line extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit;
- Rebuild the existing Leon Creek to Pearsal 138-kV transmission line with normal and emergency ratings of at least 478 MVA, approximately 1.7-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

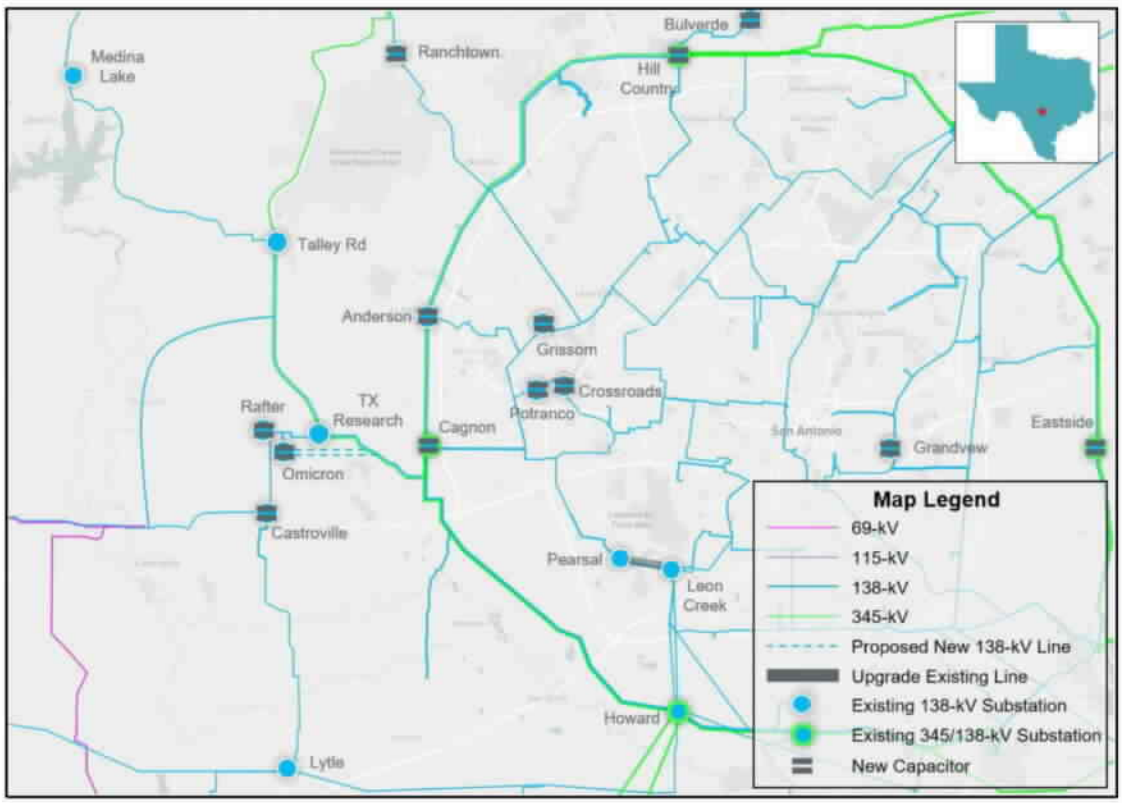


Figure 4.4: Map of Study Area with Option 1B

Option 2 consists of the following:

- Rebuild the existing Castroville to Rafter single circuit 138-kV transmission line as a double circuit 138-kV transmission line with normal and emergency ratings of at least 570 MVA, approximately 6.1-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

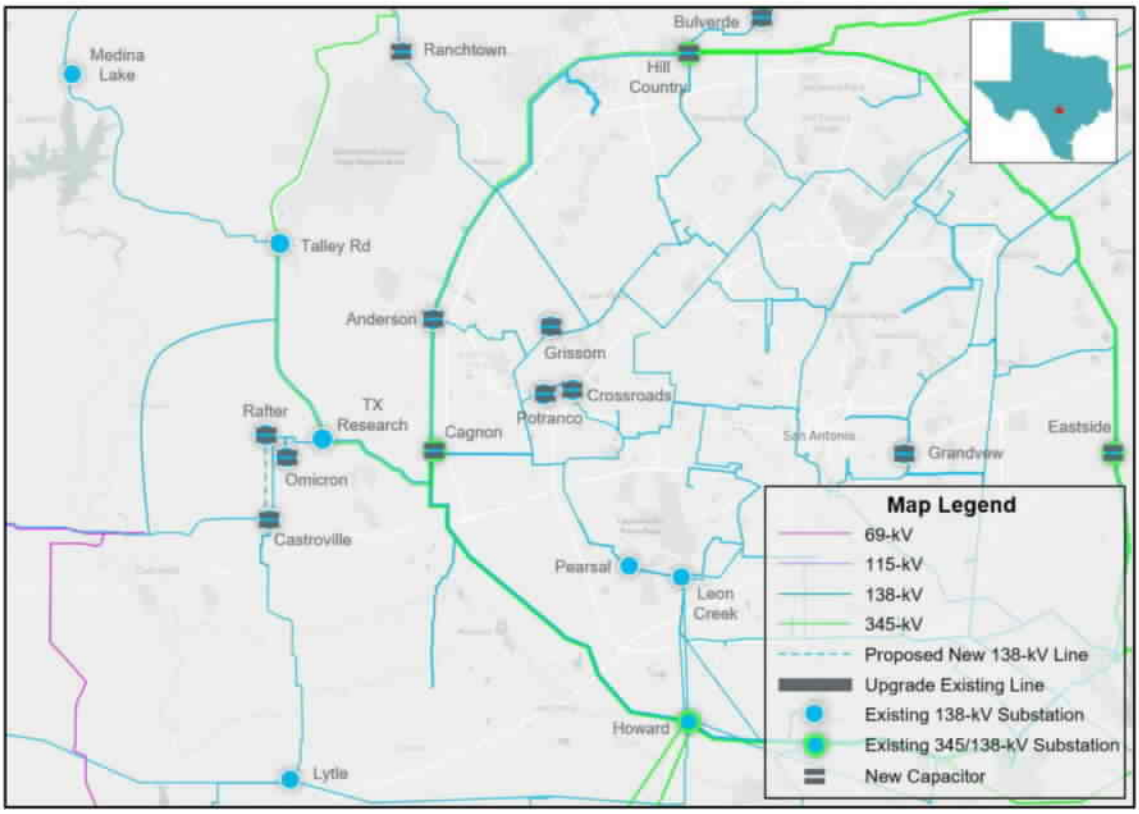


Figure 4.5: Map of Study Area with Option 2

Option 3 consists of the following:

- Rebuild Castroville to Rafter 138-kV single circuit transmission line and Castroville to Lytle 138-kV single circuit transmission line as a double circuit transmission line with circuits Castroville to Rafter, Castroville to Lytle, and Rafter to Lytle with normal and emergency ratings of at least 570 MVA, approximately 14.8-mile per circuit;
- Construct a new Talley Rd to Ranchtown 138-kV transmission line with normal and emergency ratings of at least 570 MVA, approximately 14.3-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

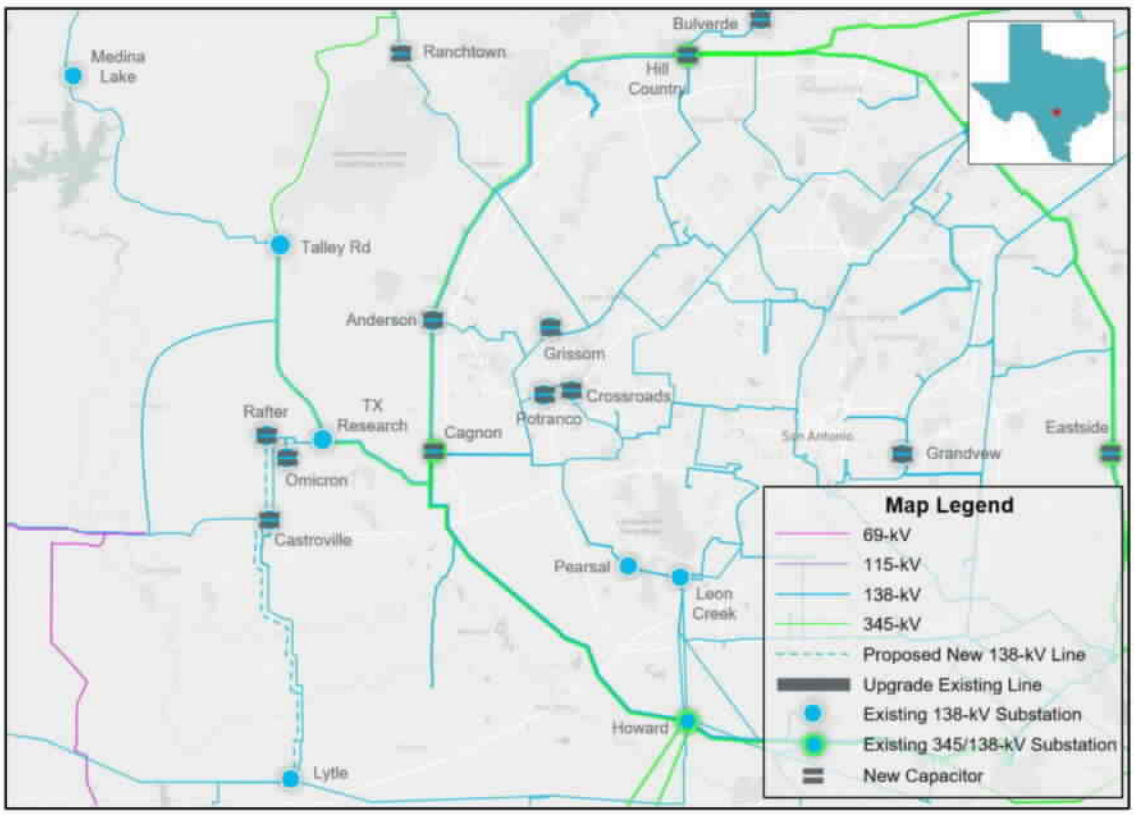


Figure 4.6: Map of Study Area with Option 3

Option 4 consists of the following:

- Construct a new 345-kV bus at the existing 138-kV Castroville substation;
- Install two new 345/138-kV transformers at the Castroville substation;
- Construct a new approximately 7-mile line extension from the new Castroville 345-kV substation to the existing Cagnon to Howard 345-kV transmission line. This creates a new Cagnon to Castroville 345-kV transmission line and a new Howard to Castroville 345-kV transmission line with normal and emergency ratings of at least 1746 MVA per circuit;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

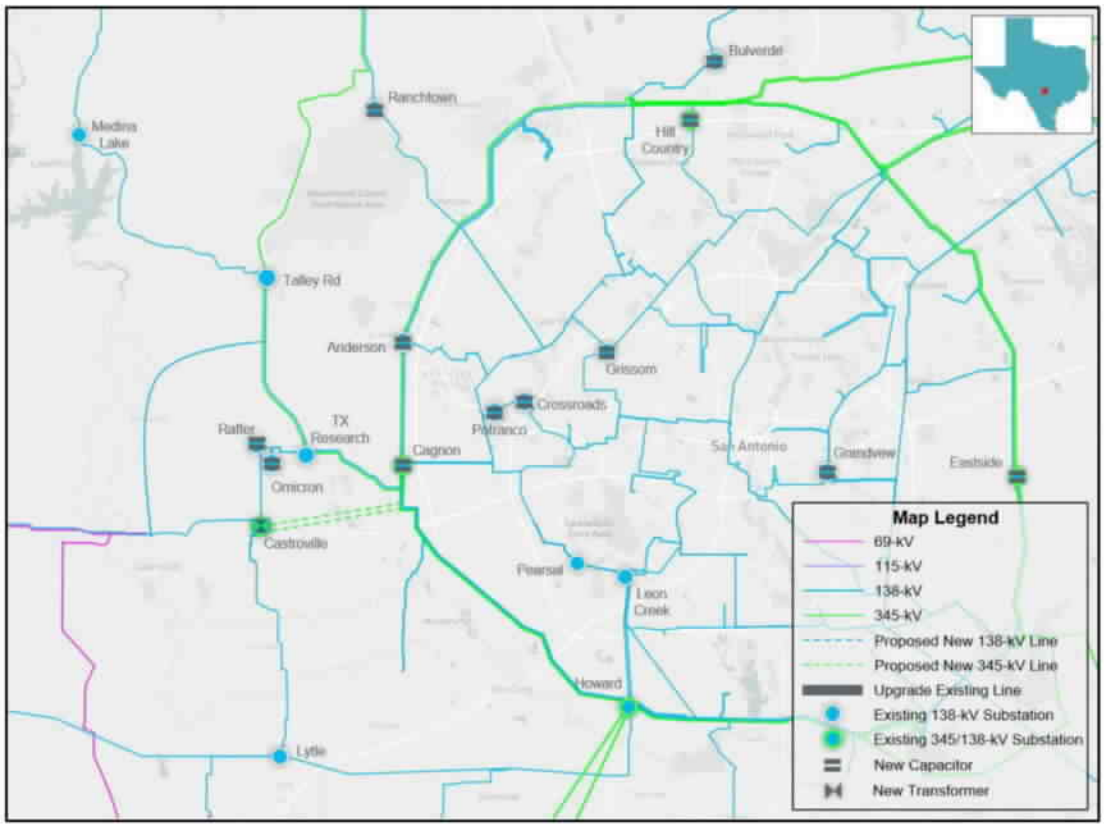


Figure 4.7: Map of Study Area with Option 4

5 Option Evaluations

ERCOT performed reliability analysis, planned maintenance outage evaluation, and load-serving capability to evaluate all initial options and to identify any reliability impact of the options in the study area. Based on the results of these analyses, short-listed options were selected for further evaluations. This section details these studies and their results and compares the short-listed options.

5.1 Results of Reliability Analysis

All initial six options were evaluated based on the contingencies described in Section 2.1 of the report, and no reliability criteria violations were identified for any options as shown in Table 5.1.

Table 5.1: Results of Initial Reliability Assessment of All Six Options

		N-1		X-1 + N-1		G-1 + N-1	
Option	Unsolved Power Flow	Thermal Overload	Voltage Violation	Thermal Overload	Voltage Violation	Thermal Overload	Voltage Violation
1	None	None	None	None	None	None	None
1A	None	None	None	None	None	None	None
1B	None	None	None	None	None	None	None
2	None	None	None	None	None	None	None
3	None	None	None	None	None	None	None
4	None	None	None	None	None	None	None

5.2 Long-Term Load-Serving Capability Analysis

ERCOT performed a long-term load-serving capability assessment on the six options to compare their relative performance.

The results show that Options 1A, 2, and 3 to have similar performance. Options 1 and 1B have significantly higher incremental load-serving compared to the other options. These results are shown in Table 5.2.

Table 5.2: Results of Long-Term Load-Serving Capability Assessment of All Six Options

Option	Incremental Load-Serving Capability (~MW)
1	891
1A	390
1B	891
2	321
3	329
4	650

5.3 Planned Maintenance Outage Evaluation

Using the P1, P2.1, and P7 contingencies based on the review of the system topology of the area, ERCOT conducted an N-2 contingency analysis for each option to represent system element outage(s)

under planned maintenance condition (N-1-1) in the area. Then, each N-2 violation was run as an N-1-1 contingency scenario, with system adjustments between the contingencies. The transmission elements in the local area of the Omicron Reliability Project were monitored in the maintenance outage evaluation.

As shown in Table 5.3, the results of this maintenance assessment indicate that Option 1A, Option 2 and Option 3 performed similarly. Option 1, Option 1B and Option 4 did not result in any reliability violations.

Table 5.3: Results of Planned Maintenance Outage Evaluation of All Six Options

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

5.4 Short-listed Options

Based on the review of the results shown in Sections 5.1, 5.2, and 5.3, Option 1, Option 1B and Option 4 were selected as short-listed options for further evaluations. These three options are illustrated in Figures 5.1, 5.2, and 5.3.

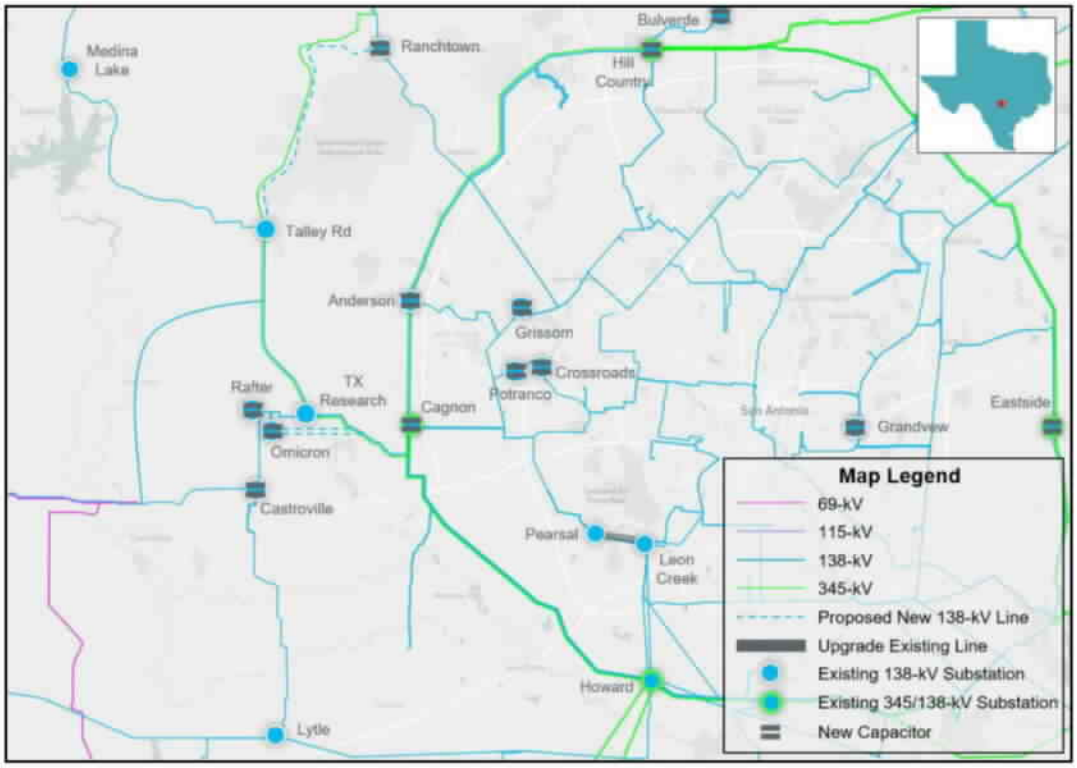


Figure 5.1: Map of Study Area with Option 1

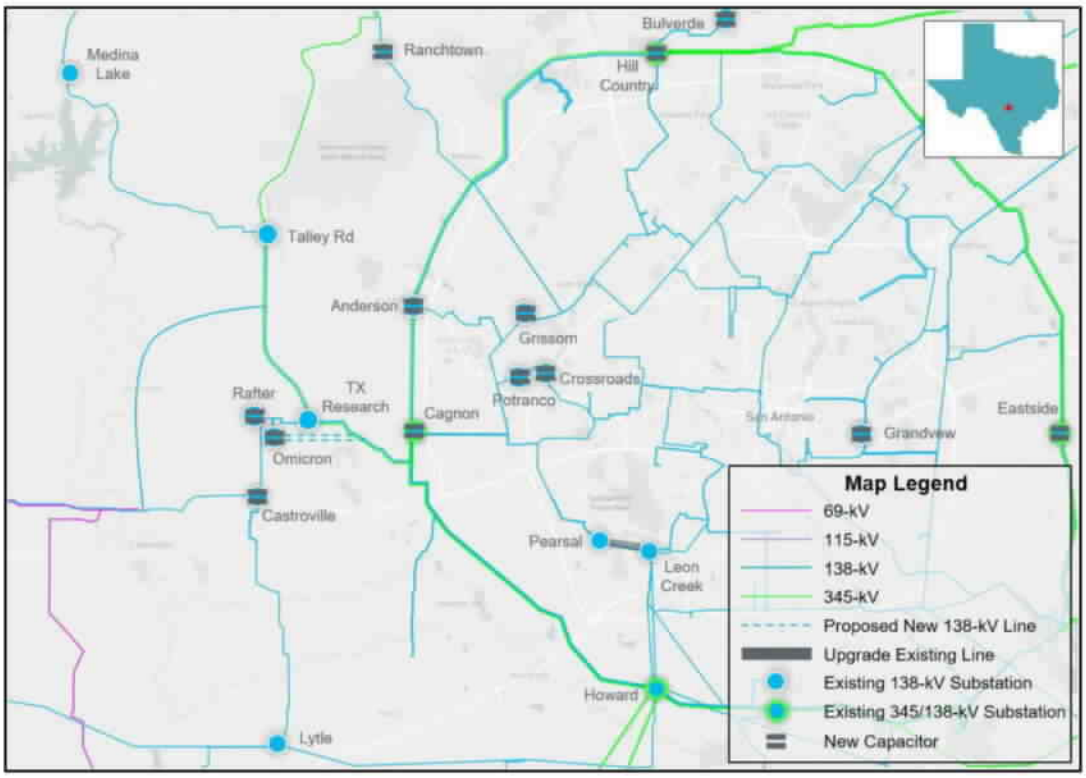


Figure 5.2: Map of Study Area with Option 1B

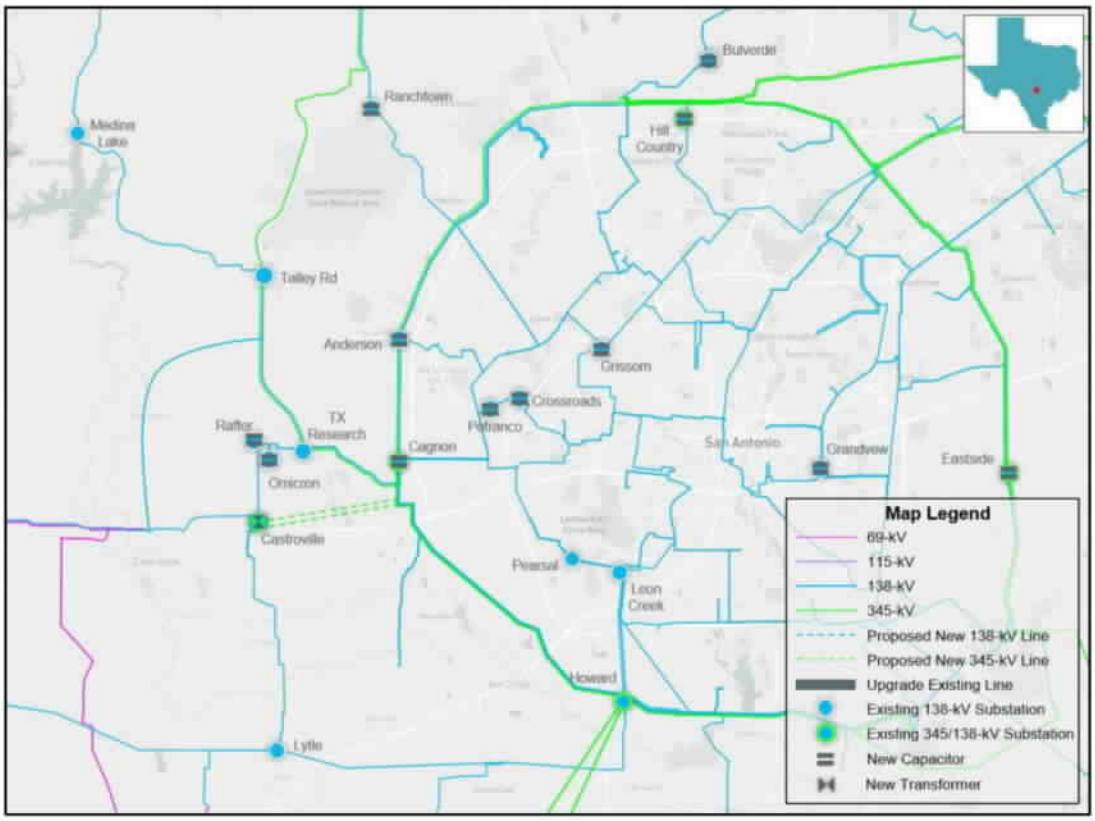


Figure 5.3: Map of Study Area with Option 4

5.5 Cost Estimate and Feasibility Assessment

CPS performed feasibility assessments and provided cost estimates for the three short-listed options. Table 5.4 summarizes the cost estimate, estimated mileage of CCN required, and option feasibility. The cost estimate for the Talley Rd to Ranchtown 138-kV transmission line was captured in the ERCOT endorsement of the South Texas Electric Cooperative, Inc. (STEC) Rio Medina Project (23RPG028) in May 2024.

Table 5.4: Cost Estimates and Expected ISD for the Short-Listed Options

Option	Cost Estimates[9] (~$M)	CCN Required (~miles)	Feasible
1	59.9[10]	Yes (19.3)	Feasible
1B	44.3	Yes (5.0)	Feasible
4	135.9	Yes (7.0)	Feasible

6 Comparison of Short-listed Options

The comparison of Option 1, Option 1B, and Option 4 with corresponding cost estimates provided by TSPs are summarized in Table 6.1

Table 6.1: Comparison of the Short-Listed Options

	Option 1	Option 1B	Option 4
Met ERCOT and NERC Reliability Criteria	Yes	Yes	Yes
Improves Long-term Load-Serving Capability	Better	Better	Yes
Improves Operational Flexibility (Planned Maintenance Outages)	Yes	Yes	Yes
CCN Needed (~miles)	Yes (19.3)	Yes (5.0)	Yes (7.0)
Capital Cost Estimates[9] (~$M)	$59.9[10]	44.3	$135.9

ERCOT recommends Option 1B as the preferred option to address the reliability need in the San Antonio area based on the following considerations:

- Option 1B addresses project need in the study area;
- Option 1B is the least expensive option;
- Option 1B provides better long-term load-serving capability; and
- Option 1B requires the least mileage of CCN.

[9] Cost estimate includes the thirteen (13) capacitor bank additions.
[10] Cost estimate includes the addition of the Talley Rd to Ranchtown 138-kV transmission line, which was captured in the STEC Rio Medina Project (23RPG028) and endorsed by ERCOT in May 2024.

7 Congestion Analysis

ERCOT conducted a congestion analysis to identify any potential impact on system congestion related to the addition of the preferred Omicron Reliability Project, Option 1B, using the 2023 RTP 2028 economic study case.

The results of congestion analysis indicated Option 1B relieved five existing congestions, increased two existing congestions, and caused one new congestion as shown in Table 7.1.

Table 7.1: List of New Congestion Due to Transmission Upgrade of Option 1B

Monitored Line	% Time of Congestion
Omicron to Rafter 138-kV Line	2.07

Additional tests were conducted by upgrading Omicron to Rafter 138-kV line to see if this alleviated the new congestion. Based on the results summarized in Table 7.2, the additional upgrade did yield economic benefit. Therefore, the upgrade of the Omicron to Rafter 138-kV line with normal and emergency ratings of at least 570 MVA will be recommended to solve this new congestion as part of Option 1B.

Table 7.2: Test Results with Omicron to Rafter 138-kV Line Upgrade

Upgrade Tested	Mileage (~miles)	Passed Production Cost Savings Test	Passed Generation Revenue Reduction Test
Omicron to Rafter 138-kV Line Upgrade	1.68	Yes	Yes

8 Conclusion

ERCOT evaluated the six transmission upgrade options to resolve the thermal overloads and voltage violations in the San Antonio area. Based on the results of the independent review, ERCOT recommends Option 1B as the preferred solution because it addresses the thermal and voltage violations in the study area, has the lowest cost, provides significant long-term load-serving capability requires the least additional mileage of CCN among all options evaluated.

Option 1B consists of the following upgrades and is estimated to cost $45.7 Million:

- Construct a new approximately 5-mile line extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line with normal and emergency ratings of 698 MVA per circuit;
- Rebuild the existing Leon Creek to Pearsal 138-kV transmission line with normal and emergency ratings of at least 478 MVA, approximately 1.7-mile;
- Install a new 28.57 MVAr capacitor bank at the existing Rafter 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Cagnon Road 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Hill Country 138-kV substation;

- Install a new 28.57 MVAr capacitor bank at the existing Potranco 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Ranchtown 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Anderson 138-kV substation;
- Install a new 50.00 MVAr capacitor bank at the existing Grissom Road 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Castroville 138-kV substation;
- Install a new 14.30 MVAr capacitor bank at the existing Bulverde 138-kV substation;
- Install a new 28.57 MVAr capacitor bank at the existing Grandview 138-kV substation;
- Install a new 42.85 MVAr capacitor bank at the existing Omicron 138-kV substation; and
- Install a new 50.00 MVAr capacitor bank at the existing Eastside 138-kV substation.

This review also reveals that Option 1B should be supplemented with the following economic project:

- Rebuild Omicron to Rafter 138-kV transmission line with normal and emergency ratings of at least 570 MVA, approximately 1.7-mile.

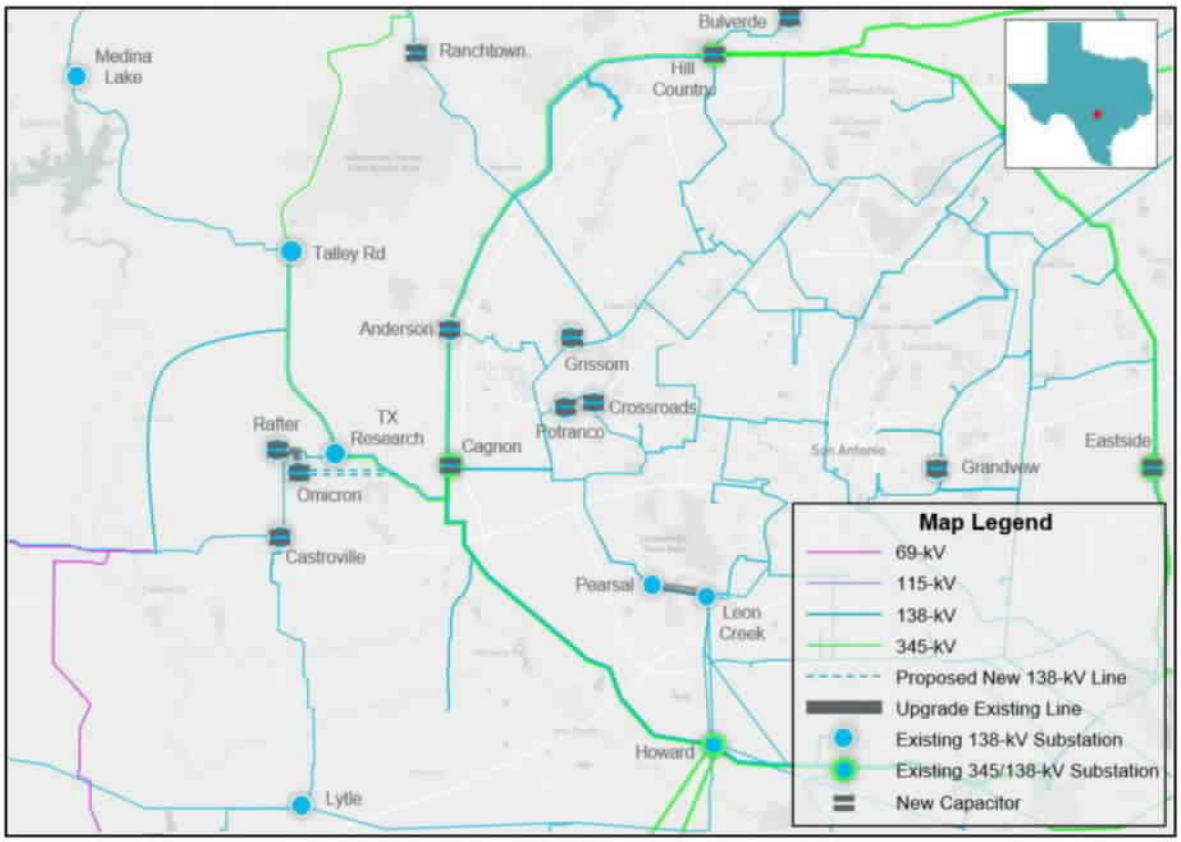


Figure 8.1: Map of Study Area with Option 1B

This project will require a CCN for the new 138-kV extension from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line due to approximately 5.0 miles of new ROW. The expected ISD of this project is June 2027. Option 1B is classified as a Tier 2 project per ERCOT Protocol Section 3.11.4.3(1)(b).

Appendix

Table A.1: List of Generation Added to the Economic Base Case Based on April 2024 GIS Report

GINR	Omicron Reliability Project	Fuel	Project COD	Capacity (~MW)	County
14INR0033	Goodnight Wind	WIN	2/14/2024	258.1	Armstrong
19INR0054	Monte Cristo 1 Wind	WIN	9/30/2025	236.9	Hidalgo
19INR0134	Cottonwood Bayou Solar	SOL	8/13/2024	351.4	Brazoria
19INR0203	Angelo Solar	SOL	8/12/2024	195.4	Tom Green
20INR0040	Montgomery Ranch Wind	WIN	9/1/2024	200.2	Foard
20INR0208	Signal Solar	SOL	3/15/2025	51.8	Hunt
20INR0210	Hopkins Solar	SOL	12/30/2023	253.1	Hopkins
20INR0248	Second Division Solar	SOL	9/17/2024	100.3	Brazoria
21INR0302	Aureola Solar	SOL	6/28/2024	203.0	Milam
21INR0303	Mandorla Solar	SOL	11/29/2024	254.0	Milam
21INR0304	Halo Solar	SOL	6/20/2024	254.0	Bell
21INR0325	Sheep Creek Wind	WIN	1/31/2024	153.0	Callahan
21INR0368	Eliza Solar	SOL	11/1/2024	151.6	Kaufman
21INR0389	Hollywood Solar	SOL	6/30/2024	353.4	Wharton
21INR0424	Tierra Bonita Solar	SOL	10/29/2024	306.9	Pecos
21INR0450	Danish Fields Storage	OTH	3/6/2024	152.4	Wharton
21INR0505	Ramsey Storage	OTH	12/31/2025	510.4	Wharton
21INR0511	Wolf Ridge Repower	WIN	4/2/2024	9.0	Cooke
21INR0515	Roadrunner Crossing Wind II SLF	WIN	1/20/2025	126.7	Eastland
22INR0251	Shaula I Solar	SOL	10/30/2025	205.2	DeWitt
22INR0260	Eliza Storage	OTH	11/1/2024	100.2	Kaufman
22INR0261	Dorado Solar	SOL	12/31/2025	406.3	Callahan
22INR0267	Shaula II Solar	SOL	5/30/2026	205.2	DeWitt
22INR0353	BRP Carina BESS	OTH	12/31/2024	151.9	Nueces
22INR0354	XE MURAT Solar	SOL	5/13/2024	60.4	Harris
22INR0366	LIBRA BESS	OTH	1/26/2024	206.2	Guadalupe
22INR0422	Ferdinand Grid BESS	OTH	5/31/2026	202.7	Bexar
22INR0502	Shamrock	WIN	4/19/2024	223.9	Crockett
22INR0555	Guevara Storage	OTH	7/15/2025	125.4	Rockwall
23INR0026	Baker Branch Solar	SOL	8/1/2024	469.4	Lamar
23INR0054	Tanglewood Solar	SOL	1/16/2025	257.0	Brazoria
23INR0062	Noria Storage	OTH	9/1/2025	75.0	Nueces
23INR0091	Cascade Solar	SOL	12/31/2024	254.2	Brazoria
23INR0114	True North Solar	SOL	6/30/2024	238.3	Falls
23INR0154	Ebony Energy Storage	OTH	5/6/2024	203.5	Comal
23INR0159	Five Wells Storage	OTH	12/30/2023	220.8	Bell
23INR0219	Dogfish BESS	OTH	12/31/2024	75.0	Pecos
23INR0239	Giga Texas Energy Storage	OTH	1/31/2024	131.1	Travis

GINR	Omicron Reliability Project	Fuel	Project COD	Capacity (~MW)	County
23INR0296	Trojan Solar	SOL	2/28/2026	151.3	Cooke
23INR0331	Talitha BESS	OTH	6/30/2024	61.4	Jim Wells
23INR0349	Tokio Solar	SOL	8/25/2025	177.6	McLennan
23INR0367	Fewell Solar	SOL	9/9/2025	203.5	Limestone
23INR0381	Soportar ESS	OTH	3/15/2025	102.1	Bexar
23INR0387	Pioneer DJ Wind	WIN	5/3/2024	140.3	Midland
23INR0408	TECO GTG2	GAS	1/30/2024	50.0	Harris
23INR0418	Angelo Storage	OTH	5/3/2024	103.0	Tom Green
23INR0460	GULF STAR STORAGE	OTH	6/25/2024	301.0	Wharton
23INR0470	BoCo BESS	OTH	6/22/2024	155.5	Borden
23INR0525	Pyron Wind Repower	WIN	2/1/2024	19.9	Nolan
23INR0637	Goodnight Wind II	WIN	12/30/2024	258.3	Armstrong
24INR0010	Pinnington Solar	SOL	10/15/2025	666.1	Jack
24INR0015	Five Wells Solar	SOL	12/29/2023	322.8	Bell
24INR0038	SP Jaguar Solar	SOL	6/30/2025	300.0	McLennan
24INR0039	SP Jaguar BESS	OTH	6/30/2025	300.0	McLennan
24INR0070	Sypert Branch Solar Project	SOL	6/1/2025	261.8	Milam
24INR0100	Sheep Creek Storage	OTH	7/1/2024	142.1	Callahan
24INR0109	Oriana BESS	OTH	7/2/2025	60.3	Victoria
24INR0138	Midpoint Storage	OTH	8/30/2025	52.2	Hill
24INR0139	Midpoint Solar	SOL	8/30/2025	103.8	Hill
24INR0140	Gaia Storage	OTH	7/31/2025	76.8	Navarro
24INR0141	Gaia Solar	SOL	7/31/2025	152.7	Navarro
24INR0265	Ironman BESS	OTH	11/1/2024	304.2	Brazoria
24INR0273	Al Pastor BESS	OTH	8/16/2024	103.1	Dawson
24INR0281	Red Egret BESS	OTH	6/1/2025	310.6	Galveston
24INR0295	Lucky Bluff BESS	OTH	5/31/2025	100.8	Erath
24INR0312	Wigeon Whistle BESS	OTH	9/1/2024	122.9	Collin
24INR0337	Eldora Solar	SOL	6/30/2026	200.9	Matagorda
24INR0338	Eldora BESS	OTH	6/30/2026	201.3	Matagorda
24INR0436	Carambola BESS	OTH	5/31/2026	97.4	Hidalgo
25INR0105	Diver Solar	SOL	6/30/2026	228.2	Limestone
25INR0162	SOHO II BESS	OTH	1/1/2025	206.3	Brazoria
25INR0223	Uhland Maxwell	GAS	4/15/2025	188.4	Caldwell
25INR0232	Isaac Solar	SOL	3/31/2026	51.6	Matagorda
25INR0328	Longbow BESS	OTH	11/13/2024	180.8	Brazoria
23INR0403	Connolly Storage	BAT	8/18/2023	125.4	Wise
24INR0147	Holy ESS	BAT	1/19/2023	209.3	Harris
24INR0397	Destiny Storage	BAT	9/21/2023	201.1	Harris
20INR0217	CAROL wind	WND	1/31/2024	165.4	Potter
21INR0240	La Casa Wind	WND	1/4/2024	148.4	Stephens
21INR0379	Ash Creek Solar	SOL	1/17/2024	417.7	Hill

GINR	Omicron Reliability Project	Fuel	Project COD	Capacity (~MW)	County
23INR0030	Langer Solar	SOL	1/5/2024	249.8	Bosque
23INR0070	Chillingham Solar	SOL	1/30/2024	352.4	Bell
23INR0336	Bypass Battery Storage	BAT	1/9/2024	206.9	Fort Bend
24INR0632	Cedro Hill Wind Repower	WND	1/30/2024	9.9	Webb
26INR0042	Valhalla Solar	SOL	1/5/2024	306.8	Brazoria
23INR0044	Parliament Solar U1	SOL	12/31/2024	250.4	Waller
23INR0044	Parliament Solar U2	SOL	12/31/2024	234.2	Waller
24INR0023	Compadre Solar U1	SOL	12/25/2024	194.7	Hill
24INR0023	Compadre Solar U2	SOL	12/25/2024	211.5	Hill
24INR0208	Eastbell Milam Solar II	SOL	12/20/2024	151.0	Milam
24INR0329	XE Murat Storage	BAT	12/14/2024	60.1	Harris
24INR0605	TEXAS GULF SULPHUR REPOWER	NG	6/25/2024	94.0	Wharton
16INR0049	Nazareth Solar	SOL	3/24/2025	204.0	Castro
21INR0428	Nabatoto Solar North U1	SOL	2/1/2026	224.8	Leon
21INR0428	Nabatoto Solar North U2	SOL	2/1/2026	140.9	Leon
24INR0395	Berkman Storage	BAT	4/30/2026	150.9	Galveston
25INR0531	CPS Energy AvR1CT2 Rotor Replacement	GAS	4/1/2024	11.3	Bexar

Table A.2: List of Transmission Projects Added to Economic Base Case Based on February 2024 TPIT Report

TPIT No	Omicron Reliability Project	Tier	Project ISD	County
22RPG026	Wimberley Loop project	Tier 2	5/1/2027	Blanco, Hays
23RPG003	Eagle Ford Large Load Interconnection Project	Tier 3	12/4/2025	DeWitt
23RPG004	Lockhart to Luling 69-kV Transmission Line Overhaul Project	Tier 4	6/30/2025	Caldwell
23RPG015	Cuero Substation Upgrade Project	Tier 4	5/15/2024	DeWitt
23RPG028	Rio Medina Project	Tier 2	1/1/2027	Medina
23RPG032	San Antonio South Reliability II Project	Tier 1	5/1/2029	Guadalupe, Wilson, Atascosa
72500	Rio Lago -New 138kV Substation	Tier 4	11/30/2024	Bandera
72268	CPSE_New Ingram Rd Substation	Tier 4	5/1/2025	Bexar
71873	CPSE_Hill Country Auto# 2 Impedance Upgrade	Tier 3	6/1/2025	Bexar
73063	Big Foot to Lytle: Convert to 138 kV	Tier 4	9/20/2025	Medina, Frio
76242	Lytle: Build new 138kV terminal	Tier 4	9/20/2025	Medina
76768	Upgrade Pearson -Pearsall	Tier 4	12/1/2025	Frio, Medina
67992D	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	1/31/2026	Bexar
76790	Upgrade Pearsall Auto	Tier 4	5/1/2027	Frio
73417	LCRATSC_Schumansville_SheriffsPosse_Storm Hardening	Tier 4	5/15/2025	Guadalupe, Comal
73793	LCRATSC_McCartyLaneEast_Zorn_TL_Storm_Hardening	Tier 4	5/15/2025	Hays, Guadalupe

Table A.3: Project Related Document

No	Document Name	Attachment
1	Omicron Reliability Project Report.pdf	Omicron Reliability Project Report