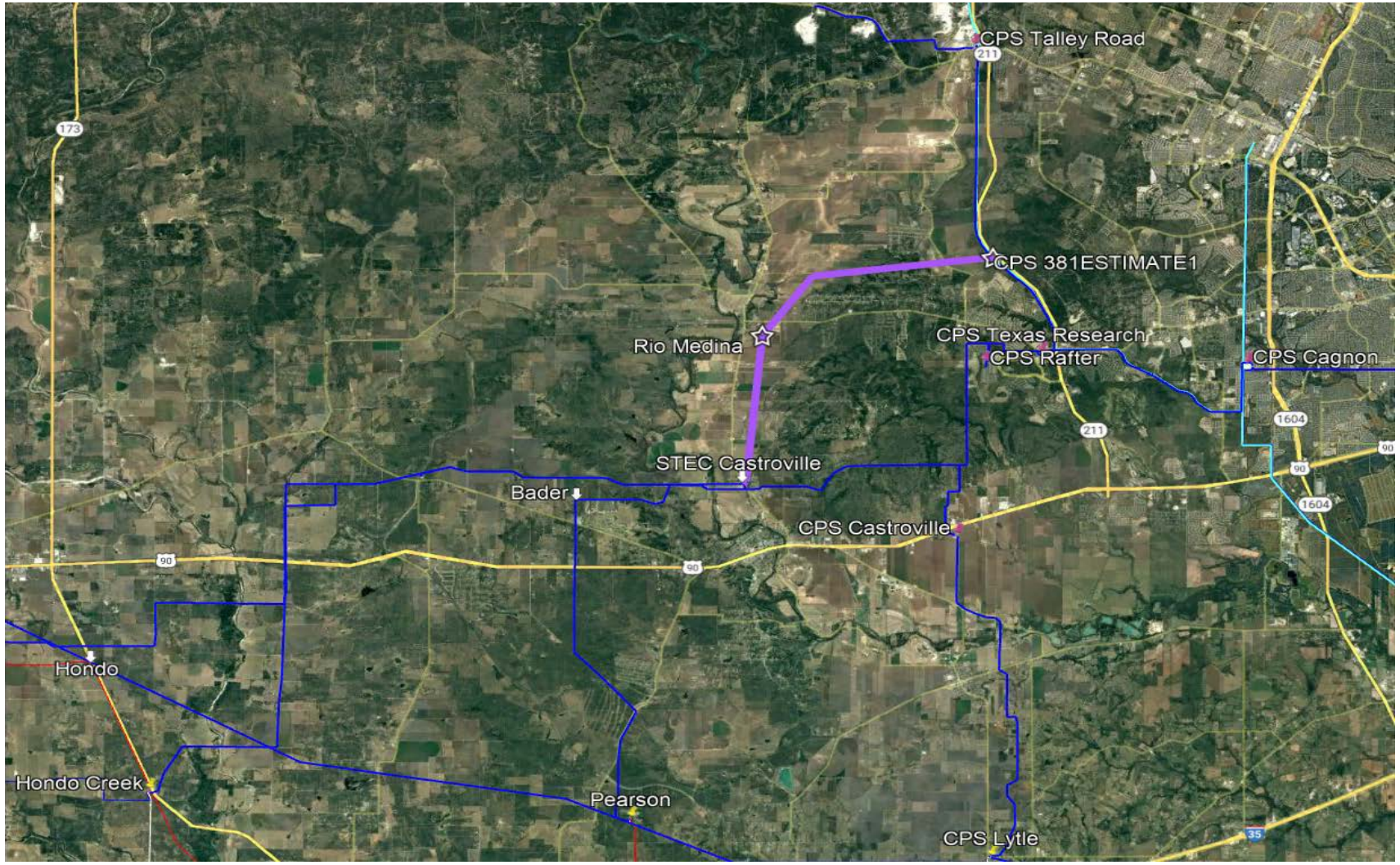
Attachment 3

Overview of STEC Rio Medina Project

Project Overview

- The proposed project focuses on serving the Rio Medina data center load but also accommodates service to an additional data center that is currently under evaluation.
- The proposal includes constructing approximately 13 miles of new double-circuit capable 138 kV transmission line with two conductor bundled 795 ACSR. This transmission line will connect STEC's Castroville substation to a new station called the Rio Medina, which will serve a 129 MW load. Additionally, a 138 kV line will be built from the new Rio Medina to connect with CPS Energy's transmission system.
- An additional terminal will be added to STEC's Castroville substation, establishing a connection from STEC's Castroville to a new Rio Medina substation.
- The project also includes the construction of a new switching station owned by CPS Energy.
- This is a Tier 2 project.
- The estimated cost of the proposed transmission improvements is $38 million.
- The project will require a CCN application.
- The estimated completion of the project is January 2027.

Proposed Project Location



Alternatives

Three alternatives for providing transmission service to the Rio Medina load were considered with the third alternative being the proposed project.

1. Construct a 138 kV, 474 MVA transmission line from the STEC Castroville substation to the new Rio Medina substation then on to the existing CPS Texas Research substation.
2. Construct a 138 kV, 474 MVA transmission line from the STEC Castroville substation to the new Rio Medina substation then on to the existing CPS Talley Road substation.
3. Proposed Project: Construct a 138 kV 474 MVA transmission line from the STEC Castroville to the new Rio Medina station then on to a new station connected to the CPS line between the Texas Research and Tally Road substations.

Questions?

Thank You!

ERCOT Independent Review of the STEC Rio Medina Project

Document Revisions

Date	Version	Description	Author(s)
2/16/2024	1.0	Final Draft	Abishek Penti
		Reviewed by	Robert Golen, Prabhu Gnanam

Executive Summary

South Texas Electric Cooperative, Inc. (STEC) submitted the Rio Medina Project to the Regional Planning Group (RPG) in September 2023. STEC proposed this project to serve 129 MW of load at the new Rio Medina 138-kV substation and address thermal overloads and voltage violations in the South Central (SC) Weather Zone, located in Medina County.

The STEC-proposed project was estimated to cost $38.0 million and was classified as a Tier 2 project per ERCOT Nodal Protocol Section 3.11.4.3 since the proposed project would require a Certificate of Convenience and Necessity (CCN) application.

ERCOT performed an Independent Review and observed thermal overloads and voltage violations under the planned maintenance outage evaluation in Medina County.

The ERCOT Independent Review (EIR) evaluated six different transmission project options. Based on the study results described in Section 5 and 6 of this report, ERCOT recommends the following Option 5 to address the reliability issues mentioned above. Option 5 consists of the following:

- Construct a new Rio Medina 138-kV substation. A 5-terminal, 138-kV breaker and a half bus arrangement including two line terminals and three transformer terminals.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile. This transmission line will require new Right of Way (ROW).
- Construct a new 381Estimate1 138-kV substation in a 3-terminal ring bus arrangement, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 5.6-mile. This transmission line will require new ROW.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal and emergency ratings of at least 285 MVA.
- Rebuild the existing Tally Road – 381Estimate1 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 3.0-mile.
- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 4.9-mile.
- Construct a new Ranch Town – Tally Road 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 12.0-mile. This transmission line will require new ROW.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

The cost estimate for this Tier 2 project is approximately $71.7 million. This project will require a CCN for the construction of a new 138-kV single-circuit transmission line from Castroville Sub 138-kV Substation to Rio Medina 138-kV Substation, a new 138-kV single-circuit transmission line from Rio

Medina 138-kV Substation to 381Estimate1 138-kV Substation, a new 138-kV single-circuit transmission line from Ranch Town 138-kV Substation to Tally Road 138-kV Substation. The expected In-Service Date (ISD) of this project is January 2027.

Table of Contents

1 Introduction

In September 2023, STEC submitted the Rio Medina Project to the Regional Planning Group (RPG) to address NERC TPL-001-5.1 reliability criteria violations (both thermal and voltage) due to 129 MW of new load in the area. This project is in the South-Central (SC) Weather Zone in Medina County.

This STEC proposed project was classified as a Tier 2 project pursuant to ERCOT Nodal Protocol Section 3.11.4.3, with an estimated cost of approximately $38.0 million. One or more CCN applications will be required for the construction of new 138-kV transmission lines from STEC's Castroville Substation to the new Rio Medina Substation and from the new Rio Medina Substation to the new CPS-owned 381ESTIMATE1 Substation due to approximately 11-14 miles of new ROW. The expected ISD of the project is January 2027.

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

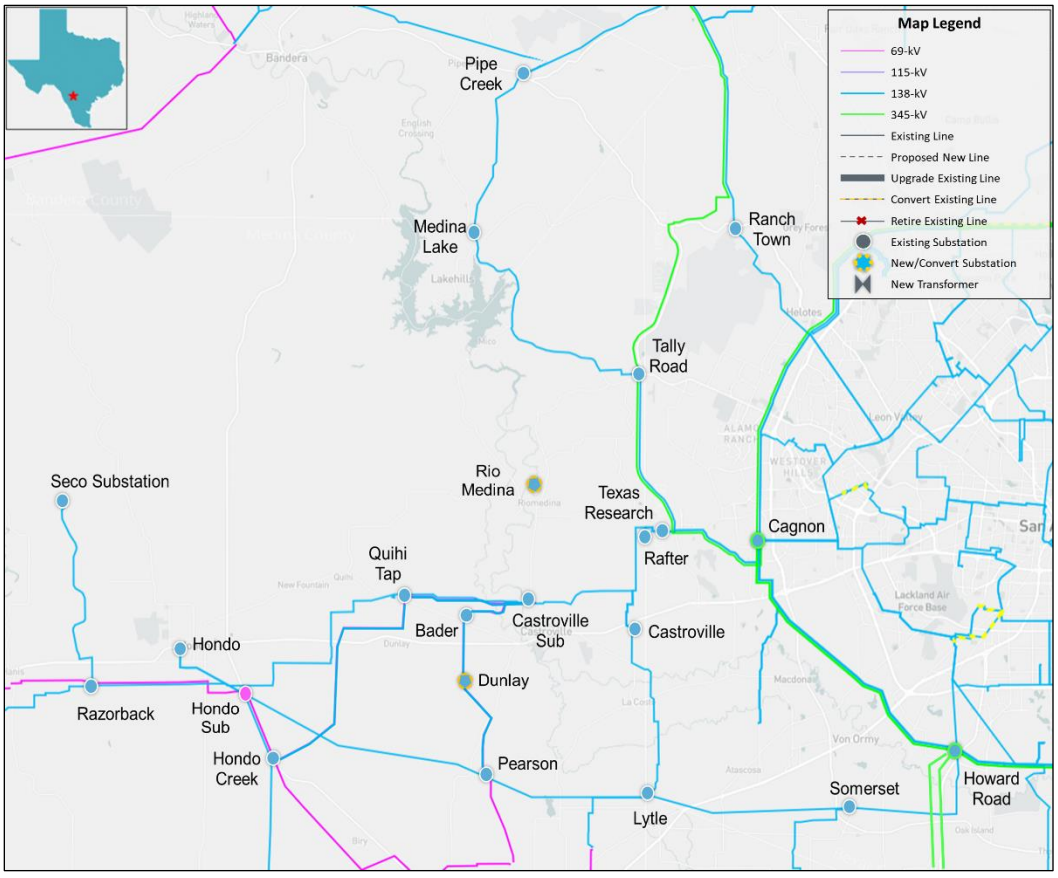


Figure 1.1: Map of Transmission System in The Medina County

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 Rio Medina 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 South-Central weather zone in Medina County. Nearby counties that will also be studied because they are electrically close via the Bulk Electrical System (BES) include Atascosa, Bandera, Bexar, Frio, Uvalde, and Zavala Counties.

2.1.1 Steady-State Study Base Case

The Final 2022 RTP cases, published on the Market Information System (MIS) on December 22, 2022, were used as reference cases in this study. Year 2027 Summer peak load case was selected for the long-term outlook. The steady-state study base case was constructed by updating transmission, generation, and loads of the following 2027 Summer peak load case for the South and South-Central (SSC) Weather Zones.

- Case: 2022RTP_2027_SUM_SSC_12222022[1]

2.1.2 Transmission Topology

Transmission projects within the SSC Weather Zone with ISDs through January 2027 were added to the study base case. The ERCOT Transmission Project Information and Tracking (TPIT)[2] report posted in June 2023 and October 2023 was used as reference. The added TPIT projects are listed in Table 2.1. These are classified as Tier 2, Tier 3, and Tier 4 projects. Recently approved Tier 1 CPS San Antonio South Reliability Project, Tier 2 Hondo Creek to Pearson 69-kV Transmission Line Rebuild Project, and Tier 4 Big Foot to Dilley Switch 138-kV Conversion Project are added to the study base case, which are also listed in Table 2.1.

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

TPIT No	Project Name	Tier	Project ISD	TSP	County
22RPG048	San Antonio South Reliability Project	Tier 1	06/01/2027	CPS	Bexar, Atascosa
22RPG022	Hondo Creek to Pearson 69-kV Transmission Line Rebuild Project	Tier 2	12/01/2023, 06/01/2024	STEC	Medina
23RPG024	Big Foot to Dilley Switch 138-kV Conversion	Tier 4	08/30/2026	AEPSC	Frio
67992	CPSE 345-kV Howard Switching Station	Tier 3	16/02/2024	CPS	Bexar
68266	Dry Frio: Build new 138-kV station	Tier 4	14/05/2024	AEP TNC	Uvalde
70536	New 138-kV Verde Circle Substation	Tier 4	01/10/2024	CPS	Bexar

[1] 2022 Regional Transmission Plan Postings: https://mis.ercot.com/secure/data-products/grid/regional-planning
[2] TPIT Report: https://www.ercot.com/gridinfo/planning

TPIT No	Project Name	Tier	Project ISD	TSP	County
72500	Rio Lago - New 138-kV Substation	Tier 4	11/30/2024	BEC	Bandera
72268	CPSE New Ingram Rd Substation	Tier 4	05/01/2025	CPS	Bexar
76576	Asherton to Uvalde: Convert to 138-kV	Tier 3	5/31/2025	AEP TCC	Dimmit
76580	Poblano: Build new 138-kV station	Tier 3	5/31/2025	AEP TCC	Uvalde
71873	CPSE Hill Country Auto# 2 Impedance Upgrade	Tier 3	06/01/2025	CPS	Bexar
73063	Big Foot to Lytle: Convert to 138-kV	Tier 4	09/20/2025	AEP	Medina
67915	Asherton to West Basteville 138-kV line Rebuild	Tier 3	11/30/2026	AEP TNC	Dimmit
71871	CPSE Cagnon to Shepherd Rd Rebuild Phase A	Tier 4	05/15/2023	CPS	Bexar

Transmission projects, listed in Table 2.2, identified in the 2022 RTP as placeholders for the CPS San Antonio South Reliability Project were removed from study base case.

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

RTP Project ID	Project Name	TSP	County
2022-SC6	Howard – San Miguel 345-kV Double Circuit Line Addition and Beck Road 345/138-kV Substation Expansion	CPS, STEC	Bexar, Atascosa

2.1.3 Generation

Based on the September 2023 Generator Interconnection Status (GIS)[3] report posted on the ERCOT website on October 2, 2023, generators in the SC Weather Zone that met ERCOT Planning Guide Section 6.9(1) conditions with Commercial Operations Date (COD) prior to January 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 2022 RTP methodology.

Table 2.3: List of Generation Added to the Study Base Case Based on the September 2023 GIS Report

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
21INR0395	SunRay	SOL	5/23/2024	200.0	Uvalde
22INR0368	Padua Grid BESS	OTH	12/31/2024	51.4	Bexar
22INR0422	Ferdinand Grid BESS	OTH	5/31/2026	202.7	Bexar
23INR0381	Soportar ESS	OTH	3/15/2025	102.1	Bexar

The status of each unit that was projected to be either indefinitely mothballed or retired at the time of the study were 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 Status

Bus No	Unit Name	Capacity (MW)	Weather Zone
170121	CALAVERS_JTD1	420.0	South Central
170122	CALAVERS_JTD2	420.0	South Central
150081	OLINGR_OLING_1	78.0	North Central
170381	OCI_ALM1_ASTRO	1.0	South Central

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

110111	DOWGEN_DOW_G37	61.0	Coast
130003	FLCNS_UNIT3	70.0	Far West
142761	BRANDON_UNIT1	20.0	North
142714	MASSENGL_G6	18.0	North
142716	MASSENGL_G7	18.0	North
142713	MASSENGL_G8	38.0	North
143671	TY_COOKE_GT2	14.0	North
143672	TY_COOKE_GT3	17.0	North
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

Generation listed in Table 2.5 will be online (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 online to Reflect Returning to Service Status

Bus No	Unit Name	Capacity (MW)	Weather Zone
110020	PNPI_GT2	71	Coast
150023	MCSES_UNIT8	568	North Central

2.1.4 Loads

Loads in the study area were updated based on the new confirmed loads. As a result of the update, 167.9 MW of additional loads were added to the study base case as shown in Table 2.6. Loads outside of study Weather Zone were adjusted as necessary to maintain the reserve consistent with the 2022 RTP methodology.

Table 2.6: New loads Added to the Study Base Case

Bus No	Substation Name	Load (MW)
5809	Dunlay	129.5
5355	Rafter	38.4*

*Load increased from 176.5 MW to 214.9 MW

2.1.5 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, loads at 138-kV substations in the study area were added and increased to reflect future load additions (customer with flexible loads remained at the same level as in the base case), and conforming loads outside of SC Weather Zone were decreased to balance power.

2.1.6 Maintenance Outage Scenario

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

The load level in the SC Weather Zone was reduced to 83.7% 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, historical load, and ratio of residential/commercial load from TSP in the SC Weather Zone.

2.2 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 November 2023 GIS[4] report for generation updates and the June 2023 and October 2023 TPIT[5] reports for transmission updates to conduct congestion analysis. Additional ERCOT-confirmed loads listed in Table 2.6 were added. The 2028 study year was selected based on the proposed ISD of the project.

All transmission projects listed in Table 2.1 were added and the RTP projects shown in Table 2.2 that were used as placeholders for the CPS San Antonio South Reliability Project were removed from the economic base case.

New generation additions listed in Table A.1 in Appendix A were added to the economic base case and all generation listed in Table 2.4 were opened in the study base case to reflect their mothballed/retired status. Furthermore, generation listed in Table 2.5 were closed in the study base case to reflect the change in their Generation Resource as these resources are returning to year-round service.

2.3 Methodology

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

2.3.1 Contingencies and Criteria

The reliability assessments were performed based on NERC Reliability Standard TPL-001-5.1, ERCOT Nodal Protocol, and 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);

[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

- P2-2, P2-3, P4, and P5 (Extra High Voltage (EHV) only);
- P3-1: G-1 + N-1 (G-1: generation outages) {JK Spruce}; and
- P6-2: X-1 + N-1 (X-1: 345/138-kV transformers only) {Cagnon}.

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;
  - 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.

2.3.2 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 11.4.0.27191 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 2.3 of this document. This analysis indicated no violations were observed under NERC TPL-001-5.1 and ERCOT planning criteria in the study area as shown in Table 3.1.

Table 3.1: Violations Observed under NERC TPL-001-5.1 and ERCOT Planning Criteria in the Study Area

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

Planned maintenance outage evaluation was also conducted on the base case to identify project need. This analysis indicated thermal overloads, voltage violations, and unsolved contingencies in the study area.

The two unsolved contingencies were observed under various planned maintenance outage conditions:

- REDACTED
- REDACTED

Twelve low voltage violations were observed under various planned maintenance outage conditions which are summarized in Table 3.2.

Table 3.2: Low Bus Voltages under Planned Maintenance Outage Evaluation in the Study Area

Bus Number	Bus Name	Bus Voltage (kV)	County	Min Voltage (pu)
705390	SODG_5390	138	BEXAR	0.88
5390	SOMERSET	138	BEXAR	0.88
5809	DUNLAY	138	MEDINA	0.89
5810	BADERSUB9	138	MEDINA	0.89
5813	PEARSONSW8	138	MEDINA	0.89
5083	CASTRVLL	138	MEDINA	0.89
5808	CSTROVILESB9	138	MEDINA	0.89
5290	LYTLE	138	BEXAR	0.89
705430	SODG_5430	138	BEXAR	0.89
5430	TX_RSRCH	138	BEXAR	0.89
5355	RAFTER	138	BEXAR	0.89
8248	QUIHITP4A	138	MEDINA	0.89

Four 138-kV transmission line overloads were observed under various N-1-1 contingency conditions. These issues are summarized in Table 3.3. Figure 3.1 visually illustrates these project need.

Table 3.3: Thermal Violations Observed under Planned Maintenance Outage Evaluation in the Study Area

Overloaded Element	Worst Contingency (N 1 1)	Length (miles)	Max Loading (%)
Hondo – Hondocreek 138-kV Line Ckt 1	Lytle – Pearson 138-kV Line Ckt 1 + Castroville – BaderSub 138-kV Line Ckt 1	9.61	108.38
Lytle – Somerset 138-kV Line Ckt 1	Hondocreek – Moores 138-kV Line Ckt 1 + Cagnon – Rafter 138-kV Line Ckt 1 Rafter – Texas Research 138-kV Line Ckt 1	9.45	108.85
Medina Lake – Pipecreek 138-kV Line Ckt 1	Howard – Somerset 138-kV Line Ckt 1 + Cagnon – Rafter 138-kV Line Ckt 1 Rafter – Texas Research 138-kV Line Ckt 1	7.83	134.56
Tally Rd – Medina Lake 138-kV Line Ckt 1	Howard – Somerset 138-kV Line Ckt 1 + Cagnon – Rafter 138-kV Line Ckt 1 Rafter – Texas Research 138-kV Line Ckt 1	12.36	128.15

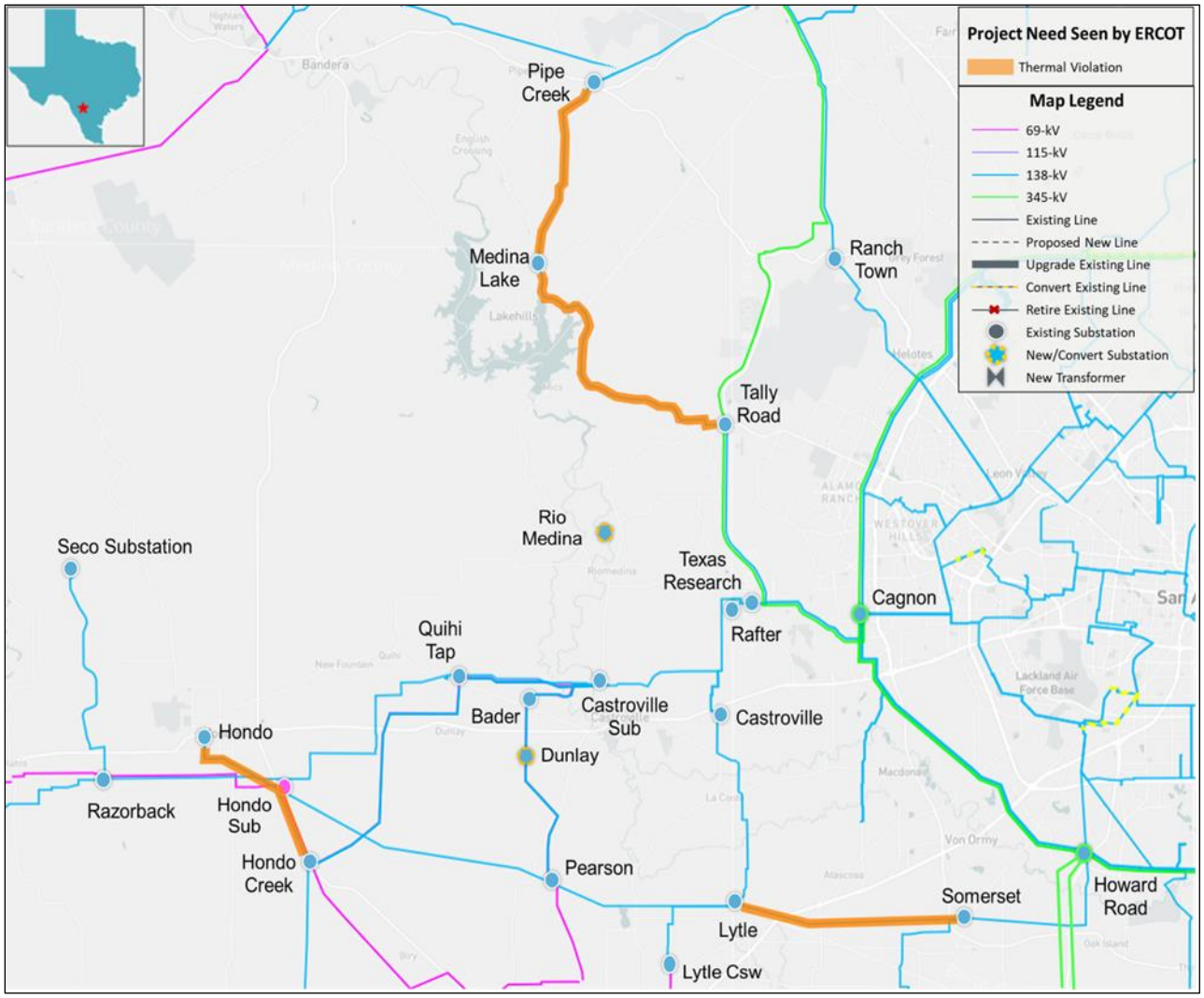


Figure 3.1: Study Area Map Showing Project Needs under Planned Maintenance Outage Evaluation

4 Description of Project Options

ERCOT initially evaluated six system-improvement options to address the thermal overloads and voltage violations under maintenance outage conditions that were observed in the study base case in the Medina County. All six options resolved reliability violations in the summer peak conditions in the study area.

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

- Construct a new Rio Medina 138-kV substation.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile.
- Construct a new 381Estimate1 138-kV substation, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 5.6-mile.

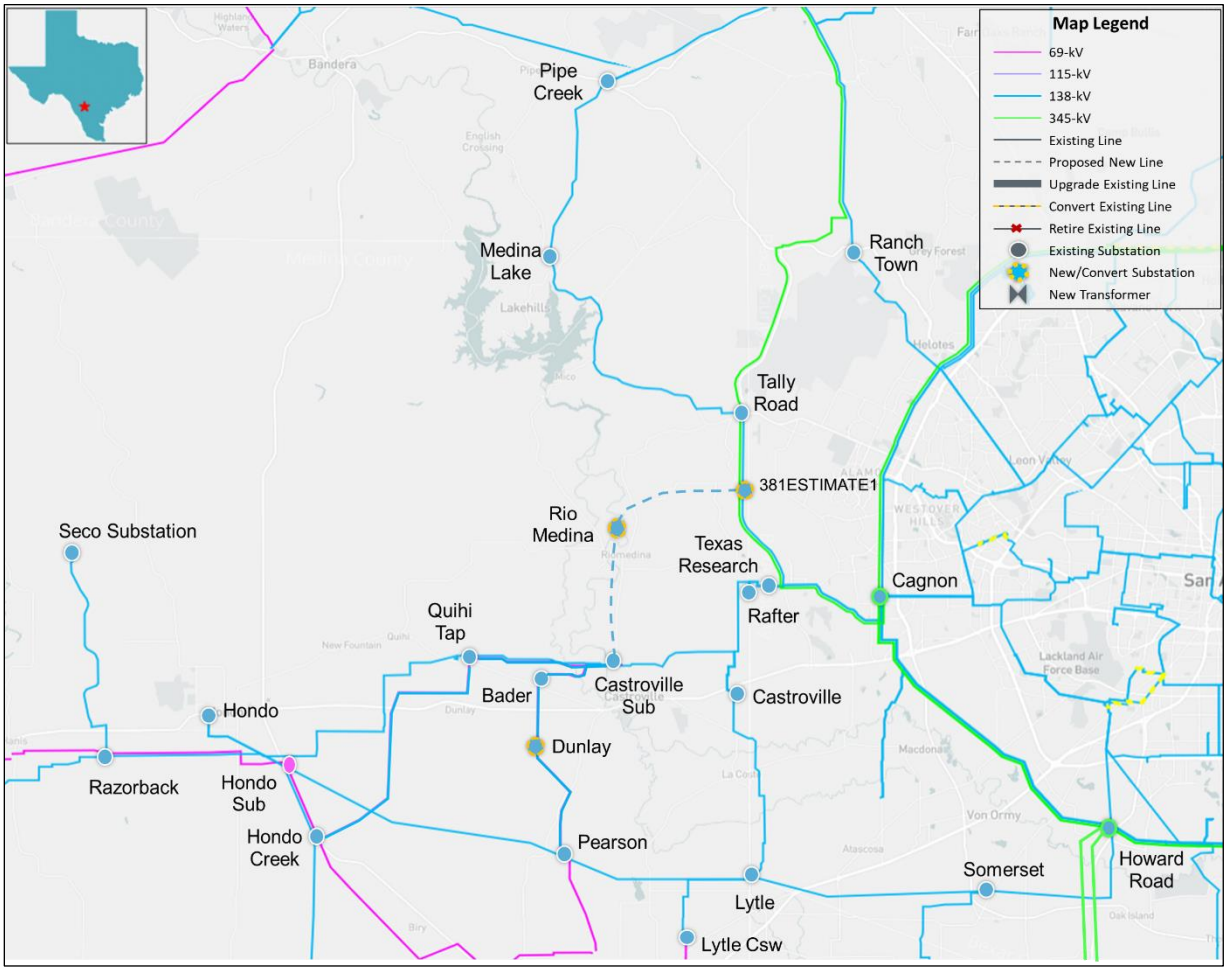


Figure 4.1: Map of Option 1

Option 2 consists of the following:

- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal/emergency ratings of at least 285 MVA, approximately 9.6-mile.
- Rebuild the existing Tally Road – Texas Research 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 7.9-mile.
- Construct a new Ranch Town – Tally Road 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 12-mile.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

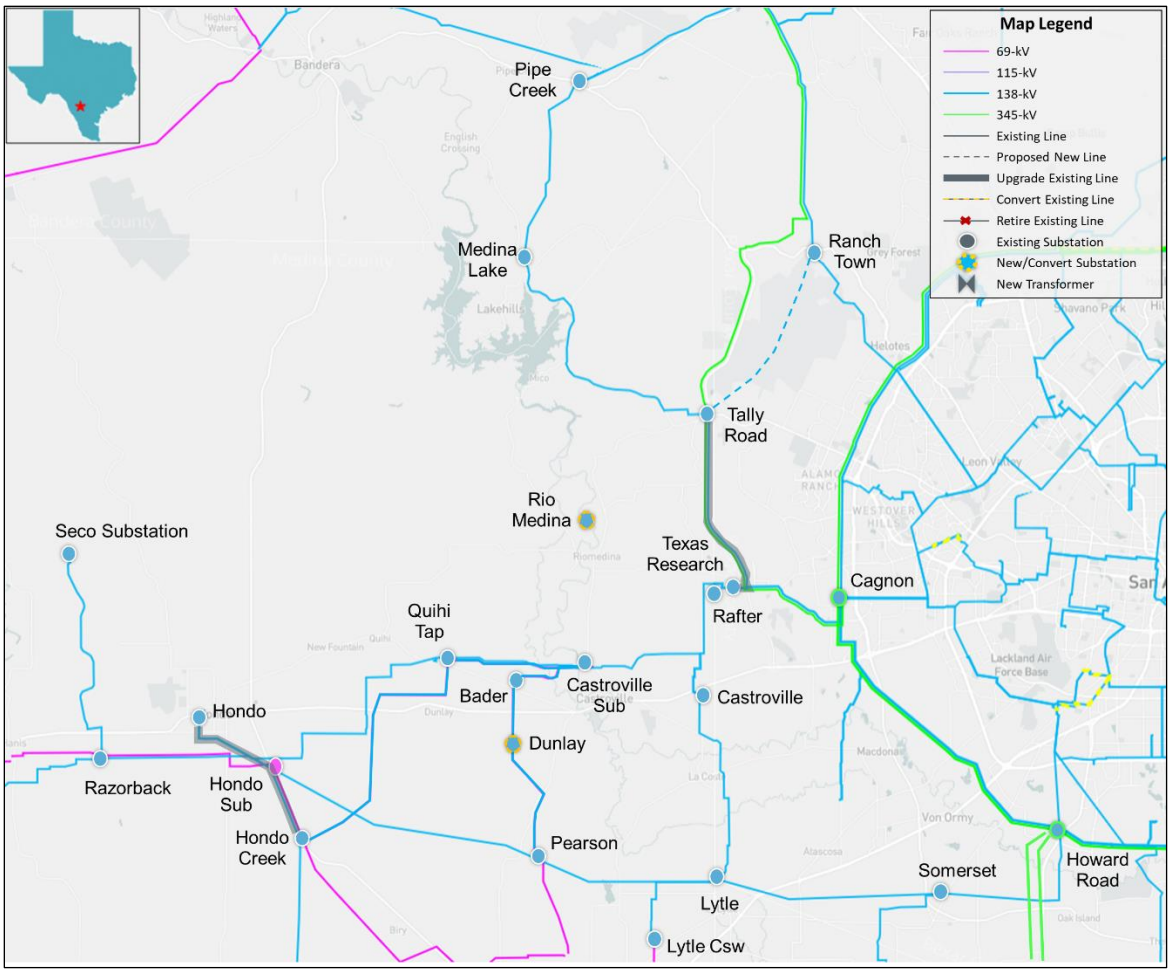


Figure 4.2: Map of Option 2

Option 3 consists of the following:

- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal/emergency ratings of at least 285 MVA, approximately 9.6-mile.
- Rebuild the existing Tally Road – Texas Research 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 7.9-mile.
- Rebuild the existing Pipe Creek – Medina Lake 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 7.8-mile.
- Rebuild the existing Medina Lake – Tally Road 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 12.4 mile.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

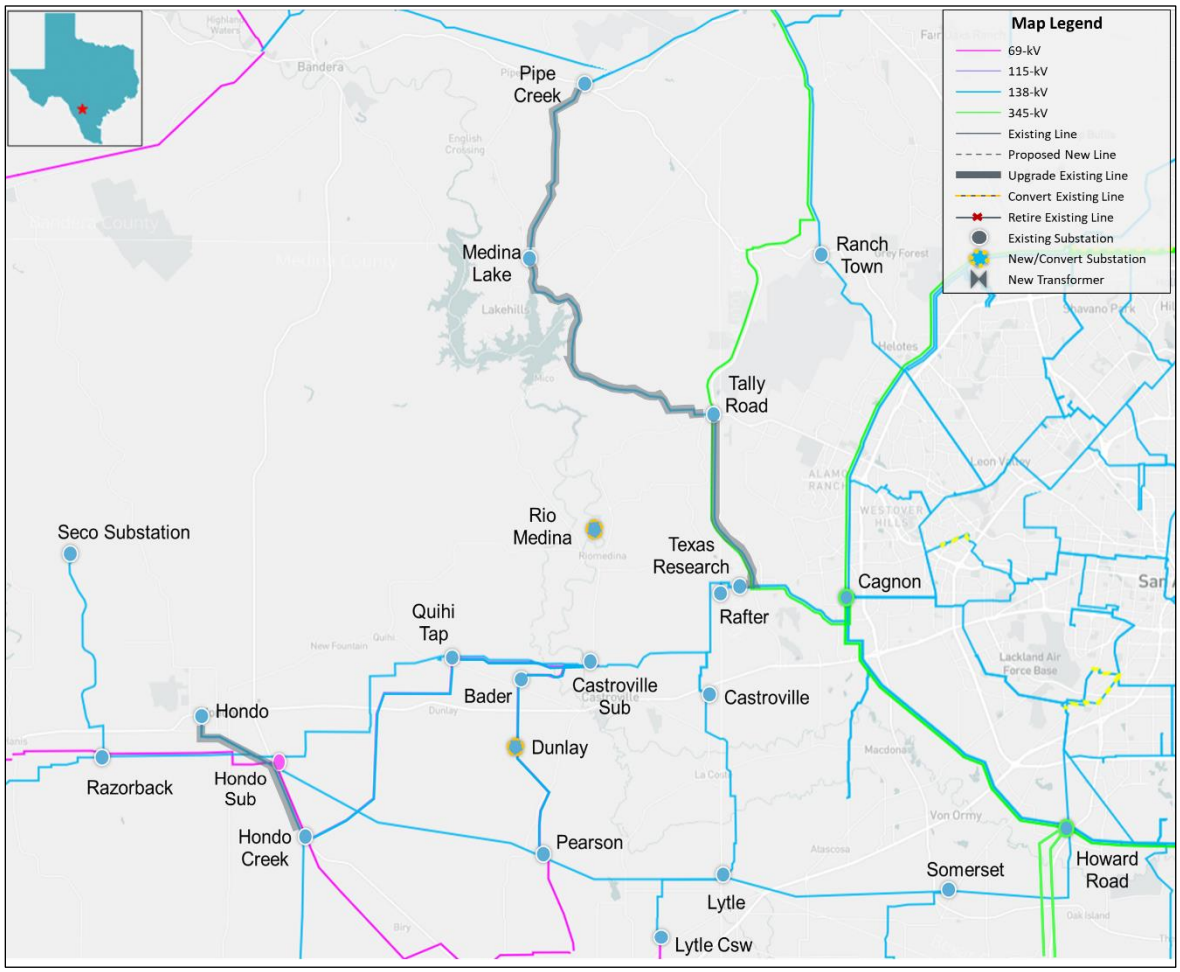


Figure 4.3: Map of Option 3

Option 4 consists of the following:

- Construct a new Rio Medina 138-kV substation.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile.
- Construct a new 381Estimate1 138-kV substation, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media - 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 5.6-mile.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal/emergency ratings of at least 285 MVA, approximately 9.6-mile.
- Rebuild the existing Tally Road – Texas Research 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 7.9-mile.
- Rebuild the existing Pipe Creek – Medina Lake 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 7.8-mile.
- Rebuild the existing Medina Lake – Tally Road 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 12.4-mile.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.
- Add a capacitor bank (Minimum: 36 MVAR) at Rio Medina 138-kV substation.

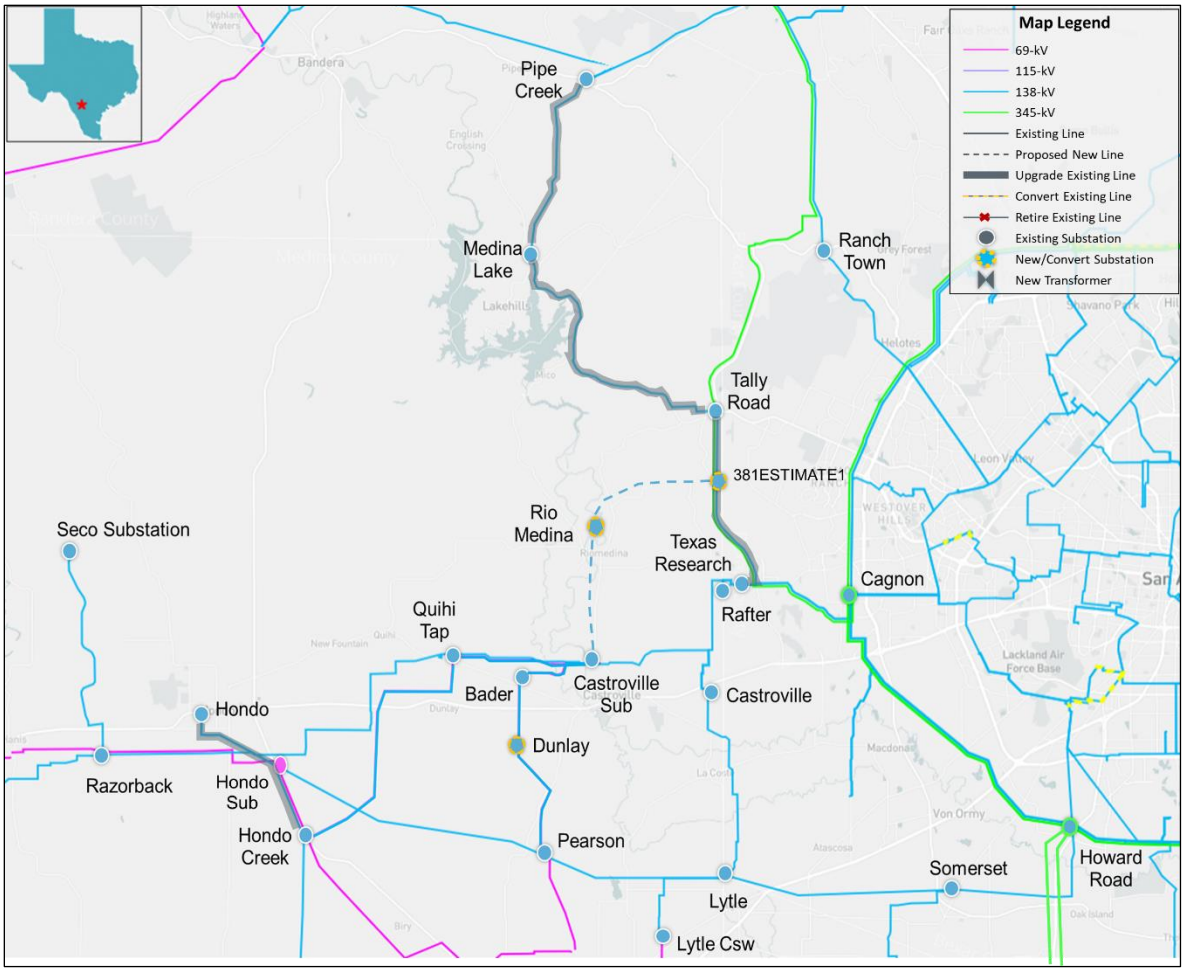


Figure 4.4: Map of Option 4

Option 5 consists of the following:

- Construct a new Rio Medina 138-kV substation.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile.
- Construct a new 381Estimate1 138-kV substation, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media - 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 5.6-mile.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal/emergency ratings of at least 285 MVA, approximately 9.6-mile.

- Rebuild the existing Tally Road – 381Estimate1 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 3-mile.
- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 4.9-mile.
- Construct a new Ranch Town – Tally Road 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 12-mile.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

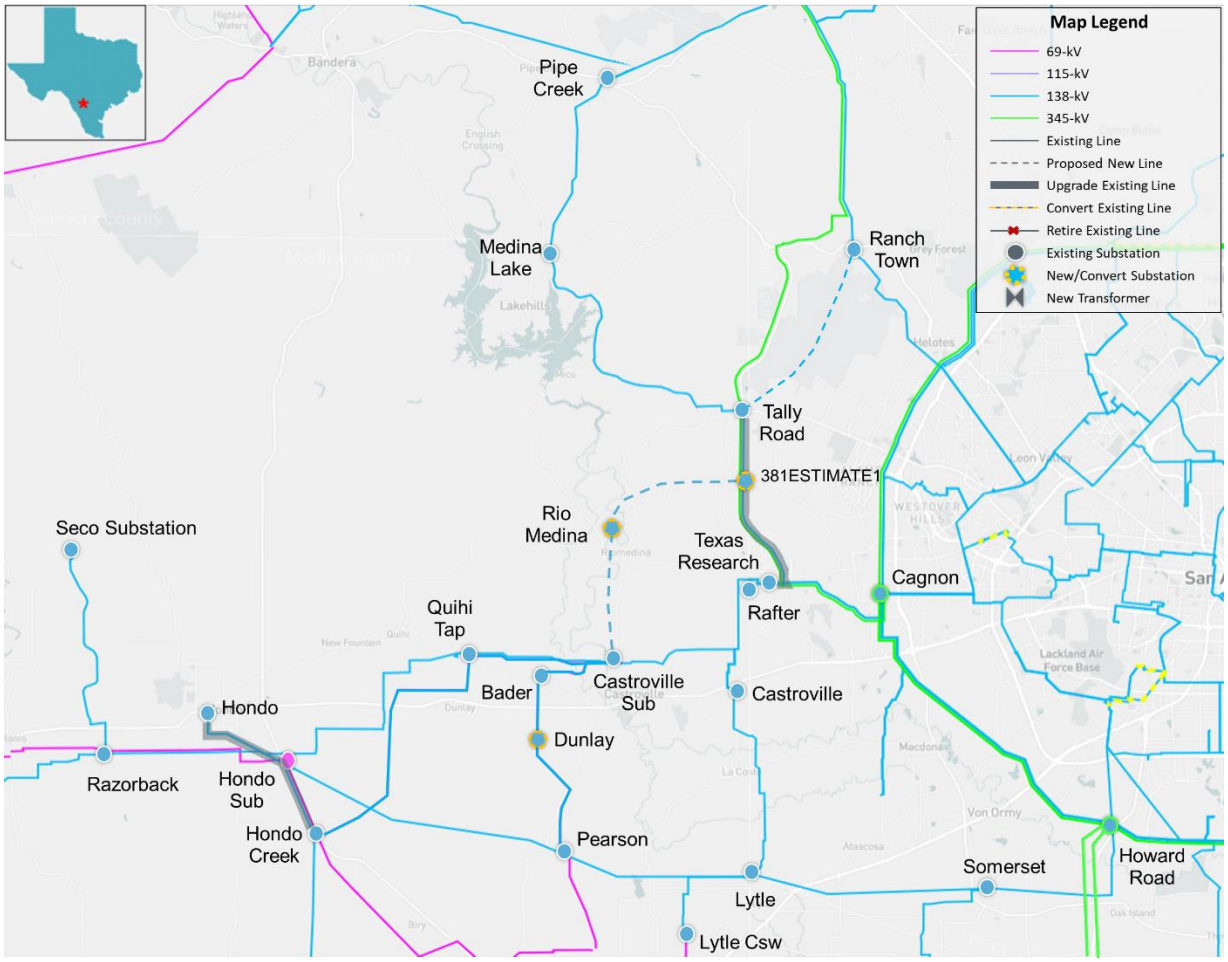


Figure 4.5: Map of Option 5

Option 6 consists of the following:

- Construct a new Rio Medina 138-kV substation.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile.

- Construct a new 381Estimate1 138-kV substation, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427474 MVA, approximately 5.6-mile.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal/emergency ratings of at least 285 MVA, approximately 9.6-mile.
- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 4.9-mile.
- Construct a new Ranch Town – 381Estimate1 138-kV transmission line with normal/emergency ratings of at least 469 MVA, approximately 15.6-mile.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

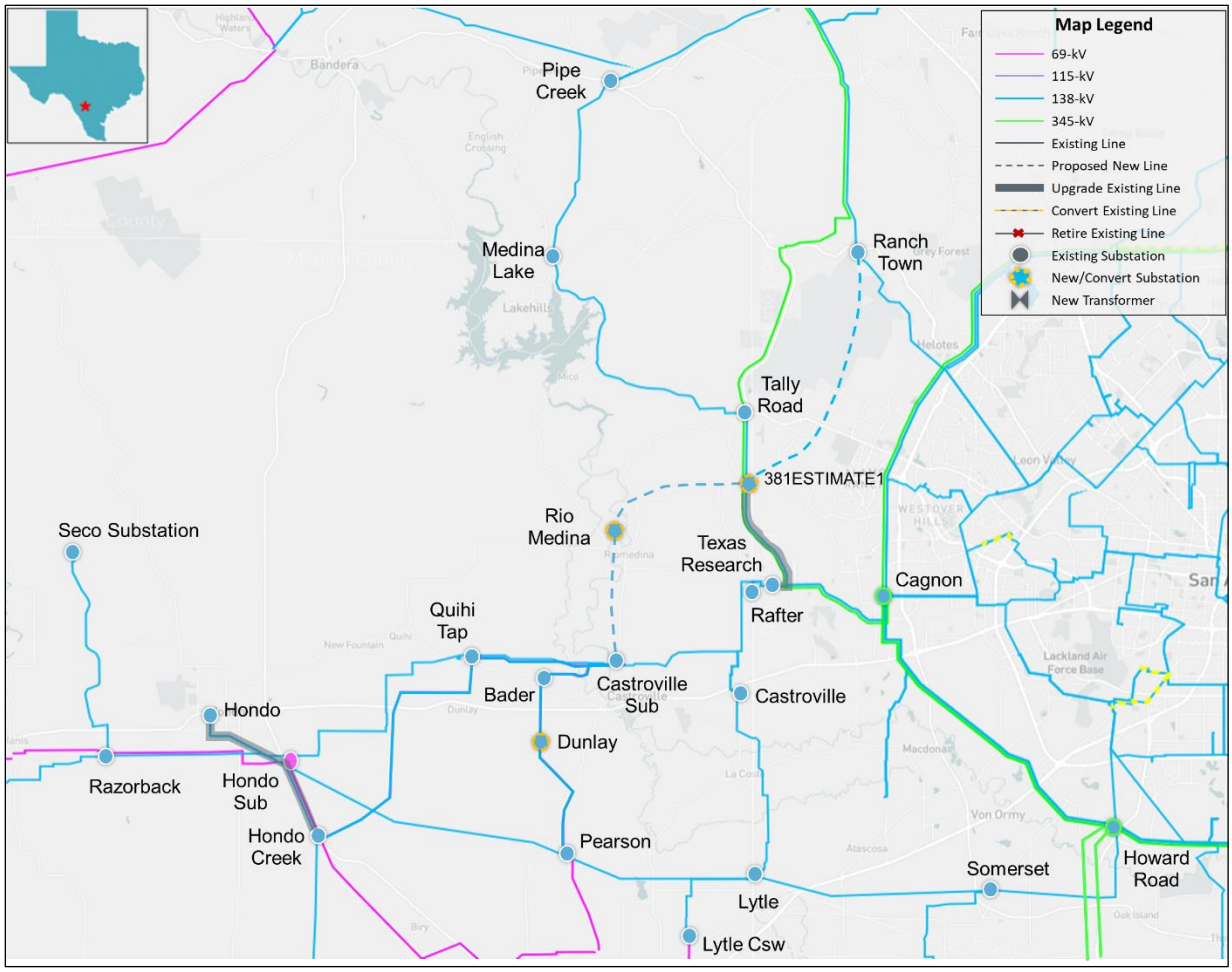


Figure 4.6: Map of Option 6

5 Option Evaluations

ERCOT performed reliability analysis, planned maintenance outage evaluation, and long-term load serving capability assessment to evaluate all six options and to identify any reliability impact of the options in the study area. This section details these studies and their results and compares the options.

5.1 Results of Reliability Analysis

All initial six options were evaluated based on the contingencies described in the methodology section of the report, and no reliability criteria violations were identified for Options 1 through 6 as shown in Table 5.1.

Table 5.1: Results of Initial Reliability Assessment for the Six Options

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

5.2 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 of the study options to represent system element outages under planned maintenance condition (N-1-1) in the area. Then, each N-2 violation was run as a N-1-1 contingency scenario, with system adjustments between the contingencies. The transmission elements in the local area of the Rio Medina Project were monitored in the maintenance outage evaluation.

As shown in Table 5.2, the results of this maintenance assessment indicates that Option 5 and Option 6 resolved all the reliability issues in the local area. Options 1, 2, 3 and 4 still had either the existing or new unsolved power flow issue along with voltage and/or thermal violations.

Table 5.2: Results of Planned Maintenance Outage Evaluation for the Six Options

Option	Voltage Violations	Thermal Overloads	Unsolved Power Flow
1	7	5	None
2	15	2	None
3	6	2	2
4	None	1	None
5	None	None	None
6	None	None	None

5.3 Short-listed Options

Based on the results shown in Table 5.2, Option 5 and Option 6 were selected as short-listed options for further evaluations. This section details these studies and their results and compares the short-listed options. Both the options are illustrated in Figures 5.1, and 5.2.

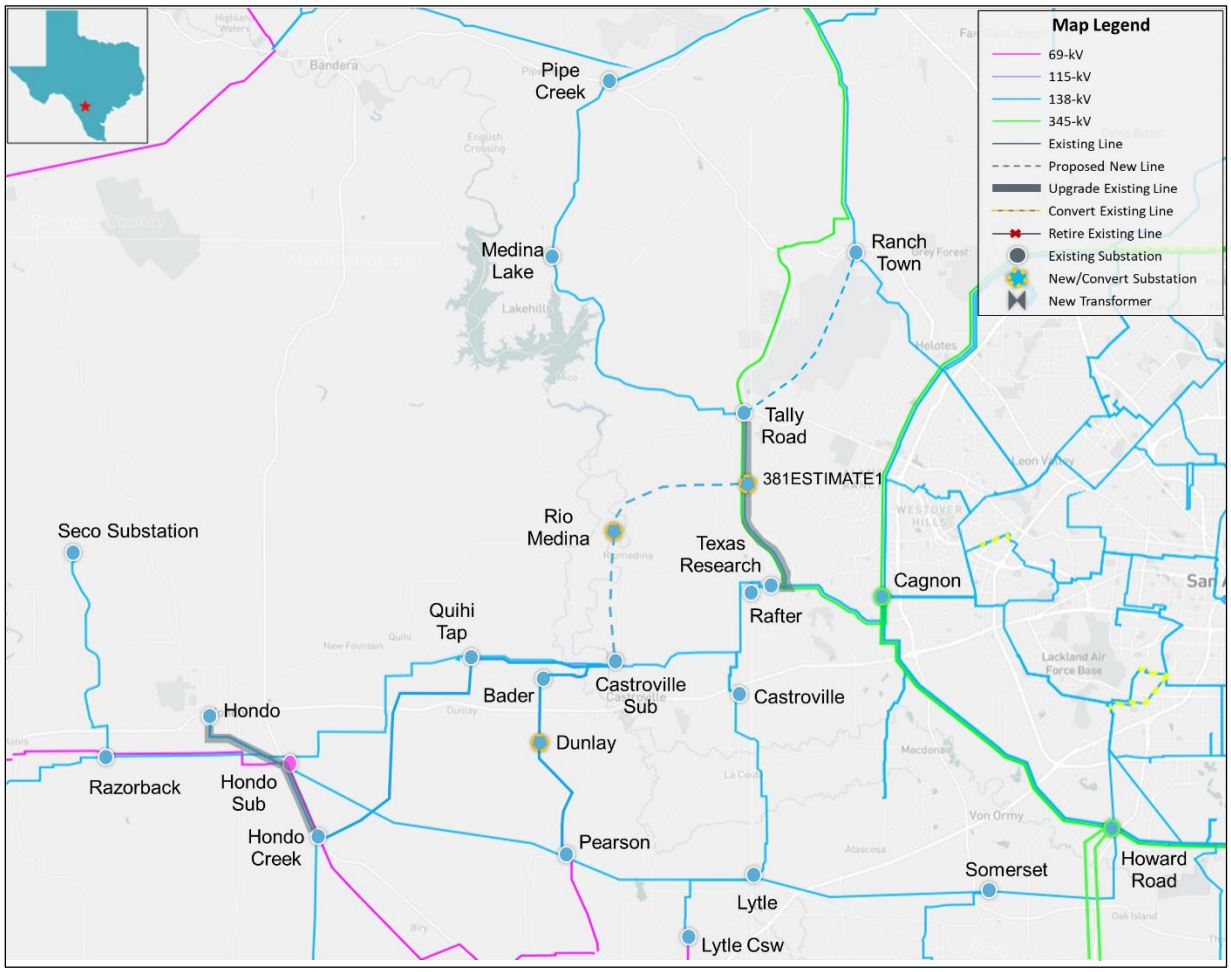


Figure 5.1: Map of Option 5

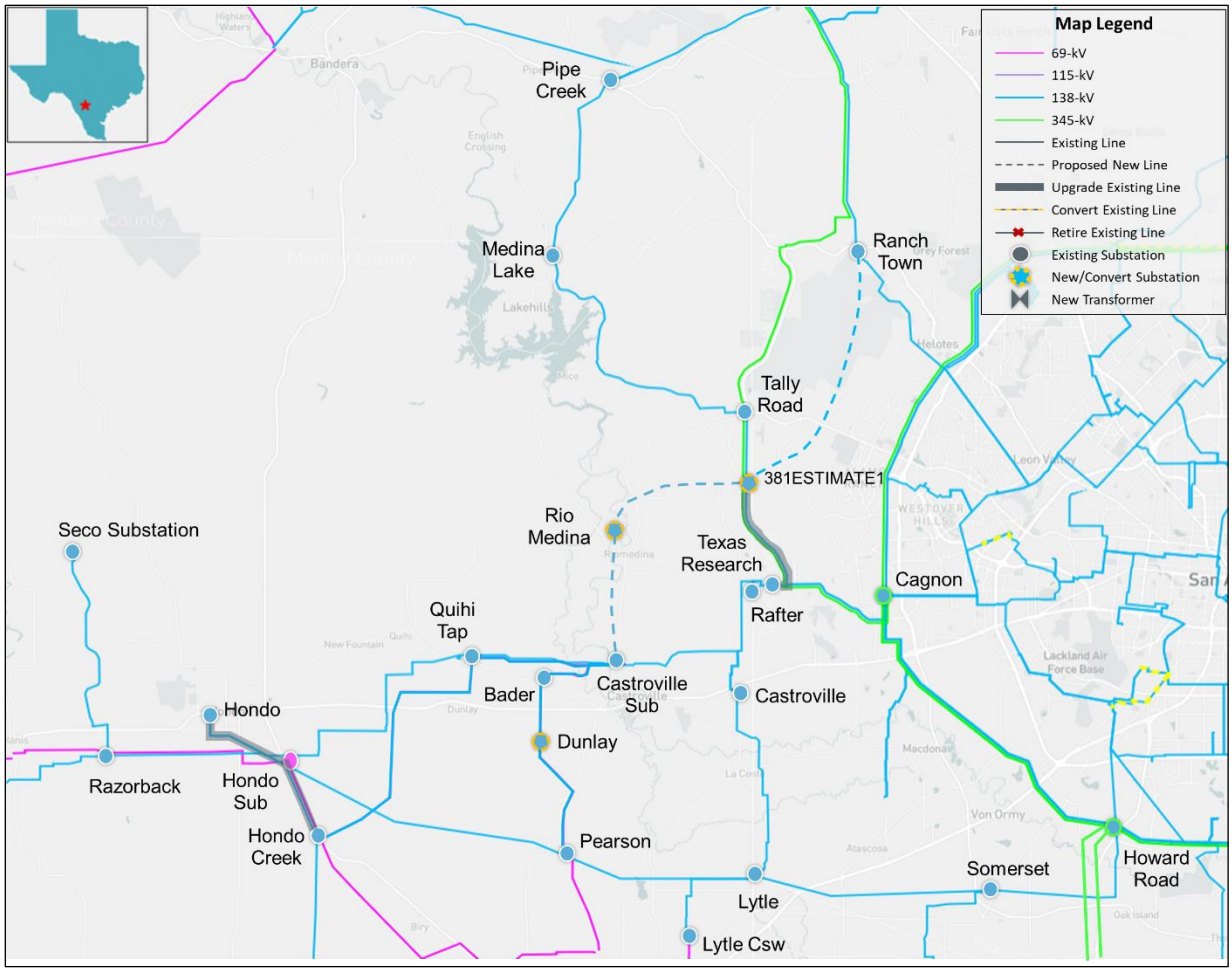


Figure 5.2: Map of Option 6

5.4 Long-Term Load Serving Capability Assessment

The need drivers for this RPG project are to meet the forecasted loads in the area and address the maintenance outage issues. Option 5 and Option 6 address these needs and were selected to perform the long-term load serving capability assessment.

The load serving capability analysis was performed based on N-1 contingency limits. The results show that Option 6 has a slightly higher long-term load serving capability than Option 5. The results are shown in Table 5.3.

Table 5.3: Results of the Long-Term Load Serving Capability Assessment of the Short-listed Options

Option	Incremental Load Serving Capability (MW)
5	416
6	444

5.5 Cost Estimate and Feasibility Assessment

STEC and CPS performed feasibility assessments and provided cost estimates for the two short-listed options. Table 5.4 summarizes the cost estimate, estimated mileage of CCN required, and option feasibility for both short-listed options.

Table 5.4: Cost Estimates and Feasibility of the Short-Listed Options

Option	Cost Estimates ($M)	CCN Required (Miles)	Feasible
5	71.7	22.1	Feasible
6	77.9	25.7	Feasible

6 Comparison of Short-listed Options

The comparison of Option 5 and Option 6, with corresponding cost estimates provided by STEC and CPSE are summarized in Table 6.1.

Table 6.1: Comparison of the Short-Listed Options

Monitored Line	Option 5	Option 6
Met ERCOT and NERC Reliability Criteria	Yes	Yes
Improved Operational Flexibility	Yes	Yes
Improves Long-Term Load Serving Capability	Yes	Yes (Better)
Requires CCN (Miles)	Yes (~22.1-mile)	Yes (~25.7-mile)
Cost Estimates ($M)	~71.7	~77.9

ERCOT recommends Option 5 as the preferred option to address the reliability need in the study area based on the following considerations:

- Option 5 meets both ERCOT and NERC reliability criteria;
- Option 5 is least cost solution;
- Option 5 improves long-term load serving capability; and
- Option 5 provides operational flexibility.

7 Congestion Analysis

ERCOT conducted a congestion analysis to identify any potential impact on system congestion related to the addition of the recommend project, Option 5, using the 2023 RTP 2028 final economic case.

The results of congestion analysis indicated Option 5 relieved one existing congestion and caused one new congestion as shown in Table 7.1.

Table 7.1: List of New and Existing Congestion Due to Transmission Upgrade of Option 5

Monitored Line	% Time of Congestion	New / Existing
Tally Road to Texas Research 138-kV Line	0.22	Existing
Medina Lake to Pipe Creek 138-kV Line	0.14	New

An additional test was conducted by upgrading Medina Lake to Pipe Creek 138-kV line to see if this alleviated the new congestion. Based on the results summarized in Table 7.2, the additional upgrade did not yield any economic benefit. Therefore, no upgrades will be recommended to solve this new congestion as part of Option 5.

Table 7.2: Test Results with Medina Lake to Pipe Creek 138-kV Line Upgrade

Upgrade Tested	Mileage (mi)	Passed Production Cost Savings Test	Passed Generation Revenue Reduction Test
Medina Lake to Pipe Creek 138-kV Line Upgrade	7.83	No	No

8 Conclusion

ERCOT evaluated the six transmission upgrade options to resolve the thermal overloads and voltage violations under maintenance outage conditions in the Medina County. Based on the results of the independent review, ERCOT recommends Option 5 as the preferred solution because it is the least cost option that addresses the thermal overloads and voltage violations under maintenance outage conditions with no reliability issues. Option 5 also provides operation flexibility, long-term load serving capability for future load growth in the area.

Option 5 consists of the following upgrades and is estimated to cost $71.7 million:

- Construct a new Rio Medina 138-kV substation. A 5-terminal, 138-kV breaker and a half bus arrangement including two line terminals and three transformer terminals.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 4.5-mile. This transmission line will require new Right of Way (ROW).
- Construct a new 381Estimate1 138-kV substation in a 3-terminal ring bus arrangement, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal/emergency ratings of at least 427/474 MVA, approximately 5.6-mile. This transmission line will require new ROW.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal and emergency ratings of at least 285 MVA.
- Rebuild the existing Tally Road – 381Estimate1 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 3.0-mile.

- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 4.9-mile.
- Construct a new Ranch Town – Tally Road 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 12.0-mile. This transmission line will require new ROW.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

This project will require a CCN for the ~22.1-mile of new 138-kV single circuit transmission line on a double-circuit structure from Castroville Sub 138-kV Substation to new Rio Medina 138-kV Substation, from Rio Medina 138-kV Substation to 381Estimate1 138-kV Substation, and from Ranch Town to Tally Road 138-kV Substation. The expected ISD of this project are January 2027.

Appendix A

Table A.1: List of Generation Added to the Economic Base Case Based on November 2023 GIS Report

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
14INR0033	Goodnight Wind	WIN	12/30/2023	258.1	Armstrong
18INR0043	Lacy Creek wind	WIN	8/1/2023	301.3	Glasscock
18INR0058	Texana Solar	SOL	9/27/2024	152.3	Wharton
19INR0134	Cottonwood Bayou Solar	SOL	6/30/2024	351.4	Brazoria
19INR0177	Crawfish	WIN	12/31/2023	163.2	Wharton
19INR0203	Angelo Solar	SOL	5/3/2024	195.4	Tom Green
20INR0035	Angus Solar	SOL	4/1/2025	112.0	Bosque
20INR0047	Siete	WIN	10/31/2024	375.1	Webb
20INR0069	Danish Fields Solar	SOL	12/15/2023	602.8	Wharton
20INR0074	Pitts Dudik Solar	SOL	8/18/2023	49.6	Hill
20INR0080	Frye Solar	SOL	3/15/2024	514.1	Swisher
20INR0164	BPL Files Solar	SOL	7/26/2023	148.7	Hill
20INR0208	Signal Solar	SOL	3/15/2025	51.8	Hunt
20INR0210	Hopkins Solar	SOL	12/31/2023	253.1	Hopkins
20INR0246	Ryan Energy Storage	OTH	10/21/2024	50.0	Coryell
20INR0249	Appaloosa Run Wind	WIN	7/7/2023	175.0	Upton
20INR0250	Aguayo Wind	WIN	7/15/2023	196.0	Mills
20INR0269	Texas Solar Nova 2	SOL	12/29/2023	201.1	Kent
20INR0296	Sand Bluff Wind Repower	WIN	6/15/2023	89.5	Glasscock
21INR0012	Air Products GCA	GAS	11/30/2023	14.0	Galveston
21INR0019	Zier Solar	SOL	3/5/2024	163.0	Kinney
21INR0027	Zier Storage	OTH	3/5/2024	40.4	Kinney
21INR0203	Eastbell Milam Solar	SOL	11/30/2023	244.9	Milam
21INR0220	Maleza Solar	SOL	12/1/2024	254.9	Wharton
21INR0223	Tulsita Solar	SOL	12/31/2024	261.0	Goliad
21INR0253	Ulysses Solar	SOL	11/1/2024	150.0	Coke
21INR0257	Mercury Solar	SOL	6/30/2024	206.1	Hill
21INR0324	Board Creek Wind	WIN	7/30/2023	299.2	Navarro
21INR0325	Sheep Creek Wind	WIN	12/31/2023	153.0	Callahan
21INR0344	Lunis Creek Solar SLF	SOL	12/31/2024	617.1	Jackson
21INR0351	7V Solar	SOL	4/30/2024	240.6	Fayette
21INR0353	Big Elm Solar	SOL	7/31/2024	203.6	Bell
21INR0368	Eliza Solar	SOL	11/1/2024	151.9	Kaufman
21INR0389	Hollywood Solar	SOL	6/30/2024	353.4	Wharton
21INR0401	Young Wind	WIN	7/7/2023	499.1	Young
21INR0442	Myrtle Storage	OTH	12/15/2023	155.0	Brazoria
21INR0458	Porter Solar	SOL	3/31/2024	245.8	Denton
21INR0484	Mustang Creek Storage	OTH	8/15/2023	70.5	Jackson

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
21INR0492	Stockyard Grid Batt	OTH	3/29/2024	150.6	Tarrant
21INR0499	Neptune Solar	SOL	12/22/2023	204.7	Jackson
21INR0511	Wolf Ridge Repower	WIN	12/31/2024	9.0	Cooke
21INR0515	Roadrunner Crossing Wind II	WIN	12/31/2023	126.7	Eastland
21INR0532	Brazos Wind Repower	WIN	8/14/2023	22.4	Scurry
22INR0223	Eiffel Solar	SOL	10/30/2023	241.0	Lamar
22INR0251	Shaula I Solar	SOL	10/30/2025	205.2	DeWitt
22INR0254	Pisgah Ridge Solar	SOL	5/15/2023	253.9	Navarro
22INR0260	Eliza Storage	OTH	11/1/2024	100.2	Kaufman
22INR0267	Shaula II Solar	SOL	5/30/2026	205.2	DeWitt
22INR0295	Coral Solar	SOL	12/15/2023	151.6	Falls
22INR0302	Bright Arrow Storage	OTH	9/19/2023	103.6	Hopkins
22INR0327	Hummingbird Storage	OTH	2/24/2024	103.8	Denton
22INR0335	Estonian Solar	SOL	10/15/2024	202.5	Delta
22INR0336	Estonian Storage	OTH	2/24/2024	101.6	Delta
22INR0338	Limousin Oak Storage	OTH	2/23/2024	104.6	Grimes
22INR0349	BRP Antlia BESS	OTH	12/1/2024	71.0	Val Verde
22INR0359	Dileo Solar	SOL	8/18/2023	71.4	Bosque
22INR0363	Hayhurst Texas Solar	SOL	11/1/2023	24.8	Culberson
22INR0366	BRP Libra BESS	OTH	11/27/2023	206.2	Guadalupe
22INR0368	Padua Grid BESS	OTH	12/31/2024	50.8	Bexar
22INR0397	Buckeye Corpus Fuels Solar	SOL	2/22/2025	57.6	Nueces
22INR0398	Sabal Storage	OTH	9/30/2023	18.0	Cameron
22INR0404	Fence Post Solar	SOL	7/12/2024	237.3	Navarro
22INR0405	Fence Post BESS	OTH	6/19/2024	71.6	Navarro
22INR0409	Stampede Solar	SOL	12/20/2024	255.7	Hopkins
22INR0410	Stampede BESS	OTH	9/21/2024	71.6	Hopkins
22INR0412	Andromeda Solar	SOL	8/30/2023	326.6	Scurry
22INR0429	Sun Valley BESS	OTH	9/10/2023	101.4	Hill
22INR0454	DR Solar	SOL	6/1/2024	46.0	Culberson
22INR0455	Blue Sky Sol	SOL	6/15/2024	101.2	Crockett
22INR0485	House Mountain	OTH	10/26/2023	63.0	Brewster
22INR0490	Callisto I Energy Center	OTH	6/1/2024	203.0	Harris
22INR0495	TIMBERWOLF BESS 2	OTH	9/1/2023	150.0	Crane
22INR0502	Shamrock	WIN	7/1/2024	223.9	Crockett
22INR0509	Turquoise Storage	OTH	7/31/2023	196.2	Hunt
22INR0524	St. Gall I Energy Storage	OTH	12/28/2023	102.6	Pecos
22INR0549	Tanzanite Storage	OTH	12/1/2024	257.7	Henderson
22INR0550	BLUE SUMMIT I REPOWER	WIN	7/1/2023	4.4	Wilbarger
22INR0551	Wolf Tank Storage	OTH	7/1/2023	155.5	Webb
22INR0552	Sowers Storage	OTH	12/1/2024	200.8	Kaufman
23INR0007	Outpost Solar	SOL	10/31/2024	513.7	Webb

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
23INR0047	Charger Solar	SOL	5/31/2025	406.8	Refugio
23INR0054	Tanglewood Solar	SOL	1/16/2025	257.0	Brazoria
23INR0062	Noria Storage	OTH	9/1/2025	75.0	Nueces
23INR0111	GULF STAR SOLAR	SOL	2/1/2024	300.5	Wharton
23INR0124	Coral Storage	OTH	12/15/2023	99.0	Falls
23INR0153	Mercury II Solar	SOL	6/30/2024	206.1	Hill
23INR0154	Ebony Energy Storage	OTH	4/1/2024	208.4	Comal
23INR0159	Five Wells Storage	OTH	12/29/2023	220.8	Bell
23INR0160	Grimes County Solar	SOL	3/15/2025	210.0	Grimes
23INR0162	Redonda Solar	SOL	12/1/2024	253.2	Zapata
23INR0166	Great Kiskadee Storage	OTH	8/1/2024	103.1	Hidalgo
23INR0223	Garcitas Creek Solar	SOL	3/31/2025	201.9	Jackson
23INR0239	Giga Texas Energy Storage	OTH	12/15/2023	131.1	Travis
23INR0331	Talitha BESS	OTH	6/30/2024	61.4	Jim Wells
23INR0339	Remy Jade Power Station	GAS	4/1/2024	408.0	Harris
23INR0343	Guajillo Energy Storage	OTH	9/30/2024	201.1	Webb
23INR0363	Brazos Bend BESS	OTH	4/15/2024	101.6	Fort Bend
23INR0369	Anemoi Energy Storage	OTH	12/20/2023	205.0	Hidalgo
23INR0371	Rodeo Ranch Energy Storage	OTH	11/6/2023	307.5	Reeves
23INR0387	Pioneer DJ Wind	WIN	4/20/2024	140.3	Midland
23INR0408	TECO GTG2	GAS	2/18/2024	50.0	Harris
23INR0418	Angelo Storage	OTH	5/3/2024	103.0	Tom Green
23INR0419	SOHO BESS	OTH	1/1/2025	206.3	Brazoria
23INR0460	GULF STAR STORAGE	OTH	2/1/2024	301.0	Wharton
23INR0472	Frontera Energy Center	GAS	7/14/2023	524.0	Hidalgo
23INR0506	Beachwood II Power Station	GAS	3/1/2024	102.0	Brazoria
23INR0524	Temple II Repower	GAS	10/15/2023	0.0	Bell
23INR0551	Brotman II Power Station	GAS	8/7/2023	102.0	Brazoria
23INR0637	Goodnight Wind II	WIN	12/30/2023	258.3	Armstrong
24INR0015	Five Wells Solar	SOL	12/29/2023	322.8	Bell
24INR0147	Citadel BESS	OTH	5/7/2024	201.3	Harris
24INR0427	CPS AvR CT1 Rotor Replacement	GAS	1/30/2024	11.3	Bexar
23INR0470	BoCo BESS	OTH	6/22/2024	155.5	Borden
22INR0353	BRP Carina BESS	OTH	12/31/2024	151.9	Nueces
21INR0450	Danish Fields Storage	OTH	2/15/2024	152.4	Wharton
22INR0261	Dorado Solar	SOL	12/31/2025	406.3	Callahan
20INR0040	Montgomery Ranch Wind	WIN	2/29/2024	200.2	Foard
21INR0424	Tierra Bonita Solar	SOL	8/1/2024	309.7	Pecos
23INR0296	Trojan Solar	SOL	2/28/2026	151.3	Cooke
24INR0382	Remy Jade II Power Station	GAS	11/30/2024	102.0	Harris
21INR0444	Long Point Storage	OTH	12/1/2025	100.6	Brazoria
21INR0505	Ramsey Storage	OTH	6/1/2024	510.4	Wharton

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
22INR0422	Ferdinand Grid BESS	OTH	5/31/2026	202.7	Bexar
23INR0219	Dogfish BESS	OTH	12/31/2024	75.0	Pecos
23INR0381	Soportar ESS	OTH	3/15/2025	102.1	Bexar
24INR0039	SP Jaguar BESS	OTH	6/30/2025	300.0	McLennan
24INR0109	Oriana BESS	OTH	7/2/2025	60.3	Victoria
24INR0265	Ironman BESS	OTH	11/1/2024	304.2	Brazoria
24INR0281	Red Egret BESS	OTH	6/1/2025	309.0	Galveston
24INR0436	Carambola BESS	OTH	5/31/2026	97.4	Hidalgo
25INR0162	SOHO II BESS	OTH	1/1/2025	206.3	Brazoria
21INR0302	Aureola Solar	SOL	6/28/2024	203.0	Milam
21INR0303	Mandorla Solar	SOL	1/2/2024	254.0	Milam
21INR0304	Halo Solar	SOL	6/20/2024	254.0	Bell
22INR0354	XE MURAT Solar	SOL	5/13/2024	60.4	Harris
23INR0367	Fewell Solar	SOL	9/9/2025	203.5	Limestone
24INR0038	SP Jaguar Solar	SOL	6/30/2025	300.0	McLennan
19INR0054	Monte Cristo 1 Wind	WIN	12/31/2024	236.9	Hidalgo
20INR0248	Second Division Solar	SOL	9/17/2024	100.3	Brazoria
23INR0026	Baker Branch Solar	SOL	8/1/2024	469.4	Lamar
23INR0525	Pyron Wind Repower	WIN	2/1/2024	19.9	Nolan
24INR0070	Sypert Branch Solar Project	SOL	6/1/2025	261.8	Milam
24INR0609	Rodeo Ranch Energy Storage II	OTH	11/6/2023	307.5	Reeves
25INR0223	Uhland Maxwell	GAS	4/15/2025	188.4	Caldwell
25INR0232	Isaac Solar	SOL	3/31/2026	51.6	Matagorda
22INR0555	Guevara Storage	OTH	7/15/2025	125.4	Rockwall
24INR0100	Sheep Creek Storage	OTH	7/1/2024	142.0	Callahan
24INR0138	Midpoint Storage	OTH	8/30/2025	52.2	Hill
24INR0140	Gaia Storage	OTH	7/31/2025	76.8	Navarro
24INR0273	Al Pastor BESS	OTH	9/2/2024	100.8	Dawson
24INR0295	Lucky Bluff BESS	OTH	5/31/2025	100.8	Erath
23INR0349	Tokio Solar	SOL	8/25/2025	177.6	McLennan
24INR0010	Pinnington Solar	SOL	10/15/2025	666.1	Jack
24INR0139	Midpoint Solar	SOL	8/30/2025	103.8	Hill
24INR0141	Gaia Solar	SOL	7/31/2025	152.7	Navarro

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March 5, 2024

Mr. Clif Lange
General Manager
South Texas Electric Cooperative
PO BOX 119
Nursery, TX 77976

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

RE: STEC Rio Medina Project

Dear Mr. Lange and Mr. Tamez:

On February 16, 2024, the Electric Reliability Council of Texas (ERCOT) endorsed the following Tier 2 transmission project in accordance with ERCOT Protocol Section 3.11.4:

STEC Rio Medina Project:

- Construct a new Rio Medina 138-kV substation. A 5-terminal, 138-kV breaker and a half bus arrangement including two line terminals and three transformer terminals.
- Construct a new Rio Media – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure with normal and emergency ratings of at least 427 and 474 MVA, approximately 4.5-mile. This transmission line will require new Right of Way (ROW).
- Construct a new 381Estimate1 138-kV substation in a 3-terminal ring bus arrangement, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Media – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure with normal and emergency ratings of at least 427 and 474 MVA, approximately 5.6-mile. This transmission line will require new ROW.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal and emergency ratings of at least 285 MVA.
- Rebuild the existing Tally Road – 381Estimate1 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 3.0-mile.
- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 4.9-mile.
- Construct a new Ranch Town – Tally Road 138-kV transmission line with normal and emergency ratings of at least 469 MVA, approximately 12.0-mile. This transmission line will require new ROW.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

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

Sincerely,

Kristi A Hobbs

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

cc:

Pablo Vegas, ERCOT
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May 28, 2024

Mr. Clif Lange
General Manager
South Texas Electric Cooperative
PO BOX 119
Nursery, TX 77976

Kenneth Bowen
Manager, Transmission Planning & Operations Engineering
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

RE: STEC Rio Medina Project

Dear Mr. Lange and Mr. Bowen:

On February 16, 2024, the Electric Reliability Council of Texas (ERCOT) endorsed the following Tier 2 transmission project in accordance with ERCOT Protocol Section 3.11.4:

STEC Rio Medina Project:

- Construct a new Rio Medina 138-kV substation. A 5-terminal, 138-kV breaker and a half bus arrangement including two line terminals and three transformer terminals.
- Construct a new Rio Medina – Castroville Sub 138-kV single-circuit transmission line on a double-circuit structure, approximately 4.5-mile with normal and emergency ratings of at least 427 and 474 MVA respectively. This transmission line will require new Right of Way (ROW).
- Construct a new 381Estimate1 138-kV substation in a 3-terminal ring bus arrangement, by cutting into the existing Texas Research – Tally Road 138-kV transmission line.
- Construct a new Rio Medina – 381Estimate1 138-kV single-circuit transmission line on a double-circuit structure, approximately 5.6-mile with normal and emergency ratings of at least 427 and 474 MVA respectively. This transmission line will require new ROW.
- Upgrade the existing Hondo – Hondo Creek 138-kV transmission line with normal and emergency ratings of at least 285 MVA.
- Rebuild the existing Tally Road – 381Estimate1 138-kV transmission line, approximately 3.0-mile with normal and emergency ratings of at least 469 MVA.
- Rebuild the existing 381Estimate1 – Texas Research 138-kV transmission line, approximately 4.9-mile with normal and emergency ratings of at least 469 MVA.
- Construct a new Ranch Town – Tally Road 138-kV transmission line, approximately 12.0-mile with normal and emergency ratings of at least 469 MVA. This transmission line will require new ROW.
- Add a capacitor bank (Minimum: 18 MVAR) at Dunlay 138-kV substation.

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:

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