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# Item 8: 25RPG012 STEC Ammonia Plant Load Project – Option 1

*Kristi Hobbs*
Vice President, System Planning and Weatherization

Board of Directors Meeting

February 9-10, 2026

## Purpose

Provide an overview of the $117.38 million STEC Ammonia Plant Load Tier 1 Reliability Project. Per Protocol Section 3.11.4.7, Tier 1 projects require endorsement by the Board of Directors (Board).

## Voting Items

ERCOT staff requests and recommends that the Board endorse the STEC Ammonia Plant Load RPG Project (Option 1) based on North American Electric Reliability Corporation (NERC) and Electric Reliability Council of Texas, Inc (ERCOT) reliability planning criteria

## Key Takeaways

- Ensuring ERCOT's leadership for grid reliability and resilience, the Project has completed Regional Planning Group (RPG) review and received an independent assessment from ERCOT staff and unanimous endorsement by the Technical Advisory Committee (TAC)
- ERCOT studied several options and recommends Option 1 as it addresses all project needs with no reliability violations, is the least cost option, improves long-term load-serving capability and requires the least amount of Certificate of Convenience and Necessity (CCN) miles

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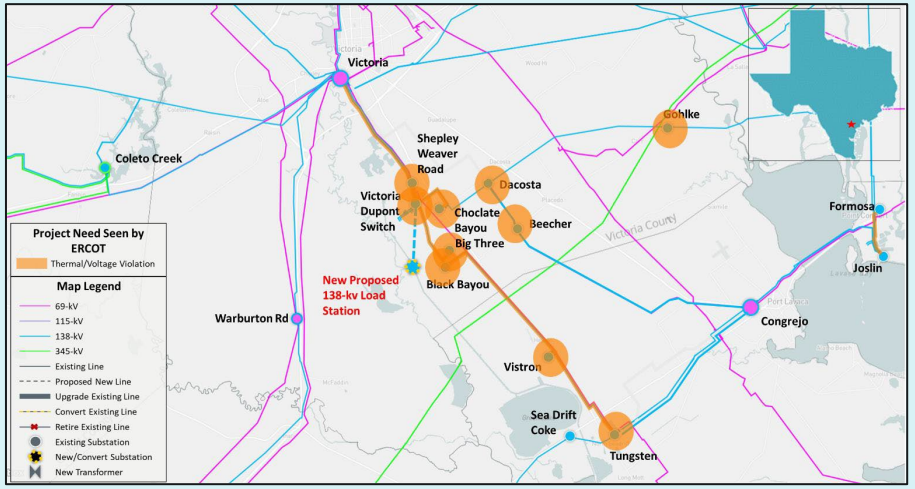
# STEC Ammonia Plant Load RPG Project

- STEC submitted the Ammonia Plant Load  Project for Regional Planning Group (RPG) review in May 2025
- The purpose of the project is to address the reliability issues due to proposed load additions in Victoria County in the Coast Weather Zone
- ERCOT performed an independent review of the project and identified thermal overloads and voltage violations in Victoria County
- ERCOT's endorsement of the project is based on the reliability need to relieve thermal overloads on ~39 miles of 138-kV transmission lines and 24 voltage violations in Victoria County to meet NERC and ERCOT reliability planning criteria
- STEC's initial cost estimate did not include AEP's increased capability requirement for the 138-kV transmission rebuild and the increased cost associated with recent tariff changes
- ERCOT presented the project and TAC voted unanimously to endorse the project on January 21, 2026

**Key Takeaway(s):** The STEC Ammonia Plant Load Project has completed RPG review and received unanimous endorsement by TAC.

## Thermal Overloads and Voltage Violations Seen by ERCOT



# Basis for ERCOT Board Endorsement

ERCOT's independent review identified a reliability need for the STEC Ammonia Plant Load Project to satisfy:

- NERC TPL-001-5.1 Table 1 Reliability Criteria for category:
  - P3: The contingency is the loss of a generator with System adjustments followed by a transmission circuit outage

- ERCOT Planning Guide Section Reliability Performance Criteria contingency:
  - 4.1.1.2(1)(d): The contingency is a loss of a single generator followed by a single transmission element or common tower outage

**Key Takeaway(s):** The STEC Ammonia Plant Load  Project is needed to meet reliability under NERC and ERCOT Planning Guide criteria.

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# Overall Project Summary

- One (1) new 138-kV substation
- Approximately 3.4 miles of new 138-kV single-circuit transmission lines
- Rebuild of approximately 39 miles of 138-kV transmission lines
- Eliminate a NERC P7 (common tower outage) event
- Certificate of Convenience and Necessity (CCN) for the new 138-kV single-circuit line from Dupont Switching station to the new large load and the removal of the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont 138-kV circuits due to approximately 11.1 miles of new right of way (ROW)

**Key Takeaway(s):** The STEC Ammonia Plant Load Project (Option 1) will require a CCN due to approximately 11.1 miles of new ROW.

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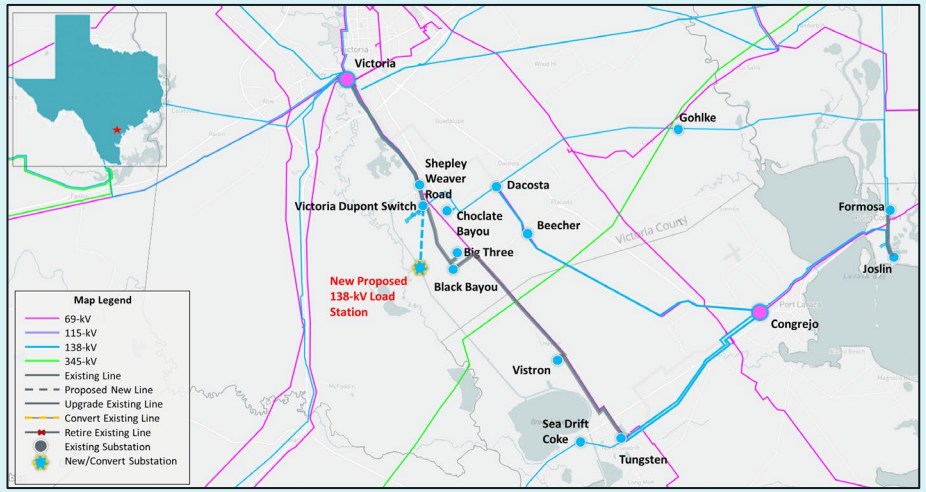
# Request for Board Vote

ERCOT staff requests and recommends that the Board:

- Endorse the need for the STEC Ammonia Plant Load Project (Option 1) based on NERC and ERCOT reliability planning criteria
- The ERCOT Independent Review (EIR) is included as Attachment A to the Board Decision Template

**Key Takeaway(s):** ERCOT studied several options and recommends Option 1 as it addresses all project needs with no reliability violations, is the least cost option, improves long-term load-serving capability and requires the least amount of CCN miles.

## ERCOT Recommendation



**Date:** February 2, 2026
**To:** Board of Directors
**From:** Kristi Hobbs, Vice President, System Planning and Weatherization (ERCOT)
**Subject:** STEC Ammonia Plant Load Regional Planning Group (RPG) Project

# Issue for the ERCOT Board of Directors

**ERCOT Board of Directors Meeting Date:** February 9-10, 2026

**Item No.:** 8

**Issue:**
Whether the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) should accept the recommendation of ERCOT staff to endorse the need for the Tier 1 STEC Ammonia Plant Load Regional Planning Group (RPG) Project in order to meet the reliability requirements for the ERCOT System and address thermal overloads and voltage violations due to proposed load additions in Victoria County in the Coast Weather Zone, which ERCOT staff has independently reviewed and which the Technical Advisory Committee (TAC) has voted unanimously to endorse.

**Background/History:**
STEC proposed the STEC Ammonia Plant Load Project in May 2025, a $67.47 million, Tier 2 project with the expected in-service date of June 2028, to meet reliability planning criteria due to proposed load additions in Victoria County in the Coast Weather Zone. Protocol Section 3.11.4.6, Processing of Tier 2 Projects, requires ERCOT to independently review submitted projects. ERCOT performed an independent review of the STEC Ammonia Plant Load Project and identified thermal overloads and voltage violations in Victoria County. The ERCOT project recommendation (Option 1), a $117.38 million, Tier 1 project with the expected in-service date of June 2028 addresses the need for a project under North American Electric Reliability Corporation (NERC) and ERCOT Planning Criteria to address thermal overloads on approximately 39 miles of 138-kV transmission lines and 24 voltage violations in Victoria County with the following ERCOT System improvements:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and

478 MVA, respectively, which will require a new right of way (ROW), approximately 3.4-mile;

- Rebuild the existing Victoria Plant to Shepley to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Rebuild the existing Victoria Plant to Dupont 138-kV transmission line ckt2 with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Remove the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont circuits (by rebuilding the two circuits on separate structures) to eliminate the NERC P7/ERCOT_1 (common tower outage) events. This would require a new ROW;
- Rebuild the existing Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

ERCOT's independent review verified the reliability need for the STEC Ammonia Plant Load Project to satisfy ERCOT Planning Guide Section 4.1.1.2(1)(d), Reliability Performance Criteria, contingency for the loss of a single generator followed by a single transmission element or common tower outage.

RPG considered project overviews during meetings in June 2025 and December 2025. Between June 2025 and December 2025, ERCOT staff presented scope and status updates at RPG meetings in June, August, October, November and December. Pursuant to paragraph (2) of Protocol Section 3.11.4.9, Regional Planning Group Acceptance and ERCOT Endorsement, ERCOT presented the Tier 1 project to the Technical Advisory Committee (TAC) for review and comment, and on January 21, 2026, TAC unanimously endorsed the project as recommended by ERCOT. Pursuant to paragraph (1)(a) of Protocol Section 3.11.4.3, Categorization of Proposed Transmission Projects, projects with an estimated capital cost of $100 million or greater are Tier 1 projects, for which Protocol Section 3.11.4.7(2) requires endorsement by the Board. Pursuant to Section 3.11.4.9, ERCOT's endorsement of a Tier 1 project is obtained upon affirmative vote of the Board.

ERCOT's assessment of the Sub-Synchronous Oscillations (SSO) of existing facilities in Victoria County in the Coast Weather Zone, conducted pursuant to Protocol Section 3.22.1.3, Transmission Project Assessment, yielded no adverse SSO impacts to the existing and planned generation resources at the time of the study. Results of the congestion analysis ERCOT conducted pursuant to Planning Guide Section 3.1.3,

Project Evaluation, indicated no significant new congestion in the area with the addition of the STEC Ammonia Plant Load Project (Option 1).

The report describing the ERCOT Independent Review of the STEC Ammonia Plant Load Project (Option 1), including ERCOT staff's recommendation, is included as Attachment A.

**Key Factors Influencing Issue:**

1. ERCOT System improvements are needed to meet reliability planning criteria due to proposed load additions in Victoria County in the Coast Weather Zone.
2. ERCOT staff found the recommended set of improvements to be the most efficient solution for meeting the planning reliability criteria, addressing thermal overloads and voltage violations.
3. Protocol Section 3.11.4.7 requires Board endorsement of a Tier 1 project, which is a project with an estimated capital cost of $100 million or greater pursuant to Protocol Section 3.11.4.3(1)(a).
4. TAC voted unanimously to endorse the Tier 1 STEC Ammonia Plant Load Regional Planning Group (RPG) Project (Option 1), as recommended by ERCOT, on January 21, 2026.

**Conclusion/Recommendation:**

ERCOT staff recommends that the Board endorse the need for the Tier 1 STEC Ammonia Plant Load RPG Project (Option 1), which ERCOT staff has independently reviewed, and which TAC has voted unanimously to endorse based on North American Electric Reliability Corporation (NERC) and ERCOT reliability planning criteria.

## ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.

## BOARD OF DIRECTORS RESOLUTION

WHEREAS, pursuant to Section 3.11.4.3(1)(a) of the Electric Reliability Council of Texas, Inc. (ERCOT) Protocols, projects with an estimated capital cost of $100 million or greater are Tier 1 projects, for which Section 3.11.4.7 requires endorsement by the ERCOT Board of Directors (Board); and

WHEREAS, after due consideration of the alternatives, the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) deems it desirable and in the best interest of ERCOT to accept ERCOT staff's recommendation to endorse the need for the Tier 1 STEC Ammonia Plant Load Regional Planning Group Project (Option 1), which ERCOT staff has independently reviewed and which the Technical Advisory Committee (TAC) has voted unanimously to endorse based on North American Electric Reliability Corporation (NERC) and ERCOT reliability planning criteria;

THEREFORE, BE IT RESOLVED, that ERCOT is hereby authorized and approved to endorse the need for the Tier 1 STEC Ammonia Plant Load Regional Planning Group Project (Option 1), which ERCOT staff has independently reviewed, and which TAC has voted unanimously to endorse based on NERC and ERCOT reliability planning criteria.

## CORPORATE SECRETARY'S CERTIFICATE

I, Brandon Gleason, Assistant Corporate Secretary of ERCOT, do hereby certify that, at its _____ meeting, the Board passed a motion approving the above Resolution by _____.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of _____, 2026.

_____

Brandon Gleason

Assistant Corporate Secretary

# ERCOT Independent Review of the STEC Ammonia Plant Load Project

# Document Revisions

| Date | Version | Description | Author(s) |
|---|---|---|---|
| 1/13/2026 | 1.0 | Final | Abishek Penti |
| | | Reviewed by | Robert Golen, Prabhu Gnanam |

# Executive Summary

South Texas Electric Cooperative (STEC) submitted the Ammonia Plant Load Project to the Regional Planning Group (RPG) in May 2025. STEC proposed this project to address North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and ERCOT Planning Guide criteria thermal overloads and voltage violations due to load addition in Victoria County in the Coast Weather Zone.

The STEC proposed project was estimated to cost approximately $65.47 million, was classified as a Tier 2 project per ERCOT Protocol Section 3.11.4.3 and the proposed project will require a Certificate of Convenience and Necessity (CCN) application.

ERCOT performed an Independent Review, identified reliability issues (thermal overloads and voltage violations identified in STEC's project submission in Victoria County) and evaluated eight different transmission project options.

The ERCOT Independent Review (EIR) evaluated eight different transmission project options. Based on the study results described in Sections 5 and 6 of this report, ERCOT recommends the following option (Option 1) to address the reliability issues mentioned. Option 1 consists of the following:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new right of way (ROW), approximately 3.4-mile;
- Rebuild the existing Victoria Plant to Shepley to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Rebuild the existing Victoria Plant to Dupont 138-kV transmission line ckt2 with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Remove the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont circuits (by rebuilding the two circuits on separate structures) to eliminate the NERC P7/ERCOT_1 (common tower outage) events. This would require a new ROW;
- Rebuild the existing Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

The cost estimate for Option 1 is approximately $117.38 million and is classified as a Tier 1 project per ERCOT Protocol Section 3.11.4.3(a). One or more CCN applications will be required for the new 138-kV single-circuit line from Dupont Switching station to the new large load and the removal of the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont 138-kV circuits due

to approximately 11.1-mile of new ROW. The expected in-service date (ISD) of this project is June 2028.

# Table of Contents

# 1 Introduction

In May 2025, South Texas Electric Cooperative (STEC) submitted the Ammonia Plant Load Project to the Regional Planning Group (RPG) to address North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and ERCOT Planning Guide criteria thermal overloads and voltage violations in Victoria County due to a new large load confirmed by Transmission Service Provider (TSP) Attestation Letter. The proposed project is in the Coast Weather Zone in Victoria County.

This STEC proposed project was classified as Tier 2 project pursuant to ERCOT Protocol Section 3.11.4.3, with an estimated cost of approximately $65.47 million. One or more Certificate of Convenience and Necessity (CCN) applications will be required for the new 138-kV single-circuit line from Dupont Switching station to new large load and the removal of the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont 138-kV circuits due to approximately 11.1-mile of new right of way (ROW). The expected in-service date (ISD) of the project is June 2028.

ERCOT conducted an Independent Review for this RPG project to identify any reliability needs in the area and evaluate various transmission upgrade options. This report describes the study assumptions, methodology, and the results of ERCOT Independent Review (EIR) of the project.

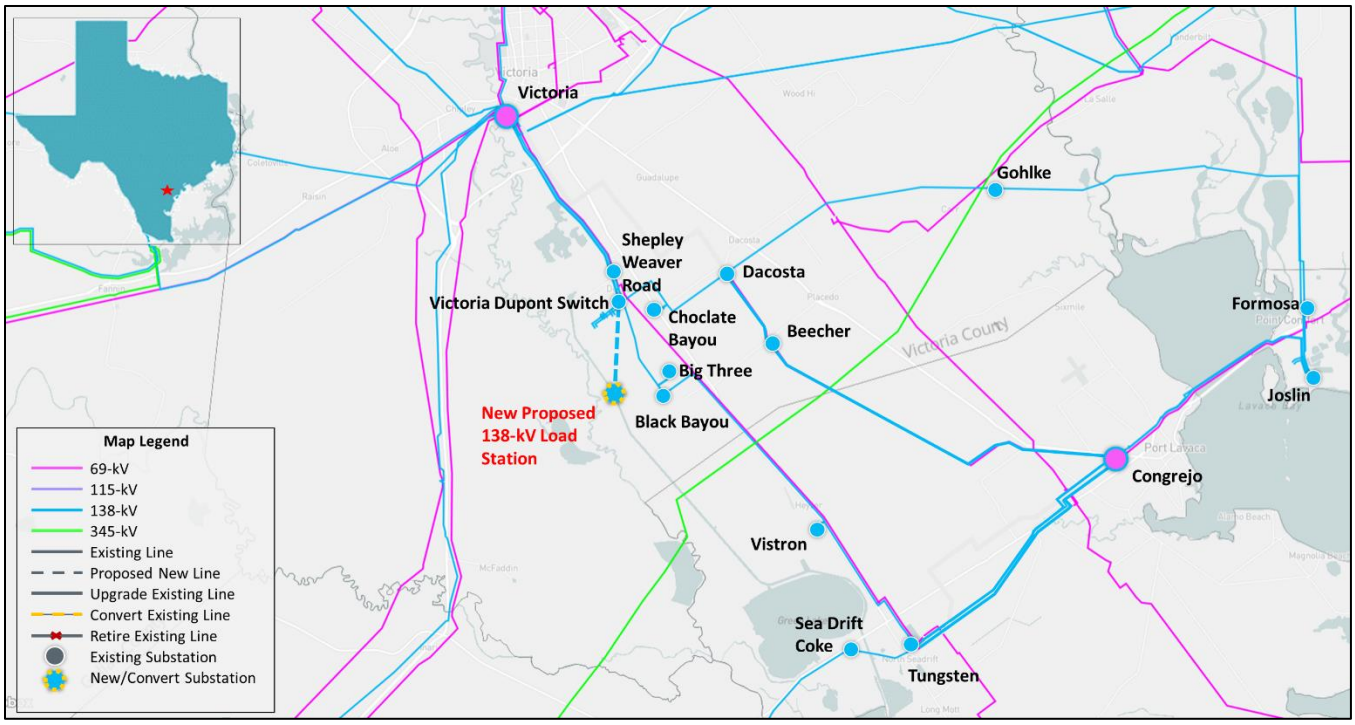



**Figure 1.1: Map of Transmission System in Study Area**

# 2 Study Assumptions and Methodology

ERCOT performed studies under various system conditions to identify any reliability issues and to determine transmission upgrades to support the proposed Ammonia Plant Load 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 Coast Weather Zone in Victoria County. The bordering Calhoun and Jackson 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 2024 Regional Transmission Plan (RTP) cases, published on the Market Information System (MIS) on December 20, 2024, were used as reference cases in this study. The 2029 study year was selected for the long-term outlook. The steady-state study base cases were constructed by updating transmission, generation, and loads of the following 2029 Summer peak load case[1]:

- Summer Peak Case: 2024RTP_2029_SUM_12202024

### 2.1.2 Transmission Topology

Transmission projects within the study area with ISDs by June 2028 were added to the study base case. The ERCOT Transmission Project Information and Tracking (TPIT)[2] report posted in February 2025 was used as a reference. The added TPIT projects are listed in Table 2.1.

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

| TPIT | Project Name | Tier | Project ISD | County |
|---|---|---|---|---|
| 25RPG021 | Victoria to Warburton 138-kV Line Rebuild Project | Tier 3 | Sep-28 | Victoria |
| 82829 | New Furhman Substation | Tier 4 | Apr-25 | Victoria |
| 69473 | Jaguar: Construct New Distribution Station | Tier 4 | Jul-25 | Victoria |
| 76788 | Upgrade Victoria-Rayburn | Tier 4 | Dec-25 | Victoria, Calhoun |
| 69489 | Shepley: Construct New Distribution Station | Tier 4 | Feb-26 | Victoria |
| 81647 | Dupont Switch to Sardinia: Construct New 138 kV Line | Tier 4 | Jun-26 | Victoria |
| 76818 | Upgrade Rayburn Auto Station | Tier 4 | Oct-26 | Victoria |
| 87029 | Chocolate Bayou to Portside Energy Center: Construct New 138 kV Line | Tier 4 | Dec-26 | Victoria |
| 87027 | Black Bayou: Construct New 138 kV Terminal | Tier 4 | Apr-27 | Victoria |
| 76777 | Rebuild Nursery-El Toro | Tier 4 | May-27 | Victoria, Jackson |
| 81556 | Haber: Construct New 345 kV Terminal | Tier 4 | May-27 | Victoria |
| 73441 | Dupont Switch to Joslin: Rebuild 138 kV Line | Tier 4 | May-27 | Victoria, Calhoun |

[1] 2024 Regional Transmission Plan Postings: https://mis.ercot.com/secure/data-products/grid/regional-planning
[2] TPIT Report: https://www.ercot.com/gridinfo/planning

| TPIT | Project Name | Tier | Project ISD | County |
|---|---|---|---|---|
| 81548 | Haber: Construct New 345 kV Station | Tier 4 | May-27 | Victoria |
| 81553 | Haber: Construct New 345 kV Terminal | Tier 4 | May-27 | Victoria |

The transmission projects, listed in Table 2.2, identified in the 2024 RTP as placeholder projects in the study area and were not approved by RPG were removed from the study base case.

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

| RTP Project ID | Project Name | County |
|---|---|---|
| 2024-CS2 | Victoria (8169) to Refugio (8410) 69-kV Line Upgrades | Victoria, Refugio |
| 2024-C12 | Sam Rayburn Switchyd (5500) to Warburton Road Switching Station (5605) 69-kV Line Upgrades | Victoria |
| 2024-C15 | Victoria Area 138-kV Line Upgrades and Furhman Switch (5506) to Magruder (8194) 138-kV Line Addition | Victoria |
| 2024-C19 | Joslin (8140) to Gohlke (8141) to Dacosta (8722) 138-kV Line Upgrades | Calhoun, Victoria |

### 2.1.3 Generation

Based on the June 2025 Generator Interconnection Status (GIS)[3] report posted on the ERCOT website on July 1, 2025, generators that met Planning Guide Section 6.9(1) conditions with Commercial Operations Date (COD) prior to June 2028 were added to the study base case. These generation additions are listed in Table 2.3. All generation dispatches were consistent with the 2024 RTP methodology.

**Table 2.3: List of Generation Added to the Study Base Cases Based on the August 2025 GIS Report**

| GINR | Project Name | Fuel | Project COD | Max Capacity (~MW) | County |
|---|---|---|---|---|---|
| 24INR0093 | Oriana Solar | SOL | 08/08/2025 | 181.0 | Victoria |
| 24INR0109 | Oriana BESS | OTH | 06/15/2026 | 60.3 | Victoria |
| 24INR0425 | Two Brothers ESS | OTH | 04/07/2027 | 152.0 | Victoria |

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 |
|---|---|---|---|
| 110205 | BYU_BYU_G8 | 4.0 | Coast |
| 110124 | DOWGEN_DOW_G66 | 95.62 | Coast |
| 151361 | CHISMGRD_G1 | 20.3 | North Central |

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.

[3] GIS Report: https://www.ercot.com/misapp/GetReports.do?reportTypeId=15933

**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 |

### 2.1.4 Loads

Loads in the ERCOT system were consistent with 2024 RTP. This project is driven by the new large load confirmed by TSP Attestation Letter from STEC, shown in Table 2.6. No load adjustments outside the Coast Weather Zone were needed to maintain the minimum reserve requirements consistent with the 2024 RTP methodology.

**Table 2.6: Newly Confirmed Load**

| Year | Load (MW) |
|---|---|
| 2029 | 300 |

## 2.2 Long-Term Load-Serving Capability Assessment

ERCOT performed a long-term load-serving capability assessment to compare the performance of the study options.

Incremental load serving capability was evaluated to assess the long-term load-serving capability. Load in the study area was increased (customer designated as non-scalable remained at the same level as in the study base case), and conforming loads outside of Coast Weather Zone were decreased to balance power.

## 2.3 Maintenance Outage Scenario

ERCOT performed a planned maintenance outage evaluation based on historic off-peak system load. Conforming loads in the Coast, South Central and South Weather Zones were scaled down to 85.0%, 80.3% and 89.2%, respectively, of the summer peak load to create the off-peak case. Loads designated as non-scalable remained at the same level as in the study base case. Next, ERCOT Planning Guide Section 4.1.1.8 Maintenance Outage Reliability Criteria was evaluated to identify and address violations.

## 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 recommended transmission upgrade option.

The 2024 RTP 2029 economic case was updated based on the June 2025 GIS[4] report for generation updates and the June 2025 TPIT[5] report for transmission updates to conduct congestion analysis. The 2029 study year was selected as it's the future year case currently available.

[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

New transmission project additions are listed in Table A.1 in the Appendix A of this document.

New generation additions listed in Table A.2 in Appendix A of this document were added to the economic base case and all generation listed in Table 2.4 were opened (turned off) in the study base case to reflect their mothballed/retired status. Furthermore, generation listed in Table 2.5 were removed from seasonal settings in the study base case as these resources are returned to year-round service.

The new large load confirmed by TSP Attestation Letter from STEC (300 MW) listed in Table 2.6 was added to the economic study cases.

## 2.5 Methodology

This section lists the Contingencies and Criteria used for project review along with tools 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 (345-kV only);
- P3: G-1+N-1 (G-1: generation outage) {Victoria Port and Formosa units}; and
- P6-2: X-1+N-1 (X-1: 345/138-kV transformer only) {Coleto Creek}.

All 60-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 limits
  - Rate A (normal rating) for pre-contingency conditions; and
  - Rate B (emergency rating) for post-contingency conditions.
- Voltage limits
  - Voltages exceeding pre-contingency and post-contingency limits; and
  - Voltage deviations exceeding 8% on non-radial load buses.

### 2.5.2 Study Tools

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

[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

- PowerWorld Simulator version 24 for Security Constrained Optimal Power Flow (SCOPF) and steady-state contingency analysis; and
- UPLAN version 12.3.0.30786 to perform congestion analysis.

# 3 Project Need

A steady-state reliability analysis was performed in accordance with NERC TPL-001-5.1 and ERCOT Planning Criteria described in Section 2.1 of this document. This analysis indicated thermal overloads and voltage violations in Victoria County under NERC P3(G-1+N-1). These issues are summarized in Table 3.1 and visually illustrated in Figure 3.1. Detailed thermal overloads and voltage violations are listed in Table 3.2 and Table 3.3 respectively.

**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 | None | None | None |
| P3: G-1+N-1 | 24 | 8 | None |
| P6-2: X-1+N-1 | None | None | None |

**Table 3.2: Thermal Overloads Observed in the Study Area**

| NERC Contingency Category | Overloaded Element | Voltage Level (kV) | Length (~miles) | Max Loading (%) |
|---|---|---|---|---|
| P3: G-1+N-1 | Formosa to Joslin | 138 | 2.53 | 140.27 |
| P3: G-1+N-1 | BlackBayou to BigTree | 138 | 0.98 | 178.70 |
| P3: G-1+N-1 | BigTree to Victoria Dupont | 138 | 4.46 | 156.05 |
| P3: G-1+N-1 | Shepley to Vuctoria Dupont | 138 | 0.67 | 132.60 |
| P3: G-1+N-1 | Tungsten to Vistron | 138 | 6.13 | 157.68 |
| P3: G-1+N-1 | Victoria to Shepley | 138 | 6.99 | 137.47 |
| P3: G-1+N-1 | Victoria to Victoria Dupont | 138 | 7.65 | 137.44 |
| P3: G-1+N-1 | Vistron to Black Bayou | 138 | 9.54 | 144.08 |

**Table 3.3: Voltage Violations Observed in the Study Area**

| NERC Contingency Category | Bus Name | Voltage Level (kV) | Voltage (pu) |
|---|---|---|---|
| P3: G-1+N-1 | BEECHER4A (8721) | 138-kV | 0.87 |
| P3: G-1+N-1 | BIGTRE4A (8146) | 138-kV | 0.83 |
| P3: G-1+N-1 | BIGTRE4B (8157) | 138-kV | 0.83 |
| P3: G-1+N-1 | BLKBYU4A (8911) | 138-kV | 0.84 |
| P3: G-1+N-1 | CBAP_LOAD (814300) | 138-kV | 0.78 |
| P3: G-1+N-1 | CHOCBAYU4A (80064) | 138-kV | 0.82 |
| P3: G-1+N-1 | DACOSTA4A (8722) | 138-kV | 0.85 |
| P3: G-1+N-1 | DUP1_V_1_8 (110682) | 138-kV | 0.80 |
| P3: G-1+N-1 | DUP1_V_2_8 (110685) | 138-kV | 0.80 |

| NERC Contingency Category | Bus Name | Voltage Level (kV) | Voltage (pu) |
|---|---|---|---|
| P3: G-1+N-1 | DUP2_V_1_8 (110683) | 138-kV | 0.80 |
| P3: G-1+N-1 | DUP2_V_2_8 (110686) | 138-kV | 0.80 |
| P3: G-1+N-1 | DUPV1_1_8 (110684) | 138-kV | 0.80 |
| P3: G-1+N-1 | DUPV1_2_8 (110691) | 138-kV | 0.80 |
| P3: G-1+N-1 | DUPV1_3_8 (110692) | 138-kV | 0.80 |
| P3: G-1+N-1 | GOHLKE4A (8141) | 138-kV | 0.89 |
| P3: G-1+N-1 | INV_TAP_1 (110689) | 138-kV | 0.80 |
| P3: G-1+N-1 | INV_TAP_2 (110690) | 138-kV | 0.80 |
| P3: G-1+N-1 | SARDINIA4A (81433) | 138-kV | 0.79 |
| P3: G-1+N-1 | SHEPLEY4A (8719) | 138-kV | 0.80 |
| P3: G-1+N-1 | STONERSY_1 (110687) | 138-kV | 0.80 |
| P3: G-1+N-1 | STONERSY_2 (110688) | 138-kV | 0.80 |
| P3: G-1+N-1 | V_DUPSW4A (8143) | 138-kV | 0.80 |
| P3: G-1+N-1 | VISTRON4A (8145) | 138-kV | 0.89 |
| P3: G-1+N-1 | VISTRON4B (8154) | 138-kV | 0.89 |

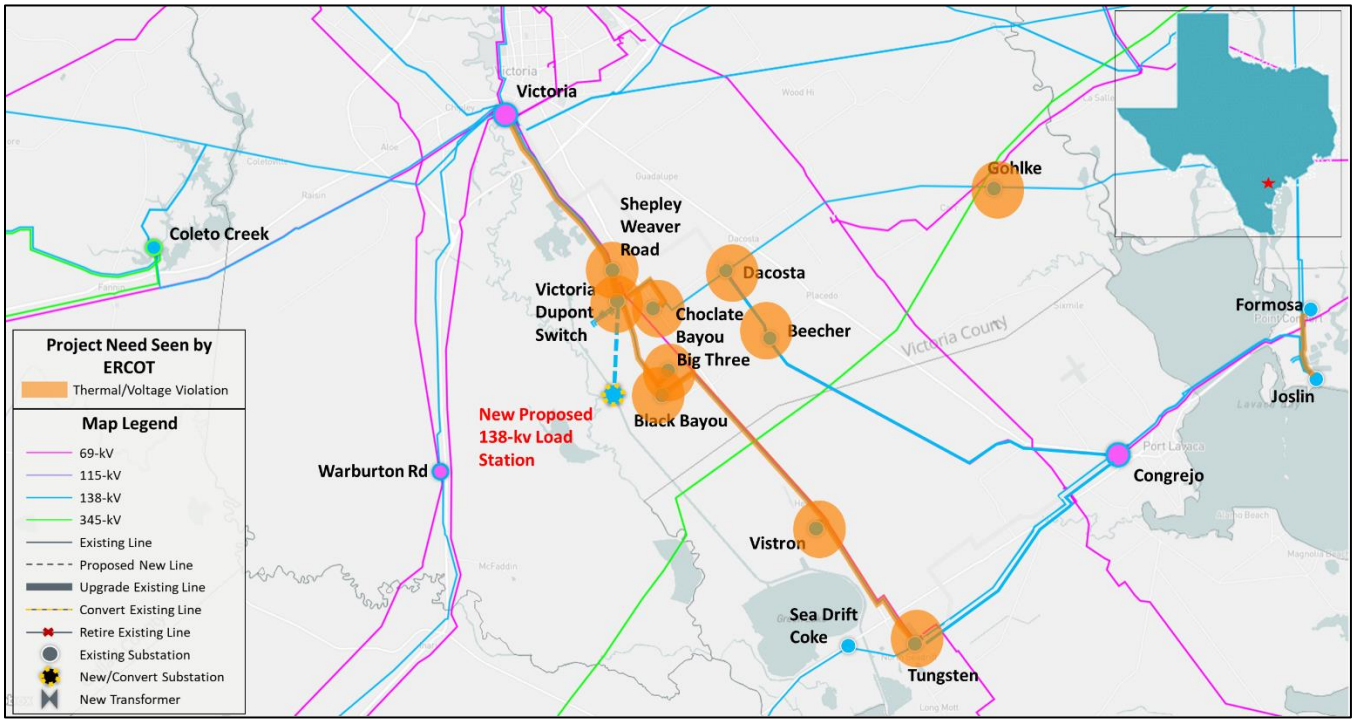



**Figure 3.1: Study Area Map Showing Project Need Seen by ERCOT**

# 4 Description of Project Options

ERCOT evaluated eight system improvement options to address the reliability violations observed in the study base case in the study area.

Option 1 (STEC proposed solution) consists of the following:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Rebuild the existing Victoria Plant to Shepley to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Rebuild the existing Victoria Plant to Dupont 138-kV transmission line ckt2 with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Remove the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont circuits (by rebuilding the two circuits on separate structures) to eliminate the NERC P7/ERCOT_1 (common tower outage) events. This would require a new ROW;
- Rebuild the existing Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

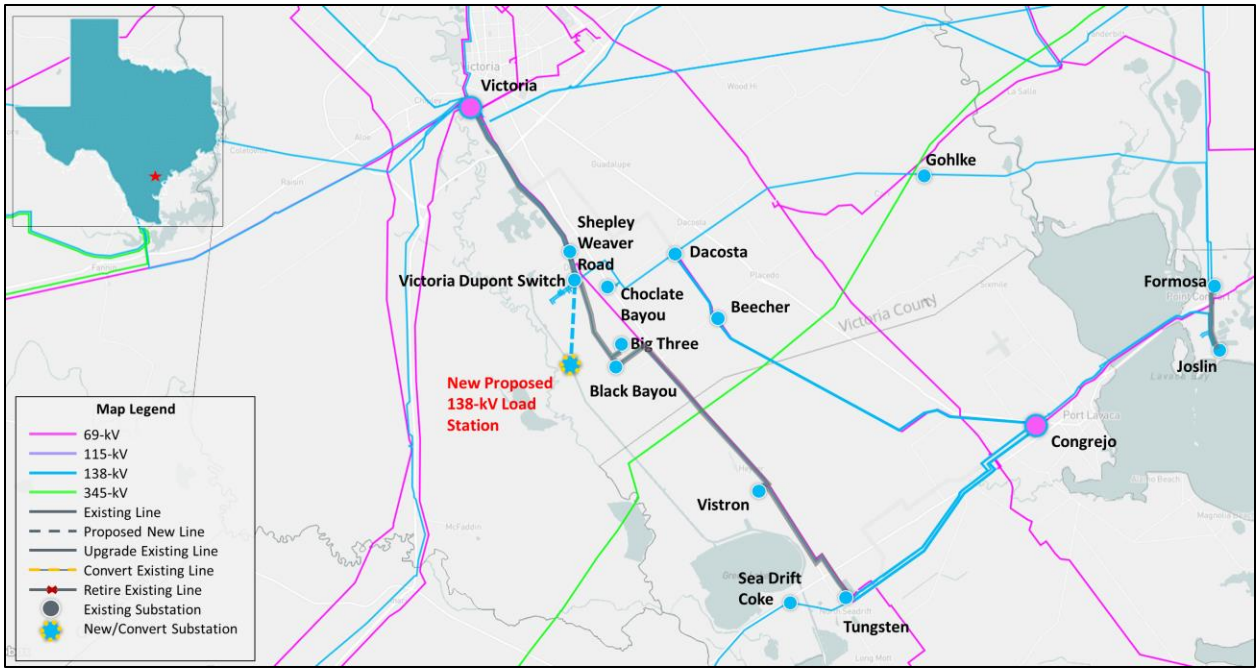



**Figure 4.1: Map of Option 1**

Option 2 consists of the following:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal

and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;

- Construct a new 138-kV transmission line from the proposed load to Coleto Creek station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 19.55-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

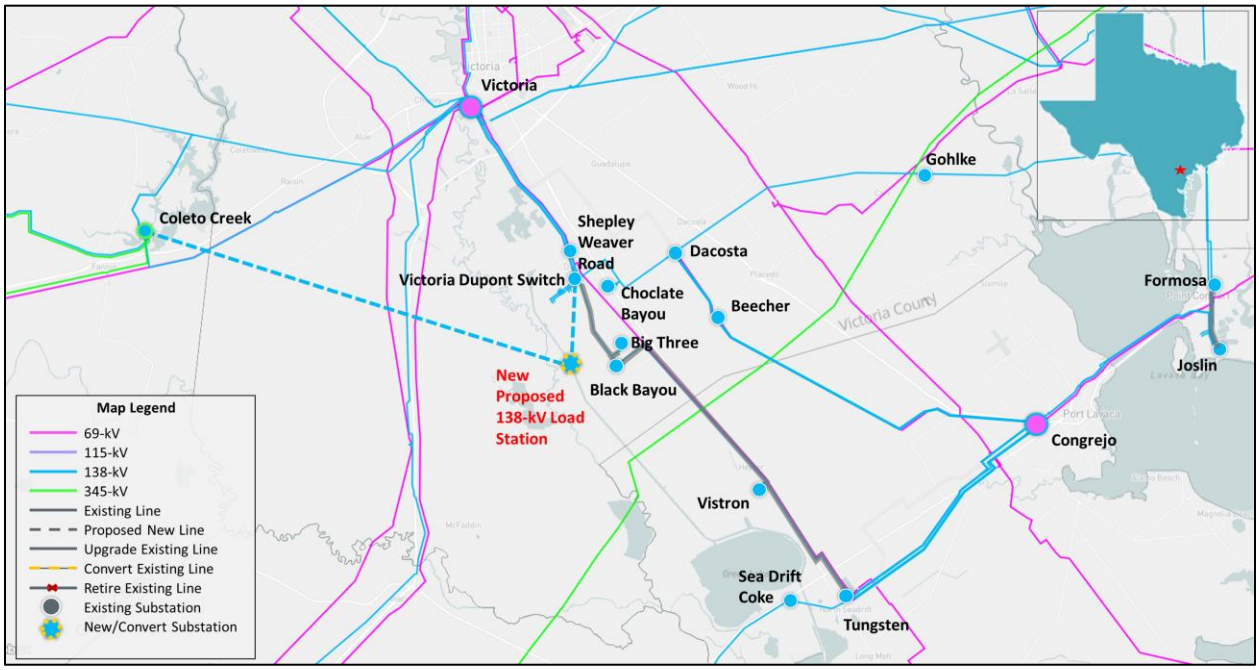



**Figure 4.2: Map of Option 2**

Option 2A consists of the following:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Construct a new 138-kV transmission line from Victoria Dupont Switch to Coleto Creek station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 19.20-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

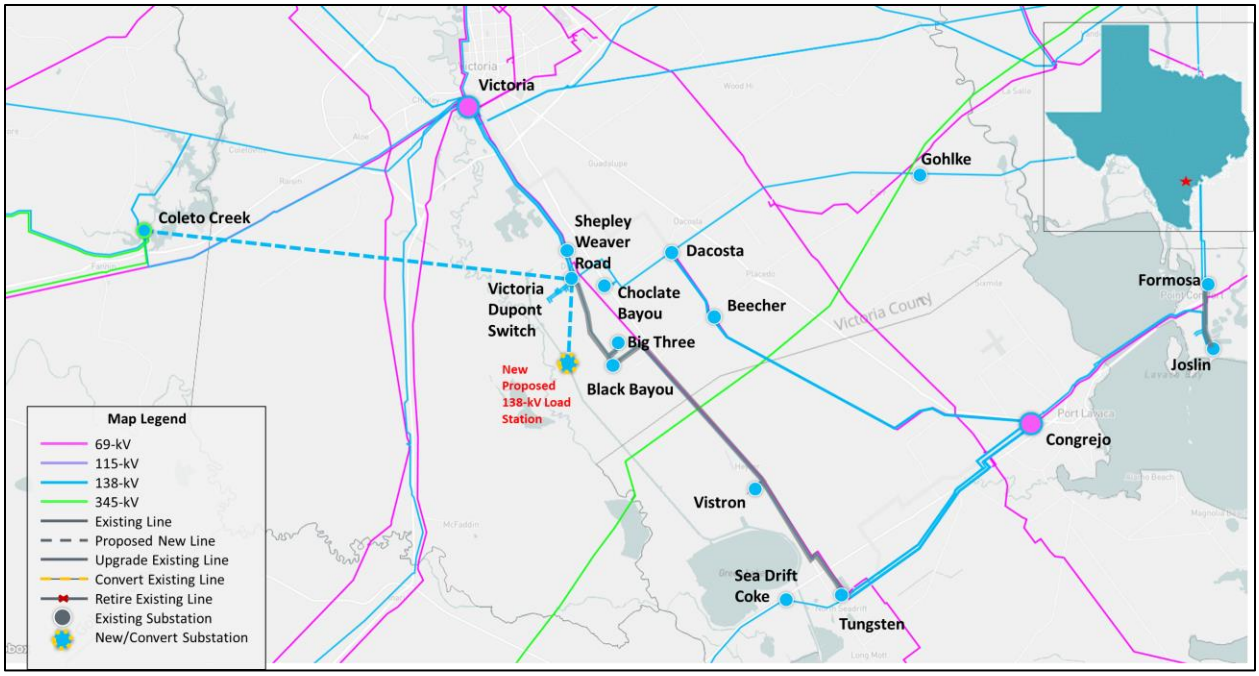



**Figure 4.3: Map of Option 2A**

Option 2B consists of the following:

- Serve the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter by connecting STEC's new load serving station to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Convert the existing Victoria Dupont Station to a 345/138-kV sub-station;
- Install two 345/138-kV autotransformers at the Victoria Dupont 345/138-kV station with a normal and emergency ratings of 675 MVA;
- Construct a new 345-kV transmission line from Victoria Dupont Switch to Coleto Creek station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 1316 MVA and 1423 MVA, respectively, which will require a new ROW, approximately 19.20-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, respectively, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

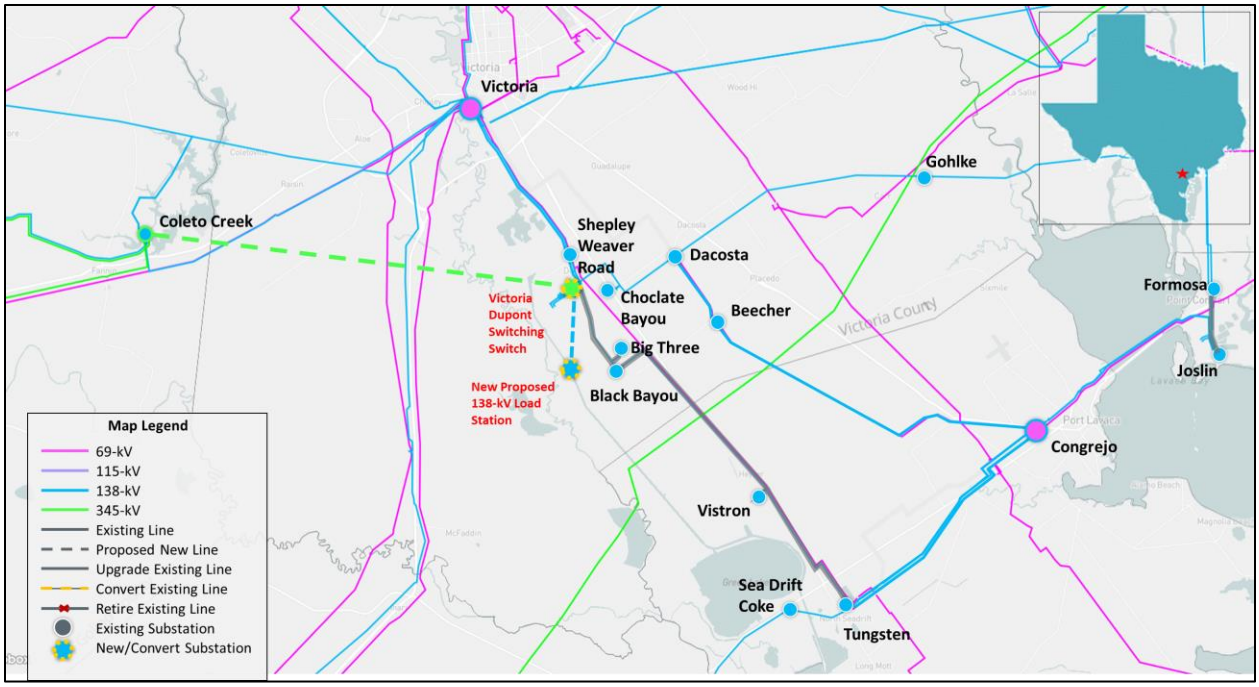



**Figure 4.4: Map of Option 2B**

Option 3 consists of the following:

- Serve the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter by connecting STEC's new load serving station to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Construct a new 138-kV transmission line from STEC's load serving station to Warburton Road station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 10.35-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

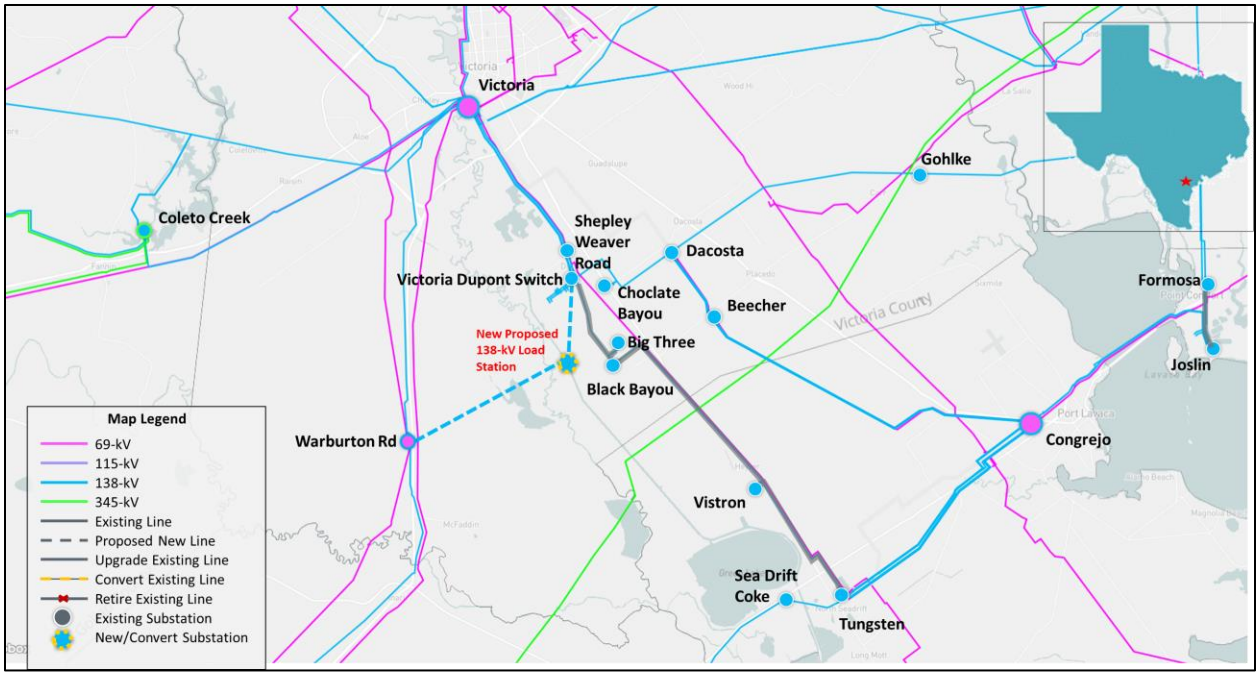



**Figure 4.5: Map of Option 3**

Option 4 consists of the following:

- Serve the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter by connecting STEC's new load serving station to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Construct a new 3-terminal Edna 138-kV switching station, approximately 1-mile from Victoria station;
- Construct a new 138-kV transmission line from the existing Victoria station to proposed Edna station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, approximately 1-mile. This will require a new ROW;
- Construct a new 138-kV transmission line from STEC's load serving station to proposed Edna station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 8.05-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

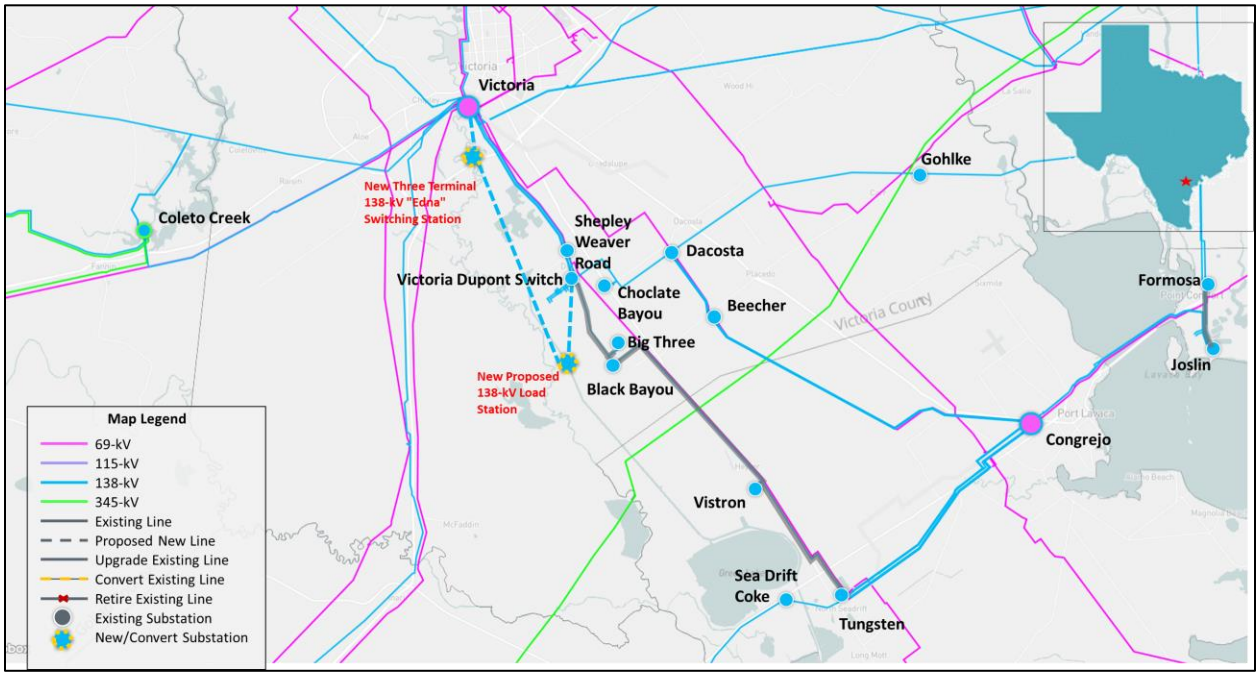



**Figure 4.6: Map of Option 4**

Option 5 consists of the following:

- Serve the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter by connecting STEC's new load serving station to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Construct a new 345/138-kV substation on the Angstrom to STP 345-kV transmission line, approximately 54.6-mile from Angstrom station;
- Install two 345/138-kV autotransformers at the new 345/138-kV station with a normal and emergency ratings of 675 MVA;
- Construct a new 138-kV transmission line from STEC's load serving station to new 345/138-kV station on single-circuit capable structures using a conductor with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 8-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

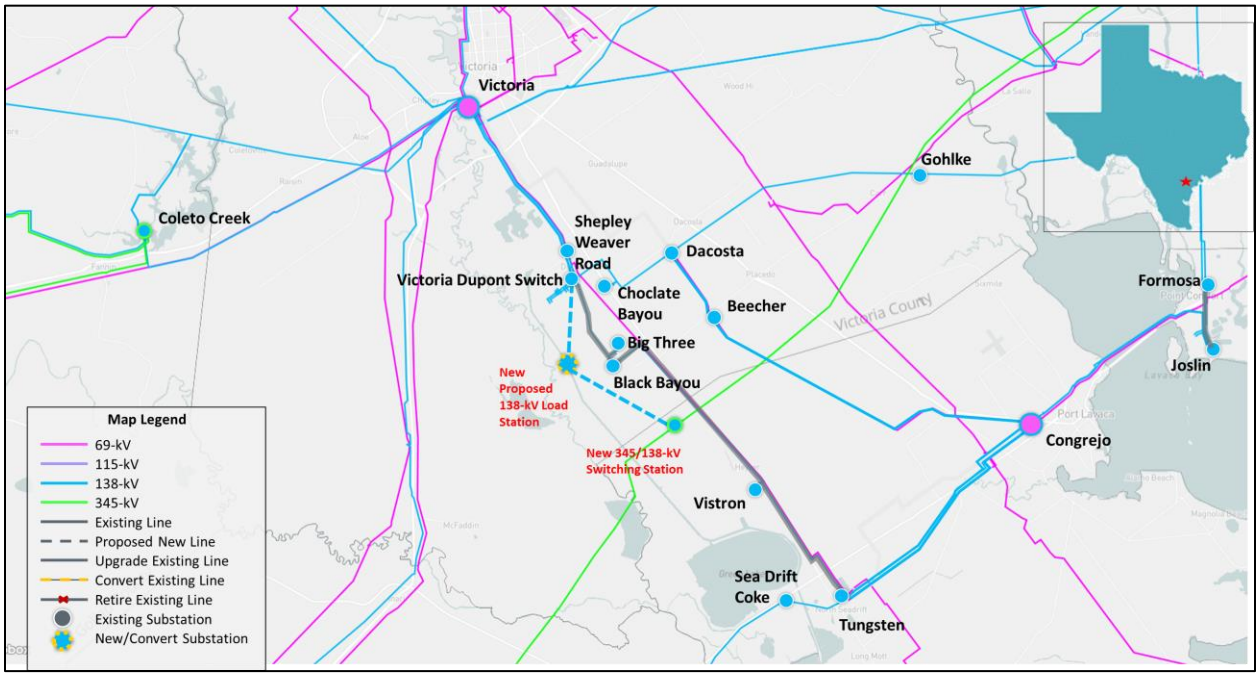



**Figure 4.7: Map of Option 5**

Option 5A consists of the following:

- Serve the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter by connecting STEC's new load serving station to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Install two 345/138-kV autotransformers at the Victoria Dupont 345/138-kV station with a normal and emergency ratings of 675 MVA;
- Construct a new 345-kV substation on the Angstrom to STP 345-kV transmission line, approximately 54.6-mile from Angstrom station;
- Construct a new 345-kV transmission line from Victoria Dupont 345-kV terminal to new 345-kV substation on single-circuit capable structures using a conductor with normal and emergency ratings of at least 1316 MVA and 1423 MVA, respectively, which will require a new ROW, approximately 9-mile;
- Rebuild the existing 138-kV Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

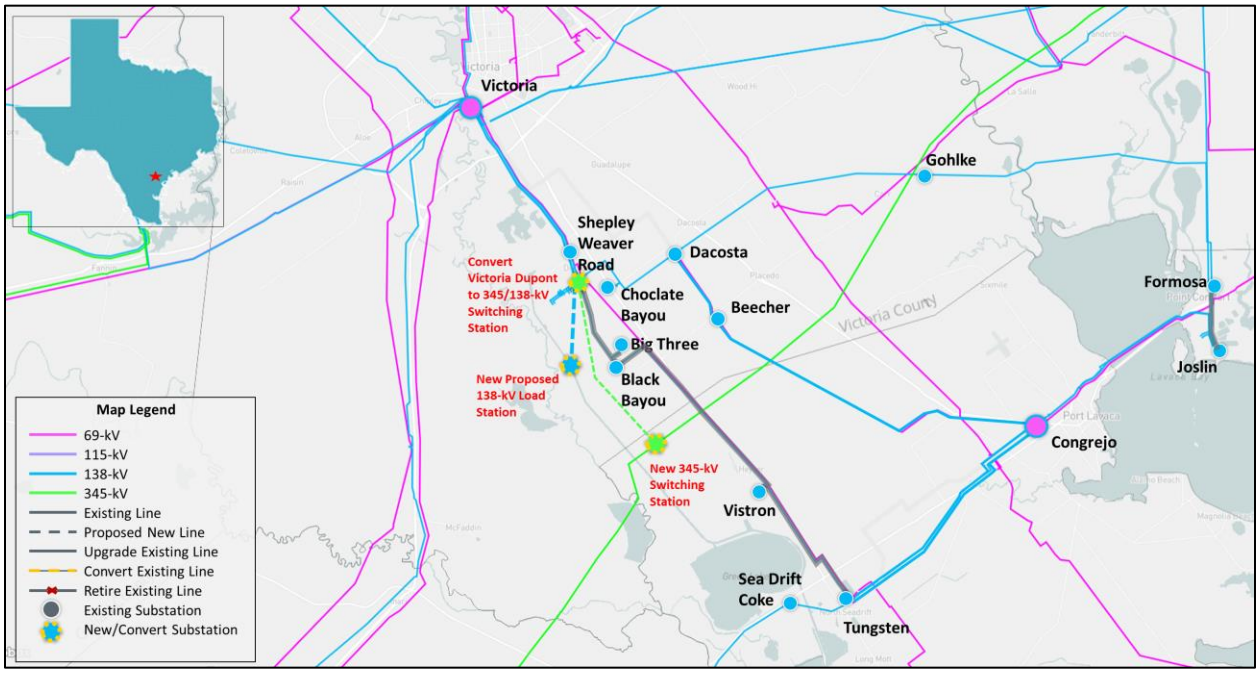



**Figure 4.8: Map of Option 5A**

# 5 Option Evaluations

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

## 5.1 Results of Reliability Analysis

All eight options were evaluated based on the contingencies described in Section 2.1 of this report. Option 3 and Option 5A observed thermal overloads under G-1+N-1 contingency conditions. No reliability criteria violations were identified for Option 1, Option 2, Option 2A, Option 2B, Option 4, and Option 5 under N-1, X-1+N-1, or G-1+N-1 as shown in Table 5.1.

**Table 5.1: Results of Initial Reliability Assessment of All Eight Options**

| Option | N-1 | | X-1+N-1 | | G-1+N-1 | |
|---|---|---|---|---|---|---|
| | Thermal Overload | Voltage Violation | Thermal Overload | Voltage Violation | Thermal Overload | Voltage Violation |
| 1 | None | None | None | None | None | None |
| 2 | None | None | None | None | None | None |
| 2A | None | None | None | None | None | None |
| 2B | None | None | None | None | None | None |
| 3 | None | None | None | None | 3 | None |
| 4 | None | None | None | None | None | None |
| 5 | None | None | None | None | None | None |
| 5A | None | None | None | None | 1 | None |

## 5.2 Short-Listed Options

Based on the results shown in Section 5.1, Option 1, Option 2, Option 2A, Option 2B, Option 4, and Option 5 were selected as short-listed options for further evaluations. These six options are illustrated in Figures 5.1, 5.2, 5.3, 5.4, 5.5, and 5.6.

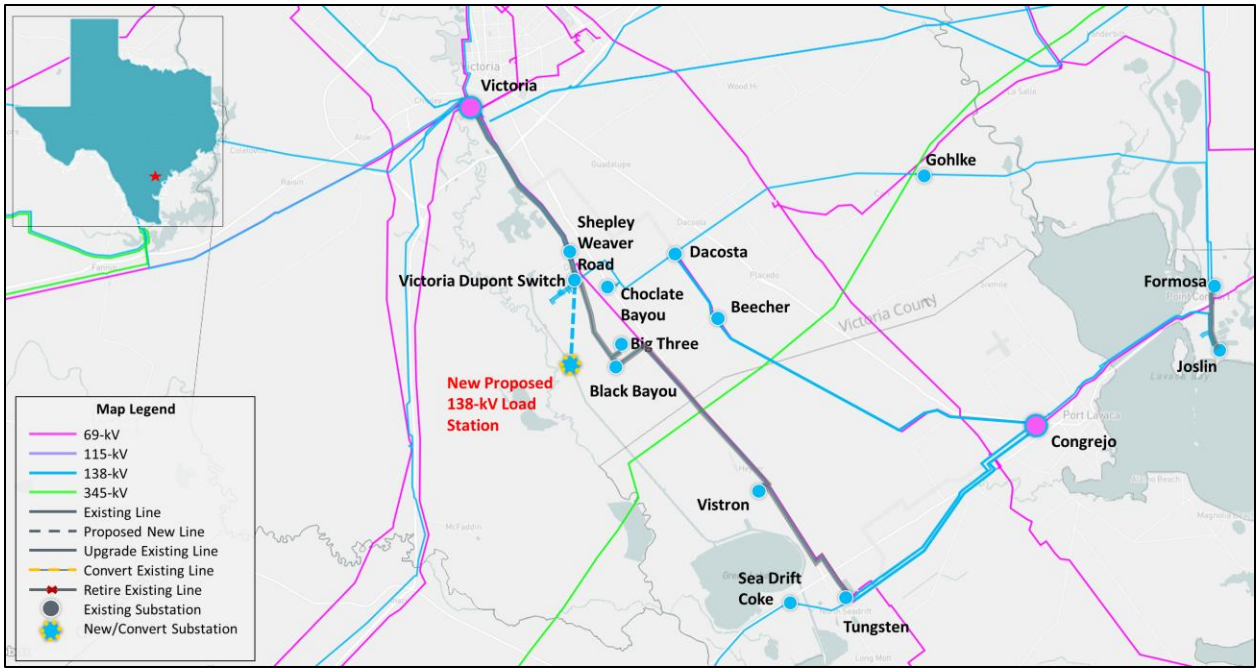



**Figure 5.1: Map of Option 1**

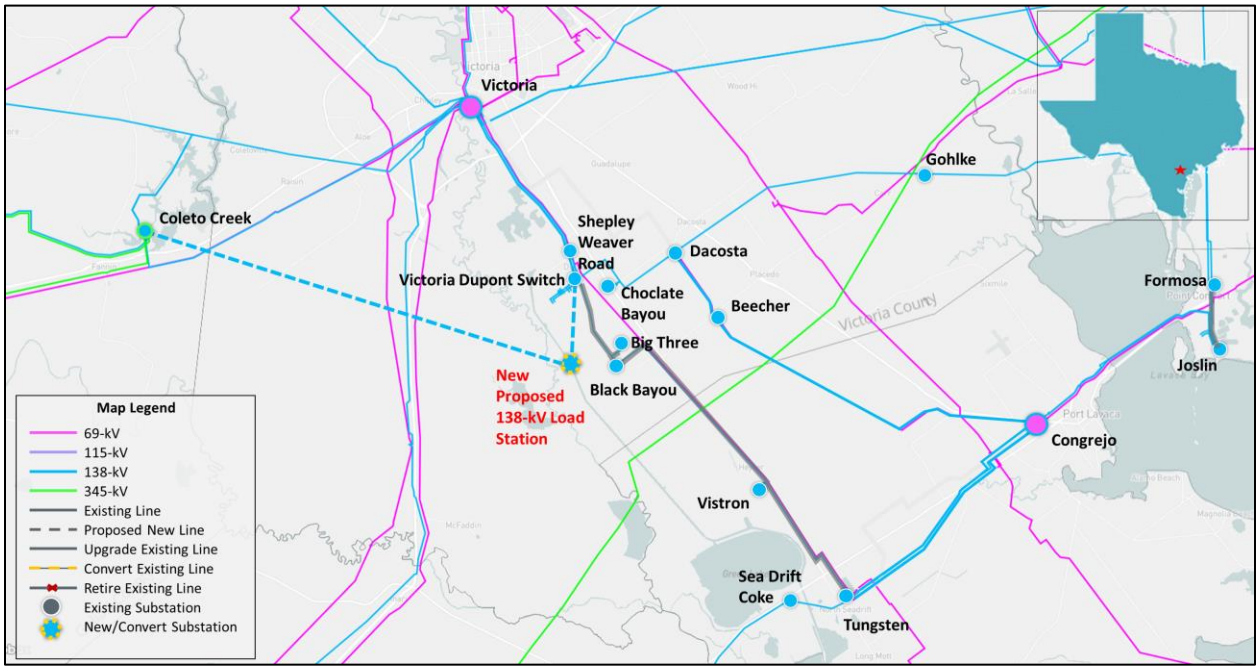



**Figure 5.2: Map of Option 2**

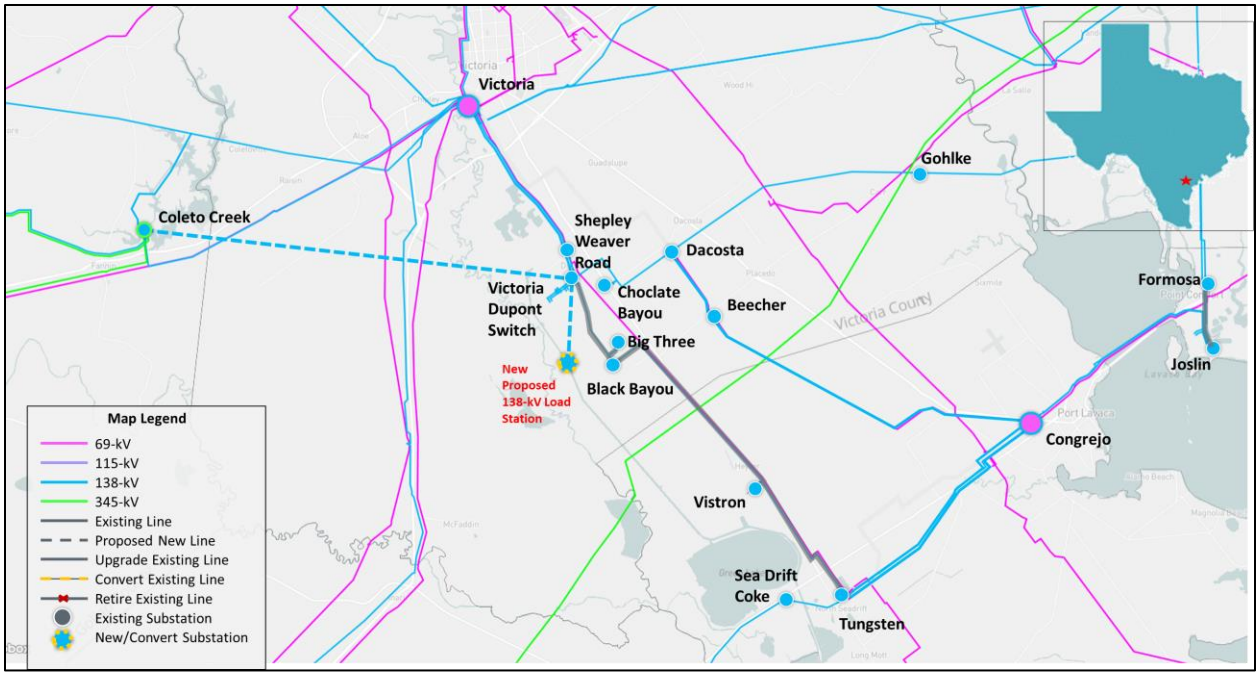



**Figure 5.3: Map of Option 2A**

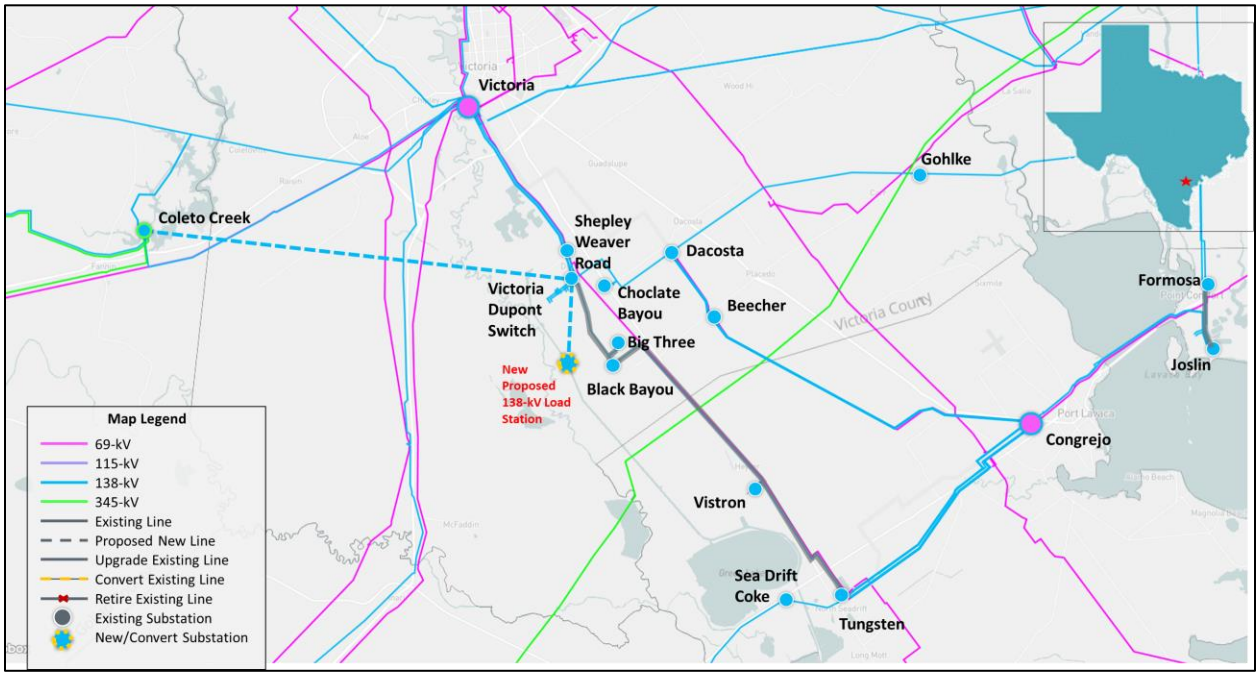



**Figure 5.4: Map of Option 2B**

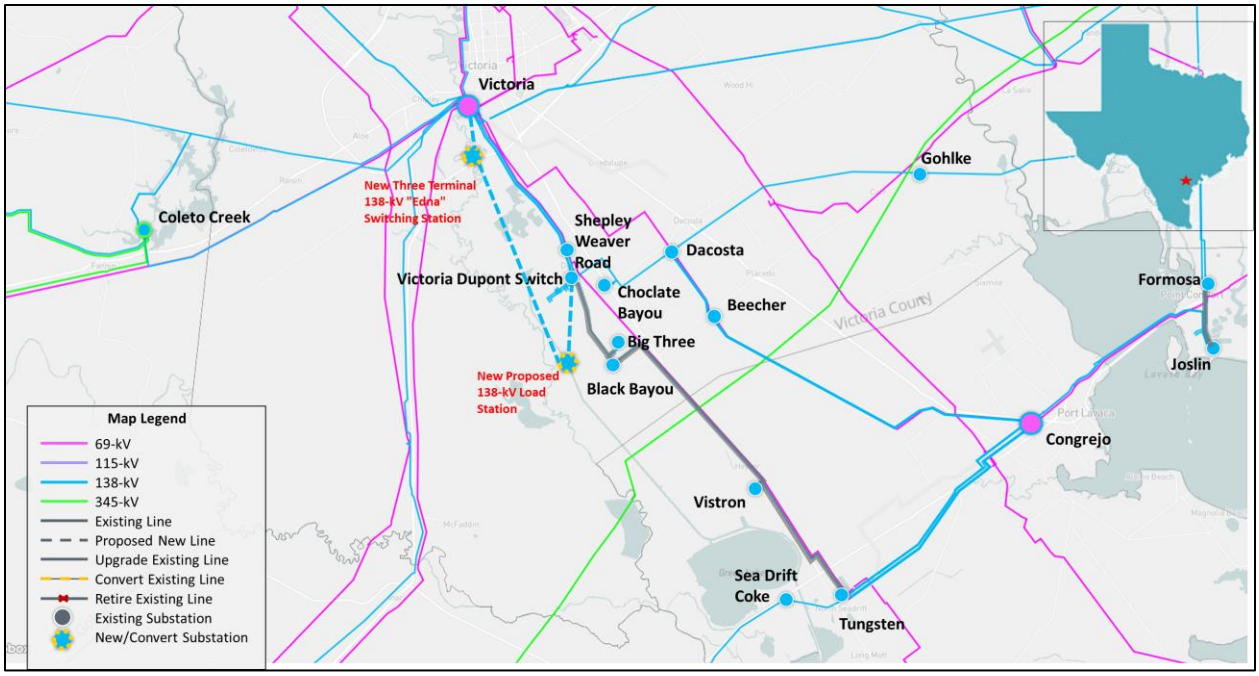



**Figure 5.5: Map of Option 4**

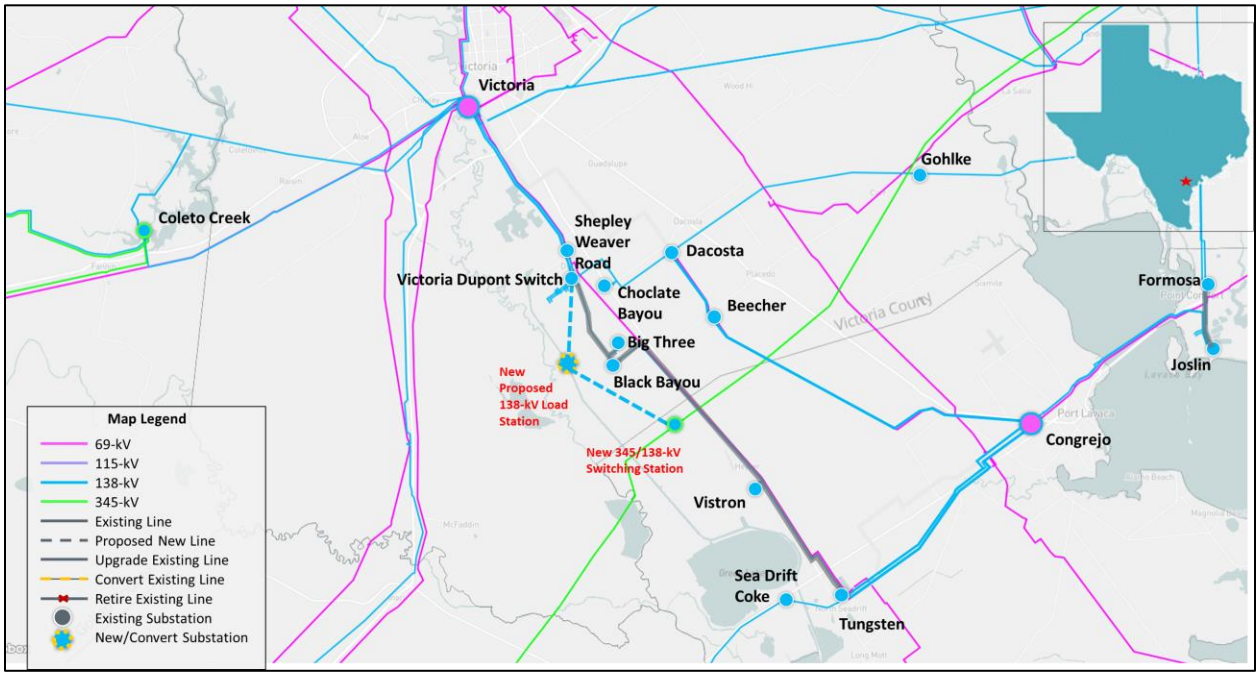



**Figure 5.6: Map of Option 5**

## 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 the six short-listed options 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 study area were monitored in the maintenance outage evaluation.

As shown in Table 5.2, the results of this planned maintenance assessment indicate all six short-listed options did not result in any reliability violations, except for Option 2B. Option 2B has reliability violations and will be removed from the short-listed options and further evaluations.

**Table 5.2: Results of Planned Maintenance Outage Evaluation for the Six Short-Listed Options**

| Option | Voltage Violations | Thermal Violations | Unsolved Power Flow |
|---|---|---|---|
| 1 | None | None | None |
| 2 | None | None | None |
| 2A | None | None | None |
| 2B | 3 | None | None |
| 4 | None | None | None |
| 5 | None | None | None |

## 5.4 Long-Term Load-Serving Capability Assessment

ERCOT conducted long-term load-serving capability assessments on the five short-listed options to compare the relative performance.

The results show that the five short-listed options provided additional long-term load-serving capability with Option 1 and Option 4 providing the greatest and Option 5 providing the least. These results are shown in Table 5.3

**Table 5.3: Results of Long-Term Load-Serving Capability Assessment of the Five Short-Listed Options**

| Option | Incremental Load-Serving Capability (~MW) |
|---|---|
| 1 | 375 |
| 2 | 175 |
| 2A | 125 |
| 4 | 375 |
| 5 | 75 |

## 5.5 Cost Estimate and Feasibility Assessment

TSPs performed feasibility assessments and provided final cost estimates for the five short-listed options. Table 5.4 summarizes the cost estimate, estimated mileage of CCN required, and option feasibility for the five short-listed options.

**Table 5.4: Cost Estimates and Feasibility for the Five Short-Listed Options**

| Option | Cost Estimates (~$M) | CCN Required (~miles) | Feasible |
|---|---|---|---|
| 1 | 117.38 | Yes (11.1) | Yes |
| 2 | 117.52 | Yes (23.0) | Yes |
| 2A | 132.38 | Yes (22.6) | Yes |
| 4 | 96.66 | Yes (12.5) | No |

| Option | Cost Estimates (~$M) | CCN Required (~miles) | Feasible |
|---|---|---|---|
| 5 | 154.54 | Yes (11.4) | Yes |

Option 4 was deemed to be infeasible due to expansion restrictions at an existing 138-kV facility and will be removed from the short-listed options and further evaluations. The cost estimate for the STEC Proposed Option 1 increased from the originally submitted $65.47 million to $117.38 million due to increases in current TSPs cost estimates.

# 6 Comparison of Short-Listed Options

Based on the results from Option Evaluations in Section 5, the four short-listed options are summarized in Table 6.1.

**Table 6.1: Comparison of the Four Short-Listed Options**

| | Option 1 | Option 2 | Option 2A | Option 5 |
|---|---|---|---|---|
| Addresses the Project Needs | Yes | Yes | Yes | Yes |
| Meets ERCOT and NERC Reliability Criteria | Yes | Yes | Yes | Yes |
| Improves Long-Term Load-Serving Capability | Yes (Best) | Yes | Yes | Yes |
| CCN Required (~miles) | Yes (11.1) | Yes (23.0) | Yes (22.6) | Yes (11.4) |
| Construction Feasibility (Based on TSP assessment) | Yes | Yes | Yes | Yes |
| Capital Cost Estimates[8] (~$M) | 117.38 | 117.52 | 132.38 | 154.54 |

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

- Option 1 addresses the project needs and meets ERCOT and NERC Reliability criteria;
- Option 1 is the least cost option;
- Option 1 improves long-term load-serving capability; and
- Option 1 requires the least amount of CCN miles.

# 7 Additional Analysis and Assessment

The recommended option (Option 1, with a cost estimate of approximately $117.38 million) is categorized as a Tier 1 project, pursuant to ERCOT Protocol 3.11.4.3(1)(a). ERCOT performed generation and load sensitivity studies to identify the recommended option performance, as required under Planning Guide Section 3.1.3(4). Additionally, a Sub-synchronous Oscillations (SSO) Assessment was performed.

[8] The cost estimates were provided by the TSPs.

## 7.1 Generation Addition Sensitivity Analysis

ERCOT performed a generation addition sensitivity analysis based on Planning Guide Section 3.1.3(4)(a).

Based on a review of the June 2025 GIS[9] report, no units were found within the study area that could have an impact on the identified reliability issues.

**Table 7.1: List of Units that Could Have Impact on the Identified Reliability Issues**

| GINR | Unit Name | Fuel Type | Max Capacity (~MW) | County |
|---|---|---|---|---|
| 23INR0342 | Brizo BESS | OTH | 140.8 | Victoria |
| 24INR0401 | Portside Energy Center (Solar) SLF | SOL | 41.1 | Victoria |
| 24INR0403 | Portside Energy Center (BESS) SLF | OTH | 41.1 | Victoria |
| 26INR0021 | Crossroads Wind | WIN | 253.3 | Victoria |
| 27INR0224 | Leopard BESS | OTH | 264.2 | Victoria |

## 7.2 Load Scaling Sensitivity Analysis

Planning Guide Section 3.1.3(4)(b) requires an evaluation of the potential impact of load scaling on the criteria violations seen in this ERCOT independent review. Before 2024, ERCOT RTP adopted the methodology of developing four sets of summer peak cases with each case representing one study region for each study year. For each summer peak case, the loads outside of the study region may be scaled down from the respective non-coincident summer peak levels to maintain a certain reserve requirement. This methodology may cause potential impact of load scaling on the criteria violations. Starting 2024, ERCOT RTP adopted a new methodology of having one summer peak case for each study year with non-coincident peaks for each of the Weather Zones, which would eliminate the load scaling impact. As stated in Section 2.1, ERCOT used the 2030 summer peak case from the 2024 RTP for this EIR project. The study base case, which was created in accordance with the 2024 RTP Study Scope and Process document and Section 2.1 of this document, did not include load scaling down from the respective non-coincident peaks in any of the eight Weather Zones. As such, load scaling sensitivity analysis is no longer needed.

## 7.3 Sub-synchronous Oscillations (SSO) Assessment

Pursuant to Protocol Section 3.22.1.3(2), ERCOT conducted an SSO screening for the recommended option (Option 1) and found no adverse SSO impacts to the existing and planned generation resources in the study area.

## 7.4 Congestion Analysis

ERCOT conducted a congestion analysis to identify any potential impact on system congestion related to the addition of the recommend option (Option 1) using the 2024 RTP 2029 economic study case.

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

The results of the congestion analysis indicated no significant congestion in the area due to the addition of the recommended transmission upgrades of Option 1.

# 8 Conclusion

ERCOT evaluated eight transmission upgrade options to resolve the thermal overloads and voltage violations identified in the study area. Based on the results of the independent review, ERCOT recommends Option 1 as the preferred solution because it addresses all project needs, meets ERCOT and NERC Reliability criteria, is the least cost option, improves long-term load-serving capability, and requires the least amount of CCN miles.

Option 1 (STEC proposed solution) consists of the following upgrades:

- Connect the new large load confirmed by Transmission Service Provider (TSP) Attestation Letter to AEP's 138-kV Dupont Switching station via a 138-kV transmission line, with normal and emergency ratings of at least 427 MVA and 478 MVA, respectively, which will require a new ROW, approximately 3.4-mile;
- Rebuild the existing Victoria Plant to Shepley to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Rebuild the existing Victoria Plant to Dupont 138-kV transmission line ckt2 with normal and emergency ratings of at least 485 MVA, approximately 7.66-mile;
- Remove the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont circuits (by rebuilding the two circuits on separate structures) to eliminate the NERC P7/ERCOT_1 (common tower outage) events. This would require a new ROW;
- Rebuild the existing Formosa to Joslin 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 2.41-mile; and
- Rebuild the existing Tungsten to Vistron to Black Bayou to Big Three to Dupont 138-kV transmission line with normal and emergency ratings of at least 485 MVA, approximately 21.11-mile.

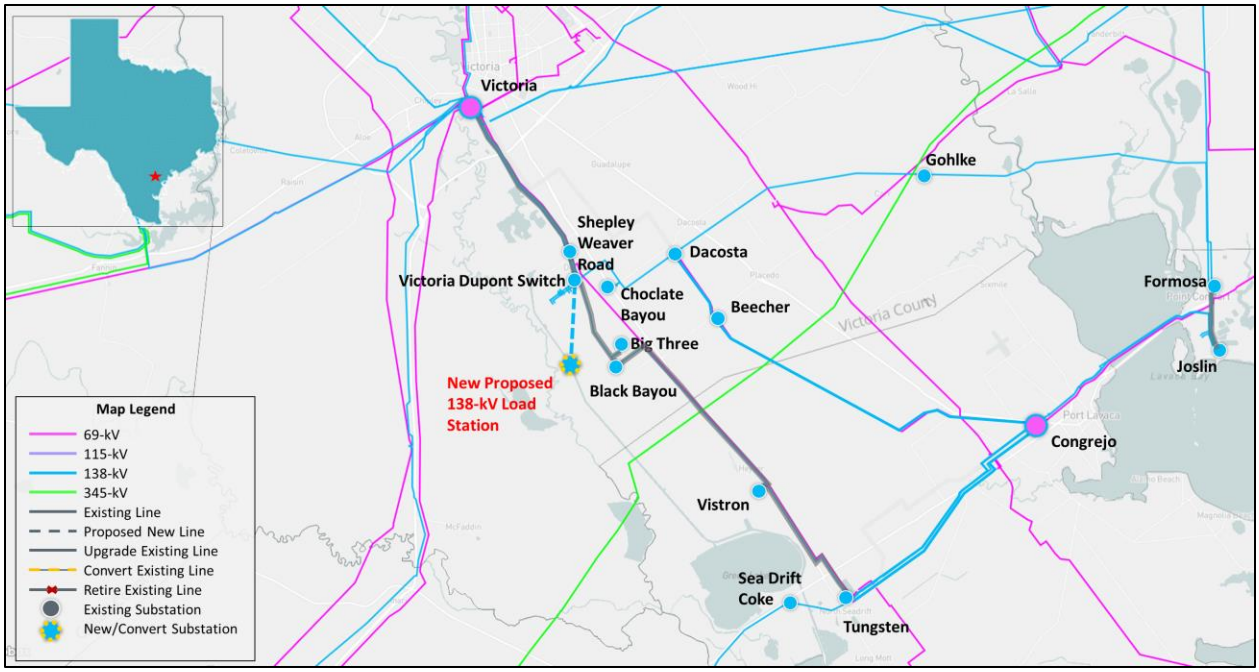



**Figure 8.1: Map of Option 1**

The cost estimate for this project is approximately $117.38 million and is classified as Tier 1 project per ERCOT Protocol Section 3.11.4.3(1)(a). The expected ISD of this project is June 2028.

CCN applications will be required for the new 138-kV single-circuit line from Dupont Switching station to the new large load and the removal of the double-circuit section of the Victoria Plant to Shepley and Victoria Plant to Dupont 138-kV circuits.

# Appendix A

**Table A.1: List of Transmission Projects added to the Economic Base Case**

| TPIT No | Project Name | Tier | Project ISD | County |
|---|---|---|---|---|
| 25RPG021 | Victoria to Warburton 138-kV Line Rebuild Project | Tier 3 | Sep-28 | Victoria |
| 76777 | Rebuild Nursery-El Toro | Tier 4 | May-27 | Victoria, Jackson |
| 76818 | Upgrade Rayburn Auto Station | Tier 4 | Oct-26 | Victoria |

**Table A.2: List of Generation Added to the Economic Base Case Based on June 2025 GIS Report**

| GINR | Project Name | Fuel | Project COD | Max Capacity (~MW) | County |
|---|---|---|---|---|---|
| 24INR0093 | Oriana Solar | SOL | 08/08/2025 | 181.0 | Victoria |
| 24INR0425 | Two Brothers ESS | OTH | 04/07/2027 | 152.0 | Victoria |

**Table A.3: Project Related Document**

| No | Document Name | Attachment |
|---|---|---|
| 1 | STEC - Ammonia Plant Load Project |  STEC RPG Ammonia Plant Load Project_0 |