



Item 5.4: 25RPG040 & 25RPG042 Combined Oncor Set 1 North and Central Texas Reliability Project & Oncor Set 2 North and Central Texas Reliability Regional Planning Group (RPG) Project

*Kristi Hobbs
Vice President, System Planning and
Weatherization*

Board of Directors Meeting

June 1-2, 2026

Purpose

Provide an overview of the \$2.363 billion Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Tier 1 Reliability Project. Per ERCOT Protocol Section 3.11.4.7 Tier 1 projects require Board endorsement.

Voting Items

ERCOT staff requests and recommends that the Board of Directors (Board) endorse the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability RPG Project (Group 2 and Group 3 upgrades) 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 RPG review and received an independent assessment from ERCOT staff and unanimous endorsement by the Technical Advisory Committee (TAC).
- ERCOT's 2024 and 2025 Regional Transmission Plan (RTP) performed comprehensive evaluations for determining the projects identified in Oncor's Set 1 and Set 2 submissions to address the significant additional new load growth and ensure reliability.

Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability RPG Project

Oncor submitted the Set 1 North and Central Texas Reliability Project (25RPG040) and the Set 2 North and Central Texas Reliability Project (25RPG042) for Regional Planning Group (RPG) review in November 2025.

The purpose of these projects is to address the reliability issues in Ellis, Navarro, Franklin, Hopkins, Collin, Hunt, Grayson, Johnson, Hill, Dallas, Henderson, Kaufman, Delta, Fannin, and Lamar counties in the North, North Central, and East Weather Zones.

ERCOT performed a single independent review of the two projects and divided into three groups.

ERCOT's endorsement of the project is based on the need to meet reliability needs driven by rapidly growing electrical demand. ERCOT performed a comprehensive evaluation for determining the upgrades required to satisfy the reliability needs in the 2024 and 2025 RTP evaluations.

ERCOT Presented the project and TAC voted unanimously to endorse the project on May 19, 2026.

Key Takeaway: The Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Group 2 and Group 3 upgrades) has completed RPG review and received unanimous endorsement by TAC.

Transmission Upgrade Summary by Group:

1. Evaluated and included in April Board endorsed Oncor Southern DFW Load Interconnection and General Grid Strengthening Project (25RPG004). These were removed from consideration in this EIR as they have already been endorsed.
2. Those that ERCOT confirmed and approved based on the reliability need identified in both 2024 RTP and 2025 RTP evaluations.
3. The upgrade proposed by Oncor and the Brazos Electric Cooperative and Texas-New Mexico Power Co. alternative. ERCOT conducted an independent review to recommend a proposed option.

Basis for ERCOT Board Endorsement

With TDSP full Officer Letter Loads in the EIR, the study area contained over 16 GW of large loads compared to the 2025 RTP load level (and over 13 GW compared to the 2024 RTP load level) as the 2025 RTP used an adjusted load forecast.

| Weather Zone | EIR Study Load Level (~MW) | 2025 RTP 2031 Load (~MW) | 2024 RTP 2030 Load (~MW) |
|---------------|-------------------------------|-----------------------------|-----------------------------|
| East | 3,599 | 3,269 | 3,756 |
| North | 12,889* | 12,526 | 8,103 |
| North Central | 55,410 | 39,606 | 46,424 |
| Total | 71,898 | 55,401 | 58,283 |

* This load does not include the Panhandle area full Officer Letter Load

Based on the evaluation of loads and transmission projects, ERCOT proposed to confirm and approve the Group 2 projects.

ERCOT's independent review identified a reliability need for the Group 3 projects in the Oncor Combined Set 1 & Set 2 North and Central Texas Reliability Projects (Option 1) to satisfy NERC TPL-001-5.1 Table 1 Reliability Criteria for P1 category.

Key Takeaway: The Group 2 projects are needed to meet the reliability needs driven by rapidly growing electrical demand. The Group 3 projects in the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Option 1) is needed to reliably meet NERC criteria.

Overall Project Summary for Group 2 and Group 3 Upgrades

Construct one (1) new 345-kV substation and three (3) new 345/138-kV transformers:

Rebuild five (5) existing substations and upgrade one (1) transformer:

- Two (2) 345-kV substations and one (1) 345/138-kV transformer; and
- Three (3) 138-kV substations.

Construct five (5) new 345-kV and 138-kV transmission lines:

- Two (2) new 345-kV double-circuit transmission lines, for approximately 115.5 miles; and
- Three (3) new 138-kV single-circuit transmission lines, for approximately 32.9 miles.

Upgrade existing 345-kV and 138-kV transmission lines for:

- Approximately 288.8 circuit miles of existing 345-kV transmission lines; and
- Approximately 233.4 circuit miles of existing 138-kV transmission lines.

A Certificate of Convenience and Necessity (CCN) is needed for the construction of the new Lavon Switch to Allen Switch 138-kV single-circuit transmission line, DeSoto Switch to Loop Nine Switch 138-kV single-circuit transmission line, Greene Switch to Wilmer Switch 345-kV double-circuit transmission line, and Jewett Switch to Greene Switch 345-kV double-circuit transmission line due to total approximately 131.0 miles of new right of way (ROW).

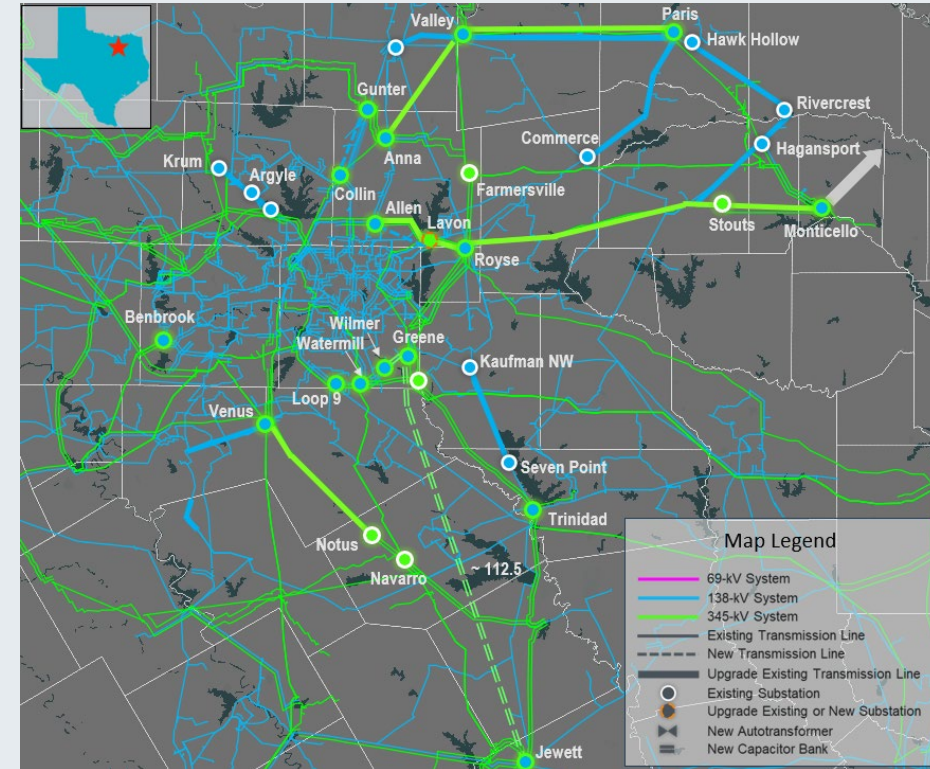
Key Takeaway: The Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Group 2 and Group 3 upgrades) will require a CCN due to approximately 131.0 miles of new ROW.

Request for Board Vote

ERCOT staff requests and recommends that the Board endorse the need for the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Group 2 and Group 3 upgrades) based on NERC and ERCOT reliability planning criteria.

The ERCOT Independent Review (EIR) is included as **Attachment A** to the Board Decision Template.

ERCOT Recommendation



Key Takeaway: ERCOT performed a comprehensive evaluation for determining the upgrades submitted in the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project to satisfy the need in the 2024 and 2025 RTP evaluations.



Date: May 22, 2026
To: Board of Directors
From: Kristi Hobbs, Vice President, System Planning and Weatherization (ERCOT)
Subject: 25RPG040 & 25RPG042 Combined Oncor Set 1 North and Central Texas Reliability Project & Oncor Set 2 North and Central Texas Reliability Regional Planning Group (RPG) Project

Issue for the ERCOT Board of Directors

ERCOT Board of Directors Meeting Date: June 1-2, 2026

Item No.: 5.4

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 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Regional Planning Group (RPG) Project in order to meet the reliability requirements for the ERCOT System and address reliability issues in Ellis, Navarro, Franklin, Hopkins, Collin, Hunt, Grayson, Johnson, Hill, Dallas, Henderson, Kaufman, Delta, Fannin, and Lamar counties in the North, North Central, and East Weather Zones, which ERCOT staff has independently reviewed and which the Technical Advisory Committee (TAC) has voted unanimously to endorse.

Background/History:

Oncor proposed the Oncor Set 1 North and Central Texas Reliability Project in November 2025, a \$1.798 billion, Tier 1 project with the expected in-service date (ISD) planned in phases between 2028 and 2034, and the Oncor Set 2 North and Central Texas Reliability Project in November 2025, a \$1.330 billion, Tier 1 project with the expected ISD of in phases between 2028 and 2034, to meet reliability planning criteria in Ellis, Navarro, Franklin, Hopkins, Collin, Hunt, Grayson, Johnson, Hill, Dallas, Henderson, Kaufman, Delta, Fannin, and Lamar counties in the North, North Central, and East Weather Zones. Protocol Section 3.11.4.7, Processing of Tier 1 Projects, requires ERCOT to independently review submitted projects. ERCOT performed a combined independent review of the Oncor Set 1 North and Central Texas Reliability Project and the Oncor Set 2 North and Central Texas Reliability Project. The ERCOT project recommendation (Group 2 and Group 3 upgrades), a \$2.363 billion, Tier 1 project

with the expected ISD planned in phases between 2028 and 2034 addresses the reliability needs due to the rapidly growing electrical demand with the following ERCOT System improvements:

- Rebuild the existing Venus Switch to Old Country Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA (due to the limit of existing 3200 A terminal equipment); and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 15.9 miles/circuit;
 - The existing infrastructure is from 1970s.
- Rebuild the existing Notus Switch to Old Country Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 14.8 miles/circuit;
 - The existing infrastructure is from 1970s.
- Rebuild the existing Hagansport (f/k/a Monticello Tap) Switch to Sulphur Springs East Tap 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 20.6 miles;
 - The existing infrastructure is from 1950s.
- Reconductor the existing Monticello Switch to Cash Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 62.3 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Valley Switch to Progress Park Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 326 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 15.6 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Cleburne 138-kV Switch by installing six 138-kV, 3200 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 3200 A;

- Rebuild the existing Cleburne Switch to Venus 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 19.5 miles;
 - The existing infrastructure is from 1980s.
- Rebuild the existing Red Hill Switch to Rio Vista Tap 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 6.6 miles;
 - The existing infrastructure is from 1950s.
- Rebuild the existing Commerce Switch to Crossroads Switch 138-kV transmission line (which is part of an existing 138-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 22.1 miles;
 - The existing infrastructure is from 2000s.
- Rebuild the existing Valley Switch to Valley South Switch 345-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1631 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 0.9 miles;
 - The existing infrastructure is from 2000s.
- Rebuild the existing Valley 345-kV Switch by installing eight 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 5000 A;
- Rebuild the existing Anna 345-kV Switch by installing twelve 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 5000 A;
- Rebuild the existing Anna Switch to Valley Switch 345-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1912 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 26.6 miles;
 - The existing infrastructure is from 1960s.
- Reconductor the existing Paris Switch to Valley South Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission

line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 46.3 miles;

- The existing infrastructure is from 2000s.
- Establish a new Lavon 345-kV Switch by installing six 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement and adding two 138-kV, 3200 A circuit breakers:
 - Terminate the existing Allen Switch to Royse Switch/Stouts Creek Switch 345-kV double-circuit transmission line into the Lavon 345-kV Switch, which creates the new Allen Switch to Lavon Switch 345-kV double-circuit transmission line for approximately 11.9 miles/circuit (the north circuit will have normal and emergency ratings of 1072 MVA, the south circuit will have normal and emergency ratings of 1631 MVA) and the new Lavon Switch to Royse Switch/Stouts Creek Switch 345-kV double-circuit transmission line (the Lavon to Stouts Creek Switch 345-kV circuit will have normal and emergency ratings of 1072 MVA for approximately 69 miles, and the Lavon to Royse 345-kV circuit will have normal and emergency ratings of 1631 MVA for approximately 10.9 miles);
 - Install one 345/138-kV autotransformer with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively, at the Lavon Switch; and
 - Ensure all associated terminal equipment meets or exceeds 5000 A for 345-kV and 3200 A for 138-kV.
- Construct a new Lavon Switch to Allen Switch 138-kV single-circuit transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater with normal and emergency ratings of at least 764 MVA, which will require a ROW for approximately 12.7 miles:
 - Install two 138-kV, 3200 A circuit breakers at Lavon 138-kV Switch and one 138-kV, 3200 A circuit breaker at Allen 138-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.
- Rebuild the existing Batchler Road Switch to Stainback Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1631 MVA to least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 3.2 miles/circuit;
 - The existing Infrastructure is from 1980s; and

- Note: Stainback Switch Project was added as part of the 25RPG004 Southern DFW Load Interconnection and General Grid Strengthening Project.
- Install a second circuit by rebuilding the existing Gunter Switch to Collin Switch 138-kV transmission line to create the Gunter Switch to Collin Switch 138-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 495 MVA to at least 765 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 16.4 miles/circuit:
 - Install one 138-kV, 3200 A circuit breaker at Gunter 138-kV Switch; and
 - The existing infrastructure is from 2010s.
- Install one new 345/138-kV autotransformer at the existing DeSoto Switch with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively;
- Construct a new DeSoto Switch to Loop Nine Switch 138-kV single-circuit transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater with normal and emergency ratings of at least 764 MVA, which will require a new ROW for approximately 3.82 miles:
 - Install one 138-kV, 3200 A circuit breaker at Loop Nine and one 138-kV, 3200 A circuit breaker at DeSoto Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.
- Rebuild the existing south circuit of Loop Nine Switch to Watermill Switch 345-kV double-circuit transmission line using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 4.0 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Kaufman Northwest Switch to Seven Point 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 20.8 miles;
 - The existing infrastructure is from 1980s.
- Construct a new Greene Switch to Wilmer Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater with normal and emergency ratings of at least 2987 MVA, which will require a new ROW for approximately 3.0 miles/circuit:

- Install two 345-kV, 5000 A circuit breakers at both the Greene 345-kV Switch and Wilmer 345-kV Switch;
 - Ensure all associated terminal equipment meets or exceeds 5000 A; and
 - Note: Greene Switch Project was submitted as part of the 25RPG004 Southern DFW Load Interconnection and General Grid Strengthening Project.
- Construct a new Jewett Switch to Greene Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater with normal and emergency ratings of at least 1912 MVA (due to the limit of existing 3200 A terminal equipment), which will require a new ROW for approximately 112.5 miles/circuit:
 - Install two 345-kV, 5000 A circuit breakers at Greene 345-kV Switch and three 345-kV, 3200 A circuit breakers at Jewett 345-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.
- Upgrade the existing Benbrook 345/138-kV autotransformer #1 with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively. The normal and emergency ratings prior to the Tier 1 project are 552 MVA and 625 MVA, respectively;
- Install a second 345/138-kV autotransformer at the existing Gunter Switch with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively, and install two 37.5 MVAR reactors on the tertiary winding of the autotransformer:
 - Install one 345-kV, 5000 A circuit breakers and two 138-kV, 3200 A circuit breakers at Gunter 345/138-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A for 138-kV and 5000 A for 345-kV.
- Rebuild the existing Argyle 138-kV Switch by installing six 138-kV, 3200 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 3200 A;
- Rebuild the existing Argyle Switch to Highlands 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 7.5 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Argyle Switch to Corinth 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 314 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 2.9 miles;

- The existing infrastructure is from 1950s.
- Rebuild the existing Argyle Switch to Krum Tap Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 210 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 8.54 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Rivercrest Switch to Hawk Hollow Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 25.5 miles:
 - Rebuild the existing Rivercrest 138-kV Switch, expand it to include a 138-kV switchyard with three 138-kV, 3200 A circuit breakers in a ring bus arrangement; and
 - The existing infrastructure is from 1950s.
- Rebuild the existing Hagansport (f/k/a Monticello tap) Switch to Rivercrest Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 9.5 miles;
 - The existing infrastructure is from 1950s.
- Rebuild the existing Paris Switch to Valley Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 46.1 miles;
 - The existing infrastructure is from 2000s.
- Rebuild the existing Paris Switch to Commerce 138-kV transmission line section (which is part of an existing 138-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 14.0 miles; and
 - The existing infrastructure is from 2000s.
- Reconductor the existing Allen Switch to Stouts Creek Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all



associated terminal equipment meets or exceeds 3200 A, for approximately 80.9 miles.

- The existing infrastructure is from 1960s.

ERCOT performed a single independent review of the two projects and divided it into three groups. Group 1 includes transmission upgrades that were already evaluated and included in the recently endorsed Oncor Southern DFW Load Interconnection and General Frid Strengthening Project (25RPG004). These were removed from consideration in this EIR as they have already been endorsed. Group 2 includes the transmission upgrades that ERCOT confirmed and approved based in the reliability need identified in both the 2024 RTP and 2025 RTP evaluations to expedite the RPG review process. Group 3 includes the transmission upgrade proposed by Oncor and the alternative option that TDSPs Brazos Electric Cooperative and Texas-New Mexico Power Co. commented on, for which ERCOT conducted an independent review to recommend a proposed option. ERCOT's independent review of Group 2 and Group 3 utilized the comprehensive evaluation in the 2024 and 2025 RTP studies for determining the upgrades identified in the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project, performed additional analysis and assessments to verify the reliability need for the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project.

RPG considered project overviews during meetings in January and May 2026. Between January and May 2026, ERCOT staff presented scope and status updates at RPG meetings in January, February, March, April, and May 2026. 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 May 19, 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 Subsynchronous Oscillations (SSO) of existing facilities conducted pursuant to Protocol Section 3.22.1.3, Transmission Project Assessment, for the Group 2 and Group 3 upgrades 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 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Group 2 and Group 3 upgrades).



The report describing the ERCOT Independent Review of the Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Project (Group 2 and Group 3 upgrades), including ERCOT staff's recommendation, is included as **Attachment A**.

Key Factors Influencing Issue:

1. ERCOT System improvements are needed to address the reliability needs to the rapidly growing electrical demand.
2. ERCOT staff found the recommended set of improvements to be the most efficient solution for meeting the planning reliability criteria and facilitating future transmission expansion for future load in the area.
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 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Planning Group (RPG) Project (Group 2 and Group 3 upgrades), as recommended by ERCOT, on May 19, 2026.

Conclusion/Recommendation:

ERCOT staff recommends that the Board endorse the need for the Tier 1 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability RPG Project (Group 2 and Group 3 upgrades), 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 deems it desirable and in the best interest of ERCOT to accept ERCOT staff's recommendation to endorse the need for the Tier 1 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Regional Planning Group Project (Group 2 and Group 3 upgrades), 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 Oncor Combined Set 1 North and Central Texas Reliability Project & Set 2 North and Central Texas Reliability Regional Planning Group Project (Group 2 and Group 3 upgrades), 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 June 1-2, 2026 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
(EIR) of the Combined Oncor
Electric Delivery Company
LLC (Oncor) Set 1 North and
Central Texas Reliability
Project (25RPG040) and Oncor
Set 2 North and Central Texas
Reliability Project (25RPG042)**

Document Revisions

| Date | Version | Description | Authors |
|------------|---------|-------------|--|
| 05/22/2026 | 1 | Final | Ying Li |
| | | Reviewed by | Robert Golen, Sun Wook Kang, Prabhu Gnanam |

Executive Summary

Oncor Electric Delivery Company LLC (Oncor) submitted the Set 1 North and Central Texas Reliability Project (Set 1 N/C Project) and Set 2 North and Central Texas Reliability Project (Set 2 N/C Project) to the Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) in November 2025. Oncor proposed these two projects to address North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and ERCOT Planning Guide reliability criteria thermal overloads and voltage violations in Ellis, Navarro, Franklin, Hopkins, Collin, Hunt, Grayson, Johnson, Hill, Dallas, Henderson, Kaufman, Delta, Fannin, Lamar, Freestone, Leon, Tarrant, Denton, and Red River counties in the North, North Central, and East Weather Zones.

Oncor's proposed Set 1 N/C Project and Set 2 N/C Project were estimated to cost approximately \$1.798 billion and \$1.330 billion, respectively; both were classified as Tier 1 projects under ERCOT Protocol Section 3.11.4.3; and both would require Certificate of Convenience and Necessity (CCN) applications.

The ERCOT System is experiencing rapid changes, including trends of notable growth in demand and penetration of intermittent Generation Resources. The trend of rising demand is driven by factors such as continued interest in connecting Large Loads to the ERCOT system as well as increased electrification of oil and gas processes in the Permian Basin. In the 2024 Regional Transmission Plan (RTP) study cycle, the forecasted summer peak demand for 2030 exceeded 150 GW, of which approximately 50 GW is for Large Loads. Both of Oncor's proposed Set 1 N/C Project and Set 2 N/C Project were identified and included in the 2024 RTP to address the thermal overloads and voltage violations referenced above.

The Large Loads submitted by Transmission and Distribution Service Providers (TDSPs) for consideration in the 2025 RTP were significantly greater than those submitted for the 2024 RTP. The 2025 RTP's forecasted summer peak demand for 2031 would have exceeded 218 GW if all TDSP-submitted Large Loads were included. After performing a historical analysis on Large Load realization, ERCOT developed an ERCOT Transmission Planning Adjusted Load Forecast (ETPALF) that adjusted the 2031 forecast

from 218 GW to 159 GW. With this load adjustment method, the load level in the study area in the 2025 RTP was lower than that in the 2024 RTP. As a result, all the projects in Oncor's proposed Set 1 N/C Project and a subset of the Oncor's proposed Set 2 N/C Project were identified and included in the 2025 RTP to address the thermal overloads and voltage violations in the study area.

ERCOT evaluated the load levels in both the 2024 and 2025 RTP as well as the load level to be used in this ERCOT Independent Review (EIR) which would include the full Officer Letter Loads (OLLs) submitted by TDSPs for consideration in the 2025 RTP. The data showed that the study area for this evaluation will have over 16 GW of additional load compared to the 2025 RTP's 2031 ETPALF load level, or over 13 GW when compared to the 2024 RTP's 2030 base case load level. The EIR forecast indicates the reliability need still exists for all the transmission projects proposed in the Oncor Set 1 N/C Project and Set 2 N/C Project. Moreover, in addition to the proposed Set 1 N/C Project and Set 2 N/C Project, additional new transmission upgrades will be needed to serve the identified additional loads, which is beyond the study scope of this EIR.

As a result, ERCOT performed a combined EIR for these two projects and divided it into three groups.

- Group 1 includes the transmission upgrades that were already evaluated and included in the recently endorsed Oncor Southern DFW Load Interconnection and General Grid Strengthening Project (25RPG004). The upgrades in Group 1 were removed from consideration in this EIR as they have already been endorsed.
- Group 2 includes the transmission upgrades that ERCOT confirmed and approved based on the reliability need identified in both 2024 RTP and 2025 RTP evaluations to expedite the RPG review process.
- Group 3 includes the transmission upgrade proposed by Oncor and the alternative option that TDSPs Brazos Electric Cooperative and Texas-New Mexico Power Co. commented on, for which ERCOT conducted an independent review to recommend a proposed option, and is considered in this EIR.

Based on this EIR, ERCOT recommends the transmission upgrades identified in Group 2 and Group 3 to address the reliability issues mentioned above. A summary of Group 2 and Group 3 upgrades are as follows:

- Construct one (1) new 345-kV substation and three (3) new 345/138-kV transformers:
- Rebuild five (5) existing substations and upgrade one (1) transformer:
 - Two (2) 345-kV substations and one (1) 345/138-kV transformer; and
 - Three (3) 138-kV substations.
- Construct five (5) new 345-kV and 138-kV transmission lines:
 - Two (2) new 345-kV double-circuit transmission lines, for approximately 115.5 miles; and
 - Three (3) new 138-kV single-circuit transmission lines, for approximately 32.9 miles.
- Upgrade existing 345-kV and 138-kV transmission lines for:
 - Approximately 288.8 circuit miles of existing 345-kV transmission lines; and
 - Approximately 233.4 circuit miles of existing 138-kV transmission lines.

A detailed component list of the transmission upgrades identified in Group 2 and Group 3 is provided in Section 5 of this EIR.

The cost estimate for this combined Tier 1 project is approximately \$2.363 billion, which includes the estimated capital cost with energized construction work. The expected in-service dates (ISDs) for the recommended upgrades are planned in phases to occur between 2028 to 2034. However, Oncor has advised that the projected ISDs may change based on material availability, construction sequencing, and other project-specific factors. One or multiple CCN applications would be required for the construction of the new Lavon Switch to Allen Switch 138-kV single-circuit transmission line, DeSoto Switch to Loop Nine Switch 138-kV single-circuit transmission line, Greene Switch to Wilmer Switch 345-kV double-circuit transmission line, and Jewett Switch to Greene Switch 345-kV double-circuit transmission line due to total approximately 131.0 miles of new right of way (ROW). If necessary, Oncor will work with ERCOT to develop and implement Constraint Management Plans (CMPs) based on future operational conditions.

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1. Introduction

In November 2025, Oncor Electric Delivery Company LLC (Oncor) submitted the Set 1 North and Central Texas Reliability Project (Set 1 N/C Project) and Set 2 North and Central Texas Reliability Project (Set 2 N/C Project) to the Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) to address North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-5.1 and ERCOT Planning Guide reliability criteria thermal overloads and voltage violations under various contingency conditions due to significant load growth in the area. The two projects are located in Ellis, Navarro, Franklin, Hopkins, Collin, Hunt, Grayson, Johnson, Hill, Dallas, Henderson, Kaufman, Delta, Fannin, Lamar, Freestone, Leon, Tarrant, Denton, and Red River counties in the North, North Central, and East Weather Zones.

Both Oncor's proposed Set 1 N/C Project and Set 2 N/C Project were classified as Tier 1 projects under ERCOT Protocol Section 3.11.4.3, with an estimated cost of approximately \$1.798 and \$1.330 billion, respectively. One or multiple Certificate of Convenience and Necessity (CCN) applications would be required to construct the projects, and the expected in-service dates (ISDs) for the two projects are planned to occur in phases between 2028 and 2034.

The unprecedented load growth in the ERCOT system has driven the need for substantial amount of new transmission infrastructure. The forecasted summer peak demand for 2030 exceeds 150 GW, of which approximately 50 GW is large load growth in the 2024 Regional Transmission Plan (RTP) study cycle. Both the Oncor proposed Set 1 N/C Project and Set 2 N/C Project were identified and included in the 2024 RTP to address the thermal overloads and voltage violations in the counties and Weather Zones identified above.

The projected large loads submitted by Transmission and Distribution Service Providers (TDSPs) for consideration in the 2025 RTP were significantly greater compared to the 2024 RTP. In the 2025 RTP, the forecasted summer peak demand for 2031 would have exceeded 218 GW if all TDSP-submitted large loads were included. After performing a historical analysis on large load realization, ERCOT developed an ERCOT Transmission

Planning Adjusted Load Forecast (ETPALF) that adjusted the 2031 forecast from 218 GW to 159 GW. With this load adjustment method, the load level in the study area in the 2025 RTP was lower than that in that 2024 RTP. As a result, all the projects in Oncor's proposed Set 1 N/C Project and a subset of Oncor's proposed Set 2 N/C Project were identified and included in the 2025 RTP to address the thermal overloads and voltage violations in the study area.

With current load forecast methodology for RPG projects, the full Officer Letter Loads (OLLs) in the study area were included in this ERCOT Independent Review (EIR). As a result, the study area load level is significantly higher than both the 2024 and 2025 RTP studies. This indicates a reliability need still exists for all the transmission projects proposed in Oncor's Set 1 N/C Project and Set 2 N/C Project. In addition to the proposed Set 1 N/C Project and Set 2 N/C Project, additional new transmission projects would also be needed to serve these additional loads which is beyond the study scope of this EIR.

ERCOT conducted a single EIR for these two RPG projects by utilizing both the 2024 and 2025 RTP studies and performing additional analyses and assessments. This report describes the study assumptions, methodology, and the results of the EIR.

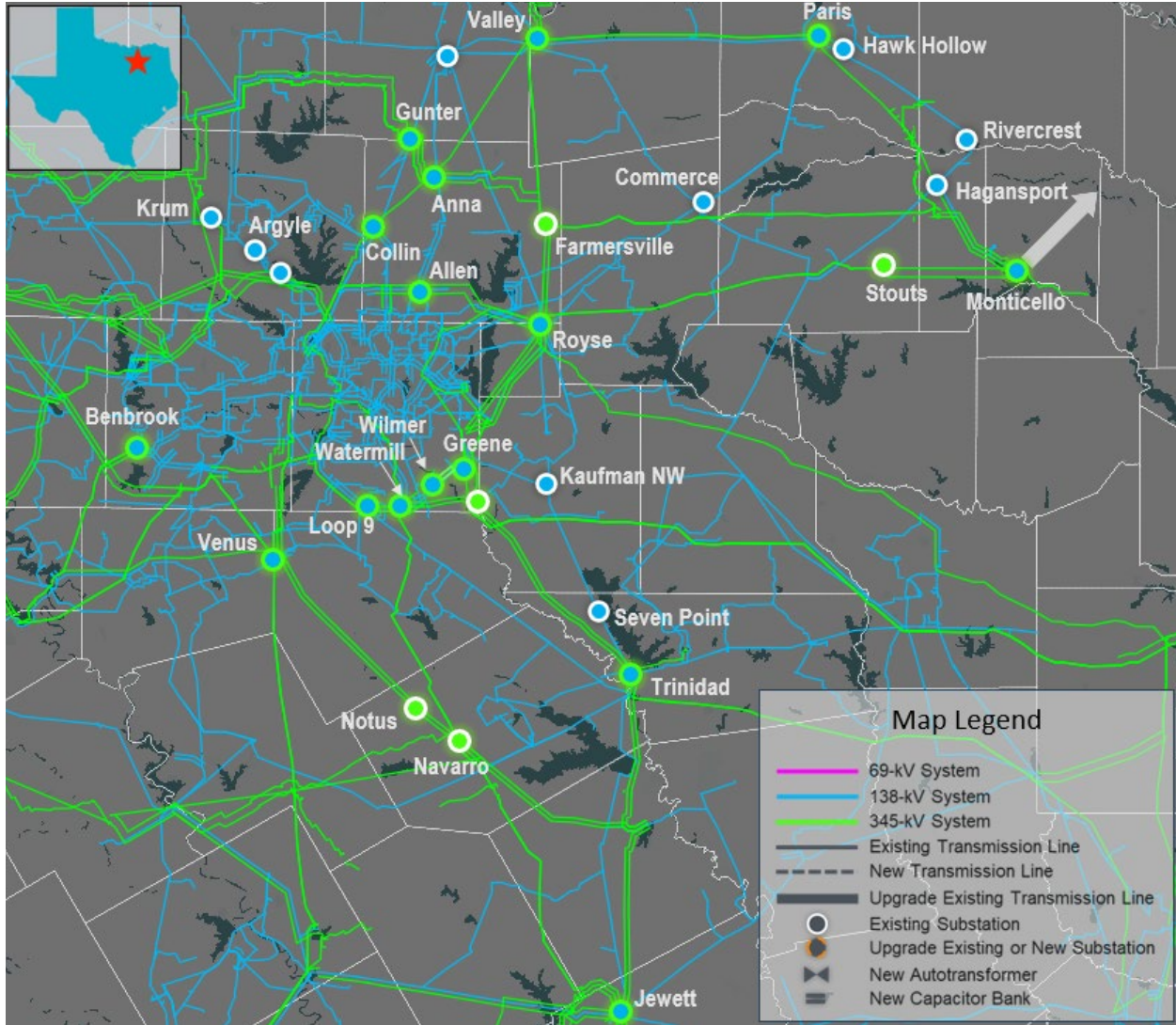


Figure 1.1: Map of Transmission System in the Study Area

2. Study Assumptions and Methodology

To address the rapid changes experienced in the ERCOT System, which include trends of substantial growth in demand and increasing penetration of Inverter-Based Resources (IBRs), a substantial amount of new transmission upgrades, including the 765-kV Extra High Voltage (EHV) transmission infrastructure, have been proposed and approved in the past two years.

ERCOT's 2024 RTP conducted extensive engineering analysis of the 765-kV transmission network and obtained substantial review and input from TDSPs and other stakeholders in the ERCOT Region through the RPG meetings. As a culmination of these efforts, ERCOT proposed the 765-kV Strategic Transmission Expansion Plan (STEP) Core Plan during the 2024 RTP study. The proposed 765-kV STEP Core Plan includes the new 765-kV transmission backbone as well as the necessary 345-kV and 138-kV transmission upgrades across the ERCOT grid. Oncor's proposed Set 1 N/C Project and Set 2 N/C Project are among the necessary 345-kV and 138-kV transmission upgrades in the 2024 RTP 765-kV STEP Core Plan.

The 765-kV transmission backbone in the 2024 RTP 765-kV STEP Core Plan includes three parts: the Permian Basin Reliability Plan 765-kV import paths, the Drill Hole to Sand Lake to Solstice 765-kV Line Project (25RPG022), and the Texas 765-kV-STEP Eastern Backbone Project (25RPG025). The Permian Basin Reliability Plan 765-kV import paths were approved by the Public Utility Commission of Texas (PUCT) in April 2025. The Drill Hole to Sand Lake to Solstice 765-kV Line Project and the Texas 765-kV-STEP Eastern Backbone Project were endorsed by ERCOT Board of Directors in December 2025.

In the 2025 RTP study, the large loads submitted by TDSPs for consideration were significantly greater compared to the 2024 RTP. In the 2025 RTP, the forecasted summer peak demand for 2031 would have exceeded 218 GW if all TDSP-submitted large loads were included. After performing a historical analysis on large load realization, ERCOT developed an ETPALF that adjusted the 2031 forecast from 218 GW to 159 GW. With this load adjustment method, the load level in the study area in the 2025 RTP was lower than that in the 2024 RTP. As a result, all the projects included in Oncor's Set 1 N/C

Project and a subset of Oncor’s Set 2 N/C were identified and included in the 2025 RTP to address the thermal overloads and voltage violations in the study area.

With the load forecast methodology for RPG projects at the time of this EIR, the 2025 RTP ETPALF needed to be reverted to the full OLLs in the study area. This would drive the study area load level significantly higher than those in both the 2024 and 2025 RTP studies. Table 2.1 compares the load levels in this EIR as well as the 2024 and 2025 RTP evaluations in the study area.

Table 2.1: Study Area Load Levels Comparison

| Weather Zone | EIR Study Load Level (MW) | 2025 RTP 2031 Load (MW) | 2024 RTP 2030 Load (MW) |
|---------------|---------------------------|-------------------------|-------------------------|
| East | 3,599 | 3,269 | 3,756 |
| North | 12,889 ¹ | 12,526 | 8,103 |
| North Central | 55,410 | 39,606 | 46,424 |
| Total | 71,898 | 55,401 | 58,283 |

As shown in Table 2.1, the study area will have over 16 GW of large loads than the 2025 RTP load level, or over 13 GW than the 2024 RTP load level. This indicates the reliability need still exists for all the transmission projects proposed in Oncor’s Set 1 N/C Project and Set 2 N/C Project. In addition to the proposed Set 1 N/C Project and Set 2 N/C Project, additional transmission projects will also be needed to serve these additional loads which are beyond the study scope of this EIR. ERCOT expects to study those additional transmission needs in the upcoming 2026 RTP study.

Based on the evaluation of loads and transmission projects, ERCOT proposed to confirm and approve the majority of the transmission upgrades proposed in Oncor’s Set 1 N/C Project and Set 2 N/C Project based on the reliability need identified in the 2024 and 2025 RTP evaluations to expedite the EIR process. Specifically, ERCOT divided the transmission upgrades proposed in the Oncor Set 1 N/C Project and Set 2 N/C Project into three groups:

- Group 1: Includes the upgrades in Set 1 N/C Project and Set 2 N/C Project that were already evaluated and endorsed in Oncor’s Southern DFW Load Interconnection and General Grid Strengthening Project (25RPG004). These

¹ This load does not include the Panhandle area full OLLs.

upgrades were endorsed by ERCOT Board of Directors in April 2026 and as a result, were removed from this EIR.

- Group 2: Includes the remaining transmission projects proposed in Oncor’s Set 1 N/C Project and Set 2 N/C Project that ERCOT proposed to confirm and approve based on the reliability need identified in the 2024 and 2025 RTP evaluations so as to expedite the RPG review process, except for the one upgrade that certain Transmission Service Providers (TSPs) commented on as an alternative option.
- Group 3: Includes the Oncor proposed option and the alternative option that TDSPs Brazos Electric Cooperative (BEC) and Texas-New Mexico Power Co. (TNMP) commented on, of which ERCOT conducted an independent review of to recommend a proposed option.

Tables 2.2, 2.3 and 2.4 list the individual projects included within each of the three groups.

Table 2.2: Group 1 Upgrades

| Oncor Project Description | RTP Project Number | Counties |
|--|--------------------|---|
| Rebuild the Tri Corner 345-kV Switch; Rebuild the Watermill Switch to Tri Corner Switch 345-kV double-circuit line between structure 102/3 and Tri Corner Switch, ~8.4 miles; and Rebuild the Trinidad Switch to Tri Corner 345-kV double-circuit line, ~40.40 miles | 2024-NC11 | Dallas, Henderson, and Kaufman |
| Rebuild the Saltillo Switch to Farmersville Switch 345-kV line, ~59.9 miles | 2024-NC31 | Collin, Fannin, Grayson, Hunt and Lamar |
| Rebuild the DeSoto 345/138-kV Switch | 2024-NC80 | Dallas |

Table 2.3: Group 2 Upgrades

| Oncor Project Description | RTP Project Number | Counties |
|---|-------------------------|------------------------------------|
| Rebuild the Venus Switch to Old Country Switch 345-kV double-circuit line, ~15.9 miles; and Rebuild the Notus Switch to Old Country Switch 345-kV double-circuit Line. ~14.8 miles | 2024-NC56 and 2024-NC42 | Ellis and Navarro |
| Rebuild the Hagansport (fka Monticello Tap) Switch to Sulphur Springs East Tap 138-kV line, ~20.6 miles | 2024-E8 | Franklin and Hopkins |
| Reconductor the Monticello Switch to Cash Switch 345-kV line, ~62.3 miles | 2024-E9 | Collin, Hopkins, Hunt and Franklin |
| Rebuild the Valley Switch to Progress Park Switch 138-kV line, ~15.6 miles | 2024-N07 | Grayson |

| Oncor Project Description | RTP Project Number | Counties |
|---|-------------------------|--|
| Rebuild the Cleburne 138-kV Switch; Rebuild the Cleburne Switch to Venus 138-kV line, ~19.5 miles; and Rebuild the Red Hill Switch to Rio Vista Tap 138-kV line, ~6.6 miles | 2024-NC04 | Johnson, Ellis and Hill |
| Rebuild the Commerce Switch to Crossroads Switch 138-kV line, ~22.1 miles | 2024-NC36 | Hunt and Delta |
| Rebuild the Valley Switch to Valley South Switch 345-kV line, ~0.9 miles; Rebuild the Valley 345-kV Switch; Rebuild the Anna 345-kV Switch; Rebuild the Anna Switch to Valley Switch 345-kV line, ~26.6 miles; and Reconductor the Paris Switch to Valley South Switch 345-kV line, ~46.3 miles | 2024-NC31 | Collin, Fannin, Grayson, Hunt and Lamar |
| Establish a new Lavon 345-kV Switch; Terminate the Allen Switch to Royse Switch/Stouts Creek Switch 345-kV double-circuit line into Lavon 345-kV Switch; Install one 600 MVA (nameplate) 345/138-kV autotransformer at Lavon Switch; and Construct a new Lavon Switch to Allen Switch 138-kV line, ~12.7 miles | 2024-NC59 | Collin |
| Rebuild the Batchler Road Switch to Stainback Switch 345-kV double-circuit line, ~3.2 miles | 2024-NC68 | Dallas and Ellis |
| Add one new 345/138-kV autotransformer at DeSoto; and New DeSoto to Loop Nine 138-kV line, ~3.82 miles | 2024-NC80 | Dallas |
| Rebuild the south circuit of Loop Nine – Watermill 345-kV double-circuit line, ~4.0 miles | 2024-NC16 | Dallas |
| Rebuild the Kaufman Northwest – Seven Point 138-kV line, ~20.8 miles | 2024-NC53 | Henderson and Kaufman |
| New Greene to Wilmer 345-kV double-circuit line, ~3.0 miles | 2024-NC86 | Dallas |
| New Jewett to Greene 345-kV double-circuit line, ~112.5 miles | 2024-NC63 | Dallas, Ellis, Freestone, Leon and Navarro |
| Upgrade the Benbrook 345/138-kV Autotransformer #1 | 2024-NC79 | Tarrant |
| Add a second 345/138-kV autotransformer at Gunter; and Add two 37.5 MVA reactors | 2024-NC76 | Collin |
| Rebuild Argyle 138-kV Switch; Rebuild the Argyle to Highlands (TNMP) 138-kV line, ~7.5 miles; Rebuild the Argyle to Corinth 138-kV line, ~2.9 miles; and Rebuild the Argyle to Krum 138-kV line, ~8.54 miles | 2024-NC72 and 2024-NC40 | Denton |
| Rebuild Rivercrest 138-kV Switch; Rebuild the Rivercrest to Hawk Hollow 138-kV line, ~25.5 miles; and Rebuild the Hagansport (fka Monticello tap) to Rivercrest 138-kV line, ~9.5 miles | 2024-N14 | Lamar and Red River |

| Oncor Project Description | RTP Project Number | Counties |
|--|--------------------|-------------------------------|
| Rebuild the Paris to Valley 138-kV line, ~46.1 miles; and Rebuild the Paris to Commerce 138-kV line, ~14.0 miles | 2024-N16 | Delta, Fannin, Hunt and Lamar |
| Reconductor the Allen to Stouts Creek 345-kV line, ~80.9 miles | 2024-NC29 | Collin, Hopkins, Hunt |

Table 2.4: Group 3 Upgrade

| Oncor Project Description | RTP Project Number | Counties |
|--|--------------------|--------------------|
| Install a second circuit by rebuilding the existing Gunter Switch to Collin Switch 138-kV line to create the Gunter Switch to Collin 138-kV double-circuit line, ~16.4 miles | 2024-NC76 | Collin and Grayson |

In summary, ERCOT decided to confirm and approve the Group 2 upgrades utilizing the need established in 2024 RTP and 2025 RTP evaluations for this EIR and to perform additional analyses required by the combined Tier 1 project. ERCOT then evaluated the Group 3 upgrade for Oncor’s proposed option and an alternative.

The following sections highlight the studies and cost effectiveness of the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades proposed by Oncor, performed in the 2024 RTP evaluation.

2.1. Steady-State Reliability Studies

To serve both current and future load growth by 2030 reliably and efficiently, many miles of new transmission build as well as upgrades to existing transmission lines will be required. The 2024 RTP developed 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, will address statewide reliability needs driven by unprecedented load growth in the ERCOT system.

The steady-state reliability studies and cost effectiveness of the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, is summarized below:

- The total construction cost estimate for the 765-kV STEP Core Plan is approximately \$32.99 billion.
- The total new right of way (ROW) mileage at all voltage levels for the 765-kV STEP Core Plan is approximately 3,441 miles.
- The total existing line upgrade mileage at all voltage levels for the 765-kV STEP Core Plan is approximately 2,831 miles.
- The 765-kV transmission lines significantly reduce power losses by transmitting electricity at a higher voltage. Power loss calculations showed that the 765-kV STEP Core Plan can reduce annual systemwide transmission losses by about 5% compared to the 345-kV plan (about 560 GWh each year, which is approximately equivalent to a 128 MW thermal unit operating at a 50% capacity factor).
- A transfer capability analysis was conducted to compare the ability to move power across the system without causing thermal overloads or voltage collapse from a steady-state perspective. The steady-state transfer capability analysis indicates that the 765-kV STEP Core Plan provides higher regional transfer capability compared to the 345-kV Plan, providing a more robust solution for meeting future demand. With the increasing curtailments of existing generation due to Generic Transmission Constraints (GTCs), such as South Texas Import and Export GTCs, or steady-state thermal limits, enhanced transfer capability will be a benefit. Specifically, the 765-kV STEP Core Plan enhances transfer capability by an additional 600 MW to 3,000 MW across various scenarios evaluated in the analysis. This higher transfer capability could also provide a greater range of siting options for both Generation Resources and large loads.
- Additional sensitivity analysis was performed to review the reliability need based on varying demand levels. A sensitivity analysis with a reduced load level (~20 GW less overall load) showed major portions of the 765-kV STEP Core Plan will still be needed to meet the reduced demand.

The final 765-kV STEP Core Plan reliability cases were published on the Market Information System (MIS) on February 6, 2025:²

- Summer Peak Case: 2024RTP_2030_SUM_TX765STEP_02062025; and
- Maintenance Case:
2024RTP_2030_MaintenanceOutage_TX765STEP_02062025.

² 2024 Regional Transmission Plan Postings: <https://mis.ercot.com/secure/data-products/grid/regional-planning>

The 2025 RTP study identified the reliability needs and included the 765-kV transmission backbone as well as Oncor's Set 1 N/C Project and a subset of the Set 2 N/C Project. The final 2025 RTP reliability cases were published on the MIS on December 22, 2025:³

- Summer Peak Case: 2025RTP_2031_SUM_12222025.

2.2. Dynamic Stability Studies

ERCOT conducted a stability analysis to examine the system's ability to return to normal operating conditions after sudden changes or disturbances (e.g., line trip). The analysis evaluated the potential impact to the West Texas Export and McCamey GTCs. The study results indicate that the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, would increase the West Texas Export stability constraint limit from 12.7 GW to 16.2 GW. No stability limits were identified for the McCamey area stability constraint with the implementation of the 765-kV STEP Core Plan. Additionally, the study results showed that bypassing all series capacitors had no impact on stability limits. The ability to potentially eliminate some or all series capacitors from the system means greater flexibility in siting and interconnecting generators without concerns about potential Subsynchronous Oscillation (SSO) issues.

System strength is increasingly important for a grid's ability to mitigate potential instability risks. IBRs in the ERCOT grid have experienced rapid and sustained growth, driving significant transformations in the energy landscape. The performance of IBRs heavily depends on power electronics controls, which are highly complex and fast-acting, making them particularly sensitive in weaker grids dominated by IBRs with limited or no conventional synchronous generation. Recognizing that adding new major transmission infrastructure, such as 765-kV, can significantly improve system strength and thereby enhance the grid's ability to support the reliable operation of IBRs and mitigate potential instability risks, ERCOT conducted a system strength analysis to evaluate the performance of the 765-kV STEP Core Plan. The results indicate that the 765-kV STEP

³ 2025 Regional Transmission Plan Postings: <https://mis.ercot.com/secure/data-products/grid/regional-planning>

Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, provides improvement in system strength, measured by weighted short-circuit MVA⁴.

2.3. Economic Study

An economic study was performed to qualitatively evaluate the economic benefit of the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, by using two study year cases (i.e., 2034 and 2039). The 2034 and 2039 economic cases for the Current Trends scenario from the 2024 Long-Term System Assessment (LTSA) were used as the base cases of this economic analysis. The economic benefit of the 765-kV STEP Core Plan was evaluated by comparing it to the 345-kV plan. The 345-kV and 765-kV plans were added separately to the base cases to simulate the incremental impact of the proposed transmission addition. Anticipated responses from price responsive load under system scarcity conditions were then modeled in the simulation.

The economic study showed that the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, demonstrated more consistent benefits through the years evaluated compared with the 345-kV plan in both the production cost savings and system-wide consumer energy cost reduction. Key findings from the economic analysis are summarized as follows and monetary numbers are in 2025 dollars:

- For year 2034, both the 345-kV and 765-kV plans showed savings in production cost and consumer energy cost. Notably, the 765-kV STEP Core Plan had \$133 million more production cost savings but \$136 million less savings in system-wide consumer energy cost compared to the 345-kV plan. The 765-kV STEP Core Plan also had \$94 million less congestion rent than the 345-kV plan.
- For year 2039, while the 765-kV STEP Core Plan continued to show savings in both production cost and consumer energy cost, the 345-kV plan showed an increase in the consumer energy cost. The 765-kV STEP Core Plan had \$28 million more production cost savings and approximately \$229 million more system-wide consumer energy cost reduction than the 345-kV plan. The 765-kV STEP Core Plan also had \$172 million less congestion rent than the 345-kV Plan.

⁴ EHV 765-kV ERCOT Workshop: <https://www.ercot.com/calendar/01272025-EHV-765-kV-ERCOT>

The economic study showed that the 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, can produce more economic benefits in the long-term planning horizon.

ERCOT also performed a congestion analysis using the 2024 RTP 2029 economic case for the 765-kV STEP Core Plan. The study showed that 765-kV STEP Core Plan, including the necessary 345-kV and 138-kV transmission upgrades, does not introduce significant new congestion in the study area.

2.4. Contingencies and Criteria

The reliability assessments were performed based on NERC Reliability Standard TPL-001-5.1, ERCOT Protocols⁵, and the ERCOT Planning Guide.⁶

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 and above);
- P3: (G-1+N-1) (G-1: generation outage); and
- P6-2: (X-1+N-1) (X-1: 345/138-kV transformer and 765/345-kV transformer).

All 115-kV and above buses and 60-kV and above 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.

⁵ ERCOT Protocols: <https://www.ercot.com/mktrules/nprotocols/current>

⁶ ERCOT Planning Guide: <http://www.ercot.com/mktrules/guides/planning/current>

2.5. Study Tools

ERCOT utilized the following software tools to perform the studies:

- PowerWorld Simulator version 23 and version 24 for Security Constrained Optimal Power Flow and steady-state contingency analysis;
- TARA version 2302_2 for steady-state transfer analysis;
- UPLAN Altos version 12.3.0.30786 to perform congestion analysis; and
- PSS/e version 35.6 for dynamic stability analysis.

3. Group 3 Upgrade Evaluation

ERCOT performed an independent review for the Group 3 upgrade, identified reliability issues (thermal overloads in Collin County), and evaluated two different project options. This section describes the study assumptions and the results of the Group 3 upgrade EIR. The contingencies and Criteria used for this evaluation are consistent with Section 2.4 of this document.

3.1. Steady State Study Base Case

The Final 2025 RTP case, specified in Section 2.1, was used as the reference case in this study. The 2031 Summer Peak Load case was selected for the long-term outlook. The steady-state study base case was constructed by updating transmission, generation, and load data of the 2025 RTP 2031 Summer Peak Load case.

3.2. Transmission Topology, Generation, and Load Assumptions

The ERCOT Transmission Project Information and Tracking (TPIT)⁷ report was used as reference to identify if there are applicable transmission projects that need to be added to the study base case. After reviewing the February 2026 TPIT report, ERCOT determined that no new transmission projects in the study area would need to be added. The transmission project listed in Table 3.1 was identified as a placeholder project in the 2025 RTP in the study area that has not been approved by RPG and was removed from the study base case.

Table 3.1: List of Transmission Project Removed from the Study Base Case

| RTP Project ID | Project Name | County |
|----------------|---|-----------------|
| 2025-NNC01 | Gunter Switch (2236) to Collin Switch (2370) 138-kV Line Addition | Collin, Grayson |

Based on the February 2026 Generator Interconnection Status (GIS)⁸ report posted on the ERCOT website on March 4, 2026, one new generator in the study area that met

⁷ TPIT Report: <https://www.ercot.com/gridinfo/planning>

⁸ GIS Report: <https://www.ercot.com/misapp/GetReports.do?reportTypeId=15933>

Planning Guide Section 6.9(1) conditions with a Commercial Operations Date (COD) prior to June 2031 was added to the study base case, as listed in Table 3.2. The generation dispatch was kept consistent with the 2025 RTP methodology.

Table 3.2: List of Generation Added to the Study Base Case Based on the February 2026 GIS Report

| GINR | Project Name | Fuel | Project COD | Max Capacity (~MW) | County |
|-----------|--------------|------|-------------|--------------------|--------|
| 25INR0101 | Drake BESS | OTH | 7/14/2026 | 257.3 | Collin |

Load in the ERCOT system was kept consistent with the 2025 RTP. The minimum reserve requirements were kept consistent with the 2025 RTP methodology.

3.3. Project Need

A steady-state reliability analysis was performed in accordance with NERC Reliability Standard TPL-001-5.1 and the ERCOT Planning Guide as described in Section 2.4 of this document. This analysis indicated thermal overloads under NERC P1(N-1). These issues are summarized in Table 3.3 and visually illustrated in Figure 3.1. Detailed thermal overloads are listed in Table 3.4.

Table 3.3: Violations Observed Under NERC Reliability Standard TPL-001-5.1 and ERCOT Planning Guide in the Study Area

| NERC Contingency Category | Thermal Overloads | Voltage Violations | Unsolved Power Flow |
|---------------------------|-------------------|--------------------|---------------------|
| P0: N-0 | None | None | None |
| P1, P2-1, P7: N-1 | 3 | None | None |
| P3: (G-1+N-1) | None | None | None |
| P6-2: (X-1+N-1) | None | None | None |

Table 3.4: Thermal Overloads Observed in the Study Area

| NERC Contingency Category | Overloaded Element | Voltage Level (kV) | Length (~miles) | Max Loading (%) |
|---------------------------|---------------------------|--------------------|-----------------|-----------------|
| P1: N-1 | Gunter – Epco POI | 138 | 0.5 | 104.2 |
| P1: N-1 | Epco POI – Alla Hubbard | 138 | 2.6 | 106.0 |
| P1: N-1 | Alla Hubbard – Outer Loop | 138 | 0.5 | 100.7 |

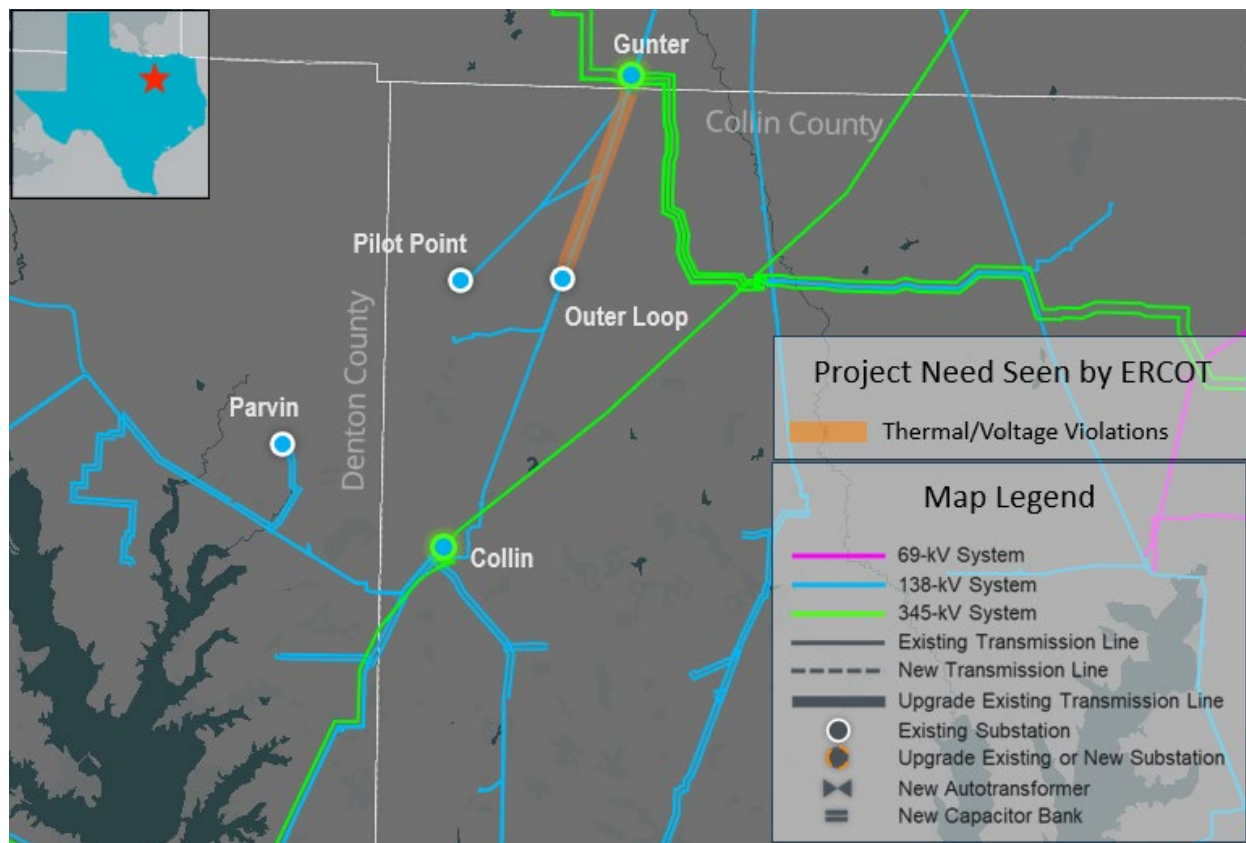


Figure 3.1: Study Area Map Showing Project Need Seen by ERCOT

3.4. Description of Project Options

ERCOT evaluated two system improvement options to address the thermal overloads that were observed in the study base case in the project study area.

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

- Install a second circuit by rebuilding the existing Gunter Switch to Collin Switch 138-kV transmission line to create the Gunter Switch to Collin 138-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, with normal and emergency ratings of least 764 MVA, for approximately 16.4 miles/circuit.



Figure 3.2: Map of Option 1

Option 2 (BEC and TNMP proposed solution) consists of the following:

- Construct a new Pilot Point to Parvin 138-kV single-circuit transmission line, on double-circuit-capable structures with one circuit in place, with normal and emergency ratings of at least 717 MVA, which will require a new ROW, for approximately 18.4 miles.

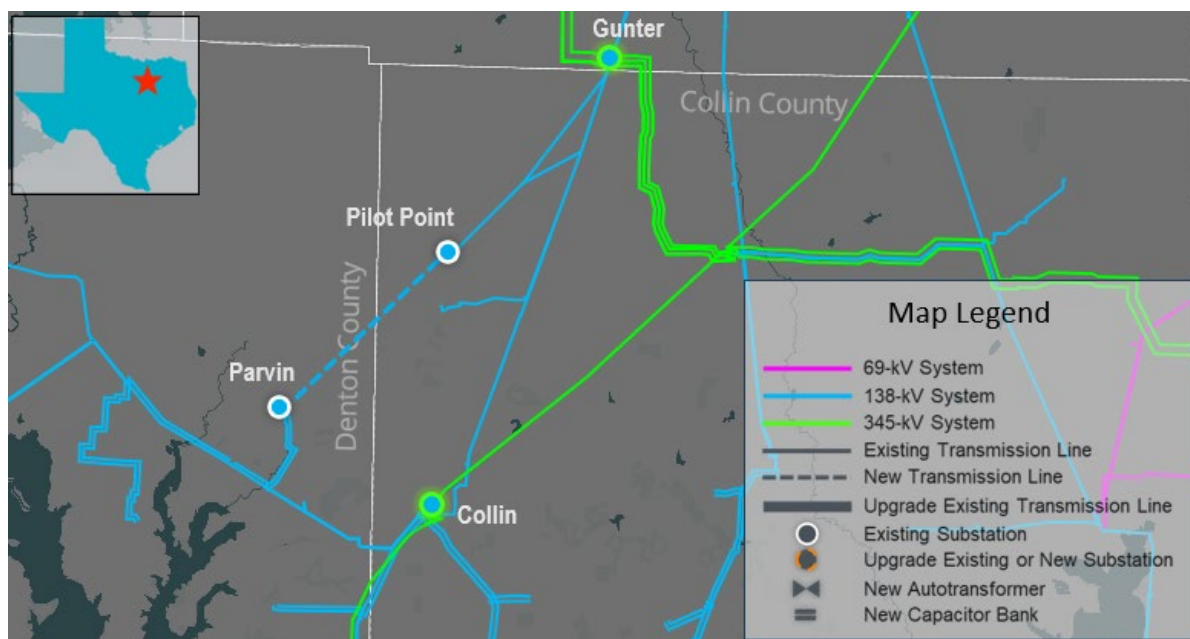


Figure 3.3: Map of Option 2

3.5. Option Evaluations

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

3.5.1. Results of Reliability Analysis

Both options were evaluated based on the contingencies described in Section 2.4 of this report. As shown in Table 3.5, neither option identified any reliability criteria violations.

Table 3.5: Results of Initial Reliability Assessment of Both Options

| Option | N-1 | | (X-1+N-1) | | (G-1+N-1) | | Unsolved Power Flow |
|--------|------------------|-------------------|------------------|-------------------|------------------|-------------------|---------------------|
| | Thermal Overload | Voltage Violation | Thermal Overload | Voltage Violation | Thermal Overload | Voltage Violation | |
| 1 | None | None | None | None | None | None | None |
| 2 | None | None | None | None | None | None | None |

3.5.2. Maintenance Outage Evaluation

Using the P1, P2.1, and P7 contingencies based on the review of the system topology of the study area, ERCOT conducted an N-2 contingency analysis for both options to represent system element outage(s) under 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 3.6, the results of this maintenance outage assessment indicate neither option resulted in any reliability criteria violations.

Table 3.6: Results of Maintenance Outage Evaluation for Both Options

| Option | Thermal Overloads | Voltage Violations | Unsolved Power Flow |
|--------|-------------------|--------------------|---------------------|
| 1 | None | None | None |
| 2 | None | None | None |

3.5.3. Long-Term Load-Serving Capability Analysis

ERCOT conducted a long-term load-serving capability assessment for both options to compare the relative performance of the two options.

An incremental load serving capability analysis was evaluated to assess the long-term load-serving capability of both options. The loads in the study area were increased (customer designated as non-scalable remained at the same level as in the study base case), and conforming loads outside of the North, North Central, and East Weather Zones were decreased to balance power.

The results show that both options provided additional long-term load-serving capability. Option 1 provides approximately 377 MW of additional incremental load-serving capability than Option 2, as shown in Table 3.7.

Table 3.7: Results of Long-Term Load-Serving Capability Assessment of Both Options

| Option | Incremental Load Serving Capability (~MW) |
|--------|---|
| 1 | 721 |
| 2 | 344 |

3.5.4. Cost Estimate and Feasibility Assessment

Oncor, TNMP, and BEC performed feasibility assessments and provided cost estimates for the two options. Table 3.8 summarizes the cost estimate, estimated mileage of CCN required, option feasibility, and expected year of complication for the two options.

Table 3.8: Cost Estimates and Expected ISD for Both Options

| Option | Cost Estimates (~\$M) | CCN Required (~Miles) | Construction Feasibility | Expected ISD (Month Year) |
|--------|-----------------------|-----------------------|--------------------------|---------------------------|
| 1 | 56.4 | 0 | Yes | May 2030 |
| 2 | 80.8 | 18.4 | Yes | November 2030 |

Based on TSPs' input, the CCN filing may result in a longer route and a later ISD for Option 2.

3.5.5. Comparison of the Two Options

The comparison of Option 1 and Option 2, with corresponding cost estimates provided by TSPs, is summarized in Table 3.9.

Table 3.9: Comparison of the Two Options

| | Option 1 | Option 2 |
|--|----------|---------------|
| Addresses the Project Needs | Yes | Yes |
| Met ERCOT and NERC Reliability Criteria | Yes | Yes |
| Improved Operational Flexibility (Maintenance Outages) | Yes | Yes |
| Improves Long-Term Load-Serving Capability (~MW) | 721 | 344 |
| CCN Needed (~miles) | No | Yes (18.4) |
| Construction Feasibility (Based on TSP assessment) | Yes | Yes |
| Capital Cost Estimates (~\$M) | 56.4 | 80.8 |
| Expected ISD | May 2030 | November 2030 |

ERCOT recommends Oncor's proposed Option 1 as the preferred option for the Group 3 upgrade to address the reliability need in the study area based on the following considerations:

- Option 1 addresses the project need in the study area and meets ERCOT and NERC reliability criteria;
- Option 1 is the least cost option;
- Option 1 provides better long-term load-serving capability than Option 2; and
- Option 1 does not require a CCN.

4. Additional Analysis and Assessment

The Group 2 and Group 3 upgrades of the Oncor Set 1 N/C Project and Set 2 N/C Project, with a cost estimate of approximately \$2.363 billion collectively, are categorized as a combined Tier 1 project, pursuant to ERCOT Nodal Protocol 3.11.4.3(1)(a). As required by ERCOT Planning Guide Section 3.1.3(4), ERCOT performed generation sensitivity analysis and considered load scaling impacts to identify the project performance. Additionally, an SSO Assessment was performed.

4.1. Generation Addition Sensitivity Analysis

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

Based on a review of the February 2026 GIS⁹ reports, twenty-nine (29) units were found within the study area that could have an impact on the Group 2 and Group 3 upgrades. These units, listed in Table 4.1, were added to the 2025 RTP 2031 Summer Peak case following the 2025 RTP methodology. ERCOT determined that the addition of these generators does not impact the Group 2 and Group 3 upgrades.

Table 4.1: List of Units that Could have an Impact on the Group 2 and Group 3 Upgrades

| GINR | Unit Name | County | Project COD | Fuel Type | Max Capacity (~MW) |
|-----------|----------------------------|-----------|-------------|-----------|--------------------|
| 24INR0075 | Blue Bird Solar | Johnson | 6/27/2028 | SOL | 773.0 |
| 24INR0117 | Utley Solar | Freestone | 5/11/2028 | SOL | 221.8 |
| 24INR0412 | Camino Ranch Solar SLF | Houston | 12/9/2028 | SOL | 296.4 |
| 24INR0420 | Camino Ranch Storage SLF | Houston | 12/9/2028 | OTH | 298.1 |
| 25INR0204 | Claxton Solar | Hopkins | 9/17/2027 | SOL | 150.6 |
| 25INR0247 | Bluebonnet Prairie Wind | Navarro | 7/15/2027 | WIN | 173.0 |
| 25INR0616 | Bobcat Bluff Storage SLF | Archer | 4/15/2027 | OTH | 0.0 |
| 25INR0661 | McCrae Energy Storage | Erath | 9/25/2028 | OTH | 306.4 |
| 26INR0033 | Fairway Storage | Freestone | 9/24/2027 | OTH | 120.3 |
| 26INR0252 | Neutron Storage | McLennan | 4/29/2028 | OTH | 104.5 |
| 26INR0256 | Camino Ranch Solar 2 SLF | Houston | 12/9/2028 | SOL | 237.2 |
| 26INR0257 | Camino Ranch Storage 2 SLF | Houston | 12/9/2028 | OTH | 238.5 |

⁹ February 2026 GIS Report: <https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER>

| GINR | Unit Name | County | Project COD | Fuel Type | Max Capacity (~MW) |
|-----------|----------------------------|-------------|-------------|-----------|--------------------|
| 26INR0409 | Lucky 7 Solar | Hopkins | 9/20/2027 | SOL | 101.4 |
| 26INR0531 | West Munday Wind | Knox | 6/30/2028 | WIN | 351.9 |
| 27INR0022 | Panhandle Flagship Solar 1 | Carson | 6/30/2031 | SOL | 439.4 |
| 27INR0025 | Panhandle Flagship Storage | Carson | 6/30/2031 | OTH | 371.7 |
| 27INR0105 | Starlight Solar | Mills | 5/9/2030 | SOL | 130.7 |
| 27INR0107 | Starlight Storage | Mills | 5/9/2030 | OTH | 104.7 |
| 27INR0140 | Kingsmill Wind SLF | Carson | 9/1/2029 | WIN | 606.3 |
| 27INR0173 | Trenno BESS | Johnson | 9/13/2027 | OTH | 202.6 |
| 27INR0181 | Elk Unit 4 | Hale | 2/28/2027 | GAS | 210.0 |
| 27INR0313 | Spindletop Solar | Nacogdoches | 12/29/2027 | SOL | 286.0 |
| 27INR0314 | Spindletop Storage | Nacogdoches | 6/30/2027 | OTH | 142.6 |
| 27INR0581 | Limitless Energy Hub I | Wilbarger | 12/1/2028 | GAS | 1,238.3 |
| 27INR0582 | Limitless Energy Hub II | Wilbarger | 12/1/2028 | GAS | 1,238.3 |
| 28INR0008 | Oriole Solar | Knox | 12/29/2028 | SOL | 503.9 |
| 28INR0009 | Oriole BES | Knox | 12/29/2028 | OTH | 150.4 |
| 29INR0003 | Aurelius Solar | Deaf Smith | 6/30/2028 | SOL | 1,124.2 |
| 29INR0004 | Aurelius Wind | Deaf Smith | 6/30/2028 | WIN | 621.6 |

4.2. Load Scaling Sensitivity Analysis

ERCOT Planning Guide Section 3.1.3(4)(b) requires an evaluation of the potential impact of load scaling on the criteria violations seen in the 2024 and 2025 RTP studies. Before 2024, ERCOT's 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's 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 such, a load scaling sensitivity analysis is no longer needed.

4.3. Subsynchronous Oscillations (SSO) Assessment

Pursuant to ERCOT Nodal Protocol Section 3.22.1.3(2), ERCOT conducted an SSO screening for the Group 2 and Group 3 upgrades and found no adverse SSO impacts to the existing and planned generation resources in the study area.

5. Conclusion

ERCOT reviewed the studies in the 2024 and 2025 RTP evaluations for the Group 2 upgrades and performed additional assessments. ERCOT evaluated two transmission upgrade options to resolve the thermal overloads in the study area for the Group 3 upgrade. Based on the results of the EIR, ERCOT recommends Oncor's proposed Option 1 as the preferred solution for the Group 3 upgrade because it addresses the project needs, meets ERCOT and NERC reliability standards, is the least cost option, improves long-term load-serving capability for future load growth in the area, and does not require a CCN. Based on the results of the EIR, ERCOT recommends the Group 2 and Group 3 upgrades of the Oncor Set 1 N/C Project and Set 2 N/C Project because they address all project needs with no reliability violations and further enhance system reliability.

ERCOT's recommended project (Group 2 and Group 3 upgrades) consists of the following upgrades:

- Rebuild the existing Venus Switch to Old Country Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA (due to the limit of existing 3200 A terminal equipment); and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 15.9 miles/circuit;
 - The existing infrastructure is from 1970s.
- Rebuild the existing Notus Switch to Old Country Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 14.8 miles/circuit;
 - The existing infrastructure is from 1970s.
- Rebuild the existing Hagansport (f/k/a Monticello Tap) Switch to Sulphur Springs East Tap 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 20.6 miles;
 - The existing infrastructure is from 1950s.

- Reconductor the existing Monticello Switch to Cash Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 62.3 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Valley Switch to Progress Park Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 326 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 15.6 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Cleburne 138-kV Switch by installing six 138-kV, 3200 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 3200 A;
- Rebuild the existing Cleburne Switch to Venus 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 19.5 miles;
 - The existing infrastructure is from 1980s.
- Rebuild the existing Red Hill Switch to Rio Vista Tap 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 6.6 miles;
 - The existing infrastructure is from 1950s.
- Rebuild the existing Commerce Switch to Crossroads Switch 138-kV transmission line (which is part of an existing 138-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 22.1 miles;
 - The existing infrastructure is from 2000s.
- Rebuild the existing Valley Switch to Valley South Switch 345-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of

1631 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 0.9 miles;

- The existing infrastructure is from 2000s.
- Rebuild the existing Valley 345-kV Switch by installing eight 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 5000 A;
- Rebuild the existing Anna 345-kV Switch by installing twelve 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 5000 A;
- Rebuild the existing Anna Switch to Valley Switch 345-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1912 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 26.6 miles;
 - The existing infrastructure is from 1960s.
- Reconductor the existing Paris Switch to Valley South Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 46.3 miles;
 - The existing infrastructure is from 2000s.
- Establish a new Lavon 345-kV Switch by installing six 345-kV, 5000 A circuit breakers in a breaker-and-a-half bus arrangement and adding two 138-kV, 3200 A circuit breakers:
 - Terminate the existing Allen Switch to Royse Switch/Stouts Creek Switch 345-kV double-circuit transmission line into the Lavon 345-kV Switch, which creates the new Allen Switch to Lavon Switch 345-kV double-circuit transmission line for approximately 11.9 miles/circuit (the north circuit will have normal and emergency ratings of 1072 MVA, the south circuit will have normal and emergency ratings of 1631 MVA) and the new Lavon Switch to Royse Switch/Stouts Creek Switch 345-kV double-circuit transmission line (the Lavon to Stouts Creek Switch 345-kV circuit will have normal and emergency ratings of 1072 MVA for approximately 69 miles, and the Lavon to Royse 345-kV circuit will have normal and emergency ratings of 1631 MVA for approximately 10.9 miles);
 - Install one 345/138-kV autotransformer with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively, at the Lavon Switch; and

- Ensure all associated terminal equipment meets or exceeds 5000 A for 345-kV and 3200 A for 138-kV.
- Construct a new Lavon Switch to Allen Switch 138-kV single-circuit transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater with normal and emergency ratings of at least 764 MVA, which will require a ROW for approximately 12.7 miles:
 - Install two 138-kV, 3200 A circuit breakers at Lavon 138-kV Switch and one 138-kV, 3200 A circuit breaker at Allen 138-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.
- Rebuild the existing Batchler Road Switch to Stainback Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater; increase the existing normal and emergency ratings of 1631 MVA to at least 2987 MVA; and ensure all associated terminal equipment meets or exceeds 5000 A, for approximately 3.2 miles/circuit;
 - The existing Infrastructure is from 1980s; and
 - Note: Stainback Switch Project was added as part of the 25RPG004 Southern DFW Load Interconnection and General Grid Strengthening Project.
- Install a second circuit by rebuilding the existing Gunter Switch to Collin Switch 138-kV transmission line to create the Gunter Switch to Collin Switch 138-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 495 MVA to at least 765 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 16.4 miles/circuit:
 - Install one 138-kV, 3200 A circuit breaker at Gunter 138-kV Switch; and
 - The existing infrastructure is from 2010s.
- Install one new 345/138-kV autotransformer at the existing DeSoto Switch with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively;
- Construct a new DeSoto Switch to Loop Nine Switch 138-kV single-circuit transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater with normal and emergency ratings of at least 764 MVA, which will require a new ROW for approximately 3.82 miles:
 - Install one 138-kV, 3200 A circuit breaker at Loop Nine and one 138-kV, 3200 A circuit breaker at DeSoto Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.

- Rebuild the existing south circuit of Loop Nine Switch to Watermill Switch 345-kV double-circuit transmission line using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 4.0 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Kaufman Northwest Switch to Seven Point 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 20.8 miles;
 - The existing infrastructure is from 1980s.
- Construct a new Greene Switch to Wilmer Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater with normal and emergency ratings of at least 2987 MVA, which will require a new ROW for approximately 3.0 miles/circuit:
 - Install two 345-kV, 5000 A circuit breakers at both the Greene 345-kV Switch and Wilmer 345-kV Switch;
 - Ensure all associated terminal equipment meets or exceeds 5000 A; and
 - Note: Greene Switch Project was submitted as part of the 25RPG004 Southern DFW Load Interconnection and General Grid Strengthening Project.
- Construct a new Jewett Switch to Greene Switch 345-kV double-circuit transmission line, on double-circuit-capable structures with both circuits in place, using a conductor rated at 5000 A or greater with normal and emergency ratings of at least 1912 MVA (due to the limit of existing 3200 A terminal equipment), which will require a new ROW for approximately 112.5 miles/circuit:
 - Install two 345-kV, 5000 A circuit breakers at Greene 345-kV Switch and three 345-kV, 3200 A circuit breakers at Jewett 345-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A.
- Upgrade the existing Benbrook 345/138-kV autotransformer #1 with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively. The normal and emergency ratings prior to the Tier 1 project are 552 MVA and 625 MVA, respectively;

- Install a second 345/138-kV autotransformer at the existing Gunter Switch with normal and emergency ratings of at least 700 MVA and 750 MVA, respectively, and install two 37.5 MVAr reactors on the tertiary winding of the autotransformer:
 - Install one 345-kV, 5000 A circuit breakers and two 138-kV, 3200 A circuit breakers at Gunter 345/138-kV Switch; and
 - Ensure all associated terminal equipment meets or exceeds 3200 A for 138-kV and 5000 A for 345-kV.
- Rebuild the existing Argyle 138-kV Switch by installing six 138-kV, 3200 A circuit breakers in a breaker-and-a-half bus arrangement; and ensure all associated terminal equipment meets or exceeds 3200 A;
- Rebuild the existing Argyle Switch to Highlands 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 7.5 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Argyle Switch to Corinth 138-kV transmission line section, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 314 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 2.9 miles;
 - The existing infrastructure is from 1950s.
- Rebuild the existing Argyle Switch to Krum Tap Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 210 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 8.54 miles;
 - The existing infrastructure is from 1960s.
- Rebuild the existing Rivercrest Switch to Hawk Hollow Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 25.5 miles:
 - Rebuild the existing Rivercrest 138-kV Switch, expand it to include a 138-kV switchyard with three 138-kV, 3200 A circuit breakers in a ring bus arrangement; and
 - The existing infrastructure is from 1950s.

- Rebuild the existing Hagansport (f/k/a Monticello tap) Switch to Rivercrest Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 2569 A or greater; increase the existing normal and emergency ratings of 186 MVA to at least 614 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 9.5 miles;
 - The existing infrastructure is from 1950s.
- Rebuild the existing Paris Switch to Valley Switch 138-kV transmission line, on double-circuit-capable structures with one circuit in place, using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 214 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 46.1 miles;
 - The existing infrastructure is from 2000s.
- Rebuild the existing Paris Switch to Commerce 138-kV transmission line section (which is part of an existing 138-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 250 MVA to at least 764 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 14.0 miles; and
 - The existing infrastructure is from 2000s.
- Reconductor the existing Allen Switch to Stouts Creek Switch 345-kV transmission line (which is part of an existing 345-kV double-circuit transmission line) using a conductor rated at 3200 A or greater; increase the existing normal and emergency ratings of 1072 MVA to at least 1912 MVA; and ensure all associated terminal equipment meets or exceeds 3200 A, for approximately 80.9 miles.
 - The existing infrastructure is from 1960s.

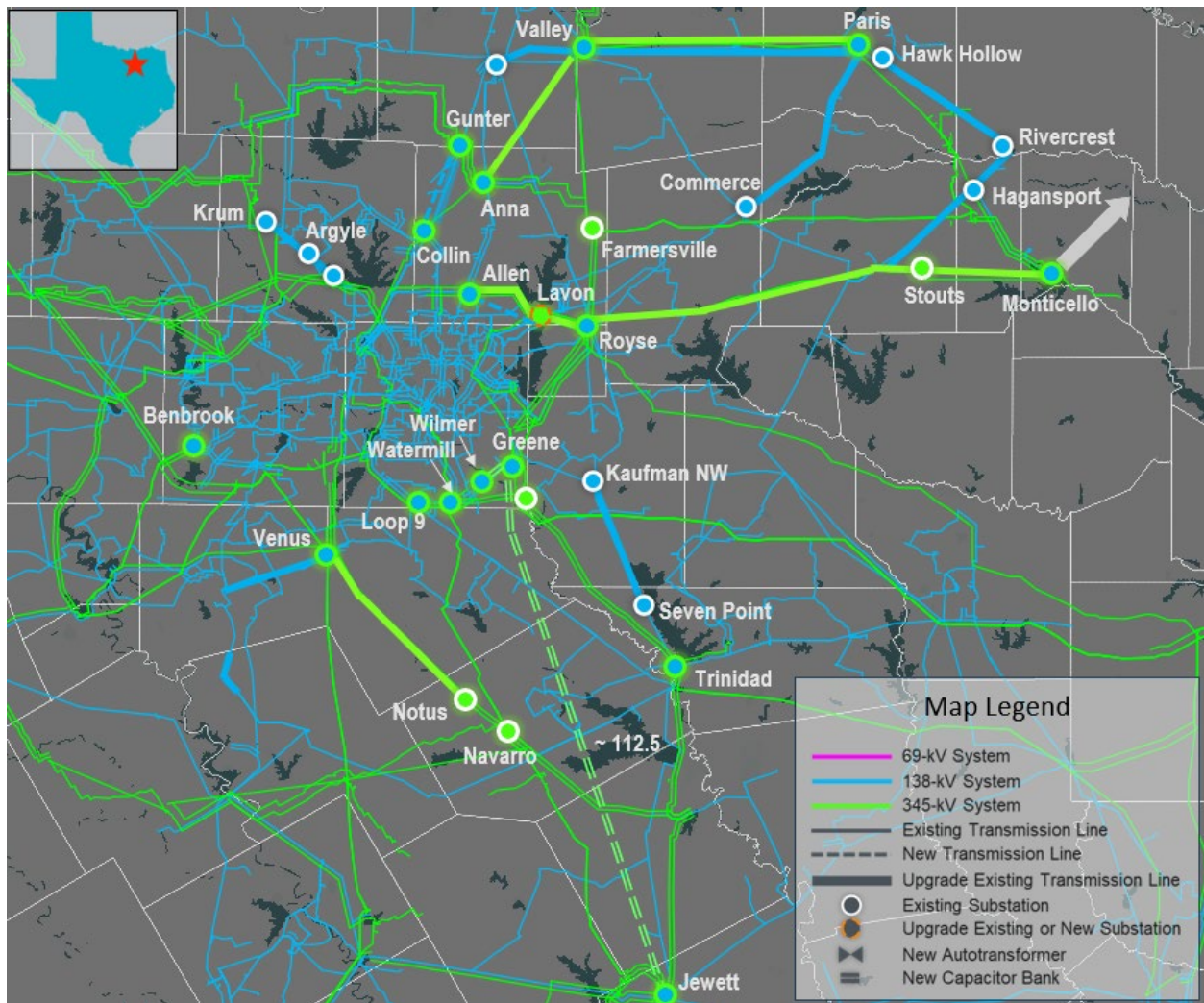


Figure 5.1: Map of ERCOT Recommended Project

The ERCOT recommended project (collective Group 2 and Group 3 upgrades) is estimated to cost approximately \$2.363 billion and classified as a Tier 1 project under ERCOT Protocol Section 3.11.4.3(a). The cost estimate includes the estimated capital cost with energized construction work.

The expected ISDs for the recommended upgrades are planned in phases to occur between 2028 to 2034. However, Oncor has advised that the projected ISD may change based on material availability, construction sequencing, and other project-specific factors. One or multiple CCN applications would be required for the construction of the new Lavon Switch to Allen Switch 138-kV single-circuit transmission line, the new DeSoto Switch to Loop Nine Switch 138-kV single-circuit transmission line, the new Greene Switch to Wilmer Switch 345-kV double-circuit transmission line, and the new



Jewett Switch to Greene Switch 345-kV double-circuit transmission line due to total approximately 131.0 miles of new ROW.

If necessary, Oncor will work with ERCOT to develop and implement Constraint Management Plans (CMPs) based on future operational conditions.

6. Appendix

A: Attachments

Table A.1: Project Related Documents

| No | Document Name | Attachment |
|----|---|---|
| 1 | Oncor Set 1 North and Central Texas Reliability Project |  Set1 Oncor North and Central Texas R |
| 2 | Oncor Set 2 North and Central Texas Reliability Project |  Set2 Oncor North and Central Texas R |