STEC Southeast Brownsville Large Load Transmission System Improvements Project – ERCOT Independent Review (EIR) Status Update

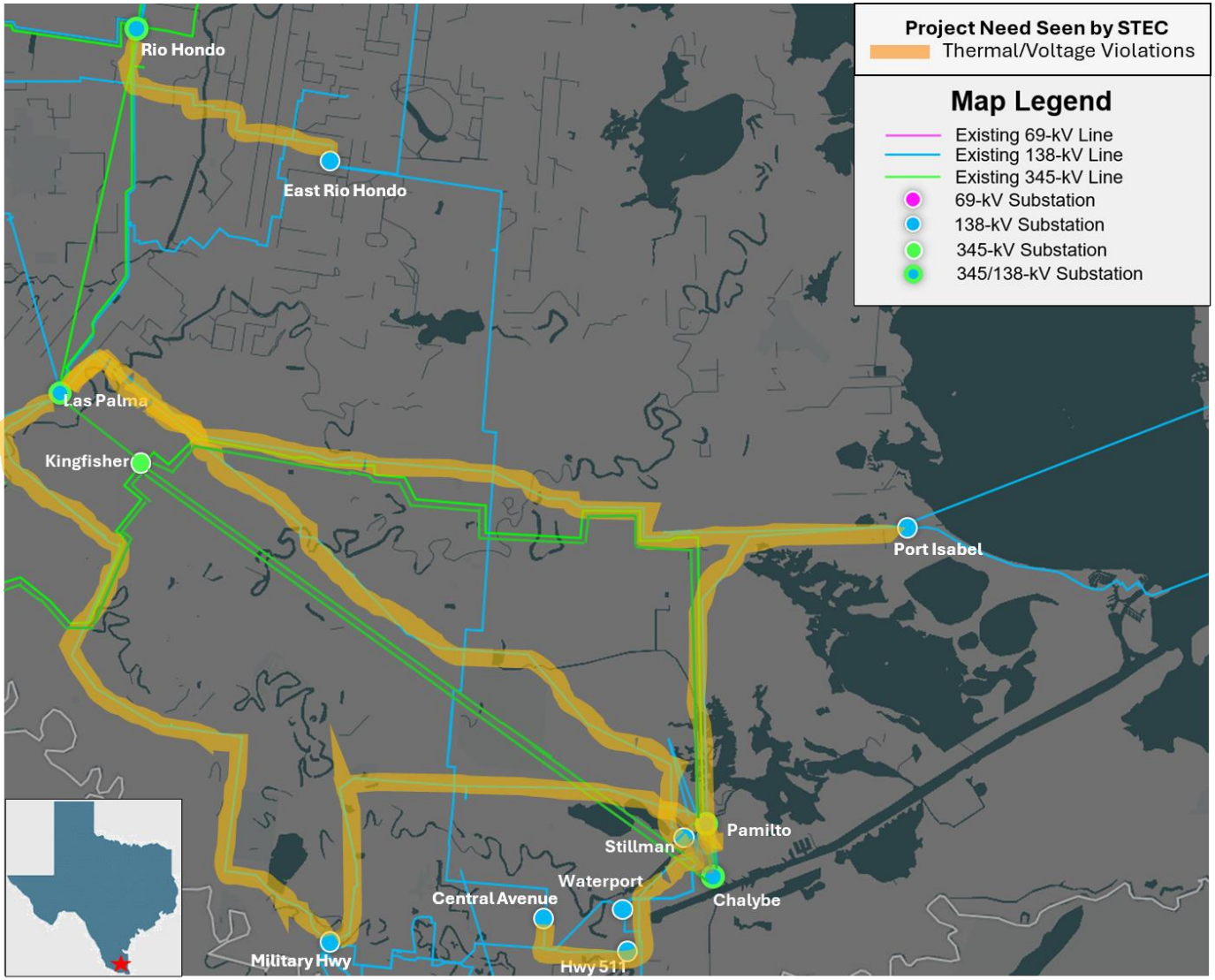
Ikponmwosa (Iyke) Idehen

RPG Meeting
March 17, 2026

Introduction

- STEC submitted the Southeast Brownsville Large Load Transmission System Improvements Project for Regional Planning Group (RPG) review in November 2025
  - This is a Tier 2 project with an estimated cost of $96.35 million and will require a Certificate of Convenience and Necessity (CCN)
  - Estimated in-service date (ISD) is June 2028
  - This project is needed to address post-contingency thermal violations in the Cameron County
- STEC presented a project overview at the January 2026 RPG Meeting
  - https://www.ercot.com/calendar/01162026-RPG-Meeting
- ERCOT provided a scope at the February 2026 RPG Meeting
  - https://www.ercot.com/calendar/02022026-RPG-Meeting
- This project is currently under ERCOT Independent Review (EIR)

Study Area Map with Project Need Seen by STEC



Updated – Study Assumptions

- Final 2025 Regional Transmission Planning (RTP) 2031 summer peak load case was used as the start case
- Transmission updates
  - List of new transmission projects added to the base case are in Appendix A.1
  - List of placeholder projects from the 2025 RTP that were removed from the study base case are in Appendix A.2
- Generation updates
  - No new generation added
- Load updates
  - Loads in study area were updated to create the study base case
- Reserve was maintained consistent with the 2025 RTP

Update – Study Assumptions – Transmission

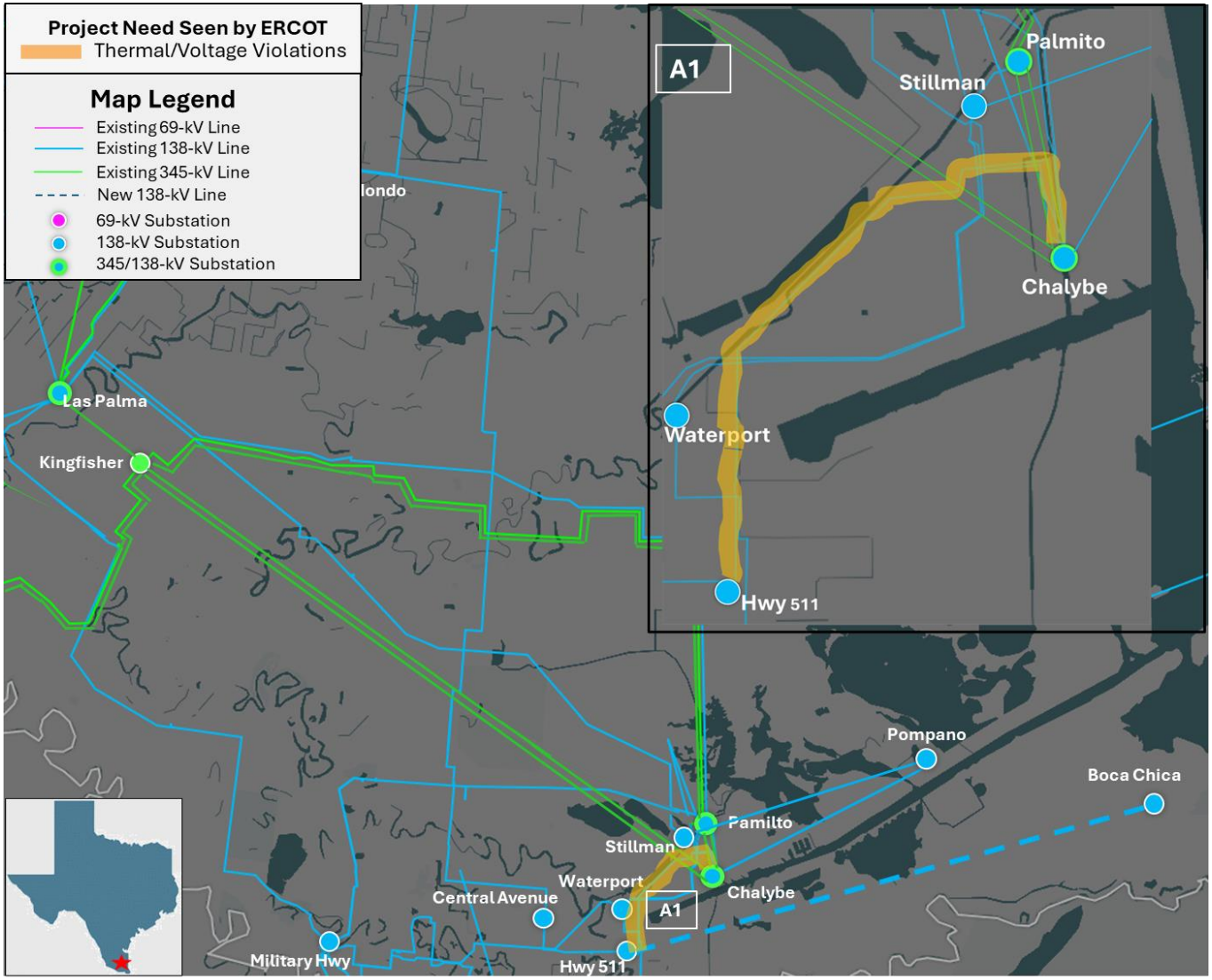
- Based on the October 2025 Transmission Project and Information Tracking (TPIT) posted on the ERCOT website, no new projects within the study area with in-service dates before June 2028 that are not already modeled in the case

Preliminary Results of Reliability Assessment – Need Analysis – Updated Base Case

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

- *See Appendix B for list of G-1 generators and X-1 transformers tested
- **A violation seen in the basecase under P1 events was also seen under G-1+N-1 event

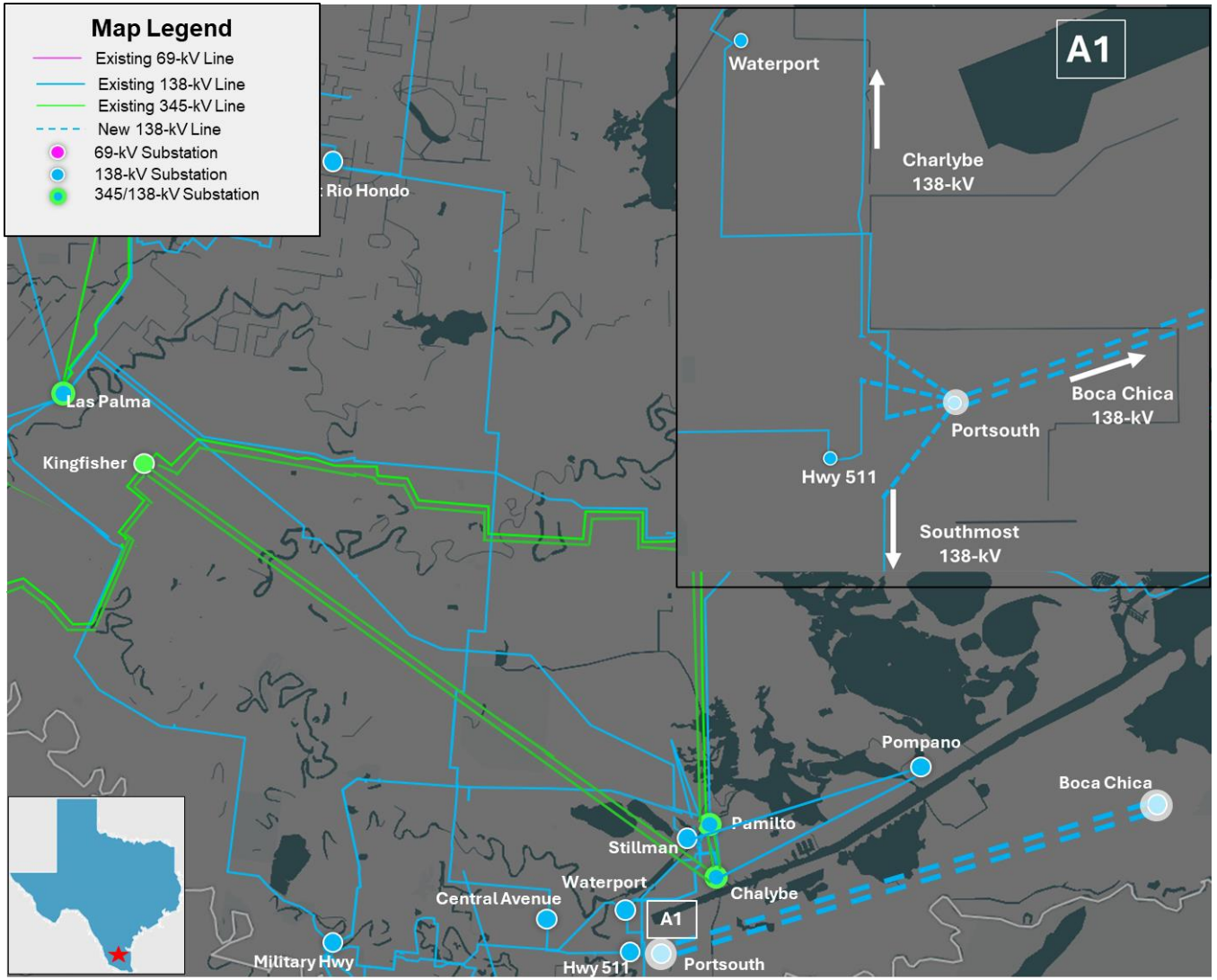
Study Area Map with Project Need Seen by ERCOT



Option 1 – STEC Proposed Project

- Construct a new Portsouth 138-kV substation with six terminals;
- Hairpin the new Portsouth 138-kV substation onto the existing Hwy511 to South Carbide (Chalybe) 138-kV transmission line using single-circuit structures;
- Hairpin the new Portsouth 138-kV substation onto the existing Waterport to Southmost 138-kV transmission line using single-circuit structures;
- Construct a new Boca Chica 138-kV substation with six terminals as a Gas-Insulated substation;
- Construct a new Portsouth to Boca Chica 138-kV double-circuit transmission line using double-circuit structures, with normal and emergency ratings of at least 478 MVA and 485 MVA respectively, on a new right of way (ROW), approximately 19.1 miles; and
- Rebuild the existing South Carbide (Chalybe) to Portsouth to Hwy511 138-kV transmission line segments using single-circuit structures with normal and emergency ratings of at least 478 MVA and 485 MVA respectively, approximately 4.45 miles.

Option 1 – STEC Proposed Project



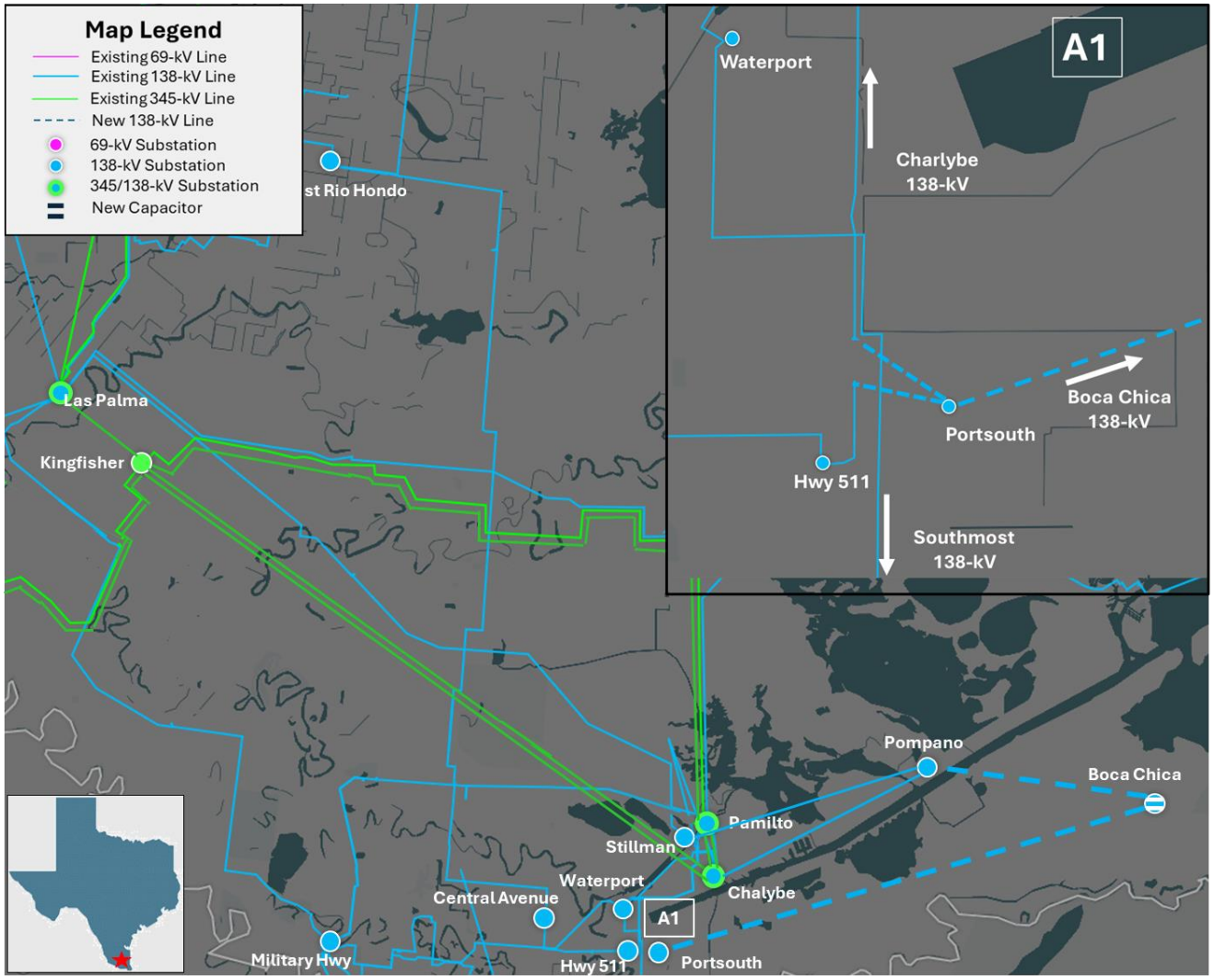
Option 2 – STEC Alternative Project

- Construct a new Portsouth 138-kV substation with six terminals;
- Hairpin the new Portsouth 138-kV substation onto the existing Hwy511 to South Carbide (Chalybe) 138-kV transmission line using single-circuit structures;
- Construct a new Boca Chica 138-kV substation with six terminals as a Gas-Insulated substation;
- Construct a new Portsouth to Boca Chica 138-kV single-circuit transmission line, with normal and emergency ratings of at least 478 MVA and 485 MVA respectively, on a new ROW, approximately 19.1 miles;
- Construct a new Pompano to Boca Chica 138-kV single-circuit transmission line, with normal and emergency ratings of at least 478 MVA and 485 MVA respectively, on a new ROW, approximately 8 miles; and

Option 2 – STEC Alternative Project

- Install 150 MVAr cap bank at the Boca Chica 138-kV substation

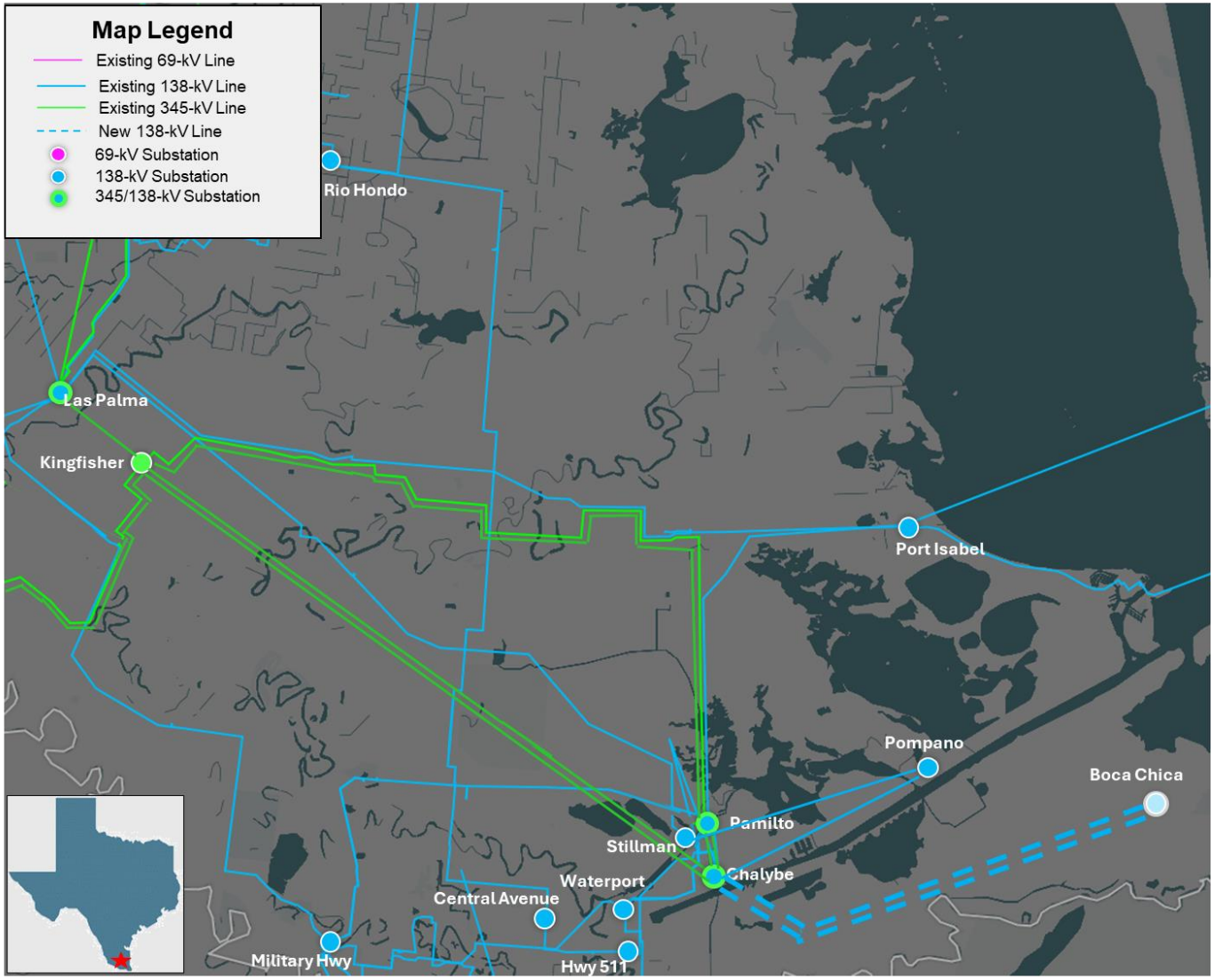
Option 2 – STEC Alternative Project



Option 3 – ERCOT Proposed Project

- Construct a new Boca Chica 138-kV substation with six terminals as a Gas-Insulated substation; and
- Construct a new Chalybe to Boca Chica 138-kV double-circuit transmission line using double-circuit structures, with normal and emergency ratings of at least 478 MVA and 485 MVA respectively, on a new ROW, approximately 13.7 miles.

Option 3 – ERCOT Proposed Project



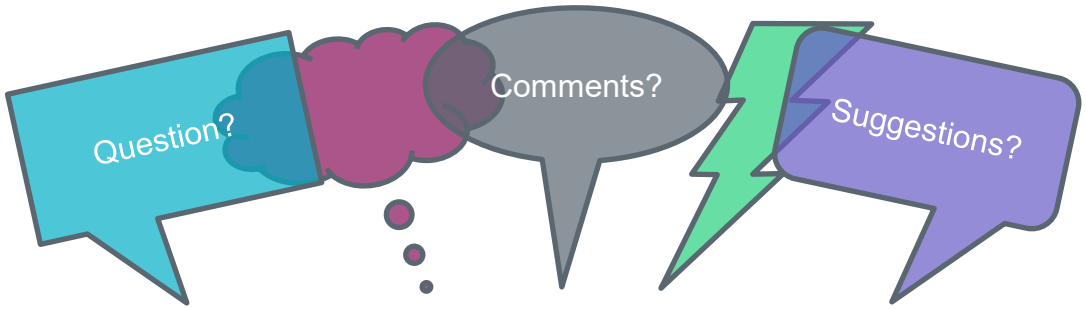
Preliminary Results of Reliability Assessment – Options

	N-1		G-1+N-1		X-1+N-1	
Option	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations	Thermal Violations	Voltage Violations
1	None	None	None	None	None	None
2	None	None	None	None	None	None
3	None	None	None	None	None	None

Next Steps and Tentative Timeline

- ERCOT will continue with project evaluation and perform the following
  - Conduct Maintenance Outage Evaluation
  - Conduct Long-Term Load-Serving Capability Assessment
  - Request TSP to Conduct Cost Estimate and Feasibility Assessment
- Additional analyses to be performed on the preferred option
  - Congestion Analysis to ensure that the identified transmission upgrades do not result in new congestion within the study area
- Tentative Timelines
  - Status updates at the future RPG meetings
  - Final recommendation – Q2 2026

Thank you!



Stakeholder comments also welcomed through:

ikponmwosa.idehen@ercot.com

Robert.Golen@ercot.com

Appendix A.1 – Transmission Projects Added

- List of recently approved RPG transmission projects added to study base case

RPG/TPIT No	Project Name	Tier	Project ISD	From County
80466	Oleander: Construct New 138 kV Terminal	Tier 4	5/1/2026	Cameron
100054	Luna to Mesquite: Rebuild 138 kV Line	Tier 4	12/1/2027	Cameron

Appendix A.2 – Transmission Projects Removed

- List of placeholder transmission projects that are directly related to proposed project were removed from the study base case

Project ID	Project Name	County(s)
2025-S06	North Edinburg Area 138-kV Line Upgrades	Cameron, Hidalgo
2025-S01	* Brownsville Area 345-kV and 138-kV Line Additions and Upgrades	Cameron

* Portion of 2025-S01 not covered by AEP Brownsville Area Improvements

Appendix B – G-1 Generators and X-1 Transformers

G-1 Generators	X-1 Transformers
San Roman Wind	Chalybe 345/138-kV
Chalupa Wind	Palmito 345/138-kV
Camwind WInd	La Palma 345/138-kV
Silas Ray (entire train)	Rio Hondo 345/138-kV
Silas Ray (1 gas, half steam): CTG 9 and STG 6	
Silas Ray CTG 10	
Magic Valley Station (entire train)	
Magic Valley Station CTG 1	
Los Vientos Wind I	