# Oncor West Texas 345-kV Infrastructure Rebuild Project – ERCOT Independent Review Update

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RPG Meeting
April 9, 2024

# Recap

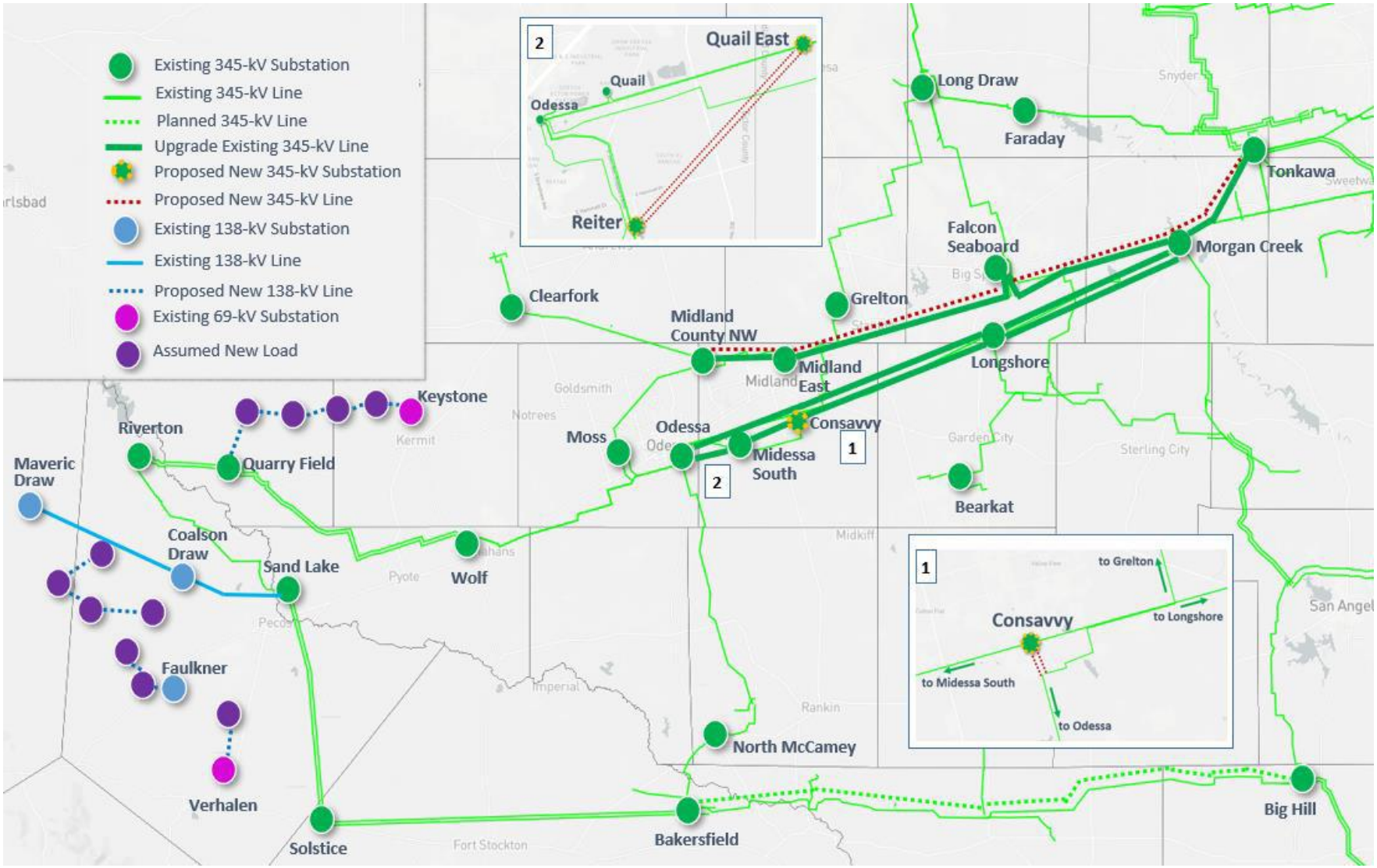
- Oncor submitted the West Texas 345-kV Infrastructure Rebuild Project for Regional Planning Group (RPG) review in November 2023
  - This Tier 1 project is estimated to cost $1.12 billion and will require a Certificate of Convenience and Necessity (CCN)
  - Estimated in-service date is Summer 2028
  - Addresses thermal overloads and load growth
- Oncor provided an overview presentation at January RPG Meeting
  - https://www.ercot.com/calendar/01172024-RPG-Meeting
- As part of the Independent review of this RPG project, ERCOT conducted an additional study to confirm the project need and that West Texas 345-kV Infrastructure Rebuild Project does address the need:
  - Scope: https://www.ercot.com/calendar/02122024-RPG-Meeting
  - Findings: https://www.ercot.com/calendar/03182024-RPG-Meeting
  - Congestion Analysis: In Progress

# Recap: Study Area with Project Need as Seen by Oncor

# Background

- As part of the efforts to address challenges associated with significant oil and gas load growth in the Far West Weather Zone, the lack of long-term load commitment, and need to ensuring that long lead time transmission improvements get in place in a timely manner, ERCOT previously completed two studies:
  1) Delaware Basin Load Integration Study in December 2019
  2) Permian Basin Load Interconnection Study in December 2021
- Project need and the West Texas 345-kV Infrastructure Rebuild Project submitted by Oncor are subsets of the overall need and improvements identified in the December 2021 Permian Basin Load Interconnection Study.
- ERCOT plans to use the results of the Permian Basin Load Integration Study to endorse Tier 1 or Tier 2 RPG projects if transmission upgrades recommended in the Permian Basin Load Integration Study are submitted for RPG review
- West Texas 345-kV Infrastructure Rebuild Project is ERCOT preferred Option.

# MAP – Preferred Upgrades



# Next Steps

## Tentative Timeline

- Report
  - April 2024
- ERCOT Independent Review recommendation to TAC
  - May 2024
- Seek ERCOT Board of Directors endorsement
  - June 2024

# Thank you!


Stakeholder comments also welcomed through:

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# Appendix – Preferred Upgrade

- ERCOT recommends the addition of the West Texas 345-kV Infrastructure Rebuild Project (WTIP) based on the review of the Permian Basin Load Interconnection Study completed December 2021, and the results from the additional studies
  - Construct a new Ranger Camp 345/138-kV substation, approximately 1.0 mile north of the existing Morgan Creek 345/138-kV Switch, with two new 600 MVA (nameplate) 345/138-kV transformers, in a 14-breaker 345-kV breaker-and-a-half bus arrangement and a 16-breaker 138-kV breaker-and-a-half bus arrangement, with one new 177 MVA (nameplate) 138/69-kV transformer, and a 2-breaker 69-kV single bus arrangement. All 345-kV equipment will be rating at least 2988 MVA, 138-kV at least 765 MVA and 69-kV at least 239 MVA.
    - Disconnect the following 345-kV lines at Morgan Creek and terminate at new Ranger Camp 345-kV:
      - Morgan Creek to Falcon Seaboard with approximately 1.4 miles in new right-of-way
      - Morgan Creek to Tonkawa with approximately 0.94 miles in new right-of-way

# Appendix – Preferred Upgrade – Cont.

- Disconnect the following 138-kV transmission lines at Morgan Creek and terminate at new Ranger Camp 138-kV:
  - Morgan Creek to Eskota
  - Morgan Creek to Barber Lake West
  - Morgan Creek to Barber Lake East
  - Morgan Creek to Sun
  - Morgan Creek to Cosden
- Disconnect the following 69-kV transmission lines at Morgan Creek and terminate at new Ranger Camp 69-kV:
  - Morgan Creek to Colorado City
  - Morgan Creek to Big Spring
- Relocate existing 177 MVA (nameplate) 138/69-kV transformer from Morgan Creek Switch to new Ranger Camp Switch

- Construct a new breaker-and-a-half rung with two new 345-kV breakers at Tonkawa 345-kV Switch. New breakers will be rating at least 2988 MVA
- Rebuild Morgan Creek (Ranger Camp) to Tonkawa 345-kV transmission line, replace with two new Morgan Creek (Ranger Camp) to Tonkawa 345-kV lines, with conductors rated to at least 2988 MVA, in existing (estimated 21.3-mile) right-of-way, installed on new, common double-circuit towers

# Appendix – Preferred Upgrade – Cont.

- Construct a new Cattleman 345/138-kV Switch, approximately 2.0 mile southwest of existing Morgan Creek 345/138-kV Switch, with two new 600 MVA (nameplate) 345/138-kV transformers, in a 15-breaker 345-kV breaker-and-a-half bus arrangement and a 9-breaker 138-kV breaker-and-a-half bus arrangement. All 345-kV equipment will be rating at least 2988 MVA and 138-kV at least 765 MVA
- Disconnect the following 345-kV transmission lines at Morgan Creek and terminate at new Cattleman 345-kV:
  - Morgan Creek to Champion Creek/LCRA Bitter Creek double circuit transmission lines with approximately 1.25 miles in new right-of-way
  - Morgan Creek to LCRA Gasconades with approximately 2.13 miles in new right-of-way
  - Morgan Creek to Consavvy
  - Morgan Creek to Longshore

# Appendix – Preferred Upgrade – Cont.

- Disconnect the following 138-kV transmission lines at Morgan Creek and terminate at new Cattleman 138-kV:
  - Morgan Creek to McDonald Road
- Construct two new Cattleman to Ranger Camp 345-kV transmission lines, with conductors rated to at least 2988 MVA, in a new (estimated 4.2-mile) right-of-way, installed on new, common double-circuit towers
- Rebuild Morgan Creek 138-kV Switch, in existing Morgan Creek 345/138-kV Switchyard from existing 12-breaker double-bus arrangement to a new 10-breaker 138-kV breaker-and-a-half bus arrangement
- Construct two new Morgan Creek to Morgan Creek CT Yard 138-kV transmission lines with separate single-circuit capable structures, leaving one vacant and the other occupied with conductors rated to at least 614 MVA in existing (estimated 0.1 mile) right-of-way
- Construct two new Morgan Creek to Ranger Camp 138-kV transmission lines, with conductors rated to at least 614 MVA, in existing (estimated 1.2-mile) right-of-way, installed on new, common double-circuit towers

# Appendix – Preferred Upgrade – Cont.

- Construct two new Morgan Creek to Cattleman 138-kV transmission lines, with conductors rated to at least 614 MVA, in existing (estimated 0.82-mile) right-of-way and new (estimated 2.48-mile) right-of-way, installed on new, common double-circuit towers
- Construct a new Prong Moss 345-kV Switch, approximately 29.4 miles southwest of existing Morgan Creek 345/138-kV Switch, and along the existing Morgan Creek to Midland East 345-kV corridor, and approximately 7.0 miles south of existing Falcon Seaboard generating station in a 12-breaker 345-kV breaker-and-a-half bus arrangement. All equipment will be rating at least 2988 MVA
  - Tap Prong Moss 345-kV Switch into existing Morgan Creek (Ranger Camp) to Falcon Seaboard 345-kV transmission line with, approximately 0.1 mile, new transmission line segment in new right-of-way
  - Tap Prong Moss 345-kV Switch into Morgan Creek (Ranger Camp) to Midland East 345-kV transmission line with, approximately 0.1 mile, new transmission line segment in new right-of-way
  - Rebuild Morgan Creek (Ranger Camp) to Prong Moss, replace with two new Morgan Creek (Ranger Camp) to Prong Moss 345-kV transmission lines with conductors rated to at least 2988 MVA, in existing (estimated 29.4-mile) right-of-way installed on new, common double-circuit towers

# Appendix – Preferred Upgrade – Cont.

- Rebuild Prong Moss to Midland East 345-kV line, replace with two new Prong Moss to Midland East 345-kV transmission lines with conductors rated to at least 2988 MVA, in existing (estimated 41.2-mile) right-of-way, installed on new, common double-circuit towers

- Rebuild Midland East to Midland County Northwest 345-kV transmission line, replace with two new Midland East to Midland County Northwest 345-kV transmission lines, with conductors rated to at least 2988 MVA, in 16.3 miles of existing (estimated 17.3-mile) right-of-way and 1.0 miles of new right-of-way, installed on new, common double-circuit towers
- Rebuild Longshore 345-kV Switch, and upgrade from existing 6-breaker ring-bus configuration to a 11-breaker 345-kV breaker-and-a-half bus arrangement. All equipment will be rating at least 2988 MVA
  - Disconnect the Morgan Creek (Cattleman) to Longshore Flyby 345-kV transmission line at Flyby and terminate at rebuild Longshore 345-kV with approximately 0.1 miles line in existing right-of-way
- Upgrade all terminal equipment at 2-breaker Midessa South 345-kV Switch to at least 2988 MVA
- Upgrade all terminal equipment at 3-breaker, ring bus, Quail East 345-kV Switch to at least 2988 MVA

# Appendix – Preferred Upgrade – Cont.

- Upgrade all terminal equipment on both breaker-and-a-half rungs of Odessa EHV 345-kV Switch to at least 2988 MVA
- Construct a new Reiter 345/138-kV Switch, approximately 3.0 mile south of the existing Odessa EHV 345/138-kV Switch, along the Odessa EHV to Moss/Wolf 345-kV double-circuit transmission line, with two new 600 MVA (nameplate) 345/138-kV transformers, in a 12-breaker 345-kV breaker-and-a-half bus arrangement and a 10-breaker 138-kV breaker-and-a-half bus arrangement. All 345-kV equipment will be rating at least 2988 MVA, and 138-kV at least 765 MVA
- Tap new Reiter 345-kV Switch into existing Odessa EHV to Moss 345-kV transmission line with, approximately 0.2 mile, new transmission line segment in new right-of-way
- Tap new Reiter 345-kV Switch into existing Odessa EHV to Wolf 345-kV transmission line with, approximately 0.1 mile, new transmission line segment in new right-of-way
- Tap new Reiter 345-kV Switch into existing Odessa EHV to Moss&Odessa EHV to Wolf 345-kV double-circuit transmission line with, approximately 0.1 mile, new transmission line segment in new right-of-way

# Appendix – Preferred Upgrade – Cont.

- Upgrade Tesoro 345-kV Switch by adding two new breaker-and-a-half rungs. New breakers will be rating at least 2988 MVA
- Construct two new Reiter to Tesoro 345-kV transmission lines, with conductors rated to at least 2988 MVA, in new (estimated 4.0-mile) right-of-way, installed on new, common double-circuit towers
- Rebuild Morgan Creek (Cattleman) to Odessa EHV 345-kV double-circuit transmission line, with conductors rated to at least 2988 MVA, in existing (estimated 88.7-mile) right-of-way installed on common double-circuit towers