



## **Item 12: Roanoke Area Upgrades RPG Project**

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Vice Present, Grid Planning and Operations

Board of Directors Meeting

ERCOT Public

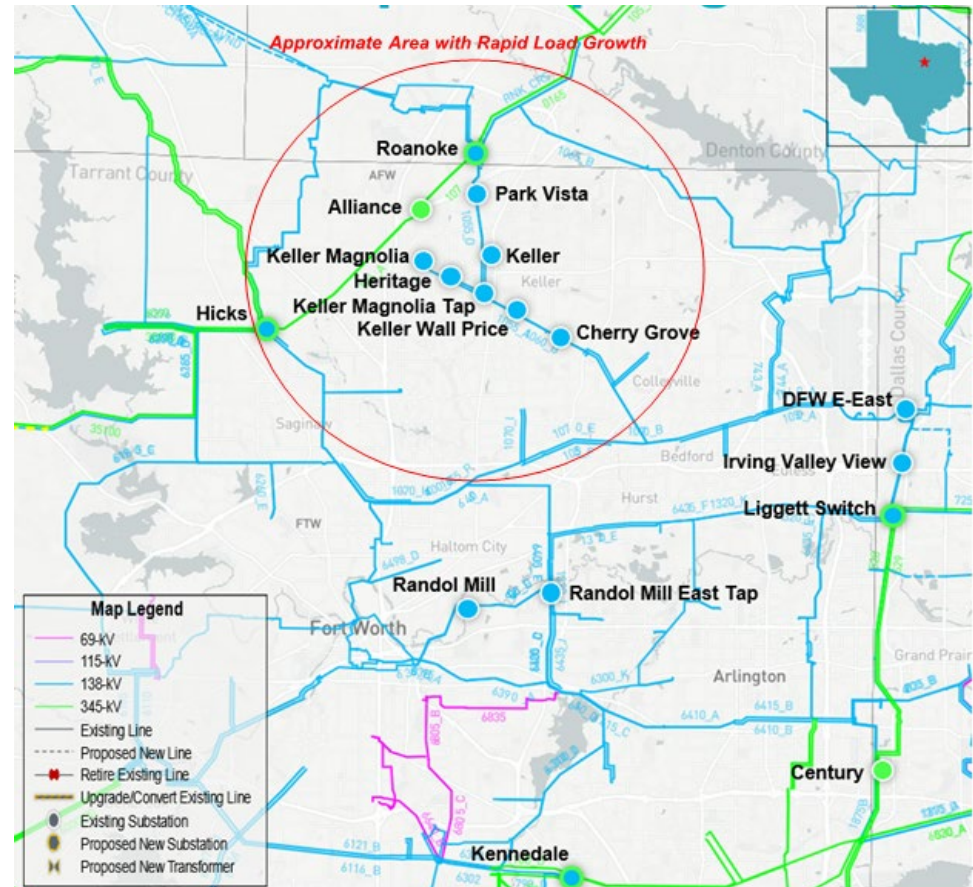
August 16, 2022

## Action

- At the conclusion of this presentation the Board of Directors will be asked to:
  1. Endorse the Roanoke Area Upgrades Regional Planning Group (RPG) Project based on NERC and ERCOT reliability planning criteria; and
  2. Designate the project as critical to the reliability of the ERCOT System pursuant to PUCT Substantive Rule 25.101(b)(3)(D)

# Roanoke Area Upgrades Project

- Oncor submitted the Roanoke Area Upgrades Project for RPG review in February 2022
- The purpose of the project is to address reliability needs driven by rapid load growth in the Roanoke area



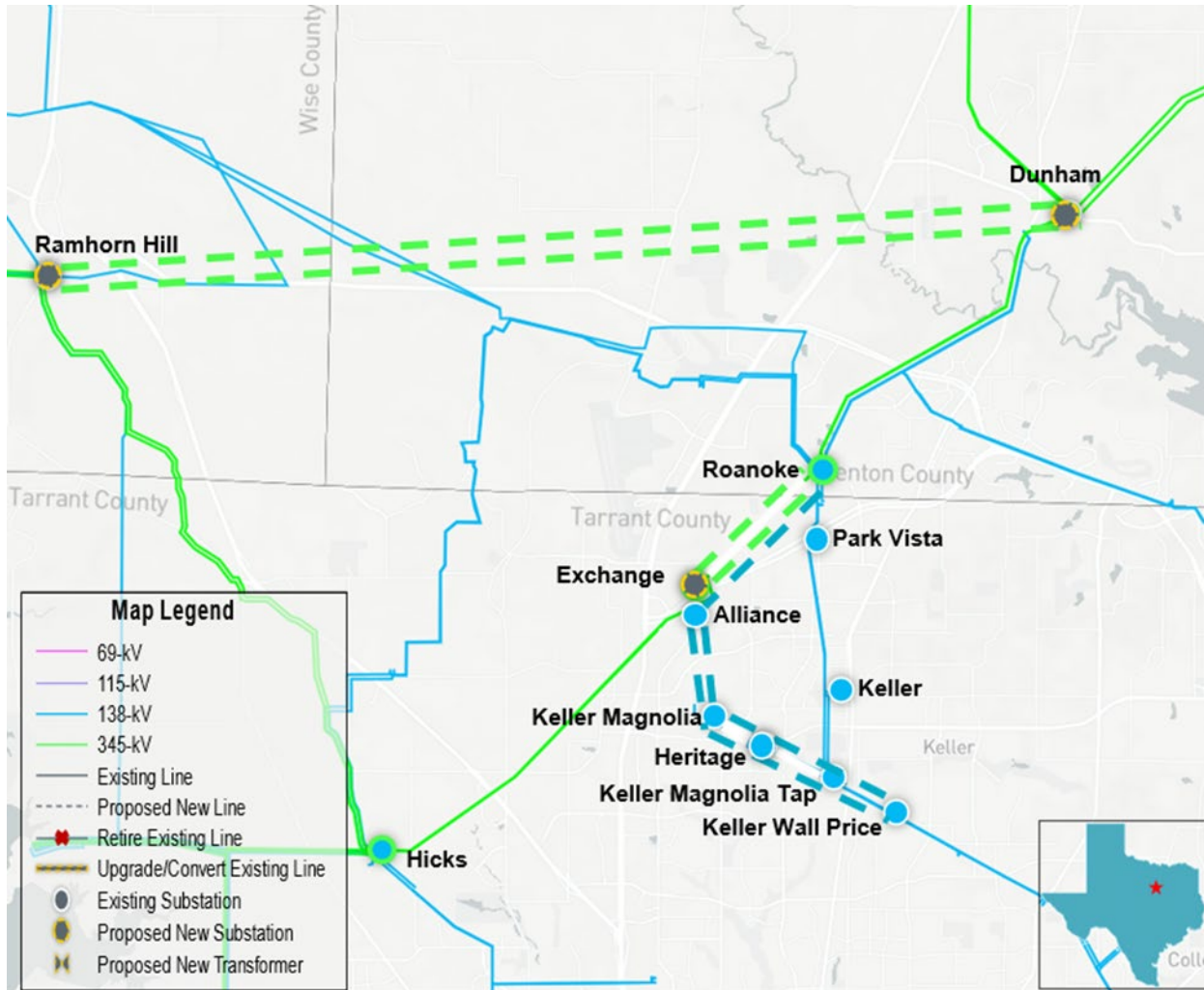
# TAC Endorsement

- ERCOT presented the project to the Technical Advisory Committee on July 27, 2022
- TAC voted unanimously to endorse the project (Option 2)

# Request for Board Vote

- ERCOT staff requests and recommends that the Board of Directors vote to endorse the need for the Roanoke Area Upgrades Project (Option 2) based on NERC and ERCOT reliability planning criteria
- ERCOT staff requests and recommend that Board of Directors designate the Roanoke Area Upgrades Project (Option 2) as critical to the reliability of the ERCOT System pursuant to PUCT Substantive Rule 25.101(b)(3)(D)

# Questions?



# ERCOT Recommendation: Option 2

- Construct a new Ramhorn Hill 345-kV switching station in a 10-breaker breaker-and-a-half arrangement tapped into existing double-circuit Hicks to Willow Creek 345-kV lines
- Construct a new Dunham 345-kV switching station in a 10-breaker breaker-and-a-half arrangement tapped into existing Lewisville to Krum West and Lewisville to Roanoke 345-kV lines
- Construct two new Ramhorn Hill to Dunham 345-kV transmission lines, with conductor rated to at least 2987 MVA, in a new (estimated 18.4-mile) right-of-way installed on new triple-circuit towers leaving one 138-kV vacant position
- Rebuild Exchange to Roanoke 345-kV double-circuit lines, upgrading both with conductors rated to at least 2987 MVA, using separate double-circuit capable structures for each line. The line rating will be 1912/1912 MVA limited by terminal equipment at Roanoke
- Construct a new Exchange to Roanoke 138-kV circuit, with conductor rated to at least 764 MVA, using one of the Exchange to Roanoke 345-kV line double-circuit capable structures
- Construct a new Exchange 345/138-kV Switching Station, adjacent to Alliance 345-kV substation, with two new 600 MVA (nameplate) transformers in an 8-breaker 345-kV breaker-and-a-half bus arrangement and a 9-breaker 138-kV breaker-and-a-half arrangement. The normal/emergency ratings of the new transformers will be 700/750 MVA
- Convert the existing Alliance 345-kV load serving substation to 138-kV load serving operation
- Construct a new Exchange to Alliance 138-kV double-circuit line with conductors rated to at least 746 MVA
- Construct a new Alliance to Keller Magnolia and Alliance to Heritage 138-kV double-circuit line with conductors rated to at least 746 MVA in a new (estimated 1.4-mile) right-of-way
- Upgrade the existing Keller Magnolia to Heritage 138-kV line with conductor rated to at least 746 MVA to be installed on Alliance to Keller Magnolia and Alliance to Heritage 138-kV double-circuit towers
- Upgrade the existing Heritage to Keller Magnolia Tap double-circuit lines with conductors rated to at least 746 MVA
- Construct a new 138-kV switching station at Keller Wall Price in a 6-breaker ring bus arrangement
- Disconnect the double-circuit Heritage to Keller Magnolia Tap lines at Keller Magnolia Tap and terminate both at Keller Wall Price by constructing two new 0.3-mile 138-kV transmission lines added to the existing Keller Magnolia Tap to Keller Wall Price right-of-way with both new line conductors rated to at least 746 MVA
- Retire Keller Magnolia Tap