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# LRGV TRANSMISSION IMPROVEMENTS UPDATE

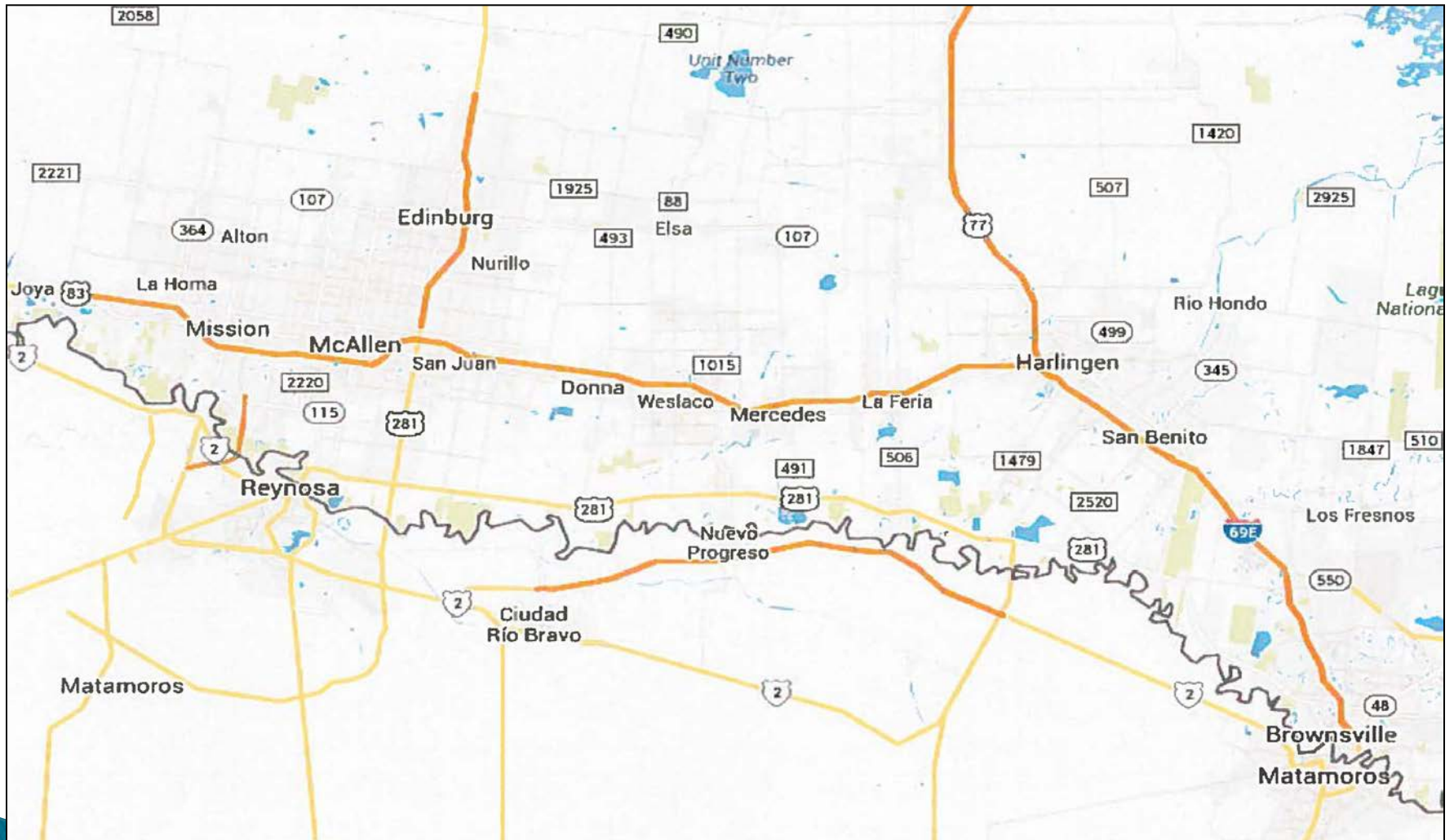
Meeting the increasing power needs of the  
Lower Rio Grande Valley

Wade Smith  
AEP Texas  
President and COO

# LOWER RIO GRANDE VALLEY

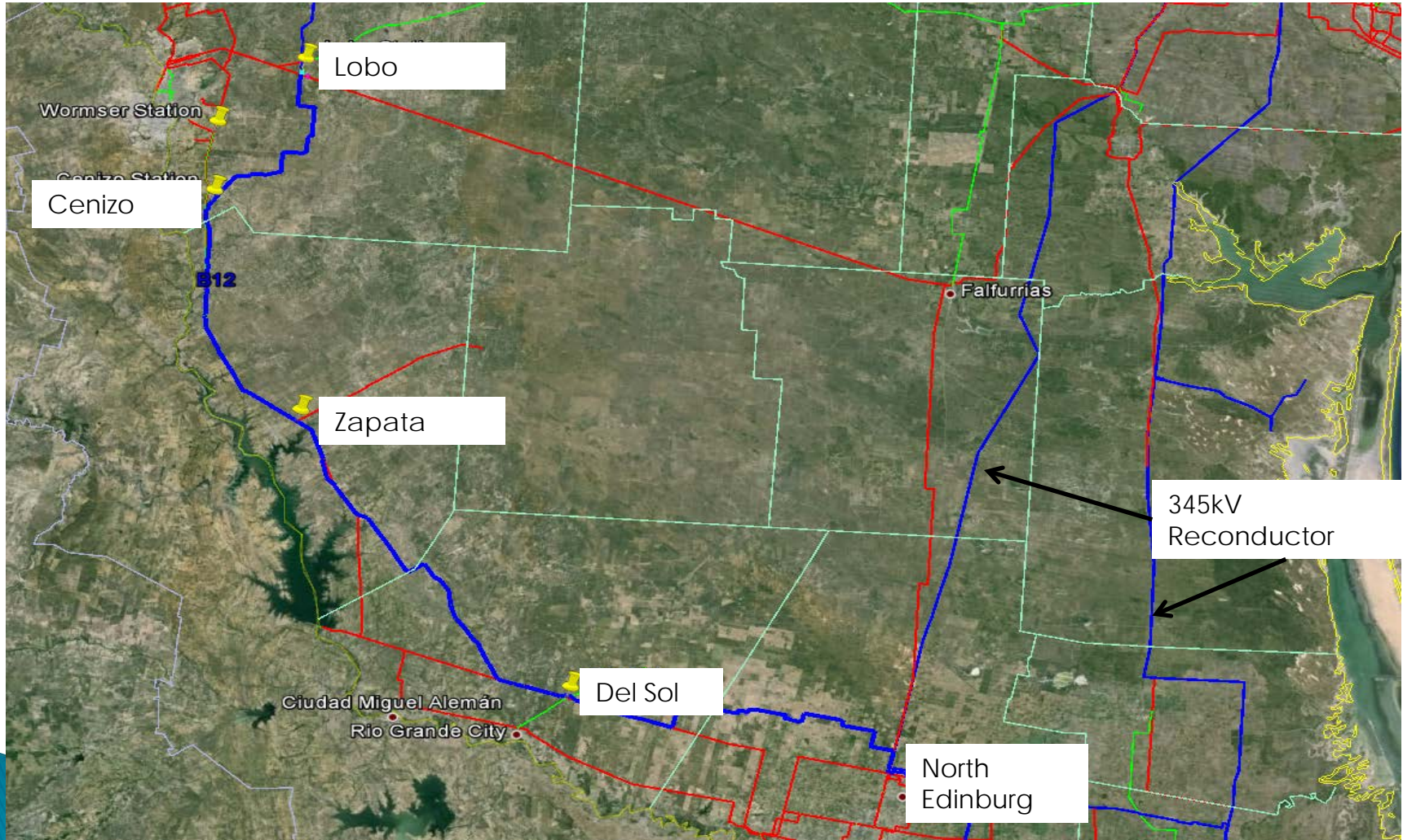
- ▶ On February 3, 2011, loading in the Lower Rio Grande Valley (LRGV) hit an all-time high of 2,734MW due to cold temperatures causing record loads. The high loading, along with transmission import limitations and a reduced generation supply due to forced and planned outages, moved operators to manual load shedding to prevent overload of the 345kV transmission system and potential cascading outages.
- ▶ In September 2011, ERCOT recommended system improvements to address the problem.

# LRGV AREA MAP





# VALLEY CONSTRAINT APPROVED TRANSMISSION PROJECTS MAP



# LOBO TO NORTH EDINBURG 345 KV DOUBLE CIRCUIT AND RECONDUCTORING

- This project addressed the potential substantial loss of electrical load that could result from the loss of the largest generation unit in the LRGV in combination with one of the two existing 345 kV lines into the LRGV.
- The ERCOT Board of Directors–endorsed project consisted of the following improvements:
  - New 345 kV double circuit capable (single circuit initially installed) transmission line from the existing Lobo Substation to the existing North Edinburg Substation.
  - Reconductor the existing Lon Hill–Nelson Sharpe–Ajo–Rio Hondo 345 kV transmission line.
  - Reconductor the existing Lon Hill–North Edinburg 345 kV transmission line.

# LOBO TO NORTH EDINBURG PROJECT UPDATE

- Lobo to North Edinburg transmission line Certificate of Convenience and Necessity (CCN) has been approved by the Public Utility Commission of Texas. Route length is approximately 156 miles.
- Scheduled in service date is July 1, 2016.
- 138 kV circuit from Lobo to the new Cenizo Substation (formerly Rio Bravo) segment of the line is scheduled to be in-service May 2015.
- ROW acquisition, engineering and material procurement is in progress and on schedule for all project components.
- One signed IA with financial commitment and additional wind projects are under study for 345kV connection in 2016.
- Property record accuracy in some counties is an ongoing ROW challenge.



# EXISTING 345 KV RECONDUCTOR UPDATE

- ▶ Rio Hondo to Ajo to Nelson Sharpe reconductoring has been completed.
- ▶ North Edinburg to Lon Hill reconductor will be 50% complete by November 2014. The remaining portion of the project is scheduled to be complete by July 2015.
- ▶ Nelson Sharpe to Lon Hill reconductor will be done last and is expected to be completed by January 2016.
- ▶ Majority of reconductor effort is done with the existing transmission lines energized.
- ▶ Considerable planning, care and coordination is required.
- ▶ Some structures replaced or repaired.
- ▶ At least one scheduled outage scheduled in March 2015 for transposition work.

# RECONDUCTOR ACTIVITY





# RECONDUCTOR ACTIVITY



# STRUCTURE ISSUES





# EVEN NATURE ISSUES

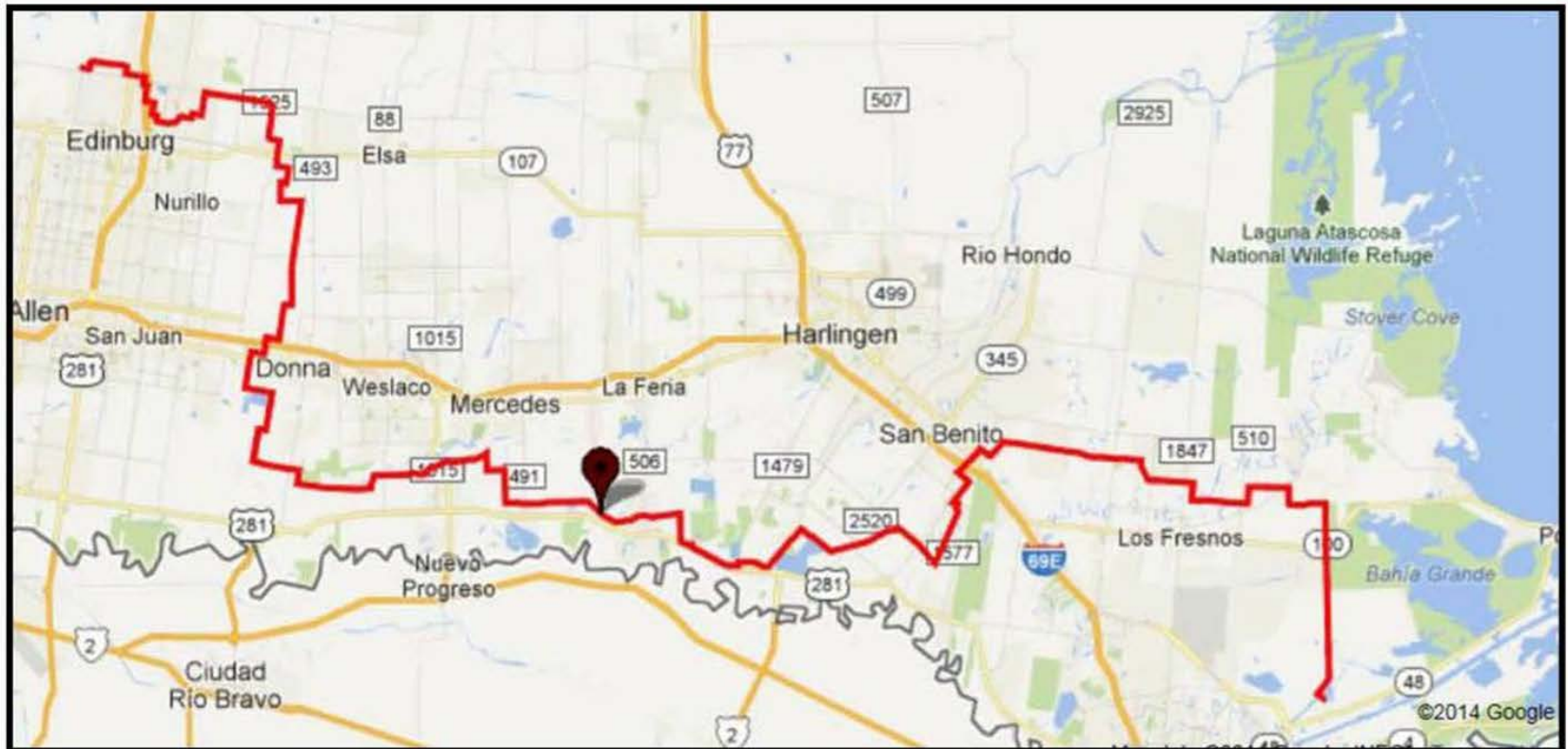




# N EDINBURG TO LOMA ALTA 345 KV

- ▶ This project addressed the potential substantial loss of electrical load in the eastern portion of the LRGV that could result from the loss of both of the 345 kV transmission lines into Rio Hondo. Also, addressed other outage combinations with less load loss potential.
- ▶ The ERCOT Board of Directors endorsed the construction of a new 345 kV double circuit capable transmission line from N Edinburg to Loma Alta. A new 345/138 kV auto also would need to be installed at Loma Alta.

# NORTH EDINBURG TO LOMA ALTA 345 KV LINE



# N EDINBURG TO LOMA ALTA UPDATE

- N Edinburg to Loma Alta Transmission Line CCN has been approved. Route length is approximately 97 miles.
- Eastern half of the project will be constructed and operated by Sharyland Utilities. Western half of the project will be constructed and operated by Electric Transmission Texas.
- Scheduled in service date is July 1, 2016.
- Easement acquisition is underway.
- Major issues to date have been continued residential and commercial development and new road plans resulting in several potential route modifications.



# FUTURE CHALLENGES

- ▶ Subsynchronous Oscillation – Studies underway
- ▶ Frontera switching – Studies underway
- ▶ Outages for project work – Continued careful planning and coordination