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# **West Texas Study (WTS) Update**

## **RPG Meeting**

July 21, 2015

# Addressing growing needs in West Texas

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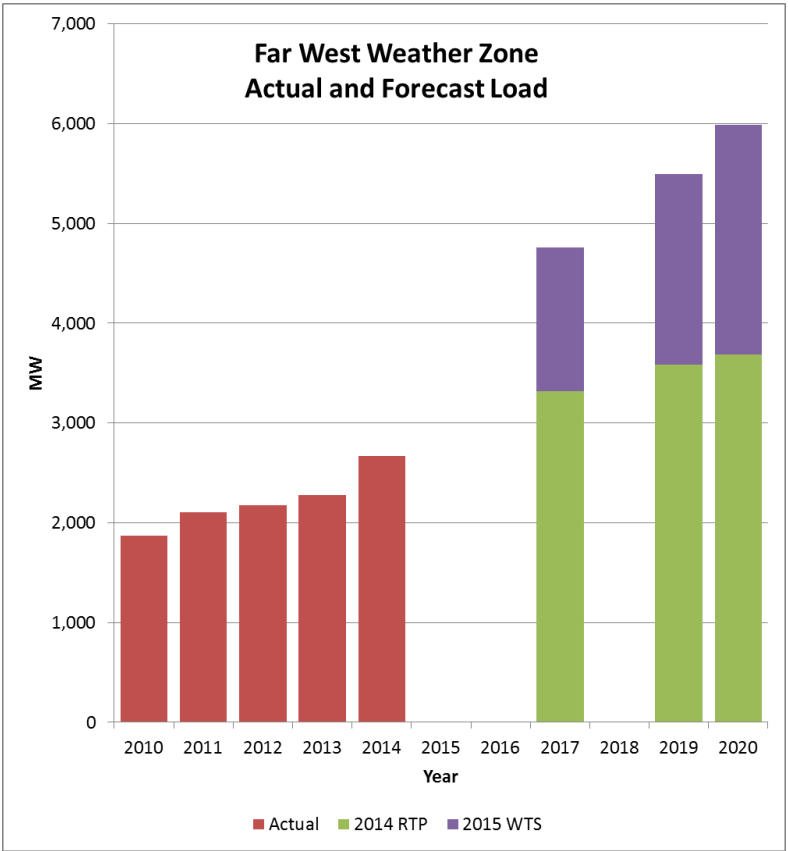
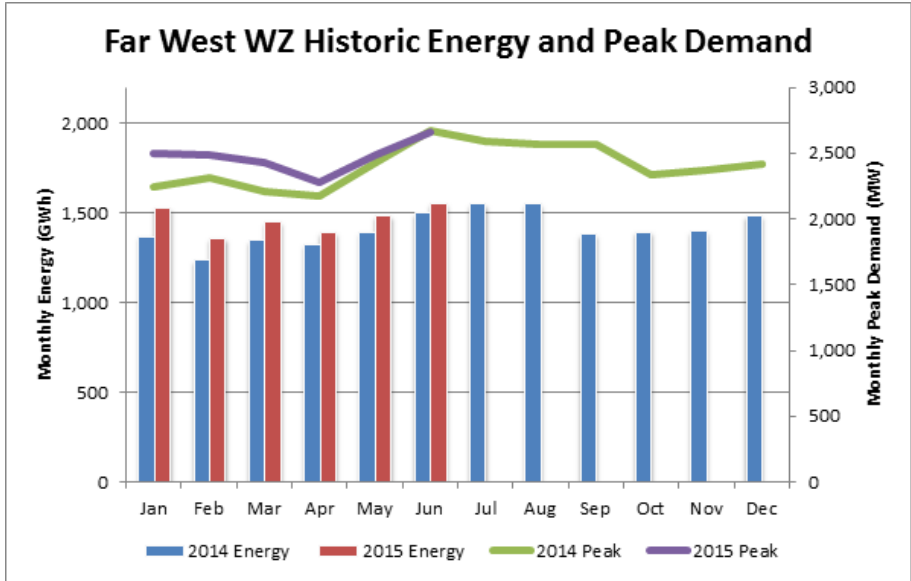
Peak demand up 40 percent since 2010 (Far West zone)

- Rapid growth of oil and gas exploration and production
- Higher power needs for horizontal drilling

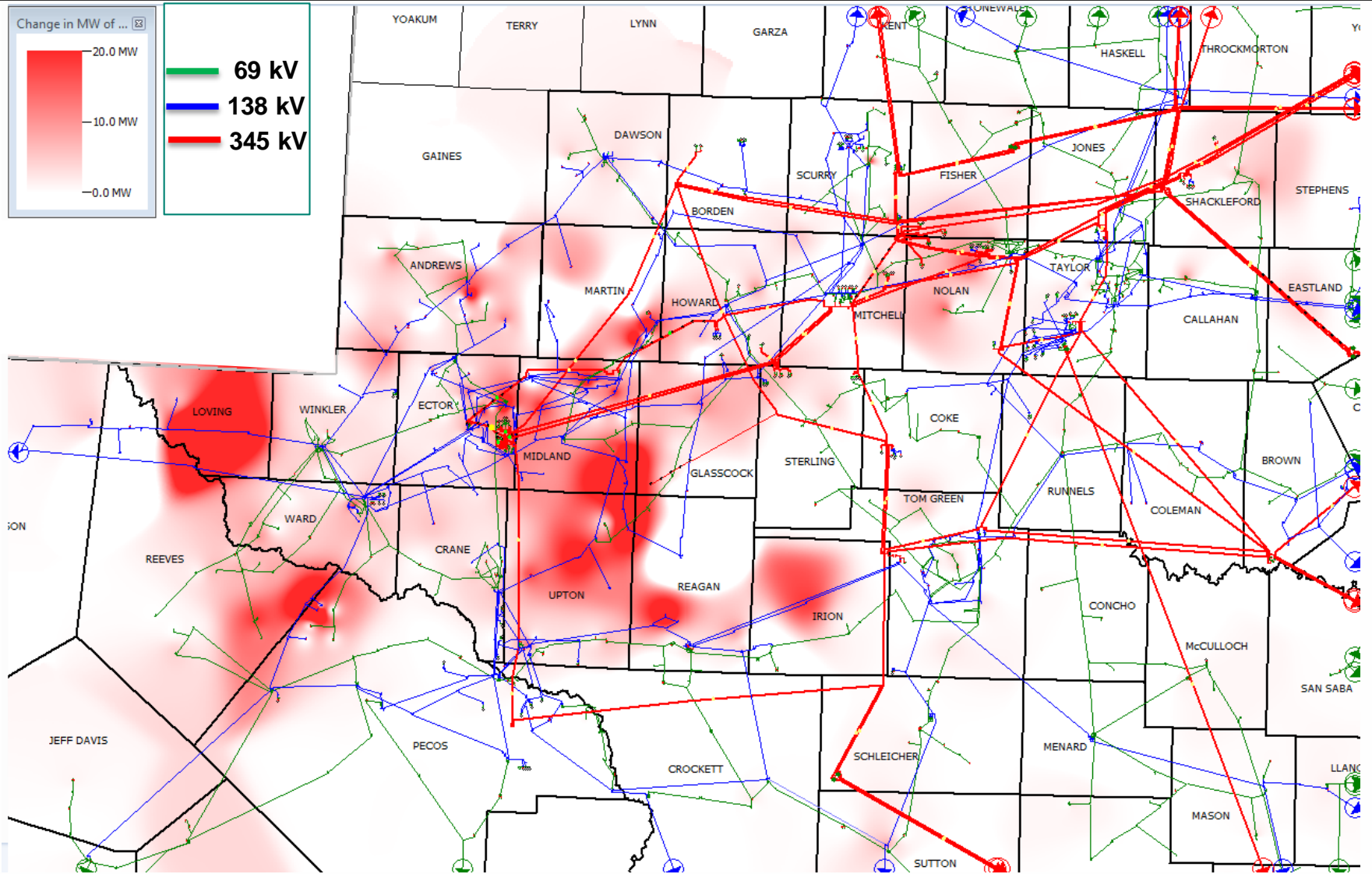
Projects to address current needs

- \$299 million in improvements in 2014 (mostly 69 kV and 138 kV)
- \$950 million in improvements planned through 2020 (most by 2018)
- Some work performed while energized

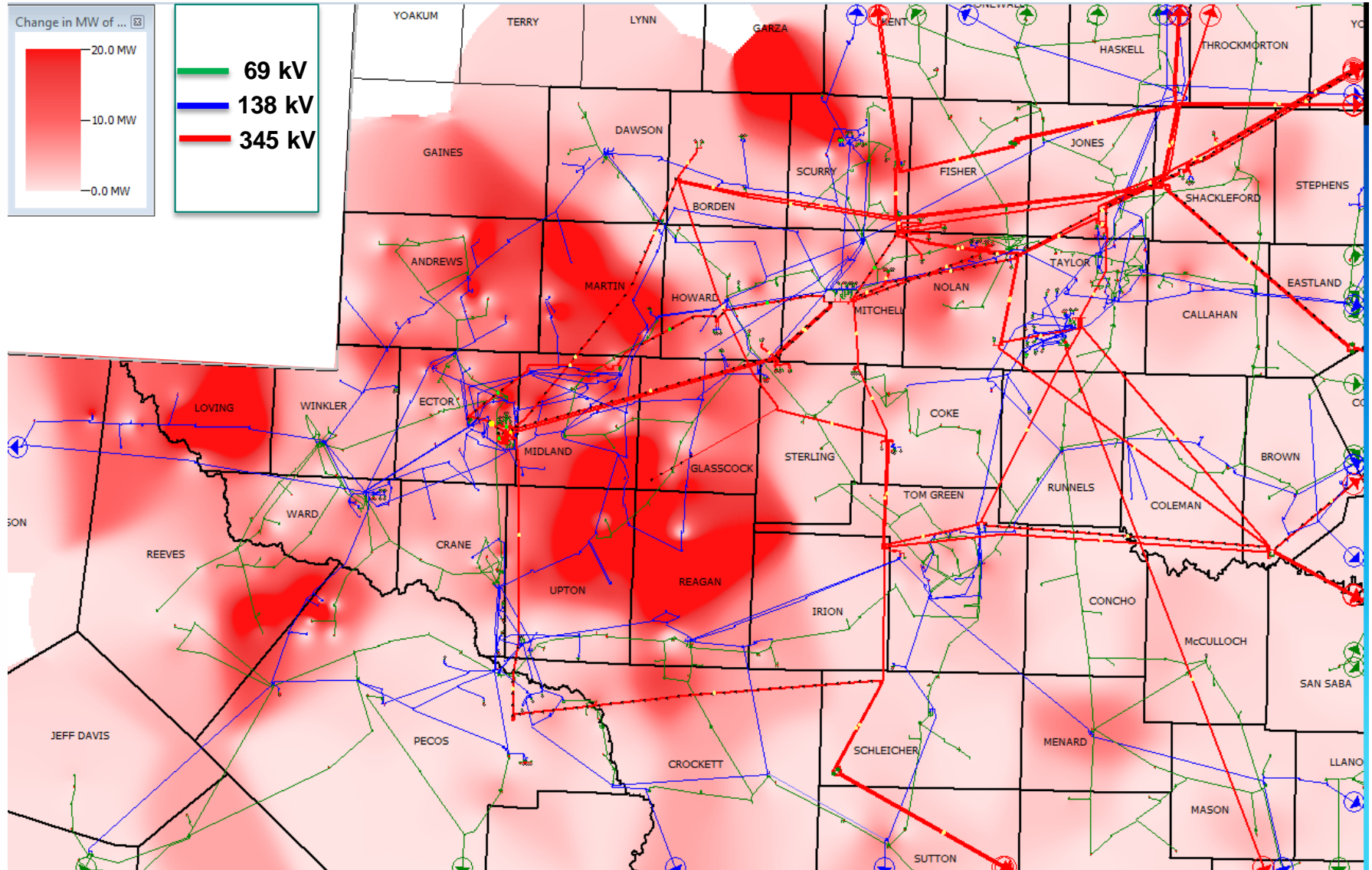
# West Texas Load and Forecast



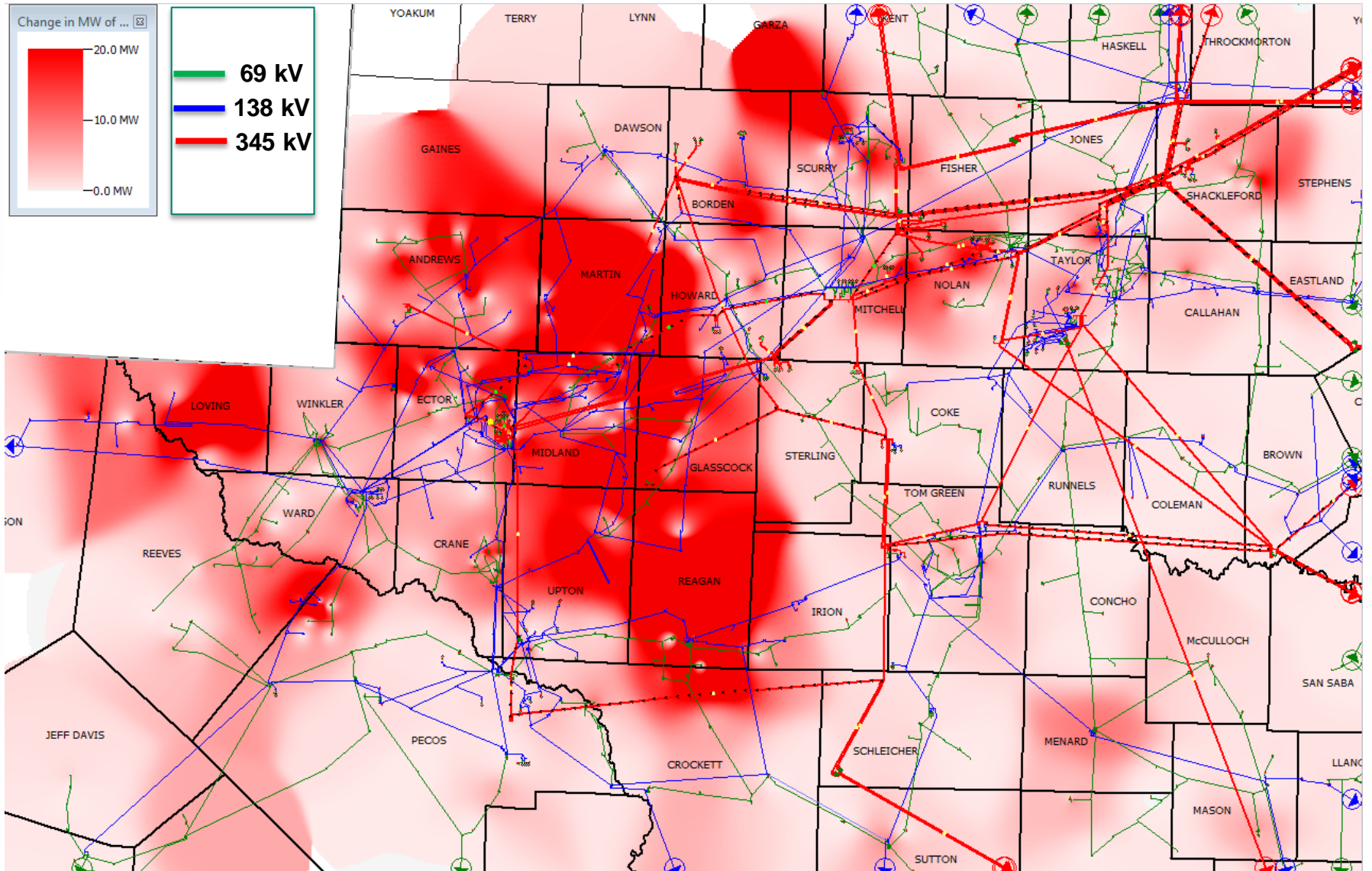
# WTS Load Increase Over 2014 RTP (2017)



# WTS Load Increase Over 2014 RTP (2019)

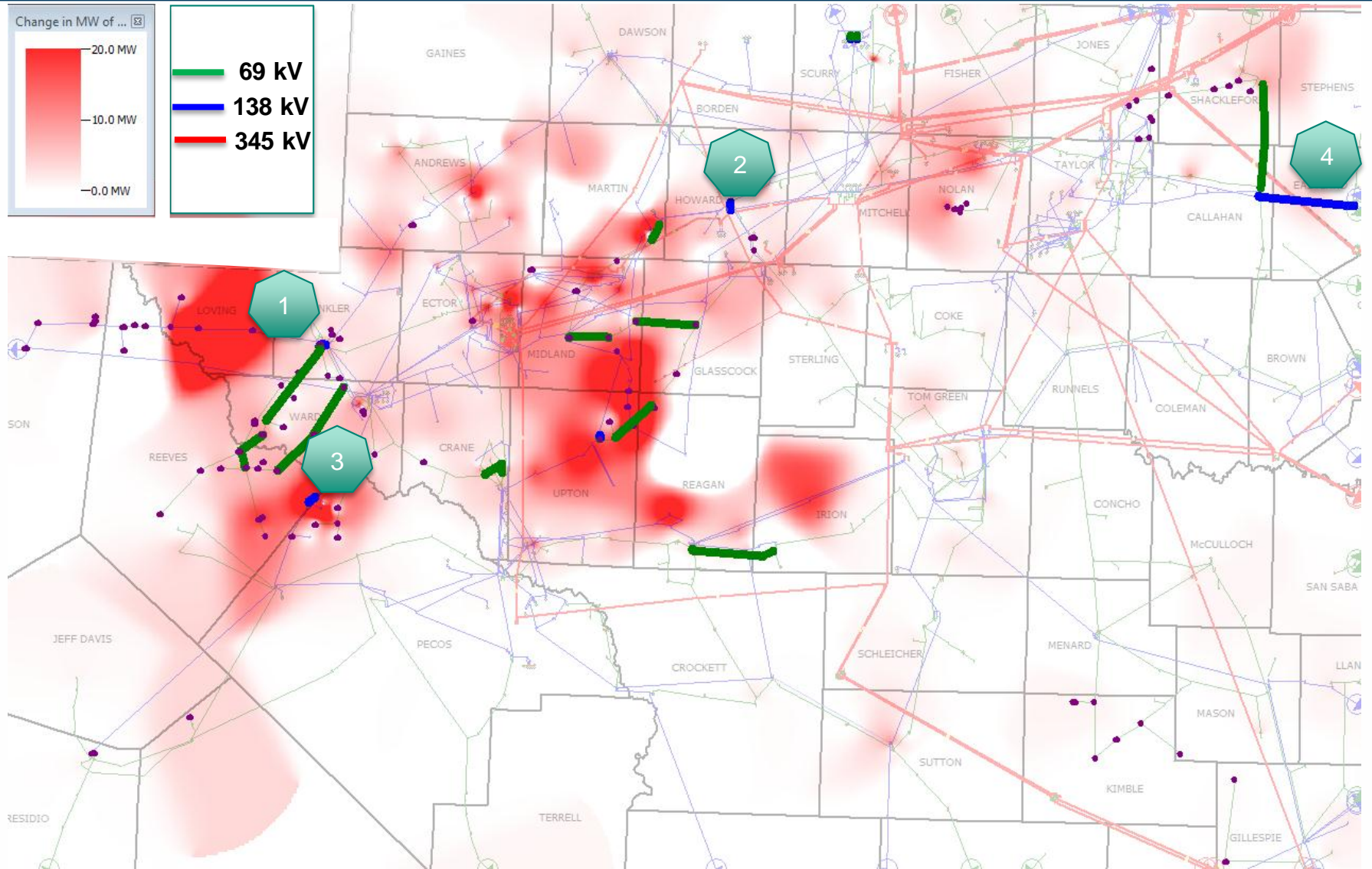


# WTS Load Increase Over 2014 RTP (2020)





# 2017 Reliability Criteria Violations



# 2017 Violation Listing (138 kV)

Label on Map	Description
1	Wink Switch – Wink TNP 138 kV line
2	Big Spring Switch – Cosden 138 kV line
3	Hackberry Draw Tap – Country Road 101 Tap 138 kV line
4	Leon – Putnam 138 kV line



# 2017 Reliability Criteria Violations Summary

- For Solved Contingencies:
  - 11 Miles of 138 kV Overloads
  - 106 Miles of 69 kV Overloads
  - 2 138/69 kV transformer
  - 0 345/138 kV transformer
- 6 Unsolved Contingencies
- Voltage Violations:

Nominal kV	Number of Buses
345	5
138	29
69	79



# 2019 Violation Listing (138 kV and transformers)

Label on Map	Description
1	Morgan Creek – McDonald Road 138 kV line
2	Bakke Tap – Unocal Parker Bakke 138 kV line
3	Unocal Parker Bakke – XTO University Block 9 138 kV line
4	Mockingbird – Gardendale POI 138 kV line
5	Willow Valley Switch – Gail Sub 138 kV line
6	Key Sub – Gail Sub 138 kV line
7	Big Spring Switch – Cosden 138 kV line
8	Big Spring West – Stanton East 138 kV line
9	Hargrove – Twin Buttes 138 kV line
10	Hargrove – Pump Jack 138 kV line
11	Hackberry Draw Tap – Country Road 101 Tap 138 kV line
12	Polecat Creek Switch – Eiland 138 kV line
13	Two Odessa EHV 345/138 kV Transformers



# 2019 Reliability Criteria Violations Summary\*

- For Solved Contingencies:
  - 15 Miles of 345 kV Overloads
  - 162 Miles of 138 kV Overloads
  - 224 Miles of 69 kV Overloads
  - 1 345/138 kV transformer
  - 8 138/69 kV transformer
- 3 Unsolved Contingencies
- Voltage Violations:

Nominal kV	Number of Buses
345	1
138	19
69	49

\*All violation counts reflect 9 Synchronous Condensers added to case to reduce number of unsolved scenarios.

# WTS Consultant Update

- ERCOT has retained Energy Ventures Analysis, Inc. to review the load growth projections.
- EVA will perform a multi-layer analysis of the oil and gas environment to assess the global market fundamentals, resulting industry activity, Permian Basin activity, and the resulting expected West Texas load growth.
- EVA will interview TDSPs and oil and gas producers to understand the development of the load forecast used in this study.
- EVA will develop high, likely, and low oil price scenarios and drilling scenarios for the US and Permian Basin. Considering these forecasts, EVA will assess the reasonableness of the load forecast for the expected oil and gas development in the Permian Basin.





# Updated Timeline

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- Complete the preliminary steady state analysis for 2017, 2019 & 2020 – July 2015
- Complete reliability analysis (identify projects) and the economic analysis – Sept. 2015
- Complete other sensitivity analysis based on feedback from consultants – Oct. 2015
- Final report with project recommendations
  - 4<sup>th</sup> quarter of 2015

# Questions

