



# TEXAS PERMIAN BASIN REGIONAL FREIGHT AND ENERGY SECTOR TRANSPORTATION PLAN

Steering Committee Meeting 1



September 19, 2019

# Agenda

## MEETING PURPOSE

Gather insight, input, and feedback on defining the Permian Basin's priority freight and energy sector transportation network and understanding the trends and factors that will impact freight and energy sector activity in the future

*Study Overview and Activities to Date*

*Action Items – Goals and Objectives and Regional Multimodal Freight and Energy Sector Network*

*Preliminary Needs Assessment*

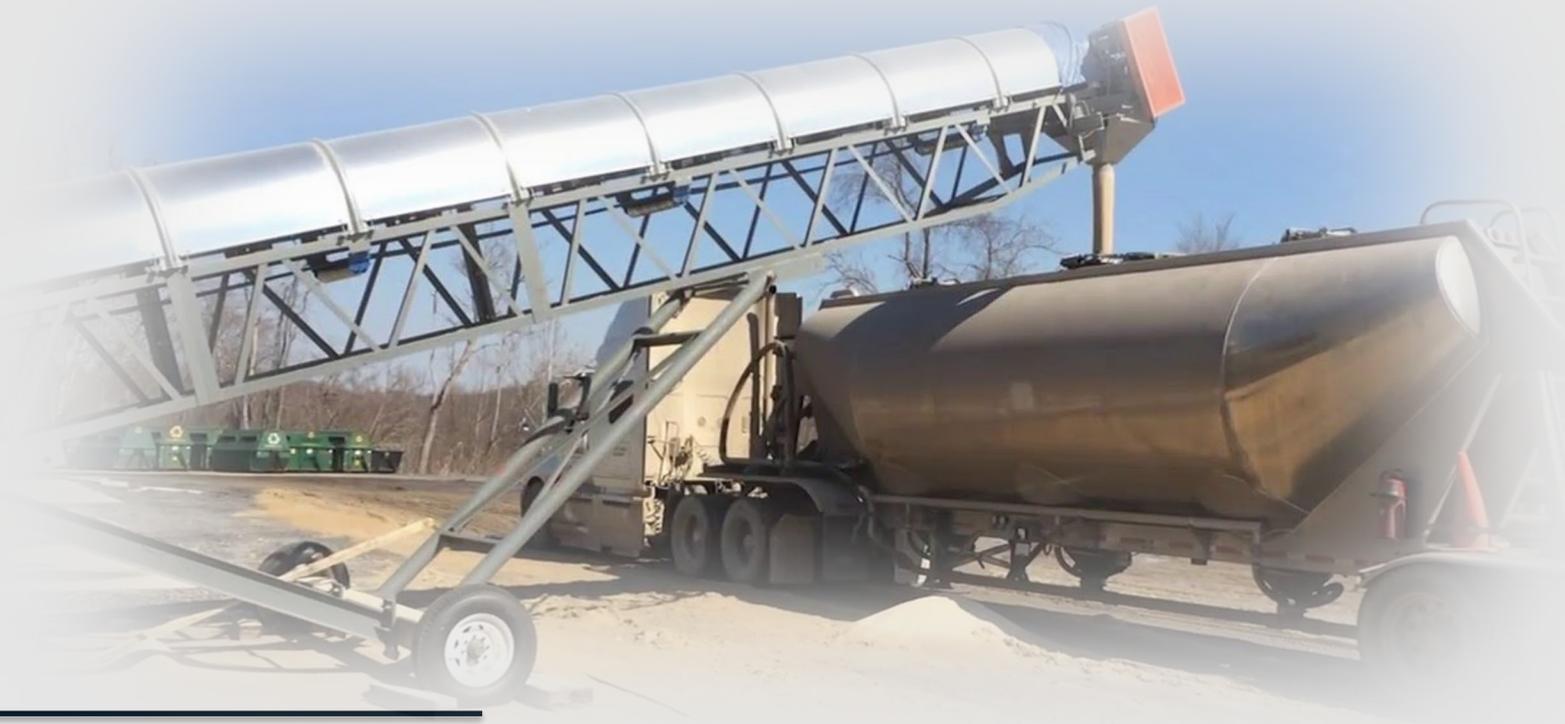
*Economic Future of the Region – Steering Committee Input*

*Next Steps and Discussion*



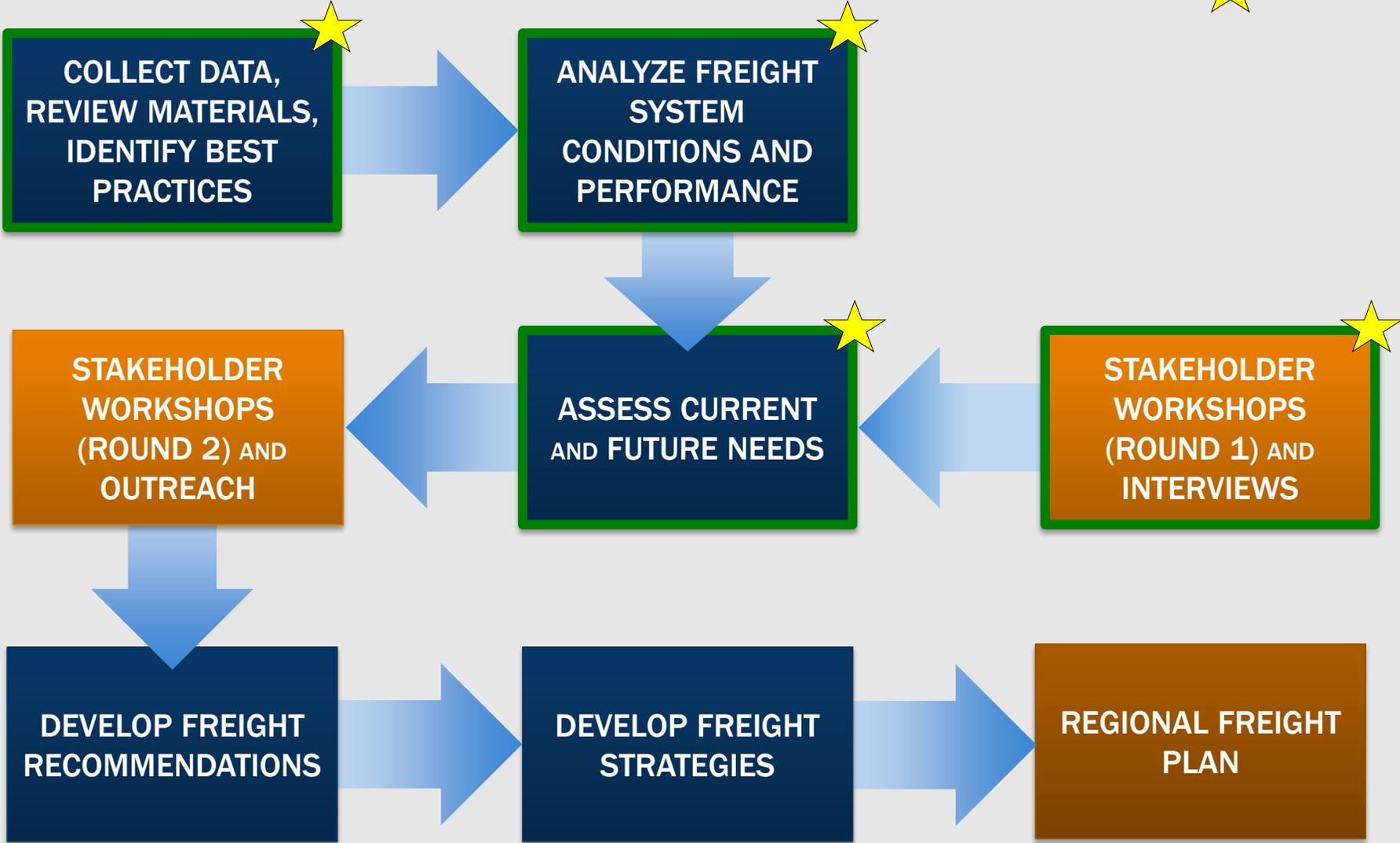
# STUDY OVERVIEW AND ACTIVITIES TO DATE

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# Plan Development Approach

★ - WE ARE HERE



## Data collection

- Private sector
  - In vehicle monitoring system data
  - Truck trip generation data
- Public sector
- Material/plan review

## Analysis

- Freight demand / commodity flow
- Conditions and performance
- Land use
- Freight and energy sector network designation and profile

## Stakeholder Outreach

- Kickoff meeting
- Group meetings
- Interviews (40)
- First round stakeholder workshops (6)

# Series of Six Stakeholder Workshops

1

*Energy Sector Perspective*

*Sand Perspective*

2

3

*Carriers and Haulers Perspective*

*Rural Community Perspective*

4

5

*Urban Area Perspective*

*State Transportation Agency Perspective*

6

# Stakeholder Workshops

## *Topics included:*

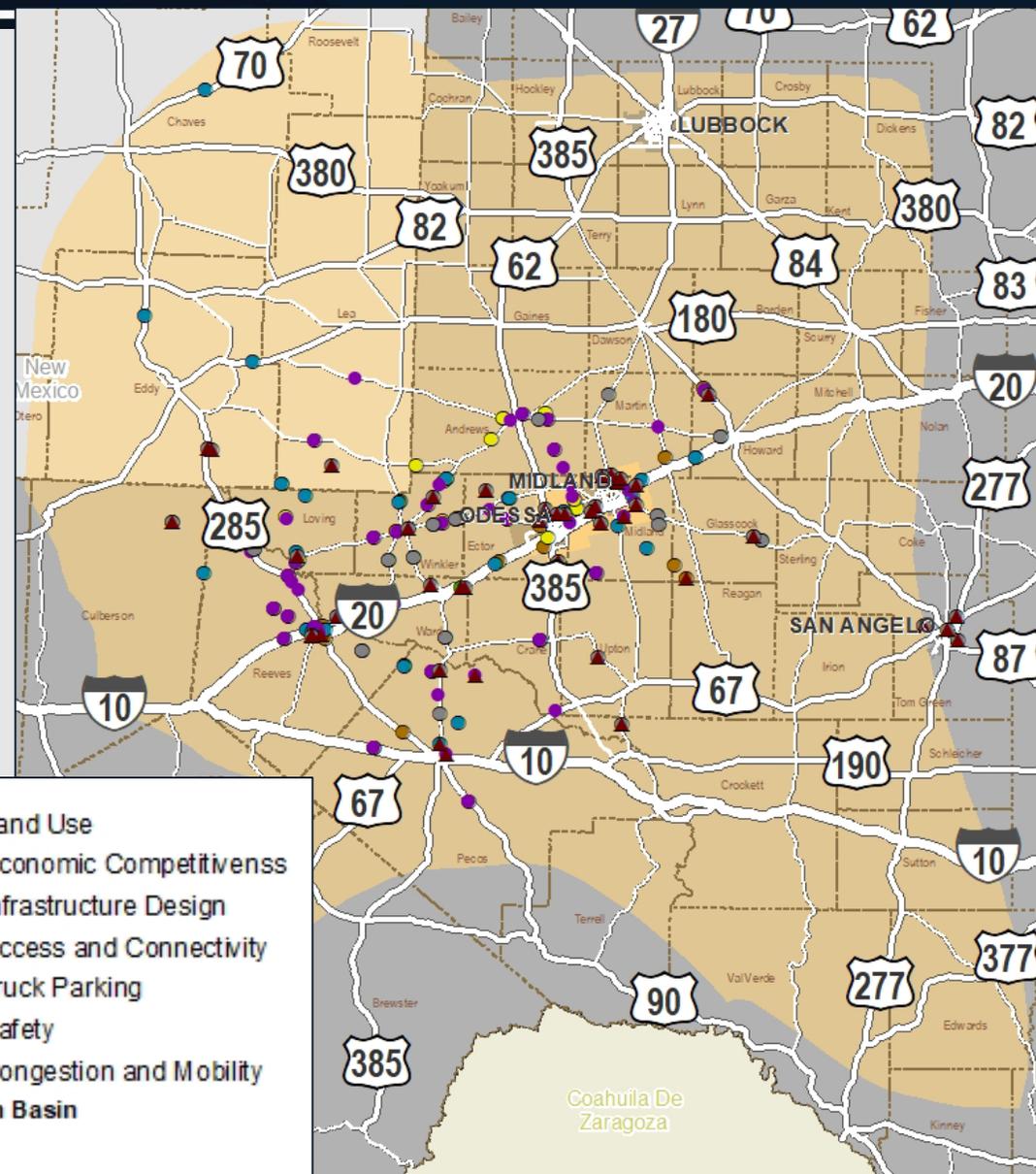
- *Goals and objectives*
- *Truck trip generation*
- *Transportation challenges and issues*
- *Designating the regional freight and energy sector network*

Workshop	Date	No. of Attendees
Energy Sector Forum	July 29, 2019	14
Sand Forum	July 30, 2019	19
Midland-Odessa Forum	July 31, 2019	19
Carriers and Haulers Forum	July 31, 2019	27
Rural Forum	August 1, 2019	15
Total Attendees		94

*Over 500 comments received*

# What We Heard - Challenges

- Congestion and Mobility
- Safety
- Access and Connectivity
- Infrastructure Design
- Land Use/Future Development



# Key Deliverables

Deliverables	Schedule
Multimodal Regional Freight and Energy Sector Transportation Network	September 2019
Economic and Commodity Flow Profile and Forecast	November 2019
Land Use and Needs Assessment	December 2019
Energy Sector / Freight Strategies and Recommendations	April 2020
Economic Importance and Impact of Energy Sector Memo	May 2020
Investment Plan and Implementation Program	May 2020
Final Plan and Executive Summary	June 2020



# GOALS AND OBJECTIVES

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# Process for Developing Goals and Objectives

## Texas Freight Mobility Plan

- State and National freight goals
- Plan recommendations

## Stakeholder Interviews

- Industry, community, and elected leaders
- May 31 stakeholder kick-off meeting

## Stakeholder Workshops

- Listening sessions and focus groups
- Final stakeholder vetting

Draft final goals and objectives for Steering Committee input

# Draft Final Goals

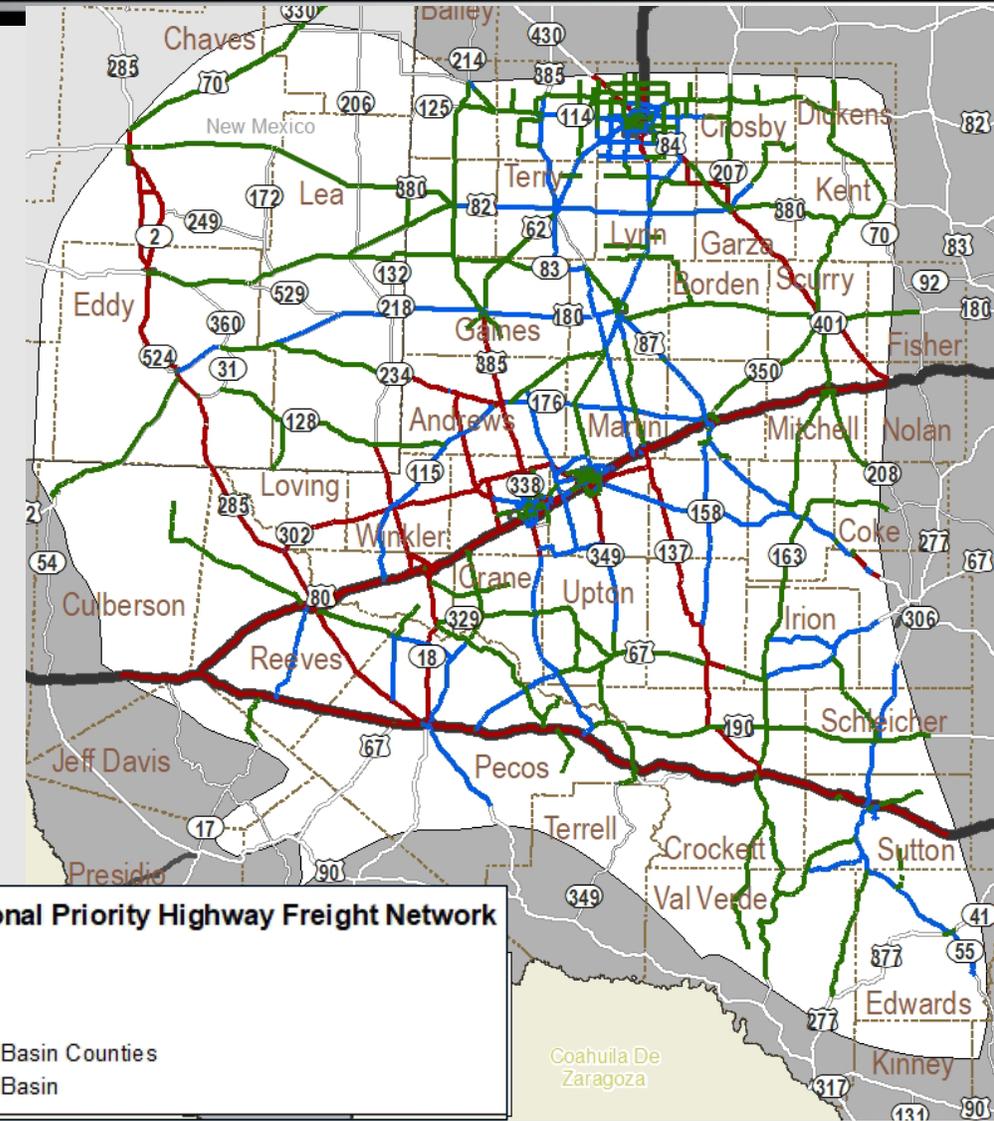
State Goal Area
Safety
Economic Competitiveness
Mobility and Reliability
Connectivity
Sustainable Funding
Stewardship
Customer Service
Asset Preservation

# Draft Final Objectives

1. Supplement state data with local and regional data collection specific to energy sector activity
2. Identify and assess the regional transportation network serving energy sector needs
3. Enhance regional freight forecast and travel demand model by accounting for future energy sector traffic, trends, and activity
4. Support identification of policies, programs, and projects to address energy sector freight activity for inclusion in the Plan
5. Document and communicate the local, state, and national economic impact of Permian Basin freight movement to increase investment in the regional multimodal freight system
6. Improve connectivity and mobility between urban and rural areas and from the Permian Basin to the rest of the state and nation
7. Develop actionable short and long term strategies for enhancing regional freight mobility, connectivity, and safety on the local and regional transportation system
8. Seek formal adoption of the Regional Freight Plan by the Texas Transportation Commission



# REGIONAL FREIGHT AND ENERGY SECTOR NETWORK



# Motivation for the Network Designation Process

Texas Multimodal Freight Network (TMFN) was a key policy outcome of the adopted Freight Plan

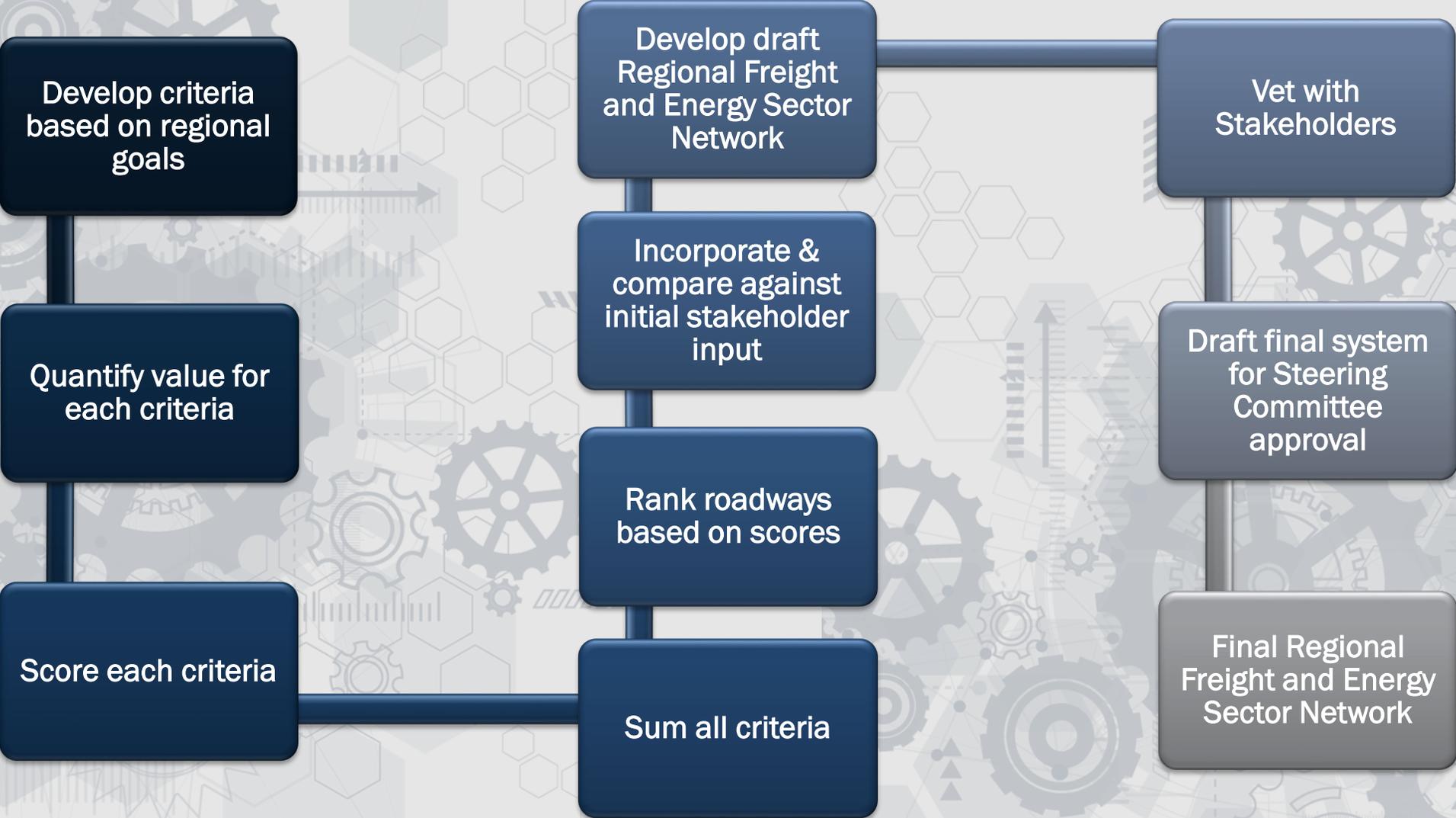
Critical Urban Freight Corridors (CUFCs) and Critical Rural Freight Corridors (CRFCs) to become part of the National Highway Freight Network (NHFN)

The Regional Freight and Energy Sector Network will become eligible for TMFN and NHFN designation

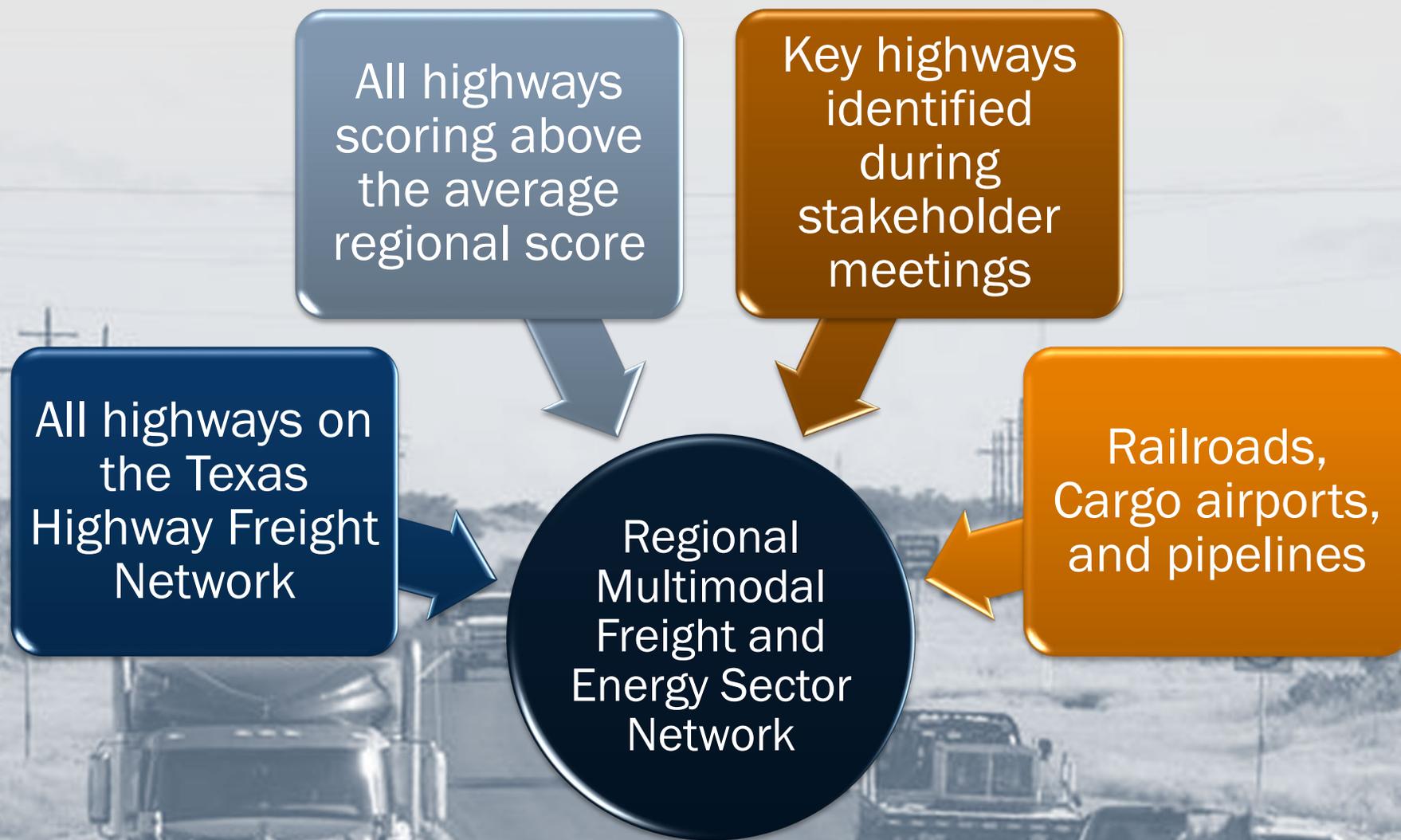
Projects on the NHFN highways are eligible for National Highway Freight Program funds and INFRA discretionary grants

Basis of needs assessment, project prioritization, recommendations, and implementation

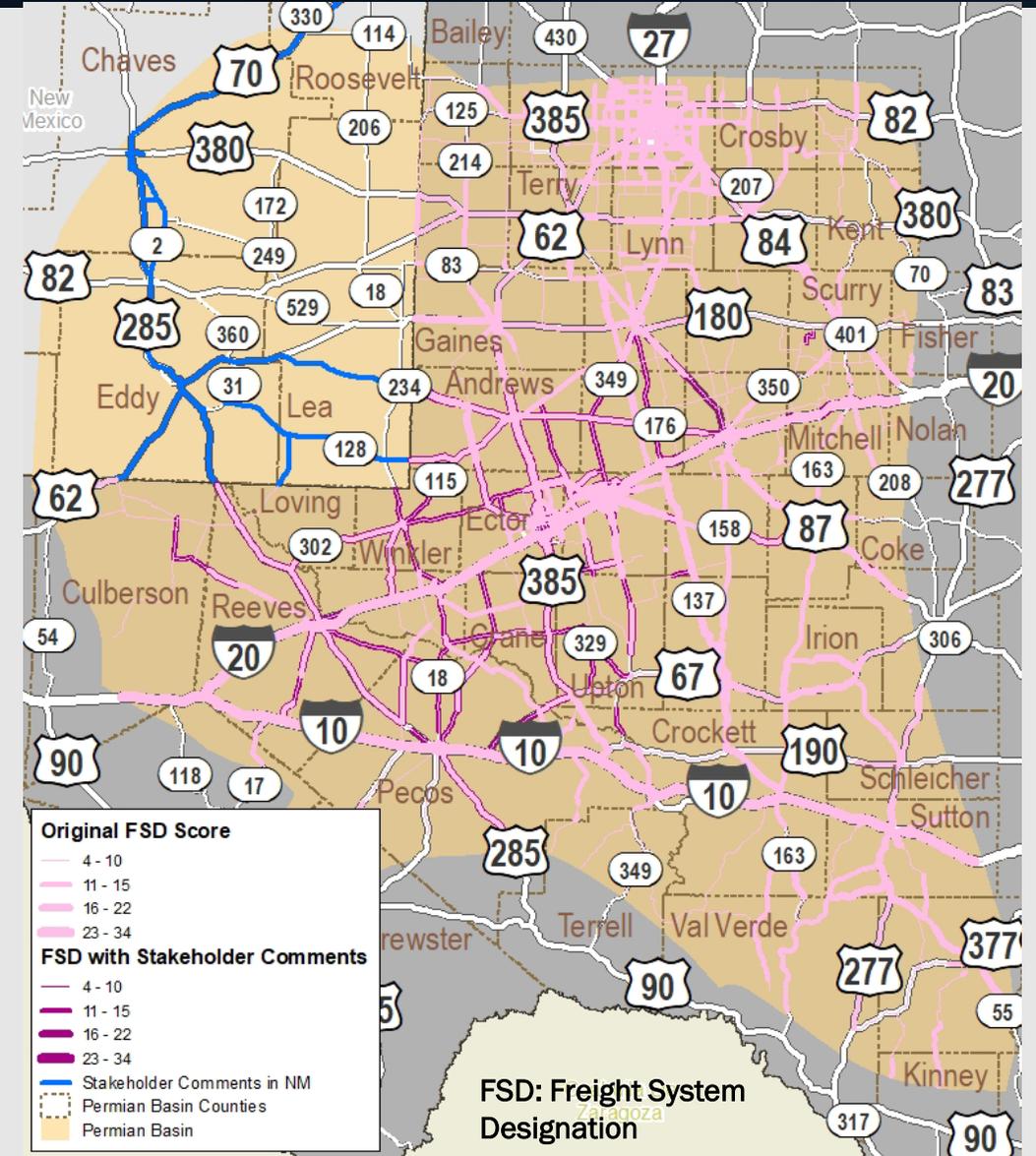
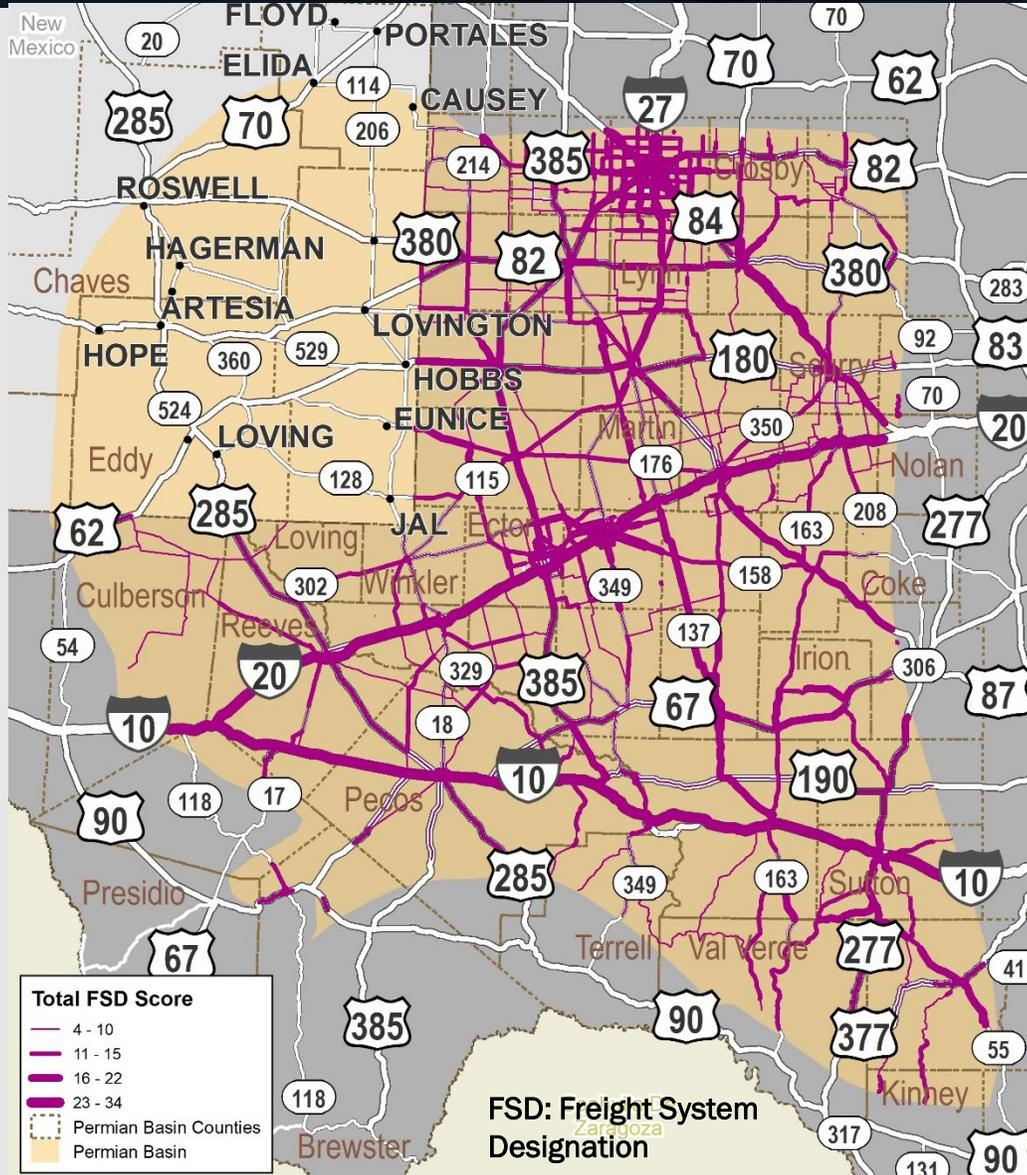
# Evaluation and Designation Process for Highways



# Components of the Regional Multimodal Freight and Energy Sector Network



# Raw Network Scores



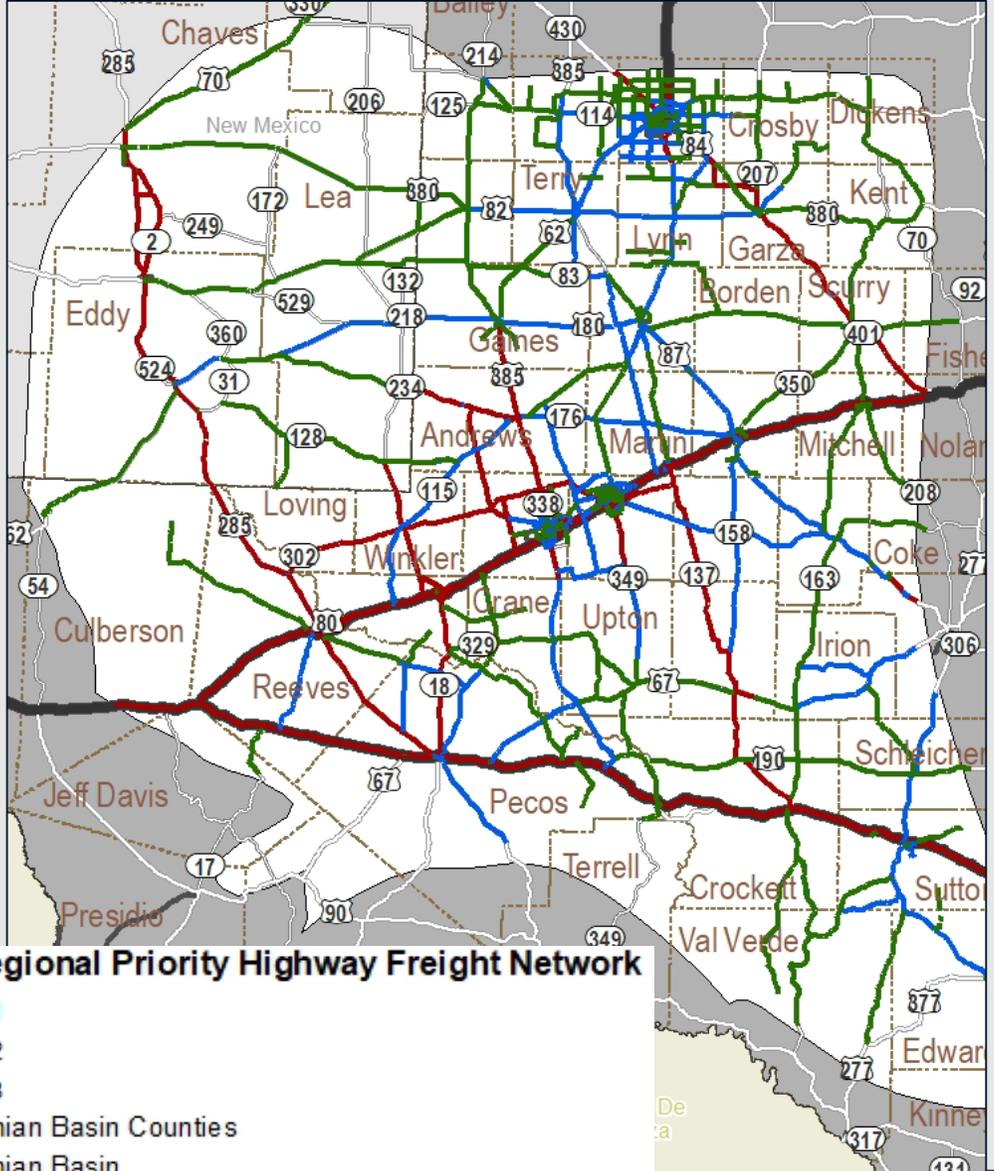
# Draft Regional Priority Highway Freight and Energy Sector Network

Are these the right routes?

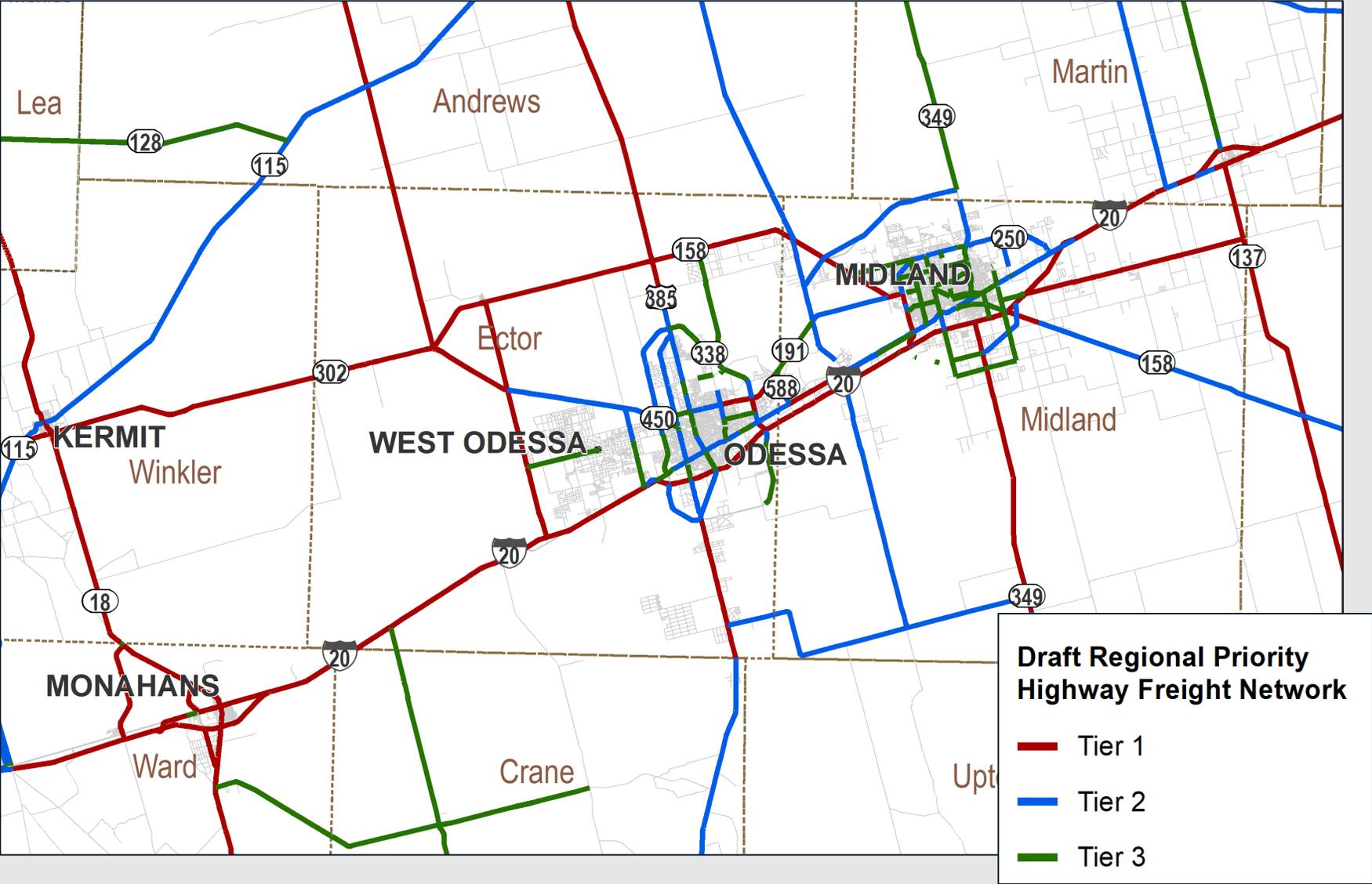
What routes are missing?

What additional routes, if any, should be considered?

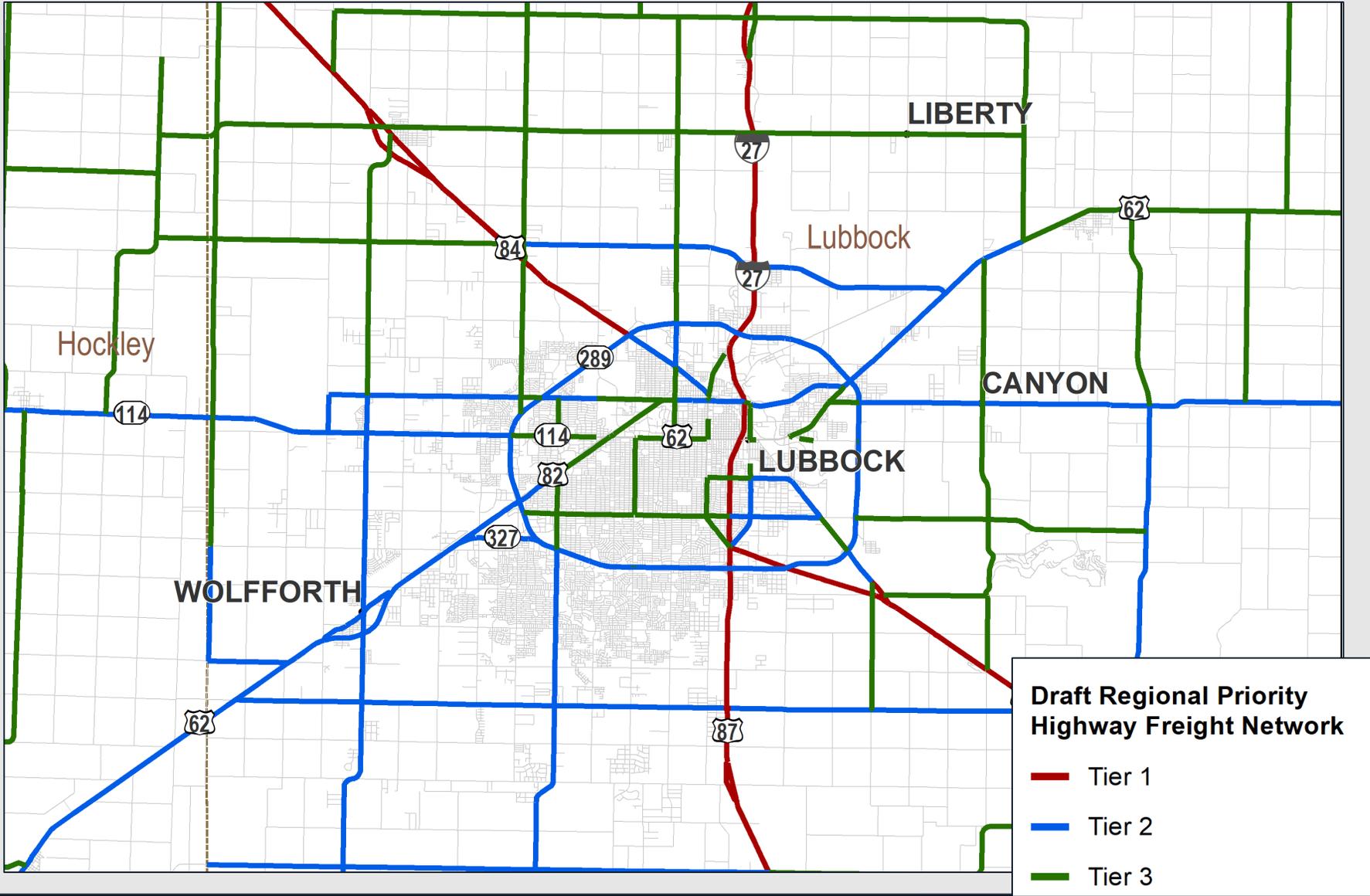
Are the tiers correct?



# Draft Midland Odessa Regional Highway Freight and Energy Sector Network

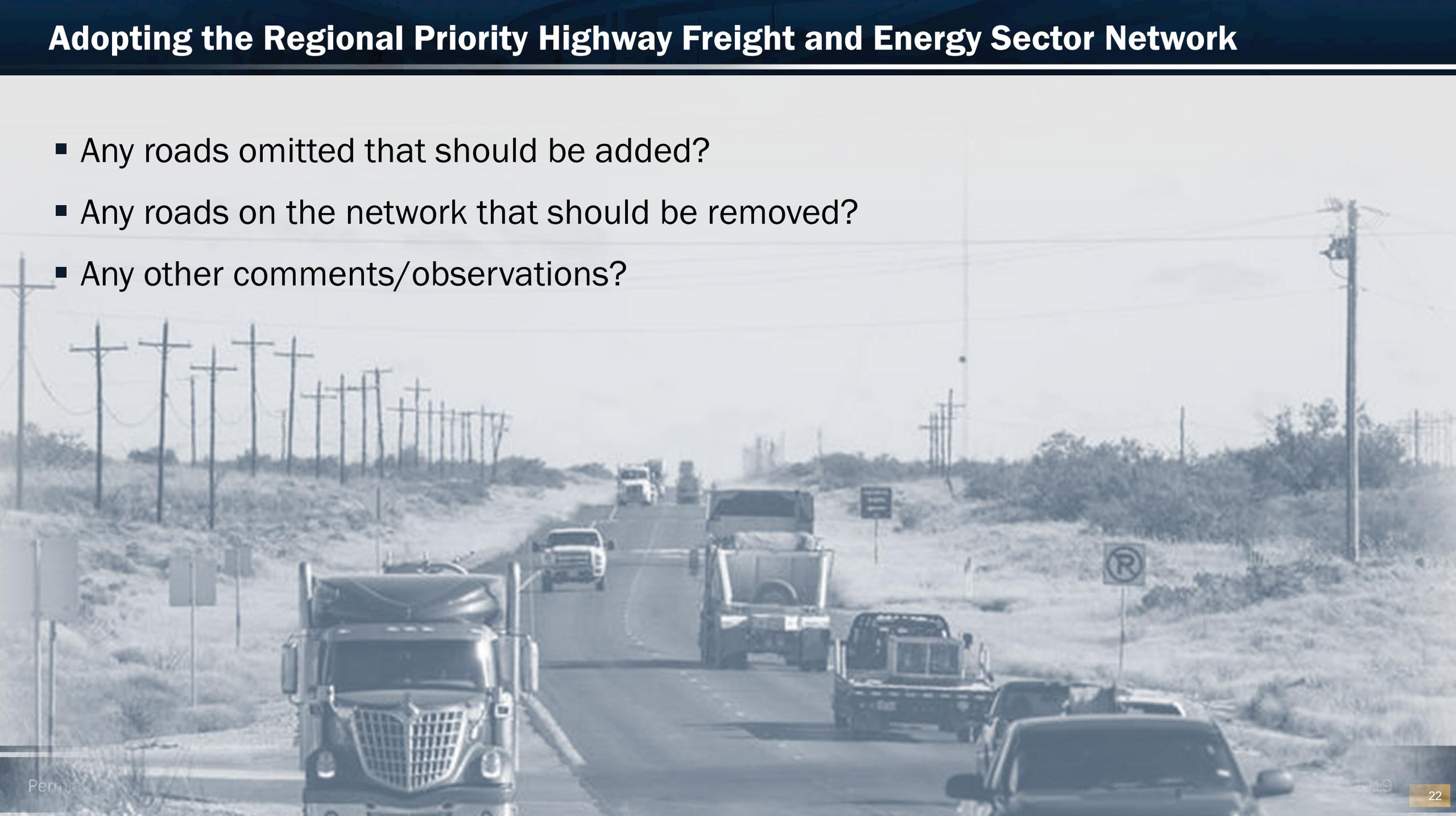


# Raft Lubbock Regional Highway Freight and Energy Sector Network



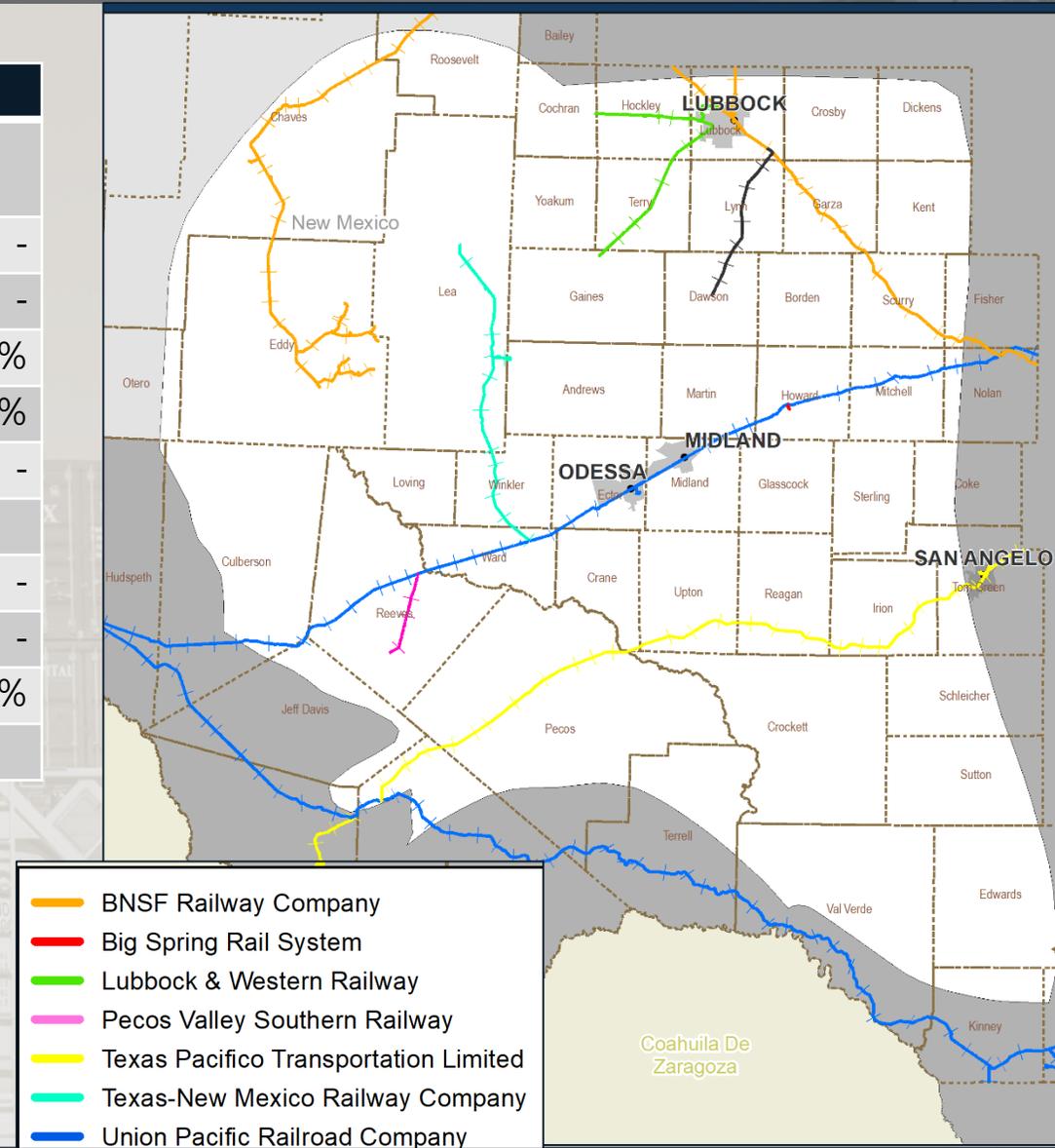
# Adopting the Regional Priority Highway Freight and Energy Sector Network

- Any roads omitted that should be added?
- Any roads on the network that should be removed?
- Any other comments/observations?



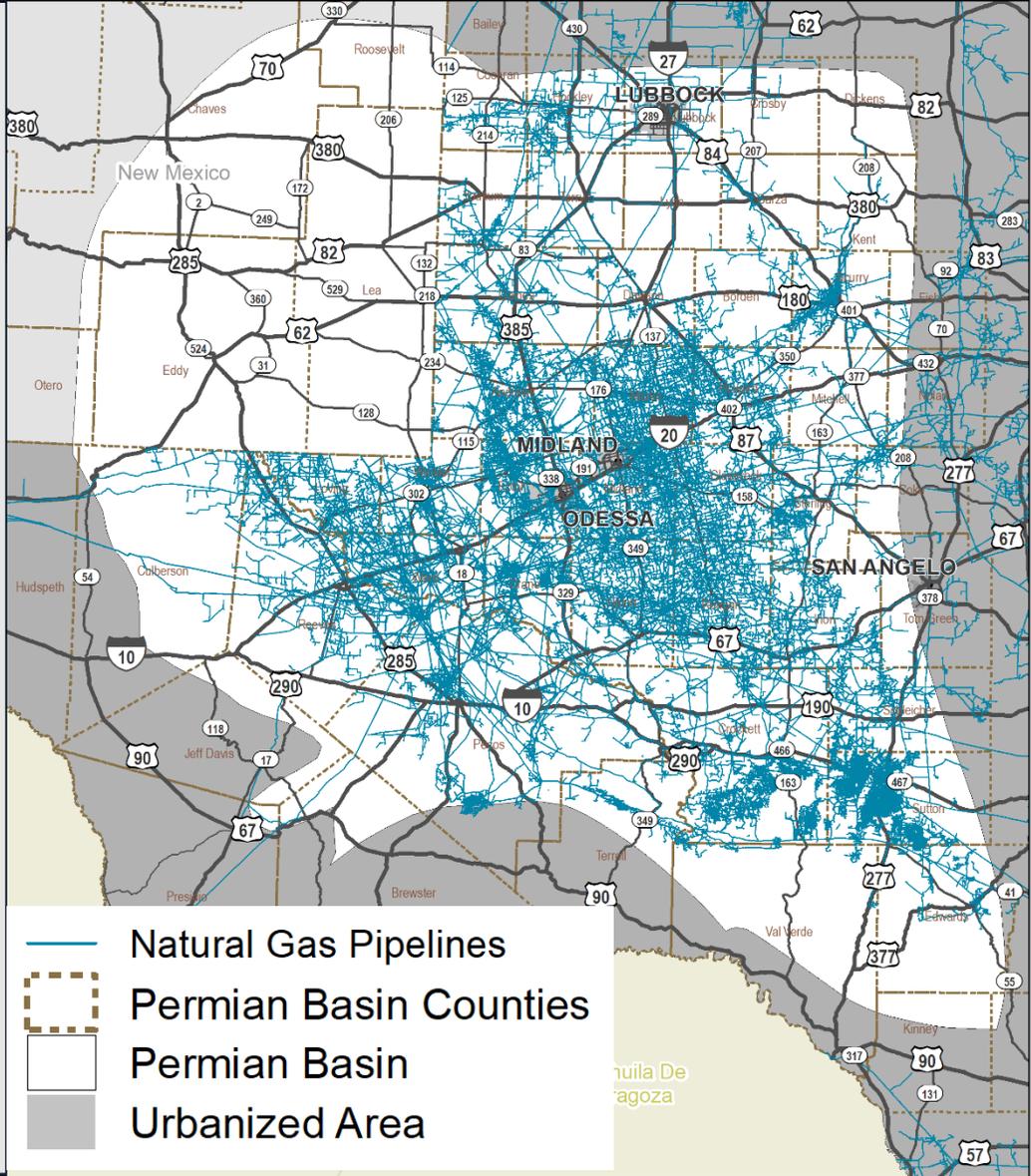
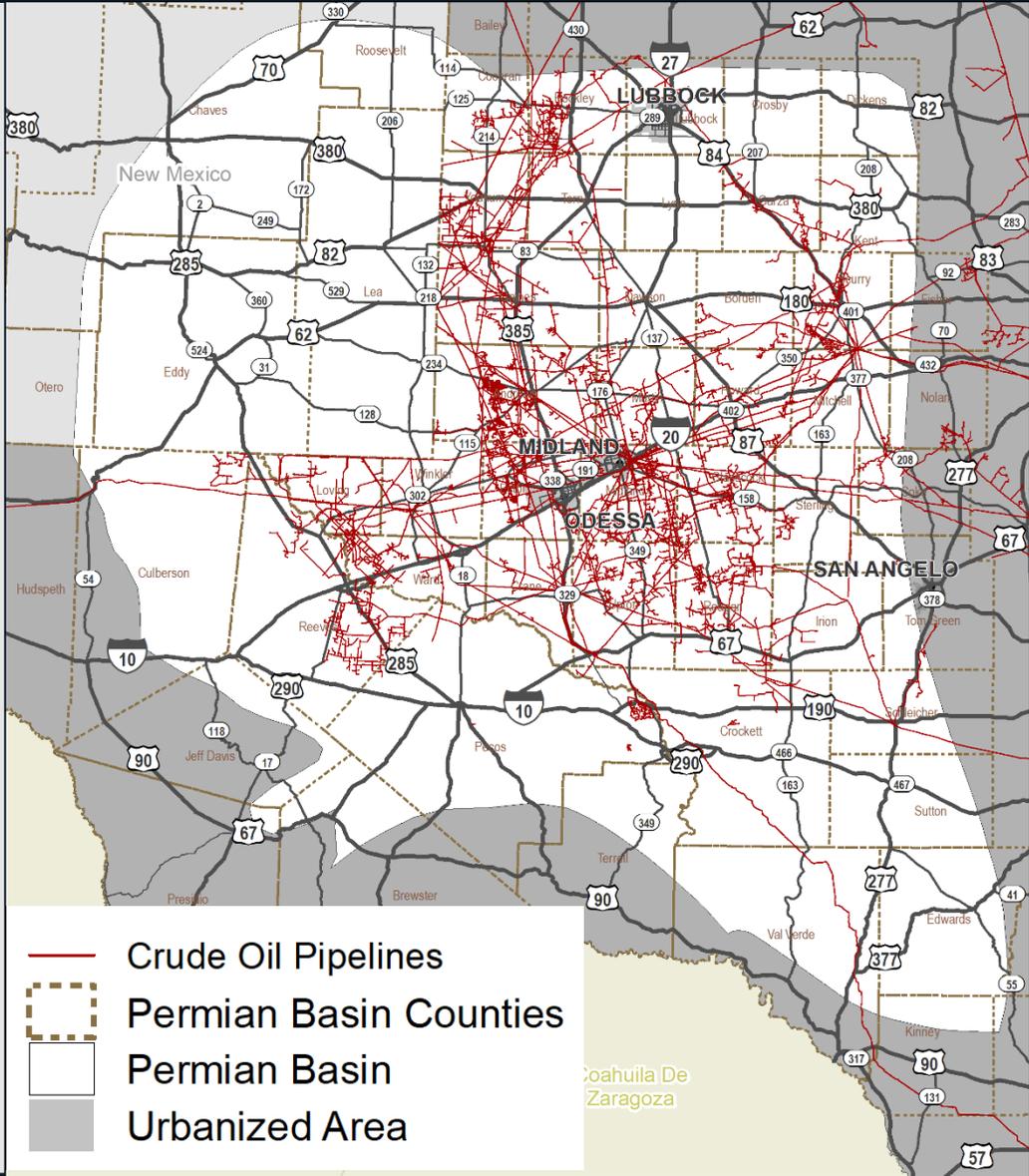
# Freight Rail Network

Railroad (Texas Counties)	Texas		New Mexico	
	Miles	% of Total	Miles	% of Total
Union Pacific	343.4	51.1%	-	-
TxDOT (operated by Texas Pacifico)	184.6	27.4%	-	-
Burlington North Santa Fe (BNSF)	49.9	7.4%	160.1	64.0%
Texas & New Mexico Railway	39.8	5.9%	90.0	36.0%
Pecos Valley Southern	31.8	4.7%	-	-
South Plains Lamesa Railroad	16.7	2.5%	-	-
Lubbock & Western	4.1	0.6%	-	-
Big Spring	2.3	0.3%	-	-
Subtotal	672.6	100.0%	250.1	100.0%
<b>Total</b>	<b>922.7 Miles</b>			



Source: TxDOT

# Pipeline Network in the Permian Basin





# PRELIMINARY NEEDS ASSESSMENT

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# Needs Assessment Early Findings

1

*Congestion and Mobility*

*Safety*

2

3

*At-Grade Rail Crossings*

*Truck Parking*

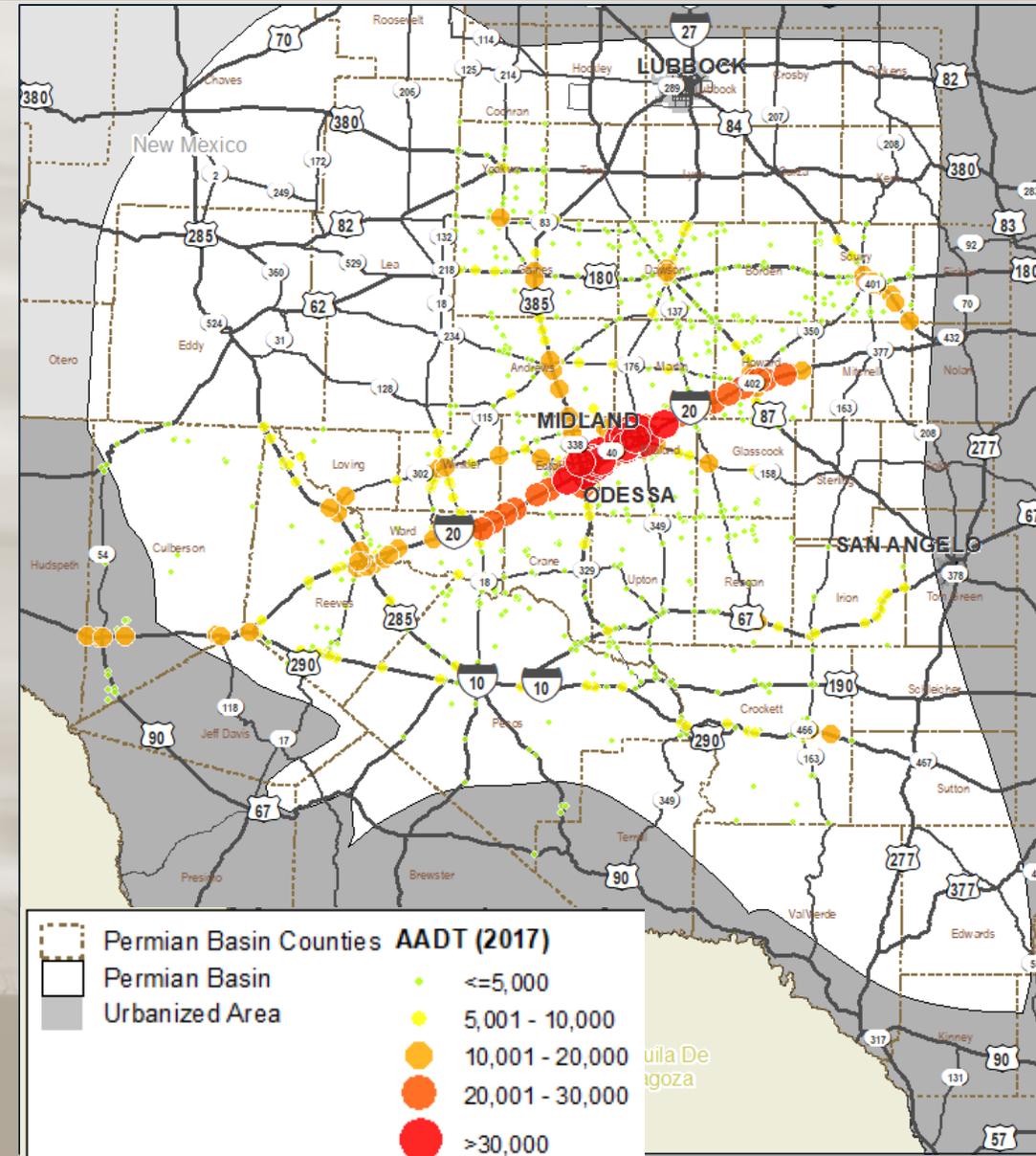
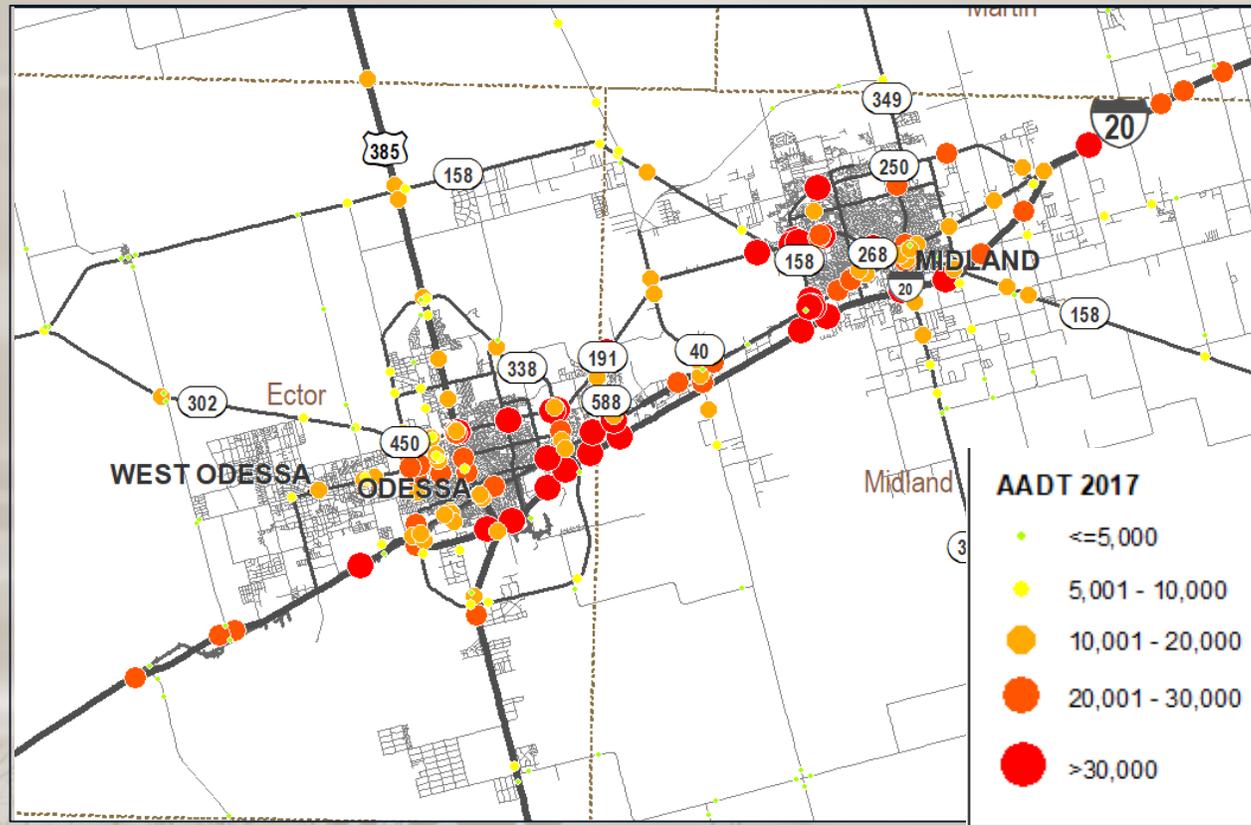
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*Bridge Infrastructure*

# Challenge: Congestion and Mobility

Average Annual Daily Traffic, 2017



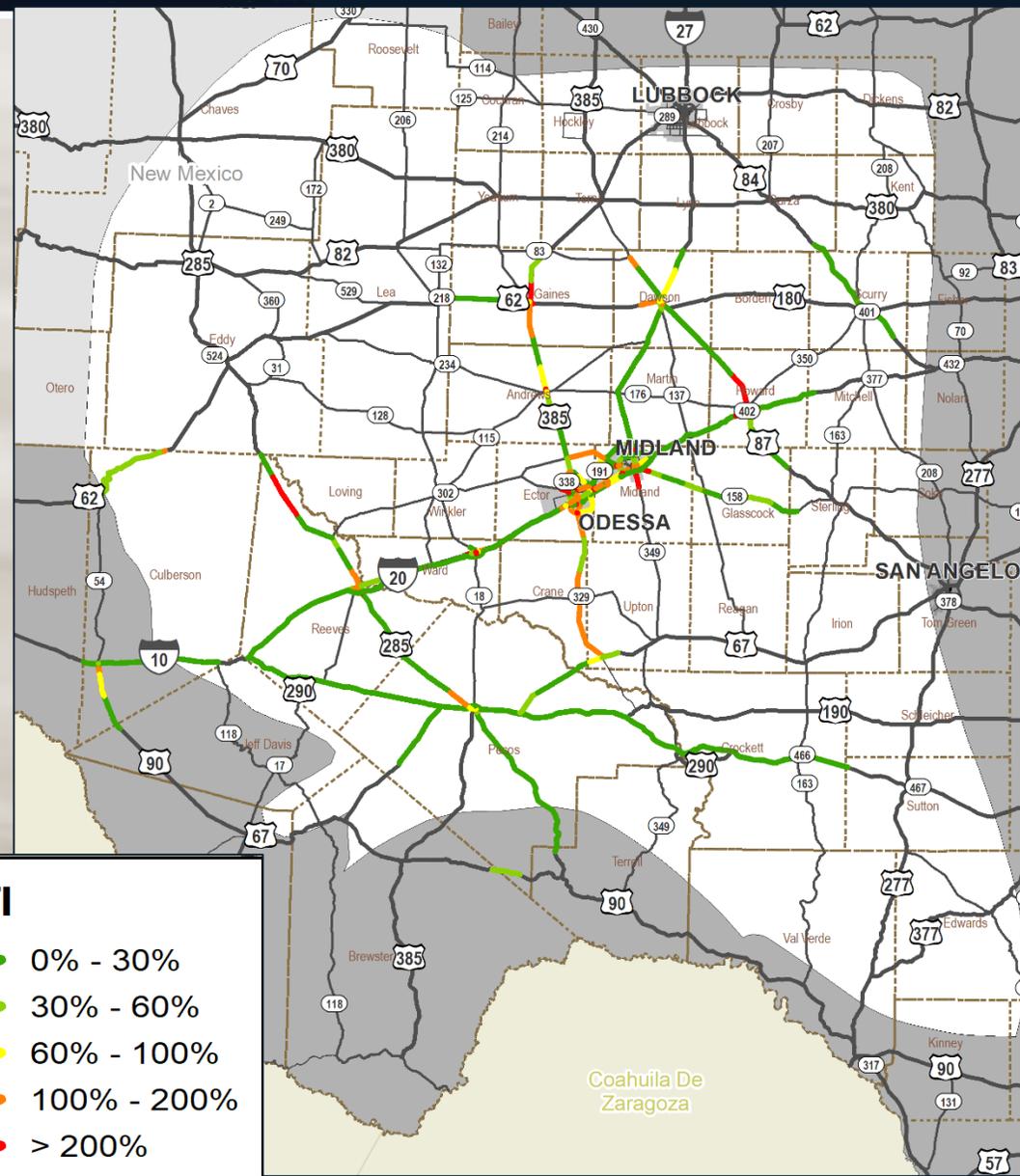
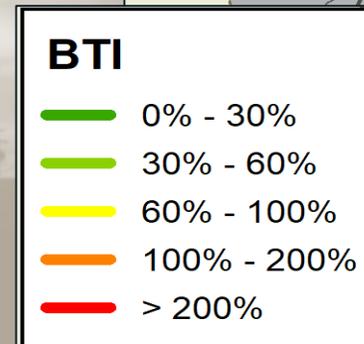
Source: Texas Department of Transportation, 2017

# Challenge: Congestion and Mobility

Truck Buffer Time Index (BTI), February 2019, PM Peak

Highest BTIs are between Odessa and Midland on I-20 and I-20 Business

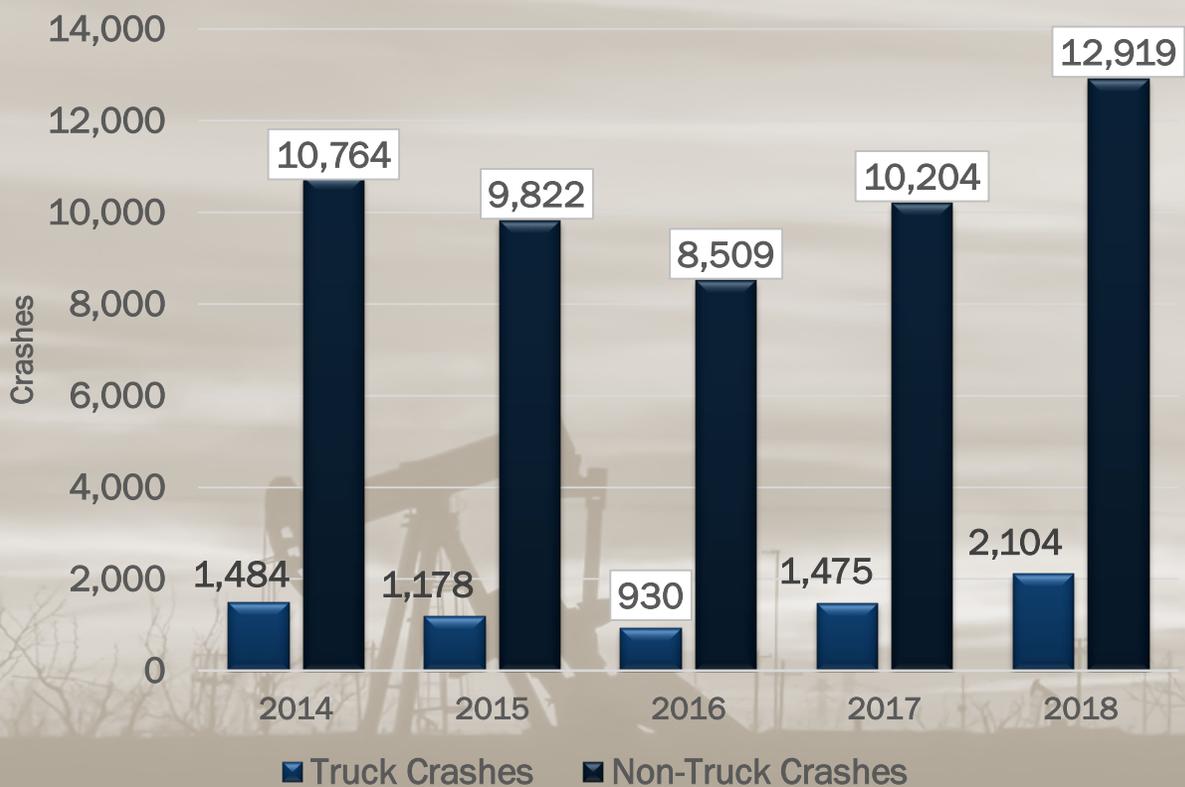
US-285 in Reeves County and US-87 in Howard County have significant stretches of roadway above a BTI of 200%



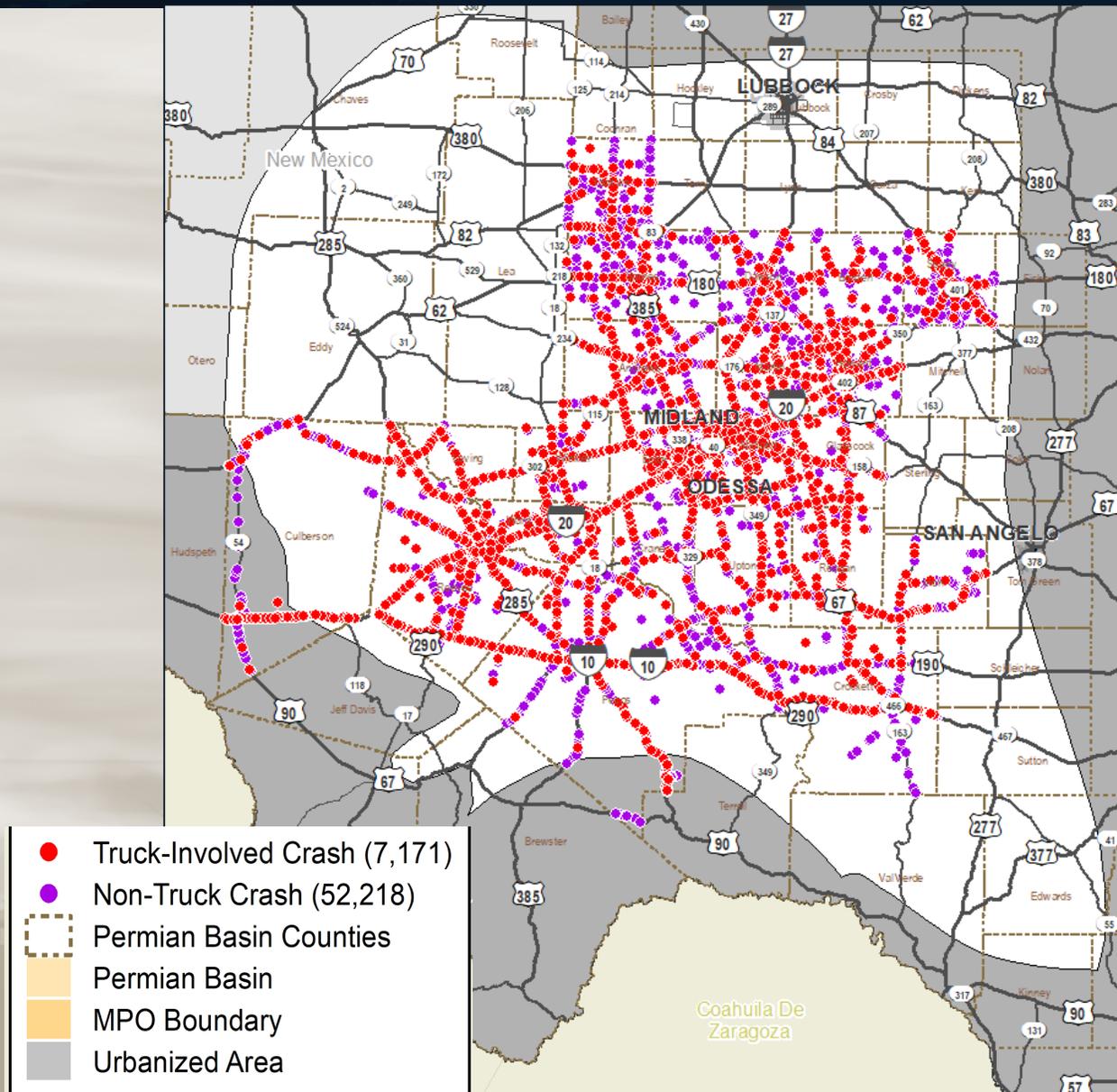
Source: National Performance Management Research Data Set, January 2018 - February 2019; Cambridge Systematics, Inc. analysis.

# Challenge: Safety

- Crashes per year
- 2014-2018



Source: Texas Department of Transportation, Crash Record Information System, 2014-2018.

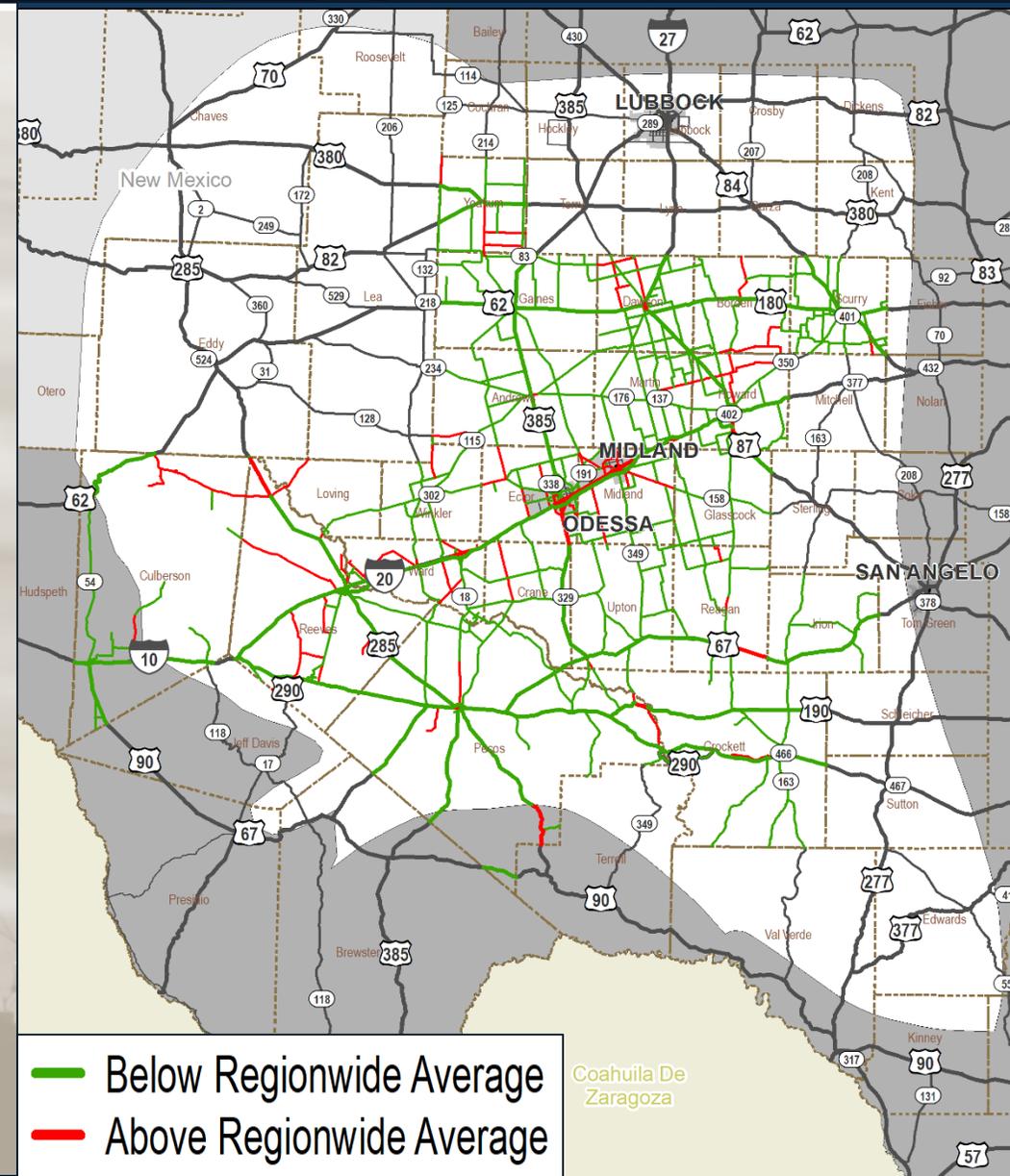


# Challenge: Safety - Crashes per 100 Million Truck Miles Traveled, 2014-2018

Highest crash rates are seen around the roads surrounding Midland and Odessa, especially:

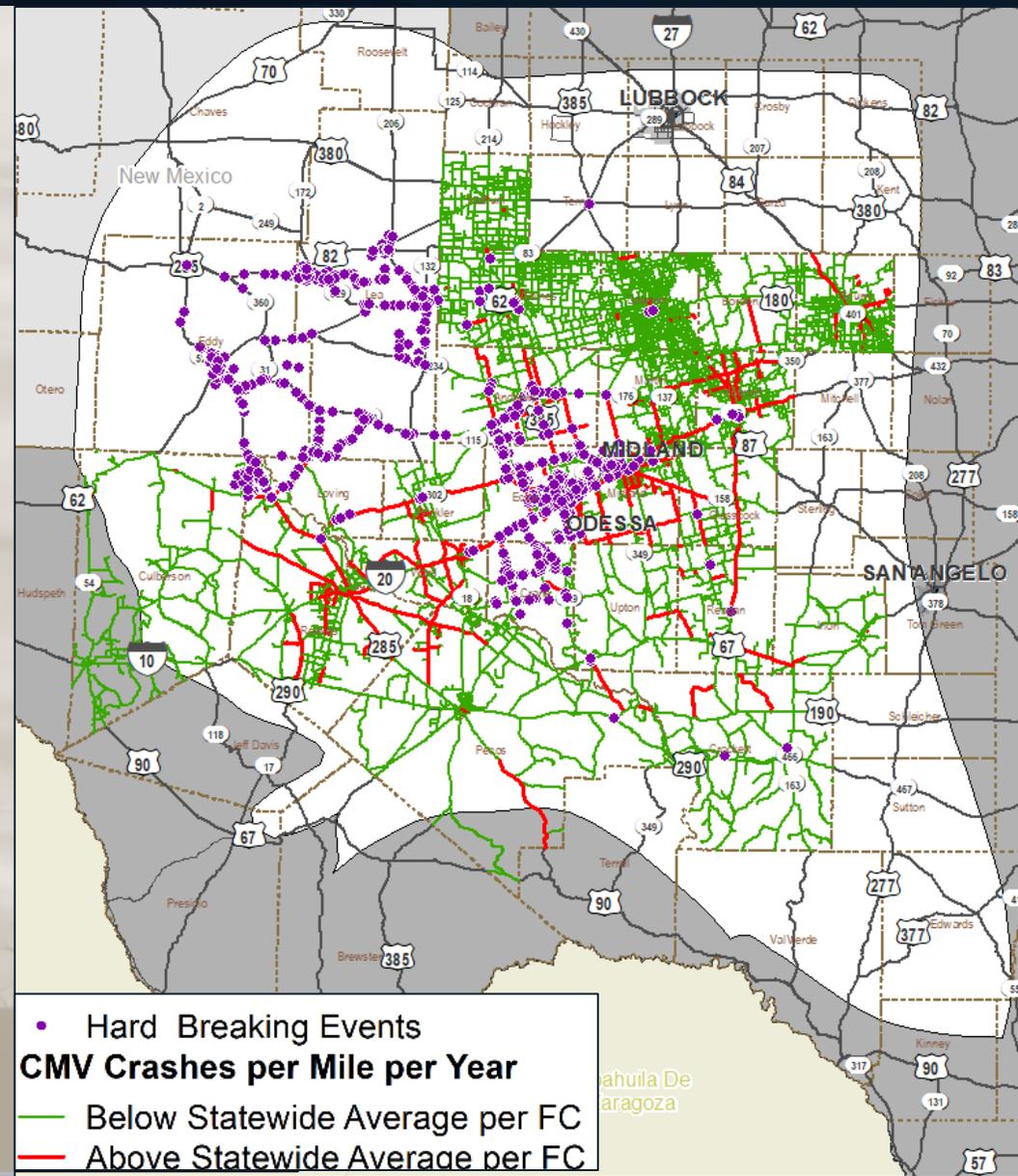
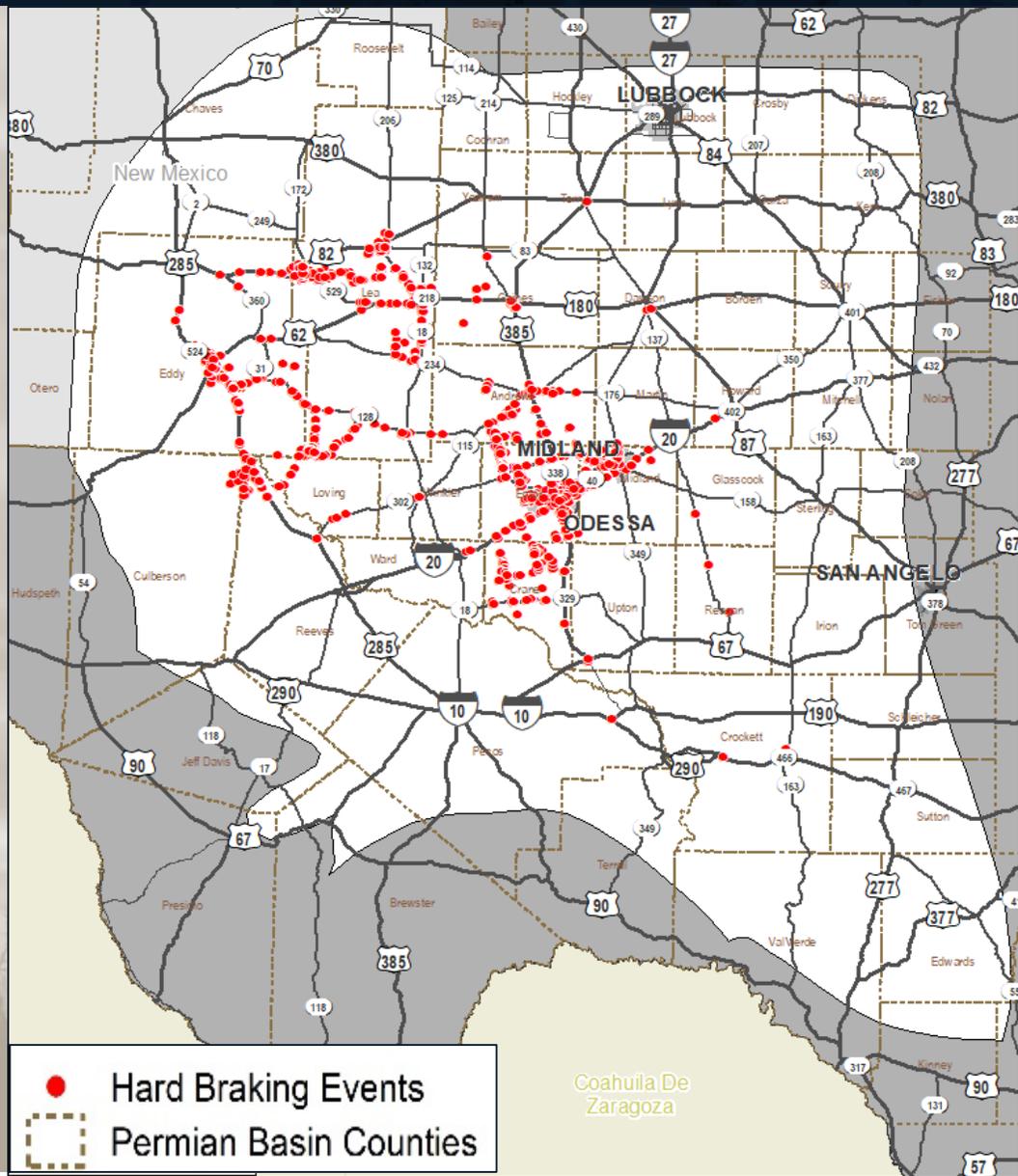
- I-20 Business
- US-385
- SH 250
- SH 158

Outside of Midland and Odessa, the western part of the region in Loving, Culberson, and Reeves Counties have higher crash rates



Source: Texas Department of Transportation, Crash Record Information System, 2014-2018

# Challenge: Safety - Hard Braking and Crash Locations

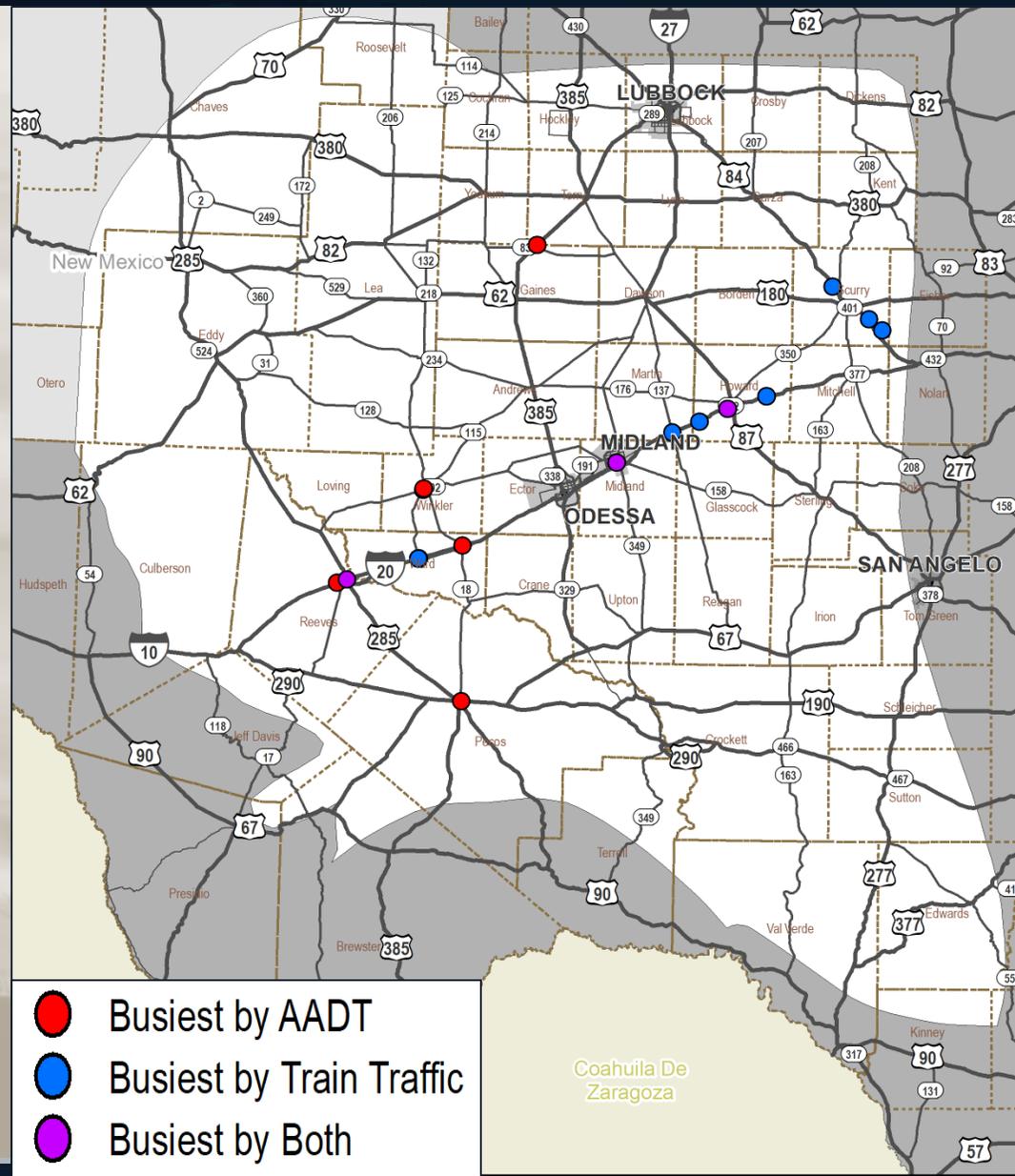


# Challenge: At-Grade Crossings – Busiest in Permian Basin

640 public at-grade rail crossings in the Permian Basin region

- 514 crossings in Texas
- 126 in New Mexico

Source: Federal Railroad Administration; Texas Department of Transportation, 2017

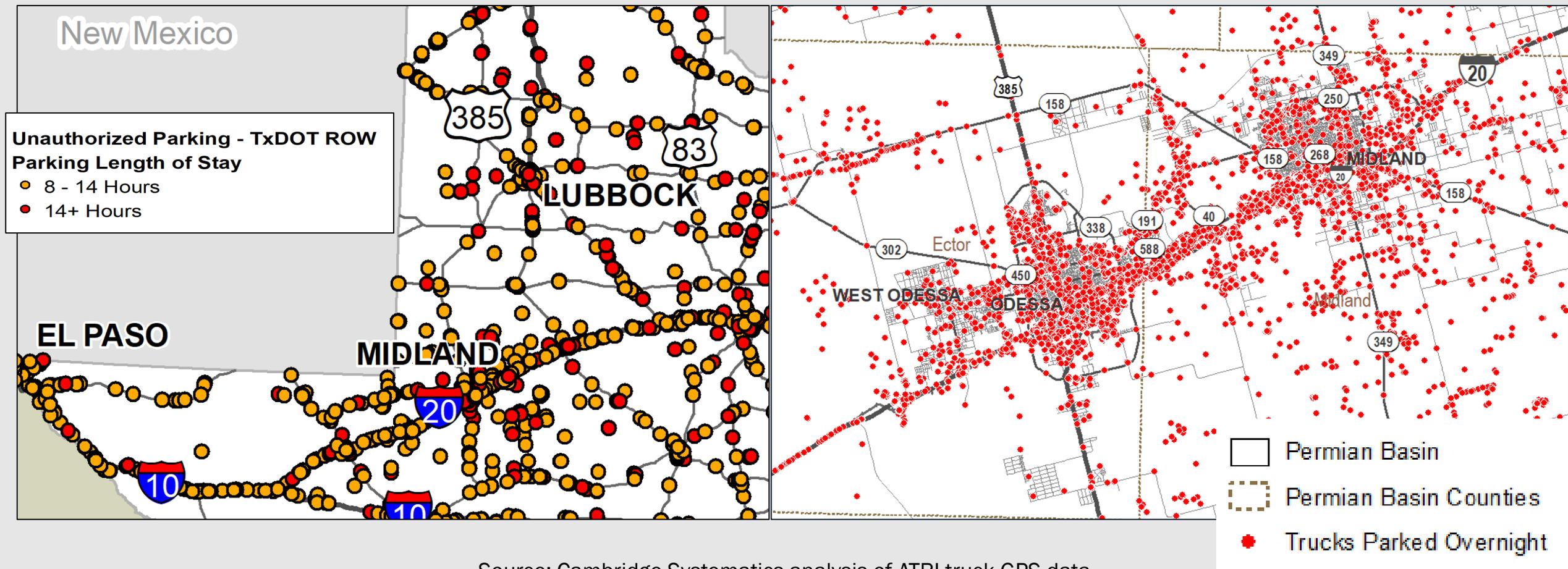




# Challenge: Unauthorized Truck Parking

Unauthorized Truck Parking in the Permian Basin, 8 hours or more

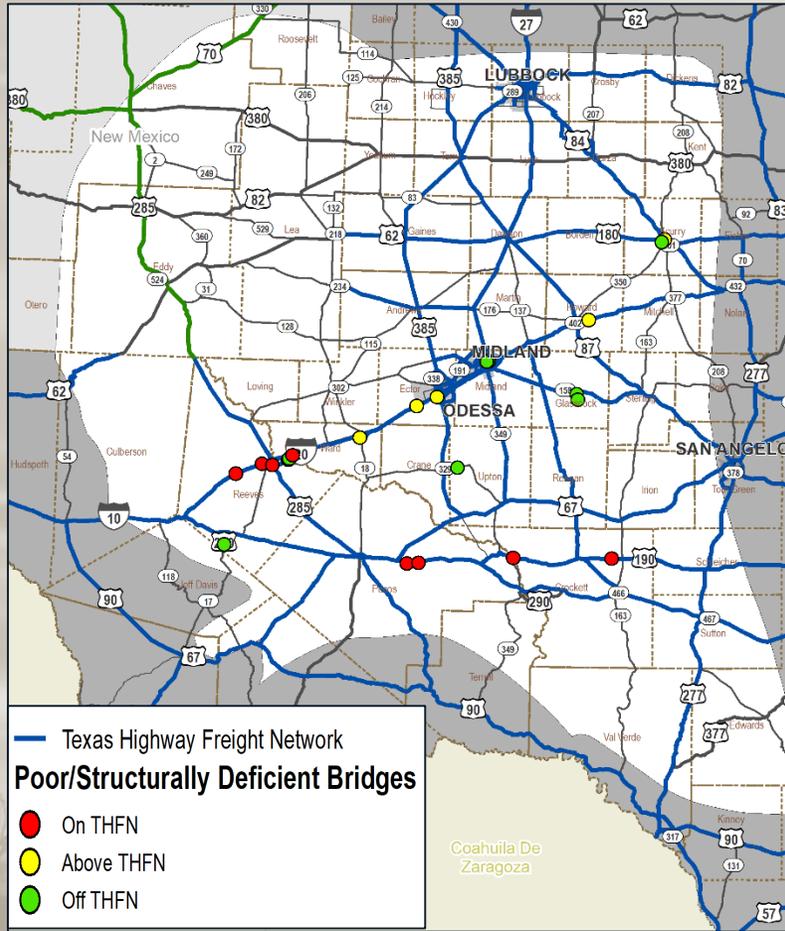
Overnight Truck Parking in the Permian Basin



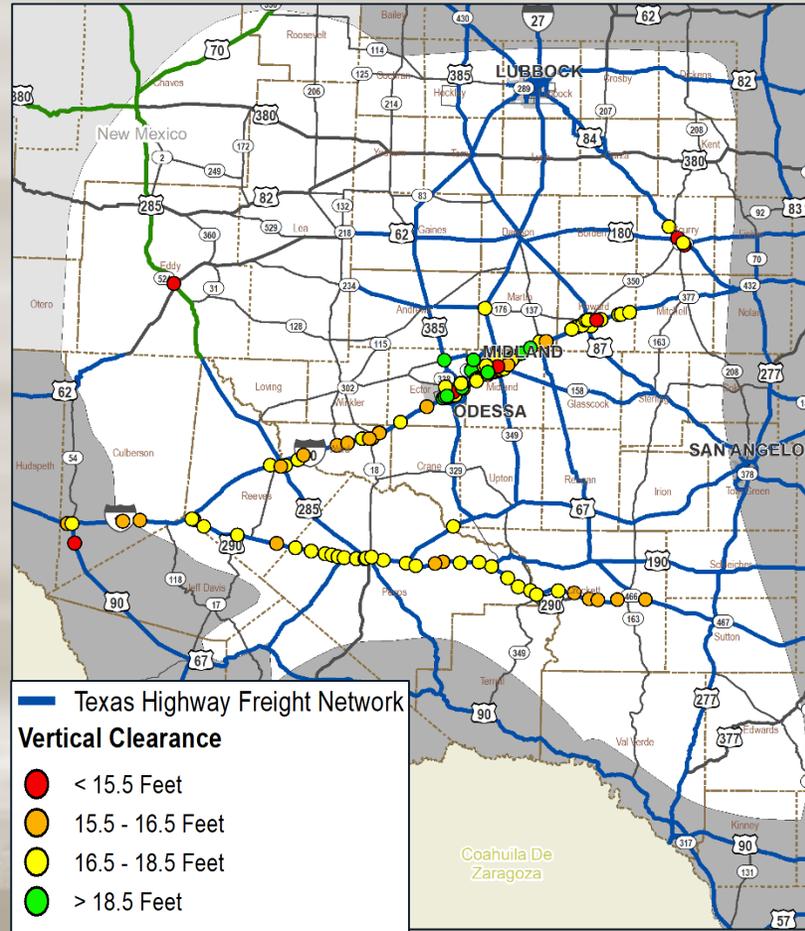
Source: Cambridge Systematics analysis of ATRI truck GPS data

# Bridges

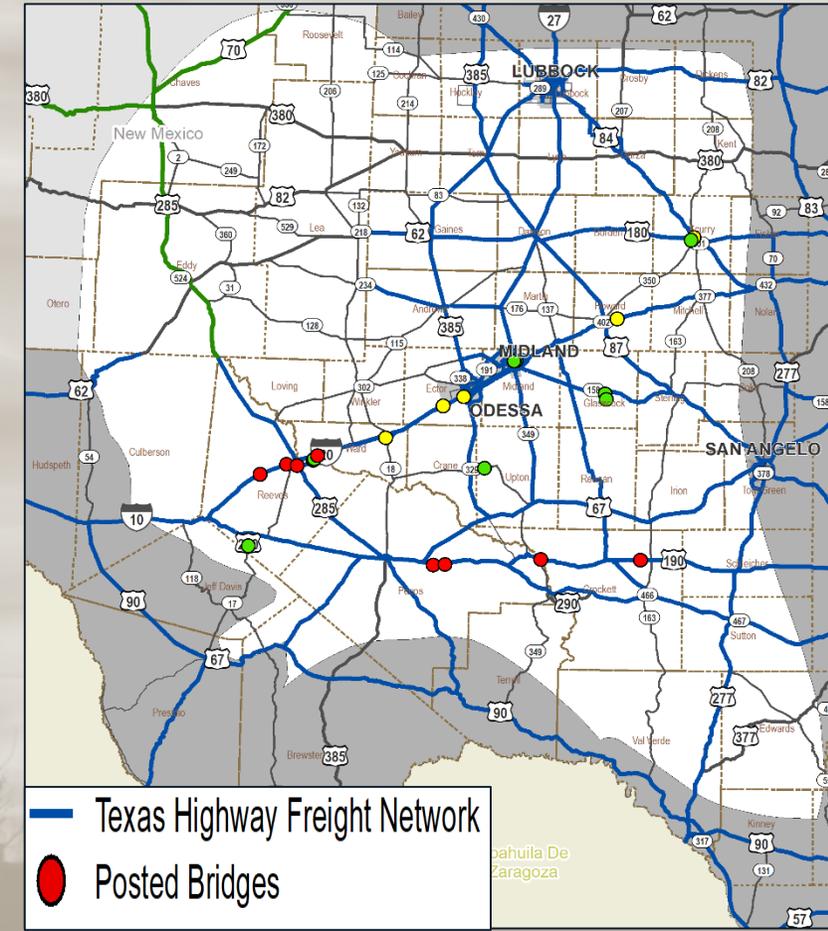
## Poor/Structurally Deficient Bridges



## Vertical Clearance of Bridges



## Posted Bridges



Source; TxDOT

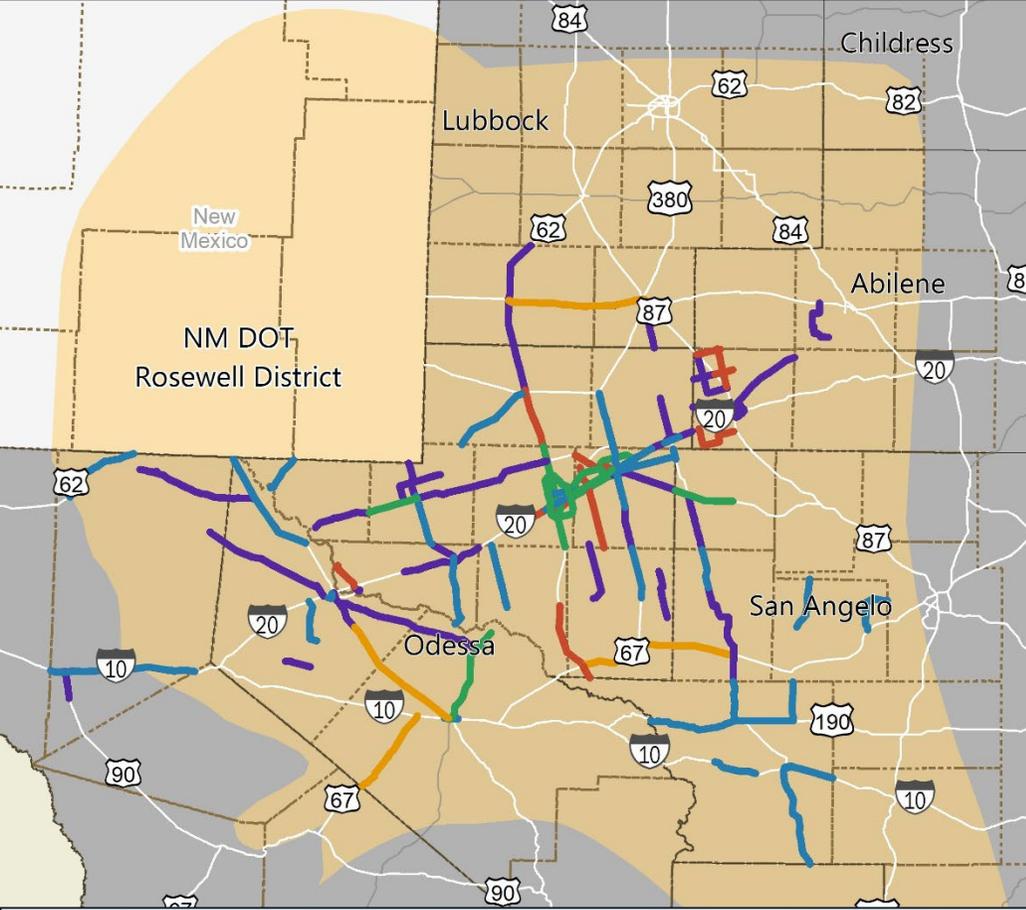
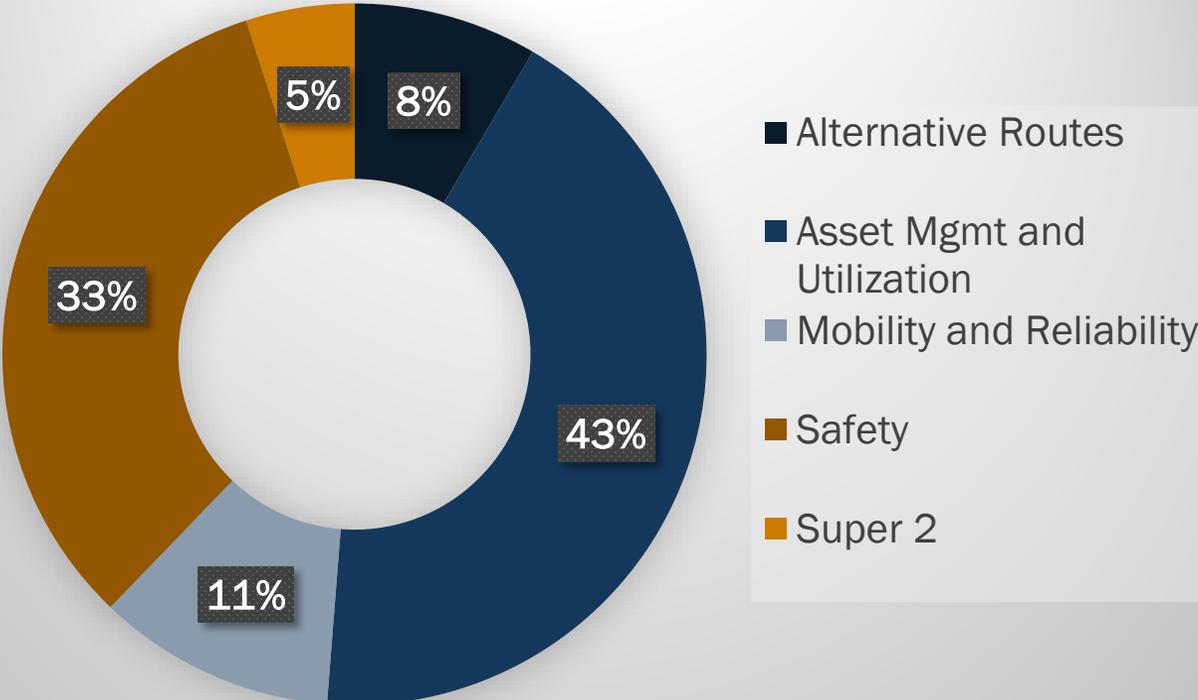


# CURRENT TRANSPORTATION PROJECTS IN THE PERMIAN BASIN

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# Projects in the 2020 Unified Transportation Program by Category



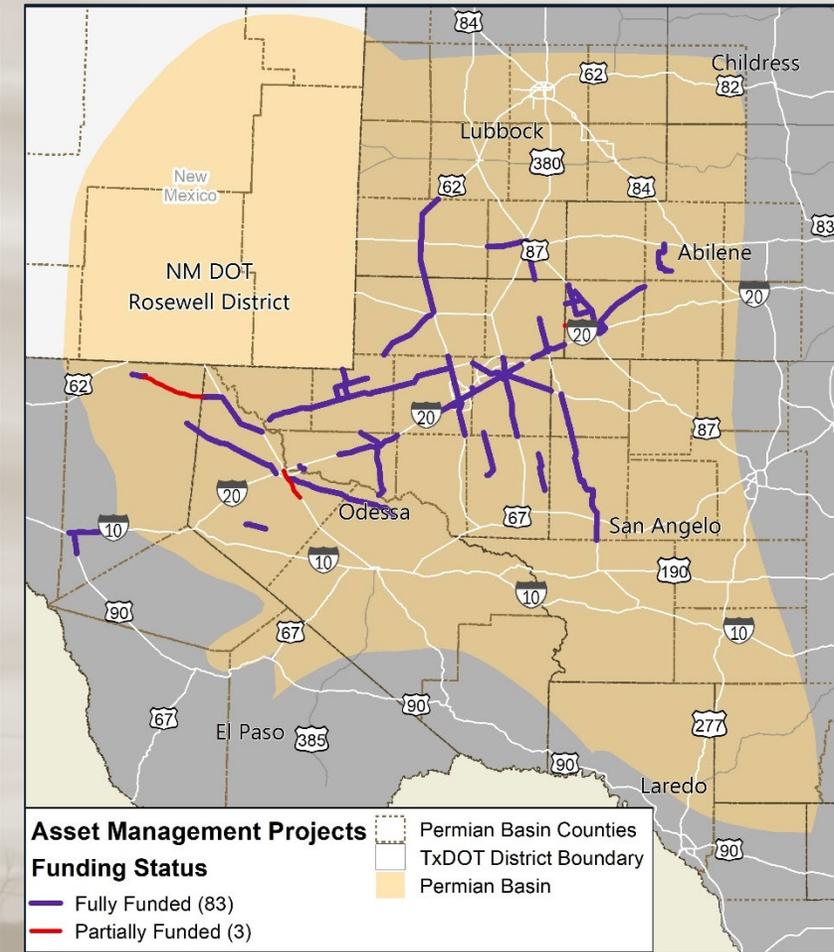
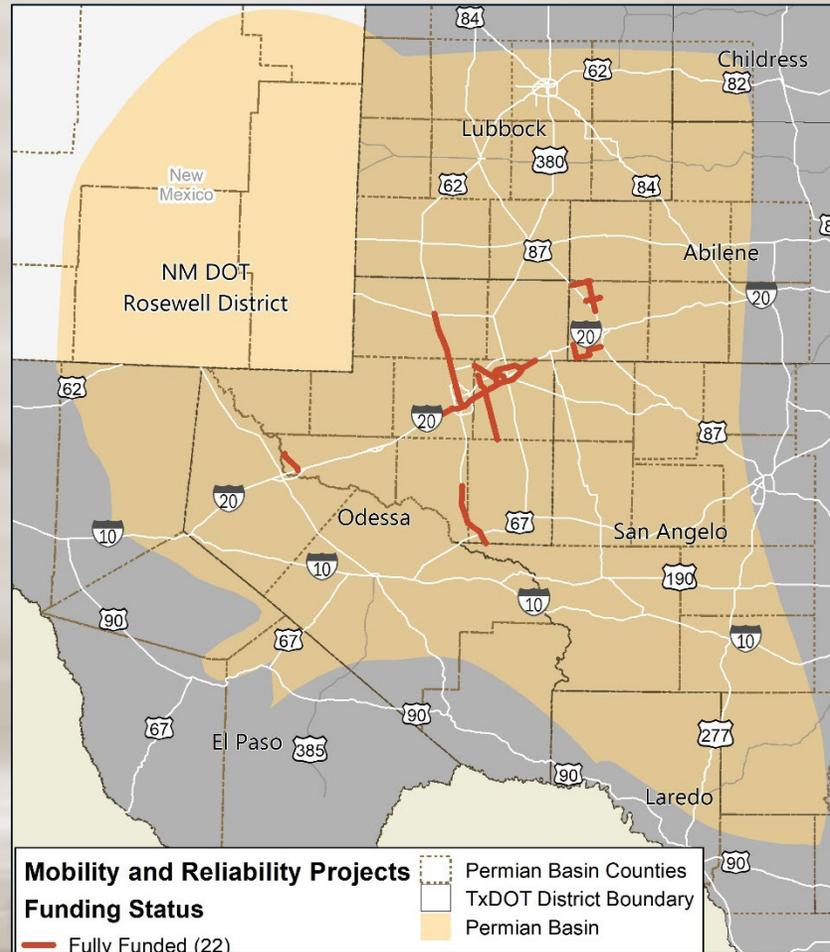
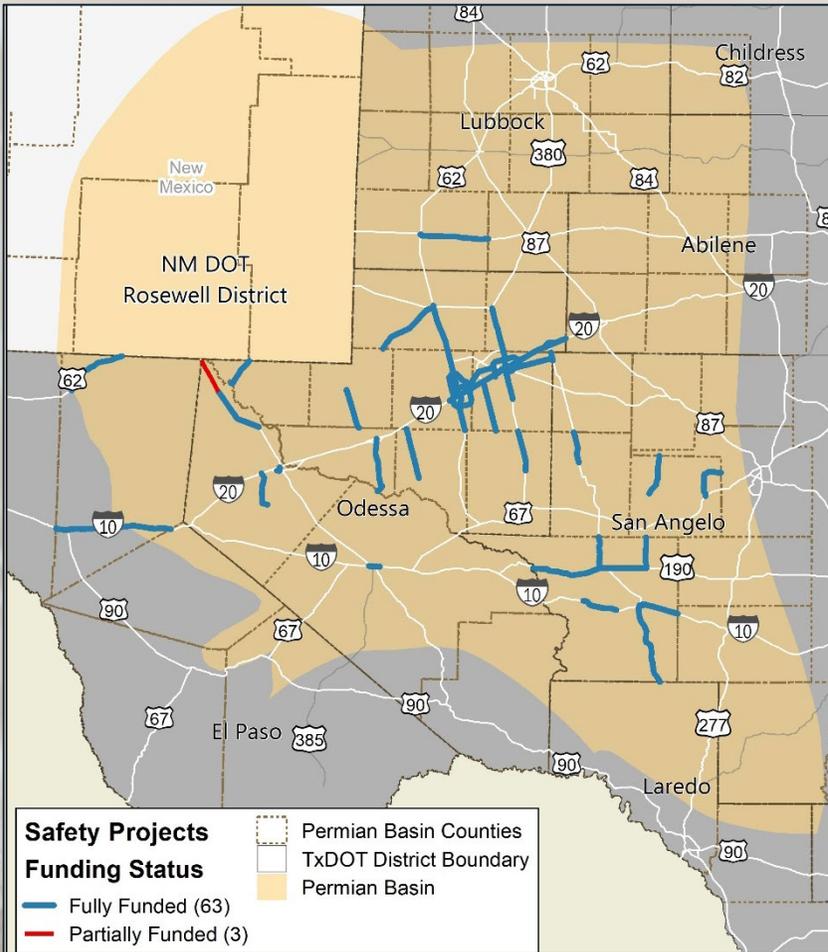
**2020 UTP Projects**

- Alternative Routes (17)
- Asset Management and Utilization (86)
- Mobility and Reliability (22)
- Safety (66)
- Super 2 (10)

- Permian Basin Counties
- TxDOT District Boundary
- Permian Basin

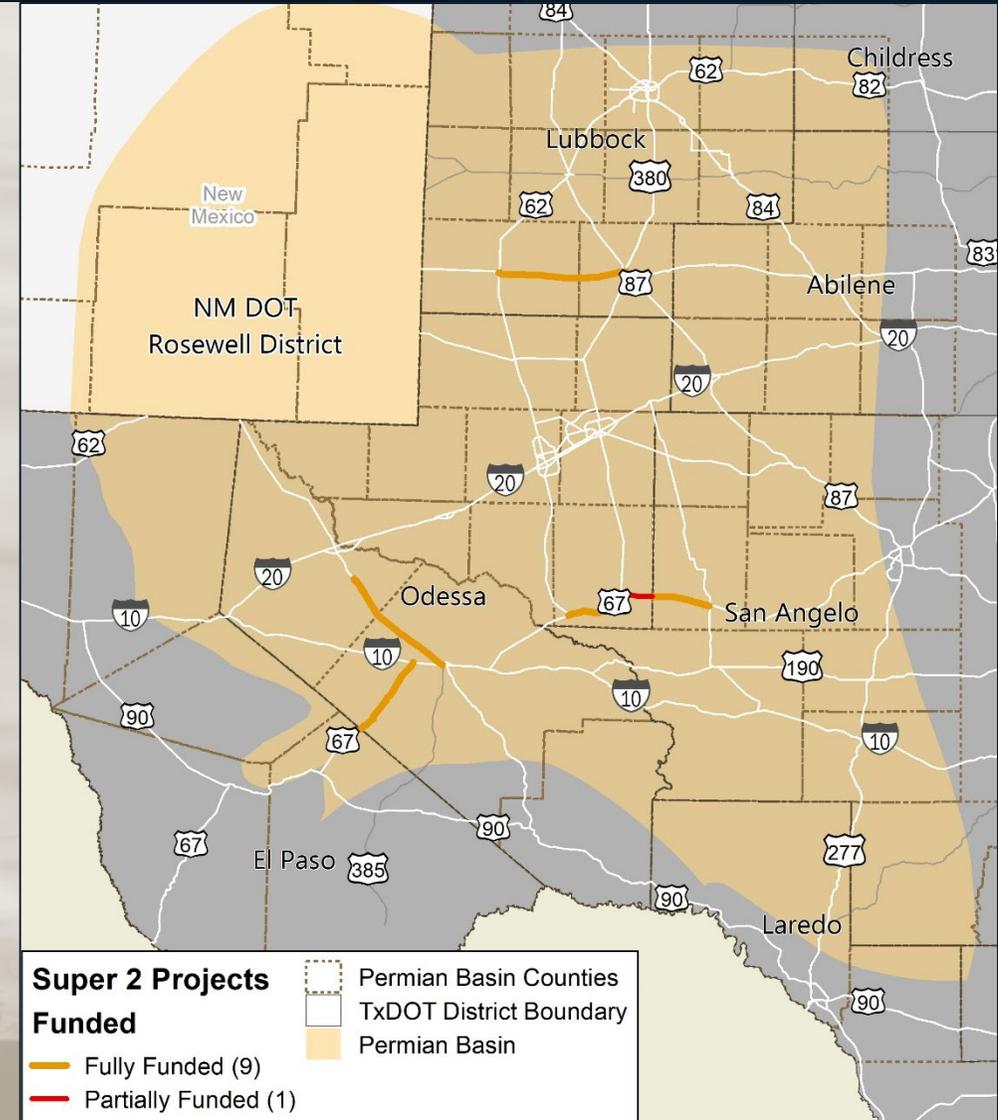
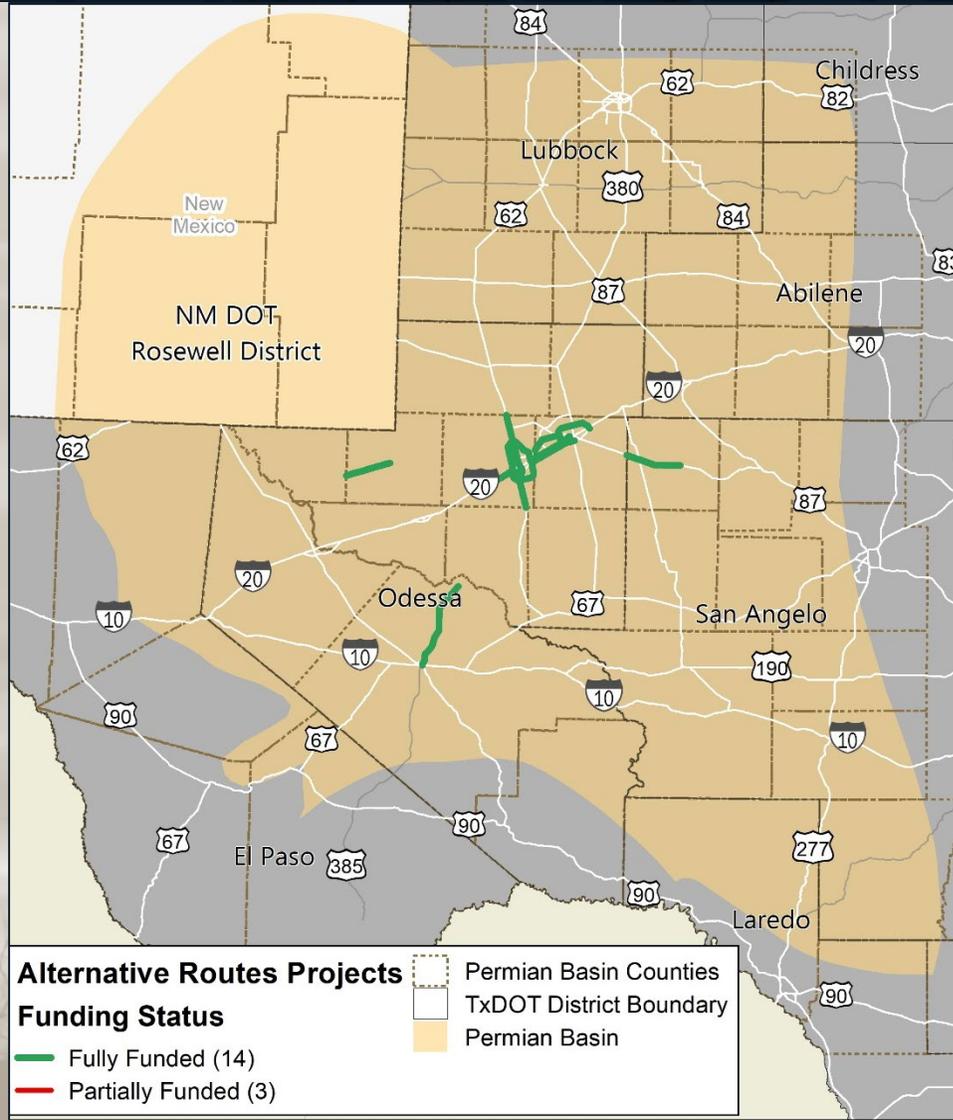
See TxDOT Project Tracker for more info:  
<https://www.txdot.gov/inside-txdot/projects/project-tracker.html>

# 2020 UTP Projects by Category by Funding Status



See TxDOT Project Tracker for more info: <https://www.txdot.gov/inside-txdot/projects/project-tracker.html>

# 2020 UTP Projects by Category by Funding Status



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# PERMIAN BASIN'S ECONOMIC FUTURE

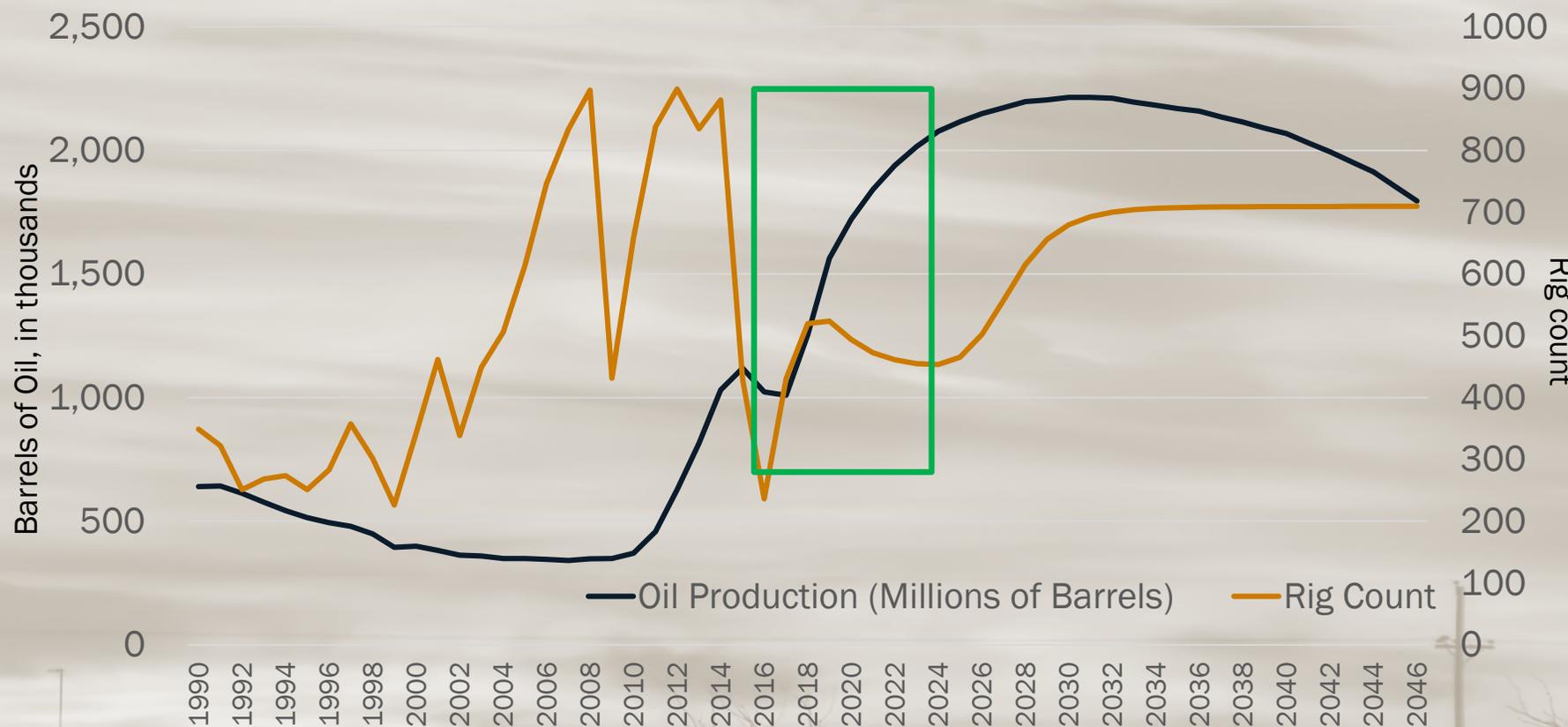
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# Oil Production and Rig Count

Forecasts have Texas rig count declining from 524 in 2019 to 454 in 2024 while oil production increases from 1.6 million barrels to 2.1 million barrels per day over this same period

**Does the increase in production from 2019 to 2024 reflect a continuing trend to drill more wells per rig, or some other factor?**



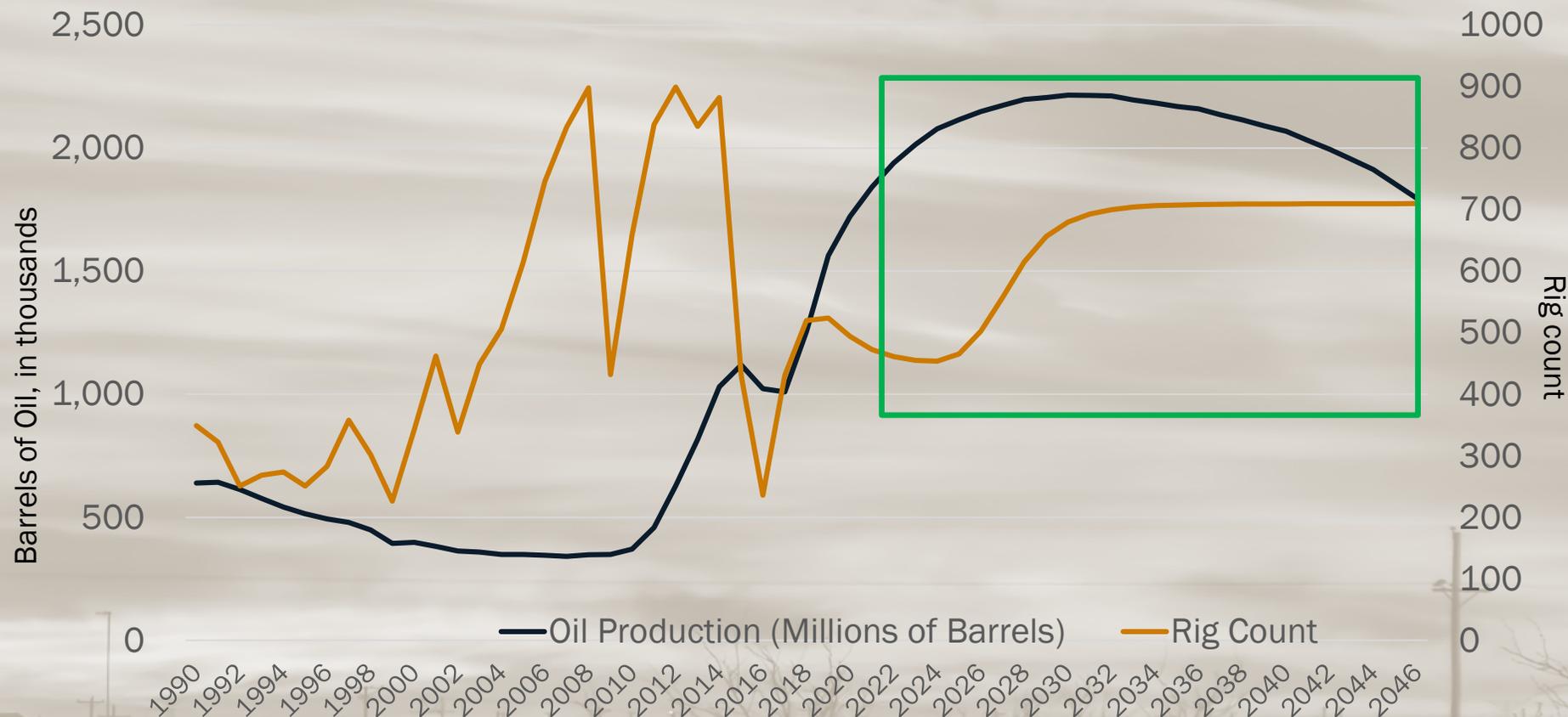
Source: Texas Comptroller's Office

# Oil Production and Rig Count

The rig count rises quickly from 455 in 2024 to over 700 in 2032 and then levels out. Over this period oil production rises more slowly, is relatively level through 2032, and declines thereafter.

**Why is production declining while the rig count is relatively constant?**

**How will oil prices trend in the future?**



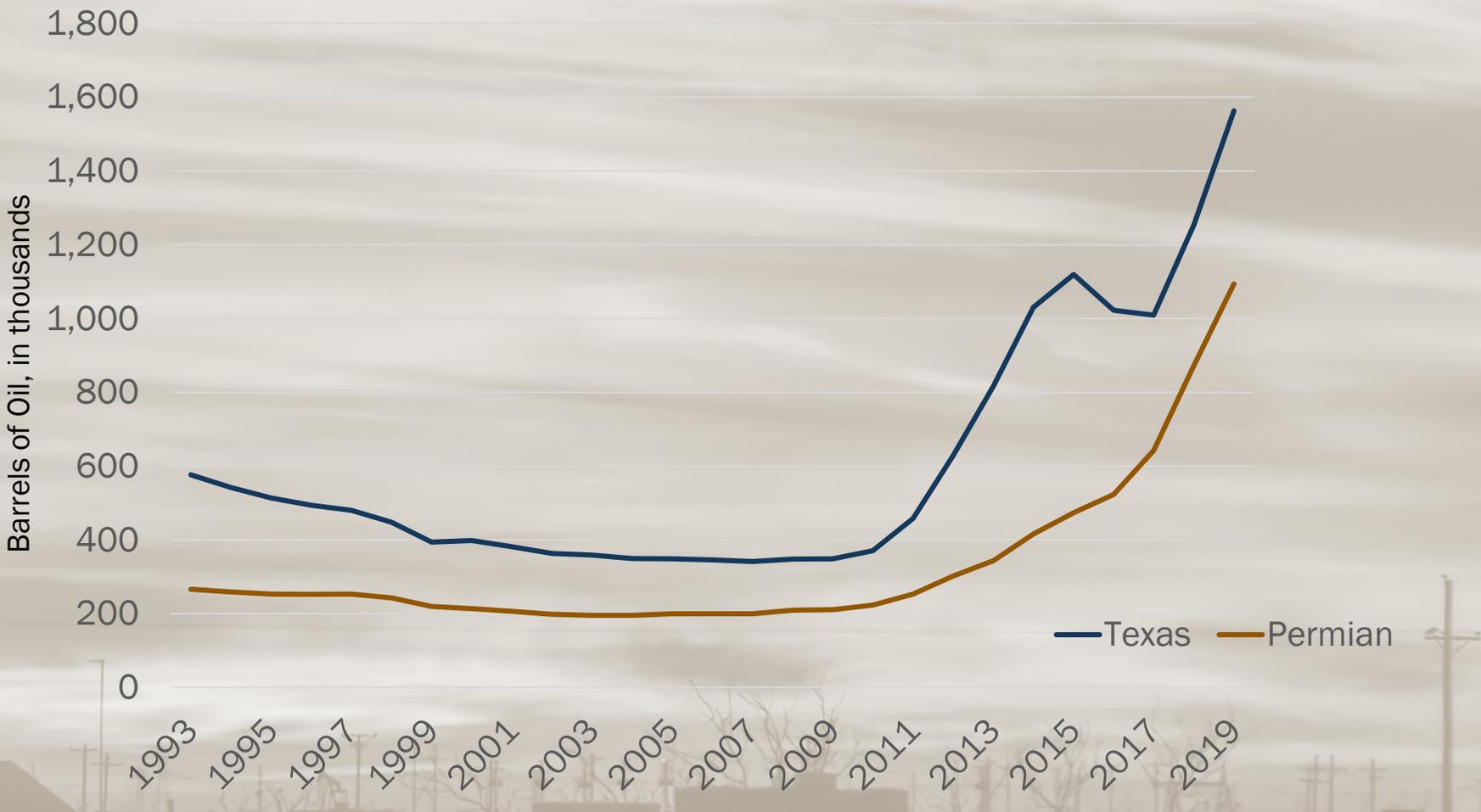
Source: Texas Comptroller's Office

# Infrastructure Design and Preservation

Oil production in Texas, as a whole, dropped from 2015 to 2017, but continued to grow rapidly in the Permian Basin.

The Permian Basin's share of state production has grown to 70% in 2018 from the 50%-plus level in the late 1990s.

**Is the Permian Basin's share of state production likely to grow past 70% in the future and, if so, by how much?**



Source: Texas Railroad Commission

Are equipment and materials used in oil drilling related more to the number of wells drilled than rigs utilized?

How will the number of wells that will be drilled relative to the rig count and production levels change in the future?

What other factors are most likely to drive energy sector truck trip generation in the future?



# Other Considerations for the Future

How much of oil production will go to refineries in the Permian Basin?  
How will it be transported?

How much will wind power developments grow in the future?

What are the top factors that will impact future economic growth in  
the Permian Basin?



# NEXT STEPS



### Technical Analysis

- Collect data from public and private sources
- Regional freight network and needs assessment
- Develop economic and commodity flow profile

### Stakeholder Outreach

- Online survey and interactive map (Fall 2019)
- Plan Steering Committee (Fall 2019)
- Round 2 listening sessions (Spring 2020)



# Developing the Freight Network Technology and Operations Plan

## PURPOSE

Develop a comprehensive Freight Network Technology and Operations Plan that positions Texas as a leader in addressing current freight movement issues through the effective use of technology.

## HOW CAN YOU HELP?

TxDOT needs your assistance in identifying technological strategies to enhance the freight transportation system.

- What are the major freight transportation operational issues you are dealing with that technology or information solutions could potentially assist you with?
- Can you identify data sources and public/private technologies/programs that should be included?
- What are the potential focus areas for technology application to improve freight operations?
- What strategies should be investigated?

## Freight Network Technology Working Group Meetings



**Thank you!**

**Contact us for more information about the Permian Basin  
Regional Freight and Energy Sector Transportation Plan**

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