



TEXAS DEPARTMENT OF TRANSPORTATION



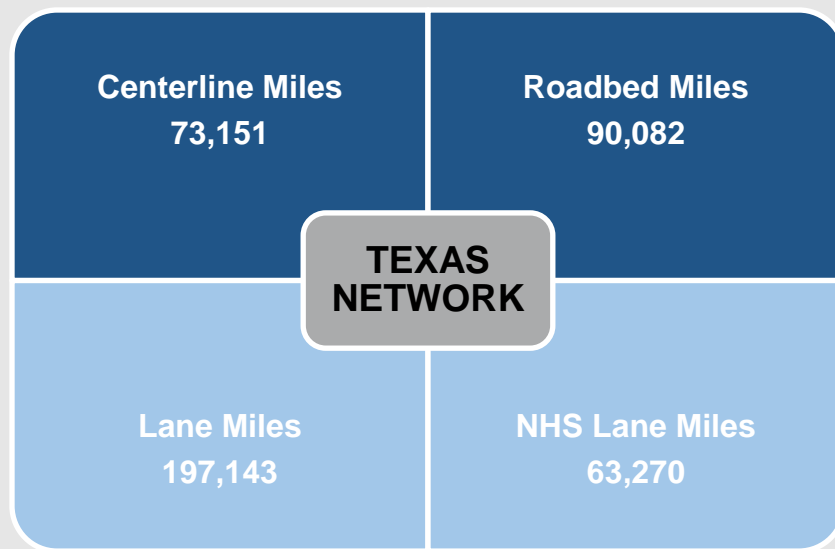
STATE OF TEXAS REPORT

“A Report on Asset Conditions,
Management, and Impacts”

Agenda

1	Pavement Asset Conditions	3-6
2	Texas Transportation Asset Management Plan (TxTAMP)	7-8
3	Impacts on Assets: Energy Sector	9-22
4	Conclusion	12-14

Pavement Asset Conditions

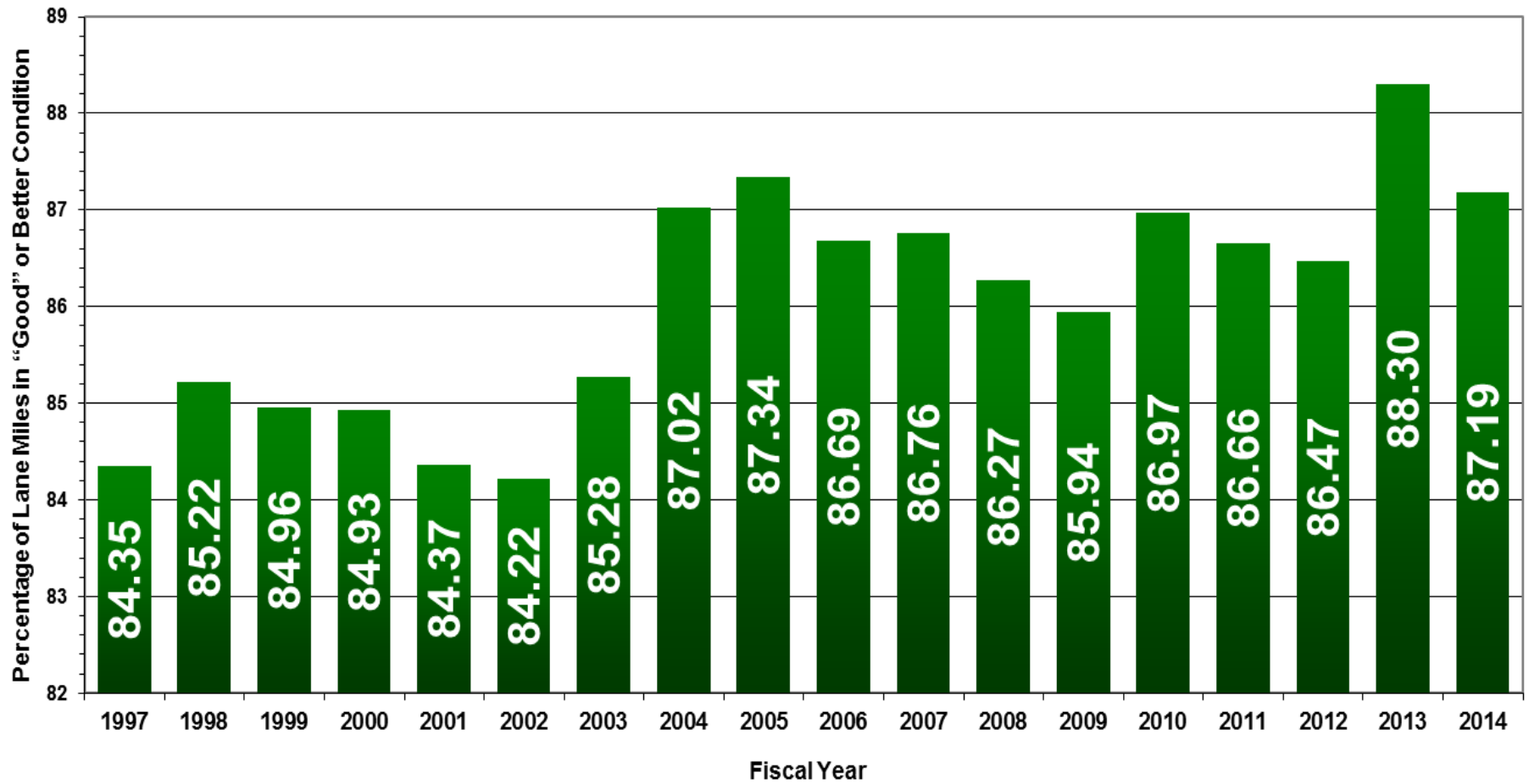


Pavement Asset Conditions

FUNCTIONAL CLASSIFICATION

Functional Class (FC) FHWA Code	1	#2-#5	#6-#7	NHS
Lane Miles % of Network	8%	78%	14%	32%
Vehicle Miles Traveled % of Network	33%	66%	1%	74%

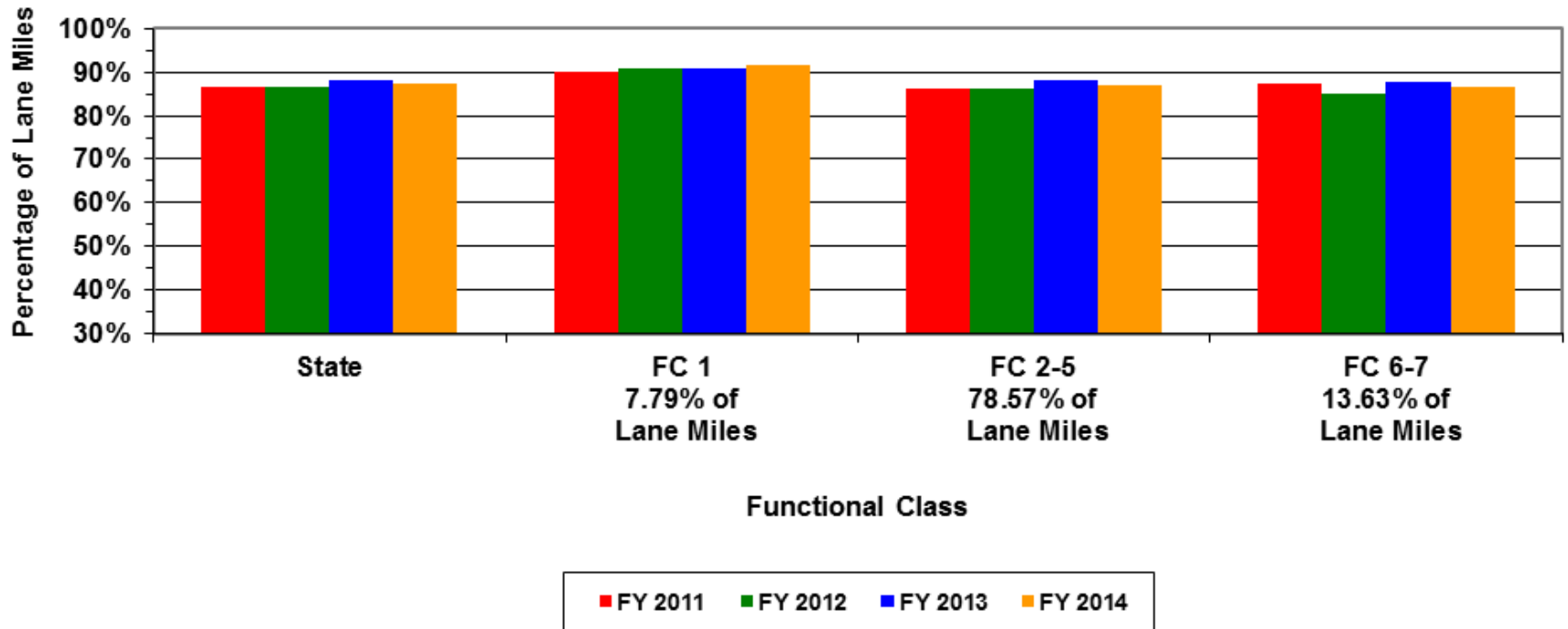
Pavement Asset Conditions



Overall Statewide Pavement Condition Scores

Pavement Asset Conditions

**“Good” or Better Condition Scores
(PMIS Condition Score 70 or above)**



FC 1: Improved

FC 2-5: Declined

FC 6-7: Declined

PHASE 1: DEVELOP

INITIAL TAMP

- 75% Complete
- Capture existing asset inventory and condition.
- Examine future asset condition targets.
- Conduct a gap evaluation.
- Perform financial and investment analysis.
- Conduct risk analysis.

PHASE 2: IMPLEMENT

LIVING TAMP

- 5% Complete
- Identify TAMP assignments and tasks as a result of gap evaluation and risk analysis.
- Establish a work-plan and communication tool to address these assignments and tasks.
- Track results.

PHASE 3: MANAGE

SUSTAINABLE TAMP

- 5% Complete
- Align performance targets with functional asset expectations.
- Align performance targets with “External Impacts” to deterioration rates.

TxTAMP PROJECT MISSION

“To align system performance with financial resources and meet Department performance measures while improving cross asset relationships for the greater good.”

Phase 1: Develop
Draft initial TxTAMP
complete July 2014...

Phase 2: Implement
Address risks and gaps July
2014 to July 2015...

Phase 3: Manage
Final initial TxTAMP
functioning July 2015, so on

TxTAMP Project Goal

“To have a fully functioning TAMP which will improve project, policy, and investment level decision making and ensure TxDOT is federally compliant.”

Transportation Asset Impacts: Energy Sector



Energy Sector Roadway Impacts



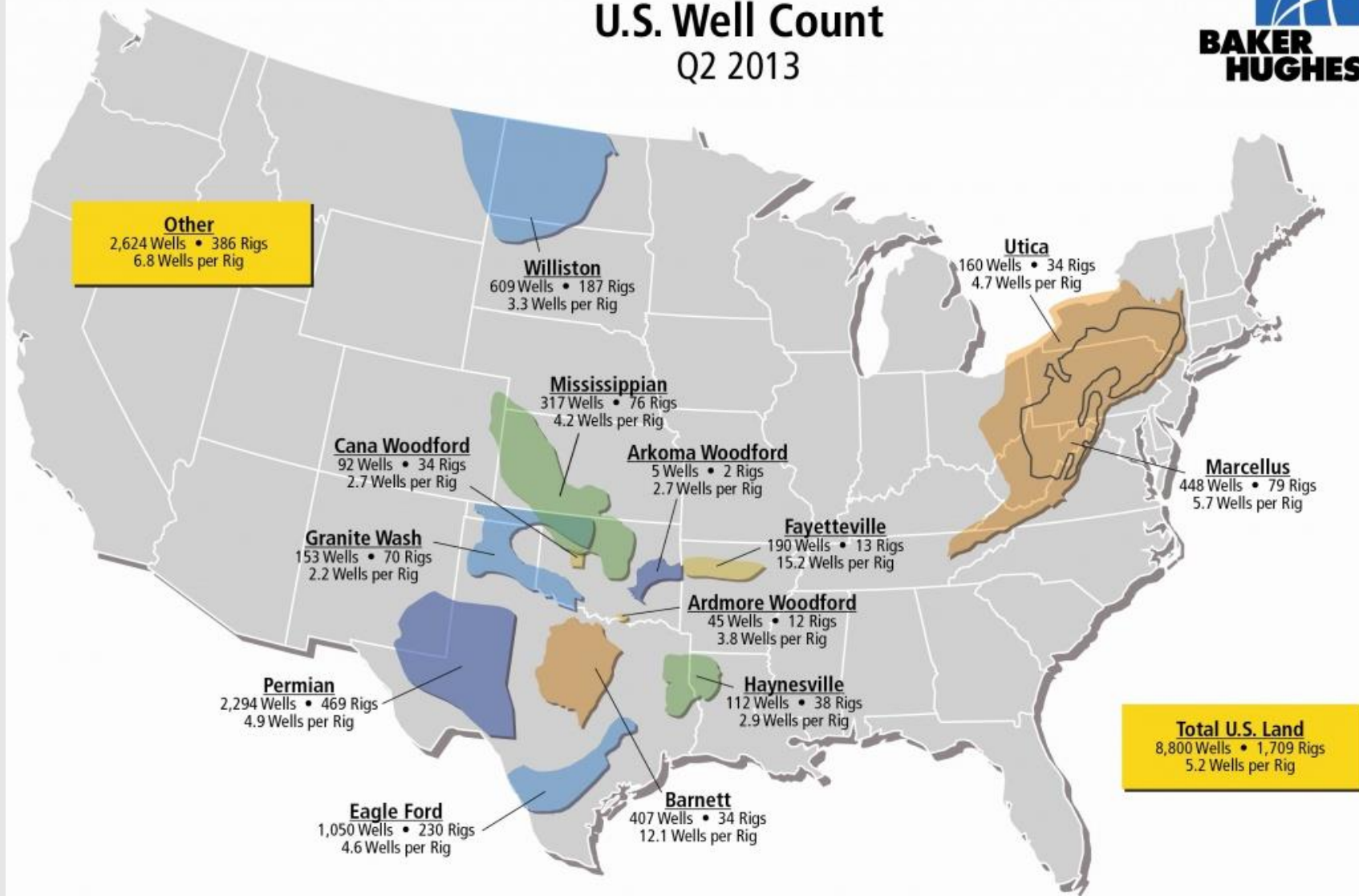
TxDOT 2903222H.201

Energy Sector Roadway Impacts



Nationwide Production

U.S. Well Count Q2 2013

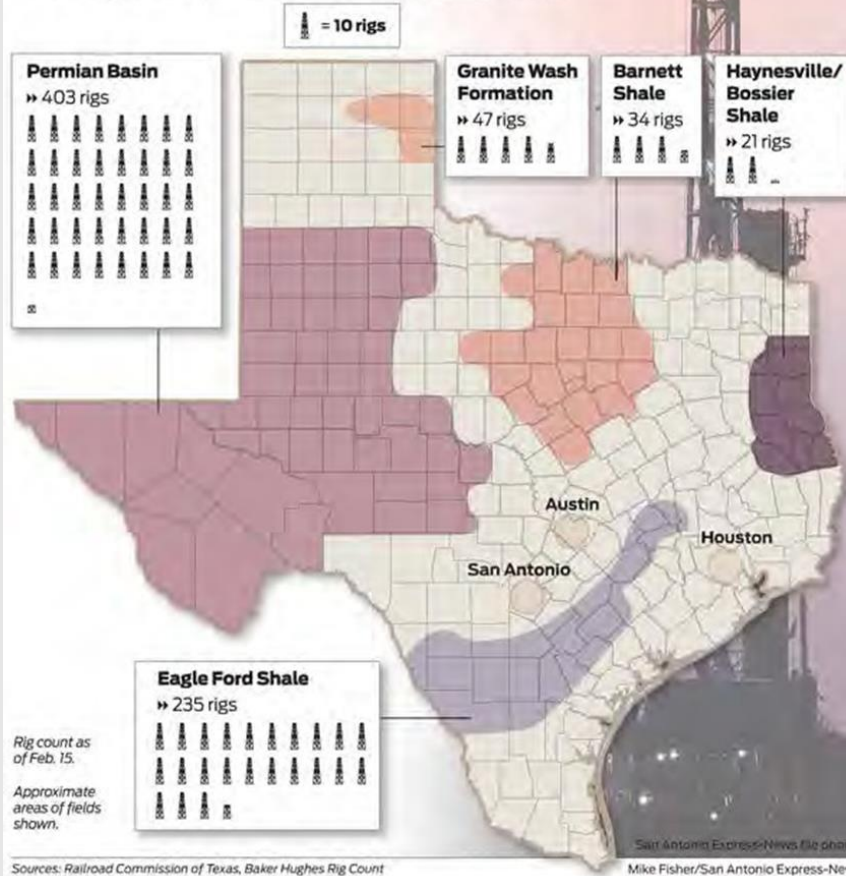


Source: Baker Hughes Incorporated

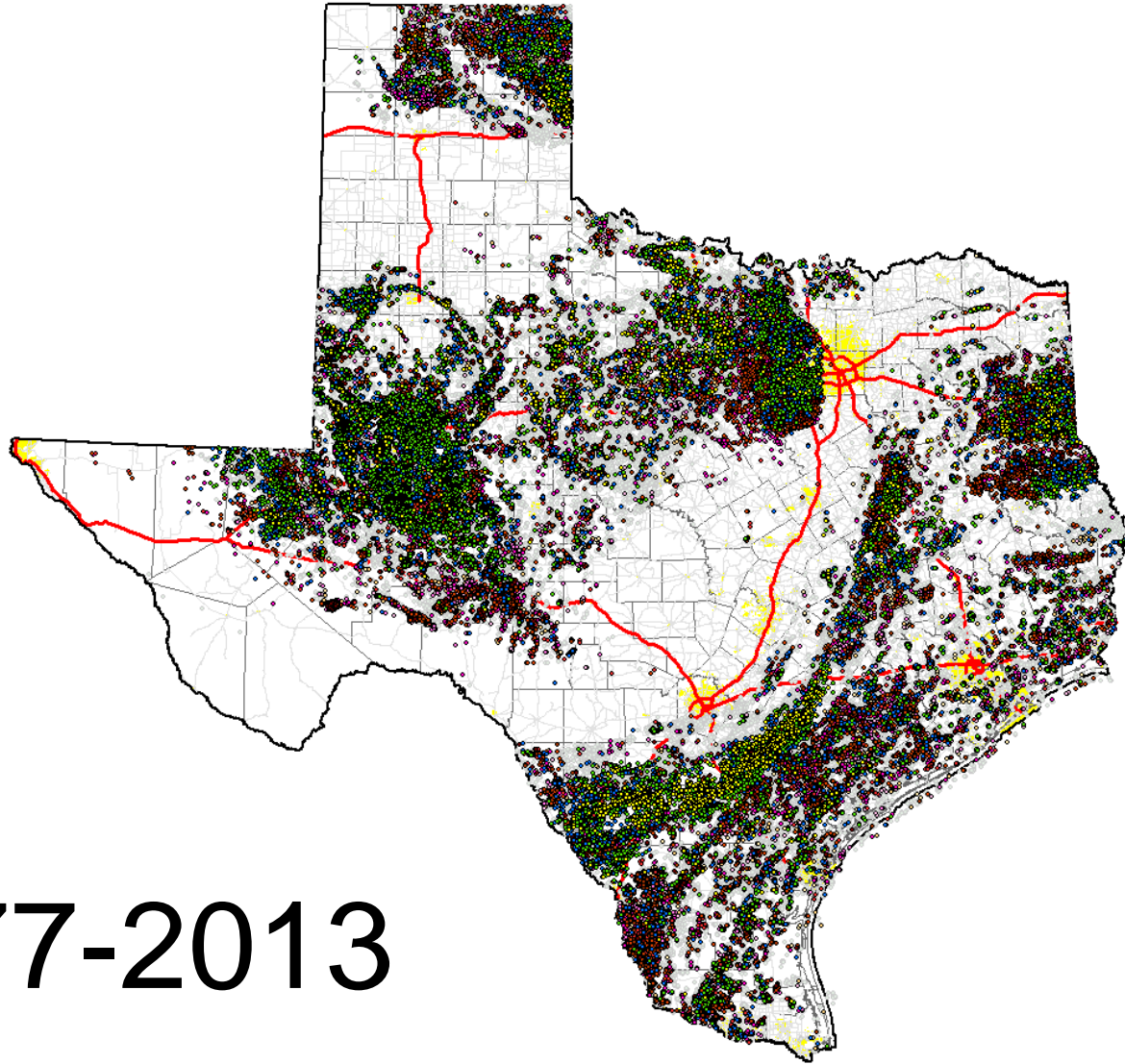
Texas Oil and Gas Regions

Texas oil and gas fields

Texas has more than one-fifth of the world's drilling rigs operating and five major areas of oil and gas production. The Barnett Shale in North Texas was the first field where horizontal drilling and hydraulic fracturing were used to produce oil and gas from dense shale rock. Since then, drilling and production has ramped up in the Eagle Ford in South Texas, the Haynesville/Bossier Shale in East Texas and the Panhandle's Granite Wash, a tight sandstone. The Permian Basin, a historically prolific area for oil and gas production, has re-emerged as a complex field with drilling in multiple geologic horizons.



Statewide Well Production



1977-2013

Infrastructure Damage



Rutting and Edge Failures



Surface Damage and Deformation



Fatigue Cracking and Failures



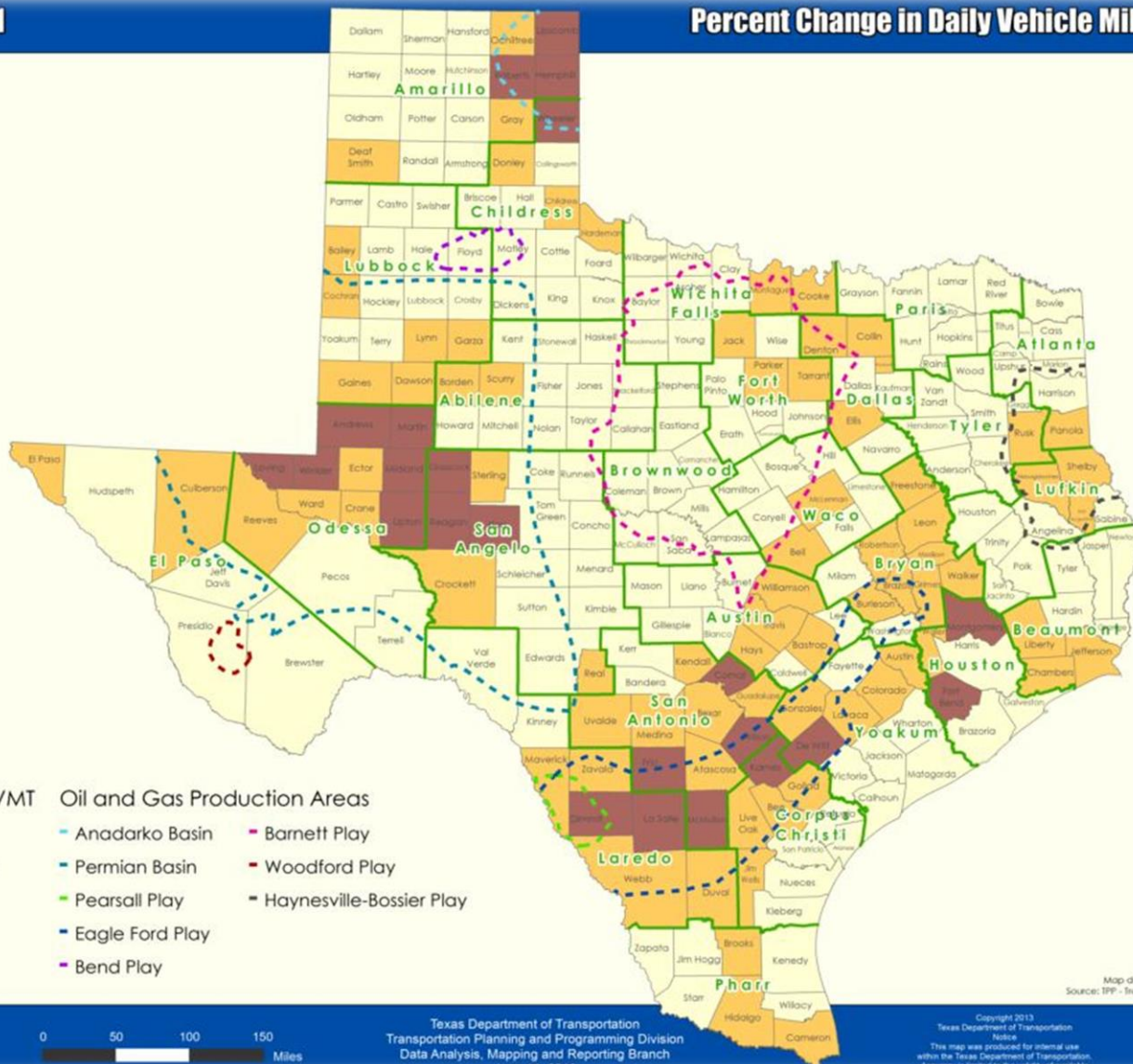
Edge Drop Offs and Erosion



Traffic Growth Related to Growing Energy Activity

2000-2011

Percent Change in Daily Vehicle Miles Traveled



Change in VMT

Oil and Gas Production Areas

> 35%

Anadarko Basin

Barnett Play

12% - 34%

Permian Basin

Woodford Play

< 11%

Pearsall Play

Haynesville-Bossier Play

Eagle Ford Play

Bend Play



0 50 100 150 Miles

Texas Department of Transportation
Transportation Planning and Programming Division
Data Analysis, Mapping and Reporting Branch
June 14, 2013

Copyright 2013
Texas Department of Transportation
Notice
This map was produced for internal use
within the Texas Department of Transportation.
Accuracy is limited to the validity of available
data as of December 31, 2012.

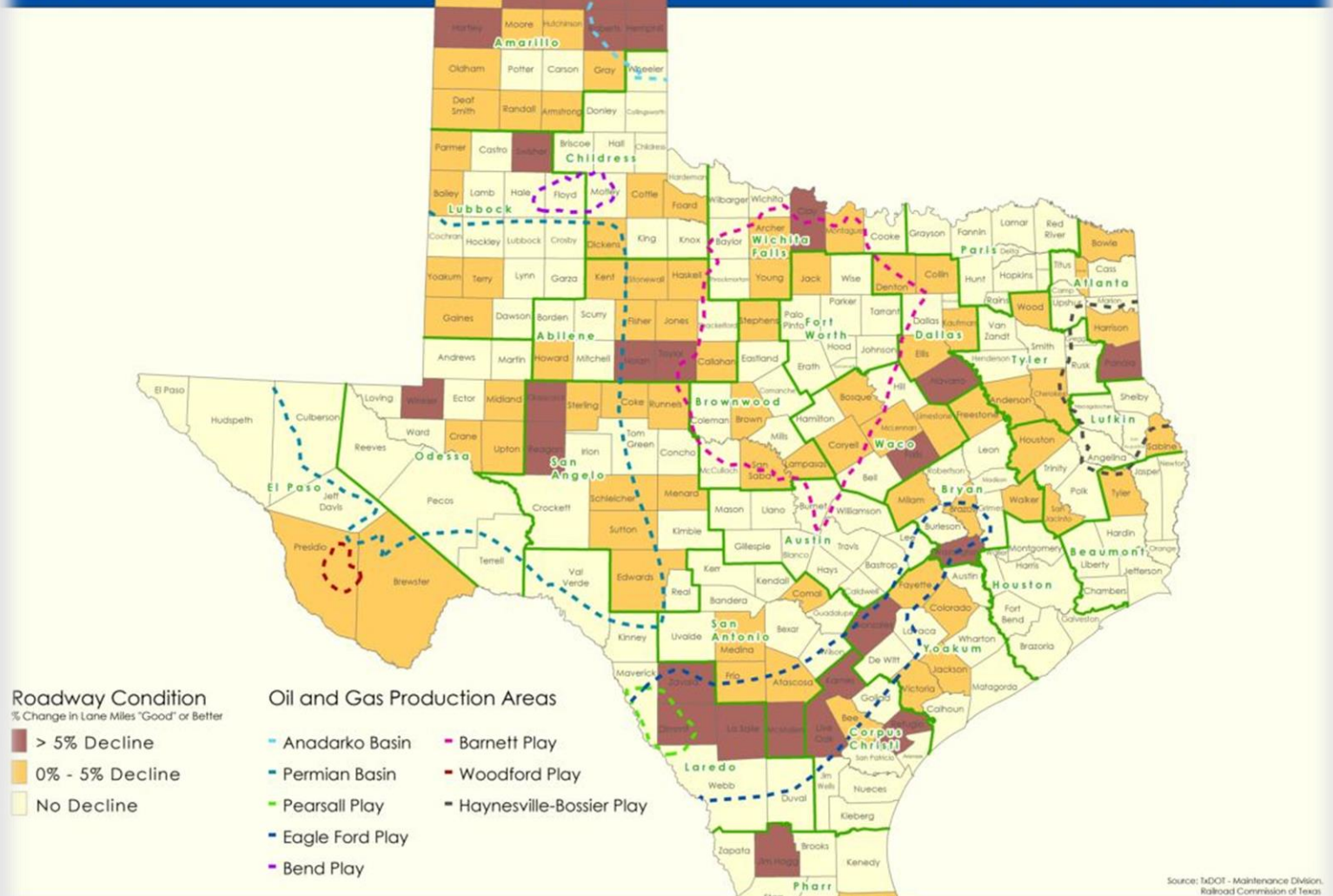


Map data derived from 2000 - 2011 AADT
Source: TFP - Traffic, Railroad Commission of Texas

Pavements Condition Impacts

2010-2013

Percent Change in Roadway Condition



Texas Department of Transportation
 Transportation Planning and Programming Division
 Data Analysis, Mapping and Reporting Branch
 June 14, 2013

Copyright 2013
 Texas Department of Transportation
 Notice
 This map was produced for internal use
 within the Texas Department of Transportation.
 Accuracy is limited to the validity of available
 data as of December 31, 2013.



Conclusions, Remarks and Lessons Learned

- Statewide pavement condition is being maintained while experiencing extremes from energy sector impacts
- TxTAMP on target to be compliant with MAP21 implementation requirements

- Energy sector activity increasingly impacting roadway assets
- Challenge to measure energy sector impacts with rapidly changing activity

- Developing a knowledge base of pavement treatments and structural sections for energy sector vehicles
- Using protective strategies to mitigate roadway deterioration