

RURAL TRANSPORTATION ISSUES

**Energy Development and the Transportation System:
Update on TRB Activities, Session 238, January 12, 2014**



U.S. Department
of Transportation

**Federal Highway
Administration**

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Commitment to Excellence

Energy Development

SECTORS:

- Oil
- Natural Gas
- Wood
- Coal
- Wind
- Biofuels
- Solar
- Nuclear



The Pros and the Cons

BENEFITS:

- Jobs
- Economic Growth
- Population Growth

ISSUES:

- Road Traffic Congestion
- Traffic Safety Impacts
- Poor Roadway Geometry
- Early Road Deterioration



Road Traffic Congestion

● Well Head Loads

(Banejee et al)

- 20 Drill Rig in/out
- 1 per day continuous
Salt water disposal
- 900 Fracking per event

● Wind Farm Loads

(Duane Downs)

- 3 Tower Sections
- 3 Blades
- 3 Hub & Generator & Parts
- 50 Concrete Trucks (~450 CY per base)

Total: 59 (not including crane/workers)

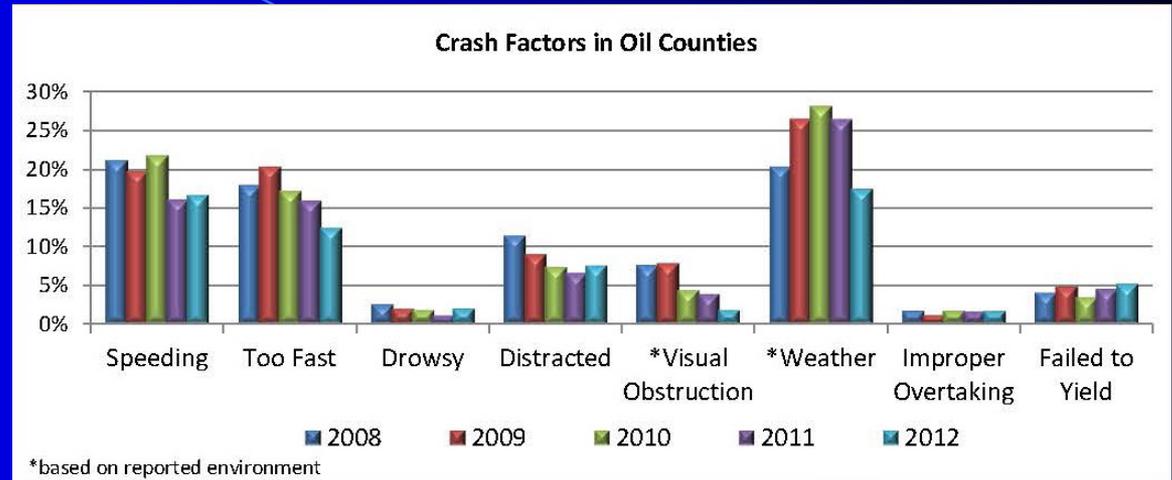


Credit: Steven Koser

Traffic Safety Impacts

NDSU Upper
Great Plains
Transportation
Institute, Fall
2013

- From 2008 – 2012:
- ~2x crashes
- ~2x injuries
- ~2x deaths
- ~2x \$\$\$



Economic Costs of Crashes in the Oil Region

Year	Total Crashes	Injuries	Fatalities	Total Est \$ Loss*
2008	2959	651	38	\$125.9 Million
2009	3198	725	46	\$144.5 Million
2010	3903	845	33	\$140.9 Million
2011	5505	1118	63	\$216.8 Million
2012	5535	1287	83	\$257.0 Million

*Total Est \$ Loss includes PDO crashes. Calculated values for Est \$ Loss as reported by National Safety Council

Poor Roadway Geometry



Credit: Duane Downs

Poor Roadway Geometry



Credit: Ken Skorseth

Early Road Deterioration

Reports:

- **TxDOT testimony to House**
- **Banerjee et al study**
- **Idaho US-12 injunction**

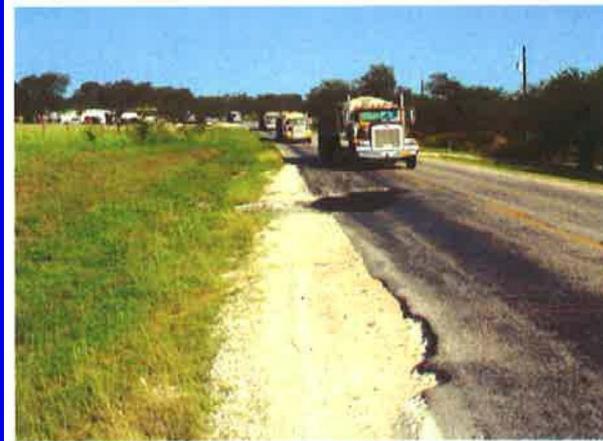
Base Failures



Pavement Distress



Edge Damage



Rutting



Early Bridge Deterioration



Example of bridge hit. (TxDOT photo)

A Step in the Right Direction

The Impacts of Energy Development on US Roads and Bridges, NCHRP Synthesis 20-05/Topic 45-10

- **Identify the energy development and impacts**
- **Document the economic infrastructure costs to support energy development**
- **Design standards for roads and bridges**
- **Engineering methods used to address heavy loads and high traffic volumes**
- **Tools to assess costs and pay for damages**
- **Agencies' safety programs for speed, geometry, and conflicts with local traffic**
- **Examples of agreements, laws and regulations**
- **Knowledge gaps**

Thank You

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