TEXAS DEPARTMENT OF TRANSPORTATION
LA REDO DISTRICT
EAGLE FORD SHALE:
“IMPACTS TO THE TRANSPORTATION SYSTEM”

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Overview

1. Eagle Ford Shale
2. Impact to The System
3. Pavement Impact
4. Traffic Operations Impact
5. A Look at the Budget
6. Solutions
Eagle Ford Shale

- Largest single economic development in the history of the state of Texas, $25 Billion South Texas Economy in 2011.
- Located South Texas and produces from various depths between 4,000 and 14,000 feet.
- Is the most active shale play in the world with 250 rigs running.

Well production across 30 county area:

- Atascosa County, TX
- Austin County, TX
- Bastrop County, TX
- Bee County, TX
- Brazos County, TX
- Burleson County, TX
- Colorado County, TX
- DeWitt County, TX
- Dimmit County, TX
- Duval County, TX
- Fayette County, TX
- Frio County, TX
- Goliad County, TX
- Gonzales County, TX
- Grimes County, TX
- Karnes County, TX
- La Salle County, TX
- Lavaca County, TX
- Lee County, TX
- Leon County, TX
- Live Oak County, TX
- Madison County, TX
- Maverick County, TX
- McMullen County, TX
- Milam County, TX
- Robertson County, TX
- Washington County, TX
- Webb County, TX
- Wilson County, TX
- Zavala County, TX
Impacts to The State

• The energy sector is of tremendous value to our state
• This issue will occur in other areas of the state in the future
• It will require a cooperative effort among a large group of interests to address the issue
• There are immediate, mid-term and long-term concerns to address
Impacts to The State

- This issue will persist for 20 – 40 years or longer
- We must be proactive in addressing this issue
- Creative and innovative solutions will be required
- Strategic and holistic planning will be required
- Current research efforts need to be expanded
- Time is of the essence
Research has determined that the service life on IH, US, SH, and FM highways is reduced:

- Due to truck traffic associated with natural gas well operations alone between:
  - 1% and 16% for rig movements
  - 1% and 34% for the saltwater disposal traffic
  - 4% and 53% for construction traffic
  - Overall Impact (Average) 30%
Impacts to the System (Cont.)

- Due to truck traffic associated with crude oil well operations alone between:
  - 1% and 3% for construction traffic
  - 2% and 16% for the production traffic
  - Overall impact (Average) 16%
Traffic Generators

Compressor plant

Compressor plant
Traffic Impacts
Increased Traffic/Safety Concerns
Safety/Environmental Concerns
Bridge Impacts/Restrictions
ROW Issues
Loaded Trucks Per Gas Well
(Based on Information from Fort Worth Barnett Shale)

- 1,184 loaded trucks to bring one gas well into Production, plus
- 353 loaded trucks per year to maintain, plus
- 997 loaded trucks every 5 Years to re-frac the well

This is equivalent to roughly 8 Million cars plus an additional 2 Million cars per year to maintain.
Typical Traffic throughout La Salle, Dimmit, & Zavala Counties
FM 469 La Salle Co.  
Severe Pavement Failure & Edge drop offs
FM 468 La Salle Co. Severe Alligator Cracking
IH 35 La Salle Co.
Newly Developed Pipe Distribution Site north of Cotulla
IH35 West Frontage Road
La Salle Co.
Severe Pavement Failure at entrance
to distribution site
Traffic Operations

Counties heavily affected by Oil and Gas Industry traffic:
• Dimmit and La Salle County
Traffic along IH-35

- Traffic Counts conducted over a four (4) week period, from June to July, along IH-35:
- Webb & La Salle County
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>MM36: 12,900</td>
<td>MM36: 13,900</td>
<td>MM36: 17,434</td>
<td>24.62 %</td>
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<tr>
<td>MM65: 13,000</td>
<td>MM65: 13,100</td>
<td>MM65: 19,575</td>
<td>49.42 %</td>
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<tr>
<td>MM72: 11,100</td>
<td>MM72: 12,700</td>
<td>MM72: 23,591</td>
<td>85.75 %</td>
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<tr>
<td>MM78: 11,100</td>
<td>MM78: 12,700</td>
<td>MM78: 20,533</td>
<td>61.67 %</td>
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Estimated Annual Impacts

- **Original Estimate for FM System:** $890 million
  - Additional 20% for heavier trucks
  - Additional 15% for higher road material prices
  - Very conservative: well over $1 billion annually

- **Estimated impact for state’s System:** $2 billion

- **Extrapolating to local roads**
  - Similar number of lane miles
  - Lower original design requirements
  - Estimated impacts well over $1 billion annually
### Immediate Expenditure Category 1

<table>
<thead>
<tr>
<th>District</th>
<th>$$</th>
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<tbody>
<tr>
<td>Corpus Christi</td>
<td>10,363,415</td>
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<tr>
<td>Dallas</td>
<td>2,462,160</td>
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<tr>
<td>Fort Worth</td>
<td>9,640,843</td>
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<tr>
<td>Laredo</td>
<td>10,357,710</td>
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<tr>
<td>San Antonio</td>
<td>2,601,019</td>
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<tr>
<td>Yoakum</td>
<td>4,232,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>39,657,147</strong></td>
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Solutions

FM Roadway Repairs
Solutions

FM Roadway Repairs
Traffic Operations (Signals)

SH97 at Bl-35 Traffic Signal & Pavement Marking Modifications:
- Added a protective/permissive left turn lane
- Pavement marking modifications
- Lane Designation Sign installations

![Traffic Operations Diagram](image-url)
Planned Projects:

- **Flashing Beacons:**
  - US83 @ FM 2688
  - US83 @ FM 133 (3 Driveways)

- **Acceleration/Deceleration Lanes:**
  - US83 @ FM 133 (Consultant)

- **Left Turn Lanes:**
  - US83 @ FM 305
  - US83 @ FM 191
Traffic Operations (Signs)

SH97 and FM133 Signs (Dimmit and La Salle):
- 16 Truck warning signs
- 17 Mile Stretch

US83 Dimmit & Webb County
- 40 Mile Stretch (Planning Phase)
Intersection Safety Improvements

[Images of an intersection before and after improvements]
Truck Routes

- Cotulla (Planning)
- Carrizo Springs (Design)
- Crystal City (Planning)
Recently Constructed Inspection Station
Solutions:

TxDOT Internal Task Force Activities

• Investigating ways to expedite the acceptance of donations by private entities
• Identifying and sharing Best Practices within TxDOT for addressing identified impacts
• Developing consistent access/driveway practices
Statewide Energy Sector Task Force Entities

- Texas Department Of Transportation
- Texas Department of Public Safety
- Texas Commission on Environmental Quality
- Railroad Commission of Texas
- Texas Department of Motor Vehicles
- Cities & Counties
- MOTRAN
- Texas Oil and Gas Association
- Texas Farm Bureau
- America’s Natural Gas Alliance
- Association of Energy Service Companies
- The Wind Coalition
- Texas Independent Producers & Royalty Owners Association
- Texas Motor Transportation Association
- Texas Pipeline Association
- Texas Energy Alliance
Current situation is not sustainable.

Growth in the energy sector contributes to state’s economic prosperity, but impacts service life of pavements.

Adequate funding sources needed to maintain infrastructure and ensure transportation system can serve energy sector in the future.
Lessons Learned

- Extensive coordination and cooperation is necessary
- Some counties have worked with industry to assist with roadway maintenance costs
- Law Enforcement assistance with additional enforcement is beneficial
- All players have a vested interest in finding a way to lessen the impacts
1. This is a critical issue requiring thoughtful planning.
2. A cooperative, multi-entity partnership is needed.
3. TxDOT has placed this as a top priority.
4. More details will be forthcoming as these plans develop.
Thank You