GROWING IMPACTS OF ENERGY DEVELOPMENT ON HIGHWAYS AND BRIDGES

An Overview of Potential Solutions

July 25, 2013
Recent growth in energy industry traffic
Increase in Traffic Volumes
Increase in Crash Rates

Most Impacted Counties

<table>
<thead>
<tr>
<th>County</th>
<th>FY 08</th>
<th>FY 09</th>
<th>FY 10</th>
<th>FY 11</th>
<th>FY 12</th>
<th>Increase from FY 08</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOLIAD</td>
<td>0.80</td>
<td>1.67</td>
<td>0.00</td>
<td>2.16</td>
<td>12.20</td>
<td>1422 %</td>
</tr>
<tr>
<td>FRIO</td>
<td>0.27</td>
<td>0.89</td>
<td>0.27</td>
<td>1.21</td>
<td>2.42</td>
<td>788 %</td>
</tr>
<tr>
<td>WILLACY</td>
<td>0.52</td>
<td>1.03</td>
<td>2.10</td>
<td>1.56</td>
<td>4.15</td>
<td>696 %</td>
</tr>
<tr>
<td>McMULLEN</td>
<td>0.00</td>
<td>0.00</td>
<td>5.84</td>
<td>3.49</td>
<td>6.95</td>
<td>695 %</td>
</tr>
<tr>
<td>WINKLER</td>
<td>0.00</td>
<td>1.47</td>
<td>7.42</td>
<td>0.00</td>
<td>6.16</td>
<td>616 %</td>
</tr>
</tbody>
</table>

- These five areas are experiencing significant crash rate increases.
Increase in Deteriorating Pavements
Some areas of the system are being completely consumed.

More than $1 billion in additional dollars is needed to bring pavements to acceptable levels.

Deterioration trend is predicted to continue for 10–15 years.

<table>
<thead>
<tr>
<th>County</th>
<th>FY 10</th>
<th>FY 11</th>
<th>FY 12</th>
<th>FY 13</th>
<th>Decrease from FY 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>KARNES</td>
<td>86.6</td>
<td>83.0</td>
<td>64.5</td>
<td>58.4</td>
<td>-32.6%</td>
</tr>
<tr>
<td>LASALLE</td>
<td>86.1</td>
<td>71.5</td>
<td>70.4</td>
<td>58.6</td>
<td>-31.9%</td>
</tr>
<tr>
<td>HANSFORD</td>
<td>95.8</td>
<td>95.8</td>
<td>89.2</td>
<td>74.2</td>
<td>-22.5%</td>
</tr>
<tr>
<td>ZAVALA</td>
<td>79.9</td>
<td>63.8</td>
<td>71.1</td>
<td>62.1</td>
<td>-22.3%</td>
</tr>
<tr>
<td>DIMMIT</td>
<td>84.3</td>
<td>75.8</td>
<td>83.3</td>
<td>72.4</td>
<td>-14.1%</td>
</tr>
</tbody>
</table>
Controlling the impact of access points is crucial.
Planned Approach to Addressing the Challenge

- A Traffic Impact Analysis (TIA) will be required for all new commercial driveway permits
- TxDOT will perform a site-specific engineering analysis based on the TIA
- Permits will not be issued until any identified safety concerns are addressed
- Existing timelines and appeals processes will apply
- A central office group will be created to assist districts
- A guidance document will be developed to assist in preparing TIAs for rural areas
Addressing the Challenge: Traffic Impact Analysis

- Rural TIAs must address:
  - Existing roadway characteristics
  - Proposed driveway characteristics
  - Proposed driveway use
  - Environmental/hydraulic issues
  - Proposed mitigation efforts
Some roads need to be load posted
Addressing the Challenge: Load-Posted Roads

- Preliminary Reviews:
  - 51 highway segments
  - 7 districts
  - More than 518 centerline miles
Some roads need to be restricted for width
Addressing the Challenge: Width-Restricted Roads & Bridges

- Preliminary Reviews:
  - 56 highway segments
  - 9 districts
  - More than 517 centerline miles
Addressing the Challenge

Some roads need to be converted to unpaved surfaces
Addressing the Challenge: Converting to Unpaved Surfaces

- Preliminary Reviews:
  - 12 highway segments
  - 3 districts
  - More than 83 centerline miles
Conclusion

- Safety is our number one concern.
- Traffic is occurring on highways that were not designed or constructed for these unprecedented volumes.
- Highways are being significantly damaged. This is compromising our ability to maintain and sustain state roads.
- Proposed solutions will help us to address these challenges and concerns.