Corridor-Based Work Zone Performance Measures: I-35, Central Texas

Work Zone Performance Management Peer Exchange Workshop
May 8, 2013  •  Atlanta, Georgia
I-35 Construction Corridor

- 17 sections
- 5+ years
- 90+ miles
- Up to 11 projects active at one time
- 55k - 110k ADT
- ~ 66% through traffic
- > 75% trucks at night
Vision for Traveler Information During Construction

- Provide information on **current** and **anticipated** travel conditions across multiple construction zones to assist:
  - Local residents
  - Regional travelers
  - Long-distance travelers

- Focus of system is on the construction-related impacts
Key Construction-Related Traffic Issues

- Multiple contractors working independently
- Nighttime lane closures
  - Some create queues, some do not
  - Potential for several in same direction of travel per night
- Alternative routes are limited (Waco, Temple, Belton)
I-35 Data Sources

- Corridor lane closure database
- Traffic volumes
- Bluetooth travel time monitoring
- End-of-queue warning systems
I-35 Corridor Measures

- Types of lane closures (full versus single lane)
- Advance notification times for lane closures
- Queues
  - % of lane closures causing queues
  - Maximum lengths
- Delays
Lane Closure Types and Notification

Closures by Impact (March 2013):
- Non High-Impact: 86%
- High-Impact: 14%

Completed vs. Cancelled Closures (March 2013):
- Completed: 86%
- Cancelled: 14%

Distribution of Advance Closure Notification Times:
- Days prior to closure:
  - 1 day: 25%
  - 2 days: 13%
  - 3 days: 5%
  - 4 days: 3%
  - 5 days: 3%
  - 6 days: 4%
  - 7 days: 11%
  - 8 days: 15%
  - 9 days: 8%
  - 10 days: 7%
  - 11 days: 11%
  - 12 days: 11%
  - 13 days: 11%
  - ≥14 days: 14%

Year to Date and March 2013 data compared.
I-35 Closure Impacts - Queues

Percent of Lane Closures with Maximum Predicted Queue Length

<table>
<thead>
<tr>
<th>Project Section</th>
<th>&gt; 0 mile</th>
<th>&gt;=2 miles</th>
<th>&gt; 4 miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>5C</td>
<td>2%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>5B</td>
<td>10%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>5A</td>
<td>13%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td>4</td>
<td>10%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>3C</td>
<td>17%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>3B</td>
<td>18%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>3A-2</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>3A-1</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>1C</td>
<td>33%</td>
<td>19%</td>
<td>9%</td>
</tr>
<tr>
<td>1B</td>
<td>11%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>1A</td>
<td>5%</td>
<td>3%</td>
<td>2%</td>
</tr>
</tbody>
</table>
I-35 Closure Impacts-Delays

Percent of Lane Closures with Delay

<table>
<thead>
<tr>
<th>Project Section</th>
<th>&gt; 0 min</th>
<th>&gt;=10 min</th>
<th>&gt; 20 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>5C</td>
<td>7%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>5B</td>
<td>10%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>5A</td>
<td>13%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>4</td>
<td>11%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td>3C</td>
<td>15%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>3B</td>
<td>13%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>3A-2</td>
<td>12%</td>
<td>6%</td>
<td>2%</td>
</tr>
<tr>
<td>3A-1</td>
<td>17%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>1C</td>
<td>28%</td>
<td>17%</td>
<td>9%</td>
</tr>
<tr>
<td>1B</td>
<td>15%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>1A</td>
<td>18%</td>
<td>8%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Drivers' Delay Experience

Percent of Drivers

Delay (min)

0 10 20 30 40 50 60
0% 1% 2% 5% 13% 79%
I-35 Corridor Impacts - Crashes

- Project and corridor-level changes
- Tracked in near real-time
- Associate back to key work activities (i.e., nighttime freeway lane closures)
Discussion Questions

- What other corridor-level measures would your agency be interested in?

- What risks, if any, do you anticipate with possible misuse of these types of measures (from the media, political leaders, etc.)?