I-35
TRAFFIC SAFETY COLLABORATION

Bobby Littlefield, P.E.
Waco District Engineer
• 45% of Texas population lives within 50 miles of I-35
• 30 million+ travelers per year use this corridor
• Approximately two-thirds travel through the corridor
• 1,000+ businesses on the 96 miles between Salado & E-W split north of Hillsboro
Highlights

- 17 projects
- 55,000–111,000 vehicles/day
- 25–30% trucks

Total Cost Approx. $2.1 B
Impact

I-35 Miles Under Construction

66 miles

$1.9 Billion
The beginning:

2012

10/23  3rd fatality in five weeks in same I-35 work zone

10/25  4th fatality - TxDOT DDE & DPS Captain call for meeting
The beginning:

2012

10/29 1st Waco District Safety Summit held

11/05 TxDOT/TTI draft recommendations
2012

11/12 TxDOT issues change order for EOQ System

11/15 Follow-up Meeting on Safety Summit Implementation
The beginning:

2012

11/19  5th fatality: 2nd worker in I-35 work zone

11/27-30  Temporary Rumble Strips tested
<table>
<thead>
<tr>
<th>Issue</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>SPEED</strong></td>
<td>- Speeding vehicles&lt;br&gt;- Speed limit 70 mph in most work zones</td>
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<tr>
<td><strong>DRIVERS</strong></td>
<td>- Drowsy driver&lt;br&gt;- Distracted driver (computers, TVs, texting, etc.)</td>
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<td><strong>CONSTRUCTION</strong></td>
<td>- Barriers = limited/no shoulders&lt;br&gt;- Difficult access for law enforcement vehicles&lt;br&gt;- Nighttime construction&lt;br&gt;- Sight restrictions&lt;br&gt;- Maintenance of barrier wall during winter</td>
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<td><strong>TRUCKS</strong></td>
<td>- High volume of truck traffic&lt;br&gt;- Trucks obscuring view of signs</td>
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<td><strong>PUBLIC INFORMATION</strong></td>
<td>- How are we educating the public?&lt;br&gt;- How to inform non-local drivers?</td>
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<td><strong>CRASHES</strong></td>
<td>- Quick clearing of incidents /reopening to traffic&lt;br&gt;- Hot spots&lt;br&gt;  - I-35 SB near Lorena&lt;br&gt;  - MM 346 &amp; 349&lt;br&gt;  - US 190 EB to NB I-35 (weaving traffic)</td>
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**Ideas: Brainstorming**

### Enforcement
- Can DPS attend weekly construction meetings?
- Advance enforcement vehicle in barrier zones
- Radar units
- RIMS? Regional incident management system? Transtar
- No passing during merge conditions
- Increased traffic fines
- Contractors use of DPS for WZ closure

### Engineering
- Rumble strips
- Use message boards to display other information, not just distance/time to next town
- No trucks in left lane/no passing/passing restrictions
- Additional law enforcement projects
- Re-examine speed limits in construction zones
- Lower speed limits during lane closures or 24/7?
- Real-time speed displays/portable units
- Message boards in DFW and Austin
- Getting inside the cab of the truck
- Temporary/portable rumble strips
- Orange lane striping
- End-of-queue warning system

### Education
- Work zone safety - YouTube video? What does sign, lights, etc. mean?
- CDL outreach
- AGC/TxDOT outreach video on work zones (Nov. meeting).
- 2-hour NHI safety training on work zone safety
- Billboards
- Additional work-zone awareness campaigns
- Getting media more involved
- Advisory radio
- Call-in number for roadway conditions
- Local radio spots
- Get truck stops involved
- CB radio messages
- Meet with local JPs so they understand the issues and the importance
- Need comprehensive safety analysis of crashes in the corridor
Recommendations - Enforcement

- Improve consistency in use of law enforcement for lane closures
  – TxDOT to discuss at construction meetings
- Invite law enforcement to weekly construction meetings
  – TxDOT issued invitation
- Consistent use of advance enforcement vehicle
  – TxDOT to discuss at construction meetings
- Additional law enforcement projects
- Meet with Justices of the Peace
Recommendations - Engineering

- TxDOT re-examine speed limits in work zones/lower speed limits during lane closures
  - Minute Order approved for 60 MPH for:
    - Nighttime mainlane closures
    - Areas w/barriers on each side and <10’ shoulders for 1 mile or more, 24/7

- Implement real-time display of speed to motorists
  - Investigated systems – trailers being placed

- Test rumble strip project for lane closure
  - Almost 200 deployments Of End-of-Queue Warning System to date:
    - less than a half-dozen fender-bender level collisions

- Expand incident management information system :
  - Created automated system of Traffic Alert emails and tweets
Recommendations – Education/Public Outreach

- Expand Public Outreach on Work Zone Safety
  - TxDOT planning work-zone safety campaign
    - Implement billboards with work-zone safety message
    - Post work-zone safety messages on permanent DMS along I-35
    - Distribute work-zone safety information at Truck Stops and Rest Areas
    - Distribute work-zone safety video via social media

- Hold NHI Work Zone Safety Training Course
  - Sessions for TxDOT, Contractors, Law Enforcement

- Research CB Wizard test project:
  - Laws prohibit use of repeating/recorded messages
Subsequent Safety Summit Meetings

- Originally monthly – current schedule bi-monthly
- Discuss Results of Efforts
- Discuss Crash Analysis
- Discuss New Issues and Ideas
TYPICAL ATTENDEES AT MEETINGS:

TxDOT Waco District:
District and Deputy District Engineers, Area Engineers, Construction Project Managers & Inspectors, Safety Officers, Public Information Officers

Contractors:
Leadership, Project Managers, Safety Directors

Law Enforcement:
DPS Leadership & Troopers
Local Police Departments
Sheriff’s Department Representatives

TxDOT Traffic Operations:
Leadership & Field Personnel

Texas A&M Transportation Institute:
Mobility Coordinators/Researchers
Crash rates: before & after construction

Crash Rate by Construction Segment, Before and During Construction All Types, All Severity

Crashes/Month/Mile

Construction Segment

Before

During

1B
1C
2B
3A.1
3A.2
3B
5A
5B
5C
End-of-Queue Summary: May 1, 2014

- 178 Deployments by Project since March 7, 2013
  - 1B = 32
  - 1C = 10
  - 2B = 4
  - 3A1 = 6
  - 3A2 = 3
  - 3B = 57
  - BRB = 0
  - 5A = 48
  - 5B = 14
  - 5C = 0
  - DPS = 4

Only 3 crashes, and ZERO Fatalities!
COOPERATION, COMMUNICATION, COORDINATION

Captain Tim Smith,
6A District, Texas Highway Patrol
RECOMMENDATIONS FOR CONSIDERATION FOR THE TEXAS TRAFFIC SAFETY SUMMIT 2014
Construction had commenced along multiple sections of I-35
This involved...
Lane closures
Traffic delays
Disruption in traffic flow
Intermittent start/stop of traffic around projects and an increase in congestion surrounding the projects themselves and...

A need for increased safety awareness for the motoring public, construction workers, and first responders
How it started...

The very first Waco District Safety Summit was held on Monday October 29th, 2012 after a series of serious crashes had occurred along I-35.

Who attended...

During that first meeting, I recommended to TXDOT that we bring all parties involved in the I-35 construction together in one room to discuss the issues, increase awareness, and open the floor up for open dialogue between TXDOT, DPS, and the Independent Contractors.

This meeting was attended by Area Engineers, Project Engineers, Chief Inspectors and other key officials with TXDOT, 6A District THP supervision, Safety Officers, Project Superintendents and high-ranking Company Officials with the independent contractors.
Take Away from the First Summit...

- Each project had its own unique set of issues.
- Though we had implemented protocols and past practices, we found that standards can always be built upon and being proactive helps to lessen the impact.
- Each group represented was committed to the overall safety of our motorists, workers, and responders.
- Everyone took ownership of their role.
- TTI likes charts and graphs.
- By opening up the dialogue between the contractors, what may have been perceived as an isolated issue now evolved into multi-project coordination with a faster means of conflict identification and resolve.
Summation
Communication...Cooperation...Coordination
Prior to your project start date...

• Set up a stakeholders meeting and ensure that the right folks are invited. Serves no purpose to have a meeting without the right folks in attendance.

• Be proactive. Be forward-thinking and work together to identify both current and potential issues that may be faced and waste no time in reaching out to everyone for ideas.

• It’s not just about your project. When consecutive projects are going on at the same time, that’s not the time to individualize your responsibility. What you may be doing may impact the next project.

• We are Texans serving Texans. Regardless of the location of your companies’ headquarters, you are a representative of TXDOT. We pride ourselves on our state’s ability to respond to both the needs of our residents and those that traverse through our state on a daily basis. The mission of our summit was simple...we owe it to our residents and travelers to do our part in providing that safe travel environment for the motoring public whether it was in design, construction, or enforcement and response.
REAL LIFE, REAL CONSEQUENCES

Jay Fonville
LANE Construction Corporation
www.laneconstruct.com
Supervisor's take free online courses (National Incident Management System) thru FEMA

[WWW.TRAINING.FEMA.GOV](http://www.training.fema.gov)

- **IS-100**  Introduction to Incident Command System
- **IS-200**  ICS for Single Resources and Initial Action Incidents
- **IS-700**  Introduction to the National Incident Management System
- **IS-800**  An Introduction to the National Response Framework

At anytime, there can be an incident on I-35. Most of the time, the contractor is the first to be on scene. The Supervisor needs to know what hazards to look for, and how to handle the incident until First Responders arrive on scene.
HazMat Spill Kits for Vehicles
Safe and Effective Use of Law Enforcement Personnel in Work Zones

We have trained 832 Texas Law Enforcement Officers in this course as of today.
Safe and Effective Use of Law Enforcement In Work Zones
...why we support the class

The purpose of the class:

* To teach officers the importance of their job, while in a work zone
* To work with the traffic queue to avoid rear end crashes
* Move vehicle to wear they will be in a safe position
* The class is FREE to all Law Enforcement Officers
Real Consequences

- 2012
  - 13,018 work zone injuries
  - 10,263 Non-Injury Crashes in work zones
  - 132 work zone deaths

1 person was killed every 2 hours 35 minutes

1 person was injured every 2 minutes 17 seconds

1 reportable crash occurred every 75 seconds
Texas Motor Vehicle Traffic Crash Crash Highlights
Calendar Year 2012

- The Fatality Rate on Texas roadways for 2012 was 1.41 deaths per hundred million vehicle miles traveled. This is a 9.3% increase from 2011.
- Texas experienced an increase in the number of motor vehicle traffic fatalities. The 2012 death toll of 3,399 was an increase of 10.82% from the 3,087 deaths recorded in 2011.
- There were 63,610 serious injury crashes in Texas in 2012 with 87,067 people sustaining a serious injury.
- The annual vehicle miles traveled in Texas during 2012 reached 240,616 billion, an increase of 1.34% over the 237,443 billion traveled in 2011.
- Fatalities in traffic crashes in rural areas of the state accounted for 55.7% of the state’s traffic fatalities. There were 1,892 deaths in rural traffic crashes.
- Single vehicle, run-off the road crashes resulted in 1,315 deaths in 2012. This was 38.7% of all motor vehicle traffic deaths in 2012.
- In 2012 there were 838 people killed in crashes occurring in intersections or related to an intersection.
- There were 533 people killed in head-on crashes in 2012.
- There were no deathless days on Texas roadways in 2012.
- There were two crashes that resulted in 6 or more fatalities in 2012.
- Sunday, July 22nd was the deadliest day in 2012 with twenty-eight (28) persons killed in traffic crashes. July was the deadliest month with 309 persons killed.
- Based on reportable crashes in 2012:
  - 1 person was killed every 2 hours 35 minutes
  - 1 person was injured every 2 minutes 17 seconds
  - 1 reportable crash occurred every 75 seconds
- Of all persons killed in vehicles where restraint usage was applicable and usage was known in 2012, 45.4% were reported as not restrained when the fatal crash occurred.
- 230,506 persons were injured in motor vehicle traffic crashes in 2012.
- There were 467 motorcyclists (operators and passengers) killed in 2012. Fifty-two percent (52%) of motorcyclists killed were not wearing helmets at the time of the crash.
- Pedestrian fatalities totaled 481 in 2012. This is a 13.2% increase from 2011.
- Pedalcyclist fatalities totaled 56 in 2012. This is a 19.1% increase from 2011.
- In 2012, there were 1,099 people killed in motor vehicle traffic crashes where a driver was under the influence of alcohol. This is 32.3% of the total number of people killed in motor vehicle traffic crashes.
- During 2012, more DUI - Alcohol crashes were reported in the hour between 2:00 am and 2:59 am than any other hour of the day. Also, more of these crashes occurred on Sunday than any other day of the week.

Information contained in this report represents reportable data collected from Texas Peace Officer’s Crash Reports (CR-3) received and processed by the Department as of May 27, 2013.
Original List

- End-of-Queue Warning System
- DPS Cooperation
- Use of Portable Changeable Message Signs
- No Trucks in Left Lane
- Speed Limits in the Corridor
- Speed Display Signs
- Full Range of Communication Initiatives
  - District-to-District Communication
  - Billboards
I-35 Safety Task Force
Drivers are alerted that they are entering a lane-closure work zone by warning signs, the presence of law-enforcement officers, and by portable rumble strips causing a slight bump and attention-getting noise. They then see a sign indicating road conditions in the work zone, e.g., “Road Work Ahead,” when there is no traffic backup detected.
Drivers are alerted to slow traffic ahead by the sign message changing to “Slow Traffic,” with an indication of how far ahead the problem will be encountered. The sign may say 3 miles, 2 miles, or 1 mile ahead, determined by the system’s readings.
Drivers are alerted to very slow or stopped traffic by a new message, “Stopped Traffic,” and the number of miles ahead the traffic queue is stopped. A distance of 3 miles, 2 miles, or 1 mile may be reported.
Additional Tasks

• Crash Data Analysis
• Bridge Height Warnings
• Variable Speed Limits (Research)
Year over Year, 2012-13, Jan-Nov
By Segment
Both Directions, All Types, All Severity

Crashes/Mile

Construction Segment

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<th>Segment</th>
<th>2012</th>
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<tr>
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Relationships Forged

- AGC (contractors)
- CTACPSA (police chiefs)
- TT&L (maintenance contractor)
- Shippers Advisory Committee (Temple)
I-35 Safety Summit
Questions