SH 161
Bottleneck Improvement Project
Dallas-Fort Worth TexITE Joint Meeting
July 15, 2016
Presented by Jory J. Dille
PARTNERSHIPS

Texas Department of Transportation

NORTH TEXAS TOLLWAY AUTHORITY

North Central Texas Council of Governments

Texas A&M Transportation Institute

IRVING TEXAS
PROJECT DESCRIPTION

- SH 161 – Conflans Road to SH 114
- Approximately 6 Miles
- Improve bottleneck during peak periods
  - AM (Northbound)
  - PM (Southbound)
- Pilot Study
  - One year study period with potential to extend
  - Before and after data collection
PROJECT LOCATION

- SH 114
- Conflans Rd
AM - Northbound Average Volume 42,464

PM - Southbound Average Volume 47,954
TRAFFIC OBSERVATIONS
(AM) Northbound

Illegal Median Crossing
EB SH 183-NB SH 161 Director Connector south of Rochelle Rd
11/14/13, 12/4/13, and 12/5/13
TRAFFIC OBSERVATIONS (PM) Southbound

**PM Weave between Beltine Road and Walnut Hill Lane**

- **Exit Split**
  - SH161 Southbound
    - 63% (694)
  - SH161 SBFR
    - 83% (5246)
    - 17% (1106)
  - 37% (412)

- **Frontage Road Split**
  - SH161 SBFR
    - 83% (3346)
    - 17% (1106)
  - 46% (2286)
    - 54% (3470)
  - 46% (2982)
    - 54% (3470)
  - 57% (3058)

**SH 161 Southbound**
- 37% Queue Jumping

**SH 161 Frontage Road**
- 57% Entering
## PROJECT ELEMENTS

**$4.25M PROJECT COST**

<table>
<thead>
<tr>
<th>Utilize Shoulder</th>
<th>ITS &amp; Signage</th>
<th>Staged Wreckers</th>
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</thead>
<tbody>
<tr>
<td>Peak Period</td>
<td>Cameras</td>
<td>Expedited Incident Management</td>
</tr>
<tr>
<td>Northbound 6AM–10AM</td>
<td>DMS</td>
<td>Peak Period Staging</td>
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<tr>
<td>Southbound 2PM–7PM</td>
<td>Illumination</td>
<td>Open Shoulder</td>
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<tr>
<td></td>
<td>Static Signage</td>
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</table>
UTILIZE SHOULDER

PEAK HOUR

12’ General Purpose Lanes (2)  |  11’ Peak Hour Travel Lanes (2)  |  12’ General Purpose Lanes (2)

OFF-PEAK HOUR

12’ General Purpose Lanes (2)  |  11’ Shoulder Lanes (2)  |  12’ General Purpose Lanes (2)
TYPICAL ROADBED SECTION VIEW

- Overhead Static Sign
- Lane Control
- Solid White Line
STATIC SIGNING

![Image of static signing on a highway overpass. The sign reads: LEFT LANE, OPEN TO TRAFFIC MON-FRI 6AM-10AM 2PM-7PM.](image-url)
DESIGNATED EMERGENCY PARKING AREA
DMS NOTIFICATION ENTERING CORRIDOR

PEAK - HOUR LANE
MONDAY - FRIDAY
6:00AM - 10:00AM
WRECKER STAGING

- 1 Staged Wrecker
  - AM Peak (Northbound)
  - PM Peak (Southbound)
- Expedited Vehicle Removal
- Assist Irving PD
DAILY OPERATIONS

- Sweeping lane prior to AM and PM openings
  - Verify there are no obstructions (e.g., vehicles or debris)
  - Remove light debris
- Communication to DalTrans for signs/signals
- On-call wrecker staged in corridor during operation hours
BRIEF CHRONOLOGY

Before Data Collection
Oct/Nov 2013

Construction
May 2014

Construction
Starts

Construction Ends
Sept 2015

Lanes Open to Traffic
Sept 16, 2015

After Data Collection
May 2016
INITIAL RESULTS

PM Comparison North End

Before - Tuesday, October 29, 2013 - 5:00 PM

After - Tuesday, September 16, 2015 - 5:00 PM
INITIAL RESULTS

AM Comparison South End

Before - Tuesday, October 29, 2013 - 8:30 AM

After - Tuesday, September 16, 2015 - 8:30 AM
INRIX SPEED COMPARISON

Northbound Mainlane
INRIX SPEED COMPARISON

Southbound Mainlane
INRIX SPEED COMPARISON

SH-161 INRIX SPEED DATA

AM OPERATIONAL PERIOD (6:00-9:00 A.M.) BY HOUR

<table>
<thead>
<tr>
<th>MILES</th>
<th>Average of speed</th>
<th>Column Labels</th>
<th>2013 Total</th>
<th>2015 Total</th>
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<tr>
<td></td>
<td>Row Labels</td>
<td>6 am</td>
<td>7 am</td>
<td>8 am</td>
</tr>
<tr>
<td>1.27</td>
<td>NORTHGATE DR</td>
<td>59</td>
<td>66</td>
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<td>0.24</td>
<td>WALNUT HILL LN</td>
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<td>68</td>
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<td>1.02</td>
<td>BELT LINE RD</td>
<td>69</td>
<td>64</td>
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<td>64</td>
<td>70</td>
</tr>
<tr>
<td>0.27</td>
<td>END OF FREEWAY</td>
<td>69</td>
<td>65</td>
<td>70</td>
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<tr>
<td>3.21</td>
<td>Grand Total</td>
<td>64</td>
<td>69</td>
<td>70</td>
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PM OPERATIONAL PERIOD (3:00-7:00 P.M.) BY HOUR

<table>
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<td>3.24</td>
<td>Grand Total</td>
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AM "PEAK" PERIOD (7:00-9:00 A.M.)

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<td>WALNUT HILL LN</td>
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<tr>
<td>0.27</td>
<td>END OF FREEWAY</td>
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<td>3.21</td>
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PM "PEAK" PERIOD (4:00-7:00 P.M.)

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<tr>
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<td>3.24</td>
<td>Grand Total</td>
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Once TxDOT opened up SH 161 shoulders, traffic started sailing

Brandon Formby

Published: April 14, 2016 3:06 pm

Widening Highways Never Fixes Traffic. But Darnit, It Did in Texas

In a true fairy tale of a transportation project, Texas spent a measly $4.25 million widening a highway and, in defiance of conventional wisdom among transportation planners, doubled the speed of rush hour traffic on a notoriously congested highway in Dallas.

The Texas Department of Transportation repaved the shoulders along both sides of a 6.3-mile stretch of State Highway 161 between Dallas and Fort Worth in September. Then it opened them up to traffic during the daily rush hour, keeping tow trucks on standby in case someone breaks down. Based on figures released this month, with the extra lanes in place, traffic “started sailing,” The Dallas Morning News reported this week.
OBSERVATIONS

- Average of 44,000 more vehicle traveling each month since opening peak-period lane
- Average speeds have increased
- Impact of construction on SH 183
- Few incidents occur on peak-period lane
NEXT STEPS

- Review after data collection
- Review for continued usage of peak-period lane after one year
- Use lessons learned for possible usage across the state
- Identified for 8 lanes (4 NB, 4 SB) in the North Texas Metropolitan Transportation Plan (MTP) 2040 - http://www.nctcog.org/trans/mtp/2040/
CONTACT INFORMATION

Jory Dille
Transportation Planner
817-704-5644
jdille@nctcog.org

Natalie Bettger
Senior Program Manager
817-695-9280
nbettger@nctcog.org

Jeffrey Neal
Program Manager
817-608-2345
jneal@nctcog.org