Innovations in Transportation Planning: Advancing Highway Planning

APA Texas Chapter 2016 State Planning Conference

San Antonio, Texas
Project

Innovation Areas

Drivers

- Data Mining
- Infographics
- Environmental Assessment
- Intersections
- Public Outreach
Drivers

Data Mining
New depths of data validate or challenge our understanding of traffic and its movements.

Infographics
Complex or technical data made accessible to foster public understanding and support.
**Public Outreach**
Delivering the full and correct message while managing a non-concentrated population.

**Innovative Intersections**
Improvement of traffic flows and congestion through new or temporary design solutions.

**NEPA Assignment**
Context sensitive solutions, streamlining, and environmental linkages to expedite the NEPA process.
What do we plan for?

Mobility
Traditional Data Collection

Home Interview Survey:

- The information to be collected from the home-interview survey can broadly be classified under 2 groups:
  - Household information.
  - Journey data.
- **Household information contains**
  1. Address
  2. Size of household
  3. Age and sex structure of household
  4. Farming members
  5. No. of motor vehicles owned
  6. Household income etc.
- **Journey data contains**
  1. All journey made during the previous 24 hour period
  2. Purpose of trip
  3. Mode of travel etc.
Traditional Characteristics

- Static Data
- Time Consuming
- Expensive to Collect
- Limited Data Availability/Information
- Ability to react, instead of plan
Data Collection in the Digital Age

PROVIDERS

airsage

Waze
Outsmarting Traffic, together.

INRIX

BlueTOAD
Digital Age Characteristics

- Dynamic Data
- Passive Data Collection
- Higher Upfront Costs – Limited Ongoing Costs
- Continuous Data/Updates
- Ability to plan
Incorporating into Planning

→ Proxy for Travel Demand Model
→ Understanding Diversion Potential
→ Travel Time Analysis
→ Managing Congestion
→ Prioritizing Investments
Infographics

Public Transit Planning

Participatory Planning

Data

Land Use Planning

Different source, format and size
Draft Implementation Plan: Dallas and Kaufman Counties
Infographics – Our new mindset

Tell a story and show
Keep a balance between text and photos
Leave some white space between your text and photos
Infographics – Corridor studies

I-30 East Texas Corridor

Length: 144 miles
Speed Limit: 75 mph

Current Typical Interstate Section

- 10 ft. median
- 12 ft. shoulder
- Travel Lane Standard
- Inside Shoulder Standard

CRASHES

- Paris District: 1,611 crashes (53% of total)
- Royse City: 201 crashes (5.4 mi)
- Greenville: 510 crashes (9.5 mi)
- Sulphur Springs: 238 crashes (9.1 mi)
- Mount Pleasant: 159 crashes (6 mi)
- Atlanta District: 1,611 crashes (47% of total)

Challenges:
- High percentages of freight traffic + expected freight expansion
- Increasing traffic volumes at both ends + constricted ROW
- Limited north-south connections

Other points:
- Campill: 112 crashes (5.8 mi)
Infographics – Working groups activities

I-30 East Texas Corridor - Hunt County
Short-range Improvements

Working Group Facts
- Employment and population growth
- Heavy freight traffic
- Short on-ramps
- Non-standard transition at I-30 and SH 24 intersection
- Overpasses don’t meet capacity needs at major interchanges
- Low vertical clearances

Working Group Concerns
- Freight parking areas needed
- Increase in truck traffic
- Longer acceleration lanes needed at rest areas
- Poor interchange designs at I-30/US 69
- Flooding on frontage roads
- Lack of public information about trucks
- Slow growth caused by poor mobility
- Need for planning continuity among counties
- Need for consistency in funding sources

Working Group Vision
- Major artery to the Midwest
- Flexible corridor for unforeseen future needs
- Freight-friendly corridor with truck-only lanes
- Coordination between counties for needed ROW

Legend
- I-30
- County Boundary
- City Boundary
- Two-way Frontage Road
- One-way Frontage Road
- Ramp Ratings
  - A: Excellent
  - B: Meets Requirements
  - C: Marginally Acceptable
  - D: Below Minimum Standards
- Main lane Overpass
  - Less than 10'
  - 15' to 15'5
- Main lane Underpass
  - Less than 16'
- Truck Parking
- Crash Statistics
  - High crash frequency interchanges
  - Crash rates range
  - Hotspot

Major Issues
- Poor accessibility to I-30
- Truck parking in non-designated areas
- Heavy Freight Traffic
- Stormwater drainage
- Lack of frontage roads
- Existing capacity does not meet current needs
  - Economic development needs
Did You Know?

1 out of 3 vehicles traveling on I-30 is a semi-trailer truck

- Do we need more truck stops?
- Improved safety measures?
- Restricted lanes?
- What other improvements along I-30 would you like to see?

We want to hear from you!

TEXT or CALL us at 434-TRUCK30
(434) 876-2530

Below is the breakdown of truck percentages, trucks stops and parking spaces per county along I-30

<table>
<thead>
<tr>
<th>County</th>
<th>Trucks</th>
<th>Truck Stops</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunt County</td>
<td>25%</td>
<td>6 truck stops</td>
<td>195 spaces</td>
</tr>
<tr>
<td>Franklin County</td>
<td>39% Trucks</td>
<td>3 truck stops</td>
<td>171 spaces</td>
</tr>
<tr>
<td>Morris County</td>
<td>42%</td>
<td>3 truck stops</td>
<td>130 spaces</td>
</tr>
<tr>
<td>Hopkins County</td>
<td>45% Trucks</td>
<td>45% Truck stops</td>
<td>53 spaces</td>
</tr>
<tr>
<td>Titus County</td>
<td>38%</td>
<td>7 truck stops</td>
<td>160 spaces</td>
</tr>
</tbody>
</table>
Public Outreach

Call our 24 hour hotline at 512-270-5000

Contact us online via our easy form

Sign up for updates via text or email

Earth Cam
Watch live construction on Mopac!

INVITE US TO YOUR EVENT
Our community outreach team would love the opportunity to meet with you, attend your meeting, make a presentation or set up our informational booth at your event.

Get in Touch »

HIGHWAY ADVISORY RADIO
Tune in or click here to get the latest updates on construction activities, lane closures and other project information.

800 AM

Project Photos

Download the MOPAC App

View all »
Challenges:

Broad system

Scattered populations centers

Changing scales and points of view

Regional pressures or trends
Targeted Public Involvement

Traditional Approach:
Focus or Theme Groups

- Non-Motorized Transportation
- Rail
- Aviation
- Environment
- Natural Resources
- Transportation Providers
- Business and Industry Representatives
- Social Equity

Marketing Platforms

- SlickText
- SUMOTEXT
- ProTexting
- Trumpia
- SimpleTexting
- Mozeo
- Ez Texting
- TXT180
John, I want to leave a comment for the authority p*** work. And my suggestion or comment would be that they need more state troopers out there, especially between now Boston in Texarkana worth the Red River Army Depot. Traffic is in the morning and then even taking.

Yes, I want to leave a comment for the authority p*** work. And my suggestion or comment would be that they need more state troopers out there, especially between now Boston in Texarkana worth the Red River Army Depot. Traffic is in the morning and then even taking.

Hello, this is Jody. While I've been a dryer for 15 years, and I appreciate you taking her comments on how to make things better and my main concern is area seriously needs to be more parking between those two destinations. If you really needs to be a nice large parking lot. So that drivers that are coming into stage up to deliver in Dallas Fort worth area the next morning. This would really be a great benefit for them. If that is I think is most important thing on that court order, and I really appreciate you taking the time to listen to it and really doesn't need to be fancy. I mean if there's just an outhouse portage on and garbage can it doesn't have to be fancy just give us a place to park. Thank you so much for listen to this bye. Bye.

I would suggest that 18-wheelers not be allowed to drive 75 miles an hour because then they're driving 85. It's too hard for them to control their speed at that their their truck paid that speed. And I think they're a cause of the huge amount of accidents that are along 130 from Dallas to Texarkana & Beyond. But that would be my having separate speed limits for the cars and trucks. 75 is okay for me. I'm a safe driver. But the trucks can't handle it. Thank you.
Interactive Approaches

Online Presentation Tools
- Haiku Deck
- Google Slides
- emaze
- Slidebean
- Visme

Interactive Sites
- Cityzen
- TellUs Toolkit
- Citizen Budget
- OpenStreetMap
- OpenPlans
Framing your message

IT’S THE WAY YOU SAY IT
Innovation in Intersections
### Capacity Analysis for Planning of Junctions

#### Input Worksheet

**Results for Roundabouts**

<table>
<thead>
<tr>
<th>#</th>
<th>Type of Roundabout</th>
<th>Zone 1 (North)</th>
<th>Zone 2 (South)</th>
<th>Zone 3 (East)</th>
<th>Zone 4 (West)</th>
<th>Overall Value Ratio</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>50 SCD</td>
<td>2.29</td>
<td>2.94</td>
<td>4.70</td>
<td>2.94</td>
<td>0.89</td>
<td>2</td>
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<tr>
<td>9.2</td>
<td>25 SCD</td>
<td>2.00</td>
<td>1.04</td>
<td>3.27</td>
<td>1.11</td>
<td>1.04</td>
<td>1</td>
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<td>9.3</td>
<td>1.1</td>
<td>9.61</td>
<td>7.85</td>
<td>8.89</td>
<td>10.69</td>
<td>10.69</td>
<td>10.49</td>
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<tr>
<td>9.4</td>
<td>1.2</td>
<td>5.66</td>
<td>5.21</td>
<td>5.66</td>
<td>7.78</td>
<td>7.78</td>
<td>7.78</td>
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<td>9.5</td>
<td>2.1</td>
<td>4.11</td>
<td>5.44</td>
<td>4.47</td>
<td>5.33</td>
<td>5.33</td>
<td>5.33</td>
</tr>
<tr>
<td>9.6</td>
<td>2.2</td>
<td>2.03</td>
<td>2.28</td>
<td>1.38</td>
<td>4.43</td>
<td>4.43</td>
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<tr>
<td>9.7</td>
<td>3.3</td>
<td>1.00</td>
<td>2.69</td>
<td>2.81</td>
<td>3.38</td>
<td>3.38</td>
<td>4</td>
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</tbody>
</table>

**Results for Interchanges**

<table>
<thead>
<tr>
<th>#</th>
<th>Type of Interchange</th>
<th>Zone 1 (NTH Mag)</th>
<th>Zone 2 (CLV Mag)</th>
<th>Zone 2 (VIC Mag)</th>
<th>Zone 3 (CLV Mag)</th>
<th>Overall Value Ratio</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>Diamond</td>
<td>N-S</td>
<td>E-W</td>
<td>E-W</td>
<td>N-S</td>
<td>104</td>
<td>16</td>
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<tr>
<td>10.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.1</td>
<td>Partial Cloverleaf</td>
<td>N-S</td>
<td>E-W</td>
<td>N-S</td>
<td>E-W</td>
<td>106</td>
<td>16</td>
</tr>
<tr>
<td>11.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.1</td>
<td>Displaced Left Turn</td>
<td>N-S</td>
<td>E-W</td>
<td>N-S</td>
<td>1071</td>
<td>1071</td>
<td>120</td>
</tr>
<tr>
<td>13.2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.1</td>
<td>Double Crossover</td>
<td>N-S</td>
<td>E-W</td>
<td>E-W</td>
<td>995</td>
<td>995</td>
<td>150</td>
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<tr>
<td>14.2</td>
<td>Diamond</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.1</td>
<td>Single Point</td>
<td>N-S</td>
<td>E-W</td>
<td>N-S</td>
<td>893</td>
<td>893</td>
<td>124</td>
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<tr>
<td>15.2</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The Federal Highway Administration (FHWA) “assigned” to TxDOT responsibility for compliance with National Environmental Policy Act (NEPA)

TxDOT has legal responsibility and liability for environmental document approval and decisions
NEPA Assignment Memorandum of Understanding (MOU) signed December 6, 2013 for CE’s

NEPA Assignment MOU signed December 16, 2014 for all NEPA Document types

TxDOT assumes NEPA decision responsibility for all projects on and off the state highway system

Specific exemptions
  - Trinity Parkway EIS
  - Harbor Bridge EIS
  - South Padre Island 2nd Access Bridge EIS

Multi-state & international projects excluded
Clean Air Act conformity remains with FHWA
Over 3,600 environmental decisions by TxDOT
  - 3,589 Categorical Exclusions
  - 3 Environmental Impact Statements/Record of Decision
  - 43 Environmental Assessments/Finding of No Significant Impact

Three FHWA compliance audits
  - Substantially in compliance with a few non-compliances. We continue to improve our processes to address these issues.
New guidance from the Council on Environmental Quality

Federal agencies should evaluate:
- The effects of the project on climate change by using GHG direct and indirect emissions as a proxy for the project’s effect on climate
- The impact of climate change both on the project itself and on the project’s environmental impacts (e.g., consider project resiliency or adaptation)

CEQ allows and FHWA encourages a programmatic approach.

Awaiting details from FHWA.
Does not need to be included for projects with environmental clearance before March 2017.

Guidance applies to:
All new EA’s, EIS’s, or EA/EIS re-evaluations not yet contracted/scoped as of August 5, 2016

Environmental Affairs Division encourages applying guidance to:
Existing projects with a hearing date of March 2017 or later or with an anticipated FONSI by summer 2017.
Internal Working Group convened in spring/summer 2016

Part of TxDOT’s Risk Prevention and Management Program

Three Tasks/Decision Points

- Identifying Risks
- Analyzing Risks
- Develop Mitigation Plans
Risks that May Warrant Mitigation Plans

- That would delay letting a project
- Related to completeness of environmental documentation
- That result on additional/ stricter regulatory enforcement
- That placed employees/contractors in potentially unsafe circumstances unnecessarily
QUESTIONS?....

APA Texas Chapter 2016 State Planning Conference

San Antonio, Texas

Thank You!