TXDOT AUSTIN DISTRICT
TRAFFIC MANAGEMENT SYSTEM
Capital Area Section ITE
August 2017
Agenda

1. What are Traffic Management Systems
2. Traffic Management System Work Streams
3. Recent and Current Projects
4. Upcoming Projects
5. Benefits
6. Questions
Austin Congestion

- # of Top 100 congested segments increased from 11 segments to 13 segments.

Source: 2015 - 2016 Urban Mobility Report/TxDOT
What are Traffic Management Systems (TMS) and why does Texas and the capital region need it?

Traffic Management Systems (TMS) uses technology solutions and improved operations to complement construction in reducing congestion and improving safety.

**A system of solutions:**
- Gathering **reliable information** on traffic, speed and bottlenecks throughout the day.
- Informing **drivers** through signs on the roads, on the web, and via mobile devices.
- Rapidly clearing **incidents** such as crashes, car breakdowns, debris in the road, etc through safety service patrol vehicles, tow trucks, and emergency vehicles.
- Coordinated from a **central nerve center**, the Traffic Management Center gathers the information and disseminates it to the drivers and parties needed to clear accidents.

Texas is behind other states in its use of TMS, and the value of catching up is huge.
- Texas has a safety and congestion problem that will only get worse as population grows.

**Return on tax payer dollars of TMS can be as high as 10x.**
Austin District TMS upgrade divided into four work streams

Clear roads with Highway Emergency Response Operators (HERO)

Communicate with drivers with updated network

Eyes on the road using Intelligent Transportation System (ITS)

Actively manage traffic in our Traffic Management Center (TMC)

Source: TxDOT ITS website, CTECC site visit, MoPac improvement project, CTRMA HERO interviews, Austin District interviews, I-35 GAP I and GAP II projects, Mobility 35, US state DOT interviews, US DOT, FHWA
Recent and Current Projects
### Master Implementation Plan

#### Corridors Overview

<table>
<thead>
<tr>
<th>Corridor #</th>
<th>Corridor Name</th>
<th>Begin</th>
<th>End</th>
<th>Project Length (Miles)</th>
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<tr>
<td>1</td>
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<td>Comal Co</td>
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<tr>
<td>2</td>
<td>SH 130</td>
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<td>SH 45 South</td>
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<td>3</td>
<td>US 183</td>
<td>SH 45 North</td>
<td>SH 71</td>
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<td>5</td>
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<td>RM 620</td>
<td>SH 130</td>
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<td>6</td>
<td>SH 45 North</td>
<td>US 183</td>
<td>SH 130</td>
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*TxDOT- Austin District Intelligent Transportation System*
GAP Projects

GAP1 – Surveillance, WiFi TTR, and Wireless Comm. (Complete)

GAP2 - Surveillance, RVSD, Wireless Comm, InterConnect w/ Partner Network for Data (Video)

GAP3 - Surveillance, Wireless Comm (Hardening), DMS

GAP4 - Surveillance, Wireless Comm, DMS
Comparative Travel Time Signs:
- Georgetown
- Round Rock
- Kyle

Hybrid Guide Sign with Variable Message Sign Inset

Travel Times displayed are being generated using third party data.
Overheight Detection Systems

Installed at three (3) locations on I-35 between Airport Boulevard and Riverside Drive:

- North of MLK Boulevard
- South of 11th Street
- 6th Street on-ramp

Utilizes lasers to measure vehicle heights with automated alert/notification to CTECC staff
Traffic Signal Integration
Central System Management

Continue to integrate TxDOT maintained signals over to our Signal Central System for:

- Remote Access
- Remote Monitoring
- Remote Diagnostics
Smart Work Zones (SWZ)

District has also began the use of SWZ:

- Real Time Construction Events
  - Project Activity; Construction Phasing; Schedule; Live CCTV Feeds; Social Media
  - https://my35construction.org/

- Portable Work Zone ITS Trailer (PWZT)
  - CCTV; PCMS; Bluetooth Readers; Radar detection; Wireless Comm; Integrated with the TMC (CTECC/Website); Variable Speeds
Transportation Management System (TMS) Upgrade Projects

**ITS Device Maintenance**

A proactive approach to addressing system issues:
- DMS Replacement & Upgrades
- Camera Replacement & Maintenance
- Replace Loops with RVSD

Quick delivery using:
- Non-site-specific ITS Maintenance Contract (Austin)
- Leveraging other District’s ITS Maintenance Contracts (San Antonio)
Transportation Management System (TMS) Upgrade Projects

TMS Yearly Maintenance Activities

<table>
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<tr>
<th>Work Year</th>
<th>2016</th>
<th>2017 - YTD</th>
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<tr>
<td>WOs Written</td>
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<td>165</td>
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<td>WO Executed</td>
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<tr>
<td>Other (HUB Repair, FO Repair, Material Purchase, etc.)</td>
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TxDOT- Austin District Intelligent Transportation System
Upcoming Projects
Connecting Remote ITS Devices

- Flood Warning @ Low Water Crossings
- School Zone Signals
- Rural DMS (Future)
- Signals

Using combinations of Cellular and Wireless communications
HERO Program Adoption/Expansion

- TxDOT will formally adopt the HERO program from CTRMA
- The process will include seven (7) phases
- Goal is to provide ~310 miles of Safety Patrol Services on Austin Roadways
TMC Program Adoption/Expansion

- Contract operators to improve our current ITS operations and find innovative solutions for continuous improvement
- Program success will be measured through development of Key Performance Indicators (KPI):
  - Device Up Time
  - # of Incidents/Durations
  - Trends; etc.
Transportation Management System (TMS) Upgrade Projects

Professional Engineering Procurement Services Contracts (PEPS)

- Two 2M dollar ITS contracts
- Two 2M dollar Traffic/ITS contracts
- One 1M dollar Signal Timing Contract

For FY 17 the Austin District has invoiced over 3.6M in consulting contracts and have an additional 2.8M under contract.
Benefits
In Austin this means every year in Societal Benefits we estimate...

- **7 lives saved**
- **70 hospitalizations**
- **700 trips to the emergency room avoided**
- **1.1M gallons of gas saved equivalent to avoiding 30 Boeing 747 flight trips from Austin to London**
- **2.6M HRS or 300 YEARS less time in traffic**
- **Reduced pollution equivalent to planting 25,000 trees**

Source: CDC, TTI, Americanforests.org, BCG Analysis
Team

COORDINATION

OTHERS

TxDOT- Austin District Intelligent Transportation System
Questions

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