PERFORMANCE MEASURES AT TXDOT

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1. Background
2. Statewide Performance Measures
3. San Antonio District Performance Measures
4. Performance Measures Case Studies
Why Measure At All?

What gets measured, gets ___________.

- Done
- Attention
- Managed
- Funding
- Staffing
- Resources
16 Statewide Initial metrics identified

1. Asset uptime %
2. Incident clearance time
3. Level of travel time reliability
4. TMS coverage
5. Asset inventory and age
6. Roadway clearance time
7. Secondary crashes
8. Peak Hour Travel Time Ratio
9. Crashes, injuries, fatalities
10. Safety service patrol assists provided
11. Workzone incidents
12. DMS travel time display
13. Time to repair assets
14. Events logged by TMC
15. Wrong way fatalities
16. TMS spending (UTP and non-UTP)

Priority metric included on Engineering Operations dashboard
Priority metric planned for inclusion on Engineering Operations dashboard
Performance Measures: Statewide

District Asset Uptime (December 2017)

Asset Uptime: A measure of the percent of traffic cameras, speed sensors, and main-lane dynamic message signs which are operational more than 75% of the time.
HOU is providing summary data from its TranStar Asset Management System (TAMS). All other districts’ data is compiled from Lonestar.

District Average Incident Clearance Time (December 2017)

Incident Clearance Time: A measure of the average time (in minutes) from incident detection to clearance for collisions (plus overturns & fires), and disabled vehicles (plus stalls & abandoned vehicles).
HOU is providing summary data from its Regional Incident Management System (RIMS). All other districts’ data is compiled from Lonestar. Note: El Paso permits vehicle owners extended time to tow or otherwise remove their own disabled vehicles. Where the clearance timestamp is not available, the closure timestamp is used instead. Percentages shown above indicate incidents with a clearance timestamp (TS) recorded.

Level of Travel Time Reliability on Interstate Highways (January 2017)

LOTTR: A measure of the percentage of interstate highway segments in the metro area in which drivers will experience relatively predictable travel time across various times of day.
Methodology: roadway segments where the 80th percentile slowest travel time does not exceed the median travel time (50th percentile) by more than 50%, as measured every 5 minutes during 4 time periods: Weekdays 6a-10a, 10a-4p, 4p-8p, and Weekends 6a-8p. A roadway segment is considered to have “reliable” travel times if the 80/50 ratio is 1.50 or less during all 4 time periods. LOTTR is currently sourced from CATTLAB reports, which combine DAL & FTW into one metropolitan area. At this point it is not possible to report this metric separately for DAL & FTW, but this will be available in the future. Detailed explanation: http://www.cattlab.umd.edu/MAP-Z1/resources/MAP-Z1SampleCalculations-SP.
Crash Data: December 2001
Crash Data: June 2018
Crash Rates

\[ R = \frac{\text{Crashes} \times 100,000}{\text{AADT} \times 365 \times \# \text{Years} \times \text{Length}} \]
Performance Measures: San Antonio District

San Antonio Freeway Performance Report
January-March (Q1) 2018

-7 percent
Total daily delay per directional mile

-4 points
Peak period vs. off peak travel times

-7 points
Unreliability (variability) of travel

55 minutes was the average clearance time recorded for TransGuide-managed collisions in Q1 of 2018.

Since 2011, traffic management and enforcement agencies from throughout the San Antonio region have worked together to improve safety by reducing wrong way driving. Their efforts have resulted in the potential saving of 69 lives.

6.9%
of San Antonio’s freeway crashes in Q1 of 2018 were secondary crashes. The quicker we respond to all crashes, the better chance we have of reducing secondary crashes.

Wrong Way Driving Events*

Wrong Way Driving Crashes*

*TransGuide event log data.

<table>
<thead>
<tr>
<th>Year</th>
<th>WWD Events</th>
<th>WWD Caught</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>175</td>
<td>10</td>
</tr>
<tr>
<td>2012</td>
<td>269</td>
<td>13</td>
</tr>
<tr>
<td>2013</td>
<td>222</td>
<td>6</td>
</tr>
<tr>
<td>2014</td>
<td>164</td>
<td>11</td>
</tr>
<tr>
<td>2015</td>
<td>190</td>
<td>7</td>
</tr>
<tr>
<td>2016</td>
<td>162</td>
<td>8</td>
</tr>
<tr>
<td>2017</td>
<td>161</td>
<td>11</td>
</tr>
<tr>
<td>2018 (Q1)</td>
<td>45</td>
<td>3</td>
</tr>
</tbody>
</table>
The Texas State Operations network disseminates missing person advisories in cooperation with public agency and private partners to notify the public of missing person cases. TxDOT and TransGuide participate in posting messages regarding AMBER Alerts, which had an extremely high success rate in 2017.

<table>
<thead>
<tr>
<th>AMBER Alert Type</th>
<th>Activations</th>
<th>Found Safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBER Alert</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Silver Alert</td>
<td>109</td>
<td>104</td>
</tr>
<tr>
<td>Blue Alert</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Endangered Missing</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

65% of San Antonio’s major freeway crashes were managed by TransGuide operators in Q1 of 2018.

TransGuide Operator Capture Rate by Corridor (Major Crashes, Q1 2018)

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Capture Rate</th>
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<tbody>
<tr>
<td>Interstate Highway 10</td>
<td>78%</td>
</tr>
<tr>
<td>Interstate Highway 35</td>
<td>50%</td>
</tr>
<tr>
<td>Interstate Highway 37</td>
<td>61%</td>
</tr>
<tr>
<td>Loop 410</td>
<td>84%</td>
</tr>
<tr>
<td>Loop 1604</td>
<td>65%</td>
</tr>
<tr>
<td>US Highway 90</td>
<td>85%</td>
</tr>
<tr>
<td>US Highway 281</td>
<td>46%</td>
</tr>
</tbody>
</table>

TransGuide Equipment

- 94% Uptime
- 93% Uptime
- 45% Uptime

- Cameras
- DMS
- Sensors
CASE STUDY:
ITS MAINTENANCE FUNDING
District Asset Uptime (April 2017): CCTV, DMS, Sensors

**District Asset Uptime (April 2017)**

<table>
<thead>
<tr>
<th></th>
<th>Avg. Percent Up (&gt;75%)</th>
<th>Assets Up (&gt;75%)</th>
<th>Asset Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>TxDOT</td>
<td>88.3%</td>
<td>3,387</td>
<td>3,836</td>
</tr>
<tr>
<td>AUS</td>
<td>52.2%</td>
<td>157</td>
<td>301</td>
</tr>
<tr>
<td>DAL</td>
<td>96.6%</td>
<td>1,148</td>
<td>1,188</td>
</tr>
<tr>
<td>ELP</td>
<td>83.5%</td>
<td>203</td>
<td>243</td>
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**City Uptimes**

<table>
<thead>
<tr>
<th>City</th>
<th>Avg. Uptime</th>
<th>Assets</th>
<th>Asset Count</th>
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<tbody>
<tr>
<td>FTW</td>
<td>82.1%</td>
<td>399</td>
<td>486</td>
</tr>
<tr>
<td>HOU</td>
<td>92.4%</td>
<td>1,213</td>
<td>1,313</td>
</tr>
<tr>
<td>SAT</td>
<td>87.5%</td>
<td>267</td>
<td>305</td>
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</tbody>
</table>
Austin Asset Uptime Trends

- Mar-17: 50.3%
- Apr-17: 52.2%
- May-17: 61.9%
- Jun-17: 58.3%
- Jul-17: 62.5%
- Aug-17: 60.5%
- Sep-17: 71.2%

- Oct-17: 74.9%
- Nov-17: 79.6%
- Dec-17: 58.8%
- Jan-18: 53.4%
- Feb-18: 61.5%
- Mar-18: 61.4%
- Apr-18: 77.7%
- May-18: 77.4%
CASE STUDY:

STAFFING FOR TRAFFIC MANAGEMENT CENTER
TMC Operator Capture Rate

- 24/7 Operations
- 131 Centerline miles
- 46,000 crashes/year (All Roads)
- Currently 10 FTE’s

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Capture Rates:
- < 50%
- 50 – 75%
- 75 – 95%
- > 95%
- No coverage
- Camera outage
Trends in Operator Capture Rate

What's happening?

Short Staffed

2017 Q1 2017 Q2 2017 Q3 2017 Q4 2018 Q1
Diving into 2018 Q1

Weekdays - 2018 Q1

Frequency

hour of Day

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

TG Collisions
KABC (CRIS)
KABCO (CRIS)
73 wrong-way drivers have been prevented by TransGuide Operators & SAPD Officers and Dispatchers since 2011.