Agenda

What is a Freight Network Technology and Operations Plan?

How does this Plan help TxDOT and the freight industry?

Who are the stakeholders and what do they think?

How will the plan be developed?
What is a Freight Network Technology and Operations Plan?

The Texas Freight Network Technology and Operations Plan will recommend appropriate technology, data-sharing, and operations-based strategies to address or capitalize on current and future freight safety and mobility challenges and opportunities on the Texas Multimodal Freight Network.

The completed Plan will include...

- Applicable technology, data-sharing, and operations-based strategies, as recommended by TxFAC, Working Group, stakeholder interviews and listening sessions, and the study team, to address freight transportation safety and mobility challenges and opportunities.

- An implementation plan that includes short- and long-term projects and three conceptualized technology / data-information strategies.
Relevant Programs in Texas

**Strategic Plans**
- Texas Freight Mobility Plan
- Statewide Intelligent Transportation System Strategic Plan
- Statewide Transportation System Management and Operations Program
- Emerging Technologies Transportation Plan

**Promote Technology**
- Smart Work Zones
- Texas Technology Task Force
- Texas Innovation Alliance
- Connected and Autonomous Vehicle Task Force
- Intelligent Transportation Society of Texas

**Implement Technology**
- Texas State Transportation Innovation Council
- Texas Connected Freight Corridors
- I-10 Corridor Coalition

**What other public or private programs are we missing?**
Addressing TxDOT and Freight Industry Needs

Investing in ITS, data, and other operational strategies helps to:

- Increase the State’s economic competitiveness
- Reduce freight-related congestion and delays
- Reduce the number of freight-related incidents and response time

What are high priority ITS infrastructure or technology-based needs that you or the freight industry need?

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Texas Strengths

- All major urban areas have traffic management centers (TMCs)
- Pilot projects to test innovative freight technologies
  - Workzone information to support dispatching planning for trucking companies
  - Real-time truck parking availability information (public truck parking facilities)
- The Texas Statewide Cooperative and Automated Transportation (CAT) Initiative – to prepare for and leverage advancements in transportation automation
  - Multiple AV pilot tests are currently underway (e.g., TuSimple and Ford)
- Planning for a future statewide “data lake” system to leverage “Big Data”
- Multi-state coalitions formed to solve common freight issues (e.g. I-10 Corridor)
- Repeated success with USDOT grant applications to fund innovative pilot projects

Are there other strengths that we have missed?

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Texas Weaknesses

- Data Integration and Operations
  - TMCs do not share data with each other
  - Ports and Border Crossings do not contain TMC capabilities
  - Many rural regions in Texas don’t have traffic and incident management systems
  - Data is currently spread across disparate sources, in non-standardized formats and inaccessible via application programming interfaces (APIs)

- Freight Traveler Information
  - Some traveler information platforms are not available on mobile devices (e.g., DriveTexas)
  - Lack of freight-specific traveler information that is currently available (especially from ports and railroads)

- Lack of coordination with private industry on the direction of private-sector investments

Are there other weaknesses that we have missed?
Texas Potential Opportunities

Traffic Management
- Statewide Super TMC
- Statewide Incident Management System
- Statewide Smart Workzone Information System

Data Availability
- Truck Parking
  - Real-time Availability
- Real-Time Traffic Conditions
- OS/OW Route and Permit Information

Data Dissemination
- Mobile Apps for Freight Traveler Information
- WAZE/Google Maps for Trucks
- Alternate Freight-Specific Route Guidance

ITS Infrastructure
- Overheight Vehicle Detection System
- Charging Technologies for Electric Vehicles

Emerging Technologies
- Connected Trucks and Supporting Infrastructure
- Infrastructure Conversion Guidance for Fully or Semi-Autonomous Freight Vehicles

Are there other potential opportunities that we have missed?

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COMPLETED

• Introductory webinar
• TxDOT Division interviews
• Workshops in Austin, Houston, and Arlington
• Texas Mobility Summit Freight and Logistics panel (San Antonio)

REMAINING

• 75+ individual interviews
  • ITS and vehicle technology OEMs, Motor Carriers, Air Freight, Railroads, Customs & Border Protection, FHWA, Ports of Entry, and more...
• Focus Group / Workshop Meetings
  • March 2020 (strategies / recommendations)
  • July 2020 (progress review)
  • November 2020 (Plan briefing)
Workshop Topics - Results

Information or data which stakeholders would like to provide to, or receive from, the freight industry:

- Population and industry growth to guide infrastructure improvements
- Weigh-in-motion data
- Container locations
- Volumes, travel speeds, delay
- Trip origins, destinations, transfers
- Insight to e-commerce impacts
- Railroad activity during peak periods on highway and school crossings

- Commodity flows
- Improved communications between Texas DMV and Districts regarding oversize/overweight load movement
Workshop Topics - Results

Technology improvements stakeholders would like to see in freight transportation:

- Expedited customs
- WAZE and Google Maps for freight
- Dedicated truck lanes
- Real-time reporting from freight (loads, permits, equipment failures, etc.)
- Truck platooning
- Highway-rail grade crossing safety
- Open data portals
- Railroad warnings incorporated into route guidance
Workshop Topics - Results

Highest priority freight infrastructure, technology, or operational concerns:

• Infrastructure to accommodate autonomous vehicle technology
• Statewide traffic management center
• Truck parking information systems
• Safety!
• Technology acceptance / funding from federal agencies
• Advanced traveler information systems
• Safer and smarter highway at-grade rail crossings
Discussion
## Next Steps - Milestones

### Technical Tasks

<table>
<thead>
<tr>
<th>Technical Tasks</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of the Practice Assessment</td>
<td>Fall 2019 / Winter 2020</td>
</tr>
<tr>
<td>Inventory Existing Conditions</td>
<td>Fall 2019 / Winter 2020</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Fall 2019 / Winter 2020</td>
</tr>
<tr>
<td>Existing / Future Needs Assessment</td>
<td>Fall 2019 / Spring 2020</td>
</tr>
<tr>
<td>Strategies Development</td>
<td>Spring – Summer 2020</td>
</tr>
<tr>
<td>Conceptual Framework</td>
<td>Winter – Spring 2020</td>
</tr>
<tr>
<td>Concepts of Operations</td>
<td>Spring – Fall 2020</td>
</tr>
<tr>
<td>Implementation Plan</td>
<td>Fall 2020</td>
</tr>
<tr>
<td>Final Plan</td>
<td>Fall – Winter 2020</td>
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</table>

### Stakeholder Outreach

<table>
<thead>
<tr>
<th>Stakeholder Outreach</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>Winter 2019 / Summer 2020</td>
</tr>
<tr>
<td>Texas Public Agency Meetings</td>
<td>Spring – Summer 2020</td>
</tr>
<tr>
<td>Workshops / Working Groups</td>
<td>Spring – Fall 2020</td>
</tr>
<tr>
<td>Working Group Webinars</td>
<td>Winter – Fall 2020</td>
</tr>
<tr>
<td>Project Fact Sheets</td>
<td>Throughout 2020</td>
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</tbody>
</table>
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Truck Parking Needs & Strategies

Texas Freight Advisory Committee
Agenda

Overview of Needs

Capacity Strategies

Technology, Policy and Outreach Strategies

Schedule and Next Steps
Truck Parking Needs
### Publicly-Owned Truck Parking Inventory

<table>
<thead>
<tr>
<th>Category</th>
<th>Sites</th>
<th>Truck Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active/ Open</td>
<td>81</td>
<td>1,237</td>
</tr>
<tr>
<td>Inactive</td>
<td>21</td>
<td>-</td>
</tr>
<tr>
<td>Interstate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active/Open</td>
<td>52</td>
<td>962</td>
</tr>
<tr>
<td>Inactive</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>Non-Interstate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active/Open</td>
<td>29</td>
<td>275</td>
</tr>
<tr>
<td>Inactive</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: TxDOT 2019 Jason’s Law submittal
## Truck Parking Inventory and Utilization by Interstate Corridor

<table>
<thead>
<tr>
<th>Interstate Corridor</th>
<th>Number of Truck Parking Locations</th>
<th>Total Truck Parking Spaces</th>
<th>Average Weekday Peak Hour Demand</th>
<th>Total Corridor Utilization</th>
<th>Number of Locations At/Overcapacity at Peak Hour (1–2 a.m.)</th>
<th>Average Weekday Trucks Parked in Highway Right of Way at Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-10</td>
<td>112</td>
<td>5,772</td>
<td>5,163</td>
<td>89%</td>
<td>38</td>
<td>118</td>
</tr>
<tr>
<td>I-20</td>
<td>91</td>
<td>4,599</td>
<td>3,793</td>
<td>82%</td>
<td>31</td>
<td>138</td>
</tr>
<tr>
<td>I-27</td>
<td>15</td>
<td>636</td>
<td>490</td>
<td>77%</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>I-30</td>
<td>19</td>
<td>826</td>
<td>1,059</td>
<td>128%</td>
<td>14</td>
<td>126</td>
</tr>
<tr>
<td>I-35</td>
<td>67</td>
<td>4,573</td>
<td>4,892</td>
<td>107%</td>
<td>35</td>
<td>185</td>
</tr>
<tr>
<td>I-37</td>
<td>18</td>
<td>492</td>
<td>289</td>
<td>59%</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>I-40</td>
<td>23</td>
<td>1,309</td>
<td>976</td>
<td>75%</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>I-45</td>
<td>30</td>
<td>1,538</td>
<td>1,555</td>
<td>101%</td>
<td>19</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>375</td>
<td>19,745</td>
<td>18,217</td>
<td>92%</td>
<td>142</td>
<td>676</td>
</tr>
</tbody>
</table>

Peak hour is 1-2 A.M.


*Capacity - Over, Near, Under*
Truck Parking and Safety

Crashes Involving Fatigued Truck Drivers
- Truck Driver Asleep or Fatigued
- Truck Driver Possibly Asleep or Fatigued
- TxDOT District Boundary
- Texas Highway Freight Network
- Other Highways

Crashes Involving Parked Trucks
- Fatality
- Serious Injury
- All Others

Texas Highway Freight Network
District Boundary
Unauthorized Truck Parking

Long Stops on TxDOT ROW

Truck Parking on Shoulders and Ramps

Average Weekday Number of Trucks Parked:
- 0
- 1 - 10
- 11 - 50
- 51 - 100
- > 100
Truck Parking Needs

Capacity Needs

Safety Needs

Freight Significance Needs
Prioritized Truck Parking Needs

**Capacity Need:** 25%

**Safety Needs:** 50%

**Freight Network Significance Need:** 25%
Strategies for Addressing the Needs
Repurpose Closed DPS/TxDOT Facilities for Dedicated Truck Parking

Estimated cost: $2 million

Hopkins – SRA
Lack of Amenities at Public Areas Leads to Underutilization

Loves peak hour utilization = 248%

IH 10 - Eastbound (8799 S. Desert Blvd. Anthony, TX 79821)

Anthony Travel Information Center peak hour utilization = 14%

1 mile apart

Length of Time Parked
- Parked 15 Min. - 1 Hour
- Parked 1+ Hour

Length of Time Parked
- Parked 15 Min. - 1 Hour
- Parked 1+ Hour
Expand/Retrofit Existing Safety Rest Areas (Medina County SRA)

DEVELOPMENT SUMMARY
- Angled Truck Parking - 22 Spaces
- OSOW Parking Included
- Car Parking Stalls - 18 Spaces
- Handicap Parking - 2 Spaces
- Covered Picnic Areas - 3
- Flush Toilets
- Showers
- Enhanced Vending Machines
- WiFi

Estimated cost - $2.4 million
Expand Picnic/Pull-out Areas: (Fort Davis Pull-out)

Estimated cost = $3.7 million
Build New Safety Rest Areas with Large Truck Parking Lot and Amenities

Estimated cost - $9.4 million
Information / Technology

- Truck Parking Availability/Information System
  - Recommend expanding I-10 efforts to other high need freight corridors (I-35, I-20, I-45, I-30)
  - Major freight generators (Borders, Ports, Energy Sector)
  - Explore multistate opportunities
### Potential Policy/Program Recommendations

#### TxDOT

- Consider truck parking needs during TxDOT project development
- Reassess public parking closures in high demand areas
- Include Driver outreach in Don’t Mess with Texas” campaign and create public truck parking education campaign
- Consider truck parking needs when securing ROW on freight corridors
- Allow truck parking in existing rest areas at night
- Multi-state coordination in Truck Parking Information Systems

#### Private Sector and Partner Agencies

- Encourage shippers/receivers to provide on-site parking or contribute common staging lot
- Include truck parking and queuing as part of Traffic Impact Analysis
- Encourage commercial/industrial property owners to allow truck parking in under utilized parking lots
- Allow overnight truck parking in existing public facilities such as park-and-ride lots, bus depots or maintenance lots
- Increase enforcement of unauthorized parking in areas with a surplus of spaces
Next Steps and Schedule
Next Steps

Stakeholder Engagement

• Outreach to District Engineers on strategies
• Driver interviews to develop optimal public truck parking facility

Next Steps

• Complete future needs assessment
• Develop recommendations based on outreach on strategies
• Compile final report – April 2020