STATEWIDE TRUCK PARKING STUDY

Texas Freight Advisory Committee
Project Approach

Collect Data and Identify Best Practices

Conduct Inventory and Utilization Analysis

Current and Future Conditions Analysis

Round 1 Stakeholder Workshops

Stakeholder Surveys

Stakeholder Interviews

Data Collection and Analysis

We are here

Round 2 Stakeholder Workshops

Develop Recommendations

Implementation Strategies

Final Report

Stakeholder Engagement

We are here

We are here

We are here

We are here
Demand and Supply - Statewide

Parking Capacity by District

Parking Locations by Number of Spaces

Source: TxDOT and various private data sources, compiled by Cambridge Systematics 2019

Source: ATRI 2018 Data, Processed by Cambridge Systematics 2019
Demand and Supply - Districts

Heat Map of Parked Trucks

Online Heat Map of Parked Trucks: https://arcg.is/WGDOy

Source: ATRI 2018 Data, Processed by Cambridge Systematics 2019
Unauthorized Parking – Next Steps

Source: ATRI 2018 Data, Processed by Cambridge Systematics 2019
STAKEHOLDER INPUT
19 workshops conducted from November 2018 – February 2019
Stakeholder Engagement – Round 1 Themes

Common Challenges

- Lack of capacity in general
- High demand near freight generators
- Providing amenities
- Ensuring safety
- Policies and regulations, including local zoning
- Signage and information about truck parking

Common Solutions

- Use underutilized land for truck parking
- Develop public or private truck parking near freight activity
- Improve availability of information about truck parking locations
- Encourage development of truck parking through tax incentives
Top 3 Challenges
1. Lack of overnight parking
2. No authorized parking at shippers/receivers
3. Hours-of-service limitations

63% of drivers park in an unauthorized location at least once a week (includes 10% who do daily)

50% of drivers park in an unauthorized location due to hours-of-service demands (23% cite lack of overnight facilities)

Top 3 Amenities
1. Safety features such as lighting
2. Food availability
3. Shower facilities
Additional Survey Comments

Most Common Driver Comments

- More capacity is needed
- Public land is an opportunity
- Lighting, safety, and cleanliness are important
- More frequent parking locations would be ideal (50-60 miles)
- Access and facility should be designed for trucks
- Real-time availability is needed
## Stakeholder Engagement – Round 2

<table>
<thead>
<tr>
<th>Interviews Currently Underway</th>
<th>Round 2 of Workshops</th>
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<tbody>
<tr>
<td>Follow-up with previous participants</td>
<td>Confirm findings from data analysis and Round 1 outreach</td>
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<tr>
<td>Identify and contact new stakeholders</td>
<td>Vet potential strategies with stakeholders</td>
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<tr>
<td>Understand how operations are impacted in various industries and regions</td>
<td>Identify priorities and partners for implementation plan</td>
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POTENTIAL TRUCK PARKING STRATEGIES
Category of Strategies

- Increase Overnight Parking Capacity
- Increase Short-Term Urban Staging Capacity
- Truck Parking Information Management System
Strategy 1: Increase Overnight Parking Capacity

Private Investment
- New or expanded truck stops

Public Investment (TxDOT)
- Expand truck parking to existing rest areas
- Truck-only parking areas
- Add parking to weigh/inspection sites
- Convert closed weigh/inspection sites
Strategy 2: Increase Short-Term Urban Staging Capacity

Private Investment

- Shippers/Receivers provide on-site parking & amenities (Hershey’s, Hershey, PA)
- Specialized staging parking providers (Mt. Olive, NC)

Public Investment (Local Municipalities)

- Zoning Change requiring on-site parking (Township of Upper Macungie, PA)
- Develop common staging lot (Port of Vancouver; Elmira, NY)
Strategy 3: Statewide Truck Parking Information Management System

I-10 Corridor Coalition
Truck Parking Availability System

ATC-ATMD Grant
volume 1 - technical approach

I-10 CONNECTS
I-10 CORRIDOR COALITION

Truck Parking Manager (Cloud-Server)

Site Controller
Relay Nodes
Sensor Nodes

Texas Freight Advisory Committee
July 11, 2019
TXFAC INPUT

Prioritizing Strategies
What Strategies Would Be Most Effective?

Interactive Input via www.menti.com

You have 100 points to distribute across the following strategies...

- Direct public investment in parking capacity
- P3 investment in overnight and/or staging capacity
- Encouragement and support of private investment (incentives, public awareness, etc.)
- Zoning and land use requirements
- Truck Parking Information Systems
- Other
## Project Schedule (2019)

### Remaining Technical Tasks

- **Utilization and Demand**
- **Parking in Unauthorized Locations**
- **Safety and Truck Parking**
- **Forecasting Future Demand**
- **Truck Parking Needs**
- **Recommendations**
- **Implementation Plan**
- **Final Report and Executive Summary**

### Outreach

- **Interviews**
- **Round 2 Workshops**

### Table

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<tr>
<th>Weeks</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
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Additional Outreach and Next Steps

Stakeholder Engagement

• Summer - Interviews and field visits
• Fall - Workshops

Next Steps

• Data-driven analysis of where, why, and how much additional parking is needed
• Draft recommendations
• Align strategies with demand
FREIGHT INFRASTRUCTURE DESIGN CONSIDERATIONS

Texas Freight Advisory Committee
Project Approach Overview

DATA COLLECTION
- Literature Review
- TX & National Practice
- Comparison Matrix
- Current TxDOT Efforts
- Truck Parking Analysis
- Stakeholder Workshops

SAFETY AND CONGESTION ANALYSIS
- Safety Analysis
- Corridor Analysis
- Hot-Spot Analysis
- Congestion and Resiliency Regional Analysis
- Regulatory Consistency

DESIGN ISSUE IDENTIFICATION
- Geometric
- Operations
- Issue Matrix

DESIGN SOLUTIONS
- Fiscal Impact Analysis
- Cost Effectiveness

DATA COLLECTION AND ANALYSIS

DRAFT FREIGHT INFRASTRUCTURE DESIGN CONSIDERATIONS

STAKEHOLDER WORKSHOPS AND TxFAC REVIEW

REvised FREIGHT INFRASTRUCTURE DESIGN CONSIDERATIONS

WORKING GROUP REVIEW

FINAL FREIGHT INFRASTRUCTURE DESIGN CONSIDERATIONS

REPORT AND EXECUTIVE SUMMARY

Texas Freight Advisory Committee

July 11, 2019
BENCHMARKING DESIGN GUIDELINES FOR TEXAS AND PEER STATES
Topics Covered in Benchmarking

- Topics:
  - Geometrics
  - Pavement
  - Bridges and Structures
  - Truck Size and Weight
  - Work Zones
  - Traffic Operations
  - Multimodal Accessibility

- Comparison Matrix
Geometric Comparisons

Overview

- TxDOT design criteria overall not substantially different from peer states

TX Leading

- Minimum vertical clearance requirements are highest among peer states
- Mainlane lane widths required to be 13’ rather than 12’ in peer states

TX Lagging

- No firm guidelines for design vehicle, while some states use WB-67 (53’Semi)
- Allows for greater grade changes without vertical curve than most peer states
Overview

- TX and peer states follow federal bridge formula for truck weight impact

TX Leading

- TX broke new ground with 18’6” standard overhead clearance on THFN
  - Other states typically around 16’6”
  - 1,300+ THFN bridges <16’6”, and 20% of those <15’

TX Lagging

- TX Gross Vehicle Weight limits match federal 80,000 lbs.
  - Some others allow higher weight on state highways or parts of the Interstate system; Florida and New York allow higher weights per axle
  - Michigan allows 164,000 lbs., but with more axles and lower axle loads
Work Zones

Overview

- TX and peer states follow federal guidance: Manual on Uniform Traffic Control Devices Part 6
  - Most states do not specifically reference trucks or freight volumes in work zone manuals
  - Focus frequently is on construction and service trucks

TX Leading

- TxDOT is a leader in work zone technology applications
  - I-35 Connected Work Zone pilot communicates conditions to truck drivers and fleets
  - Smart Work Zone Guidelines don’t consider truck volumes but do ease truck passage

TX Lagging

- Washington Work Zone Manual references importance of maintaining freight movement in work zones and coordinating with divisions
- Certain peer state best practices include designating a truck lane through work zones and/or offsetting lane widths for larger vehicles
## Workshop Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Location</th>
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<tbody>
<tr>
<td>Amarillo</td>
<td>Lubbock</td>
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<tr>
<td>Beaumont</td>
<td>Lufkin</td>
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<tr>
<td>Brownsville</td>
<td>McAllen/Pharr</td>
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<tr>
<td>Corpus Christi</td>
<td>Mesquite</td>
</tr>
<tr>
<td>El Paso</td>
<td>Midland</td>
</tr>
<tr>
<td>Ft. Worth</td>
<td>San Antonio</td>
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<tr>
<td>Grapevine</td>
<td>S. Dallas</td>
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<tr>
<td>Houston</td>
<td>Texarkana</td>
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<tr>
<td>Killeen/Temple</td>
<td>Tyler</td>
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<tr>
<td>Laredo</td>
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</tbody>
</table>

**Key:**
- North/East
- South/Gulf
- West
Observations from Workshops

- Funding has a major influence on design decisions
  - County revenue sources don’t match road responsibilities
  - Pavement selection a common example of trade-offs
- Growth outstripping design all across the state
  - Road plans and city plans trend toward obsolete
  - FM roads are hot spots
  - Rural areas may lack the resources to attract growth
- Semi-truck with 53’ trailer works as design vehicle in most of the state
  - Permian Basin is main exception
  - Design plus control vehicle is useful approach
1. Which multimodal facilities are the most difficult to access due to infrastructure design?*

* 18 locations, Beaumont absent

**KEY:**
- Rail Terminals
- Port Terminals
- Airports
- Pipeline Terminals
- Border Crossings
- Warehousing

**Sample:** 229 Responses
2. Where are the biggest challenges in moving freight on the roadway network?*

**KEY:**
- Limited access highways
- Highway access ramps
- Other local roads
- Frontage roads
- Border crossings
- Construction work zones

* 18 locations, Beaumont absent

Sample: 245 Responses
4. What are the key challenges in transporting oversize/overweight freight? *

**KEY:**
- Lane and shoulder widths
- Access ramps
- Intersections
- Construction work zones
- Overhead clearance
- Bridge weight restrictions

Sample: 217 Responses

* 17 locations, Beaumont and Corpus Christi absent
Stakeholder Workshop Polling Questions

5. What is the most critical impact on freight operations due to design limitations?*

**Sample:**
- 213 Responses

**KEY:**
- Requires more time in schedule
- Reduces utilization of assets
- Reduces safety
- Reduces fuel efficiency
- Raises cost/reduces reliability generally
- Slows down response to severe weather events

* 17 locations, Beaumont and Corpus Christi absent
1. Which aspect of roadway infrastructure is most likely to contribute to freight safety issues in your district?

**KEY:**
- Lane/shoulder width
- Access control absent
- Pavement condition
- Intersections/interchanges
- Merge-lane length
- Work zones

**Sample:** 33 Responses
2. What kind of infrastructure has issues that are most likely to make moving freight less productive in your district?

**KEY:**
- Port/rail access routes
- Local roads to shippers
- Urban streets for home delivery
- Rail grade Xings
- Local roads for border logistics
- Rural routes thru towns

**Sample:** 29 Responses
SAFETY ANALYSIS
Factors Impacting Truck Crashes

- Truck crash rates and rates of death and serious injury rise as the degree of access control decreases.
- Crash rates are higher for roads with greater congestion (Levels of Service E and F), but the rate of deaths and serious injuries is lower than on highways with no congestion.
- The highest crash rates occur when the truck percentages are lowest, and decline steadily as percentages climb.
  - Severity tends to decline as well.
- Crash rate increases progressively with higher International Roughness Index (IRI), indicating worse pavement condition.
  - However, it does not appear that IRI affects the rate of severe crashes.
- Wider right shoulders diminish the severity of crashes.
  - Shoulders narrower than 10 feet may be associated with much higher crash rates as well.
- While rare, crashes involving a parked truck are disproportionately more severe, contributing to a greater share of deaths and serious injuries.
- Overturns and jack-knifes are 2 of top 3 contributors: 7.1% of crashes
- Width limits (barriers, rails) account for 5.9% of crashes
- Overhead clearances figure in 2.1% of crashes
Factors Contributing to Truck Crashes on 8 Analysis Corridors

- Significant variability between corridors
- Changing lanes larger factor on I-45 and I-10 near Houston, and I-35 north of San Antonio
- Construction accounts for 60% of crashes on US-75 north of Dallas

<table>
<thead>
<tr>
<th>Corridor</th>
<th>OTHER AND NOT REPORTED</th>
<th>VEHICLE CHANGING LANES</th>
<th>CONSTRUCTION</th>
<th>SLOWING/STOPPING</th>
<th>ATTENTION DIVERTED FROM DRIVING</th>
<th>SWERVED/VEERED</th>
<th>ONE VEHICLE PARKING OR DRIVING</th>
<th>LOST CONTROL</th>
<th>VISION OBSTRUCTED</th>
</tr>
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<tbody>
<tr>
<td>(1) I-10 East of Houston</td>
<td>36.5%</td>
<td>20.4%</td>
<td>13.3%</td>
<td>11.0%</td>
<td>7.6%</td>
<td>5.1%</td>
<td>3.3%</td>
<td>2.7%</td>
<td>0.4%</td>
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<tr>
<td>(2) I-20 Midland to I-10</td>
<td>47.2%</td>
<td>14.2%</td>
<td>10.5%</td>
<td>11.5%</td>
<td>10.1%</td>
<td>5.3%</td>
<td>3.7%</td>
<td>7.7%</td>
<td>1.2%</td>
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<tr>
<td>(3) I-35 San Antonio to Laredo</td>
<td>44.5%</td>
<td>20.5%</td>
<td>15.1%</td>
<td>12.7%</td>
<td>12.1%</td>
<td>6.1%</td>
<td>2.9%</td>
<td>7.3%</td>
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<tr>
<td>(4) I-35 San Antonio to Temple</td>
<td>26.5%</td>
<td>19.7%</td>
<td>7.6%</td>
<td>10.0%</td>
<td>5.5%</td>
<td>3.0%</td>
<td>2.9%</td>
<td>2.7%</td>
<td>0.3%</td>
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<td>(5) I-45 Galveston through Houston</td>
<td>38.0%</td>
<td>29.3%</td>
<td>15.1%</td>
<td>10.0%</td>
<td>4.6%</td>
<td>6.6%</td>
<td>4.6%</td>
<td>2.7%</td>
<td>0.1%</td>
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<tr>
<td>(6) I-69 Houston to Lufkin</td>
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<td>19.7%</td>
<td>15.1%</td>
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<td>8.4%</td>
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<td>(7) US-75 at McKinney</td>
<td>11.1%</td>
<td>6.9%</td>
<td>7.9%</td>
<td>5.5%</td>
<td>5.5%</td>
<td>8.4%</td>
<td>2.8%</td>
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<td>(8) US-287 Fort Worth to Wichita Falls</td>
<td>42.7%</td>
<td>60.2%</td>
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<td>9.3%</td>
<td>4.8%</td>
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- Significant variability between corridors
- Changing lanes larger factor on I-45 and I-10 near Houston, and I-35 north of San Antonio
- Construction accounts for 60% of crashes on US-75 north of Dallas
TxFAC INPUT ON STRATEGIES
www.menti.com
1. Balancing needs and practicalities, where should Texas focus investment in the physical design of freight infrastructure? (100 points to assign)

   a) Upgrading local and rural roads to shippers/receivers
   b) Improved intersections and interchanges on the Texas Highway Freight Network (THFN)
   c) Assurance of adequate lane and shoulder widths throughout the THFN
   d) Expansion of access control on the THFN
   e) Other: ___________________________________________________________
Policy Issues in Freight Infrastructure Design

2. What policy issues should be put forward as important for effective freight infrastructure design? (100 points to assign)

a) Adequacy of funding and sources for facilities under non-TxDOT jurisdiction

b) Adequacy of funding for best design choices on THFN facilities

c) Sufficiency of land use and freight network plans for growing cities and towns

d) Adequacy of freight system investment in regions without growth

e) Other: ________________________________
Next Steps

- Complete Safety and Congestion Analyses (July)
- Finalize Peer State Benchmarking Report (July)
- Regulatory Consistency Analysis (July)
- Design issue identification and draft solutions (July-August)
- 2nd round stakeholder workshops (Fall 2019)
TEXAS FREIGHT NETWORK TECHNOLOGY AND OPERATIONS PLAN

Texas Freight Advisory Committee
Why Freight Network Technology and Ops Plan?

- Technology innovations are redefining traditional planning and investment decisions
- Need to find cost effective operational and technology solutions for Texas Freight Network to:
  - Improve mobility, safety and efficiency
  - Improve system management and operation
  - Address congestion
  - Enhance Economic Development
- Technology innovations will influence future freight and operations
- Better understand the needs, challenges, gaps, and opportunities and how to best plan for the future
- Proactively develop a Blueprint for facilitating deployment of emerging technologies on Texas Freight Network
- Support TxDOT goals – leader in technology innovation and TSMO practices on Texas Freight Network
Plan Purpose, Goals and Objectives

**PURPOSE**
Develop a comprehensive Freight Network Technology and Operations Blueprint that positions Texas as leader in addressing current and emerging freight movement issues.

**GOAL**
Develop a plan based on detailed assessment of current and future conditions, needs, challenges, gaps, and opportunities and outlines strategies and implementation plan.

**OBJECTIVES**
- Assess current and planned technological and operational strategies to improve safety and mobility on the TX Freight Network.
- Assess technological and operational needs, challenges, and opportunities on the Freight Network.
- Assess Freight Network technology and operational readiness.
- Develop strategies, policies, programs, and projects to address needs, challenges, gaps, and opportunities.
- Develop an Implementation Plan and Concept of Operations.
www.menti.com

- What other goals and objectives should TxDOT be focusing on for this effort?
- Are there other outcomes you would like to see?
Overview of Project Approach

We are here
Attended by TXDOT technology, operations, maintenance and administrative professionals

Project team vetted project focus:
- Emphasize a multi-modal approach
- Examine cross-border and the air and water ports
- Focus on pre-existing network and data

Identified key stakeholder types to be included:
- Public agencies including federal agencies
- Freight stakeholders other than truck (rail, water)
- Technology alliances such as Technology Innovation Alliance, TxDOT Technology Task Force
- Private sector technology providers

Identified ongoing technology/operational programs for study
- Obtain a variety of different inputs from state level agencies (DMV, DPS, key State staff covering freight, ITS, and operations, etc.)
Stakeholder Engagement

- Three stakeholder engagement methods:
  - Stakeholder Interviews (60 - 70)
  - Freight Network Technology Working Group Meetings (3) and Webinars (5)

- Stakeholders to be included:
  - All freight modes to be covered
  - Existing ITS stakeholders to be included
  - Applicable Texas public agencies
  - Applicable freight and technology private sector involvement
  - Applicable other states’ agency representatives
The FNTWG is a public agency and private industry group of stakeholders that will provide feedback on freight network technology findings and help prioritize strategies and recommendations and guide development of FNTOP.

In-person meetings of 12 to 15 persons each will be held in 6 locations around the State:
- Oct 2019 (Freight Network and user needs)
- Mar 2020 (strategies and recommendations)
- Nov 2020 (Plan briefing)

Webinars:
- July 2019 (Introduction)
- Oct 2019 (Freight Network and user needs)
- Mar 2020 (Strategies and recommendations)
- July 2020 (In-progress review)
- Nov 2020 (Plan briefing)

We are seeking members of the TxFAC to join the Freight Network Technology Working Group.
Coordination with other TxDOT Efforts

Actionable policies, programs, projects and initiatives

Roles and responsibilities for implementation

Desired outcomes with emphasis on near-term, achievable opportunities

Projects and initiatives across a variety of elements such as:

- Texas FRATIS I-35 Work Zone Prototype Information System for Trucking Fleets
- Texas Truck Platooning Demonstration Program
- CA-AZ-NM-TX I-10 Connected Trade Corridor ConOps
- I-10 Corridor Coalition Truck Parking Availability System
- Texas Connected Freight Corridors Project
- State of the art TMC installations
- Port systems
- Technology Innovation Alliance
<table>
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<th>Task</th>
<th>Time</th>
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<tr>
<td><strong>Task 1 Project Management:</strong></td>
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<tr>
<td>• Kick Off Meeting</td>
<td>May 2019</td>
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<tr>
<td>• Complete Project Management Plan with updated schedule</td>
<td>Jun 2019</td>
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<td>• Complete initial Final Report Outline</td>
<td>Jun 2019</td>
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<tr>
<td><strong>Task 2 Feasibility and Planning Studies:</strong></td>
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<tr>
<td>• Visioning and benchmarking</td>
<td>Jun-Sep 2019</td>
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<td>• Develop goals and objectives</td>
<td>Jun 2019</td>
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<td>• State of the practice review</td>
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<td><strong>Task 4 Stakeholder Involvement:</strong></td>
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<tr>
<td>• Complete Stakeholder Outreach Plan</td>
<td>Jun 2019</td>
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<td>• Form Working Group (TxDOT)</td>
<td>Jun-Jul 2019</td>
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<td>• Working Group Webinar (first)</td>
<td>Jul 2019</td>
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<td>• Working Group Meeting (first)</td>
<td>Oct 2019</td>
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<td>• TX Public Agency meeting (first)</td>
<td>Aug 2019</td>
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<tr>
<td>• Prepare for first set of stakeholder interviews</td>
<td>Jul 2019</td>
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<tr>
<td>• Conduct stakeholder interviews</td>
<td>Jul 2019-Nov 2020</td>
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<tr>
<td>• Develop project fact sheets</td>
<td>First one: Jun 2019</td>
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Project Team Contacts

- **TxDOT**
  - Caroline Mays – Project Manager; Director of Freight, International Trade, and Connectivity
    [Caroline.Mays@txdot](mailto:Caroline.Mays@txdot)
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- **Consultant Team – Cambridge Systematics**
  - Mark Jensen – Freight Tech/Ops Plan Project Manager
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  - Paula Dowell - Consultant Program Manager
    [PDowell@camsys.com](mailto:PDowell@camsys.com)
STUDY OVERVIEW
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Better capture local and regional energy sector freight data</td>
</tr>
<tr>
<td>B</td>
<td>Identify regional roadways critical to serving the energy sector</td>
</tr>
<tr>
<td>C</td>
<td>Communicate the economic importance of freight activity in the Permian Basin</td>
</tr>
<tr>
<td>D</td>
<td>Develop local and regional projects, policies, and programs to improve freight movement in the Permian Basin</td>
</tr>
</tbody>
</table>
Permian Basin Regional Energy Sector and Freight Transportation Plan Study Area

22 Texas Counties

2 New Mexico Counties

Permian Basin Sphere of Influence
Why a Texas Permian Basin Regional Freight Plan?

PURPOSE

Develop a multimodal regional freight plan to improve safety and mobility throughout the Permian Basin region by addressing local and regional freight challenges, opportunities, and strategies.

- Freight activity in Permian Basin region has significant local, state and national implications.
- Region produces an average of 4.0 million barrels of oil a day (May, 2019).
- Rapid economic growth and increasing energy sector freight volumes outpacing investment.
- 2,000 or more truck trips per new well are generated in the region.
- Between 2010 to 2018, there was a 47% increase in the number of roadway crashes and a 64% increase in roadway fatalities.
- Region generated over $4.9 billion in State revenues in 2017, accounting for nearly 10% of all state-generated general revenue.
Document Economic Importance of the Permian Basin Region

- Profile key energy sector and freight intensive industry sectors and supply chains in the region
- Identify, quantify, and document the importance of the region’s energy sector, freight and economic activity to the state and the nation
- Estimate the impact of not effectively meeting the region’s energy sector and freight transportation needs
- Supplement existing regional socioeconomic and other data
Plan Development Approach

1. **Collect Data, Review Materials, Identify Best Practices**
2. **Analyze Freight System Conditions and Performance**
3. **Stakeholder Workshops (Round 1) and Interviews**
4. **Assess Current and Future Needs**
5. **Stakeholder Workshops (Round 2) and Outreach**
6. **Develop Freight Strategies**
7. **Develop Freight Recommendations**
8. **Regional Freight Plan**

- We are here.
<table>
<thead>
<tr>
<th>Goal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td>Improve the safety, efficiency, and performance of the Permian Basin region’s multimodal freight system</td>
</tr>
<tr>
<td><strong>Economic Competitiveness</strong></td>
<td>Improve the contribution of the energy sector transportation system for economic competitiveness, productivity, and development in the Permian Basin region and beyond</td>
</tr>
<tr>
<td><strong>Mobility and Reliability</strong></td>
<td>Reduce congestion and improve system efficiency and performance on the Permian Basin region’s transportation system</td>
</tr>
<tr>
<td><strong>Connectivity</strong></td>
<td>Improve urban and rural system connectivity between all freight modes within the Permian Basin region and all industry sectors to regional, statewide, national, and international markets</td>
</tr>
<tr>
<td><strong>Sustainable Funding</strong></td>
<td>Identify and sustain funding sources for the energy sector’s and Permian Basin region’s freight transportation system</td>
</tr>
<tr>
<td><strong>Stewardship</strong></td>
<td>Manage environmental and agency resources responsibly and foster accountability and transparency in decision-making</td>
</tr>
<tr>
<td><strong>Customer Service</strong></td>
<td>Engage public and private sector stakeholders in transparent dialogue to determine consistent and comprehensive regional transportation planning strategies and recommendations</td>
</tr>
<tr>
<td><strong>Asset Preservation</strong></td>
<td>Maintain and preserve the Permian Basin’s transportation infrastructure that supports multimodal movement of energy sector freight, goods and people</td>
</tr>
</tbody>
</table>
Draft Plan Objectives Based on Initial Stakeholder Input

1. Supplement state freight data with local and regional freight and traffic data collection specific to energy sector activity

2. Identify and assess the critical regional transportation network serving energy sector needs currently and in the future

3. Enhance regional freight forecast and travel demand model by accounting for future energy sector traffic, trends, and activity

4. Support identification of policies, programs and projects to address energy sector freight activity for inclusion in the Plan

5. Document the impact of Permian Basin freight movement to local, state, and national economies

6. Improve connectivity and mobility between urban and rural areas and from the Permian Basin to the rest of the state and nation

7. Develop short and long term strategies for enhancing regional freight mobility, connectivity, and safety on the local and regional transportation system
STAKEHOLDER OUTREACH
Stakeholder Engagement

KEY ACTIVITIES

- Stakeholder kickoff meeting held May 31
- Engage and coordinate with Permian Basin Regional Freight Plan Advisory Committee
- Conduct stakeholder interviews (40)
- Administer and analyze stakeholder surveys
- Coordinate with MPO committees and New Mexico Department of Transportation
- Conduct stakeholder listening sessions (2 rounds)
Stakeholder Interviews

**Public**
- TX Department of Transportation
- NM Department of Transportation
- Metropolitan Planning Organization
- Regional Planning Commission
- Cities
- Counties
- Economic Development
- Federal Agencies
- State Agencies
- Maritime Ports
- Border Trade Advisory Committee

**Private**
- Industry Groups / Associations
- Oil / Gas Companies
- Sand / Water / Supplies
- Carriers (rail and truck)
- Freight facility operators
- Shippers and receivers of freight, including non-ES
- Warehouse and distribution centers
- Logistics service providers
- Public resources / services
- Developers
- Chamber of Commerce

Interviews conducted to date
Challenges Identified by Stakeholders to Date

Energy sector activity is projected to have sustained growth in the region for decades

Plan needs to serve as the singular strategic transportation vision for the region, be locally driven and championed, and informed by stakeholder outreach and current, accurate data

Safety and access/connectivity for community resources (emergency, education, etc.) are the major transportation concerns, mostly due to driver behavior, aging infrastructure, and inadequate capacity and design

Private sector eager to come to the table to help with data collection and identification of strategies

Key infrastructure issues include lack of capacity, lack of shoulders and pull offs, 2-way frontage roads, lack of or inadequate acceleration / deceleration lanes, narrow lanes, lack of truck parking, incident clearance and at-grade rail crossings –302 and Loop 285 most mentioned routes
Challenges Identified by Stakeholders to Date

- Oil and gas movements are increasing significantly and infrastructure is not keeping pace
- Connectivity to freight generators needs to be improved
  - Many existing roads not designed to carry the size and volume of trucks
  - Newer areas of freight intensive development lack connectivity, leading to circuitous routes
- Lack of north/south connectivity
- Access to I-20 is impeded by lack of connections and/or design of connectors
- High incident of truck involved crashes
What are the key issues, challenges, and opportunities facing the Permian region?
How does energy sector activity in the Permian Basin impact your region? The State?
What could TxDOT learn in the Permian Basin that could be transferable to other parts of the state?
## Key Deliverables

<table>
<thead>
<tr>
<th>Task</th>
<th>Deliverables</th>
<th>Schedule</th>
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<tr>
<td>Technical Analysis and Reports</td>
<td>Stakeholder Outreach and Interviews</td>
<td>April – July 2019 and January – March 2020</td>
</tr>
<tr>
<td></td>
<td>Energy Sector / Freight Data Collection</td>
<td>July 2019</td>
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<tr>
<td></td>
<td>Multimodal Energy Sector / Freight Transportation Network</td>
<td>July 2019</td>
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<tr>
<td></td>
<td>Economic and Commodity Flow Profile and Forecast</td>
<td>November 2019</td>
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<td></td>
<td>Land Use and Needs Assessment</td>
<td>December 2019</td>
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<tr>
<td></td>
<td>Energy Sector / Freight Strategies and Recommendations</td>
<td>January 2020</td>
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<tr>
<td></td>
<td>Freight Analysis Tool</td>
<td>March 2020</td>
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<tr>
<td></td>
<td>Investment Plan and Implementation Program</td>
<td>April 2020</td>
</tr>
<tr>
<td></td>
<td>Economic Importance and Impact of Energy Sector Memo</td>
<td>May 2020</td>
</tr>
<tr>
<td></td>
<td>Final Plan and Executive Summary</td>
<td>June 2020</td>
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</tbody>
</table>
Next 90 Days

Technical Analysis

- Collect data from public and private sources
- Regional freight network and needs assessment
- Develop economic and commodity flow profile

Stakeholder Outreach

- Round 1 stakeholder outreach events (week of July 29, 2019)
  - Listening sessions and Industry forums
- Online survey (August 2019)
- Plan Advisory Committee (September 2019)
- Complete stakeholder interviews
TEXAS FREIGHT MOBILITY PLAN
IMPLEMENTATION - REGIONAL
FREIGHT PLANNING, ECONOMIC
IMPORTANCE OF FREIGHT AND
FREIGHT PLANNING TOOLS AND
TRAINING

Texas Freight Advisory Committee
RIO GRANDE VALLEY REGIONAL FREIGHT AND TRADE TRANSPORTATION PLAN
2018 Texas Freight Mobility Plan Identified the Need to...

A. Better identify local and regional bi-national freight movement and needs in the Rio Grande Valley (RGV) region

B. Identify regional transportation network critical to serving bi-national trade in the RGV region

C. Communicate the economic importance of cross border freight movements in the RGV region

D. Develop local and regional projects, policies, and programs to improve regional freight movement
Texas Freight Advisory Committee
July 11, 2019

Rio Grande Valley (RGV) Freight and Trade Transportation Plan Study Area

6 Texas Counties

Hidalgo, Willacy, Cameron, Starr, Brooks, and Kenedy

Rio Grande Valley Sphere of Influence

Class I Railroad

Shortline Railroad

Study Area

Truck Border Crossing

Rail Border Crossing

Deep Water Port

Texas Freight Advisory Committee
July 11, 2019

4
Why a RGV Regional Freight and Trade Transportation Plan?

**PURPOSE**

Develop a multimodal regional freight and trade transportation plan to improve safety and mobility throughout the Rio Grande Valley region.

- The Rio Grande Valley became Texas’ fifth largest metropolitan region in 2015.

- Texas ranks first among U.S. states trading with Mexico, and the RGV has two of the top ten trading ports accounting for over $17.6 billion in 2018.

- Through April 2019, trade across Pharr International Bridge rose 4.48 percent to $11.8 billion.

- In 2018, 999,326 trucks and 937 trains crossed into the U.S. via an RGV crossing. That's a 10-year increase of 28% (trucks) and 7% (trains).
RGV Plan Development Approach

Kickoff: September 2019

1. COLLECT DATA, REVIEW MATERIALS
2. ANALYZE FREIGHT SYSTEM CONDITIONS AND PERFORMANCE
3. STAKEHOLDER WORKSHOPS (ROUND 1) AND INTERVIEWS
4. STAKEHOLDER WORKSHOPS (ROUND 2) AND OUTREACH
5. ASSESS CURRENT AND FUTURE NEEDS
6. DEVELOP FREIGHT RECOMMENDATIONS
7. DEVELOP FREIGHT STRATEGIES
8. REGIONAL FREIGHT PLAN
What are the key issues TxDOT should focus on for the RGV plan?
What are some key outcomes you would like see from the plan?
Stakeholder Engagement

KEY ACTIVITIES

• Develop and engage an RGV Freight Plan Advisory Committee
• Conduct stakeholder interviews (30)
• Administer and analyze stakeholder surveys
• Coordinate with MPO committees
• Conduct stakeholder listening sessions (2 rounds)
# Key Deliverables

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<td>Kick-off Meeting</td>
<td>September 12, 2019</td>
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<tr>
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<td>Freight Data Collection</td>
<td>January 2020</td>
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<tr>
<td></td>
<td>Stakeholder Outreach and Interviews</td>
<td>October 2019 to February 2020</td>
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<tr>
<td></td>
<td>Regional Multimodal Freight Network</td>
<td>March 2020</td>
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<td>Economic Importance and Impact Memo</td>
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<td>Regional Freight Plan and Executive Summary</td>
<td>December 2020</td>
</tr>
</tbody>
</table>
ECONOMIC IMPORTANCE OF FREIGHT IN TEXAS
2018 Texas Freight Mobility Plan Identified the Need to...

A. Better capture local, regional, state, national, and bi-national multimodal freight and economic data

B. Invest in transportation infrastructure critical to moving freight and supporting the state’s economy

C. Communicate the economic importance of multimodal freight mobility to the Texas economy to increase public awareness

D. Incorporate economic assessment into the freight investment prioritization process
Economic Importance of Freight in Texas

1. Statewide perspective

2. TxDOT District perspectives

3. Texas Triangle perspective – San Antonio, Austin, Dallas-Fort Worth, & Houston

4. Corridor perspectives

5. Cross-border trade perspective

6. Modal perspectives
Economic Implications of Freight Investments

- Cost of congestion
- Impact of investments at district level
- Impact of investments at corridor level
- Impact of Freight Investment Plan
- Impact of high priority freight projects
Economic Impact of E-Commerce in Texas Triangle

E-Commerce profile
- Sales
- Trends
- Commodities
- Transportation Impact

Indirect Impact of E-commerce
- Application developers
- Fulfillment centers
- On-line retailer support
- Brick and mortar

Total Impact of E-commerce
- Transportation demand
- Transportation costs
- Retail sales and prices
- Gross State Product
- Employment & income
- Tax revenue
What would you like to see as an outcome for this effort?

Is there anything you would NOT want to see this effort address?
**KEY ACTIVITIES**

- Convene Freight and Economics Working Group
- Engage and coordinate with modal stakeholders
- Conduct Texas public agency meetings
- Develop series of fact sheets
## Key Deliverables

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<td>August 21, 2019</td>
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<tr>
<td>Reports</td>
<td>Modal Stakeholder Outreach and Interviews</td>
<td>September – October 2019</td>
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<td>Methodology and Data Collection</td>
<td>December 2019</td>
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<td></td>
<td>Economic Role of Freight on State, Districts, Corridors and Texas Triangle</td>
<td>April 2020</td>
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<td>Economic Impact by Mode</td>
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<td></td>
<td>Final Report</td>
<td>January 2021</td>
</tr>
</tbody>
</table>
FREIGHT PROGRAM IMPLEMENTATION: FREIGHT PLANNING FRAMEWORK AND TRAINING
Key Policy and Program Recommendations for 2018 TFMP

- Develop and administer comprehensive multimodal freight planning program to improve freight transportation network in Texas
  - Strategies
  - Policies
  - Methodologies
  - Planning framework
  - Data
  - Training

- Integrate freight into TxDOT investment decision making process

- Educate and build awareness on importance of freight to Texas
To develop a customized computer-based freight investment optimization (FIO) tool for implementing the Texas Freight Mobility Plan (TFMP) and to develop freight training for State staff and planning partners.
Freight Network Identification and Assessment Module

- Update and enhance system developed as part of the 2018 TFMP
  - Expanded designation criteria
  - Latest data
Freight Flow Forecasting and Scenario Planning Module

- Trade Flow Data
- Network Capacity Analysis
- Modal Economics
- Alternative Futures
Texas Freight Advisory Committee July 11, 2019

Freight Investment Assessment and Prioritization Module

- Review TxDOT’s current process
- Update investment assessment process
- Enhance and automate process used in 2018 TFMP

Tie prioritization back to 2018 TFMP goals
Data-driven, stakeholder informed
Transparent and replicable process
What would you like to see as an outcome for this effort?
How should TxDOT include non-highway modes in the assessments, evaluations and prioritizations?
Four courses with potential topics to include:
- Integrating Freight into Planning in Texas
- Engaging the Private Sector in Freight Planning
- Understanding and Using Freight Data
- Advanced Freight Planning in Texas

Target Audience
- TxDOT staff
- Local, regional and MPO planners
- Economic developers, Chambers of Commerce
- Private sector freight stakeholders

Other topics? Other audiences?
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<td>Stakeholder Engagement Module</td>
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<td>Freight Investment Optimization Tool</td>
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<tr>
<td>TRAINING</td>
<td>Freight Training Pilot Courses</td>
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<td>Final Freight Training Course Materials and Delivery</td>
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Discussion