Texas Department of Transportation

Texas Freight Mobility Plan Workshop and Texas Freight Advisory Committee Meeting
El Paso, Texas
May 14, 2013

Let’s Talk Freight! You have been invited to participate in a Listening Session Workshop for the Texas Freight Mobility Plan and the Texas Freight Advisory Committee Quarterly meeting.

The purpose of this Workshop is to help the Texas Department of Transportation (TxDOT) to identify freight and goods movement issues, needs, challenges, and opportunities. The input from you and other freight shippers, manufacturers, retailers, carriers, users, and other members of the state’s freight and logistics community obtained from this workshop and others planned throughout the state will be used in developing statewide freight transportation priorities and investments.

The Texas Transportation Commission recently established the Texas Freight Advisory Committee. The committee is made up of a cross-section of the freight and logistics industry executives from throughout the state.

The purpose of the committee is to provide advice and recommendations to TxDOT regarding freight transportation issues and assist in identifying transportation projects that are critical to enhancing the state’s trade, economic growth, and global competitiveness.

Workshop and Meeting Location

The Workshop and Meeting will be held at the Carlos M. Ramirez, Tech2O Water Resources Learning Center, 10751 Montana Ave, El Paso, Texas 79935. Direction to the center is available at www.tech2o.org.

Meeting Schedule

- Texas Freight Mobility Plan Listening Session Workshop will be held from 10:00am – 12:00pm
- Poster Session to showcase freight projects in Texas Land Ports will be held from 10:00am – 2:30pm
- Texas Freight Advisory Committee meeting will be held from 9:00am – 3:00pm

Registration Information

You can register for this event at https://www.surveymonkey.com/s/TFMPRegistration.

For More Information

Please contact Caroline Mays, TxDOT’s Statewide Freight Planning Coordinator at caroline.mays@txdot.gov or at 512-486-5059 or at www.MoveTexasFreight.com.
Let’s Talk Freight!
Texas Freight Advisory Committee
and
Texas Freight Mobility Plan
Overview

Texas Freight Advisory Committee – Committee Business
May 14, 2013
Texas Freight Mobility Plan Needs TxFAC

- TxDOT Partners
- Freight Agents
- TxFAC
- Freight Champions
- Plan Enablers
Texas Freight Mobility Plan Inputs

- Texas Freight Advisory Committee (TxFAC)
- Executive Freight Leadership Forum (EFLF)
- Listening Sessions (LS)
- Texas Freight Mobility Plan (TFMP)
TxFAC Influences all Efforts

- Facilitated Discussion
- Discuss Business Sector Trends
- Leaders in Freight Community

- Facilitated Discussion
- Discuss Needs and Solutions
- Managers within Freight Community

- One-on-one
- Performed on-site
- Discuss Specific Operational Needs and Solutions

- Vested in Successful Freight Mobility Plan
- Freight Community Participants
# TxFAC Proposed Schedule

<table>
<thead>
<tr>
<th>DATE (Month-Year)</th>
<th>LOCATION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>May-2013</td>
<td>El Paso</td>
<td>Border Crossing</td>
</tr>
<tr>
<td>August-2013</td>
<td>San Antonio</td>
<td>Executive Freight Leadership Forum</td>
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<tr>
<td>October-2013</td>
<td>Amarillo</td>
<td>In conjunction with Ports- to- Plains Alliance</td>
</tr>
<tr>
<td>November-2013</td>
<td>Austin</td>
<td>Annual Report Card</td>
</tr>
<tr>
<td>January-2014</td>
<td>Dallas-Ft Worth</td>
<td>Executive Freight Leadership Forum</td>
</tr>
<tr>
<td>April-2014</td>
<td>Laredo</td>
<td>Texas and Global Gateway</td>
</tr>
<tr>
<td>July-2014</td>
<td>Houston</td>
<td>Texas and Global Trade</td>
</tr>
</tbody>
</table>
Comments?
Let’s Talk Freight!

Texas Freight Mobility Plan
Issue Identification

Texas Freight Advisory Committee – Committee Business
May 14, 2013
First Phase Began with YOU!

First TxFAC Meeting
• Seven Question Survey

Why Start with the TxFAC?
• You are the Plan’s Resident Experts
• You Understand the State’s Freight Transportation System
• You Appreciate the Need for TxDOT to Hear From the Freight Community
Weaknesses

**Infrastructural**
- Lack of Multi-modal Connectivity

**Policy**
- Perceived Lack of Policy for Advanced Planning
  - Lack of Necessary Funding

**Performance**
- Competing Modal Needs
- Bottlenecks
Strengths

**Modal Availability**
- All Modes Present
- Significant Use of Pipeline

**Economic Factors**
- Population and Commercial Growth
- Border

**Public Sector Responsiveness**
- Responsive to Private Sector Needs
- Incorporates Private Sector
Discussions!
Let’s Talk Freight!
Texas Freight Mobility Plan
Stakeholder Engagement Activities

Texas Freight Advisory Committee – Committee Business
May 14, 2013
Discussion for Today

Regional Listening Sessions
• Purpose
• Detailed Organization

Executive Freight Leadership Forum (EFLF)
• Purpose
• Significant Features
• Incorporation by TxFAC
LISTENING SESSIONS
Purpose of Listening Sessions

- Understand Private Sector Operational Needs
- Engage the Practitioners
- Facilitated Discussion
Listening Sessions Strategy

Location Criteria
• 80-100 persons
• Meets A/V needs
• Prefer non-TxDOT

Pilot Session
El Paso, Pilot

Statewide
Video Conference Session, July 2013

<table>
<thead>
<tr>
<th>DATE</th>
<th>DAY</th>
<th>LOCATION</th>
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</thead>
<tbody>
<tr>
<td>Week 1 - North</td>
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<td>4-Jun, 2013</td>
<td>Tuesday</td>
<td>Dallas, TX</td>
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<td>Wednesday</td>
<td>Fort Worth, TX</td>
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<td>6-Jun, 2013</td>
<td>Thursday</td>
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<td>7-Jun, 2013</td>
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<td>Week 2 - Eastern, Gulf Coast</td>
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<td>12-Jun, 2013</td>
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<td>Houston, TX</td>
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<td>13-Jun, 2013</td>
<td>Thursday</td>
<td>Corpus Christi, TX</td>
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<tr>
<td>Week 3 - Central, Southern</td>
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<td>18-Jun, 2013</td>
<td>Tuesday</td>
<td>San Antonio, TX</td>
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<tr>
<td>19-Jun, 2013</td>
<td>Wednesday</td>
<td>Laredo, TX</td>
</tr>
<tr>
<td>20-Jun, 2013</td>
<td>Thursday</td>
<td>Brownsville, TX</td>
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</table>
Executive Freight Leadership Forum
Continuing the Outreach

- Understand Business Sector Trends
- Engage the Decision Makers
- Facilitated Discussion

Executive Freight Leadership Forum
## Proposed Incorporation

<table>
<thead>
<tr>
<th>DATE (Month-Year)</th>
<th>LOCATION</th>
<th>TOPIC</th>
<th>LEVEL OF EXECUTIVE LEADERSHIP PARTICIPATION</th>
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<tbody>
<tr>
<td>May-2013</td>
<td>El Paso</td>
<td>Border Crossing</td>
<td>Regional</td>
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<td>Regional, Ports -to -Plains Attendees</td>
</tr>
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</tr>
<tr>
<td>July-2014</td>
<td>Houston</td>
<td>Texas and Global Trade</td>
<td>Regional</td>
</tr>
</tbody>
</table>
Comments?
What are Border Master Plans?

• Border Master Plans are comprehensive long range plans to inventory transportation and port of entry (POE) infrastructure in order to facilitate trade

• Border Master Plans represent bi-national stakeholder efforts to:
  • prioritize related transportation projects such as bi-national POE and multimodal projects
  • inform decision-making
  • allocate limited funding sources
  • ensure continued dialogue and coordination on future POE and transportation infrastructure needs and projects.
Major Supports of BMP efforts

- Border Master Plans are supported by the U.S./Mexico Joint Working Committee on Transportation Planning and Programming (JWC), a bi-national group whose primary focus is to cooperate on land transportation planning and cross-border transportation movements.

- The first pilot Border Master Plan was done for California-Baja California.

- These plans are developed by the following agencies:
  - U.S. Department of State (DOS)
  - Federal Highway Administration (FHWA)
  - U.S. Customs and Border Protection (CBP)
  - Secretariat of Foreign Relations (SRE)
  - Secretariat of Communications and Transportation (SCT)
  - State Transportation Agencies
Background

• Border master plans have been included in the bi-national agenda at the presidential level
• No Presidential Permits will be awarded unless projects are included in the region’s master plan
• The President’s border vision recognizes the importance of facilitating lawful trade and travel; thus a Declaration of 21st Century Border Management was issued on May 2010 and a Binational Action Plan drafted
Border Master Plans

• California-Baja California
  Original pilot completed in 2008
  Currently being updated

• Arizona/Sonora
  in final stages

• Texas-Mexico
  • Laredo - Coahuila/Nuevo León/Tamaulipas (Laredo District) completed Lower Rio Grande Valley – Tamaulipas (Pharr District) July 2013
  • El Paso/New Mexico – Chihuahua (El Paso District + New Mexico DOT) June 2013
Stakeholder Participation

• Texas Border Master Plan meetings have been well attended by U.S. and Mexican stakeholders – at the federal, state regional and local level

• The Texas Border Master Plan databases include
  • More than 270 stakeholders (e.g., 82 agencies) at the federal, state, county/municipal, and city level in both countries
  • 5 railroad companies (8 officials)
  • 18 “Border Partners” (27 participants)
Jorge C. Garcés
Director
Texas Department of Transportation
International Relations Office

http://texasbmps.com/
GULF INTRACOASTAL WATERWAY

Texas Freight Advisory Committee

May 14, 2013
Maritime Industry in Texas

- The maritime industry today is a significant part of the Texas economy, both directly and indirectly, with an impact of over $277B per year (25% SGDP), $6B in tax revenues and $1.44M in related jobs
- Texas is the first maritime state in the U.S. handling 1/5 of the nation’s freight and vessel traffic

Tout Maritime Division

Promote the development of high value growth in Texas’ maritime system

Herman Deutsch
Maritime Division Director

Sarah Bagwell
Policy and Planning Coordinator

- Tout Maritime Division is a resource to the maritime industry in Texas in the way of planning, promotion, development and operation of Texas related maritime transportation business
- Represent Tout interests with maritime stakeholders
Gulf Intracoastal Waterway (GIWW)

GIWW extends along 423 miles linking the 26 Texas ports.
Why the GIWW is important

- Serves Texas’ deep and shallow draft ports linking them with the US Inland Waterway System
- 90 percent of activity along the GIWW in Texas is related to petrochemical production
- Part of the multimodal transportation system, which keeps hazardous materials off highways
- The Eagle Ford shale development is heavily dependent on the GIWW
- On an annual basis, the GIWW sees over 73 million tons of cargo in 52,000 barge trips with a commercial value of over $25 billion
Critical Issues for the GIWW

- The GIWW is not being maintained to authorized dimensions of 125ft x 12ft due to lack of sufficient funding.
- This creates costly lost GDP for the state, a missed opportunity for environmental and fuel efficiency, and real economic cost for freight shippers in Texas.

Benefits of Restoration and Modernization of the Texas GIWW

- Potential transportation cost savings benefits are estimated at $180 million per year at current tonnage levels.
- Annual return on investment to fully maintain the GIWW at a 12-foot depth is an estimated 600% from dredging alone.
What Can Be Done for the GIWW

- $60M of additional funding is required by USACE to dredge to authorized depth and width in addition to $30M per year to maintain a depth of 12ft on top of the $25M per year of federal appropriations
  - A one (1) foot restriction equates to approximately $98M in increased transportation costs

- Keep working closely with USACE, ports, industry, state and federal government to ensure appropriate funding and adequate utilization of the GIWW
The Texas Department of Transportation is applying for a TIGER V Discretionary Grant which will provide crucial major restoration and modernization of the Texas GIWW infrastructure that represents an important component of the Texas and United States maritime system.

This creates a unique opportunity to fund a number of projects that can help get us to the goal of having a 12 ft. depth in the GIWW.

This helps to tell the story of why the GIWW is essential to the economy in both Texas and the US.

Application Due Date: June 3rd

We need letters of support by May 20th.
THANK YOU
PROJECT 21:
MODEL COMMERCIAL PORT

Toby Spoon, President

Enabling North America to Reach its Free Trade Potential

Toby.Spoon@SecureOrigins.com
PROJECT 21:
MODEL COMMERCIAL PORT

BACKGROUND:
The MODEL COMMERCIAL PORT is a COLLABORATIVE INITIATIVE
PROJECT 21:
MODEL COMMERCIAL PORT

GOALS:
• Optimize Homeland Security &
• Streamline Supply Chain Efficiencies for “Trusted” Cross-Border Commercial Shipments
PROJECT 21: MODEL COMMERCIAL PORT

APPROACH:

• Establish *Cost Effective, Sustainable* Security Best Practices

• Solicit *New Enrollment in C-TPAT*

• *Maximize ROI* for C-TPAT Members
Model Port Defined

• Optimum Facilities Design

• Lane Segmentation for Trusted Shipments

• Cutting Edge Collaboration Technologies
MODEL PORT:
Optimum Facilities Design

• Flexible FAST Lane Assignment
• Optimal Trusted Shipment Processing
MODEL PORT:
Segmentation of Trusted Shipments

Improves Security and Port Capacity
Preserves Value of C-TPAT/FAST Investment

WITHOUT Lane Segmentation

WITH Lane Segmentation
MODEL PORT: Cutting Edge Collaboration Technology

Common Operating Picture

- Essential Situational Awareness
- Real-time Information Assurance

Allows for effective selection
Wait Line Delay before U.S. CBP Primary Inspection (45 Minutes)

Northbound and Southbound Crossing Times

TX DPS Secondary Inspection (25 minutes)

<table>
<thead>
<tr>
<th>Trip Segments</th>
<th>Queuing</th>
<th>Insp.</th>
<th>Total Times</th>
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<tbody>
<tr>
<td>Gate to POE</td>
<td>US POE</td>
<td>MX POE</td>
<td>POE to RB1</td>
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<tr>
<td>1:00</td>
<td>0:45</td>
<td>0:27</td>
<td>0:15</td>
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<tr>
<td>US CBP</td>
<td>0:45</td>
<td>0:22</td>
<td>0:25</td>
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<tr>
<td>Aduana</td>
<td>1:15</td>
<td>1:12</td>
<td>1:42</td>
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## ALERT AND NOTIFICATION CLASSIFICATIONS

<table>
<thead>
<tr>
<th>Level</th>
<th>Classification</th>
<th>Example</th>
<th>Action / Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Baseline Event Documentation</td>
<td>Biometric Identification of driver; trailer door sealed, conveyance exits secure plant boundary.</td>
<td>Normal procedural events are observed and documented. No response typically required.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Benchmark Event Notification</td>
<td>Trailer sealed, arrive at secure area gate, arrive at primary inspection area, etc.</td>
<td>Benchmark event notifications are sent to Control Center Operators and other SBT personnel. Benchmark events verify procedures are being followed.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Anomaly Alert — unusual behavior or significant event</td>
<td>Unauthorized stop location; extended stop while en route; unexpected route taken; or secondary inspections</td>
<td>Anomaly event notification to Control Center Operators. CCOs will validate and notify designated Maquila if appropriate.</td>
</tr>
<tr>
<td>Level 4</td>
<td>Situation Alert - Potential theft, contamination or personnel safety</td>
<td>Off route, delayed reporting; sudden acceleration; multiple anomalies</td>
<td>High Level Alert to Control Center Operators. Validation and assessment by CCOs. Credible threats are escalated to designated Maquila personnel.</td>
</tr>
<tr>
<td>Level 5</td>
<td>Threat Alert – Immediate threat to shipment or person.</td>
<td>En route events such as tractor/trailer separation; door open, or sudden shock (crash) etc.</td>
<td>High Level Alert to Control Center Operators. Validation and assessment by CCOs. Immediate notification of designated Maquila personnel.</td>
</tr>
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</table>
# Contamination Risk Matrix

## Table: Alert Levels Associated with Detected Events

<table>
<thead>
<tr>
<th>Event Detection</th>
<th>Alert Level</th>
<th>Excess Travel Time</th>
<th>Extended Stop</th>
<th>Unexpected Stop</th>
<th>Off Route</th>
<th>Delayed GSM</th>
<th>Excessive Acceleration</th>
<th>Door Open</th>
<th>Conveyance Separation</th>
<th>Shock</th>
<th>Excessive Light</th>
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</thead>
<tbody>
<tr>
<td>Excess Travel Time</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
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<td>Extended Stop</td>
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<td>Unexpected Stop</td>
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<td>Off Route</td>
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<td>Delayed GSM</td>
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U.S. CBP SHIPMENT PORTAL VIEW

Active Shipments

North Bound Shipments

<table>
<thead>
<tr>
<th>Shipment #</th>
<th>Carrier</th>
<th>Client</th>
<th>Route</th>
<th>Scheduled Time</th>
<th>GPS Device</th>
<th>Threat Level</th>
<th>Show</th>
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<tbody>
<tr>
<td>NS-2013-3-7-147</td>
<td>Stil</td>
<td>Hubbell</td>
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<td>ICU Z</td>
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<td>TEMTAUD00733383</td>
<td>TTS</td>
<td>Fusion</td>
<td>N/A</td>
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<td>TEC-110</td>
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<td>Stil</td>
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<td>True</td>
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<tr>
<td>STILUPS13756783</td>
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<td>Hubbell</td>
<td>N/A</td>
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<td>ICU CC</td>
<td>High</td>
<td>True</td>
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<tr>
<td>SBOTUPS13676031</td>
<td>Ramos</td>
<td>Berwick</td>
<td>N/A</td>
<td>12:36</td>
<td>ICU U</td>
<td>Low</td>
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<td>STILUPS13756775</td>
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<td>TEMTUPS13707778</td>
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<td>Bag Corp</td>
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<td>16:00</td>
<td>TEC-110</td>
<td>Low</td>
<td>True</td>
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</tbody>
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South Bound Shipments

Last Updated at 1:35 PM MST
Off Route + Door Tamper: **RED ALERT**
THANK YOU!

Toby Spoon, President
SecureOrigins, Inc.
Toby.Spoon@SecureOrigins.com
North American Free Trade Agreement (NAFTA)

Texas Freight Advisory Committee
The Value of Trade with Mexico has Increased

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
U.S.-Mexico Trade Moves by Surface Modes

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
But Trucks Move the Lion’s Share

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
U.S.-Mexico Trade Crosses Texas’s Land Border

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
...... Translating into Increasing Truck Crossings

Source: Customs and Border Protection
Translating into Increasing Truck Crossings

Source: Customs and Border Protection
Translating into Increasing Train Crossings

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Border Crossing/Entry Data
Translating into Increasing Train Crossings

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Border Crossing/Entry Data
Translating into Increasing Containers

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, Border Crossing/Entry Data
What About the Weight?

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
Machinery, Equipment, and Parts Dominate

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
Where does the Traffic “Flow” in Texas?

Source: Cambridge Systematics, 2007
Where does the Traffic “Flow” in Texas?

Source: Cambridge Systematics, 2007
Looking Forward: What will Impact Trade/Traffic?

- Inadequate Capacity
- Opening of the Border
- Waiting to Cross the Border
- Lack of Federal Funding
- Rail Crossings
- Violence in Mexico
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NAFTA and TxDOT’s Role

Texas Freight Advisory Committee
May 14, 2013
1994 - Created in anticipation of changes brought by NAFTA

2009 - Expanded scope of work to include a more global perspective while maintaining Mexico as priority

2012 - Lead on Panama Canal Project (Impact of Canal Expansion on Texas)
Activities

• Liaison with other NAFTA agencies and institutions on international activities (coordination on Presidential Permits and other US/MX ports of entry issues)

• Maintain current information on international bridges and border crossings with Mexico

• Publish book on bridges & border crossings and quarterly border crossing traffic reports

• Administer a number of programs designed to exchange information to facilitate freight movement at LPOE

• Represent TxDOT at a number of transportation related international meetings - Border Governors, JWC, Bi-national Bridges and Border Crossings, etc.

• Hosts International transportation officials (over 1780) to exchange technical information and share common practices
NAFTA TRADE

Trade Between NAFTA Partners
(NAFTA trilateral trade growth January - August (12/93 = 274%)

2012
(Total trilateral trade of US$709.6 billion)

- Canada-US trade 53.5%
- Mexico-Canada trade 3.4%
- Mexico-US trade 43.1%

1993
(Total trilateral trade of US$188.6 billion)

- Canada-US trade 69.3%
- Mexico-Canada trade 1.3%
- Mexico-US trade 29.4%

Billions of US dollars

Source: The Ministry of the Economy with import data from Statistics Canada, BANXICO and USDOC

[Graph showing the trade between the U.S. and NAFTA countries from 1995 to 2012]
NAFTA TRADE (continued)

- Mexico is the US #3 trading partner with total trade of $500 billion a year.
- Canada is the US #2 trading partner
- More than $1 billion in goods trade crosses the US/MX border each day.
- Mexico is Texas most important market ($195 billion or 39.4 % of US/MX trade)
Texas/Mexico Total Trade: 1995–2012

Texas has ranked #1 since 1995-always maintaining share of total trade in between 30.6 and 36.1% with Mexico.
U.S. – MEXICO TRADE

[Map showing trade value (US$) in billions with varying colors representing different ranges. The map highlights Texas with a darker shade indicating a higher trade value.]
TEXAS – MEXICO TRADE

6 million US jobs depend on trade with Mexico
• Coordination with federal, state and local agencies in Mexico and US to expedite freight flow and create efficiencies

Two programs:
• The Border Master Plans
• Wait Time Measurements
TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)

Jorge C. Garcés
Director, IRO
May 14, 2013
North American Free Trade Agreement: Is it Important for Texas?

14 May 2013
North American Free Trade Agreement: Is it Important for Texas?

What is the North American Free Trade Agreement (NAFTA)?

On January 1, 1994, the North American Free Trade Agreement (NAFTA) between the United States, Canada, and Mexico took effect. NAFTA eliminated duties and quantitative restrictions to foster trade among the three member countries. Many of these tariffs and restrictions were eliminated immediately, but some were phased out over a period of five to 15 years. This allowed for an orderly adjustment to free trade with Mexico.

NAFTA created the world’s largest free trade area, resulting in a total trade value of $705.6 billion by the end of August 2012 (Secretaría de Economía, 2012). The implementation of NAFTA has resulted in a system of transfer stations, distribution centers, and warehouses on the U.S. side of the border and maquiladora plants in Mexico (Vadali, Kang, and Fierro, 2011).

Did NAFTA Impact Traffic/Trade?

The Value of Trade with Mexico has Increased

One of the objectives of NAFTA was to eliminate barriers to trade and thereby increase trade between the U.S., Canada, and Mexico. The data published by the Bureau of Transportation Statistics (TransBorder Freight Data) show that the value of U.S.-Mexico trade and Texas-Mexico trade increased by 85.3% and 108.9%, respectively between 2004* and 2012. In 2012, U.S.-Mexico trade amounted to almost $494 billion while Texas-Mexico trade amounted to approximately $195 billion (or approximately 39.4% of total U.S.-Mexico trade). Figure 1 also shows that the economic recession only resulted in a brief decrease in trade with Mexico by both the U.S. and Texas.

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* The earliest year for which data are available.
Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data

**Figure 1: Value (in Actual U.S. Dollars) of Trade with Mexico**

Weight/tonnage information is only available for U.S. imports from Mexico. An analysis of the data revealed that the value of U.S. imports from Mexico per imported U.S. short ton increased by 119.5% between 2004 and 2012 – or at an annual rate of 10.3%. Similarly, the value of Texas imports from Mexico per imported U.S. short ton increased 165.5% between 2004 and 2012 – or at an annual rate of 13%. These statistics seem to indicate that over the past eight years increasingly higher valued commodities have been imported by the U.S. and Texas from Mexico.

**Most of the U.S.-Mexico Trade Moves by Surface Modes**

On average more than 80% of the U.S.-Mexico trade and 75% of the Texas-Mexico trade are transported by surface modes (e.g., truck, rail, pipeline, mail, foreign trade zones, other, and unknown modes of transportation) – see Figure 2.
But Trucks Move the Lion’s Share

Figure 3 shows that trucks transport 80% of the value of U.S.-Mexico surface trade and rail transports 16%. On the other hand, trucks transport 88% of the value of Texas-Mexico surface trade and rail transports 9% (see Figure 3).
Other includes shipments made by pipeline, mail, foreign trade zones, other and unknown mode of transportation.

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data

Figure 3: 2012 U.S.-Mexico (left) and Texas-Mexico (Right) Surface Trade by Mode of Transportation (in Actual U.S. Dollars)

A Substantial Share of U.S.-Mexico Trade Crosses Texas’s Land Border

On average, approximately 60% of U.S. – Mexico trade (in terms of value) crossed at a Texas land port between 2004 and 2012, which points to the importance of Texas’s transportation infrastructure – both its highways and rail systems - in serving the nation’s trade with Mexico. Figure 4 illustrates where U.S.-Mexico surface trade crosses in Texas. Figure 4 shows that El Paso is second to Laredo in terms of the value of U.S. – Mexico trade that crosses the border.
Figure 5 illustrates the increase in the number of northbound truck crossings at Texas’s land ports since the implementation of NAFTA in 1994. Figure 5 shows that the number of northbound truck crossings at Texas’s land ports more than doubled between 1994 and 2011 – i.e., from 1,623,816 in 1994 to 3,332,899 in 2011.

...... Translating into Increasing Truck Crossings

Figure 4: Value (in Actual U.S. Dollars) of Trade with Mexico

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data
In 2011, trucks crossed at 12 crossings in Texas. The top five crossings accounted for approximately 86% of all northbound truck crossings at the Texas-Mexico border. As depicted in Figure 6, the World Trade Bridge in Laredo had the highest number of northbound truck crossings at 1.3 million in 2011 followed by 452,821 northbound truck crossings at the Pharr-Reynosa International Bridge on the Rise, and 379,508 northbound truck crossings at the Ysleta-Zaragoza Bridge in El Paso.
…… Translating into Increasing Train Crossings

Five of the seven rail crossings on the U.S.-Mexico border are in Texas: Brownsville-Matamoros, Laredo-Nuevo Laredo, Eagle Pass-Piedras Negras, Presidio-Ojinaga, and El Paso-Ciudad Juarez. Figure 7 shows the number of trains that crossed at the Texas-Mexico border between 1996 and 2012. As shown in Figure 7, the number of trains crossing at the Texas-Mexico border increased by 94.7% between 1998 and 2007 – i.e., from 4,701 in 1998 to 9,155 in 2007. The economic recession was reflected in a 30% reduction in the number of train crossings at the Texas-Mexico border between 2007 and 2009. Since 2009, the number of train crossings has; however, increased 22.3% to reach 7,833 in 2012.
Laredo is the largest freight rail crossing on the Texas-Mexico border followed by Eagle Pass, El Paso, and Brownsville. Figure 8 shows the number of train crossings at the major Texas rail crossings. In general, the number of train crossings shows a similar trend: an increase in the number of train crossings between 1998 and 2007 followed by a decline in the recession years (i.e., 2007 to 2009) followed by a recovery between 2009 and 2012. The exception is Eagle Pass where the number of train crossings has increased at an average annual rate of 9.8% between 2006 and 2012.
NAFTA railroads have been focusing on the movement of containers — specifically double stacked container unit trains — as a means to increase revenue without substantial capital investments in new capacity (Cambridge Systematics, 2007). Figure 9 illustrates the growth in intermodal container movements by rail between 1996 and 2012. Figure 9 shows that the number of loaded rail containers crossing at the Texas-Mexico border have recovered and have exceeded pre-recession levels in 2012. The number of empty rail containers crossing at the Texas-Mexico border has; however, not returned to pre-recession levels.
Figure 10 shows the number of loaded rail containers crossings at the major Texas rail crossings. Figure 10 shows that the number of loaded rail containers that crossed at Laredo decreased by 15.1% between 2005 and 2008, but recovered to pre-recession levels in 2010. In 2011, the number of loaded rail containers continued to increase to reach 236,049, representing an increase of 18% in 2011 relative to 2010. Figure 10 also shows that the number of loaded rail containers that crossed at Eagle Pass was not affected by the recession and continued to increase at an average annual rate of 18.8% during the ten year period between 2002 and 2012. Finally, Figure 10 shows that the number of loaded rail containers crossing at El Paso and Brownsville have not recovered to pre-recession levels.
What about the Weight?

Weight information is only available for imports. Figure 11 shows the weight of U.S. and Texas imports from Mexico that crossed at Texas’s land ports between 1995 and 2012. Figure 11 shows that besides the decline in imported weight in 2007, 2008, and 2009, the weight of U.S. and Texas imports (by surface modes) that crossed at a Texas land port have recovered and is exceeding pre-recession levels. Specifically, the weight of U.S. and Texas imports (by surface modes) that crossed at a Texas land port have increased 280.5% and 251.7%, respectively between 1995 and 2012.
In 2011 the total weight of U.S. imports that crossed by truck at a Texas land port amounted to 24.9 million tons (U.S. short tons). This translates into an average weight of 7.48 tons per truck crossing in 2011. Figure 12 shows that the average imported weight per truck crossing increased 54.2% between 2000 and 2011. These statistics point to a reduction in the number of empty trips and or the better utilization of trucks.
The top five commodities (in terms of value) traded between the U.S. and Mexico that crossed by surface mode at Texas’s land ports between 2007 and 2012 are: electrical machinery, equipment, and parts; vehicles other than railway; computer related machinery and parts; plastics and articles; and measuring and testing instruments (see Figure 13). These five commodities accounted for 66.4% of the traded value between the U.S. and Mexico (that crossed by surface mode at a Texas land port) in 2012.
Where does the Traffic “Flow” in Texas?

Not all border cities are the same: some are mainly transshipment points, such as Laredo while others such as El Paso are major manufacturing sites (Vadali, Kang, and Fierro, 2011). Border cities thus either serve as an intermediate service center for commodities shipped over long distances or they support local manufacturing. Depending on the crossing, the characteristics of the freight that crosses and the trip lengths and structure vary significantly. For example, in El Paso where cross-border freight movements support the local manufacturing base, the trip lengths tend be short-haul (Vadali, Kang, and Fierro, 2011).

In the cases where the supply chains involves origins and destinations away from the immediate border region, past studies have found that NAFTA trucks use mainly seven highway corridors: IH 35, IH 10, US 59, US 281, IH 20, IH 30, and US 77. These corridors represent two percent of all Texas roadway mileage, but are used by more than 83% of the NAFTA trucks that use the Texas highway system (Cambridge Systematics, 2007). Figure 14 shows the daily NAFTA truck flows on Texas highways in 2003 – the most recent year for which NAFTA truck routing data are available.
Similarly, Figure 15 illustrates the rail flows to and from major Texas NAFTA gateways.

Source: Cambridge Systematics, 2007

**Figure 14: Daily NAFTA Truck Flows on Texas Highways in 2003**
(Average Annual Weekday Trucks)

**Figure 15: Texas NAFTA Gateway Rail Flows**
(2003 Total Annual Rail Tonnage – Millions of Tons)
To estimate the impacts of future NAFTA trade volumes on Texas’s transportation system, Cambridge Systematics developed three scenarios. Figure 16 shows the forecasted truck flows (NAFTA and non-NAFTA) on Texas’s highway network in 2030 – assuming no additional capacity expansion until 2030. In this scenario, NAFTA trucks will present 50% of the total trucks on the IH 35 corridor – up from 27% in 2003 (Cambridge Systematics, 2007).

Looking Forward: What Impacts Cross-Border Traffic and Trade?

Inadequate Capacity

In 2007, Cambridge Systematics reported that Global Insight TRANSEARCH projected an increase of nearly 207% in NAFTA tonnage on Texas highways and railroads through 2030. Truck tonnage is projected to increase by 251% and rail tonnage is projected to increase by 118% by 2030. At the same time the number of trucks carrying NAFTA freight is projected to increase by 263% while the number of rail units will increase by 195%. Cambridge Systematics (2007) reported capacity concerns at border crossings that result in delays especially during the peak hour, congestion on key

Source: Cambridge Systematics, 2007

Figure 16: 2003 versus 2030 Daily NAFTA Truck Flows on the Current Texas Highway Network
(Average Annual Weekday Trucks - AAWT)
NAFTA highway corridors, and rail capacity concerns that limit multimodal interoperability.

Opening of the Border

Mexican trucks are currently not allowed to operate beyond a 20 mile zone north of the U.S. – Mexico border. Goods come from the interior of Mexico are shipped to a warehouse (usually owned by customs brokers or freight forwarders) near the border. Once paperwork is submitted for the goods to clear customs, a drayage carrier collects the shipment and crosses the border and delivers the shipment to a warehouse on the U.S. side of the border within the commercial zone. At this point, the goods are trucked by a long distance carrier to a destination beyond the commercial zone. This system introduces inefficiencies and adds cost to the supply chains. Carriers are; however, realizing cost savings through mergers, acquisitions, and alliances among Mexican and U.S. carriers. For example, a number of U.S. trucking firms have purchased Mexican trucking firms to ensure a more seamless operation between U.S. and Mexican origins and destinations. Other carriers (e.g., Con-Way) have entered into partnerships with large Mexican trucking companies to ensure more seamless operation between the U.S. and Mexico (Cambridge Systematics, 2007).

Waiting to Cross the Border

A number of factors could result in border delays. These relate to both border infrastructure (e.g., design of the border facilities, inadequate crossing capacity, and inadequate road capacity serving the crossing) and operations (e.g., inadequate staffing to process vehicles). In the case of freight, excessive wait times to cross the border increase the cost of transportation and therefore the cost of trade. Vadali et al (2011) reported that the total daily direct cost of delay at the Bridge of the Americas (BOTA) in the northbound direction amounted to $17,452 per day for shippers and carriers in 2009. The direct cost per hour per truck for labor, fuel, and other operating costs were estimated at $39 in 2009. Vadali et al; however, only calculated the direct costs of border delays and did not quantify the broader economic impacts in terms of business productivity, output, and employment or the social costs of border delays.

Lack of Federal Funding

Customs and Border Protection (CBP) has reported that approximately $6 billion (or approximately $600 million per year) is needed to fund identified port of entry (POE) needs. Although Congress has been reviewing POE funding, funding levels have been inadequate to cover the identified needs. Furthermore, CBP are under statutory
limitations that prevent the acceptance of donations to cover operating and staffing costs. CBP can only accept private donations of land and property. Outside of this scenario approval is required from Congress for a private donation. The existing statutory language is being reviewed, but a change to the current legislation is not foreseen over the short term. Federal Agencies (i.e., Department of State, CBP, and Federal Highway Administration) have thus encouraged the development of Border Master Plans to prioritize POE projects.

**Rail Crossings**

Throughout Texas, the rail system is impacted by growing metropolitan areas that have resulted in bottlenecks, are encroaching on rail corridors, causing conflicts at grade crossings, and are causing capacity concerns because of limited space for rail terminal expansion. The situation is, however, even more dire in the gateway communities on the border. In the El Paso area and in Laredo, the major rail terminals that serve cross-border rail are within the urban boundaries, compromising safety and the operating speed of trains. For example, conflicts at grade crossings in the City of Juarez have resulted in the window for rail operating between Ciudad Juárez and El Paso being limited to nine hours per day – i.e., from 10:00 PM to 7:00 AM. This operational window allows for the interchange of a maximum of ten trains per day. Addressing rail gateway bottleneck issues are complex and involve substantial investments, but are critical to ensure the continued role of rail in U.S.-Mexico trade.

**Violence in Mexico**

When President Calderón took office in 1996, he declared war on Mexico’s drug trade and the drug cartels involved. A number of checkpoints were implemented on Federal roads in states, such as Chihuahua, Nuevo León, and Tamaulipas, with drug corridors. At these checkpoints commercial vehicles are inspected to combat the trafficking of arms, drugs, and humans. These checkpoints; however, increases the cost of transportation (i.e., the time) to move freight on major trade corridors. Furthermore, there have been newspaper reports of drug cartels hijacking trucks transporting steel and agricultural products, as well as theft from trains. These thefts increase the costs of doing business in Mexico as trucking companies and the railroads are required to invest in security measures (hire guards, consult security experts, and invest in positioning devices to track cargo) (Rosenburg, 2009).
References


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