TEXAS-MEXICO BORDER STRATEGIC TRANSPORTATION BLUEPRINT

Vision, Mission, Goals, and Objectives
INTRODUCTION

- It has been 22 years since the implementation of NAFTA and we are still working through the opportunities and challenges.

- Historically, freight transportation and planning have been carried out in a piecemeal fashion.

- FHWA’s Texas Master Border Plans helped push a more holistic approach.
  - Still split the border into three sections.

- Now the BTAC will develop a single vision under the Texas-Mexico Strategic Transportation Blueprint.

- The Blueprint will used to direct the state and federal governments’ investment in the border.
Draft Vision Statement:

“To collaboratively foster integrated and efficient trade across the Texas-Mexico border and to promote economic development in the border region, throughout the state of Texas, and the nation.”

WHAT IS THE BTAC’S VISION FOR THE BLUEPRINT?
Draft Mission Statements:

- Guide current and future strategies and actions relating to Texas-Mexico trade gateway and transportation corridor infrastructure and operations to facilitate efficient flows of cross-border trade that enhances economic competitiveness of the state of Texas and the nation.
GOAL #1: Achieve a Comprehensive and Unified Vision for the Border among Members of the Border Community

- Establish a consensus among the BTAC members.
- Identify goals with a clear method for achieving them.
- Integrate individual community goals and objectives into border-wide goals and objectives.
- Provide a platform for coordinating public and private sector goals along the border.
- Identify both the challenges and opportunities of the Texas-Mexico border region.
GOAL #2: Enhance Texas’s Economic Competitiveness

- Identify critical infrastructure constraints along the border and along connecting corridors for future improvements.
- Inform the state’s decision makers and the general public about the importance of trade with Mexico to the Texas economy with an ongoing analysis of trade trends and issues.
- Target initiatives that support or build key industry sectors that engage in cross-border trade.
GOAL #3: *Improve the Operation, Efficiency, and Capacity of Trade Gateways (Ports-of-Entry)*

- Assess current and future needs of border infrastructure capacity and operations.
- Identify new technologies for deployment that will aid with border management at POEs and their approaching roadways.
- Address border wait times to facilitate efficient trade flows.
GOAL #4: *Improve Transportation Corridor and Connections within the Border Regions and between Border Regions and the Remainder of the State and the Nation*

- Identify intra-regional border trade-related transportation needs and investment strategies.
- Identify strategic binational trade corridors, needs and investment strategies.
- Identify opportunities to improve existing highway and rail corridors serving Texas POEs, through infrastructure investments and operational efficiencies.
- Support the development of trade transportation infrastructure for new corridors that will serve the border region.
- Explore opportunities for alternate infrastructure to move goods, such as truck-only lanes.
GOAL #5: Stakeholder Engagement and Public Awareness

- Identify private-sector stakeholders in border communities to participate in the planning process
- Communicate the importance of the border - tell the border story
- Outline potential strategies on trade transportation issues along the border for consideration by decision makers.
- Provide a forum at BTAC meetings for the public and private sector stakeholders to provide input on border and trade-related transportation.
GOAL #6: Enhance binational and intra-border regional communication, coordination, collaboration, and cooperation (4Cs) on gateways and corridors

- Develop and implement programs for the direct engagement of Mexican transportation officials at the federal, state, and local levels.
- Develop and implement programs for the direct engagement of Texas border regions on border and trade-related transportation issues, needs, and investment strategies.
- Broader communication between border regions and non-border regions
GOAL #7: Better understand institutions and institutional frameworks on both sides of the border to better address binational gateway and trade corridor infrastructure challenges.

- Identify and document binational, federal, state, regional, and local government agencies and their roles and responsibilities along the border.
GOAL #8: Enhance binational gateway and trade-related transportation planning.

- Encourage binational participation in the identification of border and trade-transportation priorities and investment strategies
- Encourage binational participation during the development of transportation plans along the Texas-Mexico border
- Support and encourage multistate cross-border trade-related transportation planning between state and local governments.
GOAL #9: *Compete More Effectively for Funding*

- Develop a sound and comprehensive investment plan for the border.
- Identify opportunities for innovative and alternative funding sources.
NINE GOALS

- List all nine goals
TEXAS-MEXICO BORDER
STRATEGIC TRANSPORTATION INITIATIVES PLAN

White Paper: What is the border?
What is the Texas-Mexico Border?

Outline

- Background
- Border Infrastructure
- Border Trade
- Challenges
- Core Elements
- Strategies
Background

Borders can have multiple dimensions:

- Legalistic activities related to the border: customs, immigration, and stopping contraband, have remained largely unchanged.

- Borders often function as buffers that can vary in width for tens or hundreds of miles, depending upon the function they serve.
  - 20-mile “economic zone”
  - 100-km La Paz Environmental Cooperation Agreement
  - 43 Counties Senate Bill 501 (76th Texas Legislature)
Background

Texas / Mexico Border Region
(As Defined by the Texas Legislature and by the U.S. - Mexico La Paz Agreement)

Legend
- State Boundary
- 100 Kilometers from Border
- Major Highways
- Lake / Water Body
- Major Stream
- Mexican City
- US City
- County Boundary
- Counties included as part of border region under U.S. - Mexico La Paz Agreement
- Additional counties included in definition of border region established by the Texas Legislature in SB501 (76th Legislature)

This map was generated by the Information Resources Division of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Information Resource Division at (512) 239-0800.
Border Infrastructure

- Nodes (POEs) and links (HWs & Rail)
- Trade transportation network – Trade Corridors and Gateways
  - 28 POEs
  - 12 POV and CV
  - 1 CV only
  - 4 rail crossings
3.8 million CVs crossed in 2015

21% higher than in 2005.

7 commercial vehicle crossings handle 75% total CVs

What is the Texas-Mexico Border?
Border Trade - Rail

- 849,000 incoming railcars in 2015
- 64% increase since 2009
- Laredo and Eagle Pass handled 80% of total incoming rail

Mexico-Texas Inbound Rail Cars

- Bar chart showing rail cars from 2005 to 2015 for different cities:
  - Laredo
  - Eagle Pass
  - El Paso
  - Brownsville

What is the Texas-Mexico Border?
Texas ranks first among U.S. states trading with Mexico, with 33 percent of the total truck and rail trade.

The top 10 states that trade with Mexico make 79 percent of the total truck and rail trade.

From that $355 billion, 77 percent traveled to, from or through Texas.
Challenges – Population Growth

- Population of many border cities will double in 30 years.

Population of Texas-Mexico Sister Cities

<table>
<thead>
<tr>
<th>Sister Cities</th>
<th>Texas</th>
<th>Mexico</th>
<th>Total</th>
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<tbody>
<tr>
<td>El Paso/ Ciudad Juarez</td>
<td>800,647</td>
<td>1,332,131</td>
<td>2,132,778</td>
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<tr>
<td>Presidio/ Ojinaga</td>
<td>4,426</td>
<td>26,304</td>
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<table>
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<td>2010</td>
<td>3,000,000</td>
<td>3,000,000</td>
<td>6,000,000</td>
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</table>

Population along the Texas border region is increasing at twice the rate of Texas as a whole.

The total population of the seven sister cities along the Texas/Mexico border was 5.48 million in 2010.
Challenges – Economic Growth

An efficient cross-border freight transportation system brings direct and indirect economic impacts to the border region, the state and the Nation.

The outcome of an efficient freight transportation system is linked to employment, added value, larger markets and reduction in travel time and costs.

Jobs Dependent on Trade with Mexico, 2008

6 million U.S. jobs depending on trade with Mexico.

Texas: 463,000 trade-related jobs
Challenges – Trade Flows

Projected Texas Highway Freight Tonnage, 2040

Cross-border tonnage will increase by 250 percent by 2040.
Challenges for the border region that have been identified by members of the BTAC and in Texas Freight Mobility Plan:

- Lack of a coordinated border management and infrastructure development strategy
- Growing levels of congestion
- Inadequate Federal Staffing at POEs
- Outdated Technologies
- Lack of Understanding of Mexico’s Infrastructure Plans
- Inadequate Connectivity to the Hinterland
- Lack of a comprehensive strategy for multi-state coordination
- Lack of integration between border communities
- Institutional and interagency cooperation
- Education and public awareness of the importance of the border
- Funding challenges
### Core Elements of the Texas Border Transportation Blueprint

- Policy and Regulatory
- Economic Competitiveness
- Partnership, Collaboration, Coordination, and Communication
- Leadership and Governance
- Strategic trade Corridors and Transportation Network
- Technology and Innovation
- Stakeholder Engagement
- Border Efficiency
- Border Region Integration
- Funding and Financing Border and Trade Infrastructure
- Bi-national Planning
- Border Transportation Master Plan
Strategies

One of the central goals of the Texas Border Transportation Blueprint is to **identify specific and implementable strategies** to address the challenges identified in the Texas Freight Mobility Plan and by the BTAC members.

- Proactive Public Policy, Regulations, and Agency Actions
- Gateway Capacity and Operations
- Transportation System Capacity/Conditions
- Funding for Transportation Projects and Federal Inspectors
Proactive Public Policy, Regulations, and Agency Actions

- Means for more binational and cross-border transportation planning
- Harmonize truck size and weight regulations
- Develop better cross-border data and analytical tools for decision making.
- Document and disseminate the importance of the border
Gateway Capacity and Operations

- Improve designs at border inspection facilities
- Increase “crossing capacity”:
  - Reduce/eliminate redundant, consecutive vehicle safety inspections
- Change hours of operation
Transportation System Capacity/Conditions

- Improve the capacity/condition of local roads linking to POEs.
- Develop better rail corridors outside of urbanized areas.
- Deploy cross-border technology applications to enhance the security and efficiency.
Funding for Transportation Projects and Federal Inspectors

- Identify innovative funding instruments for needed infrastructure -- border and corridors
- Identify funding sources for POE operations
What is the Texas-Mexico Border?

<table>
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<th>Key Challenges</th>
<th>Strategies</th>
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Strategies – Actions - Stakeholders

September 7, 2016
US-Mexico Cross-Border Freight Traffic Trends

Geza Pesti, Ph.D., P.E. and Rafael Aldrete-Sanchez, Ph.D.
Center for International Intelligent Transportation Research
Texas A&M Transportation Institute

Border Trade Advisory Committee
El Paso, Texas
September 7, 2015
Objectives

• Update trends and statistics in freight activities across the US-Mexico border
• Identify unexpected changes.

Approach

Analyze cross-border freight by
• Mode of transport
• Ports and destination states
• Commodities
• Average Wait Times of Commercial Vehicles at POEs
Surface Trade between U.S. and Mexico

Billions USD

- Imports
- Exports

2004: Imports 110, Exports 90
2005: Imports 120, Exports 100
2006: Imports 130, Exports 110
2007: Imports 140, Exports 120
2008: Imports 150, Exports 130
2009: Imports 160, Exports 140
2010: Imports 170, Exports 150
2011: Imports 180, Exports 160
2012: Imports 190, Exports 170
2013: Imports 200, Exports 180

Exports 44%, Imports 56%

Texas A&M Transportation Institute
Trade by Surface Mode

**IMPORT** (Billions USD)

- Truck
- Rail

**EXPORT** (Billions USD)

- Truck
- Rail

Other:
- Rail: 16%
- Truck: 82%

- Other: 2%
- Other: 5%

- Rail: 15%
- Truck: 80%

Texas A&M Transportation Institute
Surface Trade by US States

Texas

California

Michigan

Illinois

Arizona

States Ranked Based on Value of Goods Traded with Mexico

Texas A&M Transportation Institute
Freight Flow by Commodities

Change in the freight value was evaluated based on six commodity groups:

- **Group 1**: Food, beverages, agricultural commodities (HS-code: 1-24)
- **Group 2**: Minerals, chemicals, plastic, fossil fuels (HS-code: 25-40)
- **Group 3**: Wood, fabrics, paper products, books (HS-code: 41-71)
- **Group 4**: Metals, metallic materials (HS-code: 72-81)
- **Group 5**: Manufactured goods (HS-code: 82-96)
- **Group 6**: Other goods (HS-code: 97-99)
Import by Commodity Groups

- Laredo, TX
- El Paso
- Hidalgo
- Otay Mesa
- Nogales

- Food, beverages, agricultural commodities
- Minerals, chemicals, plastic, fossil fuels
- Wood, fabrics, paper products, books
- Metals, metallic goods
- Manufactured goods
- Other goods

Graph showing import by commodity groups with data for years 2007 to 2013.
Import of Manufactured Goods

Laredo, TX

Nuclear reactors; boilers; machinery and mechanical appliances; parts thereof

Electrical machinery and equipment and parts thereof; Sound recorders and reproducers

Vehicles; other than railway or tramway rolling stock; and parts and accessories thereof

Optical; photographic; cinematographic; measuring; checking; precision; medical instruments

Billion USD

0 1 2 3 4 5 6

2007

2008

2009

2010

2011

2012

2013

Texas A&M Transportation Institute
Import of Minerals, Chemicals, ...etc

Laredo, TX

Mineral fuels; mineral oils and products of their distillation; Bituminous substances; Mineral...

Inorganic chemicals; Organic or inorganic compounds of precious metals; of rare-earth...

Organic chemicals

Pharmaceutical products

Tanning or dyeing extracts; Tannins and their derivatives; Dyes; pigments and other...

Essential oils and resinoids; Perfumery; cosmetic or toilet preparations

Soap; organic surface-active agents; washing preparations; lubricating preparations;...

Albuminooidal substances; Modified starches; Glues; Enzymes

Photographic or cinematographic goods

Miscellaneous chemical products

Plastics and articles thereof

Rubber and articles thereof

2007 2008 2009 2010 2011 2012 2013
Average Waiting Times of Commercial Vehicles

Data Collection Period: May 2013 – April 2014
Source: Border Crossing Information System (http://bcis.tamu.edu/)

Zaragoza

World Trade

Pharr

Colombia

Brownsville

BOTA

Source: Border Crossing Information System (http://bcis.tamu.edu/)
Findings

- Trade has quadrupled from 1995 to 2013.
- Imports exceeded U.S. exports by 15-20%.
- Freight by trucks are 4-5 times higher than rail.
- Freight at Texas POEs is more than in the other three states combined.
- Manufactured goods are the highest value commodity shipped across the border (both ways).
- Import of manufactured goods has significantly decreased in 2013.
- Import of minerals, chemicals, plastic, fossil fuels has significantly increased in 2013.
EL PASO DISTRICT’S PLANNING EFFORTS FOR THE BORDER METROPLEX REGION

Border Trade Advisory Committee (BTAC)
**Vision:** Delivering mobility, enabling economic opportunity, and enhancing quality of life

**Mission:** Through collaboration and leadership, we deliver a safe, reliable, and integrated transportation system that enables the movement of people and goods
El Paso District Planning Efforts

- Extensive coordination with local governments, agencies, and MPOs on both sides of the international border, New Mexico’s Dona Ana County, and from El Paso County to Presidio County.

- Partnering, constructing, planning and prioritizing projects to address mobility, safety, congestion, trade, and economic development needs in the region.
  - Comprehensive Mobility Plans (2008 & 2013)
  - Completing Loop 375
  - Corridor studies
  - I-10 connections to Loop 375
  - Port of Entry improvements
  - Rail/Freight
Key El Paso Border Construction Projects
**Project Scope:**
The I-10 Connect Project is at the convergence of US 54 and I-10 in El Paso County. Currently, only the westbound Loop 375 to westbound I-10 traffic movement has direct access between I-10 and Loop 375. The three other connections from I-10 to Loop 375 require commuters and commercial trucks to divert from the freeway and use local roadways. The existing configuration on I-110 leading to the Port of Entry experiences excessive congestion during peak periods of the day, resulting in spillbacks to US 54 and the I-10 connector ramps.

- Construction Cost Estimate: $75 M
- Engineering Cost Estimate: $5.4 M
- Estimated Let Date – 12/2018
- Outstanding Issues:
  - EA Document:
  - IAJR – FHWA Coordination
  - Potential Railroad coordination

[https://www.youtube.com/watch?v=s82RXWJJrGk&feature=youtu.be](https://www.youtube.com/watch?v=s82RXWJJrGk&feature=youtu.be)
The Border West Expressway project will provide an alternate route for I-10 and will address needed improvements to safely guide the region’s growth and development. The project is located west of downtown El Paso, south of I-10 and extends approximately 7.4 miles from Racetrack Drive near Doniphan Road and New Mexico 273 east to one mile east of Park Street near US 54.

Design Build: $447.5 M
Construction Start Date: April 2015
Estimated Completion Date: Fall 2017/Spring 2018
Project Website: www.borderwestexpressway.com

Construction Update: Paisano closed from Executive Center to I-10. Connection of Paisano to Doniphan and McNutt expected by December 2016 or January 2017.
GO 10 Project (I-10 Collector Distributor lanes)

WORK ZONE 1
- Construction of CD lanes from North Mesa Street to Executive Center Boulevard
- Construction of direct connector from southbound Resler Drive to eastbound CD lanes
- Reconstruction of the I-10/US 85 interchange
- Addition of new lanes to the eastbound/westbound mainlamps

WORK ZONE 2
- Construction of U-turns at North Mesa Street
- Construction of direct connector from southern and Sunland Park Drive to eastbound CD lanes

WORK ZONE 3
- Construction Sunland Park Drive on-ramps and off-ramps
- Construction of eastbound/westbound CD lanes
- Improvements to Sunland Park Drive adjacent to I-10

WORK ZONE 4
- Construction of North Mesa Street from north of I-10 to south of I-20, including free adjacent ramps
- Construction of westbound CD lanes near Resler Drive and ramp to Resler Drive
- Construction of westbound CD lanes under Sunland Park Drive

ALTERNATE ROUTES
- Sunland Drive & I-10
- Subject to closures by other construction projects

GO 10
Texas Department of Transportation
GO 10 Project (I-10 Collector Distributor lanes)
GO 10 Project (I-10 Collector Distributor lanes)

Description:
This project includes intersection improvements and the addition of collector-distributor (C-D) lanes, main lanes, frontage roads and direct connector ramps on Interstate 10 (I-10) between State Highway (SH) 20 (Mesa St.) and Executive Center Blvd. in El Paso. The I-10 CD lanes project will improve connectivity and reliability to the segment of I-10 through El Paso where there currently are no frontage roads. This project will provide a vital connection to the Border Highway West project, which completes the southern segment of LP 375 that connects international ports of entries such as Zaragoza and the Bridge of the Americas, as well as downtown El Paso.

Low Bid: $158.8 Million
Let Date: October 2014
Construction Start Date: April 2015
Expected Completion Date: August 2019
Project Website: www.go10elpaso.com

Construction Update: Executive Center on-ramp to WB I-10 is closed until replaced at Mesa Park interchange.
**Project Scope:**
The proposed project will provide an additional lane on both sides of I-10 from Loop 375 to Eastlake and improve the frontage roads to urban standards within these limits.

- **Cost Estimate:** $15.7 Million
- **Let Date:** July 2016
- Prop Cat 2 funds
**Project Scope:**
Provide relief to the traveling Public along Loop 375 by widening from 4 to 6 lanes from Bob Hope to Dr. Zaragoza Rd (FM 659). TxDOT would also construct managed lanes within the limits between Zaragoza Rd. and North Loop Dr.

**Main Lanes:**
- **Construction Cost Estimate:** $29.6 M
- **ROW Cost Estimate:** Unknown
- **Engineering Cost Estimate:** $2.2 M
- **Outstanding Issues:** This project was fully funded prior to August 2014. This funding was diverted and needs to be provided.
- **Estimated Let Date:** July 2018

**Frontage Road and Ramps:**
- **Construction Cost Estimate:** $31.1M
- **Outstanding Issues:** This project is fully funded but should be constructed with the main lanes.
- **Estimated Let Date:** July 2018
Project Description:
Construct a parallel, two-lane, twin-bridge structure upstream for southbound traffic.

Construction Cost Estimate:  $10 M
Engineering Cost Estimate:  $1.5 M

Outstanding Issues:
Needs a Presidential Permit.
Extensive Agency Coordination
Funded by Rider 11B

Estimated Let Date:  August 2017
I-10/ Loop 375 Americas Interchange

Complete

Under Construction: Began on April 15, 2015

Let in July: Construction to begin October
Description:

- The proposed project will reconstruct SH-20 from LP 375 to Presa Place by replacing the existing, four lane undivided highway with a four lane divided highway with a raised median and left turn lanes. It will include utility relocations, drainage improvements, concrete pavement, and pedestrian improvements. The project will also restripe SH-20 from Presa Place to Padres Drive.

Cost Estimate: $9.2 Million

Estimated Let Date: May 2017
El Paso
Corridor Studies
The PEL study expanded on the area previously studied in 1997 and identified and documented transportation needs based on collaboration with the public as well as local, state and federal agencies. The issues identified included:

- Lack of direct access/connectivity to I-10 and Loop 375
- Congestion along east-west arterials
- High volumes of truck traffic along the existing east-west arterials
- At-grade train crossings that cause delay and impede traffic movement
- Increasing demand on area transportation infrastructure (roadways, railroads and ports of entry) associated with the increasing international and interregional trade and freight rail movements
- Transportation improvement alternatives were identified through a collaborative process. The alternatives were analyzed through three levels of evaluation. The alternatives that satisfied all criteria were presented within the PEL as recommended improvements. The improvements consisted of widening existing roadways, new alignment roadways and multimodal improvements.

PEL Received MPO Policy Board consensus
I-10 CORRIDOR STUDY

Description:
The I-10 Corridor Study will be conducted on I-10 from the New Mexico/Texas state line to FM3380.

Status:
Consultant selected.

Start:
Summer 2016
**Description:**
The Mesa (SH 20) corridor study will be conducted to determine needed improvements to an 12 mile long section of Mesa Street (SH 20) between Doniphan Drive and Texas Avenue.

**Status:**
Consultant selected and corridor study has begun.

**Start:**
February 2016
Public Meetings
August 2016
Description:
The Doniphan (SH 20) corridor study will be conducted to determine needed improvements to an 11 mile long section of Doniphan Drive SH 20) between Texas/New Mexico state line and Mesa Street.

Status:
Consultant selected and corridor study has begun.

Start:
January 2016
Public Meeting
September 2016
Upcoming Corridor Studies

- SH 20 Alameda – From Texas Avenue to FM 76
- US 67 – From Presidio POE to ELP/Odessa District Limits
- NMDOT Coordination for:
  - Santa Teresa POE
  - Sunland Park connectivity
  - NM 136 / TX SH 178 Artcraft Corridor
  - NM 404/ TX NE Parkway Corridor (Northern Relief Route to I-10)
  - NM 273/ TX Loop 375 Border West Expressway Corridor
  - US 62/180 – From Zaragoza to NM State Line
  - Freight Studies
  - Rail Relocation
Questions?
Border Trade Advisory Committee: El Paso Regional Planning Efforts

September 2016
Presentation Outline

- Education: The importance of our relationship with Juarez
- Crossings, revenues and wait times
- Cargo and vehicle wait time modeling
- Lean Six Sigma projects
Regional Indicators

Regional economy has grown but weak Peso

Source: Federal Reserve, IMSS, BANXICO, and TX CPA.
Note: IP, BCI, mfg. emp., and sales data are seasonally adjusted. REX accounts for inflation in both countries.
Quarterly sales data interpolated using Denton routine and TCPA allocations monthly trend.
Regional Indicators

➢ Regional economy has grown but weak Peso

Source: Federal Reserve, IMSS, BANXICO, and TX CPA.
Note: IP, BCI, mfg. emp., and sales data are seasonally adjusted. REX accounts for inflation in both countries.
Quarterly sales data interpolated using Denton routine and TCPA allocations monthly trend.
International Trade

El Paso District

$Billions Seas. Adj.

97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16

Computer & Electronic Products
Transportation Equipment
Electrical Equipment, Appliances & Components
Other Manufacturing
Other Products

70% of 2015 Trade

2015 trade $69 billion

El Paso Port of Entry

$Billions Seas. Adj.

Imports by Truck
Imports by Other
Exports by Truck
Exports by Other

90% of 2015 Exports

78% of 2015 Imports

Source: ITC, BTS
Benefits of Facilitating Crossings and Reduced Wait Times

- If carriers can add round trip deliveries during the day:
  - Manufacturers can increase current production (up to) full capacity
  - Produces spillover effects across the economy (jobs, wages, output, spending, taxes, etc.)

- Transportation efficiencies induce businesses to move/expand operations

- Facilitating cargo and personal crossings has a direct impact on the regional economy – output, wages, taxes, and jobs.

- Wait times influence personal crossing decisions and, thus, the social and economic integration and performance of the region.
 Benefits of Facilitating Crossings and Reduced Wait Times

- A 10% increase in maquila export production leads to a 2.7% increase in El Paso employment (Cañas et al. 2013)
  - Particularly in: 1) Transportation and Warehousing; 2) Finance, Insurance and Real Estate; and 3) Personal and Business Services

- Maquila employment increased 10% during 2015

- Given that production growth tends to outpace job growth, we estimate that over 6,000 jobs and over $200 million in wages in El Paso MSA were supported by the increase in maquila jobs/production in Juarez during 2015.
  - Spillover effect (direct, indirect and induced) to the El Paso economy – $300-$500 million
Cargo Trucks

**Total Northbound Crossings**

![Graph showing total northbound crossings from 1990 to 2016.]

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Northbound Crossings</th>
</tr>
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<td>2015</td>
<td>758,074</td>
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*Increase of 125 thousand from trough to 2015*

**Ysleta Southbound Revenues**

![Graph showing southbound revenues from 2007 to 2016.]

Source: CBP
Vehicles

Total Northbound Crossings

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<td>15,957,591</td>
<td>15,566,602</td>
<td>14,119,141</td>
<td>13,716,434</td>
<td>10,551,698</td>
<td>9,967,932</td>
<td>9,148,377</td>
<td>9,463,281</td>
<td>10,644,719</td>
<td>11,595,373</td>
<td>12,258,192</td>
</tr>
</tbody>
</table>

Increase of 3.1 million from trough to 2015

Ysleta & Stanton Southbound Revenues

Toll ↑ 60¢

Toll ↑ 25¢

Toll ↑ 50¢

Source: CBP
Pedestrians

Total Northbound Crossings

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<td>7,638,801</td>
<td>7,499,774</td>
<td>8,405,832</td>
<td>8,028,933</td>
<td>7,489,496</td>
<td>6,930,654</td>
<td>6,172,346</td>
<td>6,090,873</td>
<td>6,069,480</td>
<td>6,572,313</td>
<td>6,847,749</td>
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Increase of 780 thousand from trough to 2015

Ysleta, Stanton & PDN Southbound Revenues

toll 15c & start of Ysleta tolls

Source: CBP
P3 Revenues and Expenses

- City pays CBP overtime to staff all lanes during peak hours to help reduce wait times

- Paid for by an increase in tolls starting January 2014 – $0.50 for autos and $0.50 per axle for cargo vehicles
Vehicles constitute the majority (60%) of total northbound crossings, so most P3 funds are allocated towards vehicles.

Standard Cargo Hourly Wait Times
(northbound in minutes)

- P3 helped lower times *during construction* (blue vs. black bars)

**Ysleta Wednesdays**

<table>
<thead>
<tr>
<th>Hours of Operation</th>
<th>P3 hrs</th>
<th>Before P3</th>
<th>During Construction</th>
<th>↓ 7 minutes</th>
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<tbody>
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**Ysleta Thursdays**

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<th>Hours of Operation</th>
<th>P3 hrs</th>
<th>Before P3</th>
<th>During Construction</th>
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**Ysleta Fridays**

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<th>Hours of Operation</th>
<th>P3 hrs</th>
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<th>During Construction</th>
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</table>

Source: CBP  Note: Pre-P3 times 01/01/10 to 01/25/14; post-P3 to construction times 01/26/14 to 03/22/15; post-construction times 03/23/15 to 12/16/15 (Saturdays closed). FAST cargo not shown but has similar trend w/ shorter wait times.
P3 helped lower wait times for Standard PVs at PDN

PDN Mondays

- 13 minutes

PDN Saturdays

- 13 minutes

PDN Sundays

- 5 minutes

Source: El Paso CBP

Note: Pre-P3 times from 01/01/10 to 01/25/14; post-P3 times from 01/26/14 to 12/16/15
Standard Vehicle Hourly Wait Times
(northbound in minutes)

- P3 helped lower wait times for Standard PVs at Ysleta

Source: El Paso CBP

Note: Pre-P3 times from 01/01/10 to 01/25/14; post-P3 times from 01/26/14 to 12/16/15
P3 has helped lower pedestrian wait times

Source: El Paso CBP

Note: Ready pedestrians not shown but have similar trend w/ much shorter wait times
Ysleta Cargo Wait Time Modeling

Initial Model Specification:

$$\Delta(YCAWT_t) = \beta_0 + \beta_1 \Delta(YCX_{t,i}) + \beta_2 \Delta(BCX_{t,i}) + \beta_3 \Delta(BCAWT_{t,i}) + \beta_4 \Delta(YC_{t,i}) + \beta_5 \Delta(ALOI_{t,i}) + \beta_6 \Delta(P3_{t,i}) + \mu_t$$

Where:

- $YCAWT$ = Ysleta Cargo Wait Time (i.e. average and total time)
- $YCX$ = Ysleta Cargo Northbound Crossings
- $BCX$ = BoTA Cargo Northbound Crossings
- $BCAWT$ = BoTA Cargo Wait Time (i.e. average and total time)
- $YC$ = Ysleta Construction (categorical variable)
- $ALOI$ = All Lanes Open Initiative (categorical variable)
- $P3$ = P3 Program (i.e. categorical, hours funded, expenditures)

And: $\beta_1 > 0, \beta_2 < 0, \beta_3 > 0, \beta_4 > 0, \beta_5 < 0, \beta_6 < 0$

Data Sample: Monthly from January 2010 to December 2015
Impacts of Additional Lane Staffing - Cargo

- Opening an additional lane during peak times can facilitate the flow of an estimated **162 trucks per hour** (Secure Origins).

- The estimated 15 percent savings from P3 cargo would reduce sample trips such as these by 20.55 minutes.

<table>
<thead>
<tr>
<th></th>
<th>Distance</th>
<th>Trucks</th>
<th>Time (min)</th>
<th>Trucks/Hr</th>
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</thead>
<tbody>
<tr>
<td>Aduana Wait</td>
<td>4180</td>
<td>56</td>
<td>111</td>
<td>30</td>
</tr>
<tr>
<td>Aduana Queue</td>
<td>614</td>
<td>2</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>Aduana Exit</td>
<td>1400</td>
<td>3</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>CBP Standard Lane</td>
<td>56</td>
<td>21</td>
<td>162</td>
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<tr>
<td>Sample Total</td>
<td>117</td>
<td>137</td>
<td>51</td>
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</table>
Impacts of Additional Lane Staffing - POV

• Preliminary models suggest:
  • 14 percent savings from additional staffing during peak P3 hours
  • Reduces wait 12.6 minutes for a 90 minute queue
  • 8.4 minutes for a 60 minute queue.

• Models again suggest that all the POV bridges serve as substitutes (operate as a system).
Metropia and Lean Six Sigma
Ysleta-Zaragoza LSS Projects
Commercial Wait Time Reduction

September 2015 kick-off with Value Stream Mapping
Metropia Mobile® App
Demand management and data analytics platform

- Enter route and app shows you best times to leave
  - Avoid traffic
  - Spend less time on the road
  - Reduce CO2 emissions

- Real-time flow data and predictive algorithms forecast traffic patterns in 15-minute intervals
Metropia Mobile App
Congestion mitigation via social rewards-based ecosystem

- Applicable to cargo, vehicle and pedestrian traffic
- Choose departure times to avoid congestion and earn points
- User-based incentives, e.g., Amazon, Starbucks, Target, restaurants, music downloads, etc.
- Real-time bridge wait data
# Ysleta-Zaragoza LSS Projects

## LSS Steering Committee Participants

<table>
<thead>
<tr>
<th>Public Sector</th>
<th>Private Sector or Nonprofit</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of El Paso</td>
<td>Transportistas (Sotelo, Tracso)</td>
</tr>
<tr>
<td>Municipio de Cd. Juarez</td>
<td>Maquiladoras (MFI, Electrolux, Toro)</td>
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<tr>
<td>District 16 Congressional Office</td>
<td>INDEX (Maquiladoras Associations)</td>
</tr>
<tr>
<td>U.S. Customs and Border Protection</td>
<td>Customs Brokers (Pedraza Inc., BAB inc.)</td>
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<td>Aduanas Mexico</td>
<td>Desarrollo Economico de Cd. Juarez</td>
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<td>Texas Department of Transportation</td>
<td>Promofront</td>
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<tr>
<td>U.S. Department of Public Safety</td>
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<tr>
<td>Metropolitan Planning Organization</td>
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<tr>
<td>Instituto Municipal de Investigacion y Planeacion</td>
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</tbody>
</table>
22 potential improvement projects identified during 3 events

Two LSS Steering Committee Projects currently underway

1. Pilot Program, led by maquiladora industry in Cd. Juarez, for scheduling truck arrivals during off peak hours

2. Multi-Generational Project, led by City of El Paso, for several infrastructure enhancements to help expedite the flow of traffic
   - Intelligent transportation systems signage and traffic control improvements on both sides of the border
   - Expand electronic tolling usage
   - Engineering designs started to make them eligible for state and federal funding
Ysleta-Zaragoza LSS Projects

Potential Improvement Projects Identified

1) Electronic tolling
2) Improved signage, lane stripping, traffic signals, visual controls for traffic control
3) Install additional lane at the bridge
4) Improve the road access into the system from the Mexican side
5) Improve the exit on the El Paso side to reduce congestion
6) Operate POE during holidays on regular hours / Examine the best hours of operations
7) Need to examine how we can ramp up for peak demand at the end of the month
8) Dedicated lane for certified shipments Mexico - U.S.
9) Improved coordination between DOT and DPS to reduce repeat inspections whenever possible
10) Visible access to live conditions at the port
11) Prove the tangible benefits of participating in C-TPAT for increased participating rates
12) Pre-inspection together with U.S. and Mexican custom
13) Integration of decals for trucks
14) Technology solutions that provide accurate crossing time data
15) Need to reduce the percentage of empty trucks crossing
16) Intelligent Transportation Systems signage (with real wait times)
17) City of El Paso can serve as a data host for wait time data
18) Team put together to work on trusted trade to increase the participation
19) Look into the possibility of adding additional CBP primary inspection booth
20) Push message system for participating members i.e. text messages
21) Off-peak hours truck crossings (pilot program)
22) Quantify the economic impact of delayed shipments

“Delivering Outstanding Services”
Overview

- Planning Area
- Planning Priorities
- Planning Activities
Planning Area

- **Counties**
  - El Paso, TX
  - Dona Ana, NM
  - Otero, NM

- **Transportation Policy Board**
  - (30 elected and/or appointed officials)
  - New Mexico and Texas representation

- **Vision Statement**
  - A seamless and reliable multimodal network which enables connectivity, promotes quality of life and economic wellbeing, and preserves the human environment.

- **Mission Statement**
  - Accomplish regional planning and programming under one voice that provides the greatest benefit while at the same time reflecting the concerns of the community within the MPO area.

- **Objective**
  - Establish meaningful partnerships
Region

- **Las Cruces**
  - Population: 289,076
  - NM’s 2nd Largest City
  - 2014 U.S. Leader in Export Growth

- **El Paso**
  - Population: 839,007
  - TX’s 6th Largest City
  - 2nd Largest City on U.S./Mexico Border

- **Cd. Juarez**
  - Population: 1.4M
  - Chihuahua’s Largest City
  - Largest City on U.S./Mexico Border
Planning Priorities

- **International Ports of Entry (IPOE)**
  - Develop infrastructure in support of IPOE
  - Invest in technology to reduce wait-times
  - Promote greater travel time reliability

- **Interstate System**
  - Widen and reconstruction of I-10
  - Invest in technology to reduce congestion
  - Provide greater travel time reliability
Planning Priorities

- **Northeast Parkway**
  - Provide seamless connection
  - Reduce congestion on I-10
  - Promote greater accessibility, mobility, and travel time reliability
  - Serves as an incident management route

- **Fort Bliss Area**
  - Provide greater accessibility and mobility
  - Promotes greater ingress and egress of facility
  - Support the mission and needs of the DOD
Planning Priorities

- Bus Rapid Transit
  - 4 Brio Corridors
    - Mesa Street
    - Dyer Street
    - Alameda Avenue
    - Montana Avenue

- Brio Amenities
  - Branded 60-foot articulated buses
  - A frequency of 10 minutes (peak service) to 15 minutes (off-peak service)
  - Stations that are about a mile apart
  - Branded and landscaped stations with improved pedestrian amenities
  - Signal prioritization (lengthen green traffic signals)
**Brio Mesa Corridor**

- **Mesa Corridor**
  - Length: about 8.6 miles
  - Begins: Downtown Transfer Center
  - Ends: Westside Transfer Center
  - Total number of buses: 10
  - Number of stations: 22
  - Total project cost: $27.1 million
  - FTA funding: $13.5 million
  - TXDOT funding: $6.1 million
  - Operational: fall 2014
**Brio Alameda Corridor**

- **Alameda Corridor**
  - Length: 14.5 miles
  - Begins: Downtown Transfer Center
  - Ends: Mission Valley Transfer Center
  - Total number of buses: 14
  - Number of stations: 29
  - Total construction project cost: $35.5 million
  - Funding: 100 percent City of El Paso
  - Operational: early 2018
**Brio Dyer Corridor**

- **Dyer Corridor**
  - Length: 12 miles
  - Begins: Downtown Transfer Center
  - Ends: Future Northeast Transfer Center
  - Total number of buses: 8
  - Number of stations: 18
  - Total project cost: $35.9 million
  - FTA funding (anticipated): $20.4 million
  - TXDOT funding: $9.2 million
  - Operational: mid 2018
**Brio Montana Corridor**

- **Montana Corridor**
  - Length: 16.8 miles
  - Begins: Five Points Terminal
  - Ends: Future Far East Side Transfer Center
  - Total no. of buses: 12
  - Number of stations: 26
  - Total project cost: $47 million
  - FTA funding (anticipated): $27.7 million
  - TXDOT funding: 9.7 million
  - Operational: spring 2020
Planning Activities

• **Sun Cycle Bike Share**
  • 16 Stations and 160 bicycles
  • International project
    • Further Connect Central Business District with Cuidad Juarez
    • Increase Commute opportunities between El Paso and Cuidad Juarez

• **Active Transportation System**
  • Seven Segments
    • Avenida de Estrellas
    • International Beltway
    • El Paso Mission Trail Route
    • Solstice Track
    • Warriors Way
    • Transmountain Trail
    • Paseo Del Este
Planning Activities

- Planning and Environmental Linkages
  - Created to encourage transportation decision-makers to incorporate environmental, community, and economic goals early in the transportation planning process.
  - Can use and rely on planning analysis, studies, decisions, or other information developed in planning process for the project development and environmental review processes of transportation projects.
  - Aims to create a more unified decision-making process, reduce duplication of efforts, and more informed project-level decisions
- Border Highway East Project
  - Transportation Reinvestment Zone
  - Preliminary Engineering Policy
Questions?

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Executive Director

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Texas-Mexico Border Strengthens North America

Federal Reserve Bank of Dallas, El Paso Branch
Roberto Coronado
Asst. Vice President in Charge and Sr. Economist

Marycruz De Leon
Sr. Economic Analyst

The views expressed in this presentation are strictly those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Dallas or of the Federal Reserve System.
Outline

• U.S.-Mexico trade flows and business cycle synchronization
• Texas-Mexico trade
• The role of the border and maquiladoras
• Concluding remarks
Outline

• U.S.-Mexico trade flows and business cycle synchronization
  • Texas-Mexico trade
  • The role of the border and maquiladoras
  • Concluding remarks
US-Mexico trade

Billions of real $, SA, annual rates

Mexico joins GATT

NAFTA

Source: U.S. Census Bureau, Bureau of Labor Statistics
U.S.-Mexico trade slows...

Billions of real $, SA, annual rates

2015
$531 billion

219
97
62
34
30
29
21

Source: U.S. Census Bureau,

Industrial Equipment
Power-Generating Equipment
Petroleum
Telecommunications
Office Equipment
Electronics
Transportation Equipment
Other
As petroleum trade falls...

2015 - 2016 June YTD Change

Transportation Equipment: -0.9
Electronics: 0.8
Telecommunications: 0.4
Office Equipment: 3.1
Industrial Equipment: -0.4
Petroleum: -4.4
Power-Generating Equipment: -0.1
Other: -2.1
Total: -3.7

Source: U.S. Census Bureau
NAFTA brought stronger economic integration

Source: Federal Reserve Board, Instituto Nacional de Estadística Geografía e Informática
Is Mexico important to U.S. border states?

• Mexico is the third most important trading partner for the U.S.

• For U.S. border states, Mexico is a key trading partner:
  • Arizona ---- $9.2 billion (40.6%)
  • California ---- $26.8 billion (16.2%)
  • New Mexico ---- $1.7 billion (44.6%)
  • Texas ---- $94.5 billion (37.7%)
Outline

• U.S.-Mexico trade flows and business cycle synchronization
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• Concluding remarks
Texas exports grew faster than the nation even before the recession

Source: U.S. Census Bureau; Wisertrade.
Petroleum products dominate Texas exports growth

Source: WISERTrade
Mexico is Texas’ largest export market

Billions, real 2016$, SA, annual rate

Source: Federal Reserve Bank of Dallas, Wisertrade, U.S. Census Bureau
Texas Exports to Mexico well diversified, 2015

- Computers and Electronics: 28.5%
- Petroleum and Coal Products: 10.9%
- Plastic and Rubber: 4.3%
- Apparel: 4.3%
- Electrical Appliances: 8.4%
- Fabricated and Primary Metals: 7.4%
- Industrial Machinery: 5.3%
- Transportation Equipment: 12.6%
- Other: 5.1%
- Mining: 2.4%
- Paper: 1.5%
- Agriculture and Food: 3.8%

Note: Categories shaded in blue are non-maquiladora related.
Sources: U.S. Census Bureau; Wisertrade.
Texas exports to Mexico mainly go to the north.
Top exporting Texas MSAs, 2014

<table>
<thead>
<tr>
<th>City</th>
<th>Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston</td>
<td>$119.0</td>
</tr>
<tr>
<td>Dallas</td>
<td>$28.7</td>
</tr>
<tr>
<td>San Antonio</td>
<td>$25.8</td>
</tr>
<tr>
<td>El Paso</td>
<td>$20.1</td>
</tr>
<tr>
<td>Austin</td>
<td>$9.4</td>
</tr>
<tr>
<td>Beaumont</td>
<td>$8.2</td>
</tr>
<tr>
<td>Laredo</td>
<td>$6.3</td>
</tr>
<tr>
<td>Brownsville</td>
<td>$5.4</td>
</tr>
<tr>
<td>McAllen</td>
<td>$5.3</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>$5.1</td>
</tr>
</tbody>
</table>

Source: International Trade Administration
## What do we export to the world? Are we competitive?

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>NAICS Description</th>
<th>RCA (avg) 2002-2012</th>
<th>Share 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>3241</td>
<td>Petroleum &amp; Coal Products</td>
<td>2.7</td>
<td>22.7</td>
</tr>
<tr>
<td>3251</td>
<td>Basic Chemicals</td>
<td>2.8</td>
<td>10.5</td>
</tr>
<tr>
<td>3252</td>
<td>Resin, Synthetic Rubber, &amp; Artificial Synthetic Fibers</td>
<td>3.0</td>
<td>5.9</td>
</tr>
<tr>
<td>3344</td>
<td>Semiconductors &amp; Other Electronic Components</td>
<td>1.6</td>
<td>5.6</td>
</tr>
<tr>
<td>3341</td>
<td>Computer &amp; Equipment</td>
<td>1.3</td>
<td>5.1</td>
</tr>
<tr>
<td>3363</td>
<td>Motor Vehicle Parts</td>
<td>1.4</td>
<td>4.7</td>
</tr>
<tr>
<td>3331</td>
<td>Ag &amp; Construction Machinery</td>
<td>3.6</td>
<td>4.6</td>
</tr>
<tr>
<td>3342</td>
<td>Communications Equipment</td>
<td>1.3</td>
<td>3.6</td>
</tr>
<tr>
<td>3339</td>
<td>Other General Purpose Machinery</td>
<td>1.0</td>
<td>2.9</td>
</tr>
<tr>
<td>3345</td>
<td>Navigational, measuring, electromedical, &amp; control instruments</td>
<td>1.0</td>
<td>2.6</td>
</tr>
<tr>
<td>3361</td>
<td>Motor Vehicles</td>
<td>0.4</td>
<td>2.5</td>
</tr>
<tr>
<td>3329</td>
<td>Other Fabricated Metal Products</td>
<td>1.3</td>
<td>2.5</td>
</tr>
<tr>
<td>3364</td>
<td>Aerospace Products &amp; Parts</td>
<td>1.0</td>
<td>2.3</td>
</tr>
<tr>
<td>3336</td>
<td>Engines, Turbines &amp; Power Transmission Equip</td>
<td>0.9</td>
<td>2.0</td>
</tr>
<tr>
<td>3359</td>
<td>Other Electrical Equipment &amp; Components</td>
<td>1.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Texas’ main foreign competitors in world markets
(Based on export mix similarity)

Spearman Correlation Coefficient

<table>
<thead>
<tr>
<th>Country</th>
<th>Spearman Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA*</td>
<td>0.7</td>
</tr>
<tr>
<td>Japan</td>
<td>0.6</td>
</tr>
<tr>
<td>Singapore</td>
<td>0.5</td>
</tr>
<tr>
<td>Korea</td>
<td>0.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.4</td>
</tr>
<tr>
<td>Israel</td>
<td>0.4</td>
</tr>
<tr>
<td>Germany</td>
<td>0.3</td>
</tr>
<tr>
<td>Finland</td>
<td>0.3</td>
</tr>
<tr>
<td>Norway</td>
<td>0.3</td>
</tr>
<tr>
<td>France</td>
<td>0.2</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>0.2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.15</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.15</td>
</tr>
</tbody>
</table>

*USA without Texas

Texas’ main domestic competitors in world markets
(Based on export mix similarity)

Spearman Correlation Coefficient

Texas’ Comparative Advantage

• Texas exports are well diversified
  – Petroleum products and chemicals are among the most competitive

• Competitiveness has increased as Texas industries have become more productive

• Texas is an important player in the global market
  – Gained market share domestically; kept competitive internationally

• Mexico is a strategic partner
  – Gained domestic competitiveness in the auto industry vis-a-vis Ohio and Illinois

Outline

• U.S.-Mexico trade flows and business cycle synchronization
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• The role of the border and maquiladoras
• Concluding remarks
75 percent of US-Mexico land trade goes through Texas ports of entry

<table>
<thead>
<tr>
<th>2015 Rank</th>
<th>Port</th>
<th>Total Trade (Bil. $)</th>
<th>Share of Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Laredo - Texas</td>
<td>197.63</td>
<td>43.3</td>
</tr>
<tr>
<td>2</td>
<td>El Paso - Texas</td>
<td>68.91</td>
<td>15.1</td>
</tr>
<tr>
<td>3</td>
<td>Otay Mesa - California</td>
<td>42.63</td>
<td>9.3</td>
</tr>
<tr>
<td>4</td>
<td>Hidalgo - Texas</td>
<td>29.17</td>
<td>6.4</td>
</tr>
<tr>
<td>5</td>
<td>Nogales - Arizona</td>
<td>27.31</td>
<td>6.0</td>
</tr>
<tr>
<td>6</td>
<td>Eagle Pass - Texas</td>
<td>26.07</td>
<td>5.7</td>
</tr>
<tr>
<td>7</td>
<td>Santa Teresa - New Mexico</td>
<td>21.98</td>
<td>4.8</td>
</tr>
<tr>
<td>8</td>
<td>Calexico-East - California</td>
<td>16.25</td>
<td>3.6</td>
</tr>
<tr>
<td>9</td>
<td>Brownsville - Texas</td>
<td>14.29</td>
<td>3.1</td>
</tr>
<tr>
<td>10</td>
<td>Del Rio - Texas</td>
<td>5.05</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7.38</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>456.67</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bureau of Transportation Statistics, US Department of Transportation.
Laredo leads Texas land trade

Source: TAMIU, U.S. Department of Commerce Bureau of the Census, Foreign Trade Division
Machinery and transportation equipment lead trade

El Paso - $72.2 billion

- MACHINERY AND TRANSPORT EQUIPMENT: 66.7%
- MANUFACTURED GOODS: 3.6%
- MISC. MANUFACTURED: 3.6%
- CHEMICALS: 14.0%
- FOOD AND LIVE ANIMALS: 8.7%
- ALL OTHERS: 3.4%

Laredo - $204.4 billion

- MACHINERY AND TRANSPORT EQUIPMENT: 54.9%
- FOOD AND LIVE ANIMALS: 10.1%
- MISCELLANEOUS MANUFACTURED ARTICLES: 12.6%
- MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL: 12.9%
- COMMODITIES AND TRANSACTIONS NOT CLASSIFIED ELSEWHERE IN THE SITC: 1.3%

Machinery and transportation equipment lead trade

McAllen - $30.0 billion

- MACHINERY AND TRANSPORT EQUIPMENT: 54.9%
- FOOD AND LIVE ANIMALS: 12.9%
- MISCELLANEOUS MANUFACTURED ARTICLES: 12.6%
- MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL: 12.3%
- ALL OTHERS: 1.3%

Brownsville - $16 billion

- MACHINERY AND TRANSPORT EQUIPMENT: 43.7%
- FOOD AND LIVE ANIMALS: 12.3%
- MISCELLANEOUS MANUFACTURED ARTICLES: 11.8%
- MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL: 13.6%
- COMMODITIES AND TRANSACTIONS NOT CLASSIFIED ELSEWHERE IN THE SITC: 6.0%

The role of the border region

- The U.S.-Mexico border region has played a critical role as both nations integrate even further
- *Maquiladoras* are a major vehicle for the cross-border movement of industrial goods
- According to Dallas Fed research, *maquiladoras* drive significant economic activity in U.S. border cities
Maquiladoras are growing along the Texas border

Index July 2007 = 100, SA

Source: INEGI
Maquiladoras are quite important for Texas border cities

<table>
<thead>
<tr>
<th></th>
<th>El Paso</th>
<th>Laredo</th>
<th>McAllen</th>
<th>Brownsville</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>City Level</strong></td>
<td>2.8*</td>
<td>4.6</td>
<td>6.6*</td>
<td>2.2</td>
</tr>
<tr>
<td>Construction</td>
<td>0.2</td>
<td>3.2</td>
<td>4.0*</td>
<td>1.3*</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-1.3</td>
<td>1.0</td>
<td>1.6</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>5.3*</td>
<td>7.2*</td>
<td>6.6*</td>
<td>4.6*</td>
</tr>
<tr>
<td>Wholesale</td>
<td>0.4</td>
<td>2.0</td>
<td>4.0*</td>
<td>0.8</td>
</tr>
<tr>
<td>Retail</td>
<td>1.3</td>
<td>0.7</td>
<td>3.2*</td>
<td>1.3*</td>
</tr>
<tr>
<td><strong>FIRE</strong></td>
<td>2.1*</td>
<td>8.2*</td>
<td>4.6*</td>
<td>0.6</td>
</tr>
<tr>
<td>Services</td>
<td>1.8*</td>
<td>5.9*</td>
<td>7.4*</td>
<td>3.9*</td>
</tr>
</tbody>
</table>

**Notes:** This table shows elasticity estimates. That is the table shows the percentage increase in local employment from a 10 percent increase in maquiladora production for each Texas Border Cities. * indicates significant at the 10% level.

U.S.-Mexico border crossings

• Besides heavy trade flows, the U.S.-Mexico border is the busiest border in the world.

• In 2015, 181 million people crossed from Mexico to the U.S., while only 54.9 million people came from Canada.

• This means that there are about 500 thousand U.S.-Mexico border people crossings on a daily basis (northbound).

• Along the U.S.-Mexico border, Texas receives the most visitors with 82.7 million people, California 72.4 million, Arizona 23.8 million, and New Mexico 2.4 million.
Retail sales respond to Peso weakness

Sources: Texas Comptroller of Public Accounts; seasonal and other adjustments by the Federal Reserve Bank of Dallas
### Border economy in transition

- Economic activity migrating from manufacturing to services

<table>
<thead>
<tr>
<th>City</th>
<th>1990 Mfg.</th>
<th>2015 Mfg.</th>
<th>1990 Services</th>
<th>2015 Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Paso</td>
<td>20%</td>
<td>6%</td>
<td>76%</td>
<td>90%</td>
</tr>
<tr>
<td>Laredo</td>
<td>3%</td>
<td>1%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>McAllen</td>
<td>13%</td>
<td>3%</td>
<td>82%</td>
<td>94%</td>
</tr>
<tr>
<td>Brownsville</td>
<td>15%</td>
<td>4%</td>
<td>82%</td>
<td>93%</td>
</tr>
</tbody>
</table>

Source: Bureau of Labor Statistics

- Per capita income closing gap with national levels
Improvements in per capita income along the Texas Border

% of U.S. level

Source: Bureau of Economic Analysis
Outline

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Concluding Remarks

• As U.S.-Mexico trade flows have increased, business cycle synchronization has grown

• Texas leads the nation in exports. The state’s close relationship with Mexico has increased its competitiveness

• Texas-Mexico border region plays a critical role in the North American market
Texas-Mexico Border Strengthens North America

Please go to www.dallasfed.org for data and regional information.