



Texas Border Value is Now

International Trade and
Border Planning Branch
Texas Department of Transportation



Meeting Agenda



US - Mexico Trade

Overview of Texas - Mexico Border and Trade

Border Transportation Master Plan

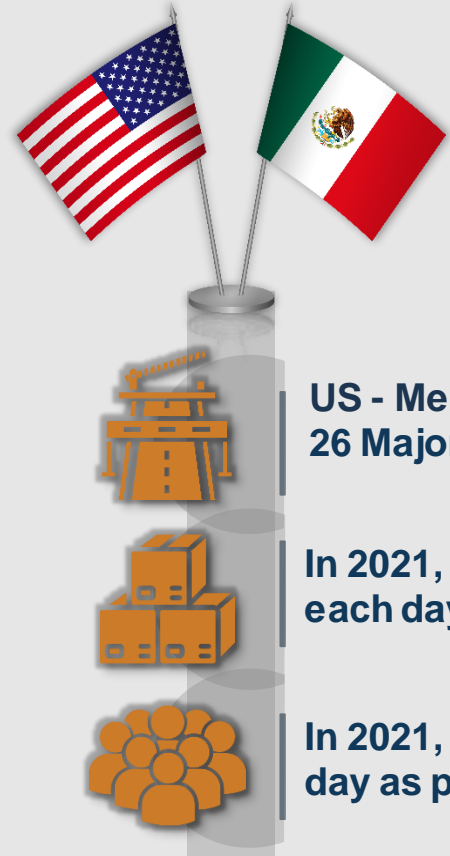
Post Pandemic Impacts

Texas Border Infrastructure and Corridors



US - Mexico Trade

US – Mexico Border



US - Mexico shares 1,954 miles of common border
26 Major Districts In-Land Ports of Entry (POE)

In 2021, \$1.5B U.S. Mexico trade crossed the border
each day by truck or rail

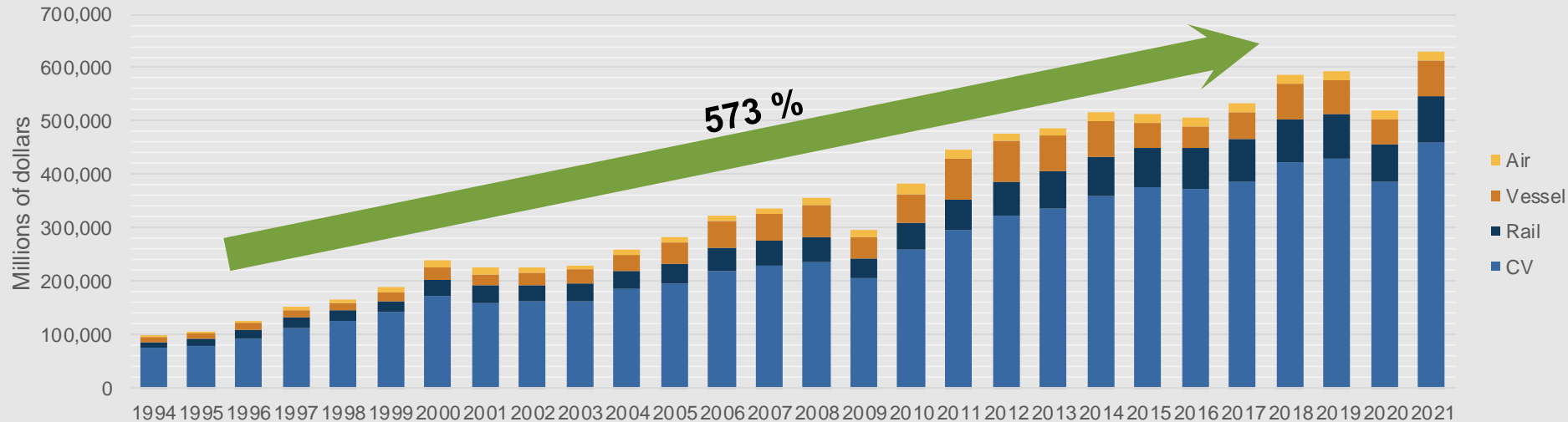
In 2021, 341,095 people crossed the border per
day as pedestrians or in passenger vehicles



US - Mexico Trade since NAFTA



- Between 1994 and 2021, the United States and Mexico trade **increased in 573%** from \$105.8 billion to \$661 billion.
- Since 2010, trade exchange between US - Mexico has increased steadily.
- In 2021, total US - Mexico trade **increased 23%** from the previous year.



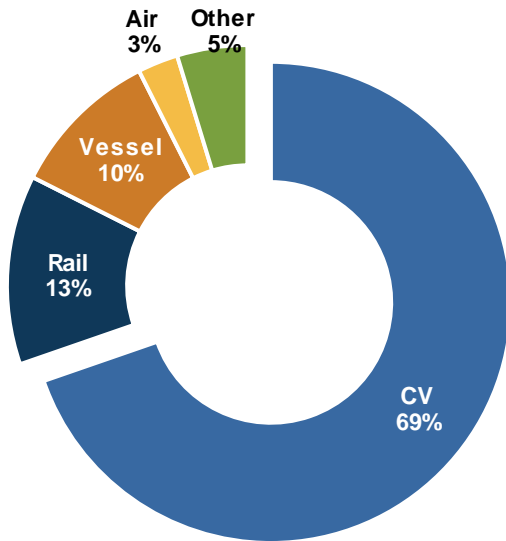
Source: BTS Transborder Freight/Entry Data 1994-2021.

CV: Commercial Vehicles.

US - Mexico Trade by mode 2021



TOTAL TRADE \$661 B



- 69% of trade exchange between the United States and Mexico is by Commercial Motor Vehicles (CMV), followed by rail at 13%.
- 82% of the total US - Mexico trade by value is handled by land ports of entry.



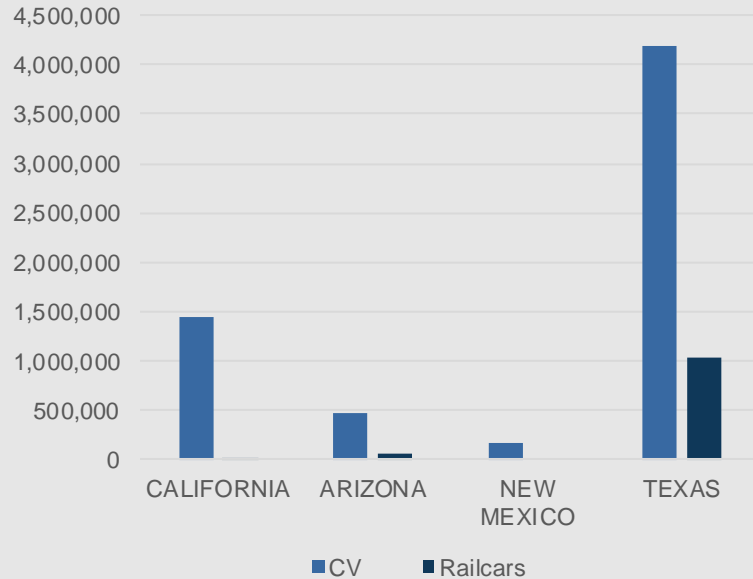
- In 2021, almost \$1.5 billion in goods traded with Mexico crossed the US - Mexico border each day by truck or rail.
- 6.95 million CMV crossed from Mexico into the US in 2021.

Source: BTS Transborder Freight

Northbound CMV and Railcars Crossings



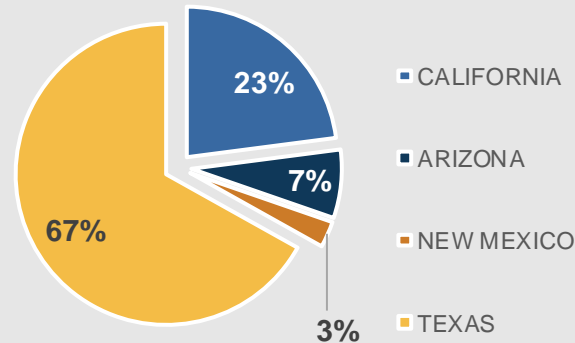
Commercial Vehicles and railcars
crossing
US - Mexico border
2021



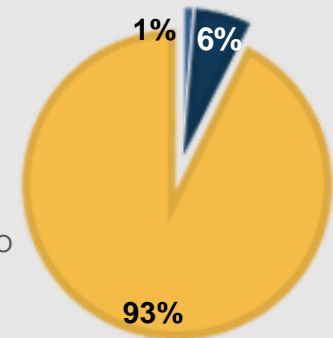
Source: BTS Transborder Freight

- **67%** of the total northbound truck crossings, are through Texas's ports of entry.
- **93%** of the total northbound railcar crossings, are through Texas's ports of entry.
- **Texas** ranks **1** among U.S. states trading with Mexico with **33%** of the total truck & rail trade

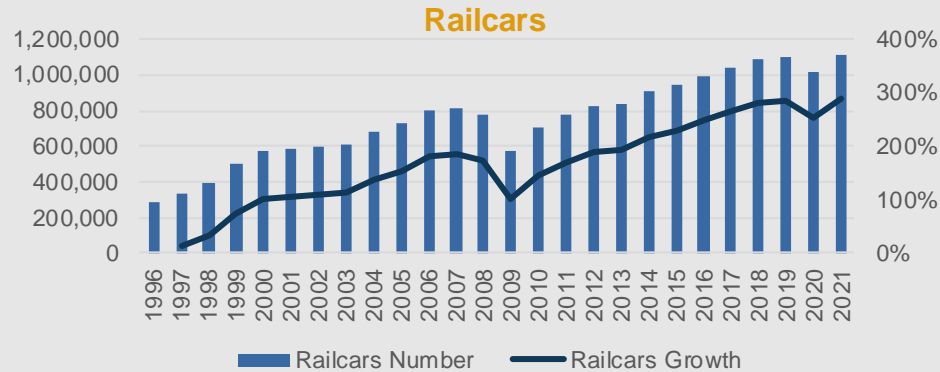
CMV Crossings



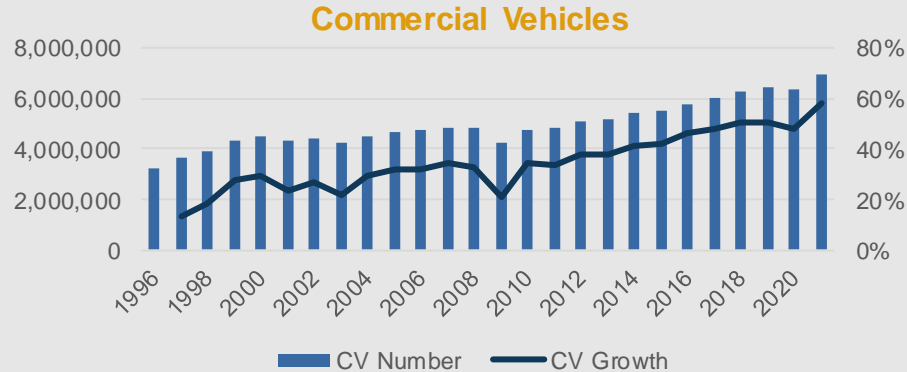
Railcar Crossings



CMV and Railcars northbound crossing US - Mexico border



- The number of incoming rail cars from Mexico into the US increased from 286,363 to 1,115,968 in the 1996-2021 period, a **289% growth**.



- The number of trucks entering the US from Mexico reached a total of 6.9 million in 2021, an increase of **58%** in the 1996 – 2021 period

Source: BTS Border Crossing/Entry Data 1996-2021.



Overview of Texas-Mexico Border and Trade



Overview of Texas - Mexico Border and Trade



- Texas plays a vital role in the US - Mexico relationship.
- Texas-Mexico shares 1,254 miles (64%).
- Texas-Mexico border connects people and facilitates trade between the two countries.
- US - Mexico trade has grown almost 7 times between 1994 and 2021, increasing from \$98 billion to \$661 billion.
 - 69% of trade between the two countries passes through the Texas-Mexico border.
- Texas-Mexico trade value increased by 298% from \$58 billion in 1994 to \$231 billion in 2021.



Source: BTS



































- We share **28 International Border Crossing** along our Texas - Mexico border.
- From the 28 POE, **14 are commercial Bridges.**
- The number **1 In-land Port of Entry** is Laredo (**16,000 trucks daily**)
- There are **4 International Rail Crossing Ports** (Brownsville, Laredo, Eagle Pass, El Paso)
- Border region **population grew by 227% and employment grew by 68%** from January 1990 to January 2022.



Texas – Mexico Border Crossing by Port of Entry (POE)



Port of Entry	International Crossing	Commercial Vehicles	Privately-Owned Vehicles	Pedestrians	Buses	Rail
Brownsville	Veterans International Bridge Los Tomates					
	Brownsville Matamoros Express Bridge					
	Gateway International Bridge					
	Brownsville West Rail Bridge					
	Free Trade International Bridge					
Progreso	Progreso					
Hidalgo	Donna-Rio Bravo International Bridge					
	Pharr-Reynosa International Bridge					
	McAllen-Hidalgo International Bridge					
	Anzalduas International Bridge					
Rio Grande City	Los Ebanos Ferry					
	Rio Grande City Starr-Camargo Bridge					
Roma	Roma International Bridge					
	Lake Falcon Dam International Crossing					

Texas – Mexico Border Crossing by Port of Entry (POE)



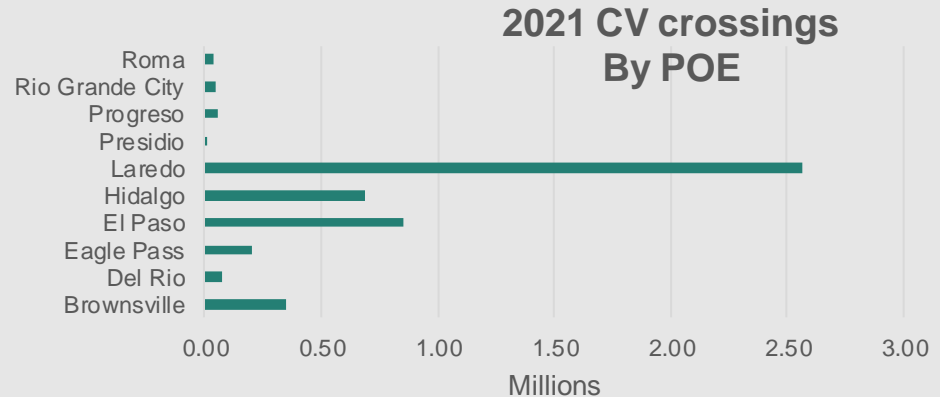
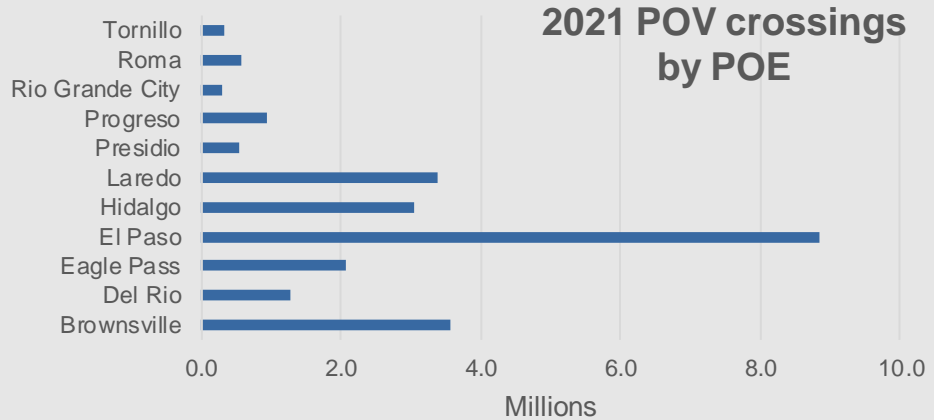
Port of Entry	International Crossing	Commercial Vehicles	Privately-Owned Vehicles	Pedestrians	Buses	Rail
Laredo	Juarez-Lincoln International Bridge					
	Gateway to the Americas Bridge					
	Laredo Rail Bridge					
	World Trade Bridge					
	Colombia Solidarity Bridge					
Eagle Pass	Camino Real International Bridge					
	Eagle Pass Rail Bridge					
	Eagle Pass International Bridge					
Del Rio	Del Rio Ciudad Acuña International Bridge					
	Lake Amistad Crossing					
Presidio	Presidio International Bridge					
Fort Hancock	Fort Hancock					
El Paso	Guadalupe-Tornillo Bridge					
	Ysleta Bridge					
	Bridge of the Americas					
	Union Pacific Railroad Rail Bridge					
	Good Neighbor Bridge					
	Paso del Norte Bridge					
	BNSF Railroad Rail Bridge					

Overview of Texas - Mexico Border and Trade



- Year-over-year, border crossings are up at all Texas's POEs, except the Tornillo Bridge (3% decrease in POVs) and El Paso (34% decrease in CMV)

- In 2021, the POE with the highest number of POV crossings is El Paso, with 25% of crossings along the Texas-Mexico border.
- In 2021, the POE with the highest number of CMV crossings is Laredo, accounting for 52% of crossings along the Texas-Mexico border.



Source: BTS Border Crossing/Entry Data 1996-2021.



TOP 10 TEXAS POE (2021)



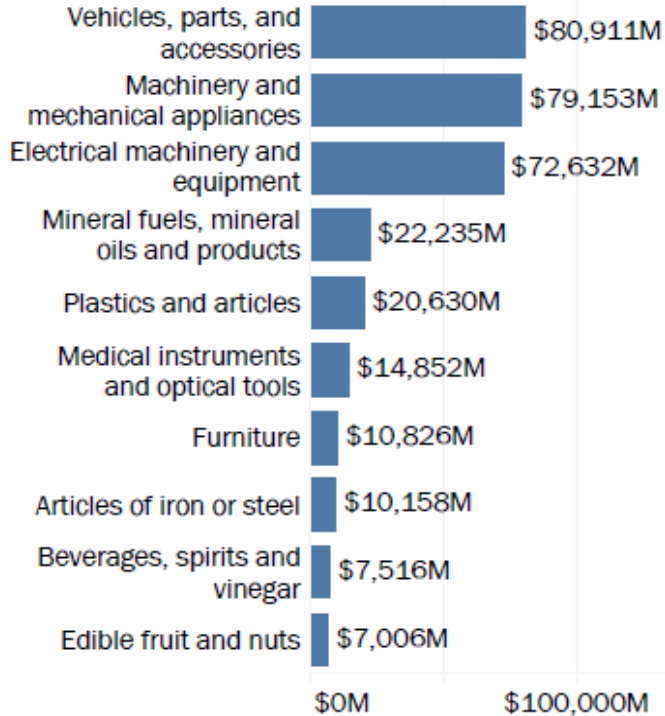
COMMERCIAL VEHICLES

- In 2021, Laredo was the Texas port with the most traded dollars (\$243,097 million), about 4 times as much as the second largest port, Ysleta (\$61,267).

- Laredo POE grew from \$198 billion in 2015 to \$243 billion in 2021 (23% of increase)
- Hidalgo is the POE with the highest trade increase (40%). It grew from \$29 billion in 2015 to \$40.8 billion in 2021.



TOP 10 TRADED COMMODITIES (2021)



COMMODITIES

- Vehicles, parts, and accessories; machinery and mechanical appliances; and electrical machinery and equipment are the **top three traded commodities accounting for 71%** of the Top 10 traded commodities.
- Imports by CMV of Machinery and Mechanical Appliances experienced the largest growth in the 2006-2021 period: **174% (\$17 to \$46.5 billion)**.

Source: BTS



CROSS-BORDER PEOPLE MOVEMENT:

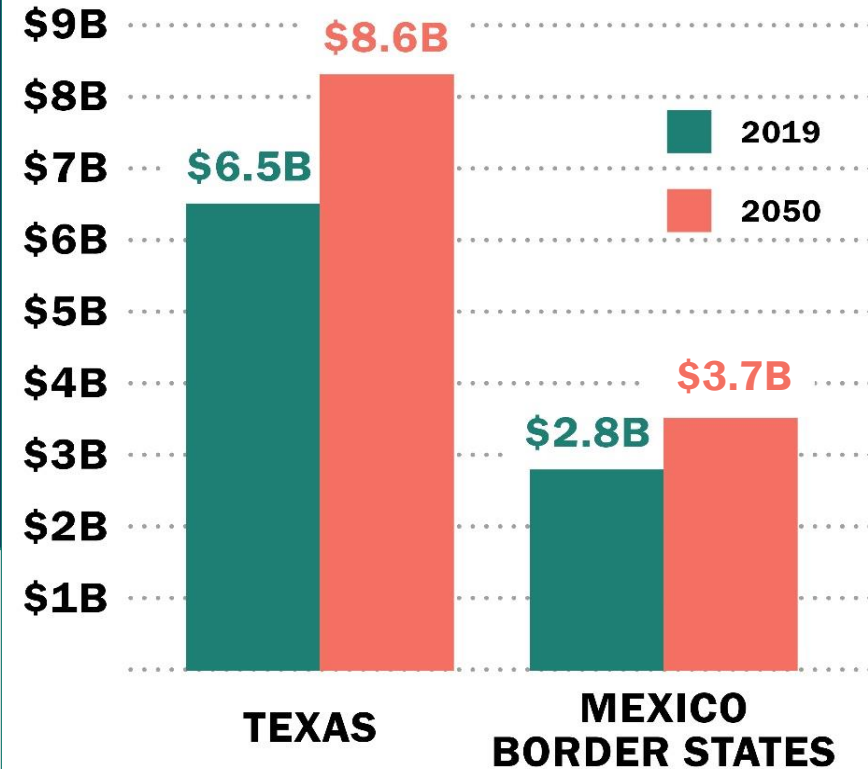
- Residents of both US and Mexico cross the Texas-Mexico border daily to access daycare facilities, hospitals, schools, and retail on opposite sides of the border.
- In 2019, Texas-Mexico cross-border movement of people generated over **\$9.30 billion GDP**.
- Forecasted to grow by 33% from \$9.30 billion in 2019 to **\$12.33 billion GDP** annually by 2050.

People movements are localized to the Texas-Mexico border region.

Includes buses, bicycles/pedestrians, and POVs.

Source: IMPLAN 2018, BTS Border Crossing/Entry Data, INRIX GPS Analysis, INEGI Population Forecasts, TDC Population Forecasts, University of New Mexico Population Forecasts.

GDP IMPACT OF CROSS-BORDER PEOPLE MOVEMENTS:





CROSS-BORDER GOODS MOVEMENT:

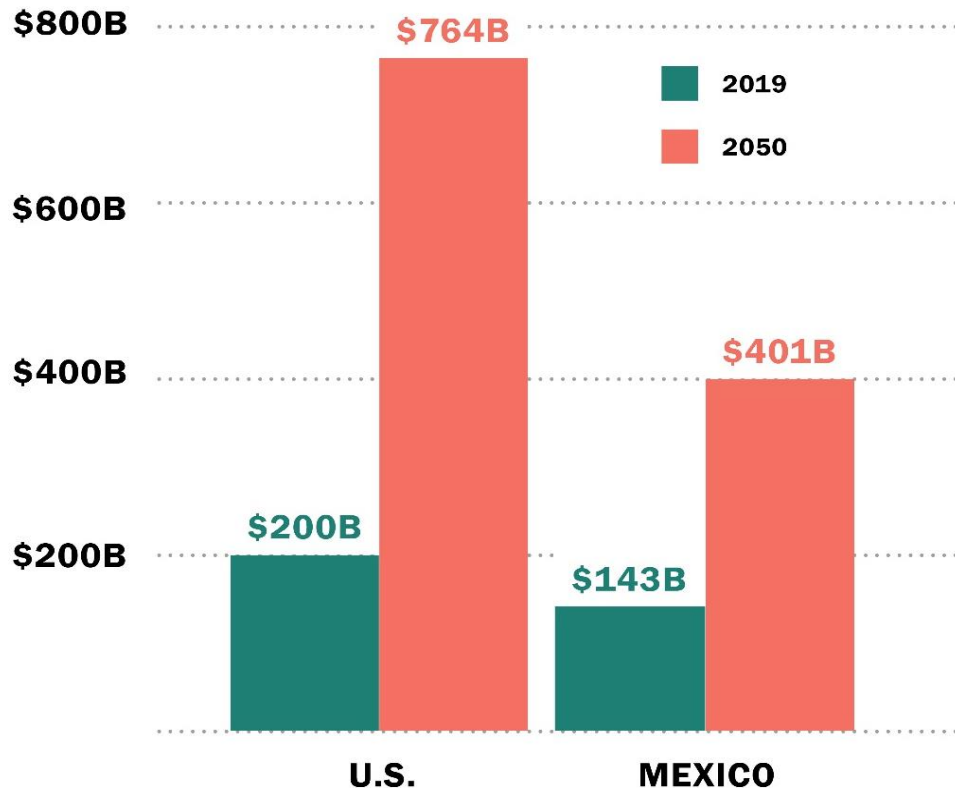
- Generated over **\$343 billion GDP** in 2019 for U.S. and Mexico.
- Forecasted to more than triple from \$343 billion in 2019 to **\$1.16 trillion GDP** annually by 2050.

Goods movement across the Texas-Mexico border touches all U.S. and Mexico states.

Includes CMV, freight rail, aviation, maritime, and pipeline.

Source: IMPLAN 2018, BTS Border Crossing/Entry Data, INRIX GPS Analysis, INEGI Population Forecasts, TDC Population Forecasts, University of New Mexico Population Forecasts.

GDP IMPACTS OF CROSS-BORDER GOODS MOVEMENT:



Texas-Mexico Border: Past, Present and Future – Trade

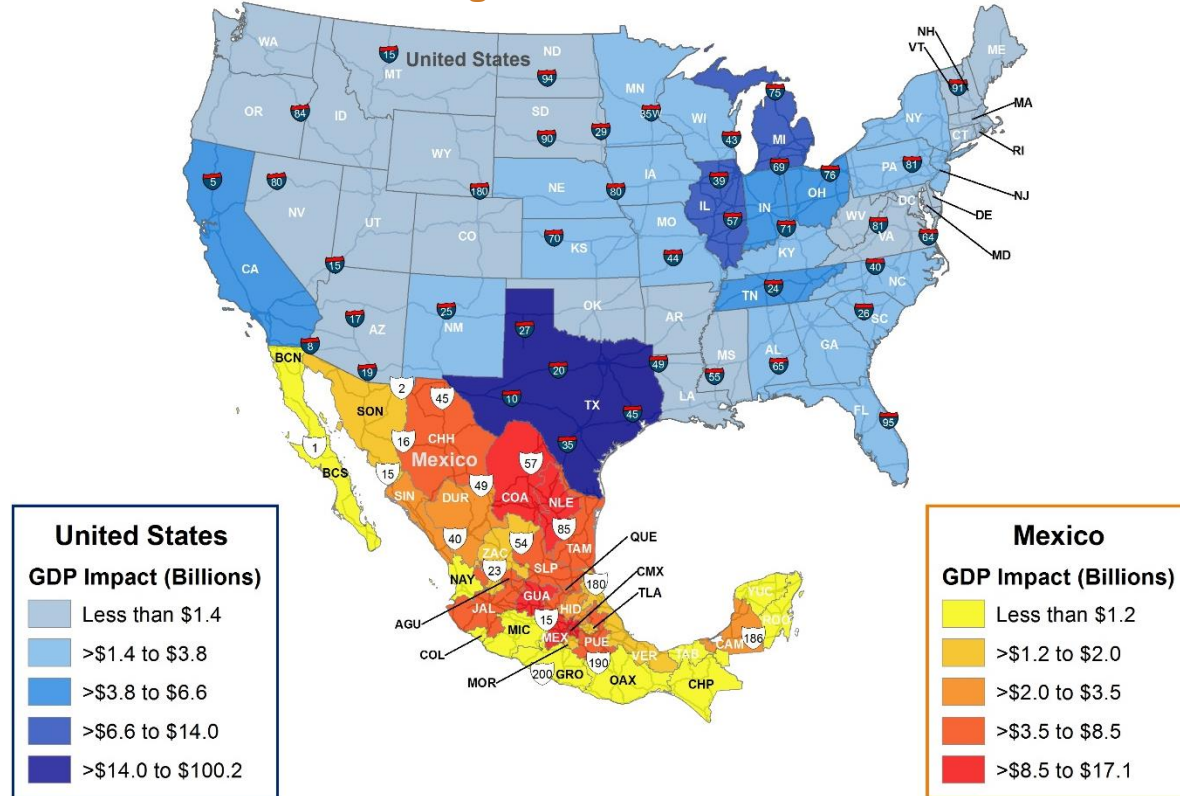


Trade across the Texas -Mexico border adds value to the GDP of states well beyond the border

- U.S states with the highest GDP impact are:
 - Texas: \$100.2 B or 5.3% of GDP
 - Michigan: \$13.5 B or 2.5% of GDP
 - Illinois: \$9.5 B or 1.1% of GDP
 - California: \$6.6 B or 0.2% of GDP
 - Ohio: \$6.2 B or 0.9% of GDP
- Mexico states with the highest GDP impact are:
 - Nuevo León: \$17.0 B or 14.7% of GDP
 - México: \$14.6 B or 10.9% of GDP
 - Coahuila: \$13.7 B or 24.9% of GDP
 - Ciudad de México: \$11.9 B or 5.0% of GDP
 - Guanajuato: \$9.6 B or 15.0% of GDP

Source: IMPLAN, U.S. Census, BTS Transborder Freight Data, U.S Bureau of Economic Analysis and INEGI

Contribution of Trade Through Texas-Mexico Border to State GDP in 2019





Border Transportation Master Plan

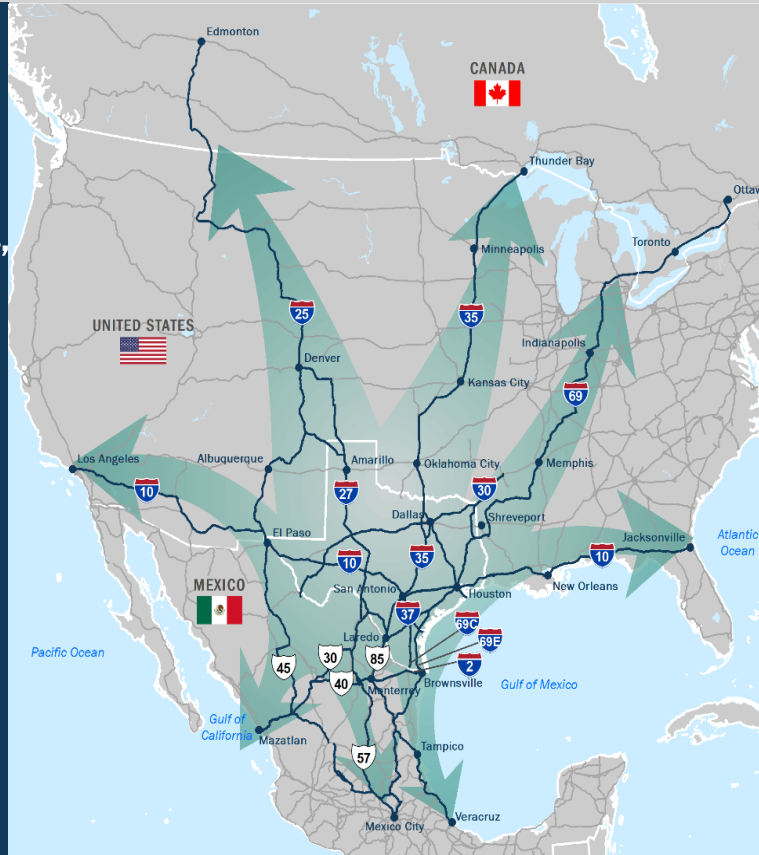


Overview of the Texas-Mexico Border Transportation Master Plan



Comprehensive, multimodal, Texas-Mexico long-range plan:

- Identifies current and future transportation needs, challenges, and opportunities for moving people and goods across the Texas-Mexico border.
- Outlines policy, program and project recommendations to address the needs.
- Facilitates coordination and collaboration between Texas and Mexico on Texas-Mexico border transportation planning and programming.



GOALS

MOBILITY AND RELIABILITY

SUSTAINABLE FUNDING

CONNECTIVITY

CROSS-BORDER RESILIENCY

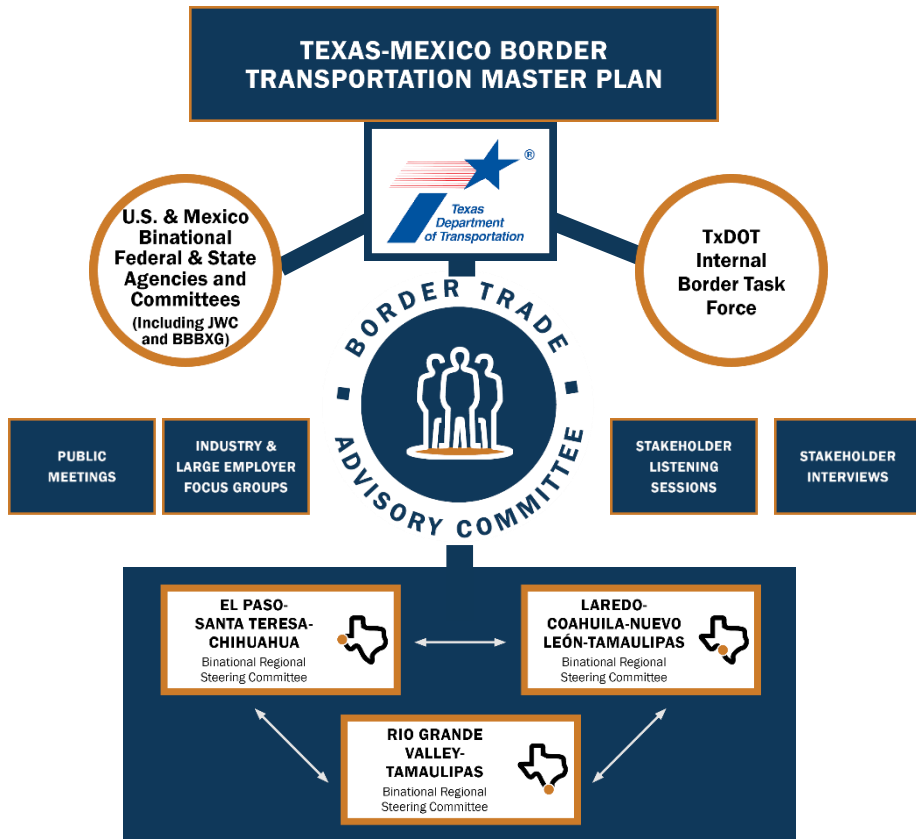
SAFETY AND SECURITY

ASSET PRESERVATION

ECONOMIC COMPETITIVENESS

STEWARDSHIP AND
SUSTAINABILITY

CUSTOMER SERVICE



- 13 Border Trade Advisory Committee (BTAC) meetings
- 33 Binational Regional Steering Committee (BNRSC) meetings held in 3 regions
- 3 Binational coordination and BBBXG*/JWC* meetings
- 5 meetings with Mexican Border States
- Monthly meetings with U.S./Mexican Federal and State agencies
- 9 General public meetings
- 10 Stakeholder workshops
- 284 Stakeholder interviews
- Meetings with Mexican Ambassador in Washington, DC, trips to Mexico City to meet with Federal Agencies and industry speaking engagements

* U.S./Mexico Binational Bridges and Border Crossings Group (BBBXG)

* U.S./Mexico Joint Working Committee on Transportation Planning (JWC)

Key Texas-Mexico Border Transportation Issues and Needs



CROSS-CUTTING ISSUES AND NEEDS



Texas-Mexico Coordination, Collaboration, and Cooperation



Integration of New Technologies



Data Collection, Sharing Harmonization, and Analysis



System Disruption/Resiliency



Funding and Financing



Stakeholder Participation



Environment and Community Impacts



Border Delays



Corridor Congestion



Rail Congestion



Connectivity



Safety



Asset Preservation

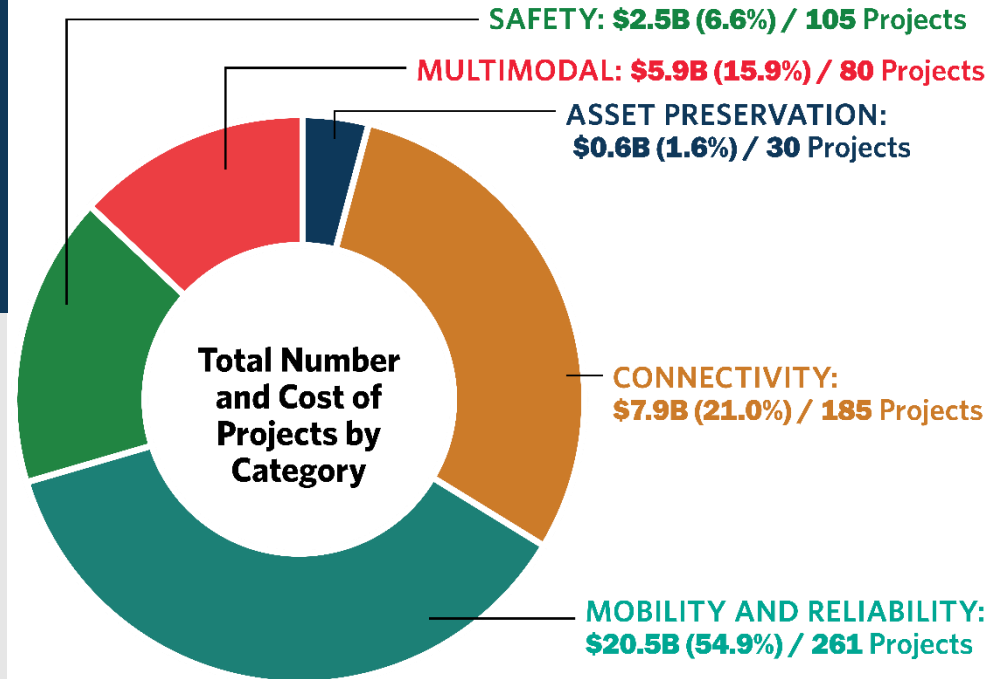
BTMP Summary of Project Recommendations



661 TOTAL TEXAS - MEXICO
BORDERWIDE PROJECTS



\$37.4B TOTAL PROJECT
COST

- 559 projects in Texas/US totaling \$32.7B.
- 102 projects in Mexico representing \$4.7B.
- 193 border crossing projects totaling \$6.0B.
- 468 corridor projects representing \$31.4B of estimated costs.





Total Projects by Implementation Timeframe and Country

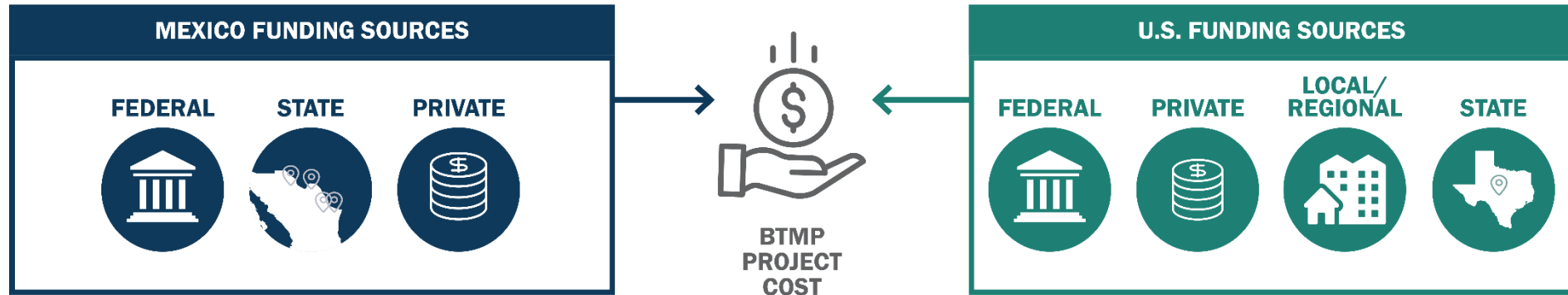
	TEXAS (U.S.) 			MEXICO 			TOTAL		
TIMEFRAME	PROJECTS	COST	UNFUNDED	PROJECTS	COST	UNFUNDED	PROJECTS	COST	UNFUNDED
Short	181	\$7.48B	\$3.39B	29	\$2.66B	\$2.60B	210	\$10.14B	\$5.99B
Medium	180	\$7.95B	\$5.28B	16	\$0.38B	\$0.35B	196	\$8.34B	\$5.63B
Long	198	\$17.22B	\$16.48B	57	\$1.68B	\$1.68B	255	\$18.90B	\$18.16B
TOTAL	559	\$32.65B	\$25.14B	102	\$4.72B	\$4.63B	661	\$37.37B	\$29.77B

- Projects cover border crossings and corridors in Texas and Mexico.
- 185 are fully funded at an estimated cost of \$5.5B.
- 27 projects are partially funded at an estimated cost of \$2.1B.
- 449 projects remain unfunded at an estimated cost of \$29.8B.

Potential BTMP Funding Sources



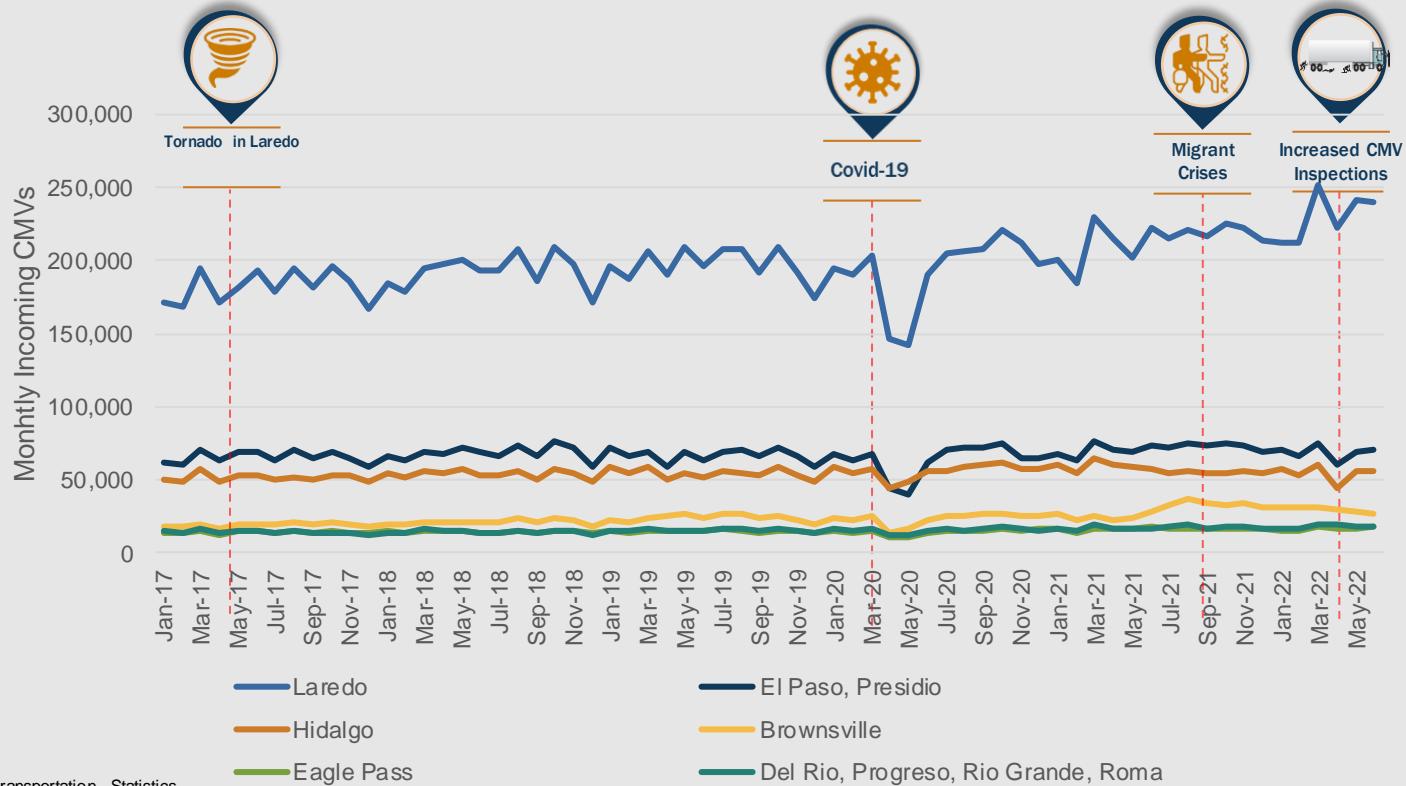
- There are no dedicated funding sources for the BTMP project recommendations.
- The BTMP recommended projects are funded by a variety of sources and funding mechanisms.





Post Pandemic Impacts

Disruptions to Northbound Commercial Motor Vehicle Crossings (CMV)

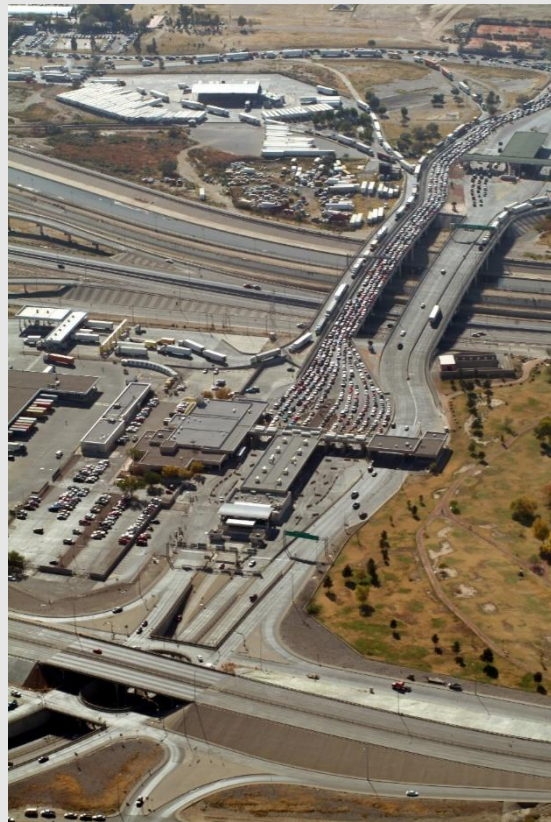


Source: Bureau of Transportation Statistics.

Disruptions Directly Impact Trade



- Traffic diverts to other crossings
- Delays/Congestion at the binational border communities
 - Associated emissions/environmental impacts
- Increase costs (carriers/shippers)
 - Operating
 - Time
 - Inventory
- Impacts border cities (loss in toll revenue)
- Impacts binational border economies
- Higher prices for consumers



Border Crossing Process

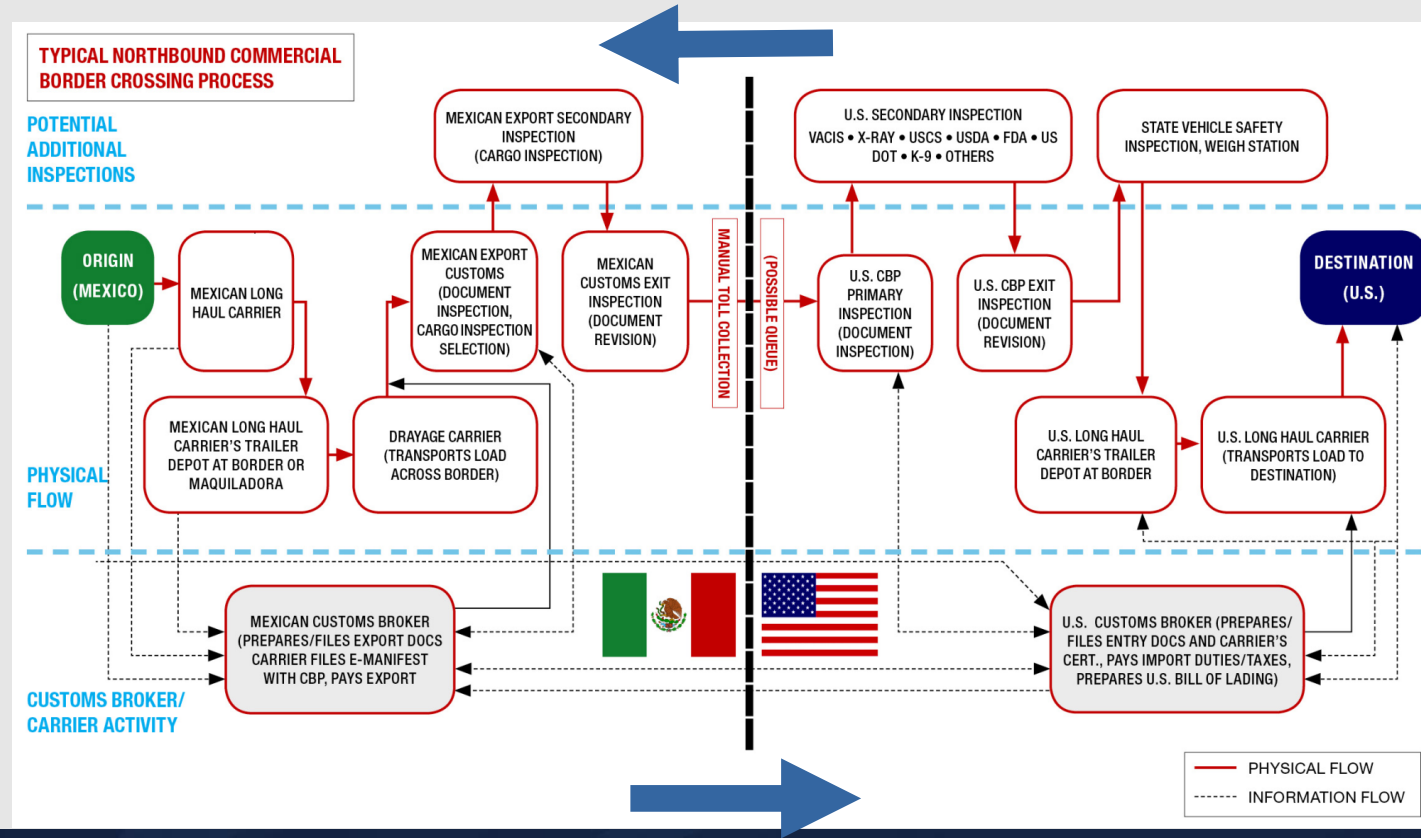


- Multiple stakeholders
- Two countries
- Federal, State and Local levels
- Private sector
- Multiple inspections

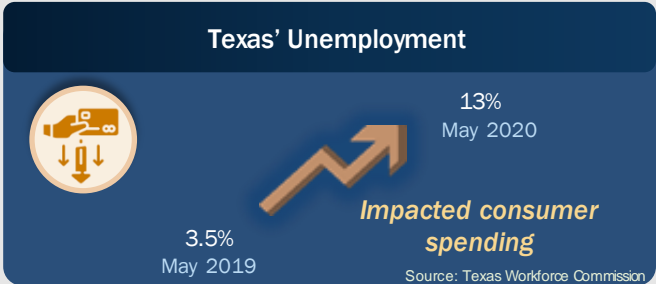


Creates Border Congestion and Delays

Source: BTS Transborder Freight



What were the Impacts of Covid-19 (2020 vs 2019)?



32

Source: Texas-Mexico Border Transportation Master Plan

Optimizing Global Value Chains



- Manufacturers constantly seek to optimize their manufacturing processes
 - Firms may relocate manufacturing or assembly facilities
 - Firms may change suppliers or where they manufacture intermediate goods
- Companies may offshore manufacturing, while concurrently nearshoring and reshoring it



Mexico is attractive to foreign investment



- NAFTA and now USMCA helped transforming Mexico's manufacturing and transportation system.
- Mexico has a competitive workforce in key industries
- Existing industrial infrastructure and transportation systems supports cross-border trade.
- Transportation and logistics costs are very competitive
- Rising labor costs in China
- U.S. tariffs on Chinese goods
- Mitigating supply chain risks
- Concerns about a U.S. confrontation with China
- Corporate climate change policies



Global Supply Chains are Restructuring



The Perfect Storm

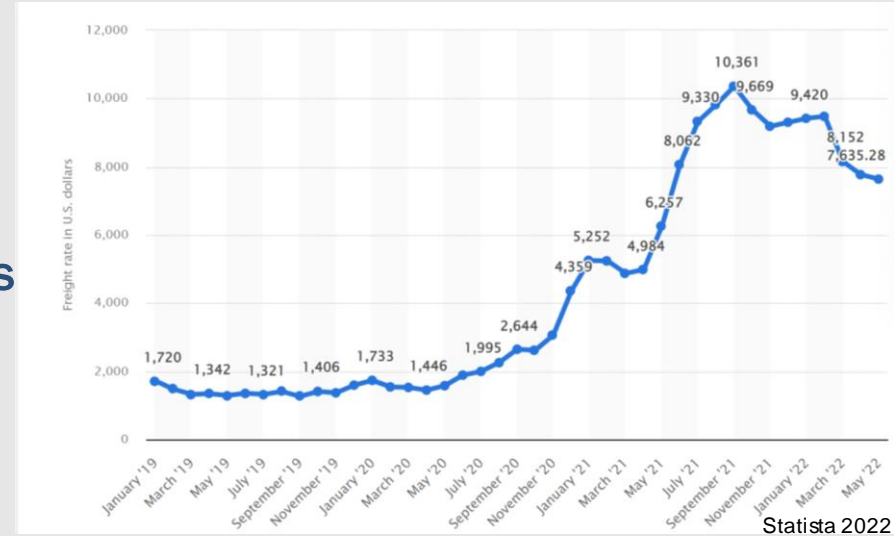
- Pandemic related supply chain disruptions
 - Transportation costs skyrocketed
 - Container and chassis shortage
 - Driver and warehouse operator's shortages

Ships waiting to enter Port of LA



The Washington Post, September 17, 2021

Global Container Freight Rate Index



Gartner Survey Reveals 33% of Supply Chain Leaders Moved Business Out of China or Plan to by 2023

Tariff Costs and Resilience Concerns are Primary Reasons to Look for Alternative Locations (2020)



Asia to Detroit

Costs	
China to West Coast	\$7k -- \$10k
West Coast Port to Detroit	\$ 3.5K -- \$6K
Total	\$10.5K -- \$16K

Travel Time	
China to West Coast	36 days
West Coast Port to Detroit	5 days
Total	41 days

Travel time reliability Low

Monterrey to Detroit

Total cost including border transfer

\$3.5K

Travel time including border transfer

7 days

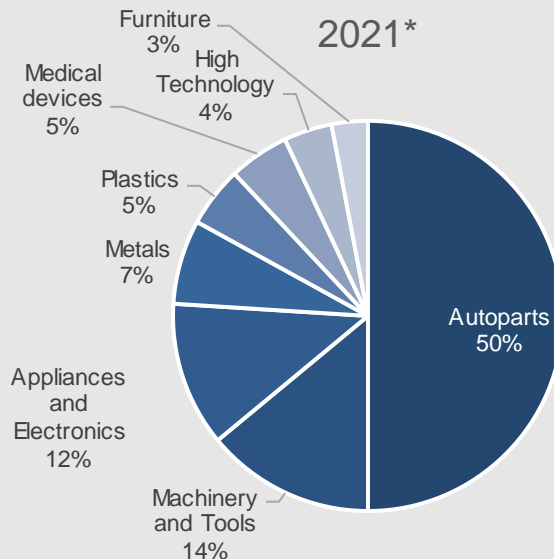
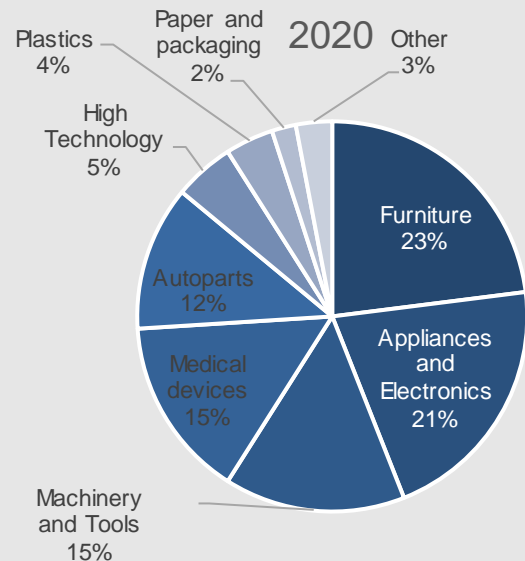
High Reliability



Existing and New Industries in Mexico are Growing



Participation by sector in nearshoring transactions 2020 vs 2021*



Traditional industries (already in Mexico):

- Auto parts
- Appliances and Electronics, and Machinery and Tools.

New industries:

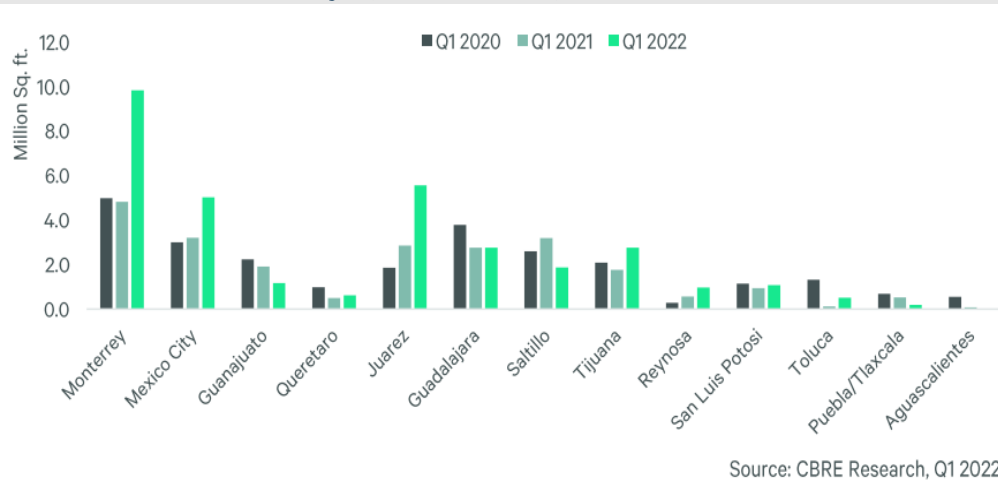
- Furniture
- Medical Devices
- Textile

Source: CBRE Research, 2021



Industrial Space is Growing in Mexico

Construction Activity Q1 2020 – Q1 2022



- It is expected for the remainder of the year, industrial demand will continue to see positive numbers

Main drivers of demand for space:

- Trends such as nearshoring in the northeast of the border
- Arrival of Asian investments

**Build to suit*

- 33.4 million Sq. ft. of industrial building space in 13 major markets.
- 39% growth in space demand vs Q1 2021
 - Monterrey
 - Cd. Juárez

Main industrial transactions, Q1 2022

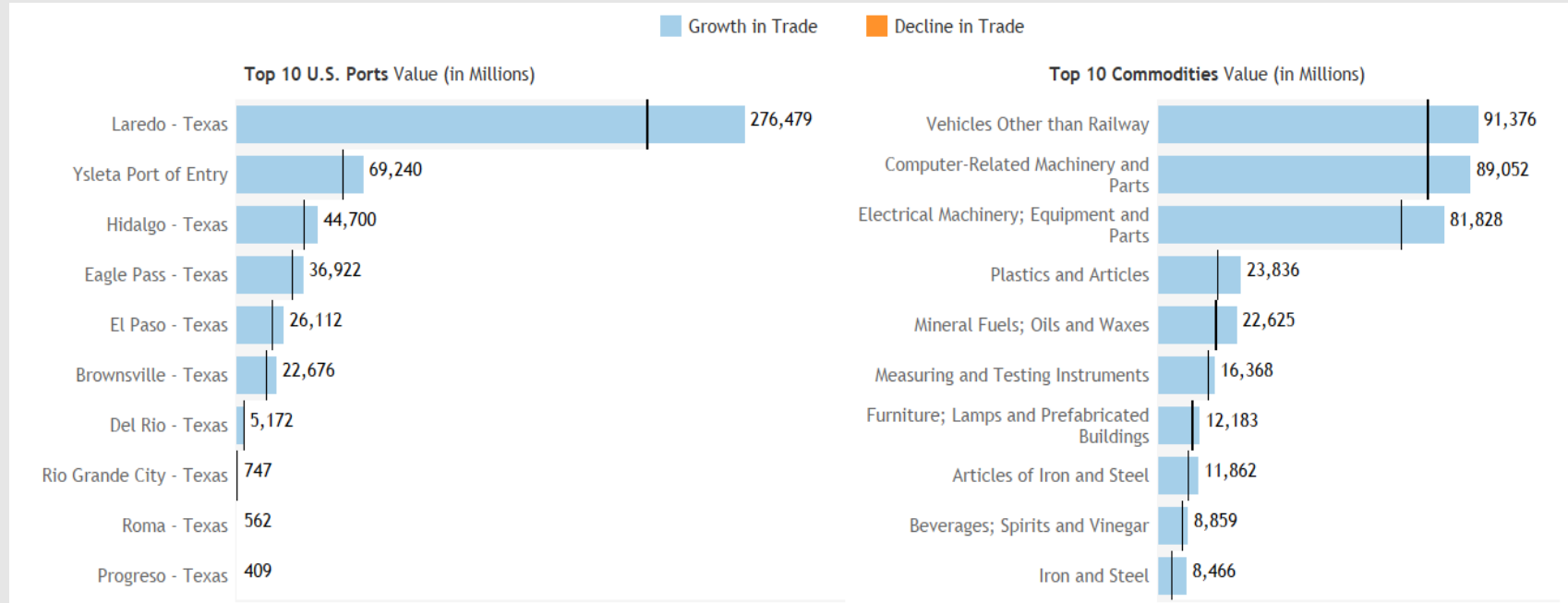
#	Market	Sq. ft	Industry	Quarter
1	Reynosa	721,005	Logistics	1Q
2	Monterrey	658,003	Manufacturing	1Q
3	Monterrey	502,313	Automotive	1Q
4	Monterrey	462,852	Manufacturing	1Q
5	Monterrey	354,469	Automotive	1Q
6	Guadalajara	312,996	Manufacturing	1Q
7	Monterrey	304,223	Manufacturing	1Q
8	Monterrey	287,700	Logistics	1Q
9	Mexico City	282,232	Manufacturing	1Q
10	Monterrey	270,758	High-Tech	1Q

Fuente: CBRE Research, Q1 2022

Recent Trade Activity at the Texas - Mexico Border



April 2021 - April 2022 Trade Statistics – Texas Ports of Entry



Note: Total trade volumes.

Source: U.S. Bureau of Transportation Statistics, 2022.

How Does Nearshoring and Reshoring Relate to Transportation?



- Cross-border trade will be impacted north and southbound.
- Expansion of Mexico's industrial sector and suppliers will place more demand on its domestic transportation sector.
-
- Impacts may be especially severe at the local level and at freight bottlenecks.





Texas Border Infrastructure and Corridors



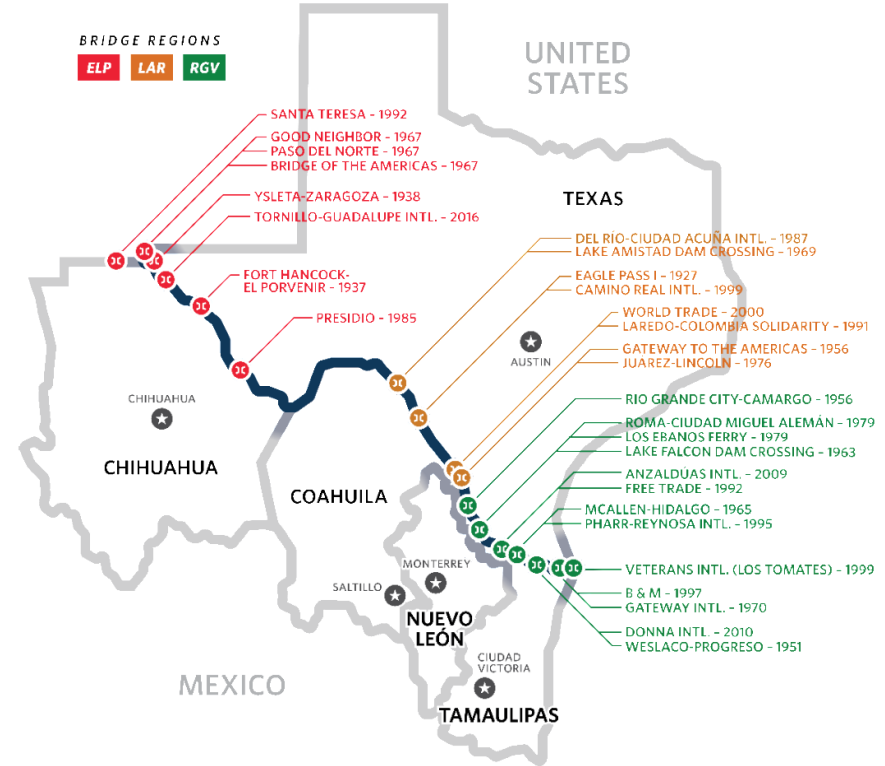
Border Crossing Infrastructure Investments have not kept Pace

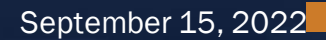


- The passage of NAFTA more than tripled cross-border trade up to present day, but only 10 bridge crossings along the Texas-Mexico border were built or improved upon since 1994.
- September 11th fundamentally altered border security and operating procedures, but only three crossings were designed and built with those enhanced screening procedures in mind.
- Only one-third of border facilities constructed since 1980 have seen additional investment.
- The U.S.-Mexico-Canada Agreement (USMCA) and continued population growth places additional pressure on the border.

Source: Texas-Mexico Border Master Plan, Chapter 3

Texas-Mexico International Crossings -- Last Year of Investments





US – Mexico Corridors



Impact of Texas-Mexico Border Delays and Congestion



- In 2019, border delays resulted in \$68.3M in economic productivity losses, reducing GDP by \$2.3B in both countries.
- If no improvements are made, border delays may result in an economic productivity loss of \$4.4B in 2050, reducing GDP by \$116B in both countries.

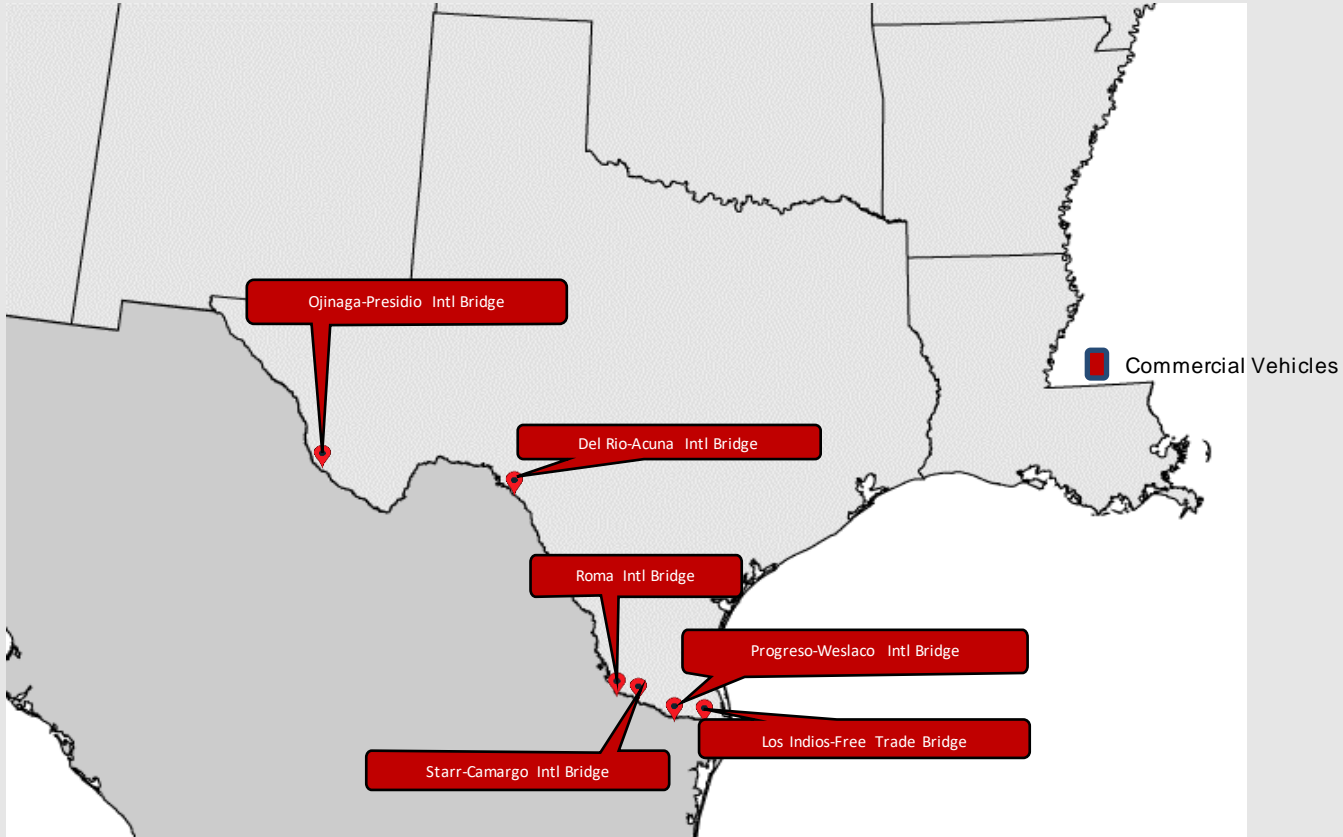


45

Existing Texas Border Crossings with Border Wait Time Measurement Systems (BWTMS)



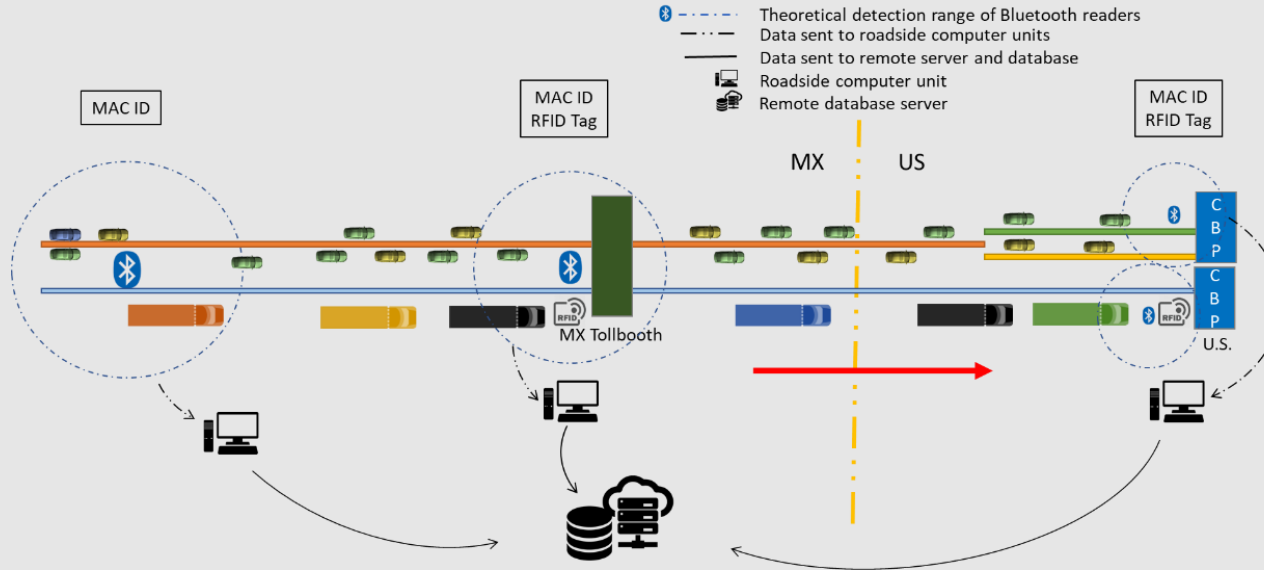
Commercial Vehicle BWTMS Expansion Plan





Hybrid Border Wait Time Measuring System

- By combining technologies, some reading stations can be used to measure both POV and CMV travel times.
- Bluetooth/Wi-Fi reading stations have less power requirements than RFID and are capable of capturing traffic in multiple lanes in both directions.

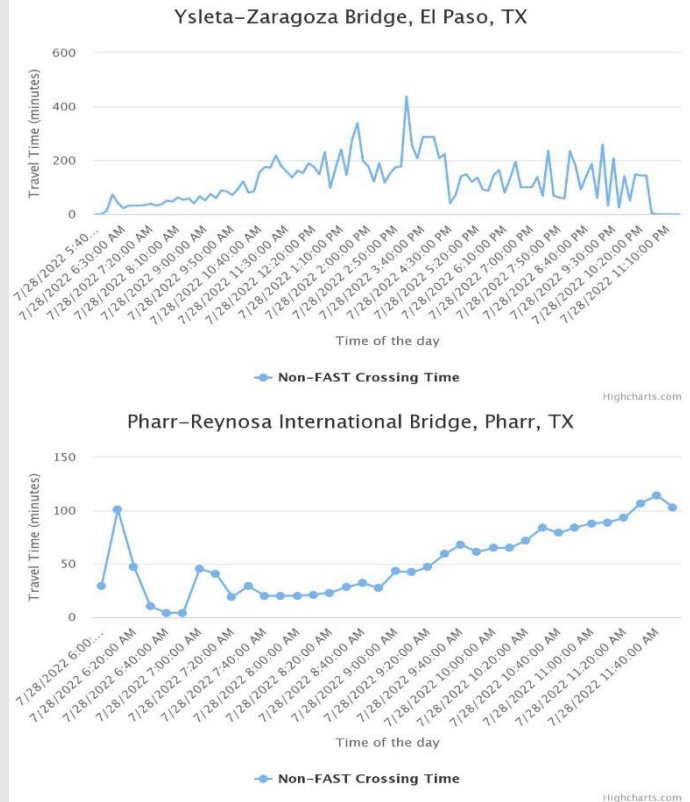


Border Crossings Times Characteristics



- Crossing times vary widely by port and time of day.
- Border crossing times are a function of multiple factors: demand, number of booths in operation and staffing at CBP Primary Inspection and DPS vehicle inspection.
- Demand is not constant with several peak periods during the day.
- The Border Wait Time Measurement System use fixed reading stations in the truck path.
- Long queues may go beyond the reading station, underestimating total crossing times

Sample Crossing Time Patterns





One-hour ADDITIONAL delay

- **\$550,000** in operational cost to the trucking industry
- **\$1.3 million** economic impact in the state of Texas -- direct, indirect, and induced impacts resulting from the trucking industry additional cost
- **\$142,000** in local, state, and federal taxes
- Missed shipments: Queues at the border could reach miles and shipments can't cross the border during the border crossing hours of operation.
- Ripple effects throughout national supply chains:
 - Autoparts not reaching assembly plants, leading to manufacturing stoppages
 - Fresh Produce going bad
- Inventory Cost increase--**\$1 billion** /day in northbound truck trade
- Environmental impacts. Vehicle idling emissions impacting millions of border residents



Source: Estimation by TTI based on ATRI Operational Cost of Trucking, and IMPLAN as a cost/saving to the trucking industry.



GRACIAS

THANK YOU!!

MIB. Claudia J. Lagos Galindo

📞 (737) 262-7459

✉️ claudia.lagos@txdot.gov

