International Trade Corridor Plan

2018

Table of Contents

FIGURES 4

TABLES 5

1. INTRODUCTION 6

2. TRADE HELPS DRIVE THE TEXAS ECONOMY 7

2.1 U.S. AND TEXAS TRADE 7
2.2 TEXAS' TRADING PARTNERS 11
2.3 WHAT COMMODITIES DOES TEXAS TRADE? 13
2.3.1 Texas Exports to Its Top Trading Partners 13
2.3.2 Texas Imports from Its Major Trading Partners 15
2.4 TRADE BENEFITS 17
2.4.1 Development of Industry Clusters 17
2.4.2 Local Economies 17
2.4.3 Regional Economies 18
2.4.4 Statewide 18
2.4.5 National Economy 19

3. ROLE OF TEXAS' TRANSPORTATION SYSTEM IN FACILITATING TEXAS' TRADE 20

3.1 TEXAS' HIGHWAY AND RAIL CORRIDORS 20
3.1.1 Texas' Highway Freight Network 20
3.1.2 Texas' Rail Freight Network 21
3.2 TEXAS' PIPELINES 23
3.3 TRANSPORTATION GATEWAYS 24
3.3.1 Land Border Crossings 24
3.3.2 Texas' Maritime Ports 30
3.3.3 Inland Ports 32
3.3.4 AllianceTexas 33
3.3.5 Port San Antonio 34

4. ENHANCING TEXAS' TRADE TRANSPORTATION SYSTEM 35

4.1 HIGHWAY TRADE CORRIDORS 35
4.1.1 I-10 Corridor 35
4.1.2 I-20 Corridor 38
4.1.3 I-30 Corridor 40
4.1.4 I-35 Corridor 42
4.1.5 I-37 Corridor 45
4.1.6 I-45 Corridor 46
4.1.7 I-69 Corridor 49
4.1.8 La Entrada al Pacifico 51
4.1.9 Ports-to-Plains Corridor 53
4.1.10 East-West Corridor 55
4.1.11 US 87 Corridor 57
4.1.12 US 69 Corridor 59
4.1.13 US 281 Corridor 61
4.2 TEXAS RAIL TRADE CORRIDORS 63
4.3 BORDER CROSSINGS 64
4.3.1 Free Trade Bridge 64
4.3.2 Veterans International Bridge 64
4.3.3 Colombia Solidarity Bridge 64
4.3.4 World Trade Bridge 65
4.3.5 Camino Real International Bridge 65
4.3.6 International Bridge I 65

4.3.7 Donna-Rio Bravo International Bridge *65*
4.3.8 Anzalduas International Bridge *66*
4.3.9 The Pharr-Reynosa International Bridge *66*
4.3.10 Presidio International Rail Bridge *66*
4.4 TEXAS-MEXICO PIPELINES 66
4.5 TEXAS DEEPWATER GULF PORT: PORT OF BROWNSVILLE 68
6. SUMMARY 70
REFERENCES 71

Figures

Figure 1. U.S. and Texas Trade 7
Figure 2. U.S. Exports and Imports 8
Figure 3. Texas, California, and New York Export Values 9
Figure 4. Texas, California, and New York Import Values 10
Figure 5. U.S. and Texas Trade With Mexico 11
Figure 6. Texas' Trading Partners by Percentage of Total Value 12
Figure 7. Texas' Largest Trading Partners 12
Figure 8. Texas' Five Most Traded Commodities 13
Figure 9. Texas' Highway Freight Network 21
Figure 10. Texas' Rail Freight Corridors 22
Figure 11. Texas' Pipeline Network (2017) 23
Figure 12. Texas' Ports of Entry 24
Figure 13. Texas' Commercial Vehicle Border Crossings 25
Figure 14. Texas Land Border Crossing Value by Truck and Rail (2008–2017) 26
Figure 15. Northbound Truck Crossings by State 27
Figure 16. Texas' Top 5 Commodities Moved by Truck (2017) 27
Figure 17. Number of Northbound Commercial Vehicle Crossings from Mexico to Texas (2017) 28
Figure 18. Northbound Train Crossings of U.S. - Mexico Border by State 29
Figure 19. Texas Top 5 Commodities Moved by Rail (2017) 29
Figure 20. Number of Trains Crossing the Texas – Mexico Border (2005–2017) 30
Figure 21. Texas Seaports 31
Figure 22. Weights at Texas Maritime Ports 32
Figure 23. Texas Inland Ports 33
Figure 24. AllianceTexas Trade (2008–2017) 33
Figure 25. Port San Antonio Trade (2008–2017) 34
Figure 26. I-10 Corridor in Texas 36
Figure 27. I-20 Corridor in Texas 38
Figure 28. I-30 Corridor in Texas 40
Figure 29. I-35 Corridor in Texas 43
Figure 30. I-37 Corridor in Texas 45
Figure 31. I-45 Corridor in Texas 47
Figure 32. I-69 Corridor in Texas 49
Figure 33. La Entrada al Pacifico Corridor in Texas 51
Figure 34. Ports-to-Plains Corridor in Texas 54
Figure 35. East-West Corridor in Texas 56
Figure 36. US 87 Corridor in Texas 58
Figure 37. US 69 Corridor in Texas 60
Figure 38. US 281 Corridor in Texas 62
Figure 39. New Howard Energy Partners (HEP) Pipelines Linking Permian 67

Tables

Table 1. 2017 Exports to Mexico by Metropolitan Statistical Area 18
Table 2. Let Projects on I-10 by Type (2017 and 2018) 36
Table 3. Planned I-10 Projects by Type (2019 UTP) 37
Table 4. Future I-10 Corridor Needs 38
Table 5. Let Projects on I-20 by Type (2017 and 2018) 39
Table 6. Planned I-20 Projects by Type (2019 UTP) 39
Table 7. Future I-20 Corridor Needs 40
Table 8. Let Projects on I-30 by Type (2017 and 2018) 41
Table 9. Planned I-30 Projects by Type (2019 UTP) 41
Table 10. Future I-30 Corridor Needs 42
Table 11. Let Projects on I-35 by Type (2017 and 2018) 43
Table 12. Planned I-35 Projects by Type (2019 UTP) 44
Table 13. Future I-35 Corridor Needs 44
Table 14. Let Projects on I-37 by Type (2017 and 2018) 45
Table 15. Planned I-37 Projects by Type (2019 UTP) 46
Table 16. Let Projects on I-45 by Type (2017 and 2018) 47
Table 17. Planned I-45 Projects by Type (2019 UTP) 48
Table 18. Future I-45 Corridor Needs 48
Table 19. Let Projects on I-69 by Type (2017 and 2018) 50
Table 20. Planned I-69 Projects by Type (2019 UTP) 50
Table 21. Future I-69 Corridor Needs 51
Table 22. Let Projects on La Entrada al Pacifico by Type (2017 and 2018) 52
Table 23. Planned La Entrada al Pacifico Projects by Type (2019 UTP) 52
Table 24. Future La Entrada al Pacifico Corridor Needs 53
Table 25. Let Projects on the Ports-to-Plains Corridor by Type (2017 and 2018) 54
Table 26. Planned Ports-to-Plains Projects by Type (2019 UTP) 55
Table 27. Let Projects on the East-West Corridor by Type (2017 and 2018) 56
Table 28. Planned East-West Corridor Projects by Type (2019 UTP) 57
Table 29. Let Projects on US 87 by Type (2017 and 2018) 58
Table 30. Planned US 87 Projects by Type (2019 UTP) 59
Table 31. Let Projects on US 69 by Type (2017 and 2018) 60
Table 32. Planned US 69 Projects by Type (2019 UTP) 61
Table 33. Let Projects on US 281 by Type (2017 and 2018) 62
Table 34. Planned US 281 Projects by Type (2019 UTP) 63

1. Introduction

The International Trade Corridor Plan report is a biannual report required by the Texas Transportation Code sections §201.114 and §201.6011. Section §201.6011 states (*1*):

> "(a) To the extent possible, the department shall coordinate with appropriate entities to develop an integrated international trade corridor plan. The plan must:
>
> (1) include strategies and projects to aid the exchange of international trade using the system of multiple transportation modes in this state;
>
> (2) assign priorities based on the amount of international trade, measured by weight and value, using the transportation systems of this state (...).
>
> (3) address implementation of the recommendations of the Border Trade Advisory Committee under Section 201.114."

In compliance with the requirements set out in the Texas Transportation Code, this document includes information on:

- Texas' global trade, including information on the state's major commodities traded and major trading partners.
- Texas' trade with its top five trading partners,
- Texas' infrastructure facilitating trade, including an overview of Texas' major trade corridors and Texas' gateways (e.g., commercial vehicle and rail border crossings, marine ports, and inland ports).
- Planned investments in major highway trade corridors that facilitate trade.
- Non-highway investments that facilitate trade.

The International Trade Corridor Plan is relevant to Texas as trade is important to both the United States (U.S.) and Texas economies. In 2017, the U.S. traded $3.9 trillion in merchandise—$2.3 trillion were imports and $1.6 trillion were exports. This trade value represents a 7 percent increase from the total trade value in 2016, and a 15 percent increase from 2008. In 2017, Texas' trade represented 13.5 percent of all U.S. trade at $527 billion. Texas had the second largest merchandise trade value behind California. However, Texas leads the country in export value, having exported $264 billion in 2017 (*2*).

Texas' transportation infrastructure is essential to facilitating trade. It is necessary to understand what is traded and which modes are used to transport trade to allow the Texas Department of Transportation (TxDOT) to better plan for current and future investments in Texas' transportation system that facilitates trade.

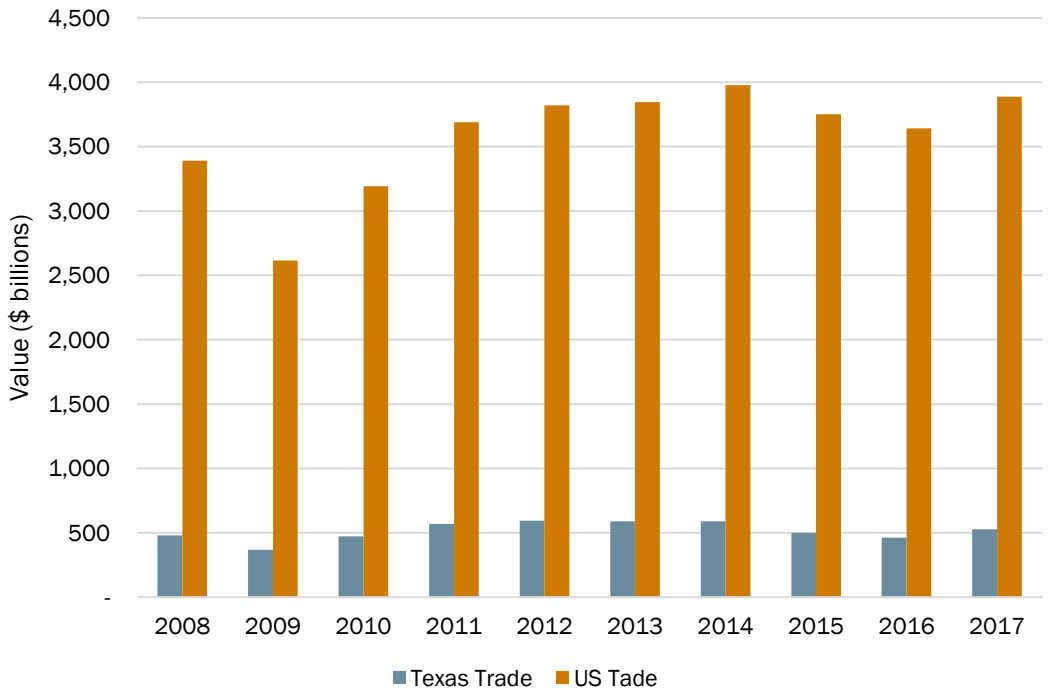
2. Trade Helps Drive the Texas Economy

This section includes information on:

- U.S. and Texas trade.
- Texas' trade with its top five trading partners.
- Major commodities that Texas trades.
- The benefits of trade.

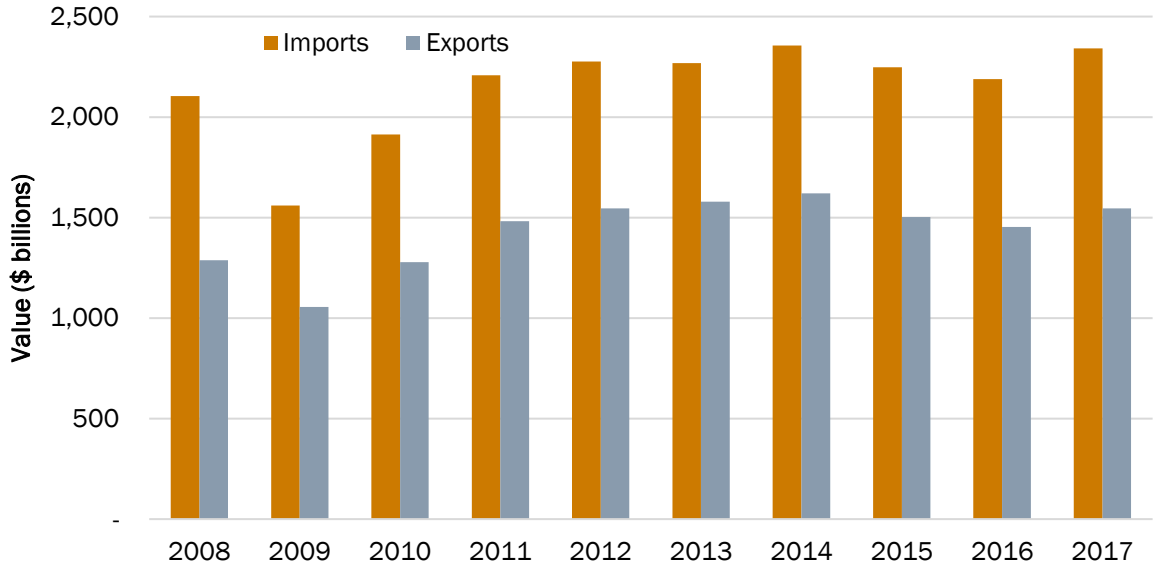
2.1 U.S. and Texas Trade

In 2017, the U.S. traded $3.9 trillion in merchandise and Texas traded $527 billion (or 13.5 percent of all U.S. trade). Figure 1 shows a 7 percent increase in U.S. total trade value between 2016 and 2017, and a 15 percent increase between 2008 and 2017(*2*). Figure 2 shows that the U.S. imported $2.3 trillion and exported $1.6 trillion in 2017(*3*).



Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 1. U.S. and Texas Trade



Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

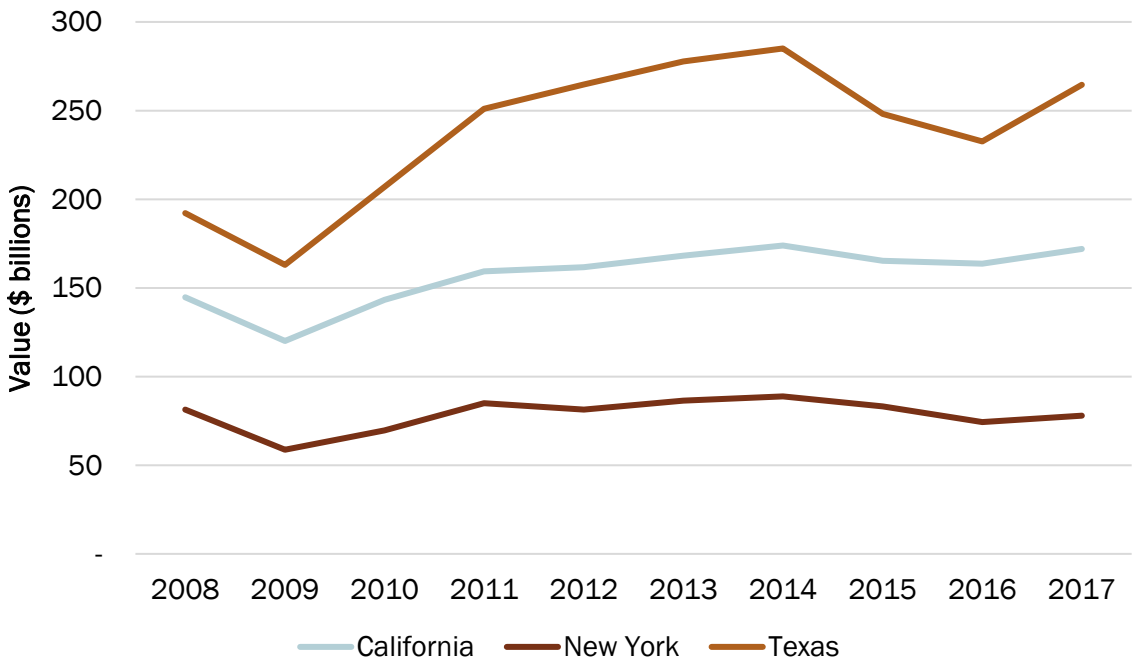
Figure 2. U.S. Exports and Imports [1]

California, New York, and Texas are the states with the highest value of exports in the U. S. Texas leads the country in export value, having exported $264 billion in 2017 (Figure 3) (*2*).

Figure 3 shows that Texas has been the U.S. state with the highest value of exports since 2008. While exports decreased between 2014 and 2016, California, New York, and Texas have seen increases in 2017. Both California and New York's export values increased by 5 percent from 2016 to 2017, to $172 and $78 billion, respectively. Texas saw a 14 percent increase in exports to $265 billion (*2*).

Texas has been the U.S. state with the highest value of exports since 2008. Between 2016 and 2017, Texas saw a 14 percent increase in exports to $265 billion.

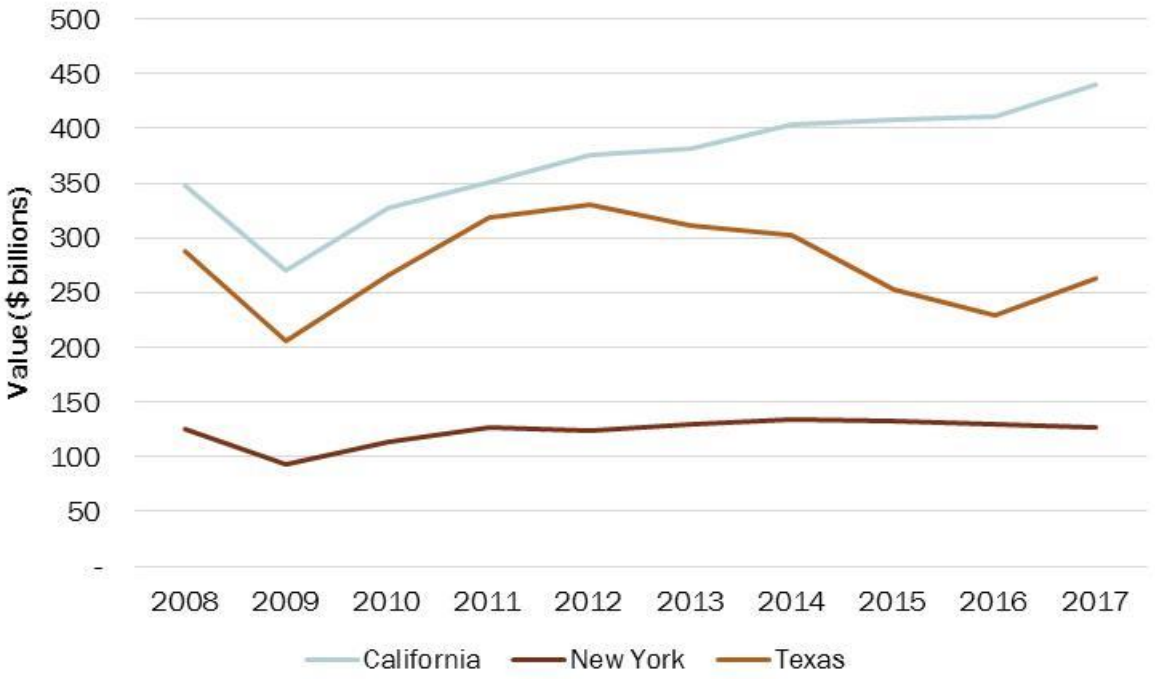
[1] In 2017, the U.S. saw increases in both export and import values from 2016. A closer inspection of the increase of U.S. international trade reveals that, while both exports and imports increased in 2017, imports increased at a faster rate. The increase in imports led to a 56 billion increase (7.5 percent) in the trade deficit from 2016. The largest portion of this deficit increase is due to a $53 billion increase in machinery/electrical imports, followed by a $41 billion increase in mineral product imports and $21 billion in metal imports (*2*).



Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 3. Texas, California, and New York Export Values

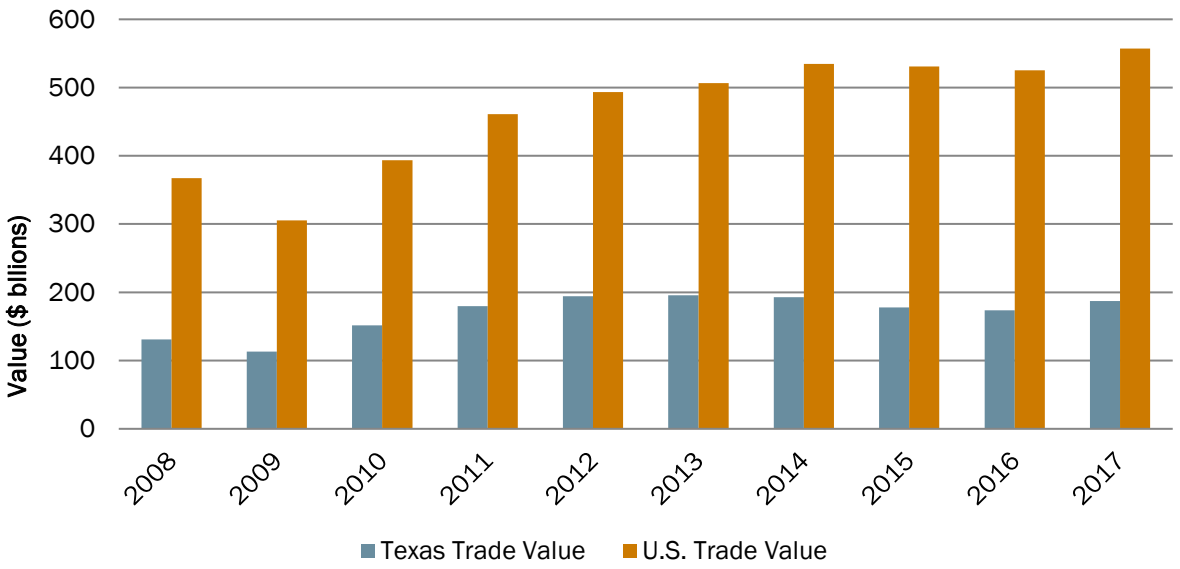
In terms of import value, California has seen a steady rise in its import value since 2009, reaching almost $441 billion in 2017 (Figure 4). Texas' imports declined steadily between 2012 and 2016 but increased 15 percent to $263 billion in 2017. New York's imports remained relatively constant between 2011 and 2016 but decreased three percent to almost $127 billion in 2017 (*2*).



Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 4. Texas, California, and New York Import Values

In 2017, the U.S. traded $557 billion with Mexico - a six percent increase from 2016. Texas represented a third of the value of trade with Mexico at $187 billion - an eight percent increase from 2016. Since 2008, U.S. trade with Mexico has increased 52 percent, while Texas trade with Mexico has increased 43 percent in the same time period (Figure 5) (*4*).



Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)

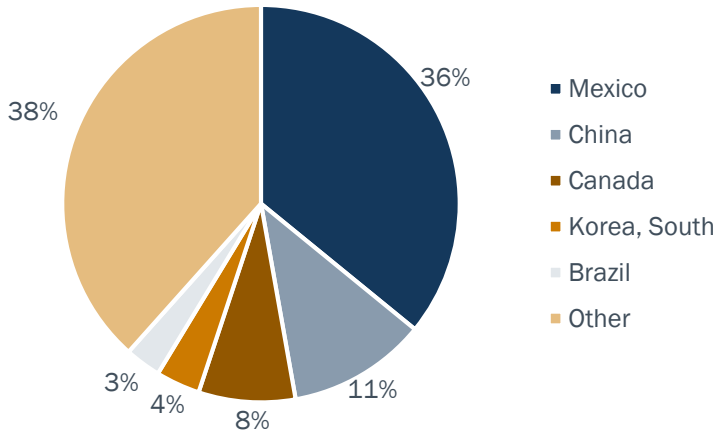
Figure 5. U.S. and Texas Trade With Mexico

Texas ports of entry processed $390 billion of U.S.-Mexico trade in 2017. Nearly 75 percent of this value (i.e., $281 billion) crossed the Texas-Mexico border by truck, while $72 billion (or 18 percent) of this value crossed by rail (*4*).

2.2 Texas' Trading Partners

Texas' five largest trading partners are Mexico, China, Canada, South Korea, and Brazil (Figure 6). In 2017, Texas traded $187 billion with Mexico.[2] Texas' second largest trading partner in 2017 was China at $59 billion, followed by Canada at $41 billion, South Korea at $19 billion, and Brazil at $15 billion (*2*).

[2] Mexico represented 35 percent of all Texas international trade at $187.5 billion.

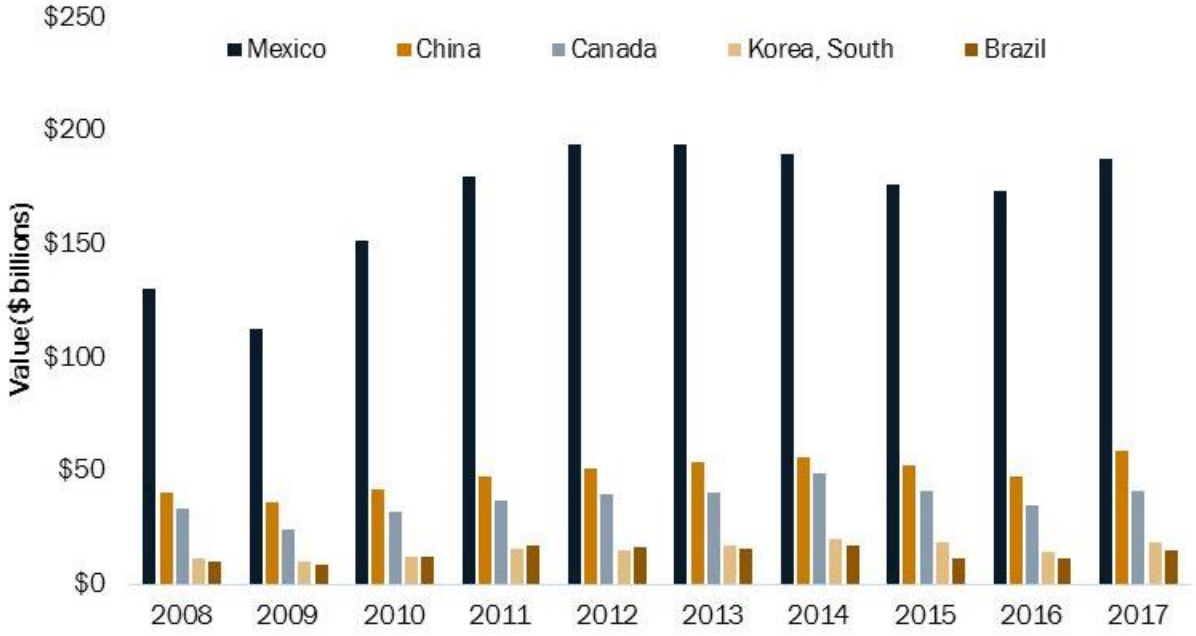


Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 6. Texas' Trading Partners by Percentage of Total Value

While trade values with these countries have fluctuated, especially between 2011 and 2016, trade increased in 2017 with all five countries (Figure 7). Specifically, Texas' trade with:

- Mexico increased 8 percent.
- Canada increased 17 percent.
- China increased 24 percent.
- South Korea increased 33 percent.
- Brazil increased 36 percent since 2016 (*2*).

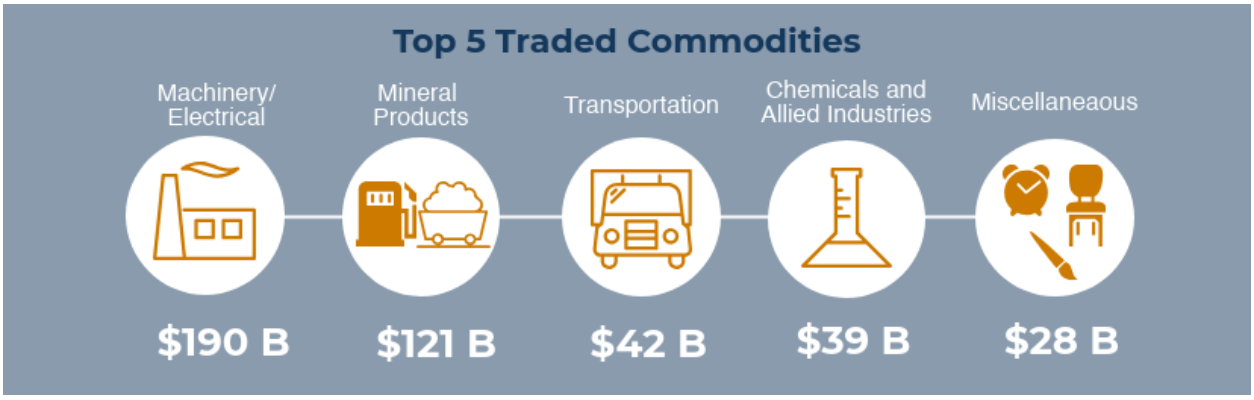


Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 7. Texas' Largest Trading Partners

2.3 What Commodities Does Texas Trade?

In 2017, Texas' most traded commodity by value was machinery/electrical products at $190 billion, followed by mineral products at $121 billion. Other highly traded commodities were transportation products ($42 billion), chemicals, and allied industry products, which consist mostly of petrochemicals ($39 billion), and miscellaneous products ($28 billion) (Figure 8) (*2*).

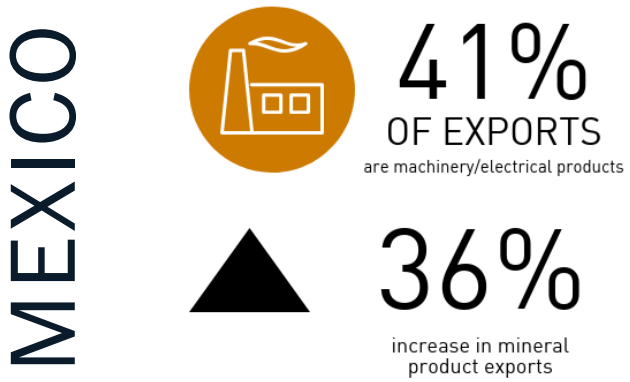


Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 8. Texas' Five Most Traded Commodities

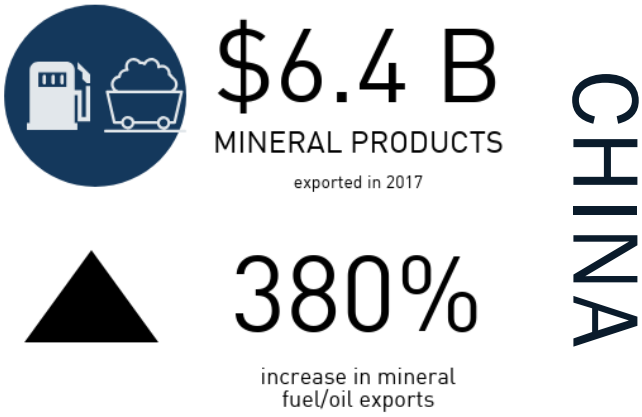
2.3.1 Texas Exports to Its Top Trading Partners

This section provides an overview of Texas' largest export commodities by value to Mexico, China, Canada, South Korea, and Brazil.



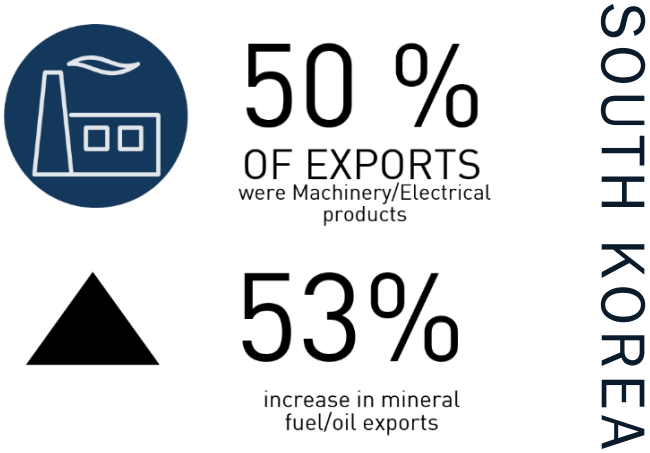
Texas exported $97.7 billion in merchandise to ***Mexico*** in 2017, a 6 percent increase from 2016. Machinery/electrical products have been the most exported commodity (in terms of value) since 2008 and far surpass other exports to Mexico. The second largest export category was mineral products at $18.9 billion. Other exports include plastics, transportation products, and metals (*2*).

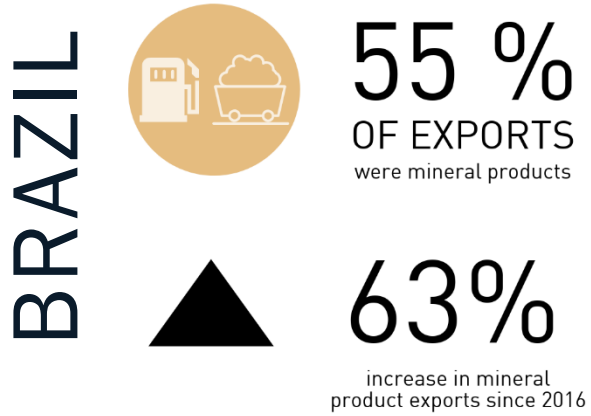
Texas exported $16.4 billion in merchandise to ***China*** in 2017, a 53 percent increase from 2016. Exports to China consisted primarily of mineral products, which increased sharply to $6.4 billion from 2016. The second largest export category was machinery/electrical products at $3.3 billion followed by chemicals and allied industry products at $2 billion. Other exports included plastics/rubber and metals (*2*).



Texas exported $22.9 billion in merchandise to ***Canada*** in 2017, a 15 percent increase from 2016. The largest Texas export to Canada was machinery/electrical products at $6.3 billion—a nearly $2 billion decrease since 2012. The second largest export product is minerals at $5.5 billion (an increase from $3.7 billion in 2016). Other exports included plastics/rubber and transportation products (*2*).

Texas exported $9.7 billion in merchandise to ***South Korea*** in 2017, a 41 percent increase from 2016. The largest export to South Korea was machinery/electrical products at $4.8 billion. The second largest export to South Korea was mineral products, which increased to $2 billion in 2017. Other exports included chemicals and allied industry products, transportation products, and plastic/rubber (*2*).

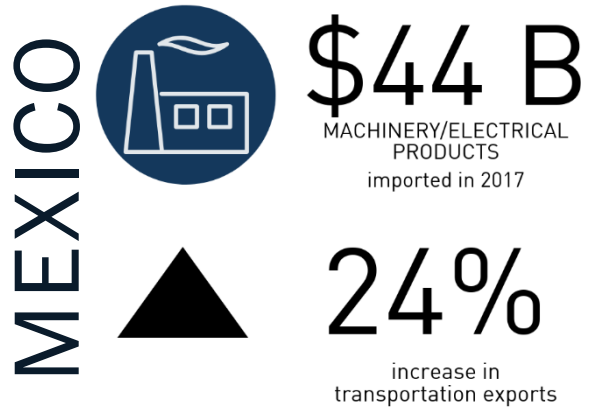




Texas exported $10 billion in merchandise to ***Brazil*** in 2017, a 43 percent increase from 2016. Texas' primary export to Brazil was mineral products at $5.5 billion in 2017, a 63 percent increase from 2016. Mineral fuel and oil exports, valued at $5.47 billion in 2017, made up a majority of mineral product exports. Other exports included chemicals and allied industry products ($1.2 billion), plastics ($1 billion), and machinery/electrical products ($0.9 billion) (2).

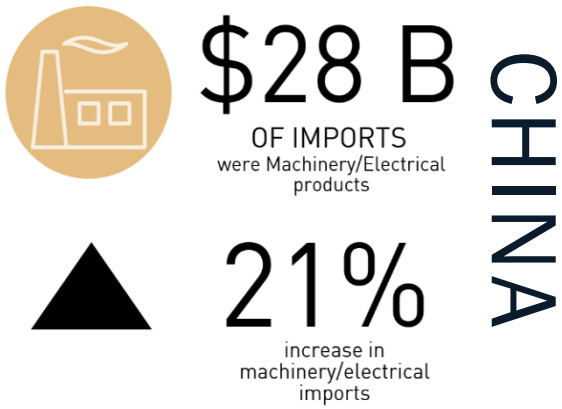
2.3.2 Texas Imports from Its Major Trading Partners

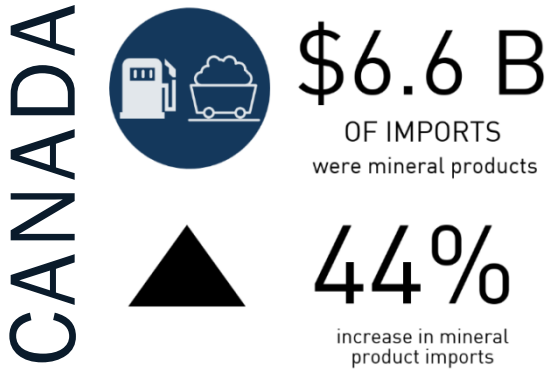
This section provides an overview of Texas' largest import commodities by value from Mexico, China, Canada, South Korea, and Brazil.



Texas imported $89.8 billion in merchandise from ***Mexico*** in 2017, an 11 percent increase from 2016. Texas' primary imports from Mexico were machinery/electrical products. These imports, which reached $44 billion in 2017, have been increasing steadily since 2010. Texas' second largest imports from Mexico were transportation equipment at $12.4 billion. Other imports included mineral products, miscellaneous products, and metals (*2*).

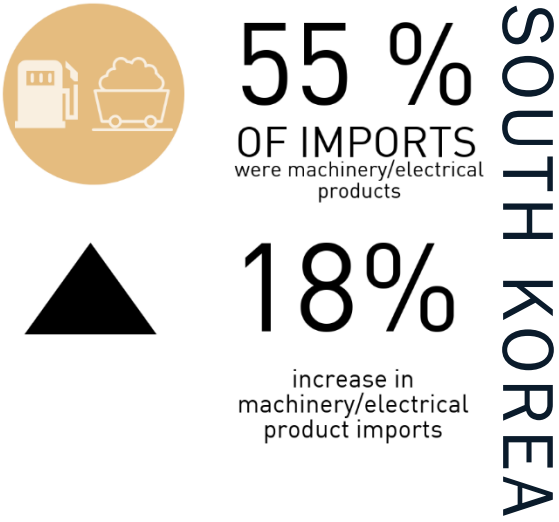
Texas imported $42.7 billion from ***China*** in 2017, a 17 percent increase from 2016. Texas' largest import category from China was machinery/electrical products at $28 billion - an approximately 21 percent increase form 2016. The second largest import category from China was miscellaneous products at $5 billion. Other imports included metals, textiles, and plastics/rubber (*2*).

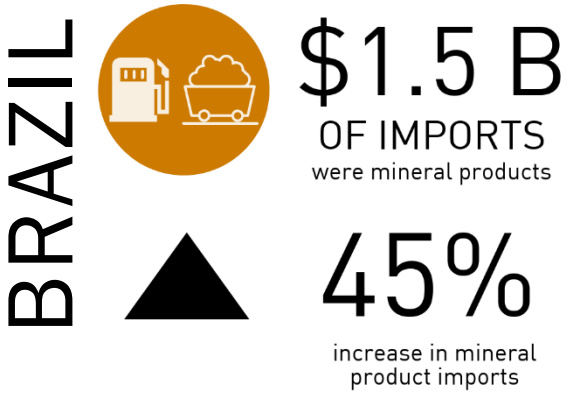




Texas imported $18.3 billion in merchandise from ***Canada*** in 2017, a 20 percent increase from 2016. Texas' largest import category was mineral products at $6.6 billion. Imports of mineral products have increased significantly since 2009 when the import value was just $1.3 billion. Texas' second largest import category was machinery/electrical products at $2.5 billion. Other imports included transportation equipment, services, and chemicals and allied industry products (*2*).

Texas imported $9.1 billion in merchandise from ***South Korea*** in 2017, a 25 percent increase from 2016. Texas' largest import from South Korea was machinery/electrical products, which reached $5 billion in 2017. Texas' second largest import from South Korea was metals at $1.7 billion. Other imports included transportation equipment, chemicals and allied industry products, and minerals (*2*).





Texas imported $5.2 billion in merchandise from ***Brazil*** in 2017, a 29 percent increase from 2016. Mineral products were Texas' largest import product from Brazil at $1.5 billion. While imports of mineral products increased 45 percent to $1.5 billion in 2017, this value has decreased significantly from the $4.7 billion import value in 2011. Other imports included chemicals and allied industry products, transportation equipment, and machinery/electrical products (*2*).

2.4 Trade Benefits

2.4.1 Development of Industry Clusters

Industry clusters are important contributors to local and regional economic performance. Industry clusters provide participating businesses "with access to specialized knowledge and/or resources, enhancing productivity, spurring innovation and attracting new business and investment in the area" (*5*). A primary factor in determining the existence and development of an industry cluster is share of employment. Location quotients can be used as a tool to measure the strength of a particular cluster, by calculating the share of an industry's employment in a particular region, compared to the national share. Calculating Texas' location quotients shows that the state has several strong industry clusters. Government, construction, financial sector, and trade, transportation, and utilities are the industries that set Texas apart from the nation the most.

2.4.2 Local Economies

Mexico represented a large share of trade by dollar value for five Texas metropolitan statistical areas (MSAs)[3] in 2017. Table 1 shows that in 2017, the El Paso MSA was Texas' largest exporter to Mexico with $21.5 billion in goods. The second largest exporter was the Houston-The Woodlands-Sugarland MSA with $16.9 billion in goods, followed by the Laredo MSA with $7.4 billion, Dallas-Fort Worth-Arlington MSA with $3.9 billion, and the Beaumont-Port Arthur MSA with $3.8 billion (*6*). The data, however, does not reflect the production origin of U.S. exports, but rather the address recorded in export documentation *(6)*. The high values for El Paso and Laredo therefore reflect the departure points of export goods rather than the production origins.

[3] Measurements of substate exports to Mexico are limited to the state's largest export regions.

Table 1. 2017 Exports to Mexico by Metropolitan Statistical Area.

Metropolitan Statistical Area	2017 Exports ($ Billions)
El Paso	21.5
Houston-The Woodlands-Sugarland	16.9
Laredo	7.4
Dallas-Fort Worth-Arlington	3.9
Beaumont-Port Arthur	3.8

Source: U.S. Census, U.S. International Trade Administration

2.4.3 Regional Economies

Trade with Mexico is an economic engine for growth and opportunity for Texas, and is especially important for Texas' border regions, which have historically had some of the highest rates of unemployment and poverty in the nation. The average unemployment rates along the Texas-Mexico border have improved since the implementation of the North American Free Trade Agreement (NAFTA), with the McAllen MSA experiencing the largest unemployment rate decline from 1994 to 2016 of 12 percentage points, followed by Brownsville with a decline of 7.4 percentage points (*7*). Furthermore, Cañas et al. using data from 1990 to 2006 reported that a 10 percent increase in maquiladora production led to a 0.5 to 0.9 percent increase of employment in U.S. border cities. Most of this employment growth occurred in the services sector in industries such as legal and accounting (*8*).

Since the implementation of NAFTA, Texas border cities' share of national per-capita income has also grown in the Texas border region. Laredo has experienced the most dramatic improvement; the region's per-capita income was 54 percent of the nation's overall per-capita income in 1995 but increased to 61.5 percent of the U.S. per-capita income in 2015 (*9, 10*).

2.4.4 Statewide

Goods exports from Texas supported 910,000 jobs in 2017, a decline of 43,000 jobs from 2015. The number of jobs Texas exports support represents about 17 percent of all jobs supported by exports nationally (*12*).

In Texas, it is estimated that nearly 1 in 5 jobs depend on international trade. Further, Texas trade-related employment grew 1.5 times faster than total employment from 2004 to 2014, suggesting trade jobs will have a growing share of employment (*11*). Jobs in export-related industries also pay around 16 percent more than jobs in less export-intensive industries.

In Texas, it is estimated that nearly 1 in 5 jobs depend on international trade. Further, Texas trade-related employment grew 1.5 times faster than total employment from 2004 to 2014.

In 2013, an estimated 41,558 Texas companies exported goods or services. Approximately 93 percent of these companies are small and medium sized businesses (*11*). While some of these companies export directly, some do so indirectly by selling goods and services to large exporters.

Texas' position as an exporting state, serves as an incentive for many foreign companies to open or expand facilities in the state. It is estimated that foreign-owned companies employ 512,800 Texas workers across various industries, including manufacturing, wholesale trade profession, science, and technology services, information, finance and insurance, and retail trade (*11*).

2.4.5 National Economy

It is estimated that exports of goods and services supported 10.7 million jobs in the U.S. in 2016—160,000 fewer jobs than in 2015. Goods exports, including agricultural products, manufactured products, natural resources, and second-hand products, supported 6.3 million jobs. Service exports supported 4.4 million jobs (*12*).

3. Role of Texas' Transportation System in Facilitating Texas' Trade

Texas' multimodal transportation system is essential to facilitating U.S. and Texas trade with the world. In 2017, Texas traded $527.8 billion via its highways, railways, pipelines, and gateways. In 2017, three times more trucks entered the U.S. at Texas ports of entry than California ports of entry and processed 15 times more loaded rail containers than Arizona (*4*). Texas marine ports processed 537 million short tons of cargo and Texas airports processed 10 billion pounds of landed weight in 2016 (*13*, *14*). This section of the report provides information about Texas' transportation system that facilitates trade.

3.1 Texas' Highway and Rail Corridors

Texas serves as a critical gateway for the nation's strategic trade relationships with Mexico, Central America, and South America. The state is ideally positioned to benefit from the continued increase in trade among the U.S., Mexico, and Canada. Several highway and rail corridors connect these countries. Trade relies on efficient highway and rail transportation in Texas, including both freight destined for the state and freight moving through to other U.S. markets.

3.1.1 Texas' Highway Freight Network

Highways are the predominant mode for freight movement within the state. Highways provide the first and last mile connection to rail facilities, ports, and airports as well as serve long haul trips destined throughout the state and beyond. Texas has the most extensive highway network of any state with over 313,000 centerline miles of public roadways, more than 3,200 miles of interstate and over 12,000 miles of U.S. highways. Figure 9 shows the final updated Texas Highway Freight Network of 21,861 miles (*16*).

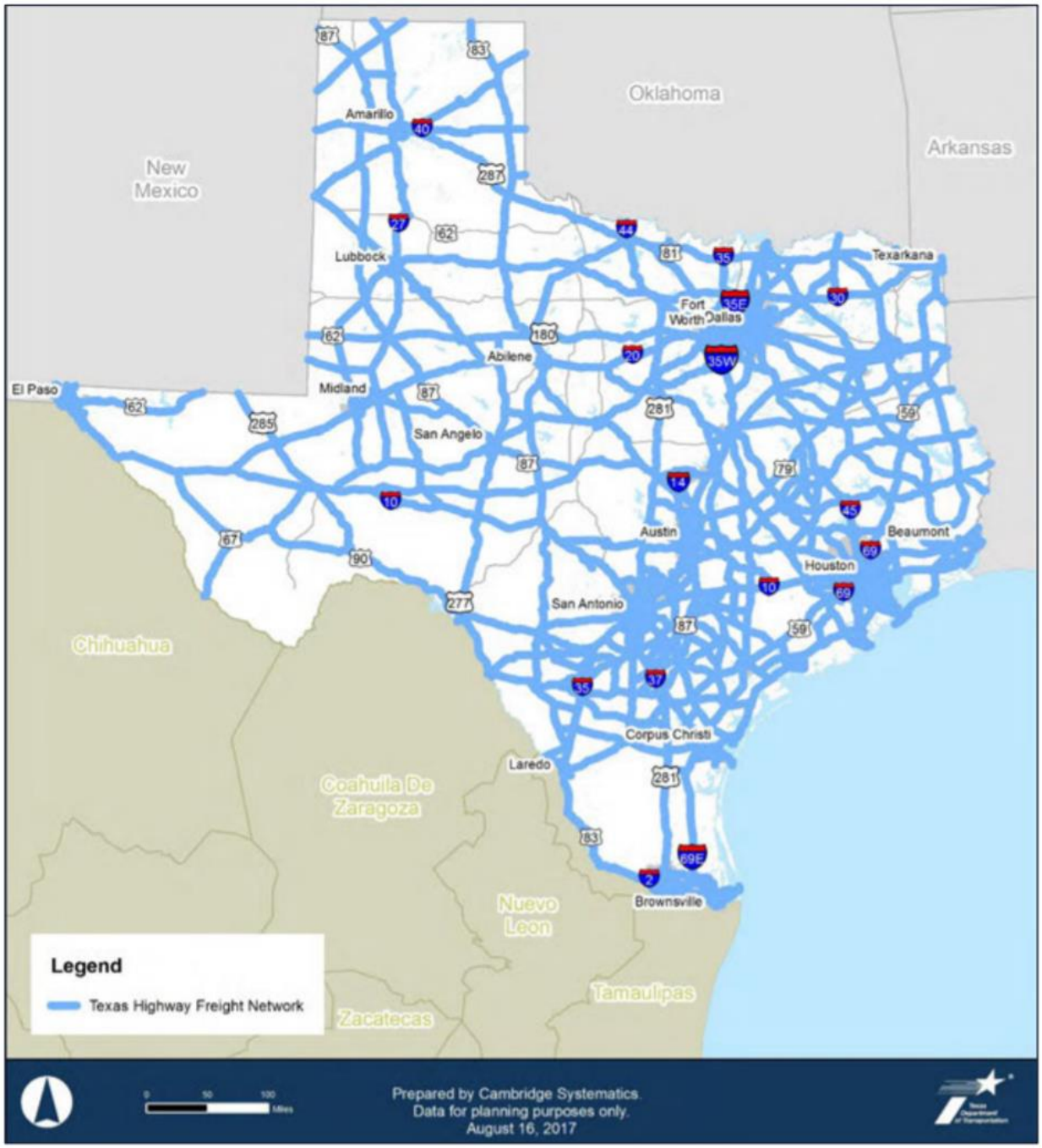


Figure 9. Texas' Highway Freight Network

3.1.2 Texas' Rail Freight Network

Texas has more miles of rail and more railroad employees than any other state, with over 10,000 track miles. Texas has 30 percent more freight rail miles than the next highest state (Illinois), making Texas a rail hub for North America. Railroads are also critical connections for trade between the U.S. and Mexico. Texas has five of the seven rail crossings between the two countries. Texas is served by three major (Class I) railroad companies: BNSF

Railway, Kansas City Southern, and Union Pacific. These railroads support significant freight movement through and throughout Texas (Figure 10). Additionally, Texas has 49 shortline railroads (local line haul and switching railroads) that are of strategic importance to the state, and serve as first or last mile railroads for Class I railroads, Texas' ports, and many of the state's rail-served industries (*16*).

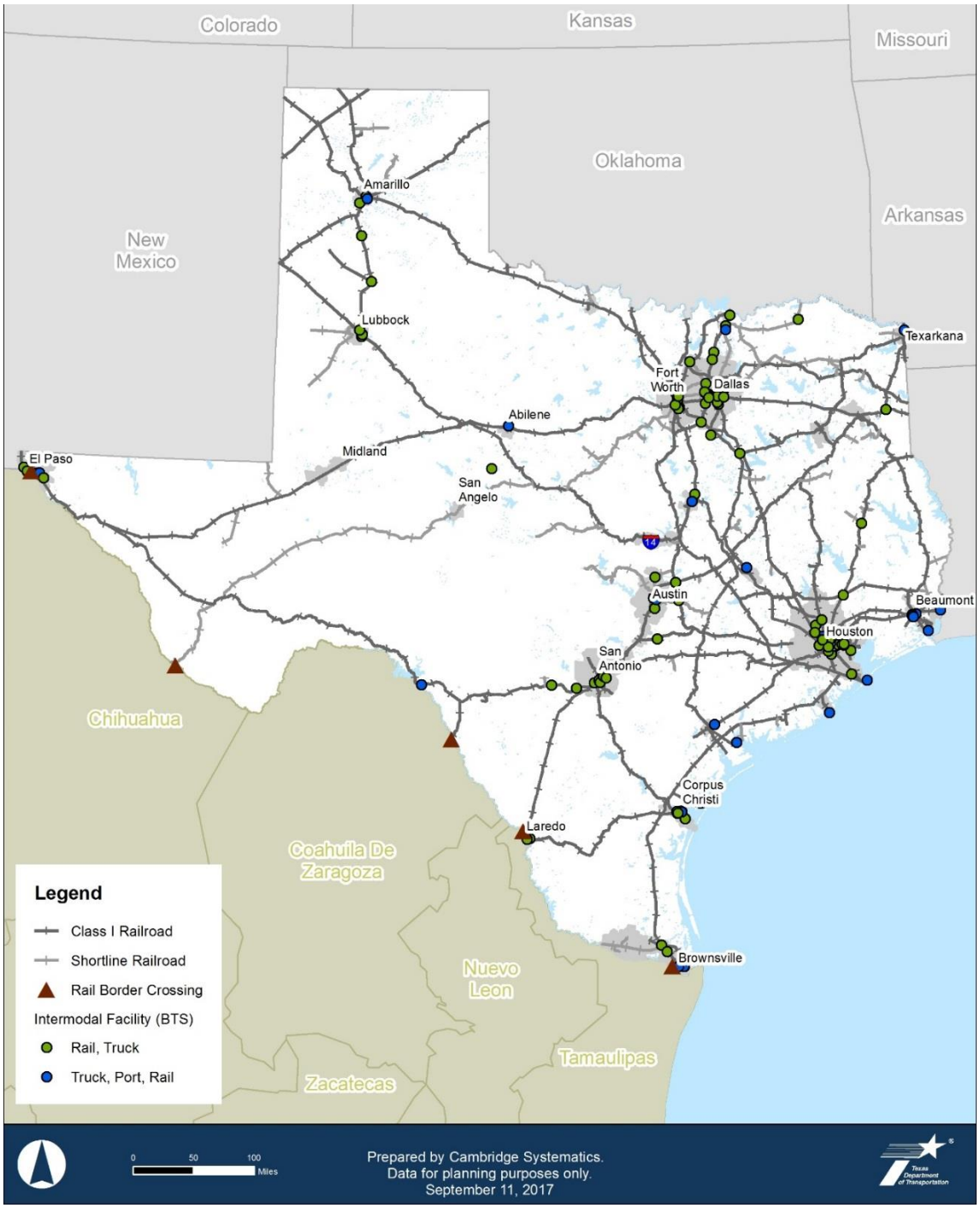


Figure 10. Texas' Rail Freight Corridors

3.2 Texas' Pipelines

Texas is well enriched with natural energy resources. Several current shale plays are mined in the state, resulting in Texas being the largest producer of oil and natural gas in the U.S. (*15*). Significant investments have been made in pipelines to efficiently move Texas's production of natural gas and crude oil. Figure 11 shows Texas' pipeline network.

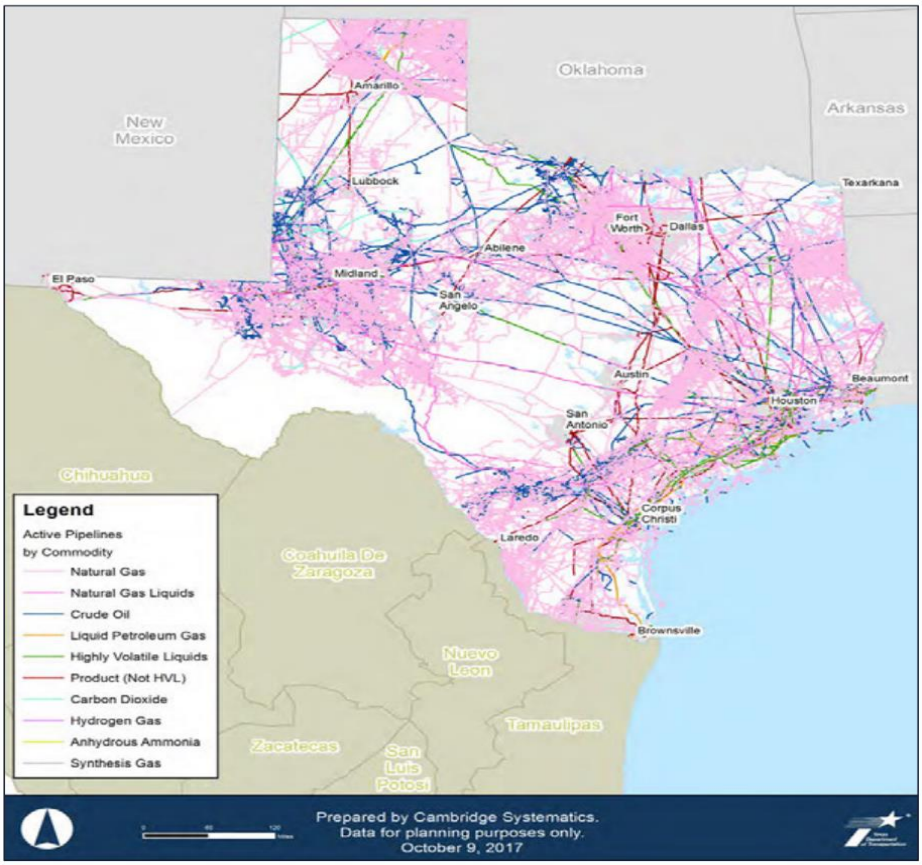
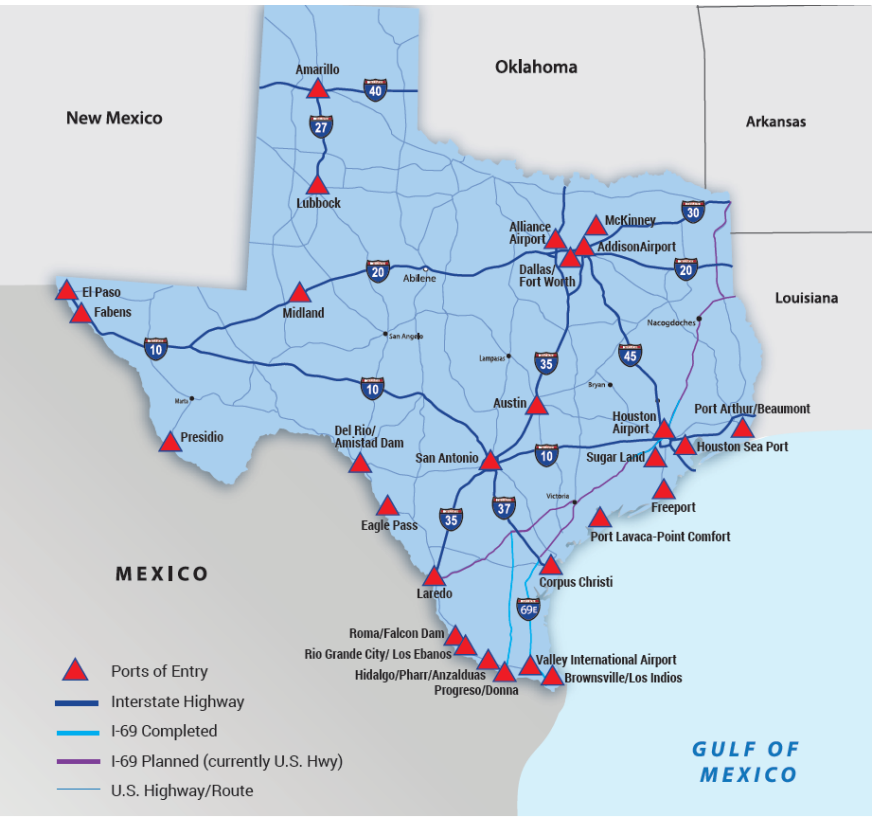


Figure 11. Texas' Pipeline Network (2017)

According to the Texas Freight Mobility Plan (TFMP), 15 pipelines crossed the Texas-Mexico border in 2016. They were located at Brownsville, Alamo City, Rio Bravo, Laredo, Hidalgo, Penitas (two pipelines), Rio Grande, Roma, Eagle Pass, Del Rio, Clint, and El Paso (three pipelines). Of these 15 pipelines, 4 moved refined products and 11 moved natural gas. The natural gas pipelines had a capacity to transport 4,438 million cubic feet per day. In 2016, $3.25 billion of mineral fuels, mineral oils and products of their distillates, oils, and waxes were exported from Texas to Mexico via pipelines (*16*).

3.3 Transportation Gateways

Ports of entry[4] are officially designated areas at U.S. land borders, seaports, and airports that are approved by U.S. Customs and Border Protection (CBP) (*17*). Texas has 28 ports of entry that handle millions of tons of domestic and international cargo, including produce and agriculture products, oil and gas, manufacturing goods, and technology products (*18*). Figure 12 shows Texas' ports of entry.



Source: https://gov.texas.gov/uploads/files/business/portsofentry-map.pdf

Figure 12. Texas' Ports of Entry

3.3.1 Land Border Crossings

Texas' 1,255-mile border with Mexico, and more specifically Texas' border infrastructure, is a critical component in facilitating U.S. and Texas trade with Mexico. Texas has 28 international bridges and border crossings, which includes two dam crossings and one hand-drawn ferry (*19*). Thirteen of the border crossings process commercial vehicles (Figure 13).

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4 The terms "port" and "port of entry" refer to any place designated by Executive Order of the President, by order of the Secretary of the Treasury, or by Act of Congress, at which a U.S. Customs and Border Protection ("CBP") officer is authorized to accept entries of merchandise to collect duties, and to enforce the various provisions of the customs and navigation laws. The terms "port" and "port of entry" incorporate the geographical area under the jurisdiction of a port director. A port of entry may encompass an area that includes several border crossings, as well as some air and sea ports. Not every border crossing is a port of entry (Source: Code of Federal Regulations, Title 19, Chapter I, Part 101, Section 101.1).

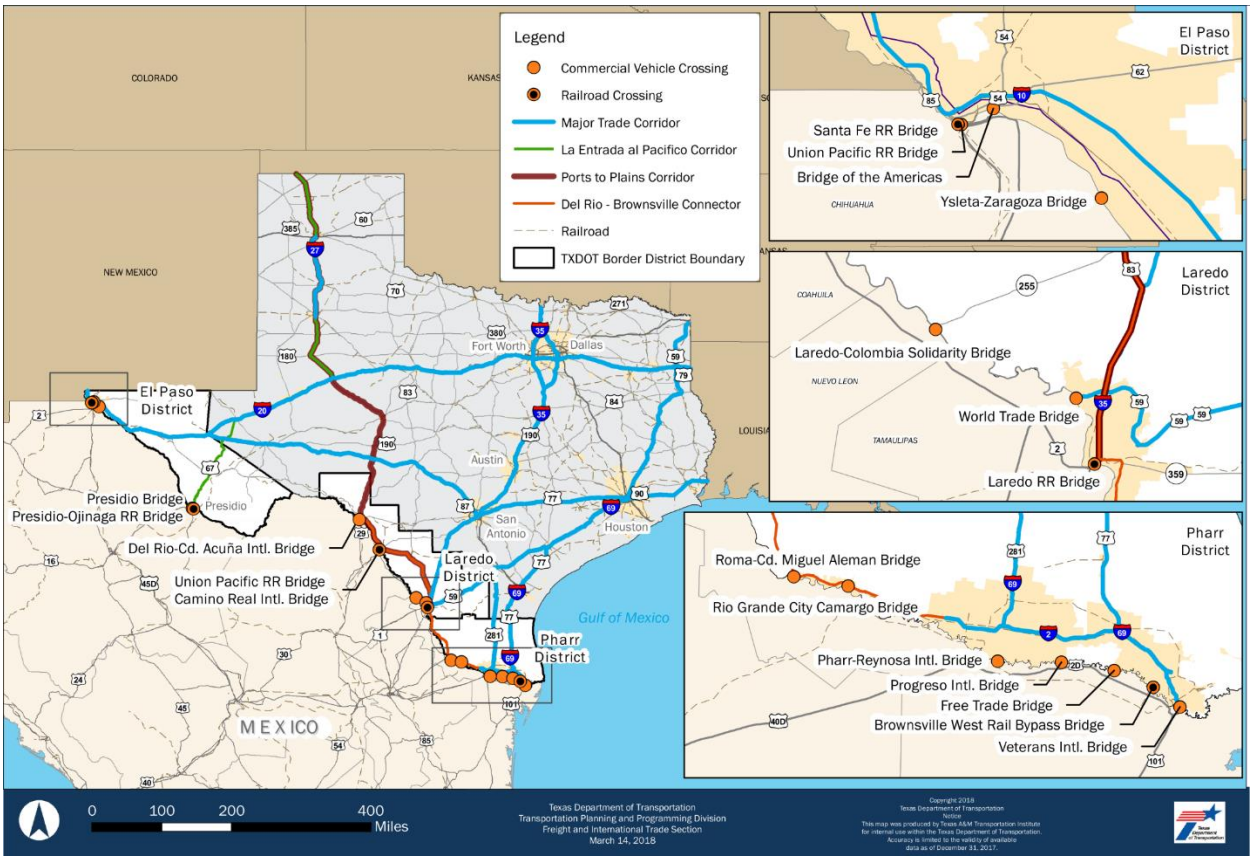
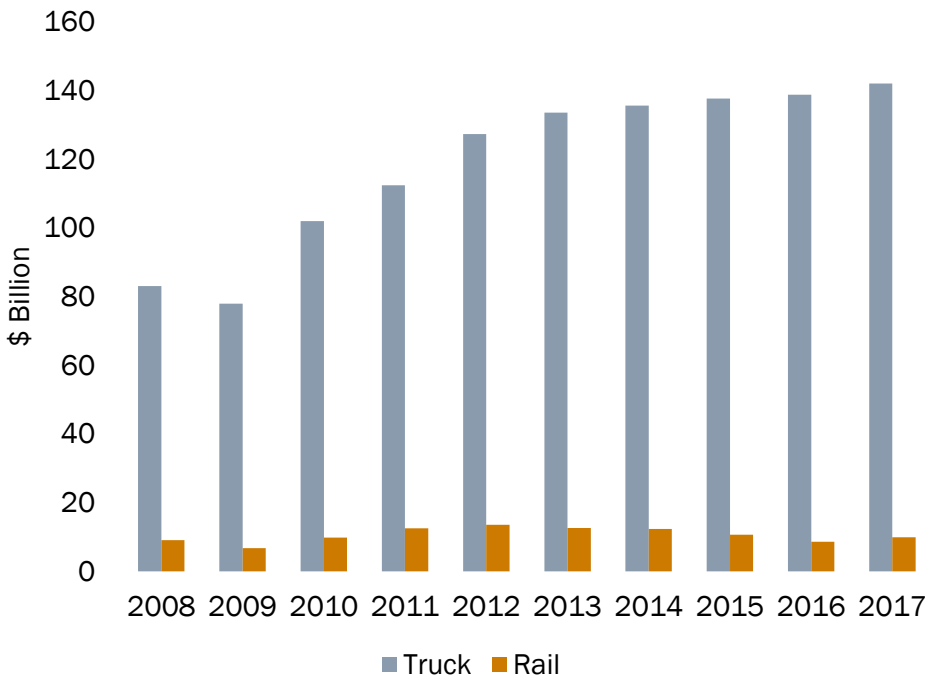


Figure 13. Texas' Commercial Vehicle Border Crossings

In 2017, 83 percent ($152 billion) of Texas' $182 billion in trade with Mexico moved by truck and rail (*4*). Figure 14 shows that after the 2008–2009 economic recession, the trade value by truck and rail crossing in Texas increased 79 percent between 2009 and 2017. The truck trade value increased 82 percent in that period, while the rail value increased 47 percent. From 2013 to 2017, the U.S.-Mexico trade value moved by these two modes that crossed in Texas remained relatively constant.



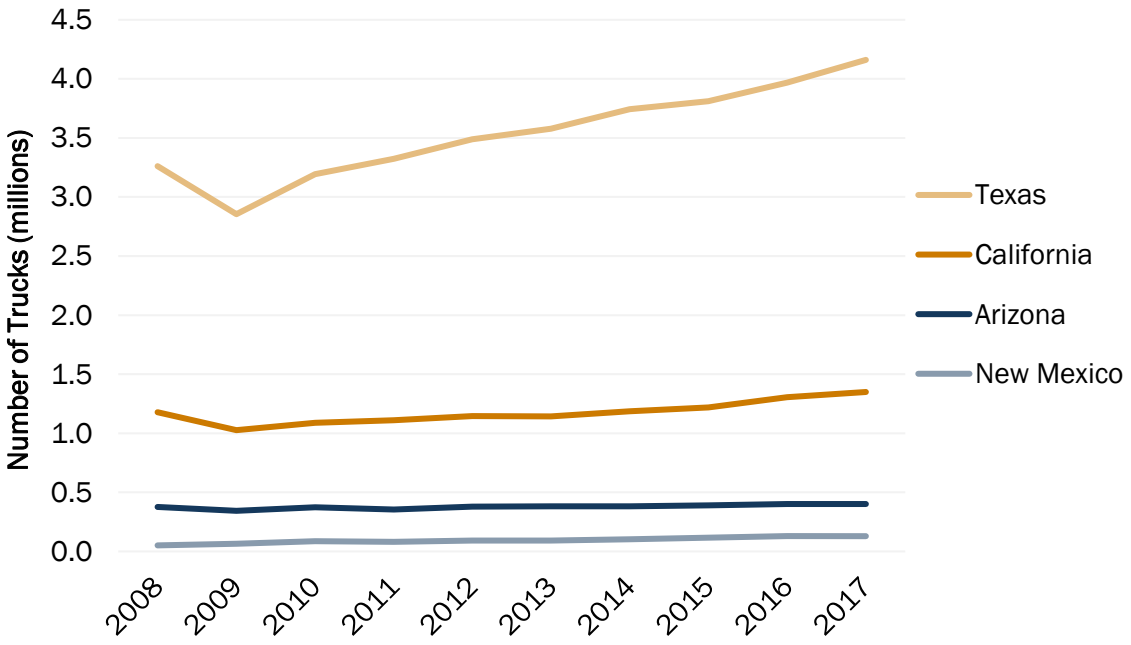
Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)[5]

Figure 14. Texas Land Border Crossing Value by Truck and Rail (2008–2017)

3.3.1.1 Truck Trade

Texas' 13 commercial vehicle border crossings handled the largest number of northbound truck crossings on the southern border in 2017 at 4.1 million northbound truck crossings (Figure 15). California handled the second most northbound truck crossings at 1.3 million, followed by Arizona (401,160 northbound truck crossings), and New Mexico (128,990 northbound truck crossings) (*4*).

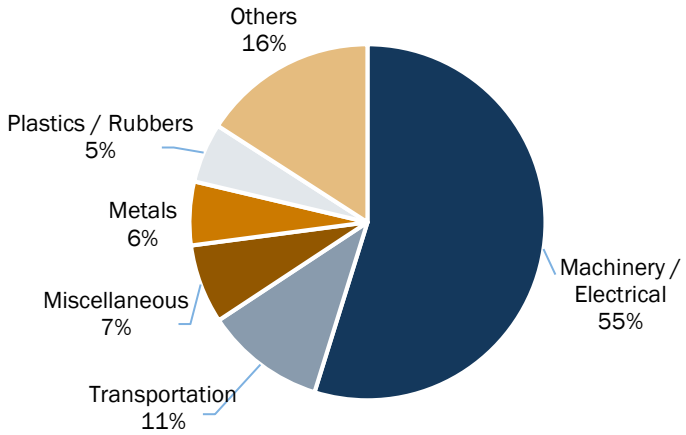
[5] BTS only provides northbound data.



Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)

Figure 15. Northbound Truck Crossings by State

Texas' top 5 commodities moved by truck across the Texas-Mexico border in 2017 were (Figure 16): electrical machinery with 55 percent of Texas' truck trade share, followed by transportation equipment at 11 percent, miscellaneous products at 7 percent, metals at 6 percent, and plastics and rubbers at 5 percent. These five commodities account for 84 percent of Texas' total trade by truck (*4*).



Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)

Figure 16. Texas' Top 5 Commodities Moved by Truck (2017)

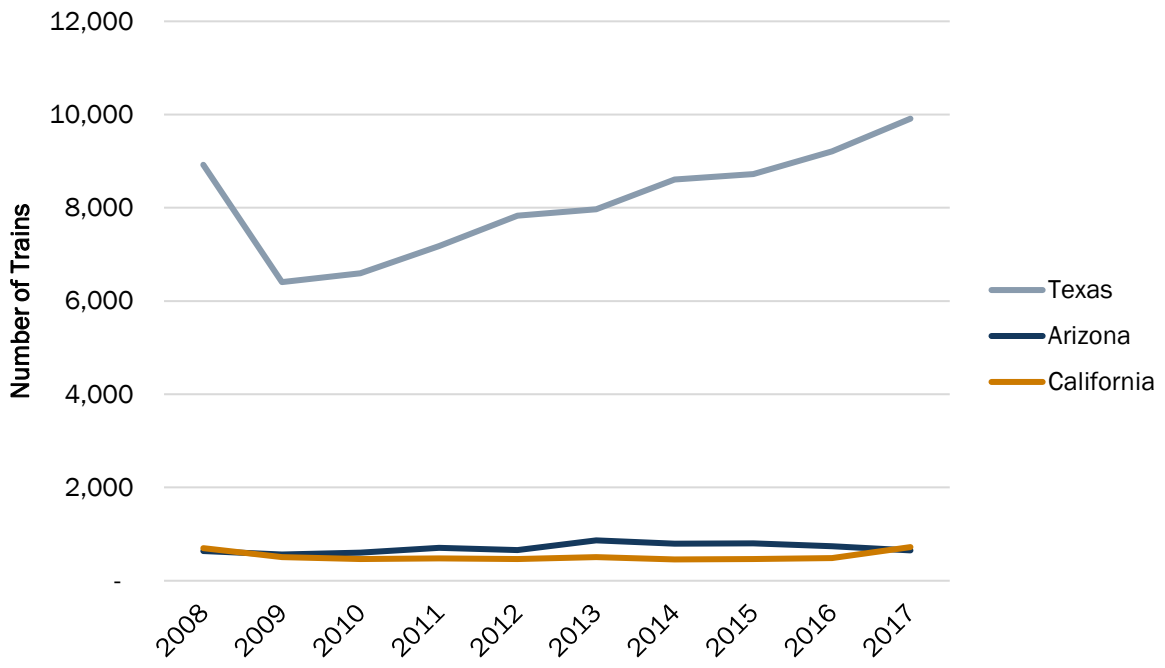
Figure 17 shows that the World Trade Bridge in Laredo is the busiest commercial crossing in Texas, handling 40 percent of incoming trucks from Mexico to Texas in 2017. The World Trade Bridge in Laredo handled more than 1.6 million northbound commercial vehicle crossings in 2017, which was more than two times greater than the next busiest bridge, the Pharr-Reynosa International Bridge on the Rise. Interestingly, the World Trade Bridge in Laredo handled more northbound commercial crossings in 2017 than did the entire state of California.

Source: CBP via TxDOT

Figure 17. Number of Northbound Commercial Vehicle Crossings from Mexico to Texas (2017)

3.3.1.2 Trade by Rail

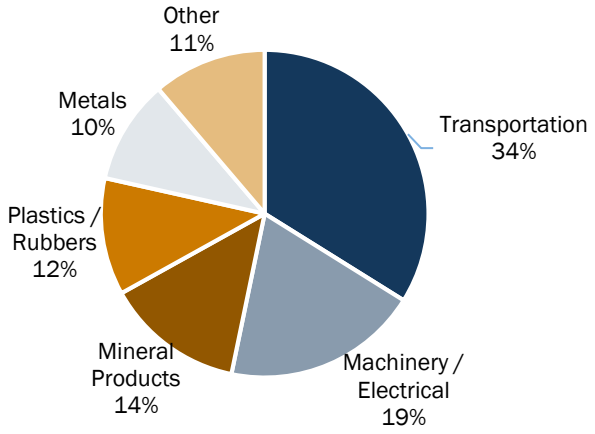
Texas' six rail-only bridges handled the highest volume of northbound train crossings on the southern border in 2017 at 9,912 northbound trains, followed by Arizona (649 northbound trains) and California (722 northbound trains). No trains crossed in New Mexico (Figure 18).



Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)

Figure 18. Northbound Train Crossings of U.S. - Mexico Border by State

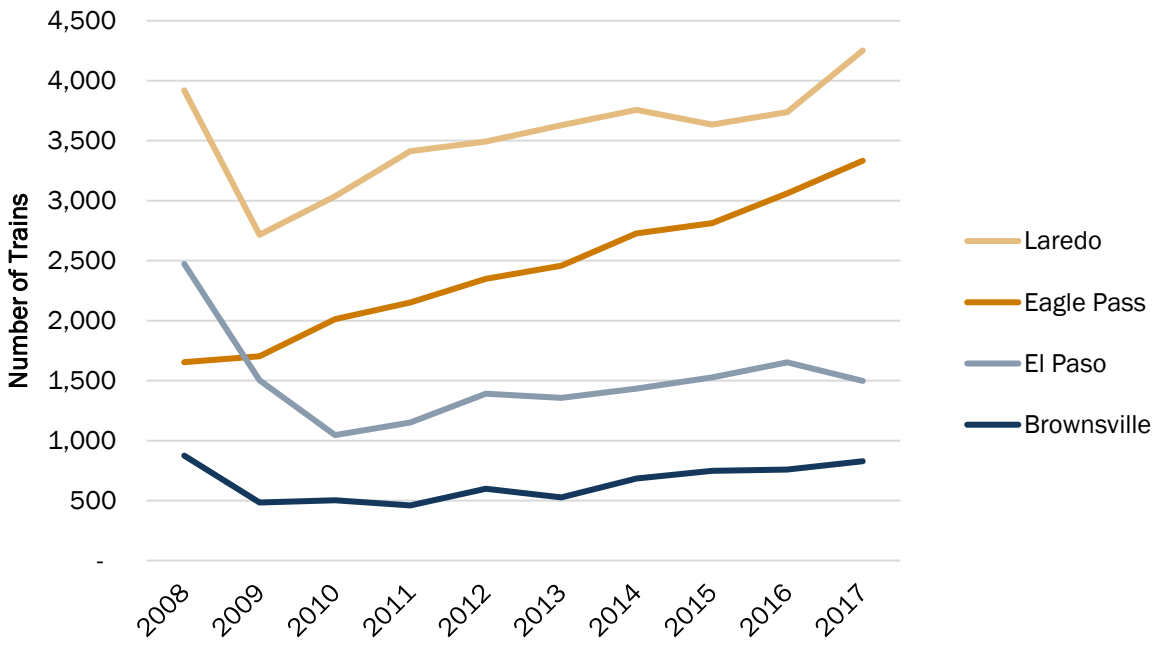
In 2017, the top five Texas commodities moved across the Texas-Mexico border by rail were: transportation equipment at 34 percent of Texas' rail trade, followed by electrical machinery at 19 percent, mineral products at 14 percent, plastics and rubbers at 12 percent, and metals at 10 percent (Figure 19). These five commodities account for 89 percent of Texas' trade by rail (*2*).



Source: Bureau of Transportation Statistics, North American Transborder Freight Data (https://transborder.bts.gov/programs/international/transborder/TBDR_QA.html)

Figure 19. Texas Top 5 Commodities Moved by Rail (2017)

Figure 20 shows that the Laredo port of entry consistently had the highest number of northbound train crossings since 2005 at 4,252, followed by Eagle Pass (3,333), El Paso (1,498), and Brownsville (829) in 2017. Eagle Pass saw a 124 percent increase in the number of northbound train crossings between 2007 and 2017 (Figure 20) (*4*).



Source: Bureau of Transportation Statistics, Border Crossing/Entry Data (https://transborder.bts.gov/programs/international/transborder/TBDR_BC/TBDR_BCQ.html)

Figure 20. Number of Trains Crossing the Texas – Mexico Border (2005–2017)

3.3.2 Texas' Maritime Ports

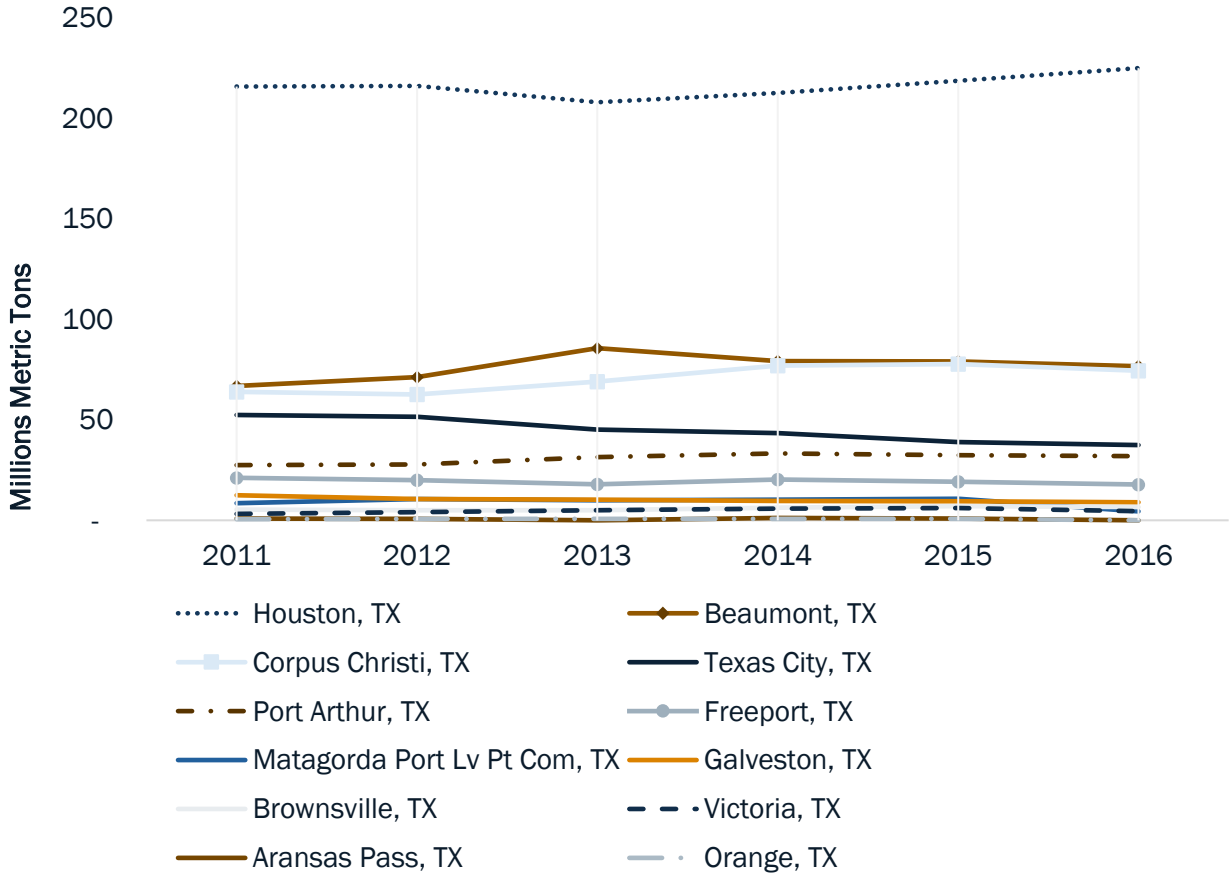
The Gulf Intracoastal Waterway in Texas (GIWW-T) is a component of the 1,100-mile-long shallow-draft GIWW system. The GIWW-T covers 379 miles of Texas coast and serves 12 deep-draft ports (25 ft or deeper) and nine shallow-draft channels (16). The GIWW-T has an important role in facilitating trade moving agricultural and manufactured goods, petroleum, machinery, and chemicals. In 2012, it moved 486 million tons—21 percent of U.S. maritime freight volume. Of this total, petroleum and petroleum products represented 67 percent of all commodity tonnage moved through the GIWW-T (*20*).

Figure 21 shows the 12 deep draft ports and nine shallow draft port in Texas that were included in the TFMP.

Figure 21. Texas Seaports

Figure 22 shows the tonnage moved through Texas ports between 2011 and 2016. A a total of 564.7 million tons of cargo was moved through Texas ports in 2016. In addition, Texas ports created more than 1.4 million jobs (*21*). Port Houston is the largest gulf coast port in terms of annual tonnage, and the second largest U.S. marine port (after the port of South Louisiana) in terms of tonnage, handling 224 million metric tons in 2016. The Ports of

Beaumont and Corpus Christi ranked 5th and 6th, respectively, among U.S. ports in terms of total cargo volume moved in 2016.



Source: U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center (http://www.navigationdatacenter.us/wcsc/wcsc.htm)

Figure 22. Weights at Texas Maritime Ports

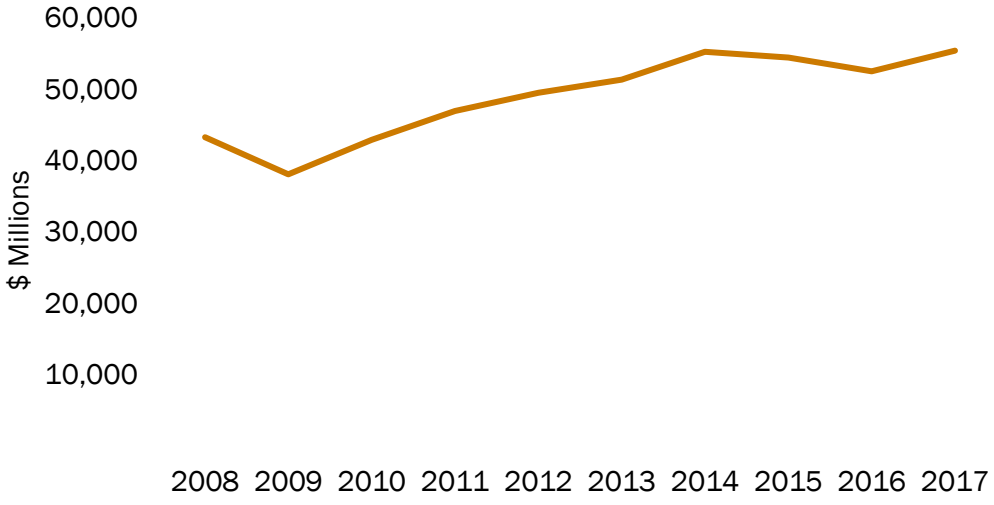
3.3.3 Inland Ports

An inland port has been defined as "a site located away from traditional land and coastal borders with the vision to facilitate and process international trade through strategic investments in multi-modal transportation assets and by promoting value added services as goods move through the supply chain" (*22*). By this definition, Texas has two inland ports: AllianceTexas and Port San Antonio (Figure 23).

Figure 23. Texas Inland Ports

3.3.4 AllianceTexas

AllianceTexas is an 18,000-acre master-planned, mixed-use community located about 20 miles north of downtown Fort Worth. A key component of the AllianceTexas development is the Alliance Global Logistics hub that includes Alliance Airport, a BNSF rail intermodal facility, access to two Class I rail lines, and connecting highways. The AllianceTexas development also includes several corporate campuses, office complexes, shopping and entertainment venues, residential housing, schools, and churches (*23*). Figure 24 suggests that AllianceTexas grew 45 percent from 2009 to 2017, from $38 billion to $55 billion.



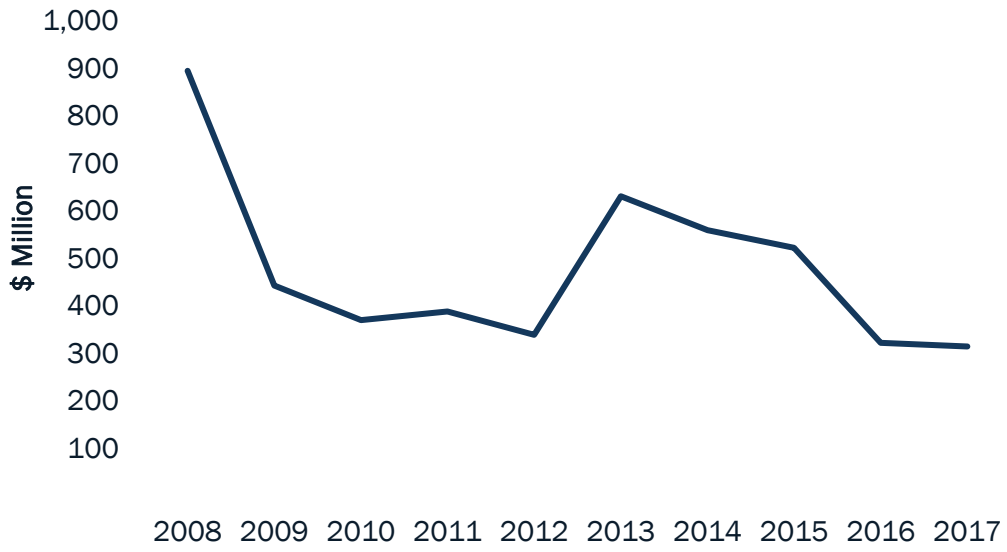
Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 24. AllianceTexas Trade (2008–2017)

3.3.5 Port San Antonio

Port San Antonio is a master planned, 1,900-acre aerospace, industrial complex, and international logistics platform. Port San Antonio is located approximately 6 miles southwest of downtown San Antonio at the site of the former Kelly Air Force Base. Port San Antonio is a private—although publicly supported—economic redevelopment/reuse project. The overall redevelopment is a broad-based project that includes air and rail freight components (along with commuter rail) and transit-oriented housing development (*23*).

Figure 25 indicates that Port San Antonio traded $314 million in 2017. Between 2008 and 2012, Port San Antonio trade decreased 62 percent, but grew 86 percent from 2012 to 2013. Between 2013 and 2017, Port San Antonio's trade decreased 50 percent.



Source: U.S. Census (USA Trade Online: https://usatrade.census.gov/)

Figure 25. Port San Antonio Trade (2008–2017)

4. Enhancing Texas' Trade Transportation System

Texas' transportation system (i.e., 13 commercial vehicle border crossings, 6 international rail bridges, rail and highway corridors, inland ports, and ports) is a critical component in facilitating U.S. and Texas trade. This section provides available information on the recent and planned investments in Texas' transportation system that facilitates trade.

4.1 Highway Trade Corridors

U.S. and Texas trade move along well-established trade corridors. The interstate corridors that serve trade in Texas are:

- I-10.
- I-20.
- I-30.
- I-35.
- I-37.
- I-45.
- I-69.

In addition to the interstate corridors, TxDOT is working with various stakeholders on the development of the Ports-to-Plains Corridor and the La Entrada al Pacifico Corridors. These corridors can be considered secondary corridors.

Finally, there is interest emerging in developing several additional corridors:

- An east-west corridor along the Texas-Mexico border to connect Brownsville to Laredo and Laredo to Del Rio.
- US 87 from TX/NM State Line to I-10.
- US 69 from Beaumont to I-20.
- US 281 from San Antonio to Wichita Falls.

This section summarizes the recent investments and planned highway infrastructure projects on these highway corridors, as well as future needs that TxDOT has identified and is evaluating with plan and development authority.

4.1.1 I-10 Corridor

The I-10 Corridor (Figure 26) is a major west-east interstate trade corridor linking California to Florida. In Texas, I-10 links El Paso to Houston before continuing to the Texas border with Louisiana. I-10 serves the Ysleta-Zaragosa Bridge and the Bridge of the Americas in El Paso.

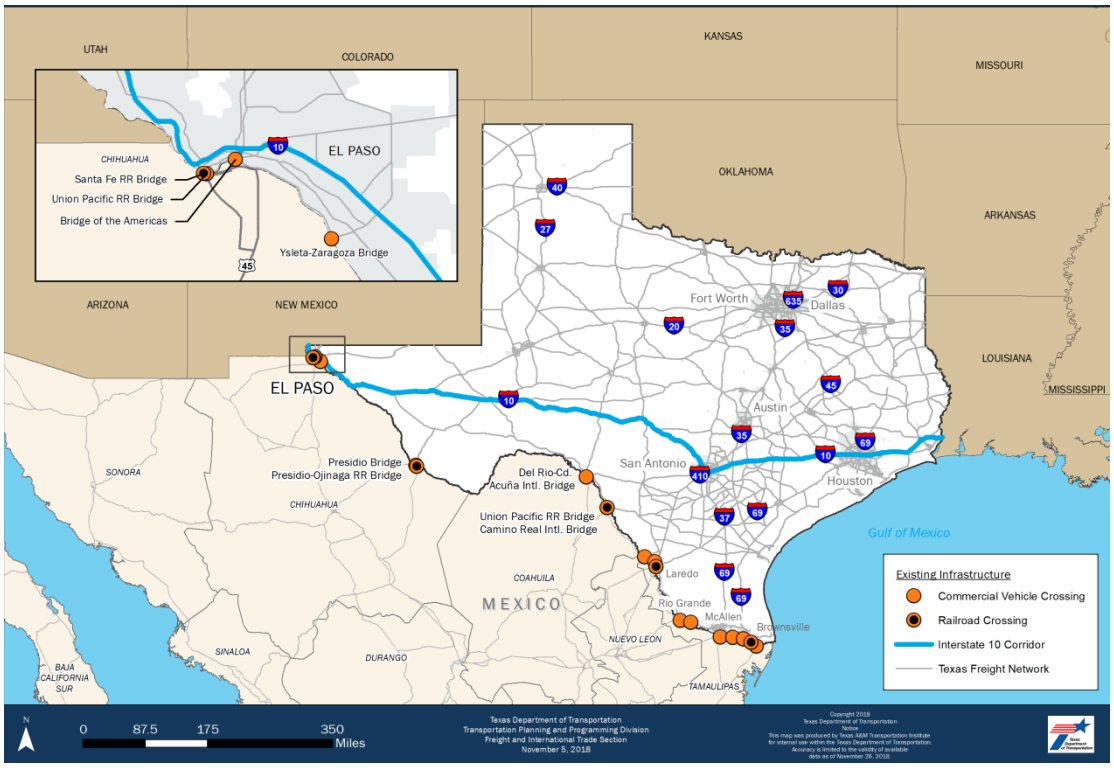


Figure 26. I-10 Corridor in Texas

Let Projects on I-10 (2017/2018)

Table 11 shows the number and cost of projects that were let on I-10 in 2017 and 2018. Table 112 shows that TxDOT let 91 projects at a total cost of $1 billion on the I-10 Corridor in 2017 and 2018. This amounted to 38 preservation projects at a cost of $101 million, 22 added capacity projects at a cost of $776 million, seven bridge projects at a cost of $6 million, and 24 safety/operational projects at a cost of $160 million.

Table 2. Let Projects on I-10 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	38	101
Mobility	22	776
Bridge	7	6
Safety/Operational	24	160
Total	91	1,043

Planned Highway Projects on I-10 Corridor

Table 3 shows the planned highway infrastructure projects on I-10 that are included in TxDOT's 2019 Unified Transportation Program (UTP)[6] development process. Table 3 shows 104 planned highway projects[7] on the I-10 Corridor at a total estimated cost[8] of $2.9 billion. Of these 104 planned highway projects, 88 are fully funded ($1.8 billion) and 7 projects are partially funded with $14.6 million in funding needed. In addition, nine projects at an estimated cost of $1.1 billion had no identified funding source in 2018.

The 104 planned highway projects consist of 54 preservation projects at a cost of $170 million, 19 added capacity projects at an estimated cost of $2.5 billion, 22 bridge projects at an estimated cost of $73 million, and nine safety/operational projects at an estimated cost of $121 million.

Table 3. Planned I-10 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	54	170
Mobility	19	2,515
Bridge	22	73
Safety/Operational	9	121
Total	104	2,880

Future I-10 Corridor Needs

Table 4 shows the I-10 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified two safety/operational project needs at an estimated cost of $15 million on the I-10 Corridor.

6 TxDOT uses the UTP as a 10-year plan to guide transportation project development. The UTP is developed in accordance with the Texas Administrative Code (TAC §16.105) and is approved by the Texas Transportation Commission annually prior to August 31, or the end of the state fiscal year. The UTP authorizes projects for construction, development and planning activities and includes projects involving highways, aviation, public transportation, and state and coastal waterways. It lists all known projects (mainly for roadway and bridge) in the 10-year window and ranks projects.

7 The number of projects was determined by counting the individual CSJ numbers.

8 The estimated construction costs were used as a proxy for project costs.

Table 4. Future I-10 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	-	-
Bridge	-	-
Safety/Operational	2	15
Total	2	15

4.1.2 I-20 Corridor

Traveling east from El Paso, I-20 (Figure 27) splits off from I-10 past Van Horn, Texas. I-20 runs parallel to I-10 to the north, traversing the Dallas-Fort Worth metroplex before continuing to the Texas-Louisiana border.

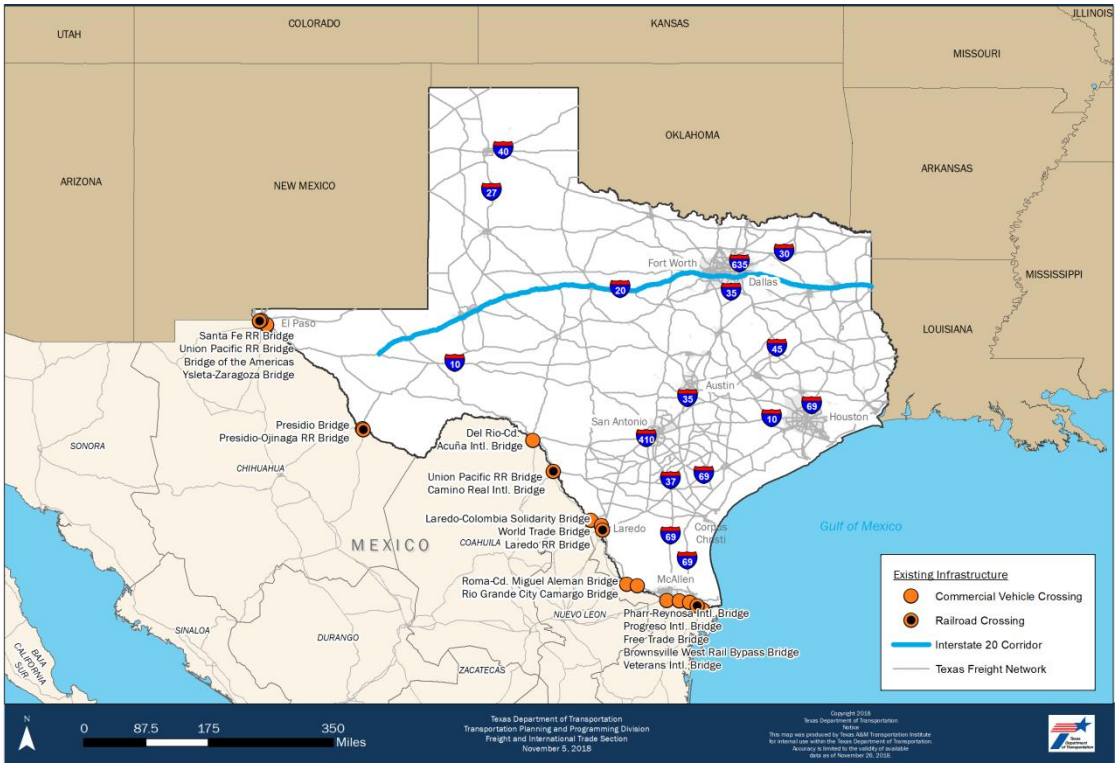


Figure 27. I-20 Corridor in Texas

Let Projects on I-20 (2017/2018)

Table 5 shows the number and cost of projects that were let on I-20 in 2017 and 2018. Table 5 shows that TxDOT let 116 projects at a total cost of $476 million on the I-20 Corridor in 2017 and 2018. This amounted to 39 preservation projects at a cost of

$165 million, 11 added capacity projects at a cost of $63 million, 44 bridge projects at a cost of $74 million, and 22 safety/operational projects at a cost of $174 million.

Table 5. Let Projects on I-20 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	39	165
Mobility	11	63
Bridge	44	74
Safety/Operational	22	174
Total	116	476

Planned Highway Projects on I-20 Corridor

Table 6 shows the planned highway infrastructure projects on I-20 that are included in TxDOT's 2019 UTP development process. Table 6 shows 171 planned highway projects on the I-20 Corridor at a total estimated cost of $4.5 billion. Of these 171 planned highway projects, 108 are fully funded ($705 million) and 33 projects are partially funded with $918 million in funding needed. In addition, 30 projects at an estimated cost of $1.9 billion had no identified funding source in 2018.

The 171 planned highway projects consist of 82 preservation projects at a cost of $221 million, 22 added capacity projects at an estimated cost of $3.6 billion, 32 bridge projects at an estimated cost of $112 million, and 35 safety/operational projects at an estimated cost of $630 million.

Table 6. Planned I-20 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	82	221
Mobility	22	3,575
Bridge	32	112
Safety/Operational	35	630
Total	171	4,538

Future I-20 Corridor Needs

Table 7 shows the I-20 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified seven project needs at a total estimated cost of $110 million on the I-20 Corridor. The seven project needs consist of two added capacity projects at an estimated cost of $17 million and five safety/operational projects at an estimated cost of $93 million.

Table 7. Future I-20 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	2	17
Bridge	-	-
Safety/Operational	5	93
Total	7	110

4.1.3 I-30 Corridor

The I-30 Corridor (Figure 28) links the Dallas-Fort Worth metroplex to the Texas-Arkansas border.

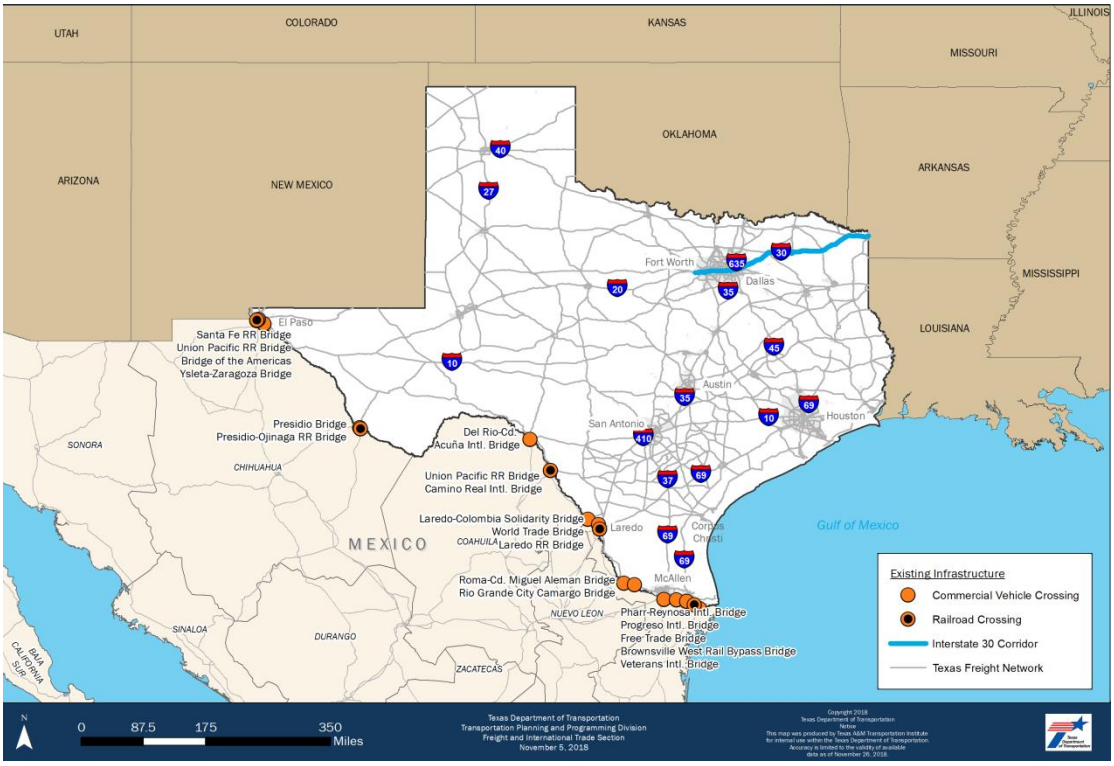


Figure 28. I-30 Corridor in Texas

Let Projects on I-30 (2017/2018)

Table 8 shows the number and cost of projects that were let on I-30 in 2017 and 2018. Table 8 shows that TxDOT let 20 projects at a total cost of $56 million on the I-30 Corridor in 2017 and 2018. This amounted to 13 preservation projects at a cost of $17 million, three added capacity projects at a cost of $38 million, and four bridge projects at a cost of $1 million.

Table 8. Let Projects on I-30 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	13	17
Mobility	3	38
Bridge	4	1
Safety/Operational	-	-
Total	20	56

Planned Highway Projects on I-30 Corridor

Table 9 shows the planned highway infrastructure projects on I-30 that are included in TxDOT's 2019 UTP development process. Table 9 shows 50 planned highway projects on the I-30 Corridor at a total estimated cost of $3.9 billion. Of these 50 planned highway projects, 32 are fully funded ($422 million) and 6 projects are partially funded with $1.9 billion in funding needed. In addition, 12 projects at an estimated cost of $1.3 billion had no identified funding source in 2018.

The 50 planned highway projects consist of 13 preservation projects at a cost of $17 million, 16 added capacity projects at a cost of $2.6 billion, two bridge projects at an estimated cost of $7 million, and 19 safety/operational projects at an estimated cost of $1.3 billion.

Table 9. Planned I-30 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	13	17
Mobility	16	2,585
Bridge	2	7
Safety/Operational	19	1,296
Total	50	3,905

Future I-30 Corridor Needs

Table 10 shows the I-30 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified four added capacity project needs at an estimated cost of $127 million on the I-30 Corridor.

Table 10. Future I-30 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	4	127
Bridge	-	-
Safety/Operational	-	-
Total	4	127

4.1.4 I-35 Corridor

The I-35 Corridor (Figure 29) serves the World Trade Bridge and the Colombia Solidarity Bridge in Laredo (*24*) via FM-1472, SH-255, and SL-20. US-277 and US-57 connect the Camino Real International Bridge (in Eagle Pass) to the I-35 Corridor. The I-35 Corridor—also known as the NAFTA Corridor—connects Mexico, the U.S., and Canada. I-35 connects three of the four largest cities in Texas before continuing north and ending in Duluth, Minnesota. I-35 also links to I-29 in Kansas City, which connects to Winnipeg, Manitoba, in Canada. This corridor serves the Midwest manufacturing centers.

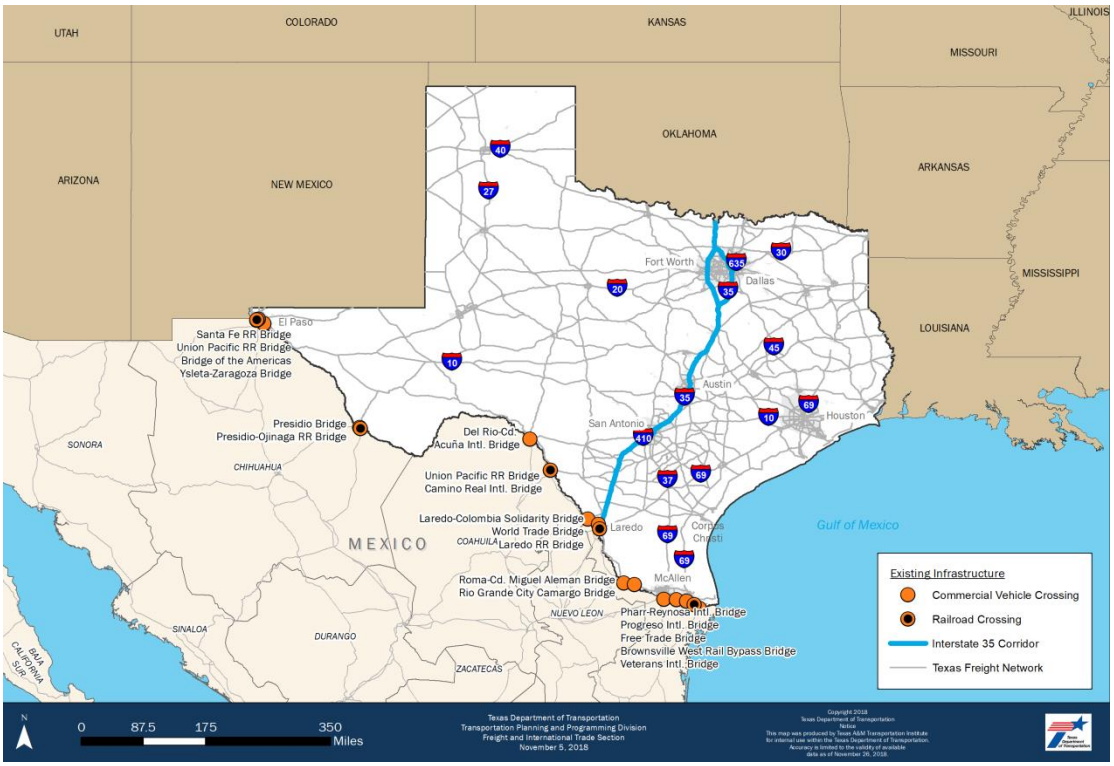


Figure 29. I-35 Corridor in Texas

Let Projects on I-35 (2017/2018)

Table 11 shows the number and cost of projects that were let on I-35 in 2017 and 2018. Table 11 shows that TxDOT let 83 projects at a total cost of $849 million on the I-35 Corridor in 2017 and 2018. This amounted to 42 preservation projects at a cost of $95 million, 11 added capacity projects at a cost of $551 million, 15 bridge projects at a cost of $61 million, and 15 safety/operational projects at a cost of $142 million.

Table 11. Let Projects on I-35 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($)
Preservation	42	95
Mobility	11	551
Bridge	15	61
Safety/Operational	15	142
Total	83	849

Planned Highway Projects on I-35 Corridor

Table 12 shows the planned highway infrastructure projects on I-35 that are included in TxDOT's 2019 UTP development process. Table 12 shows 139 planned highway projects on the I-35 Corridor at a total estimated cost of $9 billion. Of these 139 planned highway projects, 79 are fully funded ($1.4 billion) and 24 projects are partially funded with $1.5 billion in funding needed. In addition, 36 projects at an estimated cost of $5.1 billion had no identified funding source in 2018.

The 139 planned highway projects consist of 50 preservation projects at a cost of $1.9 billion, 26 added capacity projects at a cost of $5.3 billion, 11 bridge projects at an estimated cost of $277 million, and 52 safety/operational projects at an estimated cost of $1.5 billion.

Table 12. Planned I-35 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	50	1,927
Mobility	26	5,291
Bridge	11	277
Safety/Operational	52	1,511
Total	139	9,006

Future I-35 Corridor Needs

Table 13 shows the I-35 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified 24 project needs at a total estimated cost of $4.3 billion on the I-35 Corridor. The 24 project needs consist of 21 added capacity projects at an estimated cost of $4.2 billion and three safety/operational projects at an estimated cost of $151 million.

Table 13. Future I-35 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	21	4,160
Bridge	-	-
Safety/Operational	3	151
Total	24	4,311

4.1.5 I-37 Corridor

The I-37 Corridor (Figure 30) serves the Port of Corpus Christi. I-37 links Corpus Christi to San Antonio, where it connects to the I-35 and I-10 Corridors.

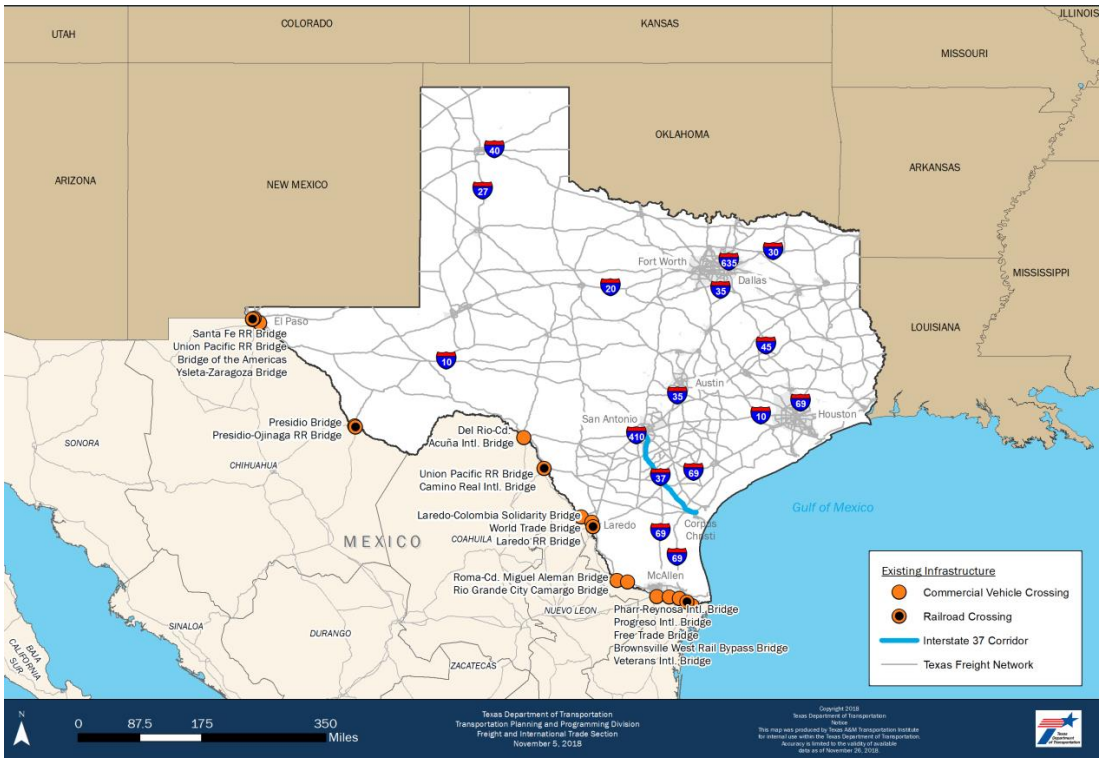


Figure 30. I-37 Corridor in Texas

Let Projects on I-37 (2017/2018)

Table 14 shows the number and cost of projects that were let on I-37 in 2017 and 2018. Table 14 shows that TxDOT let 13 projects at a total cost of $25 million on the I-37 Corridor in 2017 and 2018. This amounted to 10 preservation projects at a cost of $24 million and three safety/operational projects at a cost of $1 million.

Table 14. Let Projects on I-37 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	10	24
Mobility	-	-
Bridge	-	-
Safety/Operational	3	1
Total	13	25

Planned Highway Projects on I-37 Corridor

Table 15 shows the planned highway infrastructure projects on I-37 that are included in TxDOT's 2019 UTP development process. Table 15 shows 12 planned highway projects on the I-37 Corridor at a total estimated cost of $173 million. Of these 12 planned highway projects, 11 are fully funded ($102 million) and 1 project at an estimated cost of $71 million had no identified funding source in 2018.

The 12 planned highway projects consist of six preservation projects at a cost of $34 million, two added capacity projects at a cost of $113 million, one bridge project at an estimated cost of $100,000, and three safety/operational projects at an estimated cost of $26 million.

Table 15. Planned I-37 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	6	34
Mobility	2	113
Bridge	1	0.1
Safety/Operational	3	26
Total	12	173

Future I-37 Corridor Needs

No project needs have been identified on the I-37 Corridor beyond the 10-year UTP window.

4.1.6 I-45 Corridor

The I-45 Corridor (Figure 31) serves Port Houston. I-45 links Houston to the Dallas-Fort Worth metroplex.

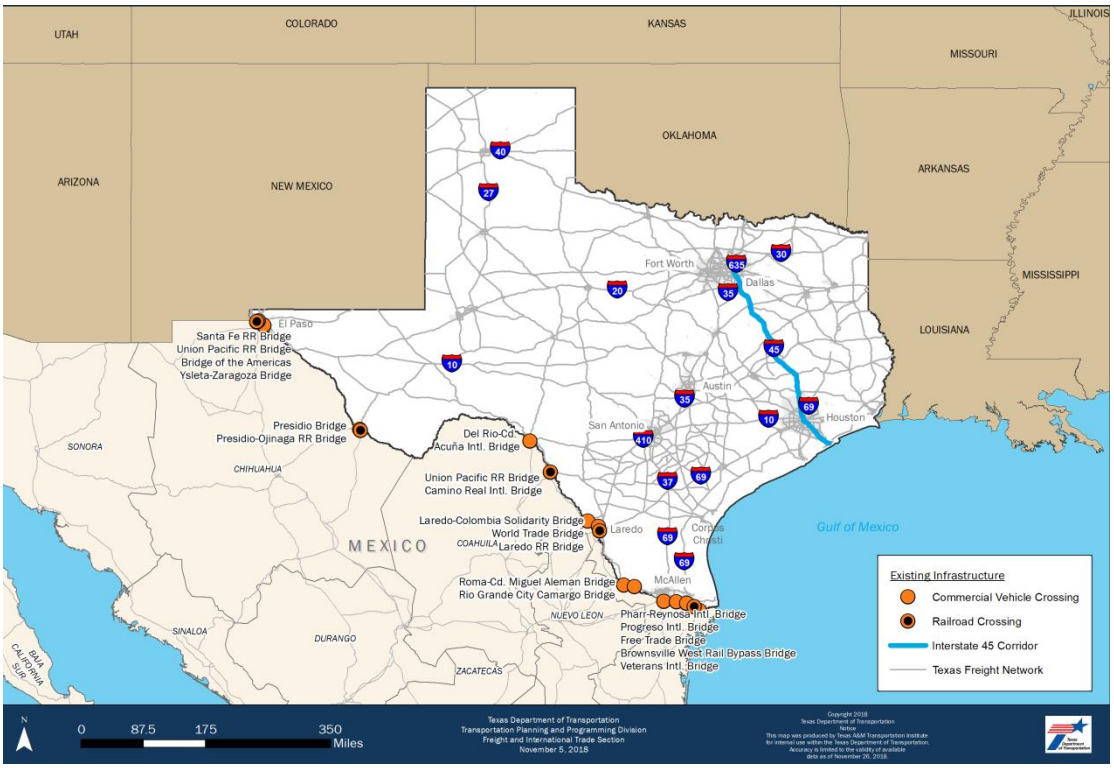


Figure 31. I-45 Corridor in Texas

Let Projects on I-45 (2017/2018)

Table 16 shows the number and cost of projects that were let on I-45 in 2017 and 2018. Table 16 shows that TxDOT let 37 projects at a total cost of $746 million on the I-45 Corridor in 2017 and 2018. This amounted to 12 preservation projects at a cost of $21 million, nine added capacity projects at a cost of $451 million, four bridge projects at a cost of $2 million, and 12 safety/operational projects at a cost of $272 million.

Table 16. Let Projects on I-45 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($)
Preservation	12	21
Mobility	9	451
Bridge	4	2
Safety/Operational	12	272
Total	37	746

Planned Highway Projects on I-45 Corridor

Table 17 shows the planned highway infrastructure projects on I-45 that are included in TxDOT's 2019 UTP development process. Table 17 shows 56 planned highway projects on the I-45 Corridor at a total estimated cost of $4.4 billion. Of these 56 planned highway projects, 42 are fully funded ($2.2 billion) and 2 projects are partially funded with approximately $200,000 in funding needed. In addition, 12 projects at an estimated cost of $2.2 billion had no identified funding source in 2018.

The 56 planned highway projects consist of 15 preservation projects at a cost of $28 million, nine added capacity projects at a cost of $2 billion, 11 bridge projects at an estimated cost of $34 million, and 21 safety/operational projects at an estimated cost of $2.3 billion.

Table 17. Planned I-45 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	15	28
Mobility	9	2,017
Bridge	11	34
Safety/Operational	21	2,299
Total	56	4,377

Future I-45 Corridor Needs

Table 18 shows the I-45 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified three project needs at a total estimated cost of $185 million on the I-45 Corridor. The three project needs consist of one preservation project at an estimated cost of $10 million and two safety/operational projects at an estimated cost of $175 million.

Table 18. Future I-45 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	1	10
Mobility	-	-
Bridge	-	-
Safety/Operational	2	175
Total	3	185

4.1.7 I-69 Corridor

The I-69 Corridor (Figure 32) connects Laredo and the Lower Rio Grande Valley with Corpus Christi and Houston before continuing east. The I-69 Corridor consists of three highways: I-69C (US 281) and I-69E (US 77) that run parallel and north from the Lower Rio Grande Valley and US-59 (future I-69W), which runs northeast from Laredo. The I-69 Corridor serves the World Trade Bridge and the Colombia Solidarity Bridge in Laredo and several bridges in the Lower Rio Grande Valley, including the Pharr-International Bridge on the Rise and Veterans International Bridge at Los Tomates (*25*).

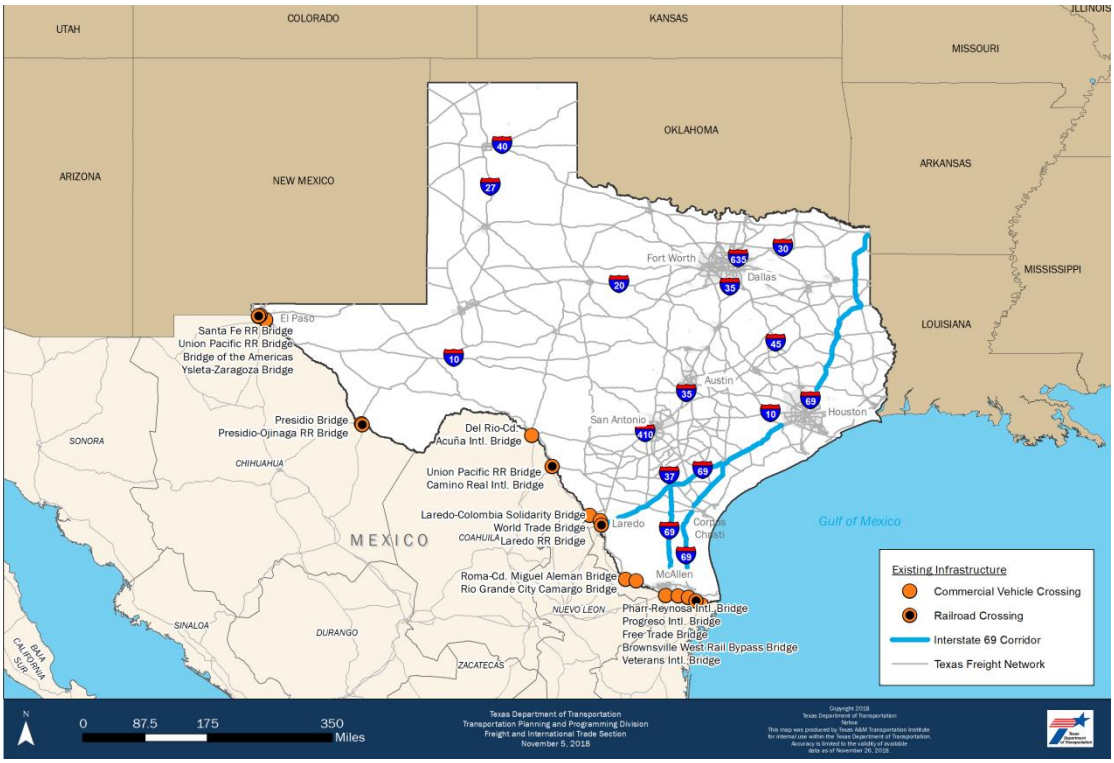


Figure 32. I-69 Corridor in Texas

Let Projects on I-69 (2017/2018)

Table 19 shows the number and cost of projects that were let on I-69 in 2017 and 2018. Table 19 shows that TxDOT let 103 projects at a total cost of $317 million on the I-69 Corridor in 2017 and 2018. This amounted to 63 preservation projects at a cost of $152 million, eight added capacity projects at a cost of $73 million, 13 bridge projects at a cost of $2 million, and 19 safety/operational projects at a cost of $90 million.

Table 19. Let Projects on I-69 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	63	152
Mobility	8	73
Bridge	13	2
Safety/Operational	19	90
Total	103	317

Planned Highway Projects on I-69 Corridor

Table 20 shows the planned highway infrastructure projects on I-69 that are included in TxDOT's 2019 UTP development process. Table 20 shows 141 planned highway projects on the I-69 Corridor at a total estimated cost of $3.4 billion. Of these 141 planned highway projects, 104 are fully funded ($2.0 billion) and 14 projects are partially funded with approximately $256 million in funding needed. In addition, 23 projects at an estimated cost of $855 million had no identified funding source in 2018.

The 141 planned highway projects consist of 71 preservation projects at a cost of $267 million, 25 added capacity projects at a cost of $1.9 billion, 8 bridge projects at an estimated cost of $68 million, and 37 safety/operational projects at an estimated cost of $1.2 billion.

Table 20. Planned I-69 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	71	267
Mobility	25	1,881
Bridge	8	68
Safety/Operational	37	1,171
Total	141	3,388

Future I-69 Corridor Needs

Table 21 shows the I-69 Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified eight project needs at a total estimated cost of $368 million on the I-69 Corridor. The eight project needs consist of three added capacity projects at an estimated cost of $80 million and five safety/operational projects at an estimated cost of $288 million.

Table 21. Future I-69 Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	3	80
Bridge	-	-
Safety/Operational	5	288
Total	8	368

4.1.8 La Entrada al Pacifico

The vision of the Midland-Odessa Transportation Alliance for the La Entrada al Pacifico Corridor (Figure 33) is to connect the Port of Topolobampo via Chihuahua City to the Presidio Bridge, Midland-Odessa, and farther north to Amarillo and Texas' border with Oklahoma (26). The La Entrada al Pacifico Corridor consists of US 67 from Presidio to Marfa and US 17 from Marfa to I-10 near Balmorhea and Pecos. At Pecos, US 17 links to I-20, which connects to Midland-Odessa. To the east of Midland-Odessa, I-20 is linked to US 87 at Big Spring. US 87 links to Lubbock and I-27 toward Amarillo.

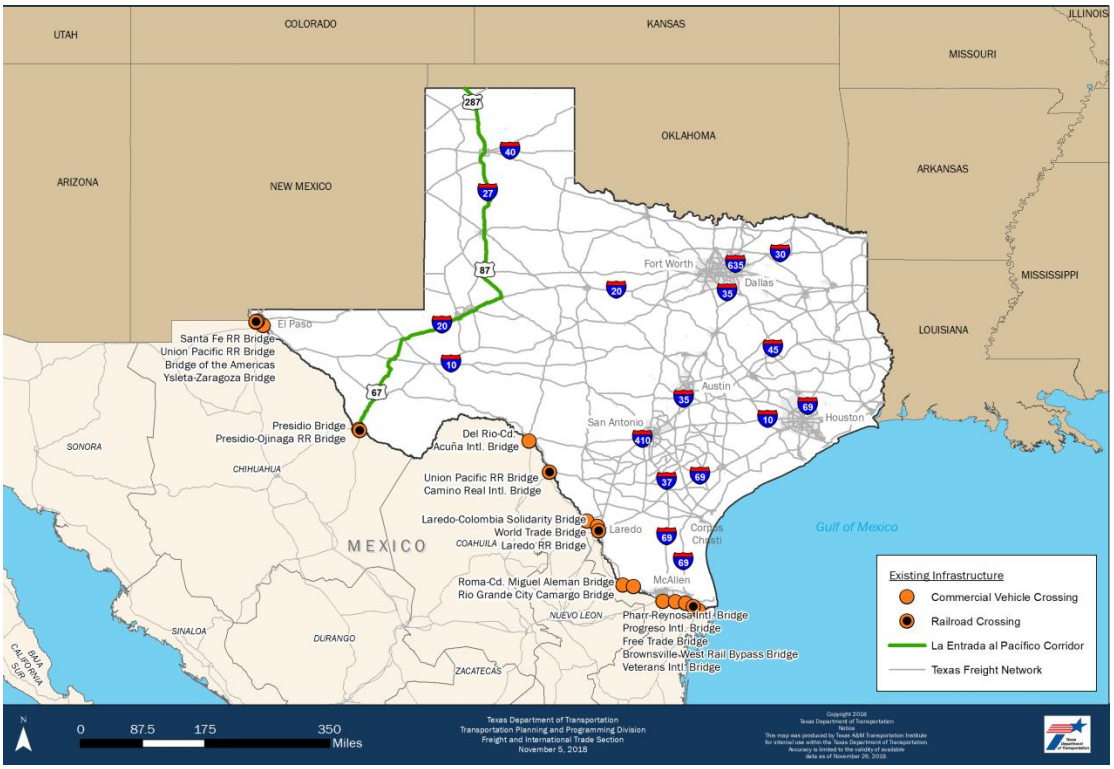


Figure 33. La Entrada al Pacifico Corridor in Texas

Let Projects on La Entrada al Pacifico (2017/2018)

Table 22 shows the number and cost of projects that were let on La Entrada al Pacifico in 2017 and 2018. Table 22 shows that TxDOT let 53 projects at a total cost of $132 million on the La Entrada al Pacifico Corridor in 2017 and 2018. This amounted to 16 preservation projects at a cost of $39 million, 25 bridge projects at a cost of $51 million, and 12 safety/operational projects at a cost of $42 million.

Table 22. Let Projects on La Entrada al Pacifico by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	16	39
Mobility	-	-
Bridge	25	51
Safety/Operational	12	42
Total	53	132

Planned Highway Projects on La Entrada al Pacifico Corridor

Table 23 shows the planned highway infrastructure projects on La Entrada al Pacifico that are included in TxDOT's 2019 UTP development process. Table 23 shows 94 planned highway projects on the La Entrada al Pacifico Corridor at a total estimated cost of $556 million. Of these 94 planned highway projects, 76 are fully funded ($381 million) and 7 projects are partially funded with approximately $12 million in funding needed. In addition, 11 projects at an estimated cost of $161 million had no identified funding source in 2018.

The 94 planned highway projects consist of 54 preservation projects at a cost of $98 million, one added capacity project at a cost of $2 million, 18 bridge projects at an estimated cost of $83 million, and 21 safety/operational projects at an estimated cost of $373 million.

Table 23. Planned La Entrada al Pacifico Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	54	98
Mobility	1	2
Bridge	18	83
Safety/Operational	21	373
Total	94	556

Future La Entrada al Pacifico Corridor Needs

Table 24 shows the La Entrada al Pacifico Corridor needs that have been identified beyond the 10-year UTP window. TxDOT identified three project needs at a total estimated cost of $82 million on the La Entrada al Pacifico Corridor. The three project needs consist of one added capacity project at an estimated cost of $2 million and two safety/operational projects at an estimated cost of $80 million.

Table 24. Future La Entrada al Pacifico Corridor Needs

Project Type	Number of Projects	Project Cost ($ million)
Preservation	-	-
Mobility	1	2
Bridge	-	-
Safety/Operational	2	80
Total	3	82

4.1.9 Ports-to-Plains Corridor

The Ports-to-Plains Corridorl (Figure 34) inks Laredo to Eagle Pass via I-35, US 83, and US 277, which connects Eagle Pass to Del Rio. From Del Rio, the corridor travels north via US 277 to San Angelo, then via US 87 to Lubbock, where it joins with I-27, which connects Lubbock to Amarillo. The Ports-to-Plains Corridor serves the Del Rio–Ciudad Acuña International Bridge, the Camino Real International Bridge (Eagle Pass), and the World Trade and Colombia Solidarity Bridges in Laredo.

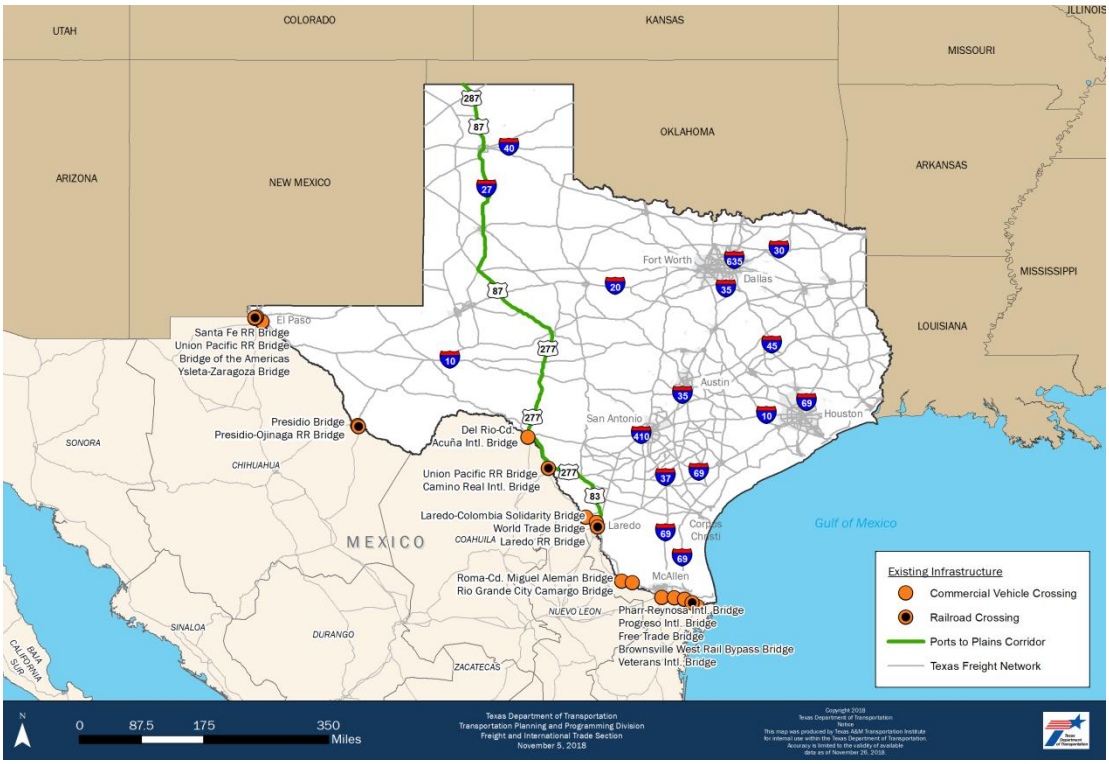


Figure 34. Ports-to-Plains Corridor in Texas

Let Projects on the Ports-to-Plains Corridor (2017/2018)

Table 25 shows the number and cost of projects that were let on the Ports-to-Plains Corridor in 2017 and 2018. Table 25 shows that TxDOT let 59 projects at a total cost of $123 million on the Ports-to-Plains Corridor in 2017 and 2018. This amounted to 29 preservation projects at a cost of $58 million, 15 bridge projects at a cost of $33 million, and 15 safety/operational projects at a cost of $31 million.

Table 25. Let Projects on the Ports-to-Plains Corridor by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	29	58
Mobility	-	-
Bridge	15	33
Safety/Operational	15	31
Total	59	123

Planned Highway Projects on the Ports-to-Plains Corridor

Table 26 shows the planned highway infrastructure projects on Ports-to-Plains that are included in TxDOT's 2019 UTP development process. Table 26 shows 89 planned highway projects on the Ports-to-Plains Corridor at a total estimated cost of $644 million. Of these 89 planned highway projects, 69 are fully funded ($449 million) and 11 projects are partially funded with approximately $17 million in funding needed. In addition, nine projects at an estimated cost of $176 million had no identified funding source in 2018.

The 89 planned highway projects consist of 53 preservation projects at a cost of $266 million, three added capacity projects at a cost of $52 million, 11 bridge projects at an estimated cost of $13 million, and 22 safety/operational projects at an estimated cost of $313 million.

Table 26. Planned Ports-to-Plains Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	53	266
Mobility	3	52
Bridge	11	13
Safety/Operational	22	313
Total	89	644

Future Ports-to-Plains Corridor Needs

No project needs have been identified on the Ports-to-Plains Corridor beyond the 10-year UTP window.

4.1.10 East-West Corridor

The East-West Border Corridor (Figure 35) is an emerging corridor that runs parallel to the border and connects Brownsville to Del Rio. Brownsville is connected to Laredo via I-69, I-2, and US 83. Traveling north from the Veteran's International Bridge in Brownsville, I-69E connects to I-2 in Harlingen. Traveling west from Harlingen, I-2 passes through McAllen and end near Mission, and the corridor continues via US 83 to Laredo. Laredo is connected to Eagle Pass via I-35, US 83, and US 277. US 277 connects Eagle Pass to Del Rio. The highways that connect Del Rio to Brownsville serve five major ports of entry along the Texas-Mexico border—Brownsville, Hidalgo, Laredo, Eagle Pass, and Del Rio.

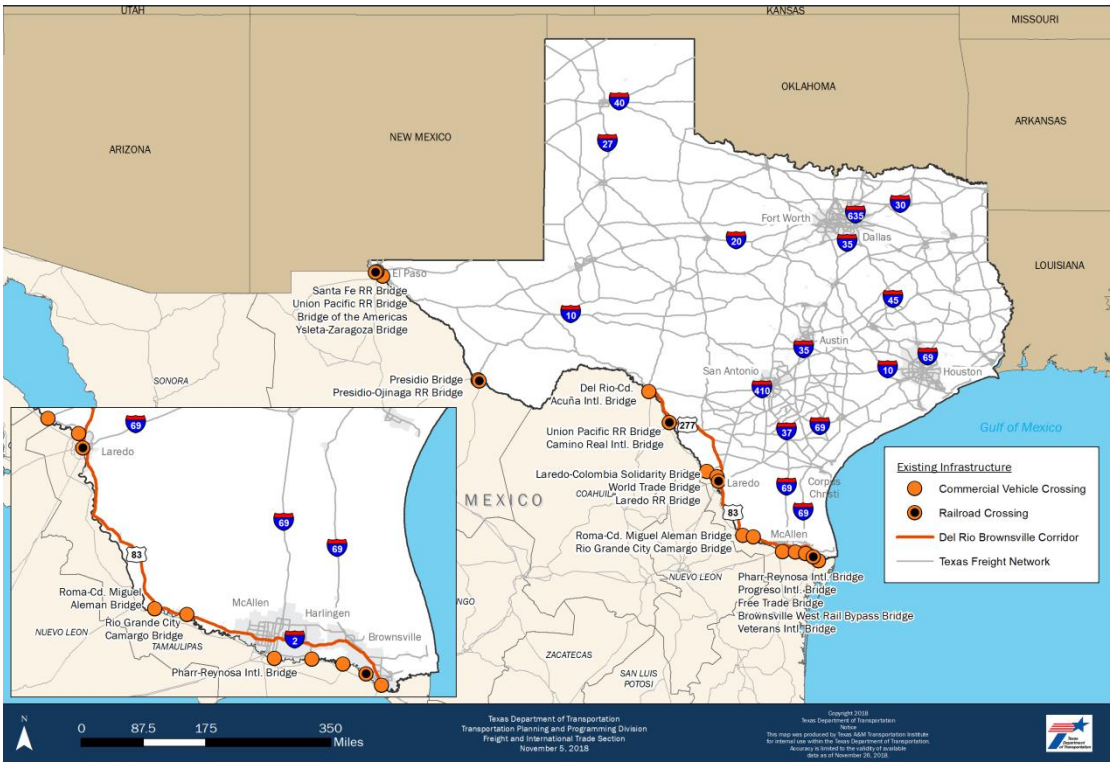


Figure 35. East-West Corridor in Texas

Let Projects on East-West Corridor (2017/2018)

Table 27 shows the number and cost of projects that were let on the East-West Corridor in 2017 and 2018. Table 27 shows that TxDOT let 34 projects at a total cost of $74 million on the East-West Corridor in 2017 and 2018. This amounted to 20 preservation projects at a cost of $38 million, one bridge project at a cost of $300,000, and 13 safety/operational projects at a cost of $37 million.

Table 27. Let Projects on the East-West Corridor by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	20	38
Mobility	0	0
Bridge	1	0.3
Safety/Operational	13	37
Total	34	74

Planned Highway Projects on the East-West Corridor

Table 28 shows the planned highway infrastructure projects on the East-West Corridor that are included in TxDOT's 2019 UTP development process. Table 28 shows 65 planned highway projects on the East-West Corridor at a total estimated cost of $1.1 billion. Of these 65 planned highway projects, 43 are fully funded ($772 million) and 8 projects are partially funded with approximately $6 million in funding needed. In addition, 14 projects at an estimated cost of $298 million had no identified funding source in 2018.

The 65 planned highway projects consist of 36 preservation projects at a cost of $193 million, 14 added capacity projects at a cost of $375 million, two bridge projects at an estimated cost of $87 million, and 13 safety/operational projects at an estimated cost of $438 million.

Table 28. Planned East-West Corridor Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	36	193
Mobility	14	375
Bridge	2	87
Safety/Operational	13	438
Total	65	1,093

Future East-West Corridor Needs

TxDOT identified one project need on the East-West Corridor beyond the 10-year UTP window. This project entails a safety/operational improvement at an estimated cost of $65 million.

4.1.11 US 87 Corridor

There is interest emerging in developing the US 87 corridor (Figure 36). US 87 connects I-10 to the Texas-New Mexico State line.

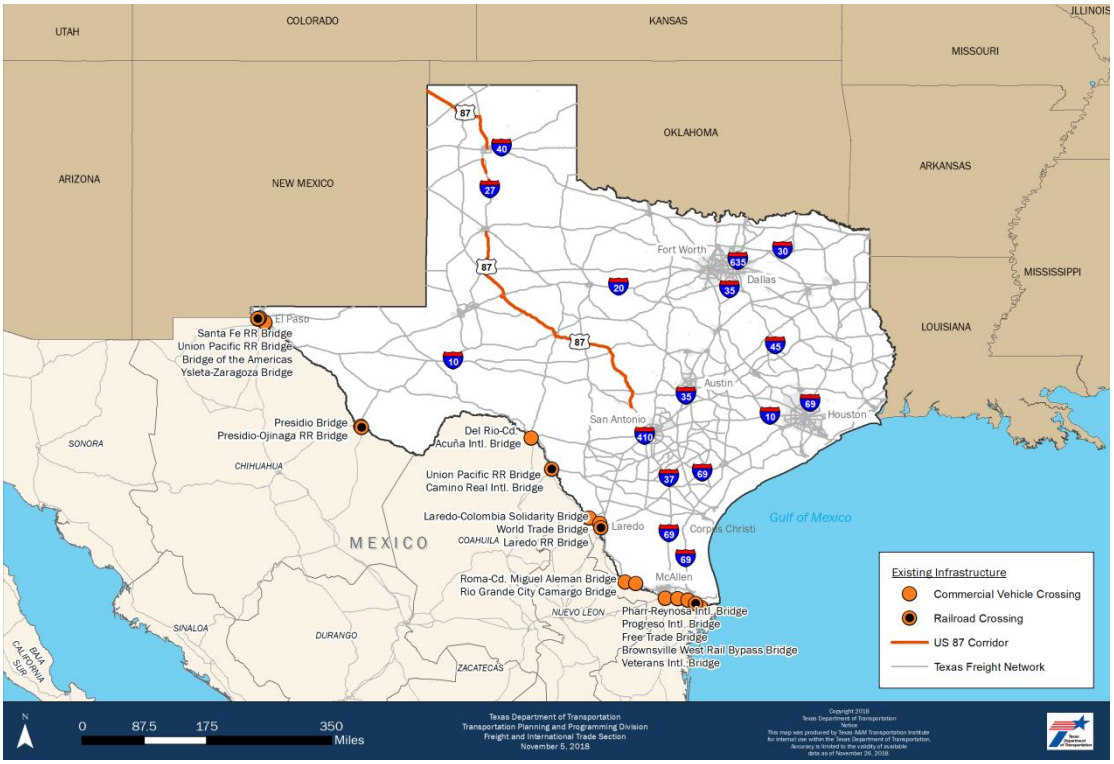


Figure 36. US 87 Corridor in Texas

Let Projects on US 87 (2017/2018)

Table 29 shows the number and cost of projects that were let on US 87 in 2017 and 2018. Table 29 shows that TxDOT let 32 projects at a total cost of $67 million on the US 87 Corridor in 2017 and 2018. This amounted to 26 preservation projects at a cost of $58 million, 2 bridge projects at a cost of $7 million, and 4 safety/operational projects at a cost of $1 million.

Table 29. Let Projects on US 87 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	26	58
Mobility	-	-
Bridge	2	7
Safety/Operational	4	1
Total	32	67

Planned Highway Projects on US 87

Table 30 shows the planned highway infrastructure projects on US 87 that are included in TxDOT's 2019 UTP development process. Table 30 shows 46 planned highway projects on the US 87 Corridor at a total estimated cost of $274 million. Of these 46 planned highway projects, 34 are fully funded ($164 million) and 8 projects are partially funded with approximately $1 million in funding needed. In addition, four projects at an estimated cost of $105 million had no identified funding source in 2018.

The 46 planned highway projects consist of 37 preservation projects at a cost of $105 million, 2 added capacity projects at a cost of $98 million, 1 bridge project at an estimated cost of $4 million, and 6 safety/operational projects at an estimated cost of $68 million.

Table 30. Planned US 87 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	37	105
Mobility	2	98
Bridge	1	4
Safety/Operational	6	68
Total	46	274

Future US 87 Corridor Needs

No project needs have been identified on the US 87 Corridor beyond the 10-year UTP window.

4.1.12 US 69 Corridor

There is interest emerging in developing the US 69 corridor (Figure 37). US 69 connects I-20 to Beaumont.

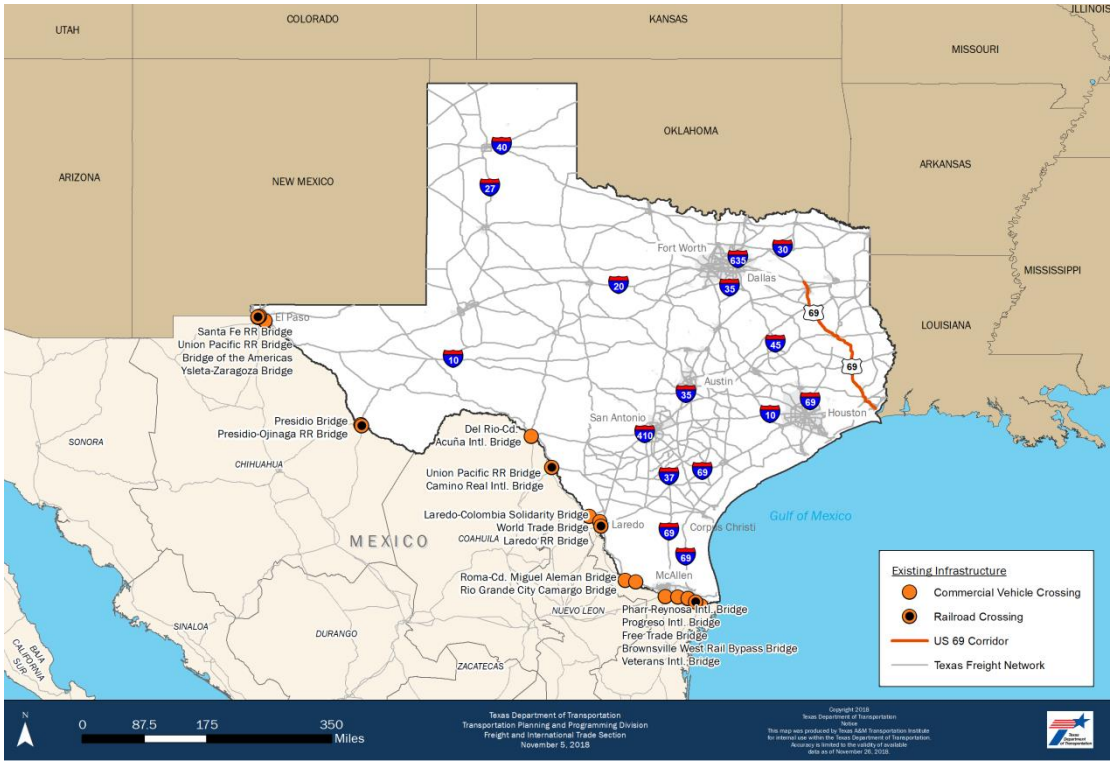


Figure 37. US 69 Corridor in Texas

Let Projects on US 69 (2017/2018)

Table 31 shows the number and cost of projects that were let on US 69 in 2017 and 2018. Table 31 shows that TxDOT let 30 projects at a total cost of $149 million on the US 69 Corridor in 2017 and 2018. This amounted to 12 preservation projects at a cost of $12 million, 11 added capacity projects at a cost of $121 million, 3 bridge projects at a cost of $200,000, and 4 safety/operational projects at a cost of $17 million.

Table 31. Let Projects on US 69 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	12	12
Mobility	11	121
Bridge	3	0.2
Safety/Operational	4	17
Total	30	149

Planned Highway Projects on US 69 Corridor

Table 32 shows the planned highway infrastructure projects on US 69 that are included in TxDOT's 2019 UTP development process. Table 32 shows 38 planned highway projects on the US 69 Corridor at a total estimated cost of $1 billion. Of these 38 planned highway projects, 27 are fully funded ($786 million) and 3 projects are partially funded with approximately $4 million in funding needed. In addition, eight projects at an estimated cost of $189 million had no identified funding source in 2018.

The 38 planned highway projects consist of 19 preservation projects at a cost of $47 million, 13 added capacity projects at a cost of $843 million, 2 bridge projects at an estimated cost of $1 million, and 4 safety/operational projects at an estimated cost of $110 million.

Table 32. Planned US 69 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	19	47
Mobility	13	843
Bridge	2	1
Safety/Operational	4	110
Total	38	1,002

Future US 69 Corridor Needs

No project needs have been identified on the US 69 Corridor beyond the 10-year UTP window.

4.1.13 US 281 Corridor

There is interest emerging in developing the US 281 corridor (Figure 38). US 281 runs parallel to I-35 to the north and connects San Antonio to the Texas-Oklahoma border.

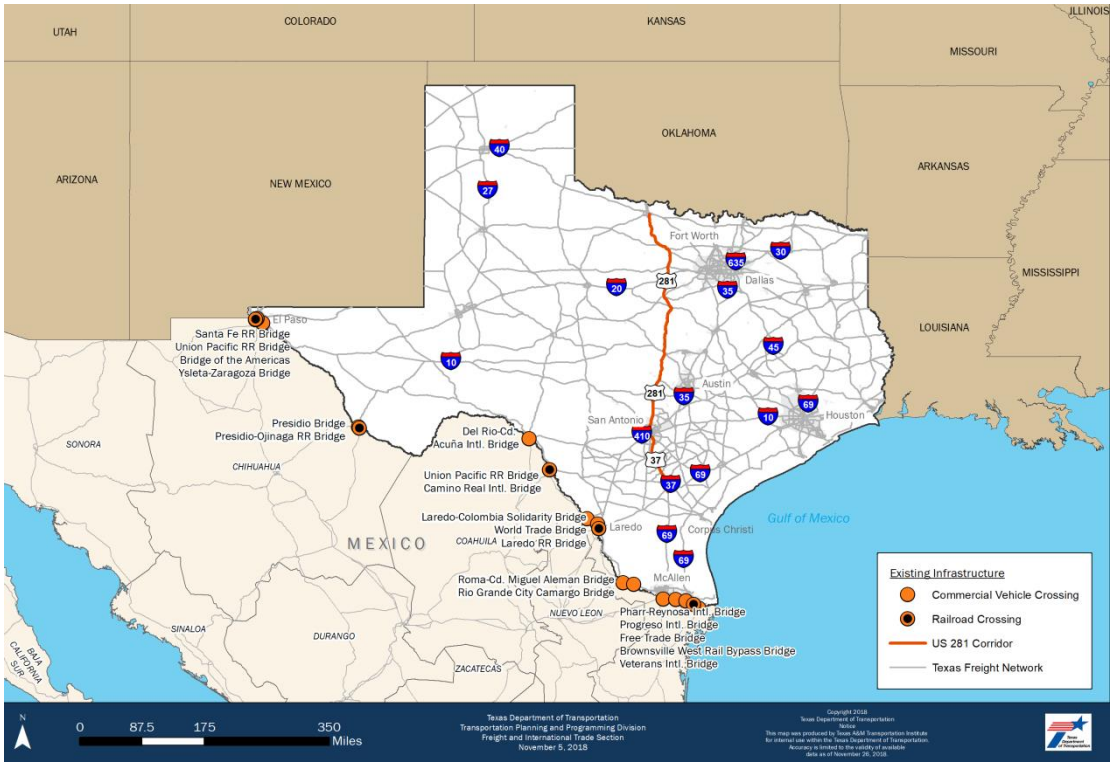


Figure 38. US 281 Corridor in Texas

Let Projects on US 281 (2017/2018)

Table 33 shows the number and cost of projects that were let on US 281 in 2017 and 2018. Table 33 shows that TxDOT let 32 projects at a total cost of $382 million on the US 281 Corridor in 2017 and 2018. This amounted to 17 preservation projects at a cost of $18 million, 8 added capacity projects at a cost of $349 million, 1 bridge project at a cost of $3 million, and 6 safety/operational projects at a cost of $12 million.

Table 33. Let Projects on US 281 by Type (2017 and 2018)

Project Type	Number of Projects	Project Cost ($ millions)
Preservation	17	18
Mobility	8	349
Bridge	1	3
Safety/Operational	6	12
Total	32	382

Planned Highway Projects on US 281 Corridor

Table 34 shows the planned highway infrastructure projects on US 281 that are included in TxDOT's 2019 UTP development process. Table 34 shows 45 planned highway projects on the US 281 Corridor at a total estimated cost of $317 million. Of these 45 planned highway projects, 30 are fully funded ($85 million) and 9 projects are partially funded with approximately $18 million in funding needed. In addition, six projects at an estimated cost of $177 million had no identified funding source in 2018.

The 45 planned highway projects consist of 25 preservation projects at a cost of $65 million, 6 bridge projects at an estimated cost of $20 million, and 14 safety/operational projects at an estimated cost of $232 million.

Table 34. Planned US 281 Projects by Type (2019 UTP)

Project Type	Number of Projects	Project Cost ($ million)
Preservation	25	65
Mobility	-	-
Bridge	6	20
Safety/Operational	14	232
Total	45	317

Future US 281 Corridor Needs

No project needs have been identified on the US 281 Corridor beyond the 10-year UTP window.

4.2 Texas Rail Trade Corridors

Class I Railroads [9]were asked to provide information regarding their modal investmemt in the border districts as well as planned investments. Texas' rail trade corridors connect Texas to Mexico and the rest of the U.S. (see Figure 10). In 2017, BNSF invested approximately $500 million in Texas rail. These investments included the following projects:

- Expanding parking, support tracks, and production tracks at the Alliance intermodal and automotive facilities.
- Completion of the Cadet Yard west of San Antonio to handle manifest trains.
- Siding extension at Clarendon.

[9] Only BNSF responded to the request.

In 2018, BNSF plans to invest $375 million in Texas. Half of this investment will be for maintenance of rail, ties, and ballast. The remainder of the planned investment will go toward expansion projects that will enhance capacity and fluidity along the network.

BNSF is also investing in several capacity expansion projects in Texas. On the Hereford Subdivision, crews completed work earlier this year on expanding to quadruple main line track for more than 4 miles through Amarillo. On the Wichita Falls Subdivision, which runs between Wichita Falls and Fort Worth, crews will complete installation of Centralized Traffic Control on the entire subdivision, install one new siding, extend another to increase capacity, and address increased train flows. In the Houston area on the Conroe Subdivision, construction is scheduled to begin on a new connection and siding in Dobbin to help facilitate train flows between Dallas/Fort Worth and Houston.

4.3 Border Crossings

4.3.1 Free Trade Bridge

In April 2018, the Free Trade Bridge inaugurated a new cold room inspection facility. The facility is located near the Port of Harlingen, Harlingen Industrial Park, I-69, and San Benito Industrial Park. The 2,650 square foot facility is expected to attract fruit and produce shippers looking to extend the shelf life of their cargo.

The cold room inspection facility project was developed by Cameron County in partnership with CBP, General Services Administration (GSA), the City of San Benito, and the City of Harlingen. The facility cost approximately $525,000, 50 percent of which was funded by Cameron County, and 25 percent each by the City of Harlingen and the City of San Benito.

4.3.2 Veterans International Bridge

In August 2018, Veterans International Bridge inaugurated its FAST lane expansion project. This project expanded commercial primary lanes to increase capacity for commercial vehicles entering the U.S.

The expansion project cost $800,000 and was funded by Cameron County. After the completion of the expansion, CBP is expected to make a $7 million investment in technology.

4.3.3 Colombia Solidarity Bridge

In 2017 and 2018, the following projects were implemented at the City of Laredo's Bridge Toll Facilities on the Colombia Solidarity Bridge:

- Upgraded the electronic toll collection system, weigh-in-motion system, and customer service center for southbound non-commercial and commercial traffic.

4.3.4 World Trade Bridge

In 2017 and 2018, the following projects were implemented at the City of Laredo's Bridge Toll Facilities on the World Trade Bridge:

- Replaced the roof of the Administration Building.
- Upgraded the electronic toll collection system, weigh-in-motion system, and customer service center for southbound non-commercial and commercial traffic.

The World Trade Bridge is also planning to expand the span of the bridge from eight lanes to 16 lanes. Changes affecting all Laredo bridges include the development of the City of Laredo Bridge Master Plan and the Free and Secure Trade Lanes Relocation project under the CBP's Donation Acceptance Program (DAP).

4.3.5 Camino Real International Bridge

In 2017, the Camino Real International Bridge completed a commercial lane expansion project. In 2018, the bridge implemented an improvement project that includes fence repairs, bridge deck repairs, and lane reconfiguration to accommodate four inbound and two outbound lanes.

4.3.6 International Bridge I

In 2018, the International Bridge I implemented an improvement project that included fence repairs, gate replacement, and bridge deck repairs.

4.3.7 Donna-Rio Bravo International Bridge

The Donna-Rio Bravo International Bridge is developing the Commercial Inspection Facilities Project, which is a multiphase project under CBP's DAP.

The first phase of the project consists of roadway infrastructure, inspection and collection booths, and a canopy to the west of the existing privately owned vehicle (POV) facilities at the Donna-Rio Bravo Land Port of Entry to facilitate the inspection and processing of southbound empty commercial traffic traveling into Mexico. The first phase is expected to be completed in July 2019 and will cost approximately $5.5 million.

The second phase of the project consists of roadway infrastructure to the east of the existing POV facilities, as well as separate inspection facilities and equipment, commercial loading docks and office space to the east and west of the new roadway infrastructure to facilitate the inspection and processing of loaded commercial trucks traveling into and out of the U.S. The second phase is expected to be completed by September 2020 and will cost approximately $51 million.

The development of the Donna-Rio Bravo International Bridge will encourage economic development as new support facilities will be drawn to the area to support the commercial traffic.

4.3.8 Anzalduas International Bridge

The Anzalduas is currently developing its Land Port of Entry Expansion Project, which will expand the current facility operations to include full commercial capabilities for both north and southbound commercial vehicles. It is expected that the addition will generate fuel savings for regular users, reduce congestion at other bridges, and reduce the area's environmental footprint by being more efficient. The cost of this project is estimated to be $53.7 million and will be funded by the Anzalduas Bridge Board and the City of McAllen.

4.3.9 The Pharr-Reynosa International Bridge

The Pharr-Reynosa International Bridge is completing a renovation project that would process between 150 and 200 trucks per hour. A planned inspection facility will serve as a gate to gate connector with added efficiency for Customs-Trade Partnership Against Terrorism (C-TPAT). Renovations include a wide load lane, 24 docking spaces (for dry and cold storage), and an agricultural inspection training center and lab. The cost of these projects is estimated at $35 million. Following these projects, a two-story command center with a camera system to view all cross-border operations is planned. The north and east docks will also be extended as they currently only have a depth of 50 ft, while trailers are 53 ft long.

4.3.10 Presidio International Rail Bridge

The International Rail Bridge at Presidio is one of five rail border crossings between Texas and Mexico, and one of eight between the U.S. and Mexico. The International Rail Bridge at Presidio burned in two separate fires in 2008 and 2009. Texas Pacifico (TXPF) is contractually responsible for the reconstruction of the bridge. TXPF developed plans for the reconstruction of the bridge and TxDOT submitted the plans and environmental document for the project to the necessary federal agencies in September 2016. TxDOT received approval for the reconstruction of the bridge as permitted on August 29, 2017. TXPF awarded the contract for reconstruction of the bridge on September 4, 2018. TxDOT and TXPF held a groundbreaking ceremony for the bridge on October 22, 2018. The bridge is scheduled to be completed by August 1, 2019.

4.4 Texas-Mexico Pipelines

Since the TFMP was completed, several additional pipeline projects have been approved or have started operations. These pipelines serve areas all along the Texas-Mexico border and inland Mexico connecting them to production from the Permian Basin, the Eagle Ford, and other production areas of the state. Some examples of recent pipeline developments include:

- The Valley Crossing Pipeline, which was approved by FERC in October 2017. It is a 168-mile pipeline that will move 2.6 billion cubic feet of natural gas per day from the Agua Dulce hub near Corpus Christi on to the Port of Brownsville and then to the Gulf of Mexico where it will connect with an undersea natural gas pipeline from Mexico (*27*).

- The underwater Sur de Texas-Tuxpan pipeline, which stretches nearly 500 miles through the Gulf of Mexico from Brownsville, in South Texas to the Tuxpan port in Veracruz state, Mexico (*28*).
- The El Encino-Topolobampo pipeline, which connects the Permian Basin gas production areas in West Texas and southeastern New Mexico to reach northwestern Mexico (*28*).
- The Nueva Era pipeline is a joint venture between HEP and Mexico's Grupo Clisa, which transports gas from the Eagle Ford Shale in Texas to northeastern Mexico. This pipeline was developed to have 600 million cubic feet per day of transport capacity. The minimum 30-inch diameter, 190-mile pipeline was designed to directly connect a natural gas hub in Webb County, to power plants in the Monterrey, Mexico, area. The system is anchored by a 504 MMcf/d contract with the Comision Federal de Electricidad (CFE), Mexico's state power company with another 496 Bcf/d still available for other users (*29*).

Figure 39 shows an example of how emerging pipeline transportation networks are beginning to provide Texas produced natural gas for the Monterrey regional market for electricity generation that supports the industrial sector (*29*).

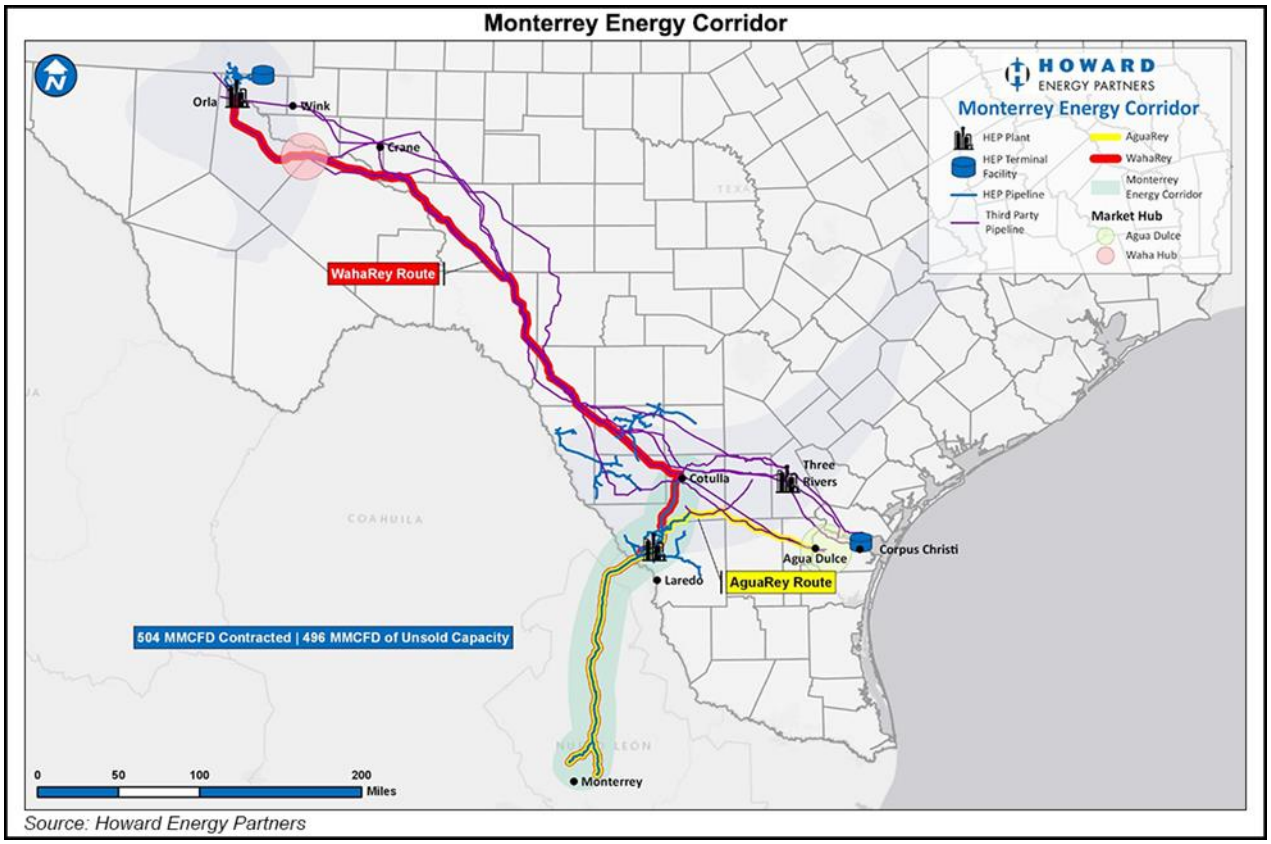


Figure 39. New Howard Energy Partners (HEP) Pipelines Linking Permian

4.5 Texas Deepwater Gulf Port: Port of Brownsville

In 2017, the Port of Brownsville completed the following projects:

- *Liquid Cargo Dock Repairs:* Rehabilitation and upgrade to Liquid Cargo Dock including new structure bridges, bollards, and installation of owner supplied fenders. The cost of the project was $679,415.
- *Oil Dock 5 Repairs:* Repair and replace West Breasting Dolphin fender damaged by a vessel. This was done in 2015. The project cost $46,500.
- *Storage Patio Repairs and Expansion:* Repairs and expansion of open area storage patios throughout the Port. The project cost $1,289,091.

In 2018, the Port of Brownsville was in the process of implementing the following projects:

- *Oil Dock 3 Repairs:* Repairs to existing Breasting Dolphins with replacement of fender cones and panels; construction of dock protection structure in front of the dock, plus construction of two new Breasting Dolphins to accommodate larger vessels. The project cost $2,271,028.
- *Oil Dock 6 – New Construction*: Construction of new state-of-the-art liquid cargo dock for vessels up to 900 ft in length, to serve the various port tank farm terminals. The project cost $24,360,247.
- *Docks Maintenance Dredging:* Dredging of shoaling in nine of the port's existing docks: Cargo Docks #3, #11, #12, #13, #15, Bulk Cargo Dock, Liquid Cargo Dock, and Oil Docks #3 and #5. The project cost $1,035,428.
- *Bulk Cargo Dock Repairs:* Repairs and enhancements to the grain elevator's bulk cargo dock, including installation of a new fendering system across the face of the existing dock, and other improvements to facilitate operations by the tenant. The project cost $5,126,417.
- *Valley Crossing Pipeline:* Leased land to Valley Crossing Pipeline for 42-inch gas pipe to provide gas to Comisión Federal de Electricidad power plants in Mexico.
- *Storage Patio Repairs and Expansion:* Repairs and expansion of open area storage patios throughout the port. The project cost $1,575,000.
- *Port Road Repairs:* Rehabilitation of various roads within the port, including approximately 5,802.83 SY concrete pavement reconstruction, about 1,235 SY of full reconstruction asphaltic pavement and some 78,690 SY of 1-1/2-inch overlay asphaltic concrete. The project cost $1,896,155.
- *BIH Channel Improvement Project* –Development of the first phase of pre-construction engineering and design documents for the Water Resources Development Act-approved 42 ft to 52 ft Brownsville Ship Channel Deepening project. The project cost $4,000,000.
- *South Port Connector:* Construction of a new 2-mile long road to connect the port's R.L. Ostos Road south of the ship channel with SH 4 (Boca Chica Blvd.) through the Port Bridge corridor. The project cost $16,500,00.

In 2019, the Port of Brownsville plans to complete the following projects:

- *Patio Storage Repairs, Expansion and Maintenance:* Repairs and expansion of open area storage patios throughout the port. The estimated cost is $2,250,000.
- *BIH Channel Improvement Project:* Additional phases of the development of construction documents and specifications for the Brownsville Ship Channel Deepening project. The estimated cost is $10,000,000.
- *BIH Channel Improvement Project:* Construction phase of the 42 ft to 52 ft Brownsville Ship Channel Deepening project, to be spread out over two or three years. The estimated cost is $204,000.
- *Dock Upgrades:* Upgrades to several docks in the Brownsville Ship Channel to take advantage of the 42 ft to 52 ft Brownsville Ship Channel Deepening project. The estimated cost is $48,000.
- *CBP Building Improvements:* Rehabilitation of the old Woodfin lease site and building, which will be occupied by CBP personnel stationed at the port. The estimated cost is $750,000.

6. Summary

The International Trade Corridor Plan is relevant to Texas as trade is important to both the U.S. and Texas economies. In 2017, the U.S. traded $3.9 trillion in merchandise-- $2.34 trillion were imports and $1.55 trillion were exports. Texas' trade represented 13.5 percent of all U.S. trade at $527 billion in 2017. Texas had the second largest merchandise trade value behind California. However, Texas leads the country in export value, having exported $264 billion in 2017.

Texas' transportation infrastructure is essential to facilitating trade. Thus, it is important to understand what is traded and which modes are used to transport trade. Projected increases in trade will require continued investments in Texas' trade transportation system to ensure the efficient movement of U.S. and Texas trade. This report provides information on recent investments in Texas' major highway trade corridors and non-highway investments that facilitate trade.

The analysis showed that TxDOT let 606 trade corridor projects at a total cost of $4.2 billion in 2017 and 2018. This amounted to 294 preservation projects at a cost of $691 million, 83 added capacity projects at a cost of $2.4 billion, 106 bridge projects at a cost of $188 million, and 123 safety/operational projects at a cost of $899 million.

Furthermore, TxDOT's 2019 UTP development process includes 891 planned highway projects on Texas' trade corridors. These 891 planned highway trade projects are estimated to cost $30.2 billion. Of these 891 planned highway trade projects, 622 are fully funded ($9.9 billion) and 118 projects are partially funded with $4.6 billion in funding needed. In addition, 151 projects at an estimated cost of $13 billion had no identified funding source in 2018. The 891 planned highway trade projects consist of 427 preservation projects at a cost of $3.1 billion, 145 added capacity projects at an estimated cost of $18.8 billion, 106 bridge projects at an estimated cost of $609 million, and 213 safety/operational projects at an estimated cost of $7.7 billion.

Finally, TxDOT identified 43 project needs at a total estimated cost of $5 billion on Texas' trade corridors beyond the 10-year UTP window. The 43 project needs consist of one preservation project at an estimated cost of $10 million, 26 added capacity projects at an estimated cost of $4.3 billion, and 16 safety/operational projects at an estimated cost of $702 million.

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