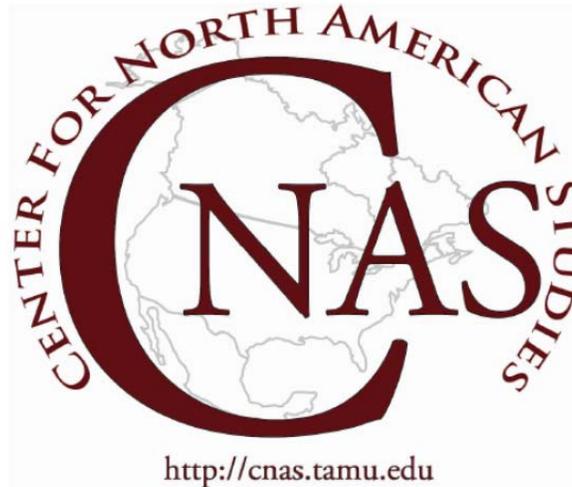


The Next Big Infrastructure Needs at the U.S. Mexico Border

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The Next Big Infrastructure Needs at the U.S. Mexico Border

Executive Summary

What Is the Issue?

The United States and Mexico have a long and strong trading relationship in most product sectors, including agricultural and food products. Within the agricultural sector, there is significant two-way trade between the two countries in fresh fruits and vegetables and Mexico is a major market for U.S. corn, rice and sorghum. Produce imports from Mexico and corn exports to Mexico are at all-time highs while rice exports are down and sorghum exports are only now beginning to rebound after two very low years.

Nearly all fresh fruit and vegetable trade with Mexico occur over land borders, with about 58 percent of corn, 31 percent of rice, and all sorghum exports are shipped via rail or truck. With all of this trade occurring over the U.S.-Mexico border, it is important to ensure that land-border transportation systems are efficient. To that end, this project seeks to identify potential improvements to the physical and administrative infrastructure at the U.S.-Mexico border which could lead to agricultural and food trade with Mexico becoming more profitable for U.S. agriculture. In an effort to address these informational needs, economists at Texas A&M AgriLife Extension Service (AgriLife) conducted a study to determine the next big infrastructure needs at the U.S.-Mexico border confronting agricultural products once they reach the border.

The purpose of this research is to determine the next big infrastructure needs on the U.S.-Mexican border and how they impact trade in corn, rice, sorghum, and fresh fruits and vegetables. This report will discuss the results of the study in the following order: (1) U.S.-Mexico trade patterns and analysis for corn, rice, sorghum, and fresh produce; (2) views from the industry in identifying and addressing border infrastructure needs; and (3) the roles of state departments of transportation in addressing border infrastructure needs. Recent events impacting U.S.-Mexico trade and how that may impact infrastructure needs will also be discussed.

What Did the Study Find?

U.S.-Mexico agricultural and food trade has grown significantly over the last two decades, and much of this trade occurs over land borders. Mexico has long been a purchaser of U.S. grains, particularly since the implementation of the North American Free Trade Agreement (NAFTA) in 1994. Since that time, U.S. corn exports to Mexico have grown from 3.1 million metric tons (MMT) to an all-time high of 14.0 MMT in 2016. Laredo is the most important land port for these corn exports (4.0 MMT in 2016), followed by Eagle Pass (2.83 MMT). Most land border corn exports are transported via rail.

U.S. rice exports grew from 261.3 thousand metric tons (TMT) to a peak of 908.2 TMT in 2011 before slipping to 854.0 TMT 2016. While most of these rice exports occur via sea, a little over 20 percent are shipped via truck and about ten percent are shipped via rail. Laredo accounts for about 75 percent of paddy rice exports to Mexico while Laredo (34.1 TMT), Otay Mesa (20.5 TMT), and Eagle Pass (16.8 TMT) were important for milled rice exports.

Sorghum exports to Mexico have seen drastic changes, first growing from 3.5 MMT in 1994 to 5.1 MMT in 2011 before falling continuously and then sharply to 74.3 TMT in 2014. U.S. sorghum exports to Mexico rebounded somewhat to 666.3 TMT in 2016. During the low years, China was purchasing most U.S. sorghum, but that has ended. Prior to the reduction, half or more sorghum was exported to Mexico via sea transport. However, all shipments are now via land, with Progreso capturing nearly 70 percent of these shipments, all by truck. Rail shipments of sorghum to Mexico via Laredo and Eagle Pass have grown in recent years.

While U.S. fresh fruit and vegetable exports to Mexico are quite small when compare to imports, U.S. exports did total 644.9 TMT at a value of \$602.2 million in 2016. Slightly more than a third of both export volume and value consisted of apples. Potato exports to Mexico accounted for about 14 percent of the volume but only about six percent of the value while pears accounted for 10 percent of the volume and 13 percent of the value. Otay Mesa and Nogales account for most of these fresh produce exports to Mexico with Calxico East also maintaining a significant share.

The U.S. imports of produce and products from Mexico during 2016, including fresh, frozen and processed fruits, vegetables, and nuts totaled \$12.04 billion. About 98 percent of these imports entered the United States by land ports between Mexico and Texas, New Mexico, Arizona, and California, and nearly all via truck. When considering only fresh fruits and vegetables, which is nearly ninety percent of the total, imports totaled \$10.67 billion. These imports totaled 8.99 MMT and were shipped in the equivalent of 463,755 forty-thousand pound truckloads.

Imports for produce obviously have a much larger impact on border area roadways than exports do and thus are part of the border infrastructure issue picture. About 48 percent of U.S. fresh fruit and vegetable imports from Mexico, 4.02 MMT, entered through Texas land ports, arriving in 221,662 truckloads. Another 35 percent, or 2.91 MMT, of these shipments entered through Arizona via 160,602 truckloads while California accounted for 15 percent with 1.24 MMT entering via 68,237 truckloads. New Mexico accounted for the remaining 3 percent. Nogales is the most important port for fresh produce imports from Mexico followed closely by Pharr. Otay Mesa and Laredo are other main entry points for these imports.

U.S.-Mexico trade industry and other stakeholders identified their top physical and administrative infrastructure priorities. Views reflected from both Arizona and Texas reflected specific physical infrastructure needs. Improvements in connections between ports-of-entry and main highways were identified as a main priority since much of the freight traffic has to share

the roadway with local noncommercial traffic and travel through downtowns and near neighborhoods. New routes around these congested areas are highly desired. Arizona and Texas stakeholders also desire an increase in better, colder climate control facilities at the border crossing.

For administrative infrastructure, it was all about staffing, including the need for more Customs and Border Protection (CBP) officers and agricultural specialists, other staff from Animal and Plant Health Inspection Service (APHIS) and Food and Drug Administration (FDA), and the coordination of hours of operation. Security on the Mexican side of the border was also mentioned as a concern. Note, numerous attempts were made to speak with California stakeholder but these attempts were unsuccessful.

Finally, it was found that states Departments of Transportation, either autonomously or in tandem with each other, are extremely proactive in identifying and solving border infrastructure needs. California, Arizona, New Mexico, and Texas are aware of the positive impacts of agricultural trade on their economies but know that they can stress existing infrastructure. Each state has some type of strategic plan for infrastructure, and each state the input by industry, communities, and other stakeholders, when developing their plans. It is believed that they accurately reflect the current and future infrastructure needs and wants of the border area and should be included in this study, especially since those stakeholders interviewed during this research mentioned similar priorities.

One focus in California is the reduction of north- and southbound congestion at the Otay Mesa port-of-entry. To address this, California will pursue the opening of the Otay Mesa East crossing and to accommodate the crossing, work is near complete SR-11 which will connect the new border crossing to the California highway network. In Arizona, a 3.75 mile portion of SR-189 which connects the Mariposa crossing to I-19, is scheduled for improvements to begin in 2019. In New Mexico, the state is planning a rail bypass/border crossing feasibility study, a new port of entry at Columbus, and a new crossing in Sunland Park just southeast of Santa Teresa.

And in Texas, priorities in the El Paso region include construction of a freight shuttle system and adding and reconfiguring lanes at the Ysleta/Zaragoza bridge while Laredo area priority projects include construction of a new bridge south of Laredo and improvements to the Eagle Pass/Piedras Negras bridge. In the Lower Rio Grande Valley (LRGV) area of Texas, priority projects include adding an inspection facility at the Donna International Bridge to process empty containers relieving some congestion at Pharr. Additional priorities are discussed in this report.

How Was the Study Conducted?

The main objective of this project was to identify the next big infrastructure need at the U.S.-Mexico border. To accomplish this goal, three approaches were undertaken:

1. Identify recent land border flows in U.S. corn, rice, sorghum and fresh produce trade with Mexico.
2. Identify the needs of trade industry and related stakeholders for improvements in physical and administrative infrastructure around the U.S.-Mexico land border.
3. Investigate the role of state Departments of Transportation in identifying and addressing infrastructure needs at the border.

The data were gathered from several sources, including government agencies databases and reports, trade organizations, and private sector firms. Data were collected from: (1) Global Agricultural Trading System (GATS), USDA/Foreign Agricultural Service (FAS); (2) USDA Agricultural Marketing Service Specialty Crop Reports; (3) WISERTrade; (4) state Departments of Transportation; and (5) U.S. Department of transportation. These data were used to validate trade volumes and entry points for exports from the United States into Mexico. In addition to data from the above sources, numerous conversations with industry and related stakeholders from Arizona and Texas were held to solicit their input. This was very important to include because they are often closest to the need.

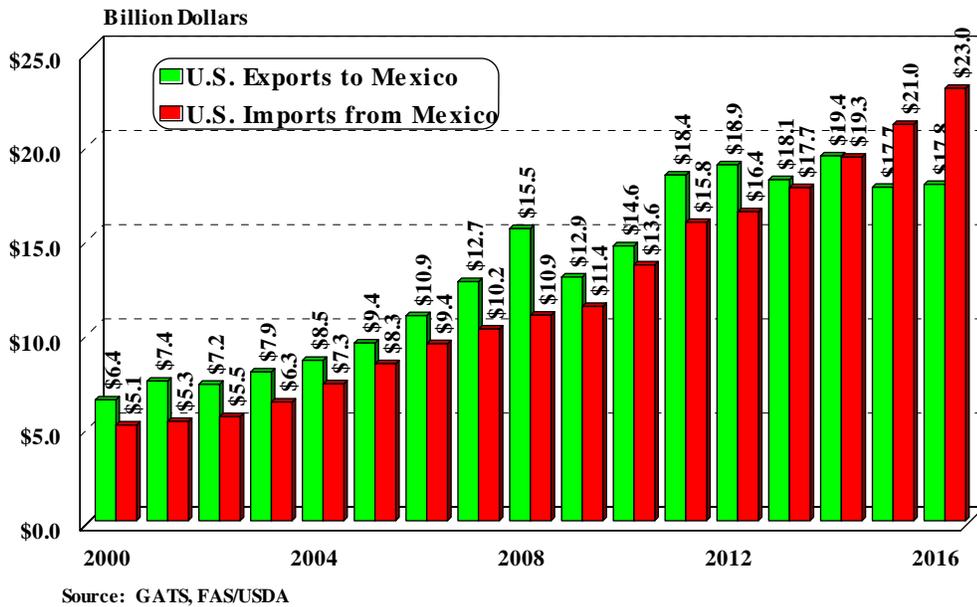
The Next Big Infrastructure Needs at the U.S. Mexico Border

Introduction

The United States and Mexico have a long and strong trading relationship in most product sectors, including agricultural and food products. In fact, bi-lateral agricultural trade between the United States and Mexico continues to grow, reaching \$40.8 billion in 2016, an increase of 255 percent since 2000. This includes U.S. agricultural and food exports to Mexico of \$17.8 billion during 2016 and imports from Mexico of \$23.05 billion the same year (Figure 1).

Figure 1.

U.S. Agricultural and Food Trade with Mexico, Billion Dollars



Among the important U.S. exports to Mexico are corn, rice, sorghum, and fruits and vegetables such as apples, pears, grapes, potatoes, and onions. Important U.S. imports from Mexico include a wide variety fresh fruits and vegetables such as tomatoes, peppers, avocados, watermelons, cucumbers, limes and many others. While about forty percent of corn exports and two-thirds of rice exports to Mexico over the past three years used sea transportation, the remainder of corn and rice exports, virtually all sorghum exports, and a vast majority of fruit and vegetable exports and imports utilized land ports in Texas, New Mexico, Arizona and California.

Efficient land-border transportation systems and the identification of potential improvements to the associated infrastructure lead to agricultural and food trade with Mexico becoming more profitable for U.S. agriculture. In an effort to address the informational needs of U.S. agribusinesses, economists at Texas A&M AgriLife Extension Service (AgriLife) conducted a study to determine the next big infrastructure needs at the U.S.-Mexico border confronting agricultural products once they reach the border.

The purpose of this research is to determine the next big infrastructure needs on the U.S.-Mexican border and how they impact trade in corn, rice, sorghum, and fresh fruits and vegetables. This report will discuss the results of the study in the following order: (1) U.S.-Mexico trade patterns and analysis for corn, rice, sorghum, and fresh produce; (2) views from the industry in identifying and addressing border infrastructure needs; and (3) the roles of state departments of transportation in addressing border infrastructure needs. This paper will also explore recent events impacting U.S.-Mexico trade and how that may impact infrastructure needs.

Recent U.S.-Mexico Trade Patterns

As noted, U.S.-Mexico agricultural and food trade has grown significantly over the last two decades, and much of this trade occurs over land borders. Thus, it is important to analyze the flow of product across the border. For the purposes of this study, we will examine U.S. exports of corn, rice, sorghum, and produce as well as U.S. imports of fresh fruits and vegetables. Each product group will be discussed in turn.

U.S. Exports of Corn, Rice and Sorghum to Mexico

Mexico has long been a purchaser of U.S. grains, particularly since the implementation of the North American Free Trade Agreement (NAFTA) in 1994. Since that time, U.S. corn exports to Mexico have grown from 3.1 million metric tons (MMT) to an all-time high of 14.0 MMT in 2016. U.S. rice exports grew from 261.3 thousand metric tons (TMT) to a peak of 908.2 TMT in 2011 before slipping to 854.0 TMT 2016. Sorghum, however, first grew from 3.5 MMT in 1994 to 5.1 MMT in 2011 before falling continuously and then sharply to 74.3 TMT in 2014. U.S. sorghum exports to Mexico rebounded somewhat to 666.3 TMT in 2016.

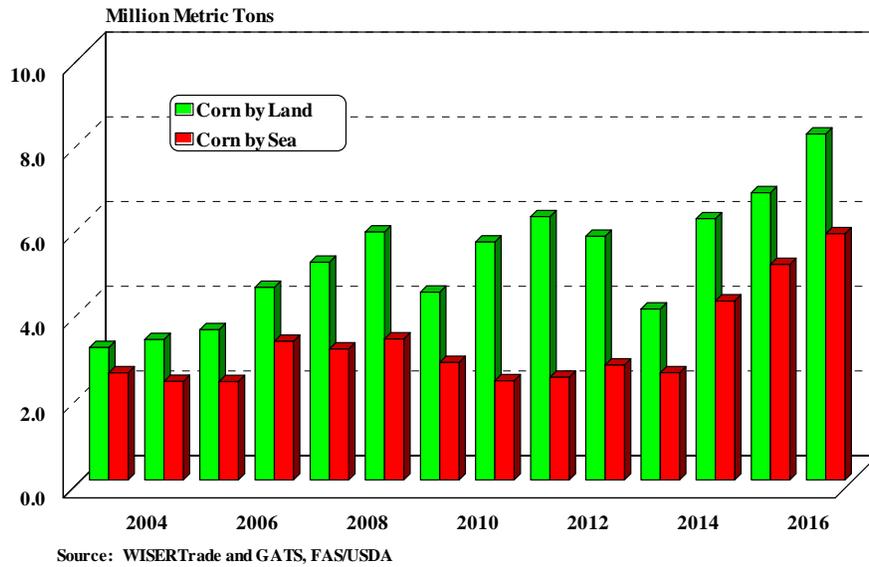
Since 2003, it can be shown that most U.S. corn exports to Mexico are shipped via land, from 55 percent to 72 percent depending on the year. During 2016, that amounted to 8.2 MMT (58.4 percent) of U.S. corn entering Mexico via land borders (Figure 2). From earlier research tracking the modes of transportation for U.S. grain exports to Mexico and from USDA Animal and Plant Health Inspection Service (APHIS) inspection data, it was learned that more than 95 percent of corn shipped to Mexico via land is shipped by rail. Further, most of these rail shipments of corn occur through Laredo (4.0 MMT in 2016), Eagle Pass (2.83 MMT), and El Paso (616.9 TMT).

Laredo has long been a major port for corn shipments to Mexico. Eagle Pass has grown from just over 500 TMT in 2012 to just under 3.0 MMT in 2016 while El Paso fell from 2.4 MMT to 617 TMT during the same time period.

Progreso has been the only significant port for truck shipments of corn into Mexico accounting for an average of 212 TMT from 2013-2016; however, about 86.4 TMT of corn was shipped via truck through Pharr in 2016 following years where the high was only 251 metric tons. It remains to be seen if Progreso will sustain their corn shipments into Mexico or if Pharr corn shipments will grow.

Figure 2.

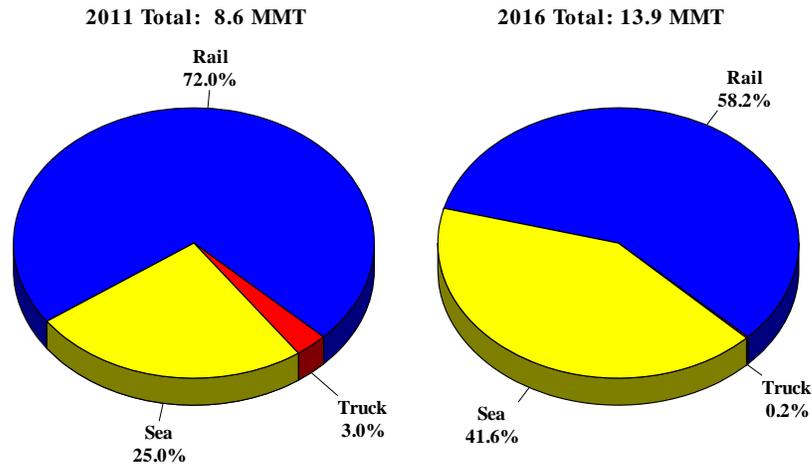
U.S. Corn Exports to Mexico by Port Type



Looking back at earlier research, it can be seen that while land continues to be the primary mode of transportation of corn to Mexico, that percentage has dropped since 2011 when research tracking the modes of transportation for U.S. grain shipments to Mexico. The volume of corn moving to Mexico via rail during 2016, 7.9 MMT, is higher than corn shipments by rail in 2011, 6.2 MMT, but the share fell from 72 percent to 58.2 percent (Figure 3). This is due to the near tripling of corn shipments via sea, from 2.2 MMT in 2011 to 6.0 MMT in 2016. Truck shipments dropped from three percent of shipments in 2011 to 0.2 percent of shipments in 2016.

Figure 3.

Modes of Transportation for U.S. Corn Exports to Mexico, 2011 vs. 2016



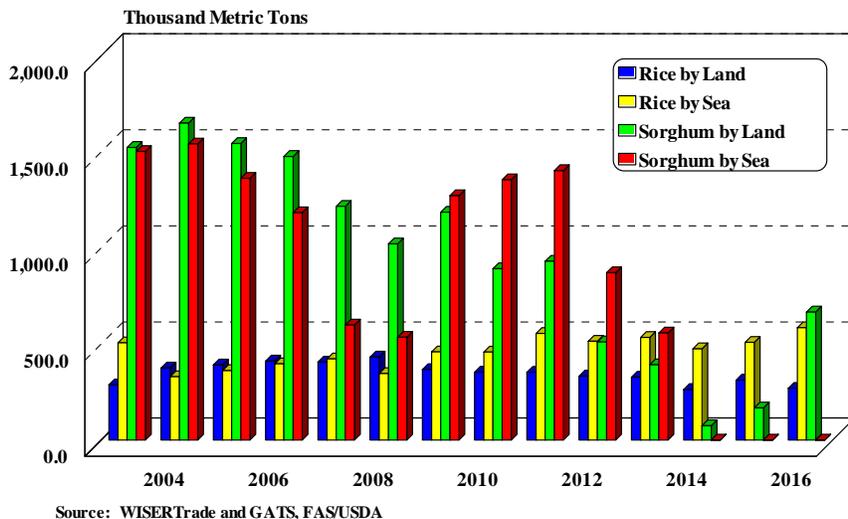
Source: USDA Global Agricultural Trade System, FAS/USDA, and APHIS/USDA

While export of corn to Mexico have generally been consistently growing with shipment mode shares being a fairly consistent between sea and rail, rice and sorghum have seen changing trends. For rice, shipments to Mexico were typically more by land than sea from 2004 to 2008 before shifting to mostly sea transport (figure 4). One reason cited by industry sources for this shift is that some rice shippers feel that because their Mexico export volumes are not as high as corn and soybeans, that the rail companies do not prioritize rice high enough and, therefore, do not always arrive in a timely manner.

Another reason is that there are often discrepancies between rice shippers and officials on the Mexican side of the border regarding volume and cleanliness of rice shipment, and these discrepancies cost the rice shipper. As a result, some rice shippers have chosen to use rail more for rice shipments, especially shipments of paddy rice. Milled rice, however, still flows into Mexico primarily via land. As milled rice is cleaned, consumer ready, and shipped in different packaging, there is a lower chance for the discrepancies cited for paddy rice. Further, partial data show that U.S. milled rice land exports to Mexico primarily use rail while paddy rice exports use trucks.

Figure 4.

U.S. Rice and Sorghum Exports to Mexico by Port Type

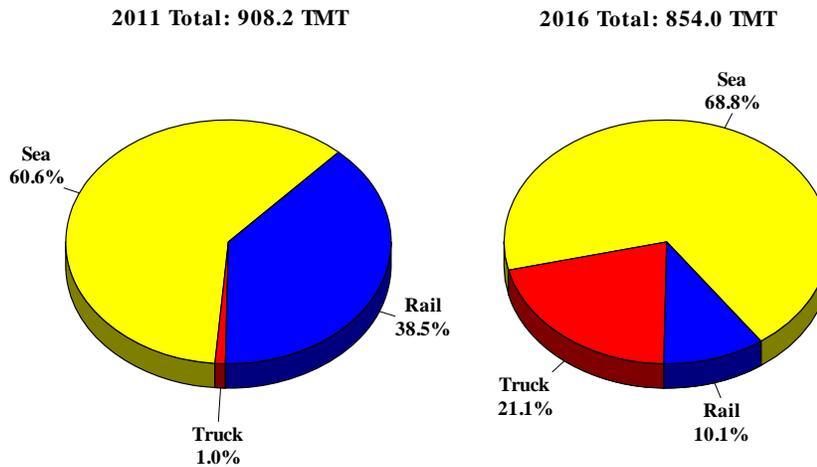


To highlight the flows of rice trade, U.S. exports of rice totaled 854.0 TMT in 2016 worth \$271.4 million. Eighty percent of the volume, 680.4 TMT worth \$190.4 million (70 percent of value) was paddy rice. Of these paddy rice exports to Mexico, 538 TMT (79 percent) of the volume and \$141.8 million of the value (74 percent) used Louisiana seaports. Most of the remainder used Laredo, and reported data show 75 percent of paddy rice shipments through

Laredo were via truck. Milled rice accounts for another 83.3 TMT (9.8 percent) of U.S. rice exports to Mexico valued at \$48.4 million (17.8 percent) of the total value. Nearly all of these exports were shown to flow through land ports. Laredo (34.1 TMT), Otay Mesa (20.5 TMT), and Eagle Pass (16.8 TMT) account for the lion’s share of these milled rice exports to Mexico, and data show that most of these milled rice exports enter Mexico via rail. The remainder of rice exports to Mexico was brown rice, accounting for 74.4 TMT and with 90 percent moving out of New Orleans. Broken rice accounted for the final 15.9 TMT, and most all of this moved through land ports. Finally, when compared to 2011, a greater percentage of rice exports moved through seaports in 2016 and rail was way down as a percentage while truck transportation greatly increased (Figure 5).

Figure 5.

Modes of Transportation for U.S. Rice Exports to Mexico, 2011 vs. 2016



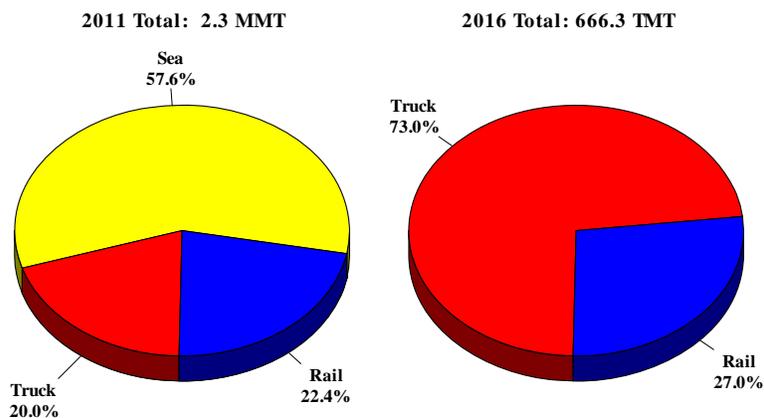
Source: USDA Global Agricultural Trade System, FAS/USDA, and APHIS/USDA

There has been a significant shift in modes of transportation to go along with the steep decrease in sorghum exports to Mexico. During 2003-2006 when sorghum exports to Mexico averaged about 2.9 MMT, the shipments were split nearly evenly between sea and land with land holding the edge. After a couple of down years, average sorghum exports returned to 2.3 MMT for 2009-2011 which were shipped primarily by sea though land shipments were still important. Since 2011, there was a steep fall off in sorghum exports to Mexico as China bid away much of the U.S. crop. Since 2014, sorghum shipments to Mexico have been shipped almost exclusively via land, and the vast majority of that has been shipped via truck through Progreso, Texas, 451.3 TMT in 2016. There have been some sorghum shipments via rail through Eagle Pass (100.6 TMT) and Laredo (59.2 TMT) with a noticeable uptick in 2016 while El Paso accounted for about 34.3 TMT of mostly rail shipments and Pharr accounted for 30.6 TMT of truck shipments of sorghum to Mexico. When compared to 2011, while total volumes have significantly

decreased, all now move by land and truck has nearly three-quarters of those exports (Figure 6). Total sorghum exports to Mexico, and exports by sea, have yet to recover.

Figure 6.

Modes of Transportation for U.S. Sorghum Exports to Mexico, 2011 vs. 2016



Source: USDA Global Agricultural Trade System, FAS/USDA, and APHIS/USDA

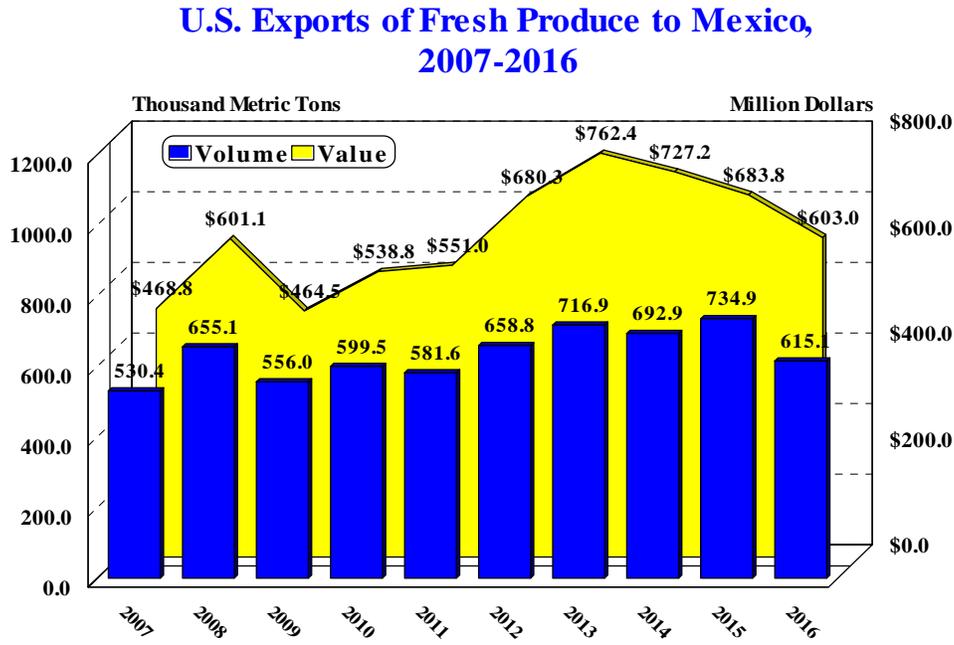
U.S. Exports of Fresh Produce to Mexico

It is well documented that Mexico is a major supplier of fresh fruits and vegetables to the United States and that will be discussed in the next section. However, the United States also supplies a wide variety of fruits and vegetables in to Mexico. During 2016, U.S. exports of fresh fruits and vegetables totaled 644.9 TMT at a value of \$602.2 million (Figure 7). Slightly more than a third of both export volume and value consisted of apples. Potato exports to Mexico accounted for about 14 percent of the volume but only about six percent of the value while pears accounted for 10 percent of the volume and 13 percent of the value. Other important fresh produce exported to Mexico includes onions, grapes, citrus, peaches, melons, and strawberries. It should be noted that the United States imports many of these same products from Mexico but typically during market windows where U.S. production is low.

Nearly all U.S. fresh fruit and vegetable exports to Mexico cross in trucks via land borders. The San Diego customs district slightly outpaces the Nogales customs district for exports of fresh product to Mexico. Consisting of Otay Mesa and Calexico, the San Diego district accounts for about 284.1 TMT of U.S. fresh produce entering Mexico, or approximately 15,660 forty-thousand pound truckloads (Figure 8). Truckloads are reported here so as to provide a portrait of the impact on highways. These exports are valued at \$232 million. Nogales, the key port in the Nogales district, accounts for 272.0 TMT (14,992 truckloads). But because the product mix has much higher valued apples, grapes, and stone fruit and much less

potatoes, fresh produce exports through Nogales are valued at \$335.0 million. The El Paso district accounts for 36.5 TMT (2,012 truckloads) valued at \$22.7 million while the Laredo district accounts for 19.3 TMT (1,066 truckloads) valued at \$9.5 million.

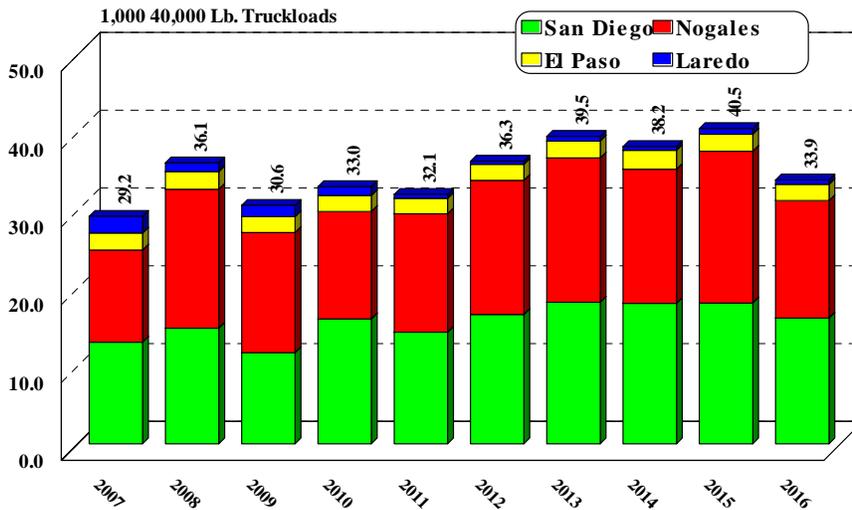
Figure 7.



Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University Syst

Figure 8.

U.S. Exports of Fresh Produce to Mexico by Truck by Customs District, 2007-2016



Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University Syst

U.S. Imports of Fresh Produce from Mexico

As trade is a two-way street, it is widely known that the United States imports a growing amount of a wide variety of fresh fruits and vegetables from Mexico every year. In research conducted for the Texas International Produce Association (TIPA), this project team found that U.S. imports of produce and products from Mexico during 2016, including fresh, frozen and processed fruits, vegetables, and nuts, totaled \$12.04 billion. About 98 percent of these imports entered the United States by land ports between Mexico and Texas, New Mexico, Arizona, and California.

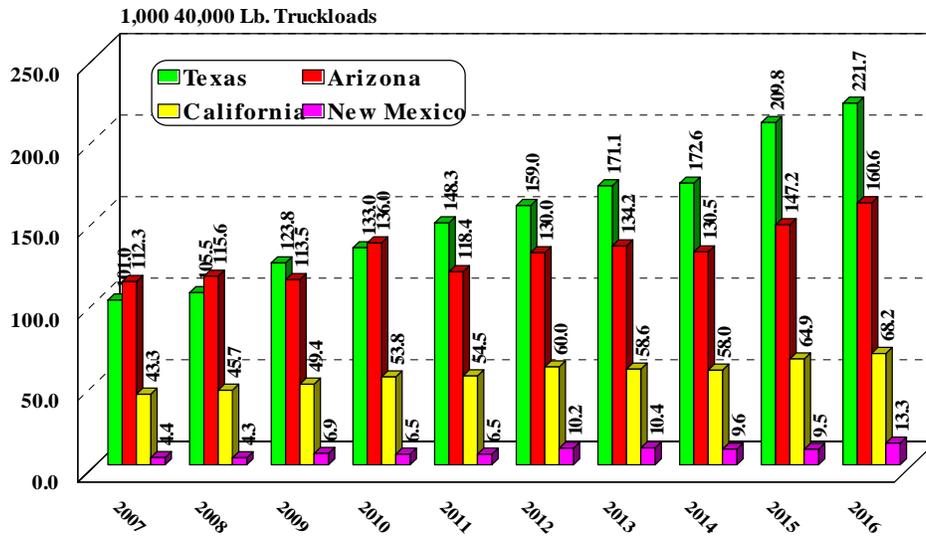
When considering only fresh fruits and vegetables, which is nearly ninety percent of the total, imports totaled \$10.67 billion. These imports totaled 8.99 MMT and were shipped in the equivalent of 463,755 forty-thousand pound truckloads. Imports for produce obviously have a much larger impact on border area roadways than exports do and thus are part of the border infrastructure issue picture. About 48 percent of U.S. fresh fruit and vegetable imports from Mexico, 4.02 MMT, entered through Texas land ports, arriving in 221,662 truckloads (Figure 9). Another 35 percent, or 2.91 MMT, of these shipments entered through Arizona via 160,602 truckloads while California accounted for 15 percent with 1.24 MMT entering via 68,237 truckloads. New Mexico accounted for the remaining 3 percent.

Imports of fresh produce consist of many products, led by tomatoes with 1.62 MMT valued at \$1.96 billion. Rounding out the top six are peppers at 913.8 TMT (\$1.07 billion), avocados at 785.1 TMT (\$1.77 billion), cucumbers at 688.3 TMT (482.4 million), watermelons at 649.2 TMT (263.3 million), and limes at 575.5 TMT (369.1 million). Other important vegetable imports from Mexico are squash, onions, asparagus, and broccoli while other important fruit imports are strawberries, other berries, grapes, mangoes, and bananas.

While looking at the trends, it can be seen that imports have grown from 4.7 MMT in 2007 (260,992 truckloads) to 9.0 MMT in 2016 (463,662 truckloads), and increase of 77.7 percent or 8.6 percent per year. Further, Arizona has gone from being the number one state of import to Texas being the number one state. Much of the reason for this is the development of the Pharr Bridge in the lower Rio Grande valley (LRGV) of Texas into a major import route for fresh produce, and to a lesser extent the growth of Laredo. Nogales, Arizona, with 154,935 truckloads in 2016, continues to be the leading port of entry for fresh produce from Mexico on an annual basis though the vast majority of their imports enter during November through June (Figure 10). Pharr accounted for 149,169 truckloads in 2016 and together with Nogales account for 65.6 percent of fresh produce imports from Mexico. Otay Mesa at 50,386 truckloads and Laredo with 46,167 were the other major ports of import for fresh produce.

Figure 9.

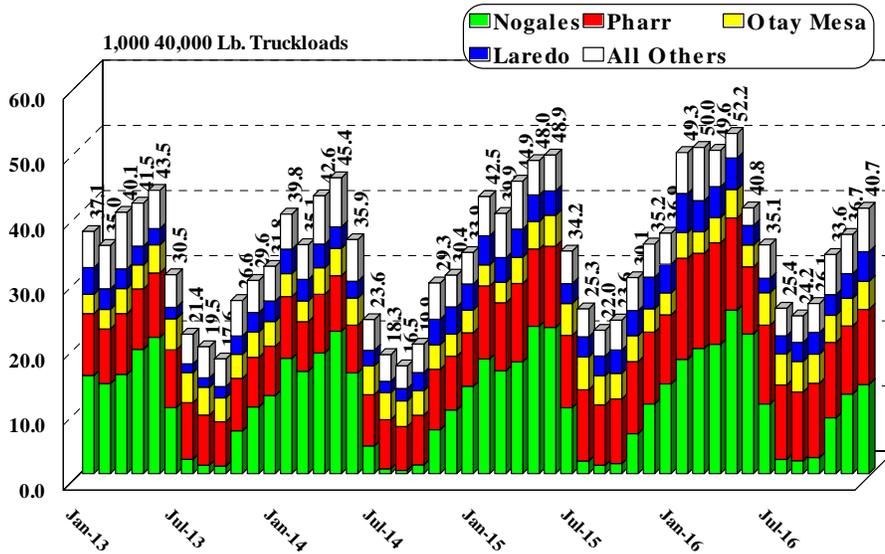
U.S. Imports of Fresh Produce from Mexico by Truck, 2007-2016



Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University Syst

Figure 10.

U.S. Imports of Fresh Produce from Mexico by Truck, Monthly, 2013-2016



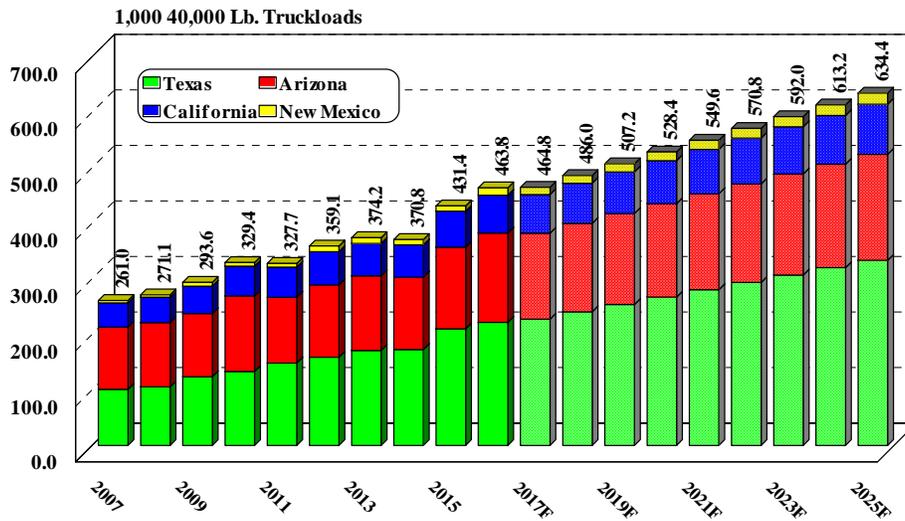
Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University Syst

As part of the study for TIPA, a forecast to 2025 was developed, first a baseline and then with a shock to the base line which included industry input. If 2007-2016 trends continued as they have been, then imports of fresh produce would increase to 634,400 truckloads by 2025, or 11.5 MMT, an increase of about 37 percent (Figure 11). If, as industry believes, recent growth

rates will continue for the next couple of years, then imports would grow to 688,400 truckloads, or 12.5 MMT (Figure 12). Texas would continue being the leading state for entry with Pharr possibly surpassing Nogales as the number one port of entry. This assumes that these ports could handle the additional inflow, so expansion in services and/or facilities at Pharr and Nogales would likely be required.

Figure 11.

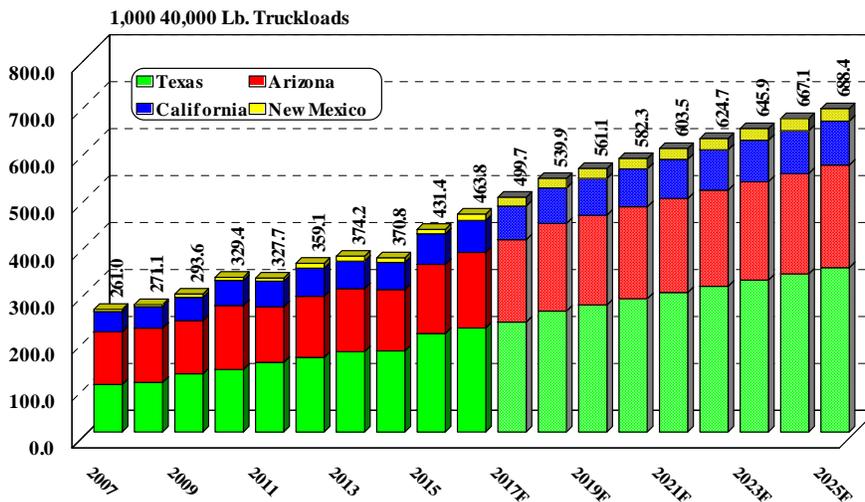
**U.S. Imports of Fresh Produce from Mexico by Truck
Baseline, 2007-2025F**



Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University System
2016-2023 Forecast based on 2007-2015 Model

Figure 12.

**U.S. Imports of Fresh Produce from Mexico following
Industry Input, 2007-2025F**



Source: Agricultural Marketing Service, USDA and Department of Agricultural Economics, Texas A&M University System
2017-2025 Forecast based on 2007-2016 Model and Previous Industry Input

Industry Input

A major part of this project was to solicit from the industry and related stakeholders their views on the next big infrastructure needs at the U.S.-Mexico border. To that end, meetings were held, both in person and via the phone, with corn, rice, sorghum, and fresh produce shippers, trade associations, and infrastructure operators. The intent of these conversations was to find out what these stakeholders thought were the shortcomings in their area of the border, either in physical infrastructure or border services, and what they thought would be the best way to address these shortcomings. The greatest participation came from grain and produce shippers in the LRGV and industry representatives in the Nogales area. A summary of the responses from each state are found in Appendix A. Numerous efforts to gather input from California were unsuccessful, and input from the Laredo area was limited. Further, industry representatives from the Gulf Coast rice industry, which ships to Mexico via land and sea, contributed input during this process.

The first question in the discussion was how the industry viewed the highways within 50-100 miles of the U.S.-Mexico border. In Arizona, the conversation centered on roads that serve the Mariposa crossing in Nogales. There is an exit, Exit 12 on Interstate 19 that needs improvements. All commercial trucks must use that exit to enter the Rio Rico Industrial Park and this causes trucks to back-up on I-19. Much of this is caused by off-highway intersections in the 1.7 miles between Exit 12 and the industrial park. There is also a small state highway, AZ-189, that runs between the Mariposa crossing and I-19. Shippers would rather have a direct connection as AZ-189 is only two-lane each way and travels through some congested areas.

In Texas, many of the highways are suitable but there is significant congestion because one main corridor, US-281, travels through downtown Pharr, and this forces trucks to divert off of US-281 and travel through city traffic. The shippers propose expanding the overweight corridor in Pharr and developing a truck corridor route connecting all bridges so as to avoid city traffic. I-69 is also an important issue due to congestion, but I-69 cannot be fixed until there is an alternative. Highways around Progreso are better than other areas of the LRGV. Some grain shippers use Progreso because can go overweight, up to 120,000 lbs. Progreso can allow overweight loads because they are private. Trucks are currently allowed to carry 32 MT in a trailer (70,000 lbs.) when they could carry 55 MT (120,000 lbs.) on a single and 85 MT (188,000 lbs.) with tandem trailers. The U.S. side of the border is comparably better than Mexico because shippers cannot use the better Mexican toll roads with overweight loads. Some shippers are happy that they have access to the improved Mexican Highway 40, joining the ports of Mazatlan and Matamoros.

The next question asked about supporting roadways within 50-100 miles of the U.S.-Mexico border. In Arizona, AZ-189 was again pointed to as having to support 1,700-1,800 trucks per day over the roughly 3.75 mile stretch with only two lanes each way. Exacerbating this is that AZ-189 converges with school and residential traffic during several parts of the day. Shippers suggested segregating the freight traffic from the non-freight traffic with a “flyover” exit or a different method. Also, an 8-mile corridor on the Mexican side of the Mariposa crossing border needs improvements.

In the LRGV area of Texas, it was pointed out that Jackson and Stewart Roads in Pharr, where much of the produce travels as well as growing shipments of seed corn and sorghum, is used by many trucks as they must exit US-281 to avoid going through downtown Pharr. Stakeholders were unsure of the solution to this but believe there is a need to perform work on local roads on both sides of the border. This includes creating better access from the main corridor to Aduana on the Mexican side because congestion gets really problematic. A suggestion was to separate northbound from southbound traffic, commercial from non-commercial, and trailers with cargo from empties. In the Progreso area, shippers seemed comfortable with the quality of local roads on the U.S. side but that repairs to local roads were needed on the Mexican side. These shippers thought the toll road to Brownsville, SH 550, was good and that a new north-south artery was needed to avoid traveling through town. Finally, one shipper suggested that the privately maintained Progreso Bridge was an advantage due to the ability to accommodate overweight loads.

The next question specifically asked about the number and quality of international cargo bridges on the U.S.-Mexico border. In Arizona, the Mariposa port-of-entry was reopened in October 2014 following a \$244 million rebuild funded mainly with federal tax dollars. The crossing lines are much improved, but the 12 northbound lanes to U.S. exit out into 2 northbound lanes of AZ-189 causing bottlenecks. Apples and pears move south into Mexico. Southbound clogs caused by enforcement efforts and volume of traffic. One hundred or more truckloads per day of apples move southward and inspections can delay the traffic flow.

In Texas, Concerns have arisen about the ability of the Pharr Bridge to efficiently handle additional volumes of trucks carrying Mexican fresh fruit and vegetable imports at its current levels of operation (i.e. staffing, hours, number of lanes, physical capacity). As a result, some shippers are considering diverting some of shipments to Laredo while others suggest opening up Anzalduas to imports. Two additional inbound lanes at the Pharr Bridge are being planned, as well as additional dock capacity, construction of a new cold storage facility, and a training facility for agricultural inspectors. Some of this work began in October 2016, but much is still in the planning stages. Opening the McAllen Anzalduas Bridge to commercial could help to reduce congestion at Pharr; however, the Anzalduas Bridge and the Donna Bridge have only been scheduled to allow for southbound empty trailers while both desire to facilitate into northbound

cargo shipments. Nonetheless, allowing southbound empties to use Anzalduas and Donna will serve to decrease congestion at and around the Pharr Bridge.

In the Progreso area, grain shippers appreciate the Progreso Bridge but comment that the availability of trucks in Progress is lacking at times. Having an import lot on both sides of the Progreso crossing would be beneficial; however, there is not enough land on the Mexican side as there is on the U.S. side.

The fourth item considered was the adequacy of rail serving the U.S.-Mexico border. Rail is not suitable to fresh produce, and some areas such as Pharr and Progreso do not have rail at the port. As a result, produce uses trucks through all ports and most sorghum exports use trucks through Progreso. Corn and to a lesser extent sorghum and rice use rail. Produce shippers spoken with had no comments regarding rail except that there have been some tests using rail between Tucson and Baltimore but no results were known.

A comment from LRGV grain exporters was that rail companies would rather handle 100-110 car shuttle trains as opposed to the 25-single car units that the exporters would ship because there is not enough grain in the LRGV to justify larger shipments. They would need a shuttle station if they wanted rail, but this would likely hurt the local farmers because they would have to compete with large volumes from elsewhere. Some rice shippers indicated that they do not ship paddy rice via rail because their demand for rail service is not large enough and that non-food shippers sometimes pay a bonus to obtain rail cars, bidding them away from rice shippers.

It was also learned that KC Southern/KC Southern de Mexico dominate Laredo/Nuevo Laredo, and on the Mexican side of Brownsville while Union Pacific and Burlington Northern-Santa Fe control Eagle Pass/Piedras Negras and points west, and can get you to Brownsville but not beyond. In Mexico, about 65 percent of the rail shipments occur on Ferromex while the other 35 percent occur on KC Southern de Mexico.

The next topic focused on crossing procedures at the U.S.-Mexico border, what is working well and what is improved. In Arizona, one main issue was the need for more cold storage inspection space at the Mariposa crossing. There are only six enclosed docks as compared to over 50 open docks. The enclosed docks have a temperature of about 60°-65° F when colder rooms in the 32°-45° F range are needed. Shippers would also like to see better coordination of truck inspections among U.S. Department of Transportation and Arizona Department of Transportation inspectors. This would include eliminating secondary inspections 20 miles inland. Further, produce shippers believe that Food and Drug Administration (FDA) inspectors are more robust in terms of enforcement at Nogales than elsewhere on the border, and they would like FDA to standardize their operations across the U.S.-Mexico border. They would

also appreciate FDA matching their hours of operation with the other agencies at the port. Finally, the shippers feel that more Customs and Border Protection (CBP) Agricultural Specialists are needed in Nogales.

In Texas, many grain exporters mentioned double inspections, one on the U.S. side and another on the Mexican side, as being a problem. They feel that the inspections on the Mexican side lead to security issues that may not exist if the truck did not have to slowly travel to the Mexican inspection site. Previously, Mexico performed inspections on the U.S. side and shippers would like to see a return of that practice. The security concern is higher for trucks than for rail, but rail faces these concerns as well. Shippers would like to see FAST-lane participation at the Pharr Bridge to speed up entry for those who qualify.

The industry's perception is that the only ongoing border projects are at Mariposa and Otay Mesa, and they would like to see similar projects in Texas. Shippers recognize that Aduanas is trying to improve, and that the situation at Pharr improved when APHIS placed an entomologist at the bridge when CBP agricultural inspectors received more discard authority. Still, they would like more weekend staff availability. Finally, shippers would like to replace the old X-ray machine, which requires as long as 30 minutes though can usually be done in 7-8 minutes, with a Z-portal, a high energy mobile X-ray which takes 2-3 minutes.

When asked if there were any other issues regarding the physical or administrative infrastructure at the border, there were various responses. In Arizona, concern centered on the negative impacts of abundant southbound traffic on northbound traffic, and the restrictive nature of the U.S. interstate system trailer weight limits. They are also considering public-private partnerships to improve facilities at the border as they have done in Texas.

In Texas, they think there are politics involved in the dispersion of transportation funds and that Texas receives the short-end of disbursements. Shippers also mentioned the need for more refrigerated holding areas, and issue also broached by Arizona stakeholders. Cold storage is needed at the bridges in order to maintain food safety and quality. There are also seemed to be a sense that there is selective delay in some shipments on the Mexican side of the border and they would like to see that end. Finally, grain exporters lamented that GIPSA has to sample and go to every facility, and that often this causes delays as the GIPSA inspectors' timetable and the exporters' timetable do not always match.

The final task was for the shippers and related stakeholders to rank their top physical and administrative infrastructure priorities. In Arizona, there were three main physical priorities. The first was either an expansion of AZ-189 from the border crossing to I-19, or construct a new connector. The second was to improve the Exit 12 as discussed and also Exit 17 on I-19 so that the Rio Rico Industrial Park can be accessed from either the north or the south and not conflict

with local traffic. The third was to have better, colder climate control at the border crossing, which would also allow the port facilities and shippers to meet the requirements of the Food Safety Modernization Act. For administrative infrastructure, it was all about staffing, including the need for more CBP officers, agricultural specialists, other staff such as APHIS and FDA, and the coordination of hours of operation.

In Texas, there were two main physical infrastructure needs, beginning the funding and building of the International Border Transportation Corridor (IBTC), a highway which would link the LRGV bridges and avoid cities. The other need was for an import lot on the Mexican side of the Progreso border crossing, which would allow for truck staging. For administration, coordination of staffing and hours between CBP, APHIS, FDA, and bridge staff is needed. Expansion of hours is preferred. Either increased staffing or overtime orders would help the situation. Another priority was to end the double fumigation of grains which occur on both the U.S. and Mexican sides of the border. The third priority is to improve the GIPSA sampling and inspection process. More GIPSA personnel are needed and a central location for sampling would help. Finally, security on the Mexican side of the border is a grave concern, and some of this could be minimized by ending the second inspection once in Mexico and bringing those inspectors to the U.S. side.

State Departments of Transportation and the Border

California, Arizona, New Mexico, and Texas are all well aware of the impacts of agricultural trade on their economies and the need to address infrastructure needs at their parts of the U.S.-Mexico border. This section will review the most recent information and work done by each state's department of transportation including infrastructure plans and related documents. As each state sought the input by industry, communities, and other stakeholders, when developing their plans, it is believed that they accurately reflect the current and future infrastructure needs and wants of the border area. Please refer to Appendix B for a table depicting infrastructure projects coupled with trade flows.

California

California has two major land border ports with Mexico – Otay Mesa entering at Tijuana and Calexico East entering at Mexicali. The San Ysidro crossing is near Otay Mesa and also enters at Tijuana, while the Calexico West (previously referred to simply as Calexico) crossing is near Calexico East and enters at Mexicali. Together, these four ports accounted for exports of \$21.8 billion and imports of \$36.4 billion during 2016. For the products considered in this study, the four ports accounted for about \$54.3 million in corn exports, \$18.6 million in rice exports, \$232.1 million in produce exports, and \$1.8 billion in produce imports. This trade has consistently grown almost every year. Further, during 2016, the last year for which data are

available, Otay Mesa and Calexico East combined for 874,980 loaded truck entries into the United States.

The California Department of Transportation (Caltrans) has paid close attention to these ports-of-entry due to the amount of traffic they create in the most populous state in the United States. One effort to help ease roadway traffic congestion is to increase the availability of rail. To that end, Caltrans is leading an effort to create a rail master plan by 2018 which among other items addressed would address freight movements. It remains to be seen how this plan and resulting activities would interact with the California-Mexico border.

According to the latest Caltrans factsheet on the Otay Mesa crossing, the goal of Caltrans here is to focus on the reduction of north- and southbound congestion at the port-of-entry. To address this focus, Caltrans will pursue the opening of the Otay Mesa East crossing for which there is a memorandum of understanding with Mexico currently in place to expedite the construction of the crossing. To accommodate the crossing, work is near complete SR-11 which will connect the new border crossing to the California highway network.

According to the latest Caltrans factsheet on the Calexico East port-of-entry, the focus is to continue to collaborate with U.S. and Mexican agencies and other stakeholders to improve movement of products. To that end, there are plans to implement a Binational Toll Pilot Project to improve the crossing, but funding has not yet been secured. Area organizations are also seeking funds to improve the Calexico West crossing. These funds would be necessary to improve that port's infrastructure because this entry is closer to downtown and an increase in crossings through Calexico West would be limited by existing infrastructure.

Arizona

Arizona has one major land border port with Mexico – Nogales entering at Nogales – and to a much lesser extent San Luis across from San Luis Rio Colorado. Another port at Douglas has very little participation in agricultural products trade with the exception of live animals, a bit of feed, and small amounts of vegetables. Together, Nogales and San Luis accounted for exports of \$10.9 billion and imports of \$17.0 billion during 2016. For the products considered in this study, the ports accounted for about \$30.0 million in corn exports, \$1.7 million in rice exports, \$1.8 million in sorghum exports, \$335.0 million in produce exports, and \$3.2 billion in produce imports. This trade has consistently grown almost every year. Nogales and San Luis combined for 309,275 loaded truck entries into the United States in 2016, with 93 percent of those entering through Nogales.

According to Arizona Department of Transportation's (ADOT) Arizona-Sonora Border Master Plan, SR-189, which connects the Mariposa crossing to I-19, is scheduled for

improvements. With the securing of funds, this project has been move sooner and will now begin in 2019, two years earlier than planned. This project will fund improvements to the pertinent 3.75 mile stretch of SR-189 and pay for a northbound flyover ramp connecting SR-189 to I-19. As more funding becomes available, the intent is to also widen the southbound exit ramp from I-19 to SR-189, install a raised median on SR-189 in an effort to decrease congestion, and to improve certain local road intersections with SR-189. Also on the list of the proposed planned projects is a widening of the road from the San Luis crossing to SR 195 to four lanes.

New Mexico

New Mexico is the least used state for trade with Mexico. New Mexico has two land border ports with Mexico – Santa Teresa and Columbus. Neither is used much for agricultural products with the exception of inbound and outbound live animals and some fresh produce imports. Together, these ports accounted for exports of \$10.8 billion and imports of \$12.0 billion during 2016. For the products considered in this study, the ports accounted for about no grain exports, less than \$100,000 in produce exports, and \$50.4 million in produce imports. Imports, though low, have consistently grown almost every year. New Mexico saw 80,191 loaded truck entries into the United States during 2016, mostly through Santa Teresa.

New Mexico Department of Transportation (NMDOT) has a long range plan looking towards 2040. While lower than other border states, international trade across its borders is important to New Mexico, and they expect trade to continue to grow. To that end, they expect more truck and rail activity at the border. To address the growing needs and mitigate expected negative impacts, NMDOT is planning a rail bypass/border crossing feasibility study, a new port of entry at Columbus, and a new crossing in Sunland Park just southeast of Santa Teresa. NMDOT will also address the need to increase the weight limit of many of their bridges as this is an impediment to the efficient movement of product within New Mexico.

Texas

Texas has eight major port areas for crossing products into and out of Mexico. From east to west, these ports are located in Brownsville, Progreso, Pharr, Rio Grande City, Laredo, Eagle Pass, Del Rio, and El Paso. There are other smaller ports at Presidio, which is growing in importance, Roma, Los Indios, and Fabens. Laredo and El Paso each account for multiple crossings. Together, Texas ports, led by Laredo, El Paso, and Pharr, accounted for exports of \$148.7 billion and imports of \$195.1 billion during 2016. For the products considered in this study, the ports accounted for about \$1.5 billion in corn exports, \$80.6 million in rice exports, \$151.3 million in sorghum exports, \$33.7 million in produce exports, and \$5.5 billion in produce imports. This trade has consistently grown almost every year. Texas ports combined for

2,764,887 loaded truck entries into the United States in 2016, with 56.4 percent of those entering through Laredo, about 15.3 percent through El Paso, and 14.9 percent through Pharr.

Some of the main reasons Texas is the largest port for trade with Mexico is the long border with Mexico, the geographic proximity to major consumption and production regions within Mexico, and the long history between Texas and Mexico. As a result, Texas Department of Transportation (TXDOT) spends ample resources addressing infrastructure needs at the border. In 2015, TXDOT published *Texas-Mexico International Bridges and Border Crossings* in an effort to provide information about each bridges and where that may need to change, and also has an active Border Trade Advisory Committee.

Another recently published report by TXDOT is the *Texas Freight Mobility Plan*, which recognizes the strengths of the Texas-Mexico border as Texas being the gateway to the United States for one of our largest trading partners. However, the plan points out that there are congestion concerns, a need for better cross-border technology and solutions to operating and staffing issues at the border, and the need for better coordination between the various agencies involved at border crossings. The January 2017 *Border Corridors and Trade Report* points out that Texas's border infrastructure the 1,255-mile border between Texas and Mexico is crucial to facilitating trade.

The three main trade corridors in Texas are the Western Corridor based in El Paso but also including Presidio, the I-35/NAFTA Corridor based in Laredo but also fed by Eagle Pass and Del Rio, and the I-69 Corridor based in the LRGV and includes Pharr, Brownsville, Progreso, and Rio Grande City. Each of these corridors are included as part of the TXDOT Border Master Plan. In the El Paso region, the priorities that emerged include construction of a freight shuttle system and adding and reconfiguring lanes at the Ysleta/Zaragosa bridge, and constructing new dedicated freight lanes or a new bridge at the Presidio/Ojinaga bridge. Laredo area priority projects are construction of a new bridge south of Laredo, which would include KC Southern constructing rail to the new bridge, improvements to the Eagle Pass/Piedras Negras bridge, and the construction of a new CBP facility at Amistad Dam north of Del Rio. In the LRGV, priority projects include building two causeway style bridges to connect the Port of Brownsville directly with Mexico, adding an inspection facility at the Donna International Bridge to process empty containers relieving some congestion at Pharr, expanding the Rio Grande City/Camargo bridge by two additional southbound lanes, and improving access and constructing inspection facilities on the Mexican side of the Progreso bridge.

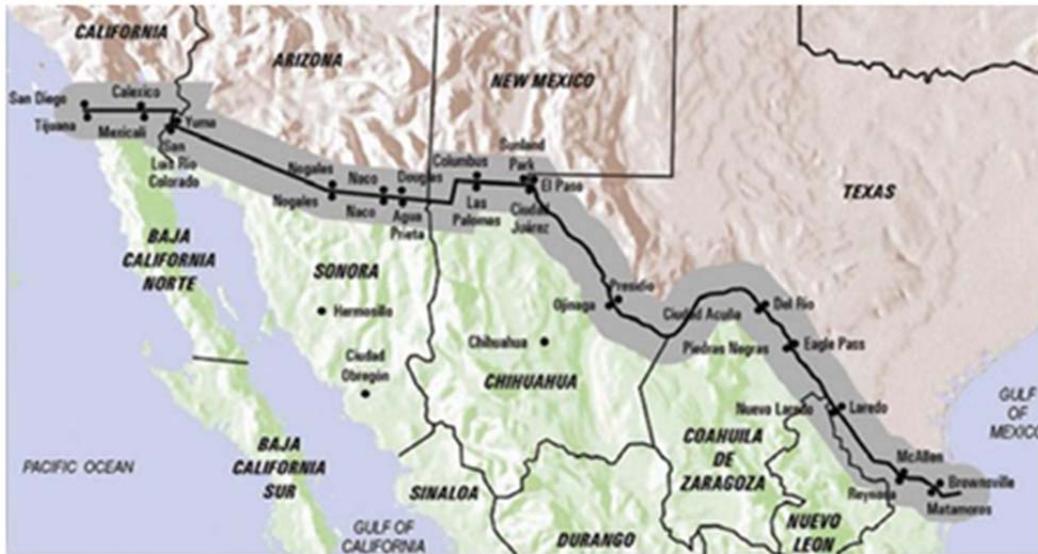
Regional Cooperation

The four states of California, Arizona, New Mexico and Texas also do a good job of coordinating with each other. Arizona and Texas have a joint project which provides real-time

crossing information for commercial vehicles for Nogales and the seven major Texas ports in Brownsville, Pharr, Laredo (2), Eagle Pass and El Paso (2). This provides similar information as the CBP Border Wait Times website but focuses only on major freight ports in Arizona and Mexico whereas the CBP site covers the entire border and all bridges and crossing types. Finally, all four states are involved in the U.S.-Mexico Joint Working Commission, which is coordinated by the Federal Highway Administration and is a binational group whose primary focus is to cooperate on land transportation planning and the facilitation of efficient, safe, and economical cross-border transportation movements. That includes facilitating 5.4 million trucks per year crossing along the 1,954 mile-long border (Figure 13).

Figure 13.

U.S.-Mexico Land Border



Source: https://www.fhwa.dot.gov/planning/border_planning/us_mexico/

Recent Events

At its inception, this project was designed to gain industry input in an effort to mitigate recent transportation issues impacting U.S. trade with Mexico via land ports of grains and fresh produce. The availability of both rail and truck transportation had been limited for agricultural products due to tremendous activity in the energy sector bidding away those transportation services. But that was beginning to subside and the idea was to be better prepared for similar situations in the future. Further, China was in the midst of buying most U.S. sorghum exports, much of which was previously shipped to Mexico via both land and sea. The question arose of

what would happen if or when China backed off their sorghum purchases, which they subsequently have. Lastly, many felt the availability of adequate and secure transportation was lacking on the Mexican side of the border.

As the project team gathered input from the industry and related stakeholders, much was learned as discussed in an earlier section of this report. Security concerns still remain, but the availability of transportation services has remained in place which has more easily allowed for an increase in corn shipments to Mexico and a partial return of U.S. sorghum exports to Mexico. Further, trade in fresh produce has grown so much, particularly imports for fruits and vegetables from Mexico that some feel existing infrastructure may need to be expanded so as to keep up with the growth.

One other significant event that has occurred since the beginning of this project is a potential change in trade policy as a result of a newly elected President. While no changes to U.S.-Mexico trade policies have been implemented, some in Mexico are concerned that the United States may levy some form of import tax on imports from Mexico or that NAFTA itself may be renegotiated. As a result, some involved in trade facilitation at the border are uneasy about what may or may not be coming. Further, the Government of Mexico has had some preliminary discussions with Argentina and Brazil about the possibility of buying their grains, including corn, should U.S.-Mexico trade relations take a negative turn. Should the latter occur and Mexican buyers establish relationships with South American grain shippers, then border infrastructure concerns may not be as important as once thought to U.S. grain shippers.

Summary and Conclusions

The United States and Mexico have a long and strong trading relationship in most product sectors, including agricultural and food products. Within the agricultural sector, there is significant two-way trade between the two countries in fresh fruits and vegetables and Mexico is a major market for U.S. corn, rice and sorghum. Produce imports from Mexico and corn exports to Mexico are at all-time highs while rice exports are down and sorghum exports are only now beginning to rebound after two very low years.

Much U.S.-Mexico trade occurs over land borders. This includes nearly all fresh produce trade, all sorghum exports, nearly sixty percent of corn exports, and thirty percent of rice trade. This highlights the importance of pursuing efficiencies in both physical and administrative border infrastructure. U.S.-Mexico trade industry and other stakeholders identified their top physical and administrative infrastructure priorities. Improvements in connections between ports-of-entry and main highways were identified as a main priority. There is also a desire to increase the availability of better, colder climate control facilities at the border crossing. For administrative infrastructure, it was all about staffing, including the need for more CBP officers,

agricultural specialists, other staff such as APHIS and FDA, and the coordination of hours of operation. Security on the Mexican side of the border was also mentioned as a concern.

States Departments of Transportation, either autonomously or in tandem with each other, are extremely proactive in identifying and solving border infrastructure needs. California, Arizona, New Mexico, and Texas are aware of the positive impacts of agricultural trade on their economies but know that they can stress existing infrastructure. Each state has some type of strategic plan for infrastructure, and each state the input by industry, communities, and other stakeholders, when developing their plans. The key component lacking in these plans is how to pay for the projects. As federal and state funding sources are identified and more public-private partnerships are entered into to fund infrastructure improvements, flows of product across the U.S.-Mexico border

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APENDIX A

Summary of Industry Input for Infrastructure Needs on the U.S.-Mexico Border

Table A-1. Summary of Arizona Industry Input for Infrastructure Needs on the U.S.-Mexico Border

<p>Item 1: Highways within 50-100 miles of the U.S.-Mexico border – number and quality of existing highways and where improvements might be needed.</p>	<p>1) Needed a solution to Exit 12 congestion on I-19. All commercial trucks must take that exit to get to Rio Rico Industrial Park, so trucks are backed up onto I-19 mostly due to off-highway intersections in the 1.7 miles between the exit and the industrial park.</p>
	<p>2) State highway AZ-189 between I-19 and the Mariposa border crossing becomes congested. Shipper would rather have I-19 connect directly to the border crossing.</p>
	<p>3) Inbound toll road from Mexico to U.S. is used with good results.</p>
<p>Item 2: Roads supporting highways within 50-100 miles of the U.S.-Mexico border – number and quality of existing supporting roads and where improvements might be needed.</p>	<p>1) AZ-189 from Mariposa to I-19 is a 3.75 mile road with 1,700-1,800 trucks per day and is the freight corridor but has only 2-lanes each way. Need both access management and corridor management for this road as it converges with school/residential traffic during parts of the day.</p>
	<p>2) Segregating that non-freight traffic from freight traffic on AZ-189 with a flyover or another method would be a good solution.</p>
<p>Item 3: International cargo bridges – number and quality of bridges and where improvements might be needed.</p>	<p>1) Southbound bottlenecks caused by enforcement efforts and volume of traffic as 100+ truckloads of apples per day move southward and inspections can delay.</p>
	<p>2) A 13-km (8 mile) corridor on the Mexican side of the border needs improvements, as well as from Mariposa Road into bridges.</p>
	<p>3) 12 northbound lanes to U.S. at the border exit out into 2 northbound lanes of AZ-189 causing bottlenecks.</p>
<p>Item 4: Rail service – number and quality of existing rail service and where improvements might be needed.</p>	<p>1) There has been a little rail use in recent years, but not inbound into U.S. Intermodal facility in Tucson takes some advantage of rail.</p>
<p>Item 5: Crossing procedures at the U.S.-Mexico border – what is working well and where improvements are needed.</p>	<p>1) More cold storage inspection at the Mariposa crossing is needed. There are 6 enclosed docks compared to >50 open docks.</p>
	<p>2) Shippers would like to see a coordination of truck inspections among USDOT and AZDOT. Desire to eliminate secondary truck inspections 20 miles into Arizona.</p>
	<p>3) FDA is more robust in terms of enforcement in Nogales vs. elsewhere on the border. It would be appreciated if FDA matched their hours of operation to the rest of the agencies at the port. And this group would like FDA to standardize operations across all ports.</p>

Table A-1. Summary of Arizona Industry Input for Infrastructure Needs on the U.S.-Mexico Border (continued)	
Item 6: Other: Anything else industry participants wish to add regarding infrastructure – physical or administrative.	1) Impact of southbound traffic is tough on northbound traffic. Different exit booths for people vs. freight are needed and better coordination of the operations.
	2) Weight limits on U.S. interstate system a problem – can handle more than 80,000 lbs., maybe up to 100,000 lbs.
	3) Need private/public partnerships like in Texas to improve border facilities.
Ranking: Please rank your top infrastructure priorities – physical and administrative.	Physical: 1) AZ 189 expansion to better connect to I-19; 2) Exits 12 and 17 into the Rio Rico Industrial Park need to be improved, including the ability to enter at either end of the park.
	Administrative: 1) Staffing – need adequate staffing at Mariposa Crossing; 2) Facilities need to meet FSMA standards as shipments which meet FSMA standards could fall out of compliance at the border; 3) Climate control at port inspection facilities.

Table A-2. Summary of Texas Industry Input for Infrastructure Needs on the U.S.-Mexico Border	
	Texas
Item 1: Highways within 50-100 miles of the U.S.-Mexico border – number and quality of existing highways and where improvements might be needed.	1) Need to expand the overweight corridor in Pharr. Currently allowed to carry 32 MT in a trailer (70,000 lbs.) when could carry 55 MT (120,000 lbs.) on a single and 85 MT (188,000 lbs.) with tandem trailers. Some use Progreso because they can go overweight with overweight permits up to 120,000 lbs.
	2) Trucks must divert off of US-281 because it goes through downtown Pharr. Would like a truck corridor route connecting all bridges to avoid city traffic. I-69 is an important issue – but it cannot be fixed until there is an alternative. Get the International Border Transportation Corridor (IBTC) in place and then US 281 can be expanded. This represents a long-term solution.
	3) U.S. side of border good but Mexican side poor because cannot use the better Mexican toll roads with overweight loads.
Item 2: Roads supporting highways within 50-100 miles of the U.S.-Mexico border – number and quality of existing supporting roads and where improvements might be needed.	1) Jackson and Stewart roads near Pharr both go through the city with lots of lights and people that use them. Shippers have to use them because they cannot continue straight from the Pharr Bridge on US-281. Need to find a way to improve this.
	2) Also need to do local road work on both sides of the border.
	3) Better access to from the main corridor to Aduana is needed because congestion gets really bad.
	4) Need to separate inbound from outbound; commercial from non-commercial; trailers with cargo from empties.
Item 3: International cargo bridges – number and quality of bridges and where improvements might be needed.	1) Concerns were raised about the ability of the Pharr Bridge to efficiently handle additional volumes of trucks carrying Mexican fresh fruit and vegetable imports at its current levels of operation (ie staffing, hours, number of lanes, physical capacity). Some shippers are considering diverting some of shipments to Laredo while others suggest opening up Anzulus to imports (currently people only).
	2) Two additional entry/exit inbound lanes at the Pharr Bridge are being planned, hoping to break ground in 1 st quarter of 2017 and be done by end of 2017. More cold inspection capacity is desired.
	3) U.S. side of Progreso has enough land for an import lot but not on the Mexican side. It would be great to have an import lot on the Mexican side of the Progreso crossing.

Table A-2. Summary of Texas Industry Input for Infrastructure Needs on the U.S.-Mexico Border (continued)	
Item 3: International cargo bridges (continued)	4) Need more trucks in Progreso because do not have enough available when needed.
	5) More cold inspection capacity is desired.
Item 4: Rail service – number and quality of existing rail service and where improvements might be needed.	1) There is no rail at Pharr and it really is not suitable for fresh produce. Truck is the only real method for produce.
	2) Progreso does not have rail, grain shippers through Progreso only use trucks.
	3) For grain exports, would need a shuttle station for 100-110 car trains if wanted rail availability in the LRGV as rail companies do not want to handle 25-single car units, but shuttle would likely hurt local farmers.
Item 5: Crossing procedures at the U.S.-Mexico border – what is working well and where improvements are needed.	1) No FAST-lane participation at the Pharr Bridge. CTPAT/FAST could be more efficient with gate-to-gate procedures.
	2) Real improvement occurred with the addition of an APHIS entomologist at the Pharr port of entry; CBP is getting more discard-authority, and that is good.
	3) Get rid of old X-ray machines which can take as on as 30 minutes but usually 7-8 minutes and purchase a Z-Portal, a high energy mobile X-ray which takes 2-3 minutes.
	4) Want weekend skeleton staffs at Pharr and in DC.
	5) Double inspections of occur on both sides of the U.S.-Mexico border and are a problem.
	6) One of the biggest problem is the corruption and security on the Mexico side with many grain shipments having to provide grain for safe passage.
	7) Aduana is trying to modernize at a cost of ~\$70 million.
Item 6: Other: Anything else industry participants wish to add regarding infrastructure – physical or administrative.	1) The political dispersion of transportation funds – only Congressional Transportation committee/sub-committee members getting the real funds.
	2) When being held for inspection, produce needs to be kept refrigerated in the holding areas. Cold storage at the bridges would help a lot because the cold chain needs to be maintained for quality and food safety reasons.
	3) Cannot get people on the Mexican side to do their job and clear your cargo without a payment. There is also the selective delay of shipments by APHIS, FGIS (GIPSA), and SAGARPA.

Table A-2. Summary of Texas Industry Input for Infrastructure Needs on the U.S.-Mexico Border (continued)	
Item 6: Other (continued)	4) GIPSA has to sample and go to every facility, and they do it on their time table, not when the shipper needs it to be done.
Ranking: Please rank your top infrastructure priorities – physical and administrative.	Physical: 1) International Border Transportation Corridor (IBTC) project to link bridges and avoid cities in LRGV; 2) Need to widen access to Aduana; 3) Need to have import lots on both sides of the Progreso crossing.
	Administrative: 1) Extension and alignment of hours of U.S. governmental agencies at the border is needed and in Mexico as well. CBP is 7 am-10 pm; USDA is 8 am-5 pm with an overtime order; FDA is 8 am-4:30 pm; 2) Need a central location for GIPSA truck sampling – a patio could solve this, and GIPSA needs more inspectors; 3) Length of time to sample trucks need to be improved; 4) Need an import facility (lot) in Nuevo Progreso; 5) Eliminate double inspections and double fumigations as well as fumigations on every load.

APENDIX B

**U.S.-Mexico Trade Flows by Major Crossing Region
and Major Infrastructure Projects**

Table B-1: Summary of U.S. Trade with Mexico by Port and Related Infrastructure Projects

Port/Region	Total Exports	Total Imports	Ag & Food Exports	Ag & Food Imports
Otay Mesa, CA	2010: \$10.2 Billion; 2016: \$15.1 Billion	2010: \$20.7 Billion; 2016: \$27.0 Billion	2010: \$601.4 Million; 2016: \$884.3 Million	2010: \$1.1 Billion; 2016: \$1.9 Billion
Calexico East, CA	2010: \$4.7 Billion; 2016: \$6.2 Billion	2010: \$5.5 Billion; 2016: \$9.4 Billion	2010: \$347.5 Million; 2016: \$266.2 Million	2010: \$769.4 Million; 2016: \$1.3 Billion
Arizona (Nogales/San Luis)	2010: \$7.4 Billion; 2016: \$10.9 Billion	2010: \$13.6 Billion; 2016: \$17.0 Billion	2010: \$688.7 Million; 2016: \$739.7 Million	2010: \$688.7 Million; 2016: \$739.7 Million
New Mexico (Sta. Teresa/Columbus)	2010: \$4.9 Billion; 2016: \$10.8 Billion	2010: \$8.4 Billion; 2016: \$12.0 Billion	2010: \$36.1 Million; 2016: \$59.7 Million	2010: \$375.4 Million; 2016: \$544.8 Million
El Paso, TX (incl. Presidio)	2010: \$24.3 Billion; 2016: \$30.8 Billion	2010: \$31.9 Billion; 2016: \$40.2 Billion	2010: \$1.5 Million; 2016: \$1.9 Million	2010: \$688.7 Million; 2016: \$990.2Million
Laredo, TX (incl. Eagle Pass/Del Rio)	2010: \$64.6 Billion; 2016: \$98.8 Billion	2010: \$76.8 Billion; 2016: \$129.1 Billion	2010: \$6.1 Billion; 2016: \$8.3 Billion	2010: \$4.5 Billion; 2016: \$9.4 Billion
LRGV, TX (Brownsville, Progreso, Pharr & Rio Grande City)	2010: \$16.3 Billion; 2016: \$18.8 Billion	2010: \$19.2 Billion; 2016: \$25.8 Billion	2010: \$772.3 Million; 2016: \$1.1 Billion	2010: \$2.3 Billion; 2016: \$4.4 Billion

Table B-1: Summary of U.S. Trade with Mexico by Port and Related Infrastructure Projects (continued)

Port/Region	Corn, Rice, Sorghum & Produce Exports	Corn, Rice, Sorghum & Produce Imports	Total Loaded Truck Entries	Fresh Produce Entries 40,000 lb Loads
Otay Mesa, CA	2010: \$98.7 Million; 2016: \$138.1 Million	2010: \$774.4 Million; 2016: \$1.3 Billion	2010: 485,805; 2016: 675,511	2010: 43,323; 2016: 50,386
Calexico East, CA	2010: \$105.2 Million; 2016: \$76.6 Million	2010: \$333.2 Million; 2016: \$613.2 Million	2010: 159,260; 2016: 199,469	2010: 10,526; 2016: 17,850
Arizona (Nogales/San Luis)	2010: \$292.8 Million; 2016: \$368.5 Million	2010: \$2.8 Billion; 2016: \$3.3 Billion	2010: 290,773; 2016: 309,275	2010: 136,031; 2016: 160,602
New Mexico (Sta. Teresa/Columbus)	2010: \$1.5 Million; 2016: \$29,000	2010: \$63.4 Million; 2016: \$90.2 Million	2010: 56,625; 2016: 80,1691	2010: 6,462; 2016: 13,254
El Paso, TX (incl. Presidio)	2010: \$401.4 Million; 2016: \$148.9 Million	2010: \$164.7 Million; 2016: \$519.5 Million	2010: 369,483; 2016: 427,919	2012: 1,206; 2016: 950
Laredo, TX (incl. Eagle Pass/Del Rio)	2010: \$895.5 Million; 2016: \$1.6 Billion	2010: \$336.2 Million; 2016: \$1.2 Billion	2010: 1,276,987; 2016: 1,713,330	2012: 27,320; 2016: 46,965
LRGV, TX (Brownsville, Progreso, Pharr & Rio Grande City)	2010: \$113.0 Million; 2016: \$153.8 Million	2010: \$1.6 Billion; 2016: \$3.7 Billion	2010: 502,308; 2016: 623,638	2012: 129,406; 2016: 173,607

Table B-1: Summary of U.S. Trade with Mexico by Port and Related Infrastructure Projects (continued)

Port/Region	Major Infrastructure Projects, Started or Planned
Otay Mesa, CA	Pursue construction of the Otay Mesa East crossing to ease congestion at the emanating from the Otay Mesa crossing. Work is nearing completion on SR-11 to accommodate an Otay Mesa East crossing, and there is an MOU in place with Mexico for the new crossing.
Calexico East, CA	Plans include implementing the Binational Toll Pilot Project to ease congestion at the Calexico East crossing. Existing infrastructure limits the use of Calexico West as a crossing - improving this infrastructure is a goal.
Arizona (Nogales/San Luis)	Improvements to SR-189, 3.75 mile local highway connecting Mariposa crossing to I-19, to include northbound flyover and widening of southbound exit ramp as funds become available (2019); Widening local road from San Luis crossing to SR-195 to 4 lanes.
New Mexico (Sta. Teresa/Columbus)	2040 Strategic Plan currently contains plans for rail bypass/border crossing feasibility study, a new port of entry at Columbus, and a new crossing in Sunland Park to relieve pressure on Santa Teresa.
El Paso, TX (incl. Presidio)	Priorities include construction of a freight shuttle system and adding/reconfiguring lanes at the El Paso Ysleta bridge, and adding new freight-only lanes or a new bridge at Presidio.
Laredo, TX (incl. Eagle Pass/Del Rio)	Construction of a new bridge south of Laredo is a priority; KC Southern would build the rail affiliated with this new bridge. Other priorities include bridge improvements at Eagle Pass and a new CBP facility near Del Rio.
LRGV, TX (Brownsville, Progreso, Pharr & Rio Grande City)	Building the International Border Transportation Corridor is a local priority, which would remove traffic from city areas and connect the ports. State priorities include: construction of 2 causeway style bridge between Brownsville and Matamoros; adding an inspection facility at Donna to process empty containers; expanding the Rio Grande City bridge; and improving access to the Progreso bridge and constructing inspection facilities in Nuevo Progreso