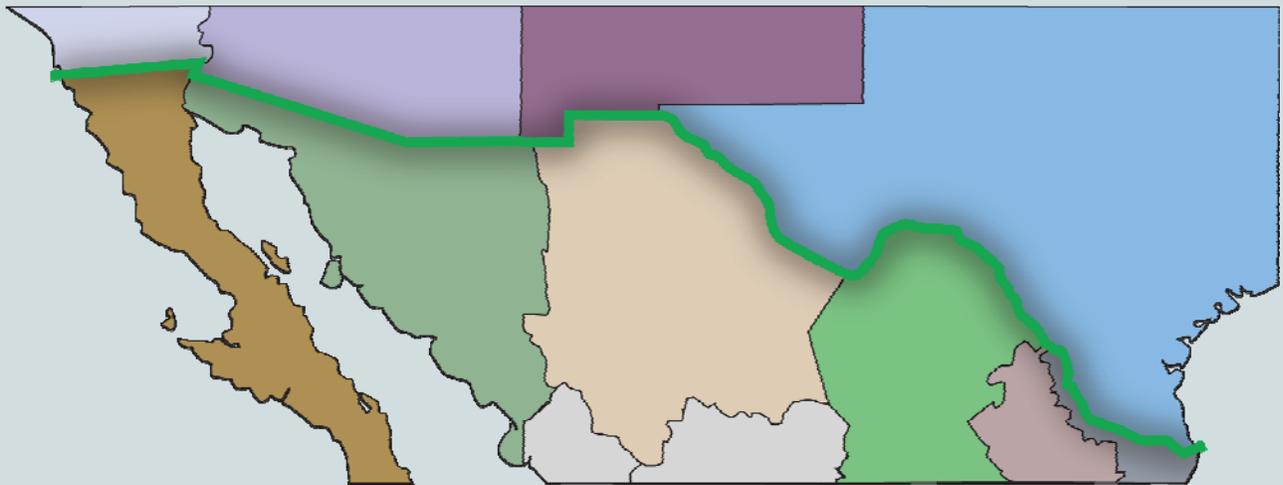


DRAFT

**IMPROVING ECONOMIC OUTCOMES
BY REDUCING BORDER DELAYS**

**FACILITATING THE VITAL FLOW OF COMMERCIAL
TRAFFIC ACROSS THE U.S.-MEXICO BORDER**



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March 2008

TABLE OF CONTENTS

Section	Description	Page
1	Executive Summary.....	3
2	Border Crossing System Delays.....	7
3	Economic Impacts	8
4	High-Level Options	10
5	Port of Entry Analysis	14
6	Conclusions	29

This study, commissioned by the Department of Commerce's International Trade Administration, was conducted by Accenture in association with HDR Decision Economics and Crossborder Group Inc. The study approach was conducted under the requirements of the International Trade Administration and limited by constraints of the Paperwork Reduction Act. The options and estimates contained in this report result from an approach that focused on commercial impacts, and do not necessarily reflect the direct perspectives of a complete cross-section of government entities or other stakeholders.

Acknowledgement of Accenture, HDR Decision Economics, and Crossborder Group Inc., does not constitute the International Trade Administration's endorsement of any company's views, products, or services. The options presented in this report do not represent the policies, funding priorities, or project plans of the United States Government.

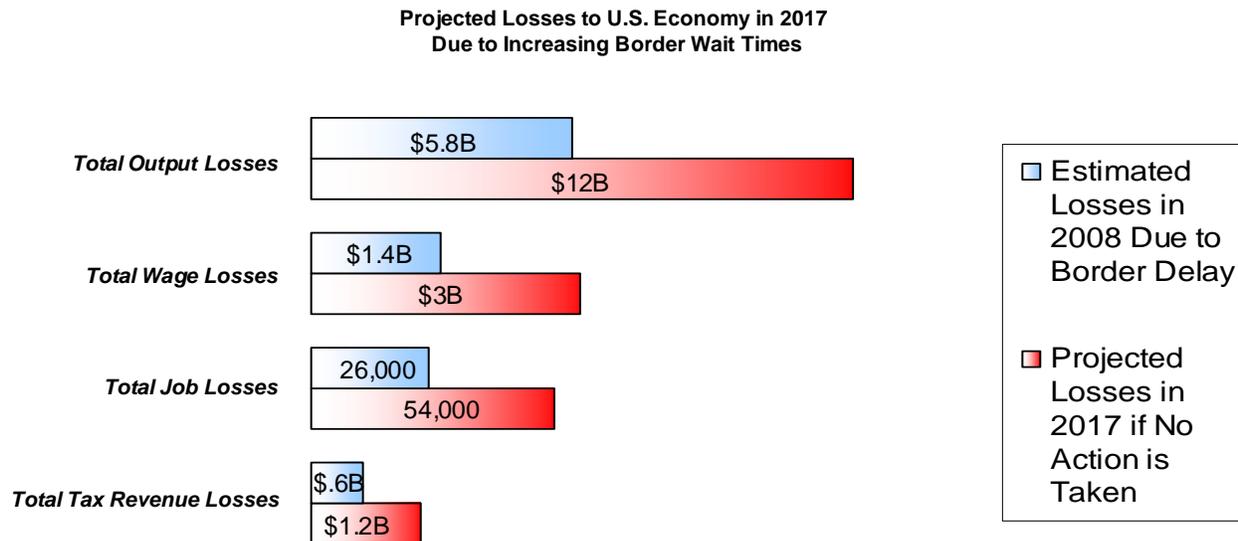
1 Executive Summary

Increasing international traffic and strained border capacity have resulted in border delays that could cause \$86 billion in output losses over the next ten years.

Essential Trading Partner Trade with Mexico is important to the United States' (U.S.) economic vitality. U.S. manufacturers and consumers depend on ready access to Mexican goods. U.S. exporters serve the Mexican market and profit from foreign sales. Border region businesses in Arizona, California, New Mexico, and Texas tie their livelihoods to trade and create jobs for American workers. Mexico is America's third largest trading partner behind only Canada and China.

U.S.-Mexico trade totals approximately \$340 billion, a nearly fourfold increase in trade since the enactment of the North American Free Trade Agreement (NAFTA). Every day more than 13,000 trucks bring over \$550 million worth of goods into the U.S. from Mexico. Over 80% of Mexican imports enter via truck through the five busiest southern border ports of entry (POEs) of Laredo, TX, El Paso, TX, Otay Mesa, CA, Hidalgo, TX, and Nogales, AZ. U.S. exports to Mexico total \$136 billion, with \$93 billion crossing via commercial truck. This represents a 150% increase in export value since the enactment of NAFTA.

A Creeping Economic Threat America's ports are charged to facilitate growing trade while safeguarding national security. However, increases and changes to global trade have outpaced the ports' capacity to accommodate them – resulting in congestion and delays.



\$116 million per minute and 26,000 jobs Today, border wait times at the five busiest southern border POEs average over one hour, which result in an average economic output loss of \$116 million per minute of delay. In 2008, these delays cost the U.S. economy nearly 26,000 jobs and \$6 billion in output, \$1.4 billion in wages, and \$600 million in tax revenue *annually*. By 2017, average wait times could increase to nearly 100 minutes, costing U.S. more than 54,000 jobs and \$12 billion in output, \$3 billion in wages, and \$1.2 billion in tax revenue *annually*. The *cumulative* loss in output due to border delays over the next ten years is estimated to be \$86 billion.

State and Manufacturing Impacts Border state economies are also injured by border delays. Texas alone loses 8,500 jobs and \$1.7 billion in output and \$490 million in wages *annually* due to delays at the in-state ports of Laredo, El Paso, and Hidalgo. The *cumulative* state economic losses in output due to in-state border delays over the next ten years are estimated to be \$26 billion in Texas, \$4.5 billion in California, and \$2 billion in Arizona. Further, industries that rely on importing and exporting are harmed by border delays. Losses to the Machinery and Equipment industry account for approximately 45% of national economic losses.

Economic losses due to border delays are projected to double by 2017.

Improving Economic Outcomes The annual economic impact of wait times will more than double by 2017 if delays grow as projected and if infrastructure and operations remained the same. Actions are being taken or planned to improve the situation, but many are constrained by available budget.

Congestion and delays may result within the U.S.-Mexico border crossing system because:

- Today's level of demand exceeds the physical infrastructure and operating capacity.
- The demand for border crossings is not optimally disbursed across available capacity to minimize congestion.
- The rate of throughput of the international border crossing system is insufficient.

To reverse negative economic trends and combat these causes of delay, a comprehensive set of options can be explored *on both sides of the border among Federal, state, and local agencies* to reduce border wait times. These options respect CBP's vital security requirements. They are designed to allow CBP the same or greater opportunity to conduct security screening while facilitating trade – two imperative components to strengthening national and economic security.

1. Optimize Use of Capacity

Objective: Achieve an optimal dispersion of demand across available capacity by promoting efficient border crossing decisions.

- 1.1 Institute an Appointment System:** Retain a percentage of capacity for e-scheduled appointments and pilot border crossing-specific use permits.
- 1.2 Pilot Variable Pricing:** Pilot adjustments to infrastructure-use tolls and other fees through congestion pricing (mandatory fees based on traffic volumes) and value pricing (voluntary fees based on demand for time-sensitive, expedited crossings).
- 1.3 Promote Data-Driven Decision Making:** Provide real-time, mobile alerts on congestion conditions and lane openings to enable efficient decisions on time and route choices by importers and to enable rapid responses by government agencies.
- 1.4 Pilot Empty Truck Strategies:** Limit empty trucks to off-peak hours and collect an empty truck fee to optimize available capacity for loaded trucks, where possible.

2. Improve Throughput

Objective: Increase the rate of movement and pace of verifications across the end-to-end border crossing system.

- 2.1 Segment the Trucking Population:** Divide the population of incoming conveyances to facilitate the efficient crossing of low-risk shipments, focus on high-risk shipments, and transition lane types to accommodate demand.
- 2.2 Expand Participation in Trusted Programs:** Grow enrollment in trusted importer programs and provide improved access to dedicated lanes.
- 2.3 Enhance Advance Information:** Integrate advance information across the importing process and investigate a bi-national superbooth concept.
- 2.4 Sponsor a Wait Time Reduction Contest:** Organize a performance measure-based contest for owners, operators, and administrators of border crossing infrastructure to reduce system-wide wait times.

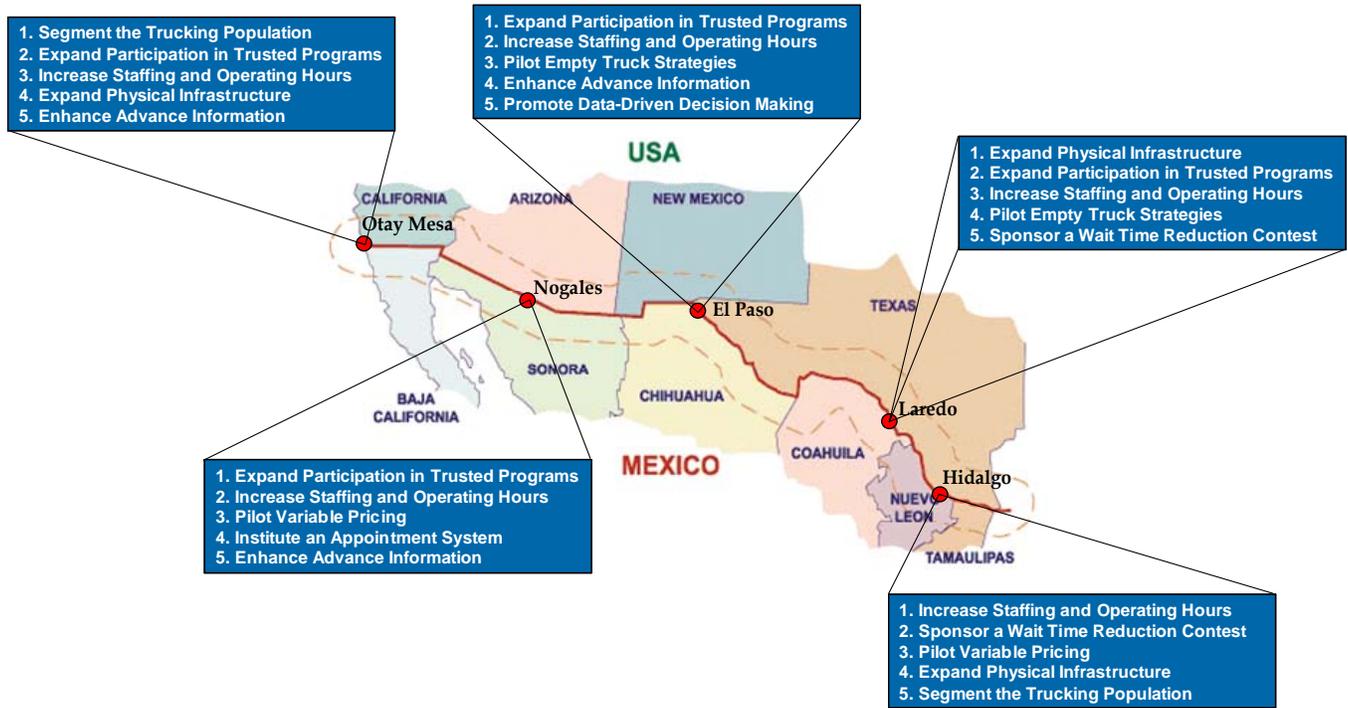
3. Expand Capacity

Objective: Enlarge physical infrastructure and increase operating capacity.

- 3.1 Expand Physical Infrastructure:** Widen bridges and U.S. and Mexican access roads, expand primary and secondary facilities, and lengthen dedicated cargo and FAST lanes.
- 3.2 Increase Staffing and Operating Hours:** Add shifts to existing operating hours and extend operating hours on both sides of the border.

A coordinated effort of stakeholders is needed to reduce border wait times and increase American economic gains from trade.

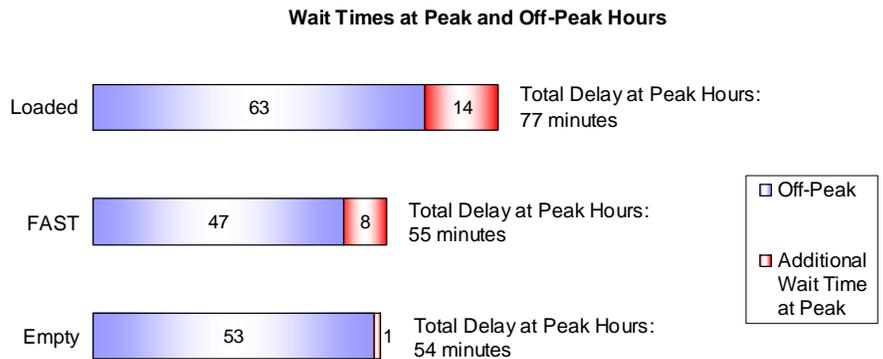
Improving Ports of Entry Stakeholders, both public and private, Federal, state, and local, and in the U.S. and Mexico, must evaluate options and turn them into results. To jump-start improvement, options are tailored and aligned to POEs. These options may generate \$7.5B and 34,000 jobs over the next ten years by reducing border wait times. Action to improve border crossings can begin immediately.



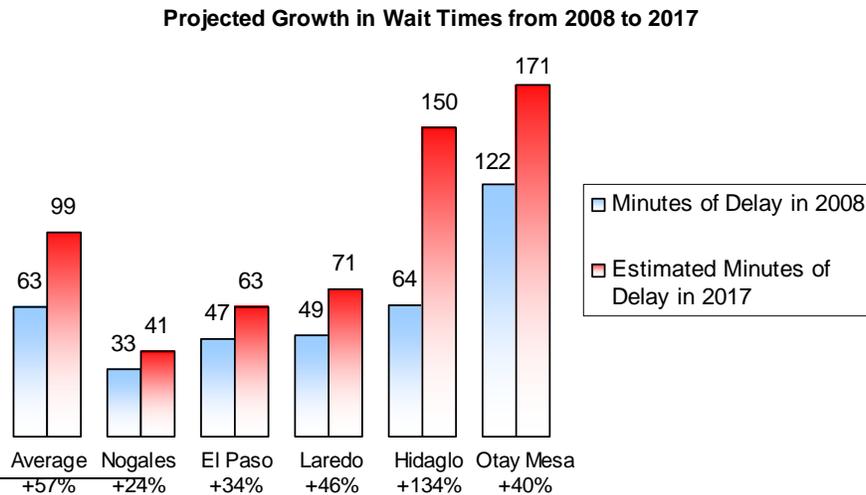
2 Border Crossing System Delays

The complex international trade process reaches its climax at our nation’s POEs, requiring the highly coordinated effort of a diverse set of public and private sector stakeholders. Therefore, it is important to view delays in that context and use a measure of total wait time that captures the border crossing system as a whole. Total wait time is defined as the time elapsed *from entering* the line in Mexico leading to Mexican export inspection *through exit* from U.S. inspection facilities, including any U.S. state-conducted inspections. Importantly, this definition of border crossing wait time captures the fact that processing time at U.S. primary is not the driver of wait time; instead, delays are due several factors, including many outside U.S. federal control. This represents an expansion of traditional wait time metrics and raises the focus from a processing time level to a more comprehensive system view. The importing community has long sought a well-constructed wait time metric. This construction, or one similar, is proposed as the national standard to account for system-wide border crossing wait time.

The average delay experienced by trucks crossing the U.S.-Mexico border is 63 minutes¹. Otay Mesa has the longest delays of the top five busiest southern border POEs, reaching over two hours. In contrast, Nogales has delays of approximately half the national average². Peaks in wait time, consistent across POEs, occur during the morning rush hour between 8am and 11am. Wait times for loaded trucks at peak times average 77 minutes. Both FAST trucks and empty trucks average approximately 55 minutes during peak times, but FAST trucks wait less during off-peak periods. At each of the five largest southern border POEs, FAST trucks experience less wait time on average than non-FAST loaded trucks.



Wait time is projected to increase across the five busiest U.S.-Mexico border crossing systems if volumes continue to grow as expected and if infrastructure and operations remain the same. By 2017, it is estimated that the average wait time will be nearly 100 minutes – an increase of 60%. Delays at Hidalgo are estimated to more than double due to its very rapid commercial growth. *Note:* The potential positive wait time impacts of planned and underway improvements are not included in these projections.



¹ Wait time estimates are based on wait time data collected specifically for this report. Historical wait time data was used to annualize and extrapolate the observed wait times.

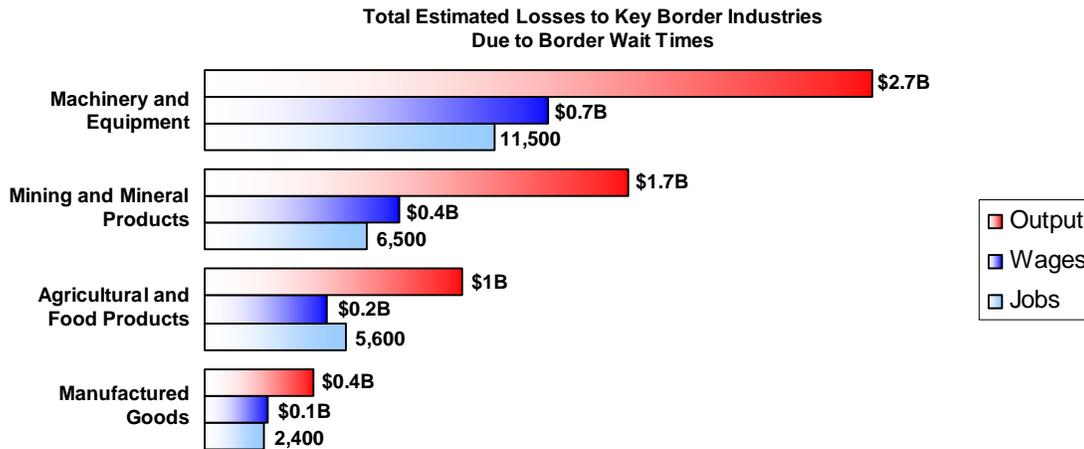
² The wait time construction in Nogales does not include Mexican export processing time due to its distance from U.S. primary.

Economic Impacts

Border delays result in losses to output, wages, jobs, and tax revenue due to decreases in spending by companies, suppliers, and consumers. Due to congestion, delays, and wait time uncertainty:

- U.S. and Mexican firms require increased inventory levels, additional trucks, and additional drivers.
- U.S. and Mexican exporters experience higher transportation costs and less export volume.
- U.S. consumers pay higher prices for Mexican goods and reduced consumer choice.
- The productivity of firms is compromised, especially in time-sensitive industries (e.g., automotive, agriculture).
- The border region’s ability to attract and maintain investments is hindered.

The economic impact due to border wait times at the five largest southern land border POEs is considerable. Total losses to the national economy are 26,000 jobs and \$5.8 billion in output, \$1.4 billion in wages, and \$600 million in tax revenue *annually*. The *cumulative* economic output loss over the next ten years (sum of projected annual losses due to current border delays at the five largest U.S.-Mexico POEs) is \$86 billion. Industries that rely on regular and predictable importing and exporting are harmed by border delays. Losses to the Machinery and Equipment industry account for approximately 45% of national economic losses.



Since U.S.-Mexico trade is deeply integrated with the fabric of U.S. border-states, state economies also experience losses due to border delays. Combined estimated output losses to Texas, California, and Arizona due to wait times at their in-state POEs total 11,000 jobs and \$2.2 billion in output and \$630 million in wages *annually*.



3 High-Level Options

Border delays have a considerable negative impact on the U.S. national economy, border-state economies, and key industries. In the absence of mitigating action, the expected growth in international trade and continuance of necessary security measures may lead to further increases in border wait times. To halt negative economic trends and reduce delays, the evaluation of potential improvement options is needed. Many of these options reflect important initiatives already planned or underway by CBP, GSA, and other federal, state, and local stakeholders.

The following options are a guide to improvement possibilities and are used to estimate returns on investments by port. These options are not intended to be policy recommendations. As shown in Section 5, positive estimated returns on investments provide evidence that these options have potential, but additional analysis is required to assess long-term feasibility.

3.1 Option 1: Optimize Use of Capacity

Proactive demand management could reduce wait times by focusing on achieving an optimal dispersion of demand across available capacity and promoting efficient border crossing decisions. A barrier to implementation is the flexibility of stakeholder business practices; collaboration and pilots are required to test feasibility.

3.1.1 Option 1.1: Institute an Appointment System

Reliability and predictability are of principal importance to those involved in importing and transportation. Appointments for service are an effective mechanism for reducing unpredictability and managing demand. An importer, broker, or transportation company could electronically schedule border crossings, free of charge, and receive a window of time within which trucks may cross. Non-scheduled crossings would wait in the standard queue. CBP and Aduanas (Mexican Customs) could best allocate available capacity and inspection resources. Adequate infrastructure is needed to allow trucks with appointments to access dedicated capacity.

A second solution for managing demand through appointments is to develop POE- and border crossing-specific use permits, pursuant to legal feasibility. Each POE or border crossing (e.g., bridges) could distribute licenses that authorize its use. Licenses could act as all day appointments and licensed trucks would be granted a defined percentage of daily border crossing capacity.

3.1.2 Option 1.2: Pilot Variable Pricing

Demand for capacity can be managed in the border crossing environment through two forms of variable pricing – congestion pricing and value pricing. Real-time congestion pricing is a strategy that varies the total cost associated with border crossings depending on traffic levels. With appropriate adjustments to tolls and fees, traffic congestion can be dissipated over time and available physical capacity.

A second form of variable pricing is value pricing. Value pricing adjusts the cost associated with border crossing depending on the urgency, or other measure of importance, of each shipment. Many shipments are time sensitive due to just-in-time inventory practices or perishability. Importers may determine that it is in their best interest to expedite shipping and may choose to pay additional tolls or fees based on their demand for time-sensitive crossings. An example is agriculture shippers who place a premium on rapid access to the U.S. market.

3.1.3 Option 1.3: Promote Data-Driven Decision Making

To best manage the use of available infrastructure, the provision of wait time and lane opening information is needed. This option builds on CBP's existing web-based reporting of open lanes and current wait times, as well as border crossing operators' traffic cameras that provide web-based, video feeds of congestion conditions. Alerts on congestion within the border crossing transportation system could be provided to users of the crossing infrastructure, such as brokers and shippers, to help make efficient decisions. Information should be provided by methods that enable alternate route selection prior to trucks being committed to a road. Importers can then vary

route, timing, and POE choices. This information may be provided through several channels, including websites, mobile phones, variable signage on approaching roadways, or the radio. A key benefit of using this information would be a reduction in excess plan time by importing entities. This strategy would benefit from a public-private partnership that enables a quasi-private organization to provide border crossing congestion and border wait time data to subscribers via electronic and other communication channels.

3.1.4 Option 1.4: Pilot Empty Truck Strategies

Empty trucks and bobtails consume capacity available to loaded trucks, are a less efficient use of the border crossing infrastructure, and slow travel for value-laden trucks and FAST trucks. For POEs with a high percentage of empty truck volume, border crossing capacity can be optimized by limiting access to only loaded trucks during peak hours. This option must be considered in the context of the current truck drayage system. Another mechanism is to charge an empty truck fee. Both options could encourage trucks to be value-added in both directions as they cross the border. The existing tolling infrastructure could be used to collect the empty truck fee. An exemption from fees or peak hour restrictions could be made to participants in trusted programs.

3.2 Option 2: Improve Throughput

Improving throughput can reduce border wait times by increasing the rate of movement and pace of verifications through the border crossing system.

3.2.1 Option 2.1: Segment the Trucking Population

Mingled and diverse traffic types at the border produce traffic conflict and congestion that impedes efficient crossings. With proper segmentation of commercial trucks, CBP and other agencies can efficiently deploy differentiated services to increase throughput for low-risk and compliant shipments. Separate and dedicated lanes provide the best method to push segmentation further back into the approach process. This option must be considered in the context of physical limitations. To improve throughput via segmentation, U.S. border authorities should be able to quickly transition lane types and processing modes to accommodate the highest demand segments at any given time. Each lane and inspection booth could process all segments of anticipated demand. For example, if empty truck lanes are expected to be underutilized during peak hours, those lanes should be converted to handle FAST or loaded trucks.

3.2.2 Option 2.2: Expand Participation in Trusted Programs

Trusted, low-risk, and known approaching trucks can move easily and quickly across the border, enabling further screening and compliance verifications of high-risk and unknown trucks. CBP has increased private sector enrollment in voluntary trusted importer programs (such as FAST, Importer and Broker Self Assessments, Customs-Trade Partnership Against Terrorism, and Nationally Managed Accounts) and continued outreach and marketing will be beneficial. There could also be tiers of benefits offered between programs to attract small, medium, and large companies. Readily accessible, dedicated lanes for members of trusted programs are critical to providing program wait time benefits. Additionally, important new programs to pilot on the southern border are a low-risk agriculture importer program and a program for maquiladoras making multiple crossings per day.

3.2.3 Option 2.3: Enhance Advance Information

Over the past few years, CBP has expanded its capability to collect advance information on passengers and cargo that intends to gain admittance into the U.S., including initial deployments of the Automated Commercial Environment. These successes can be built upon to continue to accrue benefits. Information and risk analysis could benefit from a full lifecycle view of cargo, providing credentialed records as the cargo moves through the importing chain. Data may be integrated across each component of the importing process, including importers, brokers, shippers, manufacturers, transport companies, and truck drivers. Better targeting of threats and high-risk cargo will be enabled.

At the land border, the superbooth concept currently in operation in Nogales could be expanded. An enhanced processing center could be piloted that integrates Mexican export, U.S. security, trade, and safety, and state inspections. Shared inspection and concurrent processing practices could improve throughput. This could reduce congestion during approach to the U.S. border by routing fully validated trucks past U.S.-based inspection facilities. This concept should be implemented in combination with secure corridors to close security vulnerabilities and with the International Trade Data System to integrate advance information across public and private sector stakeholders. Improvements to Mexican export processing, including closing security vulnerabilities and improving personnel skill sets may be required to ensure security while facilitating trade.

3.2.4 Option 2.4: Sponsor a Wait Time Reduction Contest

An innovative mechanism to improve system-wide throughput is to sponsor a performance measure-based wait time contest. The contest can include private firms that own and operate the border crossing infrastructure and the agencies that regulate it. The contest could involve federal agencies united as a sponsoring umbrella organization to provide incentives for the successful implementation of wait time reduction solutions. This technique would be best employed at POEs with privately-owned transportation infrastructure and with multiple border crossings. It is important to note that improvement options made via the contest would be subject to the laws and procedures of proper security inspections. No changes to CBP's or other border agencies' security or operational protocols would be initiated by stakeholders of this contest.

3.3 Option 3: Expand Capacity

Expanding capacity can reduce wait times by enlarging physical infrastructure and increasing staff and operating hours to improve the ability to process growing traffic volumes. There are many infrastructure projects planned or underway.

3.3.1 Option 3.1: Expand Physical Infrastructure

An expansion of physical border crossing infrastructure is needed to reduce wait time. Expansion options, depending on port-specific needs and available space, include:

- Improving Mexican and U.S. local access roads and highways.
- Widening the approach to Mexican export facilities and widening border crossings such as bridges.
- Constructing new lanes leading to U.S. primary and expanding the number of primary booths.
- Lengthening dedicated cargo and FAST lanes.
- Enlarging and redesigning secondary inspection facilities to accommodate advanced security technologies (e.g., radiation portal monitors, gamma-ray imaging).

Bilateral effort is required to improve infrastructure on both sides of the border. Several infrastructure expansion projects are planned and underway. It is also important to consider the type of capacity needed. The capacity needed at each POE will vary based on the types of incoming trucks, such as FAST, empty, or agricultural. For those POEs with high percentages of FAST trucks, it is recommended to provide longer and additional dedicated lanes to deliver wait time benefits to enrolled members. An additional strategy is to designate "trade-only" transportation corridors that lead to expanded commercial-only POEs. These newly designated cargo-only ports could be limited to low-risk importers and trucks (e.g., FAST, C-TPAT, or other pre-cleared trucks) either full time or during known periods of peak demand.

3.3.2 Option 3.2: Increase Staffing and Operating Hours

Adding shifts to existing operating hours is a critical option. Full staffing of available capacity can help minimize border wait times during peak operating hours. Further, widened operating hours would allow more opportunities throughout the day for trucks to cross the border. Positive results from the provision of widened operating hours will only occur if all stakeholders better align their schedules, especially brokers, transporters, and warehousing companies.

To enable better management of operating capacity during peaks in demand, an expanded temporary detail program could help to rapidly respond to staffing needs. For example, CBP Officers from off-season ports could be detailed to other ports experiencing peaks in seasonal demand. A further mechanism to increase capacity through staffing is to staff tandem primary inspection booths in anticipation of peaks, where physically feasible. Tandem primary booths are designed with two primary windows for two CBP Officers to clear two trucks concurrently.

4 Port of Entry Analysis

The five busiest southern land border POEs experience congestion and border delays that negatively impact national and state economies. Businesses, workers, and governments experience decreases in sales, wages, jobs, and tax revenues. To halt these losses, specific strategies are needed at each POE.

4.1 Laredo Port of Entry

Laredo is the busiest POE on the southern land border by volume and value. Border wait times average 49 minutes. Total national economic losses due to delays at the Laredo POE are \$2.8 billion and 12,500 jobs. Strategies to reduce wait times are projected to result in a \$4.4 billion economic benefit to the U.S. over the next ten years.

4.1.1 Port Profile

Laredo, TX is the largest land POE on the U.S.-Mexico border by commercial freight value. Over one-third of U.S. southern land border imports pass through Laredo. Over the past twelve years, total cargo value imported through Laredo by truck increased by 335% and total volume increased 103%. U.S. exports to Mexico more than doubled in value over the past twelve years, currently totaling \$35 billion. Laredo has two commercial crossing points approximately 20 miles apart: the World Trade Bridge (WTB) and the Colombia Solidarity International Bridge (CSIB). The WTB is closer to the city of Laredo and has eight primary inspection booths, all of which are used for commercial trucks. The WTB implemented the FAST program in 2005. A seven primary lane expansion project will be completed within two years. The CSIB has 12 primary inspection booths, four for passenger vehicles and eight for commercial trucks, and implemented the FAST program in November 2007. Although both commercial border crossing points have similar capacities, there is a significant disparity in their use. Over the past two and a half years, over 75% of Laredo commercial traffic volume used the WTB. This is due to political and broker licensing factors in Mexico and to the geographic and infrastructure advantages of the WTB.

World Trade Bridge - Map



The commercial traffic route is shown in Green

Colombia Solidarity International Bridge - Map



The commercial traffic route is shown in Green

4.1.2 Summary of Findings

Wait Times – Laredo’s border wait time averages 49 minutes. WTB wait time averages 55 minutes and CSIB wait time averages 40 minutes. Wait times are highest from 8:00am to 11:00am and decrease steadily throughout the day. FAST trucks wait 39 minutes compared to 51 minutes for non-FAST loaded trucks.

Economic Impact – The economic impacts to the U.S. due to border delays at Laredo account for approximately half of the total national economic impact. Total losses to the U.S. economy due to border delays at Laredo are estimated to be almost \$2.8 billion in output, \$700 million in wages, \$300 million in tax revenues, and 12,500 jobs. Economic losses are projected to increase to over \$5.7 billion in output, \$1.4 billion in wages, \$600 million in tax revenues and over 25,600 jobs by 2017.

4.1.3 Laredo Options

A decrease in border wait times at the Laredo POE may be achieved through the following tailored strategies:

Laredo - Options, Strategies, and Implementation Targets

Laredo Problem Areas	Options	Strategies	Target Start	Target End
1. Congestion due to inadequate number of primary inspection booths at WTB.	▪ Expand Physical Infrastructure (3.1)	▪ Complete addition of seven primary inspection lanes and booths.	2009	2011
	▪ Increase Staffing and Operating Hours (3.2)	▪ Extend morning operating hours and coordinate with private sector to use additional hours to reduce morning demand peaks.	2009	Ongoing
2. Capacity of CSIB is underutilized relative to WTB.	▪ Expand Physical Infrastructure (3.1)	▪ Improve infrastructure around CSIB, specifically by expanding Mexican roadways and linking CSIB's exit roads more directly to major Texas highways.	2013	2020
	▪ Sponsor a Wait Time Reduction Contest (2.4)	▪ Establish a contest with incentives to improve system-wide cooperation and reduce border wait times.	2009	2010
		▪ Develop a public-private partnership to facilitate contest achievement. ▪ Prime candidate for wait time reduction contest due to the existence of multiple crossings within the POE and nearby alternatives (e.g., Eagle Pass).	2009	2010
3. Limited management of the large population segments that regularly import through Laredo.	▪ Expand Participation in Trusted Programs (2.2)	▪ Perform marketing and outreach to increase enrollment in voluntary trusted programs, given Laredo's massive volume and relatively lower FAST wait times. Target large, mid-size, and <i>maquiladora</i> importers who regularly import through Laredo.	2009	Ongoing
		▪ Install jersey barriers and lengthen dedicated lanes for trusted trucks to establish earlier segmentation during approach.	2010	2015
4. High volume of empty trucks absorbs capacity.	▪ Pilot Empty Truck Strategies (1.4)	▪ Pilot an empty truck fee program to encourage value-added border crossings.	2010	2011

These strategies are projected to result in a \$4.4 billion economic benefit over the next ten years due to reductions in border delays. The total implementation cost estimate ranges from \$155 million to \$460 million. The largest benefit is expected to result from expanded participation in trusted programs such as FAST. This strategy is estimated to lower wait times by approximately 10 to 13 minutes and to reduce output losses by \$2.6 billion (over 20 years due to infrastructure considerations for this strategy at Laredo).

Laredo - Cost Benefit Analysis

Options	Estimated Cost	Estimated Wait Time Impact (% and mins)	NPV Timeframe ³	NPV (in \$millions) ⁴
Expand Participation in Trusted Programs (2.2)	High (\$51M – \$100M)	20% - 27% (10 - 13min)	20 years	\$2,643
Expand Physical Infrastructure (3.1)	Very High (\$101M - \$300M)	15% - 20% (7 - 10min)	20 years	\$1,770
Increase Staffing and Operating Hours (3.2)	Low (\$1M – \$20M)	17% - 23% (8 - 11min)	10 years	\$817
Pilot Empty Truck Strategies (1.4)	Low (\$1M – \$20M)	15% - 20% (7 - 10min)	10 years	\$733
Sponsor a Wait Time Reduction Contest (2.4)	Low (\$1M – \$20M)	14% - 18% (7 - 9min)	10 years	\$653

³ NPV is calculated over either a 10 year or 20 year timeframe, depending on the projected time period of benefits realization.

⁴ NPV is defined as the present value of an option's future wait time reduction benefit, as translated into economic benefit, minus the initial implementation cost

4.2 El Paso Port of Entry

El Paso is the second busiest southern land border POE. Border wait times average 47 minutes. Total national economic losses due to delays at the El Paso POE are \$1.5 billion and 6,700 jobs. Strategies to reduce wait times are projected to result in a \$1.5 billion economic benefit over the next ten years.

4.2.1 Port Profile

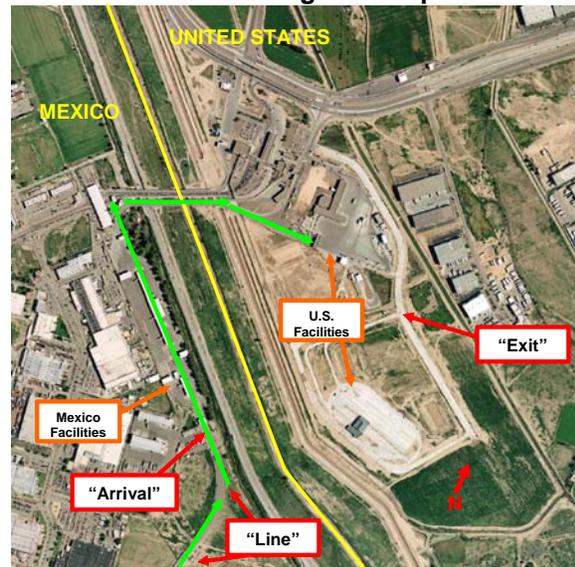
The El Paso POE is the second largest southern land border port by value. Over the past twelve years, the total trade value imported through El Paso has increased by 100%, from \$12 billion to \$24 billion per year, and volume has increased 22%. Exports to Mexico through El Paso total \$18 billion, doubling since 1996. El Paso has two commercial crossing points approximately ten miles apart: the Bridge of the Americas (BOTA) and the Ysleta-Zaragoza bridge. The BOTA has a total of 20 primary inspection booths, six of which are used for commercial trucks and 14 are used for passenger vehicles. Ysleta-Zaragoza has a total of 19 primary inspection booths; six of which are allocated for commercial trucks and 13 are assigned to passenger vehicles. Commercial traffic flow shifts from BOTA to Ysleta-Zaragoza in the evenings because BOTA closes at 6pm. Both crossings process passenger vehicles 24 hours a day, seven days a week.

Bridge of the Americas - Map



The commercial traffic route is shown in Green

Ysleta-Zaragoza - Map



The commercial traffic route is shown in Green

4.2.2 Summary of Findings

Wait Times – El Paso’s border wait time averages 47 minutes. BOTA wait time is 48 minutes and Ysleta-Zaragoza wait time is 46 minutes. Wait times are high in the morning from 8:00am to 9:00am with an additional peak at mid-day from 1:00pm to 2:00pm. FAST trucks wait on average 32 minutes, while non-FAST loaded and empty trucks average 53 and 46 minutes, respectively.

Economic Impact – Total losses to the U.S. economy due to border delays at El Paso are estimated to be almost \$1.5 billion in output, \$400 million in wages, \$200 million in tax revenues, and 6,700 jobs. Economic losses are projected to increase to over \$2.6 billion in output, \$600 million in wages, \$300 million in tax revenues and 11,500 jobs by 2017.

4.2.3 El Paso Options

A decrease in border wait times at the El Paso POE may be achieved through the following tailored strategies:

El Paso - Options, Strategies, and Implementation Targets

El Paso Problem Areas	Options	Strategies	Target Start	Target End
1. Limited operating hours at BOTA compared to other border crossings causes congestion during open hours and shifts evening demand to Ysleta-Zaragoza.	▪ Increase Staffing and Operating Hours (3.2)	▪ Widen operating hours at BOTA, specifically in the evening and in spring and summer months, and staff all primary booths during BOTA demand peaks.	2009	Ongoing
		▪ Build and operate tandem primary booths to clear multiple trucks concurrently during peaks in demand, pursuant to physical feasibility.	2010	Ongoing
		▪ Pilot an empty truck fee program for trucks not enrolled in trusted programs that make multiple daily trips across the border.	2011	2013
2. Limited management of the large commercial population segments that regularly import through El Paso.	▪ Expand Participation in Trusted Programs (2.2)	▪ Perform outreach and marketing to increase enrollment in trusted programs, given El Paso's massive volume and relatively lower FAST wait times. Market El Paso's large differential between FAST wait times and empty or loaded wait times as a major benefit to increase participation.	2009	Ongoing
	▪ Enhance Advance Information (2.3)	▪ Integrate expanded advance information across the importing process (e.g., manufacturer through consignee) to improve targeting and enable data-driven decision making (2.3) and Intelligent Transportation Systems	2011	Ongoing
3. Limited distribution of traffic across physical capacity.	▪ Promote Data-Driven Decision Making (1.3)	▪ Develop capability to transition lanes to accommodate passenger or commercial, northbound or southbound, and empty vehicles as demand requires.	2012	2014
		<ul style="list-style-type: none"> ▪ Develop a public-private partnership to provide real-time congestion and lane opening information to subscribers. ▪ Prime candidate for promoting data-driven decision making due to the clustering of four border crossings, close to major highways, in the same Mexican state. 	2011	2012
4. High volume of empty trucks absorbs physical and processing capacity; El Paso serves the highest volume of empty trucks of the five busiest POEs.	▪ Pilot Empty Truck Strategies (1.4)	▪ Pilot a dedicated empty truck lane at Ysleta-Zaragoza with Non-Intrusive Inspection technology.	2011	2013

These strategies are projected to result in a \$1.5 billion economic benefit over the next ten years due to reductions in border delays. The total implementation cost estimate ranges from \$65 million to \$190 million. The largest benefit is expected to result from expanded participation in trusted programs such as FAST. This strategy is estimated to lower wait times by approximately 9 to 13 minutes and to reduce output losses by \$454 million.

El Paso - Cost Benefit Analysis

Options	Estimated Cost	Estimated Wait Time Impact (% and mins)	NPV Timeframe	NPV (in \$millions) ⁵
Expand Participation in Trusted Programs (2.2)	Low (\$1M – \$20M)	20% - 27% (9- 13min)	10 years	\$454
Increase Staffing and Operating Hours (3.2)	Low (\$1M – \$20M)	17% - 23% (8 - 11min)	10 years	\$388
Pilot Empty Truck Strategies (1.4)	Medium (\$21M – \$50M)	15% - 21% (7 - 10min)	10 years	\$324
Enhance Advance Information (2.3)	Medium (\$21M – \$50M)	13% - 17% (6 - 8min)	10 years	\$257
Promote Data-Driven Decision Making (1.3)	Medium (\$21M – \$50M)	5% - 6% (2 - 3min)	10 years	\$74

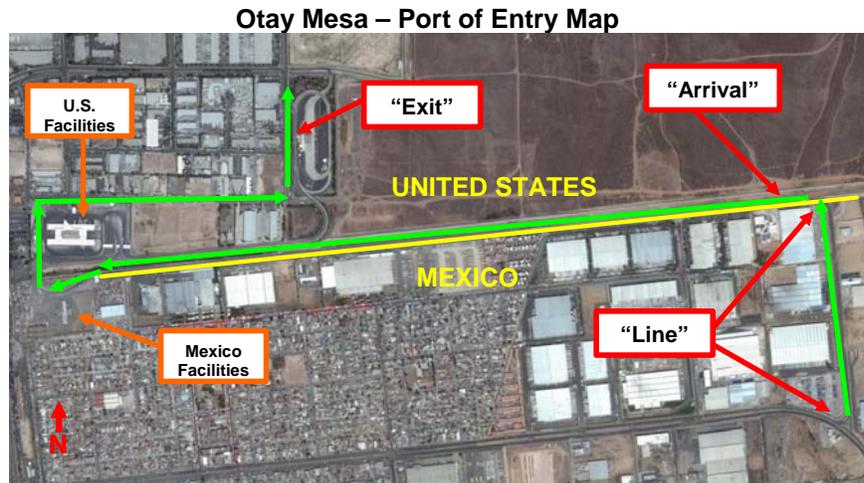
⁵ NPV is defined as the present value of an option's future wait time reduction benefit, as translated into economic benefit, minus the initial implementation cost

4.3 Otay Mesa Port of Entry

Otay Mesa has the highest wait times of the five busiest southern land border POEs. Border wait times average 122 minutes and remain higher than all other POEs throughout the day. Total national economic losses due to delays at the Otay Mesa POE are \$600 million and 2,700 jobs. Strategies to reduce wait times are projected to result in a \$430 million economic benefit over the next ten years.

4.3.1 Port Profile

The Otay Mesa POE is in San Diego, California. Over the past ten years, the total value of goods imported through Otay Mesa has increased by 162%, from \$7 billion to \$18 billion, and volume has increased 30%. From 1997 to 2007, the value of U.S. exports to Mexico rose to \$10 billion from \$5 billion. Otay Mesa has a total of 22 primary inspection booths, 12 for passenger vehicles and ten for commercial trucks. Of these cargo inspection booths, one is dedicated to empty vehicles. In October 2004, Otay Mesa was the first California POE to implement the FAST program.



The commercial traffic route is shown in Green

4.3.2 Summary of Findings

Wait Times – Otay Mesa’s border wait time averages 122 minutes, the highest of the five busiest southern land border POEs. Wait times are higher than the other four POEs throughout all operating hours. FAST trucks wait approximately 96 minutes, compared to 134 minutes for non-FAST loaded trucks and 119 minutes for empty trucks.

Economic Impact – Total losses to the U.S. economy due to border delays at Otay Mesa are estimated to be almost \$600 million in output, \$100 million in wages, \$60 million in tax revenues, and 2,700 jobs. Economic losses are projected to increase to \$1.1 billion in output, \$300 million in wages, \$100 million in tax revenues and 5,000 jobs by 2017.

4.3.3 Otay Mesa Options

A decrease in border wait times at the Otay Mesa POE may be achieved through the following tailored strategies:

Otay Mesa - Options, Strategies, and Implementation Targets

Otay Mesa Problem Areas	Options	Strategies	Target Start	Target End
1. Congestion throughout all hours of operation.	<ul style="list-style-type: none"> Expand Physical Infrastructure (3.1) 	<ul style="list-style-type: none"> Expand the roadway infrastructure leading to Otay Mesa on the Mexican side and widen the two mile stretch between U.S. and Mexico inspection points. Build Otay Mesa East (<i>not included in cost estimates</i>). 	2013	2020
2. Limited hours of operations restrict the use of available capacity.	<ul style="list-style-type: none"> Increase Staffing and Operating Hours (3.2) 	<ul style="list-style-type: none"> Widen operating hours and staff all primary booths during demand peaks (e.g., summer). 	2009	Ongoing
		<ul style="list-style-type: none"> Optimize staffing by time of year – adding CBP Officers in late fall / holiday season and Agriculture Specialists in spring season. 	2009	Ongoing
3. Lack of segmentation of passenger and commercial vehicles on approaching roadways.	<ul style="list-style-type: none"> Segment the Trucking Population (2.1) 	<ul style="list-style-type: none"> Lengthen dedicated lanes for passenger, commercial, and trusted trucks to establish earlier segmentation and reduce weaving on roadways leading to U.S. primary inspection. 	2011	2014
		<ul style="list-style-type: none"> Develop capability to rapidly transition lane types as demand requires. 	2012	2014
	<ul style="list-style-type: none"> Expand Participation in Trusted Programs (2.2) 	<ul style="list-style-type: none"> Market Otay Mesa's relatively lower FAST wait times to increase enrollment in trusted programs. 	2009	Ongoing
	<ul style="list-style-type: none"> Enhance Advance Information (2.3) 	<ul style="list-style-type: none"> Pilot superbooth concept for commercial trucks on Mexican side of the border to eliminate bottleneck on the two mile stretch between CBP and Mexican Customs. This option is pursuant to political and physical feasibility. 	2013	2015
<ul style="list-style-type: none"> Establish a secure corridor to route compliant trucks around U.S. primary once cleared by the superbooth. 		2014	2020	

These strategies are projected to result in a \$430 million economic benefit over the next ten years due to reductions in border delays. The total implementation cost estimate ranges from \$255 million to \$740 million. The largest benefit is expected to result from segmenting the trucking population. This strategy is estimated to lower wait times by up to 20 minutes and to reduce output losses by \$168 million (over 20 years due to infrastructure considerations for this strategy in Otay Mesa).

Otay Mesa - Cost Benefit Analysis

Options	Estimated Cost	Estimated Wait Time Impact (% and mins)	NPV Timeframe ⁶	NPV (in \$millions) ⁷
Segment the Trucking Population (2.1)	High (\$51M – \$100M)	12% - 16% (14 - 19min)	20 years	\$168
Expand Participation in Trusted Programs (2.2)	Low (\$1M – \$20M)	20% - 27% (24 - 32min)	10 years	\$143
Increase Staffing and Operating Hours (3.2)	Low (\$1M – \$20M)	17% - 23% (21 - 28min)	10 years	\$121
Expand Physical Infrastructure (3.1)	Very High (\$101M - \$300M)	15% - 20% (18 - 24min)	20 years	\$101
Enhance Advance Information (2.3)	Very High (\$101M - \$300M)	123% - 17% (16 - 20min)	20 years	\$60

⁶ NPV is calculated over either a 10 year or 20 year timeframe, depending on the projected time period of benefits realization.

⁷ NPV is defined as the present value of an option's future wait time reduction benefit, as translated into economic benefit, minus the initial implementation cost

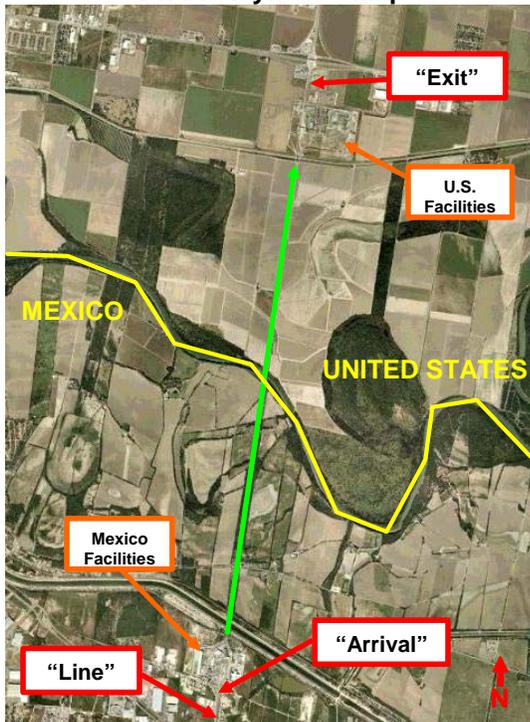
4.4 Hidalgo / Pharr Port of Entry

Hidalgo is one of the fastest growing POEs on the southern border. Total national economic losses due to delays at the Hidalgo POE are \$600 million and 2,700 jobs. Strategies to reduce wait times are projected to result in a \$950 million economic benefit over the next ten years.

4.4.1 Port Profile

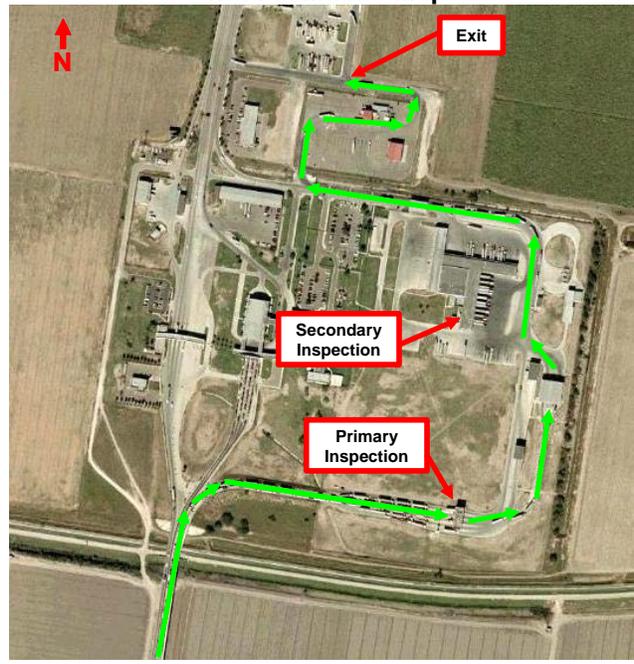
Hidalgo / Pharr, TX is one of the fastest growing ports in terms of commercial traffic volume and trade value of all the POEs on the U.S.-Mexican border. Over the past twelve years, total import value has increased 277%, from \$3 billion to \$12 billion and volume has increased 158%. This is the largest percent increase of the five busiest U.S.-Mexican border POEs. Exports to Mexico have grown to \$9 billion, increasing 350% since 1995. The Hidalgo / Pharr POE has one commercial crossing point that processes northbound cargo, the Pharr-Reynosa International Bridge on the Rise. The Pharr bridge has nine primary inspection booths, five for commercial trucks and four for passenger vehicles. The FAST program was implemented at the Pharr bridge in 2005.

Pharr-Reynosa - Map



The commercial traffic route is shown in Green

U.S. Facilities - Map



The commercial traffic route is shown in Green

4.4.2 Summary of Findings

Wait Times – Pharr’s wait time averages 64 minutes. Wait times are highest between 8:00am and 10:00am and remain relatively consistent throughout the day. FAST trucks have shorter wait times (65 minutes) than non-FAST loaded trucks (75 minutes), while empty trucks experience the least wait time (46 minutes). Average weekend wait times are higher than weekday wait times – 91 minutes compared to 59 minutes.

Economic Impact – Total losses to the U.S. economy due to border delays at Pharr are estimated to be almost \$600 million in output, \$100 million in wages, \$60 million in tax revenues, and 2,700 jobs. Economic losses are projected to increase significantly to \$2.5 billion in output, \$600 million in wages, \$300 million in tax revenues and 11,500 jobs by 2017.

4.4.3 Hidalgo / Pharr Options

A decrease in border wait times at the Hidalgo / Pharr POE may be achieved through the following tailored strategies:

Hidalgo / Pharr - Options, Strategies, and Implementation Targets

Hidalgo / Pharr Problem Areas	Options	Strategies	Target Start	Target End
1. Rapid increases in commercial volume have outgrown current capacity.	▪ Expand Physical Infrastructure (3.1)	▪ Increase the number of primary inspection booths.	2012	2014
		<ul style="list-style-type: none"> ▪ Begin planning other infrastructure expansion projects to address Pharr's fast growth and provide lead time for project approval. ▪ Forecast the timing at which the threshold for use of the Anzalduas bridge will be reached. 	2009	2011
2. Lack of segmentation of passenger and commercial vehicles and pedestrians on the Pharr-Reynosa Bridge.	▪ Segment the Trucking Population (2.1)	<ul style="list-style-type: none"> ▪ Establish segmentation prior to the bridge to eliminate the bottleneck and reduce weaving on roadway leading to U.S. primary inspection. ▪ Establish permanent FAST segmentation on the bridge. 	2010	2011
		▪ Develop capability to rapidly transition lanes between passenger and commercial as demand requires.	2012	2014
3. Limited distribution of traffic across physical capacity and days of the week.	▪ Increase Staffing and Operating Hours (3.2)	▪ Widen weekend operating hours and staff additional primary booths to reduce peaks in weekend commercial demand.	2009	Ongoing
	▪ Sponsor a Wait Time Reduction Contest (2.4)	▪ Establish a contest with incentives for improving system-wide cooperation and reducing border wait times.	2009	2010
		<ul style="list-style-type: none"> ▪ Develop a public-private partnership to facilitate contest achievement. ▪ Prime candidate for a wait time reduction contest due to the existence of multiple crossings within the POE. 	2009	2010
▪ Pilot Variable Pricing (1.2)	▪ Pilot congestion pricing to encourage border crossings during the week.	2012	2014	

These strategies are projected to result in a \$970 million economic benefit over the next ten years due to reductions in border delays. The total implementation cost estimate ranges from \$125 million to \$290 million. The largest benefit is expected to result from increasing staffing and operating hours. This strategy is estimated to lower wait times by 11 to 15 minutes and to reduce output losses by \$275 million.

Hidalgo / Pharr - Cost Benefit Analysis

Options	Estimated Cost	Estimated Wait Time Impact (% and mins)	NPV Timeframe ⁸	NPV (in \$millions) ⁹
Increase Staffing and Operating Hours (3.2)	Low (\$1M – \$20M)	17% - 23% (11 - 15min)	10 years	\$275
Sponsor a Wait Time Reduction Contest (2.4)	Low (\$1M – \$20M)	14% - 18% (9 – 12min)	10 years	\$218
Pilot Variable Pricing (1.2)	Medium (\$21M – \$50M)	13% - 18% (9 - 11min)	10 years	\$188
Expand Physical Infrastructure (3.1)	High (\$51M – \$100M)	15% - 20% (10 - 13min)	10 years	\$159
Segment the Trucking Population (2.1)	High (\$51M – \$100M)	12% - 16% (8 - 10min)	10 years	\$126

⁸ NPV is calculated over either a 10 year or 20 year timeframe, depending on the projected time period of benefits realization.

⁹ NPV is defined as the present value of an option's future wait time reduction benefit, as translated into economic benefit, minus the initial implementation cost

4.5 Nogales Port of Entry

Nogales is a fast growing POE that processes almost 50% of U.S. southern border imports of agriculture. Total national economic losses due to delays at the Nogales POE are \$335 million and 1,500 jobs. Strategies to reduce wait times are projected to result in a \$245 million economic benefit over the next ten years.

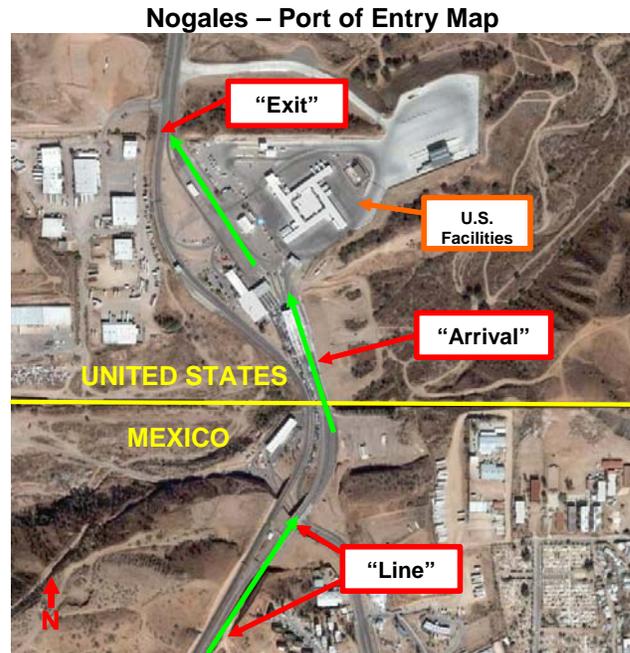
4.5.1 Port Profile

The Nogales-Mariposa crossing point is the commercial crossing for the POE at Nogales, AZ. Over the past twelve years the total value of cargo imported through Nogales has grown 166%, from \$3 billion to \$8 billion per year, and volume has increased 41%. Exports to Mexico total \$5 billion, up from \$2 billion in 1995. The Nogales-Mariposa crossing was recently expanded and implemented FAST in August 2006. The facility now has nine primary inspection booths, four for passenger vehicles and five for commercial trucks. Of these cargo inspection booths, one is allocated for FAST, three are for loaded trucks, and one is for oversized vehicles. Nogales is a significant POE for fruit and vegetable imports from Mexico. As a result, the POE consistently experiences peaks during the winter and spring seasons. Improvement plans, including infrastructure expansions, are being developed to respond to seasonal peaks.

4.5.2 Summary of Findings

Wait Times – Nogales' annualized border wait time averages 33 minutes. Peak hours are 10:00am through 1:00pm. Trucks with drivers enrolled in the FAST program experience significantly shorter border wait times than loaded commercial trucks, waiting on average approximately half the time (20 minutes) of non-FAST trucks (40 minutes). Empty trucks experience delays of 27 minutes. *Note:* Estimates of Nogales wait times do not include Mexican export processing due to its location in interior Mexico.

Economic Impact – Total losses to the U.S. economy due to border delays at Hidalgo are estimated to be almost \$340 million in output, \$80 million in wages, \$30 million in tax revenues, and 1,500 jobs. Economic losses are projected to increase to \$500 billion in output, \$130 million in wages, \$50 million in tax revenues and 2,300 jobs by 2017.



The commercial traffic route is shown in Green

4.5.3 Nogales Options

A decrease in border wait times at the Nogales POE may be achieved through the following tailored strategies:

Nogales - Options, Strategies, and Implementation Targets

Nogales Problem Areas	Options	Strategies	Target Start	Target End
1. Peaks in demand by time of day and time of year (agriculture season).	<ul style="list-style-type: none"> ▪ Increase Staffing and Operating Hours (3.2) 	<ul style="list-style-type: none"> ▪ Widen operating hours and staff all primary booths at peak times of year for commercial crossings. 	2009	Ongoing
		<ul style="list-style-type: none"> ▪ Build and operate tandem primary booths to clear multiple trucks concurrently during peaks in demand, where physically feasible. 	2010	Ongoing
	<ul style="list-style-type: none"> ▪ Institute an Appointment System (1.1) 	<ul style="list-style-type: none"> ▪ Disburse demand throughout POE operating hours by using e-appointments. 	2010	2012
2. Clearing agriculture-laden trucks requires special processing and additional inspections.	<ul style="list-style-type: none"> ▪ Segment the Trucking Population (2.1) 	<ul style="list-style-type: none"> ▪ Dedicate lanes to agriculture-laden trucks. 	2010	2010
		<ul style="list-style-type: none"> ▪ Develop capability to rapidly transition lanes between passenger and commercial as demand requires. 	2011	2013
	<ul style="list-style-type: none"> ▪ Expand Participation in Trusted Programs (2.2) 	<ul style="list-style-type: none"> ▪ Develop a trusted, low-risk agriculture importer program; enrollees would retain "all day appointments." 	2009	2010
	<ul style="list-style-type: none"> ▪ Enhance Advance Information (2.3) 	<ul style="list-style-type: none"> ▪ Expand pre-inspection of agriculture at the point of origin. 	2011	Ongoing
		<ul style="list-style-type: none"> ▪ Enhance existing Nogales superbooth with integrated and expanded advance information across the importing process (e.g., manufacturer through consignee). 	2010	2011
		<ul style="list-style-type: none"> ▪ Involve USDA and FDA in superbooth. 	2010	2012
	<ul style="list-style-type: none"> ▪ Pilot Variable Pricing (1.2) 	<ul style="list-style-type: none"> ▪ Pilot value-based pricing to expedite time-sensitive cargo (such as agriculture) across the border by providing access to dedicated capacity. 	2013	2015

These strategies are projected to result in a \$250 million economic benefit over the next ten years due to reductions in border delays. The total implementation cost estimate ranges from \$75 million to \$210 million. The largest benefit is expected to result from expanding participation in trusted programs. This strategy is estimated to lower wait times by 7 to 9 minutes and to reduce output losses by nearly \$90 million.

Nogales - Cost Benefit Analysis

Options	Estimated Cost	Estimated Wait Time Impact (% and mins)	NPV Timeframe ¹⁰	NPV (in \$millions) ¹¹
Expand Participation in Trusted Programs (2.2)	Low (\$1M – \$20M)	20% - 27% (7 - 9min)	10 years	\$87
Increase Staffing and Operating Hours (3.2)	Low (\$1M – \$20M)	17% - 23% (6 - 8min)	10 years	\$74
Pilot Variable Pricing (1.2)	Medium (\$21M – \$50M)	13% - 18% (4 - 6min)	10 years	\$31
Institute an Appointment System (1.1)	Low (\$1M – \$20M)	8% - 11% (3 - 4min)	10 years	\$28
Enhance Advance Information (2.3)	High (\$51M – \$100M)	13% - 17% (4 - 6min)	10 years	\$27

¹⁰ NPV is calculated over either a 10 year or 20 year timeframe, depending on the projected time period of benefits realization.

¹¹ NPV is defined as the present value of an option's future wait time reduction benefit, as translated into economic benefit, minus the initial implementation cost

5 Conclusions

Congestion is affecting our national and economic security. It is a problem that is expected to grow. This report promotes the ongoing dialogue across the many stakeholders necessary to improve the situation. Outreach and deep partnerships will continue to be of great importance.

This study provided:

- A performance metric for system-wide border crossing wait time that captures the broad scope of factors that lead to congestion and delays.
- Border crossing system wait times at the five busiest U.S.-Mexico crossings.
- Economic impacts of border delay for the U.S. economy, key border state economies, and key industries.
- High-level options – some which are time-tested and in-progress and some which are innovative and require additional feasibility analysis.
- Improvement options based on the particular needs of the five busiest southern land border crossing systems.

The support of Congress, every government agency working at the border, and the private sector is needed to make mutually beneficial changes that can improve national security and economic outcomes. Starting today, we can:

- Agree on a wait time performance metric and begin data collection to baseline delays.
- Bring together a true stakeholder-wide working group with the authority it needs to drive change.
- Develop near-term joint funding plans across government agencies and include the private sector.
- Investigate the feasibility of options at the five busiest southern land border POEs.
- Leverage the infrastructure investment program currently in place to base needs on true operational requirements rather than on currently under funded resource levels.
- Secure the trust of Congress that considerable improvement is possible.