BORDER MASTER PLAN
PLAN MAESTRO FRONTERIZO

Texas Department of Transportation

Final Report

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Lower Rio Grande Valley-Tamaulipas Border Master Plan

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List of Acronyms

AADT—Average Annual Daily Traffic

AAGR—Average Annual Growth Rate

ADT—Average Daily Traffic

Aduanas—Administración General de Aduanas

API—Administración Portuaria Integral, S.A. de C.V.

APP—Annual Performance Plan

ARRA—American Recovery and Reinvestment Act of 2009

BBBXG—Binational Bridges and Border Crossings Group

BMPO—Brownsville Metropolitan Planning Organization

BND—Brownsville Navigation District

BNSF—Burlington Northern Santa Fe

BOP—Border Pacific Railroad

BRAC—Base Realignment and Closure

BRG— Brownsville and Rio Grande International Railroad

BSP—Bilateral Strategic Plan

CAGR—Compound Annual Growth Rate

CAPUFE—Caminos y Puentes Federales de Ingresos y Servicios Conexos

CBD—Central Business District

CBI—Coordinated Border Infrastructure

CBP—U.S. Customs and Border Protection

CCRMA—Cameron County Regional Mobility Authority

CDA—Comprehensive Development Agreement

CHPP—Congressional High Priority Projects

CMAQ—Congestion Mitigation and Air Quality

CODEIM— Comité de Desarrollo Inter-municipal

CONAPO—Consejo Nacional de Población

CONASAMI—Comisión Nacional de los Salarios Mínimos

CPS—Classroom Performance System

CRIS—Crash Records Information System

CTR— The University of Texas at Austin's Center for Transportation Research

DGDC—Dirección General de Desarrollo Carretero

DHS—Department of Homeland Security

DOT—Department of Transportation

E.O.—Executive Order

EIS—Environmental Impact Statement

ESC—U.S.-Mexico Executive Steering Committee

FARAC—Fideicomiso de Apoyo al Rescate de Autopistas Concesionadas

FAST—Free and Secure Trade

FHWA—Federal Highway Administration

FM—Farm to Market

FMCSA—Federal Motor Carrier Safety Administration

FONADIN—Fondo Nacional de Infraestructura

FONSI—Finding of No Significant Impact

FYHSP—Future Years Homeland Security Program

GIWW—Gulf Intracoastal Waterway

GSA—General Services Administration

Hazmat—Hazardous Material

HBP—Federal Highway Bridge Program

HCM—Highway Capacity Manual

HCMPO—Hidalgo County Metropolitan Planning Organization

HID—Hughes Identification Devices Global, Inc.

HRRR—Federal High Risk Rural Roads

HSBMPO—Harlingen-San Benito Metropolitan Planning Organization

HSIP—Federal Highway Safety Improvement Program

IBWC—International Boundary and Water Commission

ICE—U.S. Immigration and Customs Enforcement

IMPLAN—Instituto Municipal de Planeación

INDAABIN—Instituto de Administración y Avalúos de Bienes Nacionales

INEGI—Instituto Nacional de Estadística y Geografía

IPG—Integrated Planning Guidance

ISTEA—Intermodal Surface Transportation Efficiency Act of 1991

ITS—Intelligent Transportation Systems

JWC—U.S./Mexico Joint Working Committee

KCS—Kansas City Southern

KCSM—Kansas City Southern de México

LEED—Leadership in Energy and Environmental Design

LNG—Liquefied Natural Gas

LPG—Liquefied Petroleum Gas

LOS—Level of Service

LPOE—Land Port of Entry

MAP-21—Moving Ahead for Progress in the 21st Century Act

MCMP—Multimodal Corridor Master Plan

MEX—The Federal highway system in Mexico is denoted with the acronym MEX.

MI—Merida Initiative

MPO—Metropolitan Planning Organization

MPP—Metropolitan Planning Process

MTP—Metropolitan Transportation Plan

MXN—Mexican Pesos

NAFTA—North American Free Trade Agreement

NEPA—National Environmental Policy Act

NII— Non-intrusive Inspection

OMB—Office of Management and Budget

OS/OW—Oversize/Overweight

PAAC—Port Authority Advisory Committee

PAC—Policy Advisory Committee

PEMEX—Pétroleos Mexicanos

POE—Port of Entry

POV—Privately Owned Vehicles

PP—Presidential Permit

PPP—Public Private Partnership

PR—Park Road

PS&E—Plans, Specification, and Estimates

RAD—Resource Allocation Decision

RAP—Resource Allocation Plan

RFID—Radio Frequency Identification

RGS—Federal Railroad Grade Separation Program

RHG—Romero Hicks and Galindo Abogados

RMA—Regional Mobility Authority

RTP—Rural Transportation Plan

RVSC— Rio Valley Switching Company

SAFETEA-LU—Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

SAT—Servicio de Administración Tributaria

SCT—Secretaría de Comunicaciones y Transportes

SEDESOL—Secretaría de Desarrollo Social

SENTRI—Secure Electronic Network for Traveler's Rapid Inspection

SHCP—Secretaría de Hacienda y Crédito Público

SLRTP—Statewide Long-Range Transportation Plan

SOP—Secretaría de Obras Públicas del Estado de Tamaulipas

SOS—Secretary of State

SRA—Strategic Resource Assessment

SRE—Secretaría de Relaciones Exteriores

SRTS—Federal Safe Routes to School

SS—State Spur

STIP—Statewide Transportation Improvement Program

SWOT—Strength/weaknesses/opportunities/threats

TAM— The State of Tamaulipas highway system in Mexico is denoted with the acronym TAM

TE—Transportation Enhancements

TEA-21—Transportation Efficiency Act for the 21st Century

TIP—Transportation Improvement Program

TMA—Transportation Management Areas

TRTP—Texas Rural Transportation Plan

TTC—Texas Transportation Commission

TTI—Texas A&M Transportation Institute

TWG—Technical Working Group

TxDOT—Texas Department of Transportation

UPRR—Union Pacific Railroad

U.S.—United States of America

US$—U.S. Dollars

USDA—U.S. Department of Agriculture

USDOS—U.S. Department of State

USDOT—U.S. Department of Transportation

USTDA—U.S. Trade Development Agency

UTP—Unified Transportation Program

Executive Summary

Introduction

Border master plans—as defined and supported by the U.S./Mexico Joint Working Committee (JWC) on Transportation Planning and Programming, the Federal Highway Administration (FHWA), and the U.S. Department of State—are comprehensive, binational long-range plans to:

- Inventory transportation and port-of-entry (POE) infrastructure that facilitates trade.
- Prioritize and promote planned POE and related transportation projects.
- Inform decision making.
- Allocate limited funding resources.
- Ensure continued dialog and coordination on future POE and supporting transportation infrastructure needs and projects.

The Lower Rio Grande Valley–Tamaulipas Border Master Plan was developed by The University of Texas at Austin's Center for Transportation Research and the Texas A&M Transportation Institute.

The objectives of this border master plan were to:

- Design a stakeholder agency involvement process that is inclusive and ensures participation of all involved in POE projects and the transportation infrastructure serving those POEs.
- Increase understanding of the POE and transportation planning processes on both sides of the border.
- Develop and implement plans for prioritizing and promoting POE and related transportation projects, including evaluation criteria and rankings over the short, medium, and long terms.
- Establish a process that will ensure continued dialog among Federal, State, regional, and local stakeholder agencies on both sides of the border to assure continued coordination on current and future POE and supporting transportation infrastructure needs and projects.

The Lower Rio Grande Valley–Tamaulipas Border Master Plan is the third border master plan on the U.S.-Mexico border and the second border master plan on the Texas-Mexico border. Its development followed an approach similar to the development of existing border master plans.

Decision-Making Structure

As in the California–Baja California and Laredo–Coahuila/Nuevo León/Tamaulipas border master plans, stakeholders were represented by a Policy Advisory Committee (PAC)—consisting of executive-level managers—and a Technical Working Group (TWG)—consisting of senior technical staff. The mandate of the PAC is to review the study objectives; evaluate the proposed work plan; define the study area; designate the TWG members; endorse the prioritization criteria, weights, and scores used by the study team to prioritize identified projects; and endorse the Border Master Plan document. The mandate of the TWG is to provide the study team with data on existing and planned transportation and border facilities serving the POEs in the study area; verify the collected information; participate in a workshop to select the criteria, scores, and weights that were used to prioritize individual projects; and review the content of the draft Border Master Plan document developed and submitted by the study team.

Membership in the PAC and TWG is limited to government agencies and rail or port entities whose mandate encompasses border transportation infrastructure planning, programming, construction, and/or management. The following is a list of the PAC and TWG member agencies that participated in the development of the Border Master Plan:

- United States:
    - U.S. Department of Transportation/Federal Highway Administration.
    - U.S. Department of Transportation/Federal Motor Carrier Safety Administration.
    - U.S. General Services Administration.
    - U.S. Department of Homeland Security/Customs and Border Protection.
    - U.S. Department of State, including applicable consulates.
    - International Boundary and Water Commission.
    - Texas Department of Transportation (TxDOT).
    - Texas Department of Public Safety.
    - Cameron County.
    - Cameron County Regional Mobility Authority.
    - Hidalgo County.
    - Hidalgo County Commuter Rail District.
    - Hidalgo County Metropolitan Planning Organization.
    - Starr County.
    - Zapata County.
    - City of Brownsville.
    - Brownsville Metropolitan Planning Organization.

  - City of Los Indios.
  - City of San Benito.
  - City of Harlingen.
  - Harlingen-San Benito Metropolitan Planning Organization.
  - City of Mission.
  - City of McAllen.
  - City of Edinburg.
  - City of Pharr.
  - City of Hidalgo.
  - City of Donna.
  - City of Weslaco.
  - City of Roma.
  - City of Rio Grande City.
  - B&M Bridge Company.
  - Progreso International Bridge.
  - Los Ebanos Ferry.
  - Starr Camargo Bridge Company.

- Mexico:
  - Secretaría de Comunicaciones y Transportes (SCT).
  - Administración General de Aduanas.
  - Instituto de Administración de Avalúos de Bienes Nacionales.
  - Instituto Nacional de Migración.
  - Centro SCT Tamaulipas.
  - State of Tamaulipas—Secretariat of Public Works.
  - State of Tamaulipas—Secretariat of Economy and Tourism.
  - State of Tamaulipas—Secretariat of Urban Development and Environment.
  - Municipio de Guerrero.
  - Municipio de Mier.
  - Municipio de Miguel Alemán.
  - Municipio de Camargo.
  - Municipio de Gustavo Díaz Ordaz.
  - Municipio de Reynosa.
  - Instituto Municipal de Planeación de Reynosa.
  - Municipio de Río Bravo.
  - Municipio de Matamoros.
  - Instituto Municipal de Planeación de Matamoros.

- Modal stakeholders:
  - Port of Brownsville.

- Kansas City Southern de México.
- Union Pacific Railroad.
- BNSF Railway.
- Rio Valley Switching Company.
- Brownsville and Rio Grande International Railroad.

In addition, a number of other agencies and companies were identified that have an interest in the development of the Border Master Plan and/or are impacted by POE or transportation infrastructure projects implemented in the study area. These agencies and companies were invited to participate as border partners in the development of the Border Master Plan. Border partners could attend all meetings and provide input at the meetings. Border partners, however, did not have a vote in selecting the categories, category weights, criteria, criterion weights, and scoring metrics that were used to prioritize projects.

Study Area

The study area approved by PAC members on November 8, 2011, includes an "Area of Influence" and a "Focused Study Area."

Area of Influence

The Area of Influence includes the following areas:

- On the U.S. side, the border counties of Zapata, Starr, Hidalgo, and Cameron (see Figure ES.1).
- On the Mexico side, the Mexican Municipalities of Guerrero, Mier, Miguel Alemán, Camargo, Gustavo Díaz Ordaz, Reynosa, Río Bravo, and Matamoros in the State of Tamaulipas.

Current and projected data on population, employment, land use, and income were obtained for the Area of Influence. The study team found that total population is expected to increase from 2,605,471 in 2010 (1,255,975 in the U.S. Area of Influence and 1,349,496 in the Mexican Area of Influence) to 3,579,715 in 2030 (1,815,967 in the U.S. Area of Influence and 1,763,748 in the Mexican Area of Influence)—an overall increase of 37.4 percent. Total employment is estimated to increase from 1,045,702 (440,957 in the U.S. Area of Influence and 604,745 in the Mexican Area of Influence) in 2010 to 1,620,461 in 2030 (723,331 in the U.S. Area of Influence and 897,130 in the Mexican Area of Influence)—an increase of 54.9 percent. A number of trade corridors (IH 69, US 281, and US 77 in the United States and the Mazatlán–Durango–Matamotos corridor in Mexico) also traverse the Area of Influence.

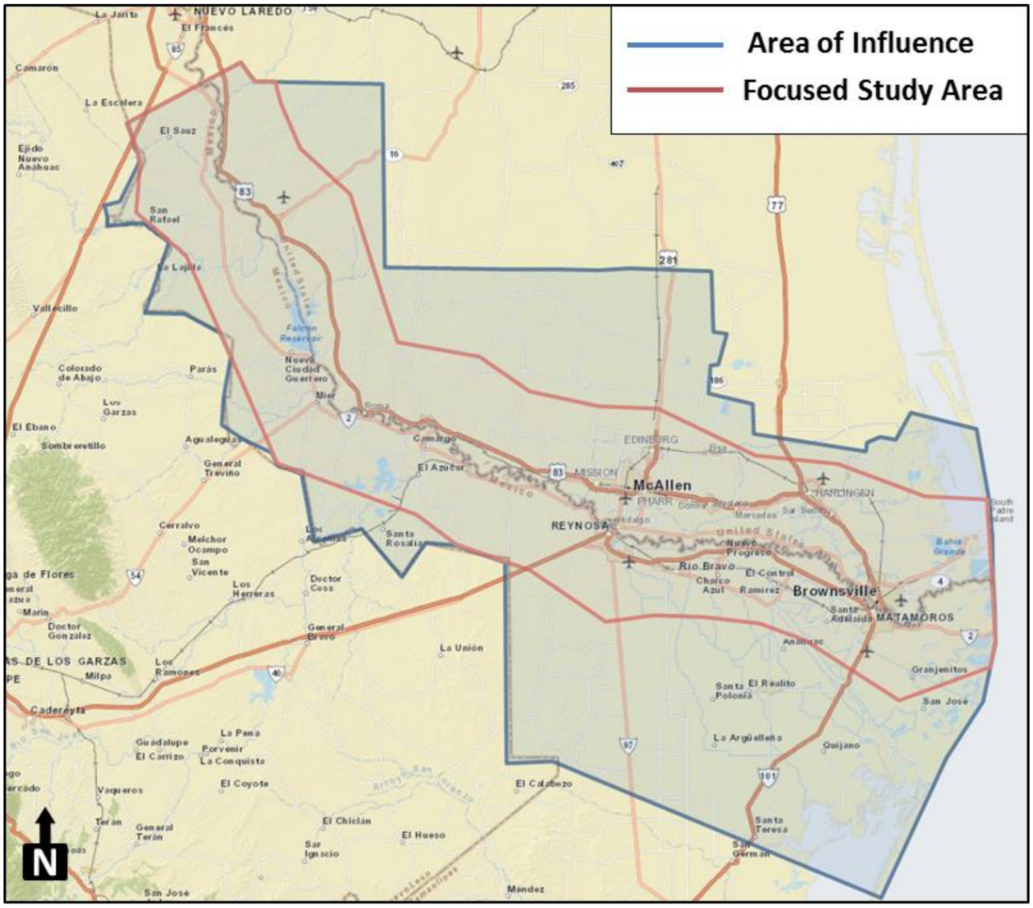


Figure ES.1: Border Master Plan Study Area (Area of Influence and Focused Study Area)

Focused Study Area

The Focused Study Area is 15 miles north and south of the Texas-Tamaulipas international border. However, to the east, the north boundary was slightly revised to include the Valley International Airport in Harlingen. The Focused Study Area´s east and west boundaries fall within TxDOT's Pharr District. The short-, mid-, and long-term POE and transportation priorities were limited to the planned POE and transportation infrastructure projects in the Focused Study Area.

The study team identified, in consultation with the working group members, the planned POE, road and interchange, rail, and marine port projects in the Focused Study Area. Short-, mid-, and long-term priorities were subsequently established for the planned projects in the Focused Study Area.

Bridges/Crossings in Focused Study Area

The Focused Study Area has 13 vehicular or pedestrian bridges/crossings and 2 rail bridges (see Figure ES.2). The two rail bridges are the B&M Bridge and the

Brownsville West Rail Bypass International Bridge, which is under construction as of August 2013. The rail carriers operating in the study area are BNSF Railway, Union Pacific Railroad, Brownsville and Rio Grande International Railroad, and Kansas City Southern de Mexico.

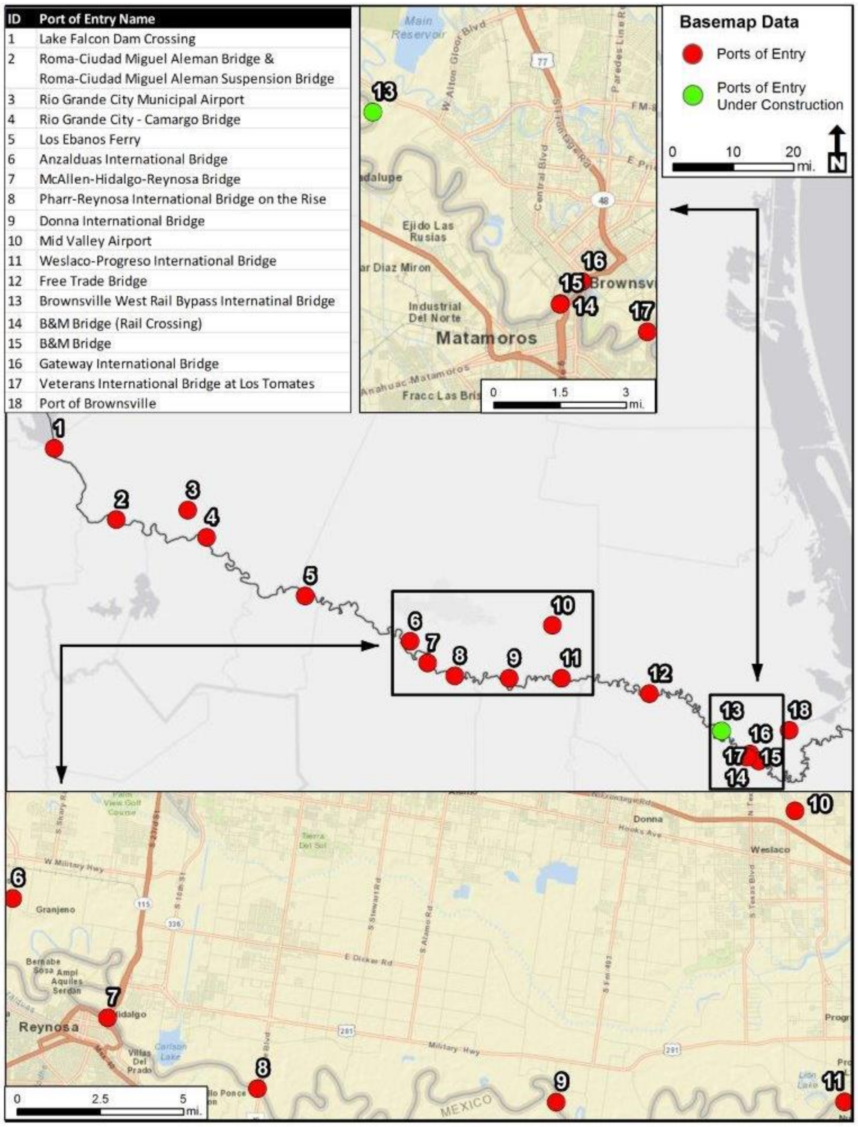


Figure ES.2: Location of Bridges/Crossings in Focused Study Area

U.S.-Mexico trade amounted to almost $494 billion in 2012, 60 percent of which crossed at a Texas land POE. The total value of U.S.-Mexico trade that crossed in the Focused Study Area was approximately $40.1 billion in 2012. Specifically, the total value of U.S.-Mexico trade that crossed by surface mode in Brownsville in 2012 was $13.8 billion: $8.2 billion in exports and $5.6 billion in imports. In Hidalgo, the total value of U.S.-Mexico trade that crossed the border was $25.6 billion: $10.0 billion in exports and $15.6 billion in imports. Rio Grande City, Progreso, and Roma accounted for a combined $699.0 million in U.S.-Mexico trade: $340.5 million in exports and $358.5 million in imports.

Study Approach

The Border Master Plan study was conducted in two phases. Phase I involved contacting executive-level managers at the identified stakeholder agencies to determine their level of support for the Border Master Plan; address any issues or concerns; determine commitment to and involvement in the development of the Border Master Plan, including the allocation of staff resources; examine the feasibility of using an approach similar to that of the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan; determine if any key stakeholders have been omitted; and establish an appropriate communications protocol and methodology for sharing information.

The purpose of Phase I was to determine whether there was sufficient stakeholder support to develop the Border Master Plan. Table ES.1 provides a summary of the support expressed by the stakeholder agencies and rail companies contacted as of August 29, 2011 (the end of Phase I). Although not every agency contacted verbalized their support, none of the agencies or the stakeholders contacted expressed any opposition to the development of the Border Master Plan or asked to be removed from the contact list, which would indicate their refusal to participate in the development of the Border Master Plan.

Table ES.1: Support Expressed by Stakeholders—Phase I

Stakeholders	Expressed Support (%)
U.S.—Federal	100
U.S.—Local	79
Mexico—Federal	66
Mexico—Tamaulipas	32[1]
Rail Stakeholders	67

The outcome of Phase I determined the level of support for the development of the Border Master Plan. Based on the stakeholder support expressed during the Phase I outreach, TxDOT authorized the study team to commence with Phase II. In Phase II, the study team accomplished the development of the Border Master Plan in six tasks:

1. Hold two stakeholder meetings to review the study's objectives, address any issues or concerns raised in Phase I, and reach agreement on the scope of work, the study area, and the planning horizon.

2. Collect data and create a detailed inventory of existing and planned POEs in the study area as well as existing/planned transportation facilities serving those POEs.
3. Hold two stakeholder meetings to review data collected and verify planned project information.
4. Conduct a stakeholder workshop and meeting to reach consensus on the criteria, scores, and weights used to prioritize planned projects.
5. Prioritize and rank planned POE and transportation infrastructure projects using the agreed-upon prioritization criteria, scores, and weights.
6. Finalize and obtain approval of the Border Master Plan document.

Phase II of the study took approximately 16 months.

Stakeholder Participation

For border master plans to be successful, stakeholder participation in and commitment to the development of these plans are critical. The study team secured this for the Border Master Plan by hosting regular meetings and maintaining contact with stakeholders and committee members.

The study team hosted six stakeholder meetings in different cities in the study area over the course of the study period. During the meetings, stakeholders were briefed on the study team's progress and actively engaged in reviewing collected information and data, as well as selecting/agreeing on the categories, category weights, criteria, criterion weights, and scoring metrics to prioritize projects.

Reaching Consensus

Two objectives of the Border Master Plan were to develop and implement a plan for prioritizing and promoting POE and related transportation projects that include evaluation criteria and rankings over the short, medium, and long terms; and to design a stakeholder agency involvement process that would be inclusive and ensure participation of all involved. The plan for prioritizing projects required PAC and TWG members to reach consensus on the elements of the ranking framework (categories, category weights, criteria, criterion weights, and scoring metrics) that would be used to prioritize the projects. To ensure a stakeholder involvement process that would be inclusive and ensure participation of all involved, it was important that each PAC and TWG member have an equal voice in selecting the categories, category weights, criteria, and criterion weights. Equally important was creating a non-threatening environment in which PAC and TWG members would feel comfortable expressing themselves.

The study team used Classroom Performance System technology to reach consensus on the categories, category weights, criteria, and criterion weights to be used in prioritizing the identified planned projects. The process worked as follows: TWG members were provided with a voting device (i>Clicker) that allowed them to rank an element of the ranking framework on importance. For example, each member could rank a specific criterion in prioritizing a project on a scale of A to E, where A was extremely important and E was extremely unimportant. The votes were anonymous, but the study team could track how many TWG members voted.

Once the votes were cast, results were shared, and the study team facilitated a discussion about the voting results. TWG members were then asked to vote again, and the process continued until consensus was reached or until the voting results did not change substantially from one round to the next. This approach allowed all attending TWG members to participate in the selection of the categories, category weights, criteria, and criterion weights. The same process was followed for the endorsement of the categories, category weights, criteria, criterion weights, and scoring metrics by the PAC voting members.

Ranking Framework

Consensus was reached regarding elements of the ranking framework (the categories, category weights, criteria, criterion weights, and scoring metrics) that would be used for project prioritization during the third TWG meeting. A few criteria and criteria weights, as well as the scoring metrics, were modified during the third PAC member meeting, but in general, PAC members endorsed the ranking framework developed by the TWG. The criteria categories and the category weights endorsed can be found in Tables ES.2, ES.3, ES.4, and ES.5.

Table ES.2 provides the prioritization criteria and weights assigned to the POE projects, for which 16 criteria were endorsed. Table ES.3 provides the prioritization criteria and weights assigned to the road and interchange projects, for which 17 criteria were endorsed. Table ES.4 provides the prioritization criteria and weights assigned to the rail projects, for which 16 criteria were endorsed. Table ES.5 provides the prioritization criteria and weights assigned to the marine projects, for which 15 criteria were endorsed.

Table ES.2: POE Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 21.0%)	Increase in Number of Fully Operational Lanes/Rail Tracks	32.2%
	Improve Throughput through the Use of Technology	19.6%
	Alleviate Congestion	29.2%
	Increase in Number of Modes Served	19.0%
Demand (Weight = 16.0%)	Percentage Annual Daily Crossings	59.6%
	Multiple-Mode Demand	40.4%
Cost-Effectiveness/ Project Readiness (Weight = 15.0%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 9.0%)	Diversion of Commercial Traffic	61.0%
	Safe Handling of Hazardous Materials	39.0%
Regional Impacts (Weight = 22.0%)	Wider Geographical Impacts	50.0%
	General Development	50.0%
Binational Coordination (Weight = 17.0%)	Binational Coordination	100.0%

Table ES.3: Road and Interchange Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Increase in Number of Lanes	26.0%
	Improvement in the Level of Service	25.6%
	Number of POEs Served	24.2%
	Connectivity	24.2%
Demand (Weight = 19.2%)	Increase in Average Annual Daily Traffic	34.4%
	Percentage of Trucks	25.6%
	Multiple-Mode Demand	12.5%
	Estimated Demand at 20 Years	27.5%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Accident Rate per Miles	57.6%
	Diversion of Non-radioactive Hazardous Materials	42.4%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

Table ES.4: Rail Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Increase in Number of Tracks	30.5%
	Average Delay Time	29.8%
	Alleviates Congestion Locally	39.7%
Demand (Weight = 19.2%)	Increase in Average Annual Daily Rail Cars	30.0%
	Cross-Border Tonnage by Rail	17.4%
	Multiple-Mode Demand	13.6%
	Additional Hours Needed for Interchange	39.0%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Accident Rate per Miles	57.6%
	Diversion of Non-radioactive Hazardous Materials	42.4%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

Table ES.5: Marine Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Vessel Size	24.0%
	Channel Capacity	44.8%
	Number of Docks	31.3%
Demand (Weight = 19.2%)	Increase in Total Annual Tonnage	53.5%
	Multiple-Mode Demand	14.8%
	Increase in Cross-Border Tonnage	31.7%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Diversion of Commercial Traffic	61.0%
	Safe Handling of Hazardous Materials	39.0%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

Planned POE and Transportation Infrastructure Priorities

On the U.S. side, 38 POE projects, 18 road and interchange projects, and 2 marine port projects were identified. No planned rail projects were identified in the U.S. Focused Study Area. On the Mexican side, 7 POE projects, 7 road and interchange projects, and 1 marine port project were identified. No planned rail projects were identified in the Mexican Focused Study Area.

U.S. projects were ranked separately from Mexico's because of the limited data provided for Mexican projects. The prioritization/ranking of both countries' projects together would thus have resulted in most of the Mexican projects receiving a very low priority/rank. Projects were then ranked by type (POE, road and interchange, and marine port). The complete ranking of all projects by type in each country is provided in Appendix F.

On the U.S. side, the project priorities are presented by county (Cameron, Hidalgo, Starr, and Zapata). On the Mexican side, the project priorities are presented by municipality (Matamoros, Valle Hermoso, Río Bravo, Reynosa, Gustavo Díaz Ordaz, Camargo, Miguel Alemán, Mier, and Guerrero). The locations of the planned projects—for which adequate location information was obtained—were identified on maps by planning horizon (short, medium, and long term). Projects for which no time period was provided were categorized as "unknown."

The highest ranked POE, road and interchange, and rail projects by U.S. county and Mexican municipality are shown in Figure ES.3. These projects are briefly described in this Executive Summary.

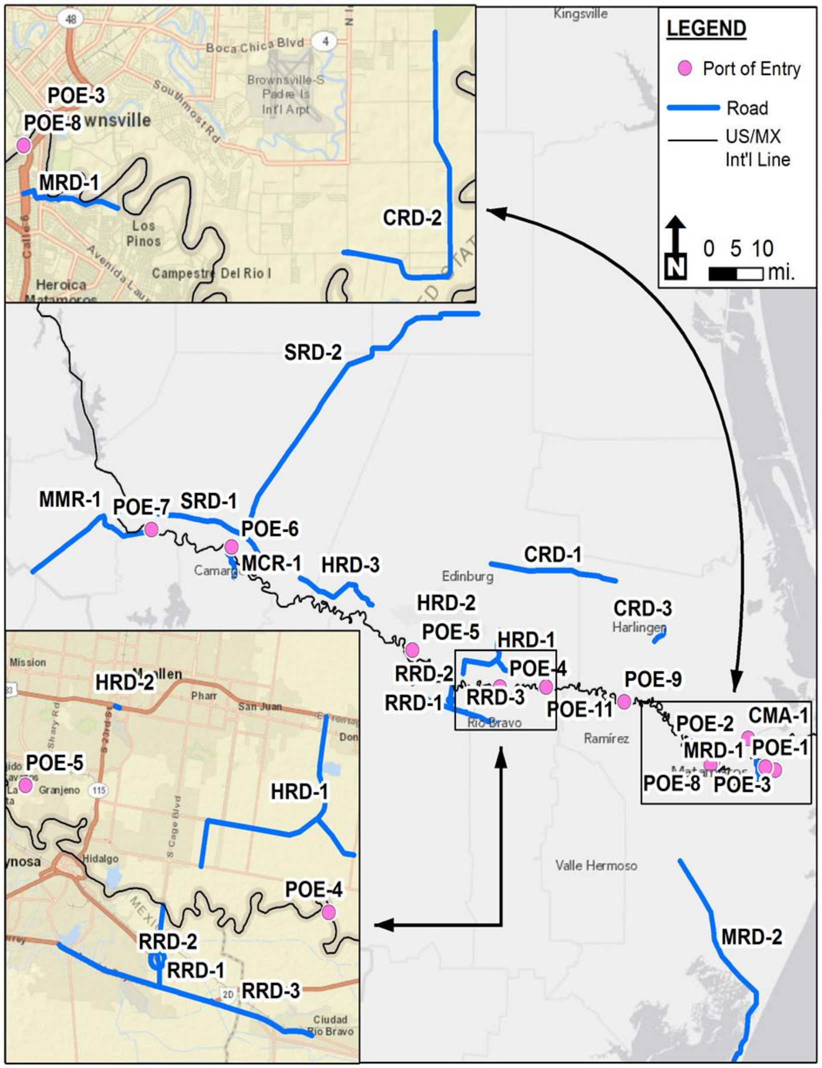
Cameron County

POE Projects in Cameron County

In Cameron County, two projects are planned for the construction of new POEs, and four additional projects are planned for currently existing POEs. The highest ranked POE project in Cameron County involves the construction of two new causeway-style bridge spans to connect the Port of Brownsville directly with Mexico. The second-highest ranked POE project in Cameron County involves the construction of a new bridge between the United States and Mexico at FM 3248 and Avenida Flor de Mayo. The third-highest ranked POE project in Cameron County is the reconfiguration and rebuilding of the existing Gateway International Bridge to comply with current design standards and operational requirements.

Road and Interchange Projects in Cameron County

Nine of the 18 planned road and interchange projects in the U.S. Focused Study Area are in Cameron County. These projects serve the three bridges in Cameron County and are expected to have a significant influence on the region's mobility. The highest ranked road and interchange project in Cameron County involves widening FM 1925 from a two-lane undivided facility to a four-lane divided facility between FM 907 and US 77. The second- and third-highest ranked road projects in Cameron County involve two planned improvements to SH 32: widening SH 32 to a four-lane divided facility and constructing overpasses on SH 32 at SH 4 and FM 3068.



CAMERON COUNTY

RANK	POE	ROAD	MARINE
1	Build two causeway-style bridge spans to connect the Port of Brownsville directly with Mexico **[POE-1]**	Widen FM 1925 from the existing two-lane undivided highway to a four-lane divided facility from FM 907 to US 77 **[CRD-1]**	Widen the Ship Channel from 250 to 350 feet and deepen it from 42 to 50 feet at Port of Brownsville **[CMA-1]**
2	Build a new bridge to link the United States and Mexico at FM 3248 (Alton Gloor) and Avenida Flor de Mayo **[POE-2]**	Widen SH 32 (East Phase II) from the existing two-lane undivided highway to a four-lane divided facility from FM 3068 to SH 4 **[CRD-2]**	Construct a new general-purpose cargo dock on South side of Brownsville Ship Channel, east of existing Cargo Dock No. 15 **[CMA-1]**
3	Reconfigure and rebuild the existing LPOE at Gateway International Bridge **[POE-3]**	Widen FM 509 from the existing two-lane undivided highway to a four-lane divided facility from BUS 77 N to FM 106 **[CRD-3]**	

HIDALGO COUNTY

RANK	POE	ROAD
1	Construct northbound and southbound Federal inspection facilities for processing empty commercial truck traffic at Donna International Bridge **[POE-4]**	Construct a new two-lane controlled-access tolled facility from US 281 at State Spur (SS) 600 to FM 493 **[HRD-1]**
2	Improve mobility and decrease wait times for northbound vehicles by adding four additional non-commercial lanes at Anzaldúas International Bridge **[POE-5]**	Construct an overpass and modify ramps at US 83 and Bicentennial Boulevard **[HRD-2]**
3	Add two additional northbound POV lanes to alleviate queuing on the bridge, and begin expanding the secondary vehicle inspection facility at Anzaldúas International Bridge **[POE-5]**	Construct a new four-lane controlled-access facility on US 83 La Joya Loop from 2.3 miles west of the Hidalgo County line to 1 mile east of the Hidalgo County line **[HRD-3]**

STARR COUNTY

RANK	POE	ROAD
1	Expand the Río Grande City-Camargo Bridge by constructing an additional two-lane span that will be used by southbound traffic **[POE-6]**	Roma/Rio Grande City Relief Route - Construct a new four-lane divided facility from US 83 at Loma Blanca Road to US 83 at La Puerta **[SRD-1]**
2	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility at Roma-Ciudad Miguel Alemán Bridge **[POE-7]**	Widen FM 755 from the existing two-lane undivided road to a four-lane divided rural roadway from FM 755 (New Realignment in Starr County) to US 281 in Brooks County **[SRD-2]**
3	Construct the proposed international crossing at Roma-Ciudad Miguel Alemán Bridge **[POE-7]**	

MUNICIPALITY OF MATAMOROS

RANK	POE	ROAD	MARINE
1	Modernize and improve the existing B & M Bridge **[POE-8]**	Construct a beltway to connect the Veterans International Bridge at Los Tomates with Sixth Avenue and MEX 2 **[MRD-1]**	Complete dredging to increase depth, and extend jetties to protect channels and docks at Port of Matamoros **[MMA-1]**
2	Expand customs facilities and construct export platforms at Free Trade Bridge **[POE-9]**	Expand and reconstruct 40 miles of access road to the Port of Matamoros **[MRD-2]**	
3	Construct new Flor de Mayo International Bridge **[POE-10]**		
4	Construct new Longoreño Bridge **[POE-11]**		

MUNICIPALITY OF RIO BRAVO

RANK	POE
1	Improve access and construct inspection facilities for the cargo lane at Weslaco-Progreso International Bridge **[POE-12]**
2	Construct inspection facilities for empty commercial trucks (both directions) at Donna International Bridge **[POE-4]**

MUNICIPALITY OF REYNOSA

RANK	ROAD
1	Expand from two lanes to four lanes. Currently two lanes serve as a connecting road; this project would add two additional lanes for commercial traffic to Avenida Puente Pharr **[RRD-1]**
2	Build an interchange at MEX 2 and Avenida Puente Pharr **[RRD-2]**
3	Modernize and expand MEX 2 from Reynosa to Río Bravo **[RRD-3]**

MUNICIPALITY OF CAMARGO

RANK	POE	ROAD
1	Develop import and export cargo areas; reorganize cargo areas and administrative buildings at Rio Grande City-Camargo Bridge **[POE-6]**	Construct a road/beltway to facilitate cargo movements to the Rio Grande City-Camargo Bridge **[MCR-1]**

MUNICIPALITY OF MIER

RANK	ROAD
1	Expand the highway from Mier to the limits of the State of Tamaulipas **[MMR-1]**

Figure ES.3: Highest Ranked POE, Road and Interchange, and Rail Projects by U.S. County and Mexican Municipality

Marine Projects in Cameron County

Two marine port projects were identified in the U.S. Focused Study Area, both in Cameron County. The highest ranked marine port project involves widening the Brownsville Ship Channel from 250 to 350 feet and deepening the channel by 8 feet to accommodate post-Panamax vessels. The planned project also allows for the addition of five new docks for loading/unloading cargo and is expected to double the amount of cargo handled at the Port of Brownsville. The second marine port project involves the construction of a new general-purpose cargo dock on a section of undeveloped land on the Brownsville Ship Channel.

Hidalgo County

POE Projects in Hidalgo County

Twenty-nine of the 38 POE projects identified in the U.S. Focused Study Area are planned in Hidalgo County. Of the 29 planned POE projects, 28 projects are planned at existing POEs in Hidalgo County, and 1 project involves a new international border crossing between Sullivan City and Gustavo Díaz Ordaz in Tamaulipas. The highest ranked POE project in Hidalgo County and the U.S. Focused Study Area involves the construction of northbound and southbound Federal inspection facilities for empty commercial trucks at the Donna International Bridge. The second- and third-highest ranked POE projects in Hidalgo County and the U.S. Focused Study Area are planned at the Anzaldúas International Bridge. The second-highest ranked project seeks to improve mobility and decrease wait times for northbound vehicles by adding four additional non-commercial lanes to the existing six non-commercial lanes. In addition, the construction of new northbound commercial import lot facilities and lanes are planned to improve the mobility of commercial border corridors in the area. The third-highest ranked project will seek to add two additional northbound POV lanes to alleviate queuing on the Anzaldúas International Bridge, and expand the secondary vehicle inspection facility to accommodate southbound commercial truck traffic and buses.

Road and Interchange Project in Hidalgo County

Eight of the 18 planned road and interchange projects in the U.S. Focused Study Area are in Hidalgo County. The highest ranked road and interchange project in Hidalgo County and the U.S. Focused Study Area is the development of the International Bridge Trade Corridor from US 281 at Spur 600 to FM 493. The International Bridge Trade Corridor will be a new two-lane controlled-access tolled facility. The second-highest ranked road and interchange project in Hidalgo County and the U.S. Focused Study Area involves constructing an overpass and modifying ramps at US 83 and Bicentennial Boulevard. The third-highest ranked road and interchange project in Hidalgo County and the U.S. Focused Study Area involves the construction of a new four-lane controlled-access facility on US 83 La Joya Loop from 2.3 miles west of the Hidalgo County line to 1 mile east of the Hidalgo County line.

Starr County

POE Projects in Starr County

Three of the 38 POE projects identified in the U.S. Focused Study Area are planned in Starr County. Of the three planned POE projects, two projects are planned at existing POEs in Starr County, and one project involves a new international border crossing. The highest ranked POE project in Starr County involves expanding the Río Grande City-Camargo Bridge by constructing two additional lane spans for southbound traffic. The second project in Starr County involves a feasibility study and the construction of a commercial bus inspection facility at Roma-Ciudad Miguel Alemán Bridge, and the third project involves constructing a new international border crossing. However, very limited data were received for the two latter projects in the county.

Road and Interchange Projects in Starr County

Of the 18 planned U.S. road and interchange projects in the U.S. Focused Study Area, 2 are in Starr County. The highest ranked road and interchange project in Starr County is the construction of a new four-lane divided facility that will connect the Río Grande City-Camargo Bridge with FM 755 to provide a direct access route to Río Grande City between US 83/Loma Blanca and US 83/La Puerta. The second road and interchange project in Starr County involves widening FM 755 to a four-lane divided facility from FM 755 (new realignment in Starr County) to US 281 in Brooks County.

Zapata County

No planned POE and road and interchange projects were identified in the U.S. Focused Study Area in Zapata County.

Municipality of Matamoros

POE Projects in Municipality of Matamoros

Of the seven POE projects identified in the Mexico Focused Study Area, four are planned in the Municipality of Matamoros; two of these four projects are at existing POEs. The highest ranked Mexican POE project in Matamoros involves improvements to the B&M Bridge, including the use of advanced technology such as specialized lanes for traffic management (Secure Electronic Network for Traveler's Rapid Inspection [SENTRI]) that would replace the current rail track. The second-highest ranked Mexican POE project in Matamoros involves expanding the customs facilities at the Free Trade Bridge through the construction of export platforms. Two new POEs are planned in the Municipality of Matamoros. Both projects ranked equally high and were the third-highest ranked projects in Matamoros. The first involves the construction of the new Flor de Mayo International Bridge, which corresponds to the second-highest ranked POE project in Cameron County. The new bridge will be located just north of MEX 2 in west Matamoros and will connect to an extension of Alton Gloor Avenue (FM 3248) in Brownsville. The second project is the construction of the new Longoreño Bridge POE project. This project corresponds to the highest ranked POE project in Cameron County. This bridge will be located north of Ejido Longoreño in Matamoros and south of the Port of Brownsville, providing Mexico with a direct connection to the Port of Brownsville.

Road and Interchange Projects in Municipality of Matamoros

Two of the seven Mexican road and interchange projects that serve the POEs are in the Municipality of Matamoros. The highest ranked road and interchange project in Matamoros involves the construction of a new loop that will connect the Veterans International Bridge at Los Tomates with MEX 2 and Sixth Avenue in Matamoros. The second-highest ranked road and interchange project in Matamoros is the expansion and reconstruction of TAM 57, an access road to the Port of Matamoros.

Marine Project in Municipality of Matamoros

One marine port project was identified in the Mexican Focused Study Area and involves dredging to increase the depth of the port and extending the jetties to protect the channels and docks.

Municipality of Valle Hermoso

The Municipality of Valle Hermosa has no planned POE, road and interchange, rail, or marine projects.

Municipality of Río Bravo

POE Projects in Municipality of Río Bravo

Two projects are planned at existing POEs in the Municipality of Río Bravo, and both ranked first and second, respectively, in the Mexican Focused Study Area. The highest ranked project in Río Bravo and the Mexican Focused Study Area proposes to improve access at the Weslaco-Progreso International Bridge and to construct inspection facilities for the cargo lanes at the bridge. The second-highest ranked project in Río Bravo and the Mexican Focused Study Area involves the construction of inspection facilities for empty northbound and southbound commercial trucks at the Donna International Bridge.

Road and Interchange Projects in Municipality of Río Bravo

The Municipality of Río Bravo has no planned road and interchange projects.

Municipality of Reynosa

POE Projects in Municipality of Reynosa

The Municipality of Reynosa has no planned POE projects.

Road and Interchange Projects in Municipality of Reynosa

Three of the seven Mexican road and interchange projects that serve the POEs are in the Municipality of Reynosa. The highest ranked road and interchange project for the Mexican Focused Study Area is located in Reynosa and involves expanding the number of lanes from two to four lanes to serve commercial truck traffic to Avenida Puente Pharr. The second project in Reynosa is the construction of a new interchange at MEX 2 and Avenida Puente Pharr. Both projects will improve access to the Pharr-Reynosa International Bridge on the Rise. The third project in the Municipality of Reynosa involves the modernization and expansion of MEX 2 from Reynosa to Río Bravo.

Municipality of Gustavo Díaz Ordaz

The Municipality of Gustavo Díaz Ordaz has no planned POE or road and interchange projects.

Municipality of Camargo

POE Project in Municipality of Camargo

Of the seven POE projects identified in the Mexico Focused Study Area, one is planned in the Municipality of Camargo. The planned project at the existing Rio Grande City-Camargo Bridge includes the development and reorganization of cargo areas and facilities at the Rio Grande City-Camargo Bridge.

Road and Interchange Project in Municipality of Camargo

One road and interchange project is planned in the Municipality of Camargo, and this project involves constructing a beltway around Camargo to facilitate freight movements to the Rio Grande City-Camargo Bridge.

Municipality of Miguel Alemán

The Municipality of Miguel Alemán has no planned POE or road and interchange projects.

Municipality of Mier

POE Projects in Municipality of Mier

The Municipality of Mier has no planned POE projects.

Road and Interchange Project in Municipality of Mier

One road and interchange project is planned in the Municipality of Mier, and this project involves expanding the Monterrey-Mier Highway from Mier to the limits of the State of Tamaulipas.

Municipality of Guerrero

The Municipality of Guerrero has no planned POE or road and interchange projects.

Recommendations

Institutionalizing the Dialog

Border master plans should be updated periodically to keep the contents and inventories current and to continue to represent the region's vision and goals. Further, these plans should be updated in response to major changes in the region, such as if multiple priority projects identified in the plan have been completed or if numerous planned initiatives have emerged since the plan was developed. The timing of the updates may thus differ from region to region.

The PAC should convene every year to determine the need for updating the Border Master Plan. Information on all completed priorities and any planned initiatives that have emerged since the completion of the previous Border Master Plan should be presented. This will allow the PAC to make an informed decision about the need to update the technical data. Similarly, the PAC will determine the need for a comprehensive update to the plan. The latter would involve revisiting the forecasted year, geographic boundaries of the study area, socio-economic data, cross-border travel demand changes, and criteria that were used to prioritize projects. Finally, it is recommended that a representative of the PAC or TxDOT's International Relations Office make regular informative presentations to the JWC regarding the need to update the existing Border Master Plan (as determined by the PAC) or to report on any in-progress Border Master Plan updates.

Development of Future Border Master Plans

The study team offers the following observations and recommendations for consideration in development of future border master plans or updates of this Border Master Plan:

- Three of the four U.S. States on the southern border have overseen the development of border master plans. To remain a viable planning tool, these plans must reflect each different region's needs, interests, and priorities. If the ultimate goal is to establish U.S.-Mexico project priorities, it is recommended that regions follow a similar—although not necessarily the same—approach in the development of all border master plans.
- Border master plans currently provide detailed inventories of planned project priorities in a Focused Study Area. Two enhancements to the scope of work for updating the border master plans should be considered: identify funding opportunities for high-priority projects in the Focused Study Area, and develop technical tools to evaluate the potential regional impact of investments. Specifically, the feasibility of developing technical tools (models) to determine how investment in a specific project would impact demand (e.g., diverting traffic to other crossings)—and therefore the need or priority of other planned projects—should be determined. The implementation of some of the identified high-priority projects could thus potentially reduce the need or delay the need for implementing some of the other high-priority projects. As currently developed, border master plans do not quantify or model the demand impact of an investment in specific projects on other crossings or transportation infrastructure in the region.

- Ensure participation by actively reaching out to stakeholders. Keep stakeholders engaged in the development of border master plans, ensure a process where every stakeholder has an equal voice in the selection of the criteria that will be used to prioritize projects, and make all reports and information disseminated available in both English and Spanish. Ultimately, continued support for development of border master plans will only prevail if results can be demonstrated—by the funding and implementation of high-priority projects identified by the border master plan.

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[1] The study team attempted to establish contact with high-ranking officials at the border municipalities. The low figure given for expressed support (32 percent) is attributable to the study team being unable to reach these high-ranking officials, rather than a reflection of the expressed support from the Tamaulipas stakeholders.

Chapter 1. Introduction

Border master plans—as defined and supported by the U.S./Mexico Joint Working Committee (JWC)[1] on Transportation Planning and Programming, the Federal Highway Administration (FHWA), and the U.S. Department of State (USDOS)—are comprehensive, binational long-range plans[2] to:

- Inventory transportation and port-of-entry (POE) infrastructure that facilitates trade.
- Prioritize and promote planned POE and related transportation projects.
- Inform decision making.
- Allocate limited funding resources.
- Ensure continued dialog and coordination on future POE and supporting transportation infrastructure needs and projects.

The benefits of border master planning are recognized by both the U.S. Government and the Mexican Government in the Bilateral Action Plan of the U.S.-Mexico Executive Steering Committee (ESC) on 21st Century Border Management. To remain a viable planning tool, a border master plan must reflect each region's needs, interests, and priorities. Border master plans are intended to be updated and amended periodically to keep the contents and inventories current, and to continue to represent the region's vision and goals.

U.S. Customs and Border Protection (CBP) defines a land port of entry (LPOE) as the facility that provides controlled entry into or out of the United States. It houses CBP and other Federal inspection agencies. It includes the land, buildings, on-site roadways, and parking lots. CBP, however, also groups all crossings and bridges into POEs. According to CBP, there are 11 POEs (33 individual bridges and crossings) between Texas and Mexico. The 11 POEs on the Texas-Mexico border are Brownsville, Del Rio, Eagle Pass, El Paso, Fabens, Laredo, Hidalgo, Presidio, Progreso, Rio Grande City, and Roma. Within these POEs, 28 bridges and crossings facilitate vehicular and/or pedestrian traffic, and 5 serve freight rail. The following bridges are closed: Presidio's Rail Bridge, the La Linda Bridge in the Big Bend region, and a suspension bridge in Roma. In addition, on April 10, 2013, the Boquillas del Carmen bridge opened for business, and the construction of the new Guadalupe-Tornillo crossing is under way. In the case of Aduanas (the Mexican customs agency), a POE can include a single or multiple bridge crossings and/or land crossings. However, the stakeholders that participated in the development of the Lower Rio Grande Valley–Tamaulipas Border Master Plan used POE and bridge/crossing interchangeably. These terms are thus used interchangeably in this document.

1.1 Purpose of Study

The Lower Rio Grande Valley–Tamaulipas Border Master Plan (referred to in this publication simply as the Border Master Plan) is the third border master plan on the U.S.-Mexico border. This plan's development followed a similar approach to that of the

California–Baja California Border Master Plan, which was completed in September 2008 and is currently being updated, and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, which was completed in 2012. Like those plans, the objectives of this Border Master Plan were to:

- Design a stakeholder agency involvement process that is inclusive and ensures the participation of all involved in POE projects and the transportation infrastructure serving those POEs.
- Increase understanding of the POE and transportation planning processes on both sides of the border.
- Develop and implement plans for prioritizing and promoting POE and related transportation projects, including evaluation criteria and rankings over the short, medium, and long terms.
- Establish a process that will ensure continued dialogue among Federal, State, regional, and local stakeholder agencies in Texas and Mexico to assure continued coordination on current and future POE and supporting transportation infrastructure needs and projects.

1.2 Decision-Making Structure

Similar to the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, stakeholders were represented by a Policy Advisory Committee (PAC) consisting of executive-level managers and a Technical Working Group (TWG) consisting of senior technical staff.

The PAC's mandate is to:

- Review the study objectives.
- Evaluate the proposed work plan.
- Define the study area.
- Participate in discussions to resolve issues or concerns.
- Designate the TWG members.
- Review and endorse the prioritization criteria, weights, and scores used by the study team to prioritize individual projects.
- Approve the Border Master Plan document.

The TWG's mandate is to:

- Provide the study team with data on existing and planned POEs in the Focused Study Area, as well as existing and planned transportation facilities serving those POEs.
- Verify the collected information.[3]

- Participate in a workshop to reach consensus on the criteria, weights, and scores used by the study team to prioritize individual projects.
- Comment on the draft Border Master Plan document developed and submitted by the study team.

Appendix A provides a copy of the charter for the PAC and TWG members.

The membership of the PAC and TWG was limited to government agencies, the Port of Brownsville, and rail companies whose mandates or objectives concern border transportation infrastructure planning, programming, construction, and/or management. In addition to these agencies and rail companies, a number of other agencies and companies were identified as either having an interest in the development of the Border Master Plan or being impacted by POE or transportation infrastructure projects identified in the Border Master Plan. These agencies and companies, such as the various Economic Development Corporations and the North American Development Bank, were invited to participate as border partners in the development of the Border Master Plan. Border partners could attend all meetings and provide input at the meetings. Border partners, however, did not have a vote in selecting the categories, category weights, criteria, criterion weights, and scoring metrics used to prioritize projects. A complete list of the PAC members, TWG members, and border partners that participated in the development of the Border Master Plan is provided in Appendix B.

1.3 Scope of Work

The Border Master Plan study was conducted in two phases. Phase I involved contacting executive-level managers at the identified stakeholder agencies to:

- Determine their level of support for the Border Master Plan.
- Address any issues or concerns.
- Determine commitment to and involvement in the development of the Border Master Plan, including the allocation of staff resources.
- Examine the feasibility of using an approach similar to that of the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan.
- Determine if any key stakeholders have been omitted.
- Establish an appropriate communications protocol and methodology for sharing information.

The purpose of Phase I was to determine whether there was sufficient stakeholder support to develop the Border Master Plan. Table 1.1 provides a summary of the support expressed by the stakeholder agencies and rail companies contacted as of August 29, 2011 (the end of Phase I). Although not every agency contacted verbalized their support, none of the agencies or the stakeholders contacted expressed any opposition to the development of the Border Master Plan or asked to be removed from the contact list, which would indicate their refusal to participate in the development of the Border Master Plan.

Table 1.1: Support Expressed by Stakeholders—Phase I

Stakeholders	Expressed Support (Percent)
U.S.—Federal	100
U.S.—Local	79
Mexico—Federal	66
Mexico—Tamaulipas	32[4]
Rail Stakeholders	67

The outcome of Phase I determined the level of support for the development of the Border Master Plan. Based on the stakeholder support expressed during the Phase I outreach, the Texas Department of Transportation (TxDOT) authorized the study team to commence with Phase II. In Phase II, the study team accomplished the development of the Border Master Plan in the following six tasks:

1. Hold two stakeholder meetings to review the study's objectives, address any issues or concerns raised in Phase I, and reach agreement on the scope of work, study area, and planning horizon.
2. Collect data and create a detailed inventory of existing and planned POEs in the study area as well as existing/planned transportation facilities serving those POEs.
3. Hold two stakeholder meetings to review data collected and verify planned project information.
4. Conduct a stakeholder workshop and meeting to reach consensus on the criteria, scores, and weights used to prioritize planned projects.
5. Prioritize and rank planned POE and transportation infrastructure projects using the agreed-upon prioritization criteria, scores, and weights.
6. Finalize and obtain approval of the Border Master Plan document.

Phase II of the study took approximately 16 months. Appendix C provides a copy of the study team's work plan.

1.4 Stakeholder Participation

During Phase II in the development of the Border Master Plan, the study team hosted six stakeholder meetings:

1. The first PAC meeting was held in McAllen, Texas, on November 8, 2011. The work plan and outcome of the California–Baja California Border Master Plan—as the first border master plan developed—was shared with attending stakeholders. CBP, Secretaría de Relaciones Exteriores, and USDOS offered remarks in support of the development of border master plans for the U.S.-Mexico border. The study team also presented the work plan for this Border Master Plan and reviewed the comments and suggestions of the stakeholders interviewed during Phase I. The study team answered questions about the Border Master Plan's development. Participants subsequently decided the geographic boundaries of the Focused Study Area and the Area of Influence, defined the time horizons for the short-, medium-, and long-term priorities, and completed forms to assign the TWG members (see Appendix A for the form that was provided to attending stakeholders).
2. The first TWG meeting was held in Rio Grande City, Texas, on February 23, 2012. The study team reviewed the outcome of the first stakeholder meeting with attendees and provided information about the PAC and TWG memberships and functions. The study team also reviewed in detail the data requirements for the Border Master Plan and invited comments and suggestions about the data requirements from participants. Participants were subsequently divided into two groups: U.S. and Mexican stakeholders. The stakeholders reviewed the data gathered for the existing infrastructure, the projects identified for their respective countries, and outstanding data needs. The study team secured commitments from the attending stakeholders to provide the study team with the missing data.
3. The second TWG meeting was held in Pharr, Texas, on June 26, 2012. The study team reviewed the U.S. and Mexico planning processes for border transportation infrastructure. This review included POEs and the supporting transportation facilities serving the POEs. The study team also presented the process for the development of the ranking framework and the elements—i.e., categories, category weights, criteria, criterion weights, and the scoring metrics—making up the framework. The study team illustrated the process and elements with examples from the ranking framework developed for the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan. The study team also highlighted several lessons learned from the development of the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan regarding criterion selection. Lessons included that criteria selected should be meaningful in assessing an important aspect of the planned project or a demonstrated need, the meaning of the criteria should be easy to communicate, the criteria should be able to be quantified or qualitatively described, and the data need to be available to measure the criteria. Attendees reviewed the identified U.S. and Mexican projects, the collected data, and the missing data. The study team reviewed the

data needs with the attendees project by project and made an official request to the TWG members to submit the outstanding technical information for the proposed/planned projects. Finally, it was proposed and agreed that funded projects in the Texas Statewide Transportation Improvement Program (STIP) will be included in the Border Master Plan, but that these projects will not be ranked.

4. The second PAC meeting was held in Donna, Texas, on August 8, 2012. The study team reviewed the meeting's objectives and reported on the study team's progress to date on the work plan tasks. The study team made a detailed presentation on the U.S. and Mexico planning processes for border transportation infrastructure. The study team also reviewed the process for developing the ranking framework and several lessons learned from the development of the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan regarding criterion selection. The study team then reviewed the identified planned U.S. and Mexican projects, the collected data, and the missing data. Finally, it was proposed, and the PAC agreed, that funded projects in the Texas STIP will be included in the Border Master Plan, but that these projects will not be ranked.
5. The third TWG meeting was held in Brownsville, Texas, on August 22 and 23, 2012. The meeting started with a review of the Border Master Plan's objectives and the process for developing the ranking framework. During the intense two-day meeting, stakeholders reached consensus on the categories, category weights, and criteria on the first day and part of the second day. In the afternoon of the second day, attendees were divided into two groups. One group reached consensus on the criterion weights, and the second group developed the scoring metrics. Due to insufficient time, a subsequent webinar was scheduled for September 7, 2012, to finalize the scoring metrics.
6. The third PAC meeting was held in McAllen, Texas, on September 13, 2012. The study team reviewed the draft ranking framework for project prioritization developed by the TWG. Specifically, the study team reviewed the categories, category weights, criteria, criterion weights, and scoring metrics that the TWG members developed. After some discussion, the PAC members endorsed the categories and category weights. Attendees then proceeded to discuss the criteria in each category and the criterion weights. Modifications were made to clarify some of the criteria and the metrics used for scoring. Only one criterion was rejected by the PAC: "Alleviates Congestion for POE Projects."

The agendas and minutes for these meetings are provided in Appendix D.

1.5 Definition of Planning Horizons and Study Area

1.5.1 Planning Horizons

In the United States, transportation and POE planning documents tend to have a long-term planning horizon of 20 to 30 years. In Mexico, Federal, State, regional, and municipal plans have a planning horizon of 3 to 25 years. At the November 2011 meeting, the PAC discussed the planning horizon for the Border Master Plan and approved these horizons:

- 3 years as the time horizon for short-term planning.
- 8 years as the time horizon for medium-term planning.
- 20 years as the time horizon for long-term planning.

1.5.2 Study Area

The study area approved by the PAC on November 8, 2011, includes an Area of Influence and a Focused Study Area.

Area of Influence

The Area of Influence was defined as the border counties of TxDOT's Pharr District and the corresponding Mexican municipalities:

- The U.S. counties included in the Area of Influence are Cameron, Hidalgo, Starr, and Zapata. The U.S. Area of Influence is bordered by Webb County (part of TxDOT's Laredo District) to the northwest and the counties of Jim Hogg, Brooks, Kenedy, and Willacy (part of TxDOT's Pharr District) to the north.
- The Mexican municipalities included in the Area of Influence are Camargo, Guerrero, Gustavo Díaz Ordaz, Matamoros, Mier, Miguel Alemán, Reynosa, Río Bravo, and Valle Hermoso in the State of Tamaulipas.

Including the U.S. counties and Mexican municipalities, the Area of Influence spans 11,264.53 square miles (see Figure 1.1). The study team obtained current and projected data on population, employment, land use, vehicle registrations, and income for this area.

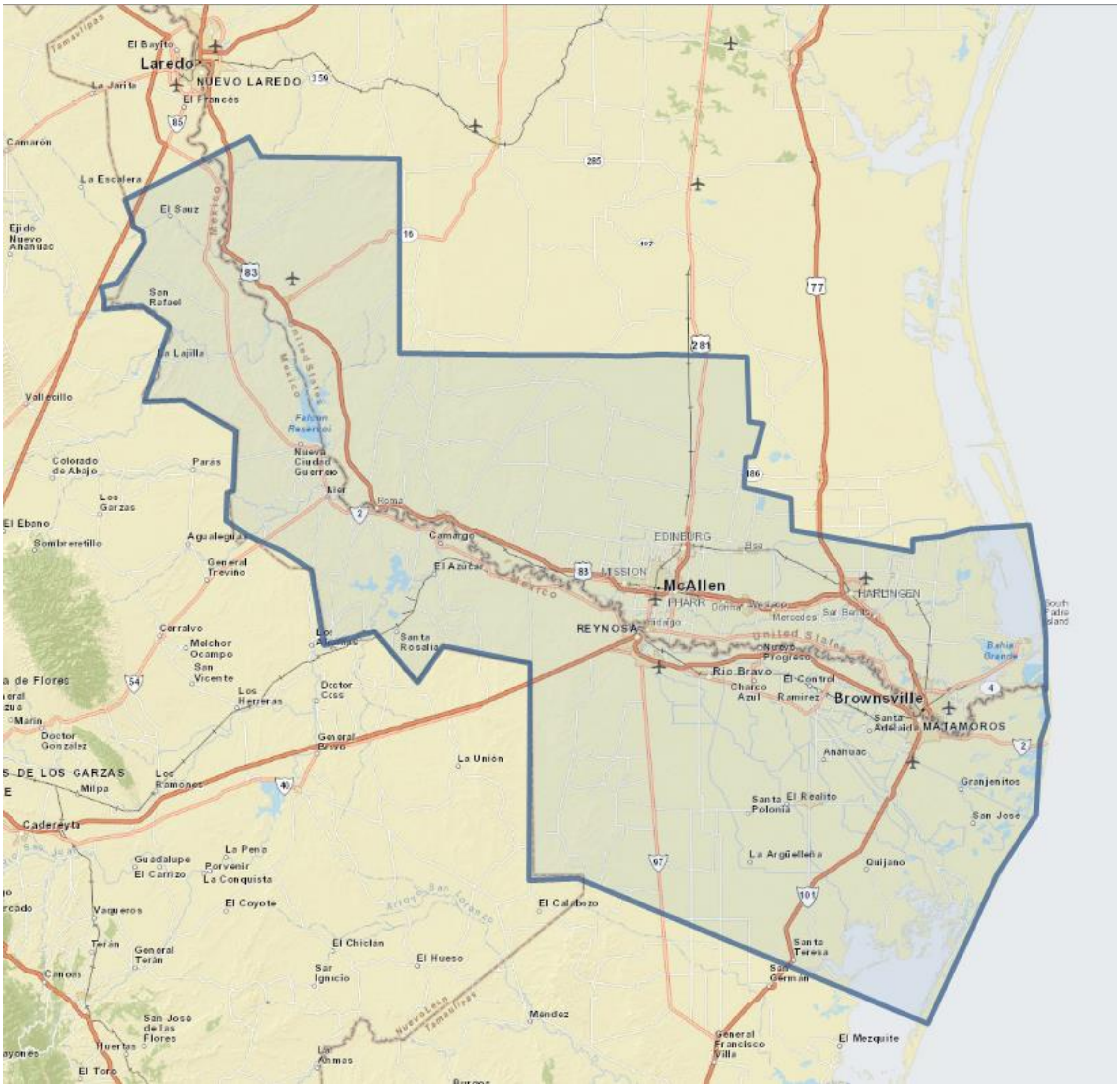

Figure 1.1: Area of Influence

Focused Study Area

The Focused Study Area is 15 miles north and south of the Texas-Tamaulipas international border. However, to the east, the north boundary was slightly revised to include the Valley International Airport in Harlingen. The Focused Study Area´s east and west boundaries fall within TxDOT's Pharr District (see Figure 1.2). The short-, mid-, and long-term POE and transportation priorities were limited to the planned POE and transportation infrastructure projects in the Focused Study Area.

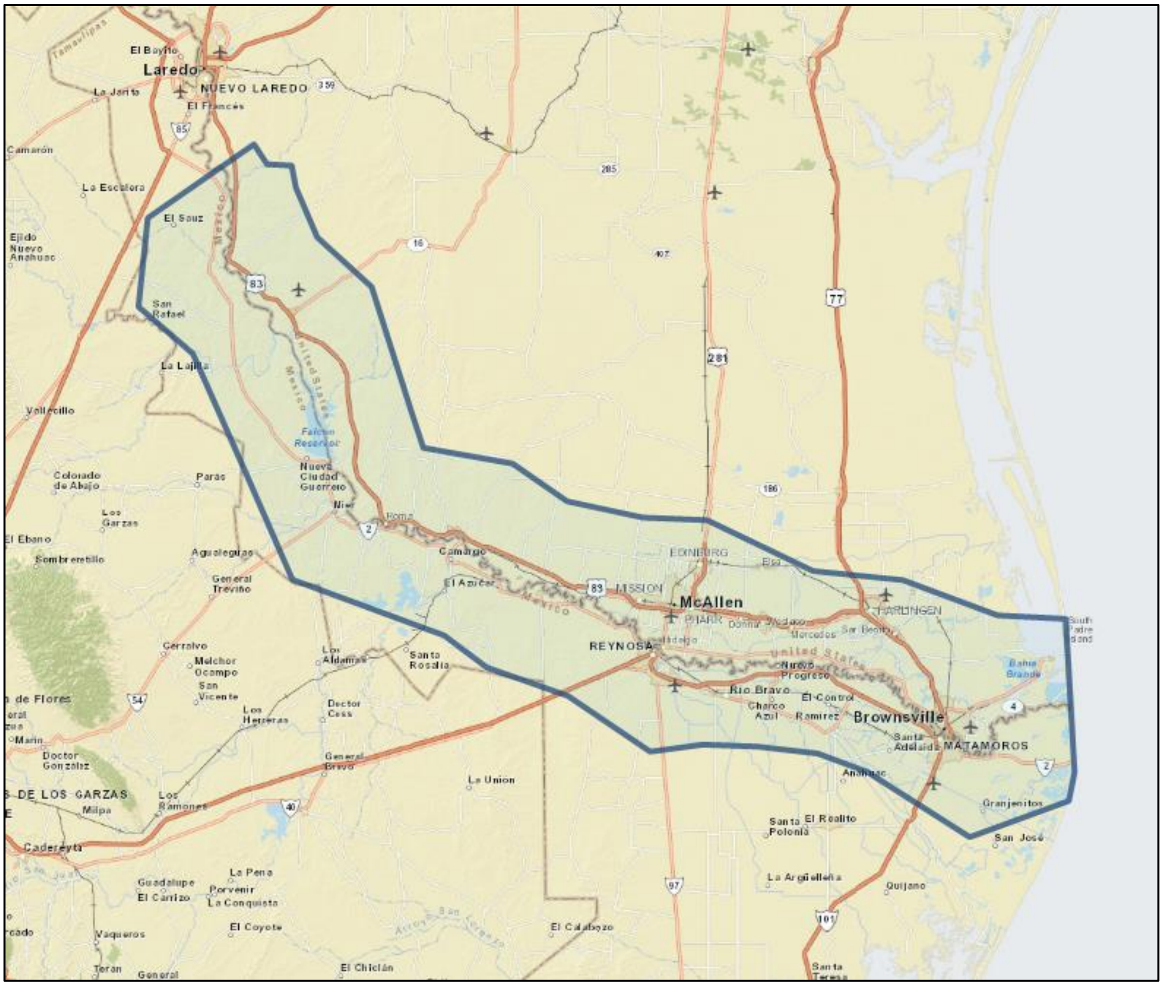

Figure 1.2: Focused Study Area

1.6 Data Collected

The required data and information for Phase II of the Border Master Plan were obtained from a review of the published literature, agency planning documents, and personal communications that included meetings with stakeholders. The TWG members were repeatedly reminded of the outstanding data, and the study team officially requested the technical data during in-person visits and through written communications, follow-up e-mails, and telephone calls. On February 6, 2013, the TxDOT Pharr District (represented by Mr. Joseph Leal), in a final letter, urged stakeholders that had not submitted project information to respond to the study team's requests.

For Texas, the data used for the development of the socio-economic and demographic profiles were obtained from the Texas State Data Center and Office of the State Demographer, Texas Department of State Health Services, U.S. Census Bureau, U.S. Bureau of Labor Statistics, and U.S. Bureau of Economic Analysis. The demographic and socio-economic data reflect the latest available data (e.g., 2010 Census data).

The data used for the development of the socio-economic and demographic profiles of the study area in Mexico were obtained from municipal plans and documents and from the following Mexican Federal agencies: Consejo Nacional de Población, Instituto Nacional de Estadística y Geografía, and Comisión Nacional de los Salarios Mínimos. The data and information that the study team used to describe the current planning processes followed by Federal, State, regional, and local agencies to determine transportation and POE infrastructure needs and priorities were obtained from agency planning documents, consultant reports, books, articles, and academic literature. In addition, telephone and in-person interviews were conducted with a number of TWG members.

The study team developed a detailed inventory of all transportation facilities serving the POEs in the study area. To facilitate comparison with the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, the study team collected similar qualitative and performance data for 2010 and used the TxDOT average annual daily traffic (AADT) growth rates to estimate facility usage and the level of service (LOS) by 2030. Both the current and anticipated LOS were calculated using methods defined by the 2010 *Highway Capacity Manual* (HCM) and traffic data provided by TxDOT. The study team collected information about the location of the roads, roadway lengths, number of lanes, AADT, and percent of truck traffic. For the existing POEs, the study team developed a detailed inventory of the POEs that included descriptions of the current facilities, hours of operation, crossings by mode (i.e., privately owned vehicles [POVs], commercial trucks, pedestrians, buses, and trains/train cars), toll rates levied, and primary transportation facilities serving the POEs.

The various planning documents yielded a list of planned POE and transportation infrastructure projects. The list of planned projects was officially shared with the TWG members during two of the TWG stakeholder meetings. At both meetings, the study team impressed on the TWG members the importance of providing the study team with adequate technical data to allow for the subsequent prioritization of the planned projects. Commitments were secured from the TWG members to provide the study team with the following technical data:

- For the planned POE projects: project description, anticipated throughput by type of inspection lane after project completion, year of project completion, current phase of the project, cost data and funding status, and a qualitative assessment of the regional impacts of the project.

- For the planned road and interchange projects: project location, planned improvements, LOS, AADT before and after project completion (2030), number of accidents, direct or indirect linkage to POE, truck volumes or percentage, year the project becomes operational, current phase of the project, cost data, funding status, and a qualitative assessment of the regional impacts of the project.
- For the planned rail projects: project location, planned improvement, anticipated change in number and/or length of tracks, daily train traffic and number of cars before and after project completion (2030), accident rate, year the project becomes operational, current phase of the project, cost data and funding status, and a qualitative assessment of the regional impacts of the project.

Finally, the ranking framework endorsed by the PAC required the collection of additional data and information:

- For planned POE projects: number of fully operational lanes, type of technology being employed, wait times, number of modes served, land availability, funding status, phase of project development, diversion of commercial traffic, hazardous materials geographic impacts, contribution to the general development of the area, and stage of binational coordination.
- For the road and interchange projects: estimated demand, multiple mode demand, land availability, funding status, phase of project development, diversion of non-radioactive hazardous materials, geographic impacts, and general contribution to the development of the area.
- For planned rail projects: type of development (rail yard and track relocation), average delay time, relocation of rail traffic, elimination of rail crossings, multiple mode demand, additional hours of interchange needed, land availability, funding status, phase of project development, accident rate per mile, diversion of non-radioactive hazardous materials, geographic impacts, and general contribution to the development of the area.
- For planned marine port projects: size of vessels that can be accommodated, channel capacity, number of docks, total annual tonnage, multiple mode demand, cross-border tonnage, cost effectiveness/project readiness, land availability, funding status, phase of project development, diversion of traffic, safe handling of hazardous materials, and general contribution to the area's development.

The criterion definitions and the scoring metrics endorsed by the PAC are provided in Appendix E.

1.7 Reaching Consensus

Two objectives of the Border Master Plan were to:

- Design a stakeholder agency involvement process that would be inclusive and ensure the participation of all involved.
- Develop and implement a plan for prioritizing and promoting POE and related transportation projects, including evaluation criteria and rankings over the short, medium, and long term.

Plan development required the TWG members to reach consensus on the elements of the ranking framework (i.e., categories, category weights, criteria, criterion weights, and scoring metrics) that would be used to prioritize the projects. In creating an inclusive agency involvement process that would ensure the participation of all involved, the study team felt it important that each TWG member have an equal voice in selecting the categories, category weights, criteria, and criterion weights. Equally important was creating an environment in which TWG members would feel comfortable exercising their vote in a non-threatening environment.

The study team used Classroom Performance System (CPS) technology to reach consensus on the framework elements to be used in prioritizing the identified planned projects. The process worked as follows: TWG members were provided with a voting device (I>Clicker) that allowed them to rank the importance of a specific element in prioritizing a project. The ranking scale ran from A to E, where A was extremely important and E was extremely unimportant. The votes were anonymous, but the study team could track how many TWG members had voted. Once the votes were cast, the results were displayed, and the study team facilitated a discussion about the voting results. TWG members were then asked to vote again, and the process continued until consensus was reached or until the voting results did not change substantially from one round to the next. This approach allowed all attending TWG members to participate in the selection of the categories, category weights, criteria, and criterion weights. The same process was followed for the PAC's endorsement of these framework elements.

1.8 Organization of the Report

Chapter 2 documents current planning practices that Federal, State, regional, and local agencies follow to determine transportation and POE infrastructure needs and establish priorities for project implementation.

Chapter 3 provides an overview of the current and projected demographic and socio-economic information obtained for the Lower Rio Grande Valley–Tamaulipas Area of Influence. The chapter summarizes available population, employment, income, and land use data for this area. This chapter also includes salient information on major trade corridors that traverse the Area of Influence.

Chapter 4 describes the current POEs in the Focused Study Area and the transportation infrastructure serving these POEs.

Chapter 5 summarizes the criteria used in prioritizing the identified planned projects in the Focused Study Area. The chapter also lists the priority of these POE, road and interchange, rail, and marine port projects submitted by stakeholders.

Finally, Chapter 6 provides what the study team believes are the requirements for the development of successful border master plans. Also included are recommendations for maintaining and enhancing the dialogue among Federal, State, regional, and local stakeholder agencies in Texas and Mexico to ensure continued coordination on current and future POE and supporting transportation infrastructure needs and projects.

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[1] The U.S./Mexico Joint Working Committee is a binational group whose primary focus is cooperating on land transportation planning and the facilitation of efficient, safe, and economic cross-border transportation movements. The group is chaired by the U.S. Federal Highway Administration and the Mexican Secretariat of Communications and Transportation.

[2] Border master plans have been largely infrastructure plans and therefore have not considered operational improvements, such as an increase in port-of-entry staffing levels, which are ultimately a major factor in the capacity of ports of entry.

[3] The study team did not perform separate feasibility studies for the project proposals forwarded by the TWG.

[4] The study team struggled to establish contact with high-ranking officials at the border municipalities. The low figure given for expressed support (32 percent) is thus attributable to the study team being unable to reach these high-ranking officials rather than a reflection of the expressed support from the Tamaulipas stakeholders.

Chapter 2. State of the Practice for POE and Transportation Infrastructure Planning

This chapter documents current planning practices followed by Federal, State, regional, and local agencies to determine transportation and POE infrastructure needs and priorities for project implementation. To better understand the current planning practices of these agencies in determining transportation and POE infrastructure needs and priorities, planning documents were reviewed and information was obtained from consultancy reports, books, articles, and academic literature. In addition, telephone and in-person interviews were conducted with a number of TWG members.

Figure 2.1 shows information about funding and mandates of different types of planning agencies. In the case of the United States, Federal agencies establish guiding principles and a regulatory framework for transportation planning at State and regional levels. State, county, and city agencies have strong funding capabilities (i.e., a strong tax collection jurisdiction) relative to Mexican State and regional agencies (i.e., which mostly receive redistributed funds from the Federation) and may seek additional funding from the Federal Government through programs established in transportation regulations that can fund transportation projects entirely or partially.

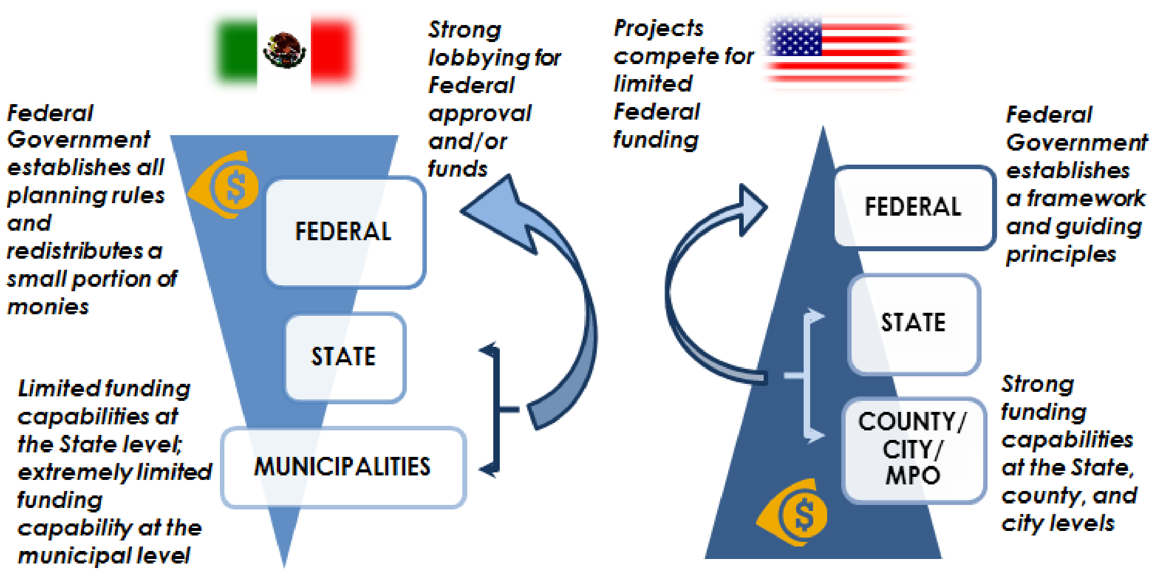


Figure 2.1: Planning Levels and Mandates

In Mexico, Congress and Federal agencies enact six-year planning documents that establish not only the guiding principles and framework for transportation planning at the regional and local levels, but may select which projects will be granted authorization and/or funding. Mexican Federal agencies approve all transportation infrastructure projects irrespective of their funding source (private, public, or a combination of both). Since State and municipal finances are limited, stakeholders have in some cases incurred debt to finance infrastructure projects. This is the direct result of the current fiscal policy framework that limits distribution of Federal funding to States and municipalities.

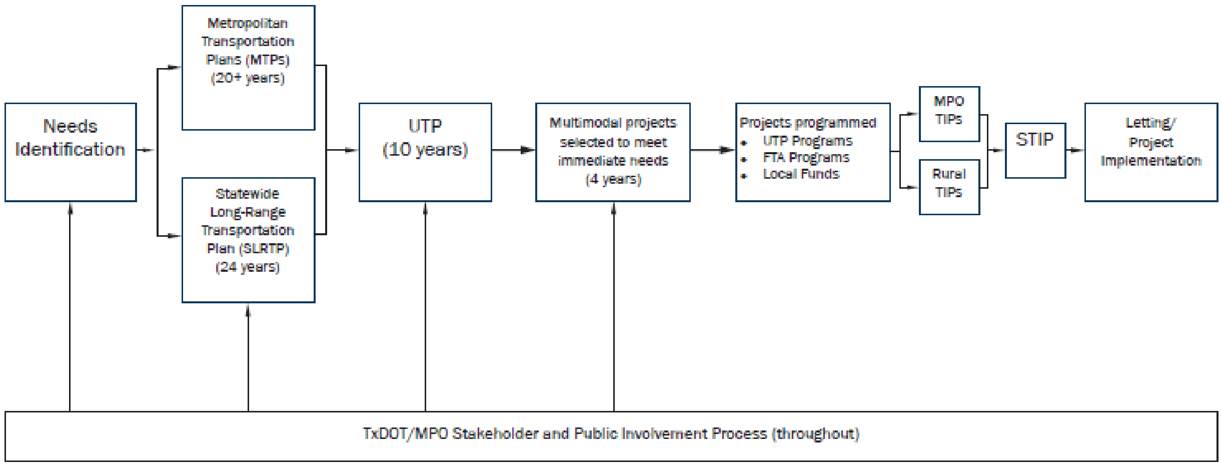
2.1 Transportation Border Infrastructure Planning Practices: United States

For Federal funding, the U.S. Department of Transportation (USDOT) relies on FHWA division offices, the Federal Transit Administration, the Federal Railroad Administration, the Maritime Administration, State departments of transportation (DOTs), and metropolitan planning organizations (MPOs) to oversee and conduct transportation planning at the State, regional, and local levels.

2.1.1 Participants in Transportation Border Infrastructure Planning

TxDOT acts on behalf of the governor of Texas in most matters relating to transportation plans. Figure 2.2 provides a summary of the interaction between the entities involved in transportation infrastructure planning in Texas. Projects can be planned at the city, county, and State levels. Projects include traditional roadways as well as projects that support other modes of transportation such as transit, bike paths/lanes, and sidewalks. TxDOT's responsibilities entail the State-maintained road network, which is commonly referred to as "on system." TxDOT also has an Aviation Capital Improvement Program that lists planned projects at general aviation airports in the State, supports the Port Authority Advisory Committee in the development of the *Port Capital Program Annual Report*, and is currently in the process of developing the Texas Freight Mobility Plan.

The metropolitan area boundary of MPOs includes urbanized areas (defined by the U.S. Census and smoothed by the MPO[1]) and the area that is expected to be urbanized during a 20-year forecast period. An MPO boundary may include rural areas.



Note: UTP = Unified Transportation Program; FTA = U.S. Federal Transit Administration; MPO TIP = Metropolitan Transportation Improvement Program; TIP = Transportation Improvement Program; STIP = Statewide Transportation Improvement Program; TxDOT = Texas Department of Transportation; and MPO = metropolitan planning organization.

Source: TxDOT[2]

Figure 2.2: Transportation Planning and Programming Process in Texas

2.1.2 Texas Department of Transportation

In general, TxDOT is responsible for planning for the on-system roads over a 20-plus-year period. MPOs are responsible for planning for transportation infrastructure in the current and expected urbanized areas over a 20-year forecast period. Texas's MPOs vary greatly in organizational size, structure, available resources (both number of employees and available funding), and program emphasis. The most important transportation planning documents developed by TxDOT and the MPOs are illustrated in Figure 2.3. Several of these transportation plans and documents consider changes in population, employment, and economic trends. The documents are briefly described in the following paragraphs.

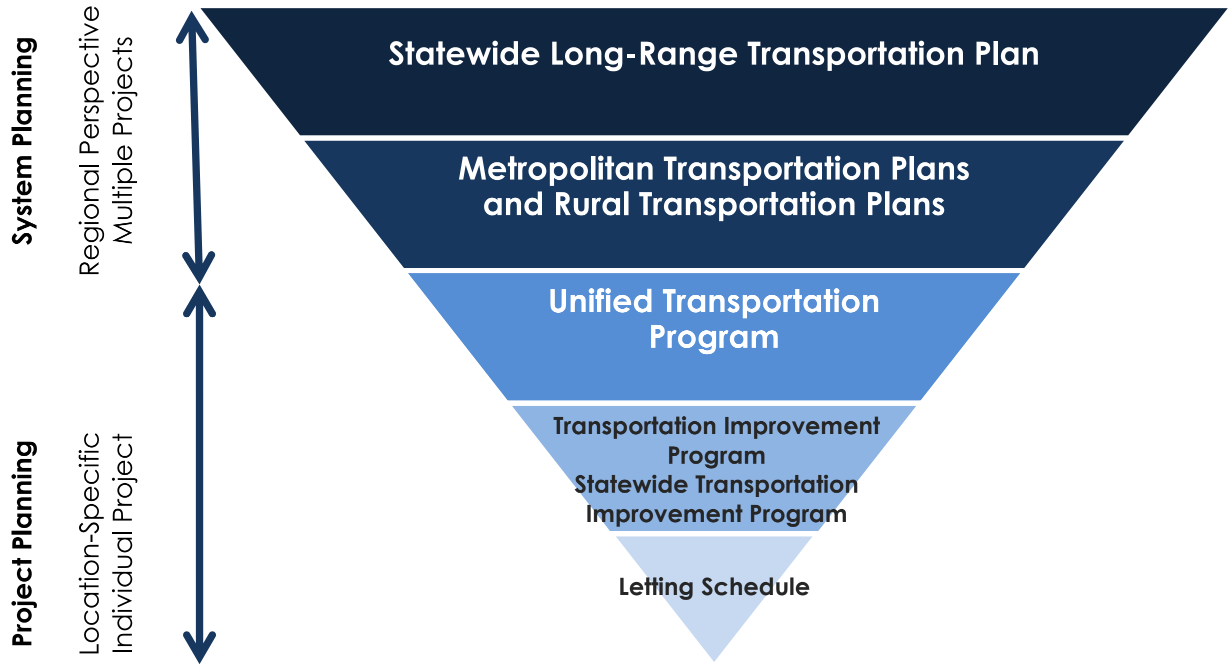


Figure 2.3: Key TxDOT Transportation Planning Documents

The planning documents can be broadly categorized as system planning and project planning documents. As shown in Figure 2.3, system planning initiatives include development of:

- *Statewide Long-Range Transportation Plan (SLRTP)*[3]—The Statewide Long-Range Transportation Plan 2035 details TxDOT's long-range (24-year) transportation goals and strategies. The plan includes an inventory of the State's transportation system—roads, pedestrian and bicycle facilities, transit, freight and passenger rail, airports, waterways and ports, pipelines, and intelligent transportation systems—and includes TxDOT's Unified Transportation Program and Statewide Transportation Improvement Program by reference.
- *Metropolitan Transportation Plans (MTPs) and Rural Transportation Plans (RTPs)*—MTPs are long-range (20-plus years) transportation plans for urban areas that have more than 50,000 people. These plans are developed by the MPO in cooperation with TxDOT and publicly owned transit services. MTPs identify policies, programs, transportation needs, and projects by travel mode, including road, pedestrian, bicycle, transit, freight and passenger rail, airport, and freight facilities necessary to meet a region's transportation needs. They may include information on the socio-economic profile of the area and any environmental considerations. The RTP is a component of the SLRTP and includes a long-range (24-year) transportation plan for areas not included in an MPO boundary. RTPs are developed in cooperation with TxDOT, local and regional decision makers, and all transportation stakeholders. The RTP includes a list of needed rural

highway projects and identifies non-highway (pedestrian and bicycle, transit, freight and passenger rail, airport, and waterway and port) needs and projects.

As Figure 2.3 shows, project planning initiatives include development of:

- *Unified Transportation Program (UTP)*[4]—The UTP is a 10-year program used by TxDOT to guide transportation project development and project construction. The UTP is updated annually and authorizes development of included projects. Project development includes activities such as preliminary engineering work, environmental analysis, right of way acquisition, and design. The UTP lists planned projects in terms of 12 funding categories and includes the estimated cost and funding sources for each project. Although important in that projects included in the UTP can move forward in terms of project development, the UTP does not ensure a budget or guarantee that projects will be built.
- *Transportation Improvement Programs (TIPs) and Statewide Transportation Improvement Program*—Each MPO and TxDOT district develops a TIP of significant regional (urban and rural, respectively) transportation needs that are consistent with the SLRTP and the MTP. The TIPs represent a short-term (typically four-year) capital improvement program of multimodal transportation projects. All federally funded projects must be included in the TIP. The STIP is a four-year capital improvement program and includes the various TIPs developed by the MPOs and TxDOT districts. The TIPs and STIP include detailed project descriptions, cost estimates, and available funding sources. The TIPs and STIP represent how TxDOT and local agencies plan to allocate available funding resources based on the transportation needs of each region for each fiscal year of the program. In the case of TxDOT's Pharr District, projects in urban and rural areas are included in these documents.[5]
- *Letting schedule*—The letting schedule lists projects that will be let within the next two years. At this point, the final contract documents—the plans, specifications, and estimates (PS&E) that provide detailed descriptions of projects, construction, and estimated costs—have been or are nearing completion.

In addition to the planning documents described above, TxDOT and the MPOs conduct a number of studies—including land use, safety, traffic and mobility (congestion), major corridor, major investment, and project feasibility studies—that inform system and project planning, as well as project development and alternatives analyses.

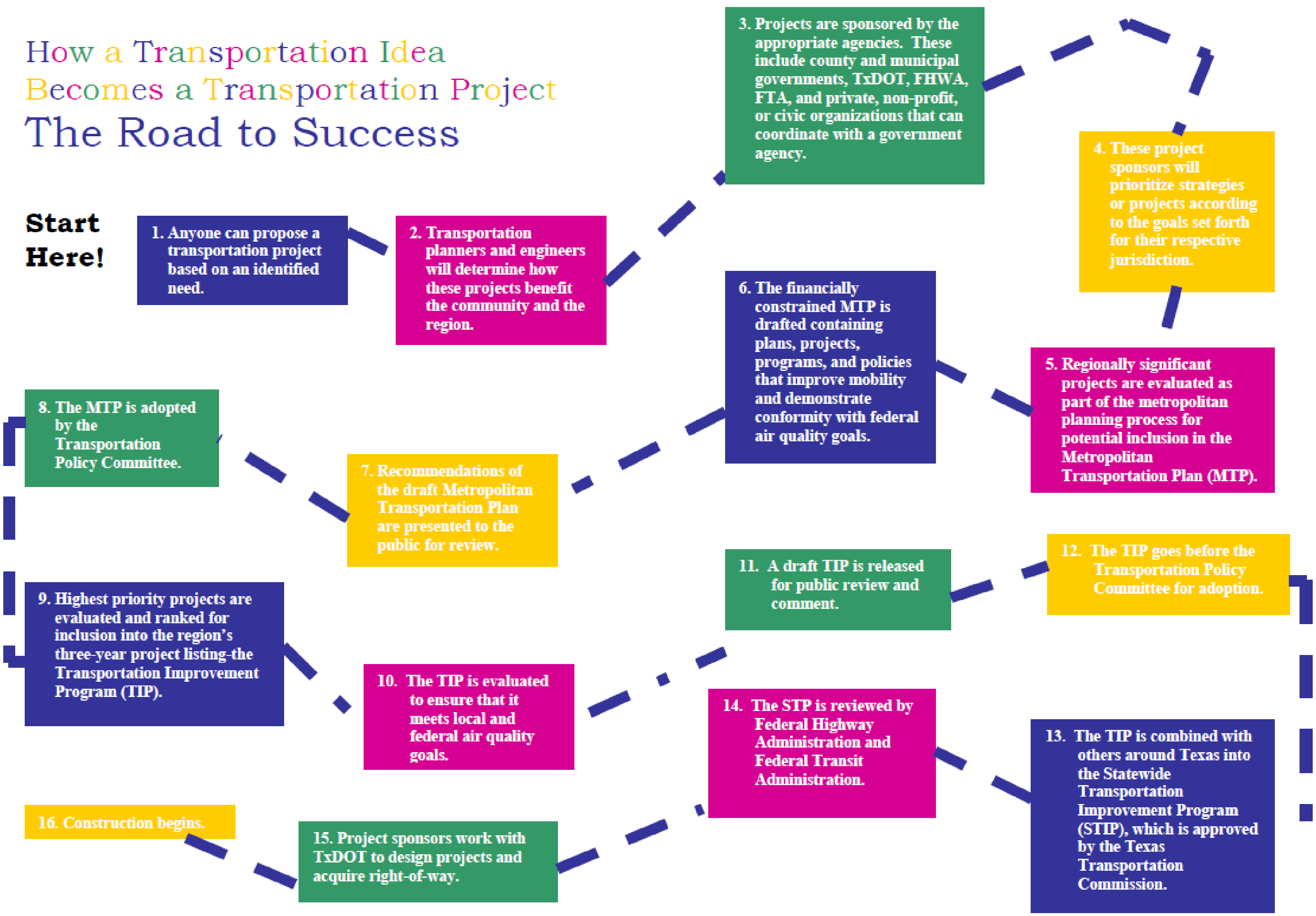
Areas that are classified as nonattainment or maintenance areas do not meet or have not met national ambient air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide.[6] In this case, MTPs, TIPs, and transportation projects funded or approved by FHWA or the Federal Transit Administration need a conformity determination. This determination demonstrates that implementation of a plan or project will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the standard or any interim milestone. [6] Currently, the Lower Rio Grande Valley area is in compliance with air quality standards and therefore is not included in the Environmental Protection Agency's Green Book or the Texas Air Quality Planning Areas by the Texas Commission on Environmental Quality.[7]

2.1.3 MPOs

As mentioned earlier, MPOs vary greatly in organizational size, structure, funding levels, and program emphasis.[8] MPOs were first established as part of the Federal Aid Highway Act of 1962 to conduct regional transportation planning for metropolitan areas with populations of 50,000 people or more. Subsequently, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Efficiency Act for the 21st Century (TEA-21) extended the MPOs' responsibilities with regard to transportation planning. The latter encouraged a continuing, comprehensive, and cooperative transportation planning process by the States and local communities. The passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005 created further requirements for transportation planning and programs. MPOs are thus designated by the governor in each State to implement this legislative requirement. The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law in July 2012 and succeeds SAFEEA-LU.

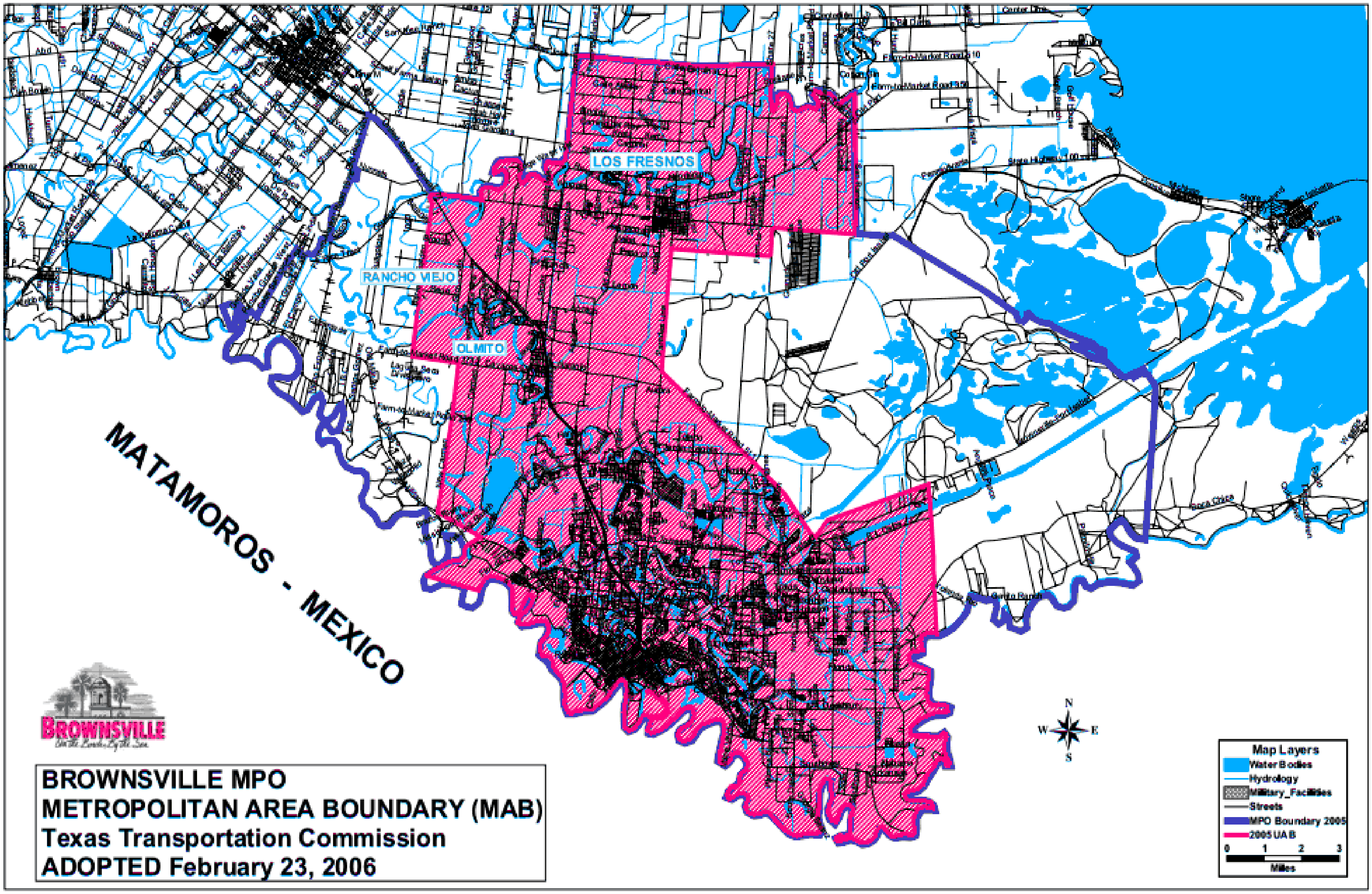
Figure 2.4 shows that all State and federally funded projects in metropolitan areas are selected through the metropolitan planning process (MPP). Any local government anticipating using State or Federal funds for a transportation project must coordinate with the State DOT and the relevant MPO to assure that the project is included in the transportation plans. Also, all projects on the State or Federal-aid highway system must be included in the approved transportation plan regardless of funding source to maintain the integrity of the planning process. Local governments are encouraged to coordinate with MPOs for projects off the State and Federal system using no State or Federal funds.[9]

Three MPOs operate in the study area: the Brownsville MPO (BMPO), Harlingen/San Benito MPO (HSBMPO), and Hidalgo County MPO (HCMPO). BMPO is responsible for transportation planning in the Brownsville urbanized area (shown in Figure 2.5). This MPO has two committees: the MPO Technical Committee (an advisory group that examines technical issues and makes recommendations) and the MPO Policy Committee (the group that makes final decisions for the MPO). Three full-time staff members conduct all tasks and related transportation planning activities.



Source: HCMPO[10]

Figure 2.4: Transportation Planning Process for HCMPO

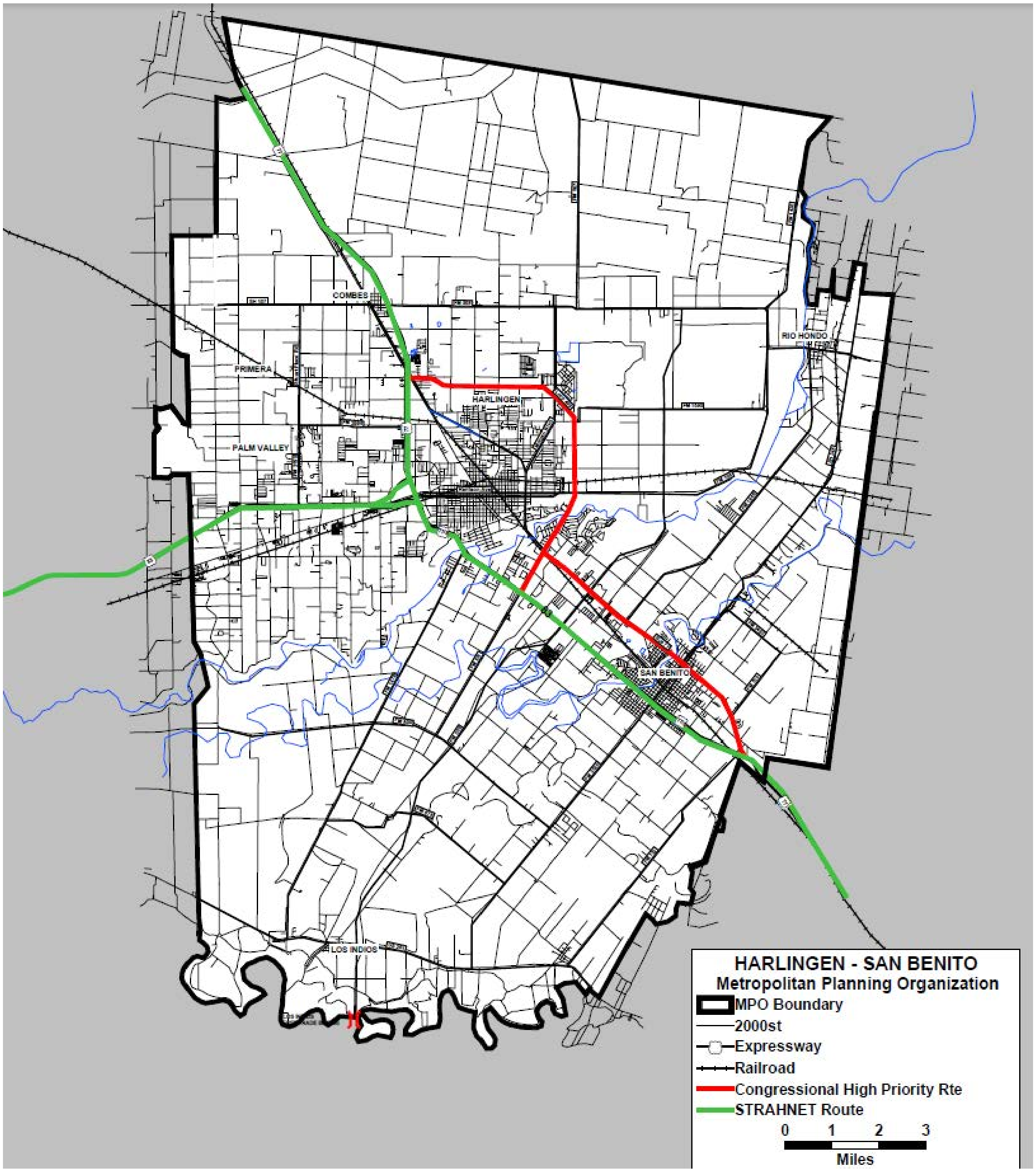


Source: BMPO[11]

Figure 2.5: BMPO Area Boundary Map

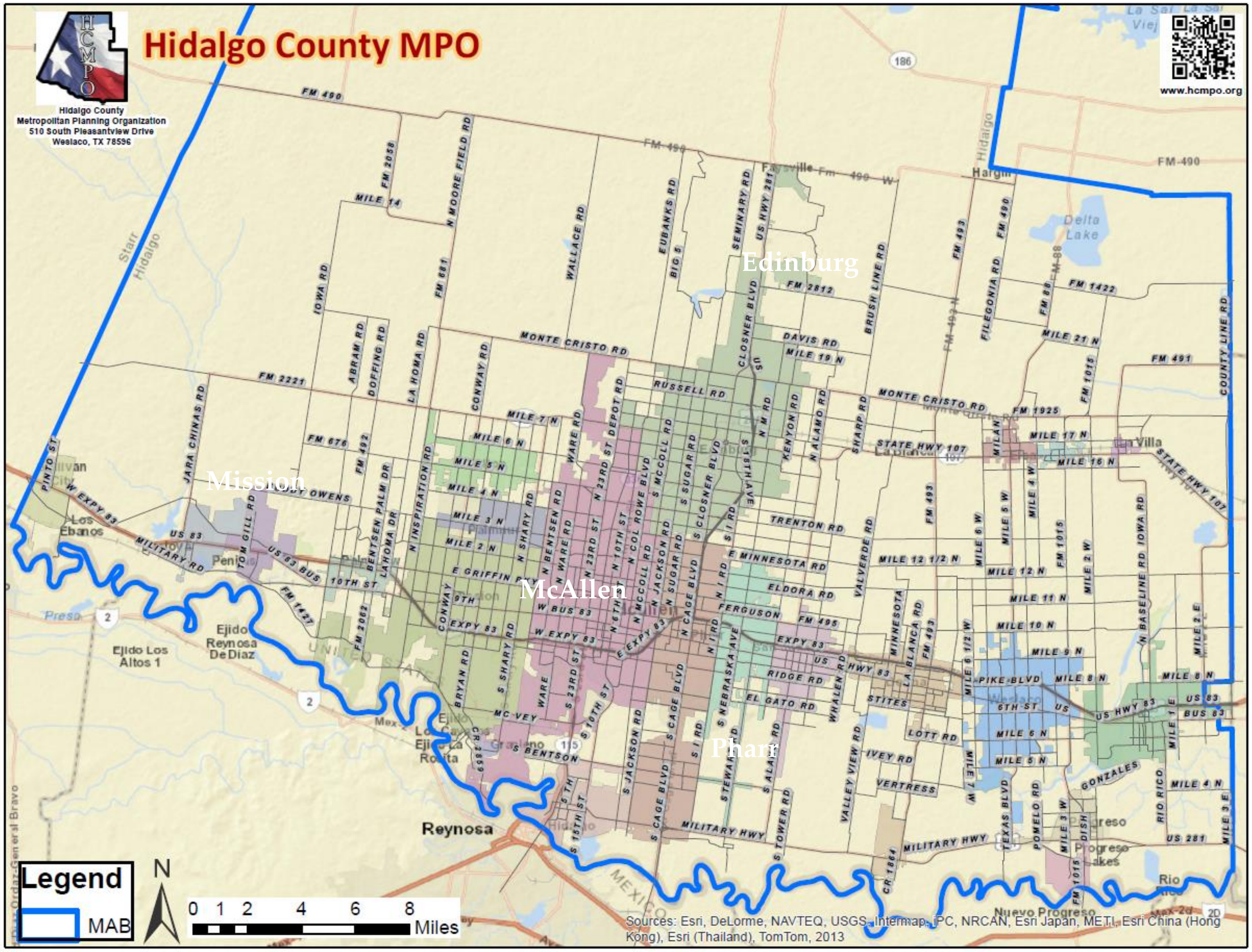
HSBMPO was established in 1988 in an agreement between the City of Harlingen and the Office of the Governor in an effort to accomplish sound planning in the Harlingen-San Benito metropolitan urbanized area (shown in Figure 2.6). HSBMPO serves as a forum for cooperative decision making by elected officials and the local government responsible for urban transportation planning. HSBMPO has a Transportation Policy Committee (a decision-making committee) and a Technical Advisory Committee (a group of local, municipal, and county government representatives appointed by the Transportation Policy Committee). Four full-time staff members conduct all tasks and related transportation planning activities in the MPO area boundary.

On April 27, 1993, Governor Ann Richards designated the Lower Rio Grande Valley Development Council as the MPO responsible for transportation planning for Cameron, Hidalgo, and Willacy Counties, with the provision that the Transportation Policy Committee be the decision-making entity for regional transportation policy in the urbanized area. HCMPO ensures that transportation planning is satisfactorily coordinated in the urbanized area and integrated with other comprehensive planning efforts in the State. This MPO conducts several plans and publishes several documents on its website. HCMPO employs eight full-time staff members.[12] Every two years, HCMPO organizes a special conference (Border to Border) that brings together U.S. and Mexican transportation professionals. HCMPO's planning area is reviewed every five years and has expanded (see Figure 2.7) because of the county's growing population.



Source: HSBMPO[13]

Figure 2.6: HSBMPO Area Boundary Map



Source: HCMPO[14]

Figure 2.7: HCMPO Area Boundary Map

2.1.4 Transportation Management Areas

A Transportation Management Area (TMA) is an area designated by the secretary of transportation and having an urbanized area population of over 200,000. TMAs were designated through the *Federal Register* on July 8, 2002, and were updated in 2012, according to Census Bureau information.[15] In the Lower Rio Grande Valley area, McAllen and Brownsville are considered TMAs.

According to 23 USC 134 (i), areas that have been designated as TMAs must address the following issues:

- Transportation plans and programs within a TMA must be based on a continuing and comprehensive transportation planning process carried out by the MPO in cooperation with the State and transit operators.
- The transportation planning process must include a Congestion Management System.
- FHWA and the Federal Transit Administration must certify the transportation planning process no less often than once every three years.

2.1.5 Non-MPO Areas

For the areas in the study area that are not within an MPO jurisdiction, TxDOT issued in June 2012 the Texas Rural Transportation Plan (TRTP), which is the rural component of the 2035 SLRTP. As part of the SLRTP, the TRTP outlines the planning processes in the rural areas that will guide the collaborative efforts between TxDOT, local and regional decision makers, and all transportation stakeholders.

2.2 Transportation Infrastructure Planning Practices: Mexico

Mexico has legislative concurrence in transportation issues; therefore, transportation project planning, financing, and implementation may be regulated by Federal, State, and municipal legislation.

2.2.1 Planning Documents

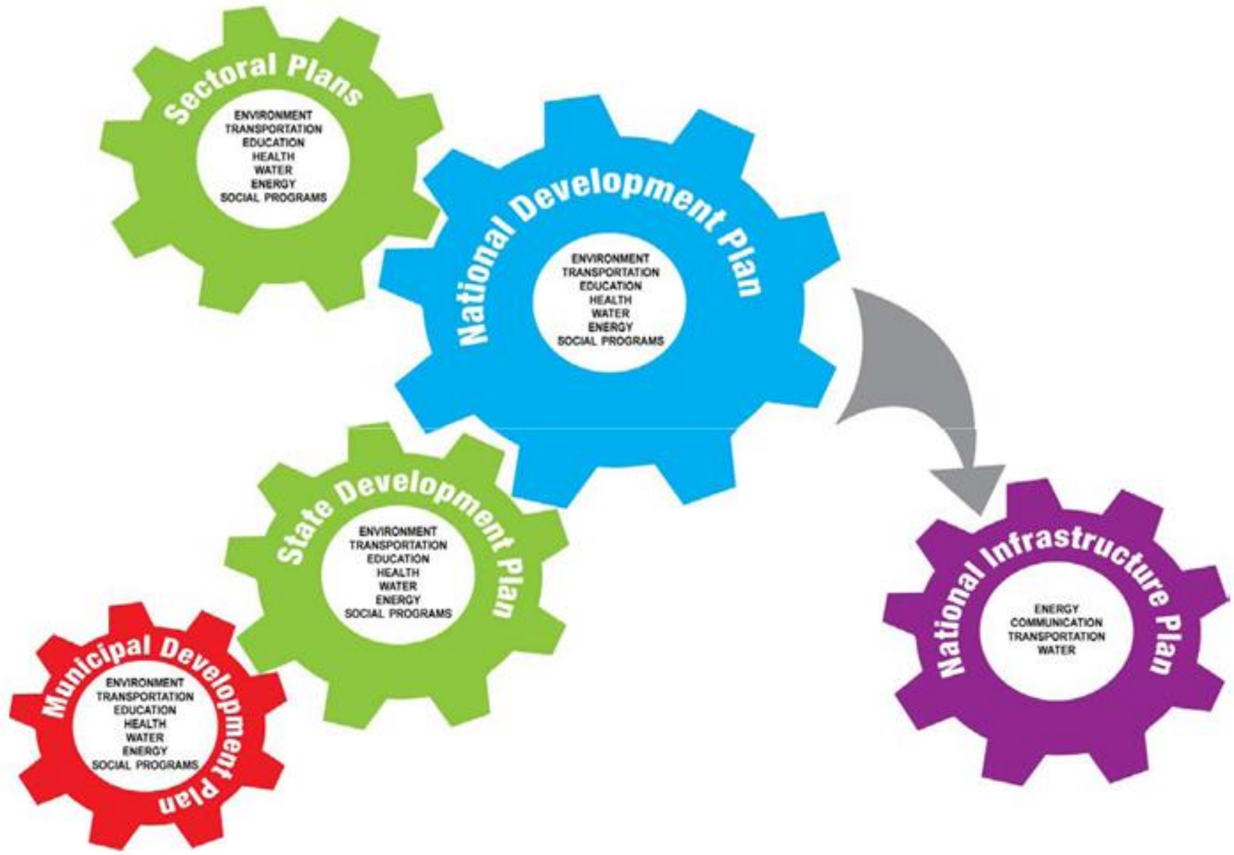
In terms of planning documents, the National Development Plan (Plan Nacional de Desarrollo) is Mexico's most important document. Issued every six years when a new president comes into power, the plan provides the blueprint, specific goals, and commitments for the ensuing years. The document is not only updated every six years, but is dramatically changed to satisfy each president's agenda. No specific format is thus established for this document, and some National Development Plans have a longer planning horizon than others.

President Felipe Calderón's National Development Plan focused on the rule of law, economic growth, climate change, enhanced competitiveness, and the reduction of monopoly power in Mexico. However, the president's support for infrastructure development was evident in his issuance of a National Infrastructure Plan (Plan Nacional de Infraestructura). In an unprecedented effort to reverse the neglect and decline in infrastructure investment in Mexico, the National Infrastructure Plan focused primarily on transportation infrastructure investments and the encouragement of public-private partnerships. The National Infrastructure Plan thus included significant investments in the expansion of highway, railway, port, and airport infrastructure.

Sectoral plans or programs adopt and elaborate on the National Development Plan's goals and commitments in a specific economic sector (e.g., transport, education, health, or energy). The Communications and Transportation Sectoral Program 2007–2012 (Programa Sectorial de Comunicaciones y Transportes 2007–2012) sets the specific goal for the Communications and Transportation Secretariat (Secretaría de Comunicaciones y Transportes [SCT])—a Federal agency—to construct and upgrade 10,835 miles of the national highway network and rural roads, which include 100 high-priority road projects. When complete, these projects would increase the Federal network by 72 percent to 90 percent.[16] By 2012, SCT thus has to conclude the modernization of the north-south and east-west main corridors, including the 100 high-impact road projects. In addition to the Sectoral Program, SCT issues an annual Working Program (Programa de Trabajo) with specific goals and objectives for the fiscal year (January 1 to December 31).

Under a different jurisdiction, State Development Plans are developed to set forth the specific goals the State governor wants to accomplish. The six-year State governor term usually constitutes the planning horizon for State Development Plans. Because the presidential and governorship terms might cover different time periods, State Development Plans may differ in focus and priorities from the National Development Plan, but the State plan has to include the applicable projects or objectives of the national plan. Finally, Municipal Development Plans have a planning horizon of three or four years (depending on the length of a mayor's term).

Figure 2.8 describes the interaction among Mexico's most relevant planning documents. At the agency level, the most pertinent planning agencies are SCT at the Federal level and the Public Works/Transportation/Economic Development Secretariats in each State.



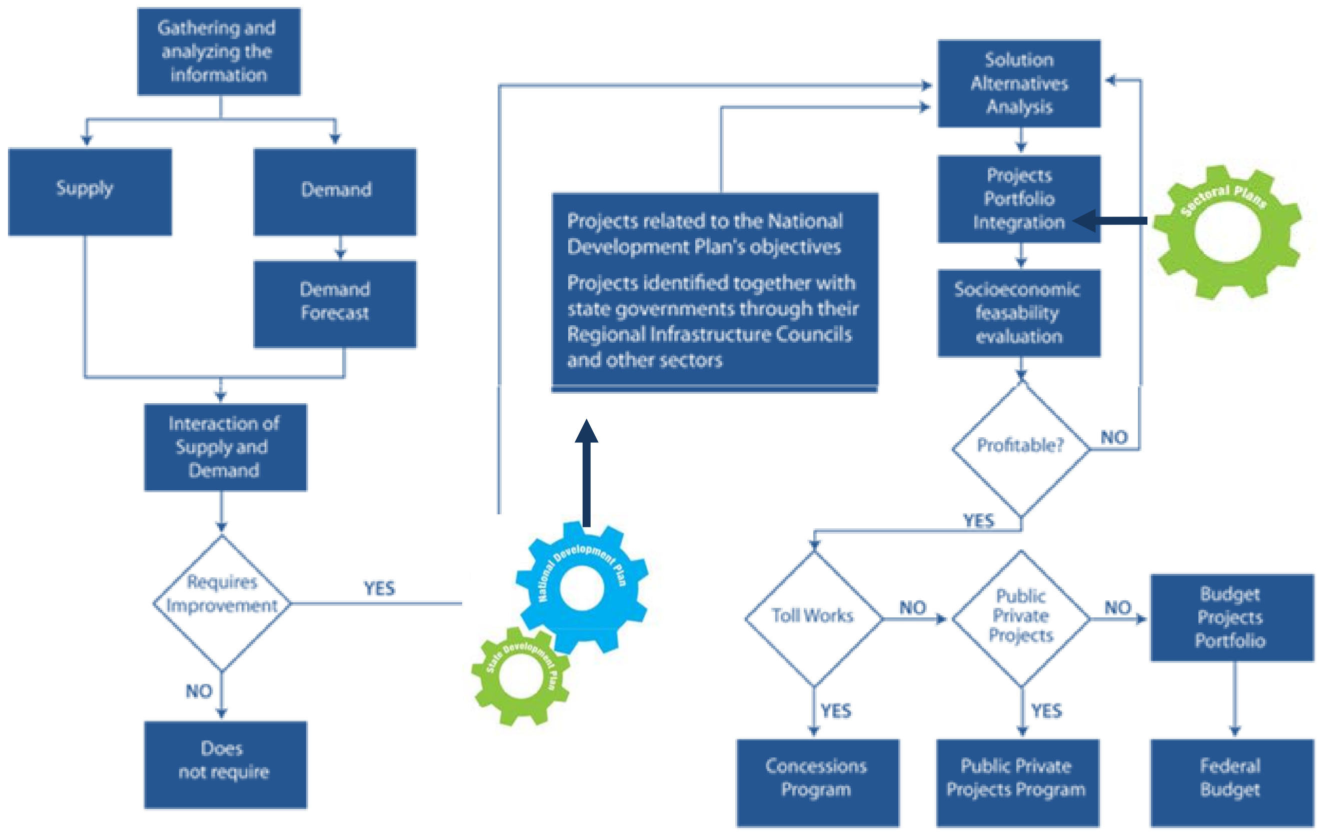
Source: CTR[17]

Figure 2.8: Interaction among Relevant Mexican Planning Documents

2.2.2 Federal Project Planning Processes

SCT is responsible for the planning, prioritization, and implementation of all Federal transportation projects. Figure 2.9 illustrates SCT's decision-making process in selecting its project portfolio for funding. During the project portfolio development process, SCT officials ensure projects are included in national or State planning documents and subsequently in the agency's own sectoral planning documents.

The project selection process can be initiated by a promoter or by an SCT official identifying a need. Stakeholders such as State and municipal authorities can start to promote a project at SCT's regional office (Centro SCT Tamaulipas). Regional SCT offices might be more familiar with the needs or characteristics of the regions than State or Federal officials and therefore can help to promote the project at SCT's central offices.

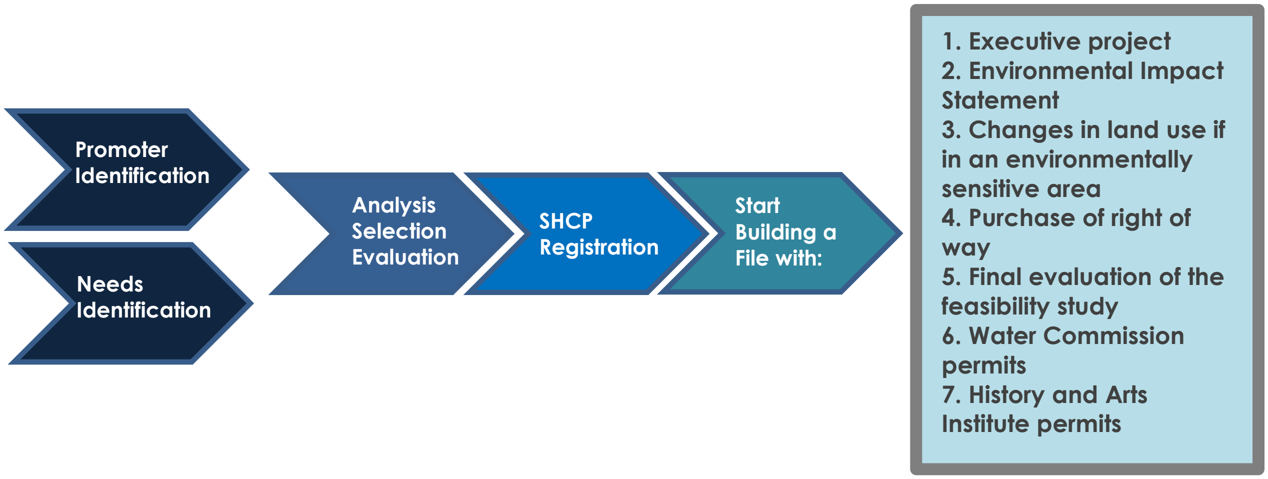


Sources: SCT[18]

Figure 2.9: SCT Project Portfolio Development

Once a project is selected to be included in the following year's project portfolio, two evaluations are conducted: one by SCT and one by the Public Credit and Treasury Secretariat (Secretaría de Hacienda y Crédito Público [SHCP]). Once an SHCP registration number is issued, SCT officials start the formal planning and permitting procedures as indicated in Figure 2.10.

At the Federal level, the Secretariat of Social Development (Secretaría de Desarrollo Social [SEDESOL]) is responsible for preparing the National Program of Urban Development (Programa Nacional de Desarrollo Urbano) and for coordinating planning activities and providing technical assistance (with regard to planning and urban development issues) to State and municipal governments. The agency develops background and supporting material for municipal plans and programs in the border region, such as the Land Port of Entry Urban Development Program (Plan o Programa Parcial de Desarrollo Urbano de Puerto Fronterizo), which is available online.



Source: SCT[19]

Figure 2.10: SCT Project Selection: Planning Process

2.2.3 State and Local Planning Processes

Public Works or Transport Secretariats at the State level and Municipal Planning Institutes (Institutos Municipales de Planeación [IMPLANs]) at the local level are responsible for preliminary needs and project identification and planning. IMPLANs were created to ensure planning continuity at the local level since administrations and officials change every three to four years.

Tamaulipas Public Works Secretariat

The State of Tamaulipas's current Public Works Secretariat (Secretaría de Obras Públicas del Estado de Tamaulipas [SOP]) was created by Governor Egidio Cantú in 2011. A formal secretariat for public works had been absent for 30 years. Its functions had been undertaken by the Secretariat of Human Settlements, Public Works, and Services (1981–1994) or the Secretariat of Social Development (1994–2005). During the past several years (2005–2011), the public works functions were conducted by the Secretariat of Urban Development and Ecology.

IMPLAN Matamoros

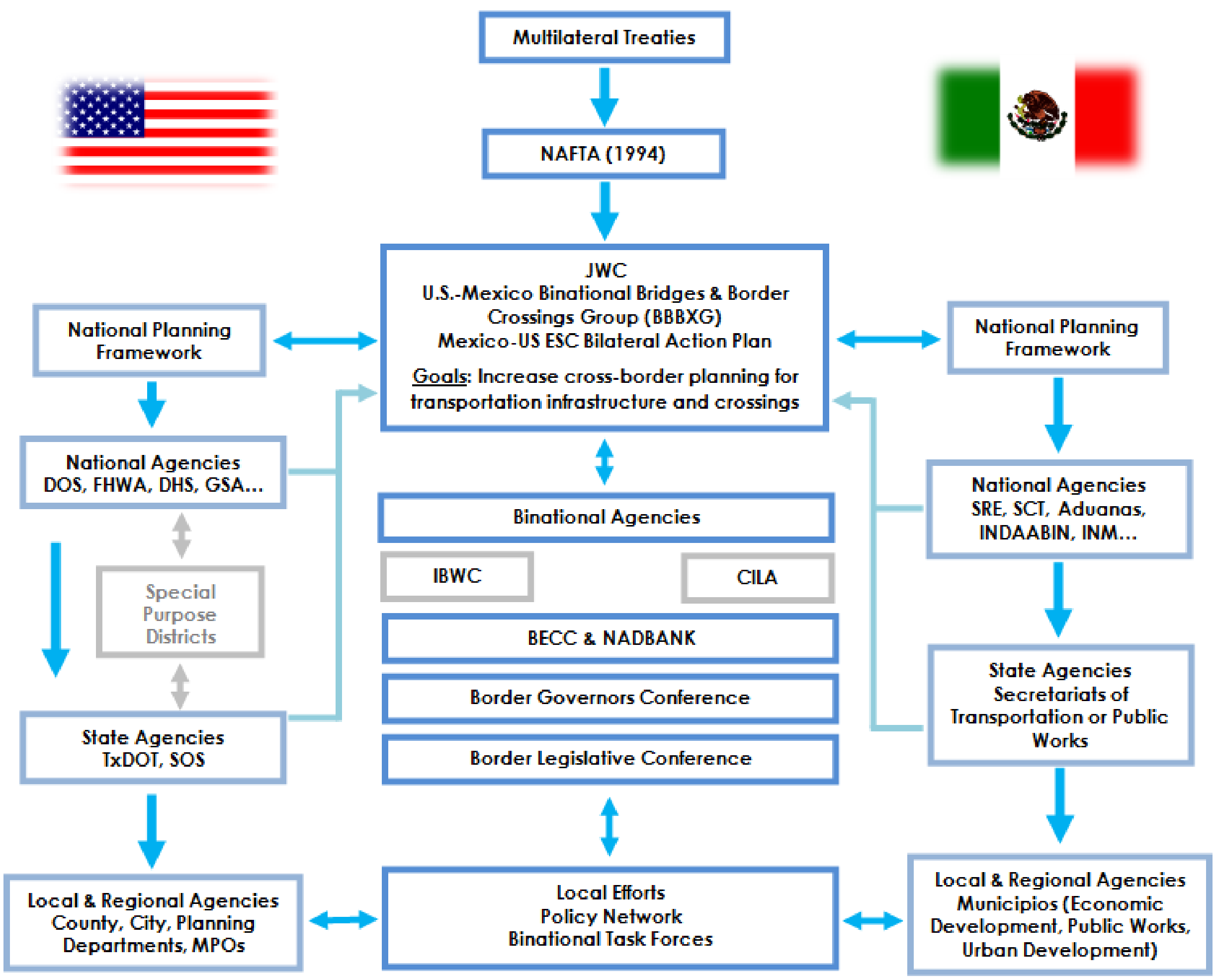
IMPLAN Matamoros was created through an executive decree in September 1998. It currently acts under the direction of a Directive Advisory Committee and a Technical Committee. It employs 10 full-time staff members. Its jurisdictional boundaries correspond to the municipal boundaries of the Municipality of Matamoros. In 2011, this IMPLAN was 100 percent funded by the Municipality of Matamoros.[20] The entity has supervised and conducted several studies that have been published online.

IMPLAN Reynosa

IMPLAN Reynosa was created through an executive decree in May 2009 but was not staffed until 2011.

2.3 Cross-Border Planning Practices for Transportation Infrastructure and POEs

Figure 2.11 describes the binational planning being conducted for transportation infrastructure, including POEs. Multilateral treaties, such as the North American Free Trade Agreement (NAFTA), prompted coordination and creation of institutions and mechanisms for improving cross-border planning among agencies.



Note: NAFTA = North American Free Trade Agreement; JWC = U.S./Mexico Joint Working Committee on Transportation Planning and Programming; U.S.-Mexico ESC = U.S.-Mexico Executive Steering Committee; and SOS = U.S. Secretary of State.

Source: Adapted to transportation from Sergio Peña[21]

Figure 2.11: Cross-Border Planning for Transportation Infrastructure

2.4 POE Planning Practices: United States

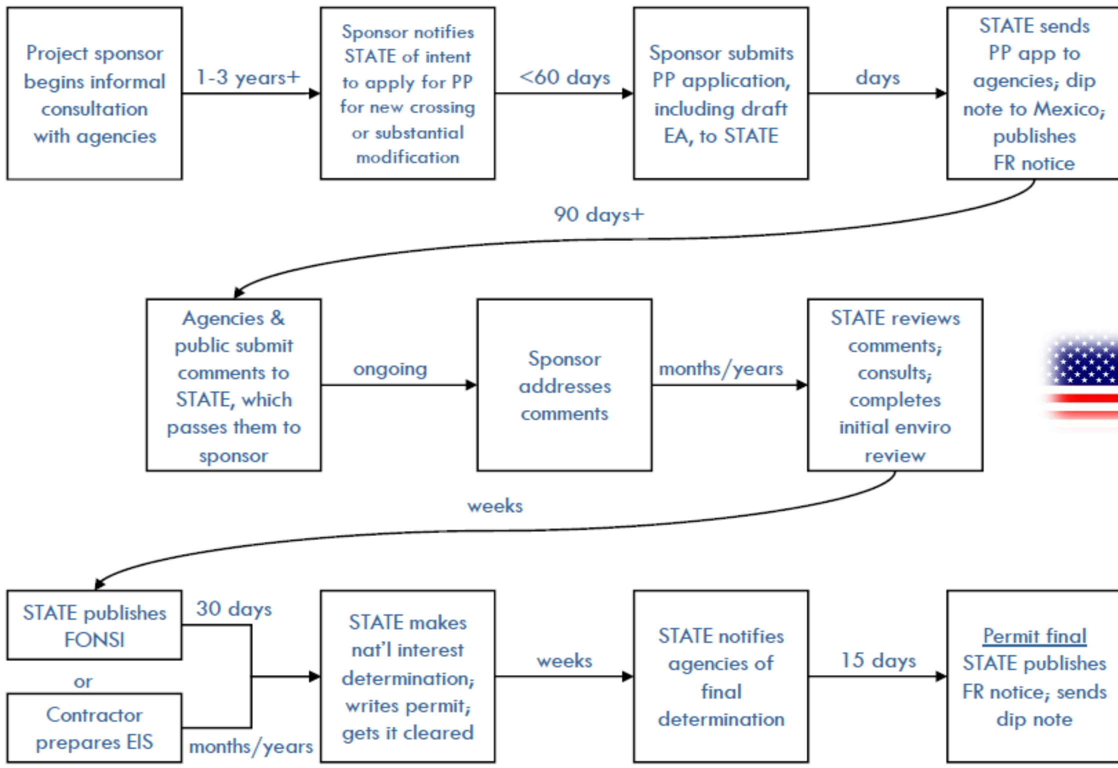
2.4.1 U.S. Department of State

Executive Order 11423 (1968), as amended,[22,23] authorizes USDOS to issue Presidential Permits (PPs) for certain cross-border facilities including, since 2004, land border crossings. Substantial modifications to an existing border-crossing facility also require a permit or amendment. USDOS has identified three categories of projects:[23]

- Notification to USDOS and a new or amended PP are required for all new border crossings and all proposed changes that would substantially modify an existing border crossing.
- Notification to USDOS is required—and USDOS determines whether a PP is required—for proposed changes in capacity, traffic flow, operation, or maintenance responsibility for an existing border crossing that may constitute a substantial modification, including changes that may be expected to have a material effect on the Mexican Government's operations in Mexico.
- No USDOS notification or PP is required for changes in the proximity of the border that are not expected to have a material effect on the Mexican Government's operations in Mexico and are neither a new border crossing nor a substantial modification to an existing border crossing. However, USDOS is responsible for determining whether the change is material, and USDOS should be consulted in the initial planning stages of the proposed project.

To issue a PP, USDOS must determine that the new or modified border serves the "national interest." An Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) is a key element before the national interest determination. Consultations are conducted with other Federal agencies, including CBP and the General Services Administration (GSA), before USDOS determines whether the facility or improvement serves the national interest.

Figure 2.12 explains the process and approximate timeline for obtaining a PP. The PP process might be initiated by a U.S. Federal, State, or local entity or a private promoter (e.g., a rail company or business group). Cities, counties, and State agencies can identify POE needs in their planning documents. Any one of the agencies specified in the Executive Order may object to the proposed project and request that the decision be referred to the president. In addition, the new POE or improvement has to comply with GSA and CBP's LPOE design manuals.



Note: PP = Presidential Permit; EA = Environmental Assessment; FR = Federal Register; FONSI = Finding of No Significant Impact; and EIS = Environmental Impact Statement.

Source: Daniel Darrach[24]

Figure 2.12: Presidential Permit Process and Timeline

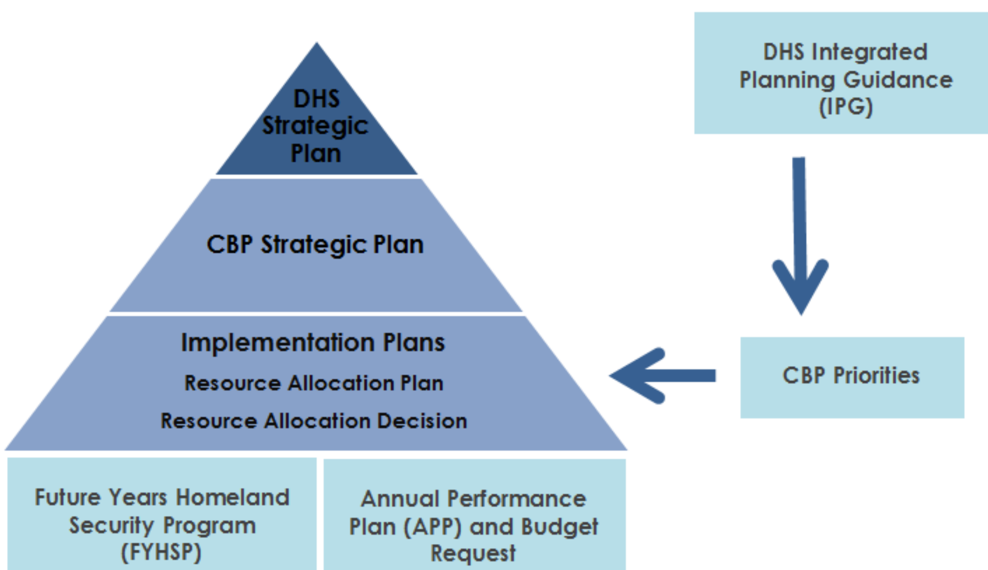
During 2009, USDOS reviewed several PPs that had been issued in the past decades but have remained unused. In addition, it established that future PPs would be issued with an expiration date for the commencement and completion of construction.[25] The following PPs were granted for proposed projects in the Focused Study Area and have not resulted in the construction of the proposed projects:

- Permit 97-01 authorizes the Brownsville Navigation District to construct, operate, and maintain two international bridges: one for vehicular traffic and one for railroad traffic between Brownsville in Cameron County, Texas, and Matamoros, in Tamaulipas, Mexico, at about Mile 24 on the Rio Grande River.[26]
- The City of Mission, Texas, was granted a PP more than 30 years ago to build an international rail and vehicular bridge.

2.4.2 U.S. Customs and Border Protection

CBP is part of the Department of Homeland Security (DHS). As shown in Figure 2.13, several documents assist DHS in developing and implementing multiyear program plans and budgets:[27]

- *DHS and CBP Strategic Plans*—These plans are an important first step in fulfilling DHS's mission by setting long-term direction and enabling decisions on near-term priorities.
- *Integrated Planning Guidance (IPG)*—This guidance is issued each year by the secretary of DHS. It articulates the secretary's investment priorities and guides the development of CBP's Resource Allocation Plan (RAP) and the subsequent Resource Allocation Decision (RAD).
- *Future Years Homeland Security Program (FYHSP)*—FYHSP outlines a five-year plan to achieve the long-term performance goals of specific programs. Each program aligns to a DHS strategic objective with a set of measures to demonstrate the program's strategy and progress in meeting that objective. This information is captured electronically in the FYHSP system, which officially records performance measure results, targets, and annual milestones. Information in the FYHSP is presented to Congress each year.
- *Annual Performance Plan (APP)*—The APP is submitted to Congress along with the annual budget request. The plan links resources to strategic results by displaying what CBP will accomplish during the budget year if given the resources requested.



Source: CBP[27]

Figure 2.13: CBP Planning Documents

The POE needs identified by CBP are published in a Strategic Resource Assessment (SRA) report that is prepared for each field office.[28] In addition to planning and programming practices, CBP and Mexico's General Customs Administration (Administración General de Aduanas [Aduanas]) are involved in joint initiatives to improve transportation planning and programming, training, technology exchange, and other activities.

Initiatives by CPB and Aduanas to Improve Planning

The Southern Border Initiative provides for cross-border coordination with Aduanas. Through the initiative, two CBP teams are coordinating with their Aduanas counterparts to assess immigration and commerce issues at Mexico's southern border.

The Bilateral Strategic Plan (BSP) was implemented in August 2007. Through the BSP, Aduanas, CBP, and U.S. Immigration and Customs Enforcement (ICE) established working groups to strengthen law enforcement and enhance security, while improving trade partnerships, promoting border efficiencies, and increasing the professionalism of border law enforcement agencies. CBP and Aduanas share information/data and coordinate inbound and outbound enforcement operations to stop the flow of illegal arms and currency across the border. In 2009, two successful pilot operations in Nogales and Eagle Pass provided the necessary impetus to expand the plan to other POEs before the end of FY2009. Aduanas employed 1,400 new and better trained agents and has asked CBP to provide technical support, basic training, and credibility assessment assistance. These activities are consistent with the BSP and are supported with Merida Initiative (MI) funding.

The MI has provided funding to complement other efforts. MI funds have been used to train Aduanas agents (using the same criteria applied to other Mexican Federal police forces), to purchase canine and non-intrusive inspection equipment, and to share technical advice and best practices to ensure Aduanas is more closely aligned with CBP.

2.5 POE Planning Practices: Mexico

2.5.1 Interagency Group on Bridges and Crossings

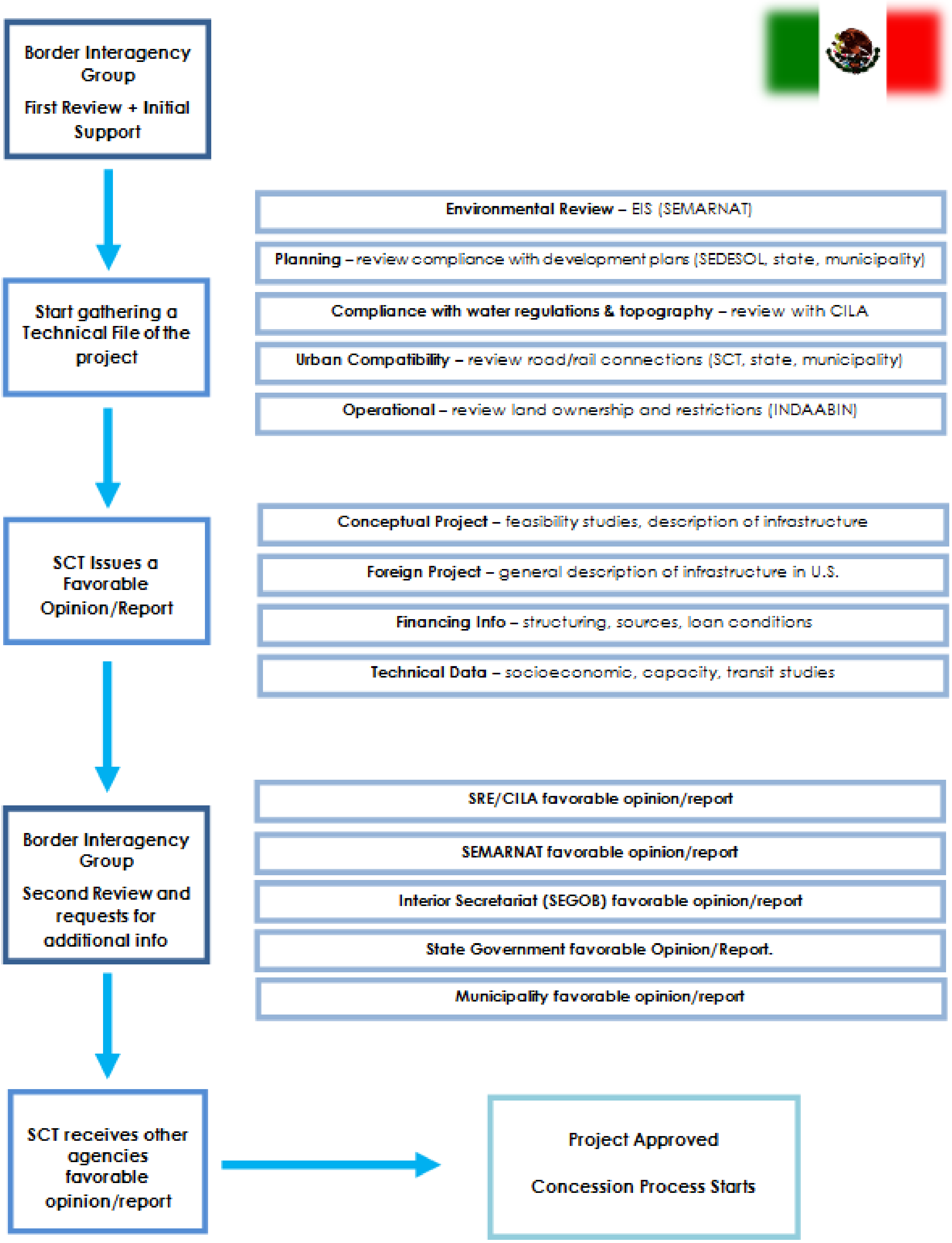
In accordance with Mexico's legislation and Supreme Court rulings, international bridges and crossings are solely under Federal jurisdiction. Projects may be initiated at the local, State, or Federal agency level, for example, by Aduanas, SCT, or the National Property Managing and Appraisal Institute (Instituto de Administración y Avalúos de

Bienes Nacionales [INDAABIN]). In all cases, the Federal Government maintains exclusive power of ownership. The bridge or crossing might be constructed with Federal funding or through a concession given to a private entity, a State, municipality, or a special-purpose vehicle (a fideicomiso trust) composed of various stakeholders.

A key first step is that the proposed project secures support at the Interagency Group for Bridges and Border Crossings (Grupo Intersectretarial de Puentes y Cruces Fronterizos), also called the Border Interagency Group. Created in 1995, the Border Interagency Group is a national gathering where Mexican Federal agencies meet to develop a common position with regard to POEs. The group discusses issues involving negotiations, construction, operations, and maintenance of POEs and the services provided at the POEs. The group also evaluates and approves proposed new POEs, and works to implement projects once they are approved. In the past few years, the group has served to establish agreements between local, State, and Federal agencies on actions that benefit border communities in both nations.[29]

The Border Interagency Group meets on an as-needed basis for as many times per year as required to address specific issues. Agreements reached at the national level are then disseminated at regional meetings where specific border projects are discussed. The members of the Border Interagency Group also meet with their U.S. counterpart agencies at the Binational Bridges and Border Crossings Group (BBBXG), co-hosted by the Secretariat of Foreign Relations (Secretaría de Relaciones Exteriores [SRE]) and USDOS at least twice a year. Regional meetings (for both western and eastern POEs) focusing on regional projects are hosted once every six to nine months. Each meeting traditionally consists of two parts: a public session and a technical session for Federal and State agency participation only.[29]

Figure 2.14 provides a simplified summary of Mexico's planning process for international POEs.



Source: SCT[30]

Figure 2.14: Mexico's POE Planning Process (Simplified)

2.5.2 General Customs Administration

The Tax Administration Service (Servicio de Administración Tributaria [SAT]) is part of SHCP. SAT was created in July 1997 and celebrated its first 15 years of service in 2012. The agency was established as a decentralized entity with management, technical, and budget autonomy. Based on the SAT mandate, SAT personnel determine and collect Federal taxes, and are responsible for customs administration in Mexico. Aduanas is part of SAT.

Documents

During the 2006–2012 presidential tenure, the following planning and guiding documents directed Aduanas's actions:

- *SAT's Strategic Plan 2007–2012*[31] delineated the challenges and initiatives for a six-year period. The objectives of this strategic plan were to facilitate and encourage voluntary compliance; combat evasion, smuggling, and the informal economy; increase the efficiency of tax administration; and integrate the organization to improve efficiency, ethics, and commitment.
- *Customs Modernization Plan 2007–2012*[32] was developed under three premises: integrate processes to strengthen infrastructure and facilities and introduce technology to better compete globally; end smuggling by detecting and resolving irregularities, optimally through stricter controls applied in the customs system and through national and international collaboration; and ensure transparency and improve the image of customs services.

Aduanas: Future Long-Term Projects

In the last decade, Aduanas has been slowly evolving from a revenue-collection agency to a de facto enforcement agency. However, many internal challenges remain.

Small Steps

In 2009, the Federal Government started to transform its Federal police force and investigators. On paper, Aduanas was not always considered for funding or included in law enforcement programs and training. In practice, not all Aduanas agents carried firearms nor were they authorized to arrest suspects at the border. Aduanas agents relied on Fiscales, the armed enforcement element of Aduanas, for arrests. The Fiscales were Aduanas officials, but they maintained a high degree of operational autonomy. On August 15, 2009, the Government of Mexico announced that Aduanas would not renew the expiring contract of the Fiscales. Backed by the temporary deployment of Mexican military personnel, all 722 Fiscales (the entire armed workforce) were relieved of their responsibilities and replaced by 1,400 newly trained Aduanas agents. While the transition appeared sudden, the agency had worked closely with the United States to train, vet, and polygraph a corps of replacement agents using Merida Initiative funding.

Institutional Strengthening Project

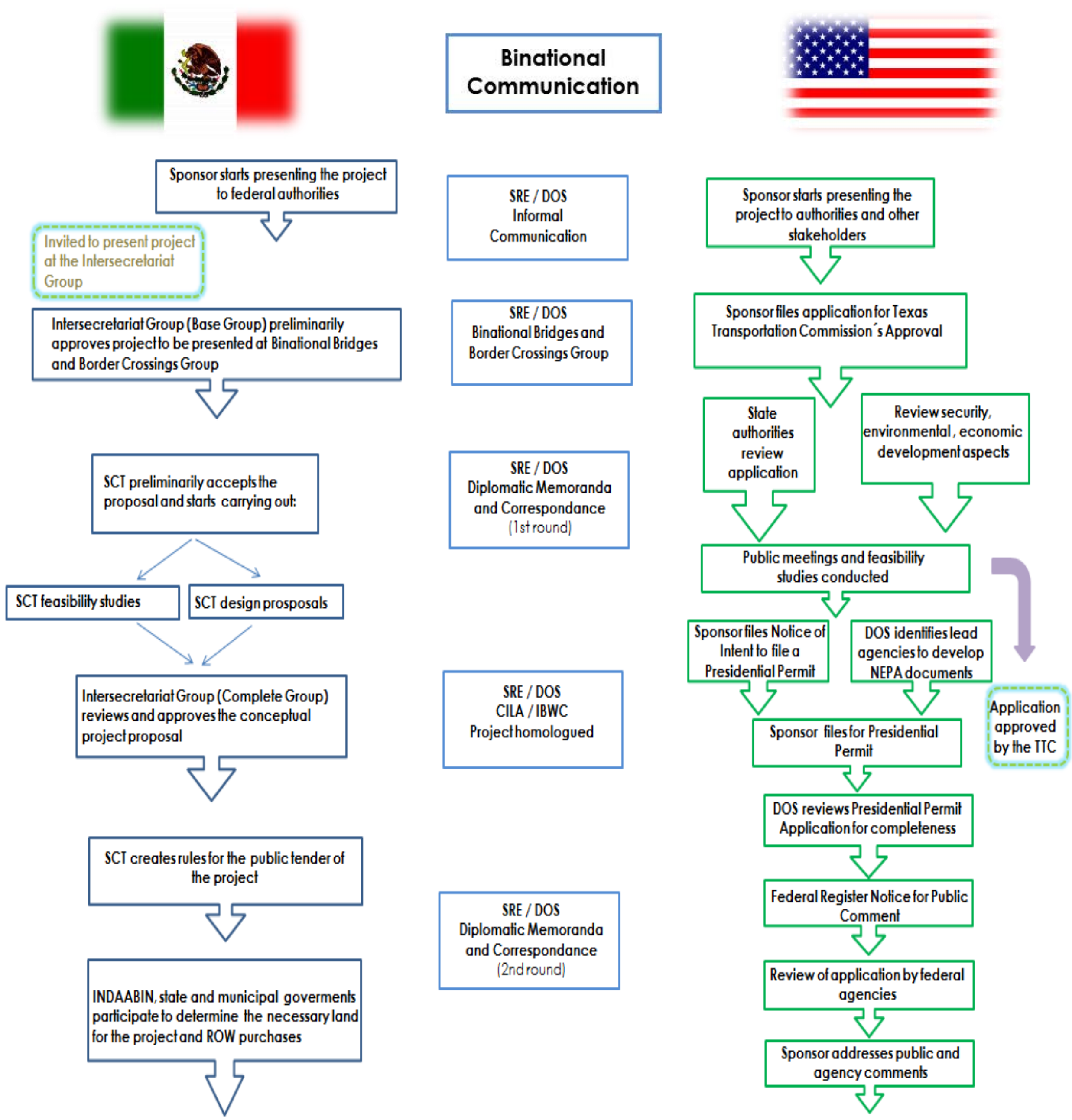
The Mexico Customs Institutional Strengthening Project is a US $54.87 million project, of which the World Bank intended to finance US $10.025 million in loans. The project's development objective was to improve the efficiency of Aduanas's processes, thereby contributing to improving Mexico's competitiveness and facilitating trade with foreign parties. The project intended to aid the institutional redesign and redefinition of the services and processes supporting Aduanas's operations; improve the human capital at Customs by creating an incentive system as part of a Fiscal Career Service Scheme; and improve change management at Customs. The four practical objectives of the project were to strengthen the controls function in Aduanas to minimize internal and external customs irregularities (such as contraband and under-valuation); increase border security; achieve cost reductions for citizens and government; and improve processing times and contribute to improved performance of Customs personnel through increased professionalism and strengthening of the link between pay and performance.

In 2012, the project was canceled. The reasons given were lengthy documentation and bureaucratic procedures in 2009, the project's redesign in 2010, and inadequate time before foreseeable administrative changes (after the election in mid-2012).

Source: World Bank[33]

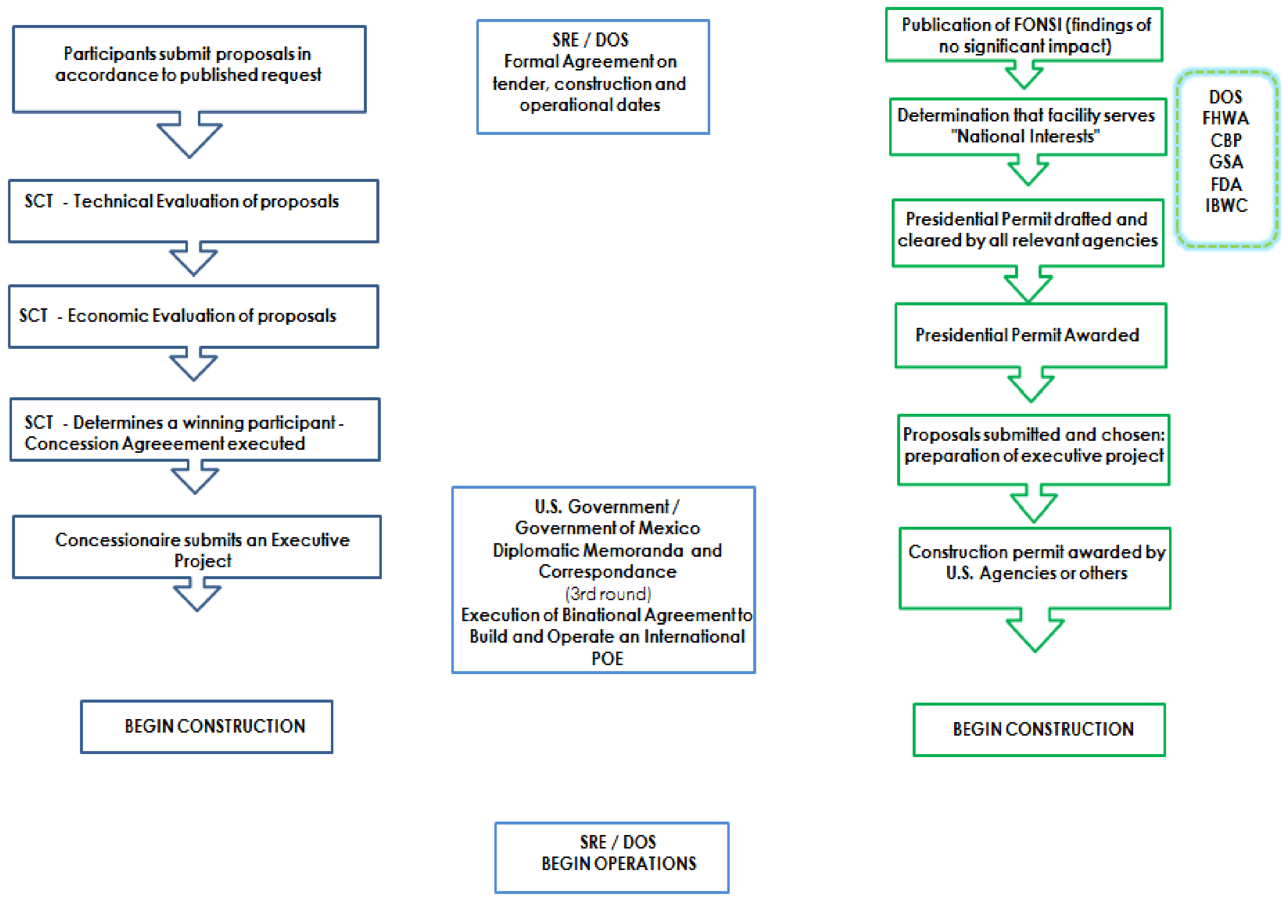
2.6 Summary of Planning Processes and Practices for New POEs

Figure 2.15 provides a simplified summary of processes for authorizing the construction of a new POE for Mexico and the United States. Both processes are coordinated by USDOS and SRE through diplomatic communications (diplomatic notes).



Source: Baltazar Romero, State of Chihuahua[34]

Figure 2.15: New POE Binational Planning Process—Part 1



Source: Baltazar Romero, State of Chihuahua[34]

Figure 2.15: New POE Binational Planning Process—Part 2

2.7 Project Selection, Prioritization, and Funding

Border master plans prioritize planned POE projects and planned transportation infrastructure serving these POEs. Although there are other modes on the border, the emphasis has been on the current planning practices for roads and highways that serve the POEs. Rail and marine project selection, prioritization, and funding are typically conducted by private rail companies and the port authorities, respectively.

2.7.1 United States

Transportation Infrastructure

In the United States, several agencies use quantitative and qualitative data to evaluate, rank, and prioritize transportation projects. For roads and highways, criteria include project cost and cost-effectiveness, current and projected average daily traffic (ADT) or AADT, current and projected LOS, benefits to freight movements, connectivity or modality, traffic accident rates, and environmental and socio-economic impacts, among others.

In the case of TxDOT, project selection involves matching high-priority highway transportation needs with forecasted funding and authorizing the development of selected projects. The following projects are included in the UTP:[35]

- Identify the highest-priority, most-needed, and most cost-effective projects for development.
- Achieve the transportation objectives established by State and Federal law and by the Texas Transportation Commission (TTC) as documented in TxDOT's Strategic Plan and SLRTP.
- Equitably address the transportation needs of the entire State.
- Authorize the development of sufficient high-priority projects to effectively use the anticipated funding in each of the UTP categories.

Transportation projects can be selected in a number of ways. Projects involving the State roadway network or improvements to existing highways are generally selected by TxDOT's districts and divisions unless the project is inside an MPO boundary. Other proposed projects are submitted by government officials, individuals, MPOs, or regional transportation planning committees. The majority of the State's transportation programs are, however, determined by local officials or TxDOT's district offices. Finally, due to project planning and development requirements, projects are selected 5 to 10 years in advance given anticipated funding.[36]

The selection criteria used for highway projects vary by UTP funding category, but a cost-effectiveness measure is used in several funding categories for prioritizing projects on a statewide basis. Although exceptions exist, the measure is usually a ratio of project cost to the traffic (in vehicles per day) served by the project.[35] The TxDOT district engineer determines the selection criteria for highway projects in his or her district, except for projects in UTP categories, where the MPO is authorized to select projects. In the latter case, the MPO is responsible for deciding the project selection criteria to be used for the UTP categories. Table 2.1 summarizes the various funding categories and project selection by funding category.

Each project undergoes three funding authorization stages: planning, development, and construction. First, a project will receive approval for its planning phase. Once planning and development are complete, the project must be approved for funding to be constructed or implemented.

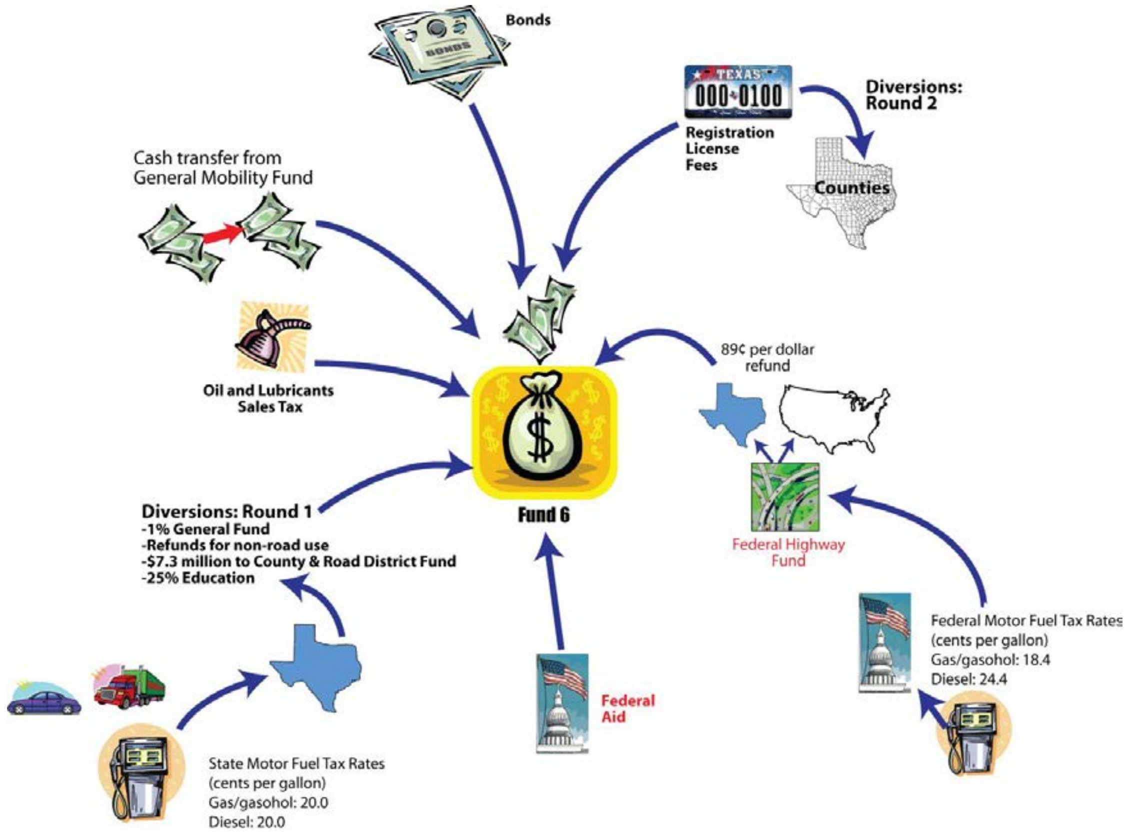
Table 2.1: TxDOT's Funding Categories and Project Selection

Funding Category	Project Selection	Usual Funding
1—Preventive Maintenance and Rehabilitation	Projects selected by districts. TTC allocates funds through Allocation Program.	Federal 90%, State10% *or* Federal 80%, State 20% *or* State 100%
2—Metropolitan and Urban Area Corridor Projects	Projects selected by MPOs in consultation with TxDOT. TTC allocates funds through Allocation Program.	Federal 80%, State 20% *or* State 100%
3—Non-traditionally Funded Transportation Projects	Project selection varies based on the funding source, such as Proposition 12, Proposition 14, Pass-Through Toll Finance, Regional Toll Revenue, and Local Participation.	Federal 80%, State 20% *or* State 100% *or* Local 100% Varies by agreement and rules
4—Statewide Connectivity Corridor Projects	Projects selected by TTC based on corridor ranking. Project total costs cannot exceed TTC-approved statewide allocation.	Federal 80%, State 20% *or* State 100%
5—Congestion Mitigation and Air Quality (CMAQ) Improvement	Projects selected by MPOs in consultation with TxDOT and funded by district's Allocation Program. TTC allocates money based on population percentages within areas failing to meet air quality standards.	Federal 80%, State 20% *or* Federal 80%, Local 20% *or* Federal 90%, State 10%
6—Bridges: Federal Highway Bridge Program (HBP) and Federal Railroad Grade Separation Program (RGS)	Projects selected by the Bridge Division as a statewide program based on the Federal HBP and RGS eligibility and ranking. TTC allocates funds through statewide Allocation Program.	Federal 90%, State 10% *or* Federal 80%, State 20% *or* Federal 80%, State 10%, Local 10%
7—Metropolitan Mobility/Rehabilitation	Projects selected by MPOs in consultation with TxDOT and funded by district's Allocation Program. TTC allocates money according to Federal formula.	Federal 80%, State 20% *or* Federal 80%, Local 20% *or* State 100%
8—Safety: Federal Highway Safety Improvement Program (HSIP), Federal Railway-Highway Crossing Program, Safety Bond Program, Federal Safe Routes to School (SRTS) Program, and Federal High Risk Rural Roads (HRRR)	Projects selected statewide by federally mandated safety indices and prioritized listings. TTC allocates funds through statewide Allocation Program. Projects selected and approved by TTC on a per-project basis for Federal SRTS Program.	Federal 90%, State 10% *or* Federal 90%, Local 10% *or* Federal 100% *or* State 100%
9—Transportation Enhancements (TE)	Local entities make recommendations, and a TxDOT committee reviews them. Projects selected and approved by TTC on a per-project basis. Projects in the Safety Rest Area Program are selected by the Maintenance Division.	Federal 80%, State 20% *or* Federal 80%, Local 20%

Funding Category	Project Selection	Usual Funding
10—Supplemental Transportation Projects: State Park Roads, Railroad Grade Crossing Replanking, Railroad Signal Maintenance, Construction, Landscaping, Landscape Cost Sharing, Landscape Incentive Awards, Green Ribbon Landscape Improvement, Curb Ramp Program, Coordinated Border Infrastructure (CBI) Program, Comprehensive Development Agreements (CDAs), and Congressional High Priority Projects (CHPP)	Projects selected statewide by Traffic Operations Division or Texas Parks and Wildlife Department; local projects selected by district. TTC allocates funds to districts or approves participation in Federal programs with allocation formulas. CBI Program funds allocated to districts according to the Federal formula.	State 100% *or* Federal 80%, State 20% *or* Federal 100%
11—District Discretionary	Projects selected by districts. TTC allocates funds through Allocation Program.	Federal 80%, State 20% *or* Federal 80%, Local 20% *or* State 100%
12—Strategic Priority	TTC selects projects that generally promote economic opportunity, increase efficiency on military deployment routes, retain military assets in response to the Federal Military Base Realignment and Closure Report (BRAC), or maintain the ability to respond to both man-made and natural emergencies. Also, TTC approves pass-through financing projects to help local communities address their transportation needs.	Federal 80%, State 20% *or* State 100%

Source: TxDOT[36]

Most of TxDOT's highway projects are funded through Fund 6, the State Highway Fund. This fund includes, for example, revenues from the motor fuel tax, vehicle registration fees, oil and lubricant taxes, and Federal aid or refunds on Federal fuel taxes. Figure 2.16 illustrates all funding sources that enter into Fund 6 for the financing of transportation projects in Texas.



Source: CTR[37]

Figure 2.16: Fund 6, State Highway Fund

In addition, TxDOT can finance transportation projects through debt financing, pass-through financing, toll revenues, and public-private partnerships (PPPs) or CDAs.[38]

Ports of Entry

As defined by GSA, an LPOE is a facility that provides controlled entry in and out of the United States for people and goods. It houses CBP and other Federal inspection agencies responsible for the enforcement of Federal laws. An LPOE is Federal jurisdiction and includes the land, buildings, on-site roads, and parking lots occupied by the POE. GSA is responsible for building and maintaining most of the nation's LPOEs, as well as the maintenance, repair, and management of the facilities.[39]

For major capital projects, GSA, CBP, FHWA, and USDOS have established a process to develop border master plans to assist in the prioritization of POE and transportation infrastructure projects. Border master plans are developed on a regional basis with Federal, State, and local stakeholders from both the United States and Mexico.

Border master plans have significant impact on what projects are included in CBP's annual submission of its *Land Port of Entry Modernization: Promoting Security, Travel and Trade* report. This report lays out the basis for prioritizing capital investments in the LPOE infrastructure, which factors in safety and site deficiencies in addition to operation and workload considerations. Included in the report is CBP's national list of projects that GSA and CBP have targeted for the next five years.

For those GSA Region 7 LPOE projects that are identified in CBP's list of projects targeted for the next five years, Region 7 works with the GSA Central Office to determine the possibility of requesting funds as part of GSA's Annual Capital Program submission. Through direction from the Office of Management (OMB), the GSA Central Office works to establish a budget target for LPOEs annually. Many LPOE projects have received partial funding (either for an initial phase of a multi-phase project or for site/design) and still await the remaining funding piece to complete the project. These projects are considered based on their placement on CBP's five-year plan (issued annually) and on the ability to fund per the budget target. If a project has not received any initial funding, GSA works with CBP to establish the best planning/funding scenario (projected budget year request) in the context of the overall LPOE inventory nationwide.

LPOEs must be designed in accordance with GSA's *P-100, Facilities Standards for the Public Buildings Service* and the U.S. *Land Port of Entry Design Guide*.[40] LPOEs must also conform to either the building code adopted by the local jurisdiction responsible for fire emergency services or the building code adopted by GSA. Finally, LPOEs must conform to State highway regulations.

2.7.2 Mexico

Transportation Infrastructure

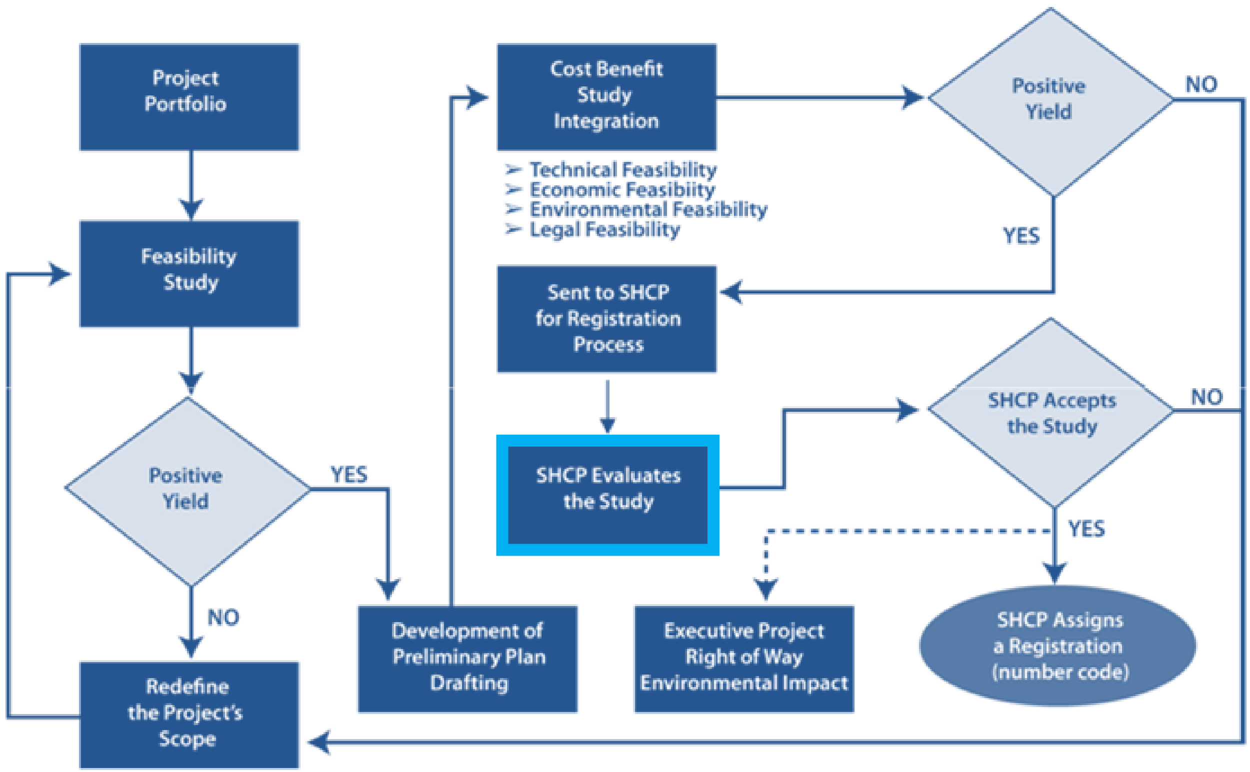
SCT has the authority for transportation planning and programming in Mexico. Transportation planning decisions consider available funding resources and the priorities established by the State SCT centers. Local agencies have minimal involvement in transportation planning and programming decisions that address medium- and long-range issues and formulate future planning solutions since they are not responsible for the development and implementation of infrastructure projects. SCT, as the agency that regulates and administers transportation activities, thus has authority and control in decision making. For example, to receive financial support, the States and municipalities must comply with Federal standards established by SCT. Contrary to the process in Texas, a dedicated funding source for transportation projects does not exist. Thus each POE project has to compete with other projects related to transportation (e.g., highways and interchanges) and non-transportation (e.g., hospitals, schools, and government buildings) infrastructure.

State governments can promote their own projects or serve as an intermediate entity between the strategic transportation planning conducted by SCT and the municipalities' needs. State government funds also represent another funding source for the municipalities, although projects frequently have to comply with State government objectives.

Municipal planning of urban development and transportation systems is therefore directed toward meeting short-term objectives since municipal administrations have a three-year or four-year tenure. The municipalities' main planning document—the Municipal Development Plan—therefore lacks long-term goals, is often not comprehensive, lacks specific milestones and objectives, and frequently does not include specific time commitments. Nevertheless, municipalities try to execute and complete as many infrastructure projects as possible because one of the efficiency measures for their administration is typically the number of infrastructure projects completed. For this reason, the organizational structure of most municipalities is directed to the construction of public works and is deficient in terms of planning structure.[41]

State and Federal governments often have a strong planning involvement with municipalities that facilitates binational commercial trade and international cross-border people movements. In these cases, State governments are usually the mediators between local and Federal agencies, and some municipalities may even request the State government become responsible for local planning. In other cases, State governments may impose planning solutions on municipalities, even when contrary to municipal expectations, because the State provides the funding.

Figure 2.17 illustrates SCT's methodology for prioritizing transportation projects for inclusion in the official SCT project portfolio. As shown in Figure 2.17, the outputs of the feasibility and cost-benefit studies are critical decision points as to whether to move forward with a transportation project.

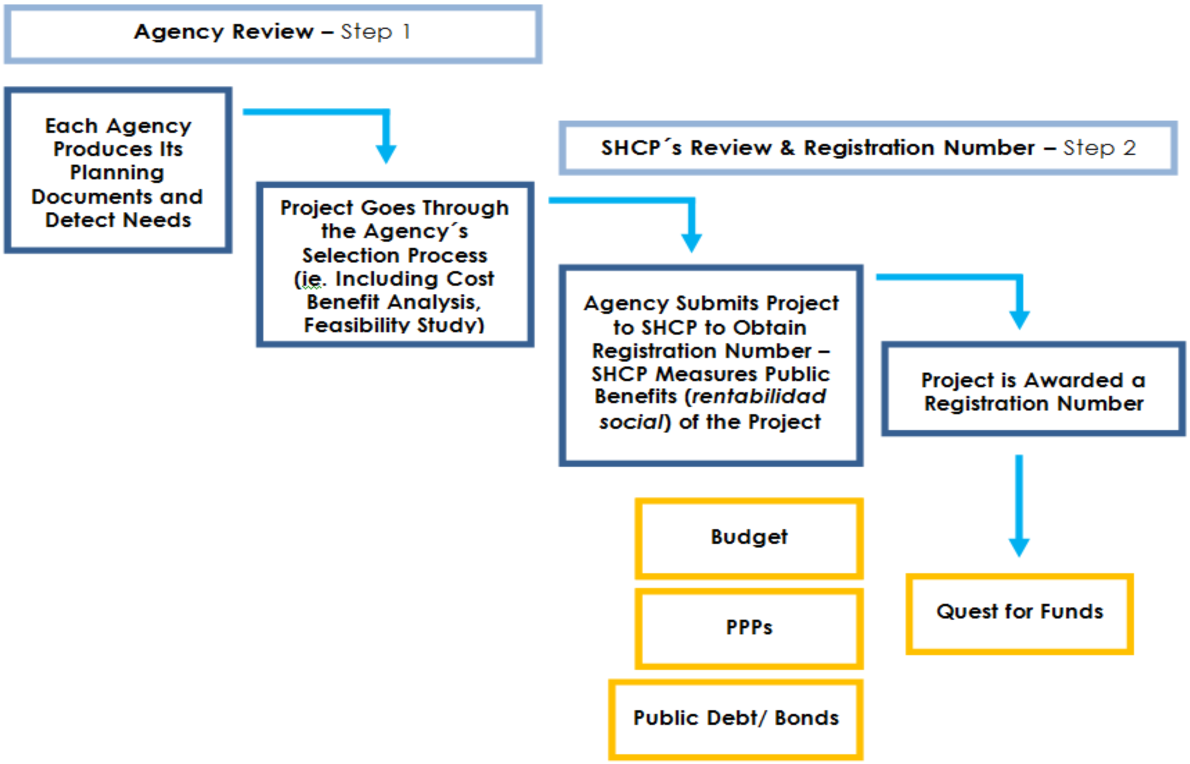


Source: SCT[19]

Figure 2.17: SCT's Decision Tree for Prioritizing Transportation Projects

On April 1, 2006, the Federal Budget and Revenue Responsibility Act (Ley Federal de Presupuesto y Responsabilidad Hacendaria) established new and concise parameters for public investments in infrastructure projects (Sistema de Inversión Pública). The Responsibility Act thus not only establishes accounting and administrative processes, but also instructs public officials to responsibly budget expenditures in compliance with the principles of legality, honesty, efficiency, efficacy, economy, rationality, austerity, and transparency, among others. The Responsibility Act requires SHCP give all projects a registration number for the project to be included in the annual Federal budget project portfolio.

SHCP has its own rules and programs that establish clear operational procedures for agencies to follow when applying for an SHCP registration number. For example, SHCP requires that the cost-benefit analysis measure public benefits (rentabilidad social) of the project. An SHCP registration number is a prerequisite for any infrastructure project to be included in the Mexican Government's project portfolio. Regardless of the funding mechanism used for the project (private, public, or a combination), a project cannot be considered without this registration number. Figure 2.18 illustrates this two-step procedure.



Source: SHCP[42]

Figure 2.18: Mexico's Two-Step Project Selection Process

Mexico does not have a dedicated funding source for transportation projects. Transportation projects thus compete with education and social programs or other infrastructure projects, among many other categories, for a share of the general revenue. An SHCP registration number does not guarantee that the project will be included in the annual budget. This lack of public funding has translated into an innovative PPP and concession-friendly environment.[43]

Contrary to funding access in Texas, State and local governments in Mexico have limited access to transportation project funding. Notwithstanding recent administrative decentralization efforts, States and municipalities still have little to no taxing authority. Public debt and bonds, when executed or issued by a local or State entity, will generally be guaranteed through Budget Account Number 28 (Ramo 28), petroleum revenue distributed by the Federation to States and municipalities. Ramo 28's revenue is distributed by SHCP to all States or municipalities by means of an irrevocable fideicomiso[44] (trust).

States and municipalities need congressional (State) or council authorization to enter into debt or issue bonds. In addition, municipalities have to sign a document titled "irrevocable instruction" that orders SHCP to repay the loan (e.g., 30 percent of the municipality's monthly Ramo 28 Federal revenues will go to the lender). Lenders generally receive repayment directly from the trust. The structure of the transaction determines each bank's or lender's priority in terms of repayment (first, second, or third priority). Because Ramo 28's revenue may differ from month to month (e.g., changing oil prices), reserve sub-accounts may be created in the trust for repayment of interest and principal. The State or municipality receives the remnants after all repayments are made. At the local level, debt levels can be dramatic. In some cases, mayors may come into power only to find that more than 70 or 80 percent of the municipality's main revenue source, Ramo 28, has been irrevocably committed to repay the loans of previous administrations.

Ports of Entry

In accordance with the Roads, Bridges and Motor Carrier Act (Ley de Caminos, Puentes y Autotransporte Federal) and Supreme Court rulings, international bridges and crossings are Federal jurisdictions. At the Federal level, the planning for and prioritization of transportation projects in the border region are accomplished independently by the various Federal agencies (SCT, SRE, Aduanas, and INDAABIN) and through interagency committees (Border Interagency Group, Base Group, and Full Group).

Whenever a new POE is being promoted, INDAABIN determines the suitability of the land for the proposed POE. However, INDAABIN's mandate does not allow the agency to purchase property. All land thus needs to be donated to the agency for negotiations to proceed. The land is generally donated by an interested municipality or a private party. Administratively, when land is donated to INDAABIN, it becomes the property of Mexico's Federal Government, which authorizes INDAABIN to build and maintain the POE and SCT to manage or concession the POE.

All donated land needs to be "clean" (no buildings or constructions) and clear of liens. However, in practice, POE promoters who wish to accelerate the process can generally start to construct the POE buildings and facilities given INDAABIN's authorization and following all agencies' instructions and manuals. Aduanas, INDAABIN, and SCT have different requirements for POE design and specifications.[45] Upon completion of the construction, the promoter needs to donate all land and improvements to INDAABIN.

If SCT concessions the POE, the POE promoters receive all international bridge tolls for a specified time period (e.g., 50 years renewable). The promoters may hire Caminos y Puentes Federales de Ingresos y Servicios Conexos (CAPUFE), an SCT entity dedicated to managing concessioned infrastructure, or another entity to manage and operate the POE facilities. If SCT does not concession the POE or the concession has expired, then the POE is managed and operated by CAPUFE. In this case, Mexico's Federal Government retains all toll proceeds except for 12.5 percent that reverts back to the municipality and another 12.5 percent that reverts back to the State to compensate the municipality and State, respectively, for any damages imposed to their infrastructure.[46] Unless otherwise specified in the concession, 100 percent of customs and related tax proceeds are retained by the Federal Government.

SCT is responsible for identifying the most appropriate funding source for building and maintaining Mexico's international bridges and border crossings based on the outcome of specific project studies and analyses. The studies include stated preference surveys to estimate value of time. The major funding sources include the public resources identified in the Federal budget, private financing through concessions, or a combination of the two funding sources.

A characteristic distinguishing Aduanas from other Mexican agencies is its project funding mechanism. The agency created an infrastructure fund in which 1 percent of all revenues obtained through its operations (e.g., taxes, duties, and import fees) are deposited. This enables Aduanas to fund projects that are considered a priority, for example, in terms of security, without competing for Federal funding against social or other infrastructure projects.

Any project wishing to use this Aduanas funding must be submitted to a senior committee composed of three executive Aduanas officials. Once the project is reviewed and approved by the senior committee, it still needs to obtain an SHCP registration number.

2.8 Public Participation

2.8.1 United States

In the United States, State, regional, and local agencies are mandated to establish processes to receive public comment and input. Formal requirements and guidelines for public involvement are included in several laws, including MAP-21, the Council of Environmental Quality regulations, and the National Environmental Policy Act (NEPA).

MAP-21 considers public involvement a hallmark and establishes opportunities for public participation in transportation decision making. MAP-21 requires that States, MPOs, public transportation providers, and resource agencies be aware of the impacts of the proposed transportation project and how it will be viewed by affected communities. It is argued that early and continuing public involvement allows project sponsors to be aware of the problems and impacts and to avoid, minimize, or mitigate issues early.[47] Specifically, USDOT guidance has argued, "If the demographics, values, and desires of a community and the impacts on the community are known early and reviewed on a continuing basis through an effective public involvement process in both the transportation planning and the project development phases, then the project sponsor can better incorporate the values and desires of the community into the design of the project."[48]

TxDOT's *Environmental Manual* (2004)[49] regards public involvement as a key element of project planning. According to the manual, public involvement shall be initiated by the TxDOT district office and will depend on and be consistent with the type and complexity of the specific transportation project (see Table 2.2). The manual also states that TxDOT district staff shall maintain a list of individuals and groups interested in transportation project development and shall provide notification of public hearing activities to these individuals and groups.

Table 2.2: Public Involvement Required for TxDOT Transportation Projects

If the project involves…	Then public involvement might be…
Minor improvements; no additional right of way	None needed
Minor improvements; a minor amount of additional right of way; projects with minor design changes; temporary easements	Meetings with affected property owners
Multiple alternatives being analyzed in an early phase; when public opinion is needed/desirable to make decisions	Public meeting
Added capacity improvements; no/little/some additional right of way needed (minimum typical for EA/FONSI)	Opportunity for public hearing
Roadway on new location; added capacity improvements; controversial projects (EA or EIS)	Public hearing

Source: TxDOT[49]

Public involvement is required and occurs during all phases of the transportation life cycle: planning, development, and implementation. At the planning phase, public input is required regarding the strategic direction and long-range objectives of the transportation agency. While it is typically more challenging to engage the public at this stage, there are tremendous value and benefits in engaging the public during this phase.

All MPOs in the Lower Rio Grande Valley area have published public participation programs that present guidance and roadmaps of processes to include residents; community and neighborhood groups and associations; non-profit groups; business-sector groups; transportation providers; Federal, State, and local government agencies; and other stakeholders to participate in a proactive, predictable planning effort that provides full access to making key transportation decisions.[50, 51, 52]

In the case of POEs, U.S. Government agencies involve the public in the decision-making process regarding POE projects as required by the NEPA process. All agencies, organizations, Native American groups, and members of the public having a potential interest in proposed POE projects are thus invited through published communications to participate in the decision-making process. CBP's Environmental Planning Program (2006)[53] guides the public opportunities for participating in decision making on proposed projects. Outreach sessions conducted by GSA and CBP are a standard component of POE project planning and execution. In addition, a 30-day public comment period allows for the public to provide written comments on shared project planning and environmental compliance information for the project. The public comment period is a requirement for conducting environmental assessments in accordance with NEPA and the general procedures for the FONSI for POE authorizations.

In the case of Texas, it is important to highlight that a pilot project under SAFETEA-LU enabled five states (California, Alaska, Ohio, Texas, and Oklahoma) to assume the role of the Federal Government during the NEPA process. MAP-21 expands the opportunity to participate in the program to all States. States that take part in this authorization can conduct their own environmental reviews, potentially saving time as a result of not having to go through multiple Federal agencies. Since MAP-21 was enacted, Texas and California have applied for delegation of Federal environmental responsibilities.[54] The American Road and Transportation Builders Association supported the applications of both states in comments submitted to USDOT.

While the reasons for non-participation by other States have varied, potential liability and litigation costs have been an overriding issue because the State must also assume Federal responsibilities for litigation over any project where delegation was used.

2.8.2 Mexico

In accordance with Article 26 of the Mexican Constitution, all planning activities should be democratic by allowing public participation of diverse social sectors and by incorporating the public's input into the development of sectoral plans (e.g., SCT's Sectoral Plan). Recently, public consultation has been accomplished by inviting associations, stakeholders, and potentially interested parties or experts to provide input regarding a planned project or a potential policy. Public consultation aimed at involving the general population typically has resulted in low participation levels. This is possibly a reflection of the fact that the population generally believes that their input will have no impact. Mexico's public participation model thus struggles to secure general population input.[55]

When soliciting public input, SCT organizes public consultation forums that bring together academic experts, associations, and other stakeholders. In addition, several task groups, councils, or committees may be created to investigate a specific project or issue in detail. SCT's Comptroller's Office (Contraloría) provides an avenue for citizens to complain or voice their opinions regarding the agency or a specific officer's functions.

Local governments and IMPLAN are mandated to involve the public in project planning and implementation. Similar to those run by SCT, public consultation forums are used to bring together academic experts, associations, and other stakeholders during a meeting or through committees that may be created to investigate a specific issue.

The Border Interagency Group, which includes Federal, State, and municipal representatives as well as private-sector stakeholders and academic experts, serves as a public consultation mechanism for the planning of new POEs. Attendance at the group's meetings is by invitation only. The group does not have a website and does not need to comply with Federal Government transparency requirements.

INDAABIN seeks the advice of the Federal operational departments, the occupants of the facility, and the Federal authorities and municipalities responsible for national, regional, and local planning in INDAABIN's development of all POE projects. In addition, INDAABIN participates in the meetings that the local governments organize to present and promote POE projects, as well as to receive comments from different public and private entities.

2.9 Other Study Area Considerations

The Focused Study Area for this Border Master Plan contains maritime ports and a case where existing infrastructure is not optimally used (at the Progreso International Bridge). This section of the document discusses a number of considerations relating to maritime ports and the Progreso Bridge.

2.9.1 Maritime Ports

Port of Brownsville

The Port of Brownsville, located 5 miles northeast of Brownsville, Texas, was officially opened on May 15, 1936. SH 48 parallels the 17-mile Brownsville Ship Channel that connects the port to the Gulf Intracoastal Waterway (GIWW). The port is the southernmost connection to the GIWW.

The ship channel was originally 32 feet deep and 200 feet wide. The turning basin is 36 feet deep and 1,200 feet wide; it is located 17 miles (14.5 nautical miles) inland from the Brazos Santiago Pass.

After World War II, the volume of agricultural produce exported at the Port of Brownsville increased as vegetable and citrus farming in the Rio Grande Valley expanded. In 1949, the GIWW was extended to the Port of Brownsville, and the ship channel was expanded to accommodate larger vessels. It currently has an authorized bottom width of 250 feet with an authorized depth of 42 feet.

Cotton, introduced to the area on a large scale in the late 1940s, saw a marked increase in the early 1950s, and for a time the Port of Brownsville became a leading exporter of cotton. During the 1970s, the southern side of the port was expanded to 350 feet wide and 1,900 feet long. By 1980, the port had 48 piers, wharfs, and docks, with 17 facilities in the Brownsville Ship Channel, 17 in the fishing harbor, and 14 on the Brownsville Turning Basin.[56]

In 2012, the Port of Brownsville handled about 7.1 million metric tons of cargo. It is a major importer of steel, most of which is then exported to Mexico by both trucks and rail. However, similar to agricultural products, steel is subject to substantial fluctuations in demand. This complicates long-term capital planning to improve the efficiency of steel handling. With careful planning, there is potential to use rail and the GIWW for steel shipments, particularly between Brownsville and Houston. Developing economies, such as Turkey, India, Mexico, and China, are some of the main destinations for raw steel exports through Texas ports.[57]

The Port of Brownsville is currently served by the Brownsville and Rio Grande International Railroad that interchanges with Union Pacific Railroad (UPRR) at its Olmito yard, with Burlington Northern Santa Fe Railway via an intermediate switch with UPRR, and with Kansas City Southern de Mexico. Dry storage warehouses, bulk liquid storage, marine repair plants, dry-docking facilities, and a grain elevator are also available at the port.

Port of Harlingen

The Port of Harlingen is located within the HSBMPO boundary, and representatives from the Port of Harlingen are ex-officio members of the MPO's Transportation Policy Committee. The Port of Harlingen provides efficient and economical transportation to destinations as close as Corpus Christi and as far as the Great Lakes. Terminal docks and other facilities serve shipments into and out of the

Port of Harlingen. Sites of up to 150 acres (on and off the Harlingen Channel) are available to industrial clients requiring attractive transportation and land lease rates. The Harlingen channel is maintained to a width of 125 feet and a depth of 12 feet (16 feet in the turning basin) and is supplied by the Arroyo Colorado, a fresh-water river.[13]

The Gulf Intracoastal Waterway

The GIWW is a 1,300-mile man-made canal along the Gulf of Mexico coastline from Brownsville to St. Marks, Florida. The GIWW links Texas ports with other state ports (see accompanying figure below). The GIWW is part of the larger Intracoastal Waterway on the Atlantic seaboard that stretches from Key West, Florida, to Boston, Massachusetts.

Texas handles more than 50 percent of the GIWW's traffic. Specifically, the 423-mile segment in Texas handles up to 90 million tons of freight annually. It enables Texas Gulf Coast ports to be key hubs for shipping throughout North America. Texas Gulf Coast ports are at the center of the State's multimodal transportation plan that includes trucking, rail, and marine shipping.

TxDOT is charged with working with other stakeholders to maintain the Texas segment of the waterway. In addition, Texas statute requires TxDOT to engage the Port Authority Advisory Committee (PAAC) when developing or implementing policies that affect Texas ports.

The PAAC, as required by Texas statute, provides a forum for the exchange of information among the ports, TxDOT, and TTC. Committee advice and recommendations guide TxDOT and TTC when they develop policies that affect Texas ports.

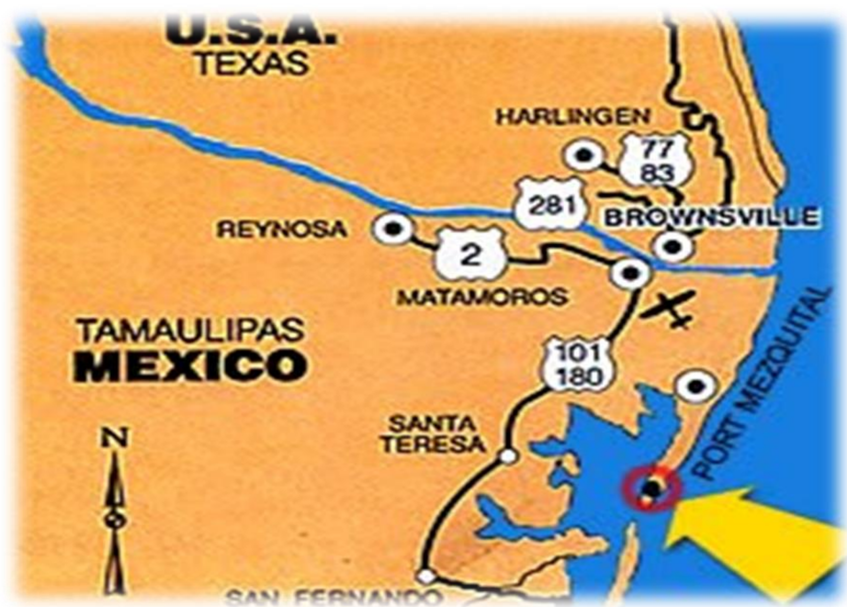
Source: TxDOT[57]

Port Isabel-San Benito Navigation District

Port Isabel is a deep-water port with a depth of 36 feet. The port was created in 1929 to lower the transportation costs of the agricultural shippers in San Benito and the marine interests of Port Isabel. Currently, the port has more than 27 tenants that employ more than 600 people. The principal mission of the port is to facilitate lower-cost transportation and provide land for industrial development.

Port of Matamoros

Figure 2.19 shows the location of the Port of Matamoros, also known locally as the Port of Bagdad or El Mezquital. During the American Civil War (1861–1865), the Port of Matamoros was one of the leading commercial ports in the world. The city changed radically after the Port of Matamoros declared itself an international free trade zone in 1858. This resulted in urbanization, industrialization, and the expansion of the port, which experienced an economic boom during the American Civil War because it was the only port through which mercenaries for the Confederate States of America could enter. After the collapse of the Confederacy, Matamoros's markets shut down, many businesses went almost bankrupt, and ships were rarely seen—a crisis that until 2011 the port seemed to have never recovered from.



Source: Nicho's Lodge[58]

Figure 2.19: Port of Matamoros (El Mezquital)

At the end of 2011, Mexican Petroleum (Petróleos Mexicanos), the state-owned petroleum company, discovered large crude-oil off-shore reserves (Supremus I and Trion I) off the coast of Tamaulipas. Tamaulipas is promoting investments to develop and dredge the Port of Matamoros and enhance the connecting transportation infrastructure.

2.9.2 Infrastructure Disconnect: Progreso-Nuevo Progreso International Bridge

The Progreso-Nuevo Progreso International Bridge links the border towns Las Flores and Progreso, Tamaulipas, and Progreso Lakes, Texas. The bridge is approximately 20 miles east of the McAllen-Hidalgo-Reynosa International Bridge.[59] Although authorization for the Progreso-Nuevo Progreso International Bridge dates back to 1928, the bridge at its current location has been in operation only since 1952. During the initial years, the bridge had relatively few pedestrian, automobile, and commercial crossings. This situation started to change in the 1970s. A new bridge structure was completed in 2003, featuring four lanes for vehicles and broader covered walkways on each side of the bridge.

In 2008, separate concrete lanes were built on the east side (the East Side Truck Lane) to remove all heavy truck traffic from the four-lane bridge. These lanes were built to handle heavier truck traffic because Mexico's truck size and weight regulations allow heavier/larger trucks than do U.S. regulations. On the U.S. side, these heavier trucks have authorization to cross to a parking lot adjacent to the bridge (see Figure 2.20).

The southbound East Side Truck Lane has never been in operation. Figure 2.20 illustrates that although all transportation infrastructure, including the inspection booths on the U.S. side, has been completed, trucks are unable to cross southbound using this special lane. Instead, the truck traffic continues to cross at the four-lane bridge, together with cars and pedestrians. The inspection booths on the Mexican side still need to be constructed; International Boundary and Water Commission (IBWC) levee regulations and determination of an appropriate location for these booths have delayed the project.

On the U.S. side, the truck lane was funded mostly from private investments. However, the following related projects were constructed with public funds:

- A $6 million investment that widened FM 1015 to four lanes from the floodway south to US 281. The project was let in March 2007 and completed in November 2008. The funding used included $2.4 million in CBI funding. FM 1015—the main connection to the bridge—is now a four-lane facility all the way to US 83.
- Operational improvements at the bridge, which used $678,444 in CBI funding, were completed in September 2010. The improvements include concrete paving to accommodate commercial truck traffic and the installation of a flashing beacon at the commercial truck exit connecting to FM 1015.

Figure 2.20: Progreso Bridge and Truck Lane Map

On the Mexican side, the customs and inspection facility is still pending. However, all transportation infrastructure (concrete lane) necessary for trucks to cross has been constructed.

2.10 Concluding Remarks

The planning of transportation infrastructure and POE projects is a binational, multi-step, multi-agency process that involves all levels of government in both the United States and Mexico. The Federal, State, regional, and local agencies on both sides of the border have different project evaluation processes in the preparation of POE and transportation planning documents. These evaluation processes range from qualitative assessments to detailed quantitative studies (e.g., feasibility studies and cost benefit analysis). Furthermore, planning horizons for POE and transportation infrastructure differ.

Collaboration and communication are thus critical to ensure coordinated project implementation. However, staff turnover, budget schedules, and bureaucratic processes have inhibited coordination in the development of POE facilities in the past. The development of border master plans represents an effort to ensure continued coordination and communication among all levels of government in developing a list of binational priorities for POEs and the transportation infrastructure serving POEs.

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Chapter 3. Demographic, Socio-economic, and Land Use Profile

This chapter of the Border Master Plan provides an overview of the current and projected demographic and socio-economic information obtained for the Lower Rio Grande Valley–Tamaulipas Border Master Plan's Area of Influence. This chapter summarizes available population, employment, income, vehicle registration, and land use data for this area. It also includes summary information for the major trade corridors that traverse the Area of Influence.

3.1 U.S. Demographic and Socio-economic Characteristics

As described in Chapter 1, the Area of Influence is made up of the border counties of TxDOT's Pharr District and the border Mexican municipalities in the State of Tamaulipas. The U.S. counties and Mexican municipalities that form the Area of Influence cover an area of 11,264.53 square miles (see Figure 3.1).

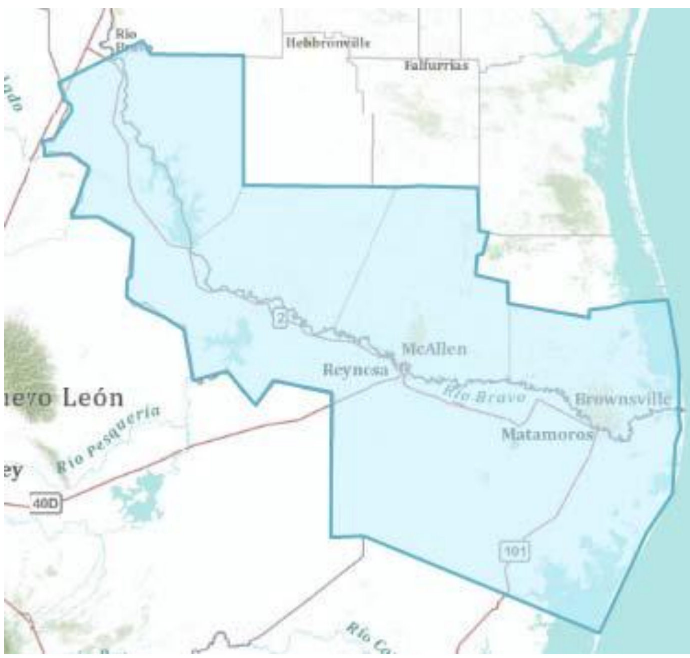


Figure 3.1: Area of Influence

The U.S. counties included in the Area of Influence are Cameron, Hidalgo, Starr, and Zapata. The U.S. Area of Influence is bordered by Webb County (part of TxDOT's Laredo District) to the northwest and the counties of Jim Hogg, Brooks, Kenedy, and Willacy (part of TxDOT's Pharr District) to the north.

The following demographic, socio-economic, vehicle registration, and land use data were obtained from the Texas State Data Center and Office of the State Demographer, the Texas Department of State Health Services, the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, and the U.S. Bureau of Economic Analysis. The demographic and socio-economic data reflect the latest available data (e.g., 2010 Census data).

3.1.1 Population

Table 3.1 shows that the total population of the U.S. counties included in the Area of Influence was 1,130,990 in 2005. Between 2005 and 2010, population in the area increased at an annual average rate of 2.1 percent to a total of 1,255,975 in 2010—or approximately 5.0 percent of Texas's total population in 2010.

It is expected that the region's population will continue to increase an average rate of 1.9 percent per year from 2010 to 2030. Hidalgo County is expected to see the highest population growth at 2.0 percent per year, while Cameron County is expected to see a population growth rate of 1.6 percent per year between 2010 and 2030. By 2030, the population in the U.S. Area of Influence is expected to reach 1,815,967, representing an increase of 559,992 people between 2010 and 2030.

Table 3.1: Population (2005–2030)

County	Year			AAGR*	
	2005**	2010	2030∞	2005–2010	2010–2030
Cameron	378,074	406,220	559,593	1.4%	1.6%
Hidalgo	677,902	774,769	1,156,580	2.7%	2.0%
Starr	61,193	60,968	80,085	–0.1%	1.4%
Zapata	13,821	14,018	19,709	0.3%	1.7%
U.S. Area of Influence	*1,130,990*	*1,255,975*	*1,815,967*	*2.1%*	*1.9%*
Texas	*22,859,968*	*25,145,561*	*37,285,486*	*1.9%*	*2.0%*

Note: * Average annual growth rate (AAGR)[1]

Source: ** Texas Department of State Health Services[2]

∞ Texas State Data Center 2012 population projections using 0.5 migration scenario[3]

3.1.2 Employment

Table 3.2 shows that 393,706 people were employed in the U.S. counties in the Area of Influence in 2005. Between 2005 and 2010, employment increased at an average annual rate of 2.3 percent to 440,957 in 2010—representing 3.9 percent of the total employment in Texas. Starr County experienced the highest average annual employment growth rate of 2.7 percent in the U.S. Area of Influence, and Zapata County experienced the lowest average annual employment growth rate of 1.5 percent.

Employment in 2030 was estimated by applying the AAGR for employment between 2002 and 2012 to the 2010 employment numbers. Between 2010 and 2030, employment in the U.S. Area of Influence is expected to increase at 2.5 percent, using the AAGR between 2002 and 2012. Employment in Hidalgo, Starr, and Zapata Counties is projected to increase at a slightly higher rate (3.1 percent, 2.6 percent, and 4.4 percent, respectively), while the average annual employment growth rate in Cameron County is expected to be slightly lower than the average at 1.4 percent (see Table 3.2).

Table 3.2: Employment (2005–2030)

County	Year			AAGR	
	2005	2010	2030*	2005–2010	2010–2030*
Cameron	129,893	142,049	188,857	1.8%	1.4%
Hidalgo	240,611	272,730	499,164	2.5%	3.1%
Starr	18,465	21,084	34,980	2.7%	2.6%
Zapata	4,737	5,094	12,019	1.5%	4.4%
U.S. Area of Influence	393,706	440,957	735,020	2.3%	2.6%
Texas	10,551,547	11,273,239	15,192,170	1.3%	1.5%

Note: * Employment projections for 2030 were determined using the AAGR between 2002 and 2012.

Source: Texas Workforce Commission[4]

3.1.3 Income

Table 3.3 shows that the average per-capita income in the U.S. Area of Influence of $16,402 was well below the statewide per-capita income of $33,220 in 2005. However, between 2005 and 2010, the average annual per-capita income increased by 5.2 percent in the U.S. Area of Influence relative to a statewide average annual increase of 2.8 percent. Although this increase narrowed the gap between the statewide per-capita income and the U.S. Area of Influence per-capita income, the gap remains wide. Between 2005 and 2010, Starr and Zapata Counties experienced, on average, an annual per-capita income growth rate higher than the annual per-capita income growth rate in Cameron and Hidalgo Counties.

Per-capita income estimates for the U.S. Area of Influence for 2030 were calculated using the 2001 to 2011 compound annual growth rate (CAGR) for the counties and were an average of 4.9 percent annually.

Table 3.3: Per-Capita Income (2005–2030)

County	Year			CAGR*	
	2005	2010	2030**	2005–2010	2010–2030**
Cameron	$18,403	$22,557	$48,143	4.2%	3.9%
Hidalgo	$17,286	$21,167	$45,060	4.1%	3.9%
Starr	$13,184	$18,457	$61,775	7.0%	6.2%
Zapata	$16,735	$22,181	$72,299	5.8%	6.1%
U.S. Area of Influence[∞]	*$16,402*	*$21,091*	*$56,819*	*5.2%*	*5.1%*
Texas	*$33,220*	*$38,222*	*$71,764*	*2.8%*	*3.2%*

Note: * Compound annual growth rate[1]

** Projections are based on 2001 to 2011 CAGR and are not adjusted for inflation.

[∞] U.S. Area of Influence per-capita income is an average of per-capital incomes of all counties in the area of influence.

Source: U.S. Department of Commerce Bureau of Economic Analysis[5]

3.1.4 Vehicle Registrations

The number of registered vehicles and the daily vehicle miles traveled in each U.S. Area of Influence county in 2006 and 2011 are shown in Table 3.4. Hidalgo County accounted for the largest number of registered vehicles and daily vehicle miles traveled, followed by Cameron, Starr, and Zapata Counties.

Between 2006 and 2011, Hidalgo County registered an additional 85,689 vehicles, Cameron County registered an additional 33,494 vehicles, Starr County registered an additional 11,188 additional vehicles, and Zapata County registered an additional 2,987 vehicles. These four counties made up 7.2 percent of the total increase in registered vehicles[6] in Texas. Daily vehicle miles traveled decreased by 1.4 percent in Texas, but increased by 4.8 percent, 5.3 percent, 1.5 percent, and 9.1 percent in Cameron, Hidalgo, Starr, and Zapata Counties, respectively.

Table 3.4: Registered Vehicles and Daily Vehicle Miles

County	Registered Vehicles		Percent Change	Daily Vehicle Miles		Percent Change
	2006	2011		2006	2011	
Cameron	238,765	272,259	14.0	5,597,186	5,868,084	4.8
Hidalgo	415,187	500,876	20.6	9,616,246	10,127,589	5.3
Starr	37,413	48,601	29.9	1,078,313	1,094,258	1.5
Zapata	9,861	12,848	30.3	390,486	426,120	9.1
U.S. Area of Influence	*701,226*	*834,584*	*19.0*	*16,682,231*	*17,516,051*	*5.0*
Texas	*20,084,036*	*21,926,312*	*9.2*	*477,769,968*	*470,844,530*	*−1.4*

Source: TxDOT[7] and Texas State Comptroller[8]

3.1.5 Land Use

Table 3.5 provides an overview of the farmland, total area, and population density in the counties in the U.S. Area of Influence and Texas as a whole. The table indicates that most of the area in Texas (approximately 78.0 percent) and in the U.S. Area of Influence (approximately 72.9 percent) is designated as farmland. The highest population densities (persons per square miles) are in Cameron and Hidalgo Counties, which are home to the Brownsville-Harlingen and McAllen-Edinburg-Mission metropolitan statistical areas. On the other hand, the population density in Starr and Zapata Counties is well below the Texas average of 96 persons per square mile (see Table 3.5).

Table 3.5: Land Use Data

County	Farmland (Square Miles)*	Land Area (Square Miles)	Population Density** (Persons/ Square Miles)
Cameron	546.0	891	456
Hidalgo	1,129.0	1,571	493
Starr	1,020	1,223	50
Zapata	718	998	14
U.S. Area of Influence	*3,413*	*4,683*	*268*
Texas	*203,748*	*261,232*	*96*

Note: * Based on 2007 Census of Agriculture statistics

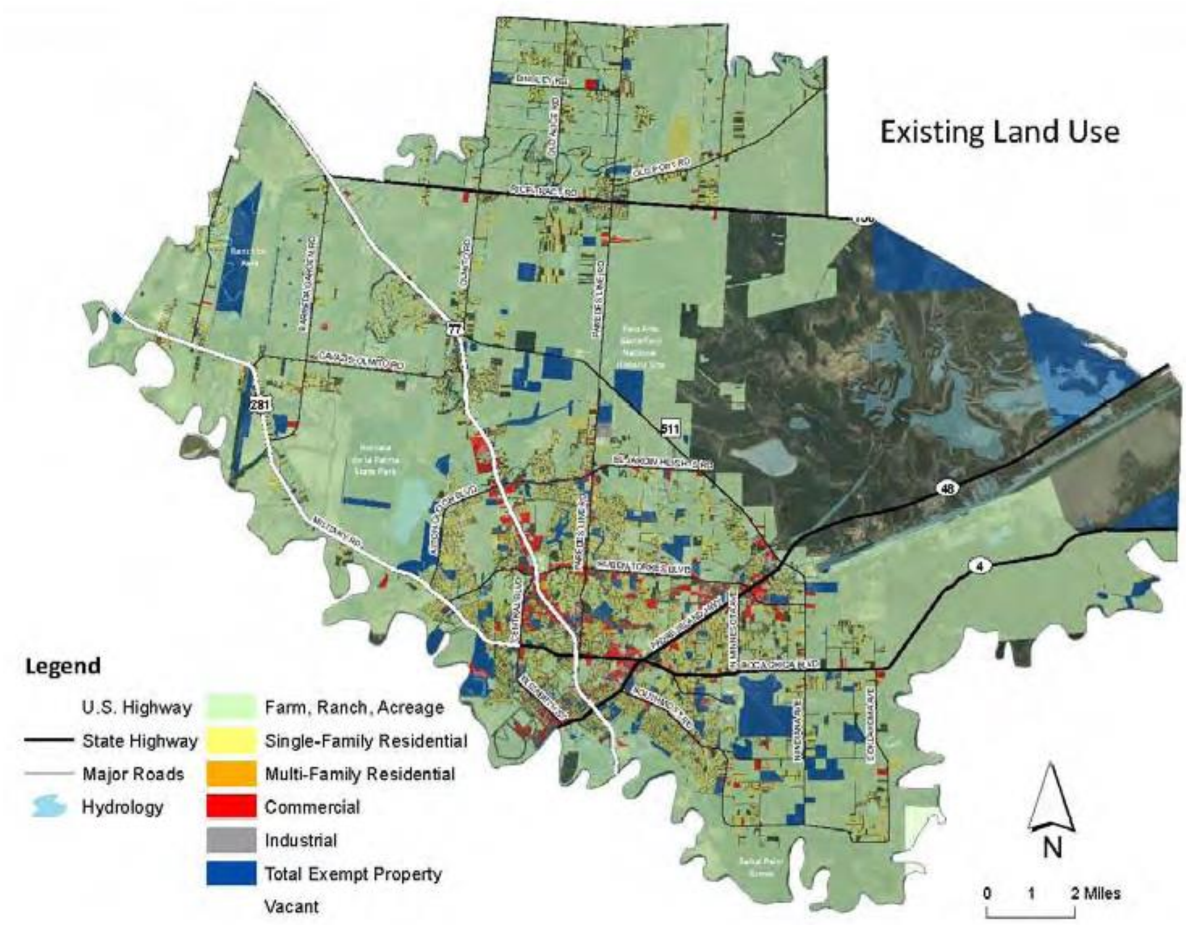
** Based on 2010 population statistics

Source: U.S. Department of Agriculture[9] and U.S. Census Bureau[10]

In addition, more detailed land use information was also obtained from BMPO, HSBMPO, and HCMPO.

BMPO encompasses the cities of Bayview, Brownsville, Indian Lake, Los Fresnos, and Rancho Viejo. The planning area covers approximately 280 square miles, extends across Cameron County, and borders with Matamoros, Mexico, and the HSBMPO area.[11] Figure 3.2 illustrates that most of the land use in the BMPO area was rural, with a large percentage of the land use classified as farm, ranch, or acreage, in 2009.

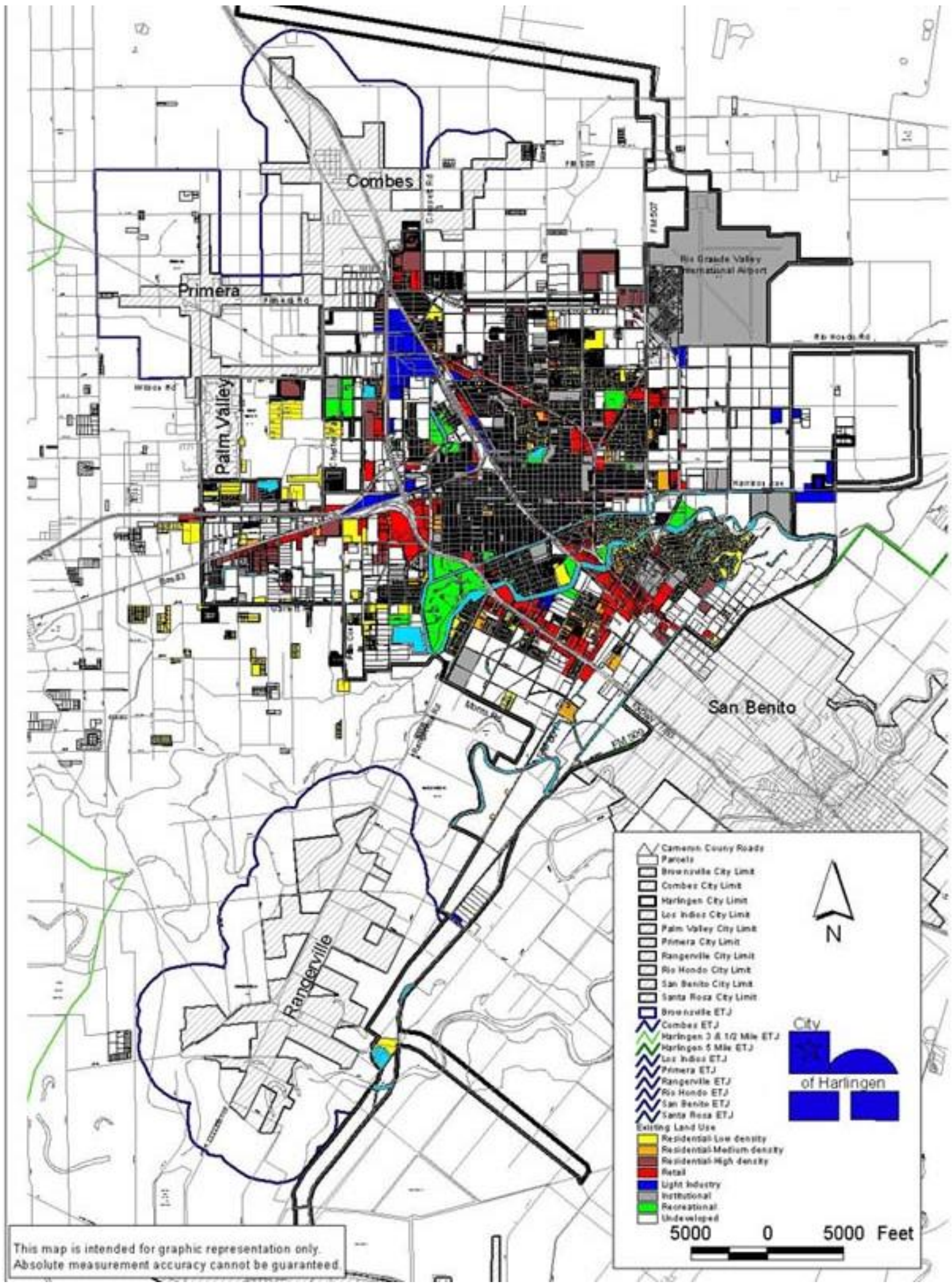
Figure 3.2 also shows that a large percentage of the land is classified as single-family residential lots. Commercial land uses are clustered in downtown Los Fresnos and along major corridors, such as US 77/US 83/IH 69E and Padre Island Highway. Tourist attractions include beaches, the Gladys Porter Zoo, museums, and the Palo Alto Battlefield National Historic Site[12].



Source: BMPO[12]

Figure 3.2: BMPO Land Use Profile (2009)

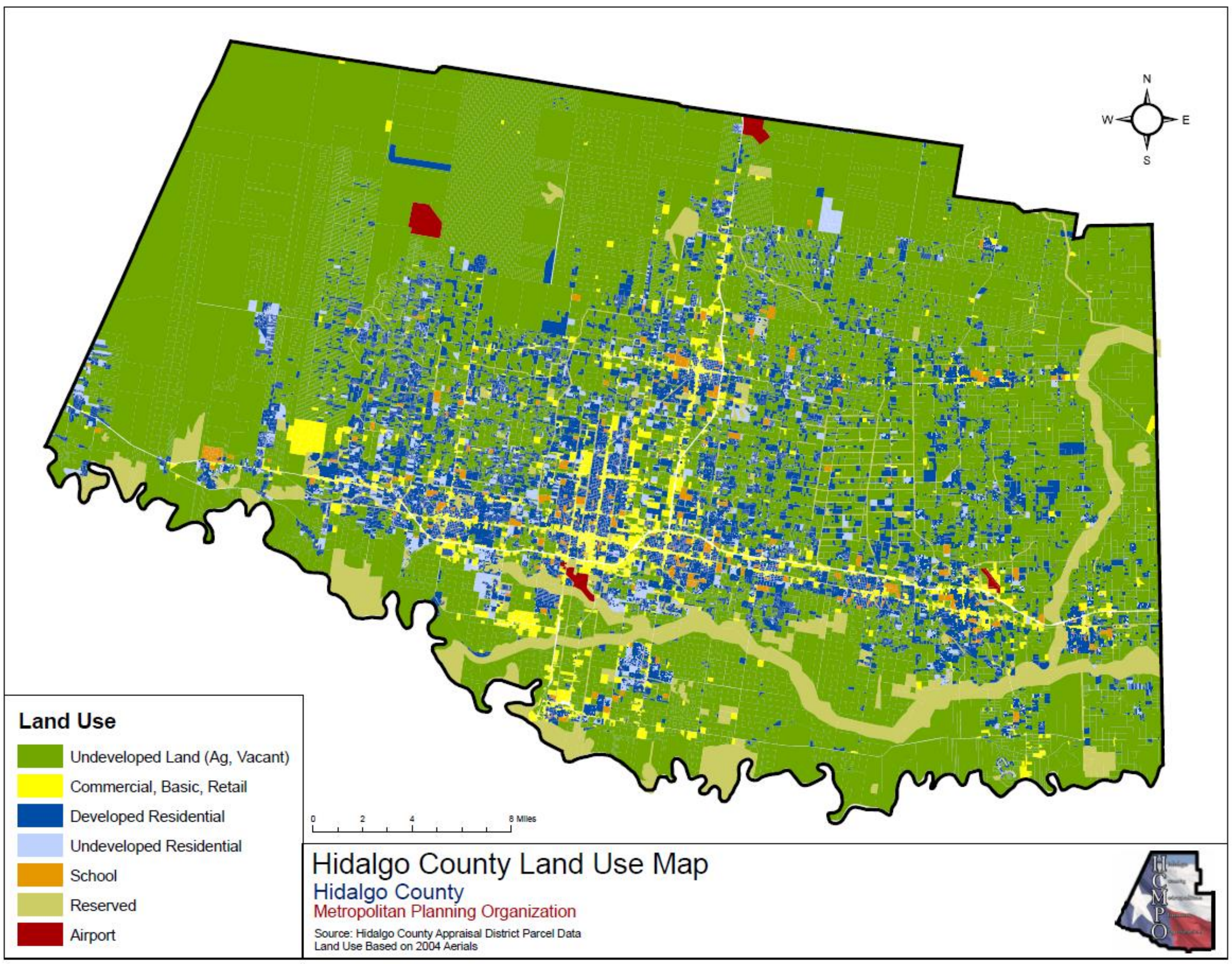
The 2000 land use map[13] for Harlingen is shown in Figure 3.3. The estimated total area is 24,957 acres. According to the City of Harlingen, 12.3 percent of the 2000 land use was low-density residential, 1.9 percent was medium-density residential, 2.8 percent was high-density residential, 6 percent was retail, 1.7 percent was industrial, 2.3 percent was recreation/public facilities, 8.9 percent was institutional, 39.2 percent was vacant land, and 24.9 percent was other uses (streets and water).[14]



Source: City of Harlingen[14]

Figure 3.3: City of Harlingen Land Use Map (2000)

Based on 2004 aerials, Hidalgo County's land use was a mix of undeveloped agricultural or vacant land, commercial/basic/retail developments, developed residential areas, undeveloped residential land, schools, reserved land, and airports. As Figure 3.4 illustrates, developed residential areas and commercial/basic/retail developments were found near the major roadway corridors such as US 83/BU 83, and US 281. Based on the input at public meetings, consultant analysis, and local expertise, Hidalgo County reached consensus on a transportation and land use vision in 2010 called the Vision Hidalgo County Scenario Planning Study, which focuses on livability and greater access to jobs and entrepreneurial opportunities. The county seeks to limit sprawl, increase urban density, conserve farm and natural areas, and diversify its housing and employment opportunities.[15] This document is available on the HCMPO website.



Source: HCMPO[15]

Figure 3.4: Hidalgo County Land Use Map (2004)

3.2 U.S. Trade Corridors

The trade corridors (current and potential) traversing the study area are the IH 69 corridor, US 281, and US 77. This section of the report summarizes salient information about these trade corridors.

3.2.1 IH 69 Corridor

The proposed 1,600-mile IH 69 corridor will connect Michigan, Indiana, Kentucky, Tennessee, Mississippi, Arkansas, Louisiana, and Texas. In Texas, the corridor starts at US 84 (in Joaquin) and US 59 (in Texarkana) and extends to Laredo and the Rio Grande Valley (see Figure 3.5). Congress has designated the highway as a High Priority Corridor and a Future Interstate Highway. IH 69 is complete through Michigan. Mississippi and Indiana have completed certain segments of IH 69, and Kentucky and Tennessee have designated portions of existing highways as IH 69. The first segment of IH 69 in Texas was on the existing US 77 from IH 37 in Corpus Christi to SH 44 in Robstown (subsequently designated IH 69E).[16]

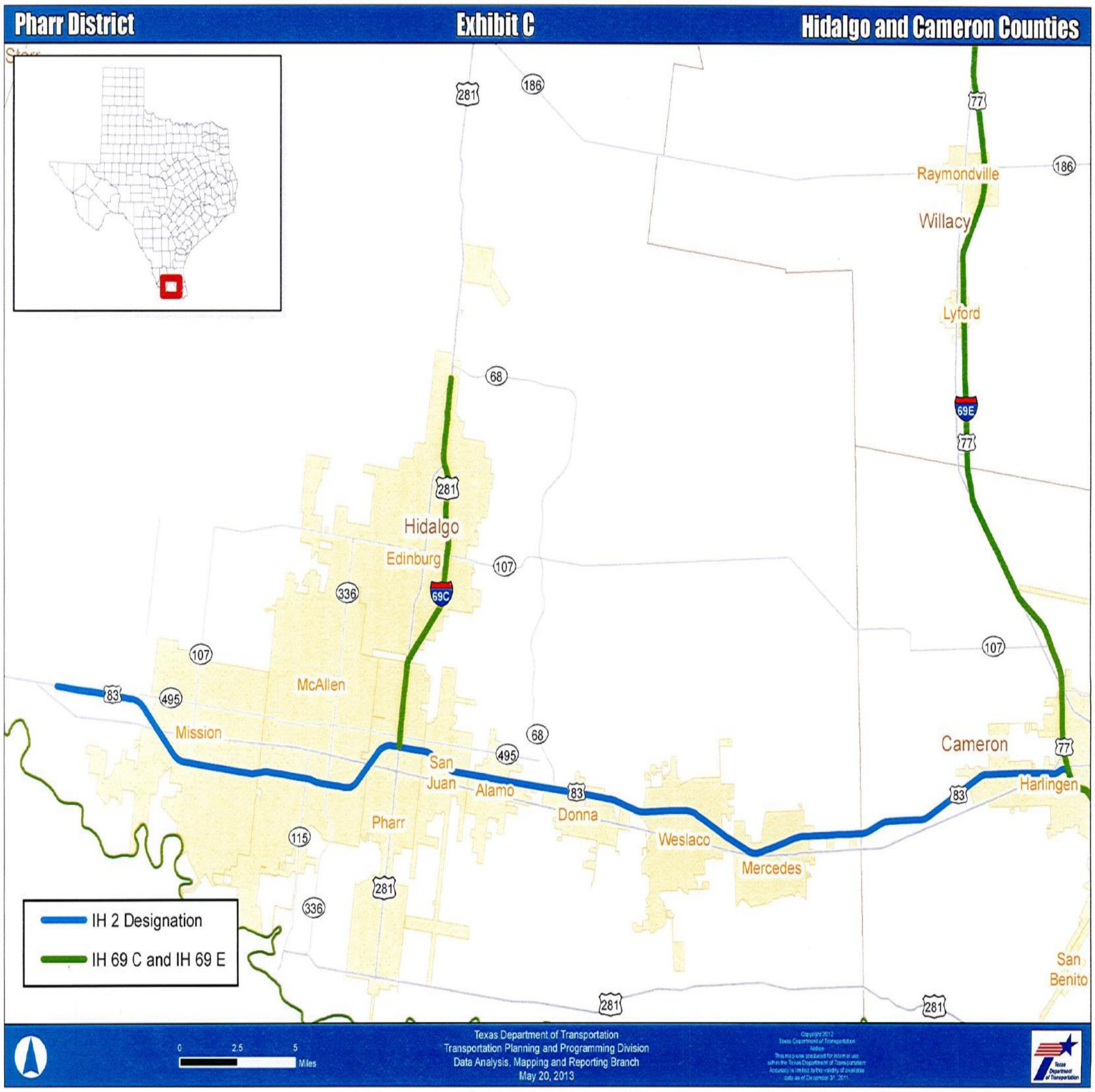
As of May 24, 2013, the American Association of State Highway and Transportation Officials and the FHWA administrator approved, and TTC ordered, that:

- A 3.5-mile segment of US 59, from IH 30 to SL 151 in Texarkana, be designated as IH 369.
- A 53.3-mile segment of US 77, from the junction of BU 77 north of Raymondville to just north of the U.S.-Mexico International Border Crossing Complex, be designated as IH 69 East (IH 69E).
- A 46.8-mile segment of US 83, from the junction of Shower Road in Palmview to US 77 in Harlingen, be designated as IH 2.
- A 13.5-mile segment of US 281, from the junction of FM 2812 in Edinburg to US 83 in Pharr, be designated as IH 69 Central (IH 69C) (see Figure 3.6).[17]

The IH 69 alignment in Texas includes multiple highway sections, but over 200 miles are built to or close to interstate highway standards. All States along the corridor are continuing to plan and develop projects along the IH 69 corridor.[16]

Source: Alliance for I-69 Texas[18]

Figure 3.5: Proposed IH 69 Corridor in Texas



Source: TxDOT (2013)[17]

Figure 3.6: IH Designations in Lower Rio Grande Valley

3.2.2 US 281

US 281 is another border-to-border route in Texas, linking the Texas-Mexico border with the North Dakota-Canada border. US 281 begins near the Texas-Mexico border in Brownsville near the intersection of US 77 and SH 48. From this point, the route proceeds north and then west along the Rio Grande, turning north near the Pharr-Reynosa International Bridge in McAllen (see Figure 3.7).

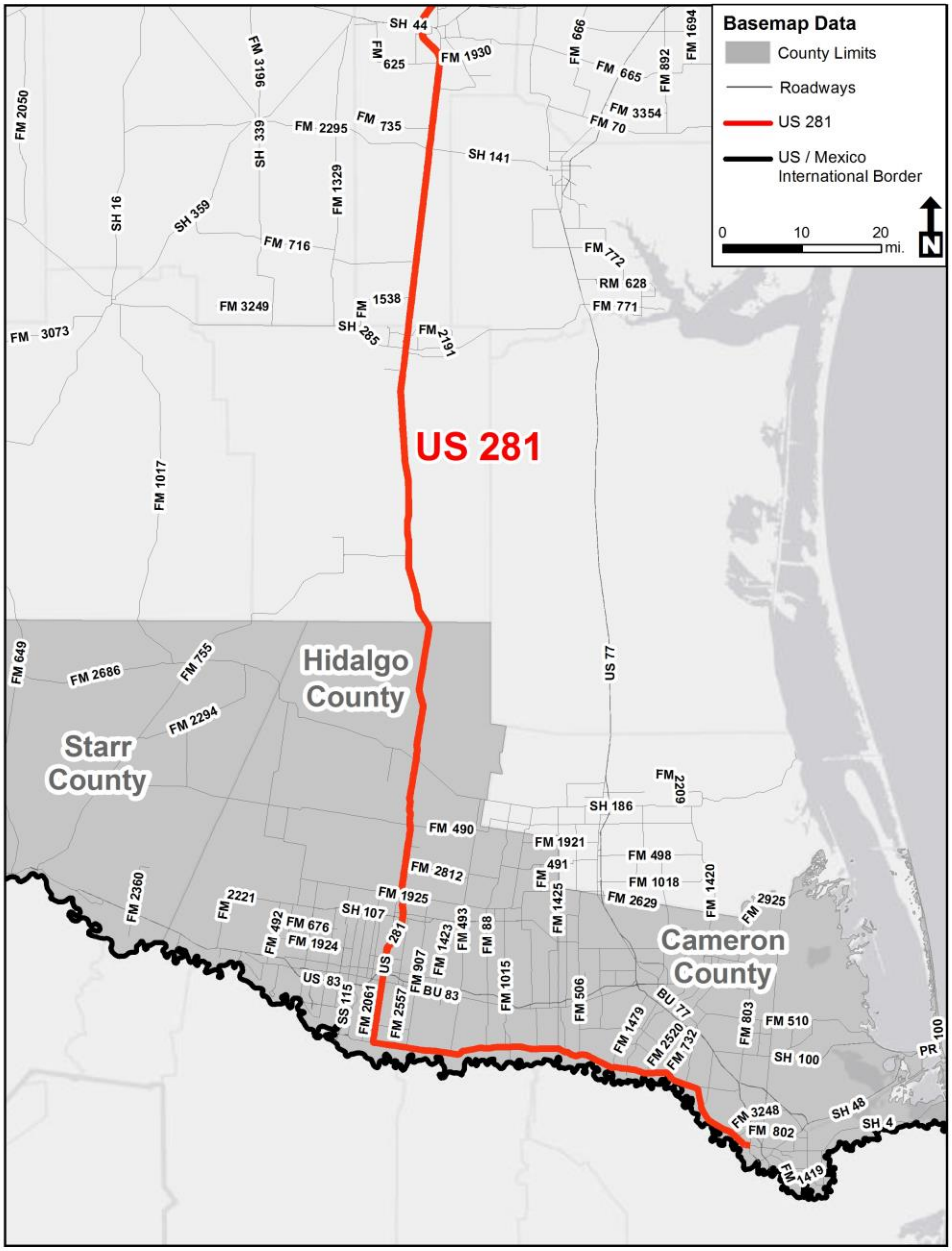


Figure 3.7: US 281 in Lower Rio Grande Valley

US 281 continues north, connecting Edinburg, Alice, San Antonio, and Blanco. It bypasses Austin and the Dallas/Fort Worth area, connecting Johnson City, Marble Falls, Lampasas, Stephenville, Mineral Wells, Jacksboro, and Wichita Falls before continuing north to Oklahoma.[19] Although some existing sections are built to freeway standards, most of the existing US 281 sections are rural two- and four-lane expressways.

TxDOT is planning to expand 48 miles of US 281 in Hidalgo and Cameron counties from Spur 600 at the Pharr-Reynosa International Bridge to SH 100 near Los Fresnos. This section of US 281 will be a four-lane divided highway just north of and parallel to the existing US 281 route. However, the planned project requires cooperation from the affected communities to secure the right of way. The planned project will alleviate traffic in the area and provide an alternative east-west route to US 83, but concerns have been expressed about potential negative impacts on businesses and landowners in the region.

3.2.3 US 77

The southern terminus of US 77 is the junction with MEX[20] 180 at the Veteran's International Bridge in Brownsville, as Figure 3.8 indicates. From there, the route merges almost immediately with US 83 and proceeds northwest to San Benito and Harlingen, where it deviates from US 83 and splits into US 77 and US 77 Business. It then proceeds north to connect to Raymondville, Kingsville, and Corpus Christi, where it briefly coincides with IH 69 and IH 37.[21] US 77 then continues northeast to Refugio, where the highway divides into US 77 (serving Victoria) and US 77 Alternate (serving Cuero and Yoakum). The highway connects again in Hallettsville and crosses IH 10 in Schulenberg, before continuing north, passing between Austin and College Station. US 77 connects with IH 35 in Waco and continues along IH 35E through Waxahachie and Dallas. In Denton, IH 35E and IH 35W reconnect. US 77 coincides with IH 35 from Denton north to Oklahoma. Some US 77 sections are constructed to Interstate Highway standards—primarily where the route follows other interstates or highways—but most of US 77 through Texas is rural two- and four-lane expressways.[21]

TxDOT has held public hearings and completed environmental assessments regarding upgrading US 77 between Harlingen and Corpus Christi to meet Interstate Highway standards and to improve safety and mobility. The proposed improvements include expansion to a four-lane divided highway and construction of new overpasses, interchanges, and frontage roads. These improvements will require approximately 689 acres of additional right of way (249 acres in Kleberg County and 440 acres in Nueces County).[22]

The addition of tolled truck lanes to the existing US 77 corridor in southern Texas was also analyzed in the *Lower Rio Grande Valley and Laredo Region Freight Study*.[23] Tolled truck lanes were considered in addition to other proposed improvements for a majority of the corridor length. The report identifies alternative alignments for tolled truck lanes east of Harlingen toward the Free Trade Bridge at Los Indios, the Port of Brownsville, and from the proposed Port of Brownsville Bridge to Mexico. Traffic projections reported in the study showed a projected increase in the percentage of truck traffic on the corridor for both the tolled and non-toll truck lanes scenarios.[23]

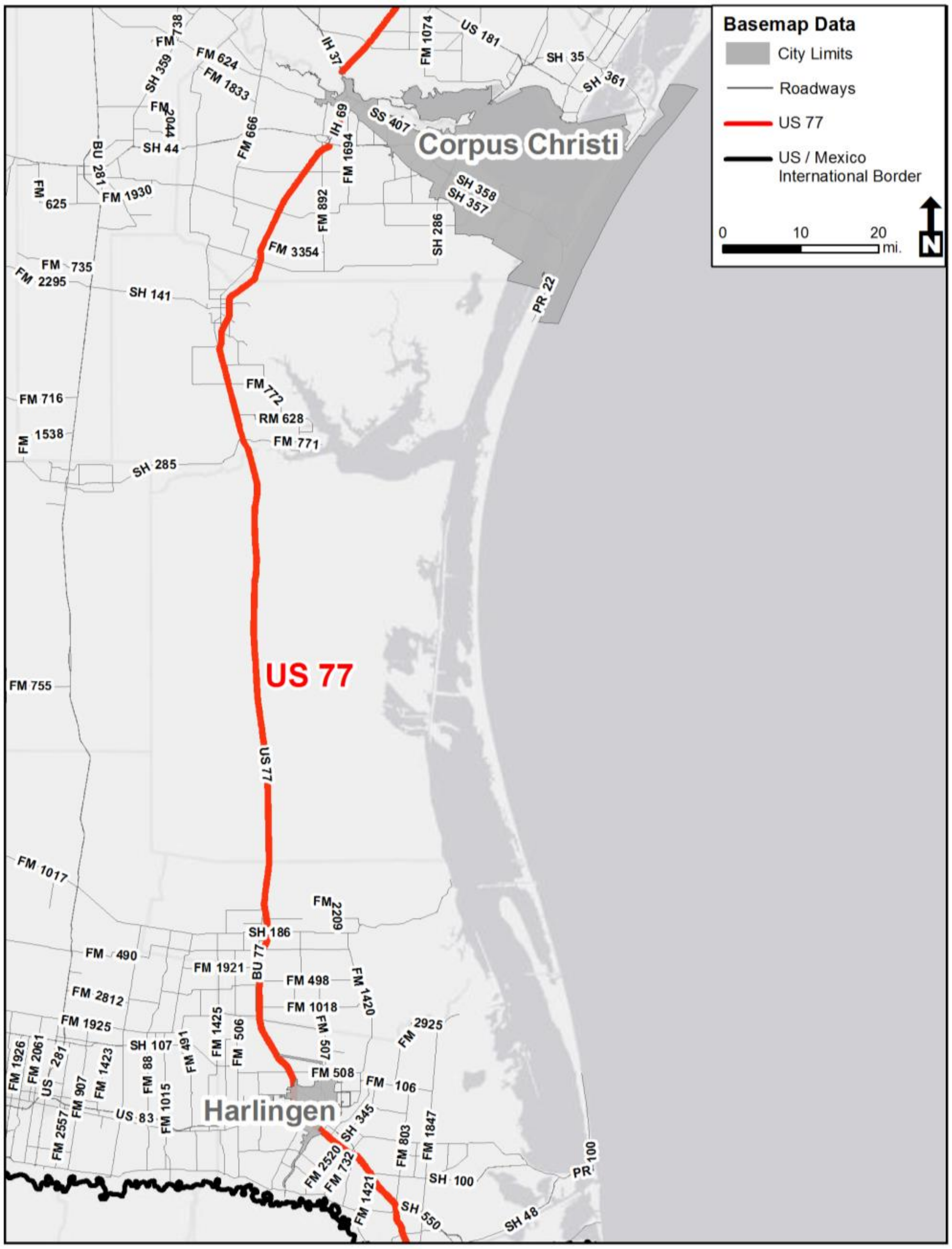


Figure 3.8: US 77 in Texas

3.3 Mexico's Demographic and Socio-economic Characteristics

The Mexican municipalities included in the Mexican Area of Influence are Camargo, Guerrero, Gustavo Díaz Ordaz, Matamoros, Mier, Miguel Alemán, Reynosa, Río Bravo, and Valle Hermoso in the State of Tamaulipas. The following demographic, socio-economic, and land use data were obtained from Consejo Nacional de Población (CONAPO), Instituto Nacional de Estadística y Geografía (INEGI), Comisión Nacional de los Salarios Mínimos (CONASAMI), and other municipal plans and documents.

3.3.1 Population

Table 3.6 shows that the total population of the Mexican municipalities included in the Mexican Area of Influence was 1,223,504 in 2005 (or about 40 percent of the total population in Tamaulipas in 2005). Between 2005 and 2010, the population of these municipalities increased at an average annual rate of 2.0 percent to a total of 1,349,496 in 2010 (or about 41.8 percent of the total population in Tamaulipas in 2010). However, the population increase was concentrated in the largest municipalities in the Mexican Area of Influence: Matamoros and Reynosa. With the exception of these two municipalities and the Municipalities of Camargo and Valle Hermoso, the total population in the remaining five municipalities decreased between 2005 and 2010. In the Municipalities of Guerrero, Gustavo Díaz Ordaz, and Miguel Alemán, the total municipal population has decreased by an average of approximately 2.0 percent or more per year between 2005 and 2010.

Table 3.6: Population (2005–2030)

State/Municipality	Year			AAGR	
	2005	2010	2030	2005–2010	2010–2030
Camargo	17,761	18,168	18,079	0.5%	0.0%
Guerrero	3,982	3,566	2,404	−2.2%	−2.0%
Gustavo Diaz Ordaz	15,387	14,020	9,364	−1.8%	−2.0%
Matamoros	463,955	499,767	607,544	1.5%	1.0%
Mier	6,672	6,365	4,984	−0.9%	−1.2%
Miguel Alemán	24,520	22,316	14,940	−1.9%	−2.0%
Reynosa	520,358	612,711	938,639	3.3%	2.2%
Río Bravo	108,100	107,414	97,407	−0.1%	−0.5%
Valle Hermoso	62,769	65,169	70,387	0.8%	0.4%
Mexican Area of Influence	*1,223,504*	*1,349,496*	*1,763,748*	*2.0%*	*1.3%*
Tamaulipas	*3,035,926*	*3,230,307*	*3,824,091*	*1.2%*	*0.8%*

Source: CONAPO[24] and INEGI[25]

Furthermore, between 2010 and 2030, the area's population is expected to increase, but at a lower rate of 1.3 percent per year to reach 1,763,748 by 2030—yielding an increase of 414,252 people between 2010 and 2030. This is partly explained by lower anticipated population growth rates in the Municipalities of Camargo, Matamoros, Reynosa, and Valle Hermoso, as well as lower anticipated populations in the five municipalities that have seen a negative population growth rate since 2005.

The decrease in population growth in the Mexican Area of Influence is similar to that anticipated for the entire State of Tamaulipas and is therefore not a phenomenon limited to the Mexican Area of Influence.

3.3.2 Employment

Table 3.7 shows that 543,679 people were employed in the Mexican Area of Influence in 2005 (representing 44.7 percent of the total employment in the State of Tamaulipas). Between 2005 and 2010, employment increased at an average annual rate of 2.2 percent to reach 604,745 in 2010 (representing 45.1 percent of the total employment in the State of Tamaulipas in 2010). Five municipalities—Camargo, Matamoros, Reynosa, Río Bravo, and Valle Hermoso—experienced an increase in employment, while employment in all the remaining municipalities decreased between 2005 and 2010.

Table 3.7: Employment (2005–2030)

State/Municipality	Year			AAGR	
	2005	2010	2030	2005 – 2010	2010–2030
Camargo	7,892	8,142	9,196	0.6%	0.6%
Guerrero	1,769	1,598	1,223	−2.0%	−1.3%
Gustavo Diaz Ordaz	6,837	6,283	4,763	−1.7%	−1.4%
Matamoros	206,164	223,959	309,027	1.7%	1.6%
Mier	2,965	2,852	2,535	−0.8%	−0.6%
Miguel Alemán	10,896	10,000	7,599	−1.7%	−1.4%
Reynosa	231,228	274,572	477,439	3.5%	2.8%
Río Bravo	48,036	48,135	49,546	0.0%	0.1%
Valle Hermoso	27,892	29,204	35,802	0.9%	1.0%
Mexican Area of Influence	*543,679*	*604,745*	*897,130*	*2.2%*	*2.0%*
Tamaulipas	*1,217,455*	*1,342,209*	*1,982,846*	*2.0%*	*2.0%*

Note: The employment information for each municipality is estimated by INEGI from the population data for the respective municipality and States' percentage of economically active population.

Source: CONAPO[24] and INEGI[25]

Similar to the population forecasts, employment is expected to increase between 2010 and 2030, but at a higher rate of 2.0 percent per year to reach a total of 897,130 by

2030—resulting in an increase of 292,385 between 2010 and 2030 (see Table 3.7). Similar to the period 2005 to 2010, employment is expected to increase in the Municipalities of Camargo, Matamoros, Reynosa, Río Bravo, and Valle Hermoso. In the remaining municipalities, a decrease in employment is anticipated.

3.3.3 Income

Limited income information is available for the State of Tamaulipas and the Mexican municipalities in the Area of Influence. The minimum annual wage in the State of Tamaulipas was MXN $46.80 per day in 2005. This number was converted into an annual wage in U.S. dollars of $1,113, assuming a six-day week for 52 weeks a year and using the average annual exchange rate reported by Banco de México, Mexico's central bank, on November 8, 2012.

Table 3.8 shows that the average minimum annual wage increased an average of 1.3 percent per year in the State of Tamaulipas and the municipalities in the Area of Influence between 2005 and 2010 to reach $1,188 per year in 2010. Between 2010 and 2012, the minimum wage increased at an average annual rate of 2.7 percent per year to reach the current $1,253. For comparison, the minimum wage in Texas is $15,080 per year (assuming a 40-hour week and 52-week year schedule).

Table 3.8: Minimum Wage Data (2005–2012)

State/Municipality	Year			AAGR	AAGR
	2005	2010	2012	2005–2010	2010–2012
Camargo	$1,113	$1,188	$1,253	1.3%	2.7%
Guerrero	$1,113	$1,188	$1,253	1.3%	2.7%
Gustavo Diaz Ordaz	$1,113	$1,188	$1,253	1.3%	2.7%
Matamoros	$1,113	$1,188	$1,253	1.3%	2.7%
Mier	$1,113	$1,188	$1,253	1.3%	2.7%
Miguel Alemán	$1,113	$1,188	$1,253	1.3%	2.7%
Reynosa	$1,113	$1,188	$1,253	1.3%	2.7%
Río Bravo	$1,113	$1,188	$1,253	1.3%	2.7%
Valle Hermoso	$1,113	$1,188	$1,253	1.3%	2.7%
Tamaulipas	*$1,113*	*$1,188*	*$1,253*	*1.3%*	*2.7%*

Note: Mexican pesos have been converted based on the exchange rate of MXN $13.11 per dollar reported by Banco de México, Mexico's Central Bank, on November 8, 2012.

Minimum wages are calculated based on 48 hours a week for 52 weeks a year.

Source: CONASAMI[26] and INEGI[25]

Table 3.9 presents the percentages of workers that have minimum wage jobs in the State of Tamaulipas. Approximately 50 percent of the working population has between one and three minimum wage jobs, earning salaries between US $1,253 and US $3,759 on a yearly basis. Tamaulipas has a high percentage of workers that earn less than the minimum wage (12.4 percent), and only 10.1 percent of its workers earn five or more minimum wages.

Table 3.9: Number of Minimum Wages Earned by Working Population in Tamaulipas (2010)

State	Number of Minimum Wages					Others	
	<1	1–2	2–3	3–5	>5	No Income	Not Specified
Tamaulipas	12.4%	25.4%	24.6%	16.7%	10.1%	5.7%	5.1%

Note: The data correspond to the entire State, not only to the municipalities in the Area of Influence.

Source: INEGI[25]

3.3.4 Land Use

Tables 3.10 and 3.11 provide land use information for the State of Tamaulipas and the municipalities in the Mexican Area of Influence. Table 3.10 shows that most of the available land in the Mexican Area of Influence (approximately 64.4 percent) is currently used for agriculture and grazing. Of the remaining land area, approximately 26 percent is not developed (designated as agricultural or urban land use), and only 1.6 percent is designated as urban (used for commercial, industrial, and residential purposes). Finally, in terms of land area, the largest urban areas are found in the Municipalities of Matamoros, Reynosa, Río Bravo, and Valle Hermoso (see Table 3.11).

In addition to the information included in Tables 3.10 and 3.11, more detailed land use information was also obtained from the Municipal Plans of Matamoros, Reynosa, and Río Bravo. Figure 3.9 and Table 3.12 provide land use information for the City of Matamoros. Table 3.12 shows that more than half (59.8 percent) of the total land in the City of Matamoros is designated as residential (very low density, low density, medium density, and high density). Land used for transportation infrastructure accounts for 16.7 percent (primary and secondary corridors) of the total land area in the City of Matamoros, industrial parks account for 8.8 percent, and urban centers account for 2.5 percent. Interestingly, the rest of the land is designated as conservation areas, safeguard areas, water bodies, and flood plains, which means that land is limited to accommodate future growth.

Table 3.10: Land Use Percentages

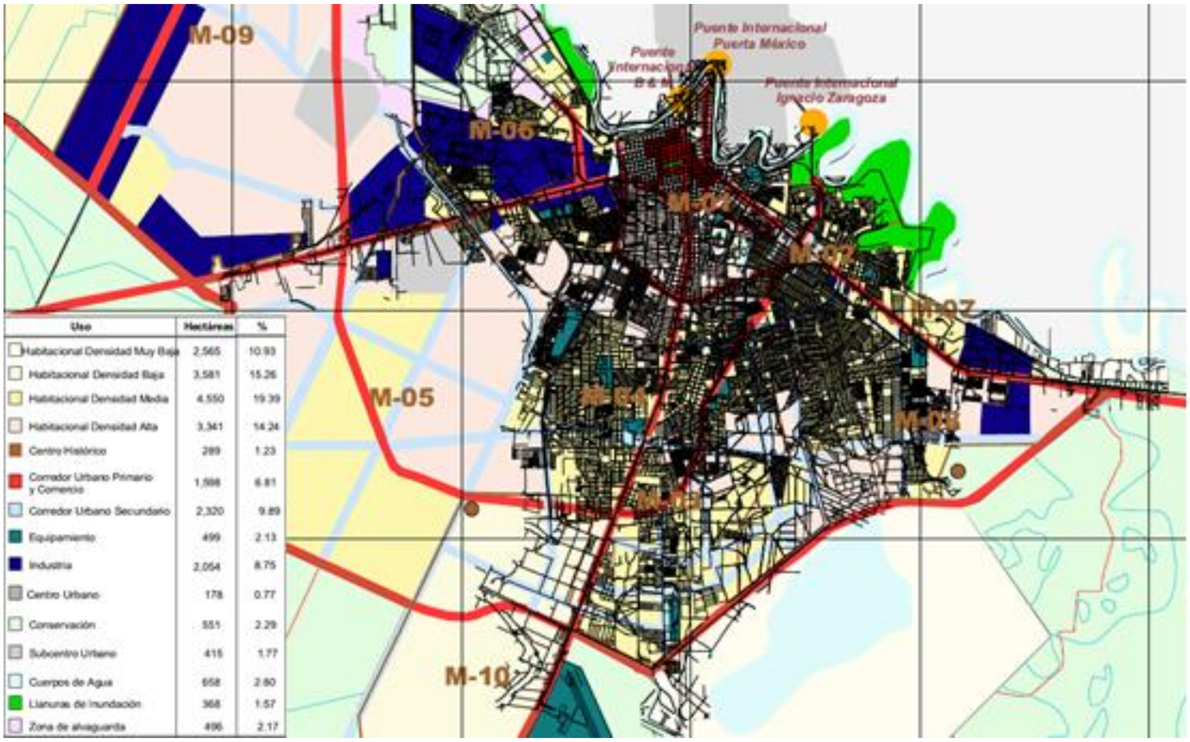
State/Municipality	Land Use Category			
	Agriculture & Grazing	Not Developed	Urban	Other
Camargo	64.0%	30.6%	0.8%	4.6%
Guerrero	43.0%	49.7%	0.1%	7.1%
Gustavo Diaz Ordaz	86.1%	12.6%	1.1%	0.2%
Matamoros	45.2%	31.7%	2.1%	20.9%
Mier	69.5%	30.0%	0.4%	0.1%
Miguel Alemán	71.9%	21.0%	0.7%	6.4%
Reynosa	77.7%	19.8%	2.3%	0.3%
Río Bravo	98.0%	0.1%	1.7%	0.3%
Valle Hermoso	95.5%	0.0%	2.7%	1.8%
Mexican Area of Influence	*64.4%*	*26.0%*	*1.6%*	*8.0%*
Tamaulipas	*46.5%*	*48.3%*	*0.9%*	*4.3%*

Source: INEGI[25]

Table 3.11: Land Use Data (2005)

Munici-pality	Area (Square Miles)											
	Agri-culture	Pasture	Forest	Jungle	Bush	Other Vegetation	Secondary Vegetation	No Vegetation	Water Bodies	Urban	Reforested	Total
Camargo	96.85	132.84	0.00	0.00	98.13	0.00	12.34	0.00	16.38	2.80	0.00	359.34
Guerrero	13.36	389.72	0.00	0.00	422.11	0.00	43.80	0.00	66.94	1.22	0.00	937.15
Gustavo Diaz Ordaz	76.58	66.72	0.00	0.00	20.80	0.00	0.12	0.00	0.37	1.87	0.00	166.46
Matamoros	732.98	75.14	0.00	0.00	34.85	451.53	22.98	58.74	374.71	38.27	0.00	1,789.20
Mier	12.09	237.14	0.00	0.00	107.76	0.00	0.00	0.00	0.24	1.29	0.00	358.52
Miguel Alemán	85.92	90.68	0.00	0.00	48.33	0.00	3.36	0.00	15.71	1.75	0.00	245.75
Reynosa	470.43	471.90	0.00	0.00	195.98	0.00	42.19	1.05	3.14	27.28	0.00	1,211.97
Río Bravo	596.61	2.48	0.00	0.00	0.71	0.00	0.00	0.00	1.42	10.19	0.00	611.41
Valle Hermoso	331.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13	9.37	0.00	347.49
Mexican Area of Influence	*2,416.81*	1,466.62	0.00	0.00	928.67	451.53	124.79	59.79	485.04	94.04	0.00	6,027.29
Tamaulipas	*7,916.95*	*6,460.33*	*1,804.75*	*2,279.86*	*5,367.33*	*908.65*	*4,537.82*	*100.02*	*1,300.94*	*278.95*	*17.22*	*30,972.82*

Source: INEGI[25]



Source: Municipality of Matamoros[27]

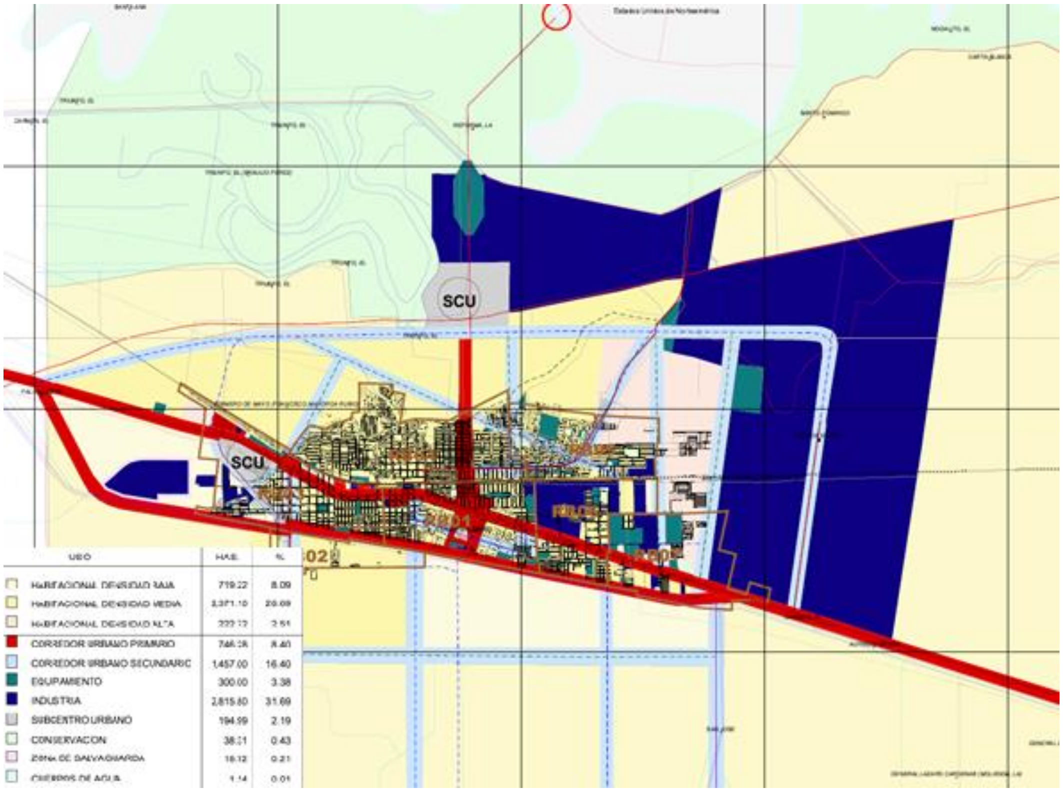
Figure 3.9: City of Matamoros Land Use Map (2001)

Figure 3.10 and Table 3.13 provide land use information for the City of Río Bravo. Unlike the City of Matamoros, less than half (37.29 percent) of the total land in the City of Río Bravo is designated as residential land use. Also, 31.69 percent of the land area is designated for industrial parks—a much larger percentage and area than what is available in the City of Matamoros. Land use for transportation facilities (24.8 percent) also accounts for a larger area compared to the City of Matamoros. On the other hand, the land designated as conservation areas, water bodies, and safeguard areas is much smaller than in the City of Matamoros, accounting for less than 1 percent of the total land area.

Table 3.12: City of Matamoros Land Use Data

Land Use Category	Percentage (%)	Area (Square Miles)
Residential Density: Very Low	10.93	9.90
Residential Density: Low	15.26	13.83
Residential Density: Medium	19.39	17.57
Residential Density: High	14.24	12.90
Historic Center	1.23	1.12
Primary Corridor	6.81	6.17
Secondary Corridor	9.89	8.96
Public	2.13	1.93
Industrial	8.75	7.93
Urban Center	0.77	0.69
Urban Sub-center	1.77	1.60
Conservation	2.29	2.13
Water Bodies	2.80	2.54
Flood Plains	1.57	1.42
Safeguard Areas	2.17	1.92
Total	*100.00*	*90.61*

Source: Municipality of Matamoros[27]



Source: Municipality of Río Bravo 2001[28]

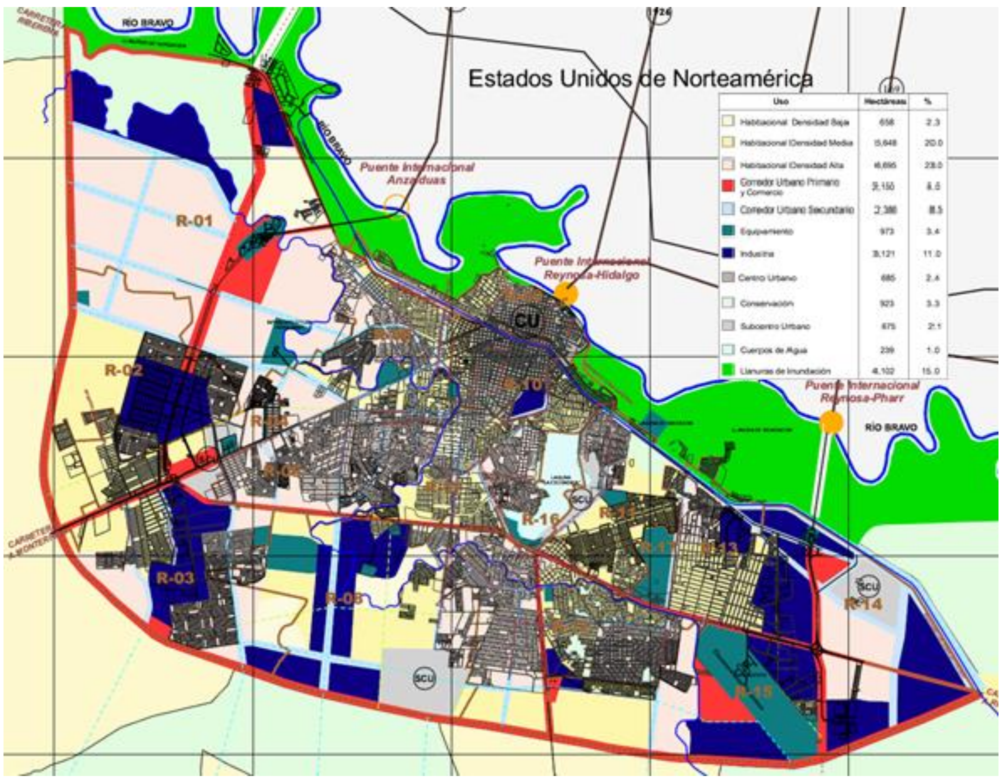
Figure 3.10: City of Río Bravo Land Use Map (2001)

Table 3.13: City of Río Bravo Land Use Data

Land Use Category	Percentage (%)	Area (Square Miles)
Residential Density: Low	8.09	2.78
Residential Density: Medium	26.69	9.15
Residential Density: High	2.51	0.86
Primary Corridor	8.40	2.88
Secondary Corridor	16.40	5.63
Public	3.38	1.16
Industrial	31.69	10.87
Urban Sub-center	2.19	0.75
Conservation	0.43	0.15
Water Bodies	0.21	0.07
Safeguard Areas	0.01	0.004
Total	*100.00*	*34.31*

Source: Municipality of Río Bravo[28]

Figure 3.11 and Table 3.14 provide land use information for the City of Reynosa. Figures 3.12 and 3.13 provide final drafts of 2012 land use maps that are still to be approved and published by this municipality. Table 3.14 shows that approximately 45.3 percent of the total land area is designated as residential. Land used for transportation infrastructure accounts for 16.5 percent (primary and secondary corridors) of the total land area in the City of Reynosa, industrial parks account for 11 percent, and urban centers account for 4.5 percent. Interestingly, a relatively large percentage of the land area (15 percent) is categorized as flood plains. The remaining land is designated as water bodies (1.0 percent) and as conservation areas (3.3 percent), which means that land is limited to accommodate future growth.



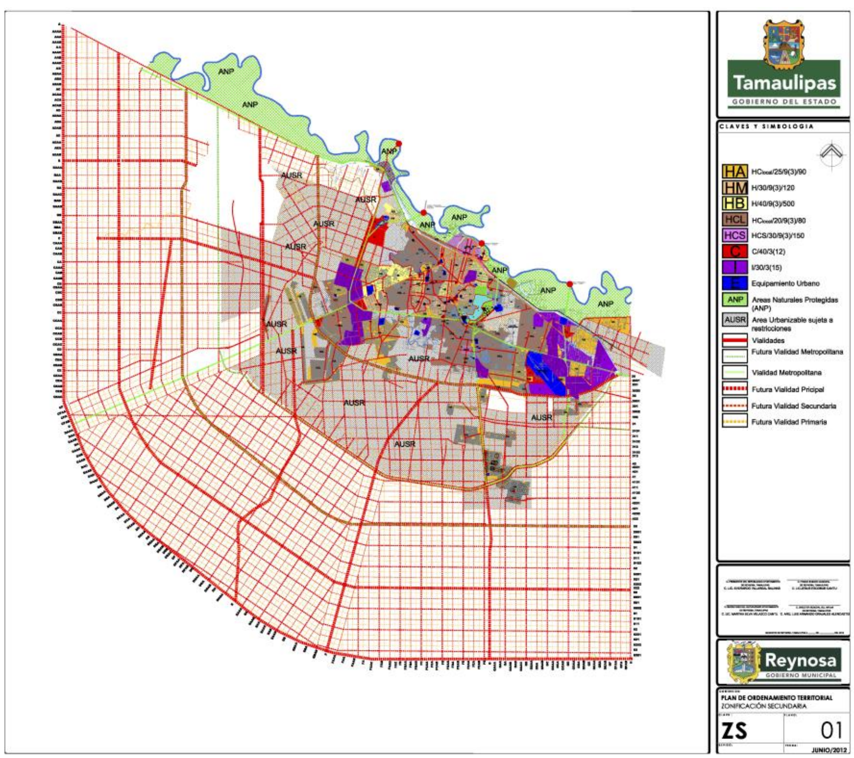
Source: Municipality of Reynosa[29]

Figure 3.11: City of Reynosa Land Use Map (2001)

Table 3.14: City of Reynosa Land Use Data

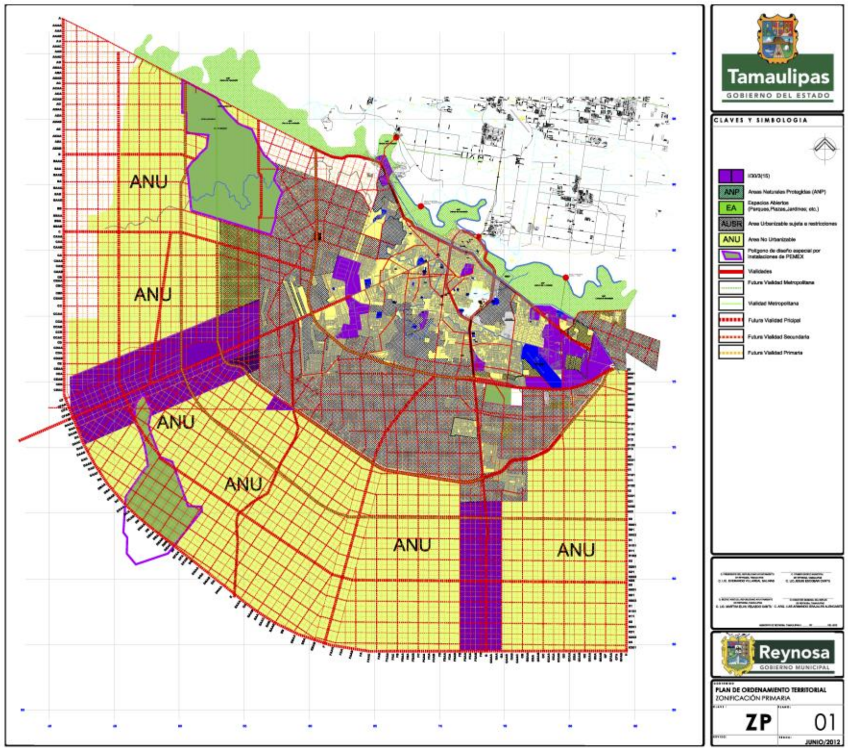
Land Use Category	Percentage (%)	Area (Square Miles)
Residential Density: Low	2.30	2.54
Residential Density: Medium	20.00	21.81
Residential Density: High	23.00	25.85
Primary Corridor	8.00	8.30
Secondary Corridor	8.50	9.21
Public	3.40	3.76
Industrial	11.00	12.05
Urban Center	2.40	2.64
Urban Sub-center	2.10	2.61
Conservation	3.30	3.56
Water Bodies	1.00	0.92
Flood Plains	15.00	15.84
Total	***100.00***	***109.09***

Source: Municipality of Reynosa[29]



Source: Municipality of Reynosa[30]

Figure 3.12: Municipality of Reynosa Land Use Map (Secondary Classification)—2012 Draft



Source: Municipality of Reynosa[29]

Figure 3.13: Municipality of Reynosa Land Use Map (Primary Classification)—2012 Draft

3.4 Mexico's Trade Corridors

3.4.1 Multimodal Corridor Master Plan

This section uses information from Mexico's Multimodal Corridor Master Plan (MCMP), which was concluded in 2010 for SCT.[31] The study was funded by the U.S. Trade Development Agency (USTDA) and conducted by Wilbur Smith Associates, with TTI; IHS Global Insight; Felipe Ochoa y Asociados, S.C.; and Romero Hicks and Galindo Abogados (RHG). The goal of the MCMP is to provide SCT with a tool to plan and promote investments in infrastructure and logistics systems that would serve the needs of Mexico's domestic market and enhance international trade with NAFTA partners and other countries.[32]

The study included several tasks that are relevant to the development of this Border Master Plan. One of the tasks involved performing a detailed analysis of current and future freight demand and supply. A lack of data required development of a freight demand model that was used to estimate:

- Freight flows through Mexico's major seaports.
- Cross-border traffic with the United States.
- Domestic freight flows with origins and destinations in Mexico.

The report stated that by 2020, Tamaulipas will be one of the 10 Mexican States[33] with the highest economic growth and that cross-border trade with the United States will grow at an average annual rate of 6 percent. This will translate into an increase of approximately 110 million tons in cross-border trade between 2010 and 2020.

The study team also performed a detailed analysis of 18 multimodal corridors in Mexico. These corridors were identified considering the spatial concentration of population and employment, as well as the existing freight transportation network and facilities. The identified corridors were evaluated qualitatively and quantitatively using multi-attribute criteria.

One of the corridors traverses the Mexican Area of Influence. This corridor extends from Mazatlán to Matamoros and traverses five Mexican States: Sinaloa, Durango, Coahuila, Nuevo León, and Tamaulipas (see Figure 3.14). Table 3.15 summarizes the results of the qualitative assessment of the Mazatlán-Matamoros corridor.

Source: SCT[31]

Figure 3.14: Mazatlán-Matamoros

Table 3.15: Summary of Qualitative Evaluation for Mazatlán-Matamoros Corridor

Criterion		Qualitative Score
Demand (freight volume)	For multimodal development	Low
	For international traffic	Low
	For long-haul movements	Low
Value of the multimodal corridor	Domestic trade	Low
	International trade	Low
	Transshipment trade	Low
	Stimulation of regional growth	Average
Shortages in current service levels compared to transport users' requirement, which increases goods' delivery time	Interlinear railway problems for freight during long hauls	Problematic
	Railroad equipment	Not available
	Railroad infrastructure	Deficient
	Delays due to at-grade railroad crossings in urban areas	Problematic
	Delays due to at-grade highway crossings in urban areas	Not problematic
	Enough logistics companies operating in the corridor	Sufficient
	Customs procedures	Not problematic
Excessive logistical costs for shippers, affecting the competitiveness of industries in Mexico and increasing prices for consumers	Railway	Not competitive
	Highway and automotive transportation	Not competitive
	Port terminals (origin/destination)	Competitive
	Domestic terminals	Competitive
	Land terminals (origin/destination)	Competitive
Inadequate infrastructure capacity, resulting in bottlenecks	Terminals for freight handling at the origin	Sufficient
	Terminals for freight handling at the destination	Sufficient
	Domestic terminals	Sufficient
	Highway network	Sufficient
Safety deficits that limit exports by not being able to satisfy new requirements or safety standards	Security deficiencies in the railroad network	Not available
	Security deficiencies in the highway network	Not problematic

Source: SCT[31]

Table 3.15 shows that the Mazatlán-Matamoros corridor was rated low in terms of demand (freight volumes) for multimodal development, international traffic, and long-haul movements. In addition, the Mazatlán-Matamoros corridor was rated fairly low as a multimodal corridor for facilitating international and transshipment trade.

The qualitative assessment was supplemented with a quantitative assessment of the 18 identified corridors using multi-attribute criteria. In the quantitative assessment, the metric used to score each criterion ranged from 8 to 24. Based on this scale and the use of six criteria, total scores ranged from 48 to 144. Corridors that scored higher than 120 were prioritized for investments in the short term, those that scored between 100 and 120 were prioritized for investments in the medium term, and those that scored below 100 were prioritized for investment in the long term. Table 3.16 summarizes the outcome of the prioritization process. As the table shows, the Mazatlán-Matamoros corridor was prioritized for investments in the long term.

Table 3.16: Summary of Quantitative Evaluation for Corridors

Corridors	Criteria to Identify the Priority Corridors						
	Future Demand	Potential Increase in Rail Participation	Potential Increase in Container Usage	Potential for National Economic Development	Connectivity	Infrastructure/ Service Quality	Total
Mexicali-Guadalajara-México City	22	22	21	17	20	19	121
Manzanillo-Guadalajara-México City	23	22	22	19	20	18	124
Lázaro Cárdenas-México City	23	20	20	18	20	22	123
Manzanillo-Gómez Palacio-Monterrey-Ciudad Juárez	16	19	19	15	19	18	106
Monterrey-Altamira/Tampico	16	18	19	16	16	17	102
Lázaro Cárdenas-Querétaro-San Luis Potosí-Monterrey-Nuevo Laredo	22	22	23	22	21	22	132
Veracruz-Querétaro	15	17	20	15	17	21	105
Veracruz-México City	21	16	19	17	21	21	115
Salina Cruz-Coatzacoalcos	15	15	15	20	14	15	94

Corridors	Criteria to Identify the Priority Corridors						
	Future Demand	Potential Increase in Rail Participation	Potential Increase in Container Usage	Potential for National Economic Development	Connectivity	Infrastructure/ Service Quality	Total
Topolobampo-Chihuahua-Ojinaga	13	16	14	17	13	15	88
Guaymas-Nogales	19	17	18	19	17	17	107
Ensenada-Tijuana	13	9	12	17	12	16	79
Lázaro Cárdenas-México City-Veracruz	11	11	11	13	16	16	77
México City-Salina Cruz-Ciudad Hidalgo	11	11	8	19	11	8	67
Veracruz-Coatzacoalcos-Mérida	8	8	8	16	11	11	61
Altamira-San Luis Potosí-Manzanillo	13	11	11	11	13	13	72
Mazatlán-Matamoros	***8***	***8***	***11***	***11***	***11***	***11***	***59***
Salina Cruz-Mérida	8	8	8	16	8	8	56

Source: SCT[31]

Each member of the SCT committee[34] assigned a weight to each criterion. The assigned weights were subsequently averaged and used to calculate the average weight attributed to each criterion (see Table 3.17). These weights were applied to the results in Table 3.16 to calculate a score based on the importance of each criterion (see Table 3.18).

Table 3.17: Criteria Weights to Evaluate Corridors

Corridors	Criteria to Identify the Priority Corridors						
	Future Demand	Potential Increase in Rail Participation	Potential Increase in Container Usage	Potential for National Economic Development	Connectivity	Infrastructure/ Service Quality	Total
Average for the Committee	22%	17%	14%	16%	18%	14%	100%

Source: SCT[31]

Table 3.18: Summary of Quantitative Evaluation for Corridors (Weighted)

Corridors	Criteria to Identify the Priority Corridors						
	Future Demand	Potential Increase in Rail Participation	Potential Increase in Container Usage	Potential for National Economic Development	Connectivity	Infrastructure/ Service Quality	Total
Mexicali-Guadalajara-México City	4.80	3.70	2.95	2.55	3.55	2.75	20.30
Manzanillo-Guadalajara-México City	4.95	3.80	2.95	3.00	3.60	2.65	20.95
Lázaro Cárdenas-México City	4.95	3.45	2.75	2.85	3.60	3.20	20.80
Manzanillo-Gómez Palacio-Monterrey-Ciudad Juárez	3.25	3.30	2.60	2.40	3.35	2.55	17.45
Monterrey-Altamira/Tampico	3.65	2.85	2.65	2.50	2.85	2.50	17.00
Lázaro Cárdenas-Querétaro-San Luis Potosí-Monterrey-Nuevo Laredo	4.85	3.70	3.20	3.50	3.60	3.20	22.05
Veracruz-Querétaro	3.25	2.95	2.65	2.40	3.10	3.05	17.40
Veracruz-México City	4.70	2.75	2.50	2.60	3.75	3.05	19.35
Salina Cruz-Coatzacoalcos	3.25	2.50	2.10	3.15	2.60	2.30	15.90
Topolobampo-Chihuahua-Ojinaga	2.90	2.75	2.00	2.65	2.35	2.30	14.95
Guaymas-Nogales	4.05	2.75	2.50	3.10	3.10	2.45	17.95
Ensenada-Tijuana	2.75	1.50	1.55	2.70	2.20	2.30	13.00
Lázaro Cárdenas-México City-Veracruz	2.13	1.60	1.60	2.67	2.40	2.40	12.80

Corridors	Criteria to Identify the Priority Corridors						
	Future Demand	Potential Increase in Rail Participation	Potential Increase in Container Usage	Potential for National Economic Development	Connectivity	Infrastructure/ Service Quality	Total
México City-Salina Cruz-Ciudad Hidalgo	2.13	1.60	1.20	3.73	1.60	1.20	11.47
Veracruz-Coatzacoalcos-Mérida	1.60	1.20	1.20	3.20	1.60	1.60	10.40
Altamira-San Luis Potosí-Manzanillo	2.67	1.60	1.60	2.13	2.00	2.00	12.00
Mazatlán-Matamoros	***1.60***	***1.20***	***1.60***	***2.13***	***1.60***	***1.60***	***9.73***
Salina Cruz-Mérida	1.60	1.20	1.20	3.20	1.20	1.20	9.60

Source: SCT[31]

Table 3.18 shows that the Mazatlán-Matamoros corridor received the second lowest score largely because of very low scores for future demand, potential increase in rail participation, and potential for national economic development. As a result, the Mazatlán-Matamoros corridor was prioritized for investments in the long term.

3.5 Bi-national Trade Corridors

The study team identified two major trade corridors in the Lower Rio Grande Valley area (see Figure 3.15). The first of these is US 281 on the U.S. side and MEX 40 on the Mexico side. US 281 is a four-lane divided highway. A 13.5-mile segment of US 281, from the junction of FM 2812 in Edinburg to US 83 in Pharr, is designated as IH 69C.[17] MEX 40 is a two-lane undivided highway. However, as each highway approaches the U.S.-Mexico border, they have been upgraded to a four- or six-lane divided facility to accommodate the high traffic volumes typically experienced in the region. The other major trade corridor in the region includes US 77 on the U.S. side and MEX 101 on the Mexico side. Both of these highways represent rural highways that have partial access control. While US 77 is a divided highway with two lanes in either direction, MEX 101 is a four-lane highway with a paved median separating the opposing traffic directions. A 53.3-mile segment of US 77, from the junction of BU 77 north of Raymondville to just north of the U.S.-Mexico International Border Crossing Complex, is designated as IH 69E.

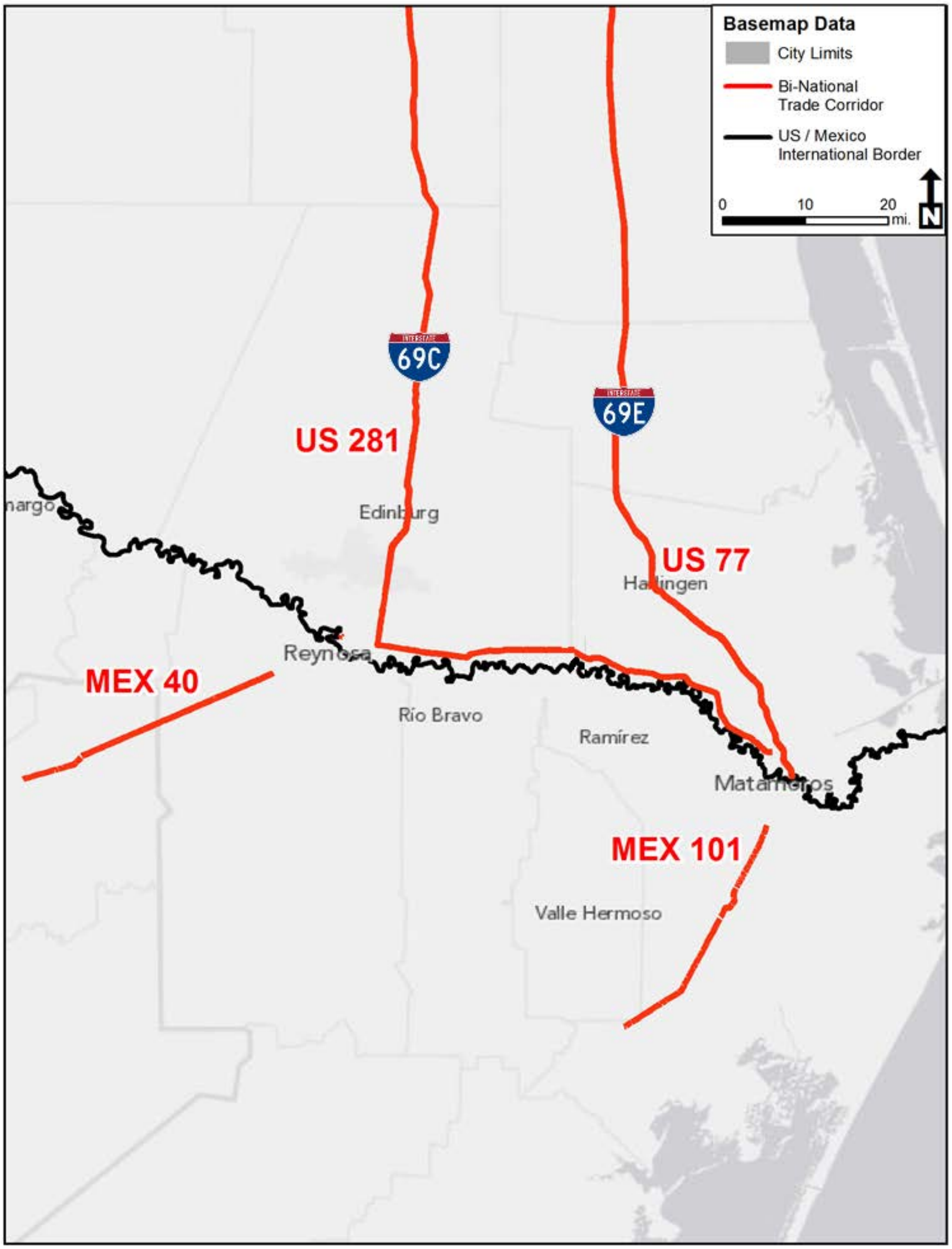


Figure 3.15: Binational Trade Corridors

3.6 Concluding Remarks

Between 2010 and 2030, the total population and total employment in the Area of Influence are anticipated to increase by approximately 43.2 percent and 51.9 percent, respectively. Total population in the Area of Influence is expected to increase from 2,612,769 in 2010 to 3,741,504 in 2030—an increase of 1,128,735 people. Total employment in the Area of Influence is expected to increase from 1,115,023 in 2010 to 1,694,143 in 2030—an increase of 579,120 employment opportunities.

Given the major trade corridors traversing the study area and the anticipated increase in population and employment in the study area, the existing capacity of existing POEs and the transportation facilities serving these POEs might be strained in the future. Chapter 4 provides an overview of the current POEs and the transportation facilities serving these POEs.

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1 "The annual average growth rate, abbreviated as AAGR and more accurately known as the compound annual growth rate, shows an average value for the annual rate of change over a period of time (typically several years) allowing for the compound effect of growth. This rate facilitates comparisons of rates of change for periods of different lengths, for example, comparing annual, five-yearly and ten-yearly rates of change. This rate is calculated by taking the nth root of the rate of change (as a percentage) between the value at the beginning and end of the period, where n is the number of years between the beginning the two values." From European Commission, Glossary: Annual Average Growth Rate (AAGR), Statistics Explained, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Compound_annual_growth_rate (accessed June 2013).

2 Texas Department of State Health Services, Texas Population, 2005, http://www.dshs.state.tx.us/chs/popdat/ST2005.shtm (accessed June 2013).

3 Texas State Data Center, Texas Population Projections Program, http://txsdc.utsa.edu/Data/TPEPP/Projections/Index.aspx (accessed June 2013).

4 Texas Workforce Commission, TRACER, http://www.tracer2.com/ (accessed June 2013).

5 U.S. Department of Commerce Bureau of Economic Analysis, BEARFACTS, http://www.bea.gov/regional/bearfacts/action.cfm (accessed June 2013).

6 From 2005 to 2010, the county accounted for 6.3 percent of Texas's population increase.

7 TxDOT, District and County Statistics (DISCOS), http://www.txdot.gov/inside-txdot/division/finance/discos.html (accessed October 29, 2012).

8 Texas State Comptroller, Texas in Focus: South Texas—Infrastructure, http://www.window.state.tx.us/specialrpt/tif/southtexas/infrastructure.html (accessed October 29, 2012).

9 U.S. Department of Agriculture, 2007 Census of Agriculture, http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Texas/ (accessed September 2012).

10 U.S. Census Bureau, State and County QuickFacts, http://quickfacts.census.gov/ (accessed September 2012).

11 BMPO, 2010–2035 Brownsville Metropolitan Transportation Plan, adopted December 9, 2009.

12 BMPO, Transportation and Land Use Study, September 2009, http://content.lib.utah.edu/cdm/ref/collection/FHWA/id/2081 (accessed August 2013).

13 A Future Land Use Plan for 2020 was also developed by the City of Harlingen based upon anticipated growth and known planned infrastructure improvements. This map is available in Harlingen's Vision 2020 Comprehensive Plan document.

14 City of Harlingen, Harlingen's Vision 2020 Comprehensive Plan, Planning and Zoning Division, 2002, http://www.myharlingen.us/default.aspx?name=pz.comprehensivemaster (accessed August 2013).

15 HCMPO, Vision Hidalgo County—Scenario Planning Study (2010), http://www.hcmpo.org/files/Studies/ScenarioPlanning.pdf (accessed August 2013).

16 TxDOT, I-69 Segment Four and Five Committee Report and Recommendations, http://ftp.dot.state.tx.us/pub/txdot-info/pub_inv/committees/i69/seg45_final.pdf (accessed October 23, 2013).

17 Texas Transportation Commission, Minute Order Number 113584, May 30, 2013.

18 Alliance for I-69 Texas, I-69 System Segments Now Part of National Interstate Highway System, http://www.i69texasalliance.com/ (accessed May 2012).

19 The American Main Street. US Highway 281 Texas, http://www.ushwy281.com/2010/01/us-highway-281-texas.html (accessed October 29, 2012).

20 The Federal highway system in Mexico is denoted with the letters MEX.

21 TexasEscapes.com, Route 77: The Padre Road, http://www.texasescapes.com/TRIPS/Route-77-The-Padre-Road.htm (accessed October 2012).

22 TxDOT, US 77 from Kingsville to Driscoll Project, http://www.txdot.gov/business/partnerships/current-cda/us77-upgrade.html (accessed June 2012).

23 A summary of the U.S. 77 Interstate Tolled Truck Lane Study was included in the Lower Rio Grande Valley and Laredo Region Freight Study. TxDOT, *Lower Rio Grande Valley and Laredo Region Freight Study*, HNTB, July 2011.

24 CONAPO, http://www.conapo.gob.mx/ (accessed June 2013).

[25] INEGI, Anuario de Estadísticas por Entidad Federativa 2011, http://www.inegi.org.mx/ (accessed June 2013).

[26] CONASAMI, Salarios Mínimos, http://conasami.gob.mx/salarios_minimos.html (accessed August 2013).

[27] Municipality of Matamoros, Plan Municipal de Ordenamiento Territorial y Desarrollo Urbano—Matamoros, 2001, http://seduma.tamaulipas.gob.mx/wp-content/uploads/2011/11/Plan_municipal_matamoros.pdf (accessed August 2013).

[28] Municipality of Río Bravo, Plan Municipal de Ordenamiento Territorial y Desarrollo Urbano, 2001, http://seduma.tamaulipas.gob.mx/wp-content/uploads/2011/11/Plan_municipal_rio_bravo.pdf (accessed August 2013).

[29] Municipality of Reynosa, Plan Municipal de Ordenamiento Territorial y Desarrollo Urbano, 2001, http://seduma.tamaulipas.gob.mx/wp-content/uploads/2011/11/Plan_municipal_reynosa.pdf (accessed August 2013).

[30] Municipality of Reynosa, Plan Municipal de Ordenamiento Territorial y Desarrollo Urbano, (forthcoming), draft copy obtained through private correspondence on September 2012.

[31] SCT, 2010, www.sct.gob.mx/ (accessed June 2013).

[32] "The methodology developed during the study provides the SCT with a tool that can be used to prioritize multimodal corridors for future development based on pre-defined criteria and guide investments and actions needed to make the multimodal transportation system in Mexico more efficient." SCT, Mexico's Multimodal Corridor Master Plan, 2010, obtained through private correspondence in January 2011.

[33] Mexico has 31 States and one Federal district.

[34] The SCT committee was made up of officials from the following SCT divisions: Rail (three officials), Planning (one official), Ports (two officials), Freight (one official), and the Mexican Transportation Institute (one official).

Chapter 4. Current POEs and Related Transportation Facilities

U.S.-Mexico trade amounted to almost $494 billion in 2012, 60 percent of which crossed at a Texas LPOE. In 2012, the total value of U.S.-Mexico trade that crossed by surface mode in Brownsville was $13.8 billion: $8.2 billion in exports and $5.6 billion in imports. In Hidalgo, the total value of U.S.-Mexico trade that crossed the border was $25.6 billion: $10.0 billion in exports and $15.6 billion in imports. Rio Grande City, Progreso, and Roma accounted for a combined $699.0 million in U.S.-Mexico trade: $340.5 million in exports and $358.5 million in imports.[1]

This chapter of the Border Master Plan describes the current and projected conditions of the five POEs (as defined by CBP) in the Focused Study Area—Brownsville, Hidalgo, Progreso, Rio Grande City, and Roma—and the current and anticipated transportation infrastructure that serves these POEs.

The Focused Study Area has 13 vehicular or pedestrian bridges/crossings and 2 rail bridges. The two rail bridges are the B&M Bridge and the Brownsville West Rail Bypass International Bridge, which is currently under construction. The rail carriers operating in the study area are Burlington Northern Santa Fe Railroad (BNSF), UPRR, Brownsville and Rio Grande International Railroad (BRG), and Kansas City Southern de Mexico (KCSM). The bridges are listed in Table 4.1, and their locations are illustrated in Figure 4.1.

Table 4.1: Number of Bridges/Crossings in Focused Study Area

U.S. Counties/ Mexican Municipalities	Number of Vehicular or Pedestrian Bridges	Number of Rail Bridges
Cameron/Matamoros	4	2
Hidalgo/Río Bravo, Reynosa	6	0
Starr/Gustavo Díaz Ordaz, Camargo, Miguel Alemán, Mier, Guerrero	3	0
Zapata/Guerrero	0	0
Total	*13*	*2*

Source: TxDOT[2]

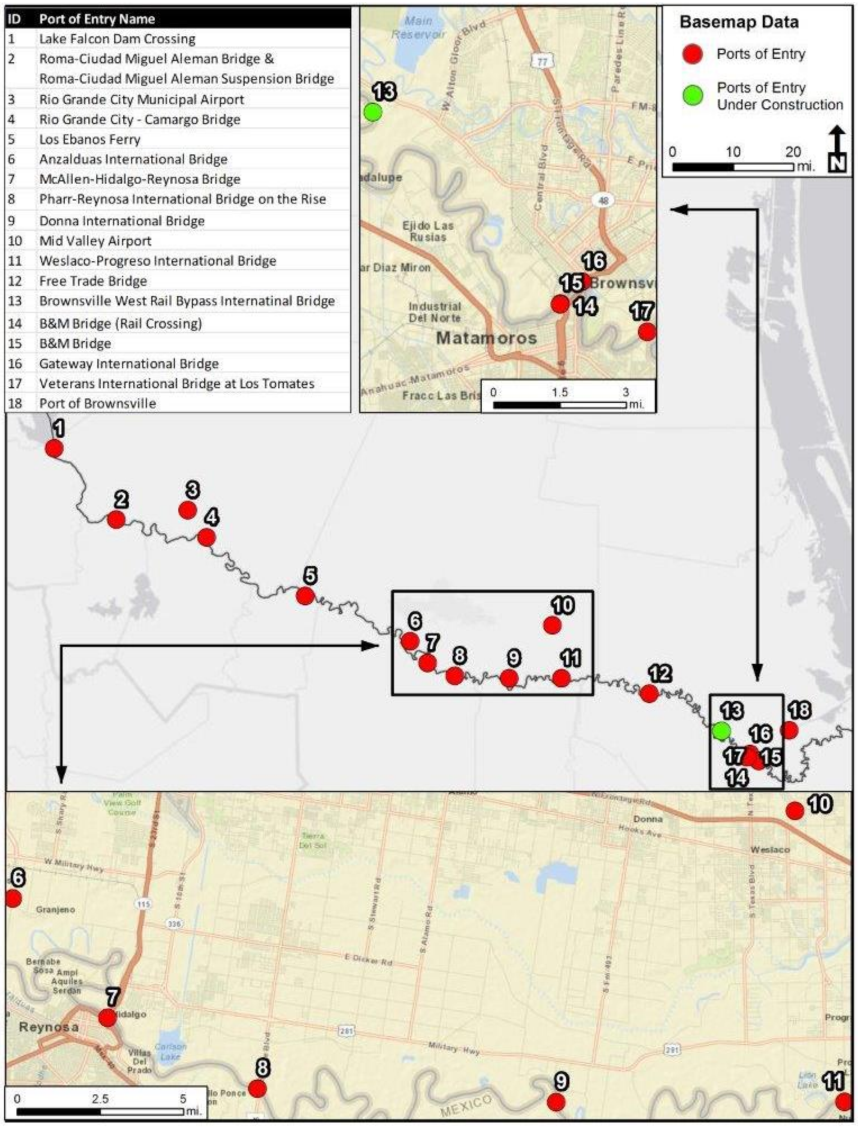


Figure 4.1: Location of Bridges/Crossings in Focused Study Area

Table 4.2 presents the current number of lanes/rail tracks and the number of booths by bridge/crossing in the Focused Study Area. The Donna International Bridge has the most lanes (9), and the McAllen-Hidalgo-Reynosa Bridge has the most northbound booths (17). This table also specifies the number of Secure Electronic Network for Travelers Rapid Inspection (SENTRI) lanes, which provide expedited customs processing; and Free and Secure Trade (FAST) lanes, which are designed to quickly clear low-risk shipments.

Table 4.2: Characteristics of Bridges/Crossings in Focused Study Area

Bridge	Total Number of Inbound Lanes (POV and Cargo combined)	Total Number of Inbound Booths* (POV and Cargo combined)	Number of Inbound Pedestrian Turnstiles	Number of FAST Lanes**	Number of POV SENTRI Lanes***	Number of Pedestrian SENTRI Lanes	Number of Outbound Lanes (POV and Cargo combined)	Number of Outbound Booths (POV and Cargo combined)
Veterans International Bridge at Los Tomates	8	8	1	1	1	0	6	2
Gateway International Bridge	5	5	4	0	0	0	3	1
B&M Bridge	4	4	1	0	0	0	3	1
B&M Bridge (Rail Crossing)	1	1	0	0	0	0	1	1
Free Trade Bridge	8	8	1	1	0	0	2	1
Brownsville West Rail Bypass International Bridge (under construction)	1	1	0	0	0	0	1	1
Weslaco-Progreso International Bridge	7	5	4	0	0	0	2	0
Donna International Bridge	4	4	4	0	0	0	2	1
Pharr-Reynosa International Bridge on the Rise	3	12	1	1	1	0	1	4****
McAllen-Hidalgo-Reynosa Bridge	4	12	5	0	1	1	3	6*****

Bridge	Total Number of Inbound Lanes (POV and Cargo combined)	Total Number of Inbound Booths* (POV and Cargo combined)	Number of Inbound Pedestrian Turnstiles	Number of FAST Lanes**	Number of POV SENTRI Lanes***	Number of Pedestrian SENTRI Lanes	Number of Outbound Lanes (POV and Cargo combined)	Number of Outbound Booths (POV and Cargo combined)
Anzaldúas International Bridge	2	4	2	0	1	0	2	5
Los Ebanos Ferry	1	1	1	0	0	0	1	0
Rio Grande City-Camargo Bridge	5	5	2	0	0	0	4	0
Roma-Ciudad Miguel Alemán Bridge	6	5	1	0	0	0	2	0
Lake Falcon Dam Crossing	3	3	0	0	0	0	2	1

Note: * All booths are not necessarily staffed by CBP during bridge/crossing hours of operation.

** FAST, a commercial clearance program, provides for expedited trade processing while ensuring safety and security.

*** SENTRI provides expedited CBP processing for pre-approved, low-risk travelers.

**** Total of eight, but four are operational

*****Total of eight, but two are not operational

Source: CBP[3]

The bridges/crossings were grouped according to the U.S. county/Mexican municipality in which they are located. Thus, the four areas covered are Cameron County/Municipality of Matamoros; Hidalgo County/Municipalities of Valle Hermoso, Reynosa, and Díaz Ordaz; Starr County/Municipalities of Camargo and Miguel Alemán; and Zapata County/Municipality of Guerrero.

Notes:

1. The bridge crossing sections reflect the latest data available from CBP (northbound bridge crossings) and Texas A&M International University's Texas Center for Border Economic and Enterprise Development (southbound bridge crossings). Southbound bridge crossing data were not available for all modes.
2. TxDOT's 2010 TLOG database provided 2010 and 2030 AADT and percent truck data for Texas roadways. SCT Dirección General de Servicios Técnicos provided 2010 AADT and percent truck data for Mexico roadways.[4] The study team did not have access to 2030 AADT data for Mexico at the time of publication.
3. Accident data for Texas were calculated using the 2010 Crash Records Information System (CRIS) database. The number of accidents per mile on a roadway is equal to the number of accidents along the roadway's control section divided by the length of the control section.
4. The study team did not have access to accident data for Mexico roadways at the time of publication. The LOS data obtained for Mexican roadways did not include section references or date information.
5. The term "commercial truck" is used as defined by CBP when referring to bridge crossings, and the term "truck," in relation to truck percentage of AADT, refers to the percent of single and combination trucks using a roadway as defined by TXDOT and SCT.
6. Bridge toll rates are current as of August 2013, and a 12.40 Mexico peso (MXN) to 1 U.S. dollar (US$) currency conversion rate is used for all bridge toll rates.[5]
7. Bridge hours of operation are provided in the time zone the bridge is located in.

4.1 Cameron County/Municipality of Matamoros

There are four bridge crossings, two rail crossings, three airports, and two marine ports in Cameron County and the Municipality of Matamoros. Two of the bridges—Veterans International Bridge and Free Trade Bridge—process pedestrians, non-commercial, and commercial vehicles. The Port of Brownsville is the only marine port in the Focused Study Area that serves trade between the U.S. and Mexico. Table 4.3 provides a summary of the bridges, airports, and marine ports in Cameron County and the Municipality of Matamoros. The table also shows the transportation modes processed by these facilities or, in the case of the Port of Brownsville, the modes serving the port.

Table 4.3: Summary of Cameron County/Municipality of Matamoros Bridges, Airports, and Marine Ports

Bridge/Airport/ Marine Port	Location	Pedestrians/ Airport Passengers	Non-commercial Vehicles	Commercial Vehicles	Rail
Veterans International Bridge at Los Tomates	Brownsville/ Matamoros	Yes	Yes	Yes	No
Gateway International Bridge	Brownsville/ Matamoros	Yes	Yes	No	No
B&M Bridge	Brownsville/ Matamoros	Yes	Yes	No	No
B&M Bridge (Rail Crossing)	Brownsville/ Matamoros	No	No	No	Yes
Free Trade Bridge	Los Indios/ Lucio Blanco	Yes	Yes	Yes	No
Brownsville West Rail Bypass International Bridge (under construction)	Brownsville/ Matamoros	No	No	No	Yes
Brownsville South Padre Island International Airport	Brownsville	Yes	N/A	N/A	N/A
Valley International Airport	Harlingen	Yes	N/A	N/A	N/A
Matamoros International Airport	Matamoros	Yes	N/A	N/A	N/A
Port of Brownsville	Brownsville	N/A	N/A	Yes	Yes
Port of Matamoros*	Matamoros	N/A	N/A	N/A	N/A

Note: * The Port of Matamoros is currently not in operation.

4.1.1 Veterans International Bridge at Los Tomates

On the U.S. side, the Veterans International Bridge at Los Tomates is owned by Cameron County and the City of Brownsville, and is operated by the Cameron County International Bridge System. On the Mexican side, the bridge is owned by the Government of Mexico (through the National Infrastructure Fund–FARAC) and operated by CAPUFE. The bridge is 4,024 feet long and has four lanes—two lanes in each direction—and two pedestrian walkways. The bridge became operational on April 30, 1999, on both the U.S. and Mexico sides. It is located just east of the University of Texas at Brownsville campus on US 77/US 83 on the U.S. side and on the northern terminus of MEX 101 in Matamoros, Tamaulipas. The crossing is also known locally as the Los Tomates Bridge, Expressway 77 Bridge, Brownsville Expressway Bridge, and Puente Internacional General Ignacio Zaragoza.

Recently, the bridge was expanded with a new bridge span to reduce congestion, improve the FAST and SENTRI lanes, and promote economic development. The existing bridge serves southbound traffic, and the new bridge span serves northbound traffic.[6] The bridge expansion was funded through the CBI program.[6]

Border Station

The U.S. border station (LPOE Los Tomates) is owned by GSA.

Hours of Operation

The bridge currently operates from 6:00 a.m. to 12:00 a.m. 365 days a year for POVs. For commercial/cargo vehicles, the bridge operates from 8:00 a.m. to 4:00 p.m. Saturday and Sunday, and 8:00 a.m. to 11:00 p.m. Monday through Friday.

Tolls

Table 4.4 provides the southbound and northbound toll rates for the Veterans International Bridge at Los Tomates.

Table 4.4: Toll Rates for Veterans International Bridge at Los Tomates

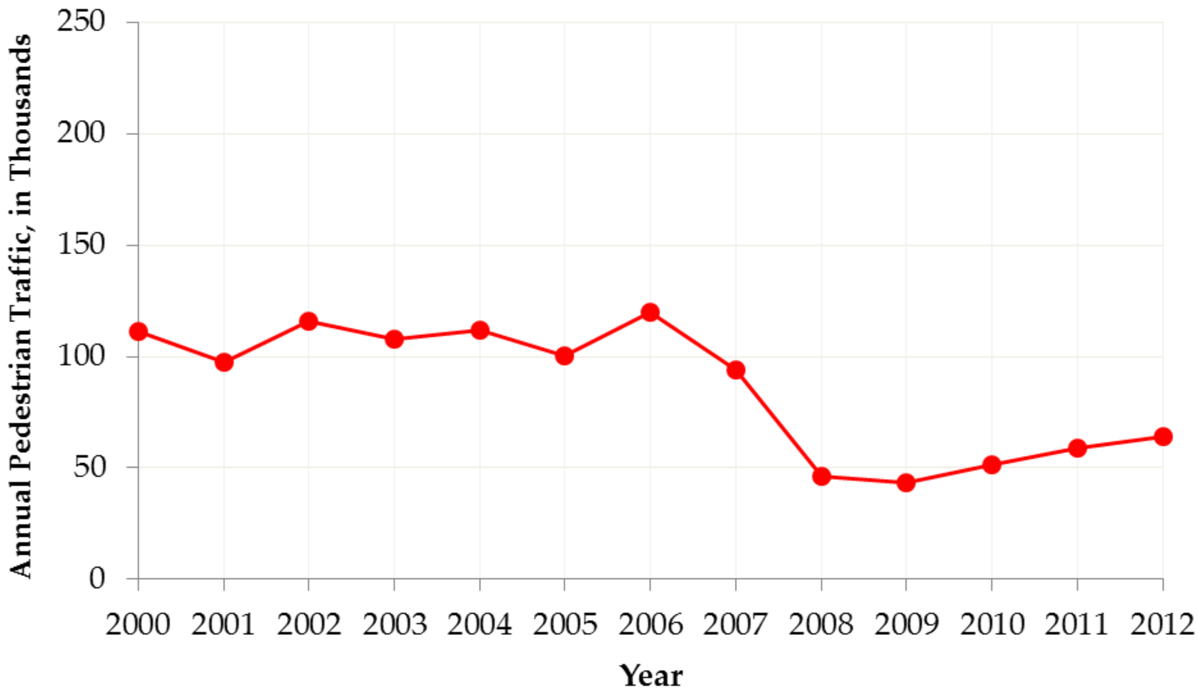
Mode	Southbound Toll Rate (US$)	Northbound Toll Rate (US$)
Pedestrian or Bicycle	0.75	0.25
Motorcycle	3.00	1.05
Non-commercial Auto or Pickup	3.00	2.10
Extra Axle for Non-commercial Vehicle	3.00	1.21
Commercial Truck (2 Axles)	7.75	4.33
Commercial Truck (3 Axles)	11.25	4.33
Commercial Truck (4 Axles)	14.75	4.33
Commercial Truck (5 Axles)	18.25	9.27
Commercial Truck (6 Axles)	21.75	9.27
Commercial Truck (7, 8, and 9 Axles)	N/A	14.50
Extra Axle for Commercial Vehicle	3.50	2.42
Passenger Bus (2, 3, and 4 Axles)	N/A	4.33
Bus or Recreational Vehicle	10.00	N/A
Express Line (per Year)	N/A	316.53

Note: Exchange rate = MXN 12.40 per US $1.

Source: Cameron County International Bridge System[7] and CAPUFE[8]

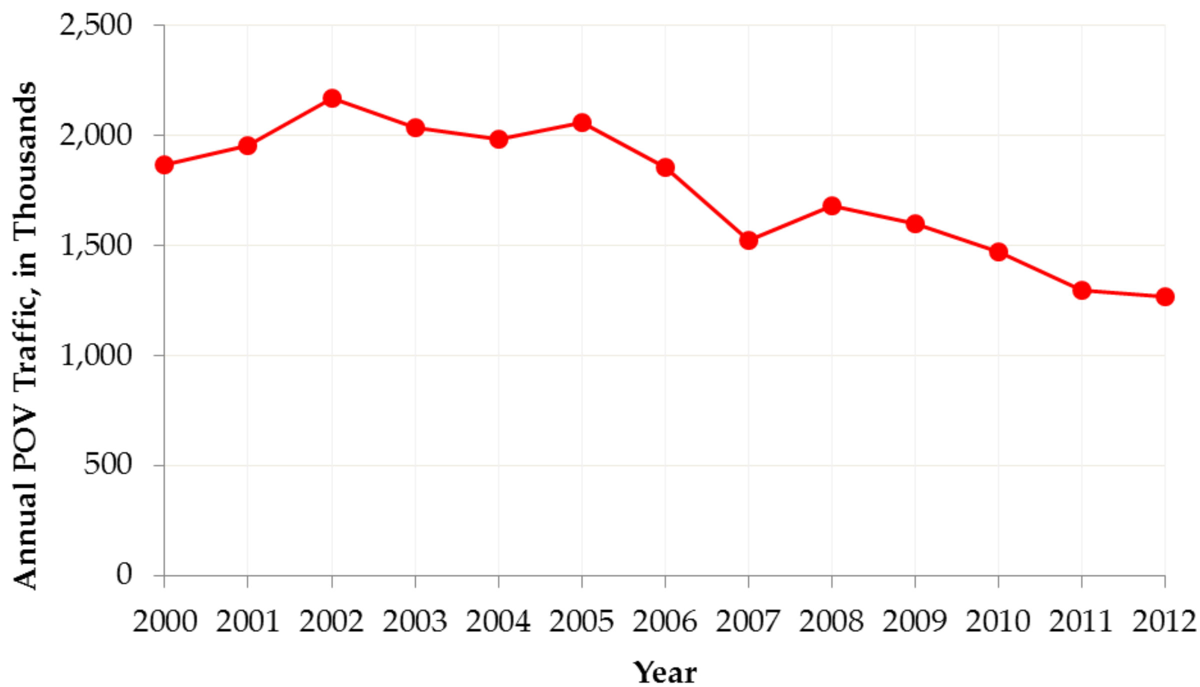
Bridge Crossings

Figures 4.2 through 4.5 illustrate the number of northbound crossings by mode between Mexico and the United States between 2000 and 2012 at the Veterans International Bridge at Los Tomates. Figures 4.6 through 4.8 illustrate the number of southbound crossings at the Veterans International Bridge at Los Tomates, the Gateway International Bridge, and the B&M Bridge. Southbound crossing data for the individual bridges were not available from the Texas A&M International University's Texas Center for Border Economic and Enterprise Development.



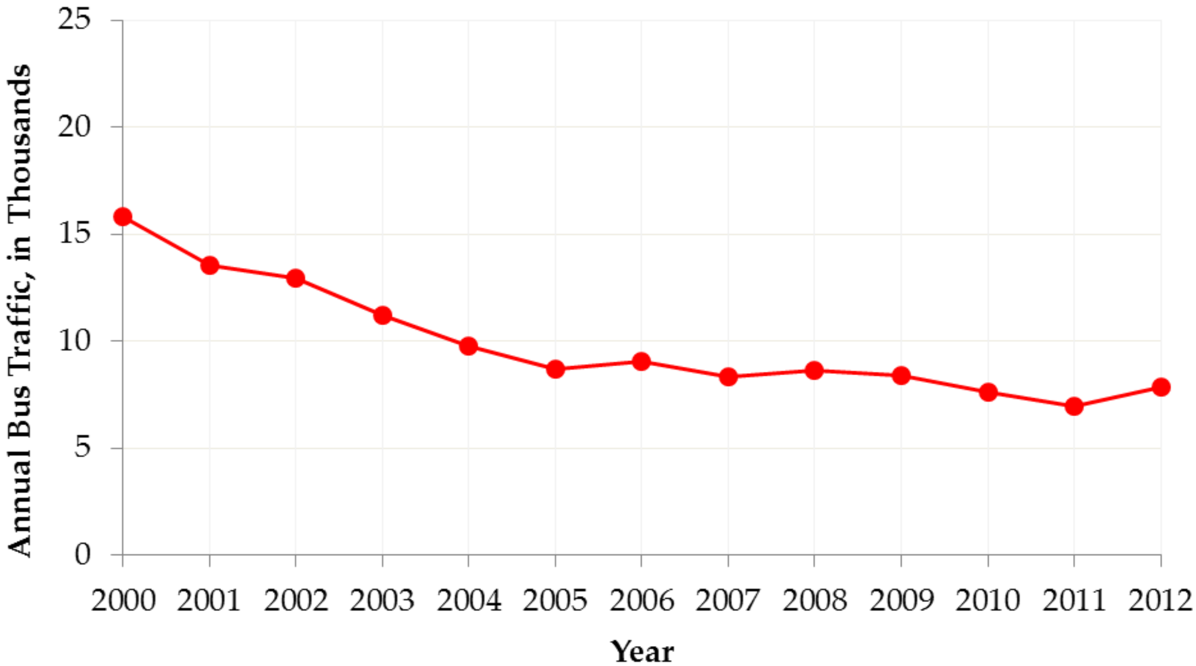
Source: CBP[9]

Figure 4.2: Veterans International Bridge—Northbound Pedestrian Crossings



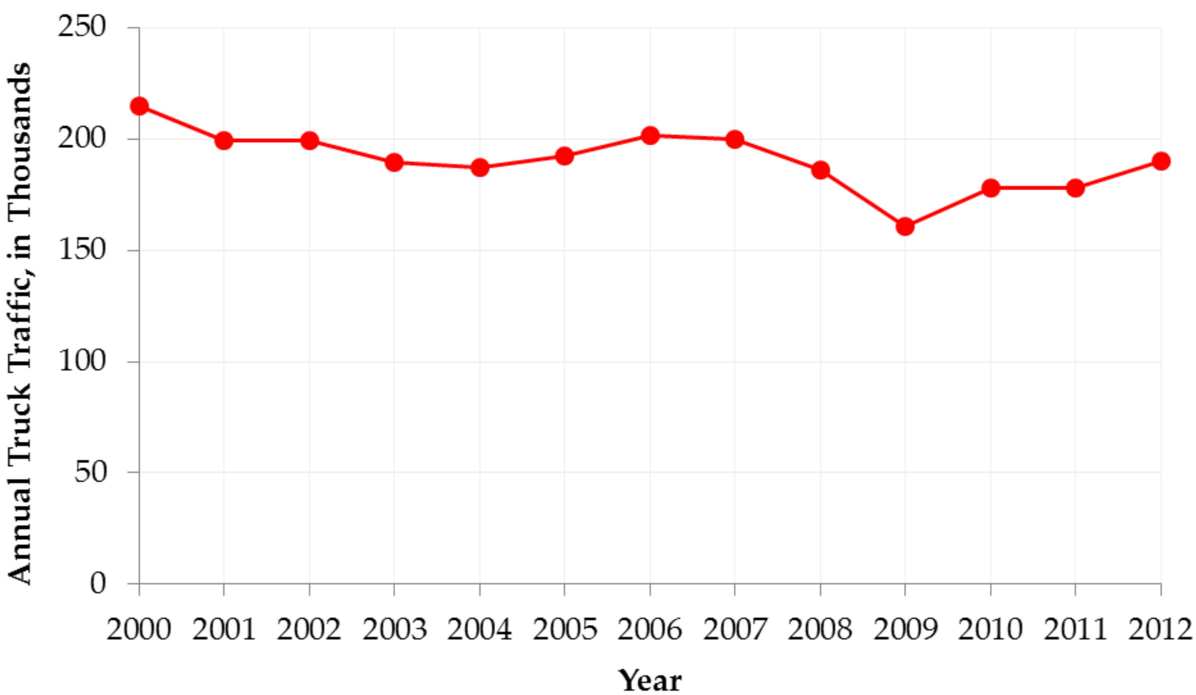
Source: CBP[9]

Figure 4.3: Veterans International Bridge—Northbound POV Crossings



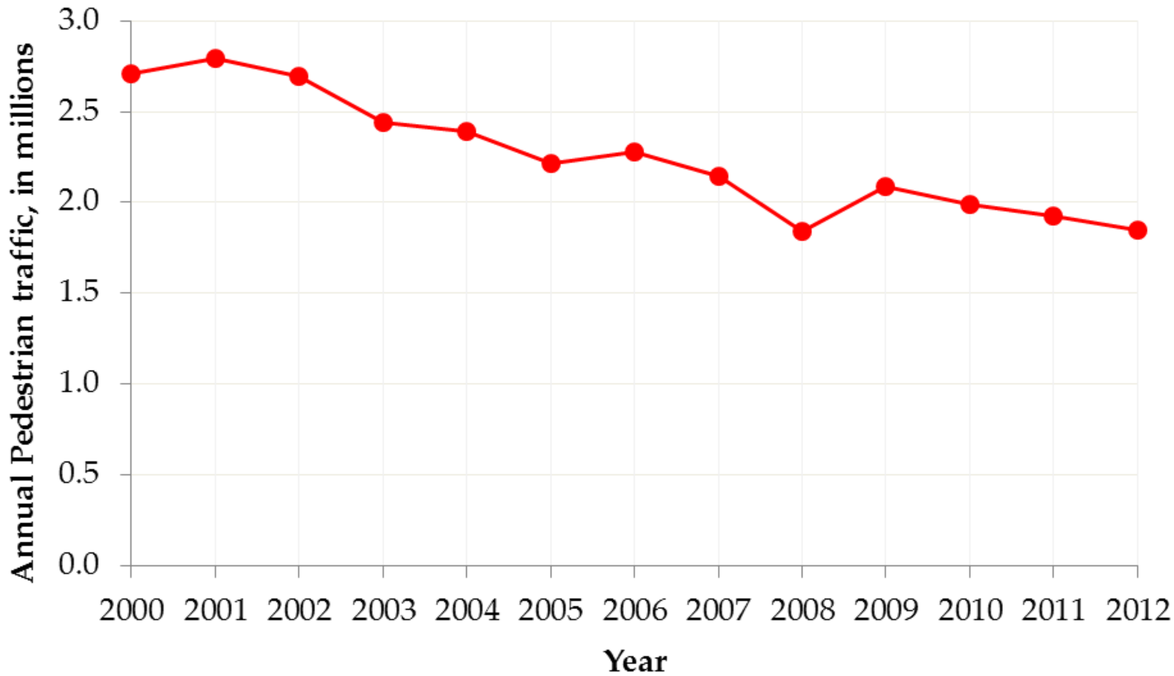
Source: CBP[9]

Figure 4.4: Veterans International Bridge—Northbound Bus Crossings



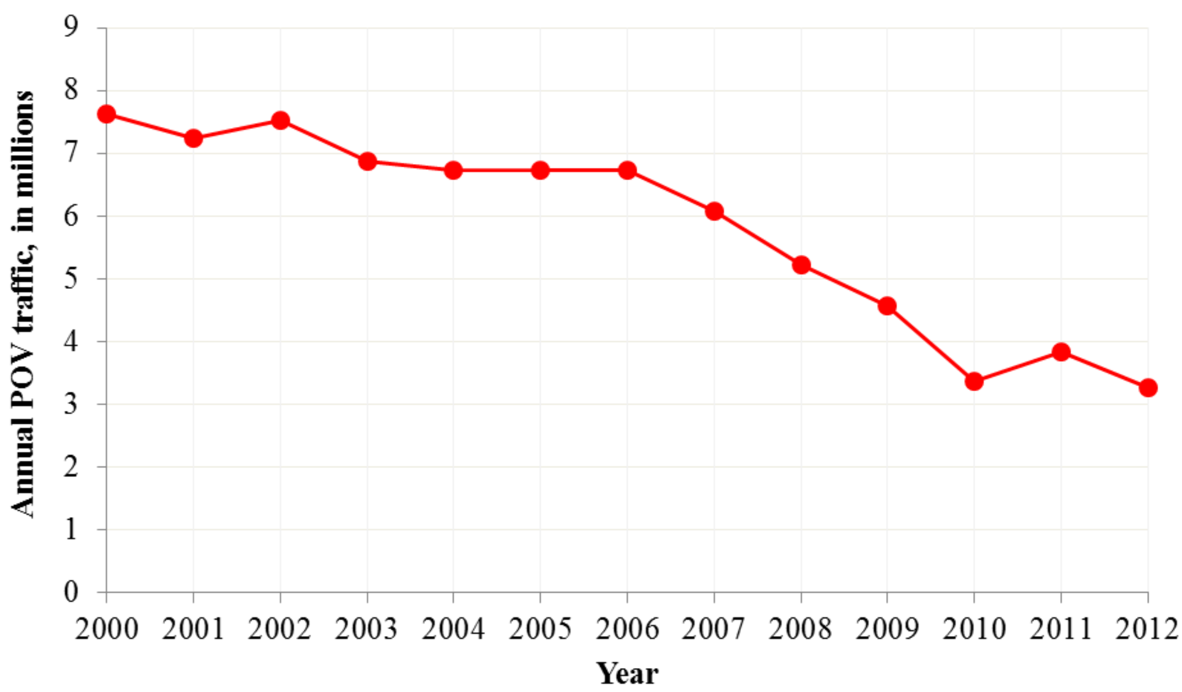
Source: CBP[9]

Figure 4.5: Veterans International Bridge—Northbound Commercial Truck Crossings



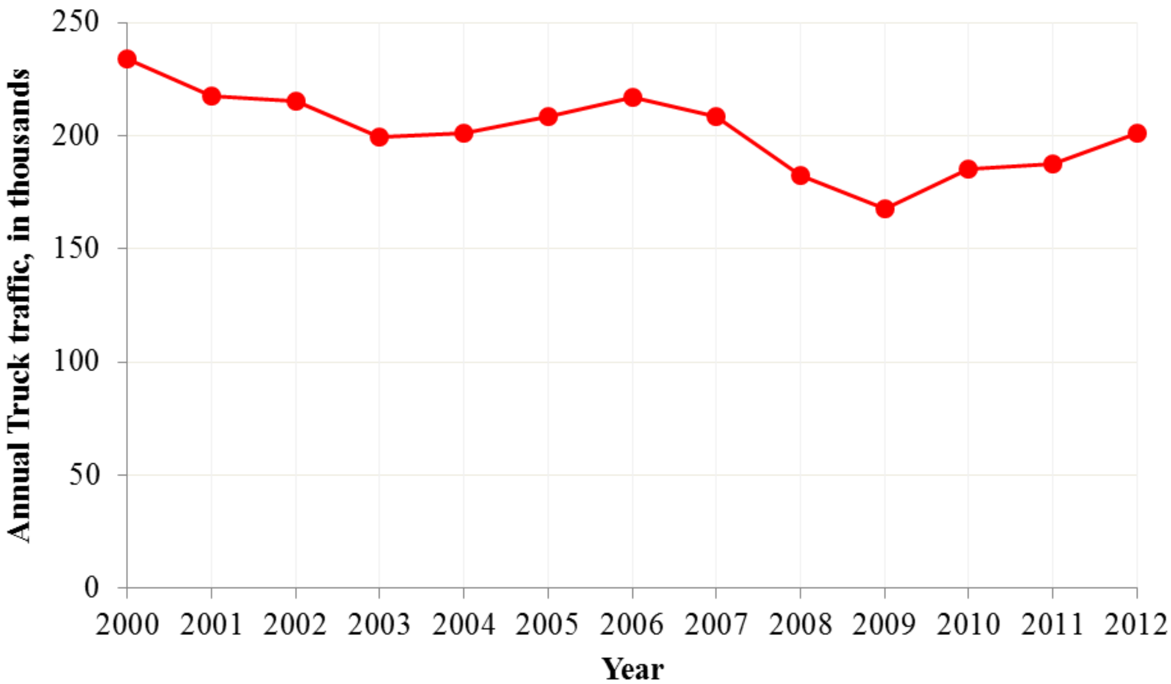
Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.6: Brownsville/Matamoros Bridges—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.7: Brownsville/Matamoros Bridges—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.8: Brownsville/Matamoros Bridges—Southbound Commercial Truck Crossings

<u>Northbound Crossings</u>: Between 2000 and 2006, the annual number of pedestrian crossings fluctuated between 100,000 and 120,000 at the Veterans International Bridge at Los Tomates (see Figure 4.2). In 2007, however, the number of pedestrian crossings began to decrease significantly, with the lowest number of crossings (43,080) recorded in 2009. This decrease is likely a reflection of the U.S. economy at the time. The number of pedestrian crossings increased steadily between 2010 and 2012 at an average annual rate of 14.2 percent.

Northbound POV crossings have largely decreased since 2002, from 2,172,168 in 2002 to 1,268,070 in 2012, a 41.6 percent decrease (see Figure 4.3). Similarly, bus crossings have decreased, from 15,819 in 2000 to 6,977 in 2011, a 55.9 percent decrease (see Figure 4.4). In 2012, the number of northbound bus crossings increased 12.9 percent compared to 2011, reaching 7,880.

Relative to the decrease in POV and bus crossings, commercial truck crossings decreased moderately (11.5 percent) between 2000 and 2012 (see Figure 4.5). During the U.S. economic recession in 2008 and 2009, commercial truck crossings decreased relative to 2007 by 6.8 percent and 20.9 percent, respectively. However, between 2010 and 2012, the number of commercial truck crossings increased 7.0 percent, reaching 190,204 in 2012.

Southbound Crossings: As mentioned earlier, the southbound crossing data are for the Veterans International Bridge at Los Tomates, Gateway International Bridge, and B&M Bridge connecting Brownsville and Matamoros. Disaggregated data for the southbound traffic on the individual bridges are not available from Texas A&M International University's Texas Center for Border Economic and Enterprise Development. Figures 4.6, 4.7, and 4.8 thus present the information for all three bridges between 2000 and 2012.

Similar to northbound crossings, southbound crossings of both pedestrians and POVs decreased between 2000 and 2012. Pedestrian crossings decreased 31.7 percent between 2000 and 2012. The lowest number of southbound pedestrian crossings (1,839,580) was recorded in 2008. The number of southbound pedestrian crossings, however, increased 13.4 percent between 2008 and 2009 to reach 2,086,748 crossings (see Figure 4.6). Between 2009 and 2012, the number of southbound pedestrian crossings decreased 11.3 percent to reach 1,850,098 crossings in 2012.

Figure 4.7 indicates that the number of southbound POV crossings decreased 55.7 percent between 2000 and 2010. In 2011, the number of southbound POV crossings increased 13.8 percent, before decreasing 14.8 percent in 2012 to reach its lowest level of 3,276,389 crossings in 2012.

Southbound commercial truck crossings[11] decreased 28.4 percent between 2000 and 2009 (see Figure 4.8). Between 2009 and 2012, the number of southbound commercial truck crossings increased 20.0 percent to reach 201,189 crossings in 2012.

Primary Roadways Serving Veterans International Bridge at Los Tomates

Figure 4.9 shows the location of the Veterans International Bridge at Los Tomates. On the U.S. side, US 77/US 83, a six-lane divided highway, connects directly to the Veterans International Bridge at Los Tomates. University Boulevard intersects US 77/US 83 about 0.75 miles north of Veterans International Bridge, and further north, US 77/US 83/IH 69E is intersected by SH 4. In 2010, the AADT on US 77/US 83 was 54,150 vehicles, of which about 8.1 percent were trucks. There were 41.36 accidents recorded per mile on this road. The LOS[12] on US 77/US 83 was F in 2010.

On the Mexican side, MEX 101 (Pedro Cárdenas Gutiérrez) runs north to south through the center of Matamoros, while MEX 2 runs east to west, connecting Matamoros and Reynosa. MEX 101 and MEX 2 are four-lane highways. The LOS on MEX 101 was E in 2010, while the LOS on MEX 2 was B in 2010. MEX 180 (Antiguo Camino Sendero Nacional) forms a loop around the southwest section of the city, and then turns into Libramiento Emilio Portes Gil before heading northeast. The LOS on the two-lane MEX 180 was D in 2010.

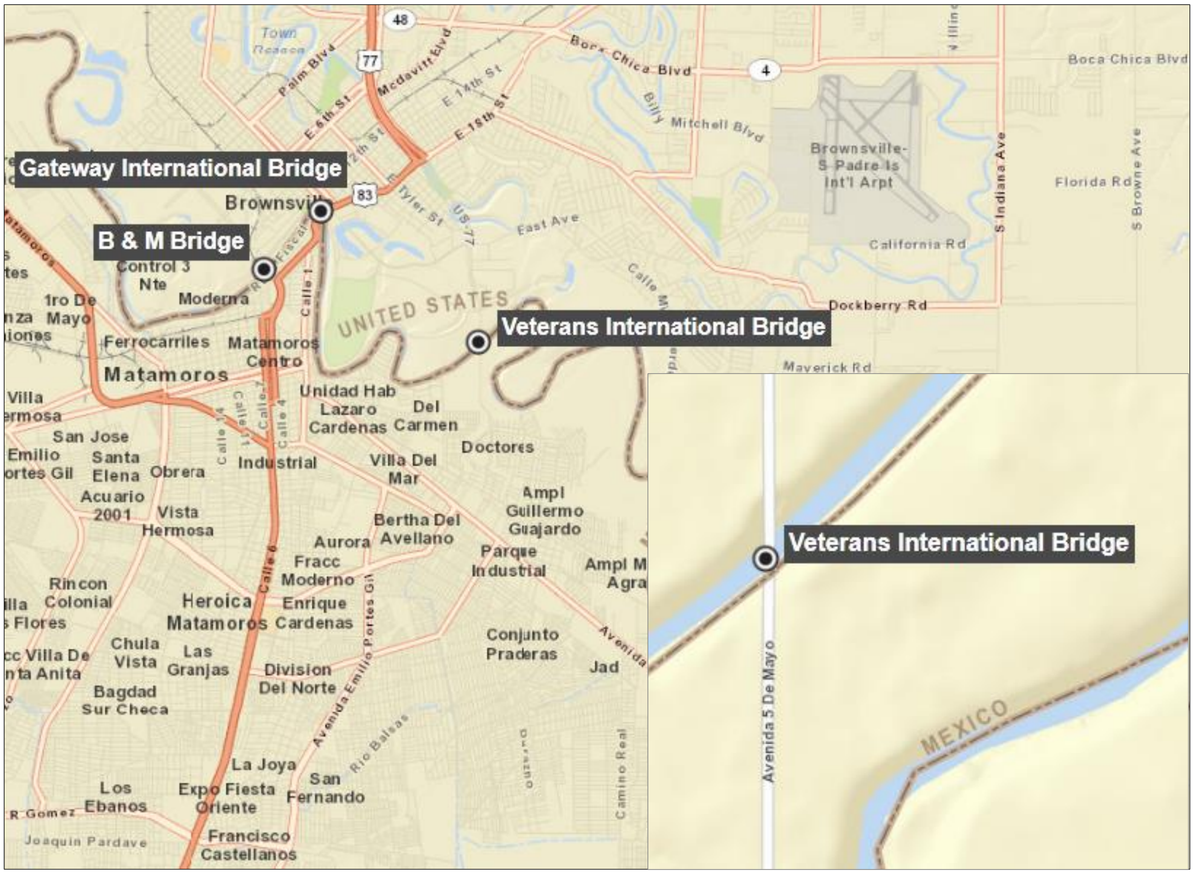


Figure 4.9: Veterans International Bridge at Los Tomates

Acción Cívica (Avenida 5 Mayo) runs northwest from MEX 101 (Pedro Cárdenas Gutiérrez)—intersecting with Libramiento Emilio Portes Gil, Roberto Guerra Cárdenas, and Avenida General Lauro Villar—before turning north to connect to Veterans International Bridge. All the aforementioned arterial roads and city streets operated at LOS E in 2010 with the exception of Libramiento Emilio Portes Gil (LOS C) and Roberto Guerra Cárdenas (LOS D). Acción Cívica, Pedro Cárdenas Gutiérrez, and Avenida General Lauro Villar are six-lane facilities, while Libramiento Emilio Portes Gil and Roberto Guerra Cárdenas each have four lanes.

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, funding for SH 32-East (Phase II) has been authorized by TxDOT to construct a connection between US 77/US 83 and SH 4. The proposed SH 32 project would be from the FM 3068/Indiana Avenue and FM 1419/Southmost Road intersection, east-northeast to SH 4. The construction cost is estimated at $40 million, and the project is expected to let by 2030. This investment is expected to provide a relief route for SH 4, which would improve the LOS on SH 4.

On the Mexican side, additional capacity is planned for MEX 101, MEX 180, Pedro Cárdenas Gutiérrez, and Libramiento Emilio Portes Gil in the form of two additional lanes by 2035.

4.1.2 Gateway International Bridge

The U.S. side of the Gateway International Bridge is owned by Cameron County and operated by the Cameron County International Bridge System. The Mexican side of the bridge is owned by the Government of Mexico and operated by CAPUFE. The bridge has twin structures—one structure serves southbound traffic, and the other serves northbound traffic—with a total of four lanes. The southbound span is 687 feet long, and the northbound span is 477 feet long.[6] The Gateway International Bridge is located on International Boulevard/SH 4 near the intersection of SH 4 and BU 77 in Brownsville on the U.S. side and on Avenida Alvaro Obregón near the intersection of MEX 2 and MEX 101 in Matamoros on the Mexican side. The crossing is also known locally as El Puente, Puente Nuevo, and Puerta México.

Border Station

On the U.S. side, the border station (LPOE Gateway) was completed in 1969 and is owned by GSA. In March 1994, a renovation and expansion project was completed, and GSA is planning another major renovation for this facility that is scheduled to begin in 2013.[6] On the Mexican side, the border station has been operational since 1963.[13] The Mexican border station was remodeled in 1968.

Hours of Operation

The bridge currently operates 24 hours a day 365 days a year for POVs only.

Tolls

The toll rates for the Gateway International Bridge are provided in Table 4.5.

Table 4.5: Toll Rates for Gateway International Bridge

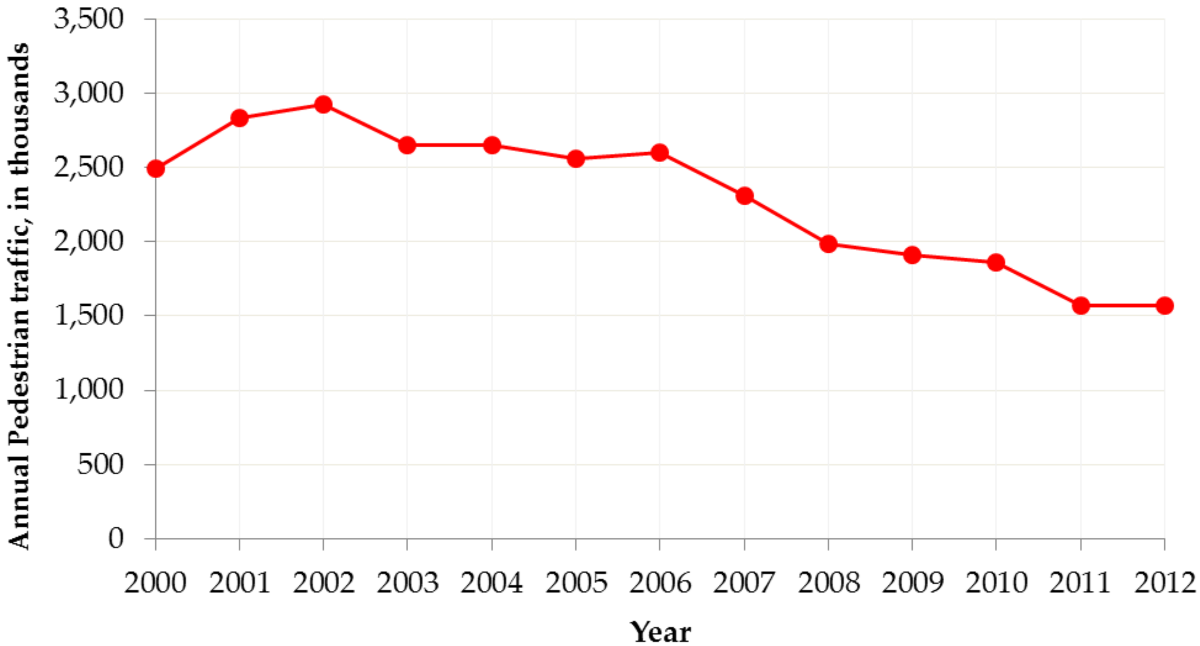
Mode	Southbound Toll Rate (US$)	Northbound Toll Rate (US$)
Pedestrian or Bicycle	0.75	0.25
Motorcycle (2 Axles)	3.00	0.97
Non-commercial Auto or Pickup	3.00	2.00
Extra Axle for Non-commercial Vehicle	3.00	1.04
Commercial Truck (2 Axles)	7.75	N/A
Commercial Truck (3 Axles)	11.25	N/A
Commercial Truck (4 Axles)	14.75	N/A
Commercial Truck (5 Axles)	18.25	N/A
Commercial Truck (6 Axles)	21.75	N/A
Commercial Truck (7, 8, and 9 Axles)	N/A	N/A
Extra Axle for Commercial Vehicle	3.50	N/A
Passenger Bus (2, 3, and 4 Axles)	N/A	N/A
Bus or Recreational Vehicle	10.00	N/A

Note: Exchange rate = MXN 12.40 per US $1.

Source: Cameron County International Bridge System[7] and CAPUFE[8]

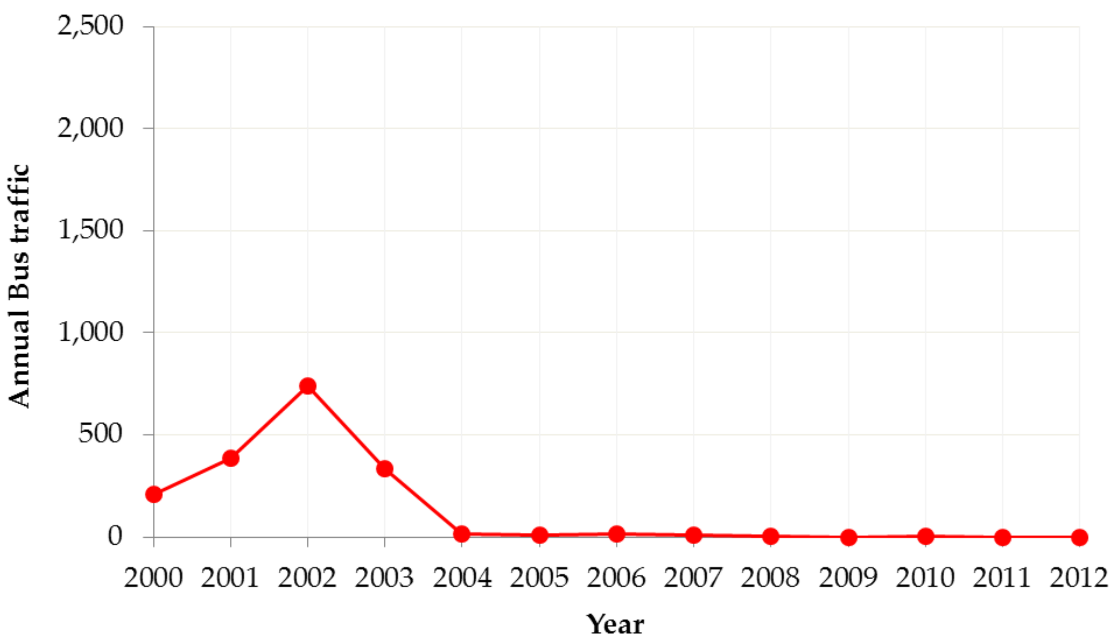
Northbound Bridge Crossings[14]

Figures 4.10 through 4.12 illustrate the northbound bridge crossings at the Gateway International Bridge between 2000 and 2012. As shown in Figure 4.10, Gateway International Bridge experienced a steady decrease in the number of northbound pedestrian crossings between 2002 and 2012, a 46.3 percent decrease. The most significant decreases occurred between 2006 and 2008 when pedestrian crossings decreased 23.5 percent and between 2008 and 2011 when pedestrian crossings decreased 21.0 percent.



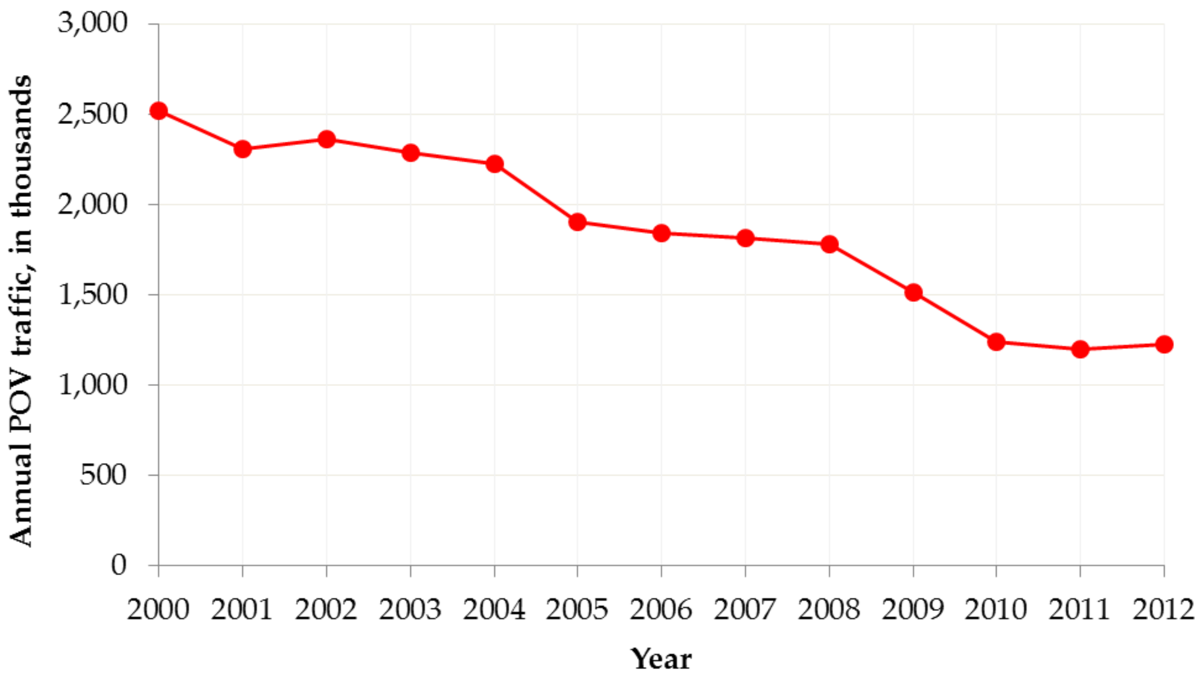
Source: CBP[9]

Figure 4.10: Gateway International Bridge—Northbound Pedestrian Crossings



Source: CBP[9]

Figure 4.11: Gateway International Bridge—Northbound Bus Crossings



Source: CBP[9]

Figure 4.12: Gateway International Bridge—Northbound POV Crossings

CBP opened a pedestrian READY lane at the Gateway International Bridge on March 7, 2013. This lane allows pedestrians traveling with an approved document that has radio frequency identification (RFID) technology to be processed faster. The pedestrian READY lane operates between 6:00 a.m. and 6:00 p.m. Monday through Friday and between 10:00 a.m. and 6:00 p.m. Saturday and Sunday. Three new kiosks were installed to process READY lane pedestrians.[15]

From the data obtained, bus crossings at the Gateway International Bridge all but ceased as of 2004 (Figure 4.11), when the number of bus crossings decreased from 335 in 2003 to 15 in 2004.

Similar to the Veterans International Bridge at Los Tomates, the Gateway International Bridge has seen POV crossings decrease significantly from its peak of 2,519,878 in 2000 to 1,196,730 in 2011, a 52.5 percent decrease (see Figure 4.12). In 2012, the number of northbound POV crossings increased marginally (2.2 percent) relative to 2011 to reach 1,223,130 crossings.

Primary Roadways Serving Gateway International Bridge

Figure 4.13 illustrates the location of the Gateway International Bridge. On the U.S. side, SH 4 connects directly to the Gateway International Bridge. SH 4 is intersected by University Boulevard and Washington Street about 400 and 800 feet east of the Gateway International Bridge, respectively. SH 4 is a four-lane undivided highway with a continuous left-turn lane in the center toward its southern end. The AADT on SH 4 was 15,900 vehicles in 2010, of which 6.6 percent were trucks. The number of accidents reported per mile on SH 4 was 61.02 in 2010, and SH 4 had an LOS of B in 2010.

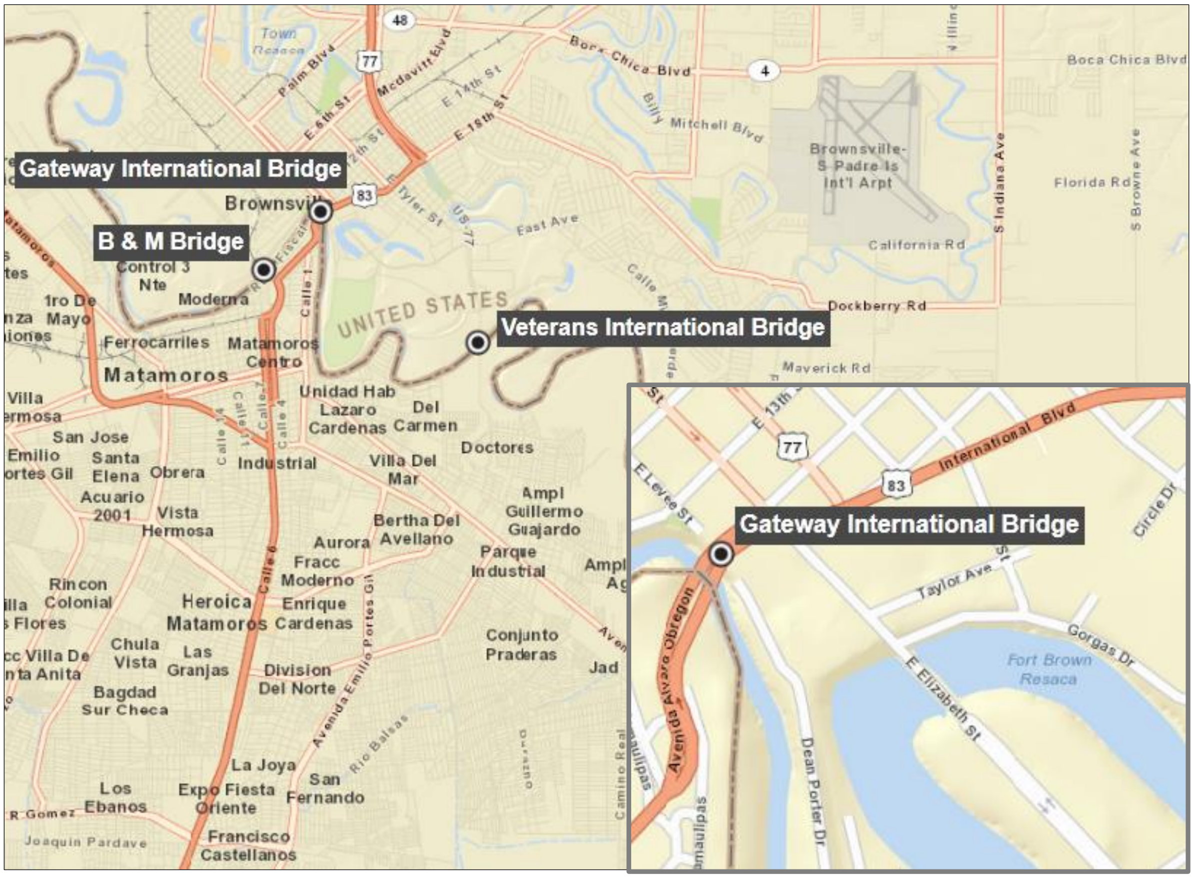


Figure 4.13: Gateway International Bridge

Texas State Senate Bill 1276 (75th Legislature, 1997) permitted TxDOT to grant the Brownsville Navigation District (BND) the authority to issue permits for the movement of oversize/overweight (OS/OW) vehicles transporting freight between the Gateway International Bridge and the Port of Brownsville. TTC subsequently approved BND's permit-issuing authority on February 17, 1998. By December 15, 1998, BND had issued 23,713 permits. BND currently has special authority to issue permits for the movement of OS/OW trucks on SH 48/SH 4 between the Gateway International Bridge and the entrance to the Port of Brownsville. BND can also issue permits on US 77/US 83 and SH 48/SH 4 between the Veterans International Bridge at Los Tomates and the entrance to the Port of Brownsville.[16] Revenues raised from the permits are used by TxDOT to maintain the designated truck routes.[6] In addition, the Cameron County Regional Mobility Authority (CCRMA) funded another OS/OW truck route (SH 550) that connects the Port of Brownsville to US 77/US 83/IH 69E on the north end. SH 550 is a tolled facility and is now operational.

On the Mexican side, MEX 101 runs north to south through the center of Matamoros, while MEX 2 runs east to west connecting Matamoros and Reynosa. MEX 101 and MEX 2 are four-lane facilities. MEX 101 had an LOS of E in 2010, while MEX 2 had an LOS of B in 2010. Heading north, MEX 101 turns into Pedro Cárdenas Gutiérrez and then Calle 6. The number of lanes on Calle 6 varies between two and six lanes. Calle 6 had an LOS of E in 2010. East of Calle 6 is Calle 5, which turns into Álvaro Obregón—a four-lane arterial that operated at LOS D in 2010—that heads north and connects to the Gateway International Bridge. Primero de Mayo (a two-lane arterial that operated at LOS C in 2010) and Rigo Tovar (a four-lane arterial that operated at LOS E in 2010) channels traffic toward the bridge from the west. Canales and División del Norte (both four-lane arterials operated at LOS E and D, respectively, in 2010) channel traffic toward the bridge from the east.

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, no planned infrastructure projects have been identified that will serve the Gateway International Bridge.

On the Mexican side, additional capacity is planned for MEX 101 in the form of two additional lanes by 2035.

4.1.3 B&M Bridge

Until 2009, the U.S. and Mexican sides of the B&M Bridge were owned by the Brownsville and Matamoros Bridge Company.[6] The Brownsville and Matamoros Bridge Company is owned by UPRR and the Federal Government of Mexico. Four UPRR officials and four Mexican Government representatives serve on the board of directors.[17]

The 100-year concession for the Mexican side of the bridge that was granted in 1909 expired in 2009. As of March 2013, however, all bridge administration, security, and maintenance services for both sides of the B&M Bridge are still managed by a single corporation, the Brownsville and Matamoros Bridge Company, located in the United States. [17]

The Municipality of Matamoros has strongly supported the concession of the bridge and has started the application process with SCT. In the past, the municipality has also advocated for CAPUFE to manage the toll revenues for the Mexican side. The Brownsville and Matamoros Bridge Company determines the toll amount that the municipality currently receives, as opposed to the set 12.5 percent of toll revenues border municipalities receive from international crossings managed by CAPUFE. However, the Mexican Government’s infrastructure fund (FONADIN) has also expressed interest in investing in the bridge and managing the future concession.

The original 1909 B&M Bridge, which opened in 1910, was an 18-foot steel structure that accommodated rail, POVs, pedestrians, and cattle crossings. In 1953, the B&M Bridge was widened by 3 feet to accommodate commercial truck traffic. In 1992, the bridge was renovated to service increased traffic, and in 1997, a concrete structure was constructed next to the original steel bridge.[17] On April 30, 1999, the bridge stopped processing northbound commercial truck traffic, and on December 30, 1999, it stopped processing southbound commercial truck traffic. At this time, all commercial truck traffic began to use the Veterans International Bridge at Los Tomates.[6]

The B&M Bridge's concrete structure consists of four lanes—two in each direction—and is currently used exclusively for non-commercial traffic. The concrete structure also includes the northbound pedestrian walkway. The older, steel structure is currently used for train crossings and includes the southbound pedestrian walkway.

The B&M Bridge is located on Mexico Boulevard near the intersection with Sam Perl Boulevard/E. 12th Street on the U.S. side and on Avenida Las Américas near the intersection with Avenida Álvaro Obregón in Matamoros. The crossing is also known locally as the Brownsville and Matamoros Bridge, ByM, Puente Viejo, and Express Bridge.

Border Station

The border station on the U.S. side (LPOE B&M) was completed in 1992 and is owned by GSA.[2] The border station facility for tourist traffic on the Mexican side was completed in 1997. The Brownsville and Matamoros Bridge Company owns all of the facilities on the Mexican side.

Hours of Operation

The bridge currently operates 24 hours a day 365 days a year for pedestrians and POVs.

Tolls

The current toll rates for the B&M Bridge are provided in Table 4.6. The bridge also provides a service, Xpress Card Plus, to pay bridge tolls at any toll booth at the B&M Bridge with a Hughes Identification Devices Global, Inc., (HID) proximity card. An RFID reader identifies the card and checks the account balance. The user receives a discount on tolls and a special permit to use a bypass lane when a train is blocking Calle Sexta in Matamoros.

Table 4.6: Toll Rates for B&M Bridge

Mode	Southbound		Northbound*	
	Toll Rate (US$)	Express Card	Toll Rate (US$)	Express Card
Pedestrian or Bicycle	1.00	N/A	1.00	N/A
Non-commercial Auto, Pickup, or Motorcycle	3.00	2.25	2.00	1.95
3 Axles	6.00	2.25	5.00	1.95
4 Axles	9.00	8.40	8.00	7.80
5 Axles	12.00	11.20	11.00	10.73

Note: * Northbound toll rates are always converted to US$ at an exchange rate of MXN 15 per US $1.

Source: B&M Bridge[17]

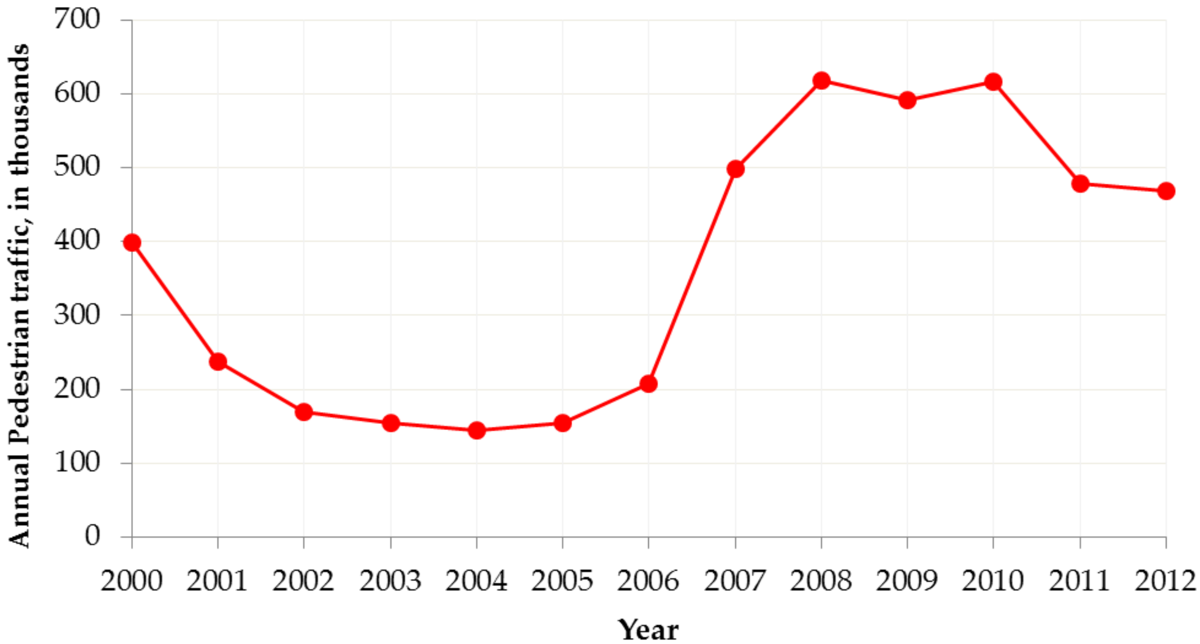
Bridge Crossings

Figures 4.14 and 4.15 illustrate northbound bridge crossings[18] at the B&M Bridge between 2000 and 2011.

Northbound Crossings: As shown in Figure 4.14, the B&M Bridge experienced a 63.9 percent decrease in pedestrian crossings between 2000 and 2004, followed by a substantial increase from a low 144,391 crossings in 2004 to 617,536 crossings in 2008, a 328 percent increase. Since then, the annual number of northbound pedestrian crossings has decreased again to reach 479,034 in 2011.

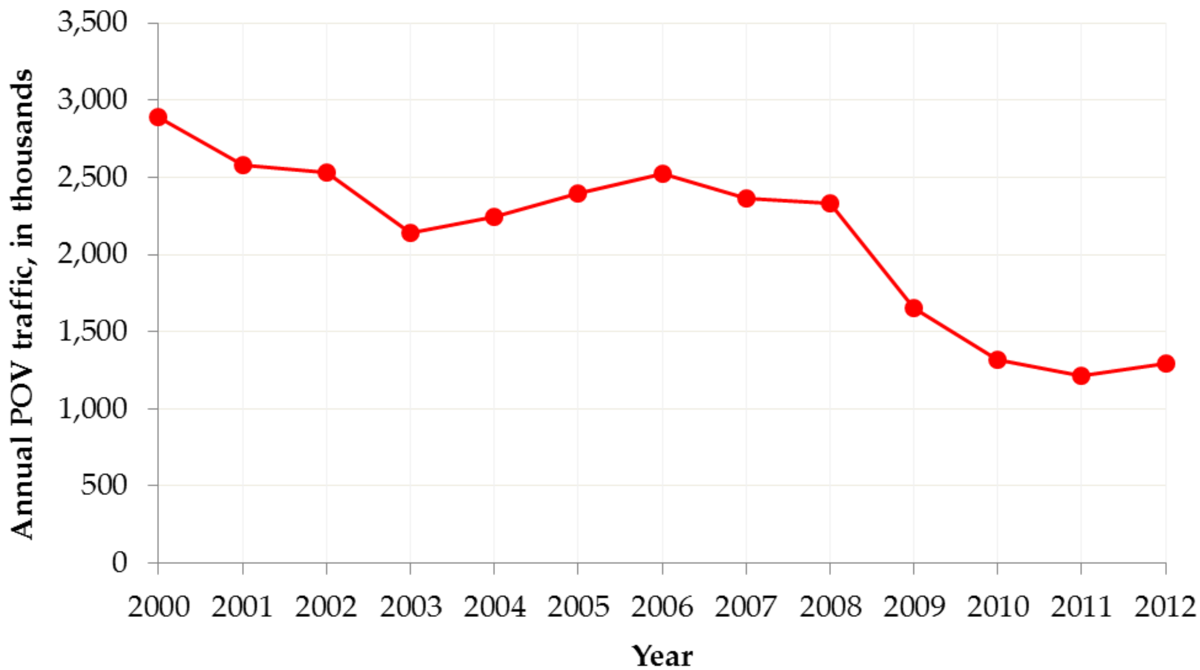
POV crossings decreased 58.1 percent between 2000 and 2011, with the most significant decrease in POV crossings occurring between 2008 and 2011. Between 2008 and 2011, the number of POV crossings decreased from 2,332,136 (2004) to 1,211,133 (2011), a decrease of 48.1 percent (see Figure 4.15).

Rail Crossings: Annual rail container crossings between 2000 and 2012 at the B&M Rail Bridge are shown in Figure 4.16. Figure 4.16 shows that rail container crossings decreased from 139,803 in 2000 to 34,021 in 2009, a decrease of 75.7 percent. Between 2009 and 2012, the number of rail container crossings increased 58.8 percent to reach 54,023 in 2012. Figure 4.17 illustrates the number of loaded rail containers crossing at the B&M Rail Bridge between 2000 and 2012. Figure 4.17 shows that the number of loaded rail container crossings was quite irregular between 2001 and 2012, fluctuating between 9,992 in 2003 and 5,612 in 2012—the lowest level of loaded rail container crossings. Peak traffic was recorded in 2000 at 13,363 loaded container crossings.



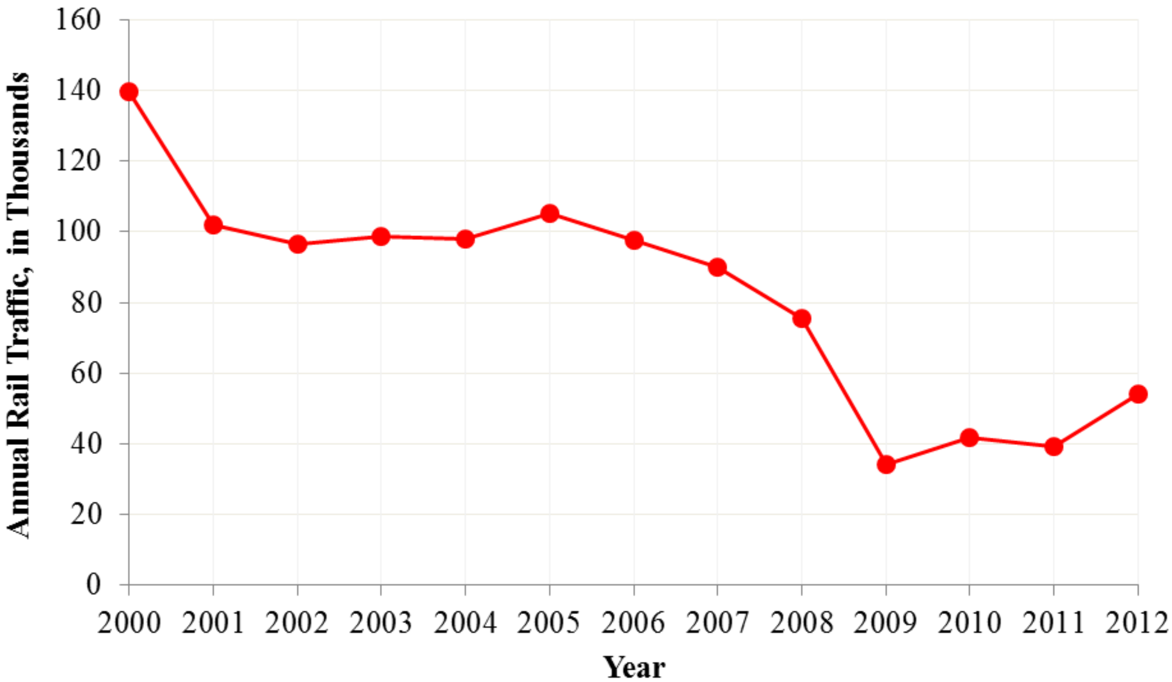
Source: CBP[9]

Figure 4.14: B&M Bridge—Northbound Pedestrian Crossings



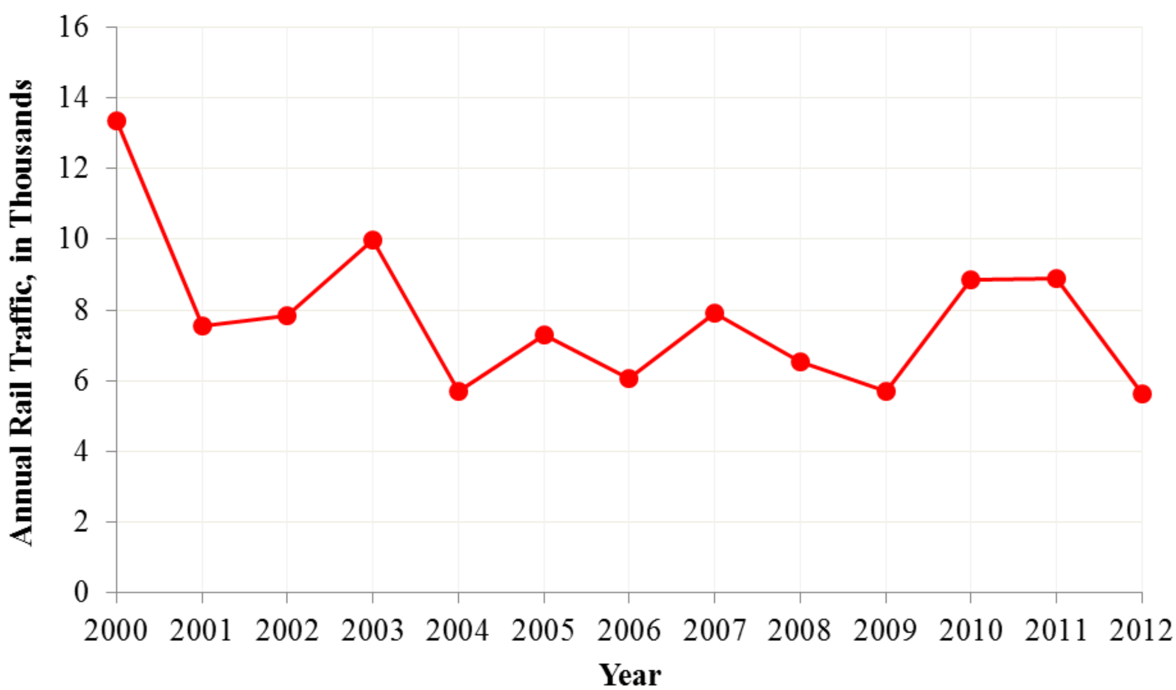
Source: CBP[9]

Figure 4.15: B&M Bridge—Northbound POV Crossings



Source: USDOT[19]

Figure 4.16: Brownsville/Matamoros Rail Crossings—Total Rail Containers



Source: USDOT[19]

Figure 4.17: Brownsville/Matamoros Rail Crossings—Total Loaded Containers

Primary Roadways Serving B&M Bridge

Figure 4.18 shows the location of the B&M Bridge. On the U.S. side, Mexico Boulevard connects directly to the B&M Bridge. Approximately 1,500 feet from the B&M Bridge, Mexico Boulevard is a six-lane divided facility. Sam Perl Boulevard, a local six-lane divided highway, also leads to the bridge from the northeast.

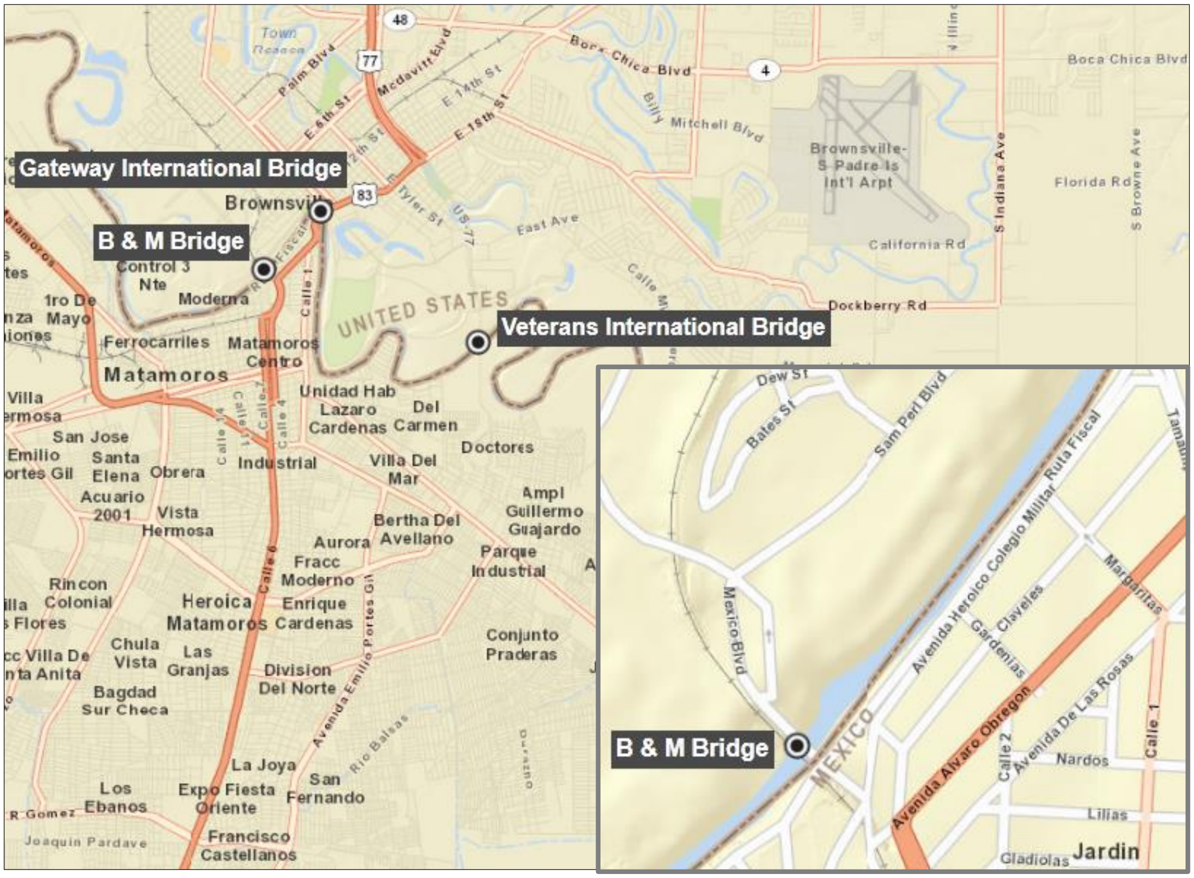


Figure 4.18: B&M Bridge

On the Mexican side, MEX 101 runs north to south through the center of Matamoros, while MEX 2 runs east to west connecting Matamoros and Reynosa. MEX 101 and MEX 2 are four-lane facilities. MEX 101 had an LOS of E in 2010, while MEX 2 had an LOS of B in 2010. Heading north, MEX 101 turns into Pedro Cárdenas Gutiérrez and then Calle 6. The number of lanes on Calle 6 varies between two and six. Calle 6 had an LOS of E in 2010. Calle 6 intersects with Las Américas, a four-lane arterial, which operated at LOS E in 2010. Las Américas runs north and connects to the B&M Bridge. Virgilio Garza Ruiz channels traffic north through western Matamoros toward the bridge. The number of lanes on this road varies from two to six, and the calculated LOS was D in 2010.

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, no planned infrastructure projects have been identified near the B&M Bridge.

On the Mexican side, additional capacity is planned for MEX 101 in the form of two additional lanes by 2035. Also, the capacity of Las Américas is expected to double—the number of lanes will increase from four to eight—by 2030.

4.1.4 Free Trade Bridge

The construction of the Free Trade Bridge was completed in 1992. On the U.S. side, the Free Trade Bridge is owned by Cameron County (50 percent), the City of San Benito (25 percent), and the City of Harlingen (25 percent), and is operated by the Cameron County International Bridge System. On the Mexican side, the bridge is owned by the Mexican Government. SCT granted the State of Tamaulipas a concession to operate and manage the bridge. Per a legislative decree signed on December 3, 2009, the State of Tamaulipas created a single trust (fideicomiso) in which toll revenues obtained from the Free Trade Bridge and Donna International Bridge are deposited.

The bridge has four lanes and is 503 feet long. The U.S. customs facilities are approximately 2,500 feet north of the U.S.-Mexico border. A parking/staging area was constructed in 2009 for southbound commercial vehicles to help alleviate traffic backing up on Farm to Market (FM) 509 (the approach to the bridge[6]). It is located on Cantu Road, approximately 1.03 miles south from where FM 509 intersects US 281/Military Highway in Los Indios on the U.S. side and on the northern terminus of MEX 2 in Lucio Blanco, Tamaulipas. The crossing is also known locally as the Los Indios-Lucio Blanco Bridge, Puente Lucio Blanco-Los Indios, Puente Internacional Libre Comercio, TLC Lucio Blanco, and Los Indios Free Trade Bridge.

Border Station

The border station (LPOE Los Indios) is owned by GSA and was completed in 1992.[2] On the Mexican side, the border station has been operational since 1992.

Hours of Operation

The bridge currently operates from 6:00 a.m. to midnight 365 days a year for POVs and pedestrians. The bridge operates from 8:00 a.m. to 10:00 p.m. Monday through Friday, and from 10:00 a.m. to 6:00 p.m. Saturday and Sunday for commercial/cargo vehicles.

Tolls

Table 4.7 lists the current southbound and northbound toll rates for the Free Trade Bridge.

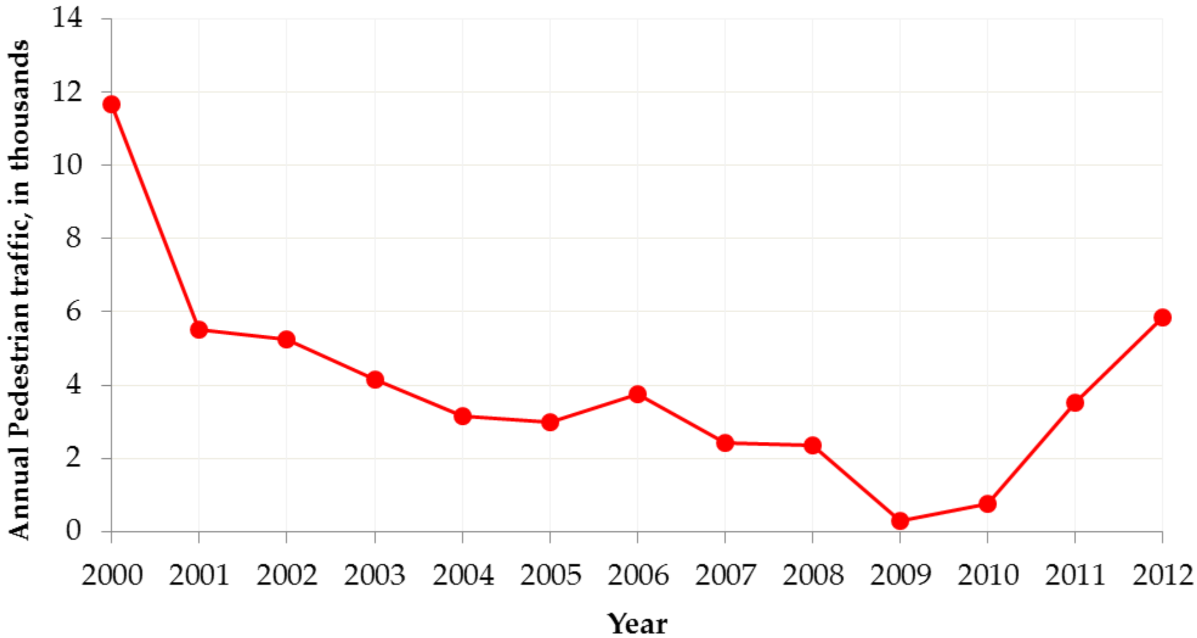
Table 4.7: Toll Rates for Free Trade Bridge

Mode	Toll Rate (US$) Southbound	Toll Rate (US$) Northbound
Pedestrian or Bicycle	0.75	N/A
Motorcycle	3.00	1.05
Non-commercial Auto or Pickup	3.00	2.18
Extra Axle for Non-commercial Vehicle	3.00	1.13
Commercial Truck (2 Axles)	7.75	4.52
Commercial Truck (3 Axles)	11.25	4.52
Commercial Truck (4 Axles)	14.75	9.19
Commercial Truck (5 Axles)	18.25	9.19
Commercial Truck (6 Axles)	21.75	14.60
Extra Axle for Commercial Vehicle	3.50	2.26
Bus or Recreational Vehicle	10.00	N/A

Source: Cameron County International Bridge System[7] and State of Tamaulipas[20]

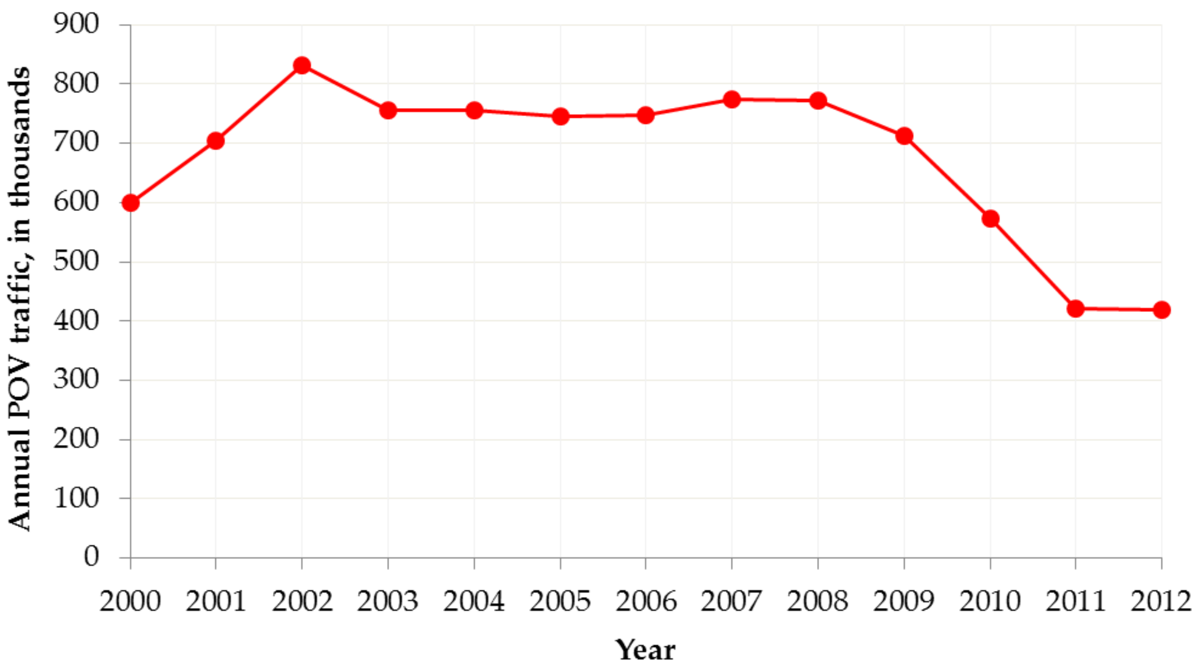
Bridge Crossings

Figures 4.19 through 4.22 illustrate northbound crossings by mode at the Free Trade Bridge between 2000 and 2012, and Figures 4.23 through 4.25 illustrate the southbound crossings by mode at the Free Trade Bridge between 2000 and 2012.



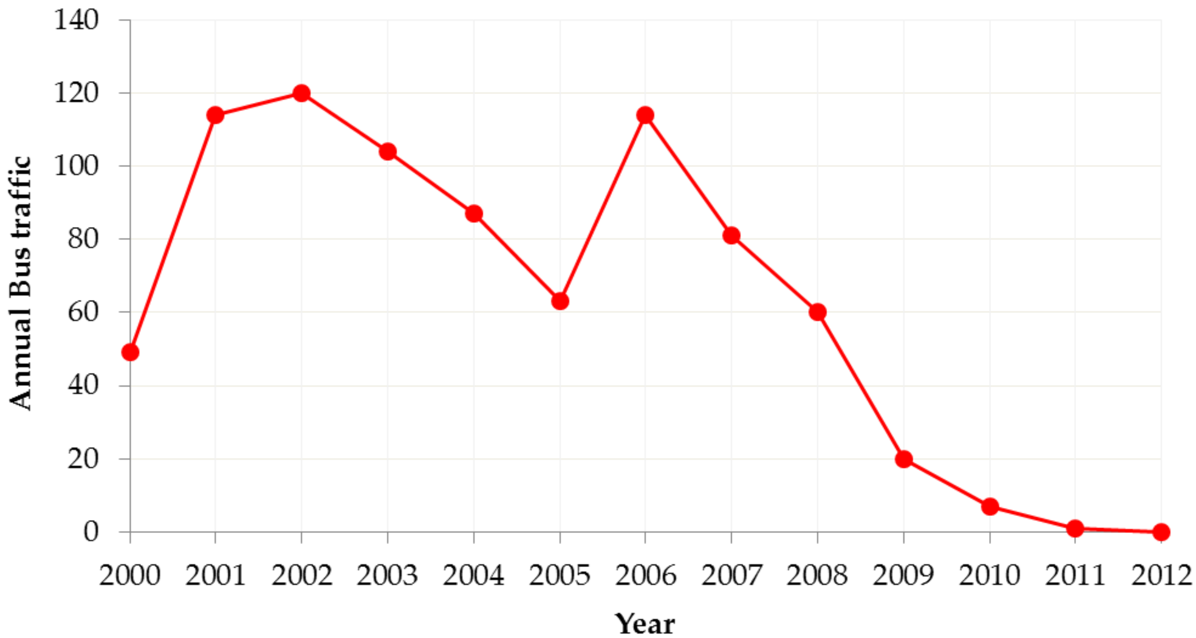
Source: CBP[9]

Figure 4.19: Free Trade Bridge—Northbound Pedestrian Crossings



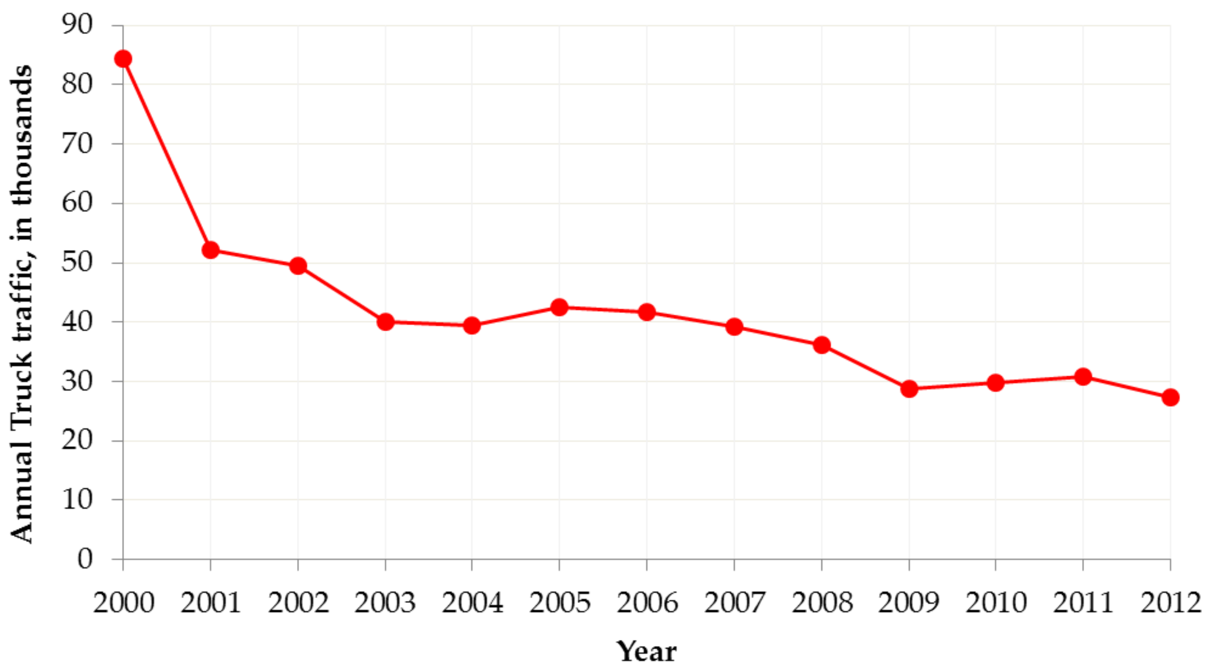
Source: CBP[9]

Figure 4.20: Free Trade Bridge—Northbound POV Crossings



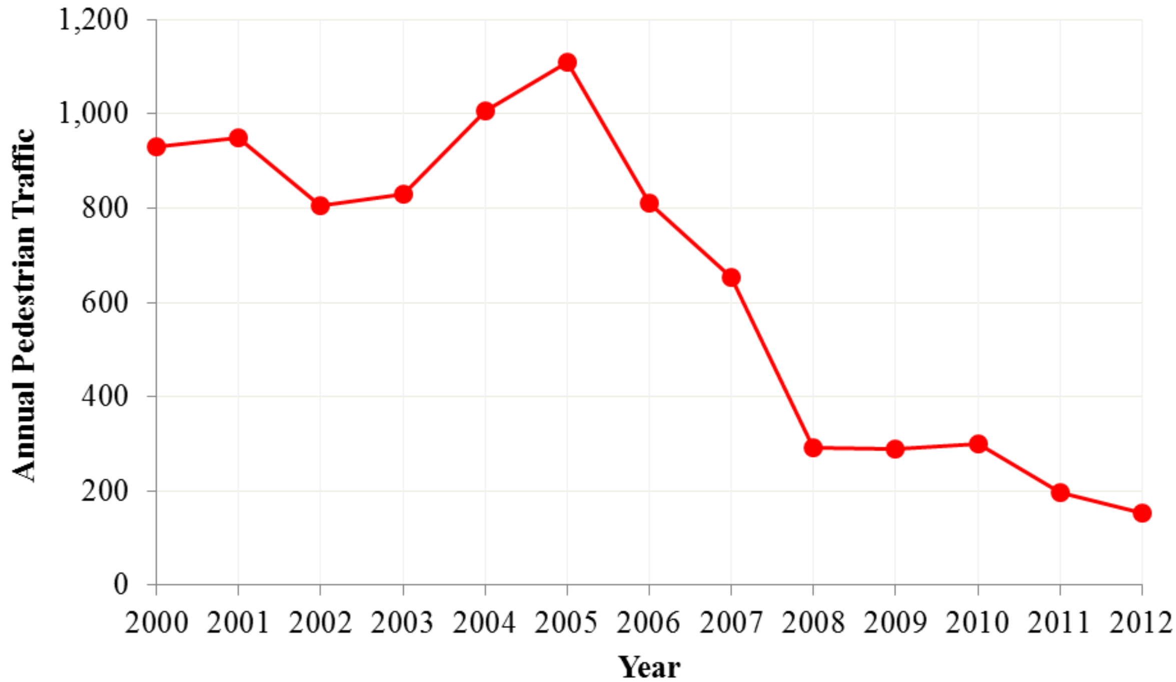
Source: CBP[9]

Figure 4.21: Free Trade Bridge—Northbound Bus Crossings



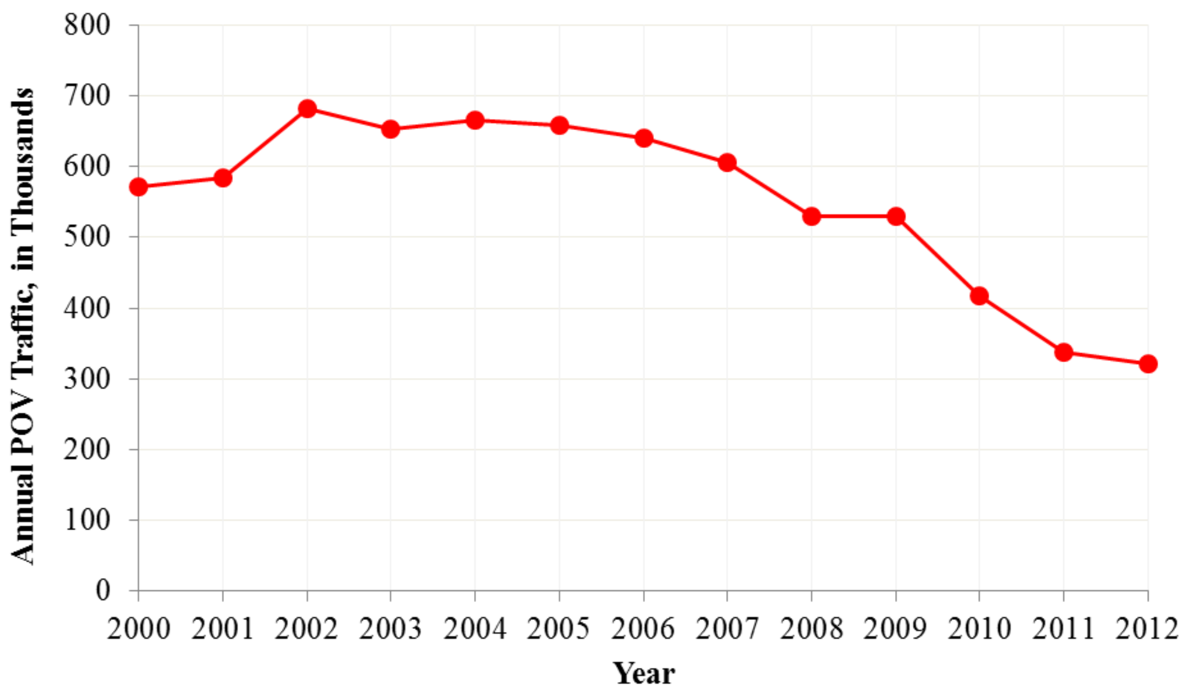
Source: CBP[9]

Figure 4.22: Free Trade Bridge—Northbound Commercial Truck Crossings



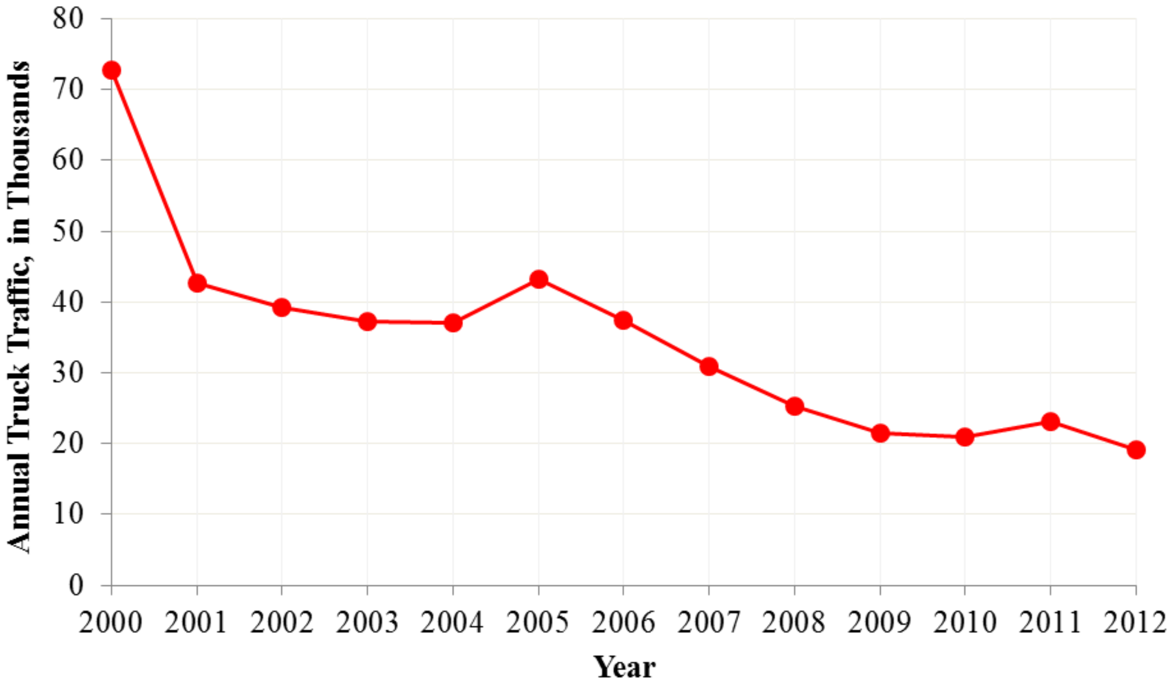
Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.23: Free Trade Bridge—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.24: Free Trade Bridge—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.25: Free Trade Bridge—Southbound Commercial Truck Crossings

Northbound Crossings: Figure 4.19 illustrates the number of northbound pedestrian crossings at the Free Trade Bridge. Specifically, it shows that the number of northbound pedestrian crossings decreased sharply between 2000 when 11,670 pedestrians crossed the bridge and 2009 when 284 pedestrians crossed the bridge. The 97.6 percent decrease in the number of northbound pedestrian crossings between 2000 and 2009 could be attributed to the events of September 11, 2001. Between 2009 and 2012, the number of northbound pedestrian crossings increased significantly to reach 5,841 in 2012.

Alternately, northbound POV crossings at the Free Trade Bridge remained fairly constant between 2003 and 2008, fluctuating between 746,148 and 774,681 POV crossings per year. However, northbound POV crossings decreased 45.8 percent between 2008 and 2012 to reach 418,275 in 2012 (see Figure 4.20).

Northbound bus crossings at the Free Trade Bridge have been cyclical, increasing sharply (144.9 percent) between 2000 and 2002 before decreasing sharply between 2002 and 2005 (47.5 percent) and then increasing again sharply between 2005 and 2006 (almost 81 percent). Between 2006 and 2012, the number of buses crossing northbound decreased significantly to only one recorded bus crossing in 2011 and zero recorded bus crossings in 2012 (see Figure 4.21).

Annual truck crossings at the Free Trade Bridge have also decreased from a peak of 84,422 crossings in 2000 to the lowest recorded level of 27,300 crossings in 2012, a decrease of 67.7 percent (see Figure 4.22).

Southbound Crossings: Figure 4.23 shows southbound pedestrian crossings at the Free Trade Bridge decreased 86.1 percent between 2005 (the peak year) and 2012, when the lowest level of southbound pedestrian crossings was recorded at 154.

Figure 4.24 shows southbound POV crossings at the Free Trade Bridge decreased 52.8 percent between 2002 (the peak year) and 2012, when the lowest level of southbound pedestrian crossings was recorded at 321,803.

Annual southbound commercial truck crossings at the Free Trade Bridge decreased from 72,714 in 2000 (the peak year) to 19,171 in 2012 (the lowest level), a decrease of 73.6 percent (see Figure 4.25). The relatively sharp decrease in the number of southbound commercial truck crossings in 2001 relative to 2000 could be attributed to the events of September 11, 2001.

Primary Roadways Serving Free Trade Bridge

Figure 4.26 shows the location of the Free Trade Bridge. On the U.S. side, FM 509 is the primary ingress and egress to the Free Trade Bridge. FM 509 is about 15 miles long and connects the bridge to US 77/US 83/IH 69 E. For most of its length FM 509 is a two-lane undivided highway. However, toward the bridge, after US 281/Military Highway, FM 509 becomes a four-lane divided highway. In 2010, the AADT on FM 509 was 3,700 vehicles, of which 4.2 percent were trucks. FM 509 had 1.54 accidents reported per mile in 2010. The LOS on FM 509 was A in 2010.

Approximately 1.5 miles from the bridge, FM 509 intersects with US 281/Military Highway, a two-lane undivided highway that runs parallel to the U.S.-Mexico border on the U.S. side. In 2010, the AADT on US 281/Military Highway was 5,900 vehicles per day, of which 16.9 percent were trucks. The number of accidents on US 281/Military Highway was 0.8 accidents per mile in 2010. The LOS on US 281/Military Highway was A in 2010.

On the Mexican side, Cantu Road is the primary ingress and egress to the Free Trade Bridge. Cantu Road becomes MEX 2 at the intersection of Cantu Road and MEX 2D. MEX 2 runs west to Reynosa and intersects with MEX 12 (which runs north from Valle Hermoso). MEX 2D also runs west to Reynosa, parallel and to the north of MEX 2. MEX 2 and MEX 2D have four lanes and operated at LOS E in 2010.

Figure 4.26: Free Trade Bridge

Planned Changes in Infrastructure (Present to 2030)

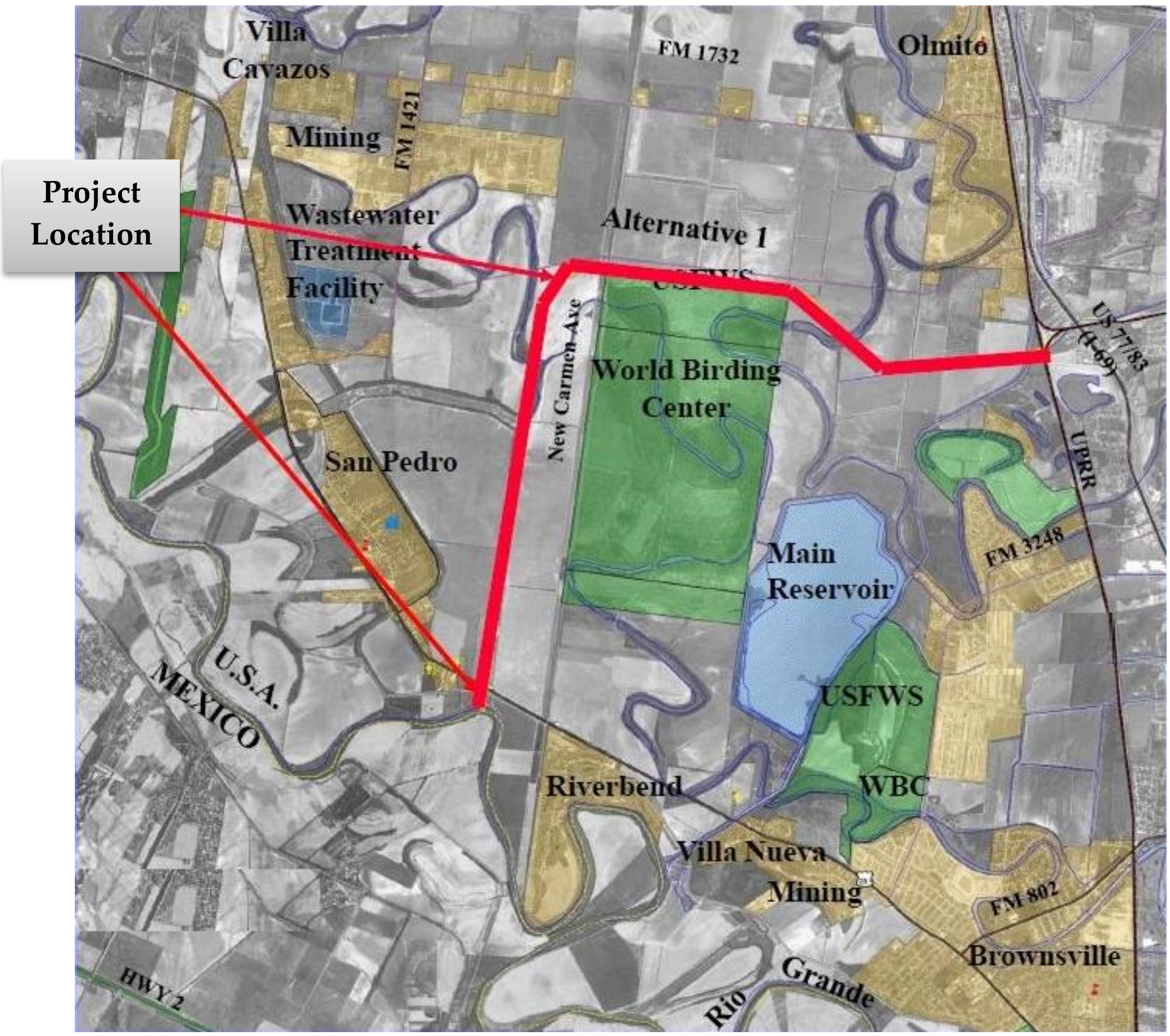
Current TxDOT plans include a new four-lane divided highway for the US 281/Military Highway connector starting from 0.5 miles west of FM 732/Narcisco Martinez Highway to US 77/US 83/IH 69E/SH 100 (TxDOT Project 0220-04-900). The proposed highway is expected to accommodate as many as 34,200 vehicles per day by 2035. This new highway will provide a relief route for US 77/US 83/IH 69E and US 281/Military Highway.

4.1.5 Brownsville West Rail Bypass International Bridge

Construction of the Brownsville West Rail Bypass International Bridge—by Cameron County in conjunction with TxDOT and UPRR—began in 2010 in the United States and in 2011 in Mexico. Bridge construction was expected to be completed at the end of 2012,[6] but the opening remains delayed as of August 2013. The Brownsville West Rail Bypass International Bridge will be a new international crossing with Mexico west of Brownsville.[21] The rail bypass will eliminate multiple grade crossings within Brownsville, thereby reducing traffic congestion within the area. The bypass alignment runs west from the Olmito Yard north of Brownsville and turns south at Resaca de la

Palma State Park before crossing over US 281/Military Highway and the Rio Grande River into Mexico.

The total cost of the project to the United States is estimated at $38.3 million. The project is funded by the Federal Highway Bridge Program ($13.0 million), American Recovery and Reinvestment Act of 2009 ($7,809,326), 2005 Omnibus Act ($1.75 million), FY 2003 Earmark ($885,600), SAFETEA-LU ($4.0 million), and the Federal Railroad Administration ($4.0 million).[22] On the Mexican side, FONADIN provided all funding for the project, MXN 804 million (approximately US $64.8 million). Figure 4.27 illustrates the location of the Brownsville West Rail Bypass International Bridge.



Source: Sepulveda[23]

Figure 4.27: Brownsville West Rail Bypass International Bridge

4.1.6 Brownsville South Padre Island International Airport

The Brownsville South Padre Island International Airport is a public-use airport owned by the City of Brownsville. It is located 4 miles east of the central business district (CBD). The airport opened on March 9, 1929. The Brownsville South Padre Island International Airport is served by three airlines: AeroMexico, American Airlines, and United Airlines. South Texas Express, Inc., provides local delivery, ground handling, and 500-mile midnight express air cargo services.[24]

Hours of Operation

CBP provides customs and immigration services and agricultural inspections at the airport 24 hours a day 365 days a year.

Primary Roadways Serving Brownsville South Padre Island International Airport

The Brownsville South Padre Island International Airport is primarily served by FM 2519/Billy Mitchell Boulevard, which connects the airport to SH 4/Boca Chica Boulevard and US 77/US 83/IH 69E (see Figure 4.28). FM 2519/Billy Mitchell Boulevard is a four-lane undivided highway with an AADT of 9,500 vehicles, of which 10.4 percent were trucks in 2010. There were 8.86 accidents reported per mile on this highway in 2010. The 2010 LOS on FM 2519 was A.

Figure 4.28: Brownsville South Padre Island International Airport and Valley International Airport

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, no planned infrastructure projects have been identified near the Brownsville South Padre Island International Airport.

4.1.7 Valley International Airport

Valley International Airport, also known as the Rio Grande Valley International Airport, is the largest airport in the Rio Grande Valley in terms of the number of passengers.[25] It is a public-use airport operated by the City of Harlingen, located 3 miles northeast of the CBD. Valley International Airport is served by three airlines—Southwest, United, and Sun Country—and four cargo carriers—FedEx, Southwest Cargo, United Cargo, and DHL.

Hours of Operation

CBP provides customs and immigration services from 8:00 a.m. to 4:00 p.m. Monday through Friday.

Primary Roadways Serving Valley International Airport

Valley International Airport is primarily served by Loop 499/Ed Carey Drive and FM 507. Loop 499/Ed Carey Drive is a four-lane divided highway that connects to US 77/IH 69E on the west side and US 77/US 83/IH 69E on the south side (see Figure 4.28). The AADT on Loop 499/Ed Carey Drive was 9,000 vehicles in 2010, of which 8.7 percent were trucks. There were 12.24 accidents reported per mile on Loop 499/Ed Carey Drive in 2010. The LOS on this facility was A in 2010.

FM 507 is a two-lane undivided highway with an AADT of 11,400 vehicles in 2010, of which 4.2 percent were trucks. FM 507 had 8.81 accidents reported per mile in 2010. The LOS on FM 507 was B in 2010.

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, two improvements to FM 509 are planned. The first involves the construction of a new section of FM 509 (FM 509 Extension/Outer Parkway) between US 77/IH 69E at Orphanage Road and FM 508 (TxDOT Project 0921-06-254) by 2030. FM 509 Extension/Outer Parkway will be a two-lane undivided section. The proposed section is expected to serve an AADT of 2,700 vehicles, of which 10 percent will be trucks in 2030. The LOS on the extension is expected to be C by 2030.

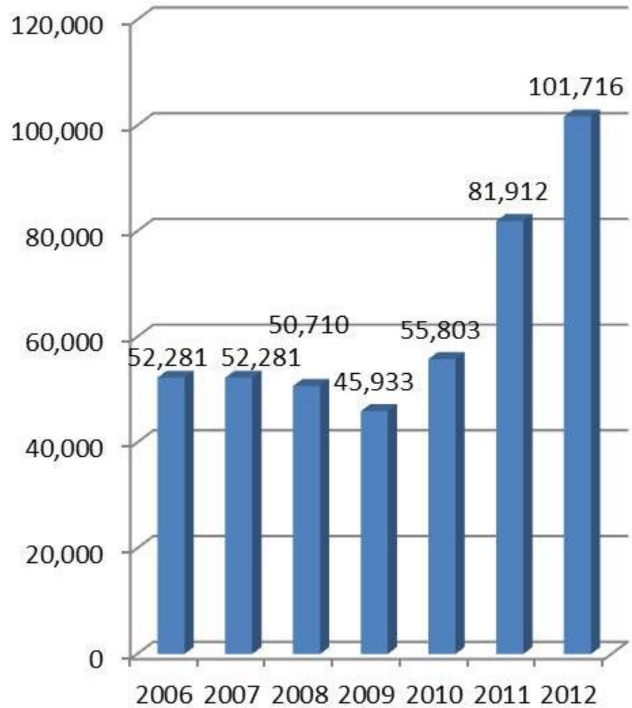
The second planned project involves the expansion of FM 509 between BU 77N and FM 106 from a two-lane undivided facility to a four-lane divided facility (TxDOT Project 2369-01-016) by 2030. The projected traffic after project completion is estimated at 27,700 vehicles per day. This increase in number of lanes will improve the LOS on this section of FM 509 by 2030.

4.1.8 Matamoros International Airport

The Matamoros International Airport, also known as the General Servando Canales Airport, is located 5.5 miles south of Matamoros. The airport opened in 1950.

The Matamoros International Airport has one asphalt landing strip with an operational capacity of 20 flights per hour. The airport is served by two commercial airlines: AeroMexico and Aeromar. Non-stop service is provided to Ciudad Victoria and Mexico City, and airport studies support the future development of commercial routes to Guadalajara and Monterrey.[26]

Figure 4.29 shows the number of passengers handled at the Matamoros International Airport between 2006 and 2012. Figure 4.29 indicates that between 2006 and 2010, the number of passengers remained fairly constant. The number of passengers, however, almost doubled between 2010 and 2012.



Source: Aeropuertos y Servicios Auxiliares[26]

Figure 4.29: Matamoros International Airport—Number of Passengers

Hours of Operation

The airport provides daily service between 8:00 a.m. and 8:00 p.m. 365 days a year.

Primary Roadways Serving Matamoros International Airport

The Matamoros International Airport is served by MEX 101, which connects to Matamoros MEX 2 and Libramiento Portes Gil to the north, and to Tamaulipas (TAM) 5 (Port of Matamoros) and TAM 12 (Valle Hermoso) to the south (see Figure 4.30).

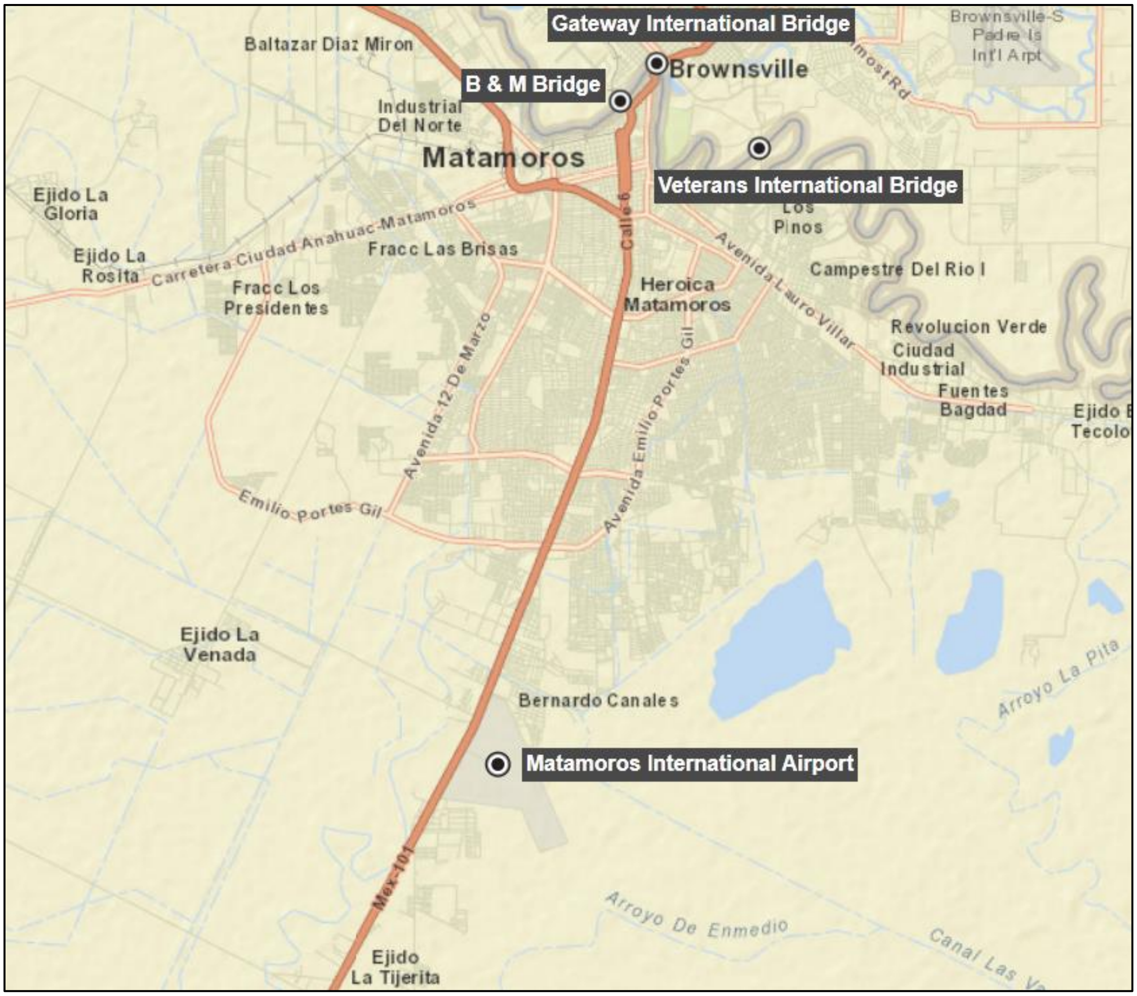


Figure 4.30: Matamoros International Airport

Planned Changes in Infrastructure (Present to 2030)

The State of Tamaulipas is planning on improving TAM 57, which connects the Port of Matamoros to MEX 101. Additional information about this project can be found in Chapter 5.

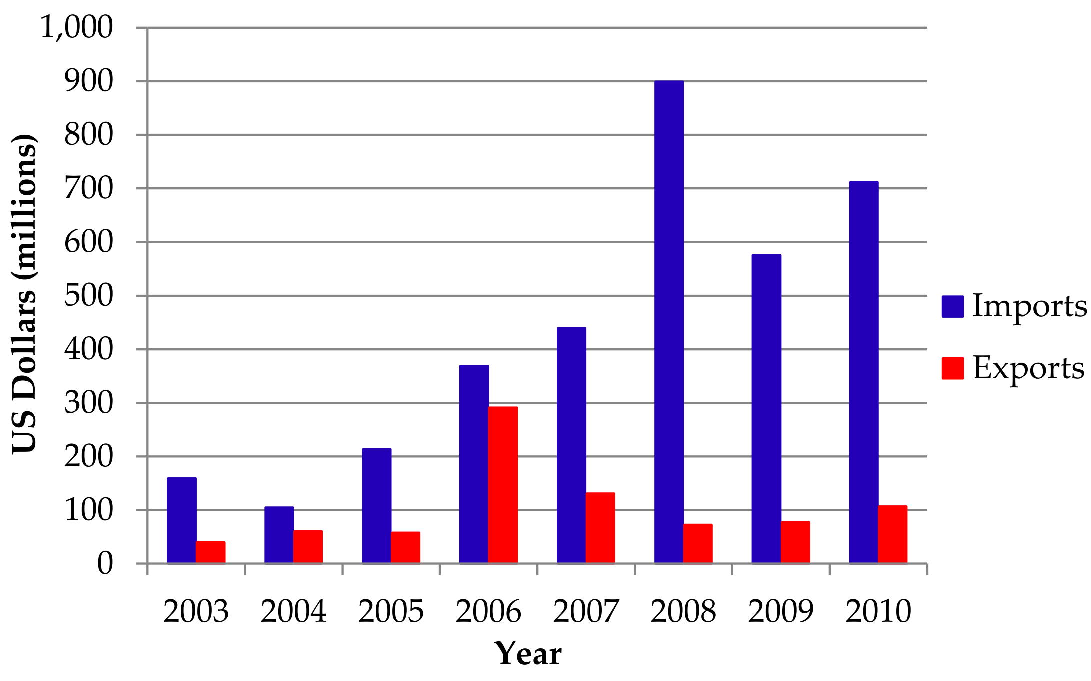
4.1.9 Port of Brownsville

The Port of Brownsville opened in 1936. The Port of Brownsville is an inland deep-water seaport with access to the Gulf of Mexico through a 17-mile ship channel, linking the land transportation infrastructure of Mexico and the United States with the U.S. Inland Waterway System. Located 2 miles northeast of Brownsville on 40,000 acres of land, the port has 571,065 square feet of covered storage, 11 cargo docks, 4 oil docks, 1 liquid-cargo dock, and an express dock.[27] The current authorized depth of the Brownsville Ship Channel is 42 feet, and the turning basin has a depth of 36 feet and a width of 1,200 feet.[28] It is governed by the Brownsville Navigation District, and guidance is provided by an elected board of commissioners.

The Port of Brownsville is primarily a bulk commodity port that handles chemicals, liquid petroleum gas, clays, petroleum, grain, agricultural products, sulfur, steel, bulk minerals, ores, and aluminum.

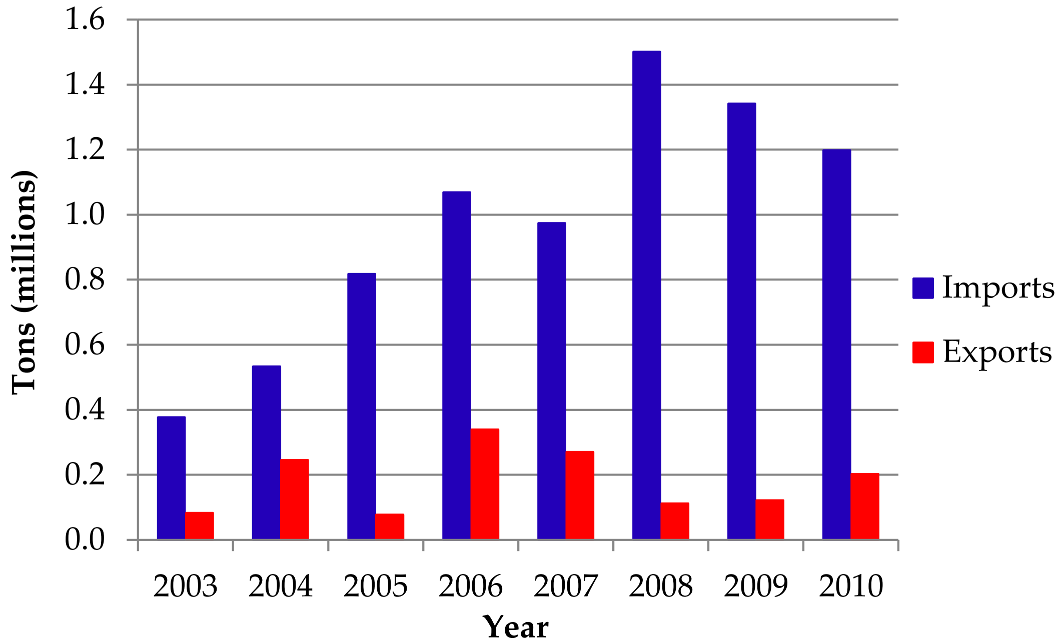
As shown in Figures 4.31 and 4.32, U.S. imports through the Port of Brownsville increased 500 percent in terms of value and 285 percent in terms of tonnage between 2003 and the peak year 2008. Between 2008 and 2009, however, the value of U.S. imports through the Port of Brownville decreased 36 percent, while the imported tonnage decreased only 10 percent. Interestingly, in 2010, the value of imports increased $120 million, while imported tonnage decreased 150,000 tons.

U.S. exports through the Port of Brownsville amounted to $100 million and 200,000 tons in 2010. The highest export value and tonnage were recorded in 2006, after which both the value and tonnage of goods exported through the Port of Brownsville decreased. Between 2008 and 2010, however, a modest increase in both the exported value and tonnage was recorded.



Source: World Port Source[29]

Figure 4.31: Port of Brownsville Foreign Trade Measured by Value (US$)



Source: World Port Source[29]

Figure 4.32: Port of Brownsville Foreign Trade Measured by Weight (U.S. Short Tons[30])

Rail freight traffic at the Port of Brownsville is handled by BRG, a short-line railroad owned by the Brownsville Navigation District, which provides rail service to all facilities located within its jurisdictional boundaries. Trains at the port interchange with the UPRR Brownsville Subdivision at the Olmito Yard on the North Rail Loop. The Brownsville Subdivision runs from the Texas-Mexico border north toward Corpus Christi.[31]

The Port of Brownsville is the closest deep-water port to the industrial centers in Northern Mexico. Consequently, the B&M Bridge and the road and rail infrastructure of South Texas are used extensively to move freight between the port and industrial sites in Matamoros, Mexico, and beyond. Approximately 65 percent of the freight handled at the Port of Brownsville originates from or is destined for Mexico.[31] Martin Associates determined that 4,373 jobs were directly related to the marine cargo and vessel activity and the ship and rig repair operations at the Port of Brownsville in 2012. Martin Associates also found that 2,366 indirect jobs were supported by $212.9 million of local purchases. These purchases came from businesses supplying services at the marine terminals and businesses dependent on the Port of Brownsville for the shipment and receipt of cargo and on the ship and rig repair operations.[31]

Primary Roadways Serving the Port of Brownsville

Figure 4.33 shows the location of the Port of Brownsville. The Port of Brownsville is served by FM 511 on the west side and SH 48 on the north side. FM 511 runs north and connects to SH 550 just north of Port Isabel Road. For the most part, FM 511 is a two-lane undivided facility. This highway saw 5.02 accidents per mile in 2010. FM 511 had an AADT of 6,200 vehicles in 2010, of which 21.9 percent were trucks. The LOS on FM 511 was A in 2010.

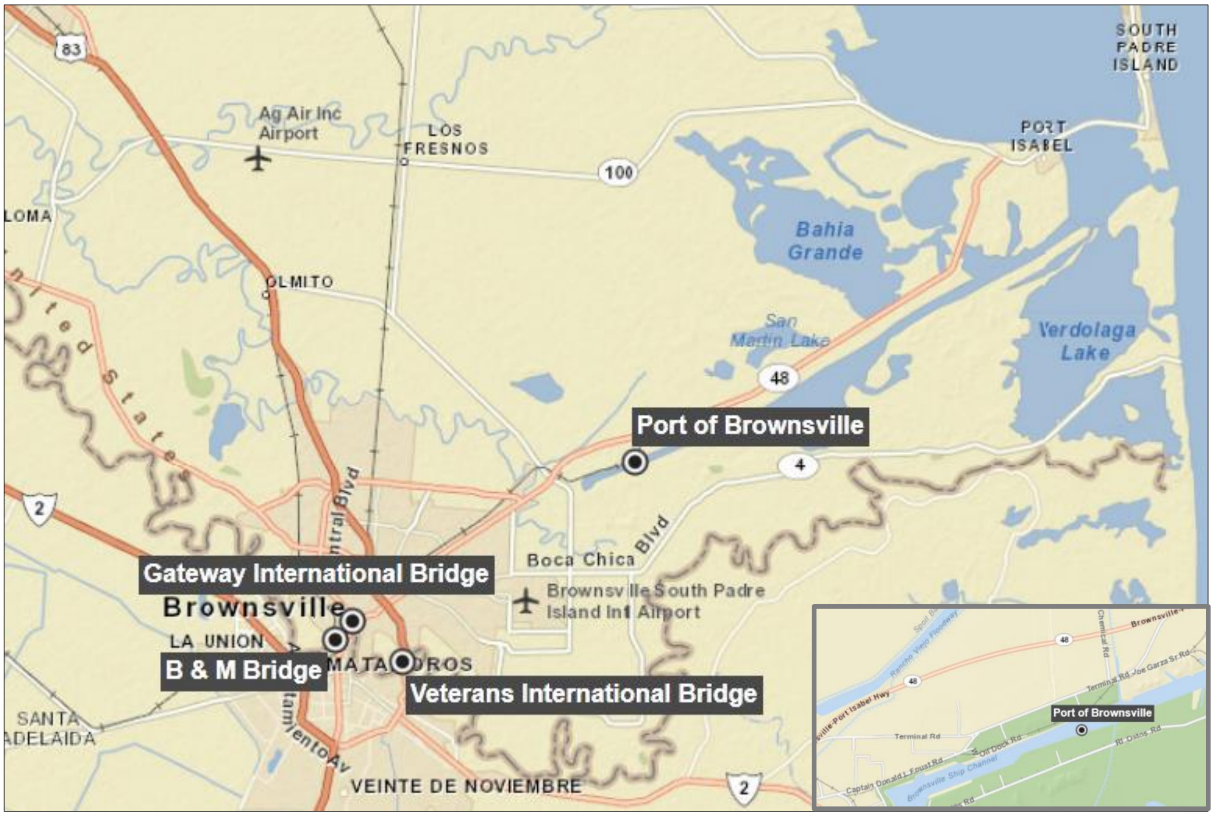


Figure 4.33: Port of Brownsville

TxDOT and Cameron County constructed SH 550, a four-lane divided highway. SH 550 is a tolled facility and overlaps with FM 511 from Olmito to Old Port Isabel Road. At that point, SH 550 veers east and then south to connect to the Port of Brownsville at a planned new north entrance.

SH 48 runs west and provides access to and from the Port of Brownsville to SH 4 and US 77/US 83/IH 69 E. Near the Port of Brownsville, SH 48 is a four-lane divided highway that had an AADT of 14,100 vehicles in 2010, of which 2.8 percent were trucks. This facility had 2.34 accidents reported per mile in 2010. The LOS on this facility in 2010 was B.

As mentioned earlier, BND currently has special authority to issue permits for the movement of OS/OW trucks on SH 48/SH 4 between the Gateway International Bridge and the entrance to the Port of Brownsville, and on US 77/US 83 and SH 48/SH 4 between the Veterans International Bridge at Los Tomates and the entrance to the Port of Brownsville.[32] In addition, the Cameron County RMA has funded another OS/OW truck route (SH 550) that connects the Port of Brownsville to US 77/83/IH 69 E on the north end.

Planned Changes in Infrastructure (Present to 2030)

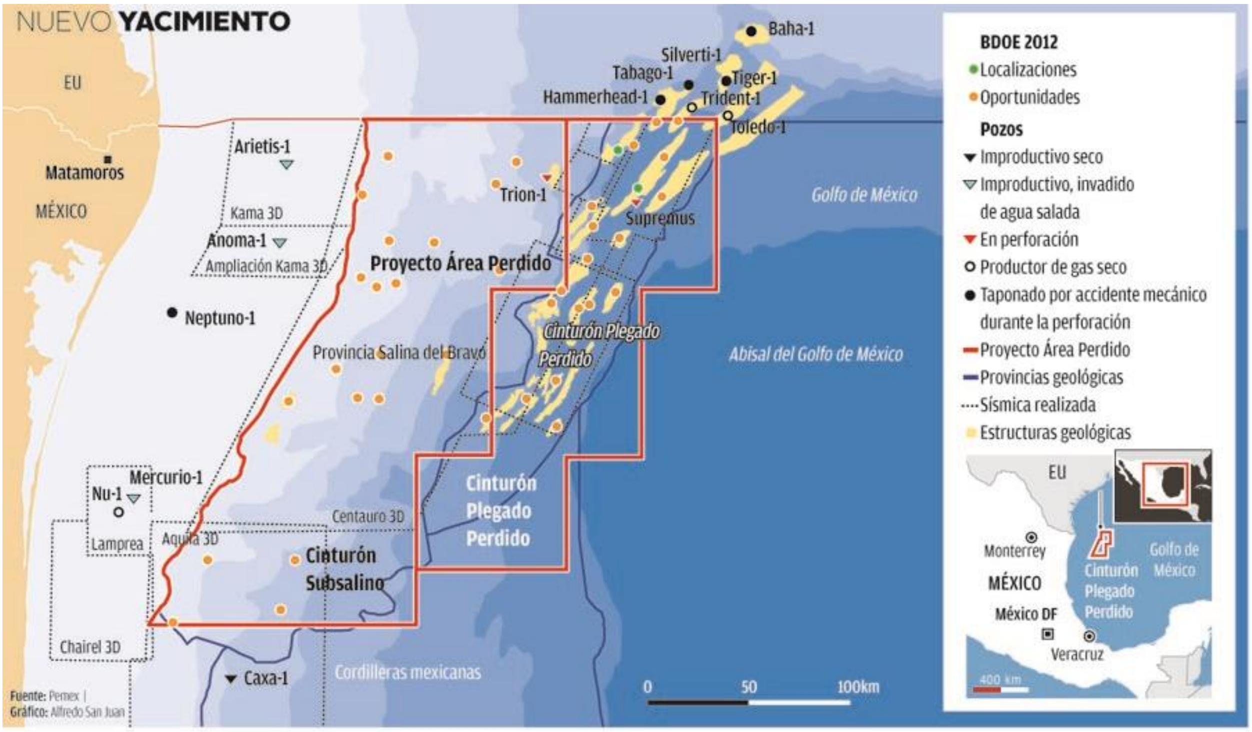
SH 32-East (Phase II), a new highway to connect US 77/83 and SH 4, has been approved. The proposed SH 32 project would be from the FM 3068/Indiana Avenue and FM 1419/Southmost Road intersection east-northeast to SH 4. The construction cost is estimated at $40 million, and the project is expected to let by 2030. This investment is expected to provide a relief route for SH 4, which would improve the LOS on SH 4. SH 32-East (Phase II) will divert trucks away from Brownsville's most populated areas and provide access to the Port of Brownsville at a planned new south entrance.

4.1.10 Port of Matamoros

The Government of Tamaulipas and the State Housing Institute co-own the Port of Matamoros, also known as Port of El Mezquital, through a State Port Administration Authority (Administración Portuaria Integral, S.A. de C.V. [API Tamaulipas]). Currently, conditions at the port do not allow for significant operations.

In 2006, API Tamaulipas published an ambitious plan, the 2006–2011 Port of El Mezquital Master Plan (Programa Maestro de Desarrollo Portuario: 2006–2011).[33] This plan contained short-, medium-, and long-term goals; a strength/weaknesses/ opportunities/threats (SWOT) analysis; best strategies; and an implementation plan that included estimated projects costs. The short-term goals included initiation of bulk grain, general freight, and limestone shipments. Over the medium and long term, the goals were to attract maritime platform and ship scrapping companies, as well as a liquid natural gas (LNG) terminal. A lack of investment and certain utility services, inadequate road access, the condition of the channel, and the port's location in the environmentally sensitive Laguna Madre y Delta del Río Bravo[34] (home to a number of protected species[35]) may have all contributed to the port failing to achieve its goals from 2006 to 2011.

In October 2012, Petróleos Mexicanos (PEMEX) confirmed the discovery of important oil reserves at its Trion-1 and Supremus-1 wells in the Perdido Basin in the Gulf of Mexico. The discovery of these oil reserves, mapped in Figure 4.34, has positively impacted investments at the Port of Matamoros. The State of Tamaulipas has started to invest in road infrastructure to provide access to the port and is working with PEMEX on how to best develop the port to support the development of PEMEX's deep-water operations.



Source: 2b1st Consulting[36]

Figure 4.34: Location of PEMEX'S Deep-Water Exploration and Relevant Wells in Region

Primary Roadways Serving the Port of Matamoros

The Port of Matamoros is served by TAM 5, a two-lane road, that is currently being upgraded to four lanes. TAM 5 connects to MEX 101, which connects to MEX 2 and Libramiento Portes Gil to the north and to TAM 12 (Valle Hermoso) to the south. The port is not served by rail (see Figure 4.35).

Figure 4.35: Port of Matamoros

4.2 Hidalgo County/Municipalities of Valle Hermoso, Reynosa, and Díaz Ordaz

There are five bridge crossings and one ferry crossing in Hidalgo County and the Municipalities of Valle Hermoso, Reynosa, and Díaz Ordaz. Four of the five bridges serve pedestrian, non-commercial, and commercial vehicles. The exception is the Donna International Bridge, which does not serve commercial truck traffic. The Los Ebanos Ferry is the only ferry crossing in the Focused Study Area and serves pedestrians and non-commercial vehicles. The specific transportation modes served by each of the facilities are provided in Table 4.8.

Table 4.8: Summary of Hidalgo County/Municipalities of Valle Hermoso, Reynosa, and Díaz Ordaz Bridges, Ferry, and Airports

Bridge/Ferry	Location	Pedestrians	Non-commercial Vehicles	Commercial Vehicles	Rail
Weslaco-Progreso International Bridge	Progreso/ Nuevo Progreso	Yes	Yes	Yes	No
Donna International Bridge	Donna/ Río Bravo	Yes	Yes	No	No
Pharr-Reynosa International Bridge on the Rise	Pharr/ Reynosa	Yes	Yes	Yes	No
McAllen-Hidalgo-Reynosa Bridge	Hidalgo/ Reynosa	Yes	Yes	Yes	No
Anzaldúas International Bridge	Mission/ Reynosa	Yes	Yes	No	No
Los Ebanos Ferry	Los Ebanos/ Gustavo Díaz Ordaz	Yes	Yes	No	No
McAllen-Miller International Airport	McAllen	Yes	N/A	N/A	N/A
Weslaco/Mid Valley Airport	Harlingen	Yes	N/A	N/A	N/A
South Texas International Airport	Edinburg	Yes	N/A	N/A	N/A
Reynosa International Airport	Reynosa	Yes	N/A	N/A	N/A

4.2.1 Weslaco-Progreso International Bridge

On the U.S. side, the Weslaco-Progreso International Bridge is owned and operated by the B&P Bridge Company of Weslaco. The Mexican side of the bridge is owned by the Mexican Government and operated by CAPUFE. The 628-foot bridge has four lanes for automobile traffic—two lanes in each direction—with pedestrian sidewalks and a separate two-lane truck bridge.

The bridge is located on FM 1015 south of US 281/Military Highway in Progreso on the U.S. side and on Benito Juárez north of MEX 2 in Nuevo Progreso, Tamaulipas. The crossing is also known locally as the B&P Bridge, Puente Las Flores, and Puente Internacional Nuevo Progreso-Progreso.

Border Station

GSA leases the U.S. LPOE facility (Progreso LPOE) from the B&P Bridge Company. The original facility was completed in 1983. GSA is negotiating a long-term succeeding lease with the lessor, which will include upgrading the electrical wiring, plumbing, and lighting. There are no plans for expansion of the facility at this time.[37] The border station on the Mexican side has been in operation since 1951.[6]

Temporary modular facilities for truck inspections by the Federal Motor Carrier Safety Administration have been erected adjacent to the import lot. The two-lane truck bridge is currently only used by northbound commercial truck traffic. A lack of Mexican inspection facilities has delayed the usage of this bridge by southbound commercial truck traffic.

Hours of Operation

The bridge currently operates 24 hours a day 365 days a year for POVs only. For commercial/cargo vehicles, the bridge operates from 8:00 a.m. to 5:00 p.m. Monday through Friday and from 10:00 a.m. to 12:00 p.m. Saturday for commercial vehicles.

Tolls

Table 4.9 provides the toll rates for the Weslaco-Progreso International Bridge.

Table 4.9: Toll Rates for Weslaco-Progreso International Bridge

Mode	Southbound Toll Rate (US$)	Northbound Toll Rate (US$)
Pedestrian or Bicycle	0.50	0.25
Non-commercial Vehicle	2.00	N/A
Motorcycle	N/A	1.05
Non-commercial Auto or Pickup	N/A	2.10
Extra Axle for Non-commercial Vehicle	N/A	1.21
Commercial Vehicle	3.50 per axle	N/A
Passenger Bus (2, 3, and 4 Axles)	N/A	4.33
Commercial Truck (2, 3, and 4 Axles)	N/A	4.33
Commercial Truck (5 and 6 Axles)	N/A	9.27
Commercial Truck (7, 8, and 9 Axles)	N/A	14.50
Extra Axle for Commercial Vehicle	N/A	2.42

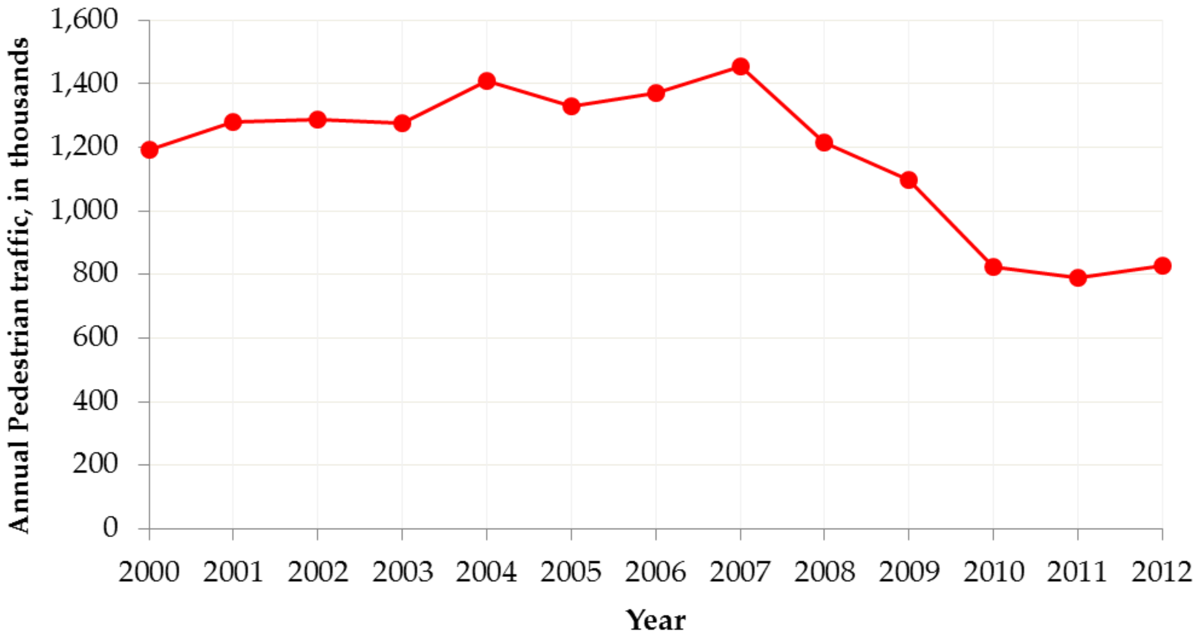
Note: Exchange rate = MXN 12.40 per US $1.

Source: Progreso International Bridge[38] and CAPUFE[8]

Bridge Crossings

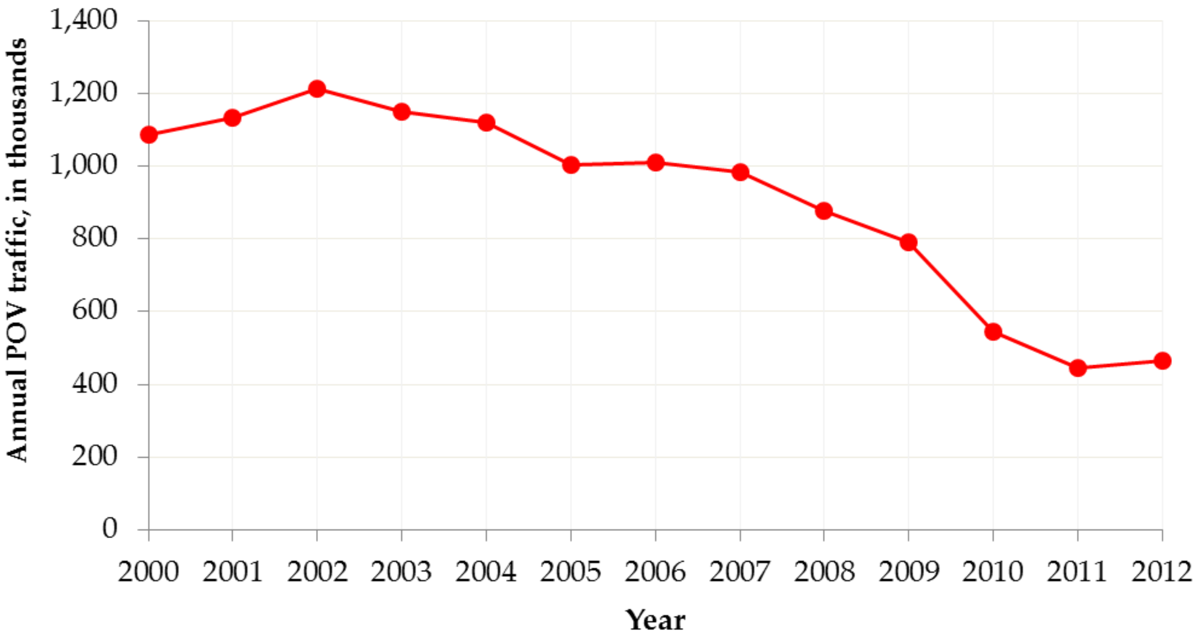
Figures 4.35 through 4.38 illustrate the number of northbound bridge crossings by mode at the Weslaco-Progreso International Bridge between 2000 and 2012. Figures 4.39 through 4.41 illustrate the number of southbound crossings at the Weslaco-Progreso International Bridge between 2000 and 2012.

Northbound Crossings: Figure 4.35 shows that the annual number of pedestrian crossings at the Weslaco-Progreso International Bridge fluctuated between 1.2 and 1.5 million between 2000 and 2008. However, between 2007 and 2011, the number of annual northbound pedestrian crossings decreased substantially from a high of 1,456,657 in 2007 to a low of 791,099 in 2011, a 45.7 percent decrease. In 2012, the number of northbound pedestrian crossings increased 4.6 percent relative to 2011 to reach 827,708.



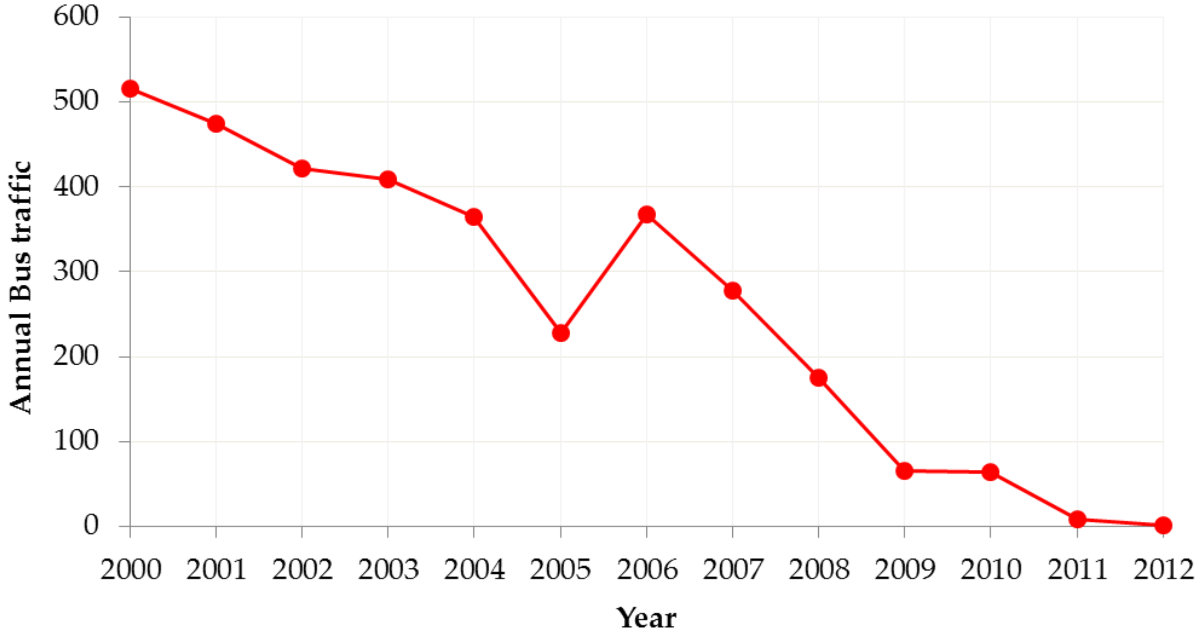
Source: CBP[9]

Figure 4.35: Weslaco-Progreso International Bridge—Northbound Pedestrian Crossings



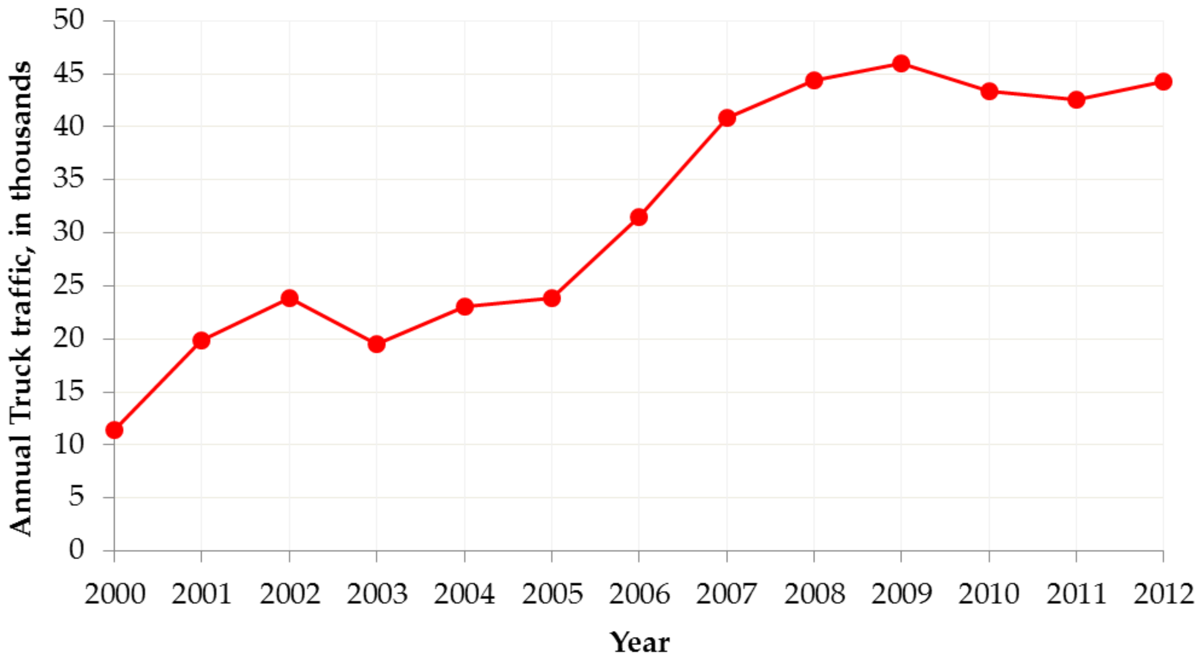
Source: CBP[9]

Figure 4.36: Weslaco-Progreso International Bridge—Northbound POV Crossings



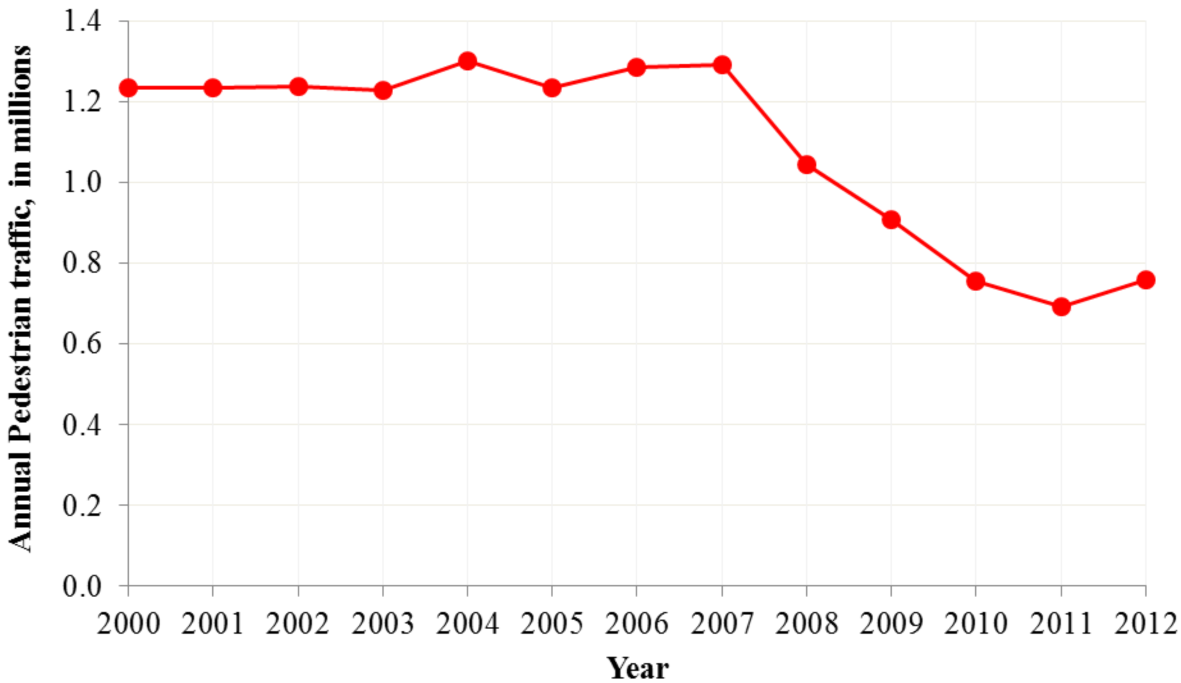
Source: CBP[9]

Figure 4.37: Weslaco-Progreso International Bridge—Northbound Bus Crossings



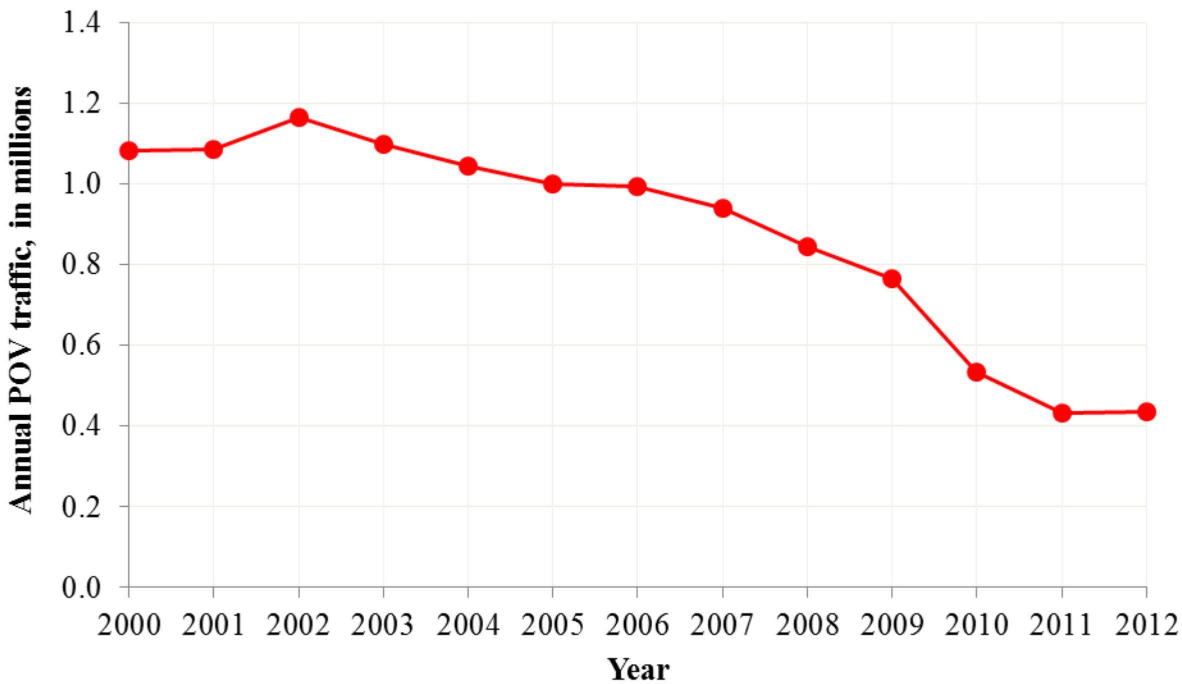
Source: CBP[9]

Figure 4.38: Weslaco-Progreso International Bridge—Northbound Commercial Truck Crossings



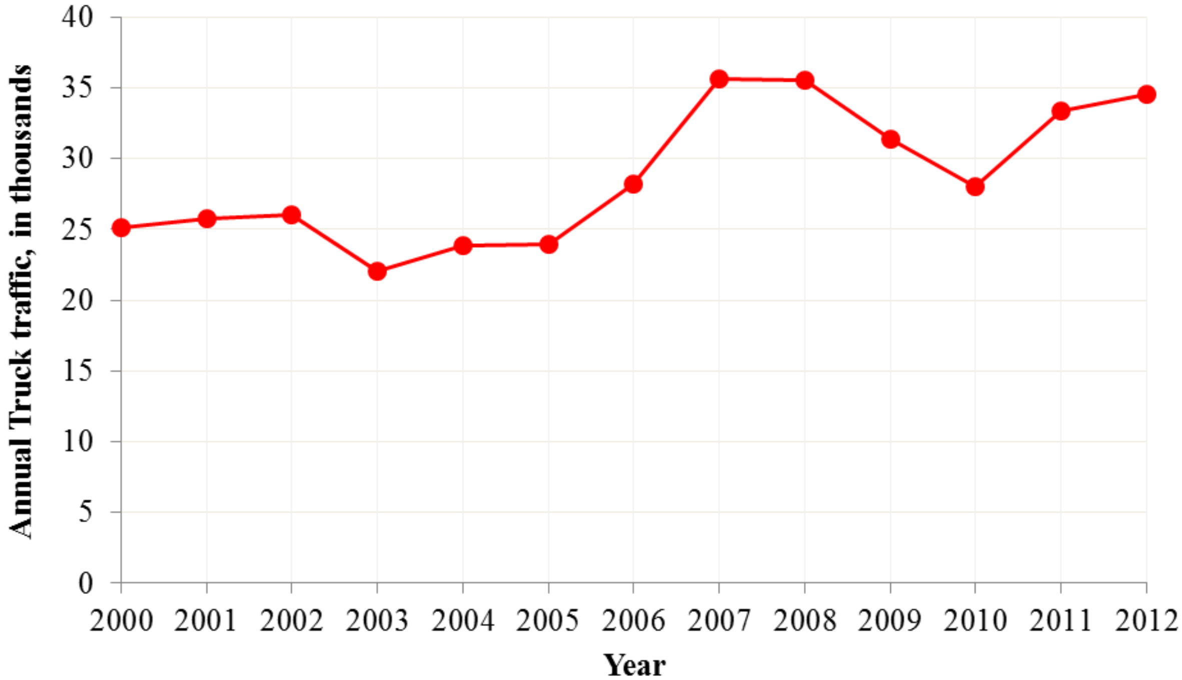
Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.39: Weslaco-Progreso International Bridge—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.40: Weslaco-Progreso International Bridge—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.41: Weslaco-Progreso International Bridge—Southbound Commercial Truck Crossings

Although the number of northbound POV crossings at the Weslaco-Progreso International Bridge increased between 2000 and 2002, Figure 4.36 shows a continuous decrease in the number of northbound POV crossings between 2002 and 2011. Specifically, the number of northbound POV crossings decreased 63.2 percent from a high of 1,214,011 in 2002 to a low of 446,241 in 2011. In 2012, the number of northbound POV crossings increased 4.6 percent relative to 2011 to reach 466,544.

Figure 4.37 shows that the annual number of northbound bus crossings decreased from 516 in 2000 to one in 2012, a 99.8 percent decrease.

On the other hand, the number of northbound commercial truck crossings increased 286.5 percent between 2000 and 2012. Although the number of northbound commercial truck crossings decreased 7.3 percent between the 2009 peak year and 2011, the crossings increased 4.0 percent in 2012 to reach 44,300 (see Figure 4.38).

<u>*Southbound Crossings*</u>[10]: Southbound pedestrian crossings at the Weslaco-Progresso International Bridge remained relatively constant between 2000 and 2007, fluctuating between 1,227,698 and 1,299,493 crossings per year (see Figure 4.39). However, between 2007 and 2011, annual southbound pedestrian crossings decreased 46.3 percent to reach 692,719 crossings in 2011 (the lowest level). In 2012, the number of

southbound pedestrian crossings increased 9.6 percent relative to 2011 to reach 759,259 crossings.

Figure 4.40 shows that the number of southbound POV crossings at the Weslaco-Progreso International Bridge decreased 62.7 percent from a high of 1,164,289 in 2002 to a low of 433,887 in 2011. In 2012, the number of southbound POV crossings increased marginally (0.6 percent) relative to 2011 to reach 436,449 crossings.

Figure 4.41 shows the number of southbound commercial truck crossings at the Weslaco-Progreso International Bridge increased 61.6 percent between 2003 and 2007. The number of southbound commercial truck crossings, however, remained relatively constant in 2008 before decreasing 21.0 percent between 2008 and 2010. Between 2010 and 2012, the number of southbound commercial truck crossings increased 23.2 percent to reach 34,567 in 2012.

Primary Roadways Serving Weslaco-Progreso International Bridge

Figure 4.42 shows the location of the Weslaco-Progreso International Bridge. On the U.S. side, FM 1015/Bill Summers International Boulevard is the primary access road to the Weslaco-Progreso International Bridge. FM 1015/Bill Summers International Boulevard is about 30 miles long and connects the bridge to US 281/Military Highway, US 83/IH 2, and SH 107 before terminating at SH 186. The widening of FM 1015/Bill Summers International Boulevard to a four-lane undivided facility with a continuous left-turn lane in the center from the border to US 83/IH 2 was completed in November 2008 at a cost of $6 million.[6] The AADT on FM 1015/Bill Summers International Boulevard was 13,500 vehicles in 2010, of which 4.6 percent were trucks. There were 0.48 accidents reported per mile on FM 1015 in 2010. In 2010, the LOS on FM 1015 was A.

Approximately 1.5 miles from the bridge, FM 1015/Bill Summers International Boulevard and US 281/Military Highway intersect. US 281/Military Highway is a two-lane undivided facility that runs parallel to the U.S.-Mexico border on the U.S. side. In 2010, the AADT on US 281/Military Highway near the bridge was 7,700 vehicles, of which 13.1 percent were trucks. No accidents were recorded on US 281/Military Highway in 2010. In 2010, the LOS on US 281/Military Highway was A.

On the Mexican side, MEX 2 and MEX 2D (located north of but parallel to MEX 2) run east-west between Reynosa and Matamoros. Near Nuevo Progreso, MEX 2 is a two-lane facility, and MEX 2D is a four-lane divided facility. MEX 99 and MEX 12 channel traffic north from Valle Hermoso to either side of Nuevo Progreso. Benito Juárez, a two-lane facility, intersects with MEX 2 and MEX 2D and passes through Nuevo Progreso before connecting to the Weslaco-Progreso International Bridge.

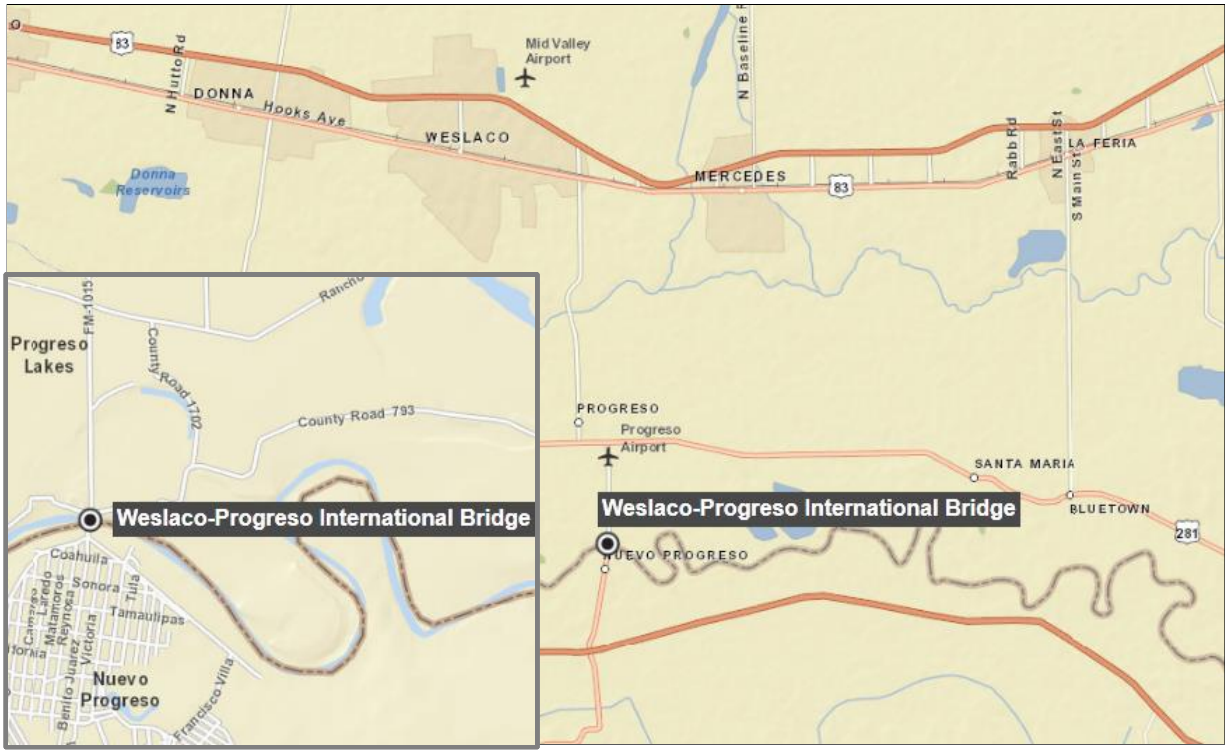


Figure 4.42: Weslaco-Progreso International Bridge

Planned Changes in Infrastructure (Present to 2030)

No planned infrastructure projects have been identified near the Weslaco-Progreso International Bridge.

4.2.2 Donna International Bridge

The Donna International Bridge opened on December 14, 2010.[6] On the U.S. side, the bridge is owned and operated by the City of Donna. The bridge has four southbound and four northbound lanes for POVs and a pedestrian walkway. The bridge is approximately 1,000 feet long and 108 feet wide.[6] The bridge has a capacity of 15,000 vehicles per day.[39] The Donna International Bridge is also certified as meeting the requirements of the Leadership in Energy and Environmental Design (LEED) program.

On the Mexican side, SCT granted the State of Tamaulipas a concession in March 2008 to construct, operate, and manage the Donna International Bridge. Per a legislative decree signed on December 3, 2009, Tamaulipas created a single trust (fideicomiso) to collect all tolls and manage all toll revenue obtained from the Free Trade Bridge and the Donna International Bridge. The Mexican side of the bridge was completed in December 2010 at an estimated cost of MXN 300 million (US $24.2 million). Information about the entity/company operating the bridge on the Mexican side is not publicly available.

The Donna International Bridge is located near the intersection of FM 493 and US 281/Military Highway on the U.S. side and near the intersection of Puebla and MEX 2 in Río Bravo, Tamaulipas. The crossing is also known locally as the Donna/Rio Bravo International Bridge and Puente Rio Bravo-Donna.

Border Station

The City of Donna donated land to the Federal Government. GSA has constructed a new border station facility on the U.S. side (LPOE Donna).[40]

Hours of Operation

The bridge currently operates from 6:00 a.m. to 10:00 p.m. 365 days a year for POVs only. The bridge also has a READY lane that is open from 9:00 a.m. to 2:00 p.m., which expedites crossing for travelers with RFID-enabled cards, such as a U.S. passport card or SENTRI card.

Tolls

Table 4.10 lists the toll rates for the Donna International Bridge.

Table 4.10: Toll Rates for Donna International Bridge

Mode	Toll Rate	
	Southbound (US$)	Northbound (US$)
Pedestrian	0.50	0.50
Bicycle	1.00	1.29
Non-commercial Vehicle or Motorcycle	3.00	3.87
Extra Axle for Non-commercial Vehicle	3.50	4.52
2-Axle Truck	8.00	10.32
3-Axle Truck	12.00	15.48
4-Axle Truck	14.00	18.06
Pushing/Pulling Car	5.00	6.45
Recreational Vehicle	20.00	25.81

Note: Exchange rate = MXN 12.40 per US $1.

Source: City of Donna[40]

Bridge Crossings[41]

The Donna International Bridge opened to traffic in December 2010.

Northbound Crossings: In 2011—the first full year for which crossing data were available—380,971 northbound POV crossings were reported. In 2012, the number of northbound POV crossings increased 28.0 percent relative to 2011 to reach 487,617.[40]

Southbound Crossings: Southbound crossing data for the Donna International Bridge were also available for 2011 and 2012. In 2011, 310,212 POVs crossed southbound at the Donna International Bridge. In 2012, this number decreased 26.6 percent to reach 392,584 crossings.[40]

Primary Roadways Serving Donna International Bridge

Figure 4.43 shows the location of the Donna International Bridge. On the U.S. side, FM 493 provides direct access to Donna International Bridge before continuing north and connecting to major routes, such as US 281/Military Highway. FM 493 is known as International Boulevard between the Donna International Bridge and US 281/Military Highway. FM 493 is known as Donna Road/South Salinas Boulevard north of US 281/Military Highway as it extends into Donna.

US 281/Military Highway near the bridge is a two-lane undivided highway with an AADT of 6,500 vehicles in 2010, of which 14.1 percent were trucks. In 2010, there were 1.85 accidents recorded per mile, and the LOS on the facility was A.

FM 493 intersects US 281/Military Highway about 1 mile north of the bridge and connects it to Donna and major routes, such as US 83/IH 2. FM 493 is a two-lane undivided highway with an AADT of 2,100 vehicles per day, of which 6.6 percent were trucks in 2010. The number of accidents recorded per mile was 3.78, and the LOS on FM 493 was A in 2010.

On the Mexican side, Ciudad Río Bravo is bordered to the south by MEX 2 and to the north by MEX 2D. Both highways are four-lane divided facilities. Puente Internacional Río Bravo-Donna begins downtown and heads north to connect with MEX 2D and ultimately the Donna International Bridge. MEX 12 channels traffic north to Ciudad Río Bravo from Valle Hermoso.

Figure 4.43: Donna International Bridge

Planned Changes in Infrastructure (Present to 2030)

TxDOT is planning to rehabilitate the section of FM 493 between US 281/Military Highway and BU 83 (TxDOT Project 0863-01-047). Improvements include reconstructing the highway and adding paved shoulders. These improvements are expected to enhance traffic flow and improve safety. The project is planned to be let in August 2014.

TxDOT is also planning to widen FM 493 between US 281/Military Highway and Champion Avenue (TxDOT Project 0863-01-056) at a cost of $19.7 million. This project is currently not in the STIP. This project will improve the LOS on the corridor from the current level of C to A.

4.2.3 Pharr-Reynosa International Bridge on the Rise

On the U.S. side, the Pharr-Reynosa International Bridge on the Rise is owned and operated by the City of Pharr. On the Mexican side, the bridge is owned by the Mexican Government (though FARAC/FONADIN) and operated by CAPUFE. The bridge has four lanes—three northbound and one southbound—and a pedestrian walkway on the northbound side. The bridge is 3.2 miles long and became operational in January 1995.[6] U.S. customs booths are located approximately 1.5 miles north of the U.S.-Mexico border. As of September 1, 1996, all northbound commercial traffic was directed from the McAllen-Hidalgo-Reynosa Bridge to the Pharr-Reynosa International Bridge on the Rise.[6]

The Pharr-Reynosa International Bridge on the Rise is located on Spur 600, south of US 281/Military Highway, on the U.S. side and on Camino al Puente Internacional Reynosa-Pharr north of MEX 2 near Luis Donaldo Colosio Murrieta in Reynosa, Tamaulipas. The crossing is also known locally as Puente Internacional Reynosa-Pharr and Nuevo Amanecer.

Border Station

The border station in the United States (LPOE Pharr) is owned by GSA and opened to traffic in April 1996. A toll collection system, funded by a Federal CBI grant, was added to the GSA facilities in 2004.[6]

In January 2009, the northbound approaches from the bridge to the truck and vehicle booths were widened, and the dedication of a FAST lane on the bridge was completed.[6] A proposed project, currently in the development stages, includes a second span expansion, additional commercial inspection facilities, 13 security cameras on the U.S. side, the installation of intelligent transportation system (ITS) fiber-optic cable/communications, a cold storage facility, and the expansion of an administration building.[6]

Hours of Operation

The bridge currently operates from 6:00 a.m. to 12:00 a.m. 365 days a year for POVs. For commercial/cargo vehicles, the bridge operates from 7:00 a.m. to 11:00 p.m. Monday through Saturday.

Tolls

The toll rates for the Pharr-Reynosa International Bridge on the Rise are provided in Table 4.11.

Table 4.11: Toll Rates for Pharr-Reynosa International Bridge on the Rise

Mode	Southbound Toll Rate (US$)	Northbound Toll Rate (US$)
Pedestrian or Bicycle	N/A	0.25
Motorcycle	N/A	1.05
Non-commercial Auto or Pickup	N/A	2.10
Non-commercial Vehicle, Motorcycle, or Bicycle	3.00	N/A
Extra Axle for Non-commercial Vehicle	3.00	1.21
Passenger Bus (2, 3, and 4 Axles)	N/A	4.33
Commercial Vehicle (2 Axles)	10.25	4.33
Commercial Vehicle (3 Axles)	14.25	4.33
Commercial Vehicle (4 Axles)	16.20	4.33
Commercial Vehicle (5 Axles)	21.25	9.27
Commercial Vehicle (6 Axles)	24.25	9.27
Commercial Vehicle (7, 8, and 9 Axles)	N/A	14.50
Extra Axle for Commercial Vehicle	N/A	2.42
Wide Load (Special Crossing)	32.25	N/A
Motorhome	20.50	N/A

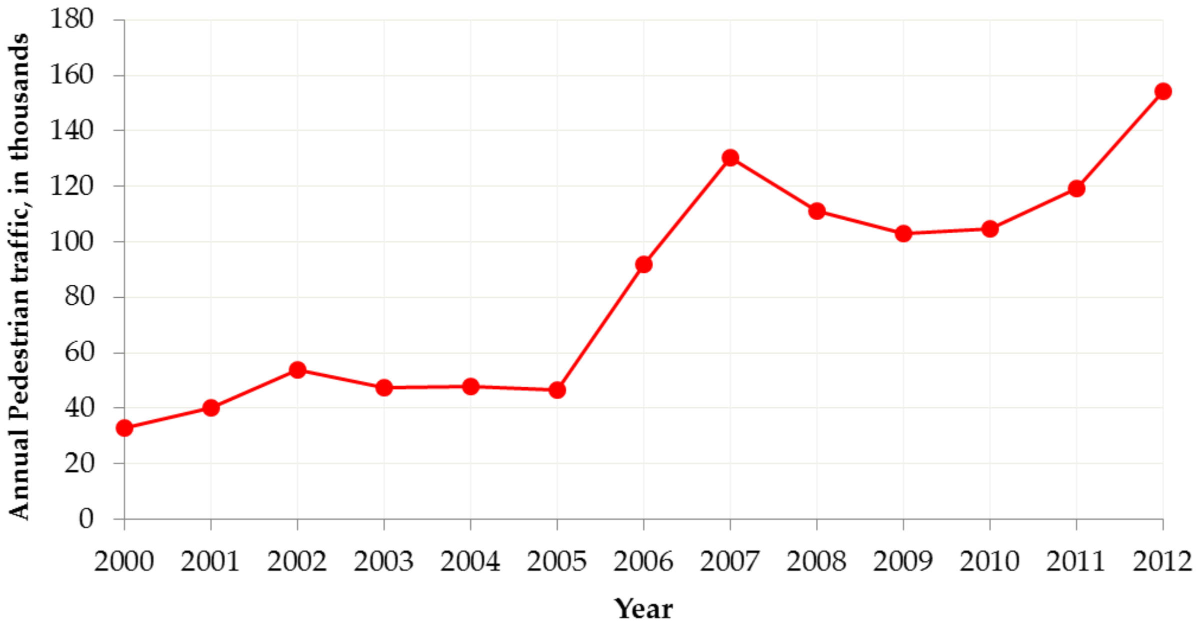
Note: Exchange rate = MXN 12.40 per US $1.

Source: City of Pharr[42] and CAPUFE[8]

Bridge Crossings

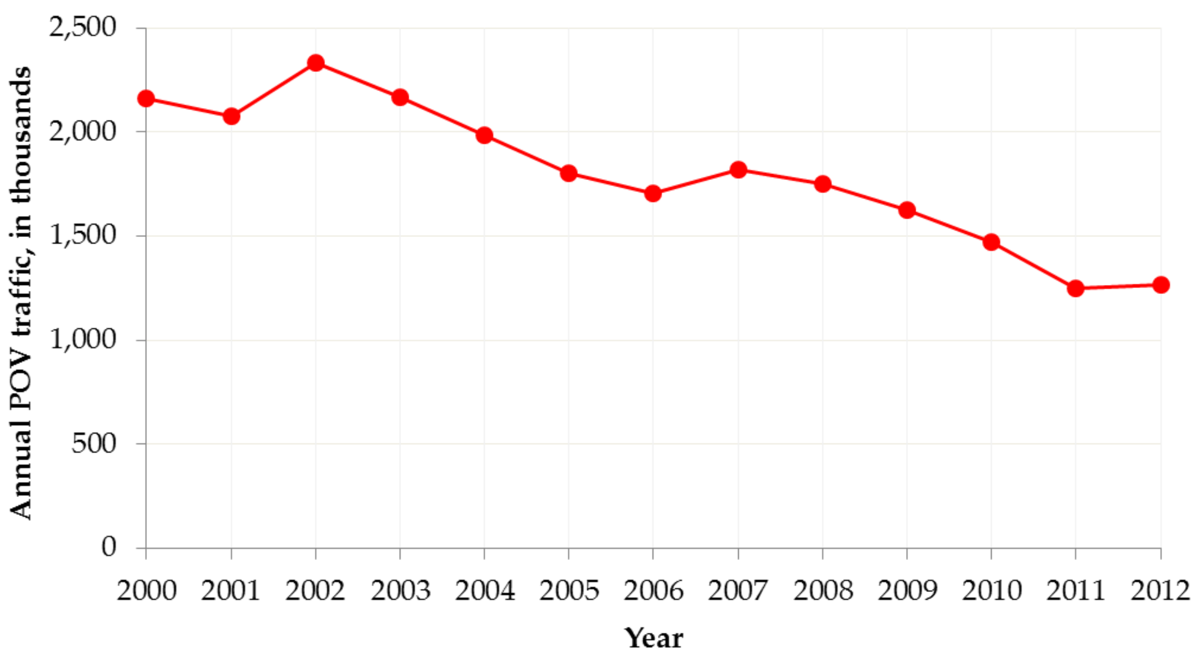
Figures 4.44 through 4.47 illustrate the number of northbound bridge crossings by mode at the Pharr-Reynosa International Bridge on the Rise between 2000 and 2012. Figures 4.48 and 4.49 illustrate the number of southbound crossings at the Pharr-Reynosa International Bridge on the Rise between 2000 and 2012. Southbound pedestrian crossing data were not available.

Northbound Crossings: Figure 4.44 shows that the number of annual northbound pedestrian crossings varied between 32,991 and 53,613 between 2000 and 2005. Subsequently, between 2005 and 2007, the number of northbound pedestrian crossings increased 180.8 percent, from 46,483 in 2005 to 130,511 in 2007. However, the number of northbound pedestrian crossings decreased 21.1 percent between 2007 and 2009 before increasing by 49.7 percent between 2009 and 2012 to reach 154,127 crossings in 2012.



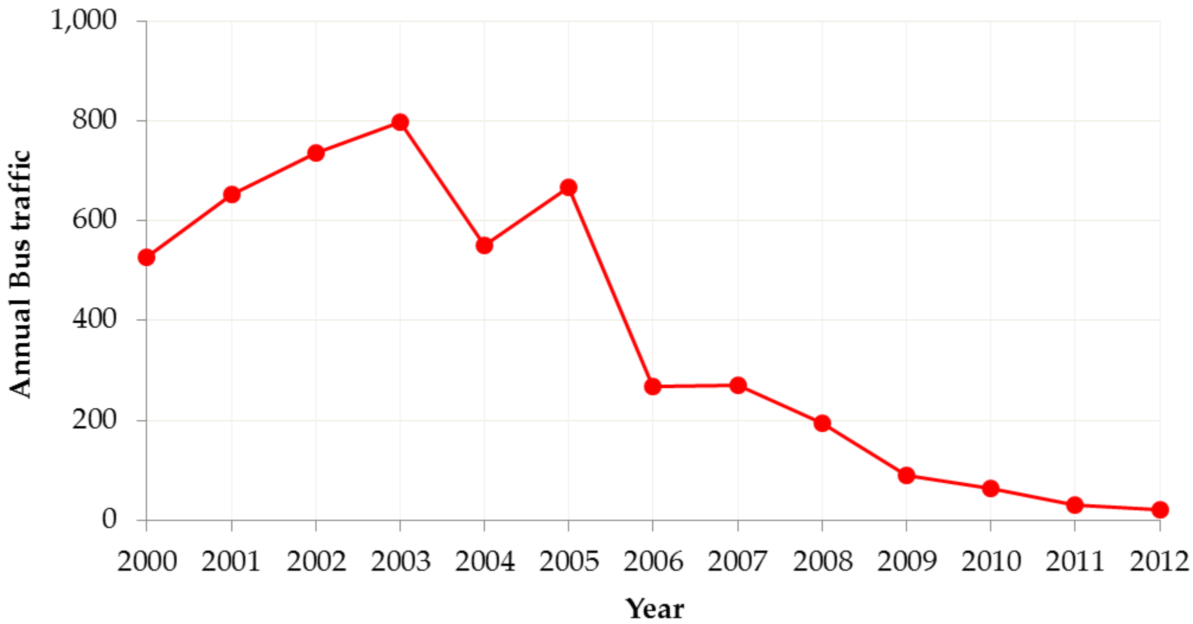
Source: CBP[9]

Figure 4.44: Pharr-Reynosa International Bridge on the Rise—Northbound Pedestrian Crossings



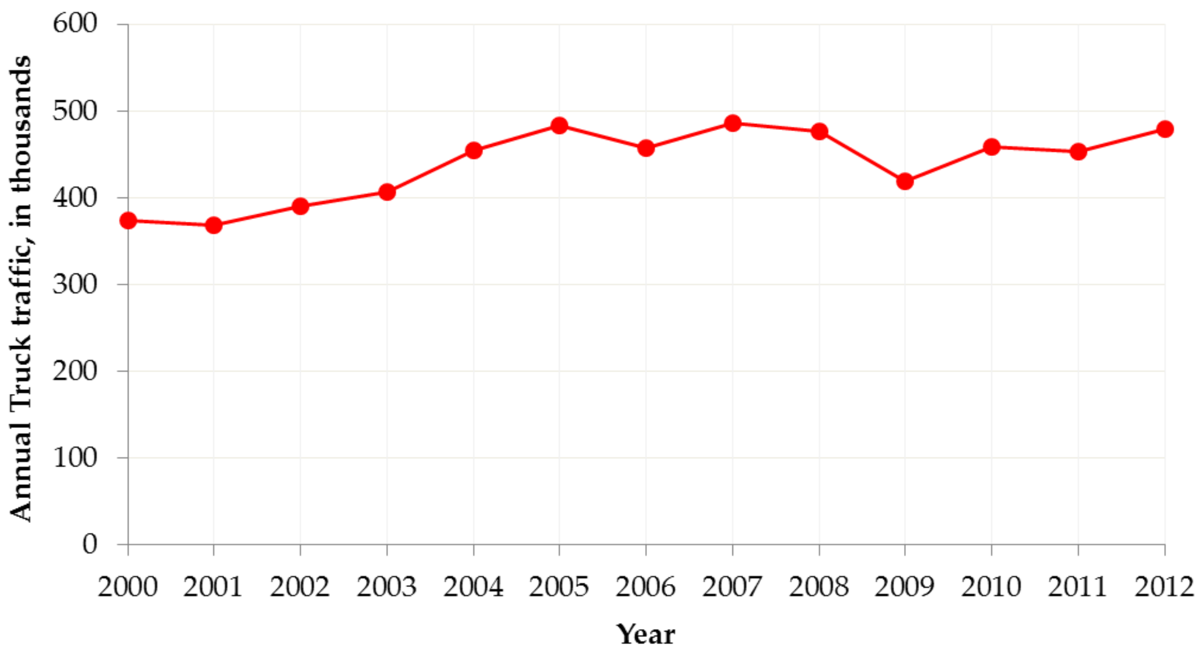
Source: CBP[9]

Figure 4.45: Pharr-Reynosa International Bridge on the Rise—Northbound POV Crossings



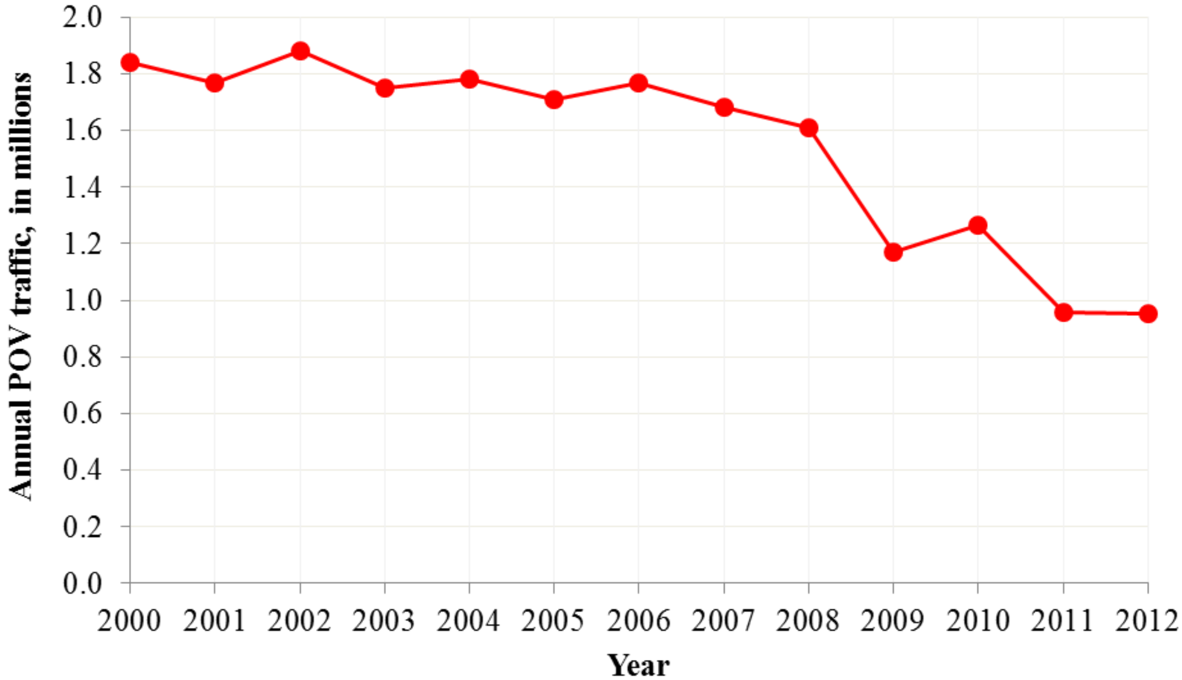
Source: CBP[9]

Figure 4.46: Pharr-Reynosa International Bridge on the Rise—Northbound Bus Crossings



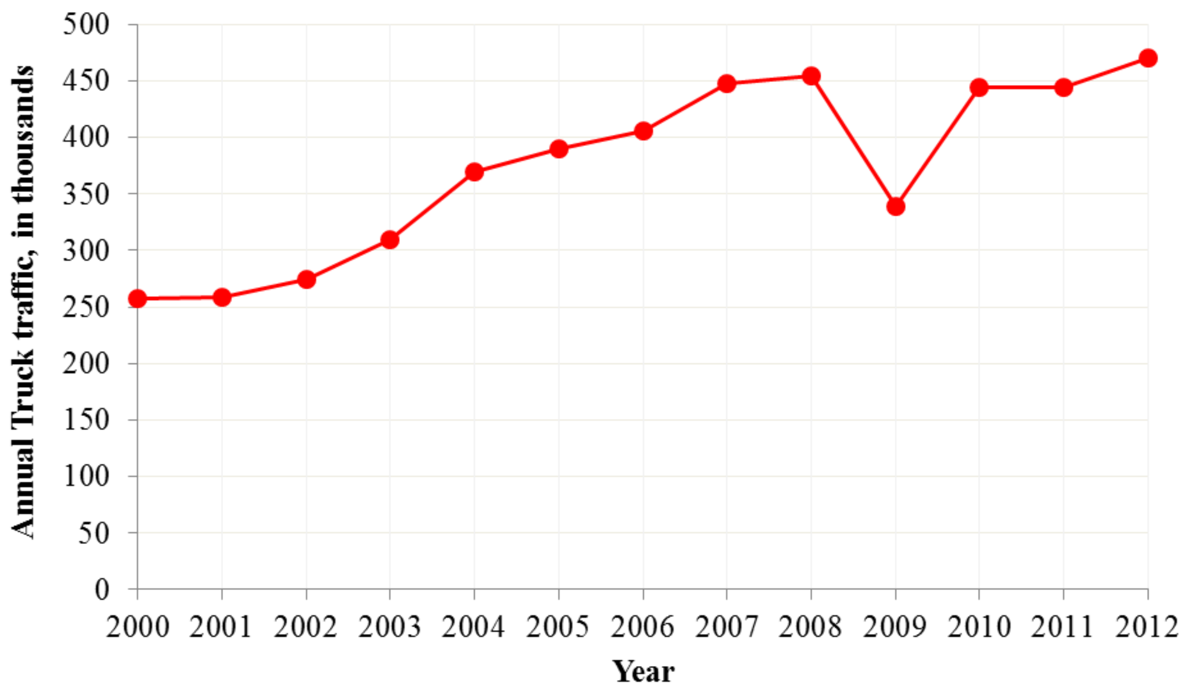
Source: CBP[9]

Figure 4.47: Pharr-Reynosa International Bridge on the Rise—Northbound Commercial Truck Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.48: Pharr-Reynosa International Bridge on the Rise—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.49: Pharr-Reynosa International Bridge on the Rise—Southbound Commercial Truck Crossings

The number of northbound POV crossings decreased 46.5 percent from a peak of 2,334,269 in 2002 to 1,248,316 in 2011 (see Figure 4.45). In 2012, the number of northbound POV crossings increased marginally (1.6 percent) relative to 2011 to reach 1,268,415 crossings.

The number of northbound bus crossings at the Pharr-Reynosa International Bridge on the Rise decreased 97.5 percent between 2003 and 2012, from 797 crossings in 2003 to 20 crossings in 2012 (see Figure 4.46).

Figure 4.47 shows that the number of northbound commercial truck crossings increased 28.2 percent between 2000 and 2012, from 374,150 in 2000 to 479,530 in 2012.

Southbound Crossings[10]: Southbound POV crossings at the Pharr-Reynosa International Bridge decreased 48.2 percent between 2000 and 2012, with the sharpest decrease occurring between 2008 and 2009 (see Figure 4.48). More specifically, between 2002 and 2012, the number of southbound POV crossings decreased 49.2 percent from a peak of 1,879,256 in 2002 to a low of 953,948 in 2012.

The number of southbound commercial truck crossings increased 76.6 percent from 257,228 in 2000 to 454,146 in 2008. However, between 2008 and 2009, the number of southbound commercial truck crossings decreased 25.3 percent to reach 339,371 in 2009 (see Figure 4.49). Since then, the number of southbound commercial truck crossings increased 38.7 percent to reach a peak of 470,716 in 2012.

Primary Roadways Serving Pharr-Reynosa International Bridge on the Rise

Figure 4.50 shows the location of the Pharr-Reynosa International Bridge on the Rise. The Pharr-Reynosa International Bridge on the Rise is located on Spur 600, south of US 281/Military Highway, in Pharr. Spur 600 intersects SH 241/US 281/Military Highway about 0.25 miles north of the bridge and continues as US 281/South Cage Boulevard.

Near the bridge, Spur 600 is a six-lane facility with a continuous left-turn lane in the center. For most of its length, however, Spur 600 is a four-lane undivided highway. The construction of Spur 600 was completed in 1994. An average of 13,500 vehicles used this facility per day in 2010, of which 5.9 percent were trucks. In 2010, there were 6.67 accidents per mile on Spur 600. The LOS on the facility was A.

SH 241/US 281/Military Highway is a four-lane divided facility at the intersection with Spur 600, but east of the intersection it is a two-lane undivided facility with wide shoulders. West of the intersection it is a four-lane undivided facility with a continuous left-turn lane. In 2010, the AADT on SH 241/US 281/Military Highway west of the intersection with Spur 600 was 6,500 vehicles, of which 14.1 percent were trucks. There were 1.85 accidents per mile, and the LOS on this facility was A in 2010.

Figure 4.50: Pharr-Reynosa International Bridge on the Rise

US 281/South Cage Boulevard is a four-lane undivided highway that connects to US 83/IH 2. The AADT on US 281/South Cage Boulevard was 26,000 vehicles in 2010, of which 12.8 percent were trucks. In 2010, there were 0.87 accidents per mile, and the LOS on this facility was B.

On the Mexican side, MEX 2 runs east-west between Reynosa and Ciudad Río Bravo. East of Reynosa, Camino al Puente Internacional Reynosa-Pharr intersects with MEX 2 and channels traffic north to cross the border. West of the bridge, MEX 97 connects Reynosa with San Fernando to the south. East of the bridge, MEX 12 connects Río Bravo with Valle Hermoso to the south. Luis Donaldo Colosio Murrieta and Porfirio Díaz (MEX 2)—both six-lane facilities—connect Reynosa to the four-lane Camino al Puente Internacional Reynosa-Pharr.

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, several projects that involve Spur 600 and US 281/South Cage Boulevard are planned. TxDOT Project 0921-02-289 is included in the STIP and involves redesigning the northbound approach to add lanes and customs booths, which is expected to improve traffic flow. The second project (TxDOT Project 0220-01-023) involves construction of a grade-separated intersection at San Juan Road between

US 281/South Cage Boulevard and Veterans Boulevard, which will improve safety at the intersection of San Juan Road and US 281/Military Highway.

A new highway (SH 365) is also funded for 2015 to provide direct access between FM 1016 and FM 3072 (TxDOT Project 3627-01-001). SH 365 will thus serve as a relief route for US 281/South Cage Boulevard in the northbound direction. Current TxDOT plans also include the installation of ITS measures to alleviate the congestion currently impacting the Pharr-Reynosa International Bridge, the McAllen-Hidalgo-Reynosa Bridge, and the Anzaldúas International Bridge (TxDOT Project 0921-02-253).

TxDOT plans to construct a two-lane tolled highway between Spur 600 and FM 493 along the US 281/Military Highway corridor. This tolled highway will provide a relief route for US 281/Military Highway in the eastward direction (TxDOT Project 0921-02-142). This project is currently not included in the STIP.

4.2.4 McAllen-Hidalgo-Reynosa Bridge

The U.S. side of the McAllen-Hidalgo-Reynosa Bridge is owned and operated by the City of McAllen. The Mexican side of the bridge is owned by the Government of Mexico and operated by CAPUFE. The bridge has two structures: the old 524-foot-long four-lane bridge constructed in 1965 that serves only southbound traffic and the new 852-foot-long four-lane bridge built in 1987 that serves only northbound traffic. The bridge is located on International Boulevard near the intersection of US 281/Military Highway, SH 115, and SH 336 on the U.S. side and near El Maestro-Centro off of MEX 97 in Reynosa, Tamaulipas. The crossing is also known locally as the Hidalgo Bridge, Puente Reynosa, and Puente Reynosa-McAllen.

Border Station

On the U.S. side, the border station (LPOE Hidalgo), which was completed in 1982, is owned by the City of McAllen and leased by GSA.[6] On the Mexican side, the border station, which has been in operation since 1965, was remodeled in 1988.[6]

Hours of Operation

The bridge currently operates 24 hours a day 365 days a year .

Tolls

The toll rates for the McAllen-Hidalgo-Reynosa Bridge are provided in Table 4.12.

Table 4.12: Toll Rates for McAllen-Hidalgo-Reynosa Bridge (Southbound)

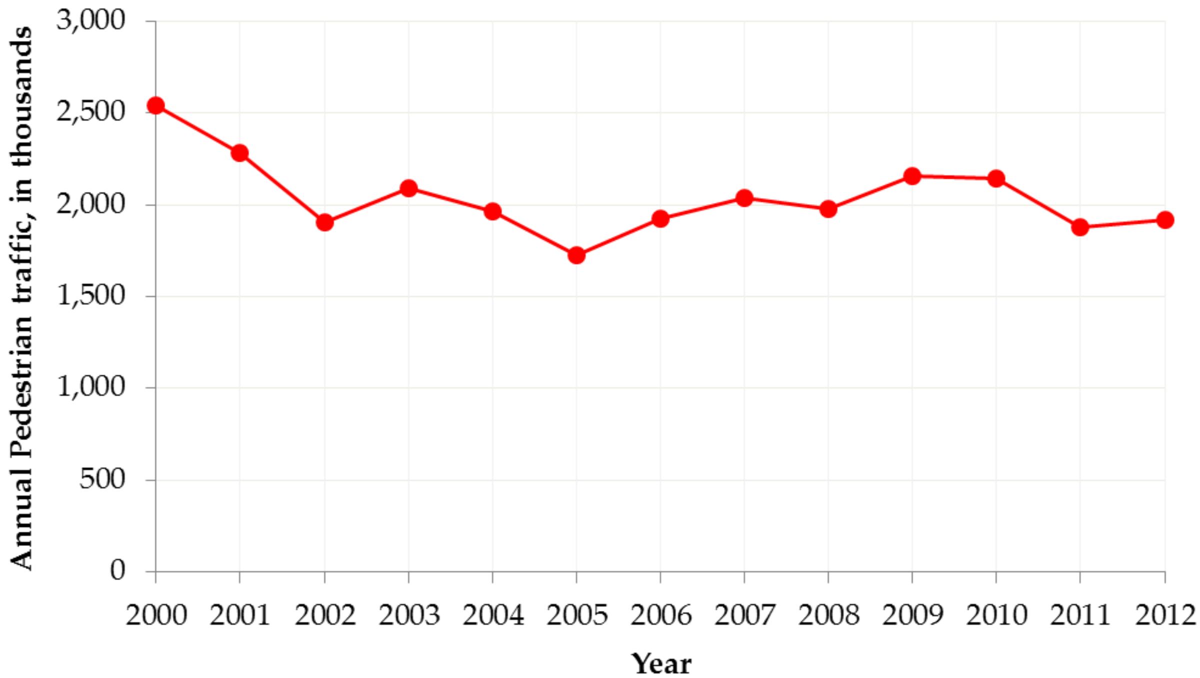
Mode	Toll Rate (US$)
Pedestrian	1.00
Motorcycle	3.00
Non-commercial Auto or Pickup	3.00
Commercial Vehicle (2 Axles)	7.00
Commercial Vehicle (3 Axles)	10.00
Commercial Vehicle (4 Axles)	14.00
Commercial Vehicle (5 Axles)	17.00
Commercial Vehicle (6 Axles)	20.00
Bus (2 Axles)	7.00
Bus (3 Axles)	9.00
Motorhome, Machinery, or Trailer	3.00 per Axle

Source: City of McAllen[43]

Bridge Crossings

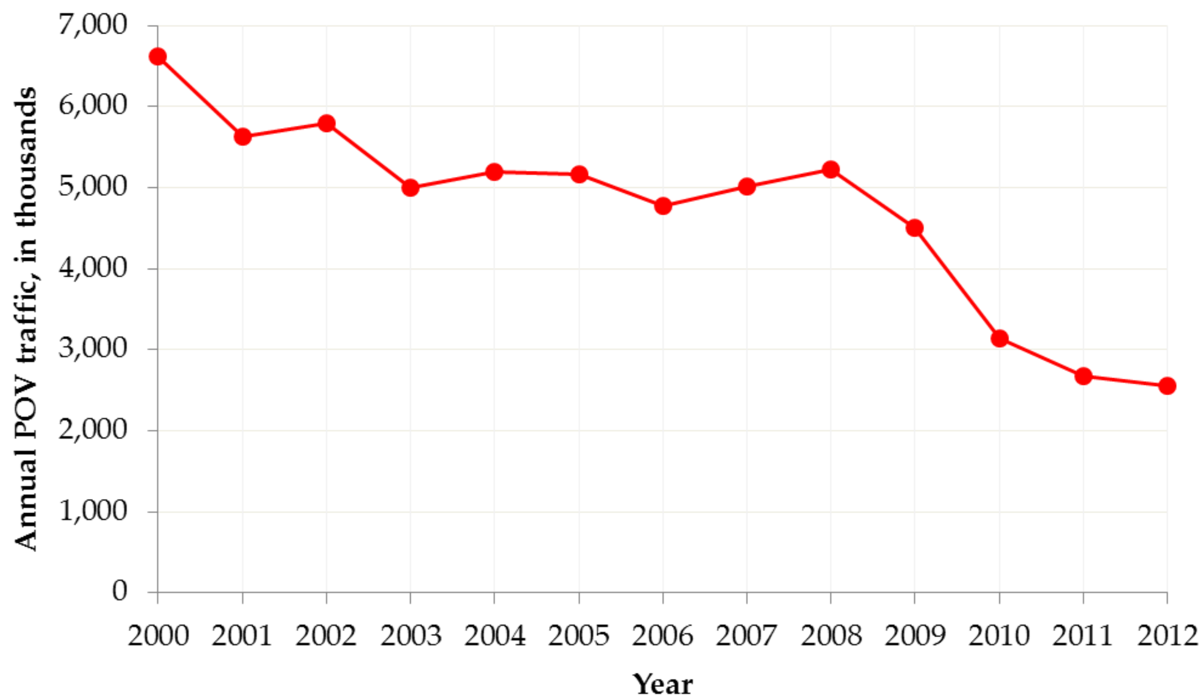
Figures 4.51 through 4.53 illustrate the northbound bridge crossings at the McAllen-Hidalgo-Reynosa Bridge, and Figures 4.54 and 4.55 illustrate the total southbound bridge crossings at the McAllen-Hidalgo-Reynosa Bridge and by the Los Ebanos Ferry. Disaggregated data for the bridge and the ferry crossing are not available.

Northbound Crossings: Figure 4.51 shows that the number of annual northbound pedestrian crossings peaked at 2,542,361 in 2000. Between 2002 and 2008, the number of northbound pedestrian crossings fluctuated between 1,727,701 and 2,091,028. In 2009 and 2010, the number of northbound pedestrian crossings remained above 2.1 million, the highest number of crossings since 2001. However, the number of northbound pedestrian crossings decreased 12.2 percent from 2,140,426 in 2010 to 1,879,014 in 2011. In 2012, the number of northbound pedestrian crossings increased marginally (2.1 percent) relative to 2011 to reach 1,919,346 crossings.



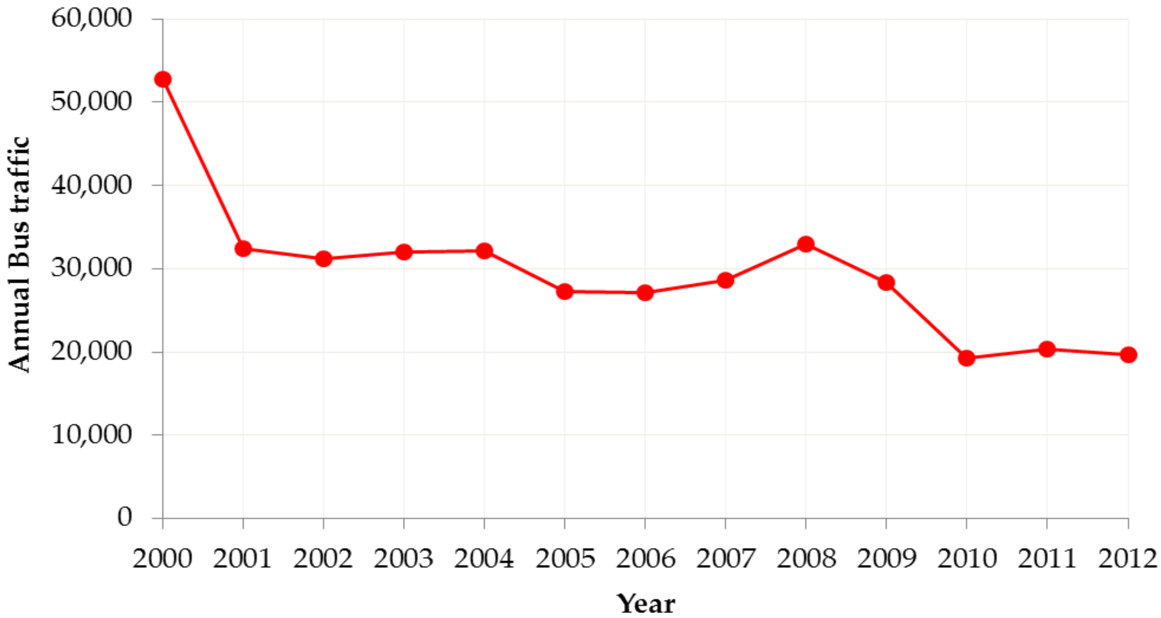
Source: CBP[9]

Figure 4.51: McAllen-Hidalgo-Reynosa Bridge—Northbound Pedestrian Crossings



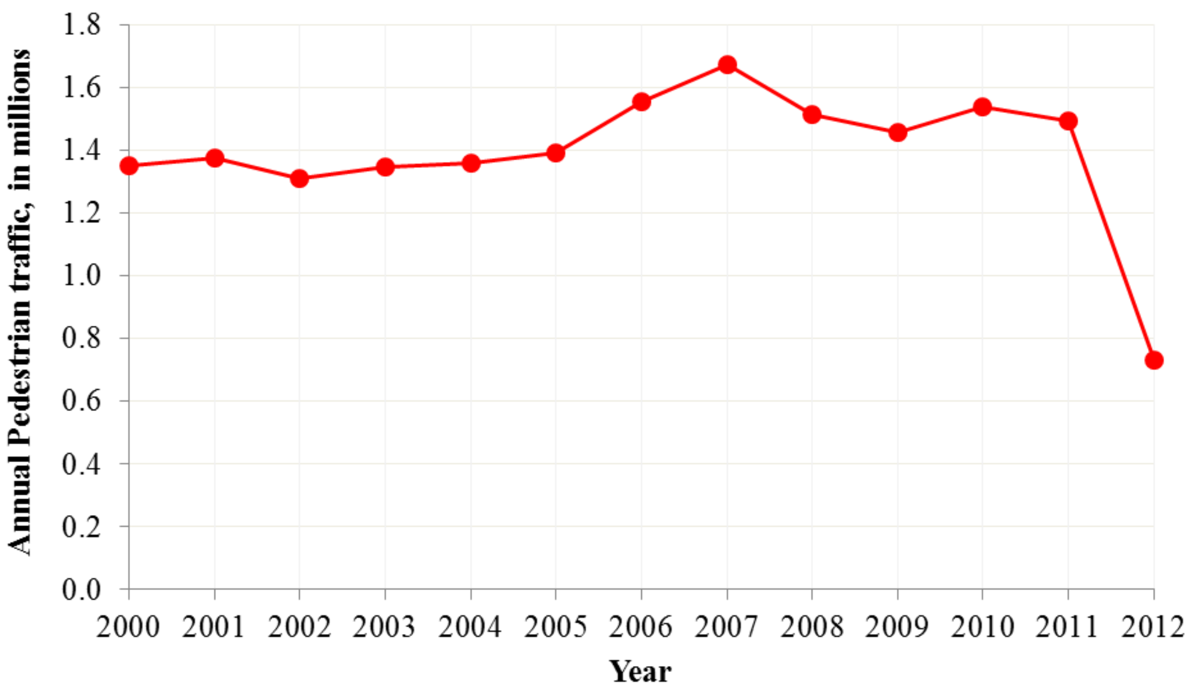
Source: CBP[9]

Figure 4.52: McAllen-Hidalgo-Reynosa Bridge—Northbound POV Crossings



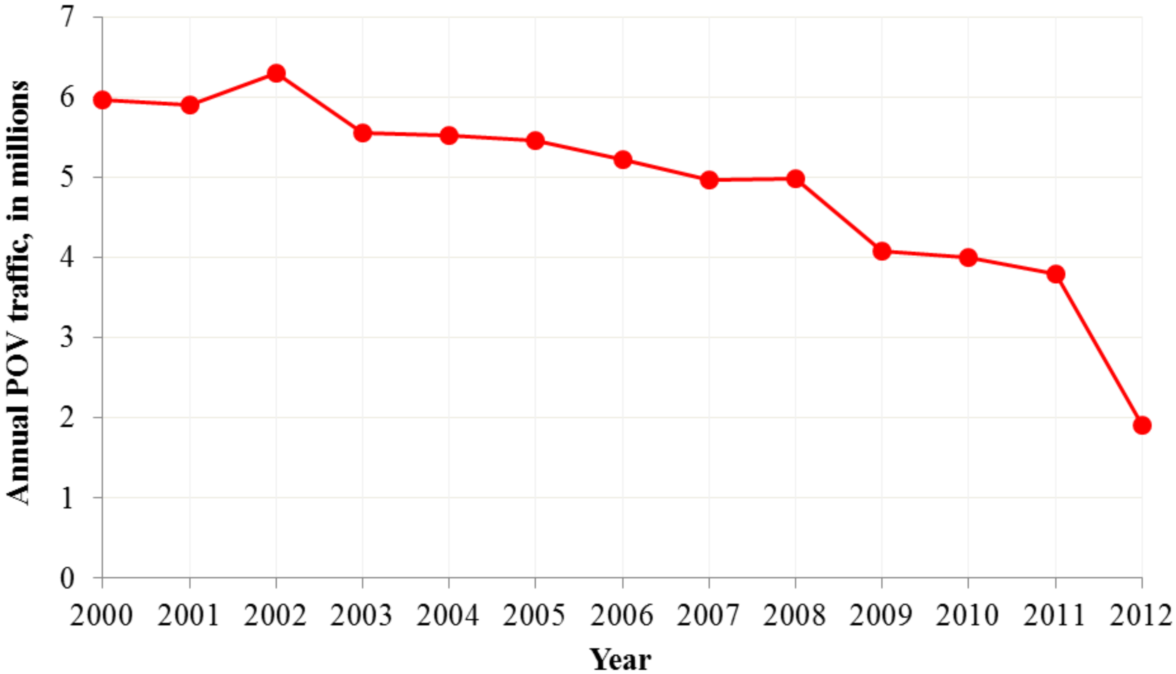
Source: CBP[9]

Figure 4.53: McAllen-Hidalgo-Reynosa Bridge—Northbound Bus Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.54: McAllen-Hidalgo-Reynosa Bridge/Los Ebanos Ferry—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.55: McAllen-Hidalgo-Reynosa Bridge/Los Ebanos Ferry—Southbound POV Crossings

Figure 4.52 shows that the number of annual northbound POV crossings peaked in 2000 at 6,616,232 crossings. Between 2003 and 2008, the number of northbound POV crossings remained fairly constant, fluctuating between 4,772,472 and 5,230,546 crossings per year. However, a sharp decrease occurred between 2008 and 2012 when the number of northbound POV crossings decreased 51.2 percent from 5,230,546 in 2008 to 2,552,452 in 2012.

Figure 4.53 shows that the number of annual northbound bus crossings peaked in 2000 at 52,809 crossings. Between 2000 and 2001, the number of annual northbound bus crossings decreased 38.7 percent. Between 2001 and 2008, the number of northbound bus crossings remained fairly constant, fluctuating between 27,077 and 32,932 crossings per year. However, between 2008 and 2010, the number of northbound bus crossings decreased 41.5 percent from 32,932 in 2008 to 19,258 in 2010 (the lowest level). In 2011, the number of northbound bus crossings increased 5.6 percent relative to 2010. In 2012, however, the number of northbound bus crossings decreased again 3.1 percent to reach 19,698 in 2012.

<u>Southbound Crossings</u>: As mentioned earlier, the southbound crossing data are for the McAllen-Hidalgo-Reynosa Bridge and the Los Ebanos Ferry, both of which connect McAllen and Reynosa. Disaggregated data for southbound traffic at the individual

crossings are not available. Figures 4.54 and 4.55 thus present the information for both crossings.

Figure 4.54 shows that the number of annual southbound pedestrian crossings at the McAllen-Hidalgo-Reynosa Bridge and the Los Ebanos Ferry remained fairly constant between 2000 and 2005, fluctuating between 1,310,776 and 1,389,613 crossings per year. Between 2005 and 2007, however, the number of annual southbound pedestrian crossings increased 20.4 percent to peak at 1,673,285 in 2007. Between 2007 and 2009, the number of southbound pedestrian crossings decreased 12.8 percent. Between 2009 and 2011, the number of southbound pedestrian crossings increased 2.3 percent to reach 1,491,694. In 2012, however, the number of southbound pedestrian crossings decreased 50.9 percent to reach the lowest level of 732,175 crossings in 2012.

Figure 4.55 shows that annual southbound POV crossings decreased from a peak of 6,297,301 in 2002 to a low of 1,906,208 in 2012, a decrease of 69.7 percent. Although the annual number of southbound POV crossings decreased almost every year since 2002, the most substantial decrease occurred between 2011 and 2012 when the number of southbound POV crossings decreased 49.8 percent.

Primary Roadways Serving McAllen-Hidalgo-Reynosa Bridge

Figure 4.56 shows the location of the McAllen-Hidalgo-Reynosa Bridge. On the U.S. side, SH 115 is the primary access road to the McAllen-Hidalgo-Reynosa Bridge. SH 115 is approximately 8 miles long and connects the bridge to US 83/IH 2 and the McAllen-Miller International Airport. Toward the bridge, after intersecting FM 1016, SH 115 is a six-lane divided facility. However, for most of its length, SH 115 is a four-lane undivided facility with an AADT of 24,000 vehicles in 2010, of which 4.4 percent were trucks. In 2010, there were 5.33 accidents per mile on SH 115, and the LOS was B.

Approximately 1 mile from the bridge, SH 115 intersects with US 281/Military Highway/SH 241. US 281/Military Highway/SH 241 runs parallel to the U.S.-Mexico border on the U.S. side. US 281/Military Highway/SH 241 is a four-lane undivided highway with an AADT of 26,000 vehicles in 2010, of which 12.8 percent were trucks. There were 0.87 accidents per mile, and the LOS on the facility was B in 2010.

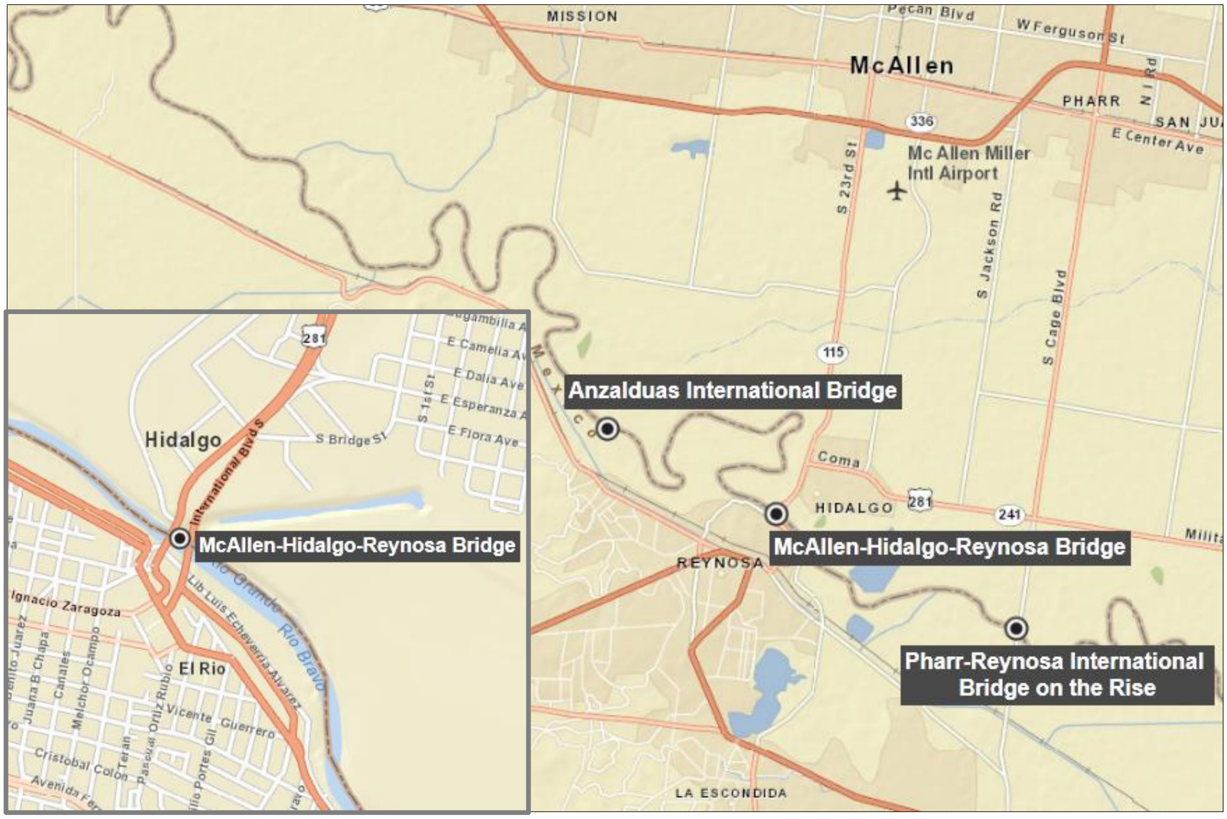


Figure 4.56: McAllen-Hidalgo-Reynosa Bridge

On the Mexican side, MEX 2 runs west to east through the center of Reynosa, where it intersects with MEX 40 and turns south. MEX 40, also known as Autopista Cadereyta-Reynosa, includes a tolled section. The tolled section (MEX 40D) spans from the boundary of the States of Tamaulipas and Nuevo León, to Cadereyta, Nuevo León. In 2011, MEX 40 served an AADT of 4,405 vehicles. Luis Echeverría, 20 de Noviembre, and Oriente form a loop around the north side of Reynosa and connect with MEX 97 on the east side. These highways have between four and six lanes. The loop connects to International Boulevard, which connects to the McAllen-Hidalgo-Reynosa Bridge.

Planned Changes in Infrastructure (Present to 2030)

A new highway (SH 365) is funded for 2015 to provide direct access between FM 1016 and FM 3072 (TxDOT Project 3627-01-001). SH 365 will serve as a relief route for US 281/South Cage Boulevard in the northbound direction. Current TxDOT plans also include the installation of ITS measures to alleviate the congestion currently impacting the Pharr-Reynosa International Bridge, the McAllen-Hidalgo-Reynosa Bridge, and the Anzaldúas International Bridge (TxDOT Project 0921-02-253).

4.2.5 Anzaldúas International Bridge

On the U.S. side, the Anzaldúas International Bridge is owned and operated by the Cities of Hidalgo, McAllen, and Mission. Constructed in 2010, the bridge is the first LPOE on the southern border certified as meeting the requirements of the LEED program. The bridge spans 3.2 miles and has four lanes[2]—two southbound and two northbound—and a pedestrian walkway. There is, however, sufficient right of way to expand the existing bridge to an eight-lane divided facility in the future.[6]

The bridge currently serves only non-commercial vehicular traffic northbound. The Anzaldúas International Bridge may begin processing northbound commercial traffic in 2015 or when the Pharr-Reynosa International Bridge on the Rise processes an average of 15,000 northbound commercial vehicles per week.[6]

On the Mexican side, the Mexican Government granted a 30-year concession to Grupo Marhnos in 2007 to build and operate 6 miles of road, the international bridge, and the border station.[44]

The bridge is located 3 miles upriver from the McAllen-Hidalgo-Reynosa Bridge near FM 494 and FM 396 (Bryan Road) on the U.S. side and near Las Quintas just north of MEX 2 in Reynosa, Tamaulipas. The crossing is also known locally as the Sharyland Bridge and Puente Anzaldúas.

Border Station

On the U.S. side, GSA completed construction of the border station facilities, and CBP initiated operations at the Anzaldúas LPOE on December 15, 2009. This non-commercial crossing has four primary and 12 secondary inspection lanes.[6] No information was available on the Mexican side.

Hours of Operation

The bridge currently operates from 6:00 a.m. to 10:00 p.m. 365 days a year.

Tolls

Table 4.13 lists the toll rates for the Anzaldúas International Bridge.

Table 4.13: Toll Rates for Anzaldúas International Bridge (Southbound)

Mode	Toll Rate (US$)
Pedestrian	1.00
Motorcycle	3.00
Non-commercial Auto or Pickup	3.00
Commercial Vehicle (2 Axles)	7.00
Commercial Vehicle (3 Axles)	10.00
Commercial Vehicle (4 Axles)	14.00
Commercial Vehicle (5 Axles)	17.00
Commercial Vehicle (6 Axles)	20.00
Bus (2 Axles)	7.00
Bus (3 Axles)	9.00
Motorhome, Machinery, or Trailer	3.00 per Axle

Source: City of McAllen[43]

Bridge Crossings

Northbound Crossings: In 2011—the first full year for which crossing data were available—967,657 northbound POV crossings and 624 northbound bus crossings were reported. In 2012, the number of northbound POV crossings increased 11.0 percent relative to 2011 to reach 1,073,619. The number of northbound bus crossings, however, decreased 44.1 percent in 2012 relative to 2011 to reach 349.[9]

Southbound Crossings: Southbound crossing data for the Anzaldúas International Bridge became available as of December 2009 and were available for 2010 and 2011. In 2010, 886,965 POVs crossed southbound at the Anzaldúas International Bridge. In 2011, this number decreased 7.2 percent to reach 822,946 crossings. Alternately, southbound bus crossings at the Anzaldúas International Bridge increased 29.1 percent from 2,605 in 2010 to 3,362 in 2011.[10]

Primary Roadways Serving Anzaldúas International Bridge

Figure 4.57 shows the location of the Anzaldúas International Bridge. The Anzaldúas International Bridge is connected to FM 396/Bryan Road. FM 396/Bryan Road connects the bridge to US 83/IH 2 to the north. It also intersects FM 1016 about 1 mile north of the bridge.

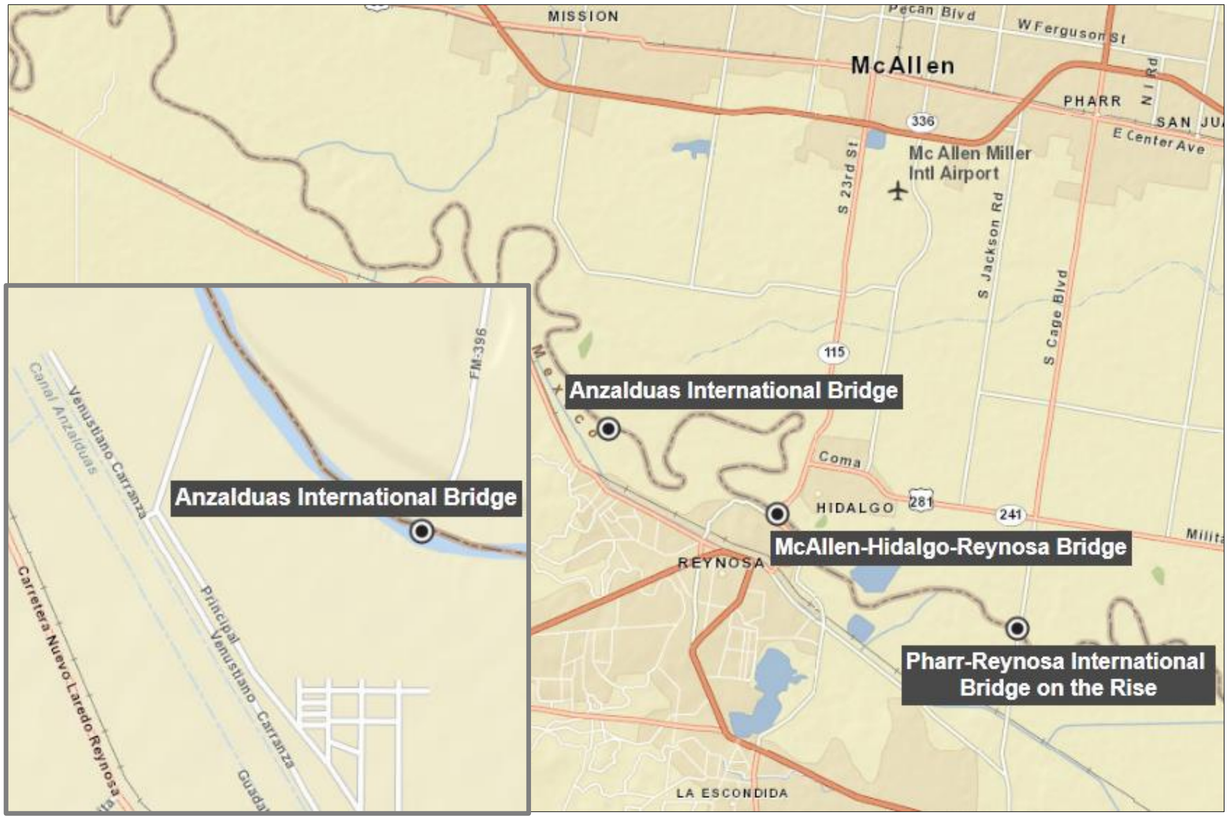


Figure 4.57: Anzaldúas International Bridge

FM 396/Bryan Road is a four-lane undivided highway from US 83/IH 2 to FM 1016/Military Highway. From FM 1016/Military Highway to the bridge, FM 396/ Bryan Road is a six-lane divided highway. An average of 17,000 vehicles used this facility per day in 2010, of which 5.5 percent were trucks. The accident rate reported on FM 39/Bryan Road was comparatively high at 18.7 accidents per mile. In 2010, the LOS on FM 396 was A.

FM 1016 is a four-lane undivided facility with a continuous left-turn lane in the center that connects to US 83/IH 2 to the north. The AADT on FM 1016 was 10,300 vehicles in 2010, of which 3.7 percent were trucks. The number of accidents per mile on FM 1016 was 3.35 in 2010. The LOS on FM 1016 was A.

On the Mexican side, MEX 2 and Viaducto Reynosa intersect with Puente Internacional Anzaldúas near the northwest corner of Reynosa. From here, Puente Internacional Anzaldúas connects directly to the bridge. MEX 40 also connects Reynosa with Monterrey to the southwest.

Planned Changes in Infrastructure (Present to 2030)

A new highway (SH 365) is funded for 2015 to provide direct access between FM 1016 and FM 3072 (TxDOT Project 3627-01-001). SH 365 will serve as a relief route for US 281/South Cage Boulevard northbound. Current TxDOT plans also include the installation of ITS measures to alleviate the congestion currently impacting the Pharr-Reynosa International Bridge, McAllen-Hidalgo-Reynosa Bridge, and Anzaldúas International Bridge (TxDOT Project 0921-02-253).

4.2.6 Los Ebanos Ferry

On the U.S. side, the Los Ebanos Ferry is owned and operated by the Reyna family. The Mexican side is owned and operated by Armando de la Garza. The ferry can accommodate up to 3 vehicles and 12 pedestrians at a time. Ferry service began in the 1950s; the current ferry has been in operation since 1979.[6] The crossing is located near Sullivan City at FM 886/El Faro Road on the U.S. side and near Avenida Adolfo López Mateos in Mexico. The crossing is also known locally as Los Ebanos-San Miguel Camargo, Ferry Gustavo Díaz Ordaz, Ferry Díaz Ordaz-Los Ebanos, and El Chalán de Los Ebanos.

Border Station

On the U.S. side, the border station (LPOE Los Ebanos) was completed in 1992 and is owned by CBP.[6] There is no Mexican border station at this site. An Aduanas checkpoint is located 2 miles away, before entering the town of Gustavo Díaz Ordaz.

Hours of Operation

The ferry currently operates from 8:00 a.m. to 4:00 p.m. 365 days a year for POVs and pedestrians only. However, the ferry's operations are impacted by the weather and water level of the Rio Grande/Rio Bravo River.

Tolls

The toll rates for the Los Ebanos Ferry that were obtained from the Los Ebanos Ferry Operator's Office are provided in Table 4.14.

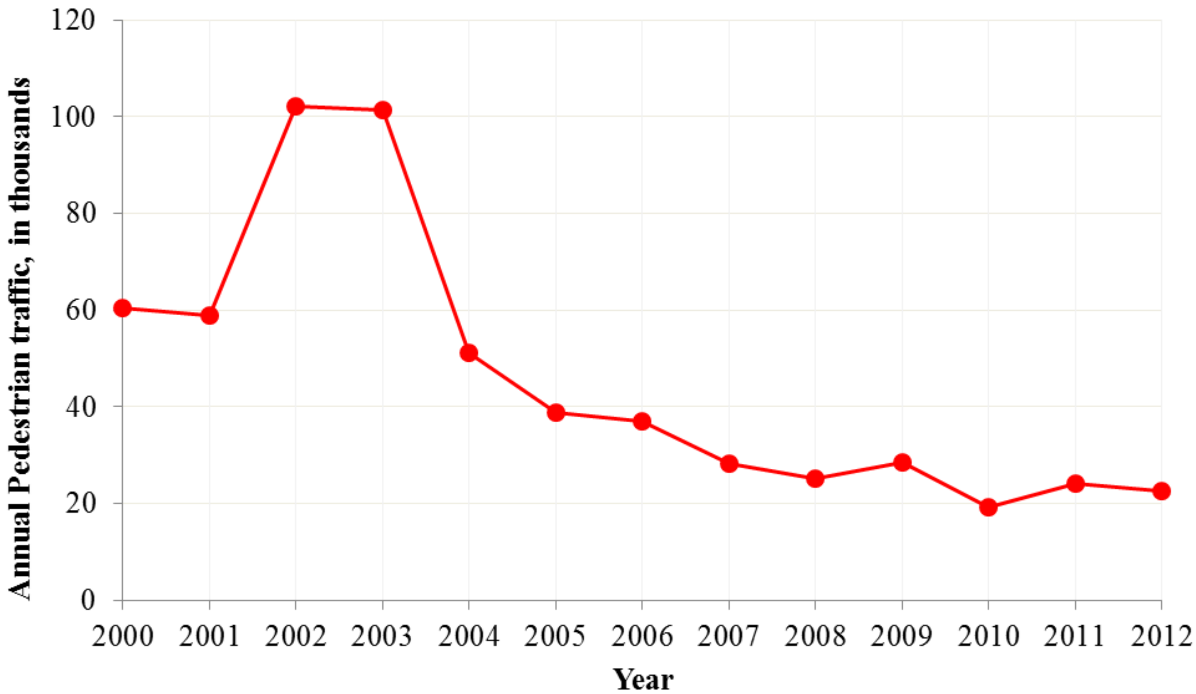
Table 4.14: Toll Rates for Los Ebanos Ferry (Northbound and Southbound)

Mode	Toll Rate (US$)
Pedestrian or Bicycle	0.50
Non-commercial Vehicle	3.50

Source: Los Ebanos Ferry[45]

Ferry Crossings

Figure 4.58 shows the number of northbound pedestrian crossings on the Los Ebanos Ferry. Northbound pedestrian crossings on the ferry experienced a peak in 2002 and 2003 with 102,059 and 101,448 crossings, respectively. However, the number of northbound pedestrian crossings decreased almost every year from 2003 to 2012. The exceptions were 2009 (when the number of crossings increased 12.9 percent relative to 2008) and 2011 (when the number of crossings increased 25.3 percent from 2010). In 2012, the number of northbound pedestrian crossings, however, decreased again 6.6 percent to reach 22,640 in 2012.



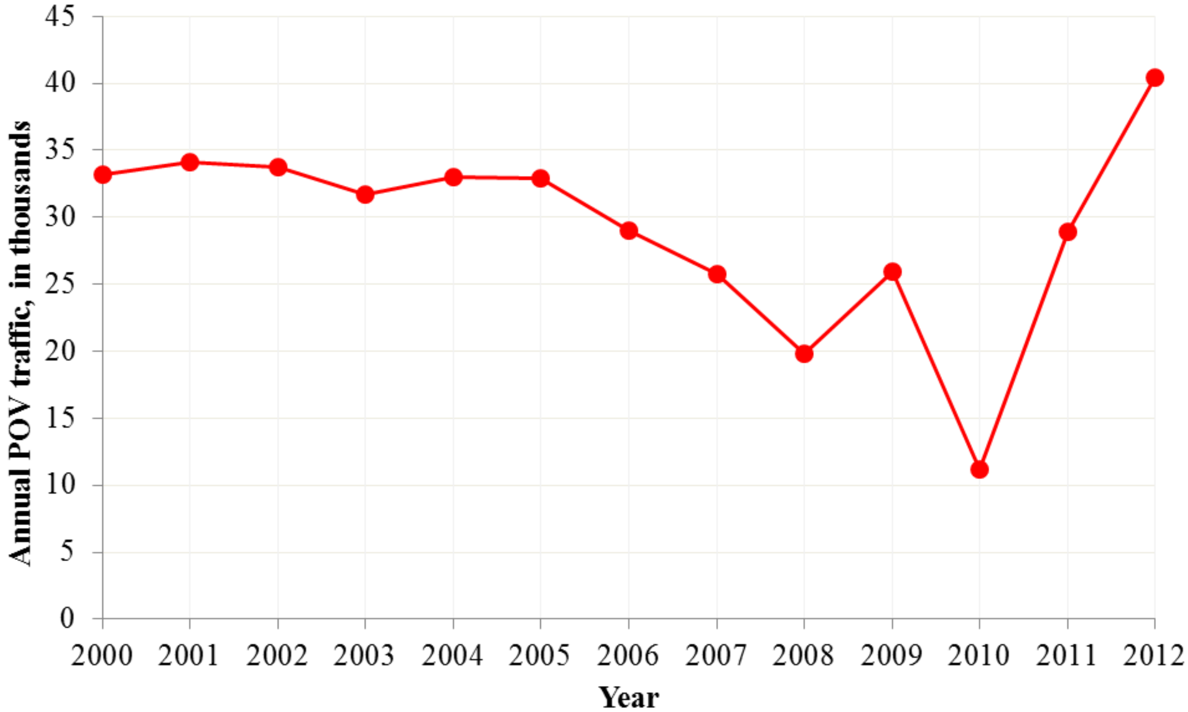
Source: CBP[9]

Figure 4.58: Los Ebanos Ferry—Northbound Pedestrian Crossings

Northbound POV crossings on the ferry were relatively constant between 2000 and 2005, fluctuating between 31,666 and 34,149. This period was followed by a substantial decrease in the number of northbound POV crossings. Between 2005 and 2008, the number of northbound crossings decreased 39.7 percent. In 2009, however, the number of northbound crossings increased 30.9 percent (relative to 2008) to 25,985 before decreasing 57.0 percent in 2010 to reach a low of 11,171 crossings. Between 2010 and 2012, the number of northbound POV crossings again increased 262.0 percent to peak at 40,434 crossings in 2012 (see Figure 4.59).

Data on southbound crossings on the Los Ebanos Ferry are provided in Section 4.2.4, along with data on southbound crossings for the McAllen-Hidalgo-

Reynosa Bridge. Disaggregated data for the bridge and the ferry crossing are not available.



Source: CBP[9]

Figure 4.59: Los Ebanos Ferry—Northbound POV Crossings

Primary Roadways Serving Los Ebanos Ferry

Figure 4.60 shows the location of the Los Ebanos Ferry. The Los Ebanos Ferry operates between Sullivan City on the U.S. side and El Jalisco on the Mexican side. Land access is provided by FM 886/Faro Road to the north and by US 83 to the east and northwest.

FM 886/Faro Road is a two-lane undivided highway with an AADT of 2,700 vehicles in 2010, of which 7.3 percent were trucks. No accidents were recorded on FM 886/Faro Road in 2010. In 2010, the LOS on FM 886/Faro Road was A.

US 83, a four-lane divided highway, runs parallel to the U.S.-Mexico border. The facility served an AADT of 36,000 vehicles in 2010, of which 9 percent were trucks. The number of accidents per mile varied on US 83 in 2010. The number of accidents per mile on US 83 was 4.83 east of FM 886/Faro Road and 12.62 northwest of FM 866/Faro Road in 2010. In 2010, the LOS on US 83 was C.

On the Mexican side, MEX 2, a two-lane facility, connects Ciudad Gustavo Díaz Ordaz with Ciudad Camargo to the west and Reynosa to the east. Avenida Hidalgo Sur connects Ciudad Gustavo Diaz Ordaz with MEX 40 further south near the border of Tamaulipas and Nuevo León. Avenida Adolfo Lopez Mateos connects Ciudad Gustavo Díaz Ordaz´s city center to the Los Ebanos Ferry.

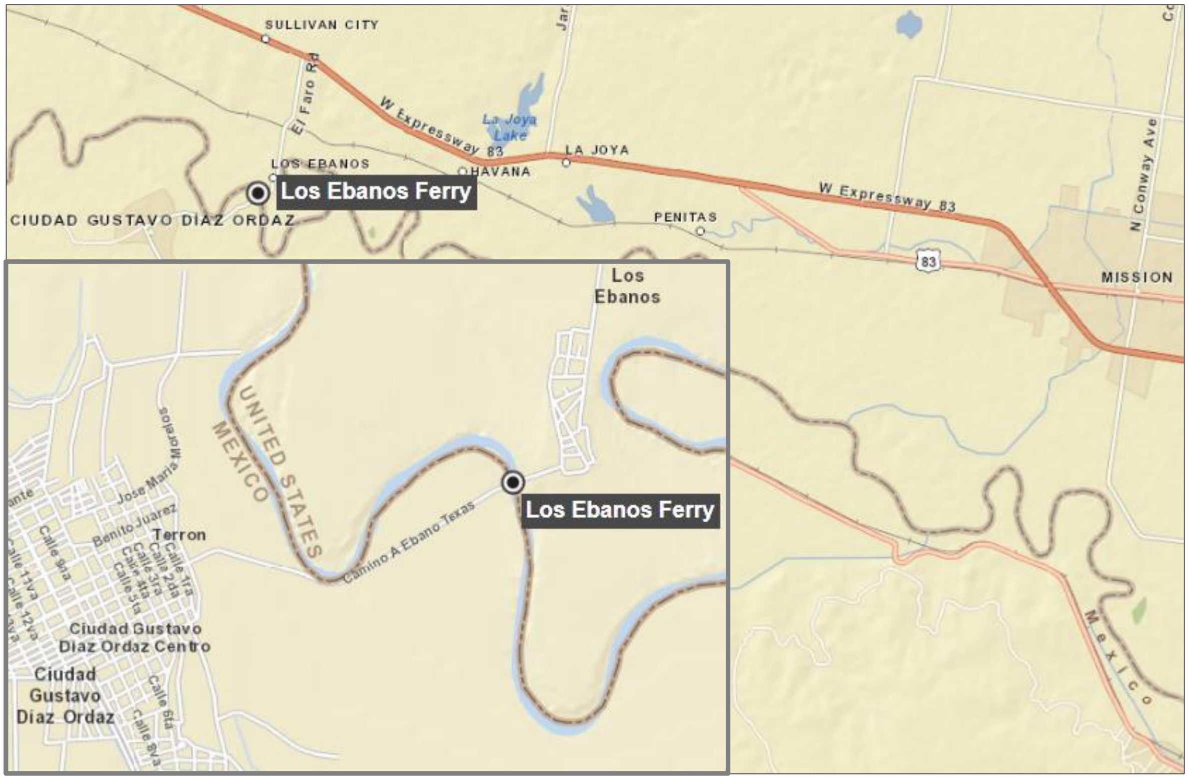


Figure 4.60: Los Ebanos Ferry

Planned Changes in Infrastructure (Present to 2030)

TxDOT is planning to upgrade US 83 to a four-lane divided facility between the Starr County line and Showers Road by 2015 (TxDOT Project 0039-02-040). This investment should improve traffic flow and positively impact the LOS on this facility. In addition, TxDOT is planning a similar upgrade to US 83 between the Hidalgo County line and 2.3 miles west of the county line (TxDOT Project 0039-01-066). Upon completion of this project, the LOS on this section of US 83 will improve from its current level of C to B.

4.2.7 McAllen-Miller International Airport

The McAllen-Miller International Airport is a public-use airport owned by the City of McAllen and is located 2 nautical miles south of the CBD (see Figure 4.61). The airport is served by four commercial airlines: Delta, American Airlines, Allegiant, and United Airlines. In addition, six cargo carriers serve the McAllen-Miller International

Airport: Ace Forwarding, Inc.; Texas Land and Air; Campbell's Delivery Valley; Continental Airlines; On Time Delivery Service; and South Texas Express, Inc.

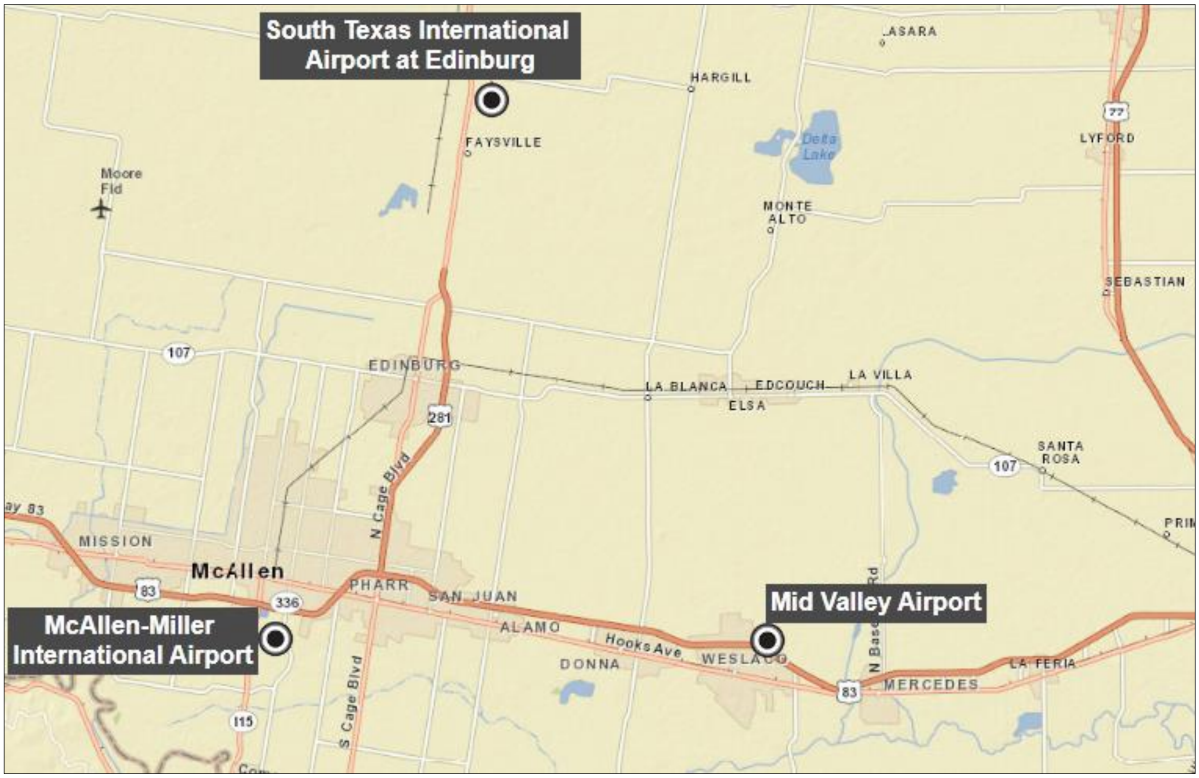


Figure 4.61: Airports in Hidalgo County

Hours of Operation

The Federal inspection station at the airport provides customs and immigration services and agricultural inspections 24 hours a day 365 days a year.

Primary Roadways Serving McAllen-Miller International Airport

The airport is primarily served by SH 115 to the west, SH 336 to the east, and US 83/IH 2 to the north. SH 115 is about 8 miles long and connects with US 83/IH 2 to the north and provides access to the McAllen-Hidalgo-Reynosa Bridge to the south. SH 115, next to the airport, is a four-lane undivided facility with an AADT of 24,000 vehicles in 2010, of which 4.4 percent were trucks. In 2010, there were 5.33 accidents per mile on SH 115, and the LOS was B.

SH 336 runs parallel to SH 115 and connects with US 281/Military Highway to the south and US 83/IH 2 to the north. For most of its length, SH 336 is a four-lane undivided facility with an AADT of 31,000 vehicles, of which 3.9 percent were trucks in 2010. In 2010, 18.67 accidents were reported per mile, and the LOS on SH 336 was C.

US 83/IH 2 is a six-lane facility with an AADT of 101,000 vehicles, of which 5.7 percent were trucks in 2010. In 2010, 45.49 accidents were reported per mile, and the LOS was F.

Planned Changes in Infrastructure (Present to 2030)

Current TxDOT plans include the construction of an overpass at the existing underpass intersection at US 83/IH 2 and Bicentennial Boulevard to improve traffic flow on Bicentennial Boulevard. This project is currently not included in the STIP.

As mentioned earlier, TxDOT is planning to upgrade another section of US 83 to a four-lane divided facility, extending from the Hidalgo County line to 2.3 miles west (TxDOT Project 0039-01-066). Upon completion of this project, the LOS on this section of US 83 will improve from its current level of C to B.

4.2.8 Weslaco/Mid Valley Airport

Weslaco/Mid Valley Airport is a public-use general aviation airport, which means that the airport serves aircraft capable of carrying 20 passengers or less. Owned by the City of Weslaco, the airport is located 2 nautical miles northeast of the CBD (see Figure 4.61). The airport has one 5,000-foot lighted runway. Aviation businesses at the Weslaco/Mid Valley Airport include Wilson Aircraft, Sterling Air Service, Garric War Birds, Chachalaca Aero, and Cain Productions.

Hours of Operation

The airport is open 24 hours a day 365 days a year, but CBP services are available only Monday through Saturday from 8:00 a.m. to 5:00 p.m.

Primary Roadways Serving Weslaco/Mid Valley Airport

The airport is served by FM 88/North Texas Boulevard to the west and FM 1015 to the east. US 83/IH 2 is to the south of the airport.

FM 88/North Texas Boulevard is a four-lane undivided facility that averaged 29,000 vehicles per day in 2010, of which 17.9 percent were trucks. There were 9.33 accidents reported per mile on this highway in 2010, and the LOS was B.

FM 1015 connects Weslaco/Mid Valley Airport to the Weslaco-Progreso International Bridge and major highways, such as US 281/Military Highway and US 83/IH 2. For most of its length, FM 1015 is a four-lane undivided highway with an AADT of 16,500 vehicles in 2010, of which 4.4 percent were trucks. This facility had 4.8 accidents per mile in 2010, and the LOS was A.

US 83/IH 2 is a six-lane highway with an AADT of 91,890 vehicles in 2010, of which 6.0 percent were trucks. In 2010, US 83/IH 2 had 18.8 accidents per mile, and the LOS was E.

Planned Changes in Infrastructure (Present to 2030)

No planned infrastructure projects have been identified near the Weslaco/Mid Valley Airport.

4.2.9 South Texas International Airport at Edinburg

The South Texas International Airport is a public-use airport owned by the City of Edinburg, located 9 nautical miles north of the CBD (see Figure 4.61). It is a single-runway general aviation airport. The City of Edinburg has requested State support for an $18 million runway extension project to allow larger air cargo planes and emergency response operations at the airport. This project will extend the runway from 5,000 feet to 7,800 feet. The city is also investing $1 million in a customs facility, is embarking on a $2.8 million new taxiway that is expected to be completed in 2013, and has allocated another $1 million for a new fuel facility.[46]

Hours of Operation

The airport is open 24 hours a day 365 days a year .

Primary Roadways Serving South Texas International Airport at Edinburg

The airport is served by FM 490 to the north and US 281to the west. For most of its length, FM 490 is a two-lane undivided facility. The AADT on FM 490 was 1,300 vehicles in 2010, of which 15.2 percent were trucks. In 2010, there were 1.31 accidents per mile, and the LOS was A.

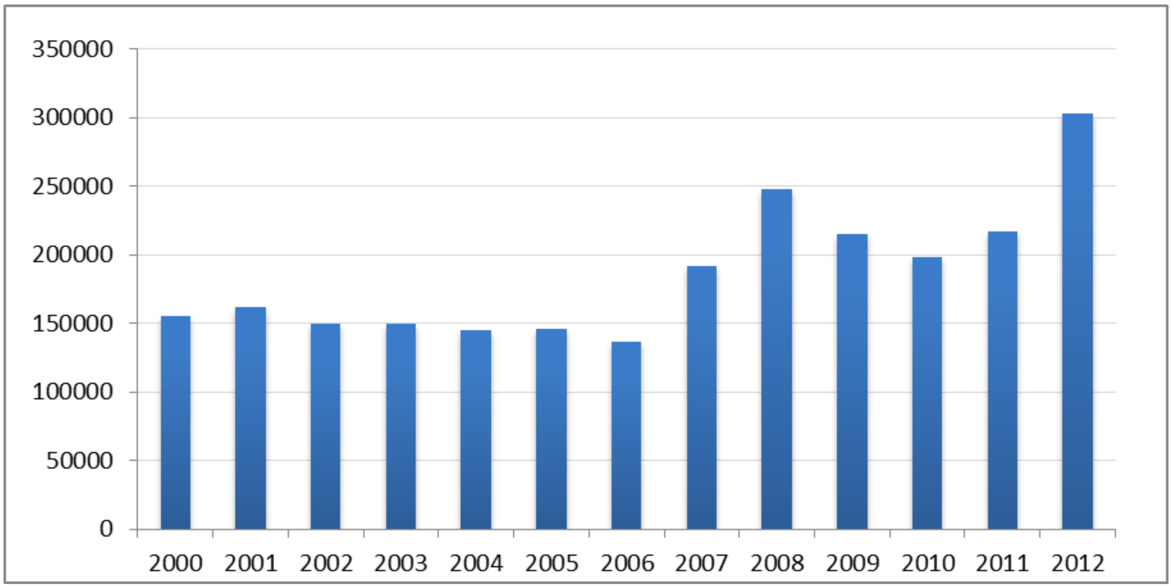
US 281 is a four-lane divided highway with an AADT of 18,600 vehicles in 2010, of which 29.0 percent were trucks. In 2010, there were 8.51 accidents per mile, and the LOS was B.

4.2.10 Reynosa International Airport

The Reynosa International Airport, also known as Aeropuerto General Lucio Blanco, is located 3 miles east of the City of Reynosa. The Reynosa International Airport has one landing strip with an operational capacity of 18 flights per hour. The airport can accommodate B-737-200 airplanes and smaller aircraft. The airport has a commercial platform, a general aviation platform, and a commercial terminal.[47]

The airport is served by three commercial airlines: AeroMexico, Aeromar, and VivaAerobus. In addition, the charter line AeroRex offers commercial services from this airport. Non-stop service is provided to Mexico City, Poza Rica, and Veracruz.

Figure 4.62 shows the number of passengers handled at the Reynosa International Airport between 2000 and 2012. Between 2000 and 2006, the number of passengers remained fairly constant. Between 2006 and 2008, the total number of passengers handled increased 80.5 percent before decreasing in 2009 to 215,392 passengers. Between 2009 and 2011, the number of passengers remained again fairly constant before increasing by 39.9 percent between 2011 and 2012 to reach 302,934 passengers.



Source: OMA[47]

Figure 4.62: Reynosa International Airport—Number of Passengers

The airport has an important freight terminal. The airport is served by 10 freight airlines: Aerotransportes Más de Carga, Astar Air Cargo, Bax Global, Estafeta Carga Aérea, FedEx, Jett Paquetería, Mex Jet, Starship, UPS, and Vigo Jet. These airlines provide non-stop service to Ciudad Juárez, Culiacán, Chihuahua, Mazatlán, Monterrey, and San Luis Potosí.

Hours of Operation

The airport provides daily service between 7:00 a.m. and 7:00 p.m. 365 days a year.

Primary Roadways Serving City of Reynosa International Airport

Figure 4.63 shows the location of the Reynosa International Airport. The Reynosa International Airport is primarily served by MEX 2, which connects the airport to MEX 2D and to the Acceso al Puente Internacional Reynosa/Pharr to the east; and to TAM 97, Libramiento Reynosa Sur II, and MEX 40 to the west.

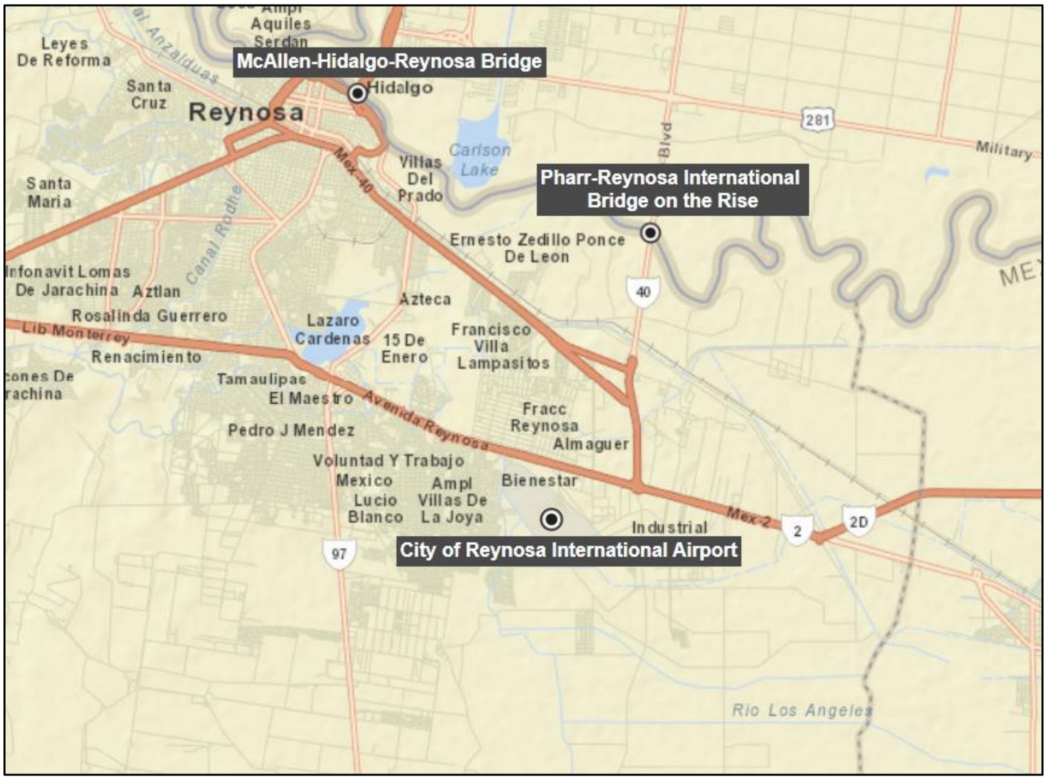


Figure 4.63: City of Reynosa International Airport

Planned Changes in Infrastructure (Present to 2030)

The State of Tamaulipas and Municipality of Reynosa are currently developing a loop around the City of Reynosa (Reynosa bypass).

4.3 Starr County/Municipalities of Camargo and Miguel Alemán

There are two bridge crossings and one dam crossing in Starr County and the Municipalities of Carmago and Miguel Alemán. Both bridges serve pedestrian, non-commercial, and commercial vehicles. The Lake Falcon Dam Crossing is the only dam crossing in the Focused Study Area and serves only non-commercial vehicles. The specific transportation modes served by each of the facilities is provided in Table 4.15. (No rail crossing is available in Starr County.)

Table 4.15: Summary of Starr County/Municipalities of Camargo and Miguel Alemán Bridges, Dam Crossing, and Airport

Bridge/Crossing	Location	Pedestrians	Non-commercial Vehicles	Commercial Vehicles	Rail
Rio Grande City-Camargo Bridge	Rio Grande City/Camargo	Yes	Yes	Yes	No
Roma-Ciudad Miguel Alemán Bridge	Roma/Ciudad Miguel Alemán	Yes	Yes	Yes	No
Lake Falcon Dam Crossing	Falcon Heights/Ciudad Guerrero	No	Yes	No	No
Rio Grande City Municipal Airport	Rio Grande City	Yes	N/A	N/A	N/A

4.3.1 Rio Grande City-Camargo Bridge

The Rio Grande City-Camargo Bridge opened in 1966.[6] The U.S. side of the bridge is owned and operated by the Starr-Camargo Bridge Company. The Mexican side of the bridge is owned by the Mexican Government and operated by CAPUFE. The bridge has two lanes and is 591 feet long.

The bridge is located between Rio Grande City and Las Lomas off of Pete Díaz Avenue and US 83 on the U.S. side, and off of Obreros Mexicanos north of Ciudad Camargo, Tamaulipas, on the Mexican side. The crossing is also known locally as the Starr-Camargo Bridge and Puente Camargo.

Border Station

The original U.S. border station (LPOE Rio Grande) was constructed in 1969 by the Starr-Camargo Bridge Company, which also constructed the new border station in 1999. GSA leases the new border station from the Starr-Camargo Bridge Company.[6] On the Mexican side, the current border station has been in operation since 1968. In 2003, the Mexican Government signed a contract to purchase land for the expansion of the border station in Camargo and to remodel the existing facility. It has since been developed into a state-of-the-art facility and is now recognized as one of Mexico's top 25 POEs.[6]

Hours of Operation

The bridge currently operates from 7:00 a.m. to 12:00 a.m. 365 days a year.

Tolls

Table 4.16 lists the southbound toll rates for the Rio Grande City-Camargo Bridge. Table 4.17 provides the northbound toll rates.

Table 4.16: Toll Rates for Rio Grande City-Camargo Bridge (Southbound)

Mode	Toll Rate (US$)
Pedestrian or Bicycle	0.25
Non-commercial Vehicle	3.00
Non-commercial Pickup with Dolly	4.25 (3 Axles)
Commercial Vehicle with Trailer	6.25 (3 Axles)
Commercial Vehicle (Empty)	10.25
Commercial Vehicle (Loaded)	12.25

Source: Starr Camargo Bridge Company[48]

Table 4.17: Toll Rates for Rio Grande City-Camargo (Northbound)

Mode	Toll Rate (US$)
Pedestrian or Bicycle	0.25
Motorcycle	1.05
Non-commercial Auto or Pickup	2.10
Extra Axle for Non-Commercial Vehicle	1.21
Passenger Bus (2, 3, and 4 Axles)	4.33
Commercial Truck (2, 3, and 4 Axles)	4.33
Commercial Truck (5 and 6 Axles)	9.27
Commercial Truck (7, 8, and 9 Axles)	14.50
Extra Axle for Commercial Vehicle	2.42

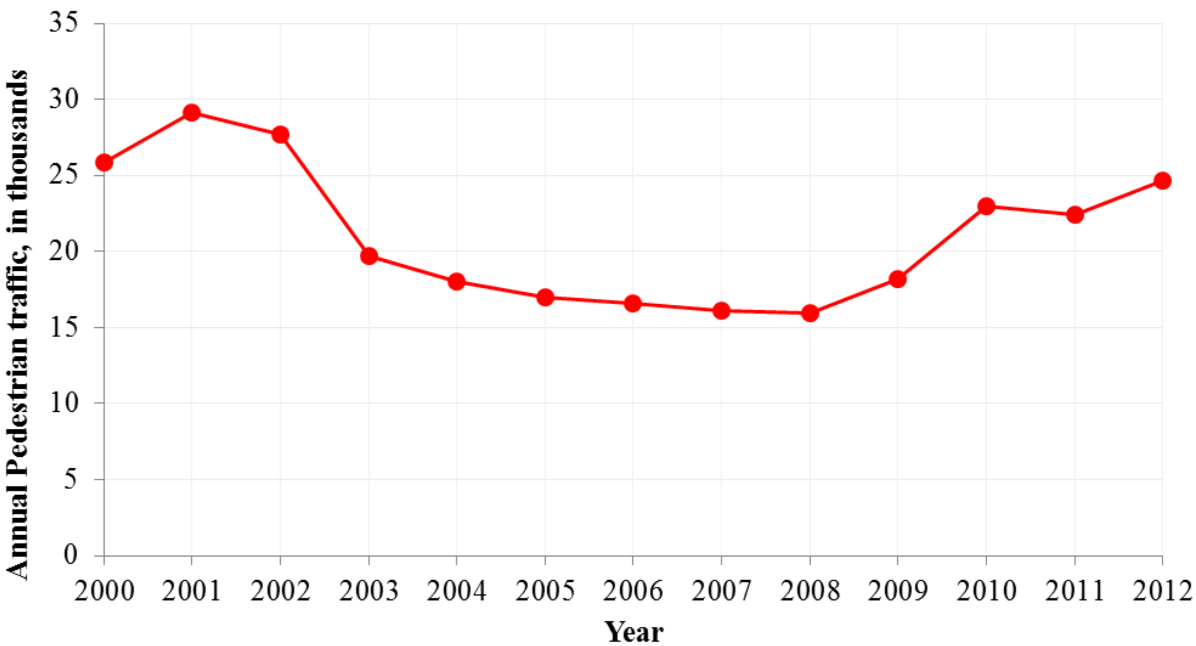
Note: Exchange rate = MXN 12.40 per US $1.

Source: CAPUFE[8]

Bridge Crossings

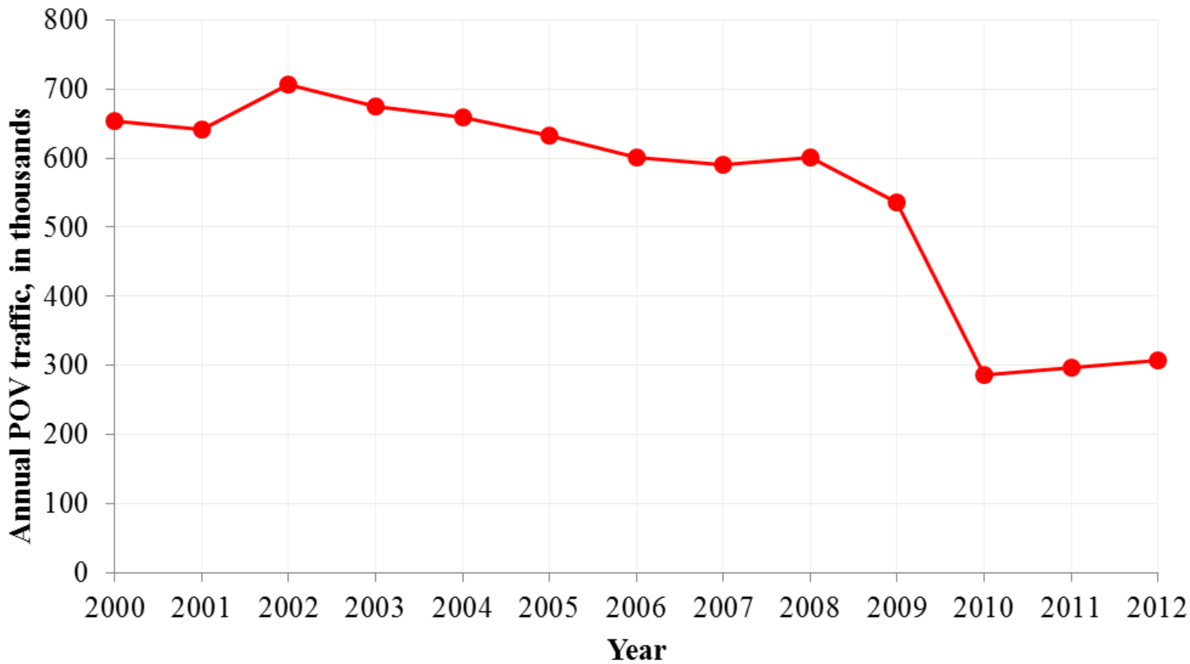
Figures 4.64 through 4.66 illustrate the number of northbound bridge crossings by mode at the Rio Grande City-Camargo Bridge between 2000 and 2012. Figures 4.67 through 4.69 illustrate the number of southbound crossings at the Rio Grande City-Camargo Bridge between 2000 and 2010—the latest year for which reliable data were available.

Northbound Crossings: Since the peak of 29,146 northbound pedestrian crossings in 2001, the annual number of northbound crossings decreased every year to reach its lowest level of 15,941 in 2008, a decrease of 45.3 percent. As of 2008, the number of northbound crossings increased in 2009 (14.3 percent relative to 2008) and 2010 (26.0 percent relative to 2009) before decreasing marginally (2.3 percent) to reach 22,417 in 2011 (see Figure 4.64). In 2012, however, the number of northbound pedestrian crossings increased 9.9 percent relative to 2011 to reach 24,634 crossings.



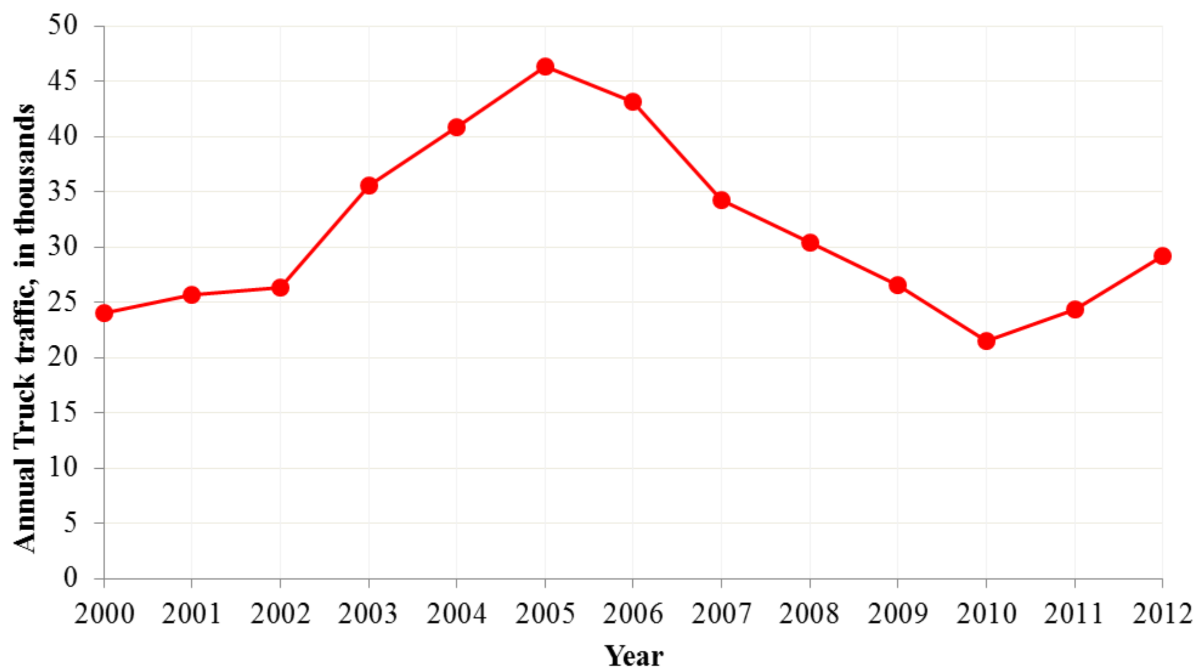
Source: CBP[9]

Figure 4.64: Rio Grande City-Camargo Bridge—Northbound Pedestrian Crossings



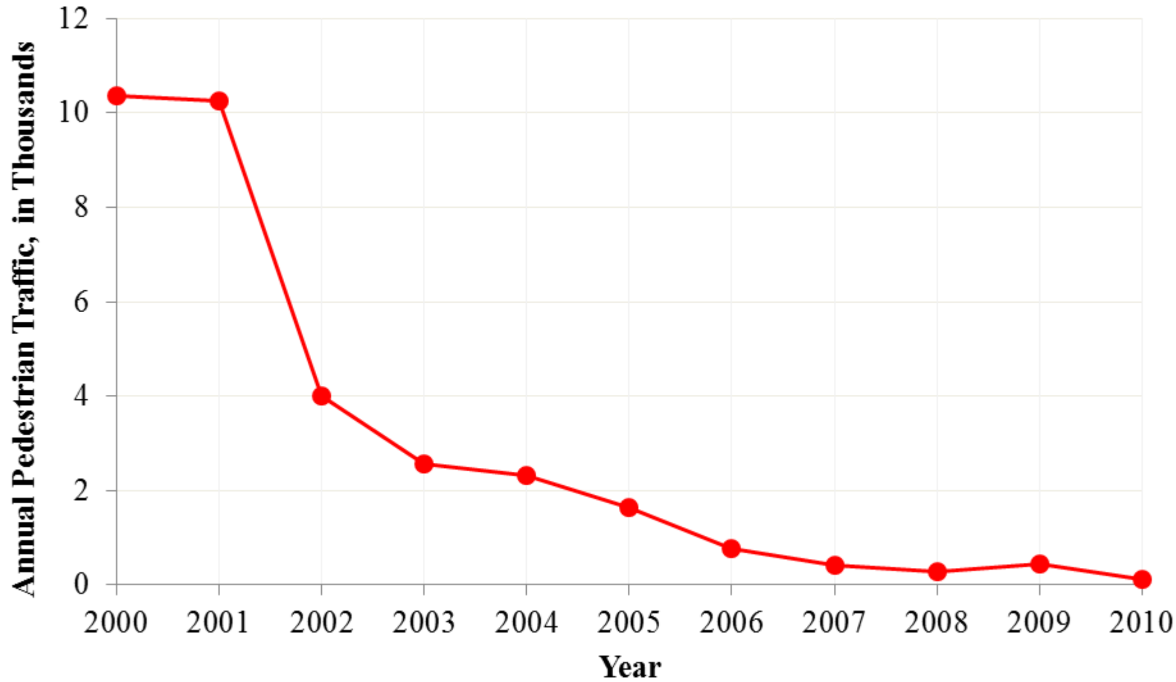
Source: CBP[9]

Figure 4.65: Rio Grande City-Camargo Bridge—Northbound POV Crossings



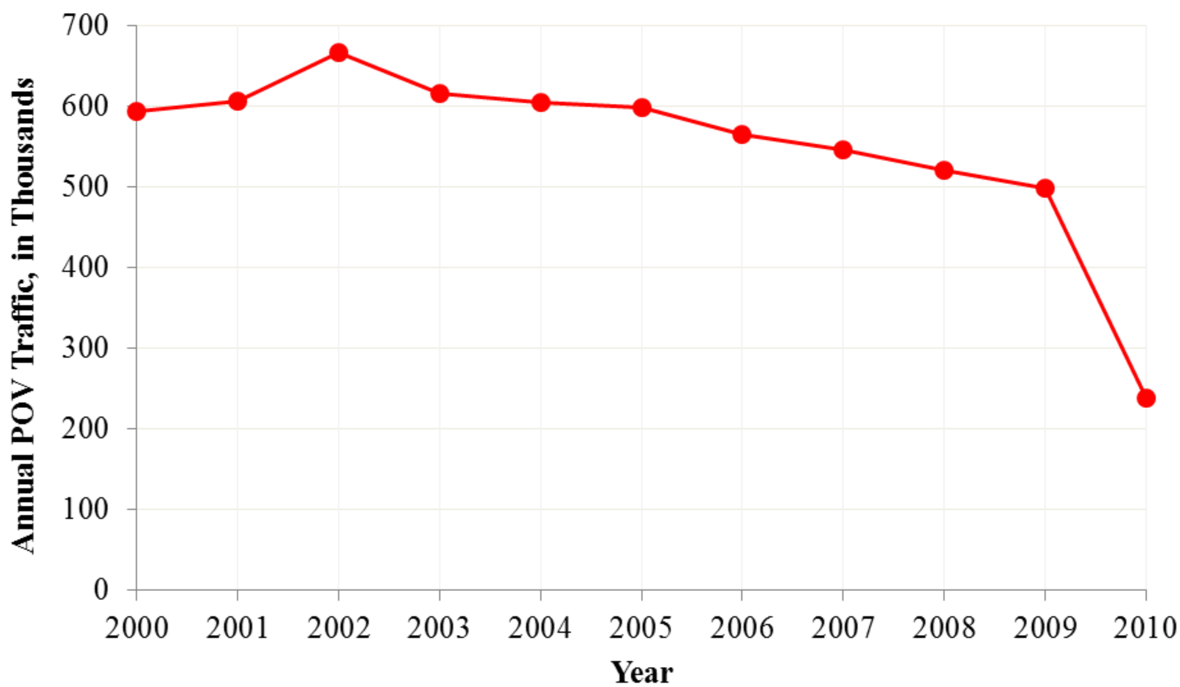
Source: CBP[9]

Figure 4.66: Rio Grande City-Camargo Bridge—Northbound Commercial Truck Crossings



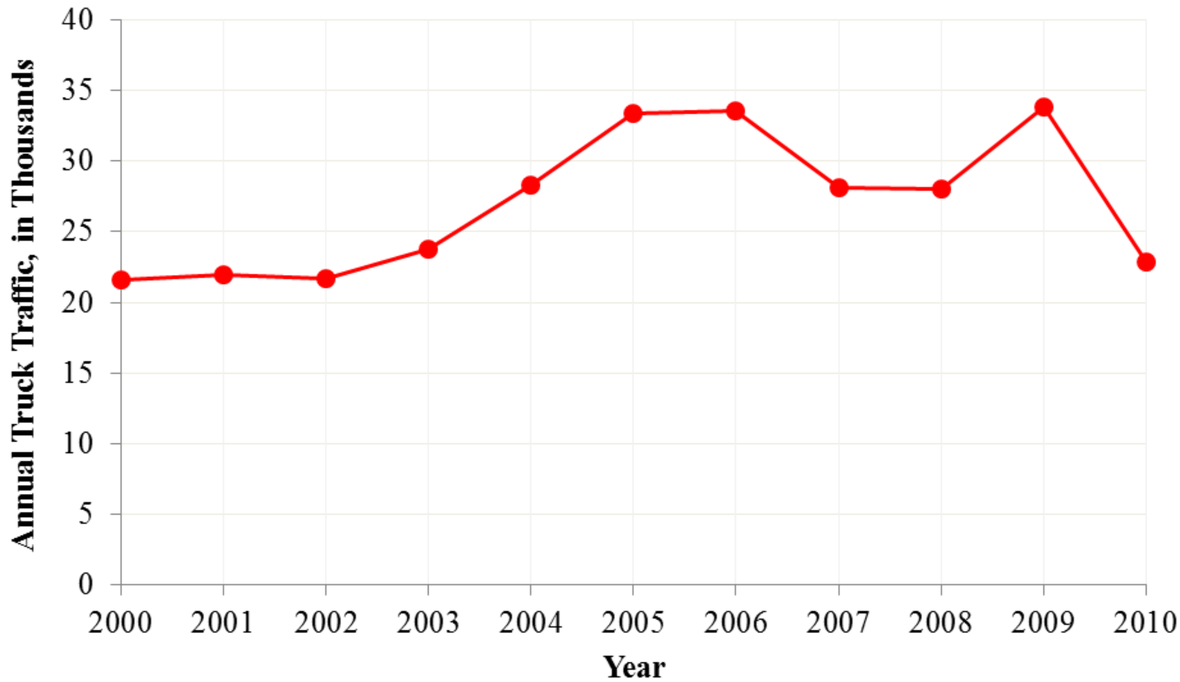
Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.67: Rio Grande City-Camargo Bridge—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.68: Rio Grande City-Camargo Bridge—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.69: Rio Grande City-Camargo Bridge—Southbound Commercial Truck Crossings

Figure 4.65 shows that the number of northbound POV crossings decreased almost every year between the 2002 peak year (when 706,674 northbound POV crossings were recorded) and 2010 (when the lowest level of 285,880 northbound POV crossings were recorded). The only exception was 2008 when a marginal increase (1.8 percent) in the annual number of northbound POV crossings was recorded relative to 2007. Between 2010 and 2012, the annual number of northbound POV crossings increased 7.5 percent to reach 307,372 in 2012.

According to available data, two buses crossed northbound at the Rio Grande City-Camargo Bridge in 2001, three in 2002, and seven in 2006. No other northbound bus crossings were reported between 2000 and 2012.[9]

Figure 4.66 shows that the number of northbound commercial truck crossings increased consistently between 2000 and 2005 to reach a peak of 46,308, an increase of 92.4 percent. However, between 2005 and 2010, the number of northbound commercial truck crossings decreased 53.6 percent to reach the lowest number of annual northbound commercial truck crossings recorded at the Rio Grande City-Camargo Bridge in 2010 with 21,503. Between 2010 and 2012, however, the number of northbound commercial truck crossings increased 35.6 percent to reach 29,160 crossings in 2012.

<u>Southbound Crossings</u>: Figure 4.67 shows the dramatic decrease (98.7 percent) in annual southbound pedestrian crossings at the Rio Grande City-Camargo Bridge between 2000 and 2010. Specifically, the number of southbound pedestrian crossings decreased from a high of 10,356 in 2000 to a low of 133 in 2010.

Figure 4.68 shows that the number of annual southbound POV crossings decreased from a peak of 666,433 in 2002 to the lowest value of 238,554 in 2010, a decrease of 64.2 percent.

Annual southbound commercial truck crossings at the Rio Grande City-Camargo Bridge increased 55.5 percent between 2002 and 2006, decreased 16.3 percent in 2007, and increased again 20.5 percent between 2007 and 2009 to reach 33,817 crossings in 2009. In 2010, however, the number of southbound commercial truck crossings decreased 32.4 percent relative to 2009 to reach 22,870 crossings (see Figure 4.69).

Primary Roadways Serving Rio Grande City-Camargo Bridge

Figure 4.70 shows the location of the Rio Grande City-Camargo Bridge. On the U.S. side, Pete Diaz Junior Avenue connects directly to the Rio Grande City-Camargo Bridge and US 83. FM 755 intersects US 83 about 0.5 miles north of the bridge. The AADT on US 83—a four-lane divided facility—was 35,000 vehicles in 2010, of which 9.1 percent were trucks. In 2010, 13.25 accidents were reported per mile of this facility, and the LOS on US 83 was C.

On the Mexican side, MEX 2 connects Ciudad Camargo with Ciudad Miguel Alemán to the northwest and Ciudad Gustavo Díaz Ordaz to the southeast. Libertad intersects with the four-lane MEX 2 on the south side of the city, changes to Avenida Ensenada, and runs north to connect to the Rio Grande City-Camargo Bridge. The AADT on Avenida Ensenada was 830 vehicles in 2011.[44]

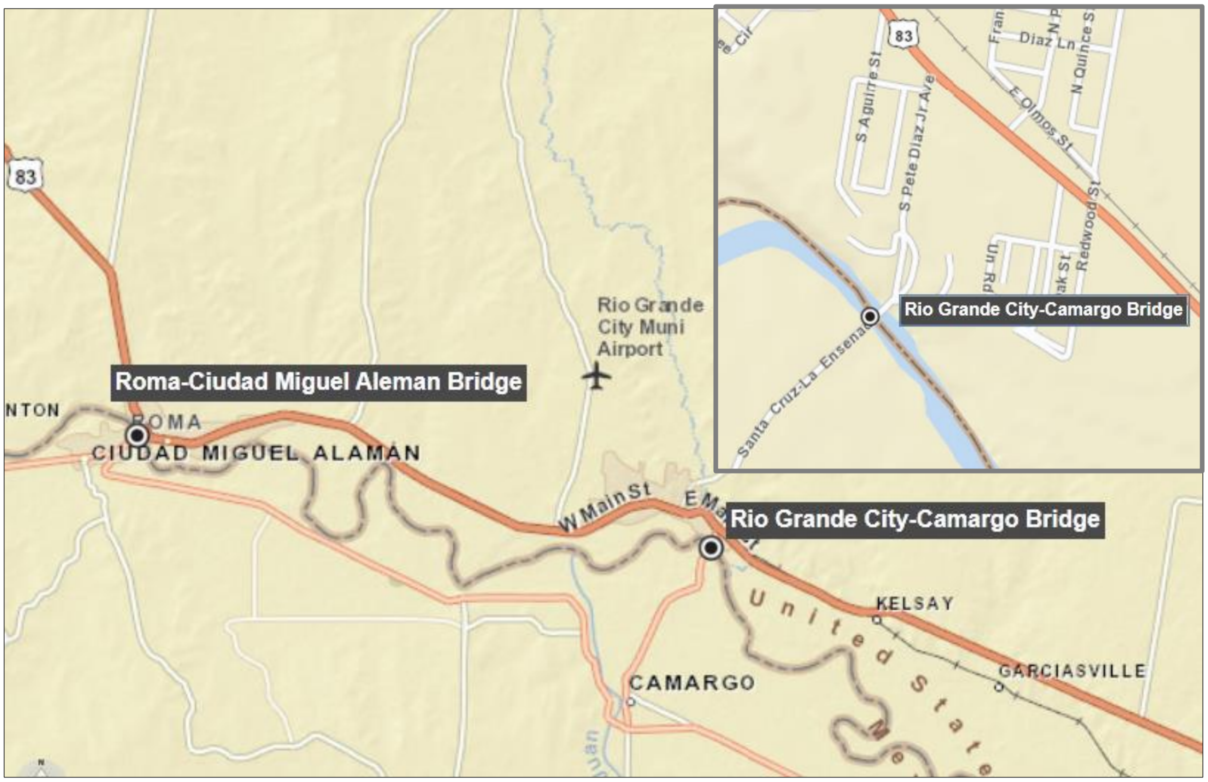


Figure 4.70: Rio Grande City-Camargo Bridge

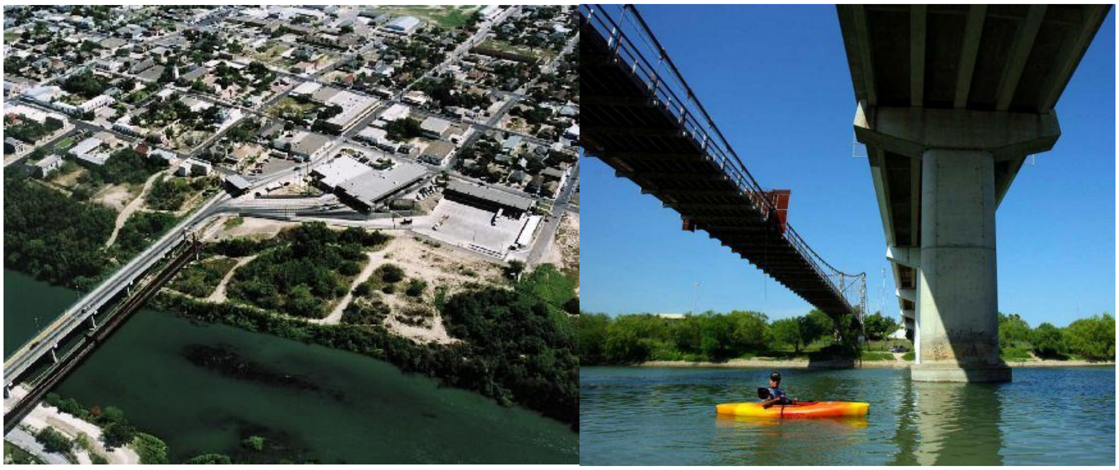
Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, several projects are planned along the FM 755 corridor. The first project involves realigning FM 755 to divert traffic from the Rio Grande City-Camargo Bridge away from populated areas in Rio Grande City (TxDOT Project 1103-04-027). This link should also divert some of the traffic between the bridge and Rio Grande City away from US 83 North, alleviating congestion on US 83 and improving the LOS on this facility. This project is included in the STIP. In addition, TxDOT also plans to construct the Roma/Rio Grande City Relief Route, which is expected to divert some traffic away from FM 755 (TxDOT Project 0921-26-004). This project is also included in the STIP.

On the Mexican side, the Comité de Desarrollo Inter-municipal (CODEIM) is working on widening the road south of Camargo to Monterrey (known as La Ruta Corta) and is seeking to connect to the Reynosa/Cadereyta toll road.[6]

4.3.2 Roma-Ciudad Miguel Alemán Bridge

Two bridges between Roma and Ciudad Miguel Alemán share the same location and border station, but only one bridge is operational. Figure 4.71 shows both bridges: the operating and functional bridge (the Roma-Ciudad Miguel Alemán Bridge) and the closed suspension bridge (the San Pedro-Roma International Bridge).



Source: (a) Texas A&M University, TTI, and the Center for Transportation Research (CTR); and (b) mysanantonio.com

Figure 4.71: Bridges between Roma and Ciudad Miguel Alemán—Operating Concrete Bridge and Closed Suspension Bridge

The San Pedro-Roma Suspension Bridge was built in 1927 and became operational on 1928. The bridge was operated as a toll crossing of the Rio Grande River until it was closed to all traffic in 1978, when the new concrete bridge was built adjacent to the old suspension bridge.[49]

The Roma-Ciudad Miguel Alemán Bridge is a concrete structure built in 1978–1979. On the U.S. side, it is owned and operated by Starr County. On the Mexican side, the bridge is owned by the Government of Mexico and operated by CAPUFE. It has two lanes and is 810 feet long.

Both bridges are located in Roma near US 83 and Spur 200/West Bravo Boulevard on the U.S. side. On the Mexican side, they are on the northern terminus of MEX 2 in Ciudad Miguel Alemán, Tamaulipas. These crossings are known locally as the Starr County International Bridge, Roma Bridge, and Puente Roma-Miguel Alemán and San Pedro-Roma Bridge.

Border Station

The U.S. border station (LPOE Roma) is owned by Starr County and was completed in 1988. GSA leases the facilities.[6] On the Mexican side, the border station was constructed in 1943 and renovated in 1991.[6] The Mexican Government plans to expand and modernize the customs facilities.[6]

Hours of Operation

The Roma-Ciudad Miguel Alemán Bridge currently operates 24 hours a day 365 days a year for POVs and from 10:00 a.m. to 6:00 p.m. Monday through Friday for commercial/cargo vehicles.

Tolls

Table 4.18 provides the southbound toll rates for the Roma-Ciudad Miguel Alemán Bridge as of January 2012. Table 4.19 provides the northbound toll rates as of November 2012.

Table 4.18: Toll Rates for Roma-Ciudad Miguel Alemán Bridge (Southbound)

Mode	Toll Rate (US$)
Pedestrian or Bicycle	0.50
Non-commercial Auto or Pickup (2 Axles)	3.00
Extra Axle for Non-commercial Vehicle	1.00
Commercial Vehicle (2 Axles)	6.00
Extra Axle for Commercial Vehicle	2.00
Bus	20.00

Source: Starr Camargo Bridge Company[48]

Table 4.19: Toll Rates for Roma-Ciudad Miguel Alemán Bridge (Northbound)

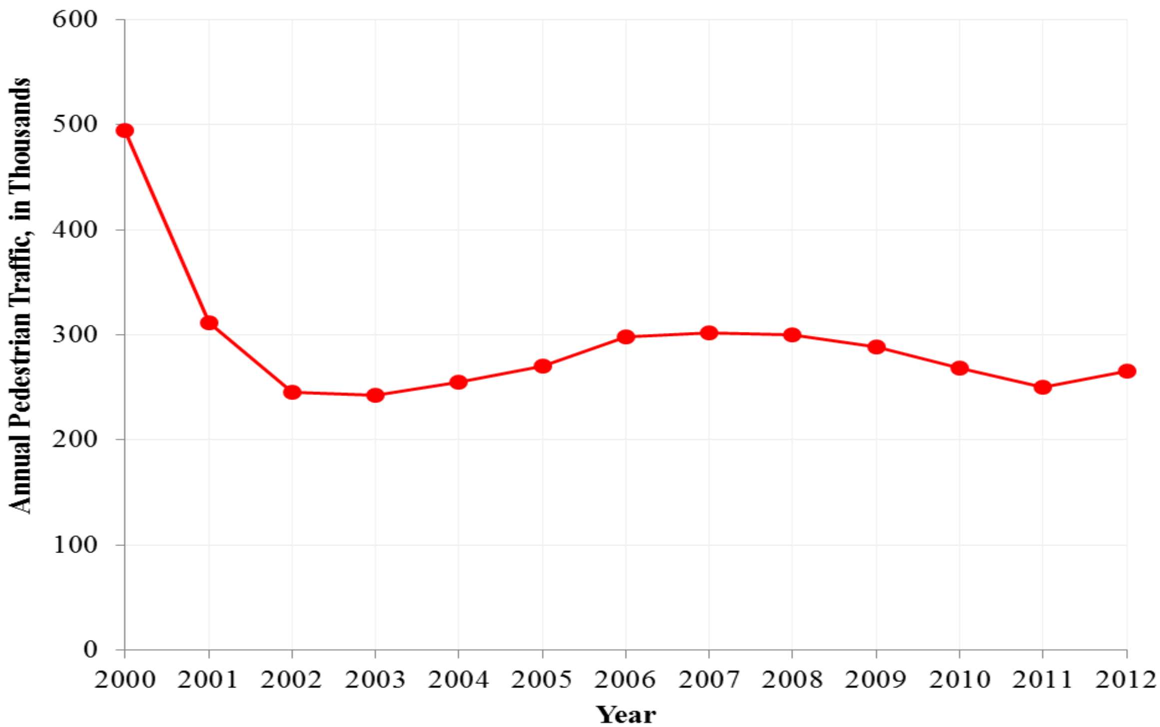
Mode	Toll Rate (US$)
Pedestrian or Bicycle	0.25
Motorcycle	1.05
Non-commercial Auto or Pickup	2.10
Extra Axle for Non-commercial Vehicle	1.21
Passenger Bus (2, 3, and 4 Axles)	4.33
Commercial Truck (2, 3, and 4 Axles)	4.33
Commercial Truck (5 and 6 Axles)	9.27
Commercial Truck (7, 8, and 9 Axles)	14.50
Extra Axle for Commercial Vehicle	2.42

Note: Exchange rate = MXN 12.40 per US $1.
Source: CAPUFE[8]

Bridge Crossings

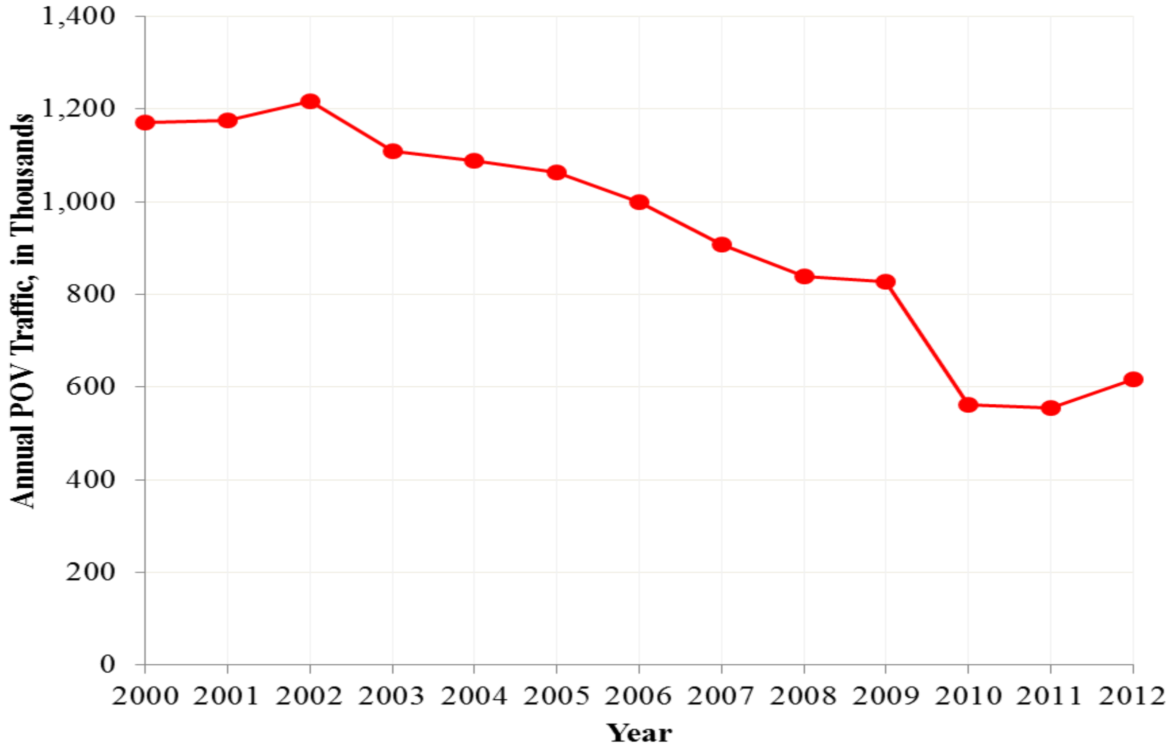
Figures 4.72 through 4.75 illustrate the number of northbound bridge crossings by mode at the Roma-Ciudad Miguel Alemán Bridge between 2000 and 2012. Figures 4.76 through 4.78 illustrate the number of southbound crossings at the Roma-Ciudad Miguel Alemán Bridge between 2000 and 2012.

Northbound Crossings: Figure 4.72 shows that the northbound pedestrian crossings at the Roma-Ciudad Miguel Alemán Bridge peaked at 494,713 crossings in 2000. The number of northbound pedestrian crossings, however, decreased 50.4 percent between 2000 and 2002. Since 2002, the annual number of northbound pedestrian crossings increased every year until 2007. Between 2002 and 2007, the annual number of northbound pedestrian crossings increased 22.9 percent. Between 2007 and 2011, however, the annual number of northbound pedestrian crossings decreased every year to reach 250,307 in 2011. In 2012, the number of northbound pedestrian crossings increased 6.3 percent relative to 2011 to reach 266,021.



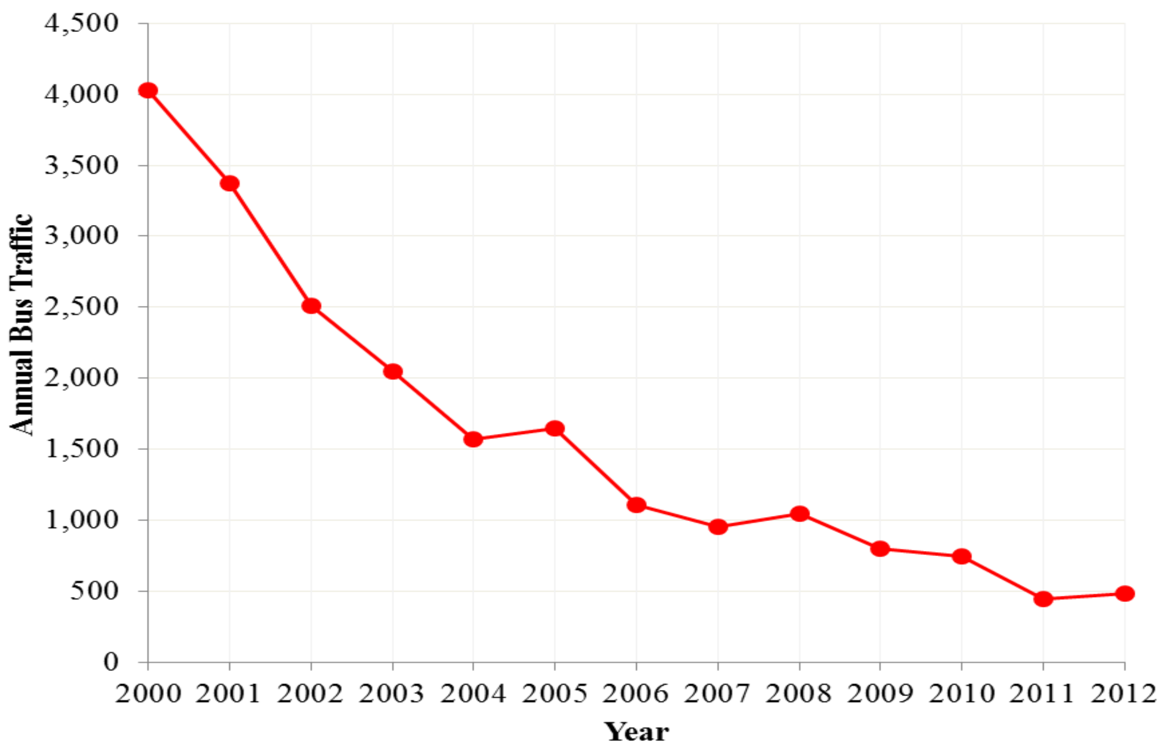
Source: CBP[9]

Figure 4.72: Roma-Ciudad Miguel Alemán Bridge—Northbound Pedestrian Crossings



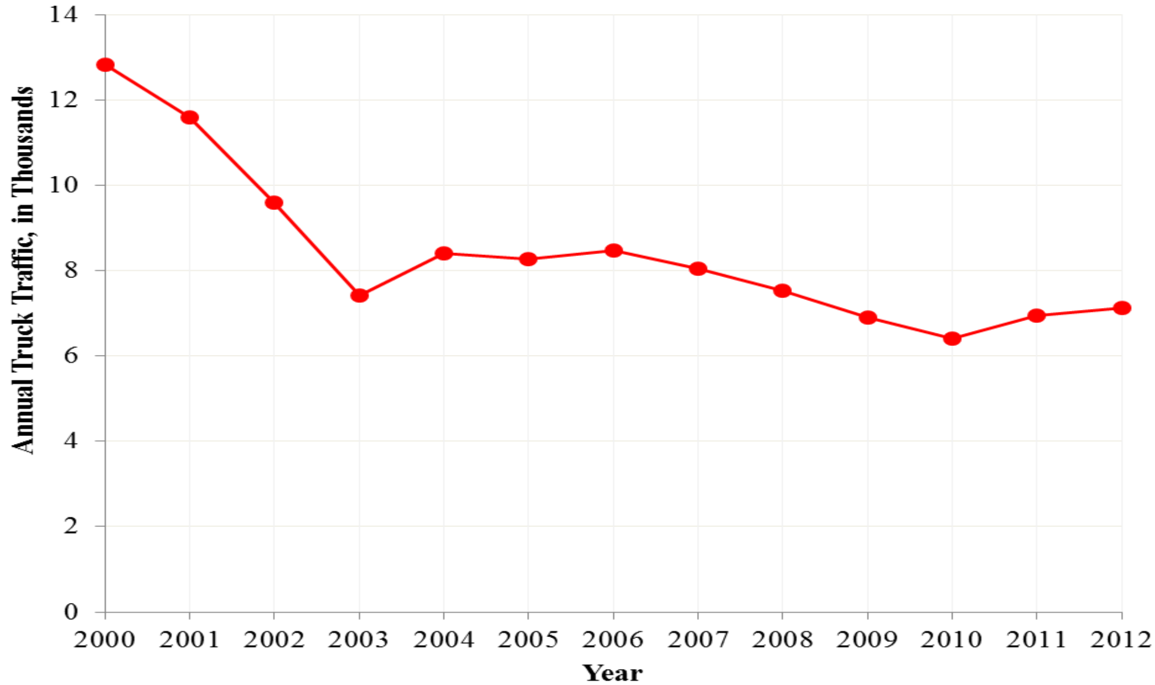
Source: CBP[9]

Figure 4.73: Roma-Ciudad Miguel Alemán Bridge—Northbound POV Crossings



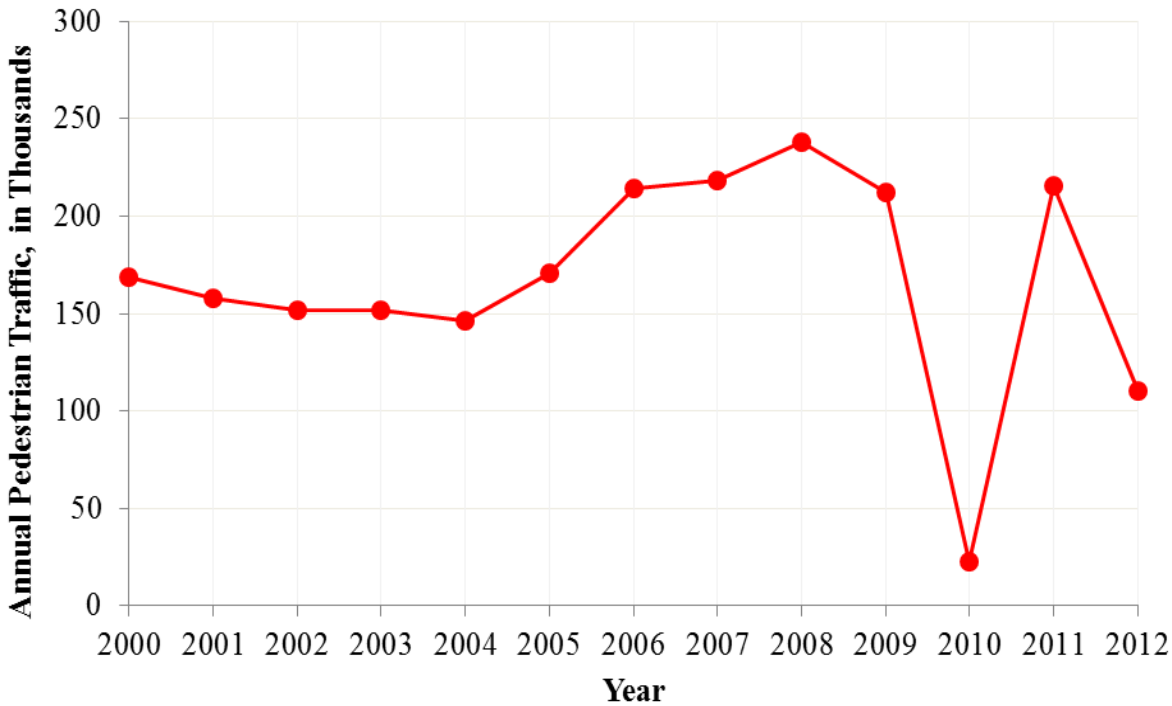
Source: CBP[9]

Figure 4.74: Roma-Ciudad Miguel Alemán Bridge—Northbound Bus Crossings



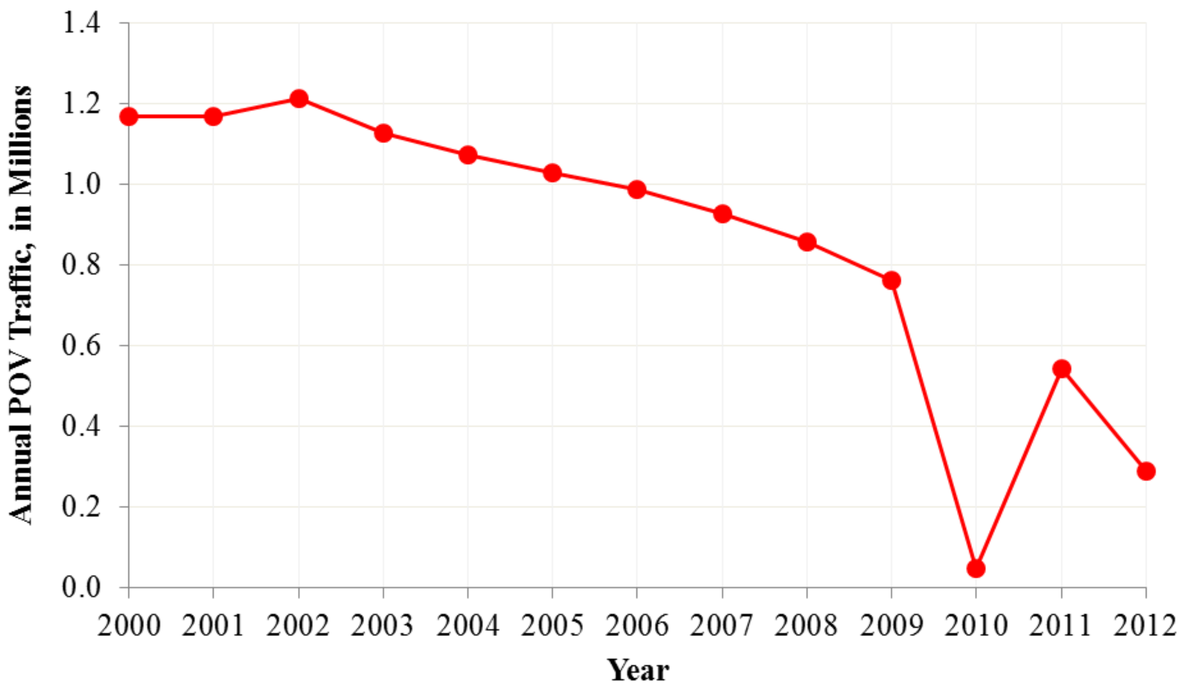
Source: CBP[9]

Figure 4.75: Roma-Ciudad Miguel Alemán Bridge—Northbound Commercial Truck Crossings



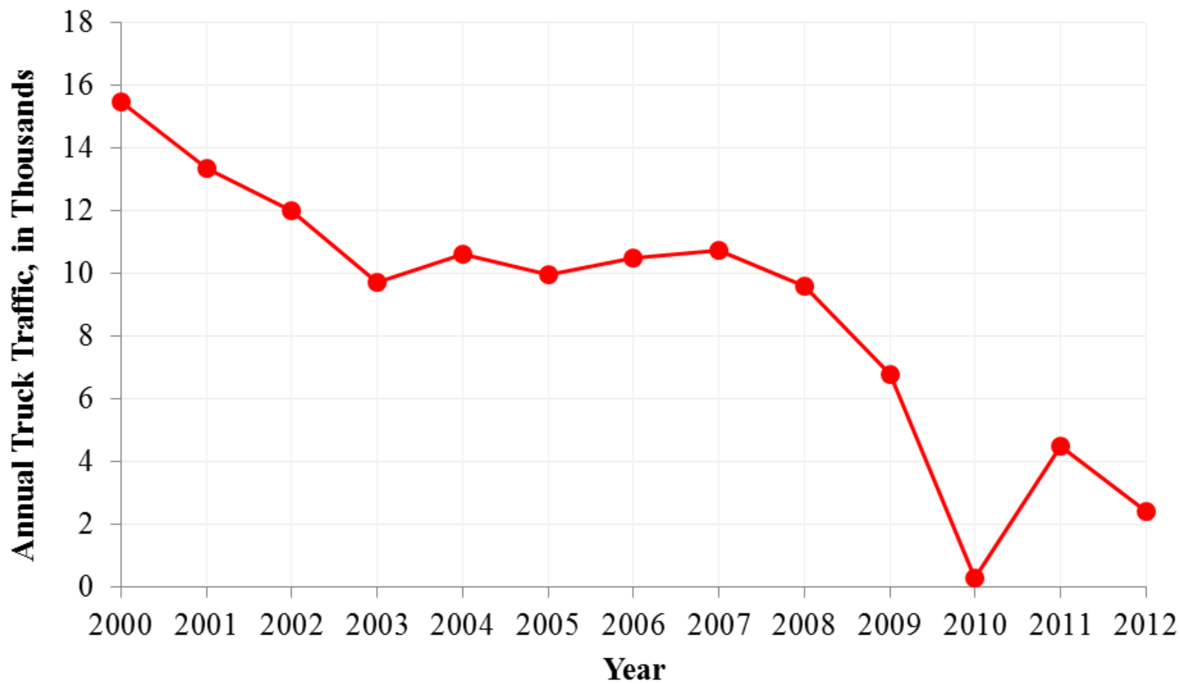
Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.76: Roma-Ciudad Miguel Alemán Bridge—Southbound Pedestrian Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.77: Roma-Ciudad Miguel Alemán Bridge—Southbound POV Crossings



Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development[10]

Figure 4.78: Roma-Ciudad Miguel Alemán Bridge—Southbound Commercial Truck Crossings

The annual number of northbound POV crossings has decreased consistently between 2002 and 2011. Since the 2002 peak year when 1,216,091 crossings were recorded, the annual number of northbound POV crossings decreased 54.3 percent to reach 555,726 in 2011. In 2012, the number of northbound POV crossings increased 11.2 percent relative to 2011 to reach 617,848 (see Figure 4.73).

Figure 4.74 illustrates that the number of northbound bus crossings decreased from 4,031 in 2010 to 445 in 2011, a decrease of 89.0 percent. In 2012, the number of northbound bus crossings increased 9.2 percent relative to 2011 to reach 486.

The number of northbound commercial truck crossings decreased 42.1 percent from its peak year in 2000 to 2003. This was followed by a period of four years (2004 to 2007) during which the annual number of northbound commercial truck crossings fluctuated between 8,050 and 8,467. Between 2007 and 2010, the annual number of northbound commercial truck crossings decreased 20.3 percent to reach its lowest value of 6,417 in 2010. Since 2010, the annual number of northbound commercial truck crossings, however, increased 11.1 percent to reach 7,130 crossings in 2012 (see Figure 4.75).

Southbound Crossings: As shown in Figure 4.76, annual southbound pedestrian crossings at the Roma-Ciudad Miguel Alemán Bridge decreased 13.6 percent between 2000 and 2004. Between 2004 and 2008, annual southbound pedestrian crossings increased 63.0 percent to reach 238,233 crossings in 2008. Between 2008 and 2010, however, the number of southbound pedestrian crossings decreased 90.5 percent to reach the lowest level of 22,701 in 2010. Since 2010, the number of southbound crossings increased 851.2 percent in 2011 before decreasing again 48.8 percent in 2012 to reach 110,528 crossings in 2012.

Annual southbound POV crossings at the Roma-Ciudad Miguel Alemán Bridge decreased 95.9 percent from the peak of 1,211,853 crossings in 2002 to the lowest level of 49,992 crossings in 2010. Since 2010, the number of southbound crossings increased 988.7 percent in 2011 before decreasing again 46.8 percent in 2012 to reach 289,618 crossings in 2012 (see Figure 4.77).

Figure 4.78 shows annual southbound commercial truck crossings at the Roma-Ciudad Miguel Alemán Bridge decreased 56.1 percent between 2000 and 2009. Between 2000 and 2003, annual southbound crossings decreased 37.2 percent. This was followed by a period of four years (2004 to 2007) during which the annual number of southbound commercial truck crossings remained relatively constant, fluctuating between 9,965 and 10,746. Between 2007 and 2010, the annual number of southbound commercial truck crossings decreased 97.1 percent to reach its lowest value of 310 in 2010. Since 2010, the number of southbound crossings increased substantially in 2011 to reach 4,513 crossings before decreasing again 46.5 percent in 2012 to reach 2,416 crossings in 2012 (see Figure 4.78).

Primary Roadways Serving Roma-Ciudad Miguel Alemán Bridge

Figure 4.79 shows the location of the Roma-Ciudad Miguel Alemán Bridge. On the U.S. side, Spur 200 is the primary access road to the Roma-Ciudad Miguel Alemán Bridge. Approximately 0.25 miles from the bridge, Spur 200 intersects US 83 and continues as Bravo Boulevard. For most of its length, Spur 200 is a two-lane roadway—one lane in each direction—from US 83 to the bridge. The AADT on Spur 200 was 1,000 vehicles in 2010, of which 10.3 percent were trucks. No accidents were reported on this facility in 2010, and the LOS on Spur 200 was A.

For most of its length, US 83 is a four-lane undivided highway that runs parallel to the U.S.-Mexico border on the U.S. side. In 2010, the AADT on US 83 was 10,800 vehicles, of which 6.4 percent were trucks. In 2010, 9.26 accidents were reported per mile of this facility, and the LOS was A.

On the Mexican side, MEX 2 connects Ciudad Miguel Alemán with Mier to the west and with Ciudad Camargo to the east. MEX 2 has four lanes at this location. Toward the northeast of Ciudad Miguel Alemán, MEX 2 branches off into Hidalgo and Zapata and directly connects to the Roma-Ciudad Miguel Alemán Bridge.

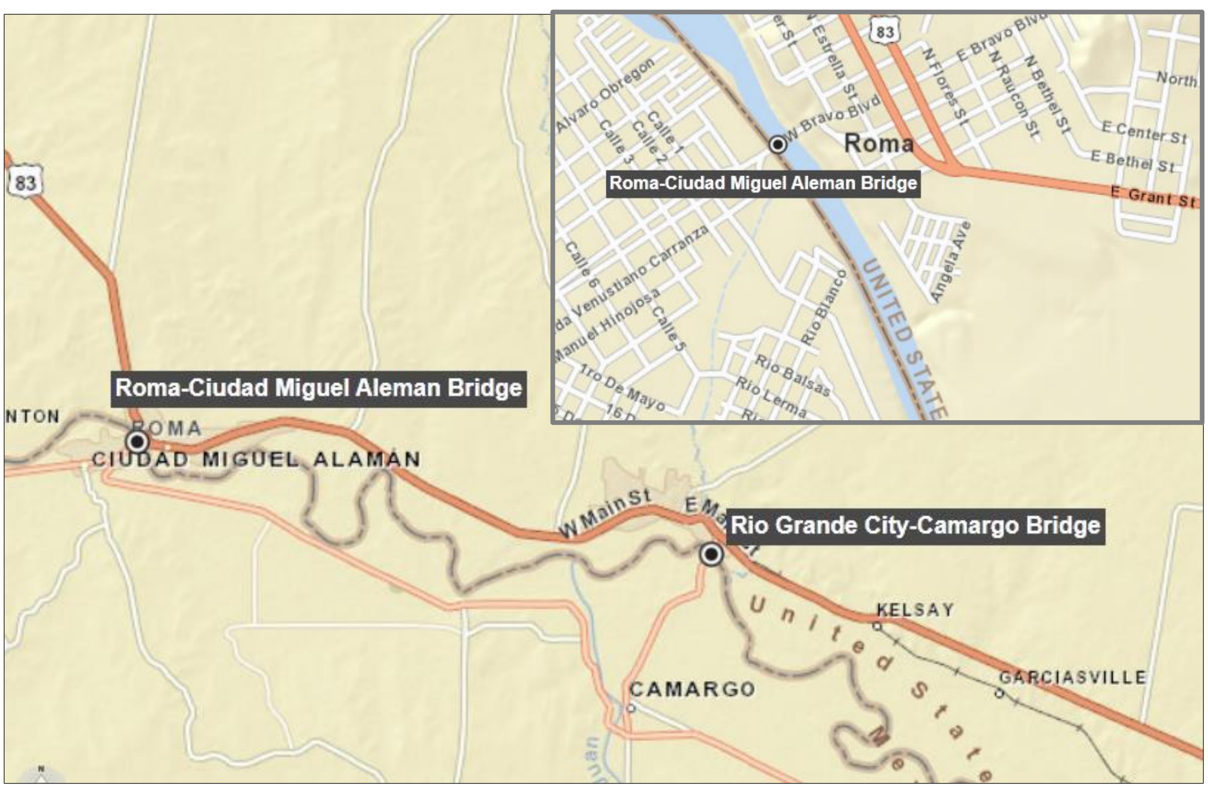


Figure 4.79: Roma-Ciudad Miguel Alemán Bridge

Planned Changes in Infrastructure (Present to 2030)

On the U.S. side, no planned infrastructure projects have been identified near the Roma-Ciudad Miguel Alemán Bridge.

4.3.3 Lake Falcon Dam Crossing

The Falcon Dam is a major multipurpose international dam and reservoir on the Rio Grande River. The Falcon Dam facilitates irrigation, flood releases, and electricity generation through a hydroelectric generating plant.[50] The Falcon Dam and Reservoir were built to provide a dependable water supply for crop growers in the Lower Rio Grande Valley delta and to provide recreational opportunities.

The Lake Falcon Dam Crossing is located off of FM 2098 near Falcon State Park in Falcon Heights on the U.S. side and near MEX 2 in Nuevo Ciudad Guerrero on the Mexican side. The crossing is also known locally as Falcon Dam, Puente San Juan, Presa Falcón, and Puente Internacional de la Presa.

Border Station

The Lake Falcon Dam Crossing is owned and operated by IBWC. The U.S. border station was constructed in 1960 by IBWC and expanded in 1977 and 1989. The border station was transferred from IBWC to CBP after construction of the dam. GSA completed renovation of the facility in March 2009.[6]

Hours of Operation

The bridge currently operates from 7:00 a.m. to 9:00 p.m. 365 days a year for POVs only.

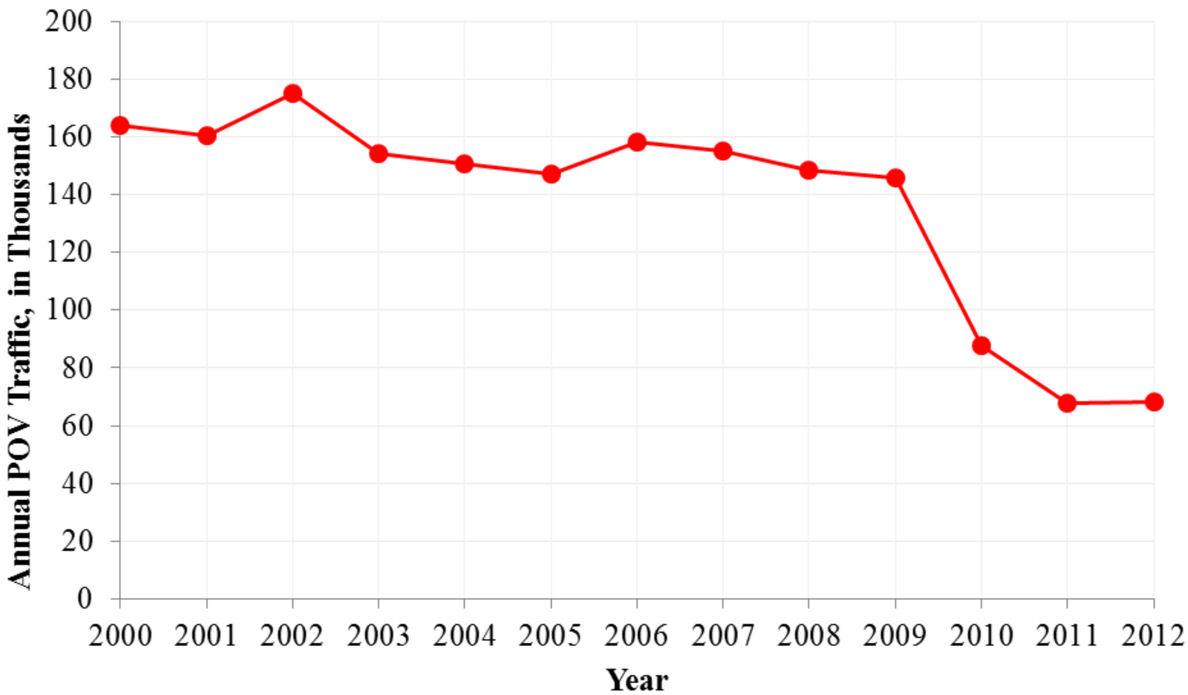
Tolls

The Lake Falcon Dam Crossing does not charge any toll fees.

Dam Crossings

This section provides the northbound crossings at the Lake Falcon Dam Crossing by mode between 2000 and 2012. The available data revealed that four pedestrians crossed northbound at the Lake Falcon Dam Crossing in 2000 and one crossed in 2002. No other northbound pedestrian crossings were reported between 2000 and 2012. Similarly, the number of northbound bus crossings at the Lake Falcon Dam Crossing decreased from a peak of 52 buses in 2001 to 3 in 2004 and 4 in 2005. No northbound bus crossings have been reported since 2005.[9]

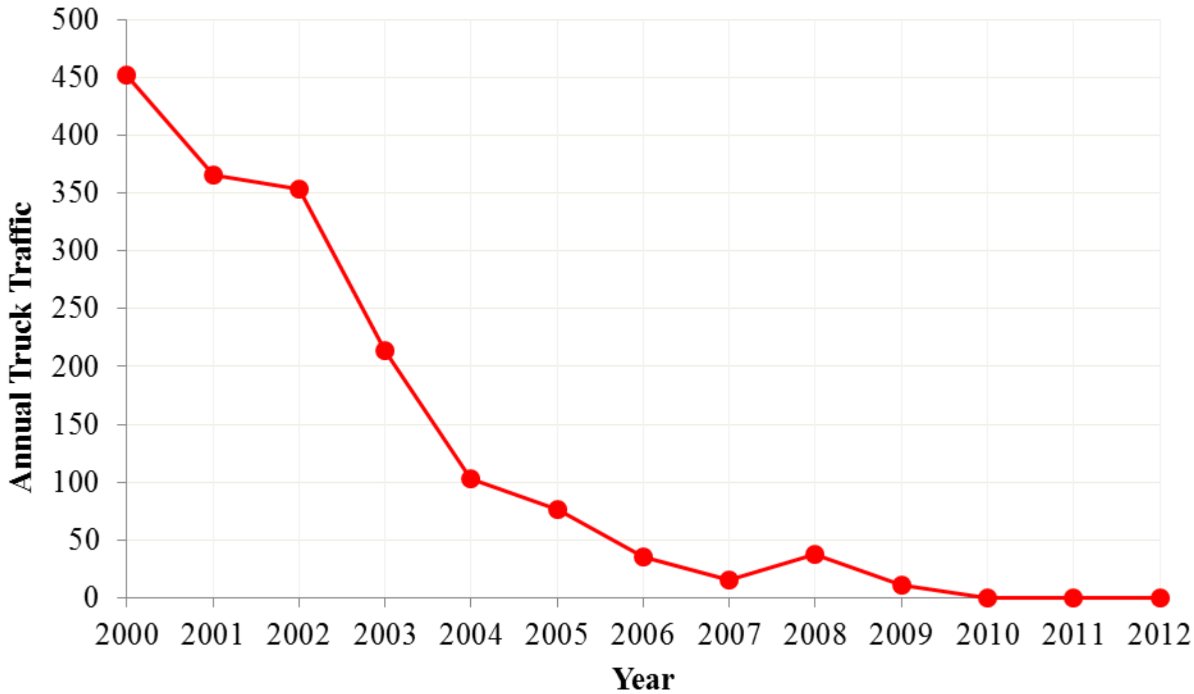
Figure 4.80 shows that the number of northbound POV crossings at the Lake Falcon Dam Crossing peaked in 2002 at 175,075 crossings. The 2002 peak year was followed by a period of seven years (2003 to 2009) during which the annual number of northbound POV crossings ranged between 146,002 and 158,054. Between 2009 and 2011, the annual number of northbound POV crossings decreased 53.6 percent to reach its lowest value of 67,745 in 2011. In 2012, however, the number of northbound POV crossings increased marginally (1 percent) relative to 2011 to reach 68,387 crossings.



Source: CBP[9]

Figure 4.80: Lake Falcon Dam Crossing—Northbound POV Crossings

Figure 4.81 shows that the number of northbound commercial truck crossings decreased from a peak of 452 in 2000 to 11 in 2009. No northbound commercial truck crossings have been reported since 2009.



Source: CBP[9]

Figure 4.81: Lake Falcon Dam Crossing—Northbound Commercial Truck Crossings

Primary Roadways Serving Lake Falcon Dam Crossing

Figure 4.82 shows the location of the Lake Falcon Dam Crossing. On the U.S. side, FM 2098 is the primary access road to the Lake Falcon Dam Crossing. Approximately 2 miles from the crossing, FM 2098 intersects Park Road (PR) 46 and continues northeast to connect with US 83. For most of its length, FM 2098 is a two-lane undivided road. The AADT on FM 2098 was 620 vehicles in 2010, of which 3.1 percent were trucks. In 2010, 0.49 accidents were reported per mile of this facility, and the LOS was A.

PR 46 is a two-lane undivided facility that provides access to Falcon State Park. In 2010, the AADT on PR 46 was 600 vehicles, of which 6.3 percent were trucks. No accidents were reported on PR 46 in 2010, and the LOS was A.

In Mexico, Carretera A Septima Base Militar is the primary access road to the Lake Falcon Dam Crossing.

Figure 4.82: Lake Falcon Dam Crossing

Planned Changes in Infrastructure (Present to 2030)

No planned infrastructure projects have been identified near the Lake Falcon Dam Crossing.

4.3.4 Rio Grande City Municipal Airport

The Rio Grande City Municipal Airport is a single-runway public-use airport owned by the City of Rio Grande. It is located 3 nautical miles northwest of the CBD.

Hours of Operation

The airport operates from sunrise to sunset 365 days a year.

Primary Roadways Serving Rio Grande City Municipal Airport

Figure 4.83 shows the location of the Rio Grande City Municipal Airport. The Rio Grande City Municipal Airport is primarily served by FM 3167, which connects the airport to US 83. FM 3167 is a two-lane undivided facility. In 2010, the AADT on this facility was 12,200 vehicles per day, of which 12.1 percent were trucks. In 2010, 0.86 accidents were reported per mile on this facility, and the LOS on FM 3167 was C.

Figure 4.83: Rio Grande City Municipal Airport

Planned Changes in Infrastructure (Present to 2030)

No planned infrastructure projects have been identified near the Rio Grande City Municipal Airport.

4.4 Zapata County/Municipality of Guerrero

Currently there are no international bridges located in Zapata County.

4.4.1 Zapata County Airport

The Zapata County Airport is a single-runway public-use airport owned by the Zapata County. It is located 4 nautical miles northeast of Zapata.

Primary Roadways Serving Zapata County Airport

Figure 4.84 shows the location of the Zapata County Airport. The Zapata County Airport is 5 miles northeast of Zapata off of SH 16. For most of its length, SH 16 is a two-lane undivided highway that connects with US 83 to the south. The AADT on SH 16 was 9,900 vehicles in 2010, of which 14 percent were trucks. There were 0.04 accidents reported per mile on this facility in 2010, and the LOS was B.

Figure 4.84: Zapata County Airport

US 83 is a four-lane undivided highway with a continuous left-turn lane in the middle. In 2010, the AADT on US 83 was 18,900 vehicles, of which 13.4 percent were trucks. The number of accidents per mile was 1.79 in 2010, and the LOS was A.

Planned Changes in Infrastructure (Present to 2030)

TxDOT plans to replace the bridge on US 83 located 1.8 miles south of SH 16 over the Arroyo Veleno (TxDOT Project 0038-04-054). Upon completion, this project will improve the structural capacity of the bridge and remove the need for the currently imposed load restrictions on the bridge, enhancing truck mobility in the region.

4.5 Rail Infrastructure in Focused Study Area

Figure 4.85 shows the rail infrastructure in the Focused Study Area. Five rail companies operate in the area: UPRR, KCSM, BRG, Rio Valley Switching Company (RVSC), and Border Pacific Railroad (BOP). This section highlights each of these rail companies.

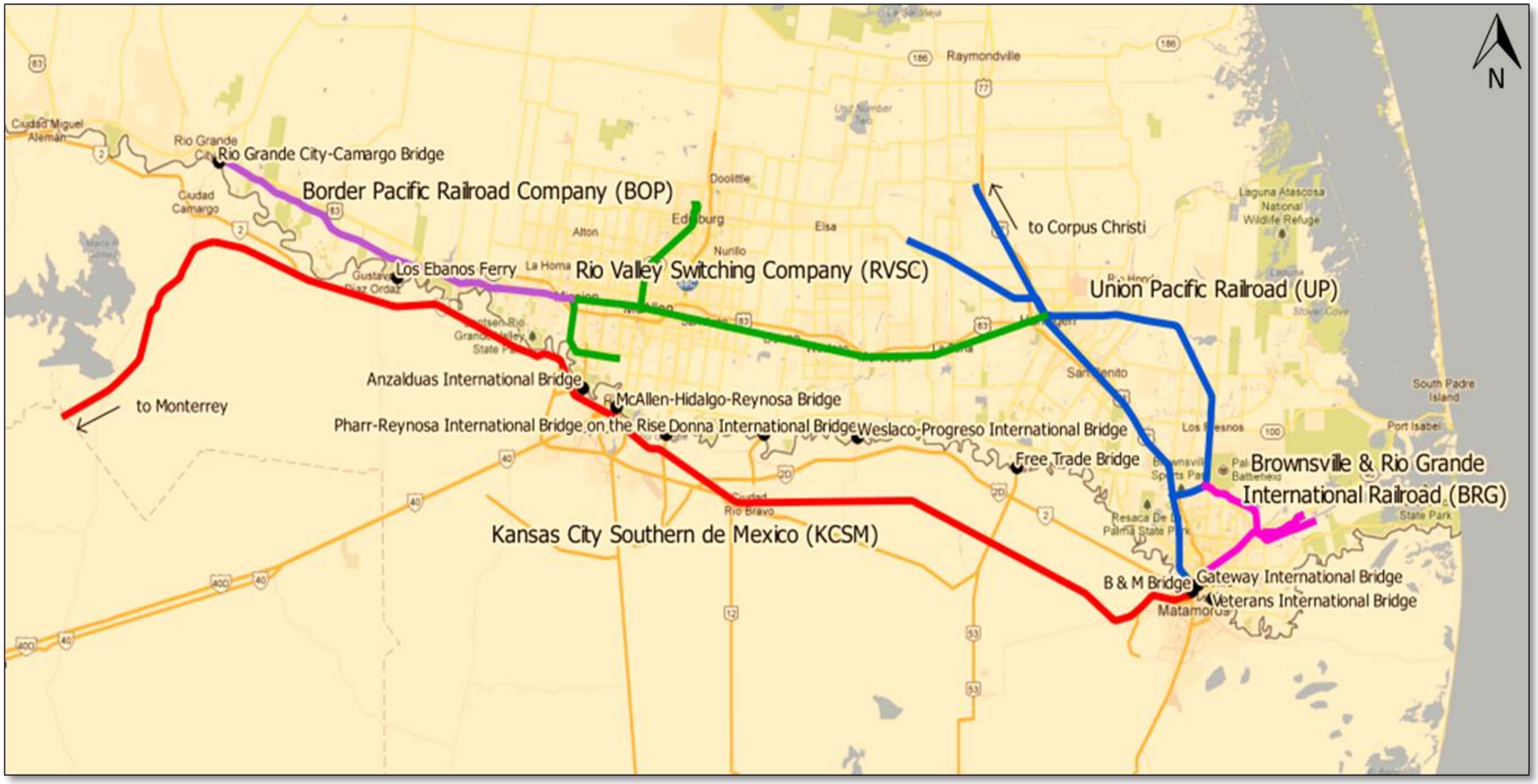


Figure 4.85: Focused Study Area—Existing Rail Infrastructure Map[51]

4.5.2 Union Pacific Railroad

UPRR is a Class I railroad that serves all major cities and gulf ports of Texas, as well as international gateways at El Paso, Eagle Pass, Laredo, and Brownsville. The railroad's diversified business portfolio includes agricultural, automotive, chemical, energy, and industrial products.[52] In the Focused Study Area, UPRR travels northwest from the U.S.-Mexico border in Brownsville to connect to Harlingen, and then continues north toward Corpus Christi. In Harlingen, UPRR interchanges with RVSC to the west and has a small branch to the northwest that connects to Santa Rosa, Texas.

4.5.3 Kansas City Southern de Mexico

KCSM is an international subsidiary of the Kansas City Southern (KCS) transportation holding company. KCS owns the KCSM fleet and the rights to operate and maintain a rail system in Mexico through a concession from the Mexican Government. KCSM serves northeastern and central Mexico from Mexico City to the U.S.-Texas border at Nuevo Laredo and Matamoros, connecting also to the port cities of Lázaro Cárdenas, Tampico, and Veracruz.[53] KCSM thus connects the Gulf of Mexico and the Pacific Ocean to the U.S. border. In the Focused Study Area, KCSM connects with UPRR at the U.S.-Mexico border in Matamoros, travels west along the border to Reynosa and Camargo, and then heads southwest toward Monterrey (see Figure 4.85).

4.5.4 Brownsville and Rio Grande International Railroad

BRG is a short-line railroad that provides freight rail transportation to and from the Port of Brownsville. Although BRG is operated on behalf of the Brownsville Navigation District of Cameron County, it is managed and controlled separately. BRG rail traffic is interchanged with UPRR at UPRR's Olmito switchyard. BRG interchanges with BNSF through a haulage agreement between UPRR and BNSF by which UPRR hauls BNSF traffic from Houston to Brownsville and interchanges with BRG. Finally, BRG interchanges with KCSM through an intermediate switch with UPRR at the B&M Bridge.[54]

4.5.5 Rio Valley Switching Company

RVSC, also known as the Valley Railroad, is a short-line railroad that interchanges with UPRR in Harlingen. From Harlingen, RVSC extends 55 miles west toward Mission and the McAllen foreign trade zone. A branch of RVSC also extends 11 miles north to Edinburg.[55]

4.5.6 Border Pacific Railroad

BOP is a short-line railroad headquartered in Rio Grande City. BOP interchanges with RVSC in Mission and travels 32 miles west along the U.S.-Mexico border to Rio Grande City. The company mostly transports bulk freight such as silica sand, ballast, crushed stone, asphalt, scrap paper, and feed grains.[56]

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Chapter 5. POE and Transportation Infrastructure Priorities

A fundamental component of the Lower Rio Grande Valley–Tamaulipas Border Master Plan was reaching consensus on a framework to rank/prioritize the planned POE, road and interchange, rail, and marine port projects in the Focused Study Area. This chapter provides a brief overview of the elements of the ranking framework used to prioritize the identified projects in the Focused Study Area. For detailed information about the categories, category weights, criteria, criterion weights, and scoring metrics used, please refer to Appendices D and E. This chapter lists the POE, road and interchange, and marine port projects in order of priority (as established by the ranking framework) for the United States and Mexico, respectively.

> Road and interchange project selection, funding, and prioritization are determined by the various MPOs (Hidalgo, Harlingen-San Benito, and Brownsville) through their federally regulated TIP and MTP, RMAs (Hidalgo and Cameron) through their respective Strategic Plans, and TTC through the UTP.

Project sponsors provided all planned project information and data included in this chapter. TxDOT's Pharr District provided all planned TxDOT project information. The information and data were not independently verified, but the study team did review the information and data for reasonableness. Any concerns about the information and data were addressed with the project sponsors.

5.1 Prioritization Framework

The study team presented the process for the development of the ranking framework and the elements of this framework to the TWG members during the second TWG meeting and to the PAC members during the second PAC meeting. The study team illustrated the process and elements with examples from the ranking framework developed for the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan. The study team also highlighted several lessons learned from the development of that plan regarding criterion selection. Concurrence was reached during the third TWG meeting regarding the elements of the ranking framework (the categories, category weights, criteria, criterion weights, and scoring metrics) that would be used for project prioritization. A detailed summary of the meeting format and outcome of the third TWG meeting is provided in the minutes of the meeting (see Appendix D).

Some of the criteria and the scoring metrics were modified during the third PAC meeting. The PAC rejected the scoring metrics for only one criterion: "Alleviates

Congestion for POE Projects." After some discussion, the PAC endorsed a metric that calculates the ratio between the wait times as a result of the proposed/planned projects relative to a baseline regional waiting time as reported by CBP. This metric was used for assigning a score to the "Alleviates Congestion for POE Projects" criterion. In general, however, the PAC members endorsed the categories, category weights, criteria, criterion weights, and scoring metrics agreed upon and recommended by the TWG. Appendix E defines the metrics that were endorsed to assign a score to each of the criteria.

The following sections list the prioritization criteria and weights assigned to the four project types. Projects were scored on a scale of 0 to 1 (typically 0, 0.25, 0.5, 0.75, and 1) for each criterion. However, the total project score for a given POE project was multiplied by 100 to express the total score out of a total of 100 points.

Table 5.1 provides the prioritization criteria and weights assigned to the POE projects. In total, 16 criteria were endorsed for prioritizing POE projects.

Table 5.1: POE Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 21.0%)	Increase in Number of Fully Operational Lanes/ Rail Tracks	32.2%
	Improve Throughput through the Use of Technology	19.6%
	Alleviate Congestion	29.2%
	Increase in Number of Modes Served	19.0%
Demand (Weight = 16.0%)	Percentage Annual Daily Crossings	59.6%
	Multiple-Mode Demand	40.4%
Cost-Effectiveness/ Project Readiness (Weight = 15.0%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 9.0%)	Diversion of Commercial Traffic	61.0%
	Safe Handling of Hazardous Materials	39.0%
Regional Impacts (Weight = 22.0%)	Wider Geographical Impacts	50.0%
	General Development	50.0%
Binational Coordination (Weight = 17.0%)	Binational Coordination	100.0%

Table 5.2 provides the prioritization criteria and weights assigned to the road and interchange projects. In total, 17 criteria were endorsed for prioritizing the road and interchange projects.

Table 5.2: Road and Interchange Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Increase in Number of Lanes	26.0%
	Improvement in the LOS	25.6%
	Number of POEs Served	24.2%
	Connectivity	24.2%
Demand (Weight = 19.2%)	Increase in AADT	34.4%
	Percentage of Trucks	25.6%
	Multiple-Mode Demand	12.5%
	Estimated Demand at 20 Years	27.5%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Accident Rate per Mile*	57.6%
	Diversion of Non-radioactive Hazardous Materials	42.4%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

Note: * Accident rate is defined as the number of accidents per mile (see Appendix E). The accident rate was not defined according to the *Highway Capacity Manual*.

Table 5.3 provides the prioritization criteria and weights assigned to the rail projects. In total, 16 criteria were endorsed for prioritizing rail projects.

Table 5.4 provides the prioritization criteria and weights assigned to the marine port projects. In total, 15 criteria were endorsed for prioritizing the marine port projects.

When data were not available for a specific criterion, a score of zero was assigned. Projects for which limited information was submitted thus received lower scores and were ranked lower than projects with detailed information. The information submitted and detailed scores for each project are provided in Appendix F.

Table 5.3: Rail Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Increase in Number of Tracks	30.5%
	Average Delay Time	29.8%
	Alleviates Congestion Locally	39.7%
Demand (Weight = 19.2%)	Increase in Average Annual Daily Rail Cars	30.0%
	Cross-Border Tonnage by Rail	17.4%
	Multiple-Mode Demand	13.6%
	Additional Hours Needed for Interchange	39.0%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Accident Rate per Miles	57.6%
	Diversion of Non-radioactive Hazardous Materials	42.4%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

Table 5.4: Marine Port Project Prioritization Criteria

Category	Criterion	Weight
Capacity/Congestion (Weight = 25.3%)	Vessel Size	24.0%
	Channel Capacity	44.8%
	Number of Docks	31.3%
Demand (Weight = 19.2%)	Increase in Total Annual Tonnage	53.5%
	Multiple-Mode Demand	14.8%
	Increase in Cross-Border Tonnage	31.7%
Cost-Effectiveness/ Project Readiness (Weight = 16.9%)	Cost/Capacity Criterion	23.4%
	Cost/Demand Criterion	18.2%
	Land Availability	26.5%
	Partially Funded Project	19.8%
	Phase of Project Development	12.1%
Safety (Weight = 16.3%)	Diversion of Commercial Traffic	61.0%
	Safe Handling of Hazardous Materials	39.0%
Regional Impacts (Weight = 22.3%)	Wider Geographical Impacts	50.0%
	General Development	50.0%

5.2 Project Prioritization/Ranking

On the U.S. side, 38 POE projects, 18 road and interchange projects, and 2 marine port projects were identified. No planned rail projects were identified in the U.S. Focused Study Area. On the Mexican side, 7 POE projects, 7 road and interchange projects, and 1 marine port project were identified. No planned rail projects were identified in the Mexican Focused Study Area.

U.S. projects were ranked separately from Mexico's because of the limited data provided for Mexican projects. The prioritization/ranking of both countries' projects together would thus have resulted in most of the Mexican projects receiving a very low priority/rank. Projects were then ranked by type (POE, road and interchange, and marine port). The complete rankings of all projects by type in each country are provided in Appendix F.

On the U.S. side, the project priorities are presented by county (Cameron, Hidalgo, Starr, and Zapata). On the Mexican side, the project priorities are presented by municipality (Matamoros, Valle Hermoso, Río Bravo, Reynosa, Gustavo Díaz Ordaz, Camargo, Miguel Alemán, Mier, and Guerrero). The locations of the planned projects—for which adequate location information was obtained—were identified on maps by planning horizon (short, medium, and long term). Projects for which no time period was provided were categorized as "unknown."

5.3 Cameron County

5.3.1 Planned POE Projects in Cameron County

Planned Projects at Existing POEs

Four projects are planned at existing POEs in Cameron County. Table 5.5 provides their rankings. The highest ranked planned project at an existing POE in Cameron County—ranked 28th in the U.S. Focused Study Area—is the reconfiguration and rebuilding of the existing LPOE (Gateway) to comply with current design standards and operational requirements. This project would improve capacity, processing efficiency, security, and officer safety. Construction is expected to start in 2017 and is scheduled to be completed in 2023 at an estimated cost of $60 million.

Limited data and information were submitted for the remaining projects planned at existing POEs in Cameron County. Two of these projects involve the construction of border safety inspection facilities at the Veterans International Bridge at Los Tomates and Free Trade Bridge, and the third involves a feasibility analysis and construction of a commercial and bus inspection facility at Free Trade Bridge, submitted by the Federal Motor Carrier Safety Administration (FMCSA).

Table 5.5: Planned Projects at Existing POEs in Cameron County

Term	Project Number	Agency	Bridge	Project Description*	Estimated Cost ($2012)	Rank**
Long	POE-01	CBP	Gateway International Bridge	Reconfigure and rebuild the existing LPOE in compliance with current design standards and operational requirements to improve capacity, processing efficiency, security, and officer safety.	$60,000,000	28
Medium	0921-06-207	TxDOT	Veterans International Bridge at Los Tomates	Construct a U.S. border safety inspection facility.	$15,000,000	30
Medium	0921-06-208	TxDOT	Los Indios Free Trade International Bridge	Construct a U.S. border safety inspection facility.	$15,000,000	30
Long	POE-23	FMCSA	Los Indios Free Trade International Bridge	Conduct Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,305,000	30

Note: * Project description as provided by sponsoring agency.

** Ranking out of 38 POE projects in the U.S. Focused Study Area.

New POE Projects

Two new POEs are planned in Cameron County, as shown in Table 5.6. The highest ranked new POE—ranked fourth in the U.S. Focused Study Area—is planned at the Port of Brownsville. This project involves the construction of two causeway-style bridge spans to connect the Port of Brownsville directly with Mexico. On the U.S. side, the bridge spans will be approximately 1,100 feet long. One of the spans will have four 12-foot truck lanes that will connect to the port's internal road network via a short two-lane road. The second span will support a single railroad track linking to the existing BRG international railroad system at the port. The planned project also includes facilities for Federal inspection agencies, advanced technologies, and traffic management strategies to enhance traffic flow. Project construction is expected to start in 2019 and is scheduled for completion in 2022 at an estimated cost of $125 million. The Port of Brownsville anticipates that the planned project will provide significant economic benefits to the area. There are no land constraints, and sufficient measures will be implemented to segregate hazardous materials.

The second-highest ranked new POE—ranked 22nd in the U.S. Focused Study Area—in Cameron County involves the construction of a new bridge between the United States and Mexico at FM 3248 and Avenida Flor de Mayo. The project is expected to be completed in 2019 at an estimated cost of $20 million. The project faces no land constraints, and this crossing is expected to increase economic activity in the area.

Table 5.6: Planned New POE Projects in Cameron County

Term	Project Number	Agency	Bridge	Project Description*	Estimated Cost ($2012)	Rank**
Long	POE-Port Brownsville	Port of Brownsville	Approximately 2.5 miles south of the Port of Brownsville Channel and 2.5 miles east of the Brownsville South Padre Island International Airport	On currently undeveloped land, build two causeway-style bridge spans to connect the Port of Brownsville directly with Mexico. One span will have four 12-foot truck travel lanes and will connect to the port's internal road network. The second span will support a single railroad track that links to the port's existing BRG railroad system. Facilities will be built for Federal inspection agencies.	$125,000,000	4
Medium	POE-22	Cameron County	New location, Cameron County, Texas	Build a new bridge to link the United States and Mexico at FM 3248 (Alton Gloor) and Avenida Flor de Mayo. This project excludes the border station.	$20,000,000	22

Note: * Project description as provided by sponsoring agency.

** Ranking out of 38 POE projects in the U.S. Focused Study Area.

5.3.2 Planned Road and Interchange Projects in Cameron County

Nine of the 18 planned road and interchange projects in the U.S. Focused Study Area are in Cameron County. These projects serve the three bridges in Cameron County and are expected to have a significant influence on the region's mobility. Table 5.7 provides the rankings for the planned road and interchange projects identified in Cameron County. Figure 5.1 illustrates the location of the road and interchange projects identified in Cameron County.

The highest ranked road project in Cameron County involves widening FM 1925 from a two-lane undivided facility to a four-lane divided facility between FM 907 and US 77/IH 69E (Projects 1803-02-029, 1803-03-007, and 0921-06-902). The planned project is 21.3 miles long. The 2010 AADT on FM 1925 was 12,000 vehicles, of which 4.9 percent were trucks. The AADT on this facility is expected to increase to 19,800 vehicles by 2030. Construction of this long-term project is scheduled to begin in 2030 with completion by 2033. This investment of $140 million is expected to improve mobility along the corridor and alleviate congestion on nearby facilities in the area. The LOS on FM 1925 is expected to improve from E to D. Finally, the project is anticipated to divert hazardous material traffic and generate significant economic benefits for the Municipalities of McAllen, Pharr, and Mission, as well as the surrounding region.

CCRMA has submitted two planned improvements to SH 32: widening SH 32 to a four-lane divided facility and constructing overpasses on SH 32 at SH 4 and FM 3068. These projects ranked 7th and 12th, respectively, out of the 18 U.S. road and interchange projects planned in the Focused Study Area. Construction cost estimates for both projects are $40 million and $35 million, respectively. The 2010 AADT on SH 32 was 8,700 vehicles per day, of which 15.3 percent were trucks. The AADT on this facility is expected to increase at an annual rate of 1.7 percent. Upon completion of these planned projects, the LOS on SH 32 is expected to improve from D to C. Furthermore, these road investments will likely result in the diversion of non-radioactive hazardous material shipments around the city of Brownsville, as well as bring significant economic benefits to the region.

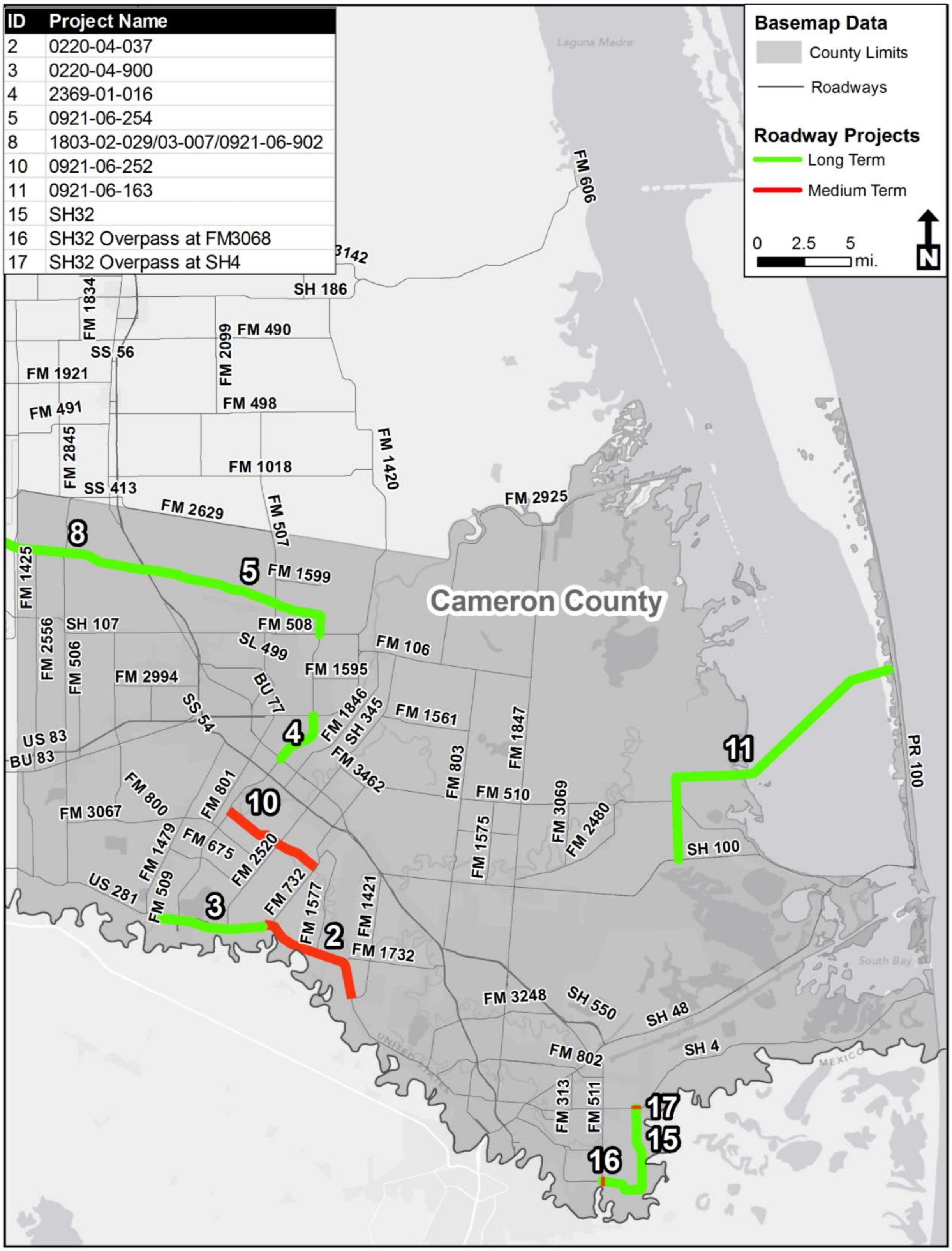
Table 5.7: Planned Road and Interchange Projects in Cameron County

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Long	1803-02-029, 1803-03-007, 0921-06-902 (8)	TxDOT	FM 1925	Widen FM 1925 from the existing two-lane undivided highway to a four-lane divided facility from FM 907 to US 77/IH 69E.	$140,000,000	4***
Long	SH 32 (15)	CCRMA	SH 32	Widen SH 32 (East Phase II) from the existing two-lane undivided highway to a four-lane divided facility from FM 3068 to SH 4.	$40,000,000	7
Long	2369-01-016 (4)	TxDOT	FM 509	Widen FM 509 from the existing two-lane undivided highway to a four-lane divided facility from BU 77 N to FM 106.	$8,045,184	8
Medium	0220-04-037 (2)	TxDOT	US 281/Military Highway	Widen US 281/Military Highway from the existing two-lane undivided highway to a four-lane divided facility from 0.25 miles west of FM 732 to FM 1421.	$15,000,000	9
Long	0220-04-900 (3)	CCRMA	US 281/Military Highway Connector	Construct a new four-lane divided US 281/Military Highway connector from 0.5 miles west of FM 732 to US 77/US 83/IH 69E/SH 100.	$28,000,000	10
Long	0921-06-254 (5)	CCRMA	FM 509 Extension/ Outer Parkway	Construct a new two-lane FM 509 Loop Extension from US 77/IH 69E at Orphanage Road to FM 508.	$10,000,000	11
Long	SH 32 Overpasses (16, 17)	CCRMA	SH 32	Construct overpasses on SH 32 at FM 3068 and SH 4.	$35,000,000	12
Medium	0921-06-252 (10)	CCRMA	South Parallel Corridor	Construct a new two-lane rural roadway from FM 509 to FM 732 (South Parallel Corridor Phase II).	$10,300,000	13
Long	0921-06-163 (11)	CCRMA	Second Causeway	Construct a new four-lane causeway connecting the mainland to South Padre Island.	$494,291,200	14

Note: * Project description as provided by sponsoring agency.

** Ranking out of 18 road and interchange projects in the U.S. Focused Study Area.

*** Hidalgo and Cameron Counties.



ID	Project Name
2	0220-04-037
3	0220-04-900
4	2369-01-016
5	0921-06-254
8	1803-02-029/03-007/0921-06-902
10	0921-06-252
11	0921-06-163
15	SH32
16	SH32 Overpass at FM3068
17	SH32 Overpass at SH4

Figure 5.1: Planned Road and Interchange Projects in Cameron County

TxDOT and CCRMA are also planning a number of investments in FM 509. These investments involve upgrading FM 509 to a four-lane divided facility from BU 77N to FM 106 at an estimated cost of $8,045,184 (Project 2369-01-016) and the construction of a new two-lane loop extension from US 77/IH 69E at Orphanage Road to FM 1925 at an estimated cost of $10 million (Project 0921-06-254). The 2010 AADT of 13,200 vehicles on FM 509 is projected to increase to 27,705 by 2030, with trucks representing 23.8 percent. Project 2369-01-016 will alleviate congestion on FM 509 and improve the LOS on this facility from E to D. Furthermore, the construction of the two-lane loop extension that will connect to FM 1925 to the east will provide an alternative to US 83/IH 2. The two-lane loop extension is expected to increase economic activity in the region.

A number of infrastructure investments are also planned for US 281/Military Highway. US 281/Military Highway runs parallel to the U.S.-Mexico border on the U.S. side and provides indirect access to most POEs in the U.S. Focused Study Area. Project 0220-04-037 involves upgrading US 281/Military Highway from a two-lane undivided facility to a four-lane divided facility between FM 732 and FM 1421 at an estimated cost of $15 million. Project 0220-04-900 involves the construction of a new four-lane divided US 281/Military Highway connector from 0.5 miles west of FM 732 and US 77/US 83/IH 69E/SH 100 at an estimated cost of $28 million. The 2010 AADT of 18,600 vehicles per day on US 281/Military Highway is expected to increase at an annual rate of 4.2 percent to reach 42,391 vehicles per day by 2030. These investments should improve the LOS on US 281/Military Highway from E to D upon project completion. Trucks made up 12 percent of the AADT in 2010.

5.3.3 Planned Marine Port Projects in Cameron County

Two marine port projects were identified in the U.S. Focused Study Area, both in Cameron County. These projects are ranked in Table 5.8.

The highest ranked marine port project involves widening the Brownsville Ship Channel from 250 to 350 feet and deepening the channel by 8 feet to accommodate post-Panamax vessels. The planned project also allows for the addition of five new docks for loading/unloading cargo. This investment will double the amount of cargo handled at the Port of Brownsville by 2030. Upon completion in 2019, this project is expected to benefit both the United States and Mexico and contribute to the socio-economic development of the region.

The second marine port project involves the construction of a new general-purpose cargo dock on a section of undeveloped land on the Brownsville Ship Channel. Funding for this project has been approved, and all necessary permits have been acquired to implement the project. This investment is also expected to result in substantial socio-economic benefits for the region.

Table 5.8: Planned Marine Port Projects in Cameron County

Term	Project Number	Agency	Project Location	Project Description*	Estimated Cost ($2012)	Rank
Medium	MarinePort-02	Port of Brownsville	Brownsville Ship Channel	Widen the Ship Channel from 250 to 350 feet and deepen it from 42 to 50 feet.	$250,000,000	1
Short	MarinePort-01	Port of Brownsville	South side of Brownsville Ship Channel, east of existing Cargo Dock No. 15	Construct a new general-purpose cargo dock on a section of the Brownsville Ship Channel's bank that currently is not developed.	$26,000,000	2

Note: * Project description as provided by sponsoring agency.

5.4 Hidalgo County

5.4.1 Planned POE Projects in Hidalgo County

Twenty-nine of the 38 POE projects identified in the U.S. Focused Study Area are planned in Hidalgo County. Of the 29 planned POE projects, 28 projects are planned at existing POEs in Hidalgo County, and 1 project involves a new international border crossing between Sullivan City and Gustavo Díaz Ordaz in Tamaulipas.

Planned Projects at Existing POEs

Table 5.9 provides the rankings for the planned projects at existing POEs. The first- and fifth-highest ranked POE projects in Hidalgo County and the U.S. Focused Study Area are planned at the Donna International Bridge. These two projects will facilitate the crossing of commercial trucks at the Donna International Bridge. Project POE-DONNA 01 involves the construction of northbound and southbound Federal inspection facilities for empty commercial trucks. The project is expected to be completed in 2013 at an estimated cost of $5 million. Project POE-DONNA 02 involves the construction of northbound and southbound Federal inspection facilities for loaded commercial trucks. This project is scheduled for completion in 2016 at an estimated cost of $13 million. In both cases, joint inspections are proposed to expedite the inspection of empty and loaded commercial trucks. All commercial trucks will be required to be FAST certified to cross at the Donna International Bridge, and all commercial trucks will be subjected to an x-ray inspection. Sufficient land is available to implement both these planned projects. Also, 71 percent of the funding for Project POE-DONNA 01 has been made available by the City of Donna; the State of Tamaulipas is committed to providing 100 percent of the funding for the necessary improvements in Mexico. No funding has been identified for Project POE-DONNA 02. The routing of commercial trucks to the Donna International Bridge is anticipated to decrease the wait times for commercial truck crossings at other bridges, alleviate congestion, and provide savings to manufacturers and logistics/transportation companies in the region.

The second- and third-highest ranked POE projects in Hidalgo County and the U.S. Focused Study Area are planned at the Anzaldúas International Bridge. Project POE-08/POE-09/POE-11 seeks to improve mobility and decrease wait times for northbound vehicles by adding four additional non-commercial lanes to the existing six non-commercial lanes. In addition, the construction of new northbound commercial import lot facilities and lanes are planned to improve the mobility of commercial border corridors in the area. Project construction is expected to begin in 2017 and be completed in 2019 at an estimated cost of $24,636,476. No funding has been secured for this project because it is still in its preliminary feasibility stages. Project POE-07/POE-13/0921-02-303 will seek to add two additional northbound POV lanes to alleviate queuing on the Anzaldúas International Bridge, and expand the secondary vehicle inspection facility to accommodate southbound commercial truck traffic and buses in 2015. Project construction is expected to begin in 2015 and be completed in 2016 at an estimated cost of $6,361,129. All the funding for Project POE-07/POE-13/0921-02-303 has been secured.

The City of Pharr submitted 14 projects. Project CSJ 0921-02-193-ALT-1 is an alternative to Project CSJ 0921-02-193-ALT-2. Similarly, Project POE-29-ALT-1 is an alternative to Project POE-29-ALT-2, and Project POE-32-ALT-1 is an alternative to Project POE-32-ALT-2. Feasibility studies are currently being undertaken to determine which alternatives are best for the city. Project CSJ 0921-02-193-ALT-2 ranked sixth among the 38 POE projects in the Focused Study Area and involves increasing the number of entrance inspection booths from six to ten and increasing the number of lanes from the bridge to the inspection booths from two to eight. Project construction is expected to begin in 2014 and be completed in 2015 at an estimated cost of $5,500,000. Project CSJ 0921-02-193-ALT-1, which ranked ninth, involves increasing the number of entrance inspection booths from six to eight and increasing the number of lanes from the bridge to the inspection booths from two to eight.

Table 5.9: Planned Projects at Existing POEs in Hidalgo County

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Short	POE-DONNA 01	City of Donna	Donna International Bridge	Construct northbound and southbound Federal inspection facilities for processing empty commercial truck traffic.	$5,000,000	1
Medium	POE-08/ POE-09/ POE-11	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Improve mobility and decrease wait times for northbound vehicles by adding four additional non-commercial lanes. Construct northbound commercial import lot facilities and lanes to (1) divert commercial traffic and separate POVs, trucks, and buses; (2) improve mobility of commercial border corridors; (3) increase border security; and (4) deter cross-border criminal activities. This is a cooperative effort with government agencies.	$24,636,476	2
Short	POE-07/ POE-13/ 0921-02-303	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Add two additional northbound POV lanes to alleviate queuing on the bridge, and begin expanding the secondary vehicle inspection facility to accommodate southbound commercial traffic of trucks and buses in 2015.	$6,361,129	3
Short	POE-DONNA 02	City of Donna	Donna International Bridge	Construct northbound and southbound Federal inspection facilities for processing full commercial truck traffic.	$13,000,000	5
Short	CSJ 0921-02-193-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase entrance inspection booth facilities from six to ten inspection booths, and expand the access roads from the bridge to the inspection booths from two to eight lanes, each 0.25 miles long.	$5,500,000	6
Short	POE-34	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase exit inspection booth facilities from two to four inspection booths to eliminate bottlenecks.	$1,650,000	7

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Medium	POE-29-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Widen the bridge by adding four additional lanes to the current U.S. side of the bridge structure (1.3 miles) to improve mobility through designated lanes and encourage commercial truck companies to become FAST certified, which will in turn improve wait times.	$26,579,400	8
Short	CSJ 0921-02-193-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase entrance inspection booth facilities from six to eight inspection booths, and expand the access roads from the bridge to the inspection booths from two to eight lanes, each 0.25 miles long.	$3,300,000	9
Short	POE-29-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Widen the bridge by adding two additional lanes to the current U.S. side of the bridge structure (1.3 miles) to improve mobility through designated lanes and encourage commercial truck companies to become FAST certified, which will in turn improve wait times.	$13,289,700	10
Short	POE-18	Hidalgo International Bridge Board	LPOE Hidalgo	Demolish the existing primary head house*** and construct five additional inspection stations with a new head house building (second story).	$3,500,000	12
Medium	POE-21	Hidalgo International Bridge Board	LPOE Hidalgo	Renovate the existing building "A" to accommodate a bus transit terminal.	$270,000	13
Medium	POE-30	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Add an emergency shoulder on both sides of the bridge to prevent accidents and reduce the interruption of traffic flow.	$2,300,000	14
Short	CSJ 0921-02-193 - ITS	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Install an overhead warning system to guide and inform traffic and allow for easier flow of traffic.	$1,200,000	15
Short	POE-28	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Build a lab and training room for U.S. Department of Agriculture (USDA) agriculture inspectors to allow for the quicker release of cargo.	$2,000,000	16

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Short	POE-35	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Remodel the current warehouse space into a lab and training room for USDA agriculture inspectors to allow for the quicker release of cargo.	$1,000,000	16
Short	POE-32-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase the POE import lot inspection facility by 50 percent through the expansion of the current wings of the facility. This will allow for quicker inspection of cargo and efficiency of operations, thereby resulting in increased use of the Pharr POE.	$7,000,000	18
Medium	POE-32-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Duplicate the POE import lot inspection facility, increasing by 100 percent. This will allow for quicker inspection of cargo and efficiency of operations, thereby resulting in increased use of the Pharr POE.	$21,000,000	19
Medium	POE-05	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Construct a 0.5-mile segment of the proposed northbound bridge to accommodate commercial truck traffic and improve mobility by increasing the number of lanes on the bridge.	$7,032,500	20
Short	POE-36	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Create an export inspection area and parking staging area for southbound trucks at the Pharr Free Trade Zone	$15,000,000	21
Short	POE-31	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Create a parking staging area for southbound trucks to reduce congestion from the road leading to the bridge and reduce the possibility of accidents.	$4,200,000	23
Short	POE-33	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Add a FAST lane within the POE and two exit booths to allow for gate to gate traffic flow.	$1,500,000	24

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Medium	POE-06/ POE-10/ 0921-02-197	TxDOT and Anzaldúas International Bridge Board	Anzaldúas International Bridge	Construct a permanent border safety inspection facility and a permanent non-intrusive inspection (NII) inspection facility to (1) improve mobility of commercial border corridors, (2) increase border security, and (3) deter cross-border criminal activities. This is a cooperative effort with government agencies.	$22,116,507	25
Medium	POE-12/ 0921-02-303	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Expand the vehicle inspection facility to accommodate southbound commercial traffic inspections.	$2,462,957	26
Long	POE-03	CBP	Weslaco-Progreso International Bridge	Reconfigure and rebuild the existing POE in compliance with current design standards and operational requirements to improve capacity, processing efficiency, security, and officer safety.	$55,000,000	27
Short	POE-02	Hidalgo International Bridge Board	LPOE Hidalgo	Demolish the existing head house, and rebuild it to current design standards and operational requirements at a more suitable location. This will allow realignment of up to four primary inbound POV lanes to facilitate incoming traffic flow and reduce congestion and processing wait times.	$7,000,000	30
Long	POE-24	FMCSA	Pharr-Reynosa International Bridge on the Rise	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,855,000	30
Long	POE-26	FMCSA	Weslaco-Progreso International Bridge	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,618,000	30
Long	POE-27	TxDOT	Donna International Bridge	Construct a U.S. border safety inspection facility.	$15,000,000	30

Note: * Project description as provided by sponsoring agency.
** Ranking out of 38 POE projects in the U.S. Focused Study Area.
*** A head house typically contains port operations functions, inspection booths, and inspection facilities.

Projects POE-29-ALT-2 and POE-29-ALT-1 ranked eighth and tenth, respectively. Project POE-29-ALT-2 involves widening the Pharr-Reynosa International Bridge on the Rise by adding four additional lanes to the current U.S. side of the bridge structure (1.3 miles) to improve mobility and wait time. If selected, project construction is expected to begin in 2017 and be completed in 2019 at an estimated cost of $26,579,400. The alternate project, Project POE-29-ALT-1, involves widening the bridge by adding two additional lanes to the current U.S. side of the bridge structure (1.3 miles) instead of four lanes as described in Project POE-29-ALT-2. If selected, project construction is expected to begin in 2015 and be completed in 2018 at an estimated cost of $13,289,700.

New POE Projects

Sullivan City, in partnership with Gustavo Díaz Ordaz, is collaborating on the planning, development, design, and construction of a new border crossing between the two cities. The cost of the proposed new crossing is estimated at $220 million. This POE project was ranked 29th out of the 38 POE projects identified in the U.S. Focused Study Area (see Table 5.10).

Table 5.10: Planned New POE Project in Hidalgo County

Term	Project Number	Agency	Bridge	Project Description*	Estimated Cost ($2012)	Rank**
Long	POE-04	Sullivan City	South of Sullivan City, Texas	Plan, develop, design, and construct a proposed international border crossing between Sullivan City and Gustavo Díaz Ordaz in Tamaulipas, Mexico.	$220,000,000	29

Note: * Project description as provided by sponsoring agency.
** Ranking out of 38 POE projects in the U.S. Focused Study Area.

5.4.2 Planned Road and Interchange Projects in Hidalgo County

Eight of the 18 planned road and interchange projects in the U.S. Focused Study Area are in Hidalgo County. Table 5.11 provides their rankings, and Figure 5.2 illustrates the location of the planned road and interchange projects in Hidalgo County.

Table 5.11: Planned Road and Interchange Projects in Hidalgo County

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Long	0921-02-142 (6)	Hidalgo County RMA	International Bridge Trade Corridor	Construct a new two-lane controlled-access tolled facility from US 281 at State Spur (SS) 600 to FM 493.	$170,331,406	1
Long	Hidalgo-MTP-06 (7)	TxDOT	US 83/IH 2	Construct an overpass and modify ramps at US 83/IH 2 and Bicentennial Boulevard.	$20,000,000	2
Long	0039-01-066 (12)	Hidalgo County RMA	US 83 La Joya Loop	Construct a new four-lane controlled-access facility on US 83 La Joya Loop from 2.3 miles west of the Hidalgo County line to 1 mile east of the Hidalgo County line.	$25,000,000	3
Long	1803-02-029, 1803-03-007, 0921-06-902 (8)	TxDOT	FM 1925	Widen FM 1925 from the existing two-lane undivided highway to a four-lane divided facility from FM 907 to US 77/IH 69 E.	$140,000,000	4***
Medium	0039-17-175	TxDOT	IH 2/IH 69	IH 2/IH 69 interchange improvements from Cesar Chavez Road (East) to McColl Road (West), including at IH 69 BU/IH 69 Split (North)	$80,000,000	6
Long	SH 68 Phase II/ 3629-01-###	TxDOT	SH 68 Phase II Toll Road	Construct a new four-lane controlled-access tolled facility from FM 1925 to US 281 (SH 68 Phase II Toll Road). New route will relieve traffic on US 281/Military Highway and the US 83/IH 2 and US 83/ IH 2/US 281/IH 69C interchange, will provide an alternative route for truck traffic separate from area arterials, and will divert hazardous cargo from populated areas.	$191,000,000	16
Long	0683-01-056 (9)	TxDOT	FM 493	Widen FM 493 from the existing two-lane undivided highway to a four-lane divided facility from US 281/Military Highway to Champion Street, and construct a high-water bridge over the International Boundary and Water Commission floodway.	$19,700,000	17
Long	0921-02-287 (13)	Sullivan City	Off-system, Guadalupe Flores Road improvements	Construct a new extension/improvements on Guadalupe Flores Road from US 83 to the proposed Sullivan City-Diaz Ordaz International Border Crossing.	$6,000,000	18

Note: * Project description as provided by sponsoring agency.
** Ranking out of 18 road and interchange projects in the U.S. Focused Study Area.
*** Hidalgo and Cameron Counties.

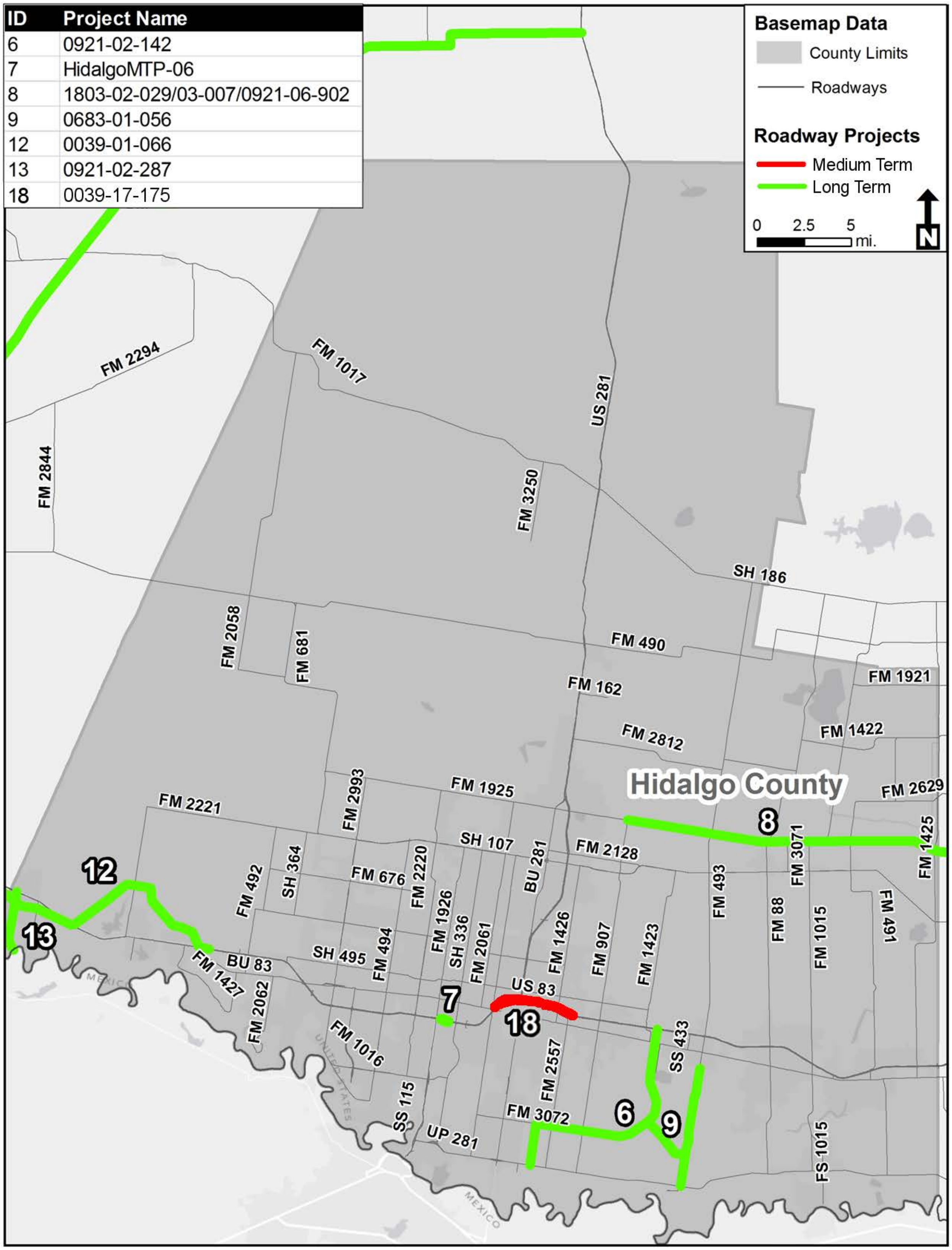


Figure 5.2: Planned Road and Interchange Projects in Hidalgo County

The highest ranked road and interchange project in Hidalgo County and the U.S. Focused Study Area is the development of the International Bridge Trade Corridor (Project 0921-02-142)—a 17.1-mile section from US 281 at Spur 600 to FM 493—by the Hidalgo County RMA. The International Bridge Trade Corridor will be a new two-lane controlled-access tolled facility. Construction is expected to begin in 2030 and be completed in 2033 at an estimated cost of $170,331,406. The corridor will serve an estimated AADT of 42,656 by 2030, of which 12.8 percent is expected to be trucks. The corridor is expected to operate at LOS D. This project will improve mobility and facilitate economic activity in the region.

Two planned investments in US 83/IH 2 also ranked high in the U.S. Focused Study Area. Project Hidalgo-MTP-06, which involves constructing an overpass and modifying ramps at US 83/IH 2 and Bicentennial Boulevard, ranked second out of the 18 road and interchange projects identified in the U.S. Focused Study Area. The cost of this project is estimated at $20 million. The 2010 AADT on this section of US 83/IH 2 was 119,280 vehicles per day, of which 5.3 percent were trucks. US 83 traffic on this section is expected to increase at an annual rate of 2.5 percent to reach an AADT of 195,691 vehicles by 2030.

Project 0039-01-066, which involves the construction of a new four-lane controlled-access facility on US 83 La Joya Loop from 2.3 miles west of the Hidalgo County line to 1 mile east of the Hidalgo County line, ranked third in the U.S. Focused Study Area. Completion of the US 83 La Joya Loop will result in LOS B on the facility. This investment of $25 million will enhance mobility and may also alleviate congestion on other major corridors in the region.

Finally, as earlier discussed in Section 5.3.2, TxDOT is planning to upgrade a section of FM 1925 to a four-lane divided facility. This planned project involves both Cameron and Hidalgo Counties and was ranked fourth in the U.S. Focused Study Area.

5.5 Starr County

5.5.1 Planned POE Projects in Starr County

Three of the 38 POE projects identified in the U.S. Focused Study Area are planned in Starr County. Of the three planned POE projects, two projects are planned at existing POEs in Starr County, and one project involves a new international border crossing sponsored by the Starr-Camargo Bridge Company.

Planned Projects at Existing POEs

Table 5.12 provides the rankings that emerged for the planned projects at existing POEs. Project Starr-STP-15 involves expanding the Río Grande City-Camargo

Bridge by constructing two additional lane spans for southbound traffic at an estimated cost of $5 million. The second project involves a feasibility study and the construction of a commercial bus inspection facility, expected to cost approximately $1.2 million.

Table 5.12: Planned Projects at Existing POEs in Starr County

Term	Project Number	Agency	Bridge	Project Description*	Estimated Cost ($2012)	Rank**
Un-known	Starr-STP-15	Starr-Camargo Bridge Company	Río Grande City-Camargo Bridge	Expand the international bridge by constructing an additional two-lane span that will be used by southbound traffic.	$5,000,000	11
Long	POE-25	FMCSA	Roma-Ciudad Miguel Alemán Bridge	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,159,000	30

Note: * Project description as provided by sponsoring agency.
** Ranking out of 38 POE projects in the U.S. Focused Study Area.

New POE Projects

The Starr-Camargo Bridge Company is planning a new international border crossing in Starr County. The study team, however, received very limited data on this planned project (see Table 5.13).

Table 5.13: Planned New POE Project in Starr County

Term	Project Number	Agency	Bridge	Project Description*	Estimated Cost ($2012)	Rank**
Unknown	Starr-STP-14	Starr-Camargo Bridge Company	Roma-Ciudad Miguel Alemán Bridge	Construct the proposed international crossing.	Unknown	30

Note: * Project description as provided by sponsoring agency.
** Ranking out of 38 POE projects in the U.S. Focused Study Area.

5.5.2 Planned Road and Interchange Projects in Starr County

Table 5.14 shows the rankings of the planned road and interchange projects identified in Starr County. Figure 5.3 illustrates the location of the planned road and interchange projects in Starr County.

Table 5.14: Planned Road and Interchange Projects in Starr County

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Long	0921-26-013, 0921-26-014 (1)	TxDOT	Roma/Rio Grande City Relief Route	Construct a new four-lane divided facility from US 83 at Loma Blanca Road to US 83 at La Puerta.	$159,565,630	5
Long	FM 755 (14)	TxDOT	FM 755	Widen FM 755 from the existing two-lane undivided road to a four-lane divided rural roadway from FM 755 (New Realignment in Starr County) to US 281 in Brooks County.	$171,000,000	15

Note: * Project description as provided by sponsoring agency.

** Ranking out of 18 road and interchange projects in the U.S. Focused Study Area.

The highest ranked road and interchange project in Starr County—the fifth-highest ranked road and interchange project in the U.S. Focused Study Area—is the construction of a new four-lane divided facility (Project 0921-26-013, 0921-26-014) that will connect the Río Grande City-Camargo Bridge with FM 755 to provide a direct access route to Río Grande City. The project involves a 21.6-mile section between US 83/Loma Blanca and US 83/La Puerta (see Figure 5.3). The 2030 AADT on this facility is expected to be 12,000 vehicles. Construction on this project is expected to begin in 2030 and be completed in 2033. Upon completion, the facility is expected to operate at LOS B. The investment of $159,565,630 will improve mobility along the corridor and enhance economic activity in the region.

The second road and interchange project in Starr County involves widening FM 755 to a four-lane divided facility from FM 755 (New Realignment in Starr County) to US 281 in Brooks County. The 2010 AADT on FM 755 was 4,500 vehicles, of which 15.7 percent were trucks. Traffic on FM 755 is expected to increase at an annual rate of 1.9 percent to reach an AADT of 6,500 vehicles by 2030. Completion of the project will improve the LOS on the facility from D to B. The investment of $171 million will also improve mobility along the corridor and will enhance economic activity in the region.

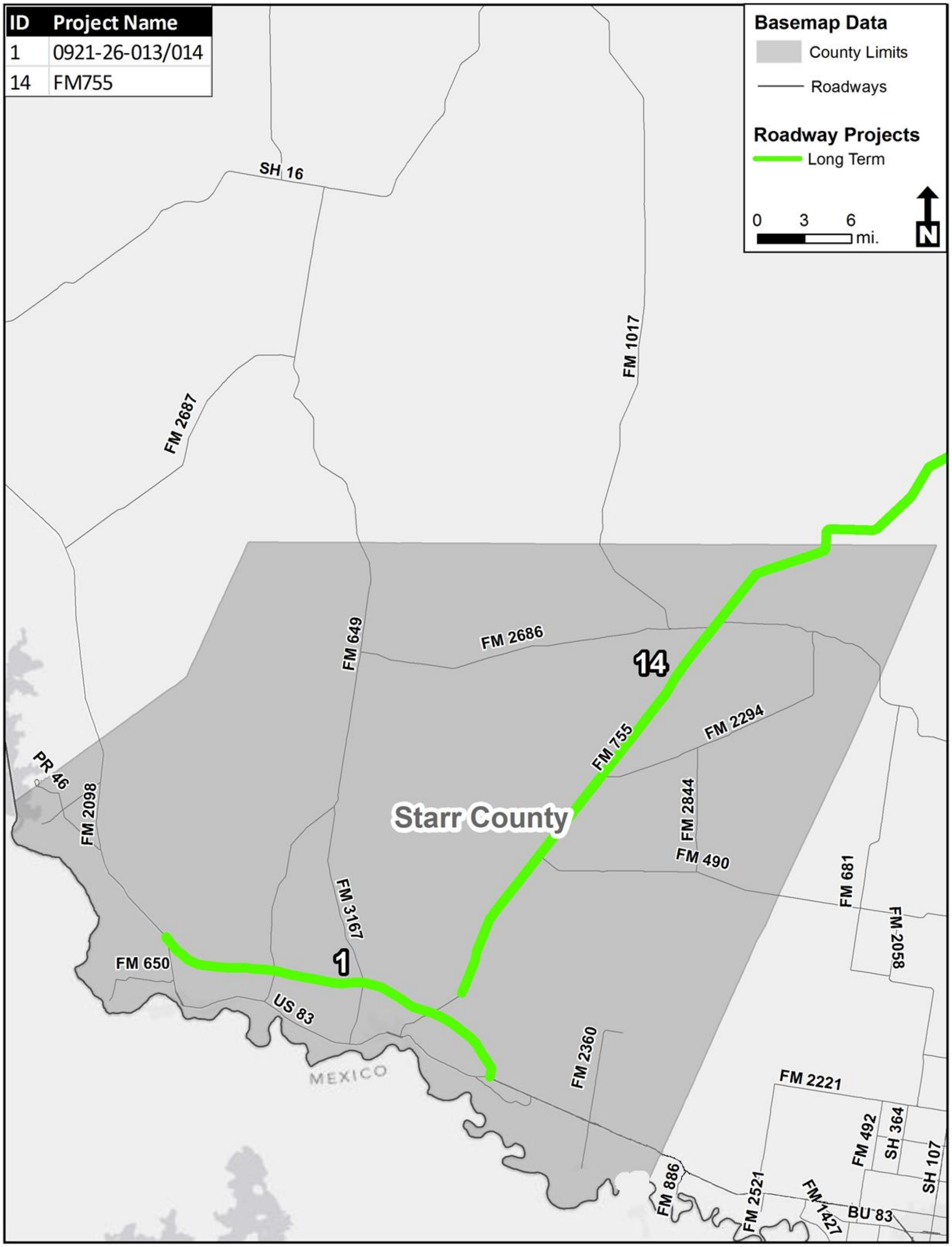


Figure 5.3: Planned Road and Interchange Projects in Starr County

5.6 Zapata County

No planned POE or road and interchange projects were identified in the U.S. Focused Study Area in Zapata County.

5.7 Municipality of Matamoros

5.7.1 Planned POE Projects in Municipality of Matamoros

Planned Projects at Existing POEs

Two projects are planned at existing POEs in Matamoros. The rankings of these POE projects are provided in Table 5.15. The highest ranked Mexican POE project in Matamoros is Project SCT-DGDC-01. This project involves improvements to the B&M Bridge, including the use of advanced technology such as specialized lanes for traffic management (SENTRI) that would replace the current rail track. Project construction is expected to begin in 2013 and be completed in 2014 or 2015 at an estimated cost of $11.2 million.

Project GobTamps-03 proposes to expand the customs facilities at the Free Trade Bridge through the construction of export platforms at an estimated cost of $4.8 million. The project is expected to begin and be completed in 2014.

Table 5.15: Planned Projects at Existing POEs in Municipality of Matamoros

Term	Project Number	Agency	Location	Project Description*	Estimated Cost ($2012)	Rank**
Short	SCT-DGDC-01	SCT	B&M Bridge	Modernize and improve the existing international bridge. Its current rail bridge portion will be converted into a SENTRI lane.	$11,200,000	3
Short	GobTamps-03	Gobierno del Estado de Tamaulipas	Free Trade Bridge	Expand customs facilities and construct export platforms.	$4,800,000	4

Note: * Project description as provided by sponsoring agency.
** Ranking out of 7 POE projects in the Mexican Focused Study Area.

New POE Projects

Two new POEs are planned in the Municipality of Matamoros. The project rankings are provided in Table 5.16. Both ranked sixth out of all POE projects in the

Mexican Focused Study Area. Project SCT-DGDC-04 is the construction of the new Flor de Mayo International Bridge. This project corresponds to Project POE-22 in the United States, which ranked second in Cameron County and 21st in the U.S. Focused Study Area (see Table 5.6). The new bridge will be located just north of MEX 2 in west Matamoros and will connect to an extension of Alton Gloor Avenue (FM 3248) in Brownsville.

Project IMPLAN-01 is the Longoreño Bridge POE project. This project corresponds to Project POE-PortBrown that ranked first in Cameron County and fourth in the U.S. Focused Study Area (see Table 5.6). This bridge will be located north of Ejido Longoreño in Matamoros and south of the Port of Brownsville, providing Mexico with a direct connection to the Port of Brownsville.

Table 5.16: Planned New POE Projects in Municipality of Matamoros

Term	Project Number	Agency	Location	Project Description*	Estimated Cost ($2012)	Rank**
Long	SCT-DGDC-04	SCT and DGDC	Flor de Mayo International Bridge	Construct a new bridge.	N/A	6
Long	IMPLAN-01	Municipio de Matamoros and IMPLAN	Longoreño Bridge	Construct a new bridge.	N/A	6

Note: * Project description as provided by sponsoring agency.
** Ranking out of 7 POE projects in the Mexican Focused Study Area.

5.7.2 Planned Road and Interchange Projects in Municipality of Matamoros[1]

Table 5.17 shows the rankings of the two planned road and interchange projects in Matamoros, and Figure 5.4 shows their locations. The highest ranked road and interchange project in Matamoros—and the second-highest ranked road and interchange project in the Mexican Focused Study Area—involves the construction of a new loop (Project SCT-04 or Matamoros Beltway) that will connect the Veterans International Bridge at Los Tomates with MEX 2 and Sixth Avenue in Matamoros. The cost of this project is estimated at $2.4 million.

The second-highest ranked road and interchange project in Matamoros—and the fourth-highest ranked road and interchange project in the Mexican Focused Study Area—is the expansion and reconstruction of TAM 57, an access road to the Port of Matamoros. The cost of this project is estimated at $20.8 million.

Table 5.17: Planned Road and Interchange Projects in Municipality of Matamoros

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Medium	SCT- 04 (2)	SCT	Matamoros Beltway	Construct a beltway to connect the Veterans International Bridge at Los Tomates with Sixth Avenue and MEX 2.	$2,400,000	2
Short	GobTamps-04 (3)	Gobierno del Estado de Tamaulipas	TAM 57	Expand and reconstruct 40 miles of access road to the Port of Matamoros.	$20,800,000	4

Note: * Project description as provided by sponsoring agency.

** Ranking out of 7 road and interchange projects in the Mexican Focused Study Area.

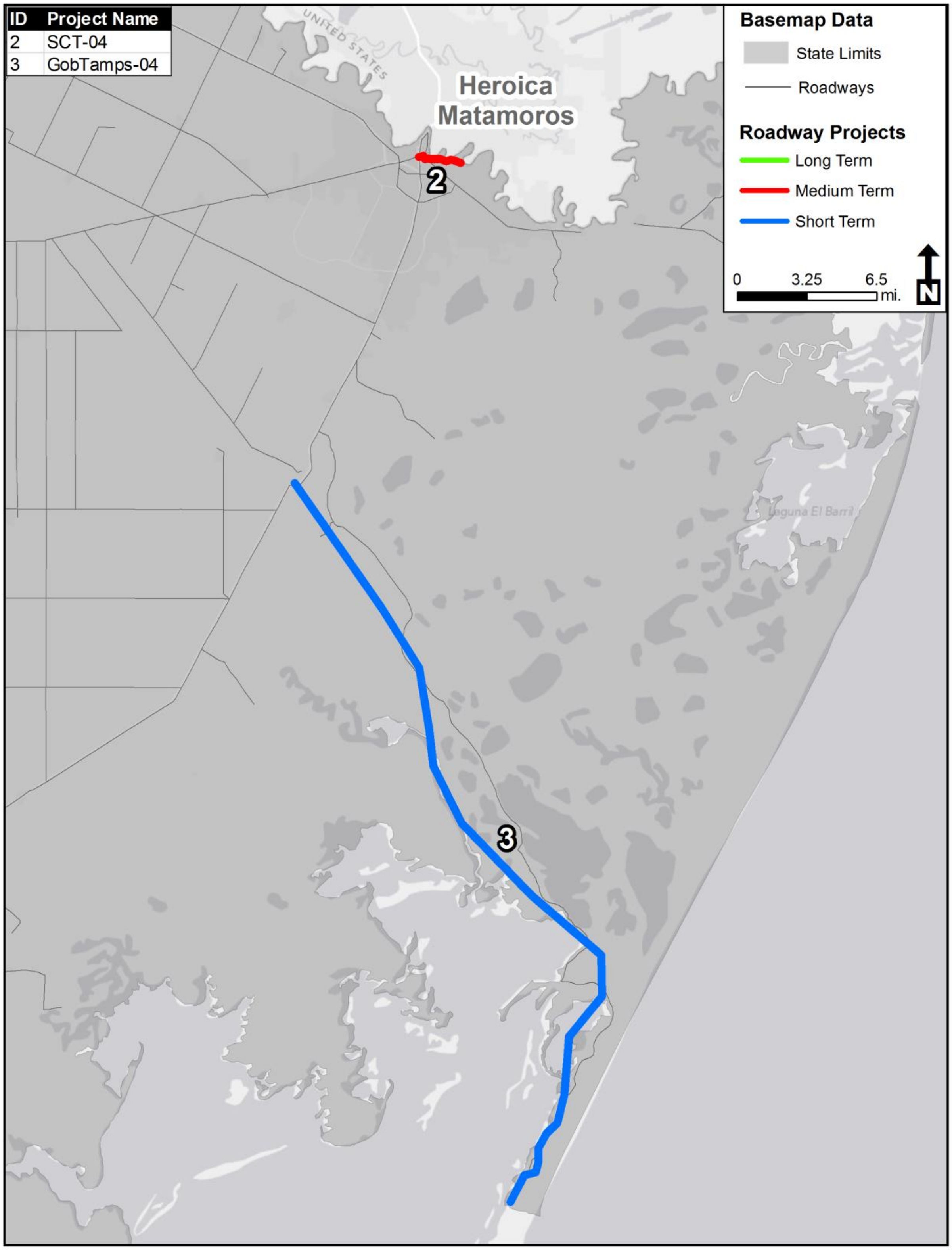


Figure 5.4: Planned Road and Interchange Projects in Municipality of Matamoros

5.7.3 Planned Marine Port Projects in Municipality of Matamoros

One marine port project was identified in the Mexican Focused Study Area. Project CG-182 involves dredging to increase the depth of the port and extending the jetties to protect the channels and docks (see Table 5.18). The project is expected to begin in 2013 or 2014 and be completed in 2015 at an estimated cost of $84.4 million.

Table 5.18: Planned Marine Port Project in Municipality of Matamoros

Term	Project Number	Agency	Location	Project Description*	Estimated Cost ($2012)	Rank
Short	CG-182	Estado de Tamaulipas/API	Port of Matamoros	Complete dredging to increase depth, and extend jetties to protect channels and docks.	$84,400,000	1

Note: * Project description as provided by sponsoring agency.

5.8 Municipality of Valle Hermoso

The Municipality of Valle Hermosa has no planned POE or road and interchange projects.

5.9 Municipality of Río Bravo

5.9.1 Planned POE Projects in Municipality of Río Bravo

Planned Projects at Existing POEs

Two projects are planned at existing POEs in the Municipality of Río Bravo. The rankings are provided in Table 5.19. Project SCT-DGDC-02, which ranked first out of all POE projects in the Mexican Focused Study Area, proposes to improve access at the Weslaco-Progreso International Bridge and to construct inspection facilities for the cargo lanes at the bridge. The cost of this project is estimated at $3.2 million.

Project GobTamps-02 ranked second out of the seven planned POE projects in the Mexican Focused Study Area. This project proposes the construction of inspection facilities for empty northbound and southbound commercial trucks at the Donna International Bridge. The project is expected to begin and be completed in 2014 at an estimated cost of $880,000.

Table 5.19: Planned Projects at Existing POEs in Municipality of Río Bravo

Term	Project Number	Agency	Location	Project Description*	Estimated Cost ($2012)	Rank**
Medium	SCT-DGDC-02	SCT and DGDC	Weslaco-Progreso International Bridge	Improve access. Construct inspection facilities for the cargo lanes.	$3,200,000	1
Short	GobTamps-02	Gobierno del Estado de Tamaulipas	Donna International Bridge	Construct inspection facilities for empty commercial trucks (both directions).	$880,000	2

Note: * Project description as provided by sponsoring agency.
** Ranking out of 7 POE projects in the Mexican Focused Study Area.

New POE Projects

The Municipality of Río Bravo has no planned new POE projects.

5.9.2 Planned Road and Interchange Projects in Municipality of Río Bravo

The Municipality of Río Bravo has no planned road and interchange projects.

5.10 Municipality of Reynosa

5.10.1 Planned POE Projects in Municipality of Reynosa

The Municipality of Reynosa has no planned POE projects.

5.10.2 Planned Road and Interchange Projects in Municipality of Reynosa

Table 5.20 shows the rankings of the three planned road and interchange projects in the Municipality of Reynosa, and Figure 5.5 shows their locations. The highest ranked road and interchange project for the Mexican Focused Study Area is located in Reynosa (Project GobTamps-01). This project will add two lanes for commercial truck traffic to Avenida Puente Pharr. The project is expected to begin and be completed in 2014 at an estimated cost of $7.3 million. The second project in Reynosa (Project GobTamps-11) is the construction of a new interchange at MEX 2 and Avenida Puente Pharr at an estimated cost of $7.6 million. Both projects will improve access to the Pharr-Reynosa International Bridge on the Rise. The third project in the Municipality of Reynosa involves the modernization and expansion of MEX 2 from Reynosa to Río Bravo.

Table 5.20: Planned Road and Interchange Projects in Municipality of Reynosa

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Short	GobTamps-01 (4)	Gobierno del Estado de Tamaulipas	Road connecting to Pharr-Reynosa International Bridge on the Rise	Expand from two lanes to four lanes. Currently two lanes serve as a connecting road; this project would add two additional lanes for commercial traffic to Avenida Puente Pharr.	$7,312,000	1
Short	GobTamps-11 (7)	Gobierno del Estado de Tamaulipas	Interchange at MEX 2 and road connecting to Pharr-Reynosa International Bridge on the Rise	Build an interchange at MEX 2 and Avenida Puente Pharr.	$7,600,000	6
Medium	CG-180b (6)	SCT	MEX 2	Modernize and expand from Reynosa to Río Bravo.	N/A	7

Note: * Project description as provided by sponsoring agency.

** Ranking out of 7 road and interchange projects in the Mexican Focused Study Area.

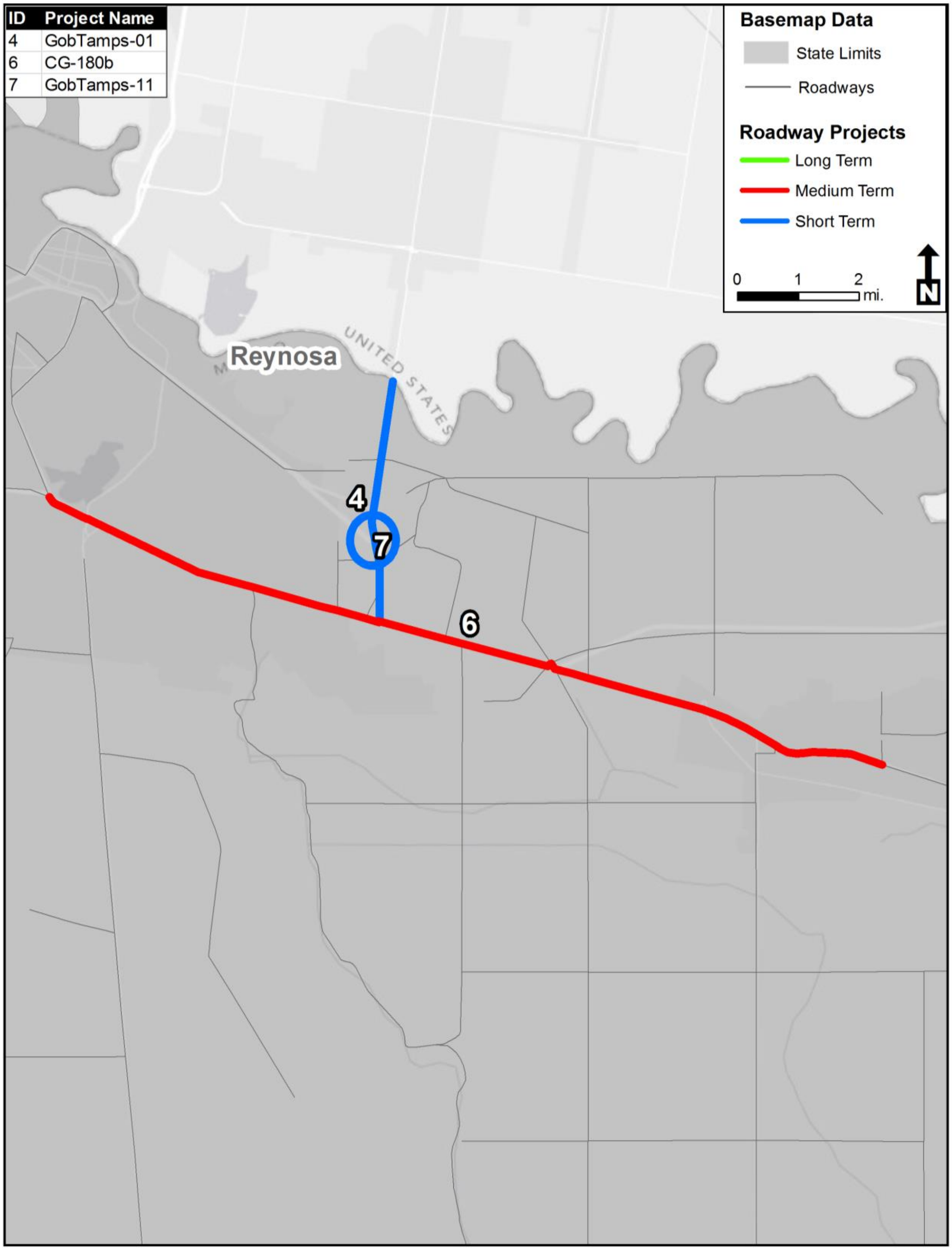


Figure 5.5: Planned Road and Interchange Projects in Municipality of Reynosa

5.11 Municipality of Gustavo Díaz Ordaz

The Municipality of Gustavo Díaz Ordaz has no planned POE or road and interchange projects.

5.12 Municipality of Camargo

5.12.1 Planned POE Projects in Municipality of Camargo

Planned Project at Existing POEs

One project is planned at existing POEs in the Municipality of Camargo. The ranking is provided in Table 5.21. Project AI-01, which ranked fifth out of all POE projects in the Mexican Focused Study Area, includes the development and reorganization of cargo areas and facilities at the Rio Grande City-Camargo Bridge. The project is expected to begin in 2013 and be completed at an estimated cost of approximately $10.2 million.

Table 5.21: Planned Project at Existing POEs in Municipality of Camargo

Term	Project Number	Agency	Location	Project Description*	Estimated Cost ($2012)	Rank**
Short	AI-01	Aduanas/ INDAABIN	Rio Grande City-Camargo Bridge	Develop import and export cargo areas; reorganize cargo areas and administrative buildings.	$10,160,000	5

Note: * Project description as provided by sponsoring agency.
** Ranking out of 7 POE projects in the Mexican Focused Study Area.

New POE Projects

The Municipality of Camargo has no planned new POE projects.

5.12.2 Planned Road and Interchange Project in Municipality of Camargo

One road and interchange project is planned in the Municipality of Camargo. The ranking of the road and interchange project is provided in Table 5.22, and its location is shown in Figure 5.6. Project CAPUFE-03 ranked fifth out of the seven road and interchange projects in the Mexican Focused Study Area. This project proposes to construct a beltway around Camargo to facilitate freight movements to the Rio Grande City-Camargo Bridge.

Table 5.22: Planned Road and Interchange Project in Municipality of Camargo

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Long	CAPUFE-03 (1)	SCT and CAPUFE	MEX 2	Construct a road/ beltway to facilitate cargo movements to the Rio Grande City-Camargo Bridge.	N/A	5

Note: * Project description as provided by sponsoring agency.
** Ranking out of 7 road and interchange projects in the Mexican Focused Study Area.

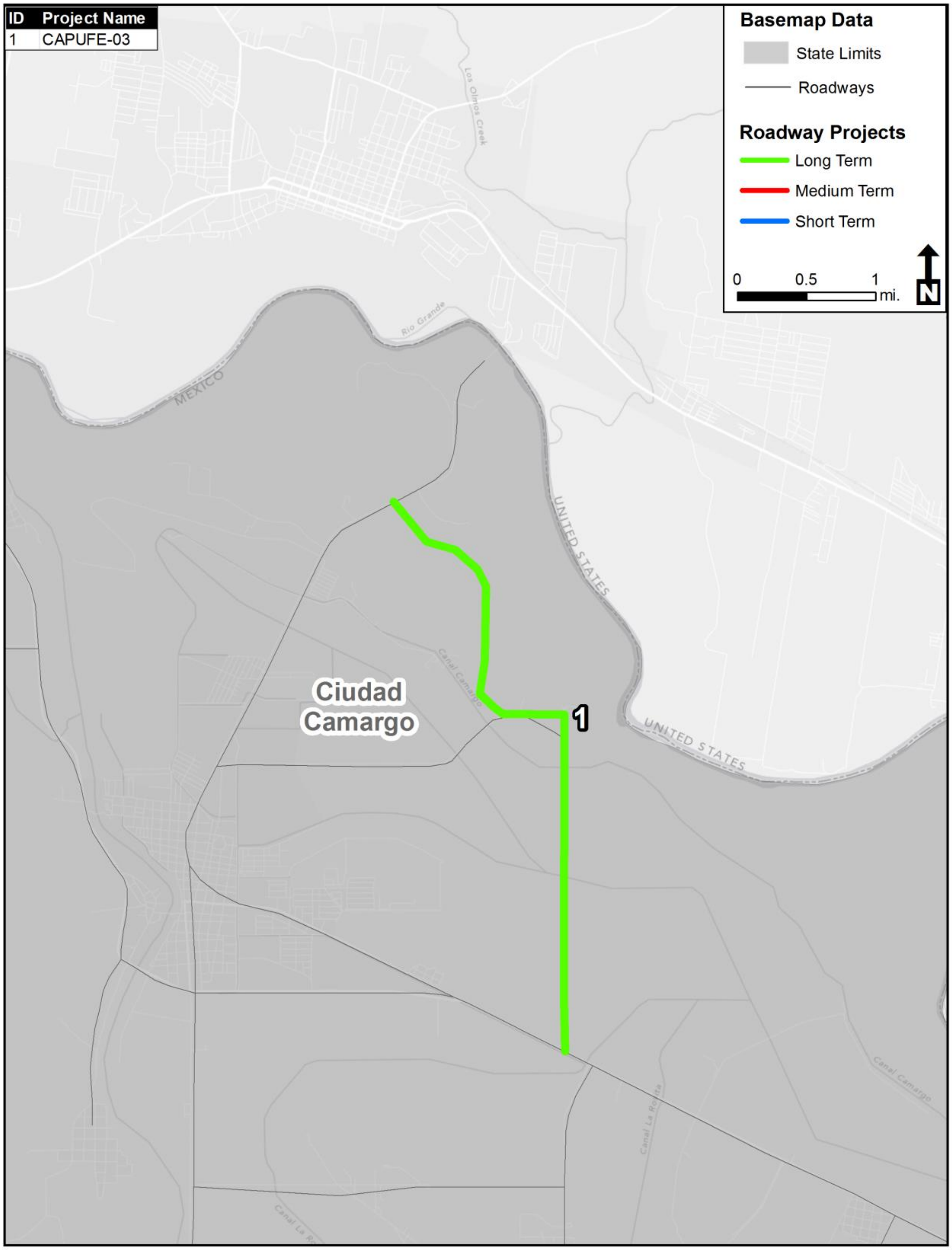


Figure 5.6: Planned Road and Interchange Project in Municipality of Camargo

5.13 Municipality of Miguel Alemán

The Municipality of Miguel Alemán has no planned POE or road and interchange projects.

5.14 Municipality of Mier

5.14.1 Planned POE Projects in Municipality of Mier

The Municipality of Mier has no planned POE projects.

5.14.2 Planned Road and Interchange Project in Municipality of Mier

One road and interchange project is planned in the Municipality of Mier. The ranking of the road and interchange project is provided in Table 5.23, and its location is shown in Figure 5.7. Project SCT-03 ranked third out of the seven road and interchange projects in the Mexican Focused Study Area. This project proposes to expand the Monterrey-Mier Highway at an estimated cost of approximately $4 million. The project is scheduled to begin in 2013 and be completed in 2014.

Table 5.23: Planned Road and Interchange Project in Municipality of Mier

Term	Project Number (Map ID)	Agency	Highway	Project Description*	Estimated Cost ($2012)	Rank**
Short	SCT-03 (5)	SCT-DGDC	Monterrey-Mier Highway	Expand the highway from Mier to the limits of the State of Tamaulipas.	$3,992,000	3

Note: * Project description as provided by sponsoring agency.

** Ranking out of 7 road and interchange projects in the Mexican Focused Study Area.

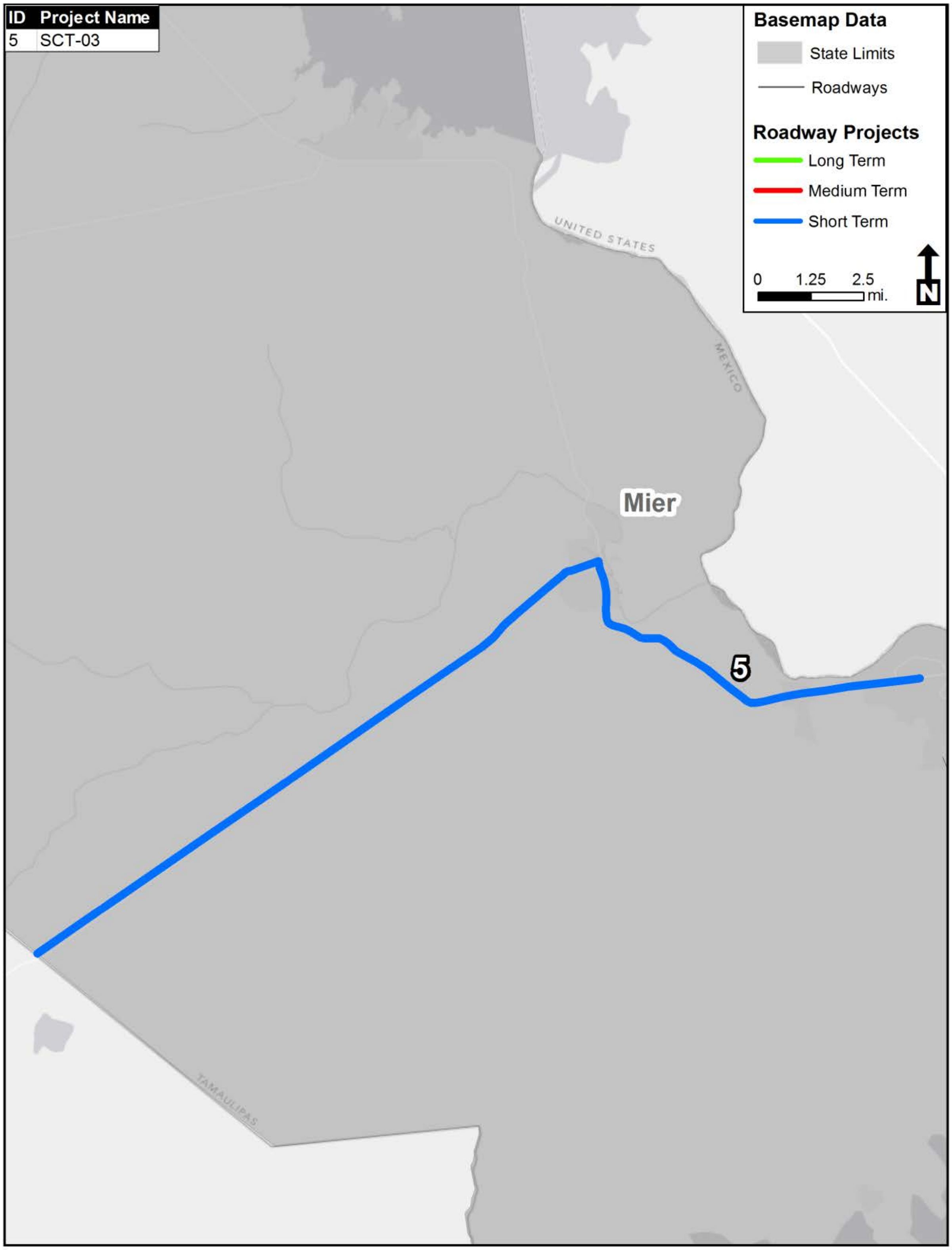


Figure 5.7: Planned Road and Interchange Project in Municipality of Mier

5.15 Municipality of Guerrero

The Municipality of Guerrero has no planned POE or road and interchange projects.

5.16 Planned U.S. Projects in Focused Study Area

Tables 5.24 through 5.26 provide the rankings of all planned POE, road and interchange, and marine port projects, respectively, in the U.S. Focused Study Area.

Table 5.24: Planned U.S. POE Projects in Focused Study Area

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Short	POE-DONNA 01	City of Donna	Donna International Bridge	Construct northbound and southbound Federal inspection facilities for processing empty commercial truck traffic.	$5,000,000	1
Medium	POE-08/ POE-09/ POE-11	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Improve mobility and decrease wait times for northbound vehicles by adding four additional non-commercial lanes. Construct northbound commercial import lot facilities and lanes to (1) divert commercial traffic and separate POVs, trucks, and buses; (2) improve mobility of commercial border corridors; (3) increase border security; and (4) deter cross-border criminal activities. This is a cooperative effort with government agencies.	$24,636,476	2
Short	POE-07/ POE-13/ 0921-02-303	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Add two additional northbound POV lanes to alleviate queuing on the bridge, and begin expanding the secondary vehicle inspection facility to accommodate southbound commercial traffic of trucks and buses in 2015.	$6,361,129	3
Long	POE-Port Brownsville	Port of Brownsville	Approximately 2.5 miles south of the Port of Brownsville Channel and 2.5 miles east of the Brownsville South Padre Island International Airport	On currently undeveloped land, build two causeway-style bridge spans to connect the Port of Brownsville directly with Mexico. One span will have four 12-foot truck travel lanes and will connect to the port's internal road network. The second span will support a single railroad track that links to the port's existing BRG railroad system. Facilities will be built for Federal inspection agencies.	$125,000,000	4

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Short	POE-DONNA 02	City of Donna	Donna International Bridge	Construct northbound and southbound Federal inspection facilities for processing full commercial truck traffic.	$13,000,000	5
Short	CSJ 0921-02-193-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase entrance inspection booth facilities from six to ten inspection booths, and expand the access roads from the bridge to the inspection booths from two to eight lanes, each 0.25 miles long.	$5,500,000	6
Short	POE-34	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase exit inspection booth facilities from two to four inspection booths to eliminate bottlenecks.	$1,650,000	7
Medium	POE-29-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Widen the bridge by adding four additional lanes to the current U.S. side of the bridge structure (1.3 miles) to improve mobility through designated lanes and encourage commercial truck companies to become FAST certified, which will in turn improve wait times.	$26,579,400	8
Short	CSJ 0921-02-193-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase entrance inspection booth facilities from six to eight inspection booths, and expand the access roads from the bridge to the inspection booths from two to eight lanes, each 0.25 miles long.	$3,300,000	9
Short	POE-29-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Widen the bridge by adding two additional lanes to the current U.S. side of the bridge structure (1.3 miles) to improve mobility through designated lanes and encourage commercial truck companies to become FAST certified, which will in turn improve wait times.	$13,289,700	10
Un-known	Starr-STP-15	Starr-Camargo Bridge Company	Río Grande City-Camargo Bridge	Expand the international bridge by constructing an additional two-lane span that will be used by southbound traffic.	$5,000,000	11

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Short	POE-18	Hidalgo International Bridge Board	LPOE Hidalgo	Demolish the existing primary head house*** and construct five additional inspection stations with a new head house building (second story).	$3,500,000	12
Medium	POE-21	Hidalgo International Bridge Board	LPOE Hidalgo	Renovate the existing building "A" to accommodate a bus transit terminal.	$270,000	13
Medium	POE-30	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Add an emergency shoulder on both sides of the bridge to prevent accidents and reduce the interruption of traffic flow.	$2,300,000	14
Short	CSJ 0921-02-193 - ITS	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Install an overhead warning system to guide and inform traffic and allow for easier flow of traffic.	$1,200,000	15
Short	POE-28	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Build a lab and training room for U.S. Department of Agriculture (USDA) agriculture inspectors to allow for the quicker release of cargo.	$2,000,000	16
Short	POE-35	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Remodel the current warehouse space into a lab and training room for USDA agriculture inspectors to allow for the quicker release of cargo.	$1,000,000	16
Short	POE-32-ALT-2	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Increase the POE import lot inspection facility by 50 percent through the expansion of the current wings of the facility. This will allow for quicker inspection of cargo and efficiency of operations, thereby resulting in increased use of the Pharr POE.	$7,000,000	18

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Medium	POE-32-ALT-1	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Duplicate the POE import lot inspection facility, increasing by 100 percent. This will allow for quicker inspection of cargo and efficiency of operations, thereby resulting in increased use of the Pharr POE.	$21,000,000	19
Medium	POE-05	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Construct a 0.5-mile segment of the proposed northbound bridge to accommodate commercial truck traffic and improve mobility by increasing the number of lanes on the bridge.	$7,032,500	20
Short	POE-36	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Create an export inspection area and parking staging area for southbound trucks at the Pharr Free Trade Zone	$15,000,000	21
Long	POE-22	Cameron County	New location, Cameron County, Texas	Build a new bridge to link the United States and Mexico at FM 3248 (Alton Gloor) and Avenida Flor de Mayo. This project excludes the border station.	$20,000,000	22
Short	POE-31	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Create a parking staging area for southbound trucks to reduce congestion from the road leading to the bridge and reduce the possibility of accidents.	$4,200,000	23
Short	POE-33	City of Pharr	Pharr-Reynosa International Bridge on the Rise	Add a FAST lane within the POE and two exit booths to allow for gate to gate traffic flow.	$1,500,000	24
Medium	POE-06/ POE-10/ 0921-02-197	TxDOT and Anzaldúas International Bridge Board	Anzaldúas International Bridge	Construct a permanent border safety inspection facility and a permanent non-intrusive inspection (NII) inspection facility to (1) improve mobility of commercial border corridors, (2) increase border security, and (3) deter cross-border criminal activities. This is a cooperative effort with government agencies.	$22,116,507	25

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Medium	POE-12/ 0921-02-303	Anzaldúas International Bridge Board	Anzaldúas International Bridge	Expand the vehicle inspection facility to accommodate southbound commercial traffic inspections.	$2,462,957	26
Long	POE-03	CBP	Weslaco-Progreso International Bridge	Reconfigure and rebuild the existing POE in compliance with current design standards and operational requirements to improve capacity, processing efficiency, security, and officer safety.	$55,000,000	27
Long	POE-01	CBP	Gateway International Bridge	Reconfigure and rebuild the existing LPOE in compliance with current design standards and operational requirements to improve capacity, processing efficiency, security, and officer safety.	$60,000,000	28
Long	POE-04	Sullivan City	South of Sullivan City, Texas	Plan, develop, design, and construct a proposed international border crossing between Sullivan City and Gustavo Díaz Ordaz in Tamaulipas, Mexico.	$220,000,000	29
Short	POE-02	Hidalgo International Bridge Board	LPOE Hidalgo	Demolish the existing head house, and rebuild it to current design standard and operational requirements at a more suitable location. This will allow realignment of up to four primary inbound POV lanes to facilitate incoming traffic flow and reduce congestion and processing wait times.	$7,000,000	30
Un-known	Starr-STP-14	Starr-Camargo Bridge Company	Roma-Ciudad Miguel Alemán Bridge	Construct the proposed international crossing.	Unknown	30
Medium	0921-06-207	TxDOT	Veterans International Bridge at Los Tomates	Construct a U.S. border safety inspection facility.	$15,000,000	30

Term	Project Number	Agency	Bridge/LPOE	Project Description*	Estimated Cost ($2012)	Rank**
Medium	0921-06-208	TxDOT	Los Indios Free Trade International Bridge	Construct a U.S. border safety inspection facility.	$15,000,000	30
Long	POE-23	FMCSA	Los Indios Free Trade International Bridge	Conduct Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,305,000	30
Long	POE-24	FMCSA	Pharr-Reynosa International Bridge on the Rise	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,855,000	30
Long	POE-25	FMCSA	Roma-Ciudad Miguel Alemán Bridge	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,159,000	30
Long	POE-26	FMCSA	Weslaco-Progreso International Bridge	Perform Phase I—Feasibility and Phase II—Design/Build of Commercial and Bus Inspection Facility.	$1,618,000	30
Long	POE-27	TxDOT	Donna International Bridge	Construct a U.S. border safety inspection facility.	$15,000,000	30

Table 5.25: Planned U.S. Road and Interchange Projects in Focused Study Area

Term	Project Number	Agency	Highway	Project Description	Estimated Cost ($2012)	Rank*
Long	0921-02-142, etc.	Hidalgo County RMA	International Bridge Trade Corridor	Construct a new two-lane controlled-access tolled facility from US 281 at Spur 600 to FM 493.	$170,331,406	1
Long	Hidalgo-MTP-06	TxDOT	US 83/IH 2	Construct an overpass and modify ramps at US 83/IH 2 and Bicentennial Boulevard.	$20,000,000	2
Long	0039-01-066, etc.	Hidalgo County RMA	US 83 La Joya Loop	Construct a new four-lane controlled-access facility on US 83 La Joya Loop from 2.3 miles west of the Hidalgo County line to 1 mile east of the Hidalgo County line.	$25,000,000	3
Long	1803-02-029, 1803-03-007, 0921-06-902	TxDOT	FM 1925	Widen FM 1925 from the existing two-lane undivided highway to a four-lane divided facility from FM 907 to US 77/IH 69E.	$140,000,000	4
Long	0921-26-013, 0921-26-014	TxDOT	Roma/Rio Grande City Relief Route	Construct a new four-lane divided facility from US 83 at Loma Blanca Road to US 83 at La Puerta.	$159,565,630	5
Medium	0039-17-175	TxDOT	IH 2/IH 69	IH 2/IH 69 interchange improvements from Cesar Chavez Road (East) to McColl Road (West) including at IH 69 BU/IH 69 Split (North)	$80,000,000	6
Long	SH 32	CCRMA	SH 32	Widen SH 32 (East Phase II) from the existing two-lane undivided highway to a four-lane divided facility from FM 3068 to SH 4.	$40,000,000	7
Long	2369-01-016	TxDOT	FM 509	Widen FM 509 from the existing two-lane undivided highway to a four-lane divided facility from BU 77 N to FM 106.	$8,045,184	8

Term	Project Number	Agency	Highway	Project Description	Estimated Cost ($2012)	Rank*
Medium	0220-04-037	TxDOT	US 281/ Military Highway	Widen US 281/Military Highway from the existing two-lane undivided highway to a four-lane divided facility from 0.25 miles west of FM 732 to FM 1421.	$15,000,000	9
Long	0220-04-900	CCRMA	US 281/ Military Highway Connector	Construct a new four-lane divided US 281/Military Highway connector from 0.5 miles west of FM 732 to US 77/US 83/IH 69E/SH 100.	$28,000,000	10
Long	0921-06-254	CCRMA	FM 509 Extension/ Outer Parkway	Construct a new two-lane FM 509 Loop Extension from US 77/IH 69E at Orphanage Road to FM 508.	$10,000,000	11
Long	SH 32 Over-passes	CCRMA	SH 32	Construct overpasses on SH 32 at FM 3068 and SH 4.	$35,000,000	12
Medium	0921-06-252	CCRMA	South Parallel Corridor	Construct a new two-lane rural roadway from FM 509 to FM 732 (South Parallel Corridor Phase II).	$10,300,000	13
Long	0921-06-163	CCRMA	Second Causeway	Construct a new four-lane causeway connecting the mainland to South Padre Island.	$494,291,200	14
Long	FM 755	TxDOT	FM 755	Widen FM 755 from the existing two-lane undivided road to a four-lane divided rural roadway from FM 755 (New Realignment in Starr County) to US 281 in Brooks County.	$171,000,000	15

Term	Project Number	Agency	Highway	Project Description	Estimated Cost ($2012)	Rank*
Long	SH 68 Phase II/ 3629-01-###	TxDOT	SH 68 Phase II Toll Road	Construct a new four-lane controlled-access tolled facility from FM 1925 to US 281 (SH 68 Phase II Toll Road). The new route will relieve traffic on the US 281/ Military Highway and US 83/IH 2 and US 83/IH 2/US 281/IH 69C interchange, will provide an alternative route for truck traffic separate from area arterials, and will divert hazardous cargo from populated areas.	$191,000,000	16
Long	0683-01-056	TxDOT	FM 493	Widen FM 493 from the existing two-lane undivided highway to a four-lane divided facility from US 281/Military Highway to Champion Street, and construct a high-water bridge over the International Boundary and Water Commission floodway.	$19,700,000	17
Long	0921-02-287	Sullivan City	Off-system, Guadalupe Flores Road improvements	Construct a new extension/improvements on Guadalupe Flores Road from US 83 to the proposed Sullivan City-Diaz Ordaz International Border Crossing.	$6,000,000	18

Table 5.26: Planned U.S. Marine Port Projects in Focused Study Area

Term	Project Number	Agency	Project Location	Project Description	Estimated Cost ($2012)	Rank
Medium	Marine Port-02	Port of Brownsville	Brownsville Ship Channel	Widen the Ship Channel from 250 to 350 feet and deepen it from 42 to 50 feet.	$250,000,000	1
Short	Marine Port-01	Port of Brownsville	South side of Brownsville Ship Channel, east of existing Cargo Dock No. 15	Construct a new general-purpose cargo dock on a section of the Brownsville Ship Channel's bank that currently is not developed.	$26,000,000	2

5.17 Planned Mexico Projects in Focused Study Area

Tables 5.27 through 5.29 provide the rankings of all planned POE, road and interchange, and marine port projects, respectively, in the Mexico Focused Study Area.

Table 5.27: Planned Mexico POE Projects in Focused Study Area

Term	Project Number	Agency	Location	Project Description	Estimated Cost ($2012)	Rank
Medium	SCT-DGDC-02	SCT and DGDC	Weslaco-Progreso International Bridge	Improve access. Construct inspection facilities for the cargo lane.	$3,200,000	1
Short	GobTamps-02	Gobierno del Estado de Tamaulipas	Donna International Bridge	Construct inspection facilities for empty commercial trucks (both directions).	$880,000	2
Short	SCT-DGDC-01	SCT and DGDC	B&M Bridge	Modernize and improve the existing international bridge. Its current rail bridge portion will be converted into a SENTRI lane.	$11,200,000	3
Short	GobTamps-03	Gobierno del Estado de Tamaulipas	Free Trade Bridge	Expand customs facilities and construct export platforms.	$4,800,000	4
Short	AI-01	Aduanas/ INDAABIN	Rio Grande City-Camargo Bridge	Develop import and export cargo areas; reorganize cargo areas and administrative buildings.	$10,160,000	5
Long	SCT-DGDC-04	SCT and DGDC	Flor de Mayo International Bridge	Construct a new bridge.	N/A	6
Long	IMPLAN-01	Municipio de Matamoros and IMPLAN	Longoreño Bridge	Construct a new bridge.	N/A	6

Table 5.28: Planned Mexico Road and Interchange Projects in Focused Study Area

Term	Project Number	Agency	Highway	Project Description	Estimated Cost ($2012)	Rank
Short	GobTamps-01	Gobierno del Estado de Tamaulipas	Road connecting to Pharr-Reynosa International Bridge	Expand from two lanes to four lanes. Currently two lanes serve as a connecting road; this project would add two additional lanes for commercial traffic to Avenida Puente Pharr.	$7,312,000	1
Medium	SCT- 04	SCT	Matamoros Beltway	Construct a beltway to connect the Veterans International Bridge at Los Tomates with Sixth Avenue and MEX 2.	$2,400,000	2
Short	SCT-03	SCT	Monterrey-Mier Highway	Expand the highway from Mier to the limits of the State of Tamaulipas.	$3,992,000	3
Short	GobTamps-04	Gobierno del Estado de Tamaulipas	TAM 57	Expand and reconstruct 40 miles of access road to the Port of Matamoros.	$20,800,000	4
Long	CAPUFE-03	SCT and CAPUFE	MEX 2	Construct a road/beltway to facilitate cargo movements to the Rio Grande City-Camargo Bridge.	N/A	5
Short	GobTamps-11	Gobierno del Estado de Tamaulipas	Interchange at MEX 2 and road connecting to Pharr-Reynosa International Bridge	Build an interchange at MEX 2 and Avenida Puente Pharr.	$7,600,000	6
Medium	CG-180b	SCT	MEX 2	Modernize and expand from Reynosa to Río Bravo.	N/A	7

Table 5.29: Planned Mexico Marine Port Project in Focused Study Area

Term	Project Number	Agency	Location	Project Description	Estimated Cost ($2012)	Rank
Short	CG-182	Estado de Tamaulipas/ API	Port of Matamoros	Complete dredging to increase the depth and extension of jetties to protect channels and docks.	$84,400,000	1

[1] Projects that span more than one municipality are listed and discussed in the municipality in which they originate.

Chapter 6. Lessons Learned and Recommendations

The Lower Rio Grande Valley–Tamaulipas Border Master Plan (referred to in this document as the Border Master Plan) was the third binational effort on the U.S.-Mexico border. The study team followed a similar approach to that used for the California–Baja California Border Master Plan, which was completed in September 2008 and is currently being updated, and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, which was completed in 2012. Border master plans serve the important function of identifying and prioritizing planned projects on the U.S.-Mexico border. Border master plans aim to:

- Identify binational POE and multimodal project priorities.
- Secure commitment from stakeholders to implement priority projects.
- Ensure continued dialogue among agencies.

This chapter summarizes the lessons learned in the development of this Border Master Plan, proposes a process for institutionalizing a dialogue among agencies, and includes several recommendations for consideration in the development of future border master plans and updates of border master plans.

6.1 Lessons Learned

The successful development of border master plans requires two elements:

- Stakeholder participation and commitment.
- Adequate technical data/information.

6.1.1 Stakeholder Participation

More than 220 stakeholders from 65 agencies at the U.S. and Mexico Federal, State, county/municipal, and city levels; 5 railroad companies; and 18 border partners (represented by 33 participants) contributed to the development of the Border Master Plan. Border partners include agencies and companies, such as the various Economic Development Corporations and the North American Development Bank.

Border partners could attend all meetings and provide input at the meetings. Similar to the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, stakeholder participation was obtained through the formation of two committees: the PAC and the TWG.

For border master plans to be successful, stakeholder participation in and commitment to the development of these border master plans are critical. The study team succeeded at this by:

- Maintaining an updated contact list.
- Hosting regular meetings.
- Using technology and an innovative approach to provide each stakeholder agency with an equal voice in developing the ranking framework that was used to prioritize projects.

Over the course of the study period, the study team made a concerted effort to maintain an updated contact list. The contact list was reviewed and regularly updated to reflect changes in stakeholder representation (e.g., mayors, county judges, and Mexican State representatives changed because of term limits and staff turnover). The study team approached and briefed all new stakeholders on the Border Master Plan's objectives and the study team's progress in developing it.

The study team hosted six stakeholder meetings in different cities in the Focused Study Area over the course of the study period (see Appendix D). To accommodate stakeholders that were not bilingual, simultaneous translation was available at all the stakeholder meetings. Providing bilingual, simultaneous translation is an essential component in ensuring stakeholder participation.

Since the prioritization of planned projects can be sensitive and contentious, it was critical to design a stakeholder agency involvement process that was inclusive and ensured the participation of all agencies and companies responsible for the planning, programming, construction, and/or management of POE projects and the transportation infrastructure serving these POEs. Furthermore, obtaining endorsement of the Border Master Plan and ensuring commitment to the implementation of the Border Master Plan's priorities were essential. Therefore, a process was developed to provide each stakeholder agency with an equal voice in developing and endorsing the ranking framework used for project prioritization.

Classroom Performance System technology allowed for anonymous voting and facilitated reaching a consensus on categories, category weights, criteria, and criterion weights. The process worked as follows: The stakeholders were provided with a voting device (the i>Clicker) that allowed them to vote on the importance of a specific criterion in prioritizing a project. The ranking scale was from A to E, where A was extremely important and E was extremely unimportant. The votes were anonymous, but the study team could track how many stakeholders voted. Once the votes were cast, the results were displayed, and the study team facilitated a discussion about the voting results. Stakeholders were then asked to vote again, and the process continued until substantial agreement developed (e.g., two-thirds of the respondents agreed) or until the voting results did not change from one round to the next. This approach allowed all stakeholder agencies to participate in the development of the ranking framework.

6.1.2 Technical Data/Information

Detailed technical data and information are required in the development of border master plans to describe the current and future demand for existing border infrastructure and to enable the prioritization of planned future projects. Thus, given adequate technical data and information to prioritize projects, border master plans provide a detailed inventory of planned project priorities in a Focused Study Area. High-priority projects included in a binational border master plan also provide a powerful argument when competing for transportation funding at the Federal and State levels, as well as for private and local funds.

As was done in the California–Baja California Border Master Plan and the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan, the study team developed a detailed inventory of all transportation facilities serving the POEs in the Focused Study Area. To facilitate comparison with these border master plans, the study team collected similar descriptive and performance data for 2010 and used the TxDOT AADT growth rates to estimate facility usage and the LOS by 2030. Specifically, the study team collected information about the location of the roads, roadway lengths, number of accidents, number of lanes, AADT, and share of truck traffic. The LOSs for 2010 and 2030 were calculated using methods defined by the *Highway Capacity Manual* (2010) and data provided by TxDOT. For the existing POEs, the study team developed a detailed bridge inventory that included descriptions of the current facilities, hours of operation, crossings by mode (i.e., pedestrians, POVs, buses, commercial trucks, and rail containers), toll rates levied, and primary transportation facilities serving the POEs.

In addition, the study team collected the following technical data for the planned POE projects: project location, current facility and planned improvements, year the project becomes operational, cost data and funding status, number of fully operational lanes/rail track before and after project completion, technology used to improve throughput, existing and future crossing wait time, annual daily crossings before and after project completion, diversion of commercial traffic, land availability, current phase of the project, accident rate, diversion of non-radioactive hazmat, a qualitative assessment of the wider geographic and general development benefits of the project, and the extent to which binational coordination has occurred.

For the planned road and interchange projects, the study team collected the following technical data: project location, planned improvements, year the project becomes operational, cost data and funding status, existing and future number of lanes, LOS before and after project completion, number of POEs served, connectivity, AADT before and after project completion, percentage of trucks, estimated demand after 20 years, land availability, current phase of the project, accident rate, diversion of non-radioactive hazardous materials (hazmat), and a qualitative assessment of the wider geographic and general development benefits of the project.

For planned rail projects, the study team collected the following technical data: project location, current facility and planned improvements, year the project becomes operational, cost data and funding status, existing and future number of tracks, whether the project is a rail yard project or involves track relocation, average delay time, relocation of rail traffic, elimination of rail crossings, average annual daily rail cars before and after project completion, existing and future cross-border tonnage by rail, additional hours of interchange, land availability, current phase of the project, accident rate, diversion of non-radioactive hazmat, and a qualitative assessment of the wider geographic and general development benefits of the project. However, no planned rail projects were submitted for inclusion in the Border Master Plan.

For planned marine port projects, the study team collected the following technical data: project location, current facility and planned improvements, year the project becomes operational, cost data and funding status, vessel size accommodation, channel capacity, number of docks before and after project completion, existing and future total annual tonnage, cross-border tonnage before and after project completion, land availability, current phase of the project, diversion of non-radioactive hazmat, and a qualitative assessment of the wider geographic and general development benefits of the project.

The more data/information provided for a planned project, the more opportunities the planned project had to receive a score—and the higher the likelihood that the planned project would be ranked higher than a similar project for which limited data were provided. Very limited information was available for the planned Mexican projects, which prevented the development of a list of binational project priorities. Instead, the projects were prioritized for the United States and Mexico separately.

6.2 Recommendations

6.2.1 Institutionalizing the Dialogue

Border master plans should be updated when there are major changes in the content of the border master plans. For example, if a number of priority projects have been completed or if a number of planned projects have emerged since the border master plan was developed, the plan will need updating. This keeps the contents and inventories current and allows the border master plan to continue to represent the region's vision and goals. The timing of the updates may thus differ from region to region.

It is recommended that the PAC convene every year to determine the need for updates. Information on all completed priority projects and any planned projects that have emerged since the completion of the previous Border Master Plan should be presented. This presentation will allow the PAC to make an informed decision about the need to update the planned project inventory and technical data of the Border Master Plan. Similarly, the PAC will be able to determine the need for a comprehensive update to the plan. A comprehensive update would involve revisiting the planning horizons (short, medium, and long term), the geographic boundaries of the study area (Focused Study Area and Area of Influence), the socio-economic data, cross-border travel demand changes, and the ranking framework that was used to prioritize projects. Finally, it is recommended that a representative of the PAC or TxDOT's International Relations Office make regular informative presentations to the JWC to discuss the need to update the existing Border Master Plan (as determined by the PAC) or to report on any in-progress Border Master Plan updates.

6.2.2 Development of Future Border Master Plans

The study team offers the following observations and recommendations for consideration in development of future border master plans or updates of this Border Master Plan:

- Three of the four U.S. States on the southern border have overseen the development of border master plans. To remain a viable planning tool, these plans must reflect each region's needs, interests, and priorities. If the ultimate goal is to establish U.S.-Mexico project priorities, it is recommended that regions follow a similar—although not necessarily the same—approach in the development of all border master plans.
- Border master plans currently provide detailed inventories of planned project priorities in a Focused Study Area. Two enhancements to the scope of work for updating the border master plans should be considered: identify funding opportunities for high-priority projects in the Focused Study Area, and develop technical tools to evaluate the potential regional impact of investments. Specifically, the feasibility of developing technical tools (models) to determine how investment in a specific project would impact demand (e.g., diverting traffic to other crossings)—and therefore the need or priority of other planned projects—should be determined. The implementation of some of the identified high-priority projects could thus potentially reduce the need or delay the need for implementing some of the other high-priority projects. As currently developed, border master plans do not quantify or model the demand impact of an investment in specific projects on other crossings or transportation infrastructure in the region.

- Ensure participation by actively reaching out to stakeholders. Keep stakeholders engaged in the development of border master plans, ensure a process where every stakeholder has an equal voice in the selection of the criteria that will be used to prioritize projects, and make all reports and information disseminated available in both English and Spanish. Ultimately, continued support for development of border master plans will only prevail if results can be demonstrated—by the funding and implementation of high-priority projects identified by the border master plan.