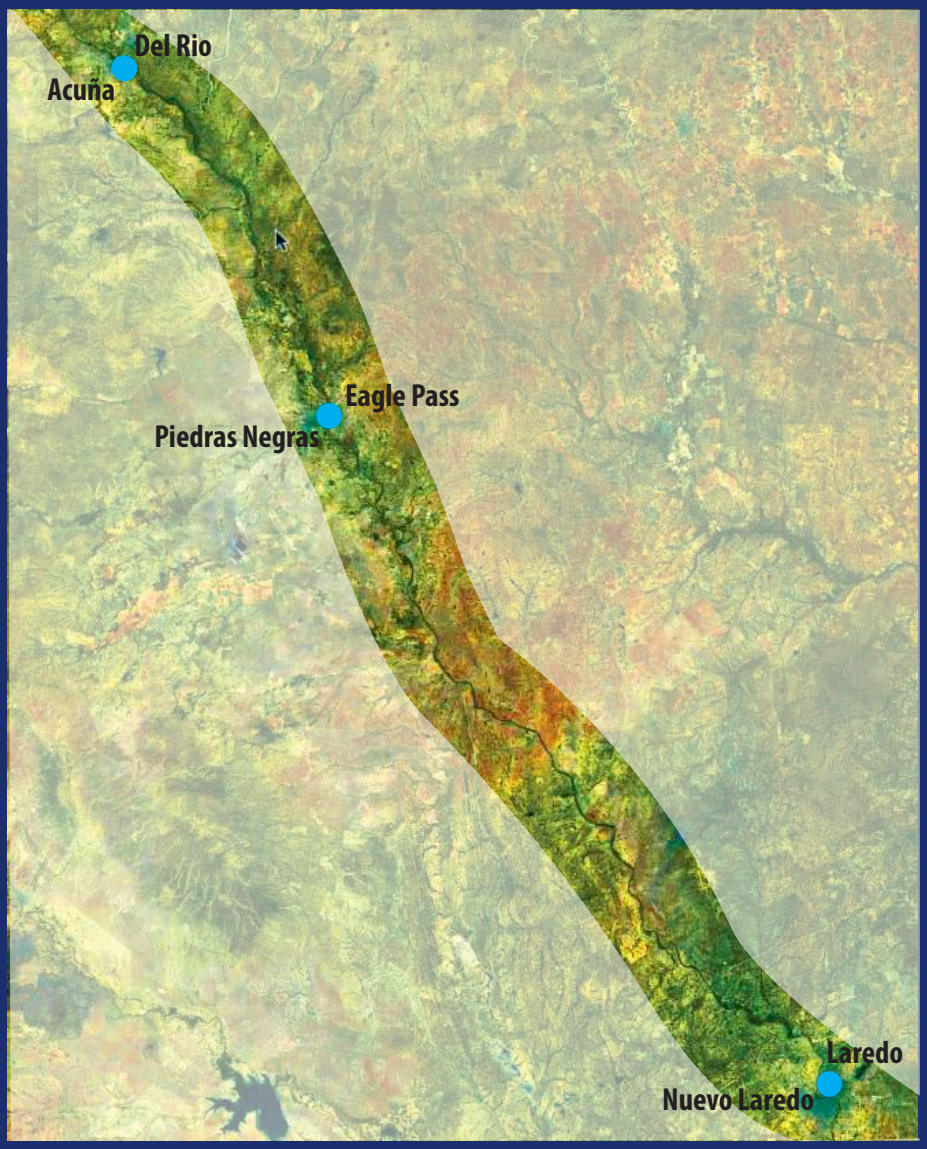
# Laredo District
# Coahuila/Nuevo León/Tamaulipas
# Border Master Plan




## Final Report
## June 2012

BORDER MASTER PLAN
PLAN MAESTRO FRONTERIZO

Texas Department of Transportation

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# Executive Summary

## Introduction

Border Master Plans, as defined and supported by the U.S./Mexico Joint Working Committee on Transportation Planning and Programming, the Federal Highway Administration, and the U.S. Department of State, are comprehensive long range plans to inventory transportation and port of entry (POE) infrastructure that facilitate trade, and prioritize planned transportation and POE projects within a defined study area. The Border Master Plans represent binational stakeholder efforts to (i) prioritize and promote POE and related transportation projects; (ii) inform decision-making; (iii) allocate limited funding sources, and (iv) ensure continued dialogue and coordination on future POE and supporting transportation infrastructure needs and projects.

The Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan (Border Master Plan) is the second Border Master Plan that on the U.S.-Mexico border and followed a similar approach as the California-Baja California Border Master Plan.

The objectives of the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan were to:

- design a stakeholder agency involvement process that is inclusive and ensure the participation of all involved in POE projects and the transportation infrastructure serving those POEs;
- increase the understanding of the POE and transportation planning processes on both sides of the border;
- 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; and
- establish a process to ensure continued 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.

The Border Master Plan documents the region's needs and priorities, and recommends a mechanism to ensure coordination on current and planned future POE projects and supporting transportation infrastructure to serve the anticipated demand imposed by a growing population and an increase in economic activity in the study area.

## Study Area

Similar to the California-Baja California Border Master Plan, the Border Master Plan's study area included an "Area of Influence" and a "Focused Study Area." The "Area of Influence" was the geographic area 60 miles (or 100 km) north and south of the Texas-Coahuila/Nuevo León/Tamaulipas international border. In Texas, it included the counties – all or

partially – of Crockett, Dimmit, Duval, Edwards, Frio, Jim Hogg, Kinney, La Salle, Maverick, McMullen, Real, Sutton, Uvalde, Val Verde, Webb, Zapata and Zavala. On the Mexican side, it included the municipalities – all or partially – of:

- Acuña, Allende, Guerrero, Hidalgo, Jiménez, Juárez, Morelos, Múzquiz, Nava, Piedras Negras, Sabinas, San Juan de Sabinas, Villa Unión and Zaragoza in Coahuila;
- Anáhuac, Lampasos de Naranjo, Parás, Sabinas Hidalgo, Vallecito and Villaldama in Nuevo León; and
- Guerrero and Nuevo Laredo in Tamaulipas.

The "Focused Study Area" was an area 25 miles (or 40 km) north and south of the Texas-Coahuila/Nuevo León/Tamaulipas international border. The study area´s east and west boundaries were roughly aligned with the Texas Department of Transportation's (TxDOT's) Laredo District (see Figure ES1). The identified short-, mid-, and long-term planned POE and transportation infrastructure projects in the "Focused Study Area" were prioritized.

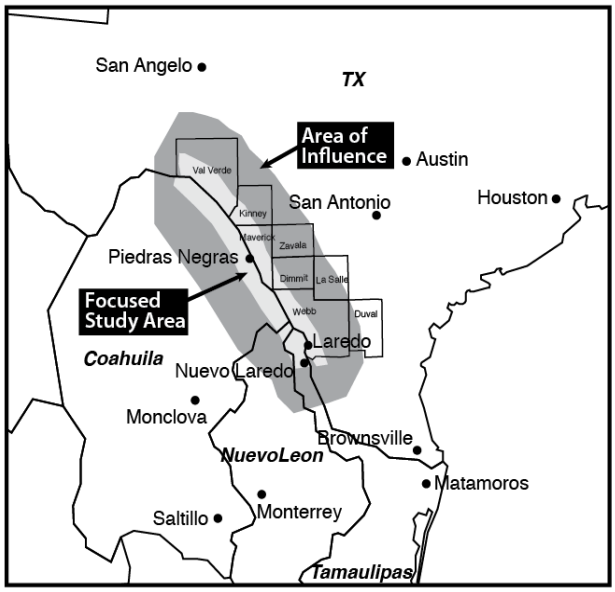



*Figure ES1: Border Master Plan Study Area*

## Stakeholder Participation

Similar to the California-Baja California 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 mandate of the PAC members was 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 members was to provide the study team with data on existing and planned transportation and border facilities serving the POEs in the study area, to verify the collected information, to participate in a workshop to select the criteria, scores, and weights that were used to prioritize individual projects, and to review the content of the draft Border Master Plan document developed and submitted by the study team.

Membership of the PAC and TWG were limited to government agencies and rail companies whose mandate encompass 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. General Services Administration (GSA)
- U.S. Department of Homeland Security/Customs and Border Protection (CBP)
- U.S. Department of State (DOS)
- U.S. Department of State/Consulate of the United States (DOS)
- International Boundary and Water Commission (IBWC-DOS)
- U.S. Department of Transportation/Federal Highway Administration (FHWA)
- U.S. Department of Transportation/Federal Motor Carrier Administration (FMCA)
- Texas Department of Public Safety
- Texas Department of Transportation
- Maverick County
- Val Verde County
- Webb County
- City of Del Rio
- City of Eagle Pass
- City of Laredo
- Laredo Metropolitan Planning Organization

*Mexico*

- Administración General de Aduanas
- Instituto de Administración de Avalúos de Bienes Nacionales (INDAABIN)
- Instituto Nacional de Migración (INAMI)
- Secretaría de Comunicaciones y Transportes (SCT)
- Centro SCT Coahuila
- Centro SCT Nuevo León

- Centro SCT Tamaulipas
- Caminos y Puentes Federales (SCT-CAPUFE)
- Instituto Mexicano del Transporte (SCT-IMT)
- Secretaría de Desarrollo Social (SEDESOL)
- Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)
- Secretaría de Relaciones Exteriores (SRE)
- Comisión Internacional de Límites y Aguas entre México y EE.UU. (SRE-CILA)
- Secretaría de Relaciones Exteriores/Consulado General de México
- Estado de Coahuila de Zaragoza
- Secretaría de Obras Públicas y Transporte de Coahuila (SOPT)
- Municipio de Acuña
- Municipio de Piedras Negras
- Estado de Nuevo León
- Corporación para el Desarrollo de la Zona Fronteriza de Nuevo León (CODEFRONT)
- Sistema de Caminos de Nuevo León
- Estado de Tamaulipas
- Secretaría de Obras Públicas de Tamaulipas
- Municipio de Nuevo Laredo
- Instituto Municipal de Investigación, Planeación y Desarrollo Urbano del Municipio de Nuevo Laredo (IMPLADU)

*Rail Companies*

- BNSF Railway Company
- Ferrocarril Mexicano S.A. de C.V.
- Kansas City Southern de México S.A. de C.V.
- Kansas City Southern Railway Company
- Union Pacific 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 criteria categories, category weights, criteria, criteria weights, and scoring metrics that were used to prioritize projects.

## Study Approach

The study team hosted seven 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 criteria categories, category weights, criteria, criteria weights, and scoring metrics to prioritize projects.

A fundamental component of the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan was the selection of the criteria categories, category weights, criteria, and criteria weights to be used in the ranking/prioritization of the planned POE, road and interchange, and rail projects. The study team adopted a Delphi type process to reach consensus. Classroom Performance System (CPS) technology – i.e., i>Clickers – allowed for anonymous voting and facilitated the reaching of consensus.

To facilitate the development of a list of project priorities for the study area, it was recommended by the study team, agreed with the TWG, and finally endorsed by the PAC that the criteria categories and weights would be the same across the different project types. The criteria categories and the category weights endorsed can be found in Table ES1.

**Table ES1: Border Master Plan Ranking Categories**

| Criteria Categories | Category Weights |
|---|---|
| Capacity/Congestion | 25% |
| Demand | 23% |
| Cost Effectiveness/ Project Readiness | 17% |
| Safety | 20% |
| Regional Impacts | 15% |

However, different criteria comprised the criteria categories given the project type, because of the fundamental differences among POE, road and interchange, and rail projects.

## Study Findings: Socio-Demographics and Planning Processes

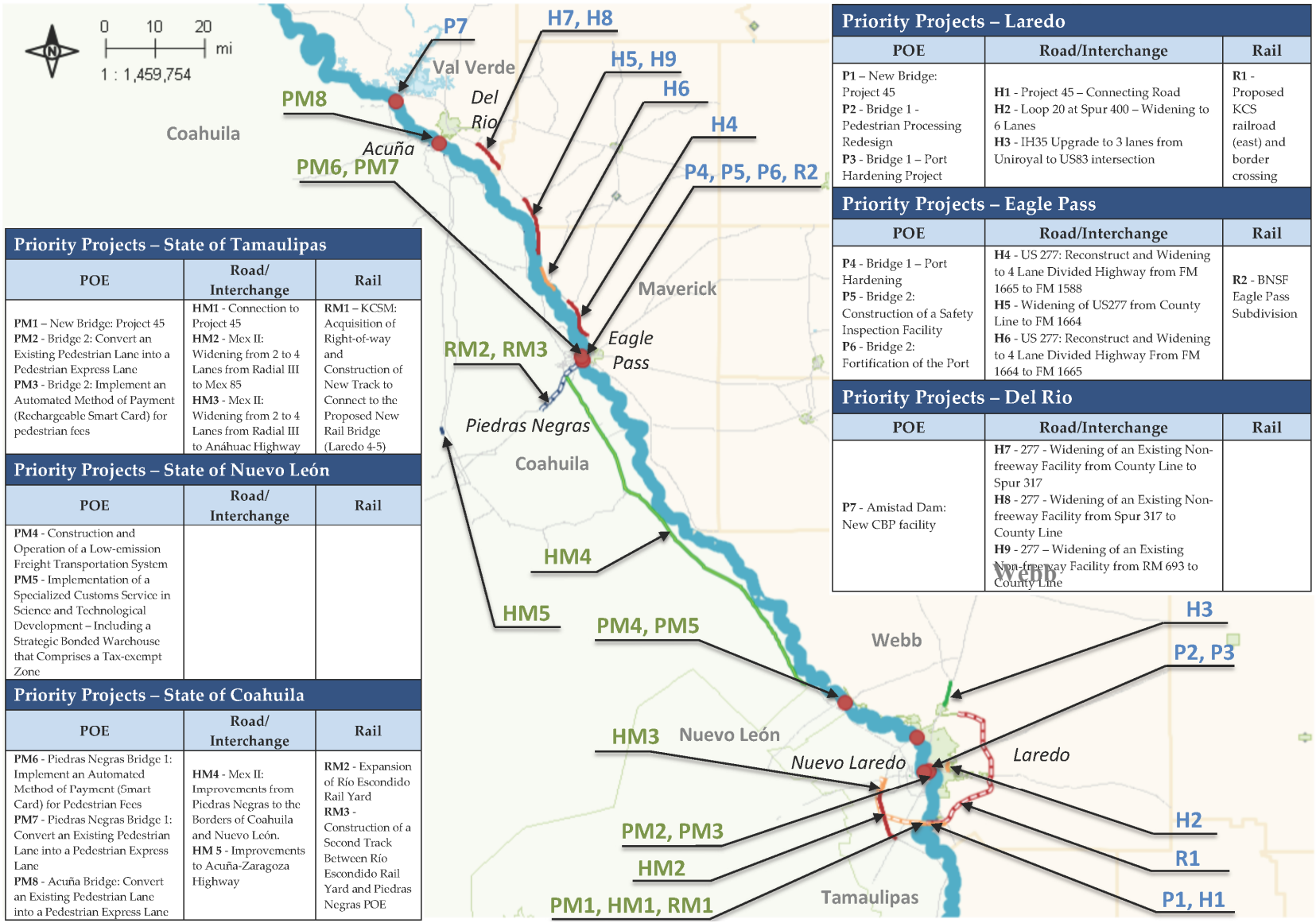
- Population and total employment in Laredo-Coahuila/Nuevo León/Tamaulipas is anticipated to increase by approximately 20% and 38%, respectively in the next 20 years. From 2000 to 2010, the Laredo – Coahuila/Nuevo León/Tamaulipas study area accounted, on an average, for 27% of pedestrian, 27% of passenger only vehicle (POVs), 50% of bus, and 53% of truck traffic that crossed into the U.S from Mexico on the Texas-Mexico border. In the case of traffic that crossed into Mexico from the U.S. on the Texas-Mexico border, the three POEs accounted, on average, for 28% of pedestrians, 30% of POVs, and 63% of truck traffic from 2000 to 2010. Rail imports and exports through the study area accounted for on average 70% of train traffic, 78% of loaded container traffic, and 60% of empty container traffic from 2000 to 2010 between U.S. and Mexico.

- 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 U.S. 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, respectively. These evaluation processes range from qualitative assessments to detailed quantitative studies (e.g., feasibility studies and cost benefit analysis).
- Planning horizons for POE and transportation infrastructure projects differ. POE project planning has a seven year planning horizon, while the planning horizon for transportation infrastructure is typically longer (e.g., 20 years) in the U.S. In Mexico, planning horizons are shorter and typically correspond to presidential (e.g., 6 years), gubernatorial (e.g., 6 years) or mayoral mandates (e.g., 3 or 4 years).
- Collaboration and communication is critical to ensure coordinated project implementation. However, staff turnover, budget schedules, and bureaucratic processes have impacted 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 both POEs and the transportation infrastructure serving those POEs.
- A review of existing transportation infrastructure and current and projected traffic volumes in the study area shows that overall road level of service varied significantly in the U.S border cities. Vehicle traffic through Laredo surpassed that of Eagle Pass and Del Rio and is projected by TXDOT to grow by an average 3% each year. If this growth rate materializes, the majority of the major highways and arterials serving POE traffic in Laredo will be congested with associated low speed stop-and-go traffic by 2035. The issue of congestion will be aggravated by scarce land resources for roadway expansion. On the other hand, the road infrastructure in Eagle Pass and Del Rio will have excess capacity after accommodating the expected 2% annual traffic growth rate in these areas by 2035. The road infrastructure corridors in Eagle Pass and Del Rio can thus serve as alternatives for the traffic between the U.S and Mexico traversing Laredo.

## Priority POE and Transportation Facilities

On the U.S. side, 14 planned POE projects, 88 planned road and interchange projects, and three planned rail projects were identified. On the Mexican side, 37 planned POE projects, 44 planned road and interchange projects, and five planned rail projects were identified. Projects from the U.S. were ranked separately from that of Mexico because of the limited data that was provided for Mexican projects. The prioritization/ ranking of both countries' projects together would have resulted in most of the Mexican projects receiving a lower priority/rank. Each country's projects were thus prioritized/ ranked separately. Projects were then ranked by type – POE, road and interchange, and rail projects.

On the U.S. side, the project priorities are presented by major cities (i.e., Laredo, Eagle Pass, and Del Rio) and on the Mexican side, the project priorities are presented by Mexican states (i.e., Tamaulipas, Nuevo León, and Coahuila). The locations of the planned projects - for which adequate location information were obtained - are illustrated in maps in the final report by planning horizon (i.e., 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 major U.S. City and Mexican state are shown in Figure ES2. These projects are briefly described in this Executive Summary.




**Priority Projects – State of Tamaulipas**

| POE | Road/ Interchange | Rail |
|---|---|---|
| **PM1** – New Bridge: Project 45<br>**PM2** - Bridge 2: Convert an Existing Pedestrian Lane into a Pedestrian Express Lane<br>**PM3** - Bridge 2: Implement an Automated Method of Payment (Rechargeable Smart Card) for pedestrian fees | **HM1** - Connection to Project 45<br>**HM2** - Mex II: Widening from 2 to 4 Lanes from Radial III to Mex 85<br>**HM3** - Mex II: Widening from 2 to 4 Lanes from Radial III to Anáhuac Highway | **RM1** – KCSM: Acquisition of Right-of-way and Construction of New Track to Connect to the Proposed New Rail Bridge (Laredo 4-5) |

**Priority Projects – State of Nuevo León**

| POE | Road/ Interchange | Rail |
|---|---|---|
| **PM4** - Construction and Operation of a Low-emission Freight Transportation System<br>**PM5** - Implementation of a Specialized Customs Service in Science and Technological Development – Including a Strategic Bonded Warehouse that Comprises a Tax-exempt Zone | | |

**Priority Projects – State of Coahuila**

| POE | Road/ Interchange | Rail |
|---|---|---|
| **PM6** - Piedras Negras Bridge 1: Implement an Automated Method of Payment (Smart Card) for Pedestrian Fees<br>**PM7** - Piedras Negras Bridge 1: Convert an Existing Pedestrian Lane into a Pedestrian Express Lane<br>**PM8** - Acuña Bridge: Convert an Existing Pedestrian Lane into a Pedestrian Express Lane | **HM4** - Mex II: Improvements from Piedras Negras to the Borders of Coahuila and Nuevo León.<br>**HM 5** - Improvements to Acuña-Zaragoza Highway | **RM2** - Expansion of Río Escondido Rail Yard<br>**RM3** - Construction of a Second Track Between Río Escondido Rail Yard and Piedras Negras POE |

**Priority Projects – Laredo**

| POE | Road/Interchange | Rail |
|---|---|---|
| **P1** – New Bridge: Project 45<br>**P2** - Bridge 1 - Pedestrian Processing Redesign<br>**P3** - Bridge 1 – Port Hardening Project | **H1** - Project 45 – Connecting Road<br>**H2** - Loop 20 at Spur 400 – Widening to 6 Lanes<br>**H3** - IH35 Upgrade to 3 lanes from Uniroyal to US83 intersection | **R1** - Proposed KCS railroad (east) and border crossing |

**Priority Projects – Eagle Pass**

| POE | Road/Interchange | Rail |
|---|---|---|
| **P4** - Bridge 1 – Port Hardening<br>**P5** - Bridge 2: Construction of a Safety Inspection Facility<br>**P6** - Bridge 2: Fortification of the Port | **H4** - US 277: Reconstruct and Widening to 4 Lane Divided Highway from FM 1665 to FM 1588<br>**H5** - Widening of US277 from County Line to FM 1664<br>**H6** - US 277: Reconstruct and Widening to 4 Lane Divided Highway From FM 1664 to FM 1665 | **R2** - BNSF Eagle Pass Subdivision |

**Priority Projects – Del Rio**

| POE | Road/Interchange | Rail |
|---|---|---|
| **P7** - Amistad Dam: New CBP facility | **H7** - 277 - Widening of an Existing Non-freeway Facility from County Line to Spur 317<br>**H8** - 277 - Widening of an Existing Non-freeway Facility from Spur 317 to County Line<br>**H9** - 277 – Widening of an Existing Non-freeway Facility from RM 693 to County Line | |

*Figure ES2: Priority Projects—U.S.-Mexico*

***Laredo Projects***

Laredo POE Projects

Planned POE projects were identified for the Gateway to the Americas Bridge, Juárez-Lincoln Bridge, World Trade Bridge, and the Laredo-Colombia Solidarity Bridge. In addition, a new crossing (i.e., Project 4-5) was identified south-east of Laredo.

As shown in Figure ES2, the highest ranked U.S. POE project in the study area was Project 4-5 (*P1*). The information provided to the study team showed that Project 4-5 will result in a shorter and less congested corridor between Mex-85 and the major U.S. highways: IH-35 and US-83. In addition to the large number of booths – i.e., 23 that will eventually be constructed – the promoters also plan to build FAST lanes to accelerate cross-border truck processing. Finally, it is anticipated that the project will facilitate development of nearby communities on the U.S. side, which will translate into economic and social benefits for the region. By 2035, it is estimated that more than 7,000 trucks will cross the bridge daily. In addition, 11,900 POVs and 5,600 pedestrians are expected to cross the bridge by 2035. Finally, the promoters have argued that Project 4-5 will divert hazardous material from the city center to the outskirts of Laredo assuming the necessary permit approvals.

Two other POE projects that ranked high in the Laredo area are the conversion of eight temporary pedestrian booths at the Gateway to the Americas Bridge to eight permanent booths (*P2*) and a new bus processing facility at the Juárez-Lincoln Bridge (*P3*).

Laredo Road and Interchange Projects

Of the 88 planned road and interchange projects identified in the U.S., 66 were in Laredo (Webb County). The highest ranked road project in Laredo is the access road that connects US-83 with the planned Project 4-5 (*H1*). The road will be a 2.6 mile four lane divided highway (i.e., two lanes in each direction) with four lanes of access road (i.e., 2 lanes in each direction). Four new access lanes on US 83 connecting to this new road are also planned. The current Average Annual Daily Traffic (AADT) of 13,900 on US 83 is projected to increase to 63,000 by 2035 with trucks representing 40% of the AADT. The road will also be used by hazardous material traffic and alleviate congestion in the central business district of Laredo.

Several planned road improvements on various sections of Loop 20 and IH-34 also ranked high. Planned improvements include increasing the number of lanes, widening of several road sections, and construction of overpasses, ramps and rail grade crossings. These improvements are expected to meet the forecasted demand associated with the expected traffic growth and alleviate congestion.

Laredo Rail Projects

Three planned U.S. rail projects were identified in the study area, but only two were ranked because of limited data for the third rail project. The planned rail projects in Laredo are shown in Figure ES2. The proposed KCS rail project in Laredo ranked first (*R1*). This planned rail project comprises the construction of rail tracks from the UP Port Laredo yard to the KCSM Sanchez Yard (7.5 miles east of the Tex-Mex Laredo yard). The project comprises the building of 21 miles of rail track on the U.S. side, 15.75 miles on the Mexican side, and the construction of a rail crossing adjacent to the proposed bridge (Project 4-5). The

proponents of Project 4-5 and KCSR/KCSM discussed a joint border crossing at the Project 4-5 site to minimize infrastructure costs and to consolidate customs and security functions at one location. It is expected that the proposed rail project will divert traffic away from downtown Laredo and Nuevo Laredo, while retaining vital rail connections to the rail yards in both cities. A presidential permit application for the rail crossing was submitted by KCS on December 31, 2008. In the application it was stated that the East Loop Rail Bypass project would *"provide for additional rail capacity, enhance corridor safety, and improve the efficiency of cross-border rail crossings."*

### *Eagle Pass Projects*

Eagle Pass POE Projects

Three planned POE projects were identified in Eagle Pass (*P4, P5,* and *P6*). Two of the planned POE projects in Eagle Pass ranked among the top twelve POE priorities in the study area. The projects aim to enhance the safety of the POE facilities and to monitor commercial vehicles entering the U.S., respectively. The projects are not expected to provide additional infrastructure to increase throughput.

Eagle Pass Road and Interchange Projects

In total 18 planned road and interchange projects that serve the Eagle Pass POEs were identified. The reconstruction and widening of a section of US 277 is the highest ranked U.S. road and interchange project in Eagle Pass and the fifth highest ranked U.S. road and interchange project in the study area. Furthermore, ten of the 18 planned road and interchange projects in Eagle Pass pertain to US 277. These projects involve the reconstruction and widening of sections of the highway from a two lane divided highway to a four lane divided highway, and the restoration and addition of passing lanes (*H4 to H6*).

Eagle Pass Rail Project

The planned rail project in Eagle Pass was ranked second out of the three U.S. rail projects (*R2*) identified. The project includes double-tracking segments between the BNSF and UP sidings and between the UP siding and the rail tracks in the vicinity of the bridge to Piedras Negras. The planned project will also provide additional sidings where stopped rail traffic can be inspected by U.S. Customs and Border Protection, thereby allowing through traffic to pass unhindered on the existing track.

### *Del Rio Projects*

Del Rio POE Projects

Two planned POE projects were identified in Del Rio, but a lack of information prevented the study team from ranking the proposed new bridge. The new CBP facility (*P7*) – that will replace the current outdated facility - at the Lake Amistad Dam crossing ranked first in Del Rio and 6th out of the 14 U.S. POE projects identified in the study area.

Del Rio Road and Interchange Projects

In total, five planned road and interchange projects were identified in Del Rio. All five the projects involved the widening of several sections of US 277 from two to four lanes (*H7* to *H9*). The resultant increase in capacity will allow US 277 to maintain its LOS A through 2035 assuming a 2% annual traffic growth rate for the corridor.

Del Rio Rail Projects

No planned rail projects were identified for Del Rio.

***Tamaulipas Projects***

Tamaulipas POE Projects

The Tamaulipas POEs facilitate a very large percentage of the total number of crossings in the study area. Planned POE projects were identified for the Gateway to the Americas Bridge, Juárez-Lincoln Bridge, and the World Trade Bridge. In addition, a new planned crossing (i.e., Project 4-5) was also identified to the east of Nuevo Laredo.

Project 4-5 (*PM1*) is the highest ranked Mexican POE project – as is its U.S. Project 4-5 counterpart – in the study area. The proposed bridge will connect Mex 85 to US-83 and the Cuatro Vientos Beltway on the U.S. side. In addition to the large number of booths – i.e., 32 booths on the Mexican side are planned in Phase 1 – the promoters also plan to include FAST, SENTRI, and HOV lanes in the new bridge's design. The large number of booths is expected to expedite the processing of commercial vehicles, passenger vehicles, bicycles and motorcycles, and pedestrians. The promoters are currently conducting a feasibility study that is partially funded by a Federal Government (SCT) allocation of $1.2 million. In terms of the schedule, the promoters would be ready to start the bridge's construction in November 2012 and begin operations in 2015. However, the project needs a Presidential Permit and other binational negotiations are still pending.

Two other Tamaulipas POE projects also ranked among the top 10 Mexican POE projects planned in the study area. The first project would convert an existing pedestrian lane at the Gateway to the Americas Bridge into an express lane (*P2*). The project ranked 6th and is expected to significantly reduce pedestrian crossing times. The second project ranked 7.5th and would implement "intelligent or smart" card technology to automatically charge pedestrian tolls at the Gateway to the Americas Bridge (*P3*). The implementation of this technology is also expected to significantly reduce pedestrian crossing times.

Tamaulipas Road and Interchange Projects

Eight of the top 10 ranked Mexican road and interchange project priorities in the study area are in the State of Tamaulipas. The highest ranked Mexican road project in Tamaulipas and the study area is the planned access road (*HM1*) that will connect Mex 85 with the proposed new bridge (Project 4-5).

In addition, two other road and interchange projects in Tamaulipas were ranked 2nd and 3rd out of the 44 Mexican road and interchange projects identified in the study area. These two projects entail capacity improvements (i.e., road widening and increasing the number of lanes) on Mex II (*HM2* and *HM3*). These projects will decrease congestion and improve the

LOS on Mex II between Nuevo Laredo and Monterrey - a major commercial center in Mexico.

Tamaulipas Rail Projects

Five rail projects were identified in the study area in Mexico. Two of the rail projects are in the State of Tamaulipas – specifically Nuevo Laredo. However, only one of the two rail projects was ranked. The ranked project involves the acquisition of right-of-way and the construction of new track (*RM1*) to connect to the proposed new rail bridge (Project 4-5).

***Nuevo León Projects***

Nuevo León POE Projects

A number of planned POE projects that is expected to enhance U.S.-Mexico trade crossings at the Laredo-Colombia Solidarity Bridge were identified. The data provided; however, only allowed for the ranking of two of the identified projects.
The construction and operation of a low-emission freight transportation system (*PM4*) was the highest ranked POE project in Nuevo León. This project also ranked 7.5th out of the 37 planned Mexican POE projects identified in the study area. The second ranked POE project in Nuevo León and the 10th ranked Mexican POE project identified in the study area is the implementation of specialized customs services and the construction of a Strategic Bonded Warehouse (Recinto Fiscalizado Estratégico) – *PM5*. The Bonded Warehouse will provide shippers with access to handling, storage, assembling, repair, manufacturing, exhibition, distribution, and sales services. It is believed that this project will enhance socio-economic development in the region.

Nuevo León Road and Interchange Projects

Two planned road and interchange projects were identified in the study area in Nuevo León. The first involves widening of the Sabinas-Colombia highway and the second involves providing an access road from La Gloria to the Laredo-Colombia Solidarity Bridge. None of the identified projects could; however, be ranked because of insufficient data.

Nuevo León Rail Projects

One rail project was identified in the State of Nuevo León. It involves the construction of approximately 35 miles of railroad track from Camarón Station to Colombia (i.e., Colombia Branch Line), development of the Camarón Station, and the implementation of the Colombia-Webb Intermodal Freight Terminal. A lack of data; however, prevented the study team from ranking the project.

***Coahuila Projects***

Coahuila POE Projects

In total 17 planned POE projects were identified for the Piedras Negras, Acuña, and Amistad Dam crossings. Of the 17 planned POE projects only five were ranked. Several of

the highest ranked Mexican POE projects in the study area are in the State of Coahuila. Three of the top 10 Mexican POE projects pertain to Eagle Pass Bridge I and two of the top 10 Mexican POE projects pertain to the Del Rio – Ciudad Acuña International Bridge.
The highest ranked POE project in the State of Coahuila is the implementation of an automated method of payment (i.e., rechargeable smart card) for pedestrian fees (*PM6*). It is believed that the use of rechargeable smart cards will expedite the crossing process and thereby reduce crossing times. In addition, the planned conversion of an existing pedestrian lane into a pedestrian express lane (*PM7*) will further reduce crossing times and enhance the efficiency of pedestrian crossings.

*PM8*, which ranked 3rd out of the 37 planned Mexican POE projects identified in the study area, involves the implementation of an automated method of payment for pedestrian fees at the Del Rio-Ciudad Acuña Bridge.

Coahuila Road and Interchange Projects

Twenty planned road and interchange projects that serve the Piedras Negras, Acuña, and Presa La Amistad POEs were identified in the study area. Only two of these planned projects could; however, be ranked given the data that were provided to the study team. The highest ranked road and interchange project in the State of Coahuila is the improvements to a section of Mex II between Piedras Negras and the Nuevo León-Coahuila border (*HM4*). These improvements will enhance connectivity to the POE and reduce congestion associated with POV and commercial traffic. The latter would translate into an improved LOS on this section of road. The second highest ranked road and interchange project in the State of Coahuila (ranked 9th out of the 44 Mexican road and interchange projects identified) is the improvements to the Acuña-Zaragoza Highway (*HM5*). This project will improve the LOS on the highway and increase access to major commercial centers such as, Saltillo, Monclova, and Monterrey.

Coahuila Rail Projects

Two rail projects were identified in the study area in the State of Coahuila. Both projects serve the Piedras Negras POE. The first project *(RM2)* comprises the widening/ expansion of the Río Escondido rail yard from seven to 15 rail tracks. This project is the 2nd highest ranked Mexican rail project in the study area. This project will almost triple the number of rail cars that can be handled, thereby improving the efficiency of rail operations in the region. The 3rd highest ranked Mexican rail project – *RM3* – comprises the construction of a second rail track between the Río Escondido Rail Yard and the Piedras Negras POE. This project will increase the number of rail cars that can be moved in the corridor, thereby also improving the efficiency of rail operations in the area.

## Institutionalizing the Dialogue

It is recommended that Border Master Plans be updated periodically to keep the content and inventories current and to ensure that these documents continue to represent the region's vision and goals. However, it is recommended that the Border Master Plans be updated only given 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 initiatives have emerged since the Border Master Plan was developed. 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 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 of the Border Master Plan. Similarly, the PAC will determine the need for a comprehensive update to the plan. The latter would involve revisiting the forecasted year, the geographic boundaries of the study area, the socio-economic data, cross-border travel demand changes, and re-visiting the criteria that were used to prioritize projects. Finally, it is recommended that a representative of the PAC make regular informative presentations to the JWC regarding the need to update the existing Border Master Plan or progress with the updates of the Border Master Plan.

## Recommendations for Border Master Plan Development and Updates

The study team offers the following observations and recommendations for consideration in the development of future Border Master Plans and updates of Border Master Plans:

- A number of U.S. States on the southern border are investing in the development of Border Master Plans. To remain a viable planning tool, the development of these Border Master Plans has aimed to reflect the different region's needs, interests, and priorities. However, if the ultimate goal is to establish U.S.-Mexico project priorities, it is recommended that a similar – although not necessarily the same – approach be followed in the development of these Border Master Plans.
- Border Master Plans currently provide detailed inventories of planned project priorities in a study area. Two enhancements to the current scope of work should be considered: identify funding opportunities for high priority projects in the study area and development of technical tools to evaluate the potential impact of investments. The need for the former has been repeated by a number of stakeholders that participated in the development of the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan. Secondly, the feasibility of developing technical tools to determine how investment in a specific project would impact demand for other projects should be determined. For example, the implementation of some of the high priority projects identified could potentially reduce the need for or delay the need for implementing some of the other high priority projects. As currently conducted, Border Master Plans do not evaluate the impact of an investment in specific projects on the crossings or traffic in the region.
- Ensure participation by actively reaching out to stakeholders, keeping stakeholders engaged in the development of Border Master Plans, ensuring a process where every stakeholder has an equal voice in the selection of the criteria that will be used to prioritize projects, and by ensuring that all reports and information disseminated are available in English and Spanish. Ultimately; however, continued support for the development of the Border Master Plans will only prevail if results can be demonstrated – i.e., the securing of funding and the implementation of the identified high priority projects.

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# Chapter 1. Introduction

Border Master Plans, as defined and supported by the U.S./Mexico Joint Working Committee[1] on Transportation Planning and Programming, the Federal Highway Administration, and the U.S. Department of State, are comprehensive long range plans[2] to inventory transportation and port of entry (POE) infrastructure that facilitate trade, and prioritize planned transportation and POE projects within a defined study area. The Border Master Plans represent binational stakeholder efforts to (*i*) prioritize and promote POE and related transportation projects; (*ii*) inform decision-making; (*iii*) allocate limited funding sources, and (*iv*) ensure continued dialogue 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 Government of Mexico in the Bilateral Action Plan of the U.S. - Mexico Executive Steering Committee (ESC) on 21st Century Border Management. The latter specifically supports the development of the following Plans: (*i*) completion of the Laredo-Coahuila/Nuevo León/Tamaulipas Plan; (*ii*) initiation of the Arizona-Sonora Plan and the Lower Rio Grande Valley-Tamaulipas Plan, and (*iii*) the update of the California-Baja California Plan. To remain a viable planning tool, these Border Master Plans reflect each region's needs, interests, and priorities. Border Master Plans are to be updated and amended periodically to keep the contents and inventories current, and to continue to represent the region's vision and goals.

## 1.1 Purpose of Study

The Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan (Border Master Plan) is the second Border Master Plan on the U.S.-Mexico border and followed a similar approach as the California-Baja California Border Master Plan that was completed in September 2008 and is currently being updated. Similar to the California-Baja California Border Master Plan, the objectives of this Border Master Plan were to:

- design a stakeholder agency involvement process that will be inclusive and ensure the participation of all involved in POE projects and the transportation infrastructure serving those POEs;
- increase the understanding of the POE and transportation planning processes on both sides of the border;
- 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; and

[1] The U.S./Mexico Joint Working Committee (JWC) is a binational group whose primary focus is to cooperate on land transportation planning and the facilitation of efficient, safe, and economic cross-border transportation movements. In addition to other agencies, the group is comprised of transportation professionals from the Federal Highway Administration (FHWA) and the Mexican Secretariat of Communications and Transportation (SCT).

[2] It should be noted that the Border Master Plans have been largely infrastructure plans and therefore have not considered operational improvements, such as an increase in POE staffing levels, which is ultimately a major factor in the capacity of POEs.

- establish a process to ensure continued 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.

## 1.2 Decision-Making Structure

Similar to the California-Baja California 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 mandate of the PAC members were to review the study objectives, evaluate the proposed work plan, define the study area, facilitate discussions to resolve issues or concerns, designate the TWG members, endorse the prioritization criteria, weights, and scores used by the study team to prioritize individual projects, and approve the Border Master Plan document.

The mandate of the TWG members was to provide the study team with data on existing and planned transportation facilities serving POEs and the POEs in the study area, to verify the collected information[3], to participate in a workshop to select the criteria, scores, and weights that will be used to prioritize individual projects, and to 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.

Memberships of the PAC and TWG were limited to government agencies and rail companies whose mandate or objectives encompass 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 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 criteria categories, category weights, criteria, criteria weights, and scoring metrics that were 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 (*i*) determine their level of support for the Border Master Plan; (*ii*) address any issues or concerns; (*iii*) anticipate commitment to, and involvement in the development of the Border Master Plan, including the allocation of staff resources; (*iv*) examine the feasibility of using a similar approach as the California-Baja California Border Master Plan; (*v*) determine if any key stakeholders have been omitted, and (*vi*) establish an appropriate communications protocol and methodology for sharing information.

The purpose of Phase I was to determine whether there is sufficient stakeholder support to develop the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan. Table 1.1 provides

[3] The Center for Transportation Research's study team performed no separate feasibility studies for each submitted project proposal.

a summary of the verbalized support expressed by the stakeholder agencies and rail companies contacted by January 25, 2010 – i.e., 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 requested to be removed from the contact list, thereby indicating their refusal to participate in the development of the Border Master Plan.

**Table 1.1: Verbalized Stakeholder Support – Phase I**

| Stakeholders | Expressed Support |
|---|---|
| U.S. - Federal | 75% |
| U.S. - Local | 93% |
| Mexico - Federal | 62% |
| Mexico - Coahuila | 55% |
| Mexico - Nuevo León | 92% |
| Mexico - Tamaulipas | 60% |
| Rail Stakeholders | 100% |

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

- two stakeholder meetings to review the objectives of the study, address any issues or concerns raised in Phase I, and reach agreement on the scope of work and terms and concepts adopted;
- data collection and the development of a detailed inventory on existing and planned transportation facilities serving POEs and the POEs in the study area;
- two stakeholder meetings to review data collected and verify planned project information;
- stakeholder workshop and meeting to reach consensus on the criteria, scores, and weights that will be used to prioritize individual projects;
- prioritization and ranking of planned POE and transportation infrastructure projects using the agreed upon prioritization criteria, scores, and weights, and
- development and approval of the Border Master Plan document.

Phase II of the study took approximately 20 months. Appendix C provides a copy of the study team's work plan.

### 1.3.1 Stakeholder Participation

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

- *First Stakeholder Meeting* in Laredo, Texas on April 23, 2010. At the first stakeholder meeting, the Joint Working Committee's vision for the development of Border Master Plans and the work plan and outcome of the California/Baja California Border Master Plan was shared with attending stakeholders. The study team also presented the work plan for the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan and reviewed the comments and suggestions of the stakeholders interviewed during Phase I. The study team answered the remaining 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 the provided forms to assign the TWG members (see Appendix A for a copy of the form that was provided to attending stakeholders).
- *First TWG Meeting* in Laredo, Texas on July 28, 2010. At the first TWG meeting the study team reviewed the outcome of the first stakeholder meeting with attendees and provided attendees with 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. stakeholders reviewed the identified U.S. projects and outstanding data needs and Mexican stakeholders reviewed the identified Mexican projects and outstanding data. The study team secured commitment from the attending stakeholders to provide the study team with the missing data.
- *Second TWG Meeting* in Eagle Pass, Texas on December 1, 2010. At the second TWG meeting, the study team reviewed the U.S. and Mexico planning processes for border transportation infrastructure – both POE and supporting transportation facilities serving the POEs. During lunch, the study team reviewed the ranking processes and the criteria that were used in the Binational Transportation Border Infrastructure Needs Assessment Study (BINS) and the California-Baja California Border Master Plan, among other studies that were identified during the literature review. The study team also reviewed in detail the prioritization framework that were proposed for the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan and invited attendees to provide the study team with suggestions for prioritization criteria prior to the next TWG workshop. Attendees were divided into two breakout sessions after lunch. U.S. stakeholders reviewed the identified U.S. projects, the collected data, and missing data. The Mexican stakeholders reviewed the identified Mexican projects, the collected data, and the missing information. 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.
- *Second PAC Meeting* in Del Rio, Texas on February 3, 2011. At the second PAC meeting, the study team reviewed the Border Master Plan's objectives and reported

on the study team's progress to date on the work plan tasks. Specifically, the study team made a detailed presentation on the U.S. and Mexico planning processes for border transportation infrastructure and the data collected thus far. Finally, the study team reviewed the framework that would be used subsequently for project prioritization.

- *Third TWG Meeting* in Laredo, Texas on March 9 and 10, 2011. The meeting started with a review of the Border Master Plan's objectives and the proposed prioritization framework. The third TWG meeting was an intense two-day meeting during which stakeholders reached consensus on the criteria categories, category weights, criteria, criteria weights, and the scoring metrics to be used by the study team in prioritizing the identified planned projects.
- *Third PAC Meeting* in Eagle Pass, Texas on May 24, 2011. At the third PAC meeting, the study team reviewed the outcome of the third TWG meeting with attending stakeholders. Specifically, the study team reviewed the criteria categories, the category weights, the criteria, and criteria weights that the TWG members recommended for project prioritization. After some discussion, changes were made to the proposed safety criteria that would be used for POE project prioritization. The PAC members subsequently endorsed the categories, category weights, modified criteria, and criteria weights to be used by the study team for prioritizing the planned road and interchange, rail, and POE projects.
- *Fourth PAC Meeting* in Laredo, Texas on April 25, 2012. At the fourth PAC meeting, the study ream reviewed the outcome of the study and requested the endorsement of the Border Master Plan.

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

### 1.3.2 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 in-person meetings with stakeholders. The TWG members were repeatedly reminded of the outstanding information and the study team officially requested the outstanding technical data during in-person visits and through written communications and follow-up e-mails and telephone calls. On August 19, 2011, the Executive Director of TxDOT, Mr. Amadeo Saenz, in a last call for information, sent an official letter to all participating stakeholders requesting that all outstanding information be submitted to the study team by September 2, 2011.

Specifically, the data used for the development of the socio-economic and demographic profiles of the study area were obtained from the following Mexican federal agencies: *Consejo Nacional de Población*, *Instituto Nacional de Estadística y Geografía*, and *Comisión Nacional de los Salarios Mínimos.* In the case of Texas, the data used for the development of the socio-economic and demographic profiles of the study area were obtained from the Texas State Data Center and Office of the State Demographer, the Texas Department of State Health Services, the United States Census Bureau, the United States Bureau of Labor Statistics, the United States Bureau of Economic Analysis, the Federal Reserve Bank of Dallas, the Real Estate Center at

Texas A&M University, the American Council on Capital Formation, and the National Association of Manufacturers, and the National Agricultural Statistics Service.

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, consultancy 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 the study team collected similar descriptive and performance data for 2008 and used the TxDOT Average Annual Daily Traffic (AADT) growth rates to estimate facility usage and the Level of Service (LOS) by 2035. Specifically, the study team collected information about the location of the roads, lengths, number of lanes, AADT, and share of truck traffic. Current and anticipated LOS were calculated using methods defined by the *Highway Capacity Manual* and data provided by TxDOT or determined from analysis published in the *Laredo 2010-2035 Metropolitan Transportation Plan*. For the existing POEs, the study team developed a detailed inventory of the POEs, that included descriptions of the current facilities, hours of operation, crossing and transportation volumes by traffic type (i.e., pedestrians, trucks, trains, and buses), toll rates levied, and primary transportation facilities serving the POEs.

A list of planned POE and transportation infrastructure projects were obtained from various planning documents. 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 transportation facilities: project location, current facility and planned improvements, LOS, AADT before and after project completion (2035), accident rate, direct or indirect linkage to POE, truck volumes or share, year the project becomes operational, current phase of the project, cost data and funding status, and a qualitative assessment of the environmental, community, and economic benefits of the project. For planned rail projects, technical data collected include: project location, current facility and planned improvement, anticipated change in number and/or length of tracks, daily train traffic and number of cars before and after project completion (2035), accident rate, year the project becomes operational, current phase of the project, cost data and funding status, and a qualitative assessment of the environmental, community, and economic benefits of the project. For the planned POE projects, the study team collected the following technical data: project description, the 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 environmental, community, and economic benefits of the project.

Finally, the criteria endorsed by the PAC required the collection of additional data and information. For POE projects, additional data and information were needed to describe the planned projects: secure lanes, wait times, alleviate congestion locally and elsewhere, changes in modes served, land availability, diversion of hazmat, binational coordination, diversion of commercial traffic/ separation by traffic type, and modal diversion. For the road and interchange projects, the following additional data and information needed to be collected: alleviate congestion locally and elsewhere, multiple mode demand, land availability, diversion of hazmat,

and modal diversion. Finally, for rail projects, additional data and information were needed on: average travel speed, alleviates congestion locally, changes in modes served, multiple mode demand, land availability, diversion of hazmat, and modal diversion.

### 1.3.3 Reaching Consensus

Two of the objectives of the Border Master Plan were to (a) design a stakeholder agency involvement process that will be inclusive and ensure the participation of all involved in POE projects and the transportation infrastructure serving those POEs and (b) develop and implement a plan for prioritizing and promoting POE and related transportation projects, including the criteria that will be used to prioritize identified projects. The latter required the TWG members to reach consensus on the criteria, weights, and scores that would be used to prioritize the projects. To ensure an agency involvement process that is inclusive and ensure the participation of all involved, it was important that each TWG member had an equal voice/vote in selecting the criteria, weights, and scores. Equally important was creating an environment in which TWG members would feel comfortable in exercising their vote in a non-threatening environment. The study team used Classroom Performance System (CPS) technology – i.e., i>clickers – to reach consensus about the criteria and weights to be used in prioritizing the identified planned projects. The process worked as follows. The TWG members were provided with a voting device (i>clicker) that allowed them to rank the importance of 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 have 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 subsequently asked to vote again and the process continued until consensus was reached or until the voting results did not change from one round to the next. This approach allowed all attending TWG members to participate in the selection of the criteria and weights.

## 1.4 Definition of Study Area and Horizons

### 1.4.1 Study Area

The study area approved by the PAC on April 23, 2010, includes an "Area of Influence" and a "Focused Study Area." The "Area of Influence" is a geographic area 60 miles (or 100 km) north and south of the Texas-Coahuila/Nuevo León/Tamaulipas international border. In Texas, it includes the counties – all or partially – of Crockett, Dimmit, Duval, Edwards, Frio, Jim Hogg, Kinney, La Salle, Maverick, McMullen, Real, Sutton, Uvalde, Val Verde, Webb, Zapata and Zavala. On the Mexican side, it includes the municipalities – all or partially – of:

- Acuña, Allende, Guerrero, Hidalgo, Jiménez, Juárez, Morelos, Múzquiz, Nava, Piedras Negras, Sabinas, San Juan de Sabinas, Villa Unión and Zaragoza in Coahuila;
- Anáhuac, Lampasos de Naranjo, Parás, Sabinas Hidalgo, Vallecito and Villaldama in Nuevo León; and
- Guerrero and Nuevo Laredo in Tamaulipas.

Current and projected data on population, employment, land use, and income were obtained for the "Area of Influence."

The "Focused Study Area" is an area 25 miles north and south of the Texas-Coahuila/Nuevo León/Tamaulipas international border. The study area´s east and west boundaries are roughly limited by TxDOT's Laredo District (see Figure 1.1). The identified short-, mid-, and long-term POE and transportation priorities were limited to the planned transportation infrastructure projects in the "Focused Study Area."

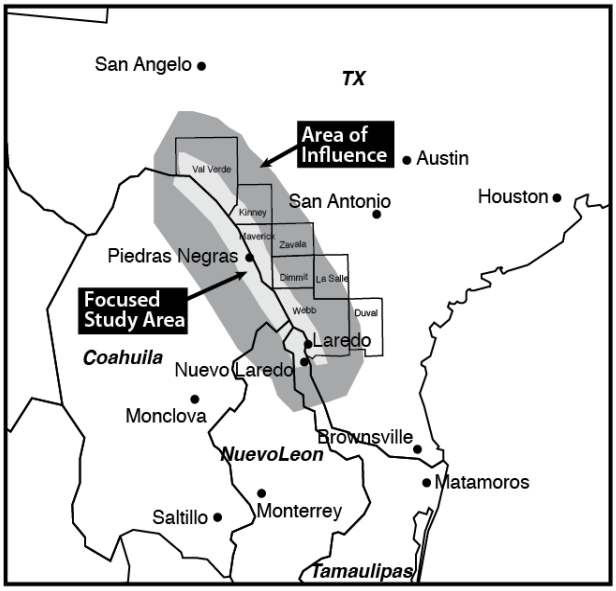



*Figure 1.1: Border Master Plan Study Area*

### 1.4.2 Planning Horizons

In the U.S., 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. The PAC discussed on April 23, 2010 the planning horizon for the Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan and approved

- 2035 as the horizon year for long-term planning;
- 2020 as the horizon year for medium-term planning; and
- 2013 as the horizon year for short-term planning.

## 1.5 Organization of the Report

Chapter 2 documents current planning practices followed by federal, state, regional, and local agencies to determine transportation and POE infrastructure needs and the establishment of priorities for project implementation. Chapter 3 provides an overview of the current and projected demographic and socio-economic information obtained for the Laredo–Coahuila/Nuevo León/Tamaulipas study area. The Chapter summarizes available population, employment, income, and land use data for the study are in Texas, Mexico, and for the binational study area. This Chapter also includes the salient information on major trade corridors that traverse the study area. Chapter 4 describes the current POEs of Laredo/Nuevo Laredo, Eagle Pass/Piedras Negras, and Del Rio/Acuña and the transportation infrastructure serving those POEs. Chapter 5 provides summarized information about the criteria that were used in

prioritizing the identified projects in the focused study area. The Chapter also lists the high priority POE, road and interchange, and rail projects identified by the study team and verified by the TWG members. Finally, Chapter 6 provides what the study team believes are the requirements for the development of successful Border Master Plans and recommendations to maintain and enhance 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.

# Chapter 2. State-of-the-Practice for Port-Of-Entry and Transportation Infrastructure Planning

This chapter documents current planning practices followed by federal, state, regional, and local agencies to determine transportation and port-of-entry (POE) infrastructure needs and the establishment of priorities for project implementation.

## 2.1 Transportation Infrastructure Planning Practices

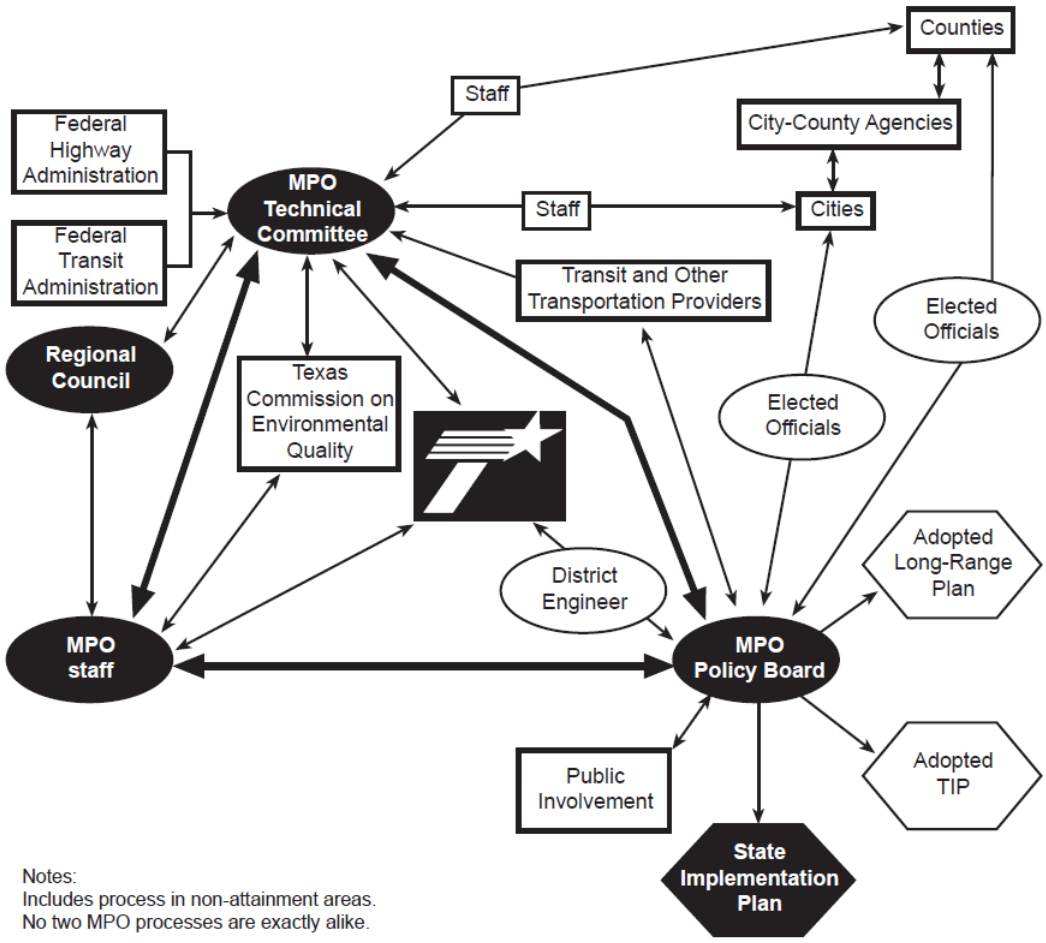
To better understand the current planning practices followed by federal, state, regional, and local agencies to determine transportation and POE infrastructure needs and priorities, planning documents were reviewed and data were obtained from consultancy reports, books, articles, and academic literature. In addition, telephone and in-person interviews were conducted with a number of Technical Working Group members.

### 2.1.1 United States

In the case of federal funding, the United States Department of Transportation (USDOT) relies on the Texas Department of Transportation (TxDOT), Federal Highway Administration (FHWA) division offices, and Metropolitan Planning Organizations (MPOs) to conduct transportation planning at the statewide, regional, and local levels. In the case of state funding, TxDOT acts on behalf of the Governor of Texas in matters relating to transportation plans.

*Participants in Transportation Infrastructure Planning*

Figure 2.1 provides a summary of the interaction between the entities involved in transportation infrastructure planning in Texas. The important participants in this overall process are TxDOT and the MPOs, especially in relation to publicly-funded transportation projects. Projects can be planned at the city, state, and county 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 the "on system." The jurisdictional boundaries of the MPO comprise the urbanized areas (established in an agreement between the MPO and the Governor) and the area that is expected to be urbanized during a 20-year forecast period.




Source: Harrison, 2002.

*Figure 2.1: Participants in Planning Process*

*Texas Department of Transportation*

As per 23 USC 135, in addition to working cooperatively with MPOs, TxDOT is required to document its transportation policy and project portfolio in several plans (see Table 2.1). Several of these transportation plans and documents consider changes in population, employment, and economic trends. The documents are briefly described in the following paragraphs.

Statewide Long-Range Transportation Plan

The Statewide Long-Range Transportation Plan (SLRTP) provides a 24-year planning framework to guide all collaborative efforts between TxDOT, local and regional decision-makers, and transportation stakeholders in reaching consensus on needed transportation projects and services (SRLTP, 2010). This plan provides an inventory of the state‘s transportation system and addresses the need for improvements to roadways, pedestrian and bicycle facilities, transit, freight and passenger rail, airports, water ports, pipelines, and Intelligent Transportation Systems (ITS) (SLRTP, 2010).

Strategic Plan

The Strategic Plan identifies challenges and provides a status report on infrastructure needs to aid TxDOT in improving as an agency. For example, the current 2011-2015 Strategic Plan establishes the development of an organizational structure and strategies to address future multimodal transportation needs in Texas as a primary goal.

Transportation Improvement Program

A Transportation Improvement Program is a short-term (i.e., approximately four years) capital improvement program of funded multi-modal transportation projects. TIPs are developed by local agencies in cooperation with state transportation agencies and are consistent with a rural long-range plan (i.e., statewide plan) or MPO long-range plan (i.e., Metropolitan Transportation Plan).

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is the state's four-year capital improvement program as reviewed and approved by the Texas Transportation Commission (TTC), the Federal Transit Administration (FTA), and the FHWA. The document includes both the MPO and Rural Transportation Improvement Programs (TIPs). The STIP also includes a financial plan that documents the availability of funding over the four year period given expected federal funding levels, forecasted state funding levels, innovative financing, and available transit funding.

Unified Transportation Program

The Unified Transportation Program (UTP) is TxDOT's 10-year program for transportation project development and construction. An annually updated UTP is adopted by the TTC. Annual updating allows TxDOT to revise the UTP as and when federal programs are better defined and also enables the UTP to be an integral part of the planning process.

Metropolitan Transportation Plans

Metropolitan Transportation Plans (MTPs) identify policies, programs, and projects by travel mode, including roadways, public transit, bicycle, pedestrian, air, rail, and freight facilities necessary to meet the region's transportation needs by 2035. For example, the Laredo Texas 2010-2035 Metropolitan Transportation Plan provides a guide and summary of transportation improvements and investments identified in the Laredo region for the next 25 years (Laredo MPO's MTP, 2010).

Texas Rail Plan

The TTC approved the Texas Rail Plan on November 18, 2010. The Texas Rail Plan addresses existing and future passenger and freight rail services in Texas through an inventory of existing rail infrastructure and by providing a long-range investment program for freight and passenger rail infrastructure. The plan also provides the state's policy, direction, and vision for rail in an effort to ensure compliance with federal and state regulations.

**Table 2.1: Summary of Texas´s Relevant Transportation Planning Documents**

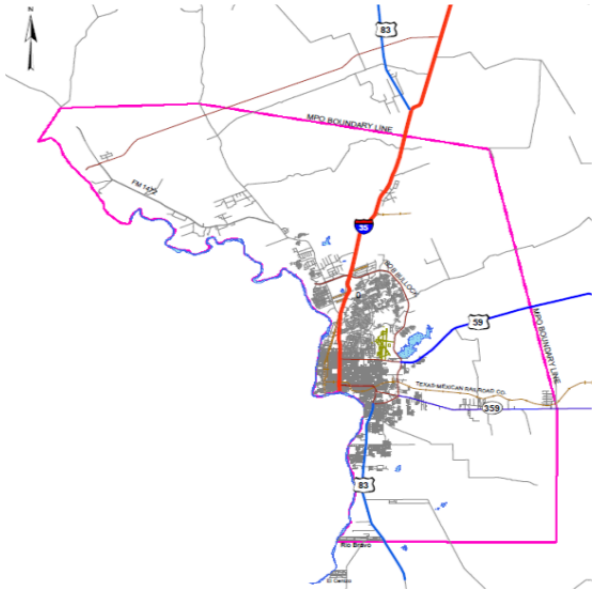
| Plan/Program | Who Develops? | Who Approves? | Time Period | Content | Update Cycle |
|---|---|---|---|---|---|
| **Statewide Long-Range Transportation Plan (SLRTP)** | TxDOT | Texas Transportation Commission | 24 years | Future goals, strategies, and performance measures | Every 4 years |
| **TxDOT Strategic Plan** | TxDOT | Texas Transportation Commission | 5 years | TxDOT´s operational goals and strategies | Every 2 years |
| **Statewide TIP** | TxDOT | US DOT | 4 years | Transportation investments | Every 2 years |
| **Unified Transportation Program (UTP)** | TxDOT | Texas Transportation Commission | Current year + 10 years | Projects to be funded/ built in a 10-year period | Annual |
| **Metropolitan Transportation Plan (MTP)** | MPO | MPO | 20 + years | Future goals, strategies, and projects | Every 5 years (every 4 years in Air Quality Non-Attainment Area) |
| **Transportation Improvement Programs (TIPs)** | MPO, TxDOT Districts | Governor/MPO | 4 years | Transportation investment (projects) | Every 2 years |
| **Corridor Studies (ie., I-35)** | TxDOT | Texas Transportation Commission | N/A | Benefit cost analysis and feasibility | As needed |
| **Texas Rail Plan** | TxDOT | Texas Transportation Commission | 5 y 20 years | Future goals and strategies | Every 5 years |
| **Texas Airport System Plan** | TxDOT | Texas Transportation Commission | 5, 10 y 20 years | Focus on general aviation needs | Annual |
| **Texas Port 2010-2011 Capital Plan** | Port Authority Advisory Committee | Texas Transportation Commission | 2 years | Goals, objectives and projects | Annual |
| **Texas Transit Statistics** | TxDOT | TxDOT | 1 year | Public transportation operation statistics | Annual |

Source: SRLTP, 2010.

*MPOs and the Laredo MPO*

MPOs vary greatly in organizational size, structure, funding levels, and program emphasis (Wolf, 2007). 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 fifty thousand 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 regards 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 designated by the governor in each state to implement this legislative requirement. As a result, the Laredo Urban Transportation Study was created as the MPO to provide for continuing, comprehensive transportation planning for the Laredo urban area (2005-2030 Metropolitan Transportation Plan, 2004).




Source: Laredo MPO, 2007.

*Figure 2.2: Laredo MPO's Boundary*

The Laredo MPO derives its authority from 23 United States Code 134. Transportation planning is conducted by the planning staff of the Laredo Urban Transportation Study (LUTS as the MPO) in cooperation with TxDOT (Laredo MPO, 2011). The MPO is governed by a Policy Committee whose responsibility it is to review and make decisions regarding transportation planning efforts in the Laredo metropolitan area. The Committee is chaired by the Mayor of the City of Laredo and includes as voting members: the mayor, three Laredo City Council members, the Webb County Judge, two County Commissioners, the TxDOT Laredo District Engineer, and the Director of the Transportation Planning Department. The MPO Technical Review Committee comprises of twenty two members who represent the City of Laredo, Webb County, Area Agencies, the State through TxDOT, the FHWA, the school system, and the private sector (Laredo MPO, 2011).

In addition, as required by federal legislation, the Laredo MPO must provide the public and interested parties with reasonable and meaningful opportunities to be involved in the transportation planning process. The Laredo MPO's rules concerning public participation were last published in 2004 and meetings are conducted in accordance with the Texas Open Meetings Act.

The Laredo MPO produces a MTP that is updated every five years. The current 2010-2035 MTP is a comprehensive, multimodal, and coordinated transportation plan for the Laredo metropolitan area. The MTP seeks to promote strategies for operating, maintaining, managing, building, and financing the transportation network to advance the region's long term goals and overall quality of life.

*Non-MPO Areas*

Besides the area that falls under the Laredo MPO's jurisdiction, the remaining Texas area of the Border Master Plan's Focused Study Area is considered "non-MPO area." For this area, TxDOT's Transportation Planning and Programming Division (TPP) cooperate with TxDOT Laredo District staff to address rural transportation planning. TPP works with the District Study

Office personnel to ensure an effective rural transportation planning process. Guidance to the District staff and District Study Office personnel is provided through the Texas Administrative Code (TAC) Sections 15.1 through 15.8 and applicable federal regulations (TxDOT, 2001).

District Responsibilities

The districts prepare rural TIPs, which address area needs within the district boundaries. The rural TIP is not defined in 23 CFR 450. However, the rural TIP has to comply with the requirements of 23 CFR 450 for a STIP. TAC Sections 15.7(b)(2) and (m)(2) define the rural TIP requirements and the rural public involvement process, respectively.

TPP Responsibilities

TPP has been charged by the TTC and TxDOT´s Executive Director to ensure that the transportation planning activities required by state and federal regulations are conducted. TPP is responsible for preparing and coordinating changes to TAC Section 15.1 through 15.8 that deal with transportation planning requirements.

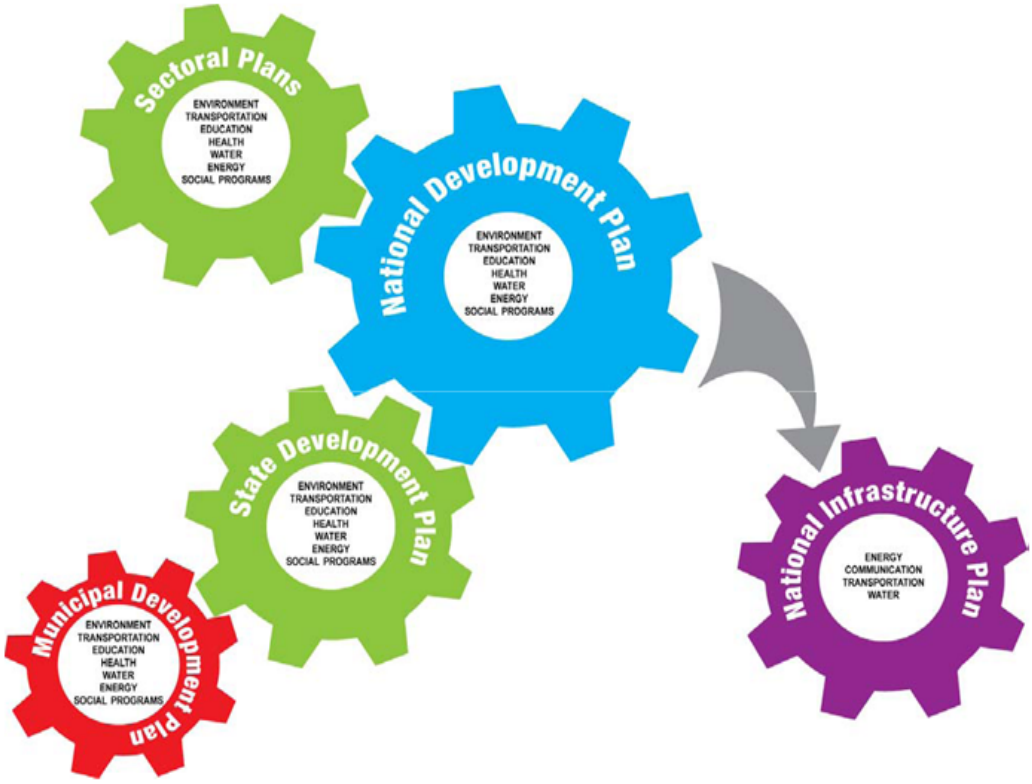
### 2.1.2 Mexico

Mexico has legislative concurrence in transportation issues; therefore, transportation project planning, financing, and implementation may be regulated by federal, state, and municipal legislation. In terms of planning documents, the National Development Plan (Plan Nacional de Desarrollo) is Mexico's most important planning 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 updated *per se* every six years, but rather is dramatically changed to satisfy each president's agenda. No specific format is thus established for this document and some National Development Plans thus *de facto* have a longer planning horizon than others.

President Calderón's National Development Plan focused on the rule of law, economic growth, climate change, enhanced competitiveness, and addressing 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.

Second, sectorial plans or programs adopt and elaborate the National Development Plan's goals and commitment in a specific sector. 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 17,438 km of the national highway network and rural roads, which include 100 high priority road projects. The latter would increase the federal network by 72 to 90% (Rodríguez, 2008). By 2012, the 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. As the presidential and governor 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 the mayor´s term). Figure 2.3 describes the interaction between Mexico's most relevant planning documents.




Source: Center for Transportation Research, 2010.

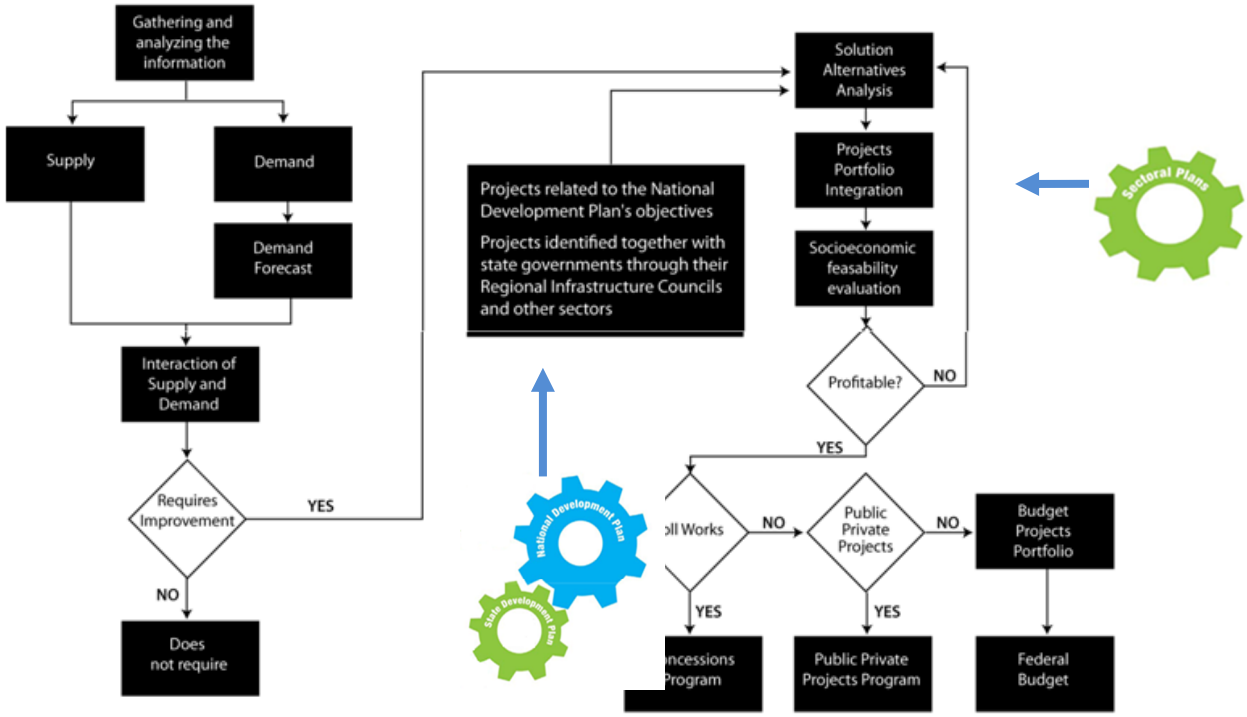
*Figure 2.3: Interaction Between the Most Relevant Mexican Planning Documents*

In Nuevo Laredo, the municipality´s Urban Research, Planning, and Urban Development Institute (Instituto Municipal de Investigación, Planeación y Desarrollo Urbano, IMPLADU) prepares the Municipal Urban Development Plan and participates in the development of partial or specific laws, plans, and projects. Examples of the latter include the Urban Development and Land Use Plan, various origin-destination studies, the Downtown Nuevo Laredo Urban Plan, and Guidelines for the Urban Development of Nuevo Laredo 2000-2020 (Plan Director de Desarrollo Urbano de Nuevo Laredo 2000-2020).

In the Municipalities of Acuña and Piedras Negras, the Directorate of Planning and Public Works and the Directorate of Planning and Urban Development conduct transportation planning and project implementation/supervision at the regional level, respectively. The municipalities have also developed urban development documents, such as Guidelines for Urban Development of Piedras Negras (Plan Director de Desarrollo Urbano de Piedras Negras, 2003)

and Guidelines for Urban Development of Acuña (Plan Director de Desarrollo Urbano de Acuña, 2000). These urban development documents generally have a longer planning horizon. Population, income, and other socioeconomic projections are typically made for 10, 15 or 20 years.

At the agency level, the most important planning agencies are SCT at the federal level and the Public Works/Transportation/Economic Development Secretariats in each state. SCT is responsible for the planning, prioritization, and implementation of all federal transportation projects. Figure 2.4 illustrates SCT's decision-making process in selecting its project portfolio for funding.




Sources: SCT, DGDC, 2010.

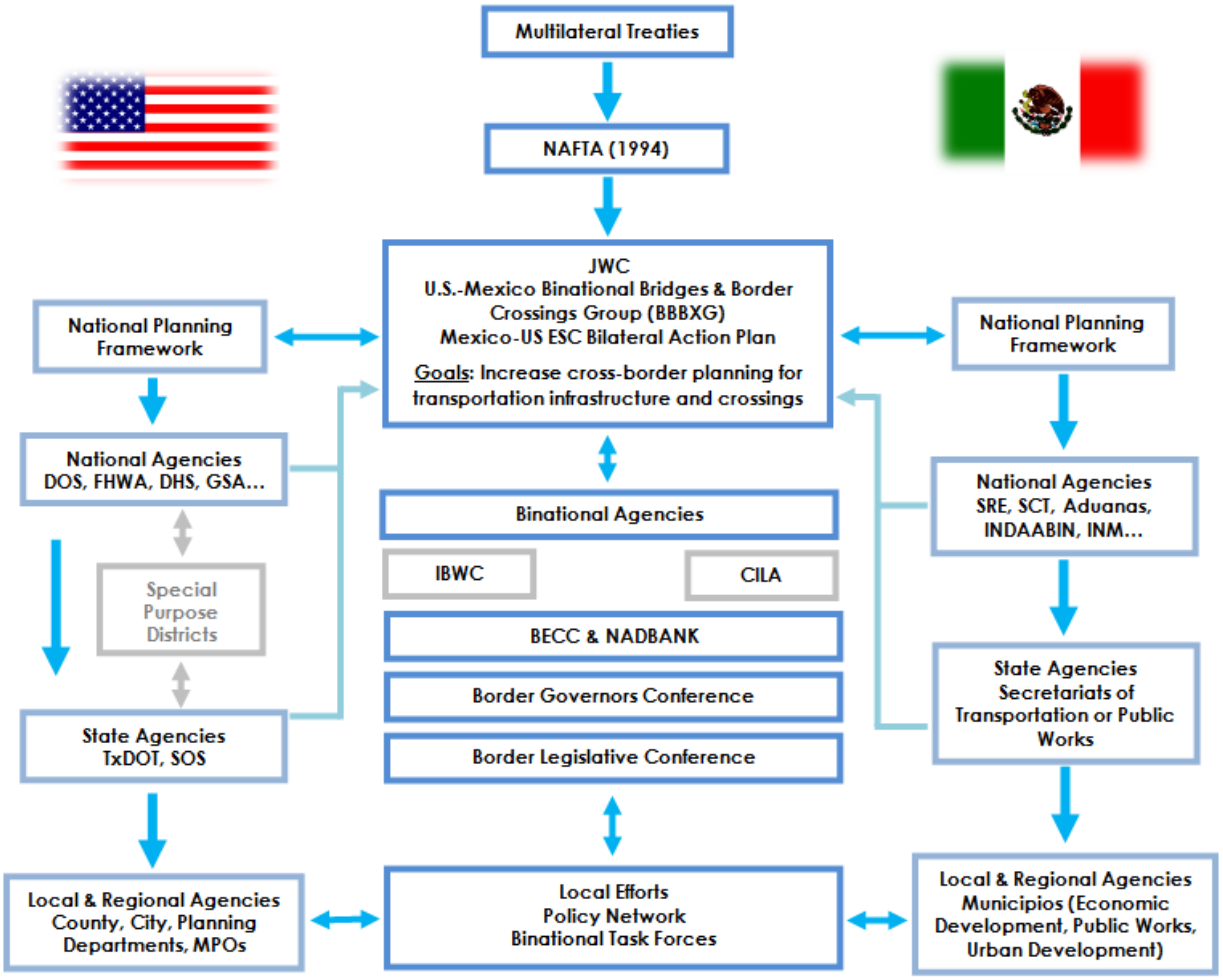
*Figure 2.4: SCT Planning Processes (and Interaction with Planning Documents)*

Also, at the federal level, 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 regards to planning and urban development issues - to state and municipal governments. The agency also 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), that is readily available online.

### 2.1.3 Cross-border Planning for Transportation Infrastructure and POEs

Figure 2.5 describes the binational planning being conducted for transportation infrastructure, including POEs. Multilateral treaties, such as the North American Free Trade

Agreement (NAFTA), prompted coordination, institutions, and mechanisms for improving cross-border planning among different agencies.




Source: Adapted to Transportation from Peña, 2005.

*Figure 2.5: Cross Border Planning for Transportation Infrastructure*

## 2.2 Port-of-Entry Planning

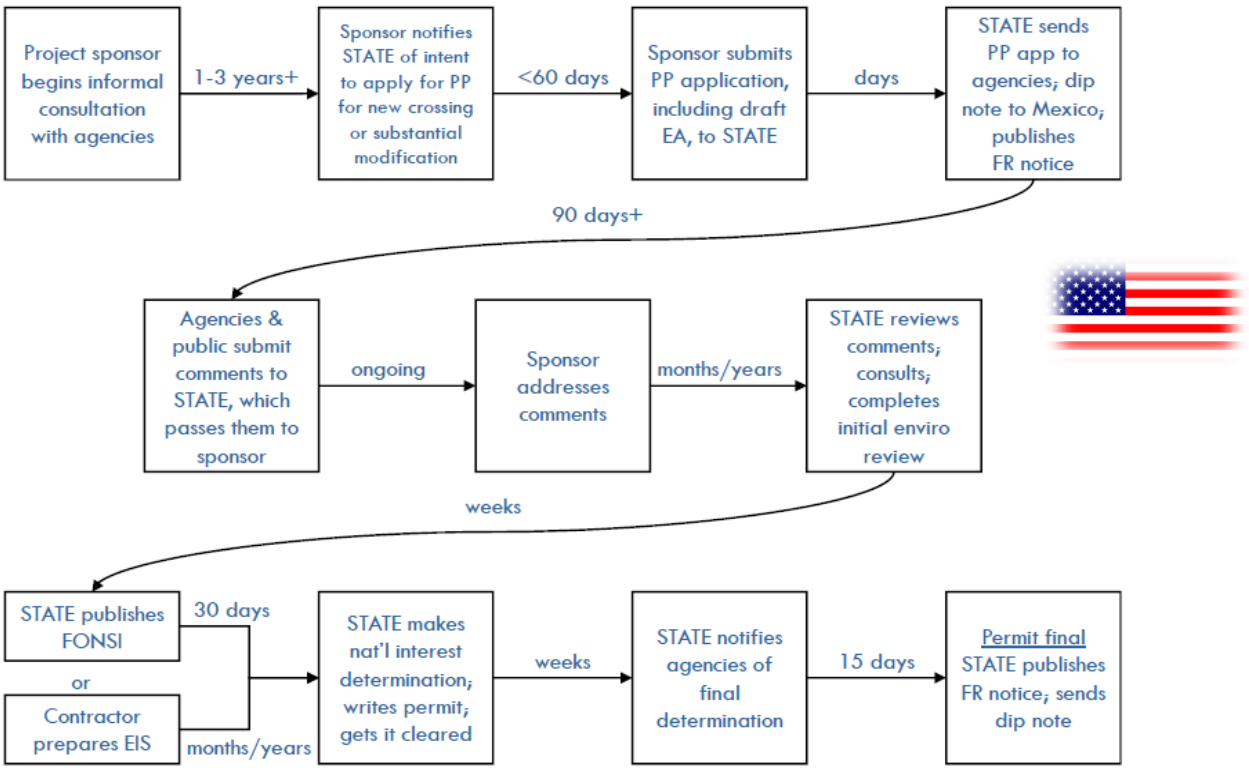
### 2.2.1 United States

Executive Order 11423 (1968), as amended, authorizes the Department of State (DOS) to issue Presidential permits 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. The DOS has identified three categories of projects (DOS, 2009b).

- Notification of DOS and a new or amended Presidential permit are required for:
    - all new border crossings, and
    - all proposed changes that would substantially modify an existing border crossing.

- Notification of DOS required and DOS determines whether a Presidential permit 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 DOS notification nor Presidential permit 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.

To issue a Presidential permit, DOS must determine that the new or modified border serves the "national interest. Figure 2.6 attempts to explain the process and approximate timeline for obtaining a Presidential Permit.




Source: Darrach, 2008.

*Figure 2.6: Presidential Permit Process and Timeline*

The Presidential Permit 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). POE needs identified by CBP are published in a Strategic Resource Assessment (SRA) report that is prepared for each field

office[4]. In addition, cities, counties, and state agencies can identify POE needs in their planning documents. An Environmental Impact Statement (EIS) or a finding that the project has no significant environmental impact is a key element before the national interest determination. Also, consultations are conducted with other federal agencies, including CBP, before DOS determines whether the facility or improvement serves national interest. Any one of the agencies specified in the Executive Order may object to the proposed determination, 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 land POE design manuals.

During 2009, DOS reviewed several Presidential Permits that had been issued in the past decades but have remained unused. In addition, it established that future Presidential Permits would be issued with an expiration date for the commencement and completion of construction (DOS, 2009a). The following Presidential permits or requests for an amendment have been filed and are still pending for proposed projects in the Focused Study Area:

- request to amend the Presidential Permit for an International Bridge on the U.S.-Mexico Border at Eagle Pass, Texas and Piedras Negras, Coahuila, Mexico (July, 2010);
- review of unused Presidential Permit: Laredo, Texas International Railroad Bridge (December, 2009);
- application for a Presidential Permit for an International Rail Bridge on the U.S.-Mexico Border near Laredo, Texas, and Nuevo Laredo, Tamaulipas, Mexico (December, 2009); and
- application for the Colombia Rail Bridge (September, 2007).

### 2.2.2 Mexico

In accordance with Mexico´s legislation and Supreme Court rulings, international bridges and crossings are solely under federal jurisdiction. Although projects may be initiated at the local, state, or federal agency level (e.g., by the General Customs Administration (Administración General de Aduanas, Aduanas), SCT, or INDAABIN), the federation maintains the exclusive power of ownership in all cases. However, 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 composed of various stakeholders (i.e., "fideicomiso trust").

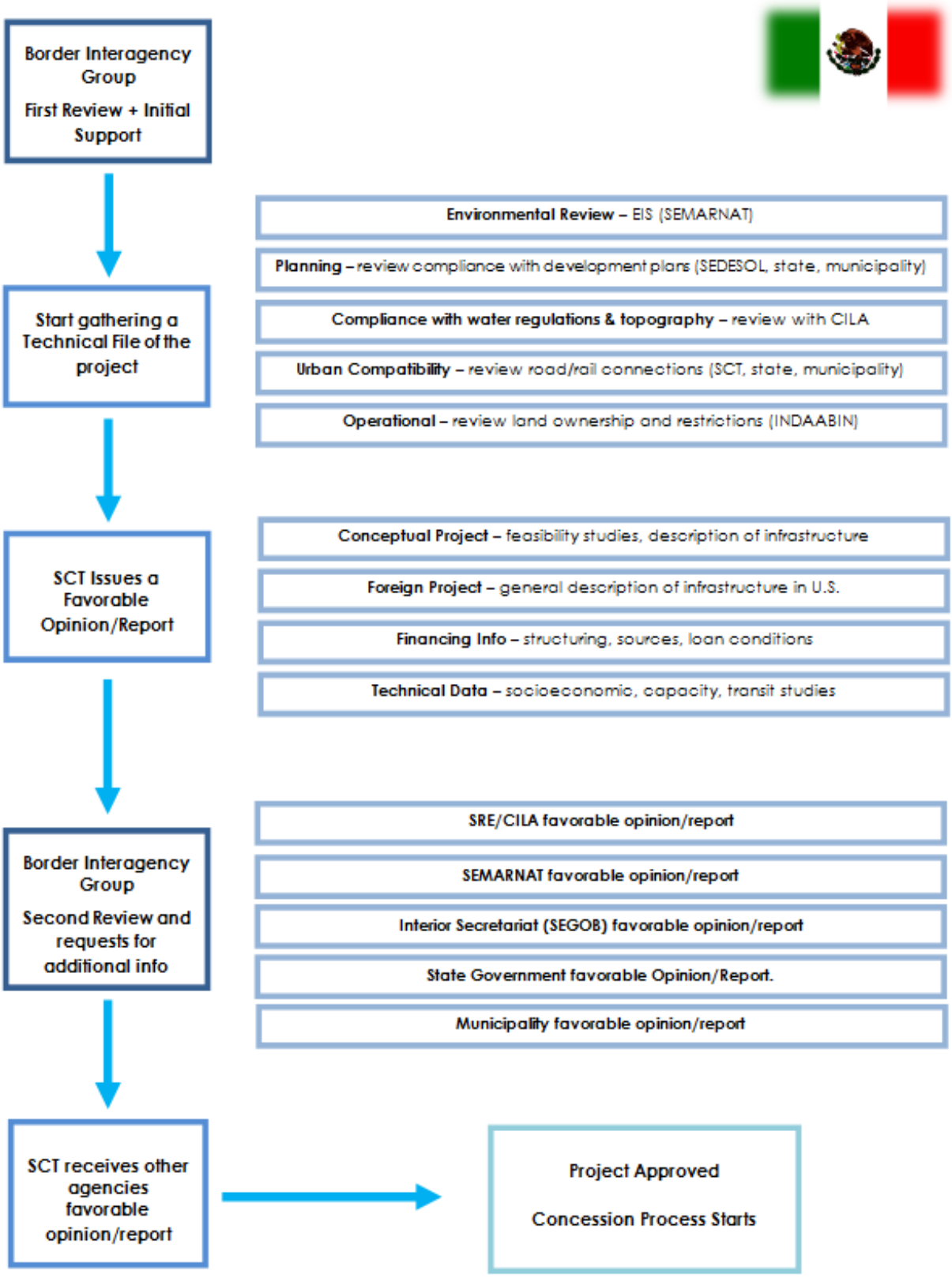
A key first step is that the proposed project secures support at the Interagency Group for Bridges and Border Crossings (Grupo Intersectretarial de Puentes y Cruces Fronterizos, Border Interagency Group). Created in 1995, the Border Interagency Group is a national gathering where Mexican federal agencies 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 work to implement projects once they are approved. In the past few years, the

[4] SRA's identify and prioritize facility requirements by: (i) documenting CBP facility needs; (ii) aligning facility investments with CBP's mission; (iii) justifying resource requests within CBP, DHS, and Congress; (iv) targeting available resources to the areas of greatest need, and (v) by planning, budgeting, and executing facility investments objectively and fairly (CBP, April 14, 2010).

group has served to establish agreements between state, local, and federal agencies on actions that benefit border communities in both nations (FHWA, 2008).

The Border Interagency Group meets as-needed and 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 Interagency Group also meet with their U.S. counterpart agencies at the Binational Bridges and Border Crossings Group (BBBXG), co-hosted by SRE and DOS at least once a year. Regional meetings (for Western and Eastern POEs) focusing on regional projects are also 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 (FHWA, 2008).

Figure 2.7 provides a simplified summary of Mexico's planning process for international POEs.

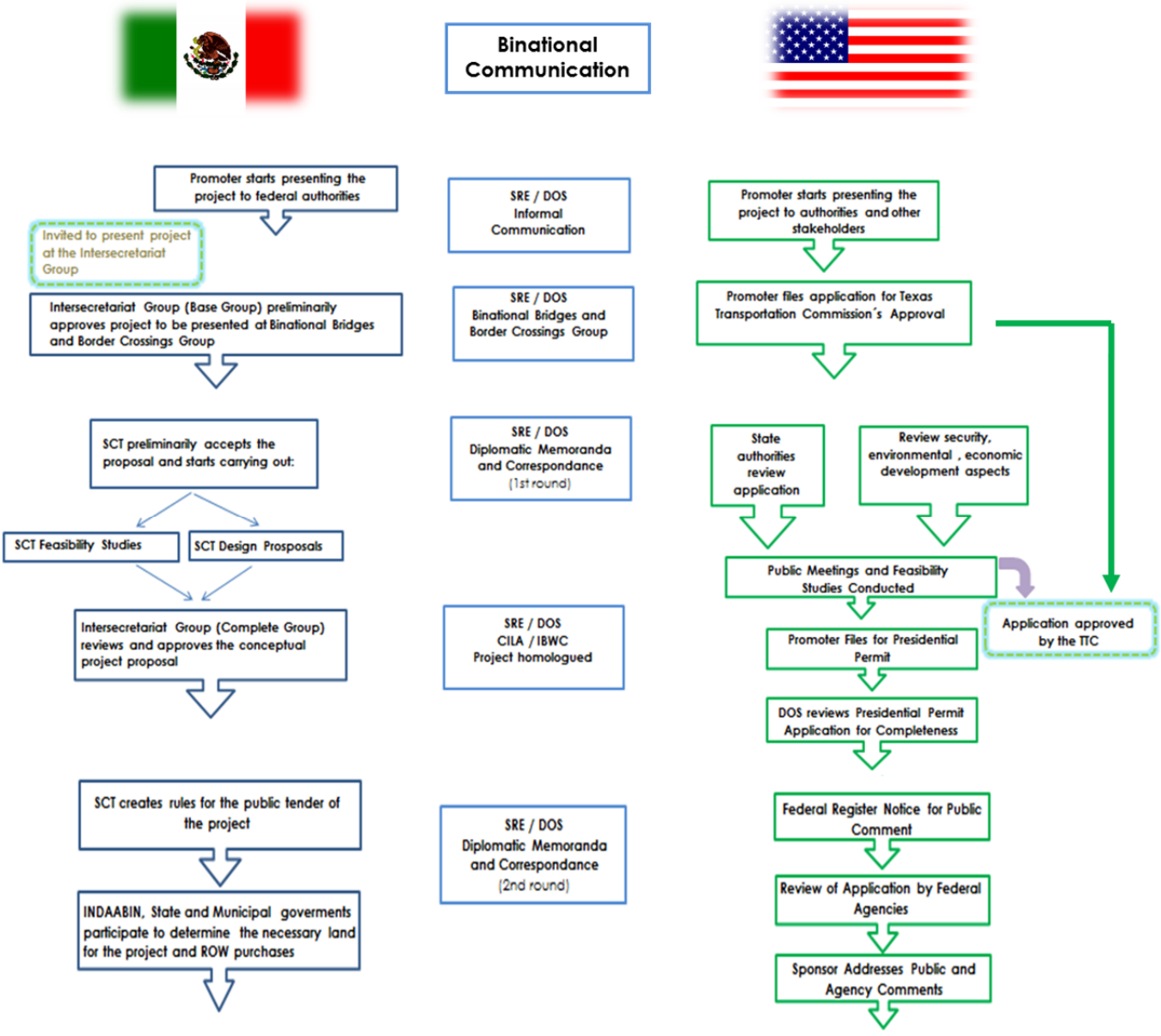


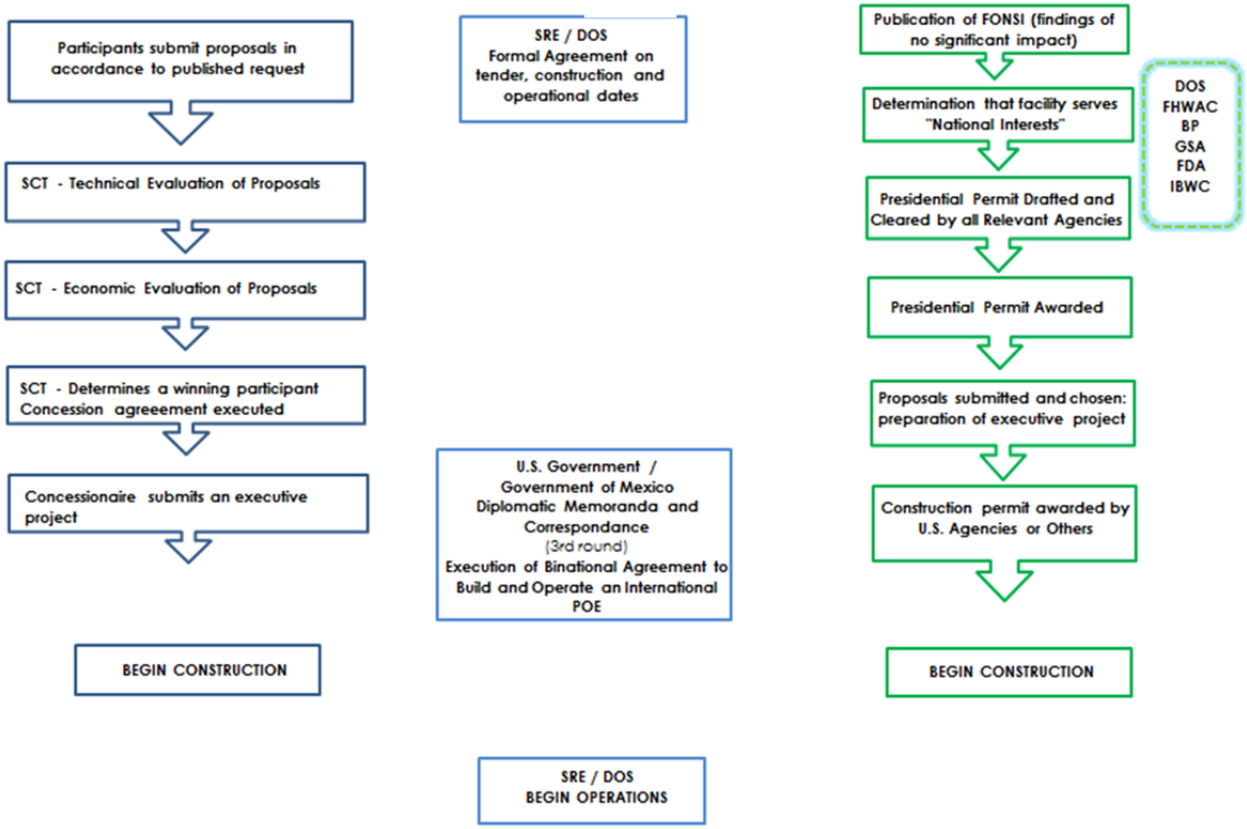

Source: SCT, Unidad de Autopistas de Cuota, 2003.

*Figure 2.7: Mexico´s POE Planning Process (Simplified)*

### 2.2.3 New POE Cross-border Planning Process

Figure 2.8 provides a simplified summary of Mexico's (left) and the U.S.'s (right) process for authorizing the construction of a new POE. Both processes are coordinated by the DOS and SRE through diplomatic communications (i.e., diplomatic notes).






Source: Adapted from Romero, Baltazar, undated.

*Figure 2.8: New POE Binational Planning Process*

## 2.3 Other Study Area Considerations

In addition to MPO, non-MPO, and federal, state or municipal planning processes, this Border Master Plan´s Study Area includes areas characterized by extreme poverty (i.e., "Colonias") and a recognized Indian reservation located near Eagle Pass, Texas.

### 2.3.1 Border Colonias

*Colonias* are communities near the U.S.-Mexico border that have been officially designated by federal and state agencies and, as such, are eligible for targeted grants and aid (Esparza and Donelson, 2009). Agencies typically define *colonias* differently due to funding requirements and the emphasis placed on specific characteristics by different government agencies and codes (i.e., location to be 50 miles from the Texas-Mexico border). Consequently, the characteristics that define a *colonia* differ according to the type of agency, government code or issue being addressed at a given time (Esparza and Donelson, 2009).

Available government programs aim to improve the living conditions in *colonias*, but many have no potable water delivery systems, sanitation treatment facilities, or home heating and cooling. Housing is also a critical problem as many homes have inadequate insulation and plumbing; while overcrowding is common. In many *colonias*, generational poverty persists, with annual incomes only a fraction of the national average, no healthcare, and few employment opportunities given low levels of educational attainment (Esparza and Donelson, 2009).

However, *colonias* are not confined to the U.S. They are also prevalent on the Mexican side of the border, and as such are international in scope. The Texas Secretary of State´s databases officially recognizes border *colonias.* There are as many as 14 in Val Verde County, 52 in Webb County, and 74 in Maverick County (Secretary of State, 2011).

### 2.3.2 Native American Lands

Official tribes recognized by the Bureau of Indian Affairs possess tribal sovereignty. Although not all recognized tribes have an Indian reservation, certain laws may apply on tribal lands. These laws can permit legal casinos on reservations, for example, which may attract tourists. The Bureau of Indian Affairs maintains the data regarding official Native American reservations in the U.S. The Texas Kickapoo Reservation is number 263 (National Park Service, undated) and one of two reservations recognized in Texas. Bordering the Rio Grande, the Kickapoo Tribe owns and operates a casino south of Eagle Pass, Texas.


Source: El Diario del Juego, 2011.

*Figure 2.9: Texas Kickapoo Reserve and Casino*

The Kickapoo Indian reservation is both a *colonia* and an Indian Reservation (Secretary of State, 2011).

## 2.4 Project Selection, Prioritization, and Funding

### 2.4.1 United States

*Transportation Infrastructure*

In the U.S., 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 annual average daily traffic (AADT), current and projected level of service (LOS), benefits to freight movements, connectivity or modality, traffic accident rates, and environmental and socioeconomic 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. Projects included in the UTP aims to (TxDOT, 2010a):

- 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,
- equitably address the transportation needs of the entire state, and
- authorize the development of sufficient high-priority projects to effectively use the anticipated funding in each of the UTP categories.

There are a number of ways that transportation projects can be selected. Projects involving the state roadway network or improvements to existing highways are generally selected by TxDOT's districts and divisions. Other proposed projects are submitted by government officials, individuals, Metropolitan Planning Organizations (MPOs) or regional transportation planning committees, and TxDOT. The majority of the state's transportation programs are, however, determined by local officials or TxDOT's districts. Finally, due to project planning and development requirements, projects are selected up to five years in advance given anticipated funding (TxDOT, 2010b).

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 (TxDOT, 2010a). 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 those UTP categories. Table 2.2 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 receiving construction funding.

## Table 2.2: TxDOT´s Funding Categories and Project Selection

| | FUNDING AT A GLANCE | | | |
|---|---|---|---|---|
| | **Funding Category** | **Starting Point** | **Project Selection** | **Usual Funding** |
| **MAINTAIN IT** | **1 – Preventive Maintenance and Rehabilitation** | TxDOT District | Projects selected by Districts Commission allocates funds through Allocation Program | Federal 90%, State10% *or* Federal 80%, State 20% *or* State 100% |
| | **6 - Structures** Federal Highway Bridge Program (HBP) Federal Railroad Separation Program (RGS) | TxDOT District | Projects by the Bridge Division as a statewide program based on HBP and RGS program eligibility. Commission allocates funds through Allocation Program. | Federal 90%, State10% *or* Federal 80%, State 20% *or* Federal 80%, State 10%, Local 10% |
| | **8 - Safety** Federal Highway Safety Improvement Program, Federal Railway-Highway Crossing Program, Safety Bond Program, Federal Safe Routes to School Program, and Federal High Risk Rural Roads | TxDOT District | Projects selected statewide by federally mandated safety indices and prioritized listings. Commission allocates funds through Statewide Allocation Program. Projects selected and approved by commission on a per-project basis for Federal Safe Routes to school Program. | Federal 90%, State10% *or* Federal 90%, Local 10% *or* Federal 100%, *or* State 100% |
| **BUILD IT** | **2 – Metropolitan Area Corridor Projects** | TxDOT District | Projects selected by MPOs in consultation with TxDOT. Commission allocates funds through Allocation Program. | Federal 80%, State 20% *or* State100% |
| | **3 – Urban Area Corridor Projects** | TxDOT District | Projects selected by MPOs in consultation with TxDOT. Commission allocates funds through Allocation Program.. | Federal 80%, State 20% *or* State 100% |
| | **4 – Statewide Connectivity Corridor Projects** | TxDOT District | Projects selected by Commission based on corridor ranking. Project total costs cannot exceed Commission approved statewide allocation. | Federal 80%, State 20% *or* State 100% |
| | **5 – Congestion Mitigation and Air Quality Improvement** | TxDOT District | Projects selected by MPOs in consultation with TxDOT and funded by District´s Allocation Program. Commission 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% |
| | **7 – Metropolitan Mobility/Rehabilitation** | TxDOT District | Projects selected by MPOs in consultation with TxDOT and funded by District´s Allocation Program. Commission allocated money based on population. | Federal 80%, State 20% *or* Federal 80%, Local 20% *or* State 100% |
| | **9 – Transportation Enhancements** | TxDOT District | Local entities make recommendations and a TxDOT committee reviews them. Projects selected and approved by commission on a per-project basis. Projects in the Safety Rest Area Program are selected by the Maintenance Division. | Federal 80%, State 20% *or* Federal 90%, Local 20% |
| | **10 – Supplemental Transportation** ***(sic)*** **Projects** State Park Roads, Railroad Grade Crossing | TxDOT District, Texas Parks | Projects selected statewide by Traffic Operations Divisions or Texas Parks and Wildlife Department, local projects selected by district. Commission | |

**FUNDING AT A GLANCE**

| Funding Category | Starting Point | Project Selection | Usual Funding |
|---|---|---|---|
| Replanking, Railroad Signal Maintenance, Construction, Landscaping, Landscape Cost Sharing, Landscape Incentive Awards, Green Ribbon Landscape Improvement, Curb Ramp Program, Coordinated Border Infrastructure Program, Comprehensive Development Agreements and Congressional High Priority Projects | and Wildlife Department, Other (federal allocation) | allocated funds to districts or approves participation in federal programs with allocation formulas. Coordinated Border Infrastructure Program funds are allocated to districts according to the federal formula. | State 100% *or* Federal 80%, State 20% *or* Federal 100% |
| **11 – District Discretionary** | TxDOT District | Projects selected by districts. Commission allocates funds through Allocation Program. | Federal 80%, State 20% *or* Federal 80% Local 20% *or* State 100% |
| **12 – Strategic Priority** | Commission | Commission selects projects which generally promote economic opportunity, increase efficiency on military deployment routes or to retain military assets in response to the federal military base realignment and closure report, or maintain the ability to respond to both man-made and natural emergencies. Also, the Commission approves pass-through financing projects in order to help local communities address their transportation needs. | Federal 80%, State 20% *(sic)* *or* State 100% |

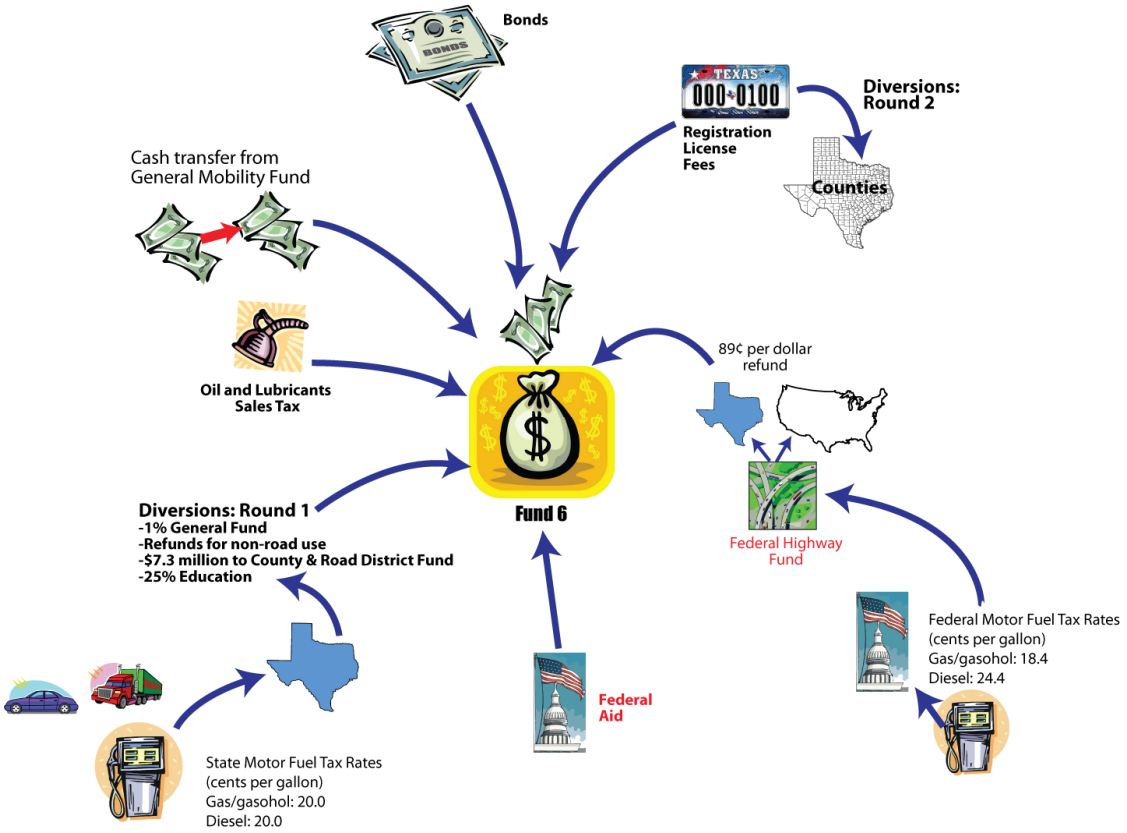
**Maintain It.** These categories are part of the Statewide Preservation and Safety Program – SPSP

**Build It.** These categories are part of the Statewide Mobility and Supplemental Transportation Program

**Allocation.** A designated share of funds that is distributed to the districts, Metropolitan Planning Organizations or for a specific purpose.

Source: TxDOT, 2010b.

Most of TxDOT's highway projects are funded through Fund 6 – The State Highway Fund. This fund comprises, 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 2.10 illustrates all funding that enter into Fund 6 for the financing of transportation projects in Texas.




Source: Persad, 2009.

*Figure 2.10: Fund 6 – The State Highway Fund*

In addition, TxDOT can finance transportation projects through debt financing, pass through financing, toll revenues, and through public-private partnerships (e.g., until 2009 through Comprehensive Development Agreements[5]).

*Ports-of-Entry*

As defined by GSA, a land POE 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. A land POE is of federal jurisdiction and comprises the land, the buildings, the on-site roads, and parking lots occupied by the POE. GSA is responsible for building and maintaining most of the nation's land POEs, as well as the maintenance, repair, and management of the facilities (GSA, undated a).

In any given fiscal year, CBP submits a list of prioritized projects to GSA for inclusion in GSA's capital program. Given this list, GSA regional offices contract with the private sector to conduct a feasibility study that includes defining a project's scope, budgets, and schedules to support a design prospectus. During the feasibility study, GSA works with CBP to establish

[5] A Comprehensive Development Agreement (CDA) is an agreement between TxDOT and a consortium of designers, engineers, and construction companies. The consortium partners may be responsible for any or all of the design, construction, operation, maintenance, and or financing aspects of a transportation project. However, in 2009 the Texas Transportation Commission suspended TxDOT´s authority to enter into new CDAs indefinitely.

overall building area, inspection lanes, warehouses, and other features necessary to accommodate CBP's programmatic needs. The resulting scope is verified against a computer traffic model called BorderWizard that calculates wait times based on a variety of data inputs. Benchmarked costs for the verified scope are subsequently calculated and a project budget is developed (GSA, undated b).

Once the projects' scopes and costs have been finalized, the region submits a project design prospectus to GSA's national office for review and inclusion in the annual capital program for submission to the Office of Management and Budget (OMB) in the spring of any given fiscal year. As in Mexico, there is no dedicated funding source available for POE infrastructure projects. These projects therefore compete with capital projects for all federal buildings, courthouses, and other non-POE facilities under the authority and control of GSA. Because of limited funding, all capital projects in the GSA submittal are thus evaluated relative to the other included capital projects. If a project is approved by OMB, it is included in the President's Budget the following February for final review, authorization, and funding by Congress.

Land POEs must be designed in accordance with GSA's *Facility Standards for the Public Building Service* and the *U.S. Land Port of Entry Design Guide.* Land POEs must also either conform to the building code adopted by the local jurisdiction responsible for fire emergency services or the building code adopted by GSA. Finally, land POEs must conform to state highway regulations.

### 2.4.2 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 aim to 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 have the authority and control in the decision-making. For example, to receive financial support, the states and municipalities must comply with federal standards established by SCT. It is important to note that contrary to Texas, a dedicated funding source for transportation projects does not exist. Thus each POE project has to compete with transportation (e.g., highways, interchanges) and non-transportation (e.g., hospital, schools, government buildings) infrastructure.

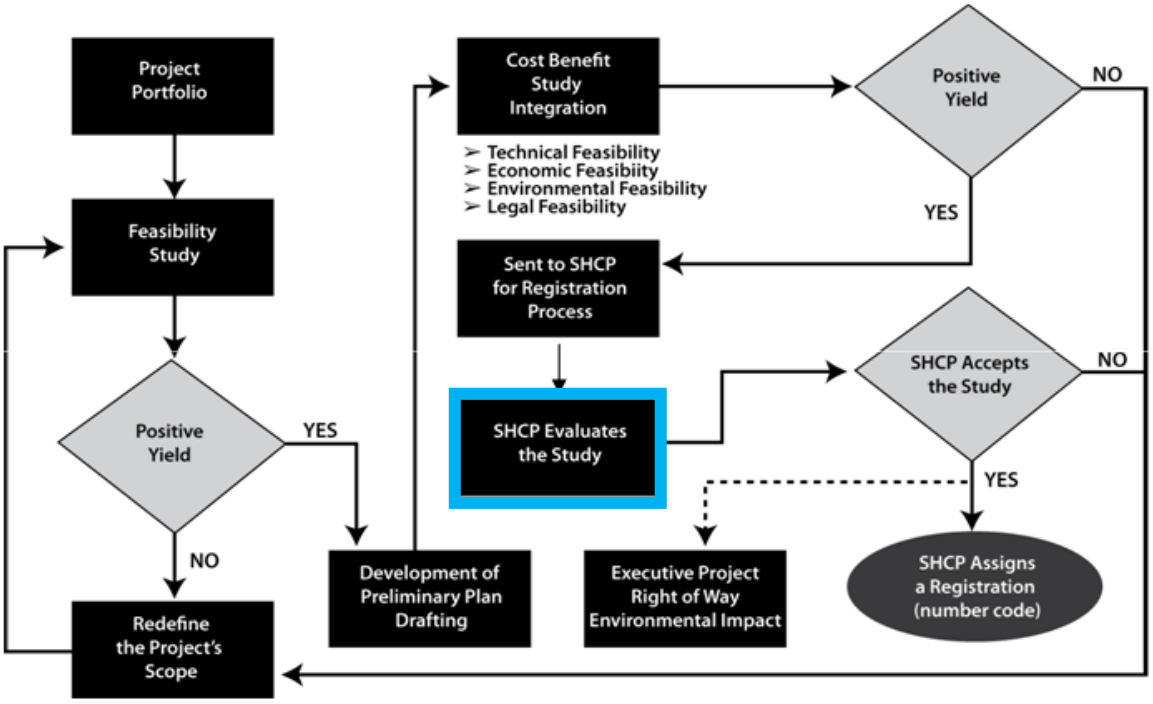
State governments can promote their own projects or serve as an intermediate entity between the strategic transportation planning conducted by SCT and the municipalities' needs. State government funds also represent another funding source for the municipalities, although projects frequently have to comply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

Municipal planning of urban development and transportation systems is therefore directed toward meeting short-term objectives since municipal administrations typically have a three or four year tenure (i.e., Coahuila). The municipalities´ main planning document – 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 deficient in terms of planning structure (Barton Aschman and La Empresa, 1998).

The state and federal government often have a stronger planning involvement with municipalities that facilitate 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 to become responsible for local planning. In other cases, state governments may impose planning solutions onto municipalities – even when contrary to municipal expectations – because the state provides the funding.

Figure 2.11 illustrates SCT´s methodology for prioritizing transportation projects for inclusion in their official project portfolio. As is evident from Figure 2.11, both the output of the feasibility and cost-benefit studies are critical decision points as to whether to move forward with the transportation project.




Source: SCT, DGDC, 2009.

*Figure 2.11: SCT's Decision Tree for Prioritizing Transportation Projects*

On April 1, 2006, the *Ley Federal de Presupuesto y Responsabilidad Hacendaria* (Federal Budget and Revenue Responsibility Act, the "Responsibility Act") 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, amongst others. The Responsibility Act also requires all projects be given a registration number by *the Secretaría de Hacienda y Crédito Público* or SHCP (Revenue and

Public Credit Secretariat) 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 a SHCP registration number. For example, SHCP requires that the cost-benefit analysis measures the public benefits (*rentabilidad social*) of the project. A SHCP registration number is a pre-requisite for any infrastructure project to be included in the Mexican government´s project portfolio. Regardless of the funding mechanism used for the project, a project cannot be considered without this registration number. Figure 2.12 illustrates this two-step procedure.

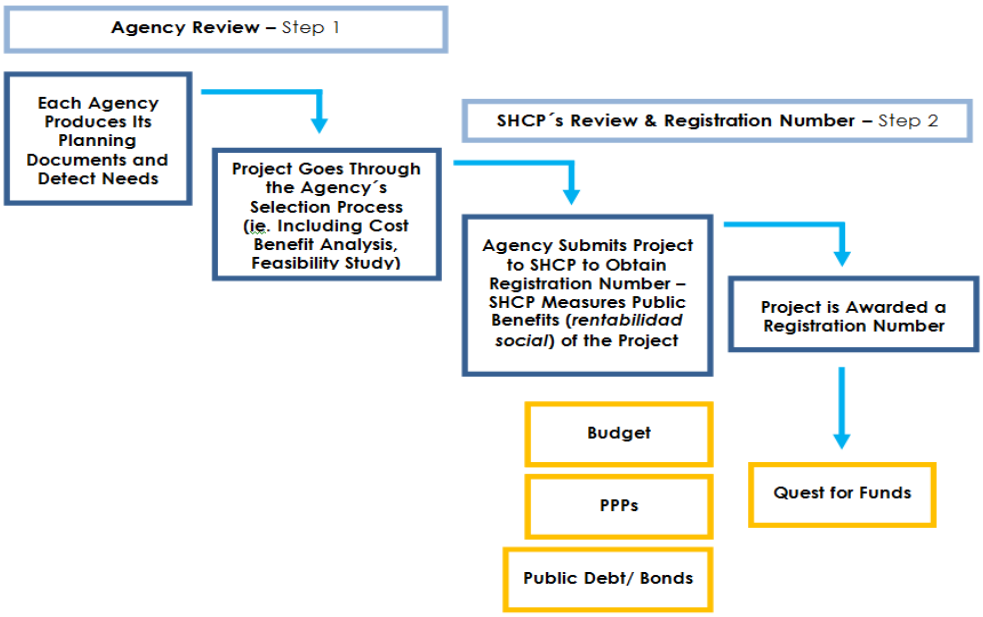



*Figure 2.12: Mexico's Two Step Project Selection Process*

Mexico does not have a dedicated funding source for transportation projects. Transportation project thus compete with education and social programs or other infrastructure projects, amongst many other categories, for a share of the general revenue. A SHCP registration number also 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 (i.e., SCT's guide to PPPs – SCT, 2006).

Contrary to 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*[6] (trust).

[6] Trusts in Mexico can only be created, managed, and terminated by banking institutions. Strict "trust secrecy" (*secreto fiduciario*) rules inhibiting transparency apply to these special purpose vehicles.

States and municipalities need congressional 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% 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 or lender's priority in terms of repayment (i.e., 1st, 2nd or 3rd priority in terms of repayment). Also, since Ramo 28´s revenue may differ from month to month (i.e., changing oil prices) reserve sub-accounts may be created in the trust for repayment of the interest and the principal. Finally, the state or municipality receives the remnants after all repayments are made. At the local level, the debt levels can be dramatic. In some cases, mayors may come into power only to find that more than 70% or 80% 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 jurisdiction. At the federal level, the planning for and prioritization of transportation projects in the border region is accomplished independently by the various federal agencies (i.e., SCT, SRE, Aduanas, and INDAABIN) and through interagency committees (i.e., 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, who authorizes INDAABIN to build and maintain and SCT to manage or concession the POE.

All donated land needs to be 'clean' (i.e., 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 (SCT, 2000). 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 (i.e., 50 years, renewable). The promoters may hire CAPUFE 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 the latter case, Mexico's federal government retains all toll proceeds except for 12.5% that reverts back to the municipality and another 12.5% that reverts back to the state to compensate the municipality and state, respectively for any damages imposed to their infrastructure.[7] Also, unless otherwise specified in the concession, 100% of customs and related tax proceeds are retained by the federal government.

[7] *Ley de Coordinación Fiscal* (Fiscal Coordination Act), Art. 9A. See also *Controversia Constitucional 325/2001 – Actor: Municipio de Nuevo Laredo, Tamaulipas*. In the latter, the Municipality of Nuevo Laredo sued the federal government for unfair revenue sharing by comparing infrastructure damage and benefits to the Nation.

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 comprise the public resources identified in the federal budget, private financing through concessions, or a combination of the two funding sources.

## 2.5 Public Participation

### 2.5.1 United States

In the U.S., 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 SAFETEA-LU, the Council of Environmental Quality regulations, and the National Environmental Policy Act (NEPA).

For the FHWA and state DOTs public involvement is recognized as a fundamental component of effective transportation planning, project development, and implementation. SAFETEA-LU established broadened opportunities for public participation in transportation decision-making. SAFETEA-LU requires that states, MPOs, public transportation providers, and resource agencies are aware of the impacts of the proposed transportation project and how it will be viewed by the affected community. 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 (FHWA, 2011). If the impacts on and the demographics, values, and desires of a community are made 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 (FHWA, 2011).

TxDOT's Environmental Manual (2004) regards public involvement 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 2.3). 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 2.3: Public Involvement Required for U.S. Transportation Projects**

| If the project involves… | Then public involvement might be… |
|---|---|
| *Minor improvements; no additional right of way* | *None needed* |
| *Minor improvements; 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, EIS)* | *Public hearing* |

Source: TxDOT, 2004.

Public involvement is required and occurs during all phases of the transportation lifecycle: 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 is tremendous value and benefits in engaging the public during this phase.

In the case of POEs, United States 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) guides the public's opportunities for participating in the 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 latter are requirements for conducting environmental assessments in accordance with NEPA and the general procedures for the FONSI for POE authorizations.

### 2.5.2 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 sectorial plans (e.g., SCT's Sectorial 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. The latter is a reflection of the fact that the population generally believes that their input will have no impact. Mexico´s public participation model thus still struggles to secure the general population's input (Peredo Quezada, undated).

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. Also,

SCT's Comptroller's Office (*Contraloría*) provides an avenue for citizens to complain or voice their opinion regarding the agency or a specific officer's functions.

Local governments and the IMPLADU are also mandated to involve the public in project planning and implementation. Similar to 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 Intersecretarial Group for Bridges and Border Crossings (*Grupo Intersecretarial de Puentes y Cruces Fronterizos*) - 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. Attending the Group's meetings is per 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.

## 2.6 Conclusions

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 U.S. 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, respectively. 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 differs. POE project planning has a seven year planning horizon, while the planning horizon for transportation infrastructure is typically longer (e.g., 20 years).

Collaboration and communication is 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 thus represent an effort to ensure continued coordination and communication among all levels of government in developing a list of binational priorities for both POEs and the transportation infrastructure servings POEs.

# Chapter 3. Demographic and Socio-Economic Profile

This Chapter of the Border Master Plan provides an overview of the current and projected demographic and socio-economic information obtained for the Laredo – Coahuila/Nuevo León/Tamaulipas study area. The Chapter summarizes available population, employment, income, and land use data for the study are in Texas, Mexico, and for the binational study area. The Chapter also includes the salient information on major trade corridors that traverse the study area.

## 3.1 Texas's Demographic and Socio-Economic Characteristics

As described in Chapter 1, the "Area of Influence" was defined as a 60 mile area north of the U.S.-Mexico Border and therefore covers TxDOT's Laredo District and parts of TxDOT's San Angelo, San Antonio, and Pharr Districts. The counties that are included (either entirely or partially) in the "Area of Influence" are: Crockett, Dimmit, Duval, Edwards, Frio, Jim Hogg, Kinney, La Salle, Maverick, McMullen, Real, Sutton, Uvalde, Val Verde, Webb, Zapata, and Zavala. The expanded "Area of Influence" - including all the counties listed - spans an area of 28,097.96 square miles. This area is bordered by:

- TxDOT's Odessa District to the West,
- the counties of Starr and Brooks (part of TxDOT's Pharr District) and the counties of Jim Wells and Live Oak (part of TxDOT's Corpus Christi District) to the East,
- the counties of Crane and Upton (part of TxDOT's Odessa District), the counties of Schleicher, Reagan, Kimble, and Irion (part of TxDOT's San Angelo District), and the counties of Medina, Kerr, Bandera, and Atascosa (part of TxDOT's San Antonio District) to the North, and
- Mexico's States of Coahuila, Nuevo León, and Tamaulipas to the South.

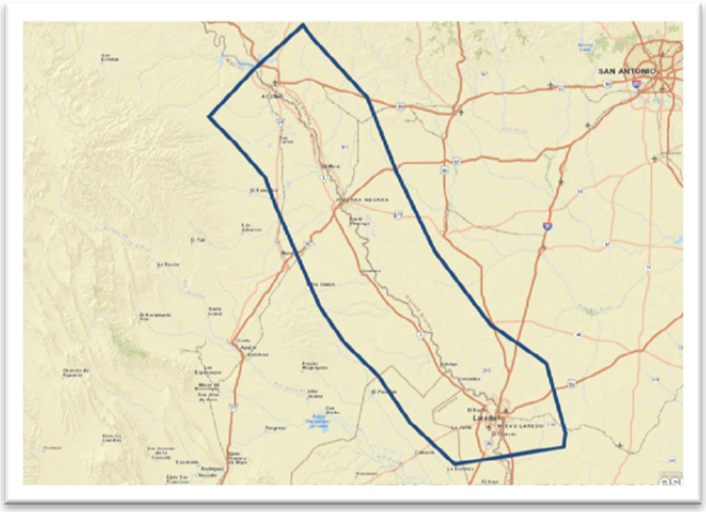



*Figure 3.1: Focused Study Area*

The following demographic, socio-economic, 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 United States Census Bureau, the United States Bureau of Labor Statistics, the United States Bureau of Economic Analysis, the Federal Reserve Bank of Dallas, the Real Estate Center at Texas A&M University, the American Council on Capital Formation, the National Association of Manufacturers, and the National Agricultural Statistics Service. The demographic and socio-economic data reflects the latest available data (e.g., 2010 Census data). A number of counties[8] in the study area are, however, being impacted by oil and gas drilling in the Eagle Ford Shale. The population, employment, and income data presented in this section may, however, not fully account for the recent developments in the Eagle Ford Shale. Unfortunately, as these impacts are currently being felt, there are not yet accurate measurements of the full impacts of oil and gas drilling in this newly developed field.

### 3.1.1 Population

From Table 3.1 it is evident that the total population of the counties included in the "Area of Influence" was 447,162 in 2005. Between 2005 and 2010, the population in the area has increased at an annual average rate of 1.2% to a total of 474,185 in 2010 (or approximately 1.9% of Texas's total population in 2010). Furthermore, it is expected that the region's population will continue to increase at a slightly higher rate of 1.4% a year between 2010 and 2030. However, this increase in population is not uniform across all counties. Some counties – i.e., Dimmit, Duval, Edwards, Kinney, and La Salle – is expected to see a reduction in population, while counties, such as Webb and Zapata, are expected to see a substantial increase in population. Nonetheless, by 2030 the population in the area is expected to reach 621,276 people; thus an increase of 147,091 people between 2010 and 2030.

[8] Counties being impacted include: Dimmit, Duval, Webb, La Salle, Maverick, Kinney, and Zavala.

**Table 3.1: Total Population in Texas Counties of Interest (2005 - 2030)***

| Counties | Year | | | AAGR** | |
|---|---|---|---|---|---|
| | 2005 | 2010 | 2030 | 2005 - 2010 | 2010 - 2030 |
| *Texas* | *22,859,968* | *25,145,561* | *37,285,486* | *1.9%* | *2.0%* |
| Crockett | 4,032 | 3,719 | 4,817 | -1.6% | 1.3% |
| Dimmit | 10,081 | 9,996 | 7,934 | -0.2% | -1.1% |
| Duval | 12,882 | 11,782 | 9,254 | -1.8% | -1.2% |
| Edwards | 2,057 | 2,002 | 1,943 | -0.5% | -0.1% |
| Frio | 16,376 | 17,217 | 18,861 | 1.0% | 0.5% |
| Jim Hogg | 5,075 | 5,300 | 5,249 | 0.9% | 0.0% |
| Kinney | 3,336 | 3,598 | 3,289 | 1.5% | -0.4% |
| La Salle | 5,974 | 6,886 | 4,959 | 2.9% | -1.6% |
| Maverick | 51,289 | 54,258 | 64,983 | 1.1% | 0.9% |
| McMullen | 865 | 707 | 754 | -4.0% | 0.3% |
| Real | 3,256 | 3,309 | 3,374 | 0.3% | 0.1% |
| Sutton | 4,162 | 4,128 | 5,144 | -0.2% | 1.1% |
| Uvalde | 26,669 | 26,405 | 28,546 | -0.2% | 0.4% |
| Val Verde | 47,268 | 48,879 | 53,960 | 0.7% | 0.5% |
| Webb | 228,354 | 250,304 | 372,899 | 1.9% | 2.0% |
| Zapata | 13,821 | 14,018 | 21,560 | 0.3% | 2.2% |
| Zavala | 11,665 | 11,677 | 13,750 | 0.0% | 0.8% |
| *Total* | *447,162* | *474,185* | *621,276* | *1.2%* | *1.4%* |

Note: * The data corresponds to the entire county; not to the portion of the county within the 60-mile "Area of Influence"
** Average Annual Growth Rate
Source: Texas SDC, Texas DSHS, US Census Bureau.

### 3.1.2 Employment

From Table 3.2 it is evident that 145,941 people were employed in the counties that comprise the expanded "Area of Influence" in 2005. Between 2005 and 2010 employment increased at an average annual rate of 0.9% to 152,366 in 2010 (representing 1.45% of the total employment in Texas). Similar to the population, some counties – i.e., Crockett, Duval, and Uvalde - experienced a decrease in employment between 2005 and 2010, while others experienced a substantial increase in employment. Between 2010 and 2030, employment is expected to increase at a much higher average annual rate of 2.3% to approximately 237,247 in 2030. The highest annual average increase in employment is expected in Edwards, Real, Webb, Zapata, and Zavala counties (see Table 3.2). In terms of total employment, Maverick, Val Verde, and Webb counties have the highest employment. These counties are also home to the cities, of Eagle Pass, Del Rio, and Laredo respectively.

**Table 3.2: Employment in Texas Counties of Interest (2005 - 2030)***

| Counties | Year | | | AAGR*** | |
|---|---|---|---|---|---|
| | 2005 | 2010 | 2030** | 2005 - 2010 | 2010 - 2030 |
| *Texas* | *9,734,808* | *10,533,620* | *14,238,226* | *1.6%* | *1.5%* |
| Crockett | 1,359 | 1,335 | 1,839 | -0.4% | 1.6% |
| Dimmit | 2,598 | 2,917 | 3,030 | 2.3% | 0.2% |
| Duval | 3,186 | 2,897 | 3,534 | -1.9% | 1.0% |
| Edwards | 434 | 435 | 742 | 0.0% | 2.7% |
| Frio | 4,063 | 4,689 | 7,202 | 2.9% | 2.2% |
| Jim Hogg | 1,734 | 1,967 | 2,004 | 2.6% | 0.1% |
| Kinney | 775 | 808 | 1,256 | 0.8% | 2.2% |
| La Salle | 1,490 | 1,703 | 1,894 | 2.7% | 0.5% |
| Maverick | 13,514 | 16,044 | 24,815 | 3.5% | 2.2% |
| McMullen | 232 | 234 | 288 | 0.2% | 1.0% |
| Real | 601 | 685 | 1,288 | 2.7% | 3.2% |
| Sutton | 2,133 | 2,313 | 1,964 | 1.6% | -0.8% |
| Uvalde | 9,806 | 8,986 | 10,901 | -1.7% | 1.0% |
| Val Verde | 16,561 | 16,644 | 20,606 | 0.1% | 1.1% |
| Webb | 81,151 | 84,260 | 142,399 | 0.8% | 2.7% |
| Zapata | 3,427 | 3,505 | 8,233 | 0.5% | 4.4% |
| Zavala | 2,877 | 2,944 | 5,251 | 0.5% | 2.9% |
| *Total* | *145,941* | *152,366* | *237,247* | *0.9%* | *2.2%* |

Note: * The data corresponds to the entire county, not to the portion of the county within the 60-mile "Area of Influence"
** The employment information for each county is estimated from the population data for the respective county and the states' percentage of economically active population
*** Average Annual Growth Rate
Source: US BLS and US Census Bureau.

### 3.1.3 Income

The per capita income in the expanded "Area of Influence" of $21,904 was below the statewide per capita income of $33,185 in 2005 (see Table 3.3). However, between 2005 and 2008 average annual per capita income increased by 6.7% in the expanded "Area of Influence" relative to a statewide average annual increase of 4.4%. Besides Uvalde, Webb, Edwards, and McMullen counties - the latter experienced a slight decrease in per capita income – all the remaining counties experienced higher average annual per capita income increases than the statewide average. On the other hand, the per capita income in Crockett and Sutton counties increased significantly between 2005 and 2008 (average annual increase of 10.3% and 19.1%, respectively). Per capita income estimates are not available for the "Area of Influence" for 2030. However, the statewide average annual per capita growth rate is anticipated to decrease to 1.7% between 2008 and 2030 to reach an average per capita income of $54,784 in 2030.

**Table 3.3: Per Capita Income in Texas Counties of Interest (2005 - 2008)***

| County | Year | | | AAGR** | |
|---|---|---|---|---|---|
| | 2005 | 2008 | 2030 | 2005 - 2008 | 2008 - 2030 |
| *Texas* | *33,185* | *37,809* | *54,784* | *4.4%* | *1.7%* |
| Crockett | 21,868 | 29,323 | - | 10.3% | - |
| Dimmit | 19,407 | 23,726 | - | 6.9% | - |
| Duval | 21,343 | 27,941 | - | 9.4% | - |
| Edwards | 24,017 | 24,621 | - | 0.8% | - |
| Frio | 19,076 | 22,230 | - | 5.2% | - |
| Jim Hogg | 25,896 | 31,682 | - | 7.0% | - |
| Kinney | 22,434 | 26,809 | - | 6.1% | - |
| La Salle | 17,879 | 22,959 | - | 8.7% | - |
| Maverick | 15,555 | 18,688 | - | 6.3% | - |
| McMullen | 31,665 | 31,296 | - | -0.4% | - |
| Real | 24,207 | 28,689 | - | 5.8% | - |
| Sutton | 30,760 | 51,928 | - | 19.1% | - |
| Uvalde | 23,532 | 26,724 | - | 4.3% | - |
| Val Verde | 23,350 | 27,244 | - | 5.3% | - |
| Webb | 20,160 | 22,831 | - | 4.2% | - |
| Zapata | 16,559 | 18,849 | - | 4.4% | - |
| Zavala | 14,661 | 16,687 | - | 4.4% | - |
| *Average* | *21,904* | *26,602* | - | *6.7%* | - |

Note: * The data corresponds to the entire county, not to the portion of the county within the 60-mile "Area of Influence"
** Average Annual Growth Rate
Source: US BEA, Federal Reserve Bank of Dallas, and Real Estate Center at Texas A&M University.

### 3.1.4 Land Use

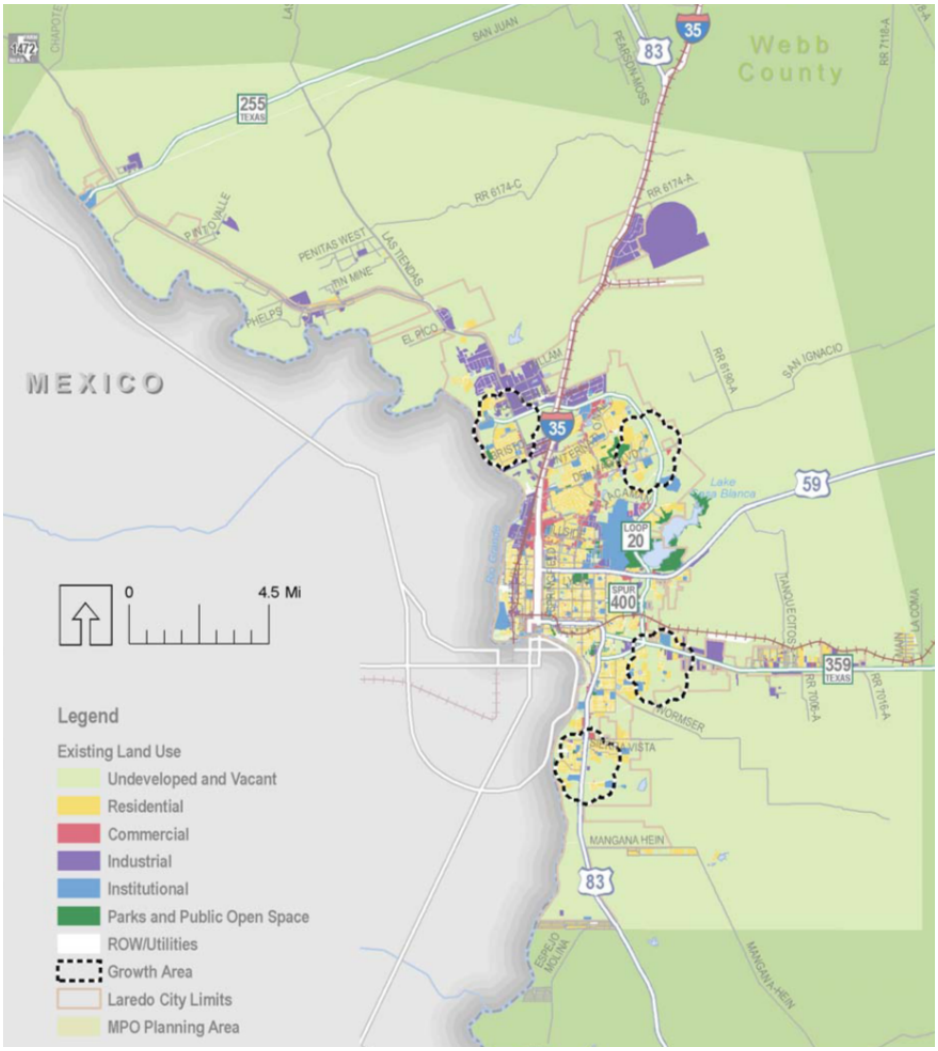
Table 3.4 provides an overview of the land use in the counties that comprise the expanded "Area of Influence" and in the state of Texas. From Table 3.4 it is evident that most of the area in Texas and the expanded "Area of Influence" are designated as farm land (i.e., approximately 77.5% of Texas land and 81.4% of the expanded "Area of Influence"). In addition, the highest population densities are found in Maverick, Uvalde, Val Verde, and Webb counties that are home to the cities of Eagle Pass, Uvalde, Del Rio, and Laredo. However, the population density in even the most populated county (i.e., Webb) in the "Area of Influence" is well below the Texas average (see Table 3.4).

**Table 3.4: Land Use for Texas Counties of Interest***

| County | Farm Land ($mi^2$)** | Land Area ($mi^2$)*** | Persons per ($mi^2$)**** | Metro. / Micro. Area |
|---|---|---|---|---|
| *Texas* | *202,868.91* | *261,797.12* | *79.6* | - |
| Crockett | 2,710.81 | 2,807.42 | 1.5 | - |
| Dimmit | 891.41 | 1,330.91 | 7.7 | - |
| Duval | 1,328.26 | 1,792.71 | 7.3 | - |
| Edwards | 1,520.63 | 2,119.75 | 1.0 | - |
| Frio | 942.07 | 1,133.02 | 14.3 | - |
| Jim Hogg | 942.68 | 1,136.11 | 4.6 | - |
| Kinney | 958.50 | 1,363.44 | 2.5 | - |
| La Salle | 872.47 | 1,488.85 | 3.9 | - |
| Maverick | 743.89 | 1,280.08 | 37.0 | Eagle Pass |
| McMullen | 932.36 | 1,113.00 | 0.8 | - |
| Real | 624.74 | 699.91 | 4.4 | - |
| Sutton | 1,374.23 | 1,453.76 | 2.8 | - |
| Uvalde | 1,513.37 | 1,556.55 | 16.7 | Uvalde |
| Val Verde | 2,594.73 | 3,170.38 | 14.2 | Del Rio |
| Webb | 3,190.67 | 3,356.83 | 57.5 | Laredo |
| Zapata | 621.04 | 996.76 | 12.2 | - |
| Zavala | 1,104.93 | 1,298.48 | 8.9 | - |
| *Total* | *22,867* | *28,098* | *14.4* (4) | - |

Note: * The data corresponds to the entire county, not to the portion of the county within the 60-mile "Area of Influence"
** Based on 2005 statistics
*** Based on 2008 statistics
**** Weighted average by county land area
Source: National Agricultural Statistics Service, US Census Bureau.

In addition to the national statistics, more detailed land use information was also obtained from the Metropolitan Transportation Plan and the Mater Plans prepared by the cities of Laredo, Eagle Pass, and Del Rio. Figure 3.2 and Table 3.5 were extracted from the Laredo *2010-2035 Metropolitan Transportation Plan* that was adopted on December 11, 2009.




Source: 2010-2035 Metropolitan Transportation Plan, 2009.

*Figure 3.2: City of Laredo Land Use Map (with Recent Growth Areas)*

**Table 3.5: MPO Planning Area and City of Laredo Land Use Data**

| Land Use Type | MPO Planning Area | | City of Laredo | |
|---|---|---|---|---|
| | Square Miles | Percent (%) | Square Miles | Percent (%) |
| Commercial | 3.3 | 0.8 | 3.3 | 3.7 |
| Industrial | 14.0 | 3.4 | 9.0 | 10.1 |
| Institutional | 5.5 | 1.3 | 5.5 | 6.2 |
| Parks and Public Open Space | 3.5 | 0.8 | 2.5 | 2.8 |
| Residential | 17.8 | 4.3 | 15.8 | 17.7 |
| ROW/Utilities | 16.0 | 3.8 | 12.8 | 14.3 |
| Undeveloped and Vacant | 357.5 | 85.6 | 40.3 | 45.2 |
| *Total* | *414.0* | *100.0* | *89.00* | *100.0* |

Source: Adapted from 2010-2035 Metropolitan Transportation Plan, 2009.

From Table 3.5 it can be seen that approximately 17.7% of the total land in the City of Laredo is designated as residential development, 14.3% is used for right-of-way/utilities, and 10.1% is used for industrial development. However, a significant percentage of the total land in the city of Laredo (approximately 45%) and in the MPO planning area (approximately 86%) is still undeveloped/vacant and can therefore accommodate considerable future growth.

Figure 3.3 provides the City of Eagle Pass's land use map. Land use statistics are as follows:

- residential – 32%;
- commercial – 17%;
- industrial – 12%;
- agricultural – 1%;
- public 11%;
- vacant – 7%; and
- infrastructure – 20%.

From the map and statistics provided by the City of Eagle Pass it is evident that the highest percentage of total land use in the City of Eagle Pass comprises residential developments (i.e., the white, yellow, orange, and brown legend colors on the map), followed by commercial developments (i.e., the green and blue legend colors), and industrial developments (i.e., red legend color).

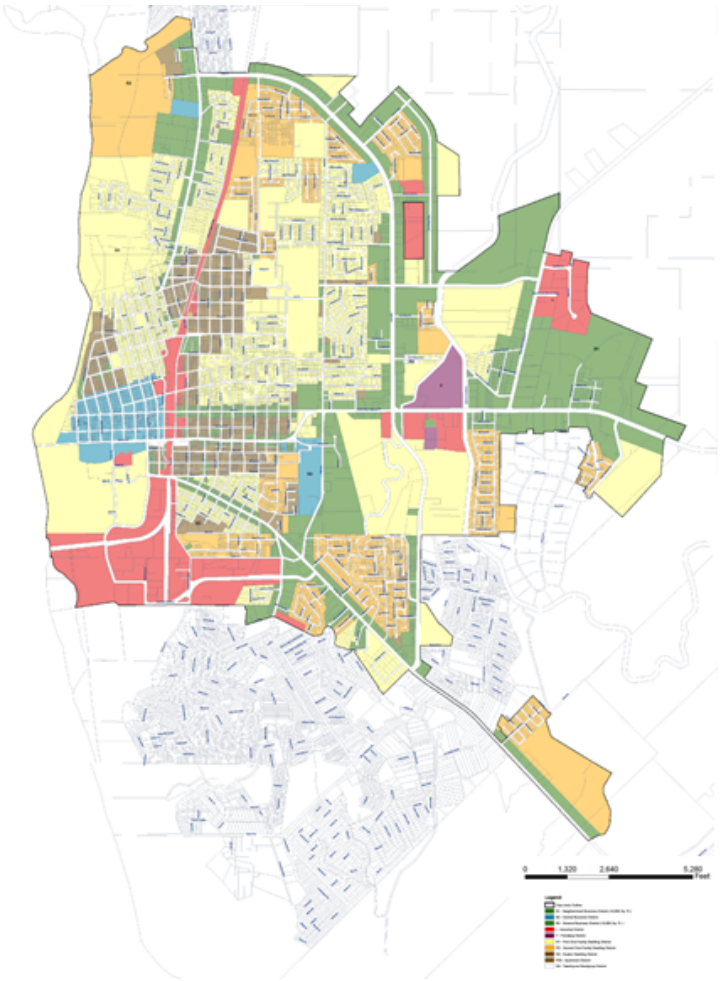


*Figure 3.3: City of Eagle Pass Land Use Map (2007)*

Figure 3.4 and Table 3.6 were obtained from the City of Del Rio's Comprehensive Master Plan (2007). From Table 3.6, it is evident that the highest percentage of the developed land in the City of Del Rio is designated residential developments (approximately 87.6%), followed by industrial developments (4.4%), public and civil land use (4.1%), and commercial developments (3.8%).

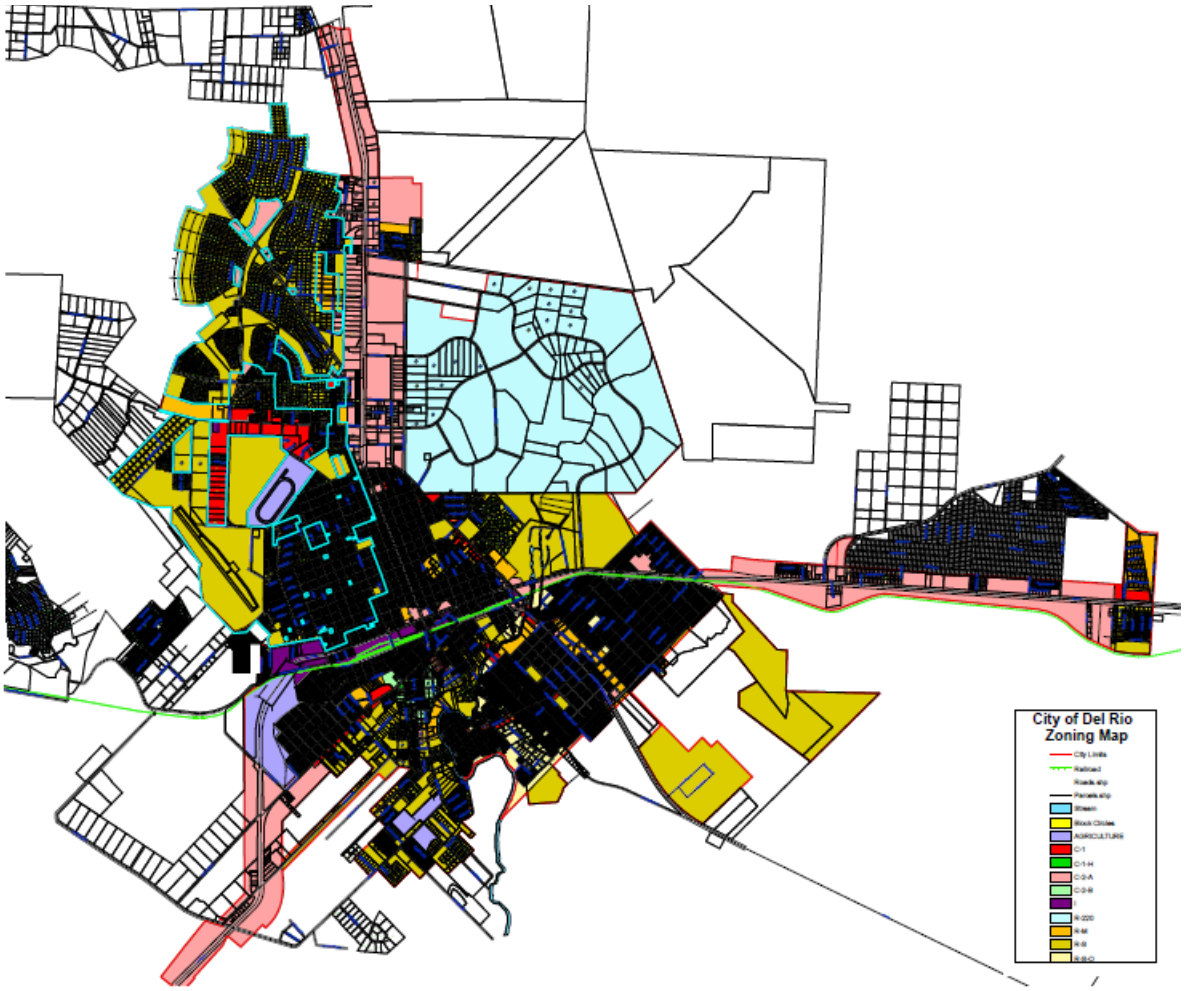



*Figure 3.4: City of Del Rio Land Use Map (2007)*

**Table 3.6: City of Del Rio Land Use**

| Land Use Class | Percentile | Area ($mi^2$) |
|---|---|---|
| Single Family Residential | 83.5% | 16.26 |
| Multi-Family Residential | 4.1% | 0.81 |
| Commercial | 3.8% | 0.75 |
| Industrial | 4.4% | 0.86 |
| Public and Civil | 4.1% | 0.79 |
| *Total* | *100.0%* | *19.47* |

Source: City of Del Rio Comprehensive Master Plan, 2007.

## 3.2 Major U.S. Trade Corridors

A number of major trade corridors (current and potential) traverse the study area in Texas: Ports to Plains, IH-35 NAFTA corridor, and US-83. This section of the report summarizes some of the salient information about these trade corridors.

### 3.2.1 Ports to Plains Corridor

Securing investments and improving the efficiency of the Ports to Plains Corridor have been an ongoing effort of the Colorado, New Mexico, Texas, and Oklahoma Departments of Transportation. These efforts have culminated in the development of the *Corridor Development and Management Plan* (CDMP, 2010). The objective of this plan was to outline *"... a proposed plan for the [almost 1,400 mile] corridor and serves as an essential tool for securing federal funding for corridor development."* The Ports to Plain Corridor CDMP includes the (a) widening of 755 miles of 2-lane roads to 4-lane divided roads, (b) construction of 15 relief routes around larger towns, (c) improvements to or construction of overpasses for railroad crossings, (d) replacement of obsolete or deficient bridges, and (e) improved signaling, ITS systems, and amenities (e.g., rest areas) along the corridor. Figure 3.5 illustrates the widening projects and relief routes included in the CDMP.

The CDMP projects are categorized into four priority groups: Group A initiatives are recommended for implementation in the short term (i.e., 2005 to 2010), Group B initiatives are recommended for implementation between 2011 and 2015, Group C initiatives are recommended for implementation between 2016 and 2020, and Group D initiatives are recommended for implementation by 2025 when the plan is expected to be fully implemented.


(a) South (b) North

*Figure 3.5: Ports to Plains Corridor Development Plan (2005-2025)*

The total investment cost associated with implementing the CDMP projects is estimated at $1.4 billion (2004 dollars at a 7% discount rate) and the benefits to transportation users in terms of safety enhancements, vehicle travel time savings, and reduced vehicle operating costs is estimated at $262.7 million (accrued benefits between 2011 and 2030 at a 7% discount rate). In addition, the CDMP project is expected to generate 43,600 jobs (by 2030) and $4.5 billion in income between 2006 and 2030 (CDMP, 2010).

### 3.2.2 IH-35 NAFTA Corridor

In 1999, HNTB Corporation (as the prime consultant) and Wilbur Smith Associates (as the principal sub-consultant) evaluated several investment alternatives for the IH-35 corridor (see Figure 3.6). These investment alternatives were evaluated considering performance metrics, such as efficiency improvements, increased railroad use, faster international freight processing, and improved commercial vehicle operations, intermodal transfers, and public transportation. The analysis period was 1996 to 2025.

A base case alternative (i.e., *"Do Little Scenario")* and five candidate alternatives were evaluated. The alternative that resulted in the highest benefits (i.e., Alternative 4): (a) maximized the number of lanes within the existing IH-35 ROW, (b) built a partial NAFTA truck-way that allows larger truck size and weights between Laredo and Dallas/Fort Worth (either as a separate facility or within existing IH-35 ROW), (c) invested in ITS systems in urban areas, relief routes (and/or double decking facilities) were lane deficiencies exist, and (e) the implemented demand management strategies and growth management policies in urban areas to increase transit use (IH 35 Trade Corridor Study, 1999)[9].

The estimated cost associated with implementing Alternative 4 was $10.9 billion dollars in 1996. However, the


Source: IH 35 Trade Corridor Study[44], 1999.
http://www.dot.state.tx.us/mis/i35corr/i35corr.htm

*Figure 3.6: IH-35 Trade Corridor*

[9] http://www.dot.state.tx.us/mis/i35corr/i35corr.htm

expected annual benefits amounted to $1.15 billion in reduced vehicle operating costs, $1.08 billion in travel time savings, and $151 million in reduced accident costs; totaling almost $2.38 billion in annual travel efficiency benefits by 2025. Furthermore, it was argued that the implementation of Alternative 4 would result in approximately $20.9 billion in discounted value added, 43,100 permanent jobs, $30.8 billion in personal income added, and $18.4 billion in added wages. All values were calculated in 1996 dollars (IH 35 Trade Corridor Study, 1999).

### 3.2.3 US-83 Corridor

Another corridor that traverses the study area in Texas is US-83 (see Figure 3.7). In 2003, Wilbur Smith Associates together with The Louis Berger Group and AECOM Consulting finalized a study that aimed to *"promote and accommodate commercial development along a major highway with "Super Two" characteristics."* The study reported that between February 1998 and December 2012, almost $76.6 million have been spent or will be spent on projects for US-83.


*Figure 3.7: US-83 Corridor*

The study recommended that US-83 be developed as a 4-lane divided highway from the US-83 and IH-35 junction to Uvalde to enhance road safety, ensure adequate access for heavy equipment merging onto the facility, and to enhance economic development. The estimated cost of the highway improvement together with the implementation of lower cost signage improvements would amount to approximately $225 million. These improvements were estimated will result in between 299 and 322 new jobs in the region and an increase in the average weekly industry wage (Wilbur Smith Associates et al, 2003).

## 3.3 Mexico's Demographic and Socio-Economic Characteristics

The "Area of Influence" (see Figure 3.8) was defined as a 60 mile area north and south of the U.S.-Mexico border and thus includes parts of the Mexican States of Coahuila, Nuevo León, and Tamaulipas. The municipalities that are included (either entirely or partially) in the "Area of Influence" are:

- Acuña, Allende, Guerrero, Hidalgo, Jiménez, Juárez, Morelos, Múzquiz, Nava, Piedras Negras, Sabinas, San Juan de Sabinas, Villa Unión, and Zaragoza in the State of Coahuila;
- Anáhuac, Lampazos de Naranjo, Parás, Sabinas Hidalgo, Vallecillo, and Villaldama in the State of Nuevo León; and
- Guerrero and Nuevo Laredo in the State of Tamaulipas.

The expanded "Area of Influence" – including all the municipalities listed - spans an area of 23,286.74 square miles. This area is bordered by:

- the State of Chihuahua to the West;
- the municipality of Mier (in the State of Tamaulipas) to the East; and
- the municipalities of Ocampo, San Buenaventura, and Progreso (in State of Coahuila), and the municipalities of Bustamante, Salinas Victoria, and Agualeguas (in State of Nuevo León) to the South, and the State of Texas to the North.

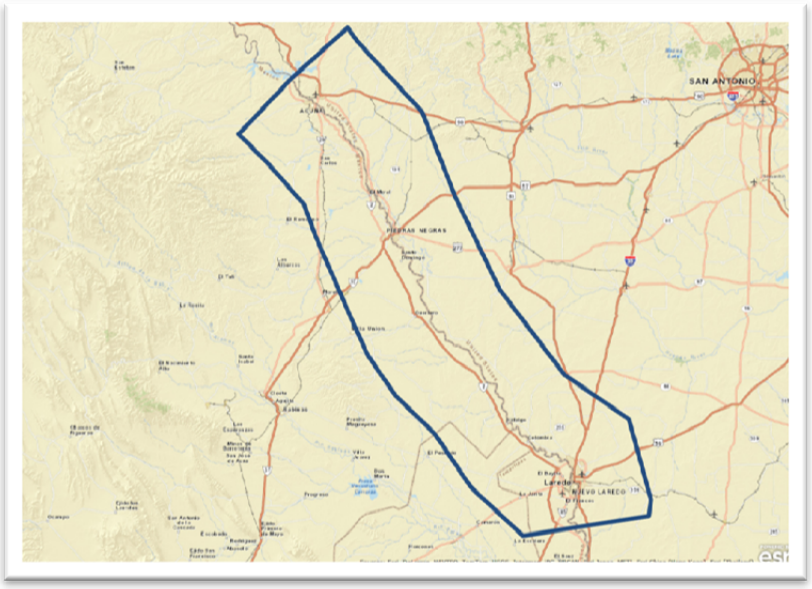



*Figure 3.8: Focused Study Area*

The following demographic, socio-economic, and land use data were obtained from *Consejo Nacional de Población*, *Instituto Nacional de Estadística y Geografía*, and *Comisión Nacional de los Salarios Mínimos*.

### 3.3.1 Population

From Table 3.7 it is evident that the total population of the municipalities included in the "Area of Influence" was 938,819 in 2005. Between 2005 and 2010, the population in the area has increased at an average annual rate of 1.1% to a total of 991,518 in 2010 (or about 9.5 % of the total population in Coahuila, Nuevo León, and Tamaulipas in 2010). However, the increase in

population is concentrated in the largest municipalities in the "Area of Influence": Acuña, Piedras Negras, and Nuevo Laredo. With the exception of these three municipalities and the municipalities of Hidalgo and Nava, the total population in the remaining 17 municipalities has decreased substantially. In the municipalities of Juárez, Lampazos de Naranjo, Parás, Vallecillo, and Guerrero, the total municipal population has decreased on average by more than 2% per year between 2005 and 2010. Furthermore, between 2010 and 2030, it is expected that the region's population will continue to increase, but at a lower rate of 0.7% per year to reach a total population of 1,138,336 by 2030; thus an increase of 146,818 people between 2010 and 2030. This is partly explained by lower anticipated population growth rates in the municipalities of Acuña, Piedras Negras, and Nuevo Laredo, as well as lower anticipated populations in the 17 municipalities that have seen a negative population growth rate since 2005.

It should also be noted that the decrease in population growth in the study area is similar to what is anticipated for the states of Coahuila, Nuevo León, and Tamaulipas and is therefore not a phenomenon limited to the "Area of Influence."

**Table 3.7: Total Population in Mexico Municipalities of Interest (2005 - 2030)***

| Municipality | Year | | | AAGR** | |
|---|---|---|---|---|---|
| | 2005 | 2010 | 2030 | 2005 - 2010 | 2010 - 2030 |
| *Coahuila* | *2,515,416* | *2,655,187* | *3,054,774* | *1.1%* | *0.7%* |
| Acuña | 126,385 | 137,634 | 165,883 | 1.7% | 0.9% |
| Allende | 20,555 | 19,265 | 13,946 | -1.3% | -1.6% |
| Guerrero | 1,925 | 1,763 | 1,176 | -1.7% | -2.0% |
| Hidalgo | 1,533 | 1,589 | 1,695 | 0.7% | 0.3% |
| Jiménez | 9,919 | 9,661 | 8,069 | -0.5% | -0.9% |
| Juárez | 1,441 | 1,271 | 869 | -2.5% | -1.9% |
| Morelos | 7,341 | 7,087 | 5,734 | -0.7% | -1.1% |
| Múzquiz | 63,672 | 61,221 | 48,410 | -0.8% | -1.2% |
| Nava | 25,959 | 27,761 | 31,831 | 1.4% | 0.7% |
| Piedras Negras | 144,393 | 156,629 | 190,904 | 1.6% | 1.0% |
| Sabinas | 53,743 | 51,907 | 41,354 | -0.7% | -1.1% |
| San Juan de Sabinas | 40,794 | 39,536 | 32,341 | -0.6% | -1.0% |
| Villa Unión | 6,231 | 5,976 | 4,619 | -0.8% | -1.3% |
| Zaragoza | 12,630 | 12,079 | 9,708 | -0.9% | -1.1% |
| *Nuevo León* | *4,221,981* | *4,502,035* | *5,398,387* | *1.3%* | *0.9%* |
| Anáhuac | 18,292 | 17,544 | 14,004 | -0.8% | -1.1% |
| Lampazos de Naranjo | 4,608 | 4,069 | 2,758 | -2.5% | -1.9% |
| Parás | 996 | 864 | 591 | -2.8% | -1.9% |
| Sabinas Hidalgo | 32,496 | 31,162 | 24,110 | -0.8% | -1.3% |
| Vallecillo | 1,917 | 1,717 | 1,159 | -2.2% | -1.9% |
| Villaldama | 4,175 | 4,032 | 3,227 | -0.7% | -1.1% |
| *Tamaulipas* | *3,035,926* | *3,230,307* | *3,824,091* | *1.2%* | *0.8%* |
| Guerrero | 3,982 | 3,566 | 2,404 | -2.2% | -2.0% |
| Nuevo Laredo | 355,832 | 395,185 | 533,544 | 2.1% | 1.5% |
| *Total* | *938,819* | *991,518* | *1,138,336* | *1.1%* | *0.7%* |

Note: * The data corresponds to the entire municipality, not to the portion of the municipality within the 60-mile "Area of Influence"
** Average Annual Growth Rate
Source: CONAPO and INEGI.

### 3.3.2 Employment

From Table 3.8 it is evident that 401,793 people were employed in the municipalities that comprise the expanded "Area of Influence" in 2005. Between 2005 and 2010 employment increased at an average annual rate of 1.5% to reach 432,957 in 2010 (representing 9.4% of the total employment in the states of Coahuila, Nuevo León, and Tamaulipas). Similar to the

population statistics, some municipalities – i.e., Acuña, Hidalgo, Jiménez, Nava, Piedras Negras, and Nuevo Laredo – experienced an increase in employment, while employment in all the remaining municipalities decreased between 2005 and 2010.

However, contrary to the population forecasts, employment in the expanded "Area of Influence" is expected to continue to increase at a similar rate (i.e., 1.4% per year on average) between 2010 and 2030 than between 2005 and 2010 (i.e., 1.5% per year on average) to reach 570,455 in 2030 (see Table 3.8). The highest annual average increase in employment is expected in the municipalities of Acuña, Hidalgo, Nava, Piedras Negras, and Nuevo Laredo. In all the remaining municipalities, lower employment is anticipated.

**Table 3.8: Employment in Mexico Municipalities of Interest (2005 - 2030)*, ****

| Municipality | Year | | | AAGR*** | |
|---|---|---|---|---|---|
| | 2005 | 2010 | 2030 | 2005 - 2010 | 2010 - 2030 |
| *Coahuila* | *1,038,540* | *1,131,054* | *1,506,637* | *1.7%* | *1.4%* |
| Acuña | 52,181 | 58,629 | 81,815 | 2.4% | 1.7% |
| Allende | 8,487 | 8,206 | 6,878 | -0.7% | -0.9% |
| Guerrero | 795 | 751 | 580 | -1.1% | -1.3% |
| Hidalgo | 633 | 677 | 836 | 1.4% | 1.1% |
| Jiménez | 4,095 | 4,115 | 3,980 | 0.1% | -0.2% |
| Juárez | 595 | 541 | 429 | -1.9% | -1.2% |
| Morelos | 3,031 | 3,019 | 2,828 | -0.1% | -0.3% |
| Múzquiz | 26,288 | 26,079 | 23,876 | -0.2% | -0.4% |
| Nava | 10,718 | 11,826 | 15,699 | 2.0% | 1.4% |
| Piedras Negras | 59,616 | 66,721 | 94,155 | 2.3% | 1.7% |
| Sabinas | 22,189 | 22,111 | 20,396 | -0.1% | -0.4% |
| San Juan de Sabinas | 16,843 | 16,842 | 15,951 | 0.0% | -0.3% |
| Villa Unión | 2,573 | 2,546 | 2,278 | -0.2% | -0.6% |
| Zaragoza | 5,215 | 5,145 | 4,788 | -0.3% | -0.4% |
| *Nuevo León* | *1,935,774* | *2,051,168* | *2,749,987* | *1.2%* | *1.5%* |
| Anáhuac | 8,387 | 7,993 | 7,134 | -1.0% | -0.6% |
| Lampazos de Naranjo | 2,113 | 1,854 | 1,405 | -2.6% | -1.4% |
| Parás | 457 | 394 | 301 | -2.9% | -1.3% |
| Sabinas Hidalgo | 14,899 | 14,198 | 12,282 | -1.0% | -0.7% |
| Vallecillo | 879 | 782 | 590 | -2.3% | -1.4% |
| Villaldama | 1,914 | 1,837 | 1,644 | -0.8% | -0.6% |
| *Tamaulipas* | *1,349,052* | *1,447,584* | *1,945,125* | *1.4%* | *1.5%* |
| Guerrero | 1,769 | 1,598 | 1,223 | -2.0% | -1.3% |
| Nuevo Laredo | 158,118 | 177,093 | 271,387 | 2.3% | 2.2% |
| *Total* | *401,793* | *432,957* | *570,455* | *1.5%* | *1.4%* |

Note: * The data corresponds to the entire municipality, not to the portion of the municipality within the 60-mile "Area of Influence"
** The employment information for each municipality is estimated from the population data for the respective municipality and states' percentage of economically active population
*** Average Annual Growth Rate
Source: CONAPO and INEGI.

### 3.3.3 Income

Limited income information is available for the Mexican states and municipalities that comprise the "Area of Influence." Table 3.9 illustrates that the minimum annual wage in the states of Coahuila and Nuevo León was $1,051 and $1,165 in the State of Tamaulipas in 2005. Also, from Table3.9, it is evident that the minimum annual wage increased on average 0.6% per

year in the municipalities that comprise the expanded "Area of Influence" in the states of Coahuila and Nuevo León between 2005 and 2010 to reach $1,082 per year in 2010. However, during the same period, the minimum wage decreased on average by 0.4% per year in the municipalities that comprise the "Area of Influence" in Tamaulipas to reach $1,141 per year in 2010. Consequently, by 2010, the minimum wage in the municipalities that comprise the expanded "Area of Influence" is relatively uniform. For comparison, the minimum wage in Texas is $15,080 per year (assuming a 40 hour week; 52 weeks a year schedule).

**Table 3.9: Minimum Wage in Mexico Municipalities of Interest (2005 - 2010)**[*, **, ***]

| Municipality | Year | | AAGR**** |
|---|---|---|---|
| | 2005 | 2010 | 2005 - 2010 |
| *Coahuila* | - | - | - |
| Acuña | 1,051 | 1,082 | 0.6% |
| Allende | 1,051 | 1,082 | 0.6% |
| Guerrero | 1,051 | 1,082 | 0.6% |
| Hidalgo | 1,051 | 1,082 | 0.6% |
| Jiménez | 1,051 | 1,082 | 0.6% |
| Juárez | 1,051 | 1,082 | 0.6% |
| Morelos | 1,051 | 1,082 | 0.6% |
| Múzquiz | 1,051 | 1,082 | 0.6% |
| Nava | 1,051 | 1,082 | 0.6% |
| Piedras Negras | 1,051 | 1,082 | 0.6% |
| Sabinas | 1,051 | 1,082 | 0.6% |
| San Juan de Sabinas | 1,051 | 1,082 | 0.6% |
| Villa Unión | 1,051 | 1,082 | 0.6% |
| Zaragoza | 1,051 | 1,082 | 0.6% |
| *Nuevo León* | - | - | - |
| Anáhuac | 1,051 | 1,082 | 0.6% |
| Lampazos de Naranjo | 1,051 | 1,082 | 0.6% |
| Parás | 1,051 | 1,082 | 0.6% |
| Sabinas Hidalgo | 1,051 | 1,082 | 0.6% |
| Vallecillo | 1,051 | 1,082 | 0.6% |
| Villaldama | 1,051 | 1,082 | 0.6% |
| *Tamaulipas* | - | - | - |
| Guerrero | 1,165 | 1,141 | -0.4% |
| Nuevo Laredo | 1,165 | 1,141 | -0.4% |

Note: * The data corresponds to the entire municipality, not to the portion of the municipality within the 60-mile "Area of Influence"
** The Mexican Pesos have been converted based on the average annual exchange rate reported by the U.S. Federal Reserve
*** Minimum wages are calculated based on a 40 hours a week, 52 weeks a year schedule
**** Average Annual Growth Rate
Source: CONASAMI and INEGI.

Table 3.10 presents the percentages of workers that earn in between less than one to more than five minimum wages in all three states of the Area of Influence. It can be noted that in the case of Coahuila and Tamaulipas, approximately 50% of the working population earns in between one and three minimum wage salaries (ie. for Coahuila in between $1,082 to $3,226, and for Tamaulipas in between $1,142 to $3,426) whereas in Nuevo León workers earn in between two and five minimum wage salaries (ie. $2,105 to $5,255). Tamaulipas presents the highest percentage of workers that earn less than the minimum wage at 12.4%, closely followed by Coahuila (11.5%) and Nuevo León (7.8%). Nuevo León has the lowest percentage of working population with no income (ie. unpaid internships) at 3.3% but the highest percentage under the category "not specified" at 13.4%.

**Table 3.10: Number of Minimum Wages Earned by the Working Population in Mexico per State of Interest (2010)***

| States | Number of Minimum Wages | | | | | Others | |
|---|---|---|---|---|---|---|---|
| | <1 | 1-2 | 2-3 | 3-5 | >5 | No Income | Not specified |
| *Coahuila* | 11.5% | 25.2% | 25.9% | 18.3% | 11.4% | 4.4% | 3.3% |
| *Nuevo León* | 7.8% | 11.7% | 24.4% | 25.1% | 14.3% | 3.3% | 13.4% |
| *Tamaulipas* | 12.4% | 25.4% | 24.6% | 16.7% | 10.1% | 5.7% | 5.1% |

Note: * The data corresponds to the entire state, not to the portion or municipalities within the 60-mile "Area of Influence"

Source: INEGI (Anuario de Estadísticas por Entidad Federativa 2011).

### 3.3.4 Land Use

Table 3.11 provides an overview of the land use in the municipalities that comprise the expanded "Area of Influence" and in the states of Coahuila, Nuevo León, and Tamaulipas. From Table 3.10 it is evident that most of the available land in the expanded "Area of Influence" (approximately 78%) is currently not developed (i.e., designated as agricultural or urban land use). Of the remaining land area, approximately 21% is used for agriculture and grazing and only 0.5% is designated as urban area (i.e., used for commercial, industrial, and residential purposes). Finally, in terms of land area, the largest urban areas are found in the municipalities of Nuevo Laredo, Piedras Negras, Sabinas, and Acuña.

In addition to the national statistics, more detailed land use information was also obtained from the Master Plans of the cities of Nuevo Laredo, Piedras Negras, and Acuña.

**Table 3.11: Land Use Data for Mexico Municipalities of Interest** *,**

| Municipality | Area (ha) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Agriculture | Pasture | Forest | Jungle | Bush | Other Vegetation | Secondary Vegetation | No Vegetation | Water Bodies | Urban | Reforested *** | Total |
| *Coahuila* | *2,909.46* | *4,680.49* | *1,768.60* | *0.00* | *43,496.19* | *77.32* | *4,983.50* | *267.91* | *149.98* | *184.86* | *147.89* | *58,518.30* |
| Acuña | 23.67 | 301.46 | 136.62 | 0.00 | 3,410.47 | 19.68 | 479.36 | 9.84 | 36.75 | 9.89 | 2.90 | 4,427.73 |
| Allende | 23.92 | 4.51 | 2.25 | 0.00 | 53.13 | 0.00 | 10.47 | 0.00 | 0.00 | 2.84 | 0.00 | 97.12 |
| Guerrero | 62.56 | 191.08 | 14.94 | 0.00 | 798.56 | 0.00 | 57.95 | 0.00 | 4.07 | 1.14 | 0.00 | 1,130.30 |
| Hidalgo | 5.36 | 115.30 | 0.00 | 0.00 | 301.96 | 0.00 | 9.50 | 0.68 | 2.19 | 1.11 | 0.00 | 436.10 |
| Jiménez | 83.73 | 18.80 | 0.00 | 0.00 | 586.52 | 1.65 | 150.31 | 0.00 | 6.23 | 2.56 | 0.00 | 849.80 |
| Juárez | 22.99 | 162.74 | 0.00 | 0.00 | 671.67 | 0.00 | 71.85 | 0.00 | 19.19 | 0.64 | 0.00 | 949.09 |
| Morelos | 30.72 | 30.65 | 6.27 | 0.00 | 127.77 | 0.00 | 49.59 | 0.00 | 0.00 | 1.90 | 0.00 | 246.91 |
| Múzquiz | 63.56 | 456.98 | 323.25 | 0.00 | 1,699.15 | 6.73 | 637.42 | 1.84 | 4.00 | 7.69 | 0.39 | 3,200.61 |
| Nava | 69.61 | 77.34 | 9.37 | 0.00 | 126.15 | 0.00 | 50.16 | 12.82 | 0.27 | 4.89 | 0.00 | 350.62 |
| Piedras Negras | 27.59 | 15.70 | 0.00 | 0.00 | 98.01 | 1.49 | 23.66 | 0.00 | 0.92 | 15.86 | 0.00 | 183.23 |
| Sabinas | 20.18 | 146.44 | 0.00 | 0.00 | 472.76 | 0.00 | 112.14 | 0.00 | 0.47 | 11.08 | 0.58 | 763.07 |
| San Juan de Sabinas | 35.68 | 75.92 | 0.00 | 0.00 | 148.35 | 0.00 | 46.14 | 0.00 | 0.07 | 3.90 | 0.39 | 310.05 |
| Villa Unión | 58.92 | 15.94 | 0.02 | 0.00 | 588.59 | 0.00 | 50.55 | 0.00 | 0.88 | 1.50 | 0.54 | 716.40 |
| Zaragoza | 81.77 | 233.46 | 229.92 | 0.00 | 2,318.15 | 0.94 | 194.56 | 1.30 | 3.00 | 2.24 | 6.80 | 3,065.32 |
| *Nuevo León* | *3,150.73* | *4,756.49* | *1,748.41* | *36.66* | *12,715.11* | *13.79* | *2,081.72* | *10.85* | *60.68* | *220.95* | *7.65* | *24,795.40* |
| Anáhuac | 189.67 | 539.49 | 0.00 | 0.00 | 966.48 | 0.00 | 62.05 | 0.00 | 4.89 | 3.02 | 0.00 | 1,765.59 |
| Lampazos de Naranjo | 13.17 | 362.68 | 7.32 | 0.00 | 878.56 | 0.00 | 59.85 | 0.00 | 0.77 | 1.46 | 0.00 | 1,323.81 |
| Parás | 0.35 | 195.34 | 0.00 | 0.00 | 227.68 | 0.00 | 27.73 | 0.00 | 1.22 | 0.44 | 0.00 | 452.76 |
| Sabinas Hidalgo | 48.33 | 193.86 | 11.56 | 0.00 | 310.20 | 0.00 | 27.87 | 0.00 | 0.29 | 3.32 | 0.00 | 595.42 |
| Vallecillo | 46.32 | 190.28 | 0.00 | 0.00 | 406.36 | 0.00 | 37.41 | 0.00 | 0.97 | 0.63 | 0.00 | 681.96 |
| Villaldama | 24.15 | 53.98 | 19.66 | 0.00 | 233.49 | 0.00 | 7.24 | 0.00 | 0.05 | 1.09 | 0.00 | 339.64 |
| *Tamaulipas* | *7,916.91* | *6,460.29* | *1,804.74* | *2,279.85* | *5,367.30* | *908.64* | *4,537.79* | *100.02* | *1,300.94* | *278.95* | *17.22* | *30,955.44* |
| Guerrero | 13.36 | 389.72 | 0.00 | 0.00 | 422.11 | 0.00 | 43.80 | 0.00 | 66.94 | 1.22 | 0.08 | 937.13 |
| Nuevo Laredo | 19.60 | 225.39 | 0.00 | 0.00 | 170.11 | 0.00 | 10.79 | 0.00 | 2.65 | 35.52 | 0.00 | 464.05 |
| *Total* | *965.18* | *3,997.07* | *761.18* | *0.00* | *15,016.21* | *30.48* | *2,220.39* | *26.49* | *155.82* | *113.94* | *11.66* | *23,286.74* |

Note: * The data corresponds to the entire municipality, not to the portion of the municipality within the 60-mile "Area of Influence"
** Based on 2005 statistics
*** Based on 2008 statistics
Source: INEGI.

Figures 3.9 and 3.10 and Table 3.12 provide land use information for the City of Nuevo Laredo. From Table 3.12, it can be seen that more than half (i.e., 52%) of the total land in the City of Nuevo Laredo is designated as residential. Land used for transportation infrastructure accounts for 16.5%, commercial developments account for 6.9%, and industrial parks account for 5.5% of the total land area in the City of Nuevo Laredo. Interestingly, only 5.2% of the total land in the city of Nuevo Laredo is still undeveloped/vacant, which means that land is limited to accommodate future growth.

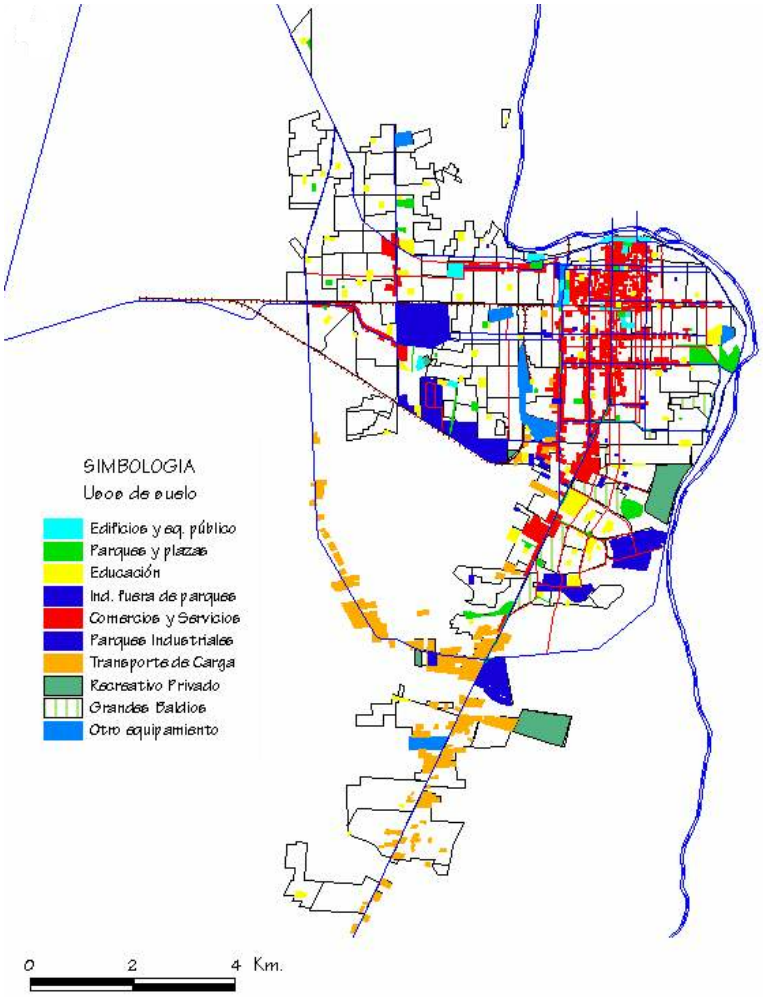



*Figure 3.9: City of Nuevo Laredo Land Use Map (1999)*

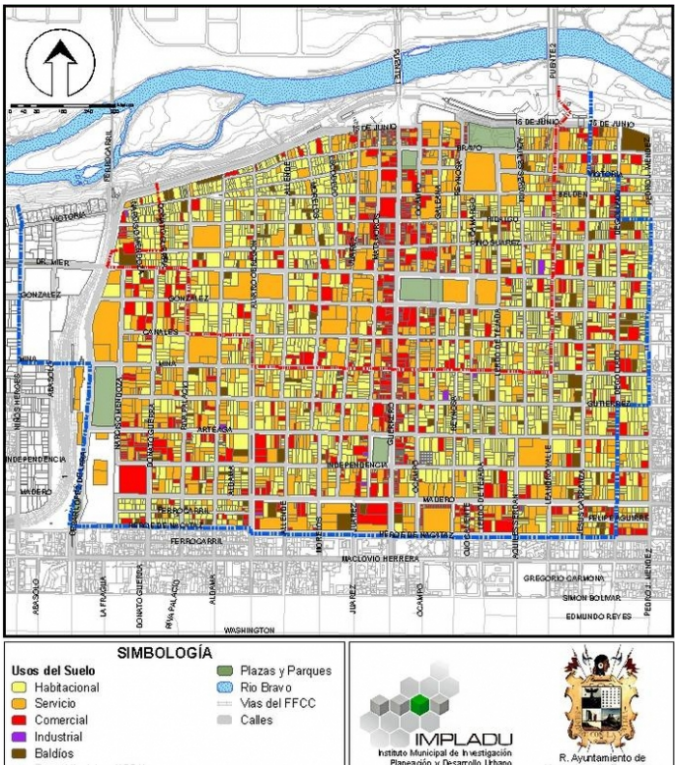



*Figure 3.10: Downtown - City of Nuevo Laredo Land Use Map (2009)*

**Table 3.12: City of Nuevo Laredo Land Use Data**

| Land Use Class | Percentile | Area ($mi^2$) |
|---|---|---|
| Residential | 52.0% | 11.42 |
| Commercial | 6.9% | 1.52 |
| Industrial Parks | 5.0% | 1.11 |
| Industrial Outside Parks | 0.5% | 0.12 |
| Transportation of Goods | 4.7% | 1.03 |
| Transportation Infrastructure | 16.5% | 3.62 |
| Recreation | 1.5% | 0.33 |
| Public | 1.1% | 0.24 |
| Private Recreation | 2.1% | 0.46 |
| Education | 2.5% | 0.55 |
| Vacant | 5.2% | 1.15 |
| Other | 1.9% | 0.42 |
| *Total* | *100.0%* | *21.97* |

Source: Nuevo Laredo Plan Director de Desarrollo 2000 – 2020.

Figure 3.11 and Table 3.13 provide land use information for the City of Acuña. Similar to the City of Nuevo Laredo, more than half (i.e., 54%) of the total land in the City of Acuña is

designated as residential. Land designated as industrial and commercial represents 6% and 2%, respectively of the total land in the City of Acuña. In contrast to the City of Nuevo Laredo and the City of Piedras Negras (see subsequent section), 28% of the total land in the City of Acuña is vacant that can therefore accommodate considerable future growth.

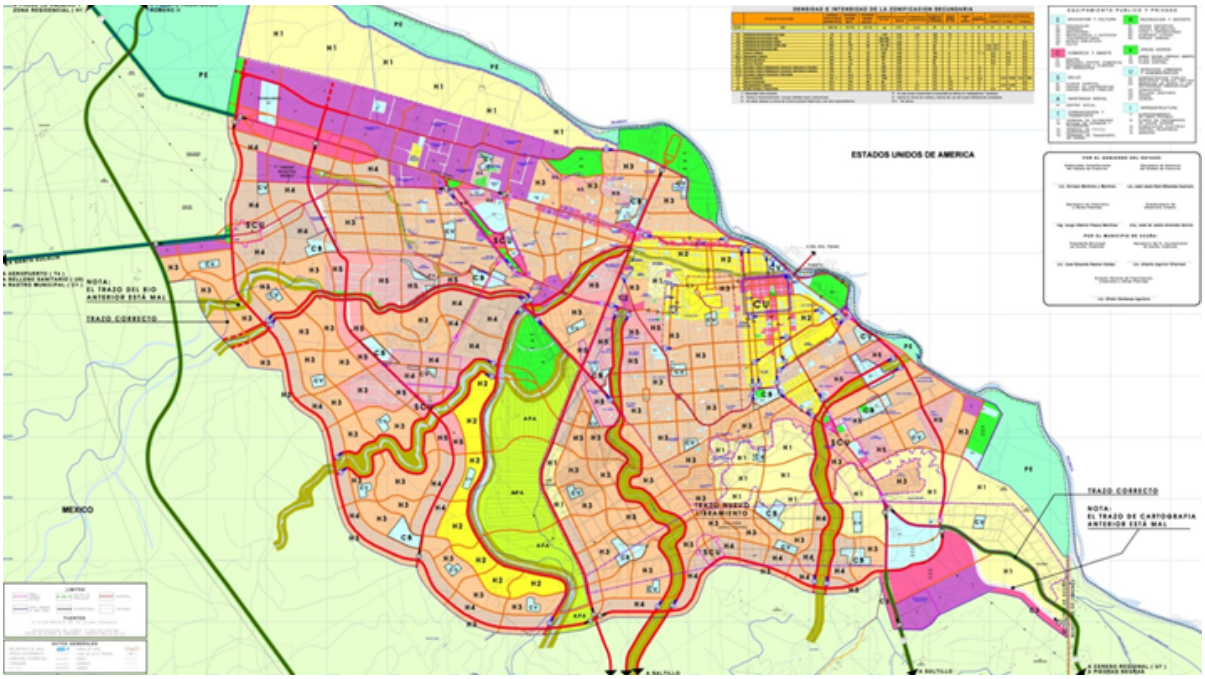



*Figure 3.11: City of Acuña Land Use Map (2008)*

**Table 3.13: City of Acuña Land Use Data**

| Land Use Class | Percentile | Area ($mi^2$) |
|---|---|---|
| Residential | 54.0% | 7.24 |
| Industrial | 6.0% | 0.80 |
| Commercial | 2.0% | 0.27 |
| Public | 8.0% | 1.07 |
| Green Areas | 2.0% | 0.27 |
| Vacant | 28.0% | 3.75 |
| *Total* | *100.0%* | *13.39* |

Source: Plan Director de Desarrollo Urbano de Ciudad Acuña, Coahuila.

Figure 3.12 and Table 3.14 provide land use information for the City of Piedras Negras. From Table 3.13, it is evident that a large percentage of the city's total land area (i.e., 68.9%) is designated residential compared to the City of Nuevo Laredo (52%) and the City of Acuña (54%). However, similar to the City of Acuña, 5.2% and 2.3%, respectively of the total land area are used for industrial and commercial purposes. Only 2.2% of the total land area is still undeveloped/vacant, which will constrain the city's ability to accommodate future growth.

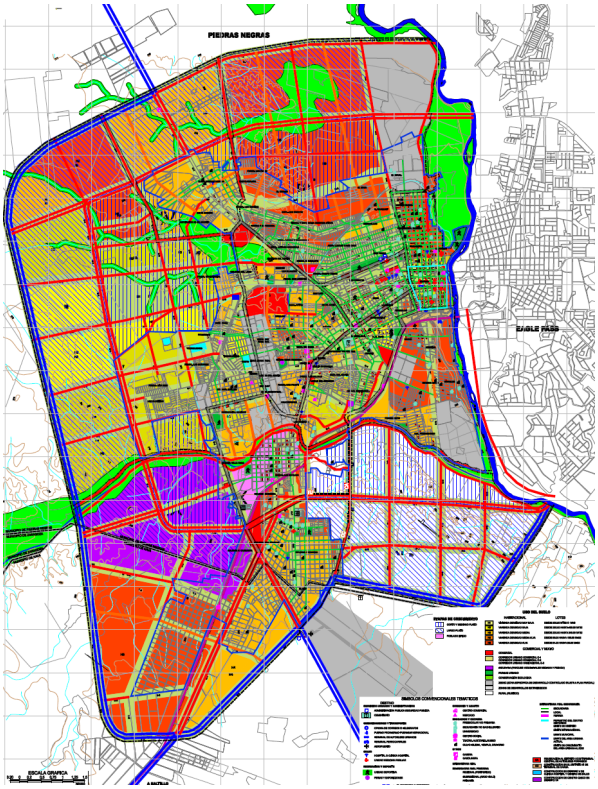



*Figure 3.12: City of Piedras Negras Land Use Map (2006)*

**Table 3.14: City of Piedras Negras Land Use Data**

| Land Use Class | Percentile | Area ($mi^2$) |
|---|---|---|
| Residential | 68.9% | 15.24 |
| Industrial | 5.2% | 1.14 |
| Commercial | 2.3% | 0.51 |
| Services | 5.0% | 1.10 |
| Public | 2.4% | 0.53 |
| Transp. Infrastructure | 13.1% | 2.89 |
| Vacant | 2.2% | 0.50 |
| Preservation Areas | 0.9% | 0.20 |
| *Total* | *100.0%* | *22.10* |

Source: Plan Director de Desarrollo Urbano de Piedras Negras.

## 3.4 Mexico's Major Trade Corridors

A Multimodal Corridor Master Plan (MCMP) was concluded in 2010 for Mexico's Secretariat for Communications and Transportation (*Secretaría de Comunicaciones y Transportes*, or SCT). The study was funded by the U.S. Trade Development Agency (USTDA) and conducted by Wilbur Smith Associates. The goal of the MCMP was to provide SCT with a tool to plan and promote investments in infrastructure and logistics systems that will serve the

needs of Mexico's domestic market and enhance international trade with NAFTA partners and other countries. *"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, 2010[10]).


Source: SCT, 2010.

*Figure 3.13: Corridor 6*

[10] Secretaría de Comunicaciones y Transportes (SCT) 2010. Master Plan for the Multimodal Corridors in Mexico

The project comprised 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 the development of a freight demand model that was used to estimate freight flows through Mexico's major seaports, cross-border traffic with the U.S., and domestic freight flows with origins and destinations in Mexico. The report stated that by 2020, Tamaulipas will be one of the 10 Mexican states with the highest economic growth and that cross border trade with the U.S. will grow at an average annual rate of 6%, which translates into an increase of approximately 110 million tons between 2010 and 2020.

In addition, the study team also performed a detailed analysis of 18 multimodal corridors that were identified in Mexico. These corridors were identified considering the spatial concentration of population, employment, and the existing freight transportation network and facilities. One of the corridors analyzed was the corridor from Lázaro Cárdenas to Querétaro to San Luis Potosí to Monterrey to Nuevo Laredo (i.e., Corridor 6). This corridor traverses seven Mexican states: Michoacán, Guanajuato, Querétaro, San Luis Potosí, Coahuila, Nuevo León, and Tamaulipas (see Figure 3.13).

The identified corridors were evaluated qualitatively and quantitatively using multi-attribute criteria. Table 3.15 provides a summary of the results of the qualitative assessment that was done for Corridor 6.

**Table 3.15: Summary of Qualitative Evaluation of Corridor 6**

| Criteria | | Corridor 6 |
|---|---|---|
| Demand (Freight Volume) | For multimodal development | High |
| | For international traffic | High |
| | For long-haul movements | High |
| Value of the Multimodal Corridor for: | Domestic trade | Low |
| | International trade | High |
| | Transshipment trade | High |
| | Stimulate regional growth | Medium |
| Shortages in current service levels compared to transport users' requirement that increases goods' delivery time | Railroad interlinearity | Not Problematic |
| | Railroad equipment | Sufficient |
| | Railroad infrastructure | Sufficient |
| | 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 | Problematic |
| Excessive logistical costs for shippers affecting the competitiveness of industries in Mexico | Railroads | Competitive |
| | Highways | Competitive |
| | Port terminals (origin/destination) | Competitive |
| | Inland terminals | Competitive |
| | Terminals at origin and/or | Competitive |

| Criteria | | Corridor 6 |
|---|---|---|
| and increase prices for consumers | destination | |
| Inadequate infrastructure capacity resulting in bottlenecks | Terminals for cargo handling at the origin | Sufficient |
| | Terminals for cargo handling at the destination | Sufficient |
| | Inland terminals | Sufficient |
| | Highway network | Sufficient |
| Deficits in the safety that limit exports by not being able to satisfy new requirements or safety standards | Security deficiencies in the railroad network | Problematic |
| | Security deficiencies in the highway network | Problematic |

Source: SCT, 2010.

As is evident from Table 3.15 Corridor 6 was rated high in terms of demand (freight volumes) for multimodal development, for international traffic - only corridor that were rated high in terms of this sub-criteria - and for long-haul movements. In addition, Corridor 6 was rated important as a multimodal corridor for facilitating international and transshipment trade.

As mentioned earlier, the qualitative assessment was supplemented with a quantitative assessment of the 18 identified corridors using multi-attribute criteria. Table 3.16 summarizes the final outcome of the prioritization process.

**Table 3.16: Final Outcome of Prioritization Process for Corridor 6**

| Corridors | Criteria to Identify the Priority Corridors | | | | | | |
|---|---|---|---|---|---|---|---|
| | Future Demand | Potential increase for rail to participate | Potential increase in container usage | Potential for national economic development | Connect-ivity | Infrastruc-ture/ 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- | 3.65 | 2.85 | 2.65 | 2.50 | 2.85 | 2.50 | 17.00 |

| Corridors | Criteria to Identify the Priority Corridors | | | | | | |
|---|---|---|---|---|---|---|---|
| | Future Demand | Potential increase for rail to participate | Potential increase in container usage | Potential for national economic development | Connect-ivity | Infrastruc-ture/ Service Quality | Total |
| Altamira/Tampico | | | | | | | |
| *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 |
| Topolobambo-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 |
| 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, 2010.

Corridors that scored higher than 120 were prioritized for investments in the short term. As can be seen from Table 3.16, Corridor 6 received the highest score largely because of the volume and the value of intermodal freight that is moved on the corridor. It also received a high

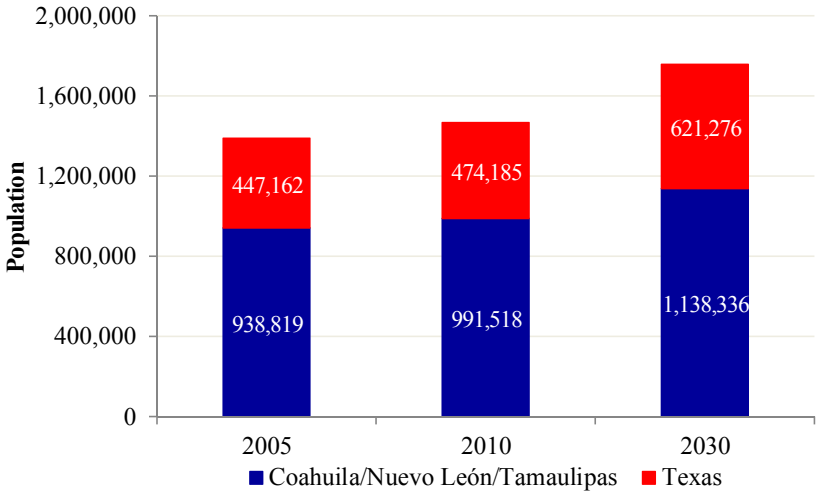
rating for its potential to (1) increase the share of rail transportation in the corridor, (2) facilitate domestic container usage, and 3) for ensuring quality infrastructure and service. Because Corridor 6 was ranked a high priority corridor, a needs analysis was subsequently performed to (1) identify bottlenecks and issues that prevent the efficient and effective operation of the multimodal corridor, 2) estimate the costs and potential benefits of the proposed initiatives, (3) evaluate and prioritize initiatives, (4) analyze risks, and to (4) identify potential funding sources and U.S. suppliers. In general, it was concluded that for Corridor 6 the construction of rail bypasses will secure the largest economic benefits in the short term. Over the long term, rail capacity improvements will result in large economic benefits due to improved freight transportation efficiency and reduced rail infrastructure maintenance costs.

## 3.5 "Area of Influence" Demographic and Socio-Economic Characteristics

The following section analyzes the population and employment profile for the combined "Area of Influence" (both Texas and Mexico sides).

### 3.5.1 Population

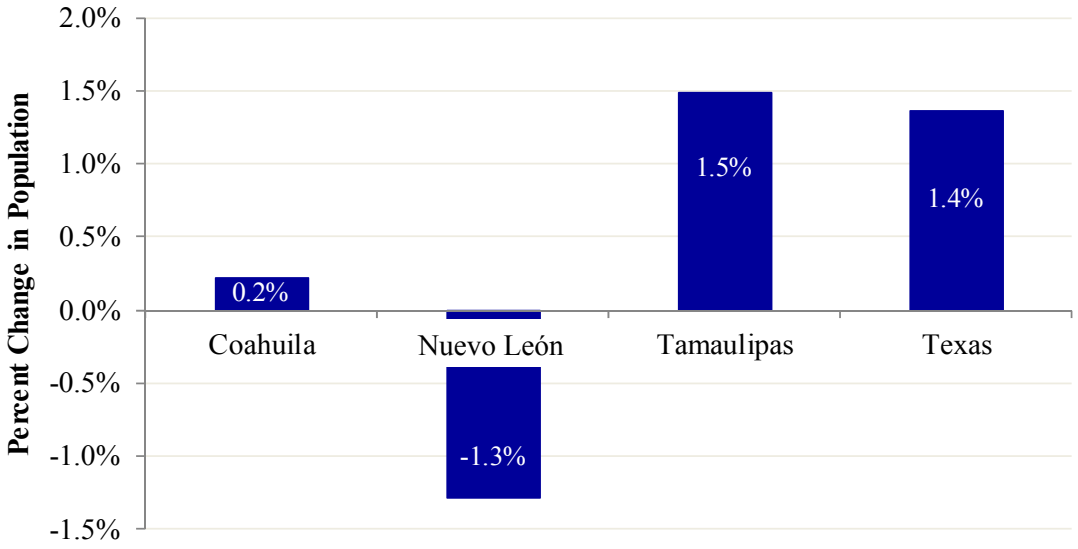
Figure 3.14 summarizes the population for the expanded "Area of Influence" in Mexico and Texas, respectively. From Figure 3.14, it is evident that the population in 2005 was 1,385,981. By 2010, the population increased by 79,722 people to reach 1,465,703. By 2030, it is expected that the total population in the expanded "Area of Influence" will increase to 1,759,612 people. It is also interesting to note that in 2005 approximately 68% of the total population in the expanded "Area of Influence" resided in the Mexican municipalities. However, by 2030, it is anticipated that the population residing in the Mexican municipalities will comprise a slightly lower percentage (i.e., 65%) of the total population in the expanded "Area of Influence." In other words, a higher population growth rate is anticipated in the Texas counties than in the Mexican municipalities that comprise the expanded "Area of Influence." The higher population growth in Texas is mostly anticipated for Webb County (City of Laredo) and Zapata County, and to a lesser extent for the counties of Crockett, Zavala, and Maverick.




Source: CONAPO, INEGI, Texas SDC, Texas DSHS, US Census Bureau.

*Figure 3.14: Population in Expanded "Area of Influence" (2005-2030)*

As can be seen from Figure 3.15, the increase in population in the expanded "Area of Influence" between 2010 and 2030 is mostly attributable to the anticipated increase in population in the municipalities in the State of Tamaulipas and the counties in Texas. The population in the municipalities in the State of Coahuila is expected to increase at a marginal average annual rate of 0.2%. Even so, by 2030 most of the population residing in the municipalities that comprise the expanded "Area of Influence" in the Mexico will reside in Coahuila (although by a very small margin due to the rapid population growth anticipated in Tamaulipas). Also, the population in the municipalities in the State of Nuevo León is expected to decrease at a rate of -1.3% per year. Overall, for the entire expanded "Area of Influence," the population is expected to increase at an average annual rate of 0.9% between 2010 and 2030.

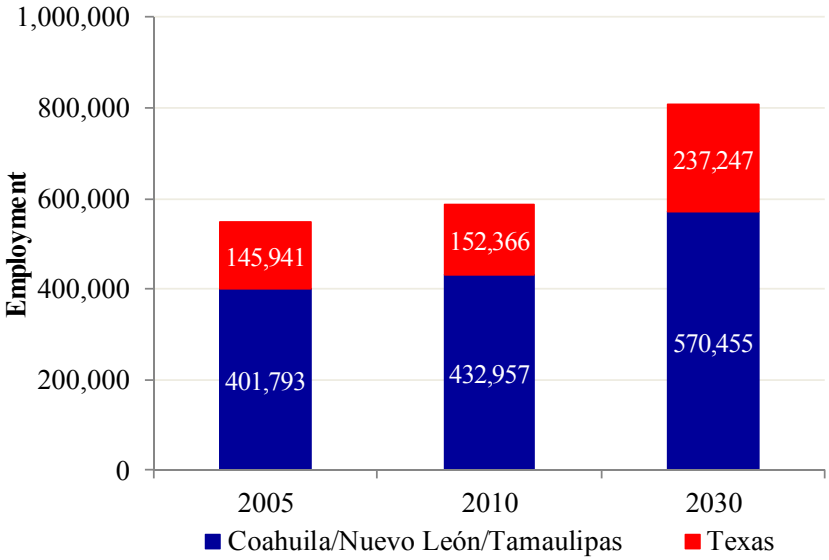



Source: CONAPO, INEGI, Texas SDC, Texas DSHS, US Census Bureau.

*Figure 3.15: Annual Average Population Growth Rates in "Area of Influence" (2010-2030)*

### 3.5.2 Employment

As can be seen from Figure 3.16, 547,734 people were employed in the expanded "Area of Influence" in 2005. By 2010, the number increased by 37,589 so that total employment reached 585,323 in the area. It is anticipated that employment will continue to increase to reach 807,702 by 2030 - an increase of 259,968 in the number of people employed compared to 2005. It is also interesting to note that in 2005, the employment was concentrated in the Mexican municipalities that comprise the expanded "Area of Influence"- accounting for 73% of the total employment in the expanded "Area of Influence." However, a higher employment growth rate is predicted for the Texas counties than for the Mexican municipalities that comprise the expanded "Area of Influence," By 2030 it is thus anticipated that employment in the Texas counties would account for approximately 30% of the total employment in the expanded "Area of Influence."

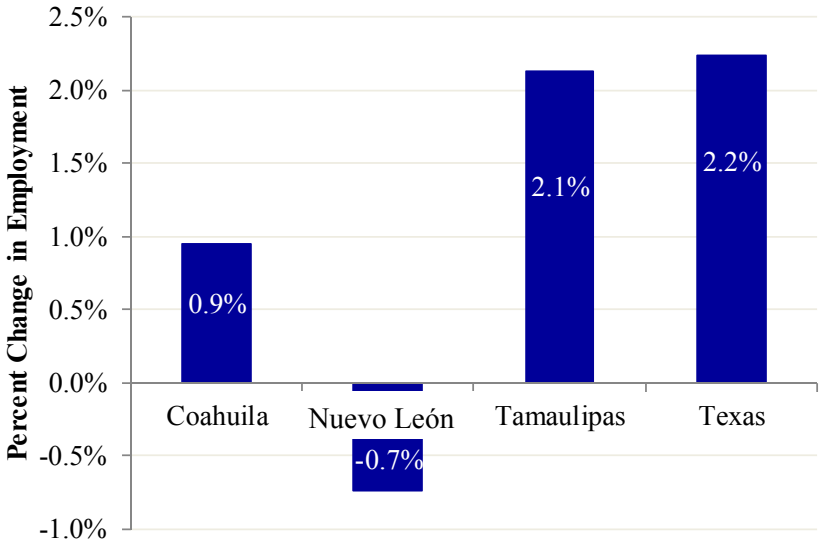



Source: CONAPO, INEGI, US BLS, US Census Bureau.

*Figure 3.16: Distribution of Employment in "Area of Influence" (2005-2030)*

Figure 3.17 illustrates the anticipated average annual employment growth rates for the municipalities and counties that comprise the expanded "Area of Influence" in Mexico and Texas, respectively between 2010 and 2030. Similar to the population growth estimates, employment growth between 2010 and 2030 is mostly attributable to the anticipated employment growth in the municipalities in the State of Tamaulipas and the counties in Texas. However, contrary to the population growth estimates, a higher employment growth rate is anticipated for the counties in Texas than for the municipalities in the State of Tamaulipas.

Employment in the municipalities in the State of Coahuila is expected to increase at a lower annual rate of 0.9%, but the municipalities in Coahuila will continue to have the highest employment in the expanded "Area of Influence" in Mexico. Similar to the population estimates, employment in the municipalities in the State of Nuevo León is expected to decrease at a rate of 0.7% per year. Overall, for the entire expanded "Area of Influence," employment is expected to increase at an average annual rate of 1.6% between 2010 and 2030.




Source: CONAPO, INEGI, US BLS, US Census Bureau.

*Figure 3.17: Annual Average Employment Growth Rates in "Area of Influence" (2010-2030)*

## 3.6 Concluding Remarks

To conclude, in the next 20 years (i.e., 2010 to 2030) total population and total employment in the expanded "Area of Influence" is anticipated to increase by approximately 20% and 38%, respectively. Total population in the expanded "Area of Influence" is expected to increase from 1,465,703 in 2010 to 1,759,612 in 2030 – an increase of 293,909 people. Total employment in the expanded "Area of Influence" is expected to increase from 585,323 in 2010 to 807,702 in 2030 – an increase of 222,379 in employment.

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 will be strained in the future. Chapter 4 provides an overview of the current POEs and the transportation facilities serving those POEs.

# Chapter 4. Current Ports-of-Entry and Related Transportation Facilities

There are 11 Ports-of-Entry (POEs) - 34 bridges - between Texas and Mexico. Twenty eight bridges facilitate vehicular and or pedestrian traffic and five serve freight rail. Presidio – the 6th rail bridge – has been closed. The 11 major POEs on the Texas-Mexico border are: Brownsville, Del Rio, Eagle Pass, El Paso, Harlingen, Laredo, McAllen-Hidalgo, Presidio, Progreso, Rio Grande City, and Roma. Of the five rail bridges on the Texas-Mexico border, the Laredo/Nuevo Laredo freight rail gateway and the Eagle Pass/Piedras Negras rail gateway handle the largest import and export values of rail trade between the U.S. and Mexico via Texas. In 2010, the total USA/Mexico trade value that crossed in Laredo/Nuevo Laredo was $122 billion - $58 billion in exports and $64 billion in imports. In Eagle Pass/Piedras Negras, the total trade value that crossed the border was $17 billion - $6 billion in exports and $11 billion in imports, and in Del Rio, the total trade value that crossed the border was $3 billion - $1 billion in exports and $2 billion in imports (BTS, 2011[11]).

This Chapter of the Border Master Plan describes the current and projected conditions of the POEs and their related transportation facilities in three POEs: Laredo/Nuevo Laredo (five bridges), Eagle Pass/Piedras Negras (three bridges), and Del Rio/Acuña (two bridges). These three POEs have eight vehicular or pedestrian bridges and two rail bridges (see Table 4.1). The POEs – i.e., Laredo, Eagle Pass, and Del Rio - are located in Webb, Maverick, and Val Verde counties, respectively on the Texas side. On the Mexico side, the three POEs – i.e., Nuevo Laredo-Colombia, Piedras Negras, and Acuña – are located in the Mexican municipalities of Nuevo Laredo, Anáhuac, Piedras Negras and Acuña. Nuevo Laredo municipality is located in the state of Tamaulipas, Anáhuac municipality in the state of Nuevo León, and Piedras Negras and Acuña municipalities in the state of Coahuila.

**Table 4.1: Number of Bridges in Focused Study Area**

| POE | Number of Vehicular or Pedestrian Bridges | Number of Rail Bridges |
|---|---|---|
| Laredo/Nuevo Laredo - Colombia | 4 | 1 |
| Eagle Pass/Piedras Negras | 2 | 1 |
| Del Rio/Acuña | 2 | 0 |
| *Total* | *8* | *2* |

The rail carriers operating in the study area on the U.S. side are Union Pacific Railroad (UP)[12], Burlington Northern Santa Fe (BNSF)[13], and Kansas City Southern Railway Company

[11] BTS, North American Transborder Freight Data. Retrieved September, 2011 http://www.bts.gov/programs/international/transborder/TBDR_QA.html

[12] UP operates the largest rail network in Texas and has direct international connections with Ferromex in Eagle Pass and KCSM in Laredo.

[13] BNSF is the second largest railroad in Texas and can access Ferromex track in Eagle Pass and KCSM track in Laredo by means of trackage rights with UP and KCSM, respectively.

(KCSR)[14]. On the Mexican side, the railroads are Ferromex[15] and Kansas City Southern de Mexico (KCSM)[16].

The current and projected number of lanes/rail tracks and booths northbound and southbound by bridge in the focused study area is presented in Table 4.2. As can be observed from Table 4.2 in 2011 the World Trade Bridge had the most number of lanes (i.e. 8) and booths (i.e. 20).

**Table 4.2: Characteristics of Bridges in Focused Study Area**

| Bridge | Total Number of Lanes/ Rail Tracks | | Total Number of Booths | | Number of SENTRI or FAST Lanes | | Location |
|---|---|---|---|---|---|---|---|
| | 2011 | 2035 | 2011 | 2035 | 2011 | 2035 | |
| Gateway to the Americas Bridge | 4 | 4 | 8 | 12 | 0 | - | Laredo/Nuevo Laredo |
| Juárez-Lincoln Bridge | 6 | 6 | 15 | 15 | 2 | - | Laredo/Nuevo Laredo |
| Laredo-Colombia Solidarity Bridge | 6 | 6 | 12 | 12 | 1 | - | Laredo/ Colombia |
| World Trade Bridge | 8 | 8 | 20 | 20 | 2 | - | Laredo/Nuevo Laredo |
| Texas-Mexican Railway International Bridge | 1 | 1 | - | - | 0 | 0 | Laredo/Nuevo Laredo |
| Eagle Pass Bridge I | 2 | 2 | 7 | 7 | 0 | - | Eagle Pass/Piedras Negras |
| Camino Real International Bridge | 4 | 4 | 9 | 9 | 0 | - | Eagle Pass/Piedras Negras |
| Union Pacific International Railroad Bridge | 1 | 1 | - | - | 0 | 0 | Eagle Pass/Piedras Negras |
| Del Rio - Ciudad Acuña International Bridge | 4 | 4 | 10 | 10 | 0 | - | Del Rio/ Acuña |
| Lake Amistad Dam Crossing | 2 | 2 | 1 | 2 | 0 | - | Del Rio/ Acuña |

Source: Customs and Border Patrol and 2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed published by the Texas Department of Transportation.

There are currently no plans to expand the number of lanes on any of the bridges by 2035. However, the number of booths for the Gateway to the Americas Bridge will increase from

[14] KCSR connects in Laredo with railway partner KCSM.

[15] Ferromex is the largest freight railroad in Mexico and is partly owned by UP.

[16] KCSM is indirectly owned and controlled by Kansas City Southern, a transportation holding company that also controls KCSR.

8 to 12 and that of the Lake Amistad dam will increase from 1 to 2 by 2035. SENTRI[17] and FAST[18] lanes are available in only 3 of the ten bridges, and there are currently no plans to increase the number of these expedited lanes on any of the bridges.

## 4.1 Texas-Mexico Border Crossings in Focused Study Area

From 2000 to 2010, the three POEs in the focused study area accounted on average for 27% of pedestrian, 27% of passenger only vehicle (POVs), 50% of bus, and 53% of truck traffic that crossed into the U.S from Mexico on the Texas-Mexico border. In the case of southbound traffic (i.e., traffic that crossed into Mexico from the U.S. on the Texas-Mexico border), the three POEs accounted on average for 28% of pedestrians, 30% of POVs, and 63% of truck traffic from 2000 to 2010. Rail imports and exports through the study area accounted for an average of 70% of train traffic, 78% of loaded container traffic, and 60% of empty container traffic from 2000 to 2010 between U.S. and Mexico. This information is illustrated in detail in Appendix E.

Focusing on the northbound traffic by bridge through the focused study area between 2000 and 2010, it is evident from the figures in Appendix E that most of the pedestrian traffic crossed at the Gateway to the Americas Bridge (80.4% in 2010). For POV traffic crossing into the U.S. through the focused study area, Del Rio-Ciudad Acuña International Bridge and Lake Amistad Dam Crossing accounted for 14.6% of POV traffic in 2010, Eagle Pass Bridge 1 and Camino Real International Bridge accounted for approximately 28.6% of POV traffic, and the Laredo/Nuevo Laredo-Colombia bridges accounted for the remaining 56.8%. In terms of the latter, the Juárez-Lincoln Bridge accounted for 42.4% of all POV traffic crossing into the U.S. through the focused study area in 2010.Furthermore, more than 97% of the northbound bus traffic through the focused study area crossed at the Juárez-Lincoln Bridge in 2010. Of the four bridges that serve truck traffic, the World Trade Bridge accounted for 71.4% of all northbound truck traffic through the focused study area in 2010, followed by the Laredo-Colombia Solidarity Bridge at 19.9%.

The traffic that crosses southbound from Texas into Mexico through the study area followed a similar trend as the northbound traffic between 2000 and 2010. As is evident from the figures in Appendix E, the Laredo/Nuevo Laredo-Colombia bridges accounted for 84.1% of the pedestrian traffic that crosses into Mexico through the focused study area in 2010, followed by the Eagle Pass/Piedras Negras (15.1%) and Del Rio/Acuña (less than 1%).For POV traffic crossing into Mexico through the focused study area, the Eagle Pass/Piedras Negras and Del Rio/Acuña bridges, together, accounted for 45.5% of the POV traffic crossing into Mexico and the Laredo/Nuevo Laredo-Colombia bridges accounted for the remainder 54.5%. Similar to the northbound truck traffic, the Laredo/Nuevo Laredo-Colombia bridges accounted for nearly 91.8% of the trucks crossing into Mexico through the focused study area between 2000 and 2010, followed by the Eagle Pass/Piedras Negras bridges (5.1%) and the Del Rio/ Acuña bridges (3.1%).

For rail crossings from 2000 to 2010, Eagle Pass gradually gained a larger share of the rail crossing market for both imports and exports. By number of trains, Eagle Pass' rail traffic

[17] Secure Electronic Network for Travelers Rapid Inspection (SENTRI) is a land border-crossing program that provides expedited Customs and Border Protection (CBP) processing for pre-approved low-risk travelers.

[18] Free and Secure Trade (FAST) is a land border-crossing commercial program offering expedited clearance to pre-approved carriers and importers.

increased from 35% in 2000 to 40% in 2010, and by number of containers (both loaded and empty), Eagle Pass' rail traffic increased from 28% in 2000 to 36% in 2010 (BTS, 2011).

Finally, in 2010, Customs and Border Protection (CBP) stationed more than 200 inspectors in the focused study area (CBP, 2010). Peak periods of traffic through the POEs in the study area are usually in January, March/April, July/August, and November/December.

## 4.2 Laredo (Webb County)/Nuevo Laredo (Municipality of Nuevo Laredo)-Colombia (Anáhuac Municipality)

There are five bridge crossings and two international airports in Laredo/Nuevo Laredo-Colombia. Each land bridge crossing serves specific transportation modes as summarized in Table 4.3. For a brief history on some of the bridge crossings, the reader is referred to Appendix F.

**Table 4.3: Summary of Laredo/Nuevo Laredo-Colombia Bridges**

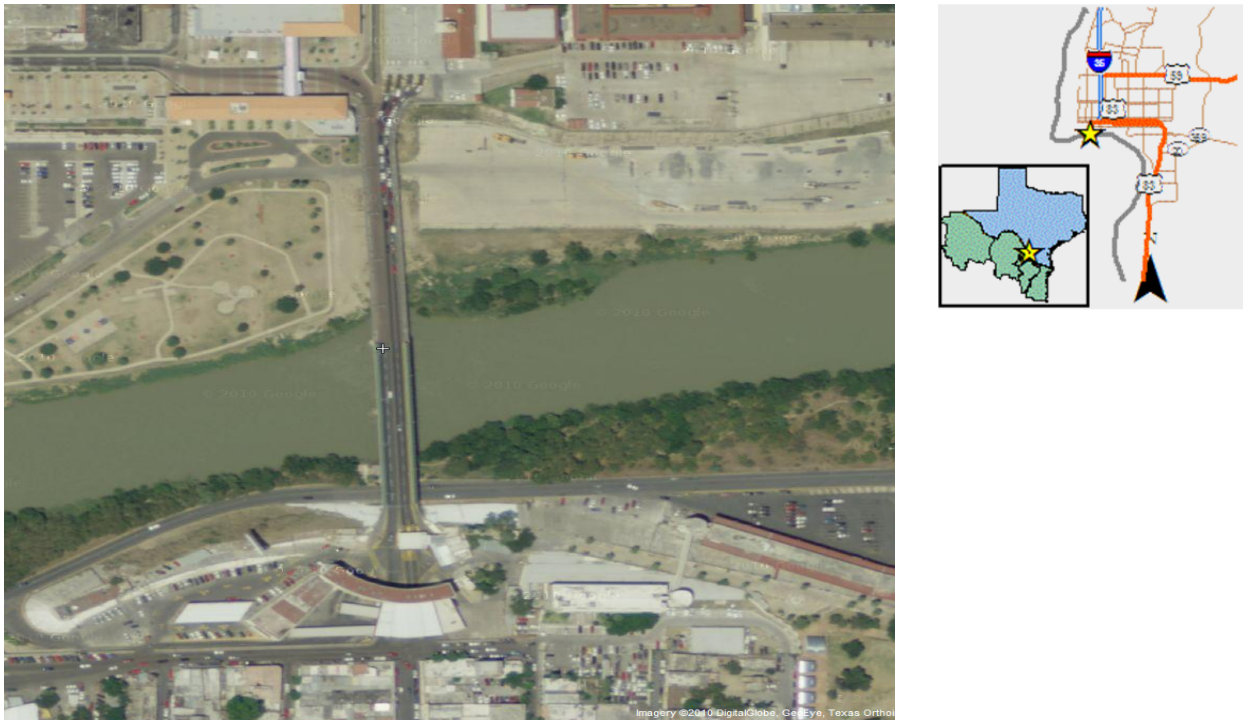
| Bridge | Bridge number | Location | Pedestrians | Non-commercial vehicles | Commercial vehicles | Rail |
|---|---|---|---|---|---|---|
| Gateway to the Americas Bridge | 1 | San Agustin Historical District (Laredo) Northern Terminus of Mexican Federal Highway 85 (Nuevo Laredo) | Yes | Yes | No | No |
| Juárez-Lincoln Bridge | 2 | Southern Terminus of Interstate 35 (Laredo) Northern Terminus of Luis Donaldo Colosio Loop (Nuevo Laredo) | No | Yes | Limited (e.g., buses) | No |
| Laredo-Colombia Solidarity Bridge | 3 | State Highway 255 Terminus (Laredo) Northern Terminus of Nuevo León State Highway Spur 1 (Colombia) | Yes | Yes | Yes | No |
| World Trade Bridge | 4 | Northwestern Terminus of Loop 20[19] (Laredo) Mexican Federal Highway 85D Terminus (Nuevo Laredo) | Yes | No | Yes | No |
| Texas-Mexican Railway International Bridge | | Western Terminus of Kansas City Southern Railway (formerly Texas-Mexican Railway (Laredo) Northern Terminus of Kansas City Southern de México Railway (Nuevo Laredo) | No | No | No | Yes |

### 4.2.1 Gateway to the Americas Bridge

On the U.S. side, the Gateway to the Americas Bridge is owned and operated by the City of Laredo. On the Mexican side, the bridge is owned by the Government of Mexico and operated by *Caminos y Puentes Federales de Ingresos y Servicios Conexos* (CAPUFE). The bridge has four lanes – i.e., two lanes in each direction - and two pedestrian walkways. It is 1,050 feet long and 42 feet wide. It was reconstructed in 1956 after being destroyed in 1954 by floods, resulting from a hurricane in the Gulf of Mexico (RJ Rivera Associates, 2008). It is located in the San Agustin Historical District in Downtown Laredo on the U.S. side and on the northern terminus of Mexican Federal Highway 85 in downtown Nuevo Laredo, Tamaulipas. The crossing is also

[19] Loop 20 is also locally known as the Bob Bullock Loop.

known locally as Convent Street Bridge, Laredo International Bridge, Bridge Number One, Old Bridge, Laredo-Nuevo Laredo Bridge One, Puente Nuevo Laredo, Puente Laredo I, and Puente Viejo. The location and an aerial view of the bridge are shown in Figure 4.1.



Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.1: Gateway to the Americas Bridge*

*Border Station*[20]

On the U.S side, the border station (LPOE Convent) is owned by the General Services Administration (GSA). The border station was constructed in 1943 and renovated in 1991 (TxDOT, 2010). On the Mexican side, the border station was constructed in 1954 and renovated in 1956 (Centro S.C.T. Tamaulipas, 2001).

The modernization of LPOE Convent is on CBP's priority list. The proposed modernization project calls for the complete renovation and expansion of the facility[21]. The feasibility study that has been completed proposes expanding the pedestrian inspection lanes from three to eight lanes, upgrading the existing four passenger vehicle lanes, and adding four seasonal inspection lanes in the old import lot[22]. The project has been included in CBP's five-year capital investment plan and is in the early phases of development. GSA has received funding from CBP for the design of a reduced scope project. Construction is pending funding availability.

20 *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

21 The facility is eligible for historic designation.

22 This component will be re-evaluated given Hurricane Alex-related flooding in the old import lot.

*Hours of Operation*

The bridge currently operates 24 hours a day for passenger operated vehicles (POVs) only.

*Tolls*

The toll rates for the Gateway to the Americas Bridge as of March 2010 are provided in Table 4.4.

**Table 4.4: Toll Rates for Gateway to the Americas Bridge (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Pedestrians or Bicycles | $0.75 |
| Non-Commercial Vehicles | $1.50 per axle |
| Non-Commercial Autos or Pickups | $3.00 (2 axles) |
| Motorcycles | $3.00 (2 axles) |
| Non-Commercial Pickup with Dolly | $4.50 (3 axles) |
| Non-Commercial Pickup with Small Trailer | $6.00 (4 axles) |
| Non-Commercial Recreational Vehicle | $3.00 (2 axles) |
| Non-Commercial Local Bus and El Metro | $3.00 (2 axles) |
| Tricycle | $3.00 (2 axles) |

Source: http://www.ci.laredo.tx.us/bridgesys/Fees/BridgeFees2.htm

*Bridge Crossings*

Figures 4.2 to 4.5 illustrate the bridge crossings into the U.S. between 2000 and 2010. From Figure 4.2 and 4.3 it is evident that between 2000 and 2010, the annual number of POV crossings into the U.S. decreased by 46%, while the annual number of pedestrian crossings into the U.S. decreased by 36%. The sharpest decline in POV crossings occurred between 2004 and 2005. Furthermore, from January to December 2010, 82,927 POVs crossed on average per month into the U.S. compared to 83,659 POVs for the same time period in 2009.

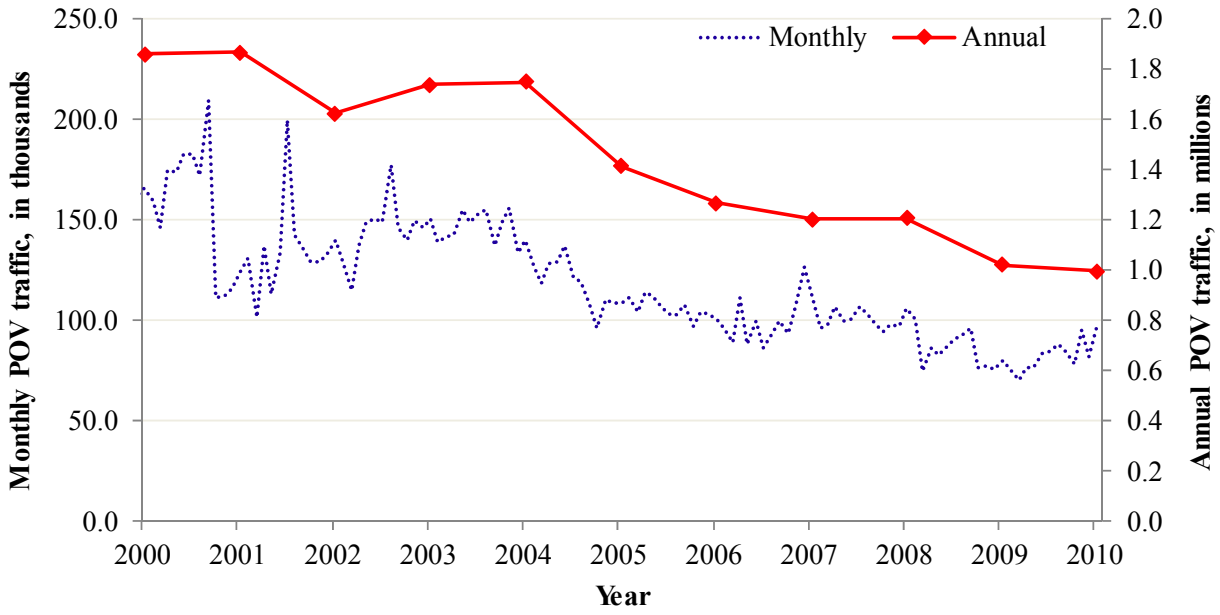



*Figure 4.2: Gateway to the Americas Bridge - Northbound POV Crossings*

Annual pedestrian crossings, on the other hand, experienced a sharp decline in 2008 - especially in the month of April - at the beginning of the economic recession, but rebounded again in 2009. In the case of pedestrian crossings, from January to March 2010, 312,209 pedestrians crossed on average per month into the U.S. compared to 339,473 for the same time period in 2009 - thus a decrease of 8%.

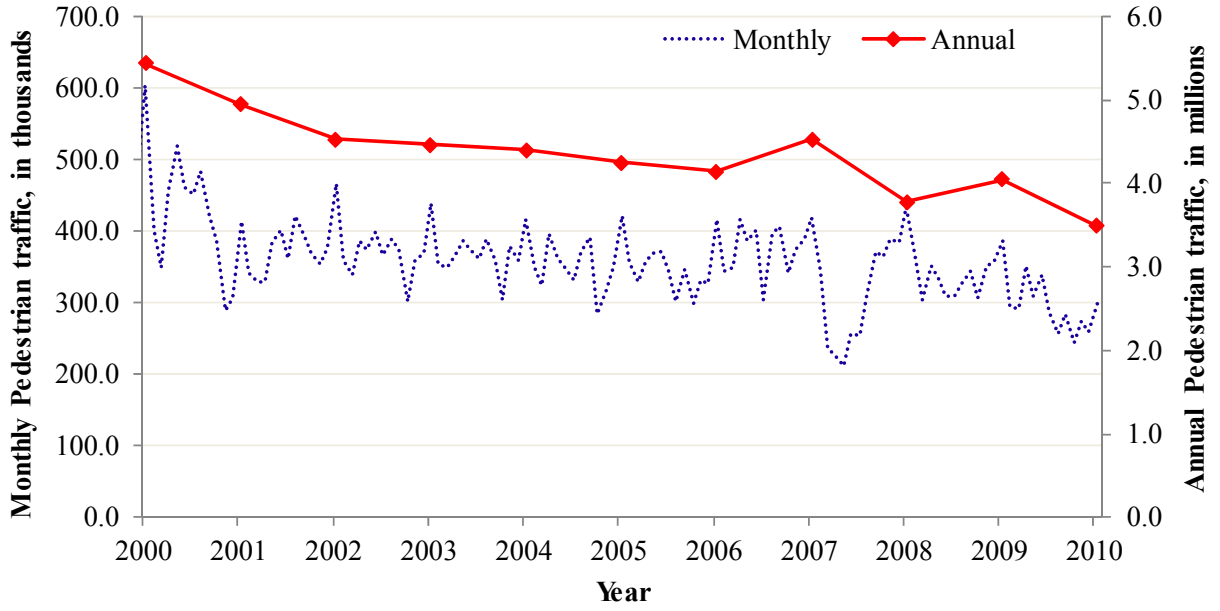
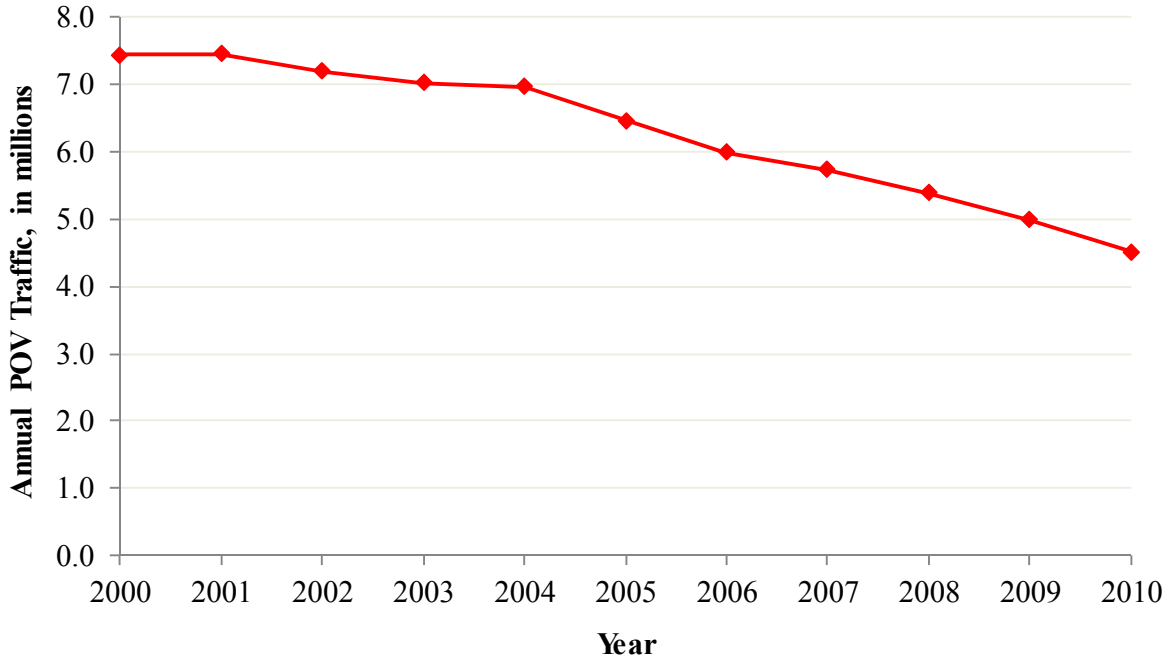



*Figure 4.3: Gateway to the Americas Bridge - Northbound Pedestrian Crossings*

Unfortunately, southbound traffic data is not available by bridge. Available data shows only aggregate southbound traffic through Laredo[23]. POV southbound traffic therefore includes traffic through the other Laredo bridges.

Southbound POV traffic through Laredo reduced by 40% from 7,433,069 vehicles in 2000 to 4,506,109 vehicles in 2010 (see Figure 4.4). This trend is similar to Laredo's northbound POV traffic which recorded a 35% decrease from 2000 to 2010.



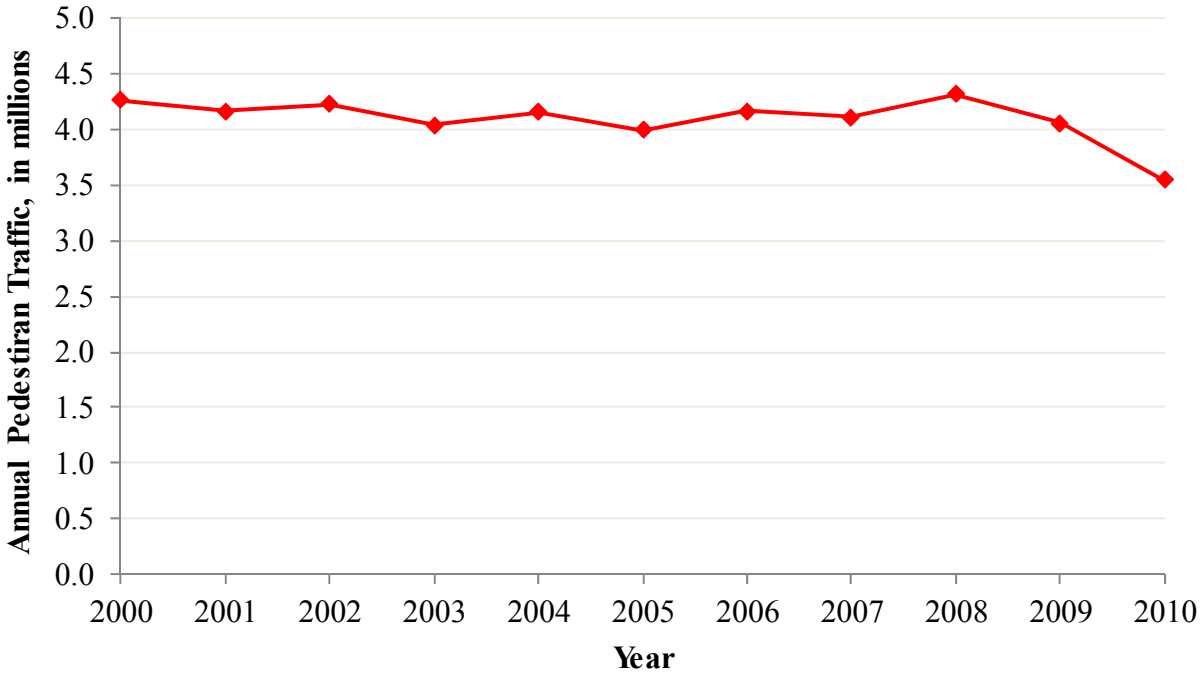

Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development.

*Figure 4.4: Laredo/Nuevo Laredo-Colombia Bridges - Southbound Passenger Operated Vehicle Crossings*[24]

Southbound pedestrian trafffic through Laredo remained consistent from 2000 to 2008 until the sharp decline in 2009 and 2010. As of the end of 2010, traffic had reduced by 18% from 4,315,033 in 2008 to 3,545,830. Northbound pedestrian traffic through Laredo for the same time period reduced by only 7%.

[23] Discussions on all southbound traffic in this report reflect that of the entire POE (i.e. Laredo, Eagle Pass, Del Rio) and are not specific to a particular bridge (e.g. Gateway to the Americas Bridge).

[24] Includes Juárez-Lincoln Bridge and Colombia-Solidarity International Bridge traffic.




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

*Figure 4.5: Laredo/Nuevo Laredo-Colombia Bridges - Southbound Pedestrian Crossings*[25]

### 4.2.2 Primary Roadways Serving Gateway to the Americas Bridge

On the U.S. side, running north and connecting directly to the bridge is Convent Avenue. In 2008, on average 7,950 vehicles were recorded using this two lane road per day. Also, in 2008, 6.69 accidents were recorded per mile on this road. Parallel to Convent Avenue is Salinas Avenue. Salinas Avenue is a two lane southbound road with an average daily traffic of 3,950 vehicles and an accident rate of 4.67 accidents per mile in 2008.The Level of Service (LOS)[26] of Convent Avenue in 2008 was between C and D, and is expected to fall to level F by 2035 due to increase in traffic and no infrastructural changes. Salinas Avenue had a LOS between A and B in 2008 and this is expected to remain the same in 2035 (Laredo MPO, 2009) as this roadway is projected to have enough capacity to handle the expected increase in traffic volume.

Convent and Salinas Avenues are intersected by Matamoros Street and Houston Street, which in turn connect to IH-35 and US 83. Matamoros Street is a two lane road running eastbound. On average between 4,440 and 15,710 vehicles traveled per day on Matamoros Street in 2008. The accident rate for Matamoros Street was extremely high at 67.26 accidents per mile. Running in the opposite direction is Houston Street, which is also a two lane road. On average between 25,000 and 41,000 vehicles used Houston Street per day in 2008. The accident rate on Houston Street was lower at 12.50 accidents per mile. It is estimated that Matamoros Street had a LOS F and Houston Street had a LOS between C and D in 2008. It is projected that by 2035 the

[25] Includes Juárez-Lincoln Bridge and Colombia-Solidarity International Bridge traffic.

[26] Level of Service (LOS) is a term used to qualitatively describe the operating conditions of a roadway based on factors such as speed, travel time, maneuverability, delay and safety. The level of service of a facility is designated with letters A to F, where A represents the best operating conditions and F the worst.

conditions on Matamoros Street will be worse than currently existing if no infrastructural changes are implemented. In addition, the LOS of Houston will fall from LOS C-D to LOS F by 2035 (Laredo MPO, 2009) because of projected increase in traffic volumes.

Parallel to Convent Avenue and Salinas Avenue are Santa Maria Avenue and San Bernardo Avenue. Both these roads are two-way undivided roads with one lane running northbound and one lane running southbound. Santa Maria Avenue had an average daily traffic of 6,410 vehicles in 2008 and recorded 18.15 accidents per mile. San Bernardo Avenue had an average daily traffic of 12,000 vehicles in 2008 and recorded a very high accident rate of 32.15 accidents per mile. The LOS on Santa Maria Avenue and San Bernardo Avenue were between A and B, and is projected to remain the same in 2035 (Laredo MPO, 2009).

However, the main highways serving this bridge are IH-35 and US 83. IH-35 is a six lane divided highway towards its south end. On average between 75,000 and 118,000 vehicles used IH-35 daily in 2008 of which trucks represented 6% to 9%. A LOS F was estimated for IH-35 in 2008 and conditions are expected to worsen in 2035 (Laredo MPO, 2009). Furthermore, the accident rate on IH-35 in 2008 was very high, ranging from 45.45 to 110.47 accidents per mile. In the case of US 83, it changes from a six lane divided highway to a two lane divided highway as it approaches the Webb/Zapata county line. On average between 33,000 and 43,000 vehicles were recorded using US 83 in 2008. It was estimated that US 83 had a LOS F within Loop 20 and conditions are expected to worsen in 2035. The accident rate on US 83 – although still high – was lower than that of IH-35 at 45.16 accidents per mile in 2008.

On the Mexican side, the roads connecting to the bridge include MEX 2, MEX 85, and North Loop (NL) 1. In 2008, the number of lanes on MEX 85 varied greatly, ranging from two to six. At the intersection with MEX 85, MEX 2 is a divided four lane highway. On average between 4,500 and 18,500 vehicles used MEX 2 daily in 2008 of which trucks represented between 20% and 25%. The accident rate in the area was estimated at 1.33[27] accidents per mile. At the intersection between MEX 2 and NL 1, NL 1 ranges from a two lane road to a four lane divided highway, with additional turning lanes in several locations.

Figure 4.6 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.

*Anticipated Changes in Infrastructure (2030)*

A number of projects and several upgrades to the existing road infrastructure serving the bridge are planned in the area. The Laredo MPO is planning the construction of a new road bordering the Río Bravo on the U.S. side. It is anticipated that this road would alleviate some of the congestion on the roads that currently connect the bridge to the major highways – i.e. IH-35 and US – 83 – in the area. The MPO is also planning for the reconstruction of San Bernardo Avenue to accommodate a linear transit hub of 2.7 miles. It is expected that this project would further alleviate traffic congestion. Finally, several rail grade separation projects are planned on East-West roadways close to the bridge. These projects will enhance safety and reduce delays at rail crossings.

On the Mexican side, several upgrades to MEX 2 are planned. Expanding MEX 2 from a two lane to a four lane highway would greatly reduce traffic congestion, increase capacity, and therefore improve the current LOS.

[27] This number represents Highway MEX-085D Mexico - Nuevo Laredo (toll road) with a length of 171 kilometers and 148 accidents in 2008 (SCT/IMT, 2010).

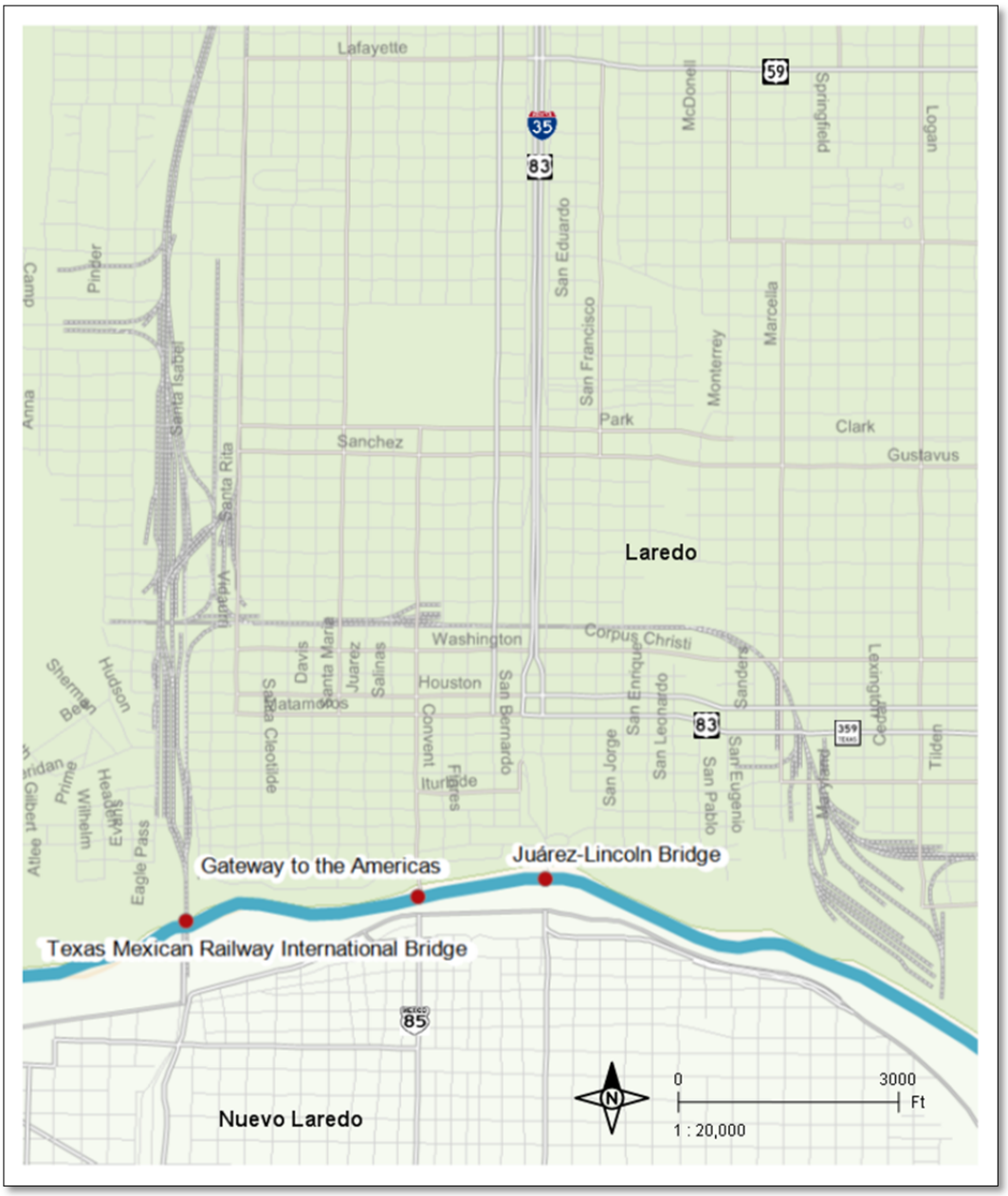
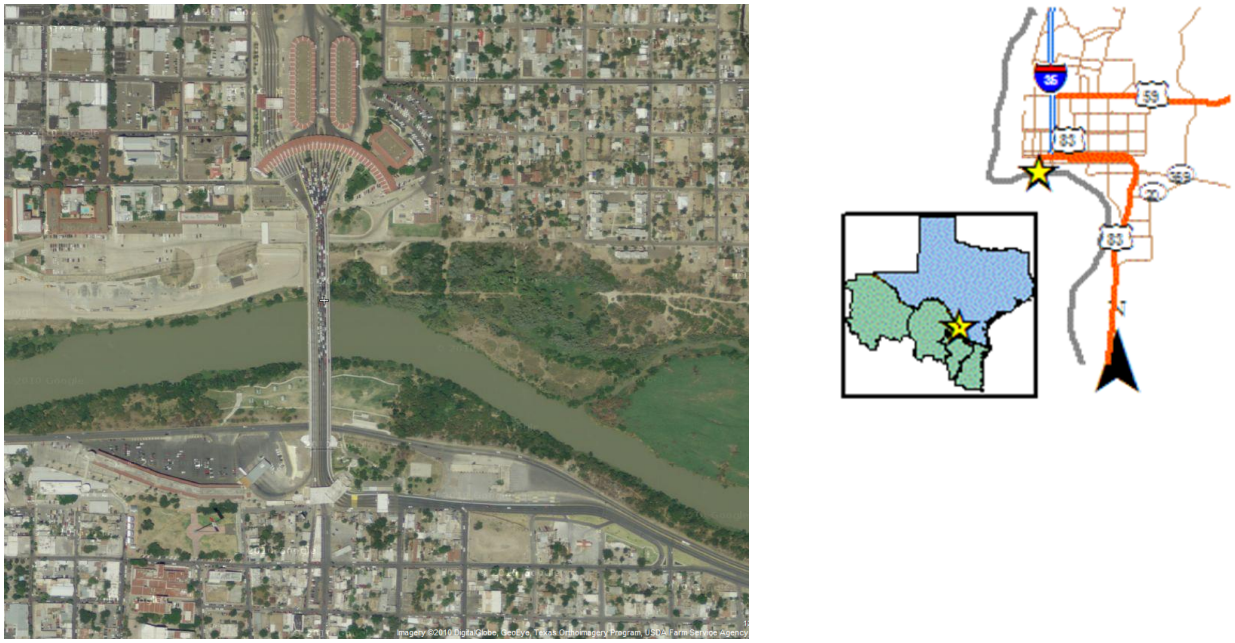



*Figure 4.6: Laredo/Nuevo Laredo-Colombia - Gateway to the Americas and Juárez-Lincoln Bridges - Existing Infrastructure Map*

### 4.2.3 Juárez-Lincoln Bridge

The Juárez-Lincoln Bridge is owned and operated by the City of Laredo on the U.S. side. On the Mexican side, the bridge is owned by the Government of Mexico and operated by CAPUFE. It was built in 1976 to alleviate congestion on the Gateway to the Americas Bridge and to serve the fast growing cities of Laredo and Nuevo Laredo. It is an eight-lane bridge. It is 1,008 feet long and 72 feet wide. The bridge serves buses and non-commercial traffic only. It has a dedicated lane for Secure Electronic Network for Travelers Rapid Inspection (SENTRI). The

Juárez-Lincoln Bridge is located in the southern terminus of IH-35 east of downtown Laredo, Texas and on the northern terminus of Luis Donaldo Colosio Loop in Nuevo Laredo, Tamaulipas. The bridge is also referred to as Laredo International Bridge 2. The location and aerial view of the bridge are shown in Figure 4.7.



Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.7: Juárez-Lincoln Bridge*

*Border Station*[28]

On the U.S side, the border station (LPOE J&L) was completed in 1982 and is owned by GSA. On the Mexican side, the border station became operational in November 1976 (Centro S.C.T. Tamaulipas, June 2001).

The modernization of LPOE J&L is on CBP's priority list for the construction of a new bus processing facility that will have 4 pedestrian processing lanes. The City of Laredo presented to GSA and CBP a concept bus processing facility - separate from the existing facility modernization project - on adjoining land to be donated by TxDOT. Through a master plan process it has been determined to construct on existing federal property. This project has been funded for design by CBP and GSA/CBP will be seeking construction funding in 2013. A project has recently been completed to increase the number of passenger inspection lanes from 12 to 15. Construction is pending funding availability (GSA, 2012).

[28] *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

*Hours of Operation*

The bridge currently operates 24 hours a day for passenger operated vehicles (POVs) only.

*Tolls*

The toll rates for the Juárez-Lincoln Bridge are similar to that of the Gateway to the Americas Bridge. The toll rates for the Juárez-Lincoln Bridge as of March 2010 are provided in Table 4.5.

**Table 4.5: Toll Rates for Juárez-Lincoln Bridge (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Non-Commercial Vehicles | $1.50 per axle |
| Non-Commercial Autos or Pickups | $3.00 (2 axles) |
| Motorcycles | $3.00 (2 axles) |
| Non-Commercial Pickup with Dolly | $4.50 (3 axles) |
| Non-Commercial Pickup with Small Trailer | $6.00 (4 axles) |
| Non-Commercial Recreational Vehicle | $3.00 (2 axles) |
| Non-Commercial Local Bus and El Metro | $3.00 (2 axles) |
| Tricycle | $3.00 (2 axles) |
| Commercial Vehicles | $3.75 per axle* |
| Commercial Bus 1 | $7.50 (2 axles) |
| Commercial Bus 2 | $11.25 (3 axles) |

*plus applicable overweight permit fees
Source: http://www.ci.laredo.tx.us/bridgesys/Fees/BridgeFees2.htm

*Bridge Crossings*

Figure 4.8 and Figure 4.9 illustrate the bridge crossings by POVs and buses into the U.S. between 2000 and 2010. From Figure 4.8 it is evident that between 2000 and 2010, annual POV crossings decreased by 20%, while annual bus crossings increased by 24%. Specifically, annual POV crossings decreased from 2001 to 2007, experienced an increase in 2008, and then declined further by 19% from 2008 to2010.

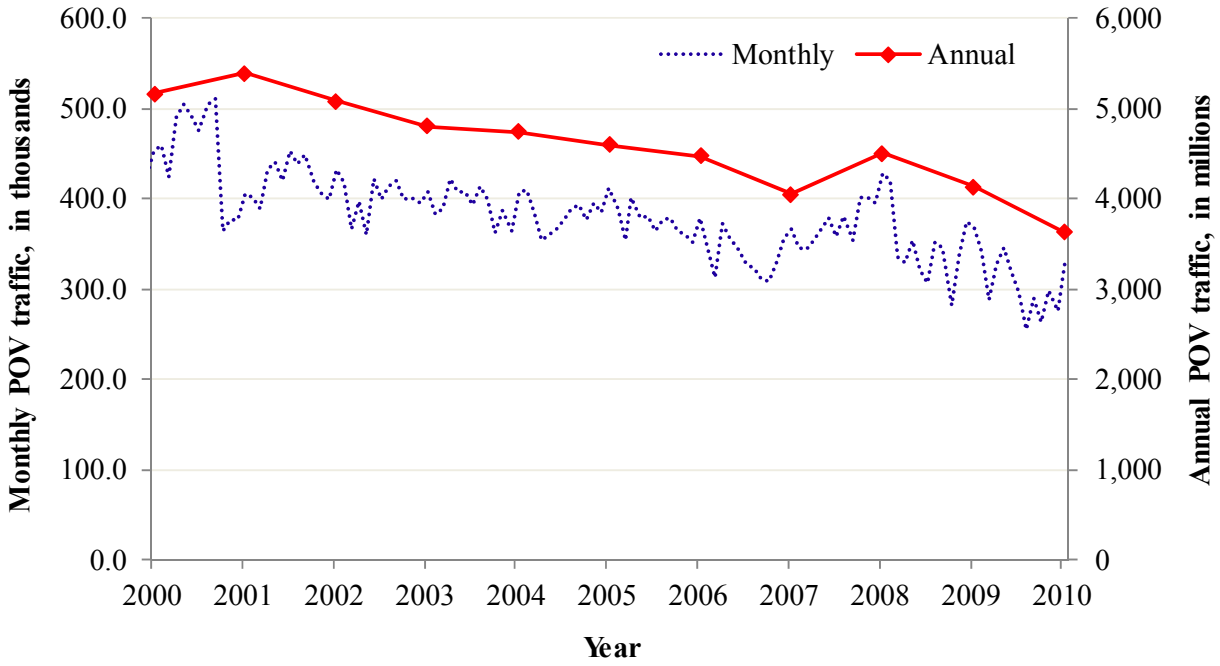



*Figure 4.8: Juárez-Lincoln Bridge - Northbound POV Crossings*

From Figure 4.9 it is evident that the number of annual bus crossings has been gradually increasing since 2005. Northbound bus traffic thus increased by 23% from 2005 to 2010 despite the reduction in POV traffic as observed in Figure 4.8.

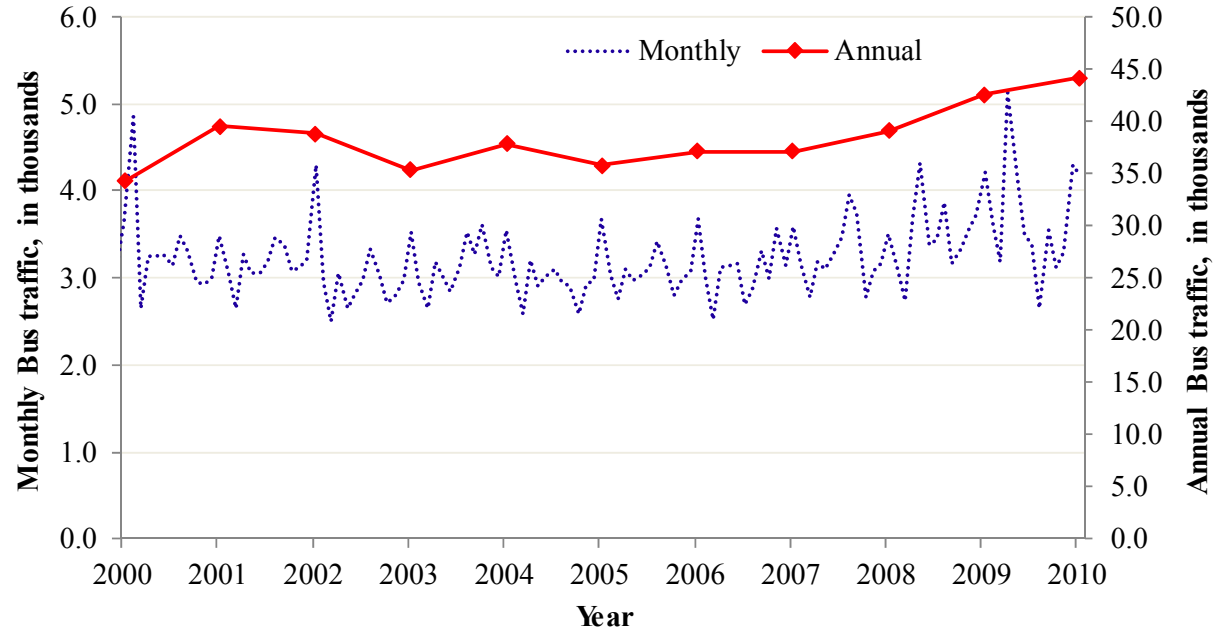



*Figure 4.9: Juárez-Lincoln Bridge - Northbound Bus Crossings*

Southbound POV and bus traffic for this bridge is not available. Please refer to the POV traffic information in Section 4.3.1 - *Gateway to the Americas Bridge* – for further information on aggregate southbound Laredo POV traffic.

### 4.2.4 Primary Roadways Serving Juárez-Lincoln Bridge

On the U.S. side, Santa Ursula and San Dario Street connect directly to the bridge. The two roads also connect directly to IH-35. Santa Ursula runs southbound providing access to the bridge, while San Dario Avenue is a 6 lane northbound road that moves traffic from the bridge to IH-35. Santa Ursula Avenue and San Dario Avenue had an average daily traffic of 22,150 and 13,300 vehicles, respectively in 2008. Their levels of service in 2008 were between C and D and this is projected to remain the same in 2035 except for sections close the bridge which conditions are expected to worsen (LOS E and F)[Laredo MPO, 20009].

Santa Ursula and San Dario Avenues are intersected by Farragut Street, Hidalgo Street, Lincoln Street, and Zaragoza Street. On average between 700 and 3,800 vehicles used Farragut Street daily in 2008. Hidalgo Street is a one lane westbound road with an average daily traffic between 350 and 2,030 vehicles in 2008. Lincoln Street is a one lane eastbound road with an average daily traffic of 530 to 2,420 vehicles in 2008. Zaragoza Street is a one lane westbound road with an average daily traffic of 430 vehicles in 2008. LOS on Farragut Street, Hidalgo Street, Lincoln Street, and Zaragoza Street were all between A and B in 2008, and are projected to remain the same in 2035 (Laredo MPO, 20009).

Complementing the abovementioned roads and intersecting IH-35 and US 83 are Matamoros Street and Houston Street. Matamoros Street is a two lane road running eastbound. On average between 4,440 and 15,710 vehicles traveled per day on Matamoros Street in 2008. The accident rate for Matamoros Street was extremely high at 67.26 accidents per mile. Running in the opposite direction is Houston Street, which is also a two lane road. On average between 25,000 and 41,000 vehicles used Houston Street per day in 2008. The accident rate on Houston Street was lower at 12.50 accidents per mile. It is estimated that Matamoros Street had a LOS F and Houston Street had a LOS between C and D in 2008. It is projected that by 2035 the conditions on Matamoros Street will be worse than currently existing if no infrastructural changes are implemented. In addition, the LOS of Houston will fall from LOS C-D to LOS F by 2035 (Laredo MPO, 2009).

IH-35 and US 83 connect with US 59, Loop 20, and SH 359. US 59 is a four lane undivided road with an additional turning lane at several locations. US 59 was used by approximately 36,000 vehicles per day in 2008 of which 3% was trucks. In 2008 it was estimated to have an accident rate of 44.76 accidents per mile. US 59 is estimated to have a LOS between C and D and this will worsen to LOS F by 2035 (Laredo MPO, 2009) due to increase in traffic volume.

Loop 20 serves as the outer loop of the City of Laredo and is for most of its length a four lane undivided highway. Loop 20 was used by on average 23,000 to 41,000 vehicles daily in 2008 and had an accident rate that ranged between 12.78 and 54.76 accidents per mile. The calculated LOS for Loop 20 was between C and D at sections between US 59 and US 83. However, by 2035, all of Loop 20 is projected to have an LOS of F, with sparse sections having LOS E (Laredo MPO, 2009). Finally, SH 359 is also a four lane undivided highway with an average daily traffic of between 13,900 and 19,800 vehicles in 2008. It has a LOS F and recorded 30.47 accidents per mile in 2008. By 2035, much larger sections of SH 359 are expected to have LOS F (Laredo MPO, 2009).

On the Mexican side, the connecting roads include MEX 2, MEX 85, and North Loop (NL) 1. In 2008, the number of lanes on MEX 85 varied greatly, ranging from two to six. At the intersection with MEX 85, MEX 2 is a divided four lane highway. On average between 4,500 and 18,500 vehicles used MEX 2 daily in 2008 of which trucks represented between 20% and 25%. The accident rate in the area was estimated at 0.1 accidents per mile. At the intersection between MEX 2 and NL 1, NL 1 ranges from a two lane road to a four lane divided highway, with additional turning lanes in several locations.

Figure 4.10 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.

*Anticipated Changes in Infrastructure (2030)*

On the U.S. side, the Laredo MPO is planning several projects that involve the widening of Loop 20 and the construction of interchanges in several critical locations. These projects will alleviate the high level of congestion (LOS F) that is currently experienced. Furthermore, direct connectors to and from IH-35 and Loop 20 are also planned to reduce the wait times at traffic signals when currently moving between IH-35 and Loop 20. In addition, it is planned that Loop 20 will be expanded to Cuatro Vientos. The expansion project will comprise a four lane (and in some cases a six lane) highway. Also, the planned Outer Loop is considered very important to reduce congestion and improve traffic flow in the city of Laredo. The Outer Loop will complement Loop 20 and will also provide an alternative means of connecting to IH-35. The proposed Outer Loop is mostly a two lane facility – although with four lanes in several sections – and will closely follow the Laredo MPO border and the proposed KCSR railroad. The Outer Loop is also expected to divert a substantial share of the traffic to the outside of the City of Laredo, improving overall traffic congestion in the city. On the Mexican side, several upgrades to MEX 2 are planned. Expanding MEX 2 from a two lane to a four lane highway would greatly reduce traffic congestion, increase capacity, and therefore improve the current LOS. In addition, the construction of an outer loop to the south of Nuevo Laredo is planned. The *Periférico Sur Poniente* and *Periférico Sur Oriente* will function as an alternate route to Mex 2 south of Nuevo Laredo; thereby serving as a relief route for heavy traffic. Finally, the construction of interchanges at several critical intersections is planned in Nuevo Laredo.

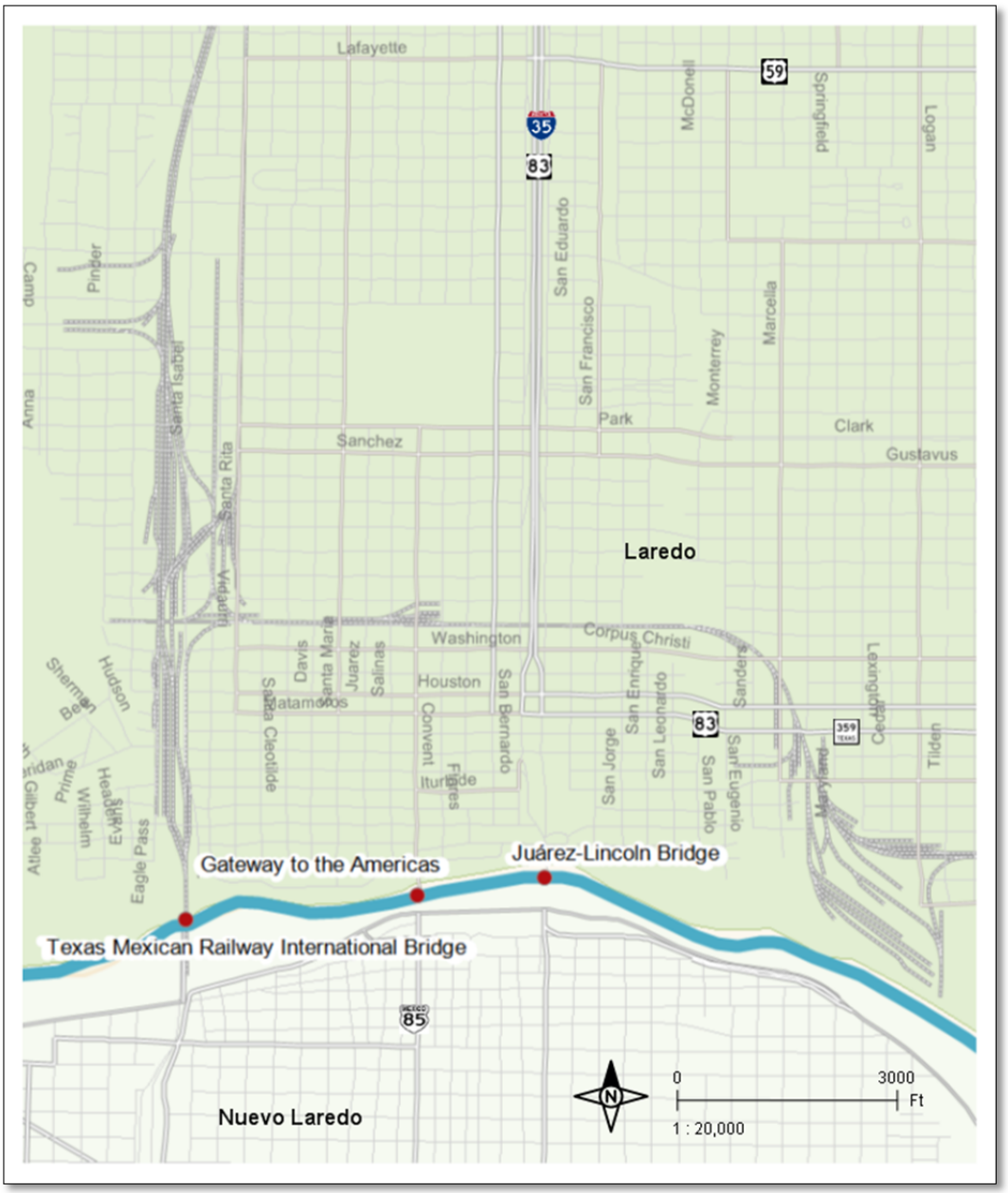


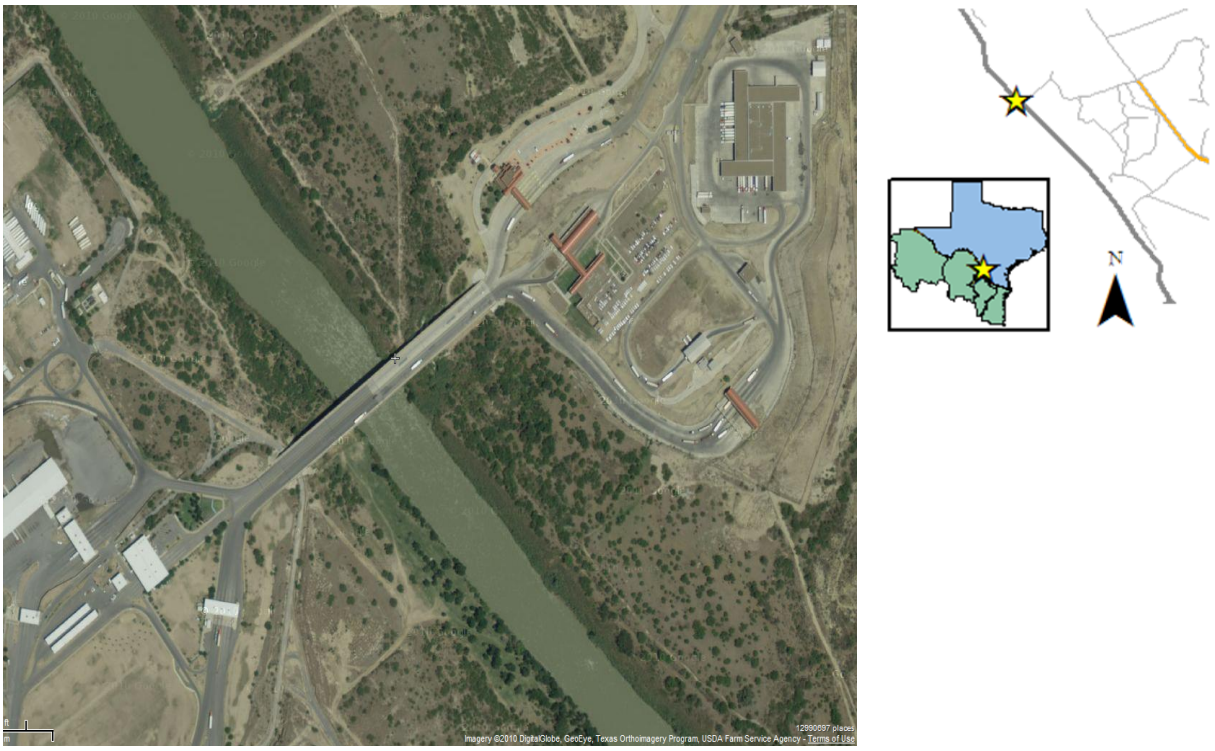

*Figure 4.10: Laredo/Nuevo Laredo-Colombia - Gateway to the Americas and Juárez-Lincoln Bridges - Existing Infrastructure Map*

### 4.2.5 Laredo-Colombia Solidarity Bridge

The Laredo-Colombia Solidarity Bridge is owned and operated by the City of Laredo on the U.S. side. On the Mexican side, the State of Nuevo León holds the concession and is the operator of the bridge. The bridge connects Laredo over the Rio Grande with Colombia, Nuevo León. It is an eight-lane bridge with two walkways for pedestrians.[29] It was opened in 1992 and

[29] The pedestrian walkways are seldom used due to the location of the bridge.

is 1,216 feet long. On the U.S. side, the bridge is located in the western State Highway 255 terminus or can be accessed via Urban Road 1472 North in Laredo, Texas. On the Mexican side, the bridge is located on the northern terminus of Nuevo León State Highway Spur 1 in Colombia, Nuevo León. The bridge is also known locally as Colombia Bridge, Puente Solidaridad, Puente Colombia, and Puente Internacional Solidaridad Colombia (TxDOT, nd). The bridge is one of two bridges – the other being the World Trade Bridge – that handles truck traffic in Laredo/Nuevo Laredo-Colombia. The location and aerial view of the bridge are shown in Figure 4.11.




Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.11: Laredo-Colombia Solidarity Bridge*

*Border Station*[30]

The border station (LPOE Colombia) was constructed in 1991 and is owned by GSA (General Services Administration, February 2006).

*Hours of Operation*

The bridge currently serves all modes of transportation with the exception of rail – i.e., pedestrians, non-commercial vehicles, and commercial vehicles. The bridge's hours of operations by mode are as follows:

- 8am – 12 midnight (POV, Monday to Sunday)
- 8am – 12 midnight (Commercial/Cargo, Monday to Friday)

30 *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

- 8am – 4pm, Saturday (Commercial/Cargo)
- 12pm – 4pm, Sunday (Commercial/Cargo)

*Tolls*

The toll rates for the Laredo-Colombia Solidarity Bridge are similar to that of the Gateway to the Americas Bridge and the Juárez-Lincoln Bridge. Table 4.6 provides the toll rates for the Laredo-Colombia Solidarity Bridge as of March 2010.

**Table 4.6: Toll Rates for Laredo-Colombia Solidarity Bridge (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Non-Commercial Vehicles | $1.50 per axle |
| Non-Commercial Autos or Pickups | $3.00 (2 axles) |
| Motorcycles | $3.00 (2 axles) |
| Non-Commercial Pickup with Dolly | $4.50 (3 axles) |
| Non-Commercial Pickup with Small Trailer | $6.00 (4 axles) |
| Non-Commercial Recreational Vehicle | $3.00 (2 axles) |
| Non-Commercial Local Bus and El Metro | $3.00 (2 axles) |
| Tricycle | $3.00 (2 axles) |
| Commercial Vehicles | $3.75 per axle* |
| Commercial Bus 1 | $7.50 (2 axles) |
| Commercial Bus 2 | $11.25 (3 axles) |

*plus applicable overweight permit fees
Source: http://www.ci.laredo.tx.us/bridgesys/Fees/BridgeFees2.htm

*Bridge Crossings*

Figures 4.12 to 4.15 illustrate the trend in bridge crossings into the U.S. between 2000 and 2010. From Figure 4.12, it is evident that northbound pedestrian crossings decreased from 28,063 in 2000 to 6,195 in 2010 – a decrease of 68%. The reason for this declining trend is largely unknown.

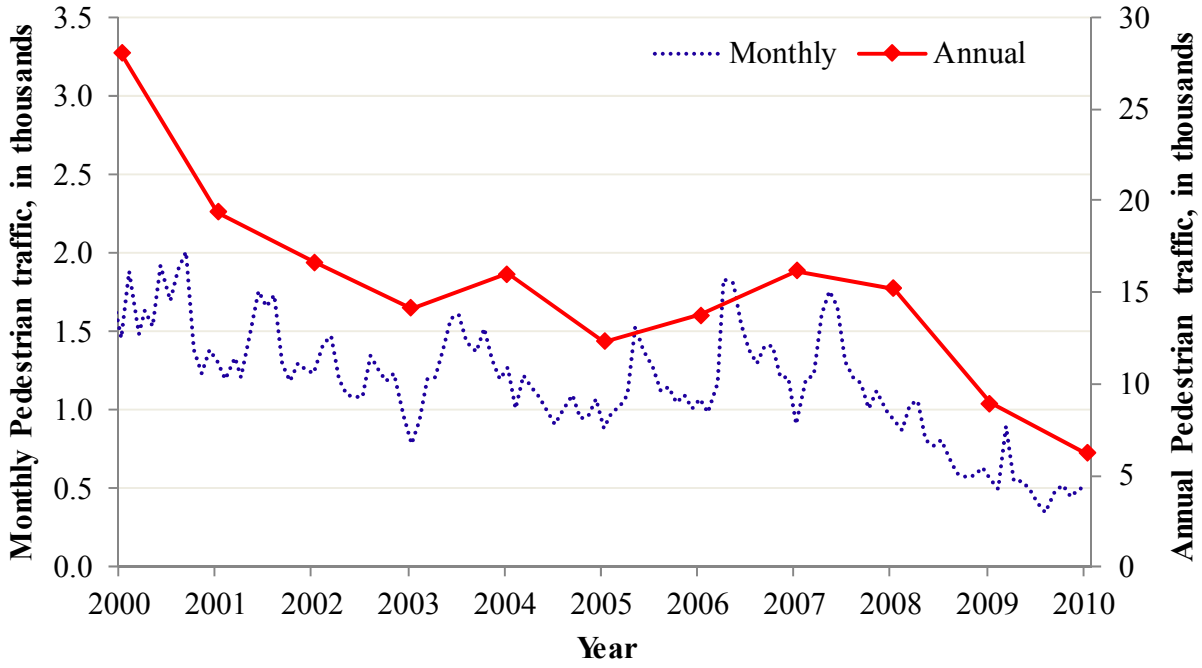



*Figure 4.12: Laredo-Colombia Solidarity Bridge – Pedestrian Crossings*

On the other hand, northbound POV crossings increased substantially – i.e. 202% - between 2000 and 2008, but decreased by 39% from 2008 to 2010. Overall, the net increase in POV traffic from 2000 to 2010 was 83%) the peak month for POV crossings being December.

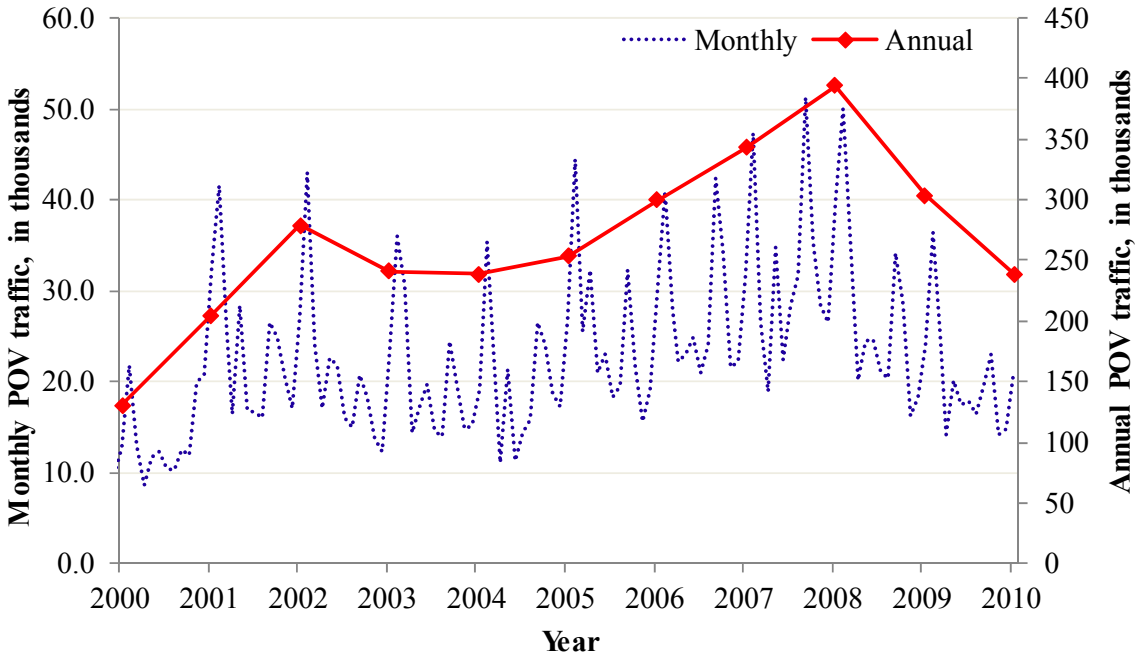



*Figure 4.13: Laredo-Colombia Solidarity Bridge – Northbound Passenger Operated Vehicle Crossings*

From Figure 4.14, it can be seen that northbound truck crossings increased substantially – by 62% - between 2003 and 2007, but declined considerably in 2008 and 2009 – by about 35% compared to 2007 – as a result of the economic slowdown, and then increased again in 2010. Furthermore, between January and March 2010, the average monthly truck crossings were 5% higher compared to the same time period in 2009. One of the lowest monthly northbound truck crossings recorded since 2000 were in August 2009 when 21,809 trucks crossed the bridge – slightly higher than the lowest ever recorded monthly truck crossings of 19,915 in December 2003. The peak month for northbound truck crossings recorded were May 2007. The average annual truck traffic on the bridge between 2000 and 2010 was 365,251 crossings.

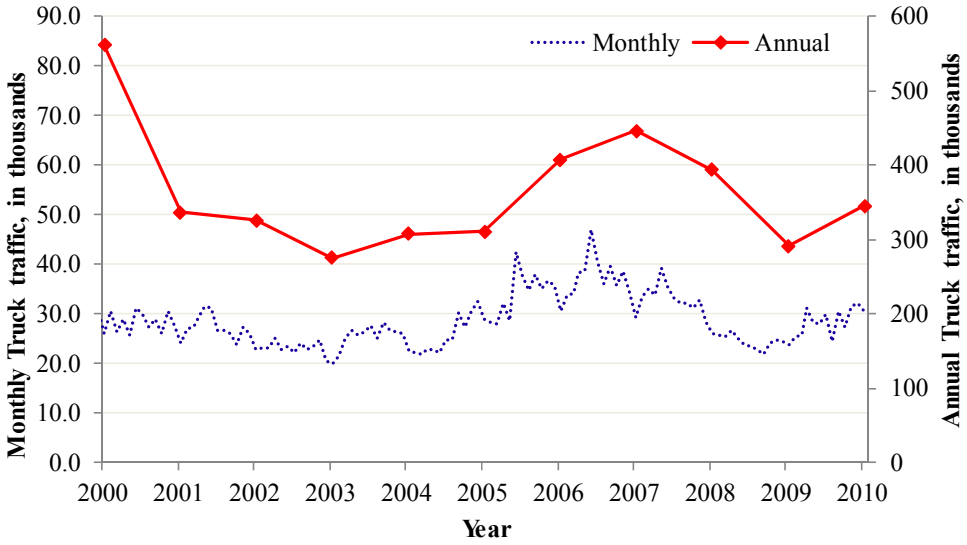
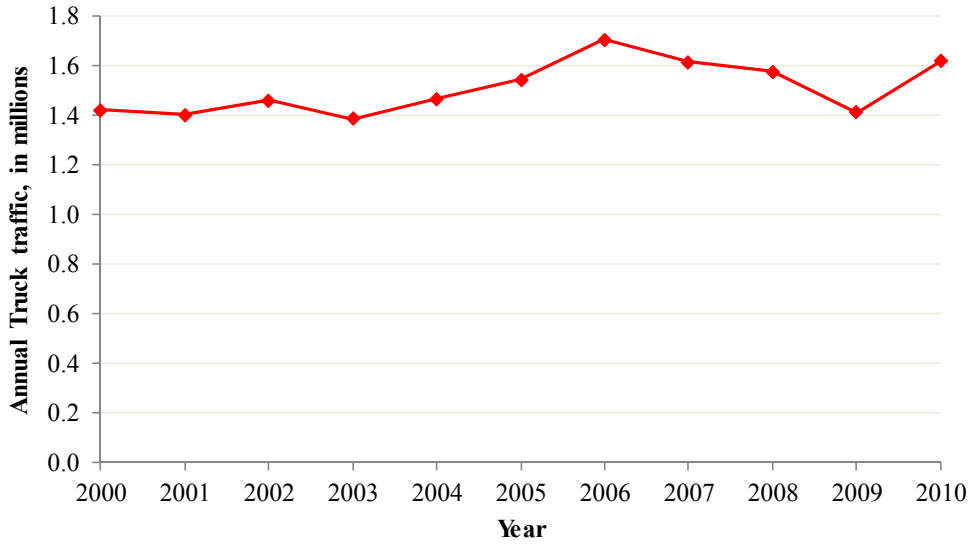



*Figure 4.14: Laredo-Colombia Solidarity Bridge – Northbound Truck Crossings*

Aggregate southbound truck traffic data for Laredo showed a relatively stable truck count from 2000 to 2010. The worst recorded decline occurred between 2006 and 2009 (17%) but traffic increased again by 15% at the end of 2010.




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

*Figure 4.15: Laredo/Nuevo Laredo-Colombia Bridges – Southbound Truck Crossings*[31]

### 4.2.6 Primary Roadways Serving Laredo-Colombia Solidarity Bridge

On the U.S. side, SH 255 is the primary ingress and egress road to the bridge. Approximately one mile from the bridge, SH 255 and FM 1472 intersect, and beyond the intersection, SH 255 becomes the Camino Colombia Toll Road (RJ RIVERA Associates, 2008). FM 255/Camino Colombia Toll Road is 22.5 miles long and connects the bridge to IH-35 and US 83. For most of its length it is a two lane undivided highway. However, the section closest to the bridge is a four lane divided highway. On average between 630 and 6,500 vehicles traveled per day on SH 255/Camino Colombia Toll Road in 2008. The accident rate on the road ranged from no accidents in some sections to 2.08 accidents per mile on other sections. In 2008, the level of service on SH 255 was determined to be between A and B, and by 2035, the section between Las Tiendas/RM 3338 and US 83 is projected to have a LOS C to F, and sections south of Las Tiendas/RM 3338 are projected to have LOS varying from A to D (Laredo MPO, 2009).

Intersecting SH 255 – about one mile from the bridge – is FM 1472. FM 1472 connects Eagle Pass to Laredo and is a two lane undivided road from SH 255 towards Eagle Pass and a four lane divided road from SH 255 towards Laredo. In 2008, an average of 430 vehicles moved on FM 1472 per day between SH 255 and Eagle Pass and 4,300 vehicles moved per day on FM 1472 between SH 255 and Laredo. The accident rate on FM 1472 in 2008 was approximately 7.46 accidents per mile. In 2008, LOS on FM 1472, north of Killam Industrial Boulevard were between A and B. Sections south of Killam Industrial Boulevard had LOS C and D with a small portion (near Shiloh Road), experiencing LOS F. However, by 2035, majority of the FM 1472, south of the Las Tiendas/RM 3338 are projected to have a LOS of F.

To the northeast of FM 1472, SH 255 intersects with Las Tiendas Road/RR 3338. RR 3338 is a two lane undivided road on which an average of 510 vehicles moved per day in 2008. The accident rate on RR 3338 is low at 0.37 accidents per mile. The LOS on Las Tiendas

[31] Include World Trade Bridge traffic.

Road/RR 3338 was between A and B in 2008, and is projected to worsen to LOS C and D by 2035.

On the Mexican side, MEX 2 connects to the bridge. The section of MEX 2 that serves the bridge is a divided four lane highway.

Figure 4.16 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.

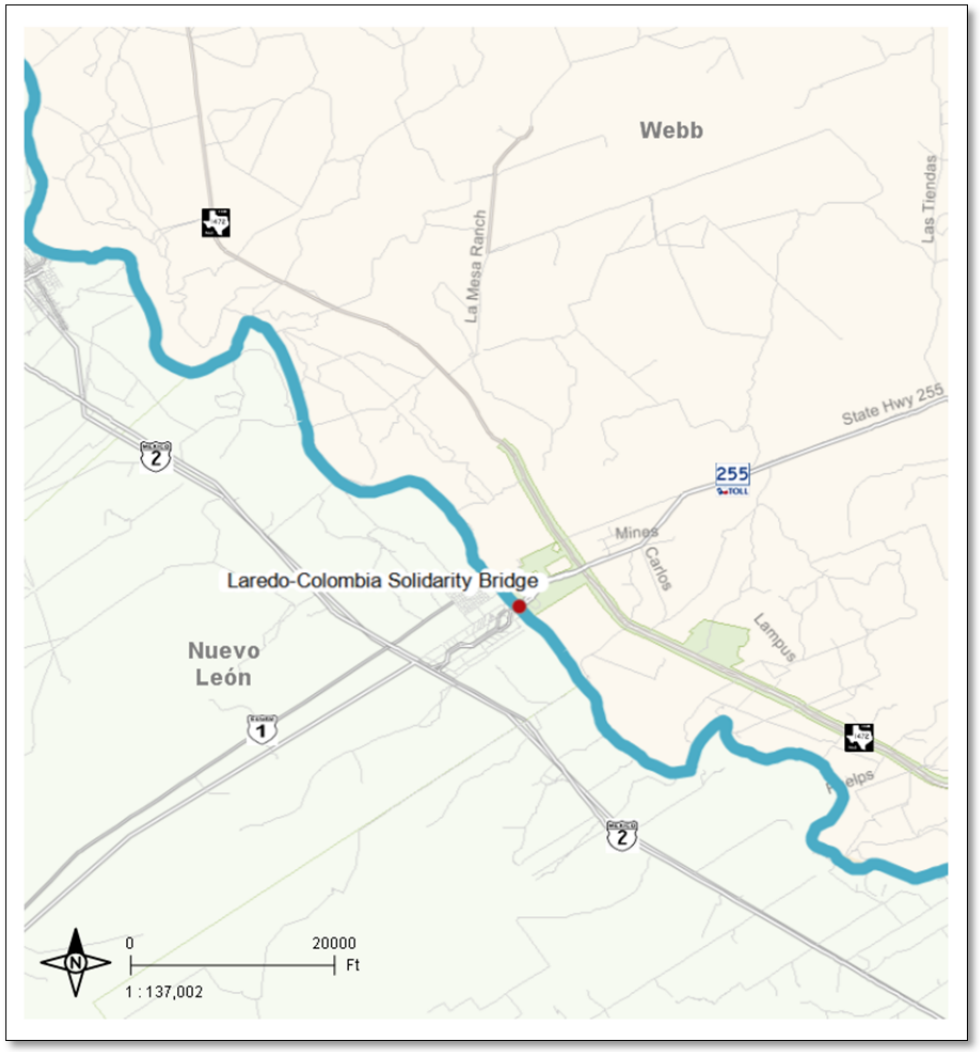



*Figure 4.16: Laredo/Nuevo Laredo-Colombia – Colombia Solidarity Bridge Existing Infrastructure Map*

*Anticipated Changes in Infrastructure (2030)*

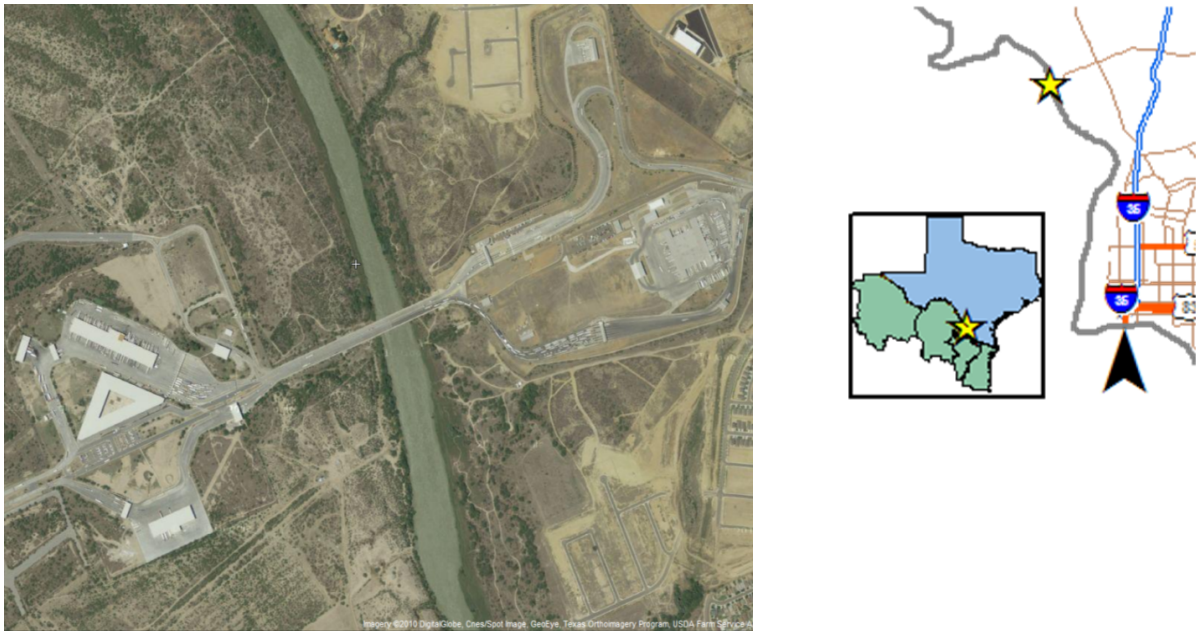
On the U.S. side, there have been talks about constructing a new rail bridge on the south side of the Laredo-Colombia Solidarity Bridge. The rail bridge would then be connected with a 22.4 mile long rail line parallel with IH-35, following the alignment of FM 255/Colombia Toll Road. It has been argued that the new rail line will help to divert some of the truck traffic to rail, thereby reducing the truck traffic in the area. In addition, a number of road upgrades are planned in the area, including a six mile road connection between IH-35 and FM 1472. This is considered

an important connection as it will provide access to FM 1472 and the surrounding areas without having to go through the City of Laredo.

On the Mexican side, several upgrades to MEX 2 are planned, including the widening and adding of new lanes to several sections of the highway between Monterrey and Sabinas. In addition, a connector to NL 1 from the bridge is planned. The latter will eliminate the need for traffic to enter (or border) Nuevo Laredo before heading south towards the interior of Mexico

### 4.2.7 World Trade Bridge

The World Trade Bridge is owned and operated by the City of Laredo and Mexico's *Secretaría de Comunicaciones y Transportes* (SCT). The bridge crosses the Rio Grande River connecting Laredo to Nuevo Laredo, Tamaulipas. It is an eight lane bridge that is 977 feet long and 262 feet wide. It only serves pedestrians and commercial traffic. The bridge is located at the northwestern terminus of Loop 20 in Laredo, Texas and at the Mexican Federal Highway 85D terminus in north Nuevo Laredo, Tamaulipas. The bridge is also known as Puente Internacional, Nuevo Laredo III, and Puente del Comercio Mundial Nuevo Laredo III Mexico (RJ RIVERA Associates, 2008). The location and aerial view of the bridge are shown in Figure 4.17.



Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.17: World Trade Bridge*

*Border Station*

The World Trade Bridge opened on April 15 – 2000, the same day the border station (USBS World Trade) became operational. The City of Laredo owns USBS World Trade and GSA leases the facilities from the City of Laredo (TxDOT, n.d.)[32]. GSA will make the final lease payment to the City in April 2012 and the ownership of the facility will transfer to GSA.

[32] Available at: http://www.txdot.gov/project_information/projects/border_crossing/worldtrade.htm

*Hours of Operation*

The World Trade Bridge serves pedestrians and commercial vehicles. The bridge currently operates 24 hours Monday to Friday, from 8am to 4pm on Saturday, and from 10am to 2 pm on Sunday.

*Tolls*

The toll rates for the World Trade Bridge are similar to that of the other Laredo/Nuevo Laredo-Colombia bridges. Table 4.7 provides the toll rates for the World Trade Bridge as of March 2010.

**Table 4.7: Toll Rates for World Trade Bridge (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Non-Commercial Vehicles | $1.50 per axle |
| Non-Commercial Autos or Pickups | $3.00 (2 axles) |
| Motorcycles | $3.00 (2 axles) |
| Non-Commercial Pickup with Dolly | $4.50 (3 axles) |
| Non-Commercial Pickup with Small Trailer | $6.00 (4 axles) |
| Non-Commercial Recreational Vehicle | $3.00 (2 axles) |
| Non-Commercial Local Bus and El Metro | $3.00 (2 axles) |
| Tricycle | $3.00 (2 axles) |
| Commercial Vehicles | $3.75 per axle* |
| Commercial Bus 1 | $7.50 (2 axles) |
| Commercial Bus 2 | $11.25 (3 axles) |

*plus applicable overweight permit fees
Source: http://www.ci.laredo.tx.us/bridgesys/Fees/BridgeFees2.htm

*Bridge Crossings*

Figures 4.18 and 4.19 illustrate the trend in northbound bridge crossings at the World Trade Bridge between 2000 and 2010. From Figure 4.18, it is evident that northbound pedestrian crossings increased steadily between 2001 and 2003 before declining to an all-time low in 2009. Total annual northbound pedestrian crossings reached 77,601 in 2009 and 93,441 in 2010. The average monthly pedestrian crossings for 2010 were 7,787compared to 6,467 in 2009.

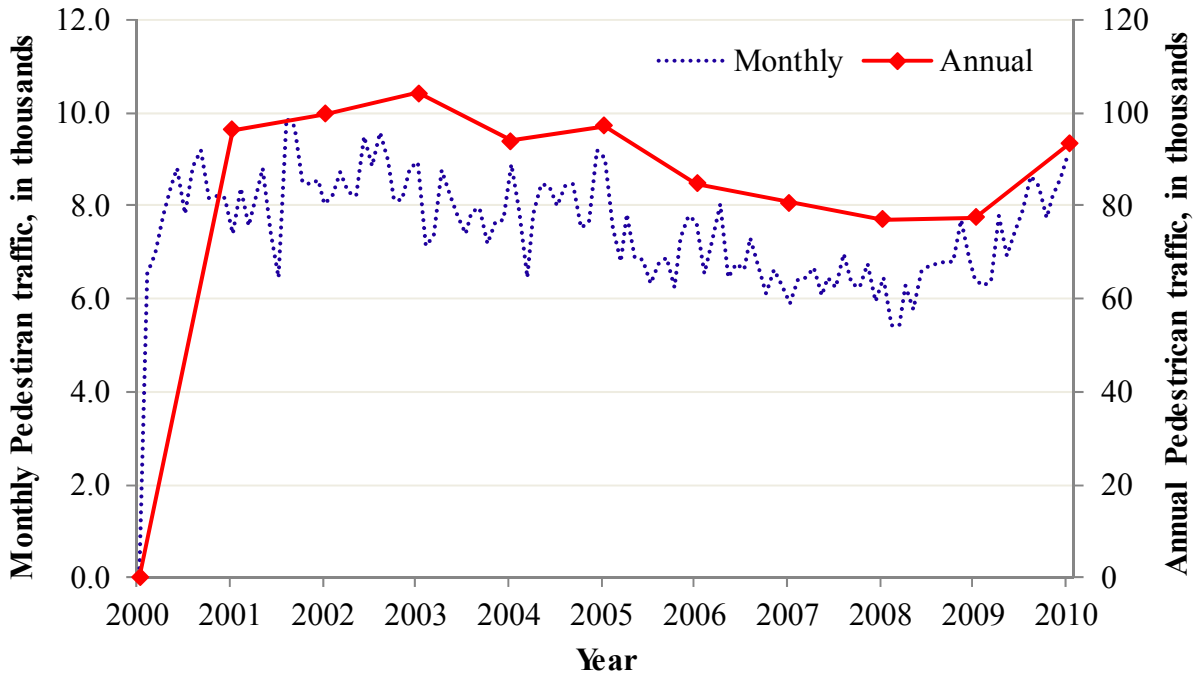



*Figure 4.18: World Trade Bridge – Northbound Pedestrian Crossings*

Northbound truck traffic showed a strong and steady growth through the World Trade Bridge during the entire decade. Despite the economic recession, in 2008 and 2009, truck traffic reduced by just 6% in 2009 and increased by 14% in 2010.

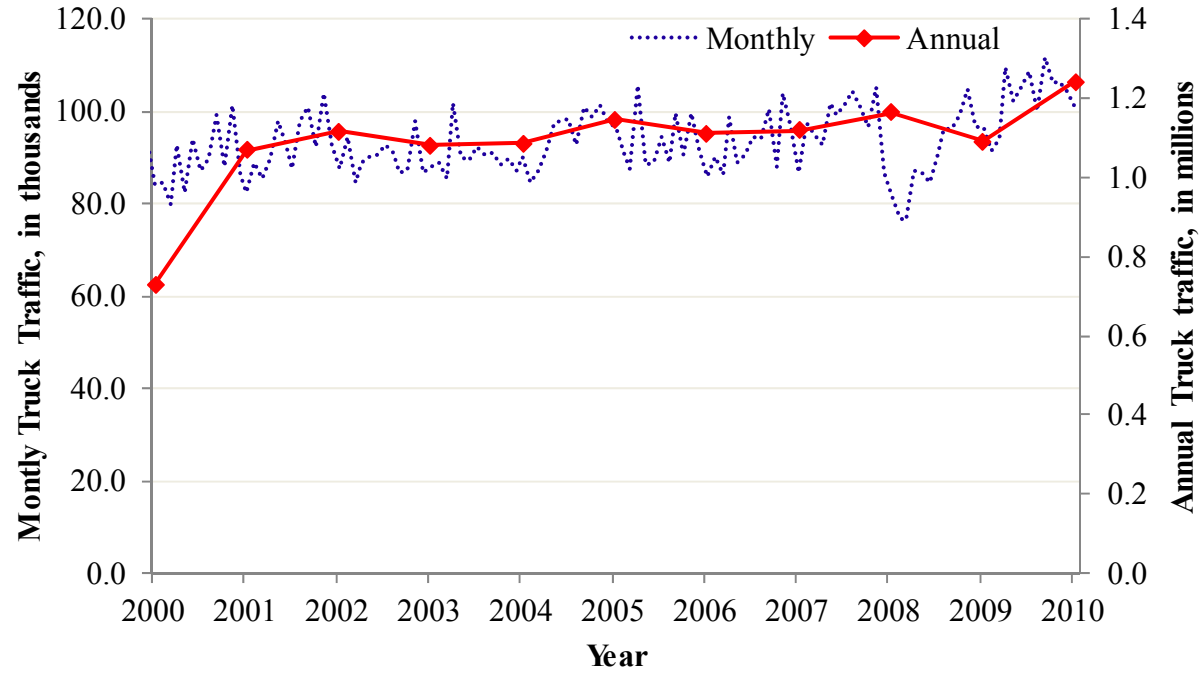



*Figure 4.19: World Trade Bridge – Northbound Truck Crossings*

### 4.2.8 Primary Roadways Serving World Trade Bridge

On the U.S. side, Loop 20 connects directly to the bridge. This section of Loop 20 is a six lane divided highway that was used by on average between 23,000 and 41,000 vehicles per day in 2008. Loop 20 also connects to other important roads in the area such as, FM 1472/Mines Road, FM 3464, San Mateo Drive, Killam Industrial Boulevard, IH-35, US 83, McPherson Road, and San Isidoro Parkway/International Boulevard.

San Mateo Drive serves as the frontage road of Loop 20 and had an accident rate of 9.50 accidents per mile in 2008. FM 1472/Mines Road is a six lane divided highway at the intersection with Loop 20. FM 1472/Mines Road had an average daily traffic of between 430 and 4,300 vehicles per day in 2008. FM 1472/Mines Road also serves as the connector between the World Trade Bridge and the Laredo-Colombia Solidarity Bridge. LOS on sections of FM 1472/Mines Road near the World Trade Bridge was between C and D in 2008, and is projected to worsen to LOS F by 2035 (Laredo MPO, 2009).

Killam Industrial Boulevard connects several industrial parks to both Loop 20 and IH-35. Killam Industrial Boulevard is a two lane undivided roadway in some places and a four lane undivided roadway with an additional left turn lane in other places. The accident rate on Killam Industrial Boulevard was 7.10 accidents per mile in 2008. Killam Industrial Boulevard recorded an LOS between A and D in 2008, and this expected to worsen to between C and E by 2035 (Laredo MPO, 2009).

Other important roads to the industrial parks close to the bridge are Shiloh Road and Las Cruces Drive. Las Cruces Drive which turns to Shiloh Road after crossing IH-35 provides alternative connections between IH-35, Loop 20, and FM 1472/Mines Road. Las Cruces Drive is a two lane undivided roadway, while Shiloh Road is a four lane roadway with an additional left turning lane in various locations. The accident rate on both roadways was a high of 21.79 accidents per mile. Both Las Cruces Drive and Shiloh Road had LOS between A and B in 2008, and this is projected to worsen to between C and D by 2035 (Laredo MPO, 2009).

McPherson Road serves as an alternative connector between Shiloh Road and Loop 20. McPherson Road is a four lane undivided connector with an additional left turn lane in various locations. McPherson Road also serves as a connector to the Laredo International Airport. The accident rate on McPherson Road was very high at 51.12 accidents per mile in 2008. LOS A and B were recorded on McPherson Road in 2008, and this projected to worsen to LOS F by 2035.

Intersecting with McPherson Road and Loop 20 is San Isidoro Parkway/International Boulevard. The lane configuration of San Isidoro Parkway/International Boulevard varies from two to five lanes, including left turning lanes in some locations. It serves as a connector to some of the industrial parks to the northeast of Laredo. In 2008, 11.17 accidents per mile were recorded on San Isidoro Parkway/International Boulevard. The roadway had an LOS between A and B in 2008, and is projected to worsen to LOS F by 2035.

On the Mexican side, a 20 mile loop – Mex 2 – connects to Mex 85 south of Nuevo Laredo and NL 1 to the northwest of Nuevo Laredo close to the bridge. At the intersection between MEX 2 and NL 1, the lane configuration of NL 1 varies from a two lane to a four lane divided highway, with an additional turning lane in several locations.

Figure 4.20 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.

*Anticipated Changes in Infrastructure (2030)*

On the U.S. side, several projects are planned that involve widening Loop 20 at several locations. Also, several intersections are planned where Loop 20 intersects with major connectors and where the level of traffic and congestion reveals that these intersections are feasible. There is also a plan to widen both the southbound and northbound lanes of IH-35 in the vicinity of Loop 20. Furthermore, direct connectors for all movements between IH-35 and Loop 20 are being planned. The latter is expected to have a significant effect on congestion and wait time since it eliminates the need for traffic to stop at traffic signals when accessing IH-35 or Loop 20. Finally, several at-grade rail separations are planned in the vicinity of Shiloh Road and Las Cruces Drive. The latter will improve safety and will reduce highway delays caused by vehicles waiting for trains to pass.

On the Mexican side, several upgrades to MEX 2 are planned in the vicinity of the bridge.

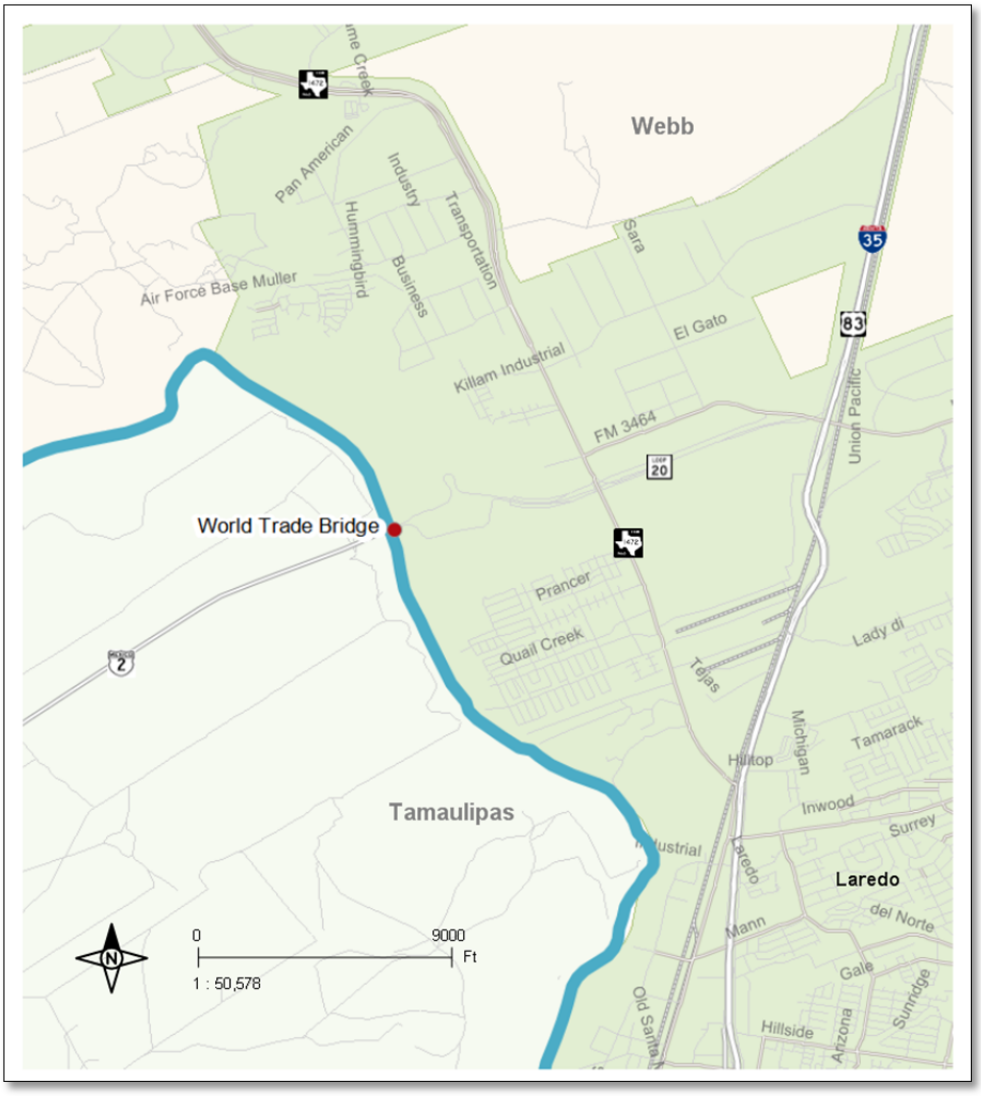



*Figure 4.20: Laredo/Nuevo Laredo-Colombia – World Trade Bridge Existing Infrastructure Map*

### 4.2.9 Texas Mexican Railway International Bridge

The Texas Mexican Railway International Bridge (see Figure 4.21) is the only rail bridge in Laredo/Nuevo Laredo connecting the two cities across the Rio Grande River. It is one of five rail-only bridges on the Texas-Mexico border and was originally built in the late 1800s and substantially improved in 1954. It is owned and operated by Texas Mexican Railway – a subsidiary of Kansas City Southern de México (KCSM)[33]. The bridge is located at the western terminus of the Texas-Mexican Railway in Laredo and at the northern terminus of KCSM in Nuevo Laredo. It is a single track bridge, 1,275 feet long, 18 feet wide, and is currently used by Union Pacific Railroad (UP), Kansas City Southern Railway Company (KCSR), and KCSM[34] (Kansas City Southern, 2007).

Source: MySanAntonio.com.

*Figure 4.21: Texas Mexican Railway International Bridge*

[33] KCSM operates 2,645 miles of rail track serving northeastern and central Mexico, the ports of Lázaro Cardenas and Tampico (among others), and provides a direct connection between the U.S. and the industrial heartland of Mexico.

[34] The Texas Mexican Railway International Bridge is one of two rail bridge crossings used by KCSM to connect to the US - the other is the Brownsville & Matamoros International Bridge. The Texas Mexican Railway International Bridge; however, handles more than twenty times the value of goods handles at the Brownsville & Matamoros International Bridge (Kansas City Southern, 2007).

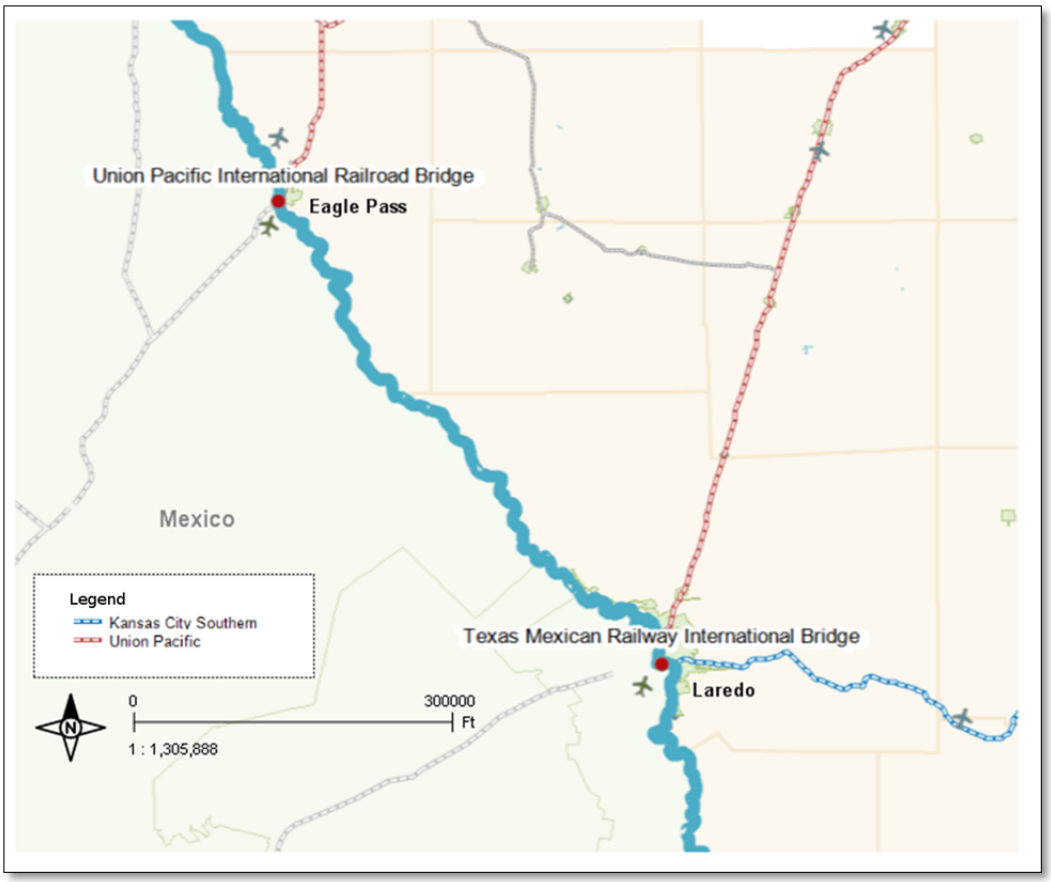



*Figure 4.22: Rail Bridge Crossings in the Study Area*

There are three major rail yards in Laredo and Nuevo Laredo: KCSR's Laredo Yard, UP's Port Laredo Yard, and KCSM's Sanchez Yard. KCSR's Laredo Yard is a 750-car capacity yard and is located approximately 7.5 miles east of the Texas Mexican Railway International Bridge. UP's Port Laredo Yard has a capacity of 750 cars and is located approximately 8.2 miles north of the bridge. The Sanchez Yard is located 11 miles south of the bridge and to the west of Nuevo Laredo. The Sanchez Yard is a 1,500-acre facility that mirrors the functions at the Port Laredo and Laredo Yards. The yard has 22 tracks, including two for car repairs and an intermodal terminal capable of handling 1,500 trucks per day. The Sanchez Yard is equipped to handle all Mexican Customs and agricultural inspections, thereby eliminating the need for international traffic to stop on the bridge for inspection. Sanchez Yard has transformed rail operations over the bridge from alternating six-hour northbound/southbound windows to a single-track through right-of-way. Northbound trains staged at the Sanchez Yard can be pre-cleared, pre-blocked, and inspected at the yard. This has doubled the bridge capacity to almost 40 trains per day (Kansas City Southern, 2007).

*Bridge Crossings*

Important measures of rail traffic are train crossings and railcar crossings. Train crossing data were obtained from the U.S. Bureau of Transportation Statistics for the period 2000 to 2010.

The northbound and southbound crossing data for the Texas Mexican Railway International Bridge are shown in Figures 4.23 and 4.24. From Figure 4.23, it can be observed that the number of trains crossing the Texas Mexican Railway International Bridge steadily increased from 2000 to 2007 by 48%. In 2008 and 2009, train traffic reduced tremendously to levels similar to the beginning of the decade (2716 train crossings). This decline occurred during the economic recession. In 2010, during the economic recovery, train traffic increased again by 12% compared to 2009 – a growth very similar to the 2000 to 2001 time period when traffic increased by 9%.

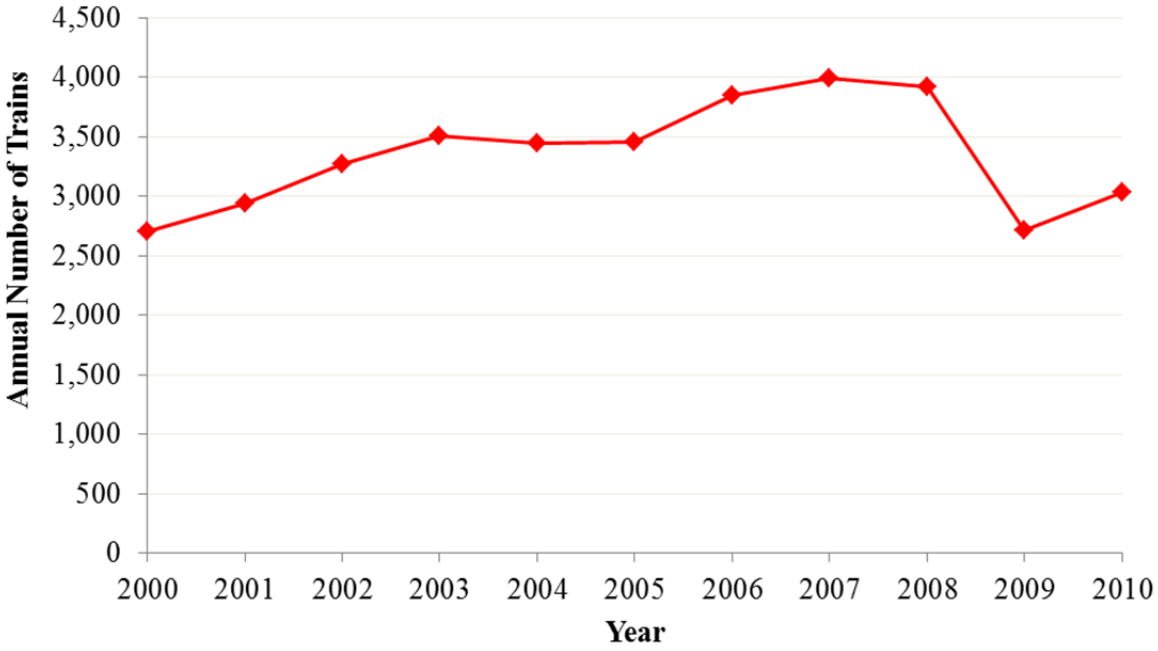



*Figure 4.23: Texas/Mexico Railway International Bridge – Annual Train Crossings (Northbound and Southbound)*

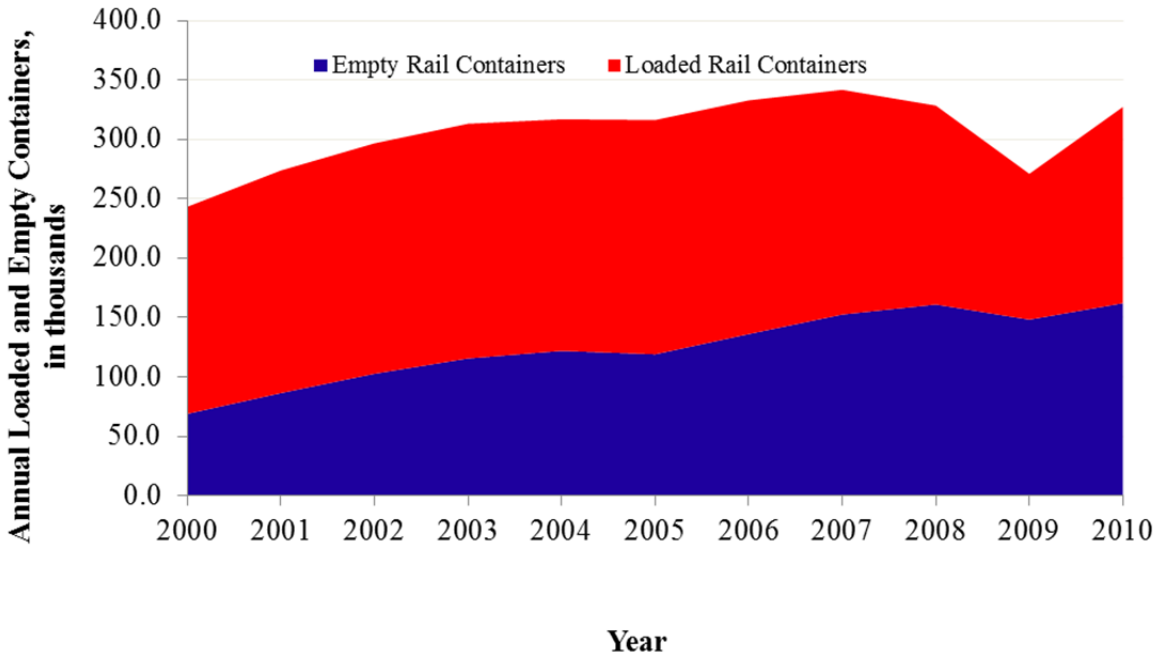



*Figure 4.24: Texas/Mexico Railway International Bridge – Annual Loaded and Empty Containers (Northbound and Southbound)*

In Figure 4.24, the total number of containers moved (loaded and empty) followed a similar pattern as the number of trains. From 2000 to 2007, total number of containers moved increased by 40%, decreased by 21% from 2007 to 2009, before increasing again by 21% in 2010. It can be inferred from the two figures that despite the number of trains reducing after the recession in 2007, the number of containers have recovered from the losses suffered. It can therefore be said that railroads are moving more containers with less number of trains, thus achieving gains in economies of scale. Thus it can be said that the number of containers moved is a better indicator of rail traffic than the number of train crossings. However, despite the gains in rail containers in 2010, it should also be noted that the number of empty containers have been increasing over the decade (see Figure 4.24). In 2000, empty containers accounted for 28% of rail traffic and in 2010, empty containers accounted for 50% of rail traffic.

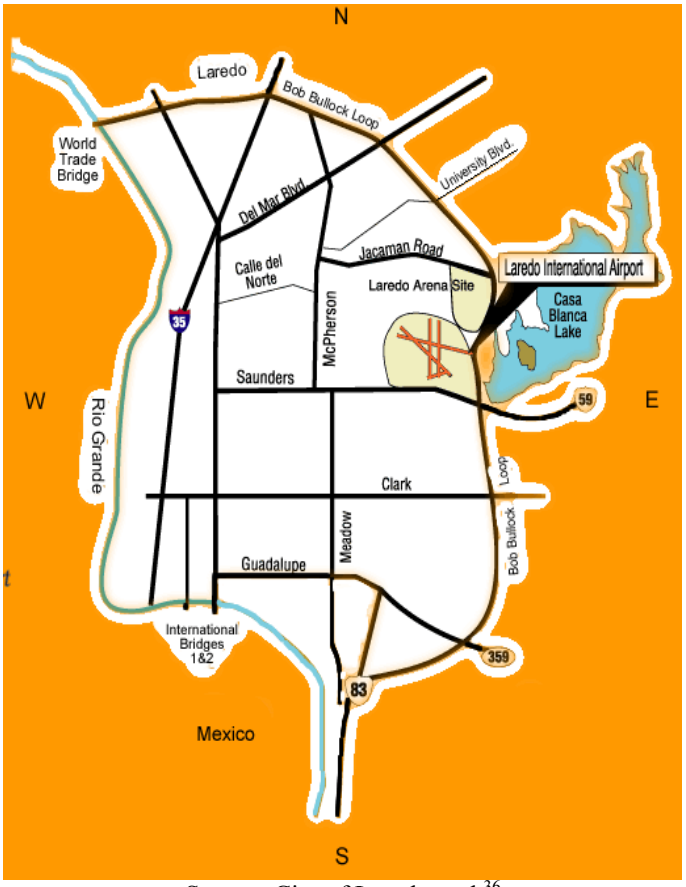
*Current and Projected Conditions*

According to a Kansas City Southern (KCS)[35] study, UP crosses approximately 10 to 12 trains per day over the Texas Mexican Railway International Bridge. By 2020, it is projected that UP will cross approximately 20 trains per day over the bridge. KCS currently crosses approximately 8 to 10 trains per day and by 2020, KCS is expected to cross approximately 30 trains per day over the bridge. KCS's traffic projections indicate a projected future growth that is in itself higher than the traffic using the bridge today. The projected rail traffic in the future will thus exceed the capacity of the bridge (Kansas City Southern, 2007).

[35] Kansas City Southern is a transportation holding company with rail investments in the U.S. (i.e., The Kansas City Southern Railway Company), Mexico (i.e., Kansas City Southern de Mexico, S.A. de C.V.), and Panama (i.e., 50% interest in Panama Canal Railway Company).

### 4.2.10 Laredo International Airport

Laredo International Airport – a public-use airport – is owned by the City of Laredo and located three nautical miles northeast of the central business district (see Figure 4.25). The airport is served by three airlines: Allegiant Air, American Airlines, and Continental. Four cargo agencies are located at the airport: UPS, Bax Global, DHL, and FedEx. A number of other cargo service companies and support services are also located at the airport. A federal inspection station, which operates 24 hours a day, provides customs and immigration services and conducts agricultural inspections. The airport has a 500 acre site that is designated as a Foreign Trade Zone (FTZ). It is one of eight FTZs in the Laredo area (City of Laredo Airport, n.d.).




Source: City of Laredo, n.d.[36]

*Figure 4.25: Laredo International Airport*

*Hours of Operation*

The federal inspection station at the airport provides a 24 hours per day, 7 days a week, 365 days a year service to commercial and private airlines (City of Laredo Airport, n.d.).

[36] Available at: http://www.ci.laredo.tx.us/airport/map.html

### 4.2.11 Primary Roadways Serving Laredo International Airport

The primary roads leading to the Laredo International Airport include US 59/Saunders, Loop 20, Jacaman Road, McPherson Avenue, and East Del Mar Boulevard.

### 4.2.12 Nuevo Laredo International Airport/ Quetzalcóatl International Airport

Nuevo Laredo International Airport/Quetzalcóatl International Airport is located less than 5 miles from the city of Nuevo Laredo. It was included in the *Aviación y Servicios Auxiliares* (Aviation and Auxiliary Services, ASA) network in 1972. The airport occupies an area of approximately 580 acres and the size of its apron for commercial aviation is 44,300 square feet. It has three runways with one being 1.24 miles long and suitable for handling A-320/A-318 aircrafts. The airport receives three daily flights from Mexico City Monday through Friday and two daily flights on Saturdays and Sundays. Air services from Mexico City are provided by AeroMéxico Connect/AeroLitoral Airlines.

Between 2001 and 2005, ASA implemented an ambitious program to rehabilitate the operational areas of the ASA network. As part of this program, the Nuevo Laredo International Airport/Quetzalcóatl International Airport remodelled its taxiways and aprons extensively, among other improvements. This was done to enhance the safety and efficiency of the structures used for airport activities. The work included: (a) the application of asphalt mortar on the runway (2000), (b) repaving the central section, and (c) adding mortar and protective sealing to runway 16 to 34, the taxiways and aprons (2003), and reinforcing runway 16 to 34, the taxiways and aprons (2004) (ASA, 2011).[37]

During 2007/2008, ASA awarded the contract for building a new air cargo terminal and a *Recinto Fiscalizado Estratégico* (Strategic Bonded Warehouse, RFE) – similar to a Foreign Trade Zone – to *Grupo Domes-Oneo*. The project began construction on February 7, 2008, but the terminal has not been completed. It was anticipated that the construction would be completed in eight months and that operations would start in August 2009. Apparently *Grupo Domes-Oneo* failed to comply with certain milestones and timelines. The municipality of Nuevo Laredo and the State of Tamaulipas first requested SCT to review the contract awarded to *Grupo Domes-Oneo* to find a resolution and to resume and finalize construction of the cargo terminal. In September 2010, ASA decided to sue *Grupo Domes-Oneo* and since then no judicial or out of court decision/agreement have been reached. The construction of the RFE and cargo terminal will be delayed until a final decision/agreement is reached[38].

[37] http://www.asa.gob.mx/wb/webasa/nvolaredo_aeropuertos

[38] http://www.wradio.com.mx/nota.aspx?id=931988 & http://entornolaredo.com/?p=355 & http://entornolaredo.com/?p=358


Source: Maiz Mier Constructora, 2011[39]

*Figure 4.26: Air Cargo Terminal*

The new air cargo terminal would have handled 24 daily flights and processed on average 50,000 tons of goods. The terminal could have served the automotive, electronics, and perishable goods markets, specifically the *maquiladora* industry, but also other industrial areas located along the Nuevo Laredo-Mexico City corridor. Should this project conclude it could increase employment and commercial opportunities (SEDESOL, 2012). Because of the latter, it has been recommended, if possible, to carry out any actions that would promote the conclusion of this project (SEDESOL, 2012).

*Hours of Operation*

The airport's hours of operation are from 8:00am to 8:00pm (ASA, 2011)[40].

### 4.2.13 Primary Roadways Serving Nuevo Laredo International Airport/ Quetzalcóatl International Airport

Primary roadways leading to the Nuevo Laredo International Airport Quetzalcóatl International Airport include Radial III, Segundo Anillo Periférico, Bulevard Aeropuerto, Bulevard Anzures, and Calle Lago Chapala.

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[39] Maiz Mier was the subcontractor hired by Grupo Domes – Oneo to build the Nuevo Laredo's Airport cargo terminal. Available at: http://maizmier.com/galerias/index.php?#/content/PROCESO/AEROPUERTO%20NUEVO%20LAREDO/A4.jpg/

[40] Available at: http://www.asa.gob.mx/wb/webasa/nvolaredo_aeropuertos

## 4.3 Eagle Pass (Maverick County)/ Piedras Negras (Municipality of Piedras Negras)

There are three bridge crossings, including one rail bridge, in Eagle Pass/Piedras Negras. Each bridge crossing serves specific transportation modes as illustrated in Table 4.8.

**Table 4.8: Summary of Eagle Pass/Piedras Negras Bridges**

| Bridge | Bridge number | Location | Pedestrians | Non-commercial vehicles | Commercial vehicles | Rail |
|---|---|---|---|---|---|---|
| Eagle Pass Bridge I | 1 | S. Adams St. Terminus (Eagle Pass) Northern Terminus of Libramiento Sur/Aduana (Piedras Negras) | Yes | Yes | No | No |
| Camino Real International Bridge | 2 | Western Terminus of US 57/ Garrison St.(Eagle Pass) Eastern Terminus of Hidalgo/Abas olo (Piedras Negras) | Yes | Yes | Yes | No |
| Union Pacific International Railroad Bridge | | South of Eagle Pass Bridge I crossing Ward St. (Eagle Pass) and Cerrada (Piedras Negras) | No | No | No | Yes |

### 4.3.1 Eagle Pass Bridge I

Eagle Pass Bridge 1 crosses the Rio Grande River and connects the cities of Eagle Pass, Texas and Piedras Negras, Coahuila. Both highway bridges in Eagle Pass accommodate POVs and pedestrians. Eagle Pass Bridge I has two lanes and two pedestrian walkways. It is 1,855 feet long. The bridge was originally constructed in 1927, reconstructed in 1954, and reinforced in 1985. On the U.S. side it is owned by the City of Eagle Pass and on the Mexican side it is owned by the Government of Mexico and operated by CAPUFE (Rivera Associates, 2008). The bridge is also known locally as Eagle Pass-Piedras Negras International Bridge and Puente Piedras

Negras-Eagle Pass (TxDOT, n.d.). The location and an aerial view of the bridge are shown in Figure 4.27.


Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.27: Eagle Pass Bridge I*

*Border Station*[41]

On the U.S. side, the border station (LPOE Eagle Pass I) is owned by GSA. The border station was completed in 1960 and expanded in 1991. Prior to 1999 when the Camino Real International Bridge opened, Eagle Pass Bridge I also handled commercial traffic.

*Hours of Operation*

Eagle Pass Bridge 1 operates seven days a week from 7am to 11pm.

*Tolls*

The toll rates for Eagle Pass Bridge I as of March 2010 are provided in Table 4.9.

[41] *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

**Table 4.9: Toll Rates for Eagle Pass Bridge I (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Pedestrians | $.50 |
| Cars and Pick-ups | $2.50 |
| 2 Axle Commercial Trucks | $7.00 |
| 3 Axle Commercial Trucks | $10.00 |
| 4 Axle Commercial Trucks | $13.00 |
| 5 Axle Commercial Trucks | $16.00 |
| 6 Axle Commercial Trucks | $19.00 |
| Each additional Axle on Commercial Vehicles | $3.00 |
| 2 Axle Buses | $7.00 |
| 3 Axle Buses | $10.00 |

Source: Eagle Pass International Bridge System[42].

*Bridge Crossings*

Figures 4.28 to 4.32 illustrate the bridge crossings into the U.S. between 2000 and 2010. From Figure 4.28, it is evident that northbound pedestrian crossings have decreased steadily from 2000 to 2010. The highest annual northbound pedestrian crossings during the past decade were recorded in 2000 at 871,294 crossings. In 2009, this number had decreased by 32% to 595,018 and in 2010 the number was even lower at 573,186.

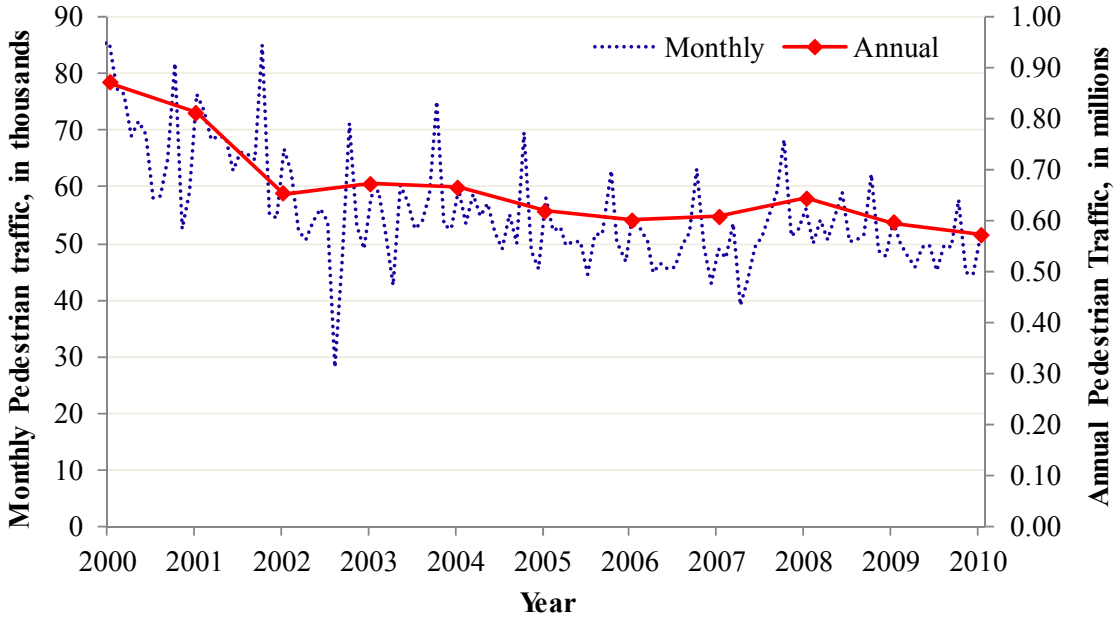



*Figure 4.28: Eagle Pass Bridge I – Northbound Pedestrian Crossings*

42 Available at: http://www.eaglepasstx.us/default.aspx?name=Bridge_Tolls_Services

Figure 4.29 illustrates that northbound POV crossings increased by 39% between 2000 and 2005 – the peak year – before starting to decline steadily and reaching 1,065,377 in 2010 – a 56% drop.

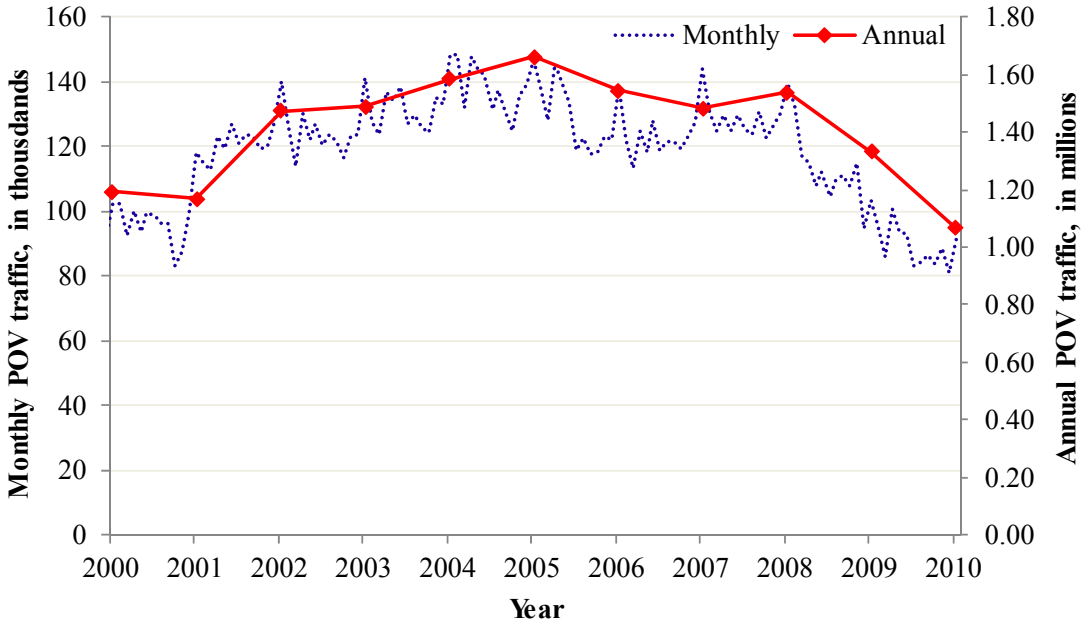



*Figure 4.29: Eagle Pass Bridge I – Northbound POV Crossings*

From Figure 4.30 it is evident that the number of northbound bus crossings declined sharply between 2001 and 2005 before ceasing in 2006.

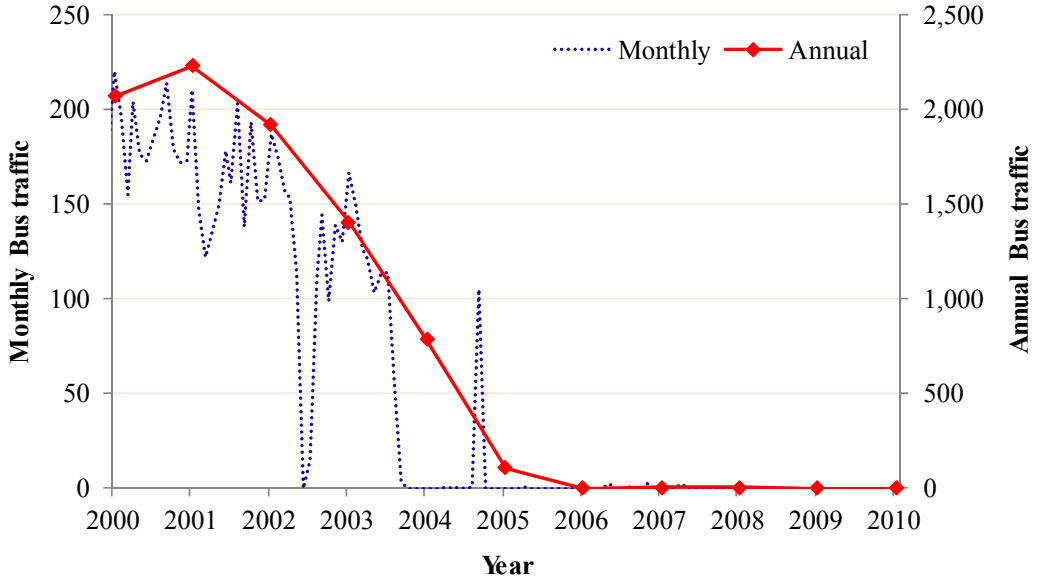
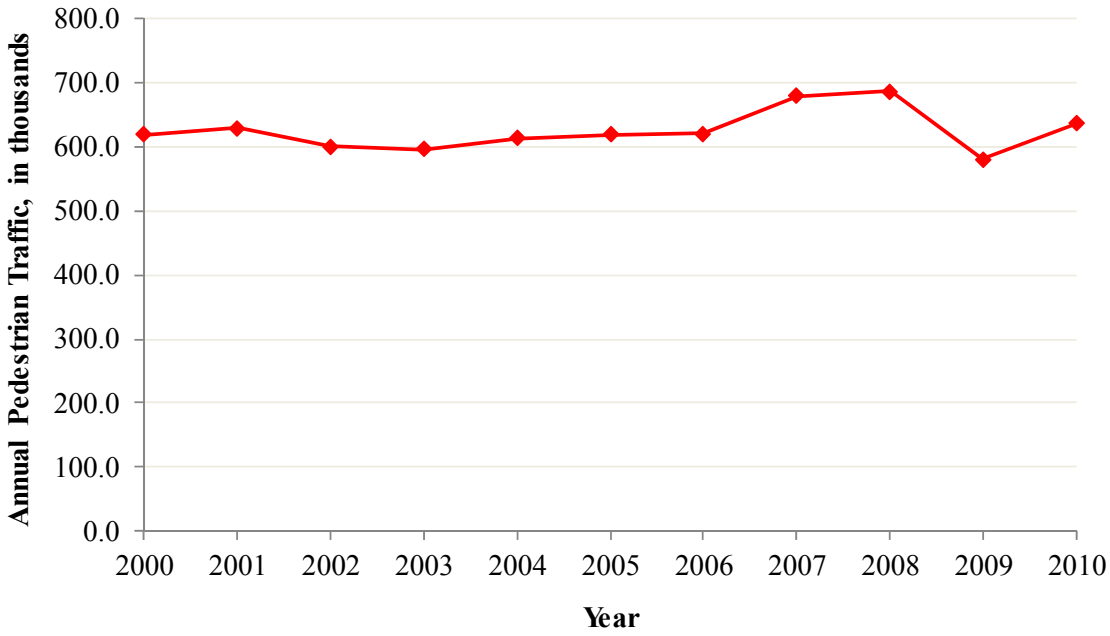



*Figure 4.30: Eagle Pass Bridge I – Northbound Bus Crossings*

Figure 4.31 and Figure 4.32 illustrate the southbound bridge crossings into Mexico through Eagle Pass between 2000 and 2010. Only aggregate data for all of Eagle Pass is available and not by bridge name. As illustrated in Figure 4.31, southbound pedestrian remained steady compared to northbound traffic in the last decade with slight increases and decreases between 2006 and 2010.



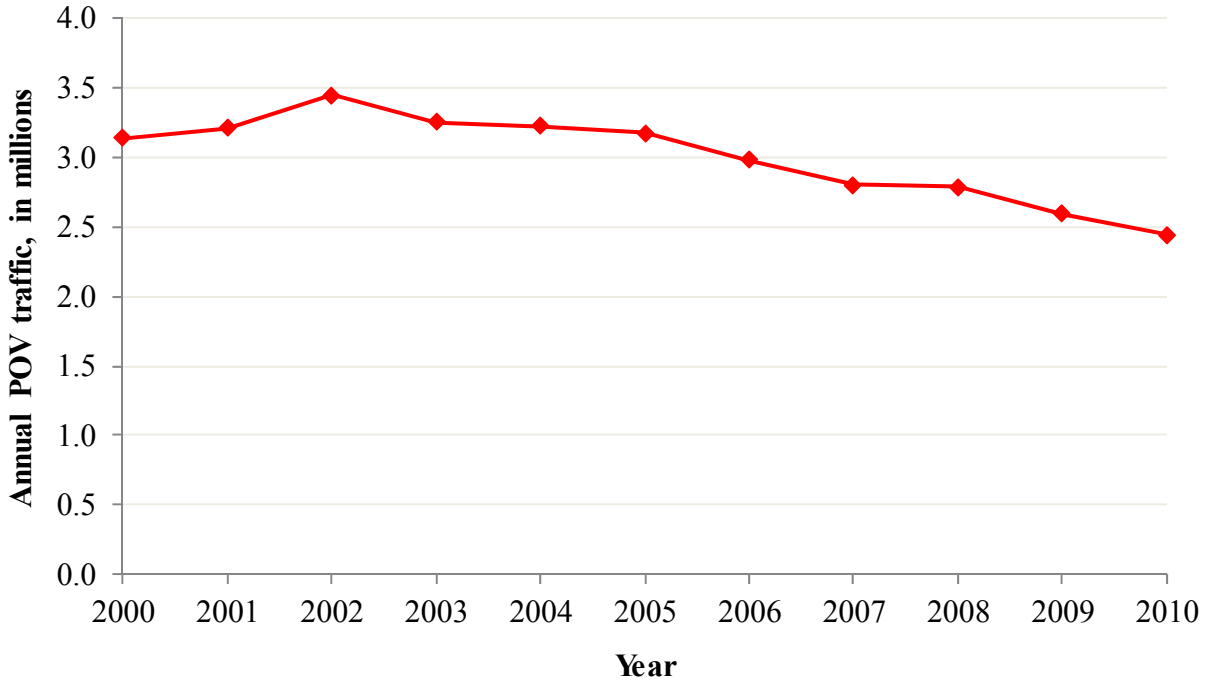

Source: Texas A&M International University, Texas Center for Border Economic and Enterprise Development.

*Figure 4.31: Eagle Pass/Piedras Negras Bridges – Southbound Pedestrian Crossings*[43]

Over the last decade, the difference in total northbound and southbound pedestrian traffic flows have been reducing from 32% higher northbound traffic in 2000 to just 6% in 2010.

For southbound POV traffic (see Figure 3.32), there has been a steady decline in traffic since 2002, with the difference in northbound and southbound traffic being less than 1% in 2010.

[43] Includes Camino Real International Bridge traffic.




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

*Figure 4.32: Eagle Pass/Piedras Negras Bridges – Southbound Passenger Operated Vehicle Crossings*[44]

### 4.3.2 Primary Roadways Serving Eagle Pass Bridge I

On the U.S. side, US 57/Garrison Street is a four lane undivided road – with an additional left turning lane – that connects directly to the bridge. In 2008, on average 6,400 vehicles were recorded using this road per day of which 6% were trucks. It was estimated that US 57/Garrison Street had an accident rate of 3.14 accidents per mile in 2008. In the same year, LOS between A and B was calculated for this roadway, and it is projected to worsen to LOS C and D by 2035 because of increase in traffic volume from the current 13,900 to 23,726.

Intersecting US 57/Garrison Street is US 277. US 277 connects Eagle Pass to Del Rio and also to Laredo via US 83. US 277 is an important component of the Ports to Plains corridor. On average, between 13,300 and 18,300 vehicles traveled per day on US 277 of which 4% to 6% were trucks. In 2008 it was estimated that the road had a LOS between A and B, which will worsen to C and D by 2035. The recorded accident rate was 1.10 accidents per mile during the same year.

US 57/Garrison Street also feeds into El Indio Highway/FM 1021 via local connectors such as Monroe Street, Ceylon Street, and Adams Street. In 2008, Monroe Street – a two lane undivided connector – had an average daily traffic of 4,000 vehicles and an accident rate of 4.76 accidents per mile. In the same year a LOS between A and B was estimated for Monroe Street and expected to remain the same in 2035. Ceylon Street is also a two lane undivided road. In 2008, it was used on average by 5,600 vehicles per day. It was estimated that Ceylon Street had A and B and an accident rate of 17.65 accidents per mile in 2008. Finally, Adams Street is also a

[44] Includes Camino Real International Bridge traffic.

two lane undivided road. In 2008, it had an average daily traffic of 3,810 vehicles, an estimated LOS between A and B, and an accident rate of 4.55 accidents per mile. LOS on Ceylon Street and Adam Street are projected to remain the same though 2035.

On the Mexican side, the bridge is located near Mex 2 and Mex 57. Mex 2/Rivereña connects Nuevo Laredo to Piedras Negras and Acuña. The lane configuration of Mex 2 varies from a two lane undivided highway in some areas to a six lane divided highway in others. The section of Mex 2 close to Piedras Negras has a reported accident rate of 0.26 accidents per mile.

Figure 4.33 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.


*Figure 4.33: Eagle Pass/ Piedras Negras (Municipality of Piedras Negras) —Existing Infrastructure Map*

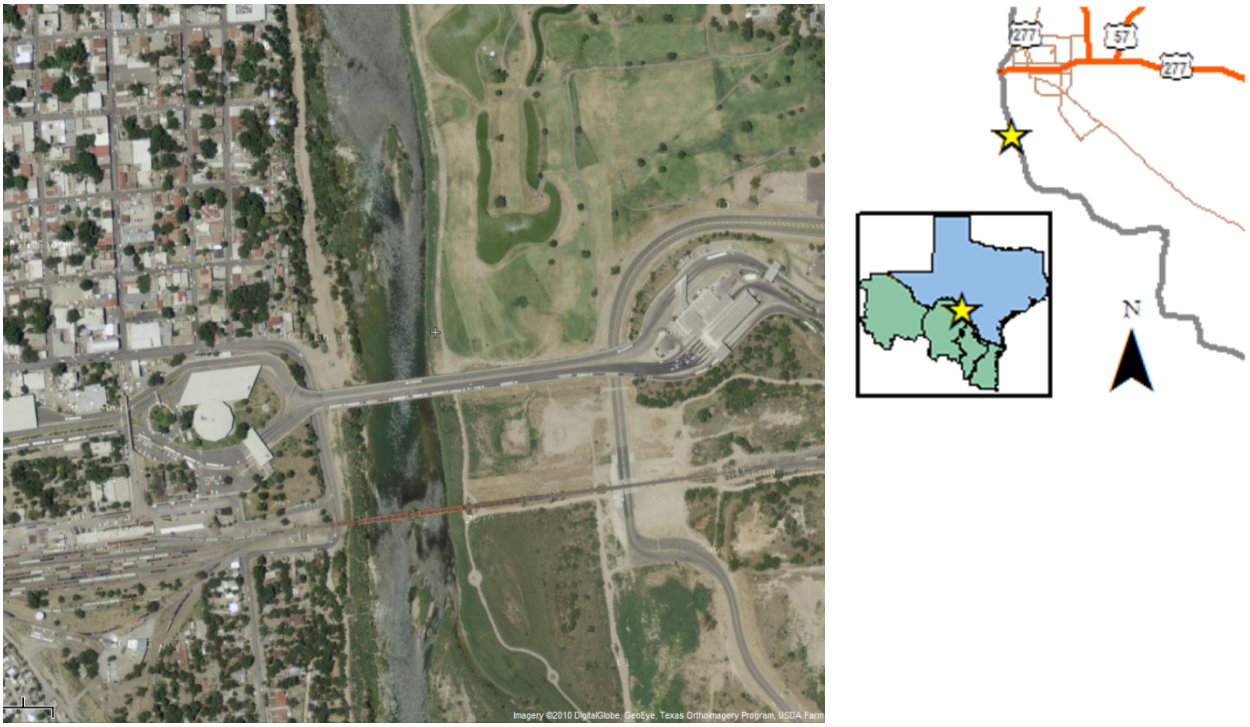
*Anticipated Changes in Infrastructure (2030)*

On the U.S. side, it is anticipated that US 277, north of Eagle Pass, will be reconstructed and widened to a four lane divided highway up to the border with Kinney County. This will aid in alleviating congestion and improve travel times between Eagle Pass and Del Rio. Complementing this expansion is a connector between US 277 and US 57 north of Eagle Pass is being planned. The planned connector will comprise a two lane undivided facility with rail grade separations and an interchange at US 57. The widening of US 277 east of Eagle Pass to the border with Webb County is also planned.

On the Mexican side, several improvements to Mex 2 from Piedras Negras to the boundary with the State of Nuevo León are also planned.

### 4.3.3 Camino Real International Bridge

The Camino Real International Bridge has six lanes and two six feet pedestrian walkways. The bridge is 82 feet wide and 1,384 feet long. The bridge was originally constructed in 1999. It is owned by the City of Eagle Pass on the U.S. side. On the Mexican side, it is owned by the Mexican Government and operated by the Government of Coahuila. The bridge is located half a mile south of Eagle Pass Bridge I and immediately north of the Union Pacific International Railroad Bridge (RJ Rivera Associates, 2008). The bridge currently serves pedestrians, POVs, buses, and trucks. The crossing is also known locally as Eagle Pass-Piedras Negras International Bridge 2 (TxDOT, n.d.). The location and an aerial view of the bridge are shown in Figure 4.34.




Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.34: Camino Real International Bridge*

*Border Station*[45]

On the U.S. side, the City of Eagle Pass and GSA jointly developed a master plan for the phased expansion of the border station (LPOE Eagle Pass II). Phase I of LPOE Eagle Pass II was built by the City of Eagle Pass and is leased to GSA. Phase II of the expansion of LPOE Eagle Pass II is to be designed and constructed by GSA on land donated by the City of Eagle Pass. Phase II is pending the donation of the land. The city, GSA, CBP and DOS are in discussions about an amendment to the Presidential Permit that would allow for a change in the lease terms and for the City to donate the land to GSA (GSA, 2012).

On the Mexican side, the construction of the border station began in July 1998 and was completed in August of 1999.

*Hours of Operation*

The bridge is open 24 hours a day for POVs and from 9am to 10pm, Monday through Friday, and 9am to 2pm on Saturdays for commercial traffic crossing into Mexico.

*Tolls*

The toll rates for the Camino Real International Bridge are similar to that of Eagle Pass Bridge I (see Table 4.10).

**Table 4.10: Toll Rates for Camino Real International Bridge (Southbound)**

| Mode | Toll rate ($US) |
|---|---|
| Pedestrians | $.50 |
| Cars and Pick-ups | $2.50 |
| 2 Axle Commercial Trucks | $7.00 |
| 3 Axle Commercial Trucks | $10.00 |
| 4 Axle Commercial Trucks | $13.00 |
| 5 Axle Commercial Trucks | $16.00 |
| 6 Axle Commercial Trucks | $19.00 |
| Each additional Axle on Commercial Vehicles | $3.00 |
| 2 Axle Buses | $7.00 |
| 3 Axle Buses | $10.00 |

Source: Eagle Pass International Bridge System[46]

*Bridge Crossings*

Figures 4.35 to 4.39 illustrate the number of bridge crossings into the U.S. between 2000 and 2010. From Figure 4.35, it is evident that the number of annual northbound pedestrian crossings has increased steadily between 2003 and 2010with the largest increase of 57% occurring between 2008 and 2009.

[45] *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

[46] Available at: http://www.eaglepasstx.us/default.aspx?name=Bridge_Tolls_Services

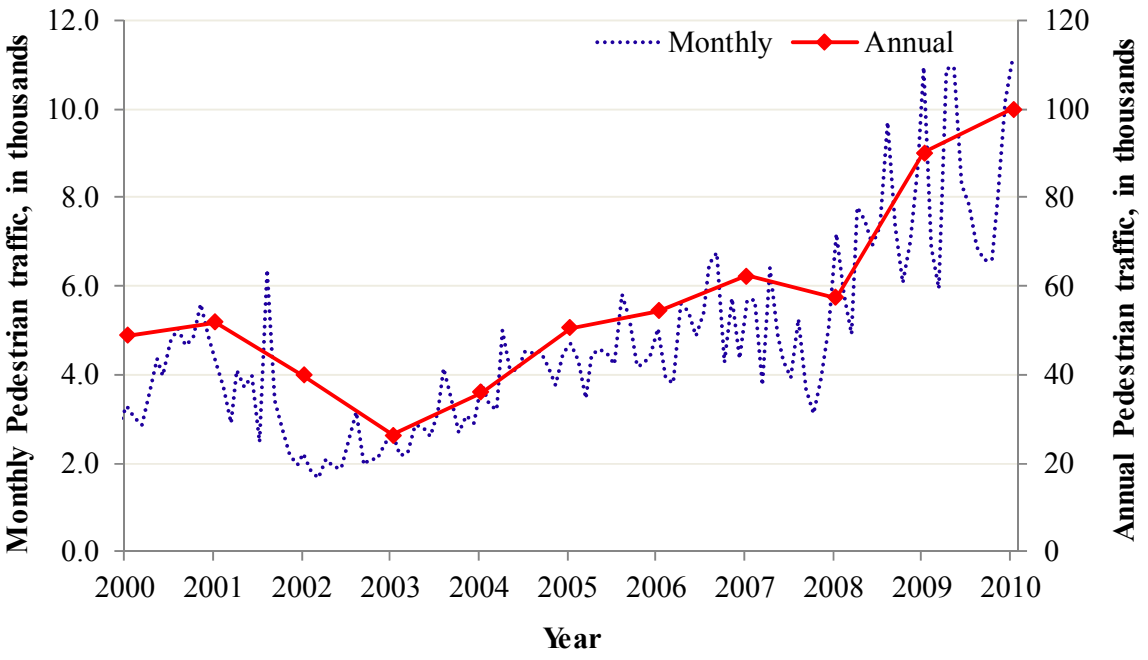



*Figure 4.35: Camino Real International Bridge – Northbound Pedestrian Crossings*

On the other hand, the number of annual northbound POV crossings has been reducing between 2002 and 2010[47] - with a decrease of 28% from 2008 to 2010 (see Figure 4.36).

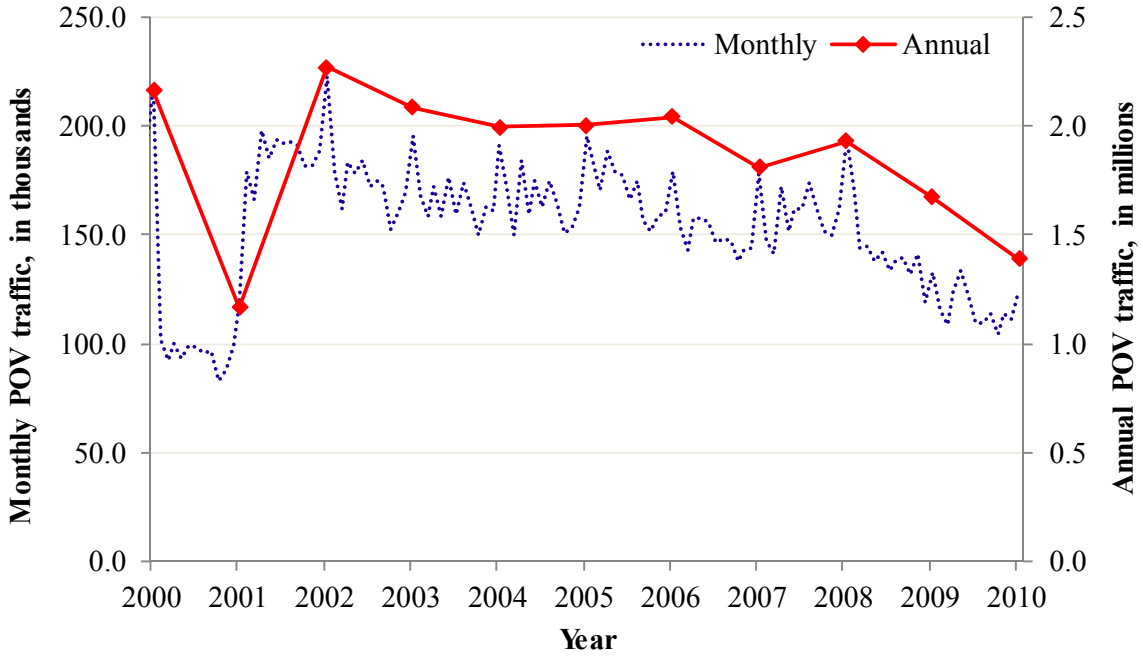



*Figure 4.36: Camino Real International Bridge – Northbound Passenger Operated Vehicle Crossings*

[47] The exception is 2008.

From Figure 4.37, it is evident that the number of annual northbound bus crossings increased substantially (i.e., 464%) from 2003 until the economic slowdown in 2008. Since 2008 the annual number of northbound bus crossings decreased to reach 95,028 crossings in 2010 – a 43% drop. It can be inferred from this diagram, that bus traffic from Eagle Pass Bridge I was diverted to Camino Real International Bridge after 2005, thus the spike between 2006 and 2008.

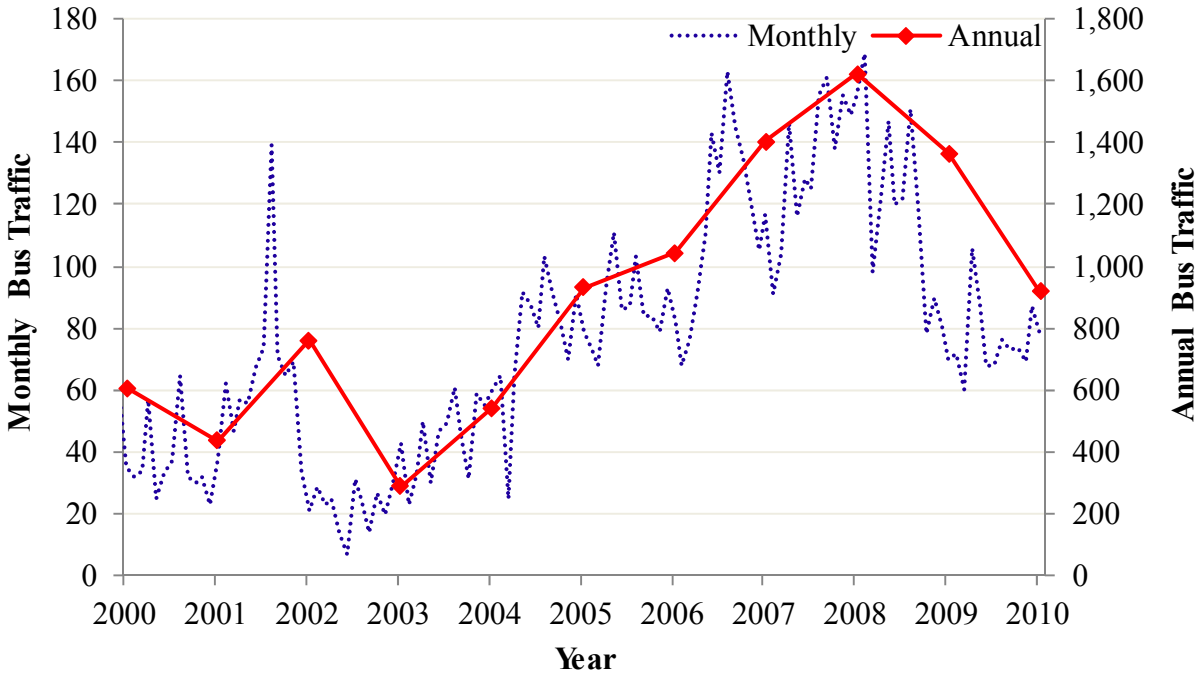



*Figure 4.37: Camino Real International Bridge – Northbound Bus Crossings*

The number of annual northbound truck crossings has been relatively constant –i.e., approximately 100,000 crossings per year – between 2004 and 2008. However, the economic slowdown resulted in an 18% decrease in the number of truck crossings in 2009 relative to 2008. In 2010, the annual number of northbound crossings reached 95,028 again – 14% higher than in 2009 (see Figure 4.38).

As shown in Figures 4.38 and 4.39, southbound truck traffic was very similar to northbound truck traffic during the past decade with the average difference in traffic flows being less than 3%. They followed a similar trend during the 2008 economic recession and the recovery in 2010.

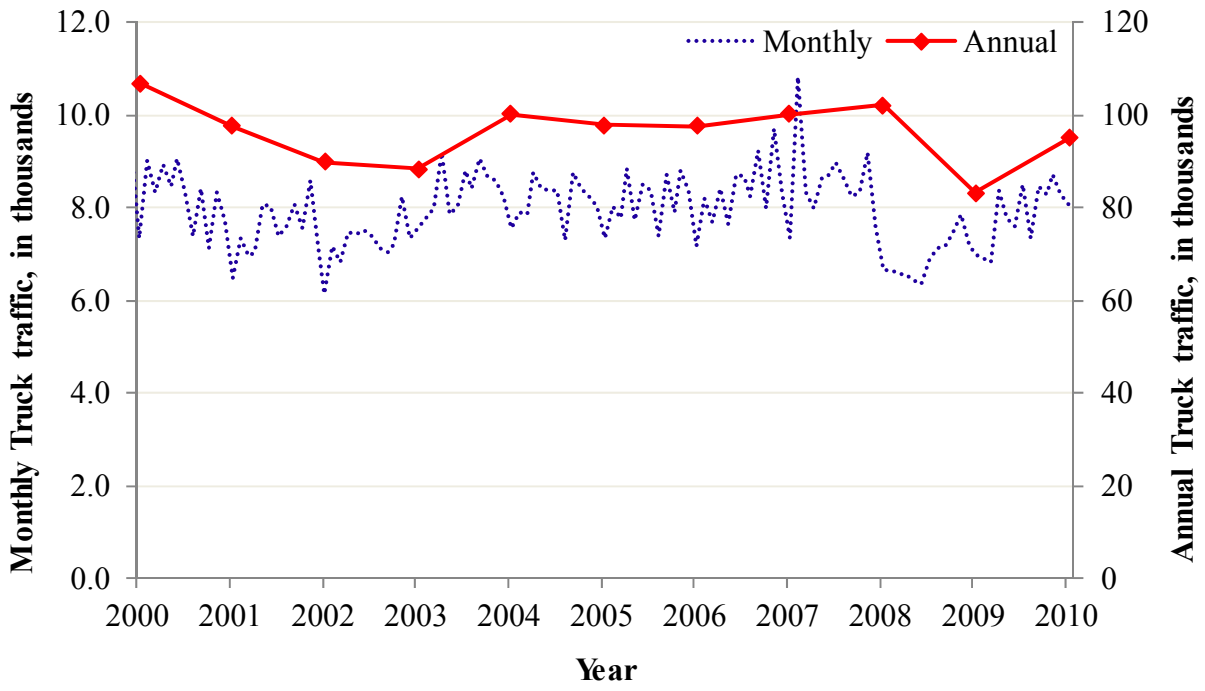
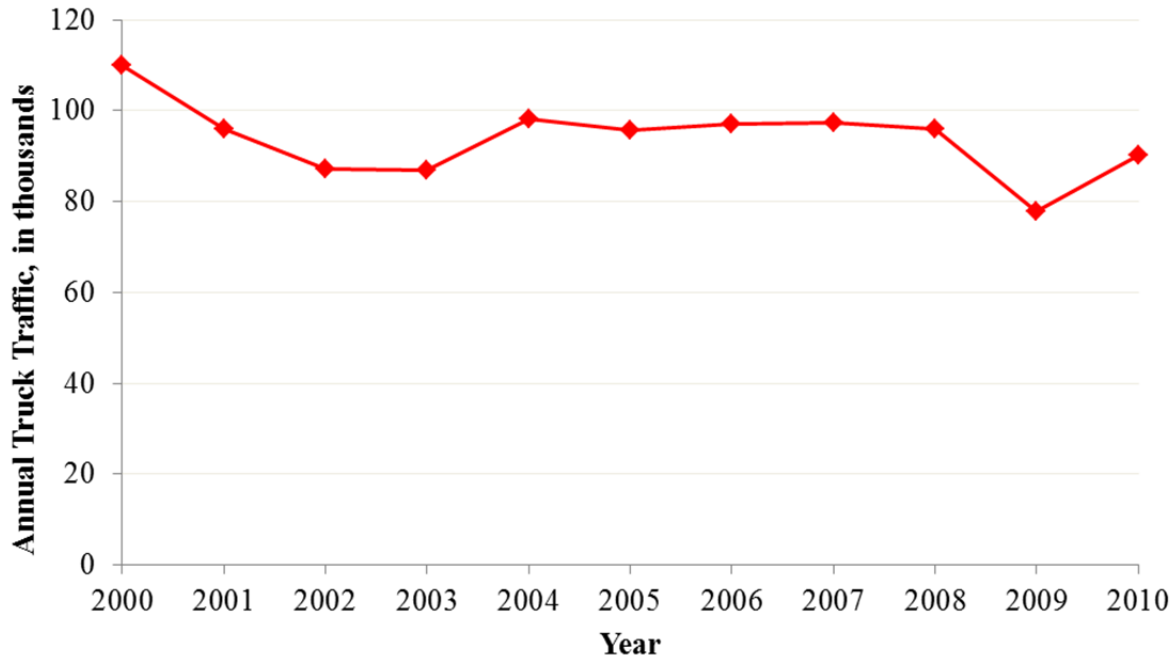



*Figure 4.38: Camino Real International Bridge – Northbound Truck Crossings*




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

*Figure 4.39: Camino Real International Bridge – Southbound Truck Crossings*

### 4.3.4 Primary Roadways Serving Camino Real International Bridge

On the U.S. side, Ward Street, Adams Street, and Monroe Street connect directly to the bridge. Ward Street is a two lane undivided road which connects the bridge to Industrial Park Boulevard. In 2008, Ward Street had an average daily traffic of 1,710 vehicles and an estimated LOS between A and B. Furthermore no accidents were recorded on Ward Street in 2008. Similar to Ward Street, Industrial Park Boulevard is a two lane undivided connector with a LOS between A and B and no recorded accidents in 2008. Industrial Park Boulevard was, however, used by 2,530 vehicles per day in 2008. By 2035, it is projected that LOS for both Ward Street and Industrial Park Boulevard will remain the same based on projected traffic volumes of 2,919 and 4,318, respectively.

Adams Street connects to the bridge from the north and Monroe Street connects to the bridge from the east. Monroe Street is a two lane undivided road with an average daily traffic of 4,000 vehicles. In 2008, a LOS between A and B was estimated for Monroe Street and an accident rate of 4.76 accidents per mile was recorded. Adams Street had an estimated LOS between A and B, and was used by 3,810 vehicles a day in 2008. The accident rate for Adams Street in 2008 was 4.55 accidents per mile. By 2035, both Monroe Street and Adams Street will still have an LOS between A and B based on projected traffic volumes of 6,282 and 6,503, respectively.

The Camino Real International Bridge is also served by US 57 and US 277, as well as El Indio Highway/FM 1021. El Indio Highway/FM 1021 connects Eagle Pass directly to Laredo and is therefore an important travel corridor. El Indio Highway/FM 1021 is a four lane undivided highway that had an estimated LOS between A and B in 2008. In 2008, El Indio Highway/FM 1021 was traveled by 8,100 vehicles per day of which 33.6% were trucks. By 2035, the LOS for El Indio Highway/FM 1021 is estimated to be between C and D. The accident rate for El Indio Highway/FM 1021 as of 2008 was 1.04 accidents per mile.

On the Mexican side, the bridge is served by Mex 2 and Mex 57. Figure 4.40 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.

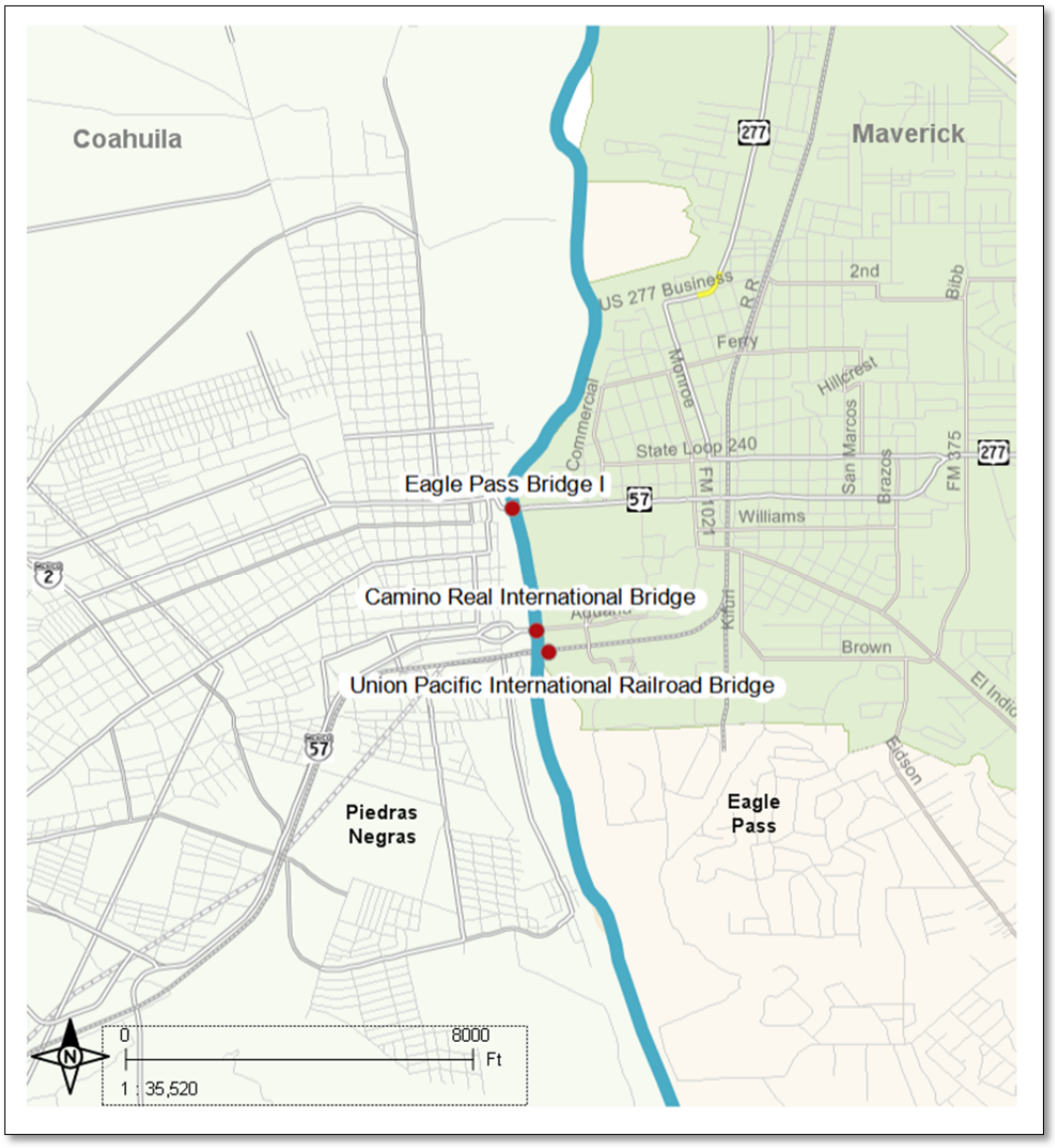



*Figure 4.40: Eagle Pass/ Piedras Negras (Municipality of Piedras Negras) —Existing Infrastructure Map*

*Anticipated Changes in Infrastructure (2030)*

As mentioned earlier, on the U.S. side, several projects (i.e., reconstruction and widening) are planned involving the US 277 trade corridor. On the Mexican side, there are also plans to improve several sections of MEX 2 near Piedras Negras. Furthermore, the Governors of Coahuila and Zacatecas signed an agreement to expand the highway infrastructure from Saltillo to Zacatecas. MEX 57 is currently a four lane highway from Piedras Negras to Mexico City (IMT, 2012).

### 4.3.5 Union Pacific International Railroad Bridge

The Union Pacific International Railroad Bridge crosses the U.S./Mexico border at the cities of Eagle Pass, Texas, and Piedras Negras, Coahuila. The bridge is owned and operated by Union Pacific Railroad on the U.S. side and is owned by the Mexican Federal Government on the Mexican side. The bridge is also locally known as the Eagle Pass-Piedras Negras International Railway Bridge.

*Bridge Crossings*

Important measures of rail traffic are train crossings, railcar crossings, and passenger crossings. The northbound and southbound train crossing data were obtained from the U.S. Bureau of Transportation Statistics for the period 2000 to 2010. The crossing data for the Union Pacific International Railroad Bridge are shown in Figures 4.41 and 4.42. From these Figures, it can be seen that the number of annual crossings (i.e., train, loaded rail containers, empty rail containers) have been largely unaffected by the economic slowdown that started in 2008. Specifically, from Figure 4.41, it is evident that the annual train crossings in Eagle Pass/Piedras Negras increased by 50% between 2006 and 2010.

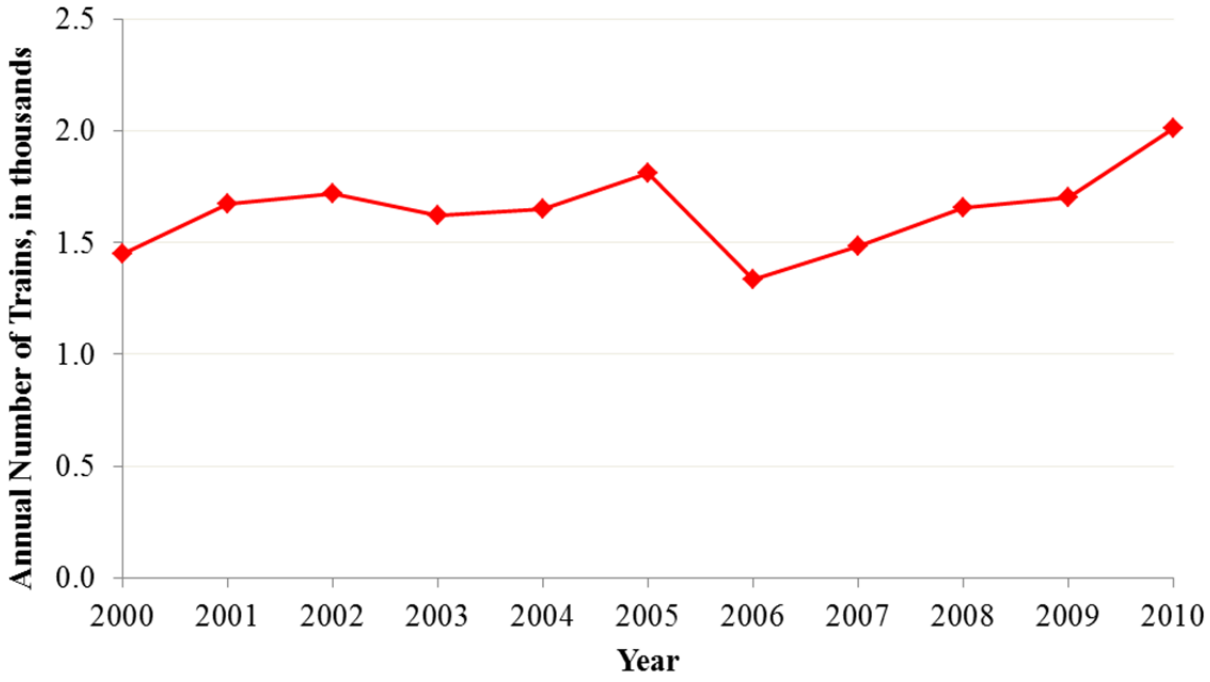



*Figure 4.41: Union Pacific International Railroad Bridge - Annual Train Crossings (Northbound and Southbound)*

Similarly, the annual number of loaded and empty rail containers crossing in Eagle Pass/Piedras Negras increased by 62% between 2006 and 2010 (see Figure 4.42). It is also evident that the number of annual empty rail containers crossing in Eagle Pass/Piedras Negras increased between 2006 and 2010 by 51%. The exception is 2009 when the number of empty rail containers crossing in Eagle Pass/Piedras Negras decreased slightly (i.e., 8%) compared to 2008.

In 2000, empty containers accounted for 57% of total number of containers, and in 2010, this number increased slightly to 59%

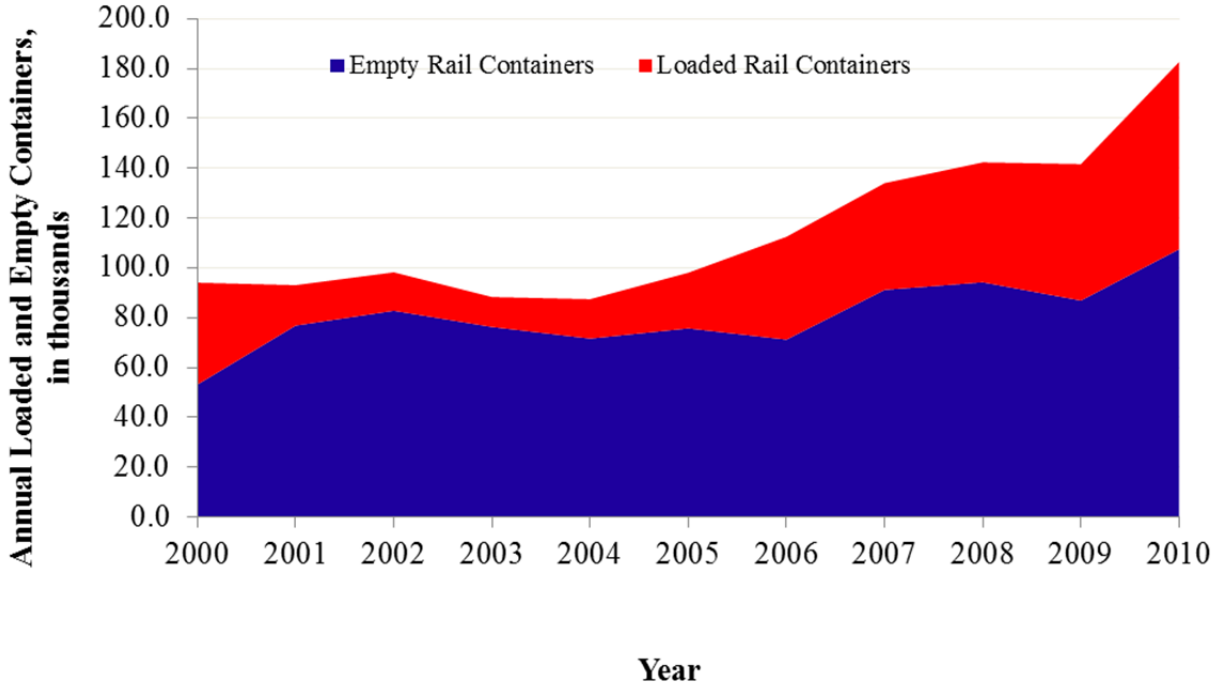



*Figure 4.42: Union Pacific International Railroad Bridge – Annual Loaded and Empty Rail Containers*

## 4.4 Del Rio (Val Verde County)/Acuña (Municipality of Acuña)

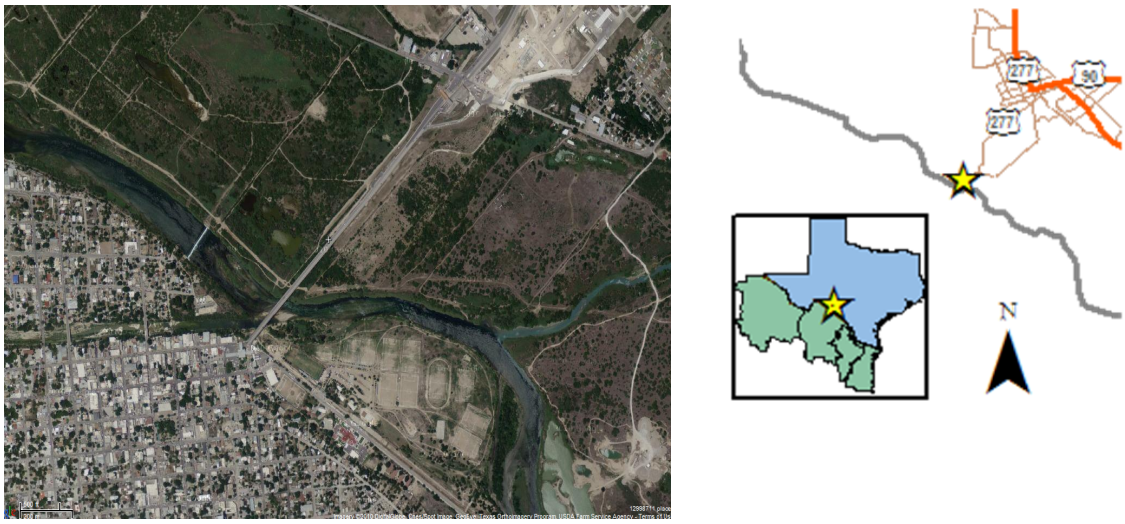
There are two bridge crossings between Texas and Mexico in Val Verde County and the Municipality of Acuña, as well as one international airport in Del Rio, Val Verde County. Each bridge crossing serves specific transportation modes as illustrated in Table 4.11.

**Table 4.11: Summary of Del Rio/Acuña Bridges**

| Bridge | Bridge number | Location | Pedestrians | Non-commercial vehicles | Commercial vehicles | Rail |
|---|---|---|---|---|---|---|
| Del Rio – Ciudad Acuña International Bridge | n/a | Southwestern Terminus of US 277/Spur 239 (Del Rio) Northeastern Terminus of Miguel Hidalgo (Acuña) | Yes | Yes | Yes | No |
| Lake Amistad Dam Crossing | n/a | Western Terminus of Spur 349 (Del Rio) Northern Terminus of Presa La Amistad (Ciudad Acuña) | Yes | Yes | No | No |

### 4.4.1 Del Rio – Ciudad Acuña International Bridge

The Del Rio-Ciudad Acuña International Bridge is owned and managed by the City of Del Rio on the U.S. side. On the Mexican side, the bridge is owned by the Government of Mexico and operated by CAPUFE. The bridge was built in 1930 and reconstructed in 1987. The bridge has four lanes and two pedestrian walkways. It is 2,035 feet long and serves pedestrians, POVs, and commercial vehicles. The crossing is also known locally as Del Rio International Bridge, Puente Acuña, and Puente Ciudad Acuña-Ciudad Del Rio.




Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.43: Del Rio-Ciudad Acuña International Bridge*

*Border Station*[48]

On the U.S. side, the border station (LPOE Del Rio) was constructed in 1967 and is owned by GSA. The building and lanes were expanded in 1990 and a new import dock was constructed in the late 1990's. GSA also substantially completed new facilities for administration and non-commercial operations in April 2009. CBP began operations in the new facilities in June 2009.

*Hours of Operation*

The bridge operates 24 hours per day seven days per week.

*Tolls*

The toll rates for the Del Rio-Ciudad Acuña International Bridge as of May 2011 are provided in Table 4.12.

[48] *2010 Texas-Mexico International Bridges and Border Crossings – Existing and Proposed* published by the Texas Department of Transportation

**Table 4.12: Toll Rates for Del Rio-Ciudad Acuña International Bridge (Southbound)**

| Vehicle Classification | Toll Charge ($US) |
|---|---|
| Class 1 – Autos/Pickups & Motorcycles | $ 2.50 |
| Class 2 – 2 Axle Truck | $ 8.00 |
| Class 3 – 3 Axle Truck | $ 12.00 |
| Class 4 – 4 Axle Truck | $ 16.00 |
| Class 5 – 5 Axle Truck | $ 20.00 |
| Class 6 – 6 Axle Truck | $ 24.00 |
| Class 7 – Recreational Vehicles | $ 8.00 |
| Class 8 – Buses | $ 8.00 |
| Class 9 – Bicycles | $ 0.75 |
| Class 10 – Autos/Pickups & Motorcycles - Fri. & Sat. 9pm – 5am | $3.00 |
| Pedestrians | $ 0.75 |
| Extra Axles | $ 1.25 per axle |

Source: http://www.cityofdelrio.com/index.aspx?NID=193, retrieved May 5, 2011

*Bridge Crossings*

Figures 4.44 to 4.49 illustrate the bridge crossings into the U.S. between 2000 and 2010. From Figure 4.44, it is evident that annual northbound pedestrian crossings have declined substantially (i.e. 78%) between 2000 and 2008. However, the number of northbound pedestrian crossings increased slightly in 2009 (i.e., 6% compared to 2008), and again in 2010 (26% compared to 2009).

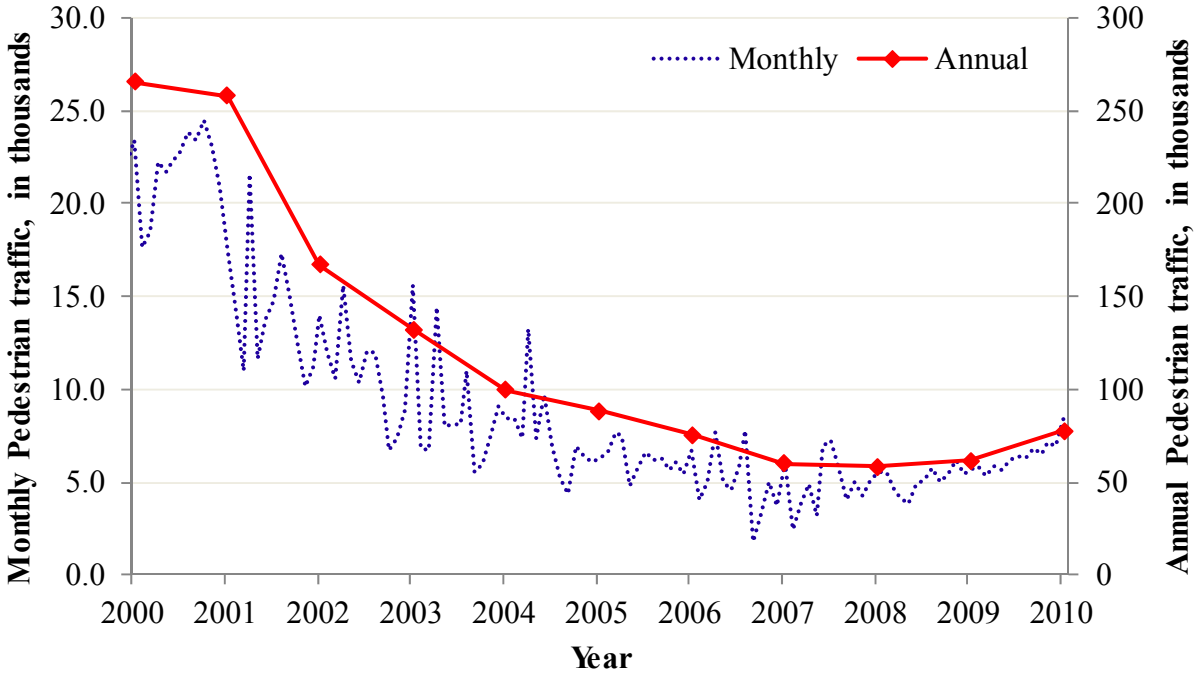



*Figure 4.44: Del Rio-Ciudad Acuña International Bridge – Northbound Pedestrian Crossings*

Figure 4.45 shows that the number of annual northbound POV crossings declined consistently from a peak of 2,029,529 in 2002 to 1,210,356 in 2010 – a decline of 40%.

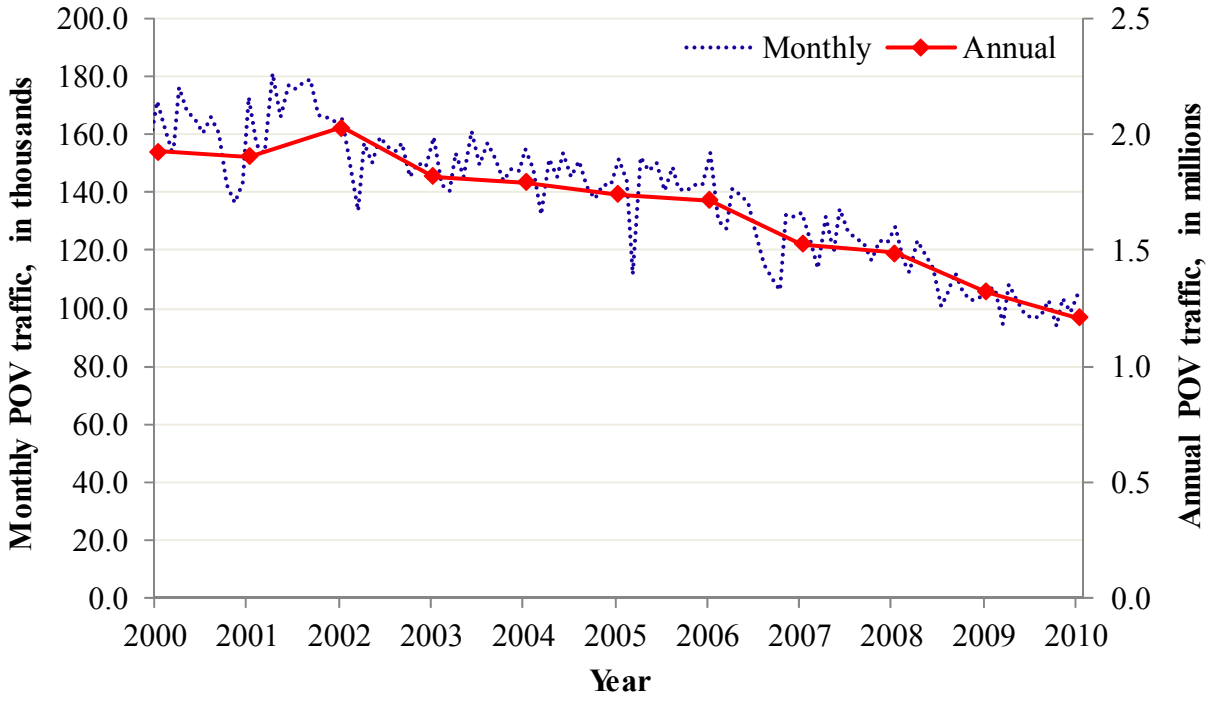



*Figure 4.45: Del Rio-Ciudad Acuña International Bridge – Northbound POV Crossings*

From Figure 4.46, it is evident that the number of annual northbound truck crossings was relatively constant at approximately 64,500 truck crossings between 2003 and 2007. However, at the start of the economic slowdown in 2008, the number of northbound truck crossings decreased by10% in 2008 relative to 2007 and by 13% in 2009 relative to 2008. In 2010, northbound truck crossings again increased by 13% relative to 2009 to reach 55,852 crossings.

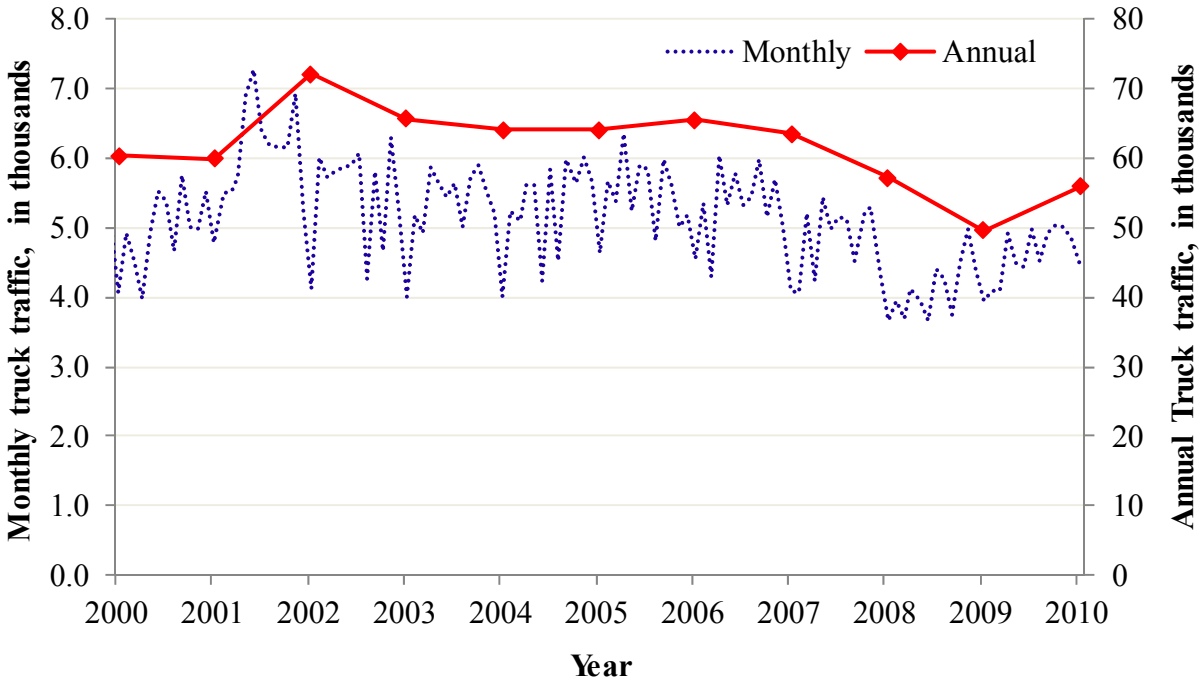
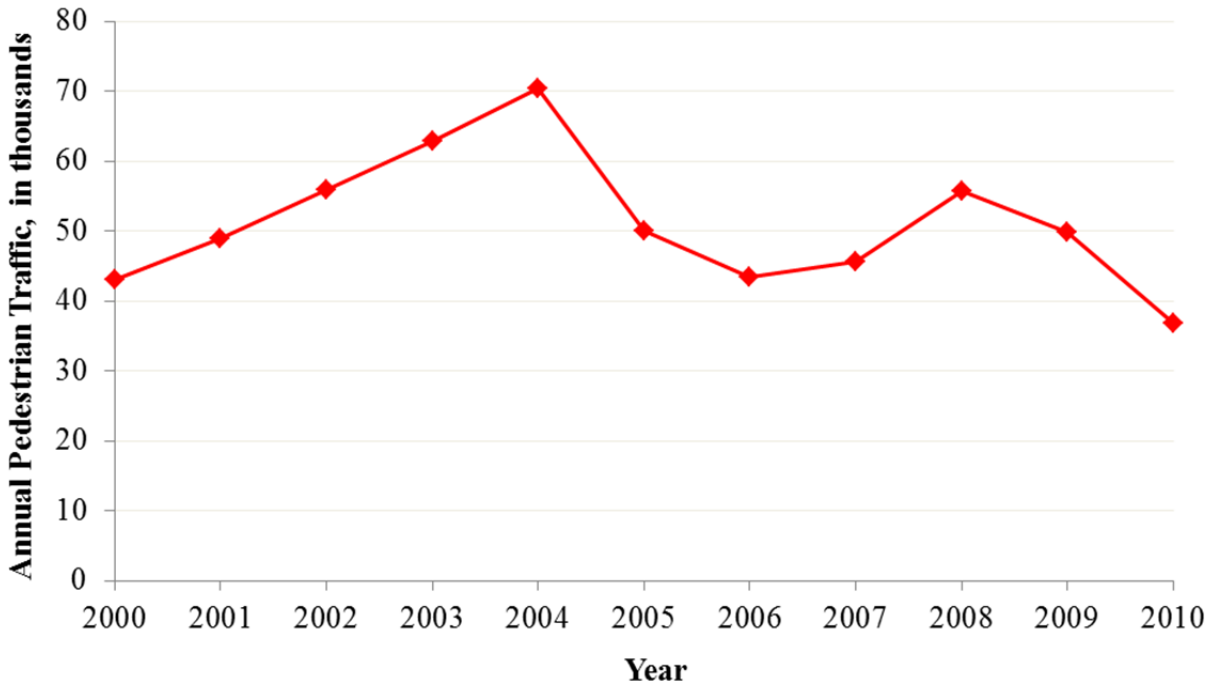



*Figure 4.46: Del Rio-Ciudad Acuña International Bridge – Northbound Truck Crossings*

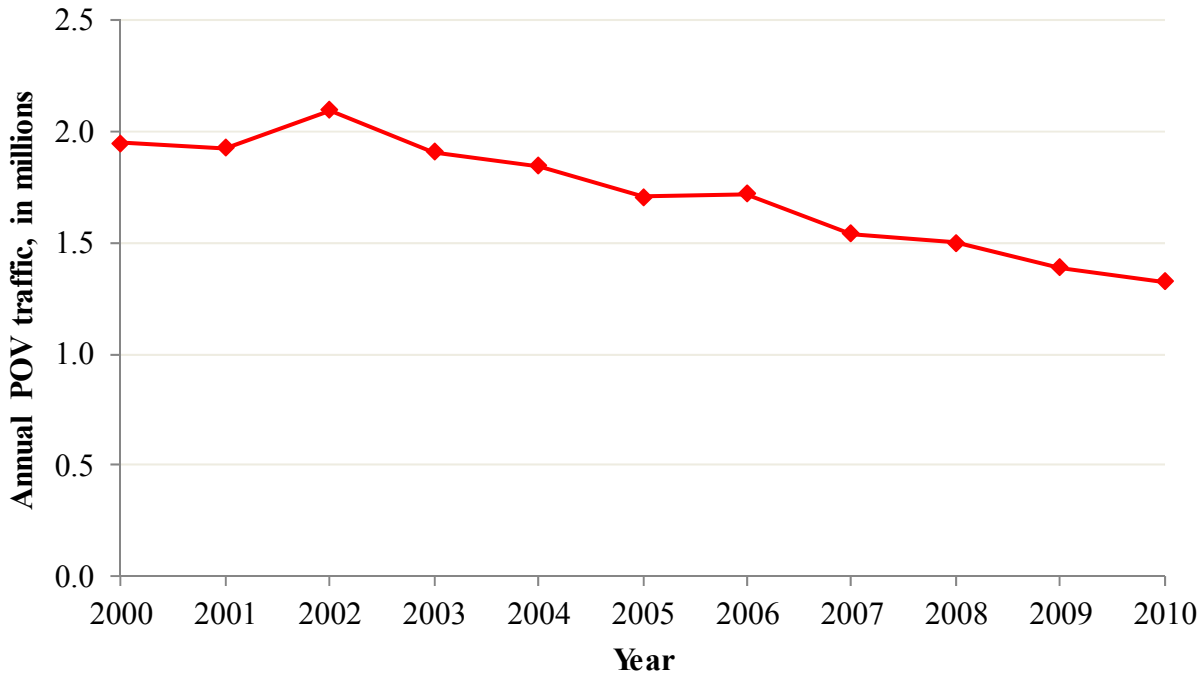
From Figure 4.47, it is evident that the annual number of southbound pedestrian crossings have increased substantially (i.e., 64%) between 2000 and 2004. However, from 2004 to 2006, the number of southbound pedestrian crossings decreased by 40% to reach 43,427. From 2006 to 2008, the number of southbound pedestrian crossings increased again, before declining to the lowest level of 36,784 crossings in 2010 – a decline of 34% between 2008 and 2010. Until recently, southbound crossing were 500% more than northbound crossings (i.e. in 2000). In 2010, northbound traffic was 110% more than southbound traffic.




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

*Figure 4.47: Del Rio-Ciudad Acuña International Bridge - Southbound Pedestrian Crossings*

Figure 4.48 illustrates the annual number of southbound POV crossings at Del Rio-Ciudad Acuña International Bridge and the Lake Amistad Dam Crossing. From Figure 4.48, it is evident that the annual southbound POV crossings at the two bridges declined similarly to the northbound POV crossings at Del Rio-Ciudad Acuña International Bridge between 2002 and 2010. The peak number of POV crossings (i.e., 2,095,185) was recorded in 2002. Between 2002 and 2010, the total number of annual southbound crossings had decreased by 37% to reach 1,326,069 in 2010.




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

*Figure 4.48: Del Rio/Acuña Bridges - Southbound POV Traffic*[49]

Figure 4.49 illustrates the annual number of southbound truck crossings at Del Rio-Ciudad Acuña International Bridge and the Lake Amistad Dam Crossing. As is evident from Figure 4.49, the annual number of southbound truck crossings at the two bridges was more variable. The peak crossing years were 2005 and 2009 when the annual southbound truck crossings exceeded 80,000 crossings. However, in 2010, the annual southbound truck crossings decreased sharply (34% relative to 2009) to reach the lowest level of 53,982 crossings recorded between 2000 and 2010.

[49] Include Lake Amistad Dam Crossing traffic.

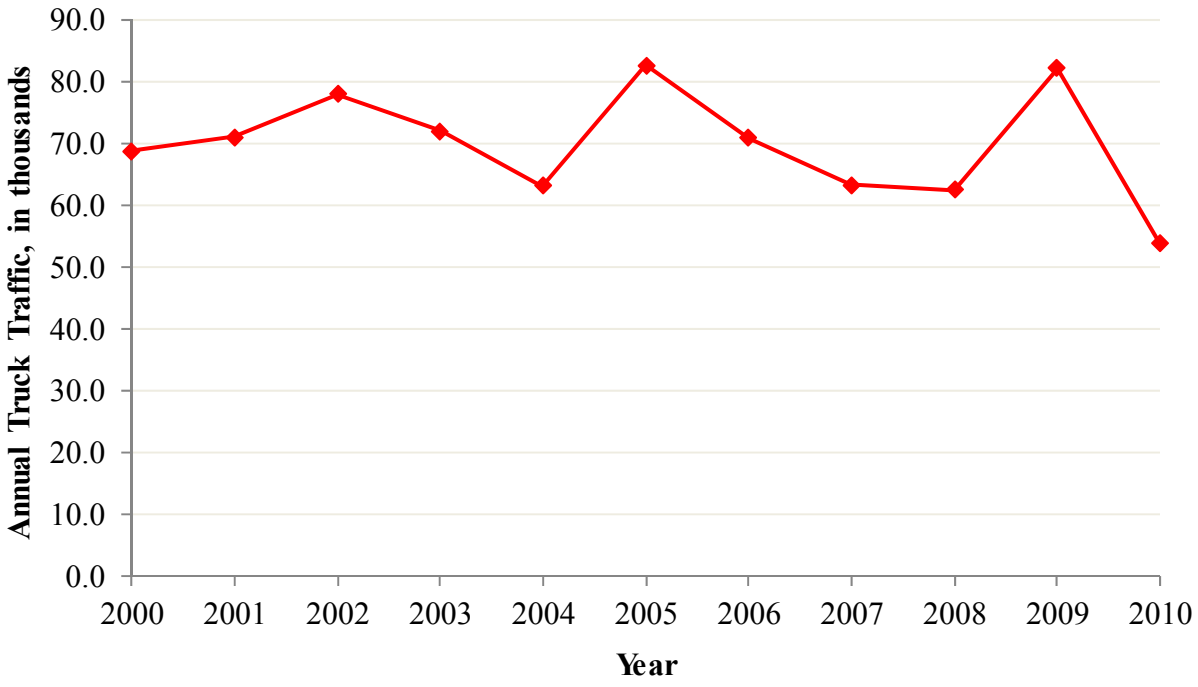



*Figure 4.49: Del Rio/Acuña Bridges - Southbound Truck Crossings*[50]

### 4.4.2 Primary Roadways Serving Del Rio-Ciudad Acuña International Bridge

On the U.S. side, Spur 239 connects directly to the bridge. Spur 239 is a four lane undivided road with an additional continuous left turning lane. In 2008, on average 14,000 vehicles were recorded using Spur 239 daily. By 2035, 23,896 vehicles are expected to be using this facility. LOS will change from the current C-D level to E. Accident rate in 2008 was also recorded at 4.33 accidents per mile. Spur 239 connects directly to US 277, US 377, and US 90. Also serving as a connector between these major highways is Gibbs Street. Gibbs Street is a four lane undivided road with an additional left turn turning lane. The average daily traffic on Gibbs Street was also 14,000 vehicles per day in 2008 and expected to increase to 23,896 by 2035.

The bridge is also served by Main Street, Garfield Street, Las Vacas Street, Qualia Drive, Hudson Drive, Pecan Street, and Rio Grande Road. Main Street is a two to four lane undivided road with an additional turning lane. It is estimated that on average 6,300 vehicles used this road in 2008 and it is projected to grow to 10,753 by 2035. The accident rate on Main Street was recorded as 13.15 accidents per mile in 2008. LOS is expected to change from between A and B in 2008 to between C and D by 2035. The lane configurations of Garfield Street and Las Vacas Street also vary from two to four lanes. In 2008, Garfield Street and Las Vacas Street had an average daily traffic of 10,900 vehicles per day. LOS for these roadways is expected to worsen from the 2008 level between A and B to a level between C and D by 2035. Hudson Drive, Pecan Street, and Rio Grande Road are two lane undivided roads. On average 3,710 vehicles traveled

[50] Includes Lake Amistad Dam Crossing traffic; however, considering Del Rio northbound data and a comparison with Lake Amistad Dam Crossing data, it can be inferred that the majority of the southbound truck traffic use the Del Río-Ciudad Acuña International Bridge as the Lake Amistad Dam Crossing does not typically serve truck traffic.

per day on Hudson Street in 2008. In 2008, the accident rate on Pecan Street was high at 25.81 accidents per mile compared to Hudson Street and Rio Grande Road at 4.00 and no accidents per mile, respectively. LOS for these streets will remain between level A and B from 2008 to 2035.

The main highways serving Del Rio are US 277, US 377, and US 90. US 57 also connects to US 277. In Del Rio, Veterans Boulevard (US 277/US 377/US 90) is a four lane undivided highway with an additional left turning lane. In 2008, this segment of Veterans Boulevard had an average daily traffic of 33,000 vehicles per day, and expected to grow to 56,327 vehicles per day by 2035. LOS on this roadway will remain at Level F from 2008 to 2035. Outside the City of Del Rio, US 277 and US 377/US 90 had an average daily traffic of 18,300 and 20,000 vehicles per day, respectively. These are projected to grow to 31,236 and 39,162 by 2035. LOS will thus worsen form the 2008 conditions which were between levels C and D to level F by 2035.The accident rate on Veterans Boulevard (US 277/US 377/US 90) was 3.09 accidents per mile in 2008.

On the Mexican side, MEX 2 and Coahuila State Highway 29, which connects to Mex 57, are major highways serving the bridge.

Figure 4.50 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.


*Figure 4.50: Del Rio / Ciudad Acuña Existing Infrastructure Map*

*Anticipated Changes in Infrastructure (2030)*

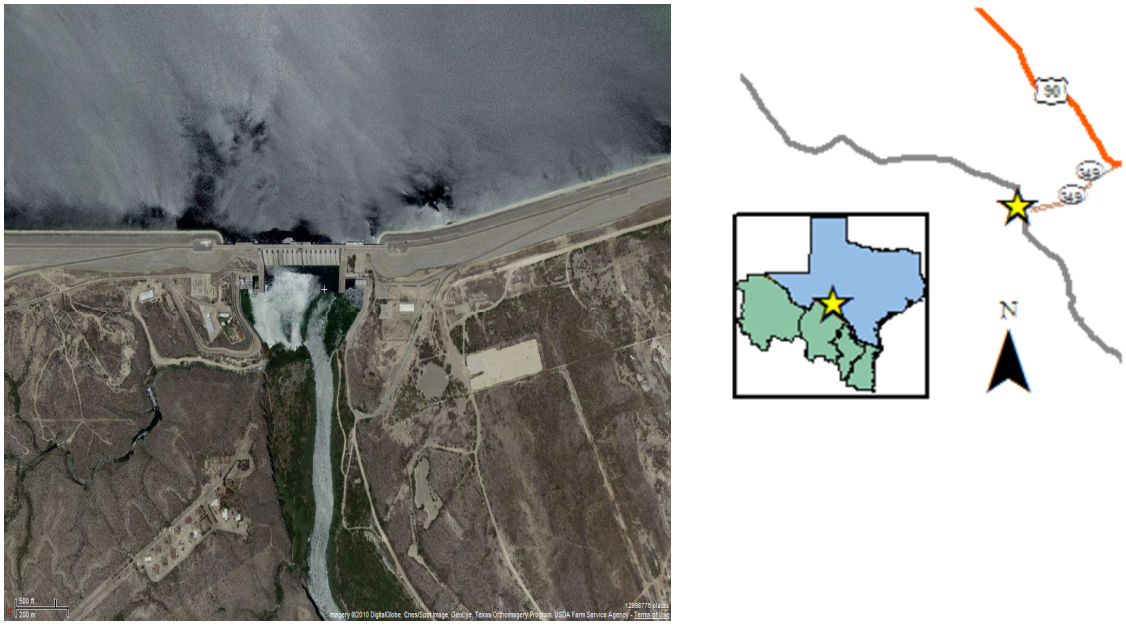
On the U.S. side, a number of improvements and widening projects are planned for both US 90 and US 277, east of the City of Del Rio. US 90 will be improved from Laughlin Air Force Base, through Kinney County, and into the City of Uvalde in Uvalde County. US 277 will be widened from east of the City of Del Rio to Quemado north of Eagle Pass. A Del Rio Outer Loop – a four lane divided highway – is also planned to eliminate congestion in the City of Del Rio. The initial phase of this project is a two lane highway from US 277 South to US 90 West with a connection to Laughlin Air Force base and a railroad grade separation near US 90 West.

On the Mexican side, a new highway outside the City of Acuña (i.e., Libramiento Morelos/Zaragoza) and several road improvements are planned. The new road would connect to Mex 57 and would benefit traffic in the City of Acuña. Within the City of Acuña several improvements to the *Libramiento Emilio Mendoza* are planned, including the construction of several interchanges. Also, the planned improvement of the highway connecting the City of

Acuña with the City of Hidalgo and the construction of a new road between Nava and Villa Unión will be important to trade from the interior of Mexico.

### 4.4.3 Lake Amistad Dam Crossing

The Lake Amistad Dam Crossing serves as an international bridge to cross the Rio Grande south of Lake Amistad. The dam connects the cities of Del Rio and Ciudad Acuña, Coahuila. The crossing is a 0.4 mile two-lane road. The crossing is owned by the U.S. and Mexican Governments. However, the crossing is operated and maintained by the International Boundary and Water Commission (U.S. and Mexican sections). The bridge serves POVs only. The dam is also known as "Amistad Dam" and "Presa la Amistad." The border station was completed in 1969 (TXDOT, n.d.).




Sources: Google Maps, 2010; RJ RIVERA Associates, 2008.

*Figure 4.51: Lake Amistad Dam Crossing*

*Hours of Operation*

The bridge operates from 10:00am to 6:00pm, seven days a week.

*Tolls*

No toll charges are levied at the Lake Amistad Dam crossing since the dam's primary function is to control water flow and generate electricity. The crossing is also used for touristic and recreational purposes.

*Bridge Crossings*

Figure 4.52 illustrates the bridge crossings into the U.S. between 2000 and 2010. From Figure 4.52, it is evident that the annual northbound POV crossings increased from 2000 to peak in 2003 at 90,127 crossings. From 2003 to 2005, annual northbound POV crossings decreased before increasing again in 2006 and 2007. However, between 2007 and 2010, the annual northbound POV crossings have decreased 52%.

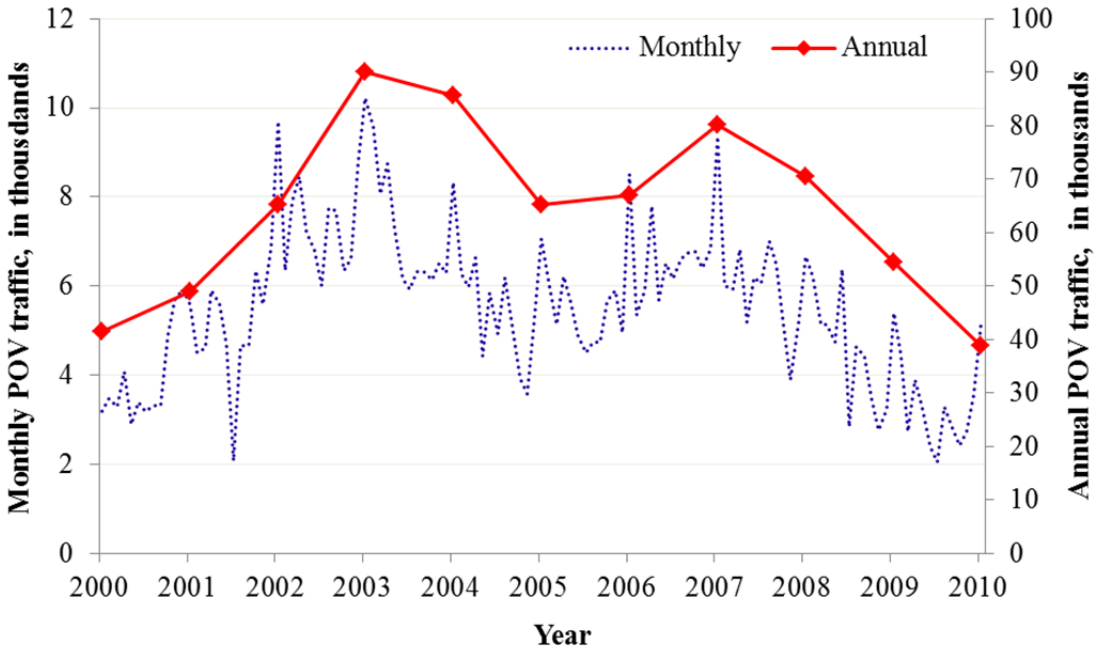



*Figure 4.52: Lake Amistad Dam Crossing – Northbound Passenger Operated Vehicle Crossings*

### 4.4.4 Primary Roadways Serving Lake Amistad Dam Crossing

*Current Conditions (2008)*

On the U.S. side, Spur 349 connects directly to the crossing. Spur 349 is a two lane undivided road from US 90 to the Lake Amistad Dam Crossing. In 2008, Spur 349 had recorded accident rate of 0.39 accidents per mile and a level of service between A and B. In 2035, LOS is expected to remain the same as traffic growth is projected to be at 1,024 vehicles per day. US 90 allows for connections with US 277 to the City of Del Rio and also US 377. The lane configuration of US 90 varies from a two lane undivided highway (north of Spur 349) to a four lane undivided highway with an additional turning lane (south of Spur 349). LOS on US 90 is projected to worsen from the 2008 level which was between A and B, to C and D by 2035. Also, in 2008 on US 90, an accident rate of 0.25 accidents per mile was recorded south of Spur 349 and an accident rate of 0.47 accidents per mile was recorded north of Spur 349.

Vega Verde also connects directly to the Lake Amistad Dam Crossing. The road's alignment follows the Rio Grande River to the City of Del Rio. No accidents were recorded on Vega Verde in 2008.

On the Mexican side, Mex 2 and Presa La Amistad connect directly to the crossing. Figure 4.53 shows a map of the entire existing infrastructure discussed. For a complete list of facilities serving this bridge please see Appendix G.


*Figure 4.53: Lake Amistad Dam Existing Infrastructure Map*

*Anticipated Changes in Infrastructure (2030)*

On the U.S. side, the construction of a Loop (i.e., Loop 79) to connect US 90 and US 377 to the northeast of Lake View is planned. This Loop will eliminate the need for traffic from the crossing heading north to US 377, or heading south on US 377 towards the crossing, to enter the City of Del Rio and deviate to Lake View.

### 4.4.5 Del Rio International Airport

The City of Del Rio owns and manages the Del Rio International Airport. The airport has been a Part 139 Certified Federal Aviation Airport since February 2005. The airport is classified

by the Federal Aviation Administration as a commercial primary, non-hub airport. Continental Airlines provide passenger air services between Del Rio and Houston, Texas.

## 4.5 Concluding Remarks

A review of existing transportation infrastructure, current and projected traffic volume data for the study area shows that overall roadway level of service varied significantly by POE city. Vehicle traffic through Laredo surpassed that of Eagle Pass and Del Rio and this traffic is projected by TXDOT to grow by an average of 3% each year. Should this growth rate materialize, majority of the major highways and arterials serving POE traffic in Laredo will be heavily congested with low speed stop-and-go traffic by 2035. This problem will be compounded by scarce land resources for roadway expansion. From the data analyzed, roadway infrastructure in Eagle Pass and Del Rio are capable of handling more traffic in addition to their expected 2% annual growth rate by 2035. Eagle Pass and Del Rio can benefit from the Laredo situation and serve as alternative routes for POE traffic between U.S and Mexico.

Additionally, there are currently no plans to expand the number of lanes on any of the bridge crossings in the study area by 2035. The only expected additions to crossings is an increase in the number of pedestrian booths serving the Gateway to the Americas bridge and the provision of a pedestrian booth on the Lake Amistad Dam Crossing. Data showing bridge crossing traffic increased and decreased over the decade based on economic outlook. It is thus difficult to project future growth in traffic and how this may influence POE capacity. However, for truck traffic, the region experienced strong growth over the decade and this trend is expected to continue in the future. The ability for Laredo to adequately handle increased truck traffic is therefore an issue of concern. Currently, Eagle Pass' share of rail traffic through the region increased from 56% in 2000 to 60% in 2010; however, it's truck traffic share decreased from 7% in 2000 to 5% in 2010. It is currently unknown what factors (e.g. travel time, availability of labor, reliability) that freight stakeholders are considering when moving different commodities by different modes as the data shows that despite the growth and increase in market share of rail traffic through Eagle Pass, Laredo continues to remain the preferred route for truck traffic.

# Chapter 5. Prioritization of Port-of-Entry and Transportation Infrastructure Projects

A fundamental component of the Laredo–Coahuila/Nuevo León/Tamaulipas Border Master Plan was the selection of the criteria categories, category weights, criteria, and criteria weights to be used in the ranking/prioritization of the different port-of-entry (POE), road and interchange, and rail projects. This Chapter provides summarized information about the criteria that were used in prioritizing the identified projects in the focused study area. For detailed information about the criteria categories, category weights, criteria, criteria weights, and the scoring metrics used, please refer to Appendices D and H. The Chapter also lists the POE, road and interchange, and rail projects in order of priority for the U.S. and Mexico, respectively.

## 5.1 Prioritization Framework

The study team explained the prioritization framework to the TWG members during the second TWG meeting and the PAC members during the second PAC meeting. Informed consent was reached regarding the criteria categories, category weights, criteria, criteria weights, and the scoring metrics that would be used for project prioritization during the third TWG meeting. A detailed description of the workshop format and outcome of the latter meeting is provided in the minutes of the meeting (see Appendix D). Some of the criteria, criteria weights, and scoring metrics were modified during the subsequent PAC meeting, but in general the PAC members endorsed the criteria categories, category weights, criteria, criteria weights, and scoring metrics agreed upon and recommended by the TWG (see Appendix D).

To facilitate project prioritization across different project types, it was recommended by the study team, agreed with the TWG, and finally endorsed by the PAC that the criteria categories and weights would be the same across the different project types. The criteria categories endorsed are: Capacity/Congestion, Demand, Cost Effectiveness/Project Readiness, Safety, and Regional Impacts. The Capacity/Congestion criteria account for 25%, the Demand criteria for 23%, the Cost Effectiveness/Project Readiness criteria for 17%, the Safety criteria for 20%, and the Regional Impacts criteria for 15% of the total project scores. However, different criteria comprised the criteria categories given the project type, because of the fundamental differences among POE, road and interchange, and rail projects.

Table 5.1 provides the prioritization criteria and weights assigned to the POE projects. In total 18 criteria were endorsed for prioritizing the POE projects. In terms of each criterion, projects were scored on a scale of 0 to 1. However, the total project score for a given POE project was expressed out of a 100. The scoring metrics is provided in Appendix H.

**Table 5.1: POE Project Prioritization Criteria**

| Category | Criteria | Weight |
|---|---|---|
| Capacity / Congestion (25%) | Change in Number of Booths | 20% |
| | Secure Lanes | 16% |
| | Wait Times | 18% |
| | Alleviate Congestion Locally | 17% |
| | Alleviate Congestion Elsewhere | 15% |
| | Change in Modes Served | 14% |
| Demand (23%) | Change in Average Annual Daily Crossings | 50% |
| | Multiple Mode Demand | 50% |
| Cost Effectiveness / Project Readiness (17%) | Cost Effectiveness ($/Capacity Criterion) | 35% |
| | Cost Effectiveness ($/Demand Criterion) | 35% |
| | Land Availability | 30% |
| Safety (20%) | Diversion of Hazmat | 14% |
| | Bi-national Coordination | 60% |
| | Diversion of commercial traffic / Separation by traffic type | 26% |
| Regional Impacts (15%) | Environmental Impacts | 45% |
| | Socio-Economic Impacts | 40% |
| | Modal Diversion | 15% |

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. In terms of each criterion, projects were scored on a scale of 0 to 1. However, the total project score for a given road or interchange project was expressed out of a 100. The scoring metrics is provided in Appendix H.

**Table 5.2: Road and Interchange Project Prioritization Criteria**

| Category | Criteria | Weight |
|---|---|---|
| Capacity / Congestion (25%) | Change in Number of Lanes | 19% |
| | Final Level of Service | 6% |
| | Change in Level of Service | 17% |
| | Number of Ports-of-Entry served | 17% |
| | Alleviate Congestion Locally | 23% |
| | Alleviate Congestion Elsewhere | 18% |
| Demand (23%) | Change in Average Annual Daily Traffic | 33% |
| | Percentage of Trucks | 34% |
| | Multiple Mode Demand | 33% |
| Cost Effectiveness / Project Readiness (17%) | Cost Effectiveness ($/Capacity Criterion) | 35% |
| | Cost Effectiveness ($/Demand Criterion) | 35% |
| | Land Availability | 30% |
| Safety (20%) | Accident Rate per Mile | 66% |
| | Diversion of Hazmat | 34% |
| Regional Impacts (15%) | Environmental Impacts | 45% |
| | Socio-Economic Impacts | 40% |
| | Modal Diversion | 15% |

Table 5.3 provides the prioritization criteria and weights assigned to the rail projects. In total 15 criteria were endorsed for prioritizing the rail projects. In terms of each criterion, projects were scored on a scale of 0 to 1. However, the total project score for a given rail project was expressed out of a 100. The scoring metrics is provided in Appendix H.

**Table 5.3: Rail Project Prioritization Criteria**

| Category | Criteria | Weight |
|---|---|---|
| Capacity / Congestion (25%) | Change in Number of Tracks | 26% |
| | Average Travel Speed | 17% |
| | Alleviates Congestion Locally | 37% |
| | Change in Modes Served | 20% |
| Demand (23%) | Change in Average Annual Daily Rail Cars | 37% |
| | Cross-Border Tonnage by Rail | 24% |
| | Multiple Mode Demand | 39% |
| Cost Effectiveness / Project Readiness (17%) | Cost Effectiveness ($/Capacity Criterion) | 35% |
| | Cost Effectiveness ($/Demand Criterion) | 35% |
| | Land Availability | 30% |
| Safety (20%) | Accident Rate per Mile | 66% |
| | Diversion of Hazmat | 34% |
| Regional Impacts (15%) | Environmental Impacts | 45% |
| | Socio-Economic Impacts | 40% |
| | Modal Diversion | 15% |

When data were not available for a specific criterion, a score of zero was assigned. It should thus be recognized that there is an inherent bias in this process towards projects for which data are submitted. In other words, projects for which limited information were received would receive lower scores and would therefore result in being ranked lower than projects for which detailed information for each criterion was received. The information submitted and detailed scores for each project are provided in Appendix I. Projects for which no or limited data were available were identified and included in the spreadsheet, but no priority/ranking was assigned to these projects.

## 5.2 Project Prioritization/Ranking

On the U.S. side[51], 14 POE projects, 88 road and interchange projects, and three rail projects were identified. On the Mexican side[52], 37 POE projects, 44 road and interchange projects, and five rail projects were identified. Projects from the U.S. were ranked separately from that of Mexico because of the limited data that were provided for Mexican projects. The prioritization/ ranking of both countries' projects together would have resulted in most of the Mexican projects receiving a lower priority/rank. Each country's projects were thus prioritized/ ranked separately. Projects were then ranked by type – POE, road and interchange, and rail projects. The complete ranking of all projects by type in each country is provided in Appendix I.

On the U.S. side, the project priorities are presented by major city (i.e., Laredo, Eagle Pass, and Del Rio) and on the Mexican side, the project priorities are presented by Mexican state (i.e., Tamaulipas, Nuevo León, and Coahuila). The locations of the planned projects - for which adequate location information were obtained - are illustrated in maps by planning horizon (i.e., short, medium, and long term). Projects for which no time period was provided were categorized as "unknown."

## 5.3 Laredo Projects

### 5.3.1 Laredo POE Projects

The Laredo POE facilitates a very large percentage of the total number of crossings by the different modes between the U.S. and Mexico. Planned POE projects were identified for the Gateway to the Americas Bridge, Juárez-Lincoln Bridge, World Trade Bridge, and the Laredo-

[51] Project information for projects on the U.S. side was obtained from the following U.S. agencies: General Services Administration (GSA), Federal Highway Administration (FHWA), U.S. Customs and Border Protection, City of Del Rio, City of Laredo, Metropolitan Planning Organization of Laredo, Texas Department of Transportation, Burlington Northern Santa Fe Railway, Kansas City Southern Railway, and Ports to Plains Alliance Corridor.

[52] Project information for projects on the Mexican side was received from the following Mexican agencies: Federal Roads and Bridges (*Caminos y Puentes Federales* or CAPUFE), General Customs Administration (*Administración General de Aduanas*), Secretariat of Communications and Transportation (*Secretaría de Comunicaciones y Transporte* or SCT), Administration and Estimates of National Real Estate (*Instituto de Administración y Avalúos de Bienes Nacionales* or INDAABIN), Secretariat of Foreign Relations (*Secretaría de Relaciones Exteriores* or SRE), International Boundary and Water Comission (*Comisión Internacional de Límites y Aguas entre México y los EEUU* or CILA), Secretariat of Social Development (*Secretaría de Desarrollo Social* or SEDESOL), Secretariat of Public Works (*Secretaría de Obras Públicas*), State of Coahuila, Municipality of Acuña, Municipality of Piedras Negras, State of Nuevo León, State of Tamaulipas, Municipality of Nuevo Laredo, *Ferrocarril Mexicano* S.A., and Kansas City Southern de México.

Colombia Solidarity Bridge. In addition, a new crossing (i.e., Project 4-5) was promoted south-east of Laredo.

The ranking of the POE projects planned in Laredo are provided in Table 5.4. From Table 5.4, it is evident that Project 4-5 is the highest ranked U.S. POE project in the study area. The stakeholder information provided to the study team showed that Project 4-5 will result in a shorter and less congested corridor between Mex-85 and major U.S. highways IH-35 and US-83. In addition to the large number of booths – i.e., 23 – the promoters also plan to build FAST lanes to accelerate truck processing. The project is also anticipated to facilitate development in the surrounding community[53], which will translate into economic and social benefits for the region. By 2035, it is anticipated that more than 7,000 trucks will cross the bridge daily. In addition, 11,900 POVs and 5,600 pedestrians are expected to cross the bridge by 2035. Finally, the promoters have argued that Project 4-5 will divert hazardous material from the city center to the outskirts of Laredo.

Other POE projects that ranked high in the Laredo area include the upgrading of eight temporary pedestrian booths at the Gateway to the Americas Bridge (i.e., ranked second out of the 14 U.S. POE projects) to eight permanent booths. The improvements are expected to alleviate congestion and long wait times in the northbound direction. The port hardening project also at the Gateway to the Americas Bridge (ranked fourth out of the 14 U.S. POE projects) aims to enhance the safety of the POE facilities and reducing the incidence of port-running. These projects will not provide infrastructure for increased throughput. The planned improvement at the Juárez-Lincoln Bridge also ranked fifth out of the 14 U.S. POE projects. The planned project comprises a new bus processing facility that will increase the capacity of the bridge and reduce the time required to process bus passengers and buses. The project includes (a) the furnishing and installation of primary and secondary individual bus stalls, (b) pedestrian inspection lanes, (c) an inspection area (including, luggage X-ray facilities), (d) waiting areas, (e) bathrooms, and (f) a canopy for loading and unloading. Other project components include utilities, electric services, paving, walkways, curbs, gutters, storm drainage, exterior communications and information systems, fire protection and alarm systems, site drainage, site work, and site improvements. Finally, it should be noted that two projects were not ranked due to limited available data. Figure 5.1 illustrates the locations of the ranked Laredo POE projects listed in Table 5.4. For detailed information on the scoring of each planned project the reader is referred to Appendix I.

[53] Although a number of smaller communities exist on the U.S. side in the area near the proposed bridge, the area in Mexico is largely unpopulated. Concern has been expressed that without rigorous urban planning policies the full socio-economic benefits would not be realized.

**Table 5.4: Laredo POE Projects**

| Term* | Project ID/CSJ | Bridge | Project Description | Estimated Cost ($2010) | Project Ranking** |
|---|---|---|---|---|---|
| Medium# | Project 4-5 | New Road Bridge | Construction of a new international road bridge - Project 4-5. | $ 46,900,000 | 1 |
| Medium | Pedestrian Processing Redesign | Gateway to the Americas Bridge | Increase pedestrian processing capacity by reconfiguring the existing space and improving pedestrian path of travel from the bridge through the facility. This is an ARRA funded project. | $20,000,000 | 2 |
| Short | Port Hardening | Gateway to the Americas Bridge | Fortification of Port - furnishing and installing additional barriers, tire shredders, and fencing to enable outbound inspections. | - | 4§ |
| Medium | Bus Processing Redesign | Juárez-Lincoln Bridge | Design a new 10,000-15,000 square feet bus processing facility to increase bus and bus passenger processing capacity. The project includes furnishing and installing primary and secondary individual bus stalls; pedestrian inspection lanes; inspection area, including luggage X-ray; waiting areas; bathrooms; and a canopy for loading and unloading. Project components include utilities, electric services, paving, walkways, curbs, gutters, storm drainage, exterior communications and information systems, fire protection and alarm systems, site drainage, site work, and site improvements. This is an ARRA funded project. | $40,000,000 | 5 |
| Short | Secondary Port Hardening | Laredo-Colombia Solidarity Bridge | Security Enhancements: installation of doors and walls to separate and secure hard secondary in the main building of passport control area. | $ 30,000 | 7.5§ |
| Short | 0922-00-025 | Laredo Colombia - Solidarity Bridge | Construction of a Border Safety Inspection Facility. | $ 22,793,658 | 7.5 |
| Short | Port Hardening | Juárez-Lincoln Bridge | Fortification of Port - furnishing and installing additional barriers, tire shredders, and fencing. | - | 10§ |
| Short | 0922-00-024 | World Trade Bridge | Construction of a Border Safety Inspection Facility. | $ 9,600,001 | NA |
| Unknown | - | Laredo International Airport | New General Aviation facility. | - | NA |

* The PAC adopted 2013 as the horizon year for short term projects, 2020 as the horizon for medium term projects, and 2035 as the horizon for long term projects.
**Ranking out of 14 U.S. POE projects
#CBP and GSA remarked that the specified term may be over optimistic given the long lead time for studies, the anticipated budgetary climate for GSA capital funding, and CBP operations funding for staffing, rent, equipment, and technology.
§These projects are focused on officer safety and reducing the incidence of port-running. These projects will not provide infrastructure for increased throughput.

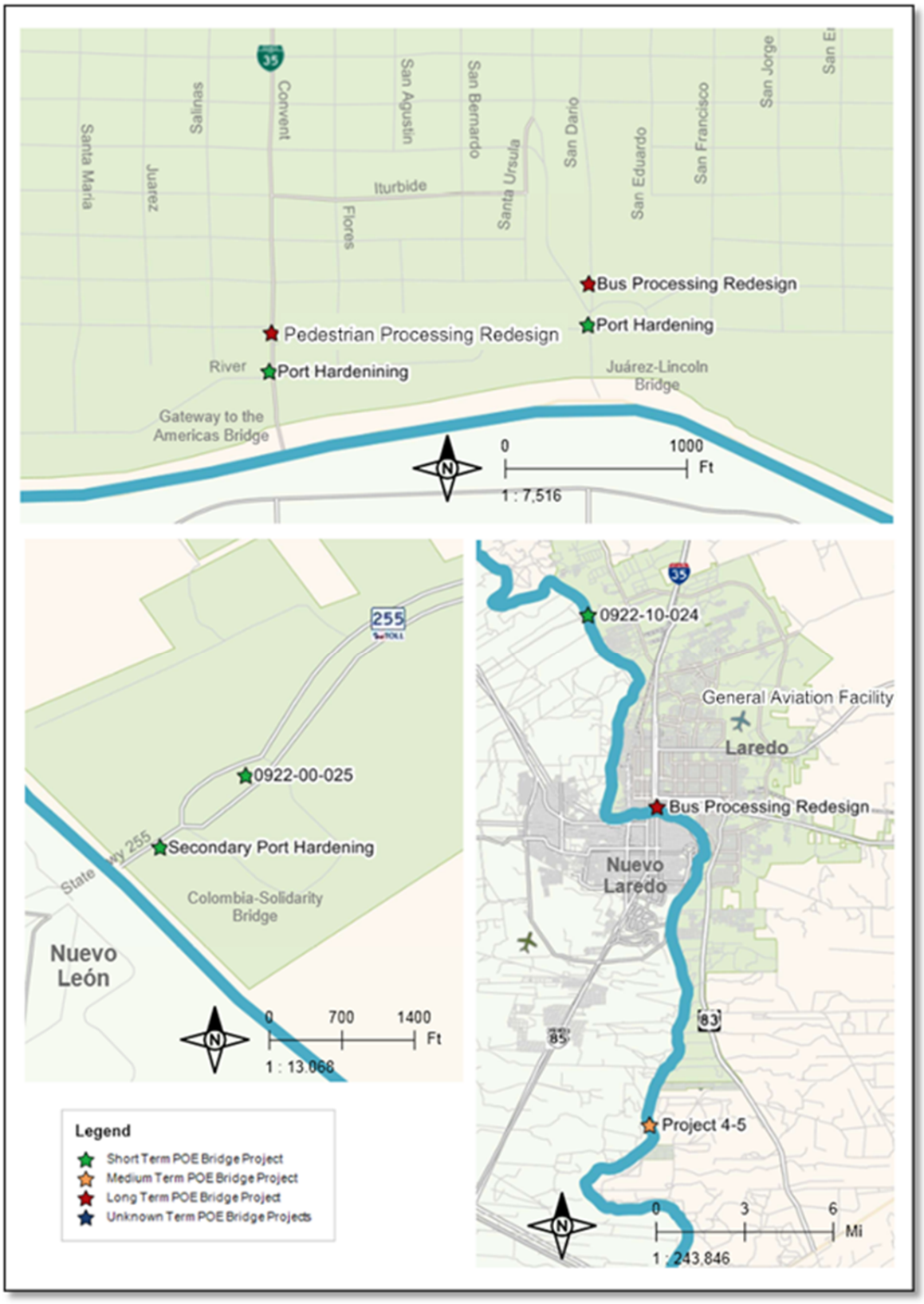



*Figure 5.1: Laredo POE Project Locations*

### 5.3.2 Laredo Road and Interchange Projects

A large number of the planned U.S. road and interchange projects identified in the study area serve the Laredo POE. Specifically, 66 of the 88 road and interchange projects identified are planned in Laredo/Webb County. The ranking of the road and interchange projects that serve the Laredo POE are provided in Table 5.5.

From Table 5.5 it is evident that the highest ranked road project is the access road that connects US-83 with the planned Project 4-5. The road will be a 2.6 mile four lane divided highway (i.e., two lanes in each direction) with four lanes of access road (i.e., 2 lanes in each direction) connecting US-83 with the new bridge. In addition, four new access lanes on US 83 connecting to this new road are planned. The current Average Annual Daily Traffic (AADT) of 13,900 on US 83 is projected to increase to 63,000 by 2035 with trucks representing 40% of the AADT. The project is also anticipated to serve hazardous material traffic and alleviate congestion in the central business district of Laredo.

Several planned road improvements (i.e., increase number of lanes, widening of the road, and construction of overpasses) to Loop 20 also ranked very high (i.e., 2nd, 8.5th, 8.5th, 13th, 17th, 18th, and 22nd out of the 88 U.S. road and interchange projects). On various sections of Loop 20, traffic is anticipated to grow between 3% and 7% annually. The traffic on the southern section of Loop 20 that connects US 59 to SH 359, is anticipated to grow at a rate of 7% annually. Despite the planned improvement (Project ID/CSJ number 0086-14-046 in Table 5.5 and Figure 5.3), the LOS on this road is expected to remain at level F by 2035. The accident rate on this section of Loop 20 was 49.77 accidents per mile in 2008. Other high ranked planned improvements on Loop 20 include Projects R-08[MPO] and R-10[MPO] that ranked 8.5th involve the construction of an overpass and ramps at McPherson Road and Del Mar Boulevard, respectively. Others include adding a lane in each direction on the sections from SH 359 to the Proposed Outer Loop (Project X-03[MPO]), which ranked 13th, and the construction of main lanes (Project R-07[MPO]), which ranked 17th, the addition of a lane in each direction on the segment connecting the World Trade Bridge to IH 35 (Project X-04[MPO], which ranked 18th, and the construction of an overpass and ramps at Jacaman Road (Project X-14[MPO], which ranked 22nd.

Similarly, several planned road improvements (i.e., increase number of lanes and grade separations) to IH-35 also ranked high (i.e., 3rd, 6th, 7th, 11th, 12th, and 20th out of the 88 U.S. road and interchange projects ranked). The 3rd ranked project upgrades the section of IH 35 0.5 miles north of Uniroyal and 0.5miles north of the US 83 intersection from four to six lanes (Project 0018-05-904). The current LOS of this road is C and despite the planned improvement, the LOS is anticipated to decrease to F by 2035 given a projected annual traffic growth rate of 3.6%. In 2008, 27.9 % of the total traffic was truck traffic. Other planned improvements on IH 35 include the widening of the northbound and southbound main lanes from four to six lanes from Shiloh Drive to 0.25miles north of the Loop 20 intersection, including the construction of a rail grade separation (ranked 6th), and the construction of railroad grade separations on the frontage roads of San Dario (ranked 7th), at Shiloh Drive (ranked 11th), and at San Ursula (ranked 20th). The roadway illumination project at 3.9 mi north of Loop 20 and 0.5 mi north of Uniroyal was ranked 12th out of the 88 U.S. road and interchange projects ranked.

Finally, the realignment and grade separation work on FM 1472 between Calton Road/Santa Maria and Las Cruces/Flecha Lane ranked 14th (see Figure 5.2) and the widening of US-83 from SH 359 to the Proposed Outer Loop ranked 15th (see Table 5.5 and Figure 5.4). For detailed information on the scoring of each planned project the reader is referred to Appendix I. However, it is evident from Table 5.5 that planned projects that increase capacity ranked high.

Figures 5.2 to 5.5 illustrate the location of the planned projects listed in Table 5.5 for which location information could be obtained.

**Table 5.5: Laredo Road and Interchange Projects**

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Medium | Project 4-5 | (New) | 4 lane divided highway (2 lanes in each direction) and 4 lanes of access road (2 lanes in each direction) connecting US-83 with new bridge. Also, 4 new access lanes on US-83 | $ 24,000,000 | 1 |
| Medium | 0086-14-046 | Loop 20 | Widen to 6 lanes and upgrade intersection at Spur 400 (Clark Blvd). Construct a 4 lane overpass. Potential Pass Through Toll Road. Under negotiation. | $ 18,253,021 | 2 |
| Short | 0018-05-904 | IH 35 | Upgrade to 3 lane rural section - Each Direction | $ 22,500,000 | 3 |
| Medium | R-02 [MPO] | US 59 | Install raised median | $ 643,000 | 4 |
| Long | 0018-06-136; X-05 [MPO] | IH 35 | Widen NB and SB main lanes (to 3 lanes each direction - MPO) and rail grade separation. | $ 48,272,000 | 6 |
| Short | 0018-06-907; X-28 [MPO] | IH 35 NB Frontage Road (San Dario) | Construct railroad grade separation | $ 10,000,000 | 7 |
| Long | R-08 [MPO] | Loop 20 | Construct overpass and ramps. | $ 23,240,372 | 8.5 |
| Long | R-10 [MPO] | Loop 20 | Construct overpass and ramps. | $ 14,525,323 | 8.5 |
| Short | 0922-33-093 | CS | Construct a grade separation at Calton / Santa Maria intersection. | $ 14,829,709 | 10 |
| Long | 0018-06-155 | IH 35 | Construct Railroad grade separation | $ 35,000,000 | 11 |
| Medium | R-03 [MPO] | IH 35 | Install roadway illumination. | $ 1,081,000 | 12 |
| Unknown | X-03 [MPO] | Loop 20 (Cuatro Vientos) | Widen to 6-lane divided road. | $ 47,367,993 | 13 |
| Short | 0922-33-076 | FM 1472 | Realignment of Flecha Ln/Las Cruces at FM1472 and PE work of a grade separation at Calton Rd / Santa Maria intersection. | $ 1,891,335 | 14 |
| Unknown | X-01 [MPO] | US 83 | Widen to 7-lane section | $ 64,686,532 | 15 |
| Long | R-07 [MPO] | Loop 20 | Construct main lanes. | $ 34,860,557 | 17 |
| Unknown | X-04 [MPO] | Loop 20 | Add 1 lane in each direction | $ 8,425,622 | 18 |
| Long | 0922-33- | Outer Loop | Outer Loop, construct 4 lane divided facility with an | $ 34,000,000 | 19 |

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| | 039; X-23 [MPO] | | interchange at US 83 (Phase 1) | | |
| Short | 0018-06-906; X-28 [MPO] | IH 35 SB Frontage Road (Santa Ursula/San Dario) | Construct railroad grade separation. | $ 10,000,000 | 20 |
| Unknown | X-14 [MPO] | Loop 20 | Construct overpass and ramps. | $ 45,435,629 | 22 |
| Unknown | X-29 [MPO] | San Bernardo (IH 35 BU) | Construct railroad grade separation. | $ 10,000,000 | 24 |
| Unknown | X-31 [MPO] | Chicago St. | Construct railroad grade separation. | $ 10,000,000 | 25 |
| Medium | R-01 [MPO] | Loop 20 | Install raised median. | $ 541,100 | 27 |
| Medium | R-05 [MPO] | US 83 (Chihuahua) | Add one travel lane. | $ 19,173,307 | 28 |
| Long | 0922-33-108 | Outer Loop | Construct an interchange. | $ 20,000,000 | 31 |
| Long | 0922-33-024; X-18 [MPO] | Outer Loop | Construct 2-lane section with shoulder and RR grade separation. (phase 1) | $ 32,599,694 | 32 |
| Medium | R-06 [MPO] | US 83 (Guadalupe) | Add one travel lane. | $ 19,173,307 | 33 |
| Medium | R-04 [MPO] | IH 35 | Install roadway illumination. | $ 1,820,441 | 35 |
| Unknown | X-15 [MPO] | US 59 | Widen to 7 lanes. | $ 72,570,269 | 36 |
| Long | R-12 [MPO] | Loop 20 | Construct overpass and ramps. | $ 14,525,232 | 37.5 |
| Long | R-09 [MPO] | Loop 20 | Construct overpass and ramps. | $ 36,679,968 | 37.5 |
| Unknown | X-33 [MPO] | Sanchez St. | Construct railroad grade separation. | $ 10,000,000 | 39 |
| Long | 0922-33-025; X-20 [MPO] | Outer Loop | Construct 2-lane section with shoulder. | $ 60,866,165 | 40 |
| Unknown | X-11 [MPO] | US 83 | Construct overpass and ramps. | $ 9,854,207 | 44 |
| Long | B-02 [MPO] | US 59 | Replace bridge. | $ 10,585,465 | 45 |
| Long | 0922-33-040; X-21 | Outer Loop | Upgrade to 4-lane divided facility. (phase II) | $ 78,396,782 | 46.5 |

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| | [MPO] | | | | |
| Long | 0922-33-022; X-19 [MPO] | Outer Loop | Construct new road. | $ 53,635,677 | 46.5 |
| Long | 0922-33-918 | Outer Loop | Construct an interchange. | $ 20,000,000 | 48 |
| Unknown | X-24 [MPO] | Clark Blvd Spur 400) | Construct new 5-lane road. | $ 125,366,287 | 49 |
| Unknown | X-02 [MPO] | Loop 20 (Cuatro Vientos) | Construct overpass and ramps. | $ 41,361,993 | 51 |
| Unknown | X-32 [MPO] | Scott St. | Construct railroad grade separation. | $ 10,000,000 | 54 |
| Unknown | X-36 [MPO] | Loop 20 | Construct overpass and ramps. | $ 21,319,555 | 56.5 |
| Unknown | X-35 [MPO] | Loop 20 | Construct overpass and ramps. | $ 21,319,555 | 56.5 |
| Short | 0922-33-133 | CS | Extend city street to (Cuatro Vientos) Loop 20/Cielito Lindo. | $ 1,887,863 | 58 |
| Long | Outer Loop Widening | Outer Loop | Widen and construct interchanges. | $ 260,000,000 | 61 |
| Short | 0922-33-134 | CS | Extend city street to (Cuatro Vientos) Loop 20/Los Presidentes. | $ 283,284 | 62.5 |
| Short | 0922-33-135 | CS | Extend city street to (Cuatro Vientos) Loop 20/Southgate Blvd. | $ 2,116,223 | 62.5 |
| Short | 0037-10-029 | US 83 | Widen existing highway. | $ 67,100,000 | 64 |
| Long | B-03 [MPO] | Convent Ave / IH 35 Bus. | Rehabilitate bridge. | $ 2,000,000 | 65 |
| Unknown | X-13 [MPO] | Loop 20 | Add main lanes. | $ 21,383,466 | 67 |
| Long | 0922-33-105 | CS | Construct Scott and Sanchez Streets grade separation project. (Feasibility Study) | $ 382,800 | 68 |
| Medium | 0922-33-085 | CR | Construct the replacement of an existing bridge and approaches. | $ 566,528 | 69 |
| Unknown | X-25 [MPO] | US 83 | Construct 2 direct connectors – NB US 83 to EB Outer Loop and WB Outer Loop to SB US 83. | $ 63,104,581 | 70 |
| Unknown | X-22 [MPO] | Outer Loop | Construct 2-lane roadway. | $ 102,139,844 | 71 |
| Short | 0037-09-905 | US 83 | Widen existing highway. | $ 59,800,000 | 72 |

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Unknown | C-13 [MPO] | Thomas Ave./Maher Ave./Hillside Rd. | Widen, reconstruct, and realign roads. (2.5 mi). | $ 1,084,600 | 73 |
| Unknown | X-16 [MPO] | Loop 20 (Cuatro Vientos) | Construct overpass and ramps. | $ 50,067,993 | 74 |
| Medium | 0922-33-066 | VA | Extend Loop 20/Cuatro Vientos; Construct 2-lane rural. | $ 6,830,167 | 75 |
| Unknown | X-12 [MPO] | Loop 20 (Cuatro Vientos) | Construct overpass and ramps. | $ 50,067,993 | 76 |
| Long | X-17[MPO] | FM 1472 spur | Construct new road. | $ 24,585,440 | 77 |
| Unknown | C-10 [MPO] | River Vega/Pedregal | Construct new road. (0.6 mi). | $ 3,000,000 | 78 |
| Unknown | C-09 [MPO] | River Road | Construct new road. (17.4 mi). | $ 60,900,000 | 80 |
| Unknown | X-09 [MPO] | IH 35 | Construct Direct Connector # 8. (20EB to 35SB). | $ 31,552,290 | 83 |
| Unknown | X-08 [MPO] | IH 35 | Construct Direct Connector # 6. (35NB to 20EB). | $ 31,552,290 | 83 |
| Unknown | X-10 [MPO] | IH 35 | Construct Direct Connector # 5. (20WB to 35SB). | $31,552, 290 | 83 |
| Unknown | X-06 [MPO] | IH 35 | Construct Direct Connector # 4. (20WB to 35NB). | $ 31,552,290 | 83 |
| Unknown | X-07 [MPO] | IH 35 | Construct Direct Connector # 3. (35SB to 20EB). | $ 31,552,290 | 83 |

* Ranking out of 88 U.S. road and interchange projects

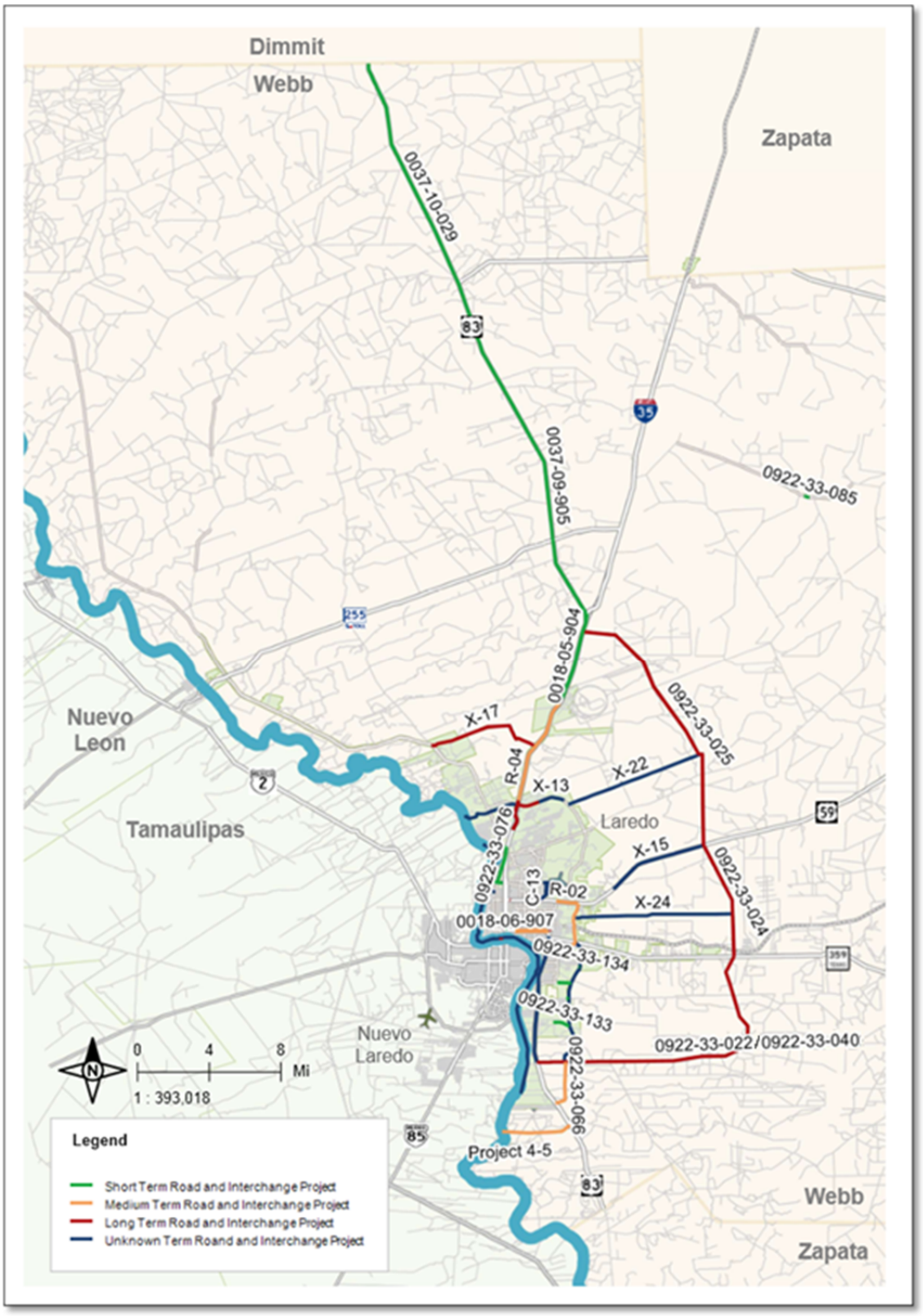



*Figure 5.2: Laredo Road and Interchange Project Locations*

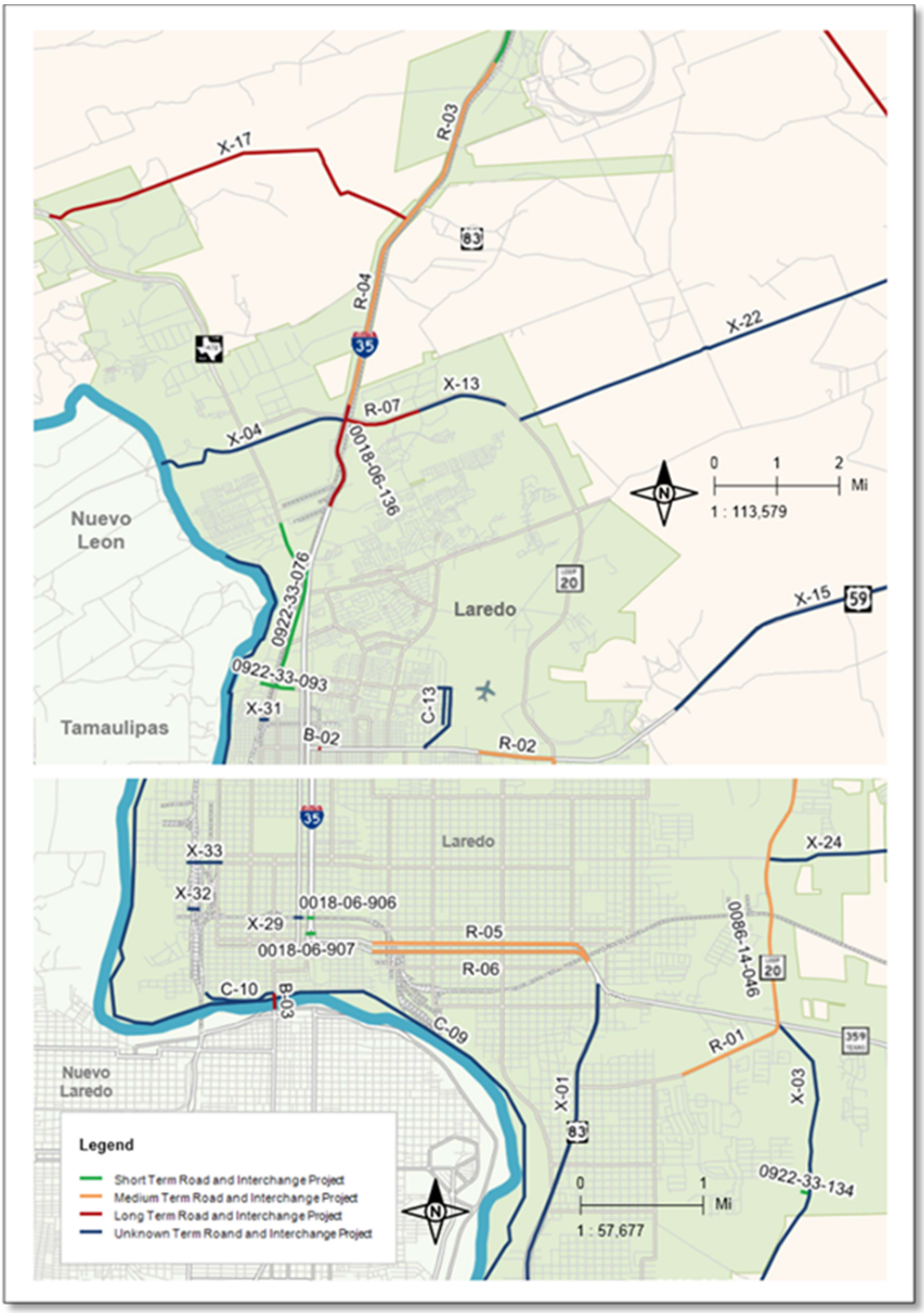



*Figure 5.3: Laredo Road and Interchange Project Locations*

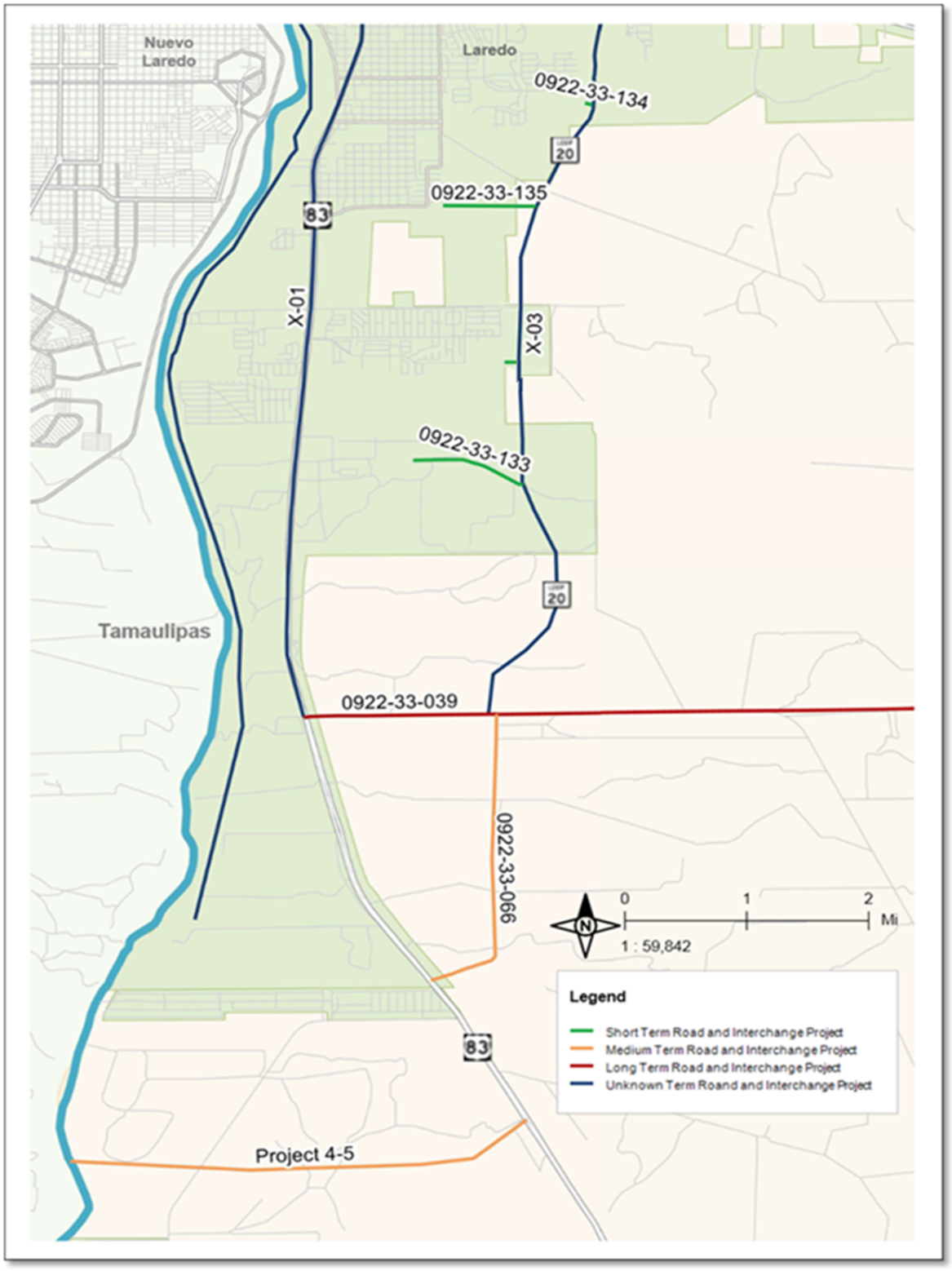



*Figure 5.4: Laredo Road and Interchange Project Locations*

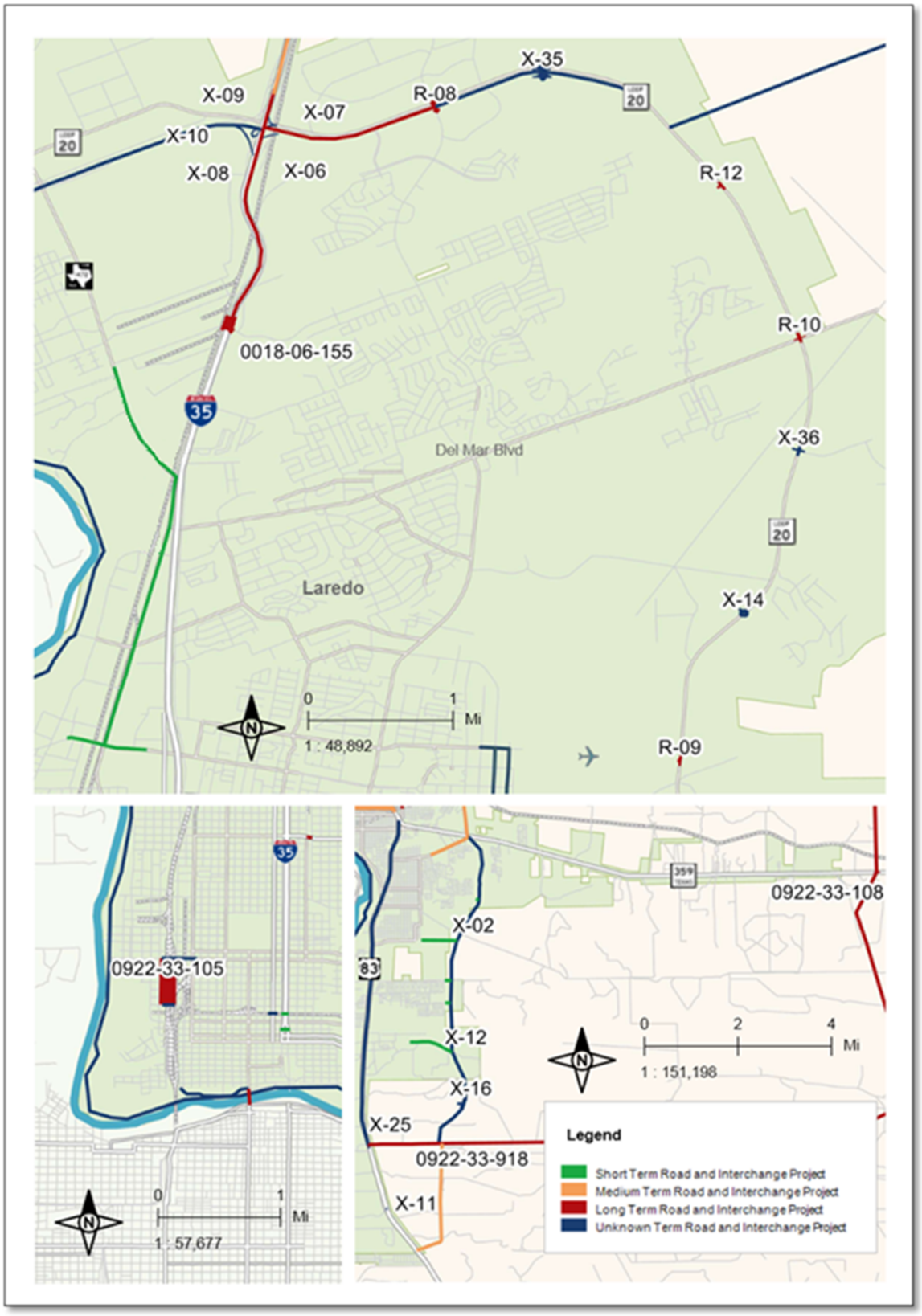



*Figure 5.5: Laredo Road and Interchange Project Locations*

### 5.3.3 Laredo Rail Projects

Three U.S. rail projects were identified in the study area, but only two were ranked because of limited data for the third rail project. The identified rail projects in Laredo are shown in Table 5.6. The proposed new KCS rail project in Laredo ranked first. This planned rail project comprises the construction of rail tracks from the UP Port Laredo yard to the KCSM Sanchez Yard (7.5 miles east of the Tex-Mex Laredo yard). It is anticipated that the project will be implemented in two phases. Phase 1 will comprise the building of 21 miles of rail track on the U.S. side and 15.75 miles on the Mexican side. It is expected that the project will divert traffic away from downtown Laredo and Nuevo Laredo, while retaining vital rail connections to the rail yards in both cities. A presidential permit application was submitted by KCS on December 31, 2008. In the application it was stated that the East Loop Rail Bypass project would *"provide for additional rail capacity, enhance corridor safety, and improve the efficiency of cross-border rail crossings"*[54]. For detailed information on the scoring of the project the reader is referred to Appendix I. Figure 5.6 shows the location of the rail projects identified in the Laredo area.

**Table 5.6: Laredo Rail Projects**

| Term | Project ID/CSJ | Owner | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Long | East Loop Bypass – Phase I | KCS | Proposed KCS Railroad (east) and border crossing (i.e., bridge spanning the Rio Grande/Rio Bravo). Construct:<br>• Phase I - 21 miles (U.S.) & 15.75 miles (Mexico) of new railroad.<br>• Phase II - 19.5 miles (U.S.) of new railroad.<br>• Rail bridge at the same location as the proposed Project 4-5.** | $ 407,073,000 | 1 |
| Long | F-01 | - | Proposed rail link north of Laredo | - | N/A |

* Ranking out of three U.S. rail projects

**The proponents of Project 4-5 and KCSR/KCSM have discussed a joint border crossing at this location that, to the extent possible, could minimize infrastructure costs, and that would consolidate customs and security functions at one location.

[54] Notice of Receipt of Application for a Presidential Permit for an International Rail Bridge on the U.S.-Mexico Border near Laredo, Texas, and Nuevo Laredo, Tamaulipas, Mexico. Federal Register Volume 74, No. 17. U.S. Department of State http://www.state.gov/p/wha/rls/120276.htm

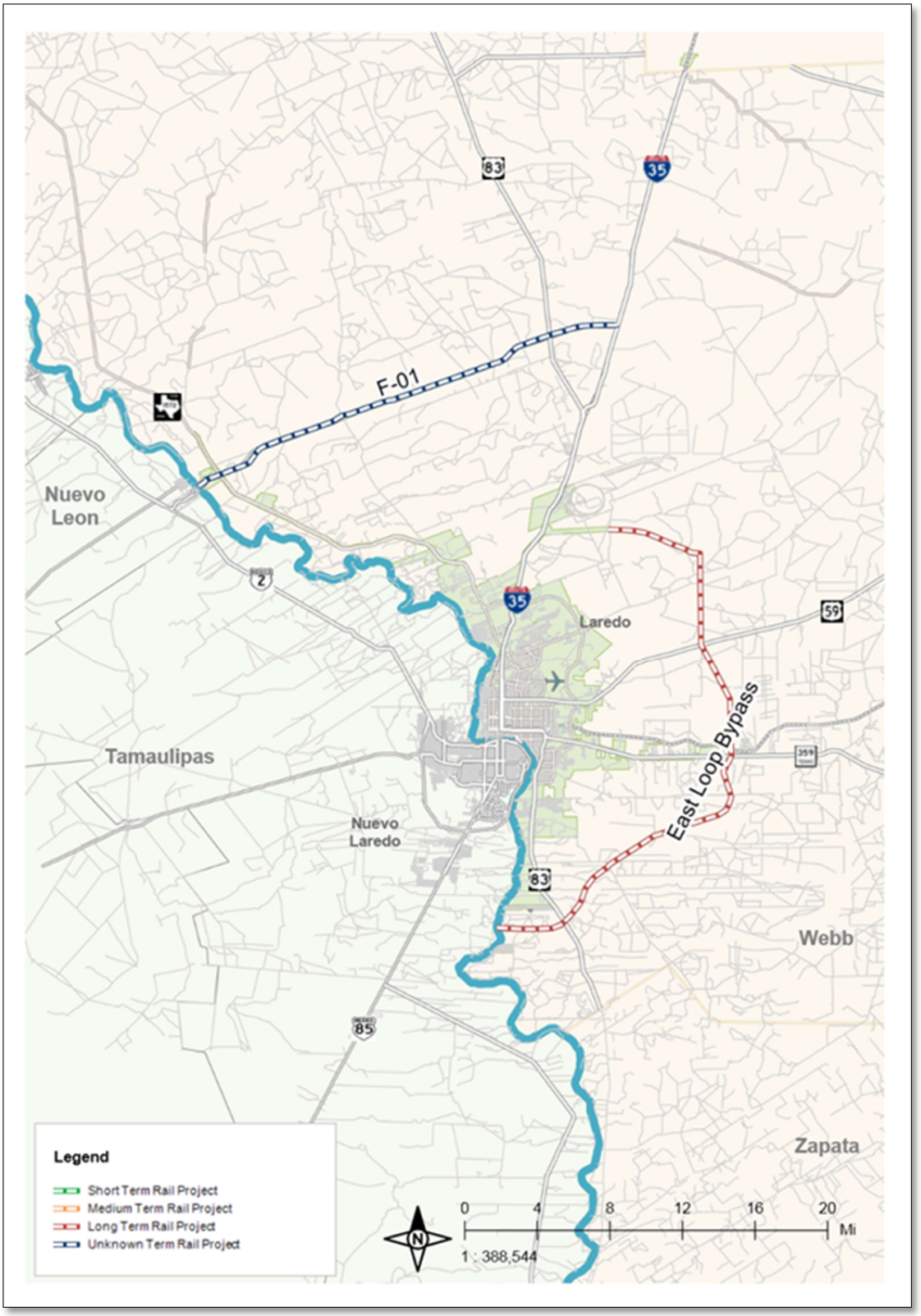



*Figure 5.6: Laredo Rail Project Locations*

## 5.4 Eagle Pass Projects

### 5.4.1 Eagle Pass POE Projects

Three planned POE projects were identified in Eagle Pass. The rankings of the POE projects in the Eagle Pass area are shown in Table 5.7. As is evident from Table 5.7, two of the planned POE projects in Eagle Pass ranked amongst the top twelve POE priorities in the study area. These projects aim to enhance the safety of the POE facilities and the monitoring of commercial vehicles entering the U.S., respectively. Figure 5.7 shows the location of the projects identified. For detailed information on the scoring of the planned projects the reader is referred to Appendix I.

**Table 5.7: Eagle Pass POE Projects**

| Term | Project ID/CSJ | Bridge | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Short | Port Hardening | Eagle Pass Bridge I | Fortification of port. | - | 3** |
| Short | 0922-10-028 | Camino Real International Bridge | Construction of a Border Safety Inspection Facility. | $ 18,262,364 | 9 |
| Short | Port Hardening | Camino Real International Bridge | Fortification of port. | - | 11** |

* Ranking out of 14 U.S. POE projects

**These projects are focused on officer safety and reducing the incidence of port-running. These projects will not provide infrastructure for increased throughput.


*Figure 5.7: Eagle Pass POE Project Locations*

### 5.4.2 Eagle Pass Road and Interchange Projects

In total 18 planned road and interchange projects that serve the Eagle Pass POE were identified. The rankings of these projects are presented in Table 5.8. From Table 5.8, it is evident that the reconstruction and widening of a section of US 277 is the fifth highest ranked U.S. road and interchange project in the study area. Furthermore, ten of the 18 planned road and interchange projects pertain to US 277. In addition to Project 0299-04-041 that ranked 5th, other planned improvements to US 277 ranked, for example, 23rd, 30th,34th and 43rd out of the 88 planned U.S. road and interchange projects in the study area. Project 0299-04-041 involves the reconstruction and widening of a two lane divided highway to a four lane divided highway 0.3 miles south of FM 1665 to 0.4 miles north of FM 1588 (see Figure 5.9). The current facility has a LOS A that will remain the same by 2035 given the expected 2% annual traffic growth rate. The current AADT on the facility is 7,300 of which trucks account for 27%. The accident rate on the existing facility was 0.59 accidents per mile in 2008. Project 0299-03-039 that was ranked 30th also involves expanding the number of lanes from two to four on the section of US 277 from FM 1664 north of Quemado South to FM 1665. The current AADT on this section is 3,600 and traffic is anticipated to grow at a rate of 2% per year. The LOS on the facility is A and this is anticipated to remain unchanged by 2035. Finally, a low accident rate of 0.2 accidents per mile was recorded in 2008. US 277 is a component of the Ports-to-Plains trade corridor, which could serve as an alternative to the congested IH-35 trade corridor, thereby having the potential to relieve some of the congestion along IH-35.

The planned projects for Loop 480 ranked 42nd and 55th, respectively. Project 0299-14-010, which ranked 42nd, involves the construction of a two lane undivided highway and railroad grade separation. Project 0299-14-016, which ranked 55th, comprises the construction of an interchange 0.362 miles north of US 57 and 0.699 miles south of US 277. Loop 480 connects FM 1021/El Indio Highway to US 57 on the east side of Eagle Pass.

On U.S. 83, Project 0037-06-084 comprises widening the existing highway from 0.943 miles west of FM 2522 to 1.481 miles south of FM 2688 (ranked 41st), Project 0092-49-907 involves a new bypass 1.2 miles northwest of Catarina to 0.5 miles south of Catarina (ranked 50th), and Project 0037-08-905 involves widening the existing highway from FM 133 to the Dimmit/Webb County line (ranked 52nd). The LOS on US 83 is expected to decrease from LOS A to LOS C by 2035, given the projected 2.1% to 2.7% annual traffic growth rate on this road. Other planned projects include a relief route around Carrizo Springs (ranked 86.5th) and another relief route around Asherton (ranked 86.5th). Very limited data were available for the planned Bob Rogers Boulevard, which prevented the study team from ranking this project.

Figures 5.8 and 5.9 illustrate the projects listed in Table 5.8. As can be seen, most of the planned projects are medium or long term projects. For detailed information on the scoring of the planned projects the reader is referred to Appendix I.

**Table 5.8: Eagle Pass Road and Interchange Projects**

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Long | 0299-04-041 | US 277 | Reconstruct and widen to 4 lane divided highway | $ 32,295,534 | 5 |
| Long | 0299-03-905 | US 277 | Widen existing highway | $ 29,000,000 | 23 |
| Medium | 0299-03-039 | US 277 | Reconstruct and widen to 4 lane divided highway | $ 22,837,072 | 30 |
| Long | 0299-03-915 | US 277 | Restoration and add passing lanes | $ 6,400,000 | 34 |
| Long | 0037-06-084 | US 83 | Widen existing highway | $ 30,600,000 | 41 |
| Long | 0299-14-010 | Loop 480 | Construct a 2-lane undivided facility and RR grade separation | $ 57,846,262 | 42 |
| Medium | 0299-03-040 | US 277 | Reconstruct and widen to a 4 lane divided highway | $ 14,488,129 | 43 |
| Long | 0922-49-907 | US 83 | New bypass | $ 8,300,000 | 50 |
| Long | 0037-08-905 | US 83 | Widen existing highway | $ 33,000,000 | 52 |
| Medium | 0300-01-080 | US 277 | Widen existing highway | $ 30,000,000 | 53 |
| Long | 0299-14-016 | Loop 480 | Construction of an interchange | $ 1,000,000 | 55 |
| Long | 0300-02-915 | US 277 | Widen existing highway | $ 43,000,000 | 59 |
| Long | 0300-03-915 | US 277 | Widen existing highway | $ 38,100,000 | 60 |
| Medium | 0300-03-906 | US 277 | Widen existing highway | $ 20,000,000 | 66 |
| Medium | 0922-49-905 | US 277/ US 83 | Relief route around Carrizo Springs | $ 23,800,000 | 86.5 |
| Medium | 0922-49-906 | US 83 | Relief route around Asherton | $ 16,200,000 | 86.5 |
| Unknown | - | Bob Rogers Blvd | - | - | N/A |

* Ranking out of 88 U.S. road and interchange projects

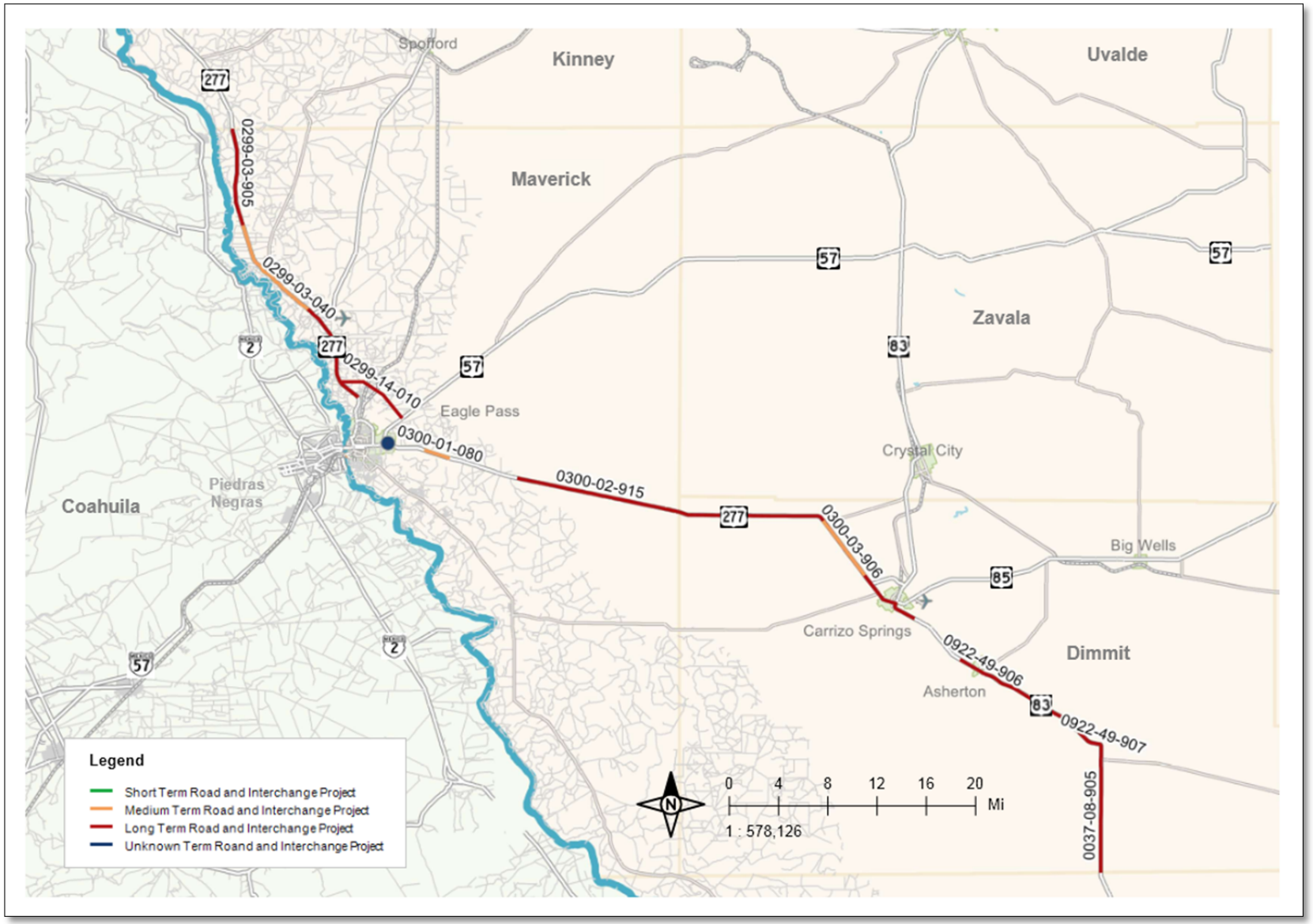



*Figure 5.8: Eagle Pass Road and Interchange Project Locations*

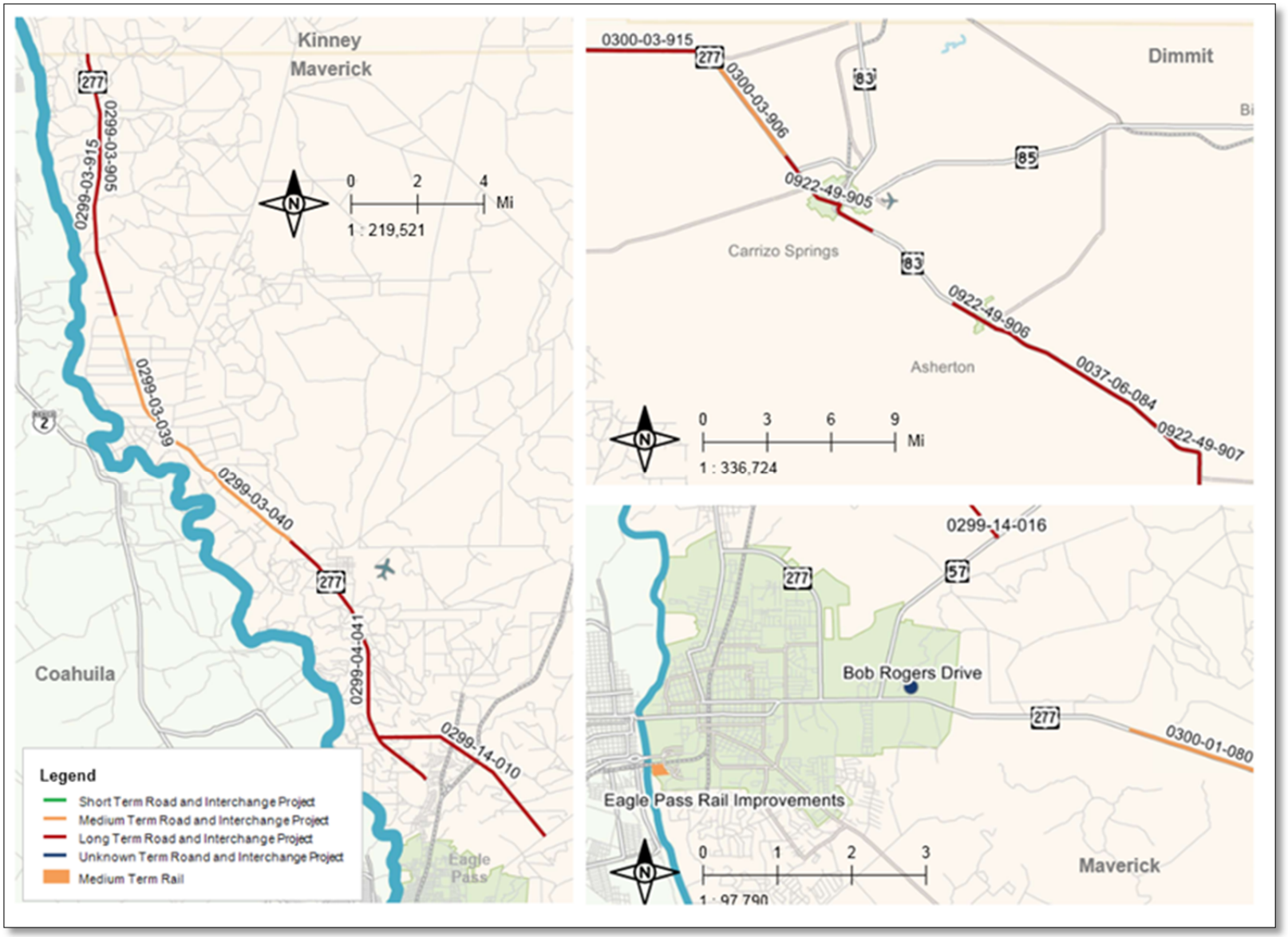



*Figure 5.9: Eagle Pass Road and Interchange and Rail Project Locations*

### 5.4.3 Eagle Pass Rail Project

The planned rail project serving the Eagle Pass POE was ranked second out of the three U.S. rail projects (see Table 5.9). The project includes double-tracking segments between the BNSF and UP sidings and between the UP siding and the rail tracks in the vicinity of the bridge to Piedras Negras, as well as other improvements. The planned project will provide additional sidings where stopped rail traffic can be inspected by CBP, thereby allowing through traffic to bypass unhindered on the existing track. The project location is illustrated in Figure 5.9. For detailed information on the scoring of the planned project the reader is referred to Appendix I.

**Table 5.9: Eagle Pass Rail Project**

| Term/ Map ID | Project ID/CSJ | Owner | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Medium | Eagle Pass Rail Improvements | BNSF | Eagle Pass Rail Improvements – include double-tracking segments between BNSF and UP sidings and between UP siding and tracks at Eagle Pass in the vicinity of the bridge to Piedras Negras, an intermodal facility with lay-down pad for container movements, and improvements to assist CBP in conducting border security measures | $18,000,000 | 2 |

*Ranking out of three U.S. rail projects

## 5.5 Del Rio Projects

### 5.5.1 Del Rio POE Projects

Two planned POE projects were identified in Del Rio, but a lack of information prevented the study team from ranking the proposed new bridge. The rankings of the planned POE projects in Del Rio are shown in Table 5.10. From Table 5.10 it is evident that the new CBP facility – to replace the current outdated facility - at the Lake Amistad Dam crossing ranked 6$^{th}$ out of the 14 U.S. POE projects identified in the study area. Figure 5.10 shows the locations of the projects. For detailed information on the scoring of the planned projects the reader is referred to Appendix I.

**Table 5.10: Del Rio POE Projects**

| Term/ Map ID | Project ID/CSJ | Bridge | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Short | CBP New Facility | Lake Amistad Dam Crossing | New CBP facility. This is an ARRA funded project. | $ 10,000,000 | 6 |
| Unknown | N/A | New Bridge | Construction of new bridge | - | N/A |

* Ranking out of 14 U.S. POE projects


*Figure 5.10: Del Rio POE Project Locations*

### 5.5.2 Del Rio Rail Projects

No planned rail projects were identified in the Del Rio area.

### 5.5.3 Del Rio Road and Interchange Projects

In total five planned road and interchange projects were identified that serve the Del Rio POE. The rankings for these projects are presented in Table 5.11. From Table 5.11 it is evident that Project 0299-01-905, which involves the widening of a section of US 277, ranked the highest in Del Rio and 16th out of the 88 U.S. road and interchange projects identified. As mentioned earlier, US 277 forms part of the Port-to-Plains trade corridor. Furthermore, the four top ranked Del Rio road and interchange projects involves widening US 277 – several sections involve widening US 277 from two to four lanes. The resultant increase in capacity will enable US 277 to maintain its current LOS A through 2035 given the anticipated annual traffic growth rate of 2% on the corridor. In 2008 truck traffic accounted for between 25.2% and 31.3% of the corridor traffic. Figure 5.11 shows the locations of the projects. For detailed information on the scoring of the planned projects the reader is referred to Appendix I.

**Table 5.11: Del Rio Road and Interchange Projects**

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Long | 0299-01-905$^{\Delta}$ | US 277 | Widening of an existing non-freeway facility | $ 9,400,000 | 16 |
| Long | 0299-01-906$^{\Delta}$ | US 277 | Widening of an existing non-freeway facility | $ 22,000,000 | 21 |
| Long | 0299-02-906 | US 277 | Widening of an existing non-freeway facility | $ 16,600,000 | 26 |
| Long | 0299-02-905 | US 277 | Widening of an existing non-freeway facility | $ 26,600,000 | 29 |
| Long | - | US 90 | - | - | 79 |

* Ranking out of 88 U.S. road and interchange projects

$^{\Delta}$ Projects occur in opposite direction on the same section of roadway

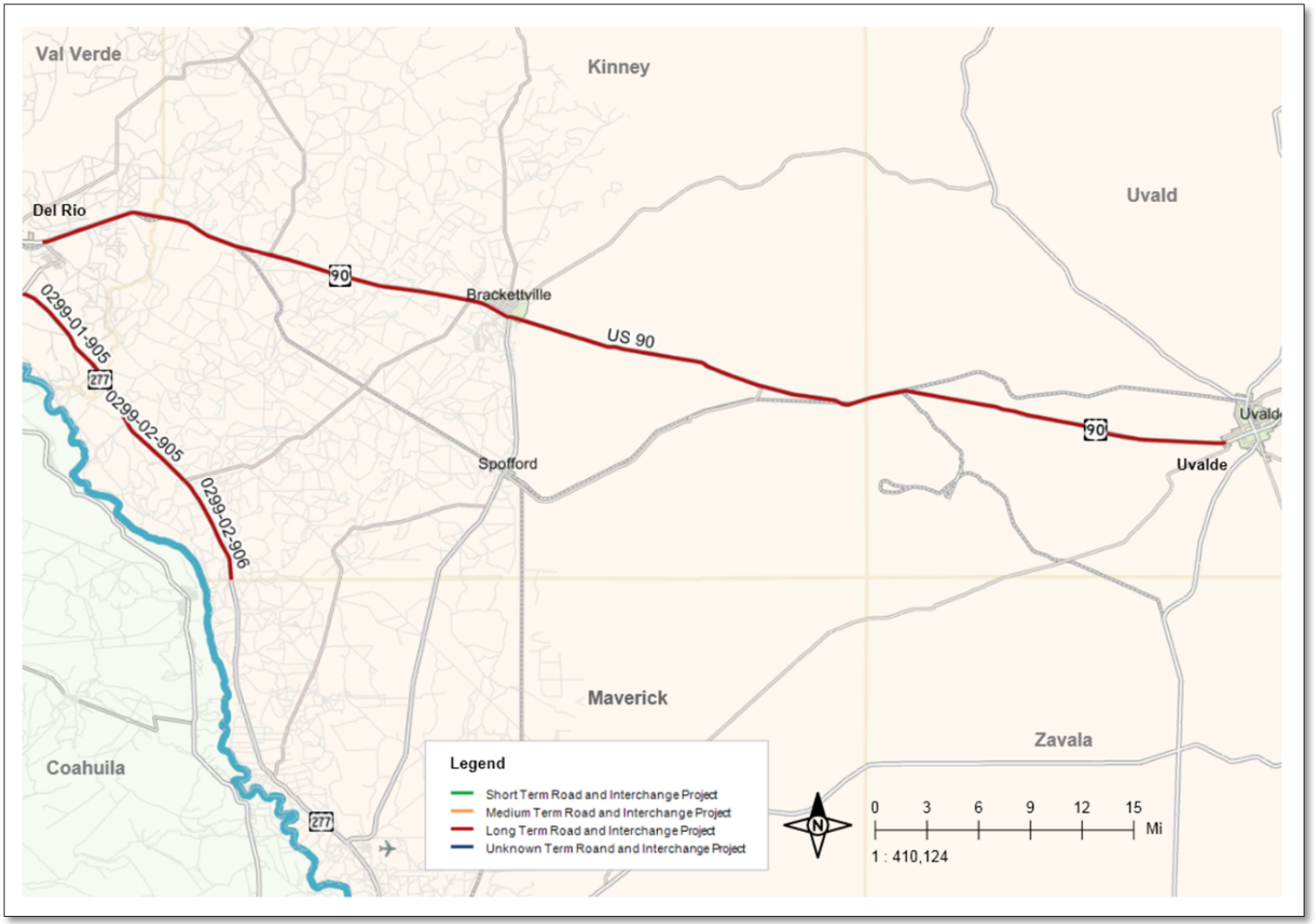



*Figure 5.11: Del Rio Road and Interchange Project Locations*

## 5.6 Tamaulipas Projects

### 5.6.1 Tamaulipas POE Projects

The Tamaulipas POEs facilitate a very large percentage of the total number of crossings in the study area. Planned POE projects were identified for the Gateway to the Americas Bridge, Juárez-Lincoln Bridge, and the World Trade Bridge. In addition, a new planned crossing (i.e., Project 4-5) was also identified to the east of Nuevo Laredo.

The ranking of the POE projects planned in Tamaulipas are provided in Table 5.12. From Table 5.12, it is evident that Project 4-5 (MX-P-012) is the highest ranked Mexican POE project – similar to its U.S. counterpart Project 4-5 – in the study area. The proposed bridge will connect Mex 85 to US-83 and the Cuatro Vientos Beltway on the U.S. side. In addition to the large number of booths – i.e., 32 on the Mexican side are planned in Phase 1 – the promoters also plan to include FAST, SENTRI, and HOV lanes in the bridge design. The large number of booths is expected to expedite the processing of commercial vehicles, passenger vehicles, bicycles and motorcycles, and pedestrians. The promoters are currently conducting a feasibility study that is partially funded by a Federal Government allocation of $1.2 million. In terms of the schedule, the promoters plan to start construction of the bridge in November 2012 and begin operations in 2015.

Two other Tamaulipas POE projects also ranked among the top 10 Mexican POE projects in the study area. Project MX-P-002 would convert an existing pedestrian lane of the Gateway to the Americas Bridge into an express lane. The project ranked 6$^{th}$ and is expected to significantly reduce pedestrian crossing times. Project MX-P-001 ranked 7.5$^{th}$ and would implement "intelligent or smart" card technology to automatically charge pedestrian tolls on the Gateway to the Americas Bridge. The implementation of this technology is also expected to significantly reduce pedestrian crossing times.

Figure 5.12 shows the location of the planned Tamaulipas POE projects listed in Table 5.12. For detailed information on the scoring of each planned project the reader is referred to Appendix I.

**Table 5.12: Tamaulipas POE Projects**

| Term | Project ID/CSJ | Bridge | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Medium | MX-P-012 | New Road Bridge | Construction of a new international road bridge - Project 4-5. | $ 51,500,000 | 1 |
| Short | MX-P-002 | Gateway to the Americas Bridge | Convert an existing pedestrian lane into a pedestrian express lane. | $ 150,000 | 6 |
| Short | MX-P-001 | Gateway to the Americas Bridge | Implement an automated method of payment (i.e., rechargeable smart card) for pedestrian fees. | $ 300,000 | 7.5 |
| Short | MX-P-007 | World Trade Bridge | Addition of a FAST lane. | - | NA |
| Unknown | MX-P-003 | Gateway to the Americas Bridge | Reorganization of the bridge and construction of barriers. | - | NA |
| Medium | MX-P-005 | World Trade Bridge | Adopting an automated barcode system, including the installation of transponders to read barcodes in the door locks of containers. | - | NA |
| Unknown | MX-P-006 | World Trade Bridge | Building a Strategic Bonded Warehouse close to Customs (Preliminary phase). | - | NA |
| Short | MX-P-008 | World Trade Bridge | Maximize the bridge's capacity | - | NA |
| Medium | MX-P-013 | New Rail Bridge | Project KCSM – New rail international bridge | | NA |
| Unknown | MX-P-011 | Airport Project | Complete construction of the Strategic Bonded Warehouse (see Chapter 4 for discussion) | - | NA |

* Ranking out of 37 Mexican POE projects

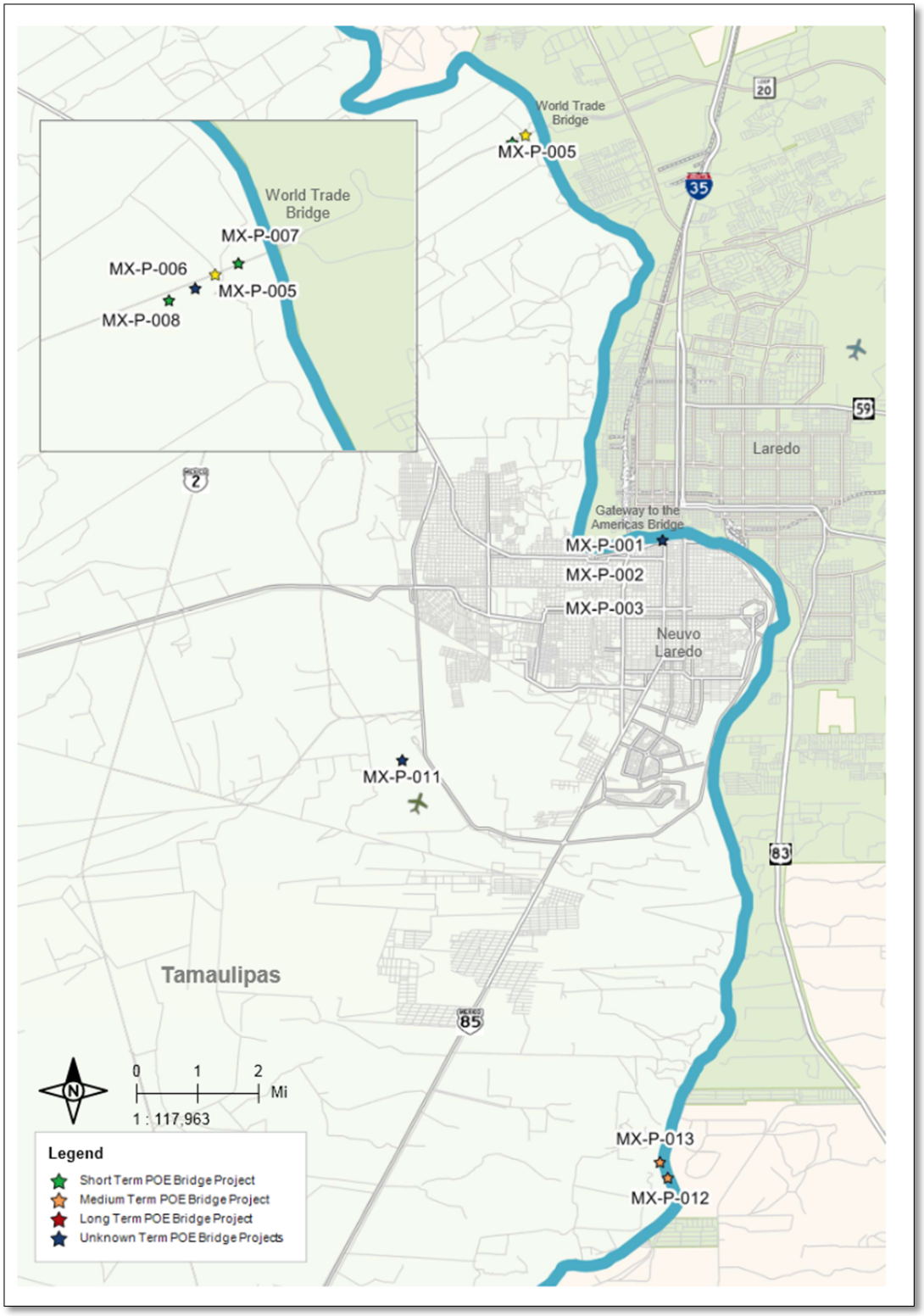



*Figure 5.12: Tamaulipas POE Project Locations*

### 5.6.2 Tamaulipas Road and Interchange Projects

Eight of the top 10 Mexican road and interchange project priorities in the study area are in the State of Tamaulipas. The ranking of the road and interchange projects that serve the Tamaulipas POE are provided in Table 5.13.

From Table 5.13 it is evident that the highest ranked road project is Project MX-RI-022, which is the access road that will connect Mex 85 with the new proposed bridge (Project 4-5). On the U.S. side, the four lane divided road that connects US-83 with the proposed new bridge was also ranked 1st out of all 88 U.S. road and interchange projects identified in the study area. As mentioned earlier, the new crossing is expected to divert a share of the commercial traffic to the proposed Bridge 4-5. The access road planned comprises eight lanes and is designed for an AADT of 52,000 of which the truck share is estimated at 40%. Furthermore, the proposed bridge and access road will alleviate congestion in the area by diverting traffic and hazardous materials away from the urban area provided the necessary authorization is obtained.

In addition, MX-RI-003 and MX-RI-002 ranked 2nd and 3rd out of all 44 Mexican road and interchange projects identified in the study area. These two projects comprise capacity improvements (i.e., road widening and increasing the number of lanes) on Mex II. The investments will decrease congestion and improve the LOS on Mex II between Nuevo Laredo and Monterrey - a mayor commercial center in Mexico.

Several overpasses/ rail grade separations (*Pasos superiores a desnivel* or *Distribuidores Viales*) involving Héroe de Nacataz were also ranked high. These overpasses/rail grade separations will allow for more efficient traffic flows by eliminating the interaction between the road and rail modes in several locations.

Finally, general improvements to and the widening of the airport access road – specifically the Mier-Nuevo Laredo section - will improve overall access and travel times to the Nuevo Laredo Airport. Project MX-RI-001 ranked 5th out of the 44 Mexican road and interchange projects identified.

Figures 5.13 and 5.14 illustrate the location of the planned projects listed in Table 5.13 for which location information could be obtained. For information on the scoring of each planned project the reader is referred to Appendix I.

**Table 5.13: Tamaulipas Road and Interchange Projects**

| Term / Map ID | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010)** | Project Ranking* |
|---|---|---|---|---|---|
| Medium | MX-RI-022 | Connection to Project 4-5 | Construction of the new road connecting to the new bridge (Project 4-5) | $ 24,000,000 | 1 |
| Long | MX-RI-003 | Mex II | Widening of MEX II from 2 to 4 lanes from Radial III to the National Highway (Mex 85) | $ 4,101,417 | 2 |
| Medium | MX-RI-002 | Mex II | Widening of MEX II from 2 to 4 lanes from Anáhuac Highway to Radial III | $ 4,101,417 | 3 |
| Short | MX-RI-011 | Héroe de Nacataz and Mazatlán | Construction of overpass/rail grade separation: Héroe de Nacataz and Mazatlán | $ 4,929,157 | 4 |
| Medium | MX-RI-001 | Ribereña | Improvements and widening of Mier-Nuevo Laredo section. Adding 2 shoulders of 8.2 feet each. | $ 22,371,365 | 5 |
| Short | MX-RI-012 | Héroe de Nacataz and Fco. Munguía | Construction of overpass/rail grade separation: Héroe de Nacataz and Fco. Munguía | $ 2,013,423 | 6 |
| Short | MX-RI-013 | Héroe de Nacataz and Yucatán | Construction of overpass/rail grade separation: Héroe de Nacataz and Yucatán | $ 3,228,934 | 7 |
| Short | MX-RI-009 | Airport Road | Improvements and widening of Airport Highway from 4 to 8 lanes. | - | 10 |
| Unknown | MX-RI-021 | Mex II | Improvements and widening of Interchange (2 to 4 lanes): Mex II and Anáhuac Highway. | - | NA |
| Short | MX-RI-020 | Radial III | Construction of a 2 lane T-design interchange: Radial III and Highway II. | - | NA |
| Medium | MX-RI-014 | Mex 85 | Construction of interchange: National Highway and Freeway/Loop (Authorization of Phase II). | - | NA |
| Unknown | MX-RI-015 | Mex 85 | Construction of interchange: Reforma Avenue and Pérez Ibarra/Municipio Libre with César López de Lara Avenue. | - | NA |
| Unknown | MX-RI-016 | Mex 85 | Construction of interchange: Reforma Avenue and 15 de Septiembre Street. | - | NA |
| Unknown | MX-RI-017 | Mex 85 | Construction of interchange: Reforma Avenue and Anáhuac Highway with Álvaro Obregón Street. | - | NA |
| Unknown | MX-RI-018 | Mex 85 | Construction of interchange: Reforma Avenue and Paseo Colón Street. | - | NA |
| Unknown | MX-RI-019 | Radial III | Construction of Phase 1 interchange: Southwest Expressway | - | NA |

| Term / Map ID | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010)** | Project Ranking* |
|---|---|---|---|---|---|
| | | | and Radial III | | |
| Short | MX-RI-008 | Reforma Avenue | Widening of Reforma Avenue | - | NA |
| Short | MX-RI-004 | Freeway | Construction of a Southeast Expressway/ Freeway | - | NA |
| Short | MX-RI-005 | Freeway | Construction of a Southwest Expressway/ Freeway | - | NA |
| Short | MX-RI-006 | Radial III | Construction of the connection of Radial III with Airport Boulevard. | - | NA |
| Medium | MX-RI-007 | Beltway II | Third Phase of Beltway II | - | NA |
| Long | MX-RI-010 | Boulevard Miraflores-Las Torres | Widening of Miraflores-Las Torres Boulevard | - | NA |

* Ranking out of 44 Mexican road and interchange projects

** Converted at an exchange rate of MX $13.41 for US $1 as published by Mexico's Central Bank on November 4, 2011

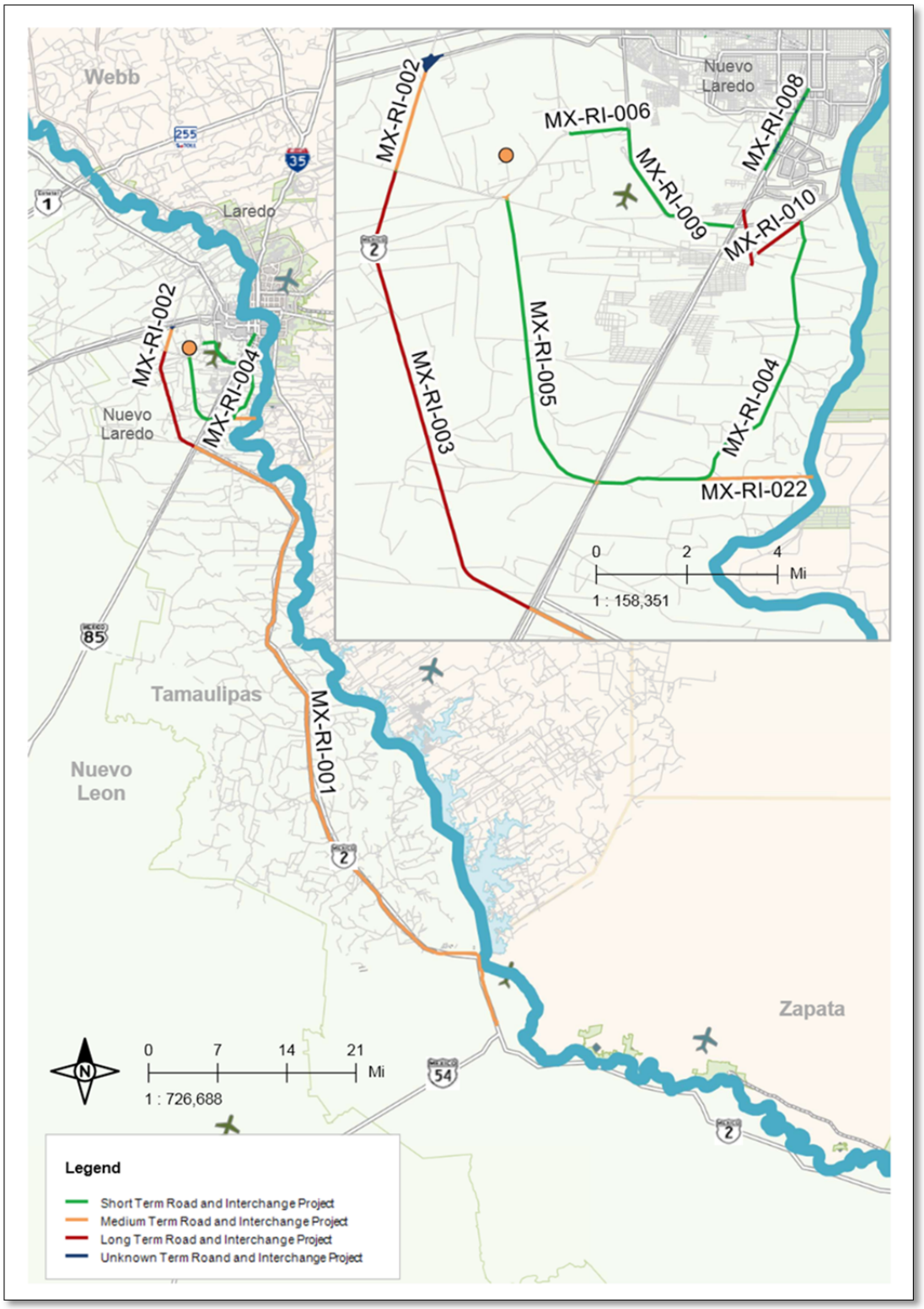



*Figure 5.13: Tamaulipas Road and Interchange Project Locations*

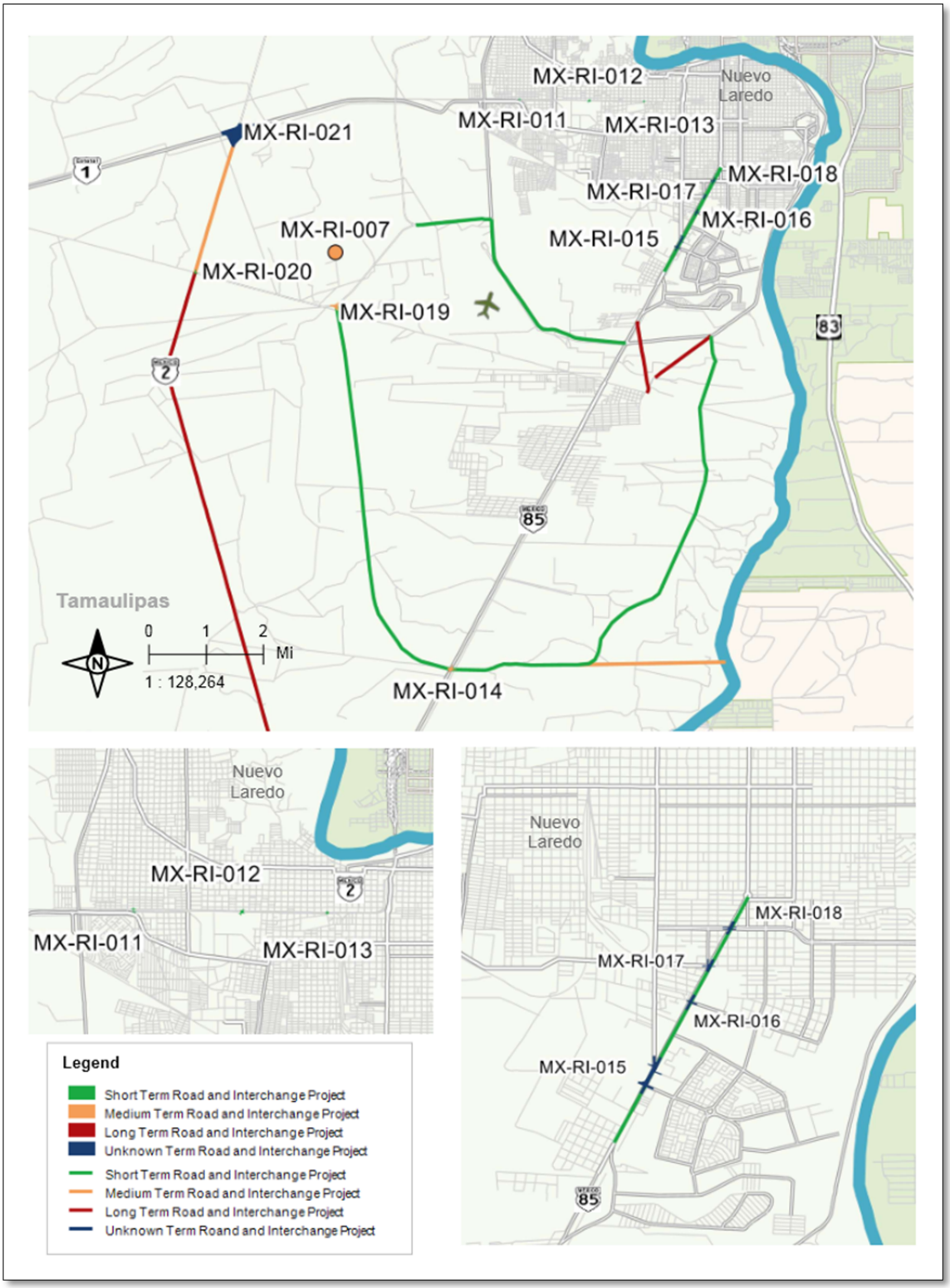



*Figure 5.14: Tamaulipas Road and Interchange Project Locations*

### 5.6.3 Tamaulipas Rail Projects

Five rail projects for Mexico were identified in the study area. Two of the rail projects are in the State of Tamaulipas – specifically Nuevo Laredo. Only one of the two rail projects was ranked. From Table 5.14 it is evident that MX-RR-002 was ranked 1st out of all five Mexican rail projects identified in the study area. MX-RR-002 involves the acquisition of right-of-way and the construction of new track to connect to the proposed new rail bridge (Project 4-5).

**Table 5.14: Tamaulipas Rail Projects**

| Term | Project ID/CSJ | Owner | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Medium | MX-RR-002 | KCSM | Acquisition of right-of-way and construction of new track to connect to the proposed new rail bridge (Laredo 4-5) | $407,073,000 | 1 |
| Medium | MX-RR-001 | KCSM | Construction of new rail tracks for exports | - | NA |

* Ranking out of five Mexican rail projects

Figure 5.15 illustrates the location of the proposed rail projects identified in the State of Tamaulipas. For information on the scoring of the project the reader is referred to Appendix I.

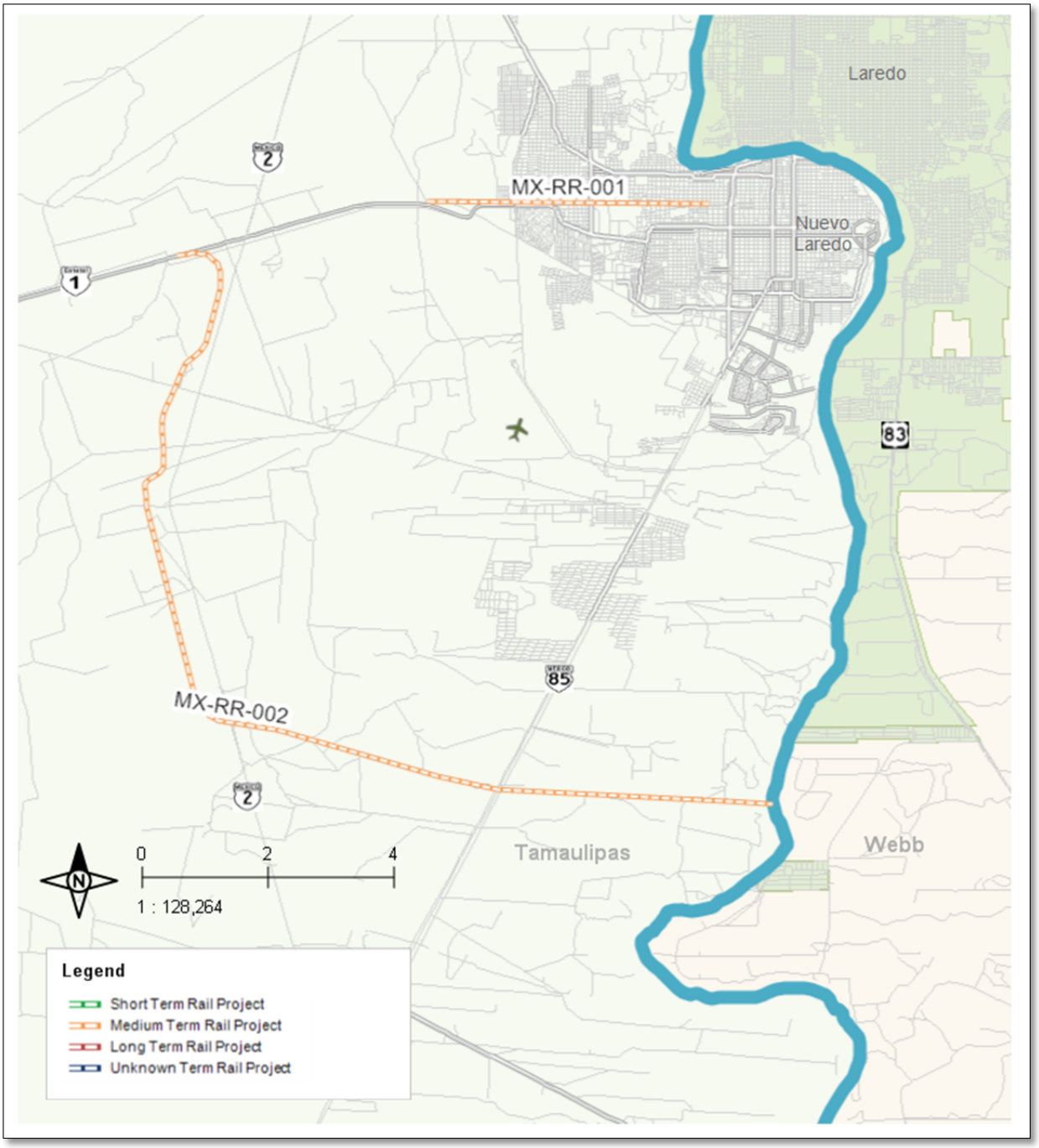



*Figure 5.15: Tamaulipas Rail Project Locations*

## 5.7 Nuevo León Projects

### 5.7.1 Nuevo León POE Projects

The stakeholders identified a number of POE projects pertaining to the Laredo-Colombia Solidarity Bridge that is believed could enhance U.S.-Mexico trade. The identified Nuevo León POE projects are provided in Table 5.15. However, the data provided were only sufficient to rank two of the identified projects.

From Table 5.15, it is evident that the construction and operation of a low-emission freight transportation system was the highest ranked POE project in Nuevo León. This project – MX-P-021 – ranked 7.5$^{th}$ out of all the identified Mexican POE projects in the study area. Also, Project MX-P-015 ranked 10$^{th}$ out of all the identified Mexican POE projects in the study area. Project MX-P-015 comprises the implementation of specialized customs services and the construction of a Strategic Bonded Warehouse (*Recinto Fiscalizado Estratégico)*. The Bonded Warehouse will provide shippers with access to handling, storage, assembling, repair, manufacturing, exhibition, distribution, and sales services. It is believed that this project will enhance socio-economic development in the region. Figure 5.16 illustrates the locations of the identified Nuevo Leon POE projects listed in Table 5.15 for which location information could be obtained. For information on the scoring of each planned project the reader is referred to Appendix I.

**Table 5.15: Nuevo León POE Projects**

| Term | Project ID/CSJ | Bridge | Project Description | Estimated Cost** ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Unknown | MX-P-021 | Laredo-Colombia Solidarity Bridge | Construction and operation of a low-emission freight transportation system. | - | 7.5 |
| Unknown | MX-P-015 | Laredo-Colombia Solidarity Bridge | Implementation of a Specialized Customs Service in Science and Technological Development, including a laboratory to validate analyses and the identification of product imports and exports. Construction of a Strategic Bonded Warehouse that comprises a tax-exempt zone. | - | 10 |
| Unknown | MX-P-016 | Laredo-Colombia Solidarity Bridge | Construction of a U-turn lane for the handling of freight exports origination from the Import Center in the Bonded Warehouse and destined for the Exports modules in Customs. | - | NA |
| Medium | MX-P-020 | Laredo-Colombia Solidarity Bridge | Construction of a world-class, large-scale Logistics Center with integrated multimodal, fiscal, and customs services. | $ 271,439,224 | NA |
| Unknown | MX-P-022 | Laredo-Colombia Solidarity Bridge | Implementation of a truck-only lane at the bridge and investments to facilitate the use of the Laredo-Colombia Solidarity Bridge to connect shipments from and to Mexico with the Port of Brownsville. | - | NA |
| Unknown | MX-P-018 | Laredo-Colombia Solidarity Bridge | Increase security throughout the entire perimeter of the Laredo-Colombia Solidarity Bridge, including security cameras and federal authority monitoring. | $ 9,000,000 | NA |
| Unknown | MX-P-017 | Laredo-Colombia Solidarity Bridge | Develop an area (yard) near the border crossing with enhanced security measures to protect goods as vehicles and products enter and exit. | - | NA |
| Short | MX-P-009 | Laredo-Colombia Solidarity Bridge | Implement a FAST lane. | - | NA |
| Unknown | MX-P-019 | Colombia-Webb Internacional Rail Bridge | Construction of the Colombia – Webb International Rail Bridge | $ 75,000,000 | NA |
| Unknown | MX-P-023 | Laredo-Colombia Solidarity Bridge | Construct a meat inspection station to the specifications established in NOM-058-ZOO-1999, “Specifications for the Installation and Operation of Animal Health Verification and Inspection Points.” | - | NA |

* Ranking out of 37 Mexican POE projects

** Converted at an exchange rate of MX $13.41 for US $1 as published by Mexico’s Central Bank on November 4, 2011

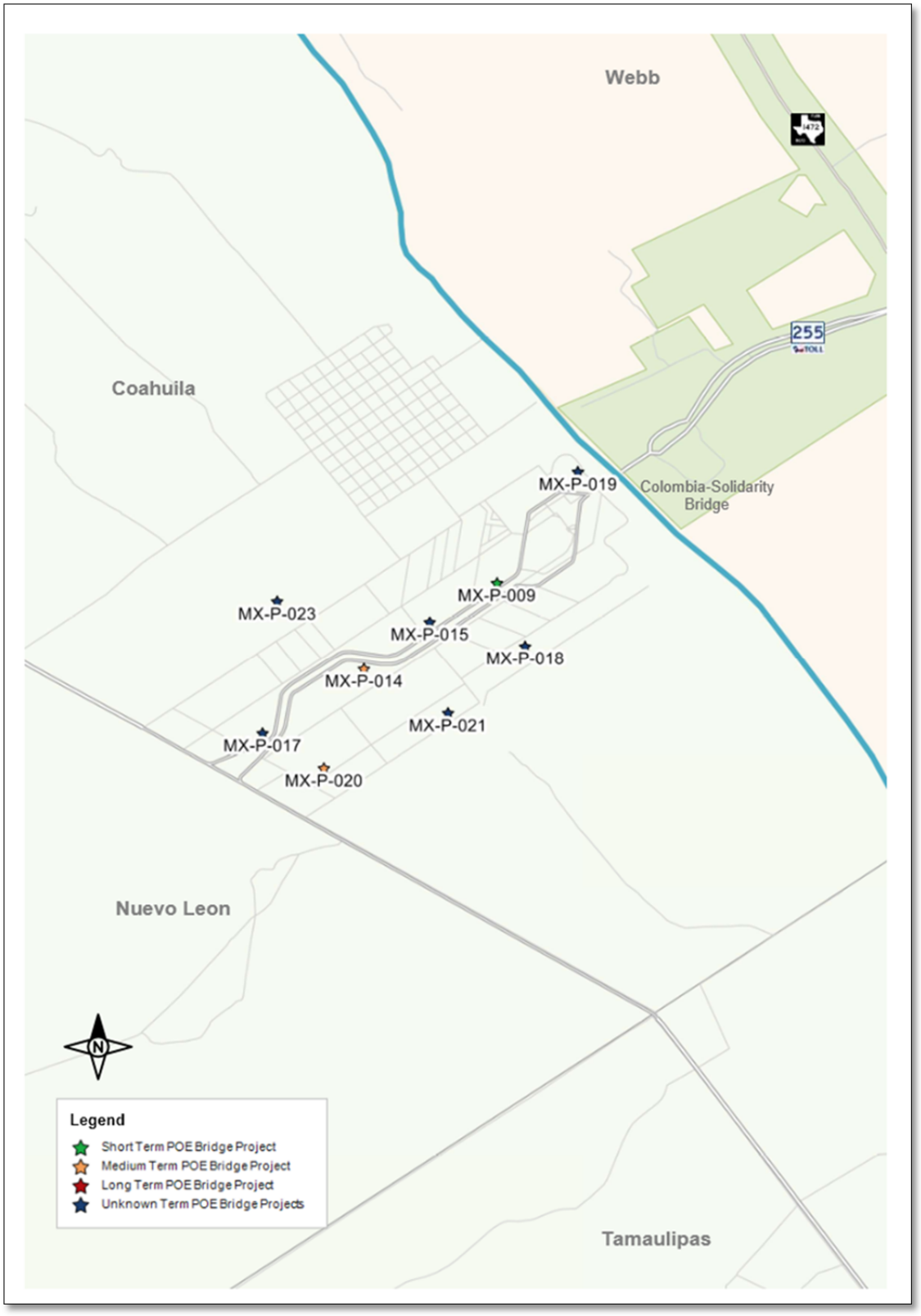



*Figure 5.16: Nuevo León POE Project Locations*

### 5.7.2 Nuevo León Road and Interchange Projects

Two road and interchange projects that serve the Nuevo León POE were identified in the study area. MX-RI-023 involves widening of the Sabinas-Colombia highway and Project MX-RI-024 involves providing an access road from La Gloria to the Laredo-Colombia Solidarity Bridge (see Table 5.16). None of the identified projects could; however, be ranked because of insufficient data. Figure 5.17 illustrate the locations of the identified projects.

**Table 5.16: Nuevo León Road and Interchange Projects**

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking |
|---|---|---|---|---|---|
| Short | MX-RI-023 | Sabinas-Colombia | Widening of unpaved roads, road drainage and asphalt concrete work, including signal improvement. | $ 78,300 | NA |
| Unknown | MX-RI-024 | Sabinas-Colombia | Access from La Gloria to Laredo-Colombia Solidarity Bridge | - | NA |

** Converted at an exchange rate of MX $13.41 for US $1 as published by Mexico's Central Bank on November 4, 2011.

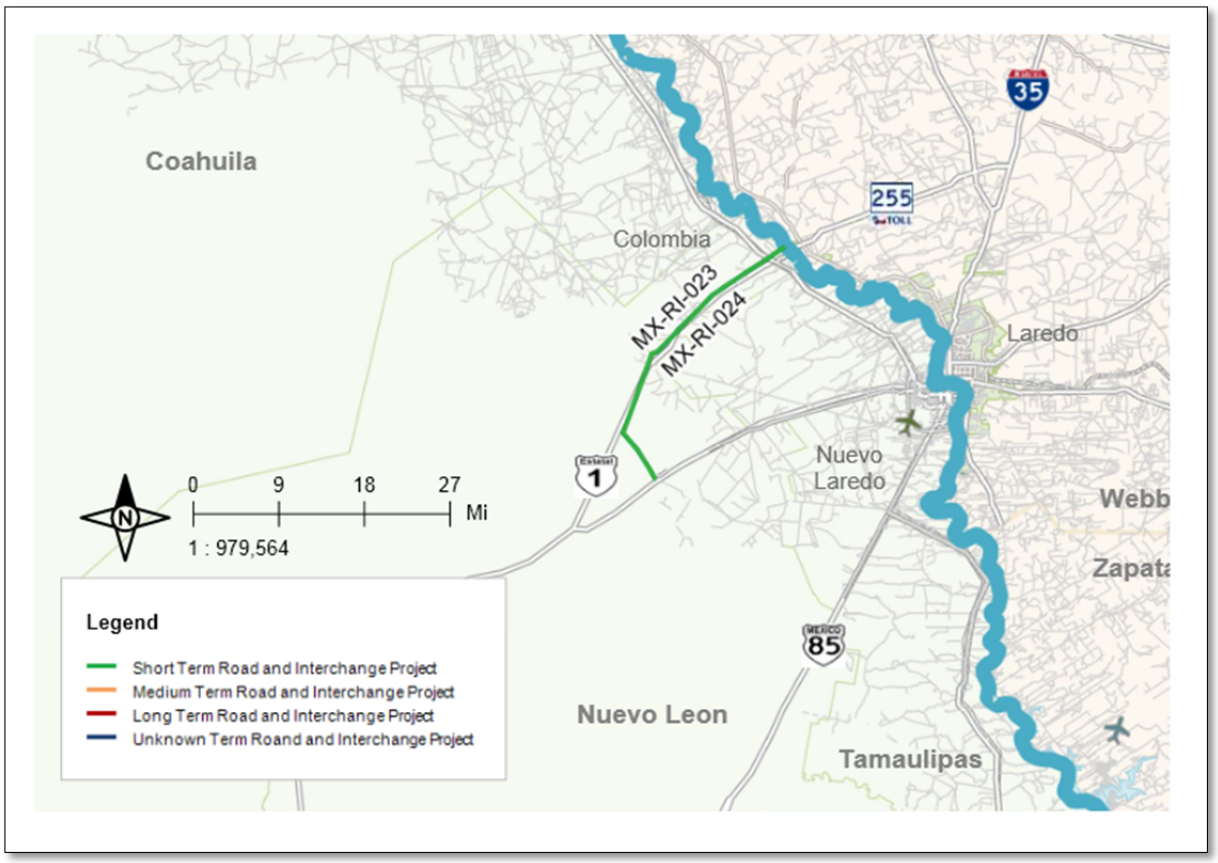



*Figure 5.17: Nuevo León Road and Interchange Project Locations*

### 5.7.3 Nuevo León Rail Projects

One rail project was identified in the State of Nuevo León. MX-RR-003 involves the construction of approximately 35 miles of railroad track from Camarón Station to Colombia (i.e., Colombia Branch Line), development of Camarón Station, and the implementation of the Colombia-Webb Intermodal Freight Terminal. A lack of data; however, prevented the study team from ranking the project. Figure 5.18 shows the location of the rail project.

**Table 5.17: Nuevo León Rail Projects**

| Term | Project ID/CSJ | Owner | Project Description | Estimated Cost ($2010) | Project Ranking |
|---|---|---|---|---|---|
| Unknown | MX-RR-003 | CODEFRONT | Colombia Branch Line, Camarón Station, and Colombia-Webb Intermodal Freight Terminal | $ 75,000,000 | NA |

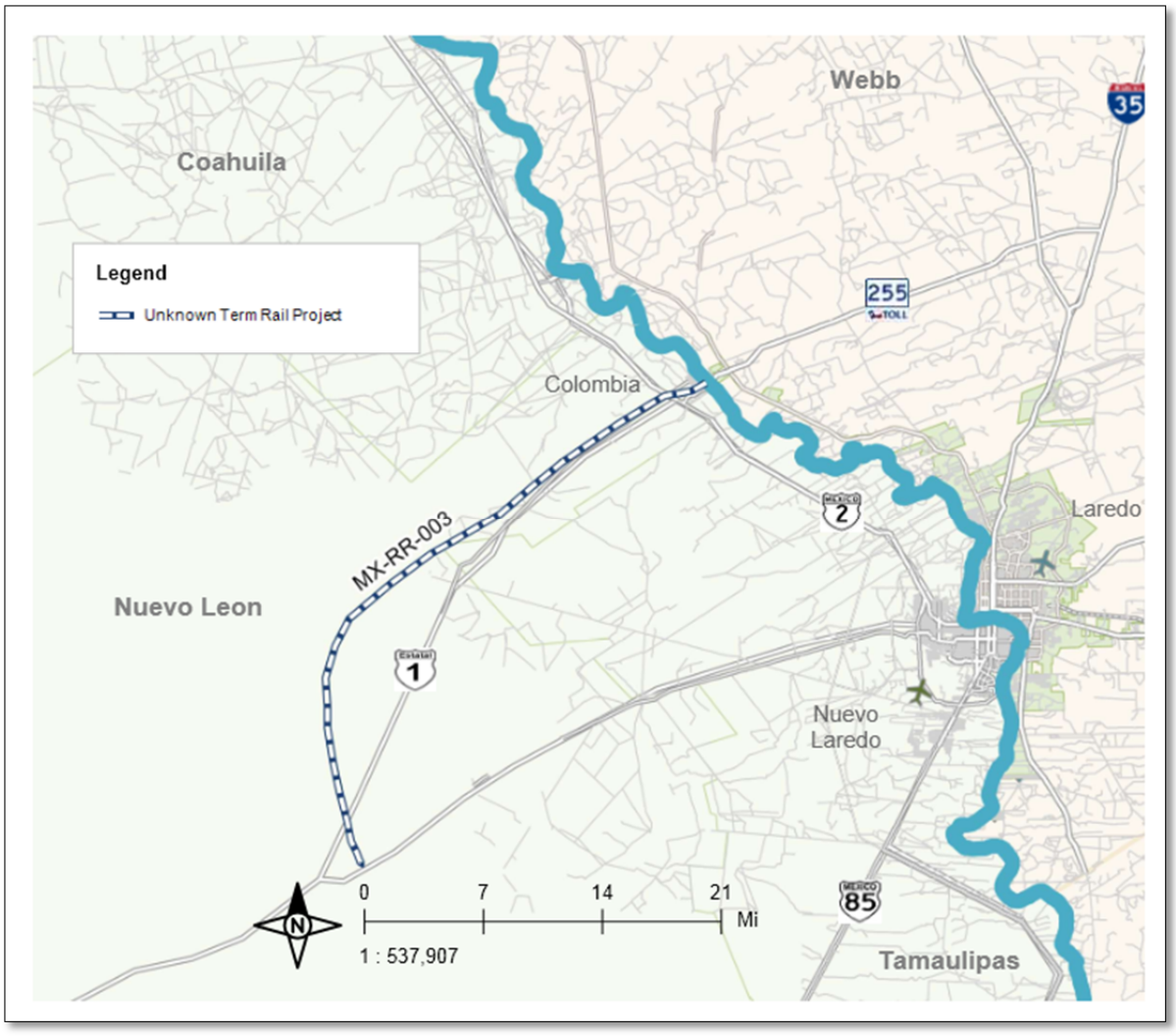



*Figure 5.18: Nuevo León Rail Project Location*

## 5.8 Coahuila Projects

### 5.8.1 Coahuila POE Projects

In total 17 POE projects were identified for the Piedras Negras, Acuña, and Amistad Dam crossings. Of these 17 POE projects only five were ranked. The ranking of the POE projects planned in the State of Coahuila are provided in Table 5.18. Several of the highest ranked Mexican POE projects in the study area are in the State of Coahuila. Three of the top 10 Mexican POE projects pertain to Eagle Pass Bridge I and two of the top 10 Mexican POE projects pertain to the Del Rio – Ciudad Acuña International Bridge.

The top ranked POE project in the State of Coahuila – i.e., Project MX-P-024 – involves the implementation of an automated method of payment for pedestrian fees. It is believed that the implementation of a rechargeable smart card will expedite the crossing process and thereby reduce crossing times. In addition, the planned conversion of an existing pedestrian lane into a pedestrian express lane (Project MX-P-025) will further reduce crossing times and enhance the efficiency of pedestrian crossings. Finally, Project MX-P-027 involves the implementation of a vehicle express or SENTRI lane at Eagle Pass Bridge I. This project is currently in the design phase. Bidding has not commenced, but it is anticipated that CAPUFE will administer the bidding process. This project is also seen as an effective method for reducing POV crossing times, thereby improving the efficiency of the crossing.

Finally, Project MX-P-037 and MX-P-036 pertaining to the Del Rio-Ciudad Acuña Bridge ranked 3$^{rd}$ and 4$^{th}$ out of the Mexican POE projects identified in the study area. Project MX-P-037 involves the implementation of an automated method of payment for pedestrian fees at the Del Rio-Ciudad Acuña Bridge and Project MX-P-036 pertains to the conversion of an existing pedestrian lane into a pedestrian express lane. Figure 5.19 illustrates the location of the planned projects listed in Table 5.18 for which location information could be obtained. For information on the scoring of each planned project the reader is referred to Appendix I.

**Table 5.18: Coahuila POE Projects**

| Term | Project ID/CSJ | POE | Project Description | Estimated Cost** ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Short | MX-P-024 | Eagle Pass Bridge I | Implement an automated method of payment (i.e., rechargeable smart card) for pedestrian fees. | $ 40,000 | 2 |
| Short | MX-P-025 | Eagle Pass Bridge I | Convert an existing pedestrian lane into a pedestrian express lane. | $ 20,000 | 3 |
| Short | MX-P-037 | Del Rio - Ciudad Acuña International Bridge | Convert an existing pedestrian lane into a pedestrian express lane. | $ 30,000 | 4 |
| Short | MX-P-036 | Del Rio - Ciudad Acuña International Bridge | Implement an automated method of payment (i.e., rechargeable smart card) for pedestrian fees. | $ 60,000 | 5 |
| Short | MX-P-027 | Eagle Pass Bridge I | Implement a vehicle express lane or SENTRI lane. | $ 500,000 | 9 |
| Short | MX-P-029 | Camino Real International Bridge | Convert an existing lane into FAST lane. | - | NA |
| Unknown | MX-P-026 | Eagle Pass Bridge I | Widening of the fiscal premises and the re-organization of the new buildings that will house the various administrative offices of the port. This is necessary to increase the capacity for imports and exports. | - | NA |
| Unknown | MX-P-028 | Eagle Pass Bridge I | Improve Customs to “Type A Customs” | - | NA |
| Short | MX-P-030 | Camino Real International Bridge | Maximize the bridge’s capacity. | - | NA |
| Unknown | MX-P-032 | Del Rio - Ciudad Acuña International Bridge | Re-organize to increase the bridge’s capacity. | - | NA |
| Medium | MX-P-033 | Del Rio - Ciudad Acuña International Bridge | Investments to promote tourist traffic. | - | NA |
| Unknown | MX-P-034 | Del Rio - Ciudad Acuña International Bridge | Widening of the fiscal premises. | - | NA |
| Unknown | MX-P-035 | Del Rio - Ciudad Acuña International Bridge | Widening of lanes. | - | NA |
| Unknown | MX-P-038 | Del Rio - Ciudad Acuña International Bridge | Improve Customs to “Type A Customs” | - | NA |
| Unknown | MX-P-039 | Lake Amistad Dam Crossing | Investments to promote tourist traffic. | - | NA |
| Unknown | MX-P-040 | New International Bridge | Construction of a third international bridge in Acuña. This | - | NA |

| Term | Project ID/CSJ | POE | Project Description | Estimated Cost** ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| | | in Ciudad Acuña | bridge would directly benefit the maquiladora industry, which would enhance socio-economic growth in the region. | | |
| Unknown | MX-P-041 | New International Rail Bridge | Building of a new rail bridge in Acuña. The project would consist of a rail suspension bridge located near the Amistad Dam. | - | NA |

* Ranking out of 37 Mexican POE projects.
** Converted at an exchange rate of MX $13.41 for US $1 as published by Mexico's Central Bank on November 4, 2011.

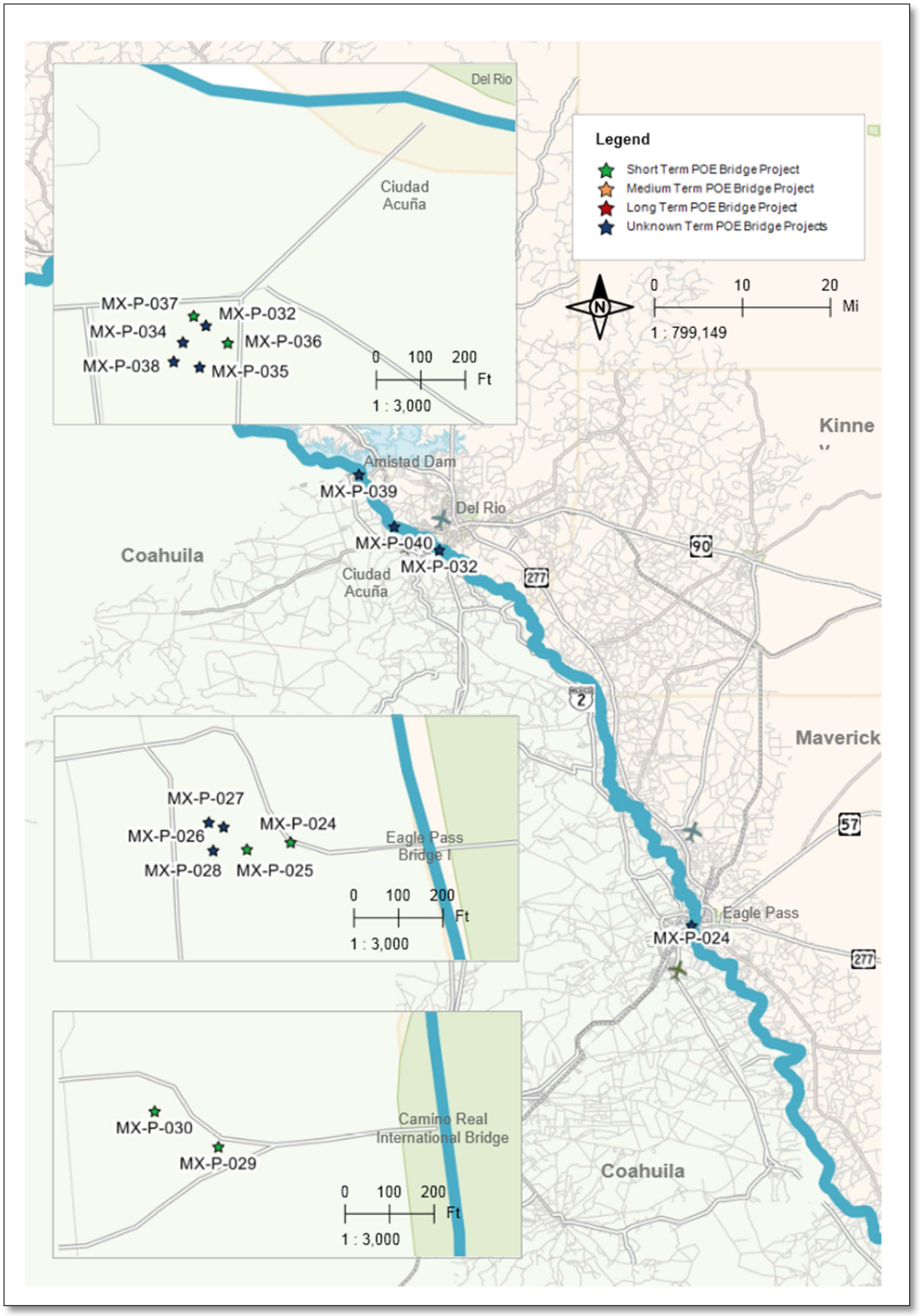



*Figure 5.19: Coahuila POE Project Locations*

### 5.8.2 Coahuila Road and Interchange Projects

In total 20 planned road and interchange projects that serve the Piedras Negras, Acuña, and Presa La Amistad POEs were identified by the stakeholders. The rankings of these projects are presented in Table 5.19. From Table 5.19 it is evident that although many projects were identified in the State of Coahuila only two projects could be ranked given the data that were provided to the study team. The highest ranked road and interchange project in the State of Coahuila is Project MX-RI-026, which involves improvements to a section of Mex II between Piedras Negras and the Nuevo León-Coahuila border. The improvements are anticipated to enhance connectivity to the POE and reduce congestion associated with POV and commercial traffic. The latter would translate into an improved LOS on this section of road. The second highest ranked road and interchange project in the State of Coahuila (ranked 9$^{th}$ out of all 44 Mexican road and interchange projects identified) are improvements to the Acuña-Zaragoza Highway (Project MX-RI-029). This project will improve the LOS on the highway and increase access to major commercial centers such as, Saltillo, Monclova, and Monterrey.

Figures 5.20 and 5.21 illustrate the projects listed in Table 5.19 for which location information could be obtained. For information on the scoring of each planned project the reader is referred to Appendix I.

**Table 5.19: Coahuila Road and Interchange Projects**

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Short | MX-RI-026 | Mex II - Ribereña | Improvements to the section of Federal Highway from Piedras Negras to the borders of Coahuila and Nuevo León. | $ 7,151,379 | 8 |
| Unknown | MX-RI-029 | Acuña-Zaragoza | Improvements to Acuña-Zaragoza Highway | $ 5,219,985 | 9 |
| Unknown | MX-RI-037 | Emilio Mendoza Street | Construction of Interchange: Emilio Mendoza Street and José de las Fuentes Rodríguez Street | - | NA |
| Unknown | MX-RI-038 | Emilio Mendoza Street | Construction of Interchange: Emilio Mendoza Street and Las Vacas arterial road | - | NA |
| Unknown | MX-RI-039 | Emilio Mendoza Street | Construction of Interchange: Emilio Mendoza Street and Arroyo Las Vacas | - | NA |
| Unknown | MX-RI-040 | Fausto Z. Martínez Boulevard | Bridge construction on Fausto Z. Martínez Boulevard | - | NA |
| Unknown | MX-RI-041 | North Division Colony | Construction of the North Division Colony Bridge | - | NA |
| Long | MX-RI-027 | Morelos / Zaragoza Loop | Construction of the Morelos/Zaragoza Loop in the right-of-way of the old FFCC line. | - | NA |
| Medium | MX-RI-028 | Emilio Mendoza Loop | Improvements to the Emilio Mendoza Cisneros Loop: an overpass (interchange) with José de las Fuentes Rodríguez Loop, Arterial Road (Eje Central), Cobre Street, and the Santa Eulalia Highway intersection with Aranda Reynel Street. A roundabout is also envisioned for this Loop in front of the Macroplaza grounds and government offices. | - | NA |
| Unknown | MX-RI-031 | Villa Unión-Nava | Construction of Villa Union-Nava Highway | - | NA |
| Unknown | MX-RI-032 | Centenario | Provide access to Prolongación Centenario | - | NA |
| Short | MX-RI-033 | Roundabout Intersection Southwest and Guerrero Blvd. | Planning for a highway from the maquiladoras to both Acuña -Zaragoza and Acuña -Piedras Negras Highways. | - | NA |
| Medium | MX-RI-034 | Connection to Southwest Avenue and J. Aranda Reinel Avenue | Construction of a connection between Southwest Avenue and J. Aranda Reinel Avenue. | - | NA |
| Short | MX-RI-035 | Nuevo Milenio Loop | Construction of an outer loop for Ciudad Acuña. Phase I will reduce traffic congestion in the area between the | - | NA |

| Term | Project ID/CSJ | Highway | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| | | | International Bridge and the Acuña -Piedras Negras or Acuña -Zaragoza Highway. Phase II will extent through the city to reach the Industrial Parks. An agreement will be sought with the City of Del Rio to connect this Loop with the US Loop currently under construction. | | |
| Unknown | MX-RI-036 | Highway Intersections | Development of a Program to build Highway Intersections | - | NA |
| Unknown | MX-RI-042 | Mex II - Ribereña | Pavement of the intersection of Mex 2 with Madero Del Rio, in Jiménez | - | NA |
| Unknown | MX-RI-043 | Southwest Intersection | Improvements to the Southwest Intersection on Zaragoza Highway | - | NA |
| Unknown | MX-RI-047 | Jiménez - San Carlos | Rehabilitation and maintenance of Jiménez-San Carlos Highway (Jiménez) | - | NA |
| Unknown | MX-RI-053 | Guerrero Municipality | Paving and improving of city streets | - | NA |
| Unknown | MX-RI-054 | Hidalgo Municipality | Pavement 100% of the roads in City Hall, in Hidalgo | - | NA |

* Ranking out of 44 Mexican road and interchange projects.
** Converted at an exchange rate of MX $13.41 for US $1 as published by Mexico's Central Bank on November 4, 2011.

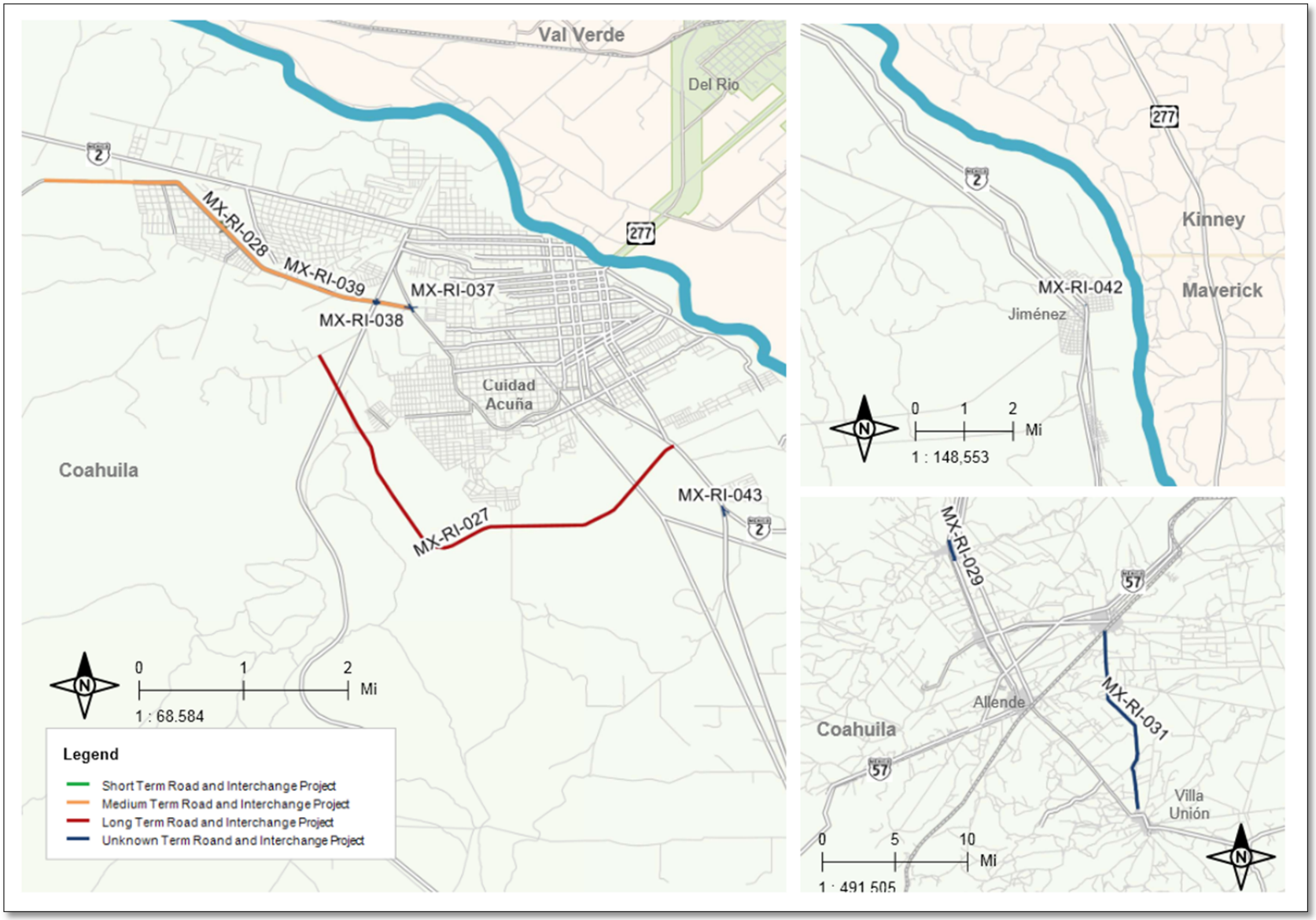



*Figure 5.20: Coahuila Road and Interchange Project Locations*

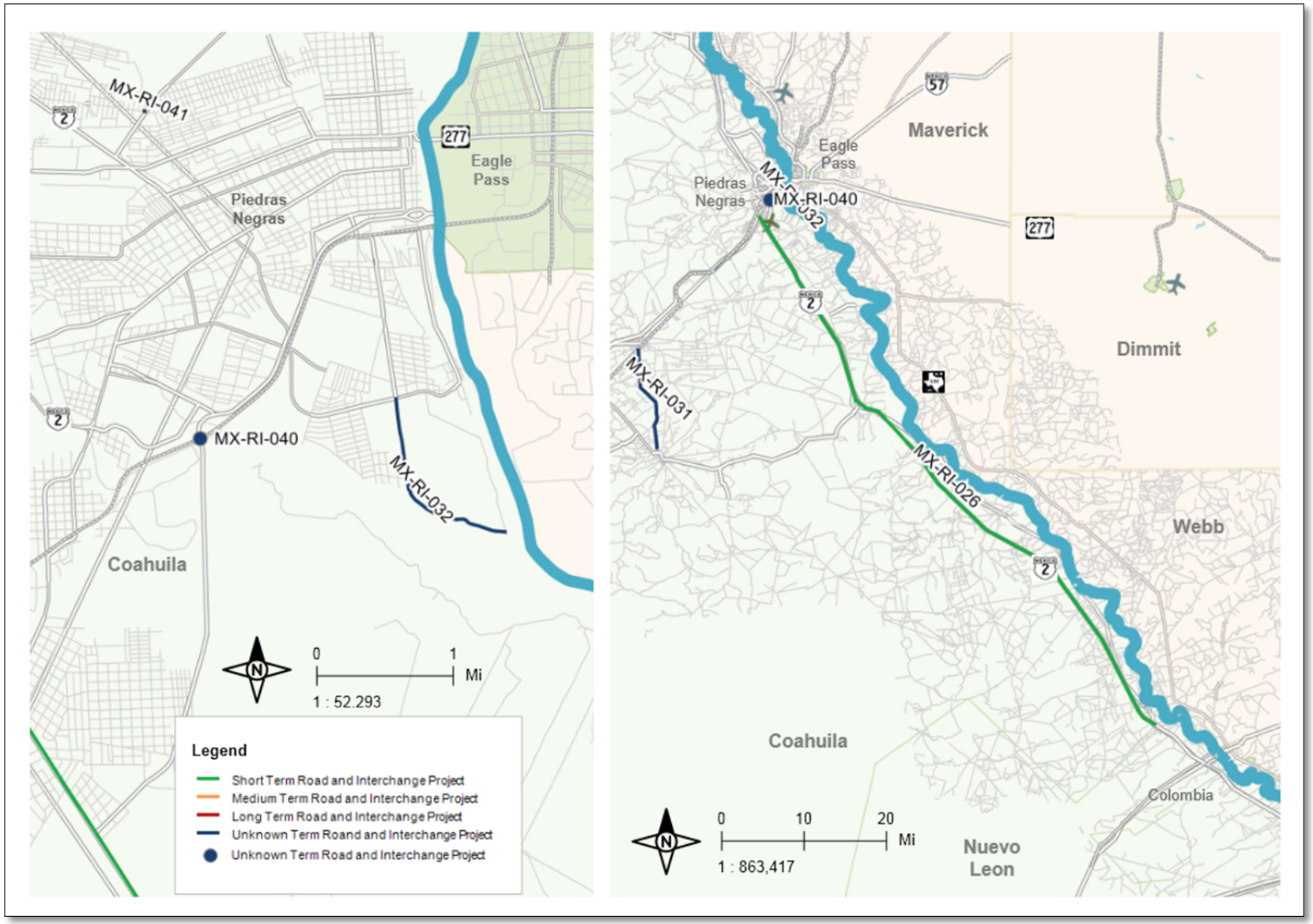



*Figure 5.21: Coahuila Road and Interchange Project Locations*

### 5.8.3 Coahuila Rail Projects

Two rail projects were identified in the State of Coahuila. Both projects serve the Piedras Negras POE. The rankings of the two rail projects are provided in Table 5.20. From Table 5.20, it is evident that Project MX-RR-004, which comprises the widening/ expansion of the Río Escondido Rail yard from seven to 15 rail tracks, is the 2nd highest ranked Mexican rail project in the study area. This project will allow for an almost tripling of the number of rail cars that can be handled, thereby improving the efficiency of rail operations in the region. The 3rd rank Mexican rail project - Project MX-RR-005 – comprises the construction of a second rail track between the Río Escondido Rail Yard and the Piedras Negras POE. This project will allow for an increase in the number of rail cars that can be moved in the corridor, thereby also improving the efficiency of rail operations in the area. Figure 5.22 shows the locations of the rail projects in the State of Coahuila. For information on the scoring of the planned rail projects the reader is referred to Appendix I.

**Table 5.20: Coahuila Rail Projects**

| Term | Project ID/CSJ | Owner | Project Description | Estimated Cost ($2010) | Project Ranking* |
|---|---|---|---|---|---|
| Unknown | MX-RR-004 | FERROMEX | Widening/Expansion of Río Escondido Rail Yard from 7 to 15 rail tracks | $15,000,000 | 2 |
| Unknown | MX-RR-005 | FERROMEX | Construction of a second track between Río Escondido Rail Yard and Piedras Negras POE | - | 3 |

* Ranking out of five Mexican rail projects

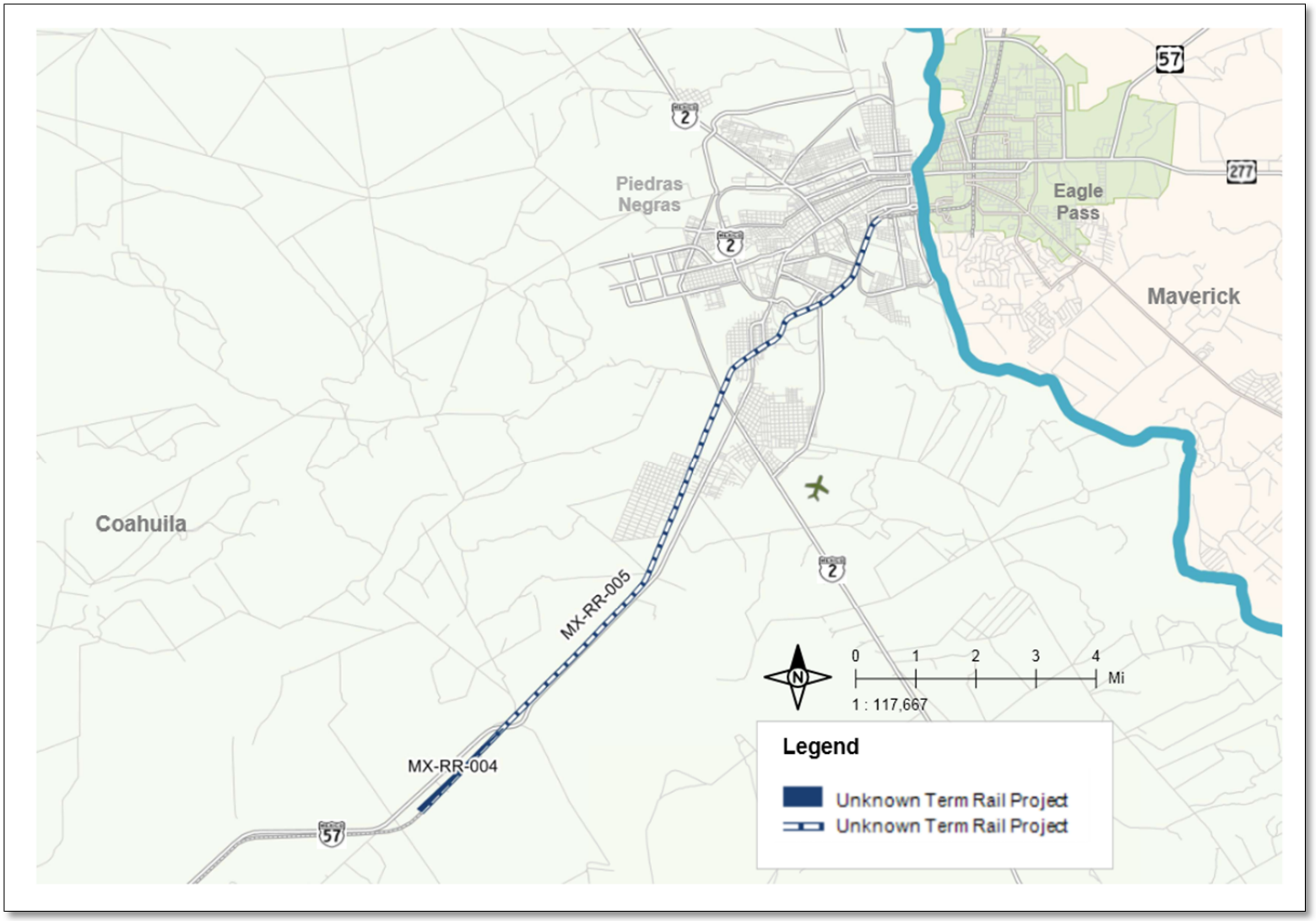



*Figure 5.22: Coahuila Rail Project Locations*

## 5.9 Summary and Conclusions

The ranking/prioritization of the planned POE, road and interchange, and rail projects revealed substantial alignment among the top ranked projects in the study area. This is evident from the fact that the highest priority POE, road and interchange, and rail projects on both sides of the border are the new proposed road and rail bridge – i.e., Project 4-5 – and the access roads to the proposed Bridge. The completion of Project 4-5 is anticipated to divert a substantial share of the commercial truck and rail traffic from the existing Laredo/Nuevo Laredo bridges; thereby alleviating congestion in the downtown areas of Laredo and Nuevo Laredo. The highest priority road and interchange projects provide access to the proposed Bridge. The highest ranked U.S. road and interchange project is the access road that will connect the proposed Bridge to US-83. The highest ranked Mexican road and interchange project connects south-east Nuevo Laredo to Mex II and Mex-85. Similarly, the planned rail tracks that provide access to the proposed rail bridge (Project 4-5) were the highest ranked rail projects on both sides of the border. Also, it is evident from the project rankings that many of the high priority projects represent investments in the major trade corridors that traverse the study area – i.e., IH-35, US-83, and US-277, which is a component of the Ports-to-Plains corridor, in the U.S. and Mex II in Mexico.

It is however, necessary to highlight that very detailed information were available for all of the top ranked projects (see Appendix I). Unfortunately data were not available for many projects. This resulted in many projects – especially on the Mexican side – not being ranked. The study team included these projects in the Tables provided to illustrate the needs in the area. Also, as data become available in the future, the data can be used to rank these planned projects in future updates of the Laredo – Coahuila/Nuevo León/Tamaulipas Border Master Plan.

# Chapter 6. Recommendations for Binational Border Master Planning

The Laredo-Coahuila/Nuevo León/Tamaulipas Border Master Plan (Border Master Plan) was the second binational effort on the U.S.-Mexico border. The study team followed a similar approach as the California-Baja California Border Master Plan that was completed in September 2008 and is currently being updated. The development of Border Master Plans is important for identifying and prioritizing planned projects on the U.S.-Mexico border. Border Master Plans thus aim to (a) identify binational POE and multi-modal project priorities, (b) secure commitment from stakeholders to implement priority projects, and (c) ensure continued dialogue among agencies in moving forward. This Chapter summarizes the lessons learned in the development of the 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.

## 6.1 Lessons Learned

In essence, there are two requirements for the successful development of Border Master Plans:

- stakeholder participation and commitment, and
- adequate technical data/information

### 6.1.1 Stakeholder Participation

More than 150 stakeholders from 50 agencies at the U.S. and Mexico federal, state, county/municipal, and city levels, five railroad companies, and 14 Border Partners (represented by 22 participants) participated in the development of the Border Master Plan. Similar to the California-Baja California Border Master Plan, stakeholder participation were obtained through the formation of two committees: Policy Advisory Committee and Technical Working Group.

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 secured stakeholder participation in and commitment to the development of the Border Master Plan by:

- maintaining an updated contact list,
- hosting regular meetings, and
- using technology and an innovative approach to provide each stakeholder agency with an "equal voice" in determining the criteria and criteria weights that were 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 updated on a monthly basis with any 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 objectives of and the study team's progress-to-date in developing the Border Master Plan.

The study team hosted *seven stakeholder meetings* in different cities in the study area over the course of the study period (see Appendix D). To accommodate stakeholders that are not bilingual it is imperative that simultaneous translation is available at all the stakeholder meetings.

Since the prioritization of planned projects can be sensitive and contentious, it was imperative to design a stakeholder agency involvement process that is inclusive and ensure the participation of all agencies responsible for the planning, programming, construction, and or management of POE projects and the transportation infrastructure serving those POEs. Furthermore, it was critical to the endorsement of the Border Master Plan and to ensure commitment to the implementation of the Border Master Plan's priorities that a process be developed that provide each stakeholder agency with an "equal voice" in selecting the criteria and criteria weights that were used for project prioritization.

The study team adopted a Delphi type process to reach consensus on the category, category weights, criteria, and criteria weights used for project prioritization. Classroom Performance System (CPS) technology – i.e., i>Clickers – allowed for anonymous voting and facilitated the reaching of consensus. The process worked as follows. The stakeholders were provided with a voting device (i>Clicker) that allowed them to rank the importance of 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 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 subsequently asked to vote again and the process continued until consensus was reached or until the voting results did not change from one round to the next. This approach allowed all stakeholder agencies to participate in the selection of the categories, category weights, criteria, and criteria weights.

### 6.1.2 Technical Data/Information

Fairly 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 allow 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 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.

Similar to the California-Baja California Border Master Plan, 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 the study team collected similar descriptive and performance data for 2008 and used the Average Annual Daily Traffic (AADT) growth rates to estimate facility usage and the Level of Service (LOS) by 2035. Specifically, the study team collected information about the location of the roads, lengths, number of lanes, AADT, and share of truck traffic. Current and anticipated LOS were calculated using methods defined by the *Highway Capacity Manual* and data provided by TxDOT or determined from analysis published in the *Laredo 2010-2035 Metropolitan Transportation Plan*. For the existing POEs, the study team developed a detailed inventory of the bridges, that included descriptions of the current facilities, hours of operation, crossing and transportation volumes by traffic type (i.e., pedestrians, trucks, trains, and buses), toll rates levied, and primary transportation facilities serving the POEs.

In addition, the following technical data were collected for the planned transportation facilities: project location, current facility and planned improvements, LOS, AADT before and after project completion (2035), accident rate, direct or indirect linkage to POE, truck volumes or share, year the project becomes operational, current phase of the project, cost data and funding status, and a qualitative assessment of the environmental, community, and economic benefits of the project. For planned rail projects, technical data collected include: project location, current facility and planned improvement, anticipated change in number and/or length of tracks, daily train traffic and number of cars before and after project completion (2035), accident rate, year the project becomes operational, current phase of the project, cost data and funding status, and a qualitative assessment of the environmental, community, and economic benefits of the project. For the planned POE projects, the study team collected the following technical data: project description, the 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 environmental, community, and economic benefits of the project.

In addition, the criteria endorsed by the PAC required the collection of additional data and information. For POE projects, additional data and information that described the planned projects were needed as follows: secure lanes, wait times, alleviate congestion locally and elsewhere, changes in modes served, land availability, diversion of hazmat, binational coordination, diversion of commercial traffic/ separation by traffic type, and modal diversion. For the road and interchange projects, the following additional data and information were needed: alleviate congestion locally and elsewhere, multiple mode demand, land availability, diversion of hazmat, and modal diversion. Finally, for rail projects, additional data and information were needed on: average travel speed, alleviates congestion locally, changes in modes served, multiple mode demand, land availability, diversion of hazmat, and modal diversion.

There is a bias in the prioritization process towards projects for which data is submitted. In other words, projects for which limited information were available received lower scores and were ranked lower than projects for which comprehensive information on each criterion were received. Specifically, a lack of sufficient data and information impacted the Border Master Plan priorities as follows:

- A number of criteria were selected for project prioritization for which limited or no information were available. For example, roadway and interchange project criteria for which limited or no information were available and the overall contribution of these criteria to the total project score was as follows: Modal Diversion (2.25%), Multiple Mode Demand (7.59%), Alleviates Congestion Elsewhere (4.5%), Environmental Impacts (6.75%), and Socio-Economic Impacts (6.0%).
- Very limited information was available for the planned Mexican projects, which prevented the development of a list of binational project priorities – rather the projects were prioritized for the U.S. and Mexico separately.
- For roadway and interchange projects, the LOS criteria accounted for 4.265 % of the total score. LOS data were not provided by stakeholders and thus were calculated by the study team, where possible, using methods outlined by the Highway Capacity Manual (HCM). For freeways and highways, LOS could be determined from readily available information on road volumes and capacity data. However, for urban arterials with free-flow speeds less than 45 mph, the HCM requires that the LOS be

based on maneuverability, delays, and speeds as these factors are heavily influenced at signalized intersections where green and red time allocations determine the capacity of the arterial. Higher traffic volumes result in an increase in the probability of vehicles stopping at an intersection, thus leading to a decrease in LOS. Without data for the green time allocation at intersections on these arterials, the study team could not accurately determine the volume to capacity ratios of the urban arterials. In another method outlined by the HCM average travel speeds can be used to estimate LOS. Since average travel speed information was unavailable, posted speeds were used, where available, to determine LOS. Posted speeds may; however, not reflect the actual LOS on a roadway. For the Mexican road and interchange projects, LOS could not be calculated because of a lack of data.

## 6.2 Institutionalizing the Dialogue

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. However, it is recommended that the Border Master Plan be updated given major changes in the content of the Border Master Plan. For example, if a number of priority projects have been completed or if a number of planned initiatives have emerged since the Border Master Plan was developed. 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 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 of the Border Master Plan. Similarly, the PAC will determine the need for a comprehensive update to the plan. The latter would involve revisiting the forecasted year, the geographic boundaries of the study area, the socio-economic data, cross-border travel demand changes, and re-visiting the criteria that were used to prioritize projects. Finally, it is recommended that a representative of the PAC make regular informative presentations to the JWC regarding the need to update the existing Border Master Plan or progress with the updates of the Border Master Plan.

## 6.3 Recommendations

The study team offers the following observations and recommendations for consideration in the development of future Border Master Plans and updates of Border Master Plans:

- A number of U.S. States on the southern border are investing in the development of Border Master Plans. To remain a viable planning tool, the development of these Border Master Plans has aimed to reflect the different region's needs, interests, and priorities. However, if the ultimate goal is to establish U.S.-Mexico project priorities, it is recommended that a similar – although not necessarily the same – approach be followed in the development of these Border Master Plans.
- Border Master Plans currently provide detailed inventories of planned project priorities in a study area. Two enhancements to the current scope of work should be considered: identify funding opportunities for high priority projects in the study area and development of technical tools to evaluate the potential impact of investments. The need for the former has been repeated by a number of stakeholders that participated in the development of the Laredo-Coahuila/Nuevo León/Tamaulipas

Border Master Plan. Secondly, the feasibility of developing technical tools to determine how investment in a specific project would impact demand for other projects should be determined. For example, the implementation of some of the high priority projects identified could potentially reduce the need for or delay the need for implementing some of the other high priority projects. As currently conducted, Border Master Plans do not evaluate the impact of an investment in specific projects on the crossings or traffic in the region.

- Ensure participation by actively reaching out to stakeholders, keeping stakeholders engaged in the development of Border Master Plans, ensuring a process where every stakeholder has an equal voice in the selection of the criteria that will be used to prioritize projects, and by ensuring that all reports and information disseminated are available in English and Spanish. Ultimately; however, continued support for the development of the Border Master Plans will only prevail if results can be demonstrated – i.e., the securing of funding and the implementation of the identified high priority projects.