

Chapter 1. Introduction

Border master plans—as defined and supported by the U.S./Mexico Joint Working Committee (JWC)¹ on Transportation Planning and Programming, the Federal Highway Administration (FHWA), and the U.S. Department of State (USDOS)—are comprehensive, binational long-range plans² to:

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

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

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

1.1 Purpose of Study

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

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

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

1.2 Decision-Making Structure

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

The PAC’s mandate is to:

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

The TWG’s mandate is to:

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

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

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

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

1.3 Scope of Work

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

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

The purpose of Phase I was to determine whether there was sufficient stakeholder support to develop the Border Master Plan. Table 1.1 provides a summary of the support expressed by the stakeholder agencies and rail companies contacted as of August 29, 2011 (the end of Phase I). Although not every agency contacted verbalized their support, none of the agencies or the stakeholders contacted expressed any

opposition to the development of the Border Master Plan or asked to be removed from the contact list, which would indicate their refusal to participate in the development of the Border Master Plan.

Table 1.1: Support Expressed by Stakeholders—Phase I

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

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

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

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

1.4 Stakeholder Participation

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

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

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

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

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

1.5 Definition of Planning Horizons and Study Area

1.5.1 Planning Horizons

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

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

1.5.2 Study Area

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

Area of Influence

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

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

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

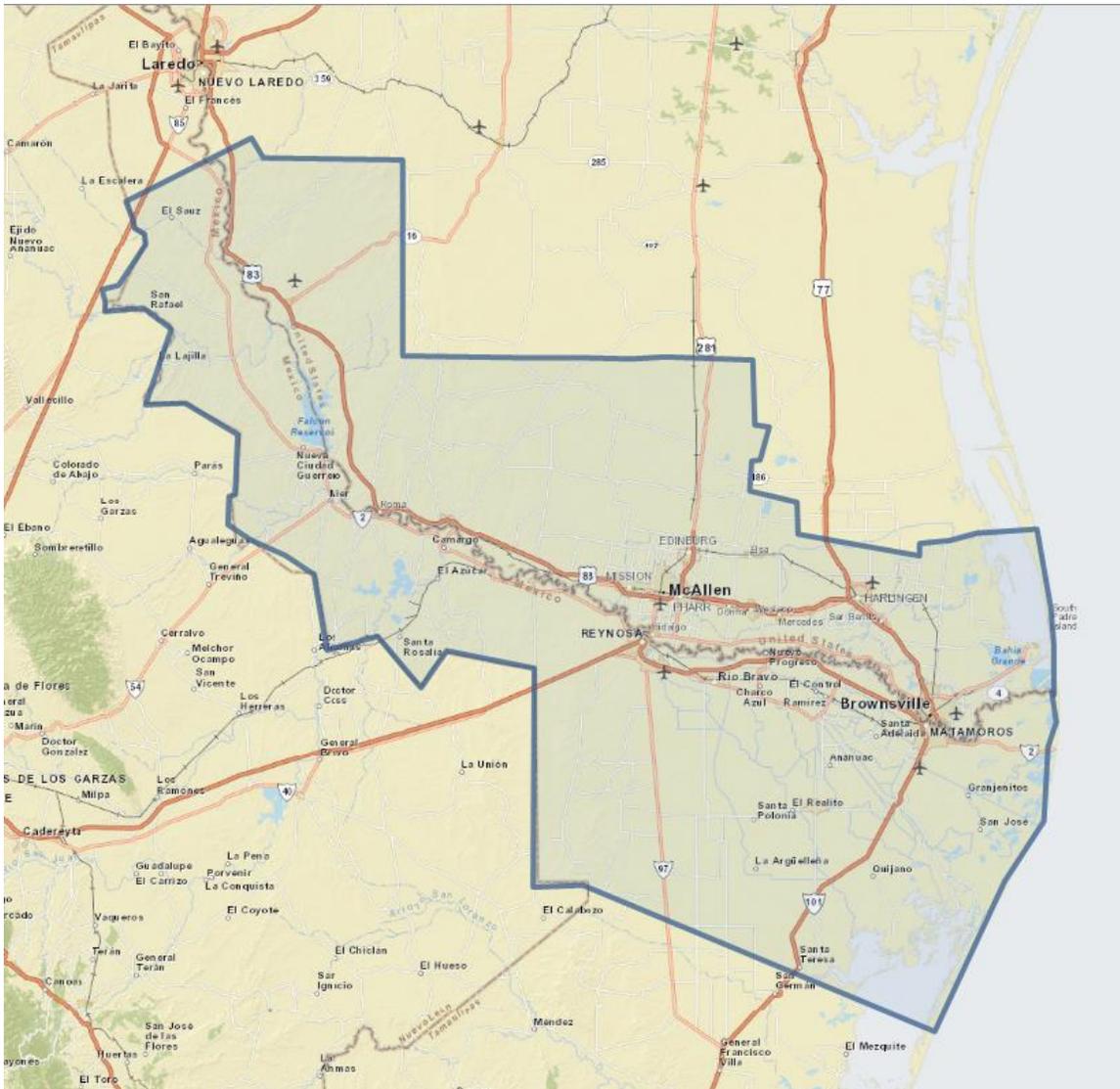


Figure 1.1: Area of Influence

Focused Study Area

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

demographic and socio-economic data reflect the latest available data (e.g., 2010 Census data).

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

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

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

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

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

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

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

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

1.7 Reaching Consensus

Two objectives of the Border Master Plan were to:

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

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

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

1.8 Organization of the Report

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

Chapter 3 provides an overview of the current and projected demographic and socio-economic information obtained for the Lower Rio Grande Valley–Tamaulipas Area of Influence. The chapter summarizes available population, employment, income,

and land use data for this area. This chapter also includes salient information on major trade corridors that traverse the Area of Influence.

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

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

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

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- ¹ The U.S./Mexico Joint Working Committee is a binational group whose primary focus is cooperating on land transportation planning and the facilitation of efficient, safe, and economic cross-border transportation movements. The group is chaired by the U.S. Federal Highway Administration and the Mexican Secretariat of Communications and Transportation.
 - ² Border master plans have been largely infrastructure plans and therefore have not considered operational improvements, such as an increase in port-of-entry staffing levels, which are ultimately a major factor in the capacity of ports of entry.
 - ³ The study team did not perform separate feasibility studies for the project proposals forwarded by the TWG.
 - ⁴ The study team struggled to establish contact with high-ranking officials at the border municipalities. The low figure given for expressed support (32 percent) is thus attributable to the study team being unable to reach these high-ranking officials rather than a reflection of the expressed support from the Tamaulipas stakeholders.