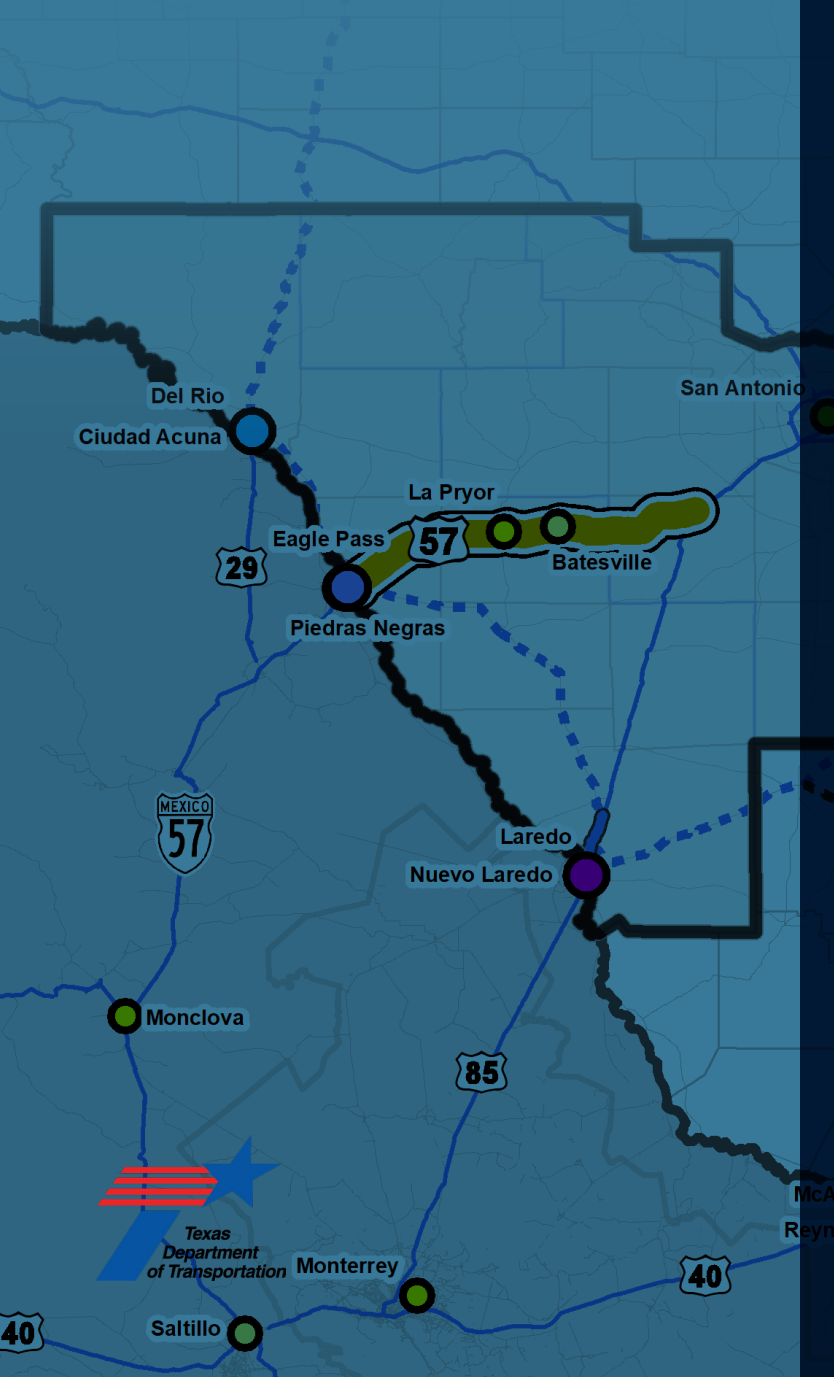
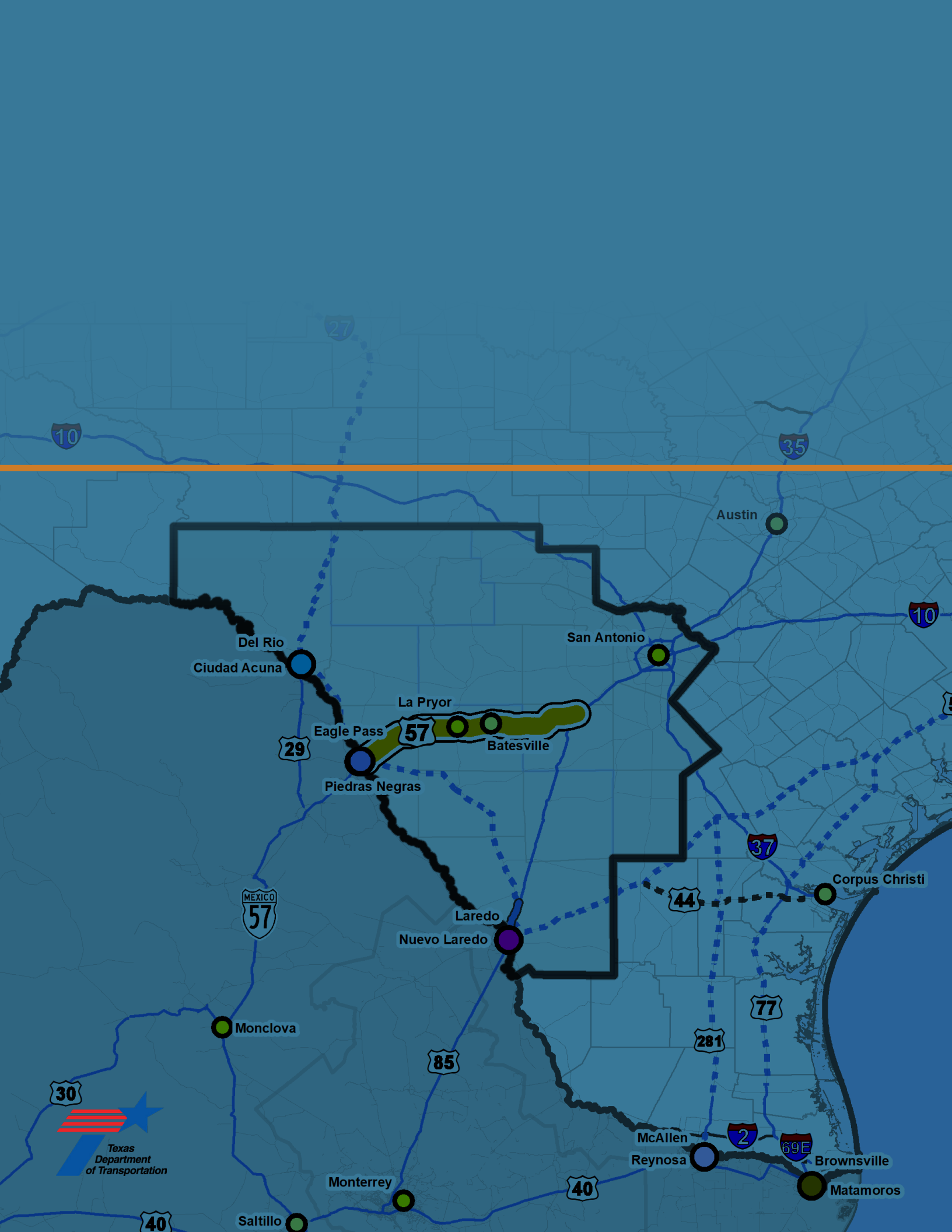
US 57 CORRIDOR INTERSTATE FEASIBILITY STUDY

JANUARY 2023

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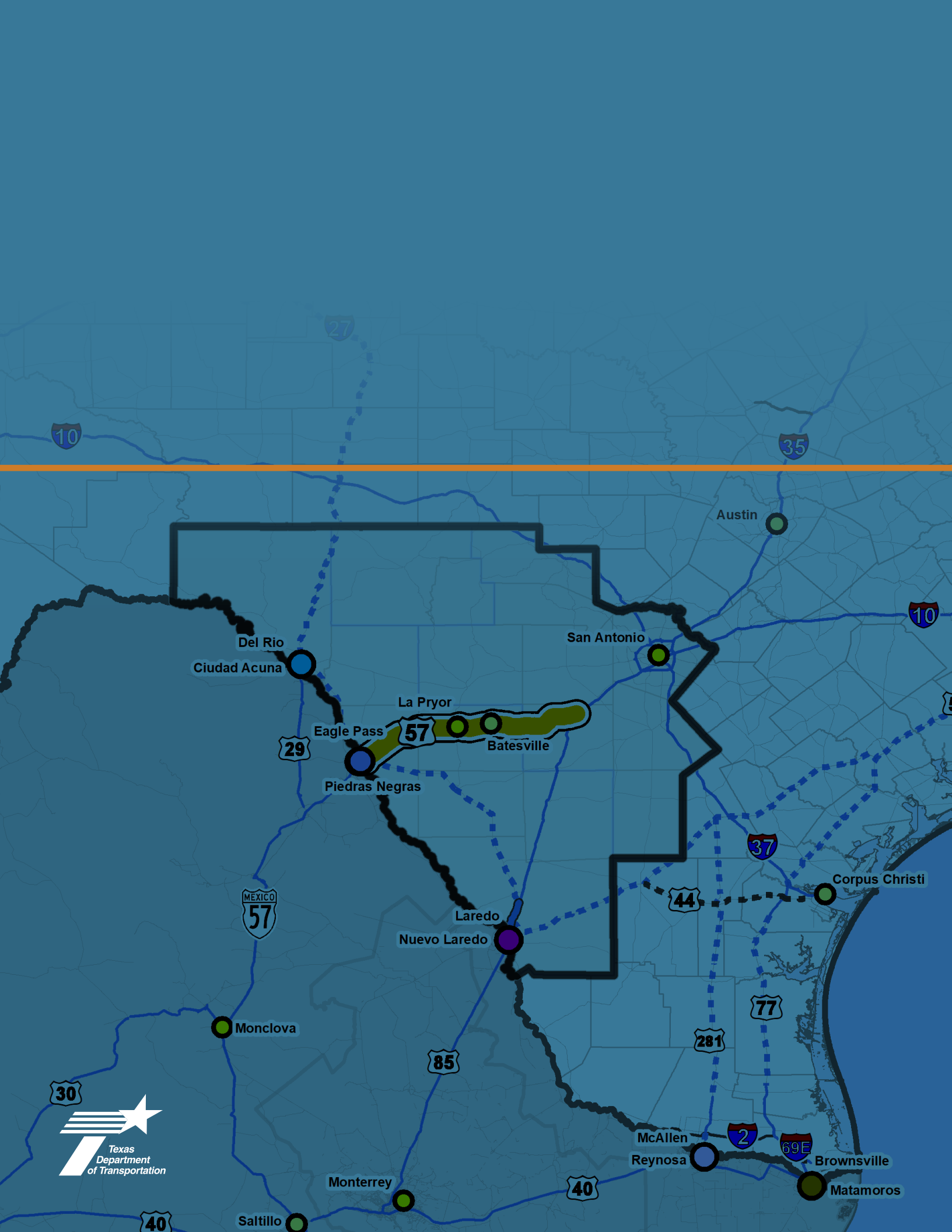
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Chapter 1

INTRODUCTION

1.1 CORRIDOR OVERVIEW

This Corridor Interstate Feasibility Study highlights information for the 98-mile US Route 57 that begins at the U.S.-Mexico border crossing in Eagle Pass, TX (Eagle Pass-Piedras Negras International Bridge and Camino Real International Bridge, Port Code 2303) east to the terminus at I-35, 43 miles southwest of San Antonio, TX (**Figure 1.1**). Within Texas, the US 57 corridor traverses three counties (Maverick, Zavala, and Frio) and two TxDOT Districts (Laredo and San Antonio). The alignment of US 57 passes through three municipal agencies (Eagle Pass, La Pryor, and Batesville). US 57 is classified as a Principal Arterial and is on both the federal Primary Highway Freight System (PHFS) and the TxDOT Highway Freight Network (THFN). Eagle Pass is one of two southern ports of entry without direct access to an interstate highway.[1]

US 57 is a rural two-lane and super 2 highway for most of the corridor. It switches back and forth between two eastbound lanes with a single westbound lane and two westbound lanes with a single eastbound lane from the center of Maverick County approximately 0.5 miles east of FM 481 east to I-35. On the western side of the corridor in Eagle Pass, US 57 intersects US 277. US 57 intersects US 83 in La Pryor. Several Farm to Market roads and Ranch Roads cross US 57 or branch off from US 57 along the corridor's alignment (FM 481, FM 117 in Batesville, RR 187 in Batesville, FM 140, and FM 3352).

1.1.1. US 57 IN EAGLE PASS

The US 57 alignment begins at the Eagle Pass-Piedras Negras International Bridge I (herein referred to as "Bridge I") near Ryan St. and E Garrison St. in Eagle Pass. From there, US 57 heads east and merges into Main St. after approximately 1.5 miles. After 0.5 miles, the shared US 57/Main St alignment connects to US 277 and parallels the existing US 277 route for 0.7 miles. US 57 then branches off from US 277 and heads north-northeast, where it intersects State Highway Loop 480 ("SL 480") after 2.8 miles.

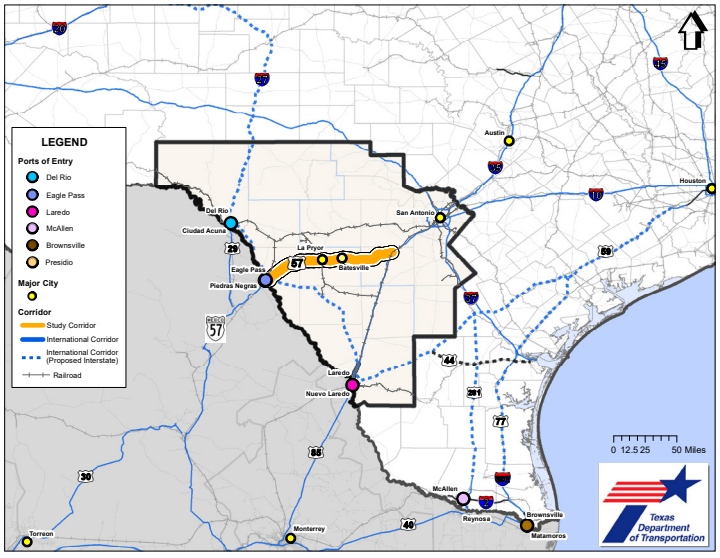

Figure 1.1 - US 57 Study Area

[1]TxDOT; Ports-to-Plains Corridor Interstate Feasibility Study, Segment 3 Committee Report, June 30, 2020; Page 3 of 179; https://ftp.txdot.gov/pub/txdot/get-involved/statewide/ports-plains/seg%20mtgs/070120-seg3-committe-report.pdf

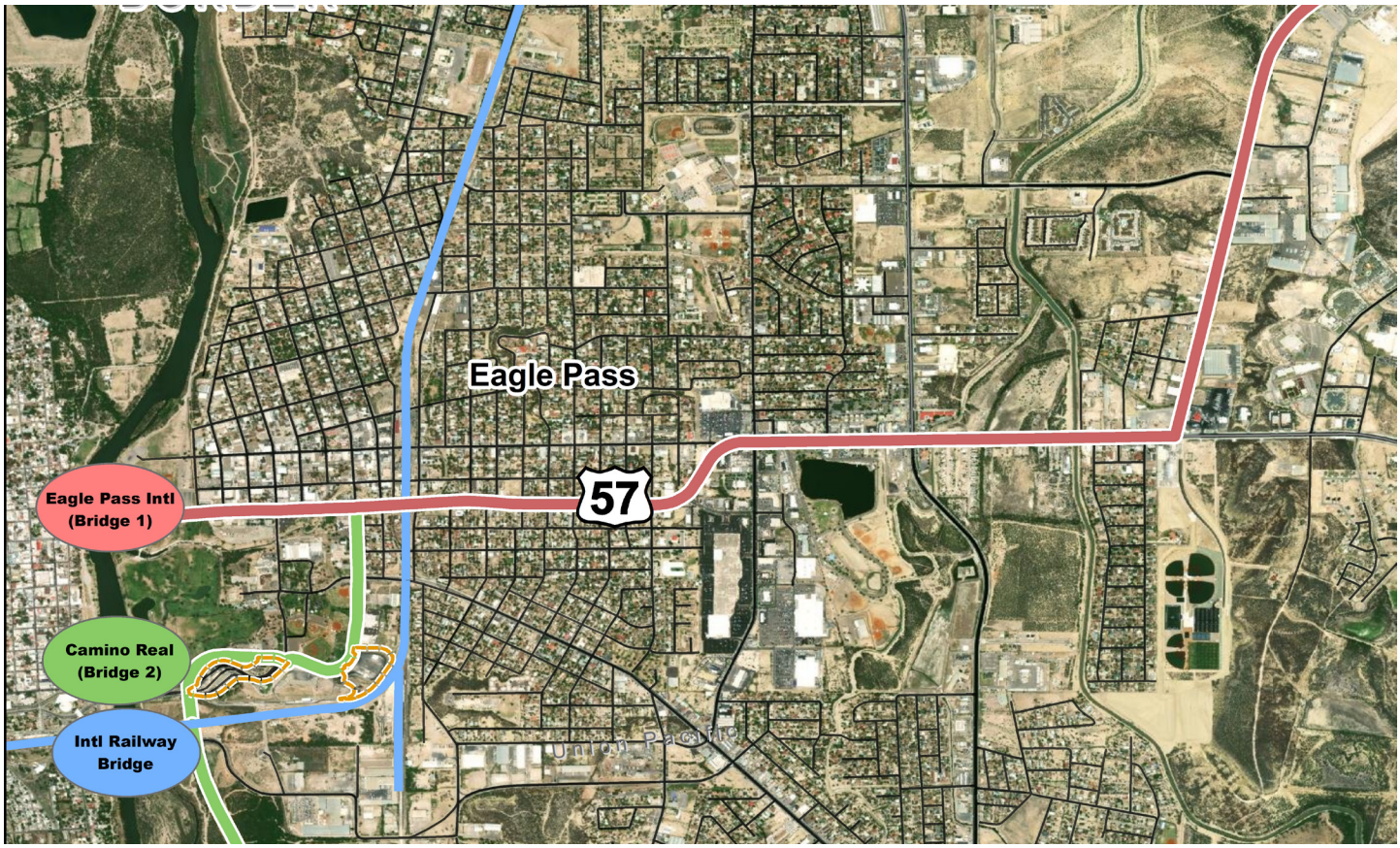

Figure 1.2 - US 57 Eagle Pass Alignment (shown in red)

The US 57 typical roadway section in Eagle Pass is a five-lane undivided roadway, with the center lane serving as a two-way left-turn lane mid-block and a dedicated left turn lane at intersections (see **Image 1.1**). US 57 crosses over the UP-BNSF joint-use tracks less than one mile from Bridge I (see **Image 1.2**). Bridge I serves as a pedestrian and passenger vehicle border crossing. Bridge II serves as a pedestrian, passenger vehicle, and commercial motor vehicle (CMV) border crossing. Additional details regarding specifics about each of the border crossing structures are provided in this study.

Currently, US 57 connects to the Bridge II crossing via Monroe St. and Adams St. After screening by U.S. Customs and Border Protection, CMVs that have crossed Bridge II into the U.S. are directed south along SL 480 along with select vehicles that are screened by Texas Department of Public Safety (DPS) staff.

Image 1.1 - US 57 at Bibb Avenue in Eagle Pass

Image 1.2 - Bridge I in Eagle Pass

1.1.2. SL 480

SL 480 provides a commercial motor vehicle (CMV) relief route from the U.S.-Mexico border to US 57. The existing 11.2-mile SL 480 route shown in green in **Figure 1.3** provides potential future traffic capacity and serves as a commercial truck bypass around Eagle Pass. SL 480 also services many of the border crossing broker warehouses in and around Eagle Pass.

The SL 480 alignment that connects to US 57 is 5.7 miles longer than the more direct US 57 route through downtown Eagle Pass. When factoring in US 57 intersection control delays, reduced speed limits, and peak period congestion within Eagle Pass, the SL 480 route may at times be more efficient than the current US 57 route through the heart of the city. The planned extension of SL 480 to connect to US 277 north of Eagle Pass is shown in **Figure 1.3**. in dashed yellow.

Six miles northeast of the SL 480 and US 57 intersection is a U.S. Interior Border Patrol Checkpoint (see **Image 1.4**). This checkpoint is open 24 hours a day, 7 days a week.

Image 1.3 - SL 480 Outside of Eagle Pass

Image 1.4 - Interior Border Patrol Checkpoint

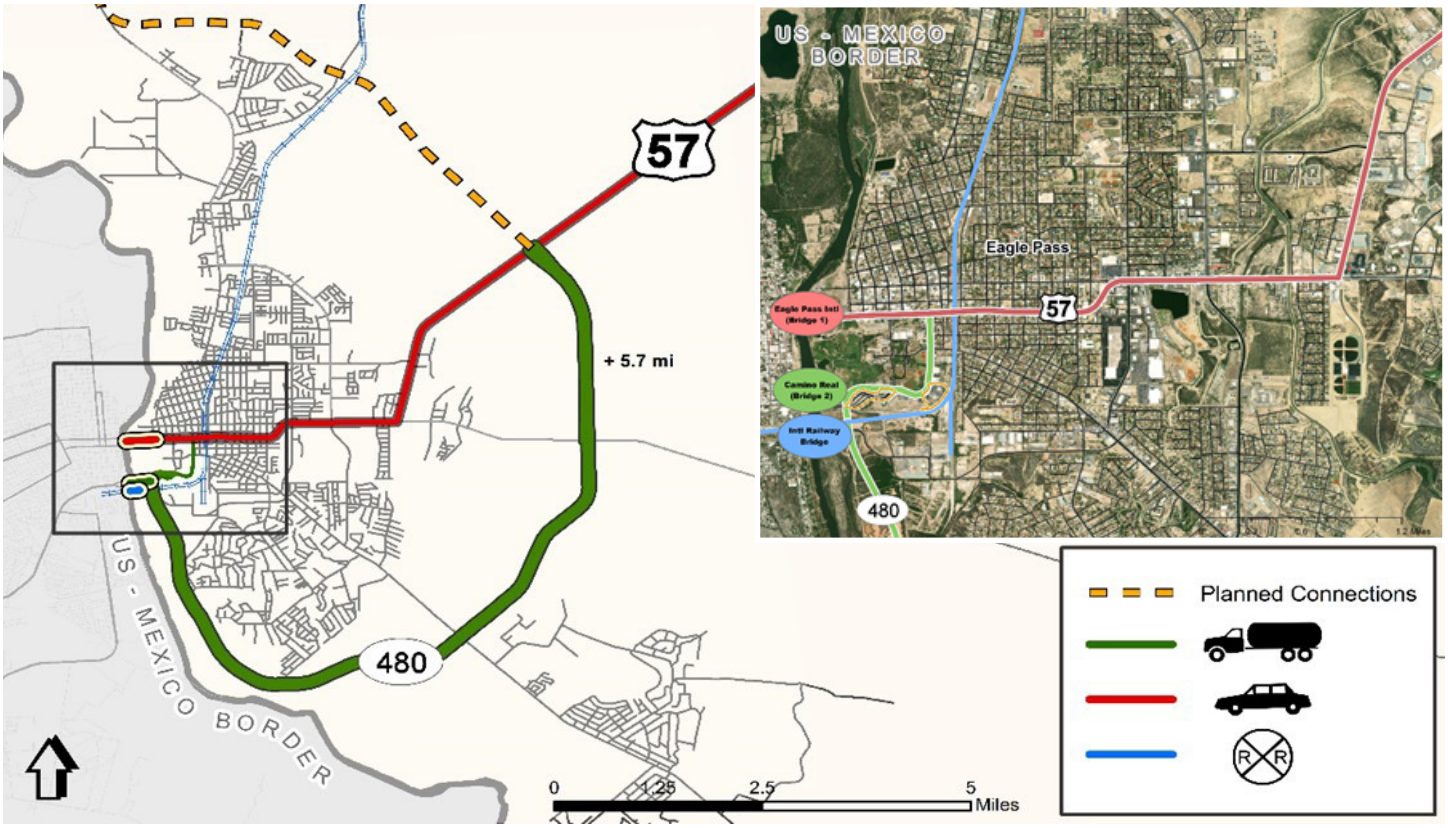

Figure 1.3 - SL 480 Alignment Around Eagle Pass

1.1.3. US 57 IN LA PRYOR, TX

The City of La Pryor is located 46 miles east of Eagle Pass and has a population of approximately 1,500 people. US 57 intersects US 83 on the west side of La Pryor (see **Image 1.7**) and widens to a four-lane roadway section from La Pryor Ave. to the east for approximately ¾ of a mile before transitioning back to a two-lane highway. There are approximately 14 intersections along US 57 within the limits of La Pryor. None of the intersections in La Pryor are signalized, except a flashing beacon at US 83, which operates as an all-way stop-controlled intersection. The standard right-of-way (ROW) width within La Pryor along US 57 is 100 feet.

Image 1.5 - Four-lane US 57 Section in La Pryor

Image 1.6 - Three-lane US 57 Section in La Pryor

Image 1.7 - Westbound US 57 at US 83 Junction in La Pryor

Image 1.8 - US 57 at US 83 Junction in La Pryor (Looking Southeast)

1.1.4. US 57 IN BATESVILLE, TX

The City of Batesville is located 15 miles east of La Pryor (61 miles from Eagle Pass). According to census estimates, Batesville's population is approximately 1,450 people. US 57 intersects FM 117 on the west side of Batesville (See see **Image 1.9**) and expands to a three-lane roadway section to accommodate dedicated left-turn movements for eastbound and westbound US 57 traffic at the junction. There are approximately five intersections along US 57 within the limits of Batesville, none of which are signalized, except for the flashing beacon at FM 117. The junction of US 57 and FM 117 operates as a two-way stop-controlled intersection. From Batesville, it is 38 miles east to the junction of US 57 and I-35 and the eastern limit of the US 57 corridor.

Image 1.9 - City of Batesville Junction of US 57 and FM 117

1.1.5. TYPICAL RURAL US 57 CORRIDOR

The land use along the full limits of the US 57 corridor is primarily rural, except for the three cities noted (Eagle Pass, La Pryor, and Batesville). Existing US 57 is a collection of two-lane undivided, super 2 highway, three-lane, and four-lane undivided roadway sections. Detailed information regarding the existing lane assignments along the corridor is provided in Chapter 2.

Due to the continuity of Mexican Federal Highway 57 across the U.S.-Mexico border, this Study focuses on the US 57 limits within the United States but also highlights existing and forecasted data for how the border crossings and commerce to and from Mexico contributes to future dependence on the US 57 corridor.

Image 1.10 - Rural Section of US 57 Within a Super 2 Section

Image 1.11 - Rural Section of US 57 With a Single Lane in Each Direction

1.2 HISTORY OF US ROUTE 57

In 1933, US Route 57 was designated as Texas State Highway 76. In the mid-1960s, the designation was changed to Highway 57 to align with Mexican Federal Highway 57 across the Texas-Mexico border within Piedras Negras, Coahuila. Even though the US 57 corridor runs predominately east-west, which would typically be designated by an even numbered highway in the United States, it remained "57" to avoid confusion due to the continuation of the Federal Highway route in Mexico. US 57 was commissioned as a United States Highway in 1970[2].

Eagle Pass has been home to a Port of Entry since 1886. Bridge I provides two lanes across the Rio Grande River and was initially built in 1927. The Camino Real International Bridge ("Bridge II") provides six lanes across the Rio Grande River and was constructed in 1999. SL 480 was constructed in 2012 as a freight route around Eagle Pass connecting the Bridge II commercial border crossing to FM 1021 (EL Indio Highway), US 277, and US 57.

Figure 1.4 - Mexican Federal Highway from Piedras Negras to Mexico City

1.3 MEXICAN FEDERAL HIGHWAY 57

Across the U.S.-Mexico border, in the City of Piedras Negras, US 57 turns into Mexican Federal Highway 57 and covers 809 miles from Piedras Negras to Mexico City (see **Figure 1.4**). Due to its centralized location within Mexico and the numerous major highway links it connects to, Federal Highway 57 is known as the "backbone of Mexico's roadway network." Mexican Federal Highway 57 traverses eight Mexican states (Coahuila, Nuevo Leon, San Luis Potosi, Guanajuato, Queretaro, State of Mexico, Hidalgo, and the Federal District), and forms vital connections to major urban areas throughout the northern half of Mexico.

Texas plays a vital role in the U.S.-Mexico import/export relationship. Texas shares 1,254 miles of border with Mexico, or 64% of the total U.S.-Mexico border. The border connects people and facilitates trade between the two countries. Citizens of both countries cross the border each day for work and personal activities. For this Study, the increase in population, employment, and trade will be discussed on both sides of the U.S.-Mexico border.

Eagle Pass and Piedras Negras is in the Laredo/Coahuila/Nuevo Leon/Tamaulipas Region. As one of 32 States of Mexico, Coahuila has a population of over 3 million, with a land mass 1/5 the size of Texas at approximately 58,000 square miles. The capital of Coahuila is Saltillo, which is located 230 miles from Piedras Negras.

[2] https://en.wikipedia.org/wiki/U.S._Route_57

Figure 1.5 - Texas-Mexico Border
Source: Texas-Mexico Border Transportation Master Plan

A future consideration of U.S.-Mexico border crossings is the ongoing increase in Mexican seaports shipping cargo across Mexico in and out of the United States via border crossings in Eagle Pass, Laredo, and beyond. Mazatlan is a seaport on the western coastline of Mexico with a direct roadway network to Piedras Negras and Eagle Pass. The Eagle Pass border crossing has become a more attractive destination for transport trucks in Mexico over recent years due to cartels and organized crime hijacking these types of vehicles in neighboring Mexican states. The Eagle Pass border crossing offers a more direct route to/ from Mazatlan for cargo coming from or going to Mazatlan's seaport avoiding Chihuahua, Nuevo Leon, and Tamaulipas.

Figure 1.6 - Mexico Seaports with Road Transport Connections to Texas

A large portion of Mexican Federal Highway 57 helps form the Pan-American Highway, a continuous highway system from Alaska to Argentina that crosses through 15 countries. The Pan-American highway originated from discussions at the Fifth International Conference of American States in 1923. **Figure 1.7** shows the transcontinental route through North America and South America. Within Mexico, the Pan-American Highway branches off from Mexican Federal Highway 57 near Monterrey and follows Mexican Federal Highway 85 to the US-Mexico border and crosses at Laredo, TX. There are two unofficial routes along the Pan-American Highway within the United States — one follows I-35 to the U.S.-Canada border that crosses south of Thunder Bay, Ontario, Canada, and one that follows I-10 to I-25 to I-90 to I-15 to the Canada border that crosses in Coutts, Alberta, Canada.

Figure 1.7 - Pan-American Highway

1.4 U.S.-MEXICO INTERNATIONAL TRADE IMPLICATIONS

As data has been gathered for the US 57 corridor in 2021 and 2022, there has been additional information provided by U.S. representatives and the Mexican delegation related to the evolving increase of cross-border trade between these two countries. Mexico has experienced an influx in nearshoring, that being the process of transferring a business operation to be closer to the ultimate destination of the goods being produced in preference to a more distant location. Companies producing goods destined for the U.S. that were previously located elsewhere are being established, or re-established, in Mexico due to the proximity of shipping. A recent study by the Texas Center for Border Economic and Enterprise Development (TCBEED) estimates that only 41.5% of Mexican imports that arrive at Texas ports of entry stay in Texas. Meaning that in 2021, more than 50% of Mexican imports arriving at Texas land ports were ultimately shipped to other states (see **Figure 1.8**).

The Texas-Mexico Border Transportation Master Plan published in 2021 provides a holistic approach to document the collaboration between the U.S. and Mexico while identifying the distinctiveness of each border region and each region's unique geographic, trade, economic, and population characteristics. TxDOT's Ports-to-Plains Corridor Interstate Feasibility Study published in 2020 highlights international trade routes between Del Rio and Laredo within its segment 3. Both of the aforementioned TxDOT documents have been sourced in preparation of this Study.

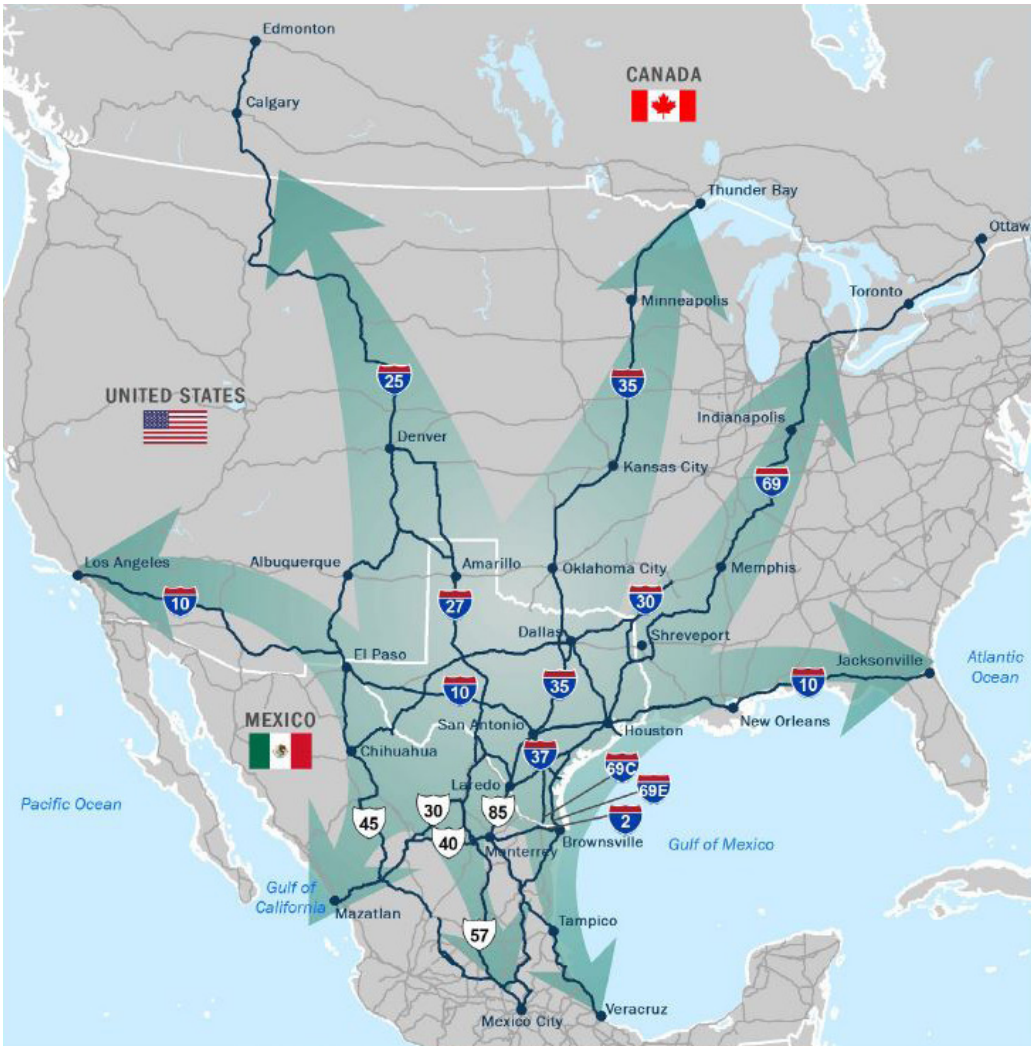

Figure 1.8 - Texas-Mexico Border Transportation Master Plan Graphic
Source: Texas-Mexico Border Transportation Master Plan

[3]Laredo Morning Times, The Texas-Mexico border: An economic powerhouse, May 9, 2022, Daniel Covarrubias.

Support for the enhancement of US 57 in the U.S. as a necessary and viable route for commerce transportation has been shared by Mexican representatives. In July 2022, Mexican representatives hosted a select group of TxDOT employees and TxDOT consultants to provide a tour of various facilities in Coahuila. The study team visited Torreon, Saltillo, and Piedras Negras. This included a meeting with Coahuila Governor Miguel Ángel Riquelme Solís and key stakeholders and consolidated coordination with Mexican partners. The study team visited the Peñoles Mining Company, Chrysler Plant, Daimler Freightliner Plant, General Motors Plant, and Constellation Brands Plant. This visit helped understand the origin of cross-border trade and how freight navigates to the border. The study team observed more demand on the transportation infrastructure in Texas and Mexico due to the impacts of reshoring/nearshoring.

US 57 should be evaluated on both quantitative and qualitative measures. The quantitative measures include the projected growth and use of the corridor by industries located in Coahuila and beyond; safety analysis measures; and the amount of investment that has been pledged for expansion of the freight bridge (Camino Real International Bridge) from six to twelve lanes and the Mexican Federal Highway 57 to bypass towns within Mexico along the alignment. The qualitative measures include the need for connectivity from the Eagle Pass POE to an interstate system in the United States; international freight demand and influence that the US 57 corridor can provide; redundancy for international freight shipping; and equally investing in the corridor for providing a safe and mobile intermodal corridor that serves not only Texas but the entire US.

1.5 LITERATURE REVIEW

The following publications have been reviewed for applicable information that provide relevant facts and data contributing to the enhanced understanding of the US 57 corridor and the interstate upgrade process.

- *A Policy on Design Standards – Interstate System*, May 2016, American Association of State Highway Transportation Officials (AASHTO)
- *Texas-Mexico Border Transportation Master Plan 2021*, March 19, 2021, TxDOT (herein "T-MBTMP")
- *Initial Assessment Report, Extension of I-27/Ports to Plains Corridor*, November 2015, TxDOT
- *Texas-Mexico International Bridges and Border Crossings*, Existing and Proposed 2015, TxDOT
- *Texas-Mexico International Bridges and Border Crossings*, December 2019, TxDOT
- *Interstate Highway System Designation Process*, TEX-21 Virtual Meeting, December 3, 2021, Lorena Echeverria de Misi, P.E., MBA, TxDOT
- *Truck Parking Study: Overview and Recommendations*, Laredo District, April 2020, TxDOT
- *Truck Parking Study: Overview and Recommendations*, San Antonio District, April 2020, TxDOT
- *Texas Freight Mobility Plan 2018*, March 7, 2018, TxDOT "TFMP"
- *Texas Transportation Plan 2050*, June 2020, TxDOT
- *Texas Department of Transportation 2021-2022 Educational Series*, Interstate Highway System Designations, January 2021, TxDOT
- *Ports-to-Plains Corridor Interstate Feasibility Study*, June 2020, TxDOT
- *Eagle Pass*, TX Texas Border Facts
- *U.S. Trade Connection at Eagle Pass Project*, FY 2017 TIGER, October 2017, TxDOT
- *Master Plan for Bridge Crossing Facilities at International Bridge II Eagle Pass*, TX, April 2017, Marmon Mok
- *2020 Eagle Pass Trade Numbers*, World City, ustradenumbers.com

1.6 PURPOSE OF THE CORRIDOR INTERSTATE FEASIBILITY STUDY

The purpose of this Study consists of:

- Evaluate feasibility of converting the US 57 corridor to an interstate facility
- Improve east/west connectivity and capacity while assessing the feasibility of interstate upgrade
- Enhance corridor safety
- Provide consistency with the Texas Freight Mobility Plan and the Strategic Highway Safety Plan
- Support border community development plans and economic opportunities

Tasks associated with this Study includes:

- Define purpose and need to improve US 57
- Existing and forecasted conditions and needs assessment
- Interstate feasibility analysis
- Economic development impacts of the Corridor and cost benefit analysis
- Corridor improvement strategies
- Recommendations
- Implementation plan
- Feasibility Study Final Report

1.7 KEY CORRIDOR CHALLENGES

Key challenges identified early in the drafting of this Study consist of:

- ***The complexity of interstate upgrade***
  Achieving interstate designation in the U.S. is a very stringent process that involves meeting or exceeding specific roadway characteristics, political support, and funding availability to upgrade roadways to fulfill the federal interstate requirements.
- ***Age/deficiency of existing bridge class culverts and bridge structures***
  Many of the existing structures along US 57 are 50+ years old. Dozens of these structures were not designed for current loading requirements and would therefore require complete removal and replacement to comply with the federal interstate requirements.
- ***Heavy increase in cross-border rail trade***
  US 57 will experience a direct affect from the increase in rail traffic across the border in Eagle Pass. Union Pacific, BNSF, Ferromex (Mexico) and other rail corporations rely on the rail crossing in Eagle Pass to move goods internationally. US 57 is a direct route to I-35 toward San Antonio resulting in additional trade routing over the next 30 years and beyond.
- ***Right-of-Way (ROW) limitations***
  To establish a four-lane divided rural interstate roadway section with frontage roads, approximately 330 feet of ROW width is required. This accounts for required lane widths, shoulder widths, median widths, and clear zones as prescribed by the Federal Highway Administration (FHWA) and the United States Department of Transportation (USDOT). However, the required ROW width required can be more than 400 feet when factoring in drainage, ditch capacities, and interchanges.
- ***Considerable number of access points***
  To qualify for interstate designation, a continuous route must provide full control of access, meaning that any connections to or from the main lanes must be facilitated by on-ramps and off-ramps. Driveways, side streets, etc. are not allowed to directly connect to the main lanes of the facility. The US 57 corridor currently has over 250 direct points of access which would need to be removed and replaced by frontage road connections, interchanges, or other grade-separated crossings for US 57 to be considered for an interstate upgrade.

- ***Del Rio border crossing temporary closure re-distributing crossing traffic to Eagle Pass***
  While a temporary condition, the September 2021 closure of the Del Rio-Ciudad Acuna International Bridge crossing brings about the potential need for future re-distribution of traffic along the border between Laredo, TX and Presidio, TX.

1.8. ORGANIZATION OF THE REPORT

This Study has been developed to present existing information regarding US Route 57 as well as relative border crossing information; incorporate various studies, reports, and plans prepared by others that align with this study; provide forecasted conditions of the study area; and provide relevant data outlining the parameters required for US 57 to be considered for interstate upgrade.

The US 57 Study chapters are organized as follows:

- ***Chapter 1: Introduction***
  Provides an overview of the US 57 corridor, the purpose of this Study, and the challenges associated with the corridor.
- ***Chapter 2: Existing Conditions and Needs Assessment***
  Documents the relevant data collection for the US 57 corridor.
- ***Chapter 3: Forecasted Conditions***
  Predicted future characteristics that may result in needs and issues to be addressed for the long-term sustainability of US 57.
- ***Chapter 4: Environmental Documentation***
  Mapping of existing conditions within a 100-foot corridor on both sides of the existing US 57 alignment to identify potential resources that could conflict with an expansion of US 57.
- ***Chapter 5: Interstate Designation Process***
  Documents the regulatory framework, requirements, and process to potentially designate US 57 as an interstate.
- ***Chapter 6: Corridor Interstate Feasibility Analysis and Findings***
  Documents the baseline condition, including data collected for this Study. Compares the baseline condition to the requirements of interstate upgrade to highlight upgrades required for US 57 to meet interstate upgrade requirements. Optional proposed solutions for US 57 are also presented in this chapter in lieu of an interstate upgrade.
- ***Chapter 7: Public Involvement and Stakeholder Engagement***
  Presents the strategy, process, and interaction conducted between the Study team and appropriate stakeholders to ensure that all relevant individuals, groups, and other bodies have been appropriately communicated and coordinated with in preparing the study approach, results, and recommendations for the US 57 corridor.
- ***Chapter 8: Recommendations***
  The Study team's recommended action items resulting from the US 57-collected and -studied corridor data. These include both short-term and long-term recommendations to address existing deficiencies, implement strategic cost-effective solutions for short-term improvements to the corridor, and highlight potential long-term solutions based on a potential future interstate upgrade.

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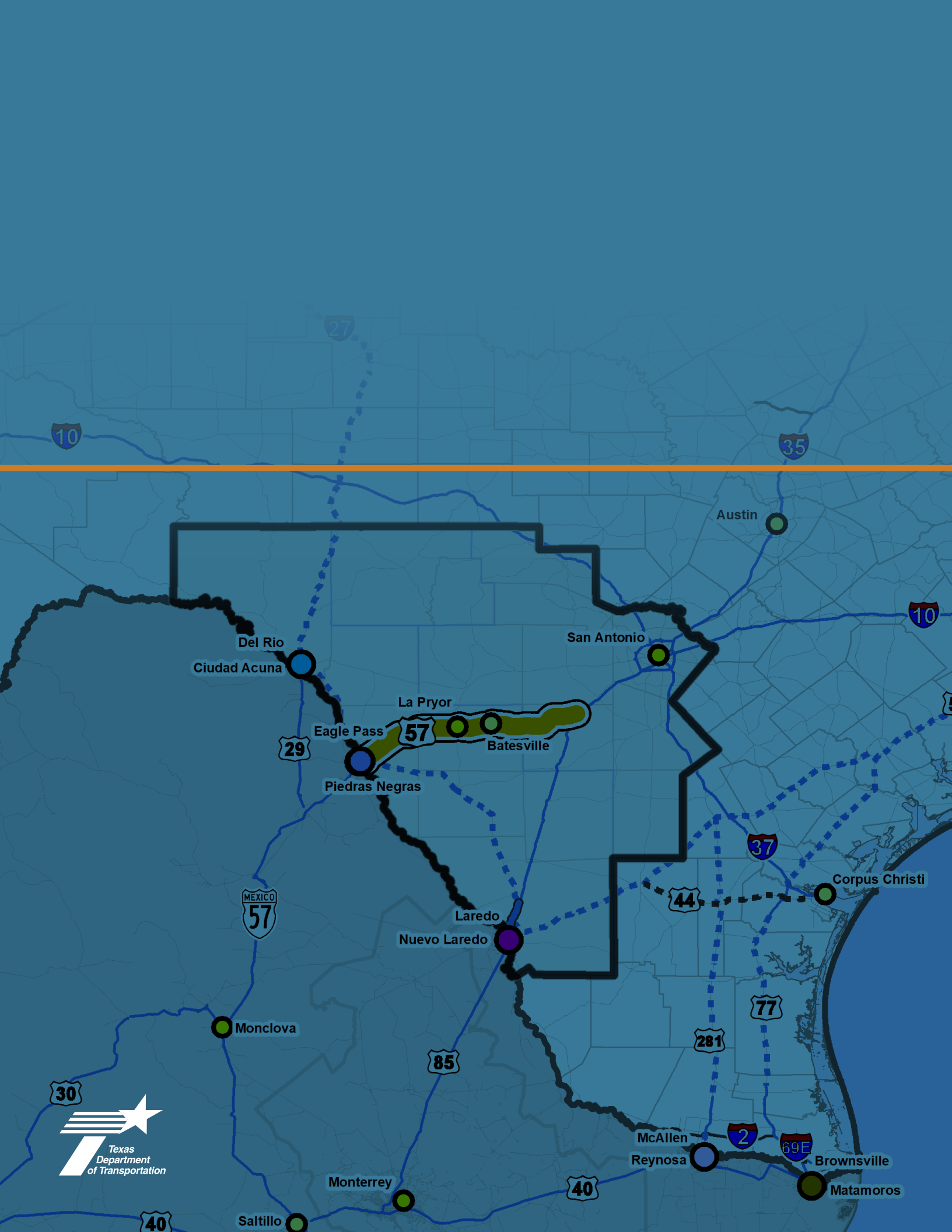
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Chapter 2

EXISTING CONDITIONS AND NEEDS ASSESSMENT

Existing conditions of the US 57 corridor are documented and discussed in this chapter. The Study limits and data collection efforts extend into Mexico and analyze information regarding current border crossing impacts to the US 57 route. Also, with the eastern limits of US 57 terminating at I-35, consideration of existing traffic and roadway geometrics have been analyzed to highlight the interaction between US 57 and I-35, mainly related to interchange traffic operations and geometry.

2.1 CONTROL SECTIONS

The US 57 alignment exists within two TxDOT Districts, the Laredo District and the San Antonio District. TxDOT staff within both Districts were instrumental in providing relevant data collection items to inventory the existing US 57 corridor. Information pertaining to Control-Sections 0300-01, 0276-01, and 0276-02 in Maverick County and Control-Sections 0276-03, 0276-04, and 0276-05 in Zavala County were provided by the TxDOT Laredo District. Information pertaining to Control-Section 0276-07 was provided by the TxDOT San Antonio District. These control section locations are shown in **Figure 2.1**.

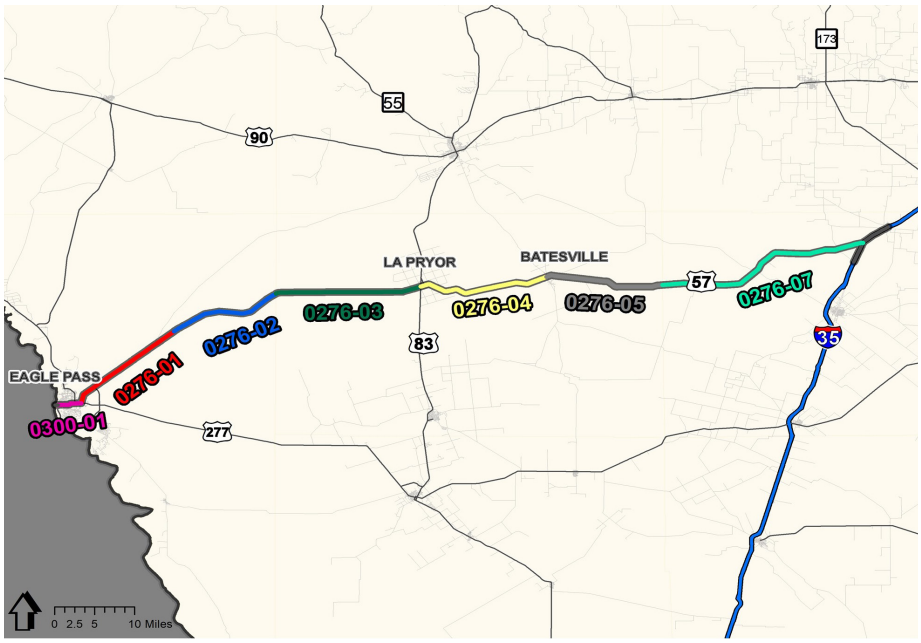


Figure 2.1 - US 57 Control Sections

2.2 POPULATION CHARACTERISTICS

The existing population of the three-county area of the US 57 corridor limits is less than 90,000. The average population of counties in Texas is approximately 114,000. The City of Eagle Pass makes up nearly one-third of the total population of all three counties, with approximately 30,000 persons. As of 2020, Eagle Pass was the 108th-largest city in Texas. Across the U.S.-Mexico border, Piedras Negras is home to over 160,000 people, with the metropolitan area exceeding 250,000 people. It is the third-largest city in the Mexican state of Coahuila.

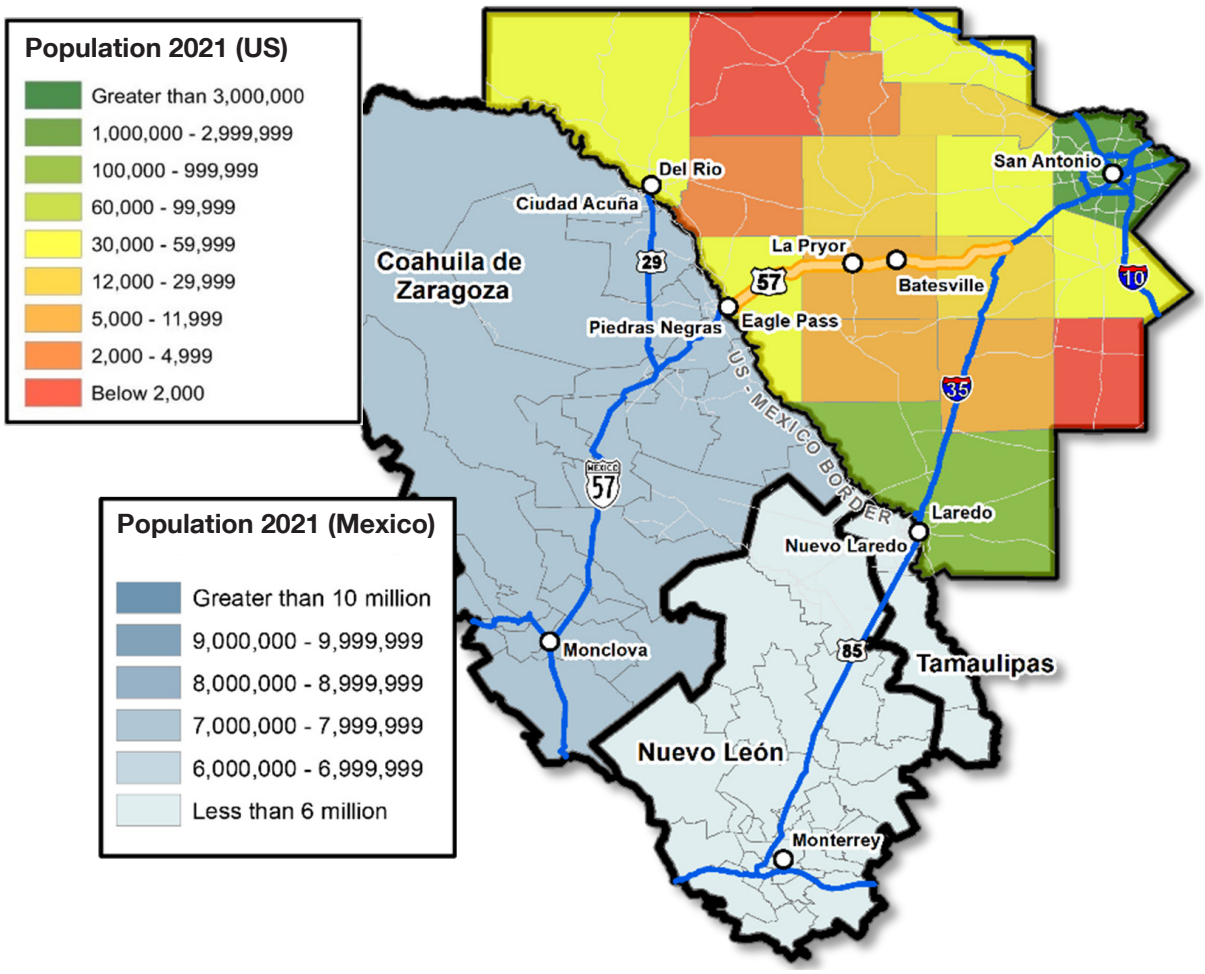


Figure 2.2 - Population of the Study Area, Year 2021 Values

2.3 ECONOMIC CONDITIONS

2.3.1 EMPLOYMENT

In 2021, Maverick County reported employment numbers of 20,821 versus a civilian labor force of 24,494. This equates to a 15 percent unemployment rate. Zavala reported employment numbers of 2,946 versus a labor force of 3,430, for a 14.1 percent unemployment rate. Frio County reported employment numbers of 8,996 versus a labor force of 9,537, for a 5.7 percent unemployment rate. In 2021, the statewide unemployment rate was 7.6 percent.[4]

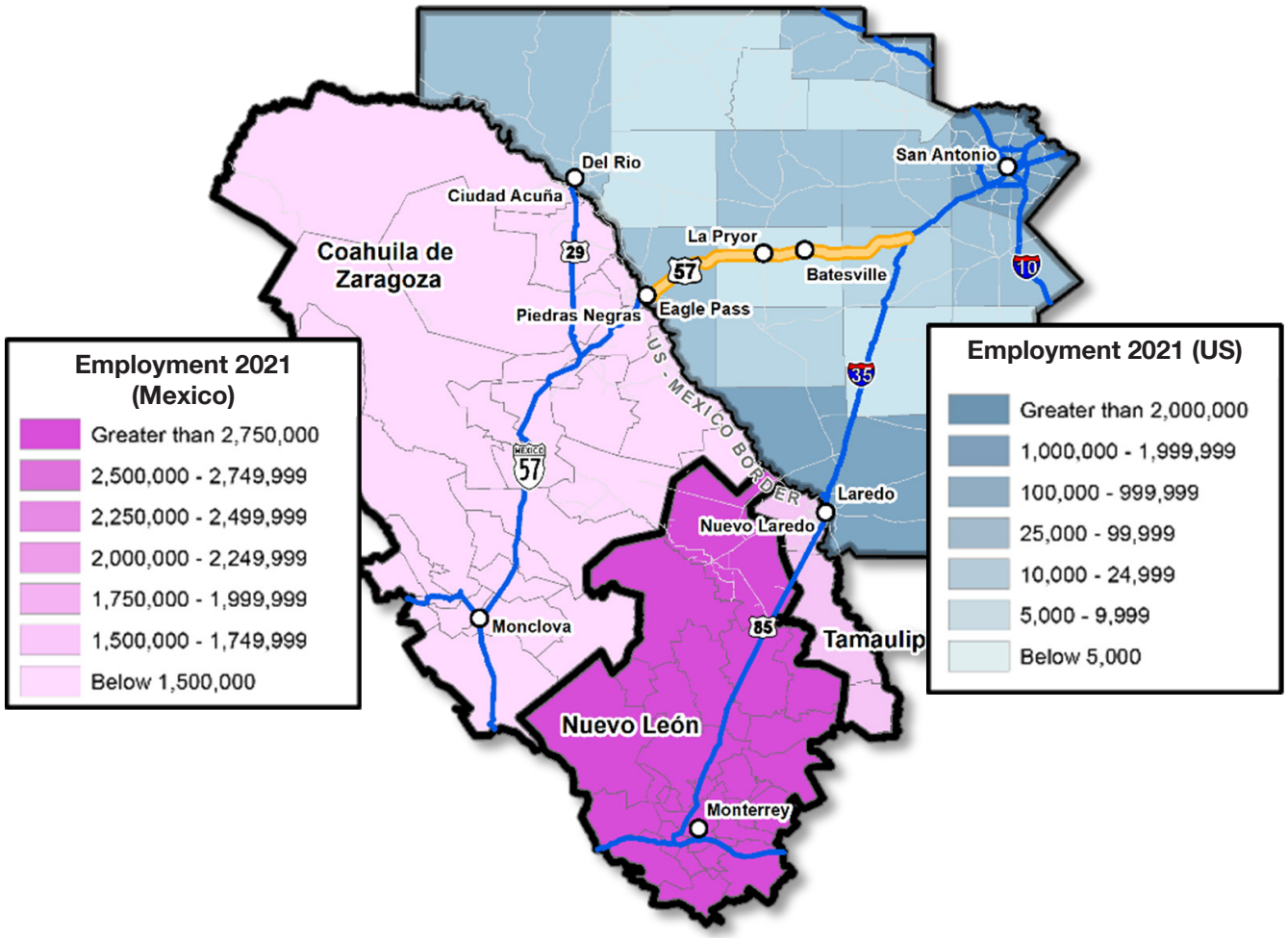


Figure 2.3 - Employment in the Study Area, Year 2021 Values

[4]Texas Workforce Commission; Texas Labor Market Information, Feb 17, 2022, https://texaslmi.com/

2.3.2. GROSS DOMESTIC PRODUCT

The main economic functions contributing to the gross domestic product (GDP) of Maverick, Zavala, and Frio counties consist of:

- Mining, quarrying, and oil and gas extraction;
- Manufacturing;
- Retail trade;
- Transportation and warehousing;
- Finance, insurance, real estate, rental, and leasing; and,
- Government and government enterprises.

The total GDP for all three counties in 2019 was approximately $4.3 billion.

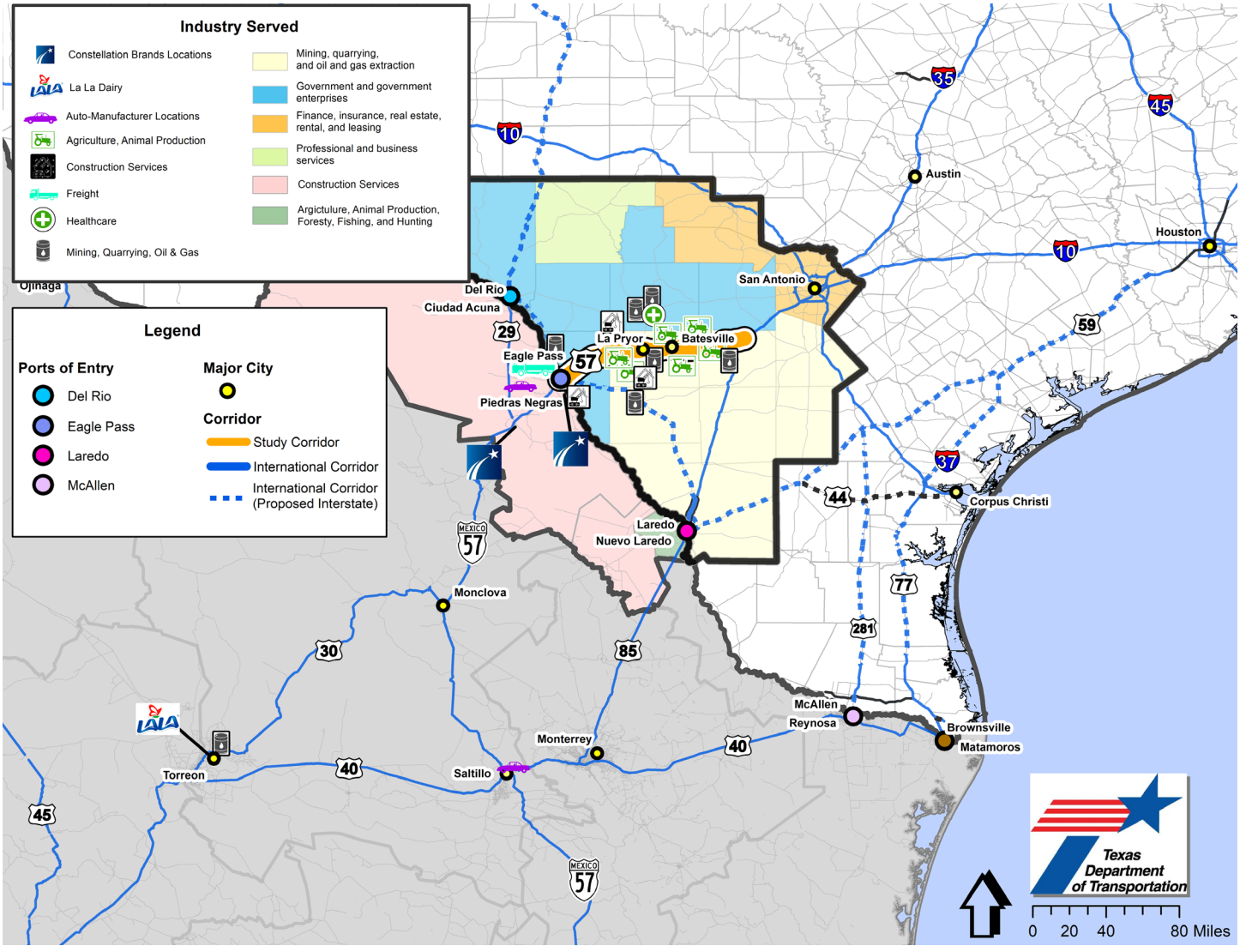


Figure 2.4 - 2019 Industries Served by the Study Area

Commerce passing through Eagle Pass Bridge II contributes $15.2 billion in GDP ($5.3 billion in the U.S. and $10.0 billion in Mexico) based on year 2019 statistics out of an overall $325 billion annually in GDP for the Texas-Mexico border.[5]

Exports in 2021 at the Port of Eagle Pass exceeded $10B with a wide range of commodities as shown in Figure 2.6. Imports in 2021 at the Port of Eagle Pass exceeded $23.3B with a heavy emphasis on commercial vehicles, beer, and passenger vehicles that made up nearly 3/4 of all imports by value.

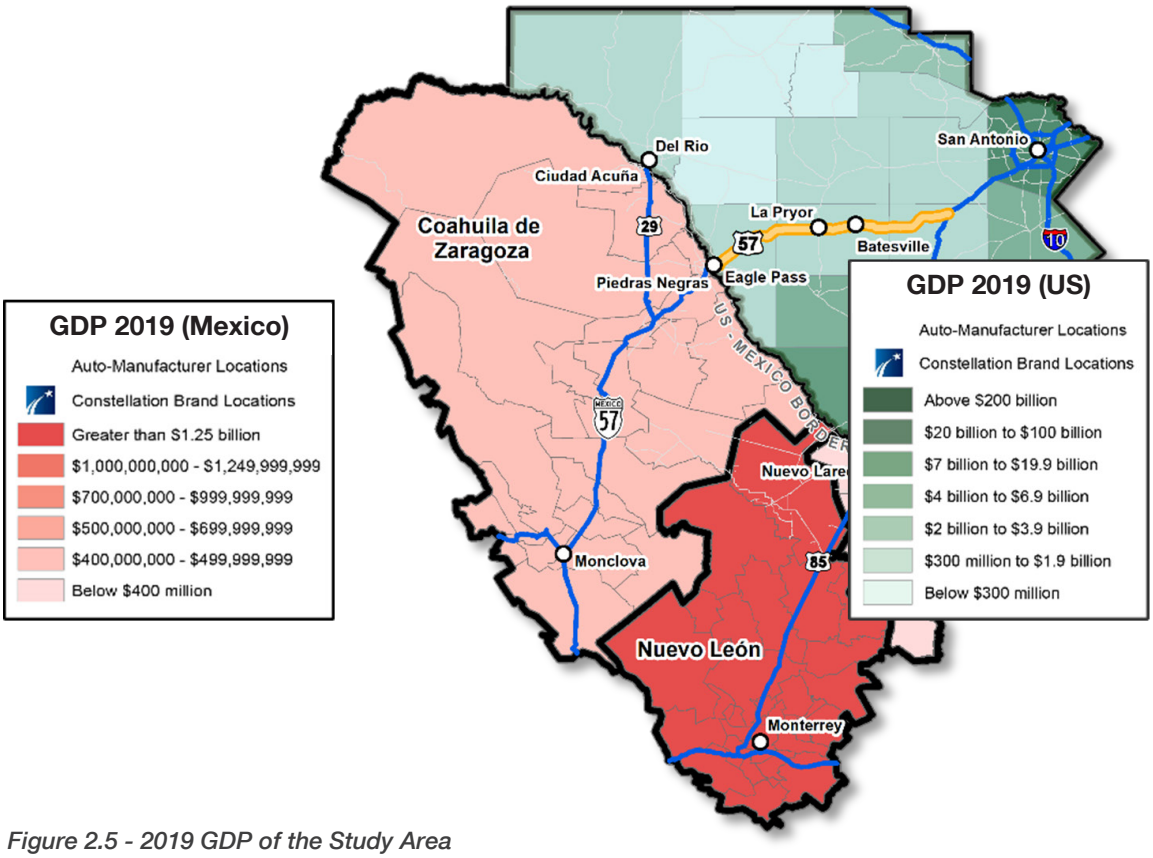


Figure 2.5 - 2019 GDP of the Study Area

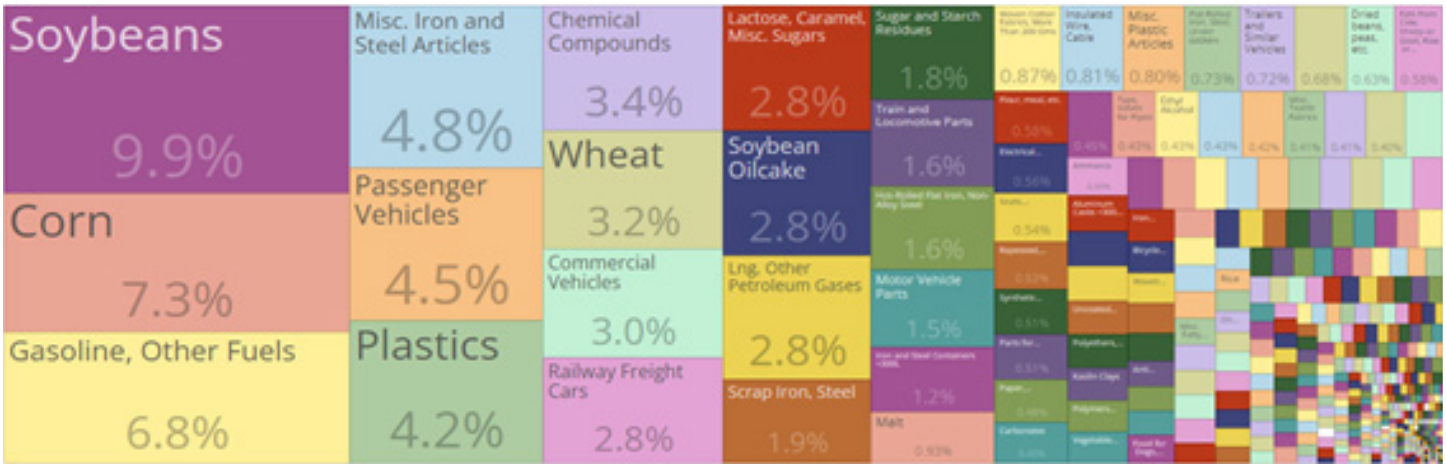


Figure 2.6 Eagle Pass 2021 Exports by Value (Total $10.5 billion);
Source: https://www.eaglepasstx.us/320/Port-of-Eagle-Pass-Trade-Data

[5]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 5-8 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf

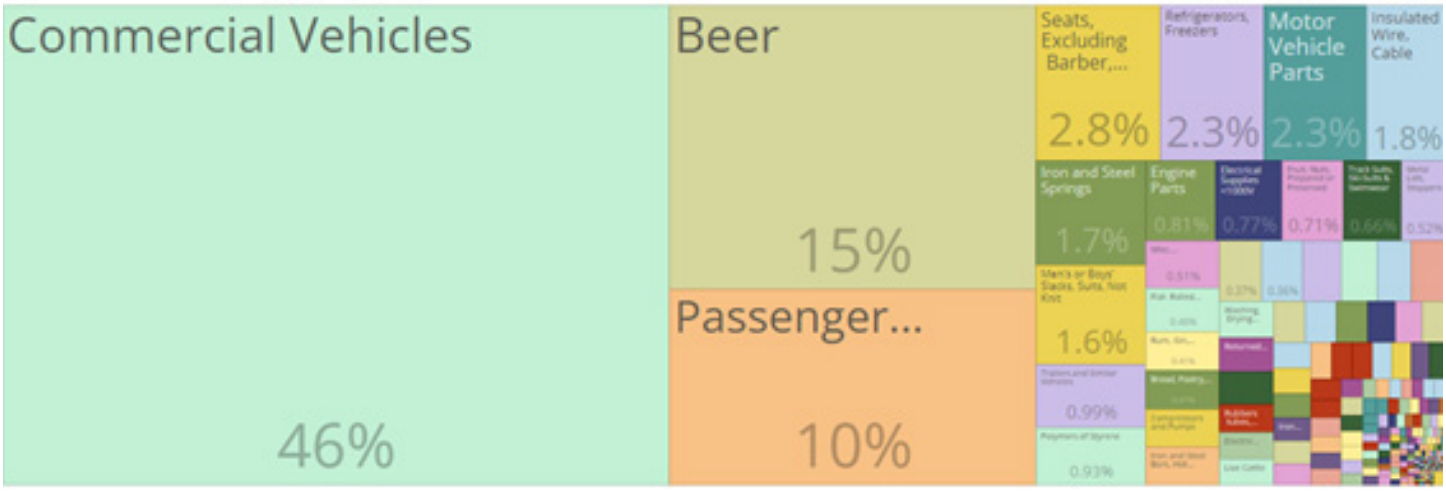


Figure 2.7 - Eagle Pass 2021 Imports by Value (Total $23.3 billion);
Source: https://www.eaglepasstx.us/320/Port-of-Eagle-Pass-Trade-Data

Figure 2.6 and **Figure 2.7** show the Exports and Imports at the Eagle Pass Port of Entry for 2021 by value. While exports remain well diversified, a significant amount of imports are based on commercial vehicles, beer, and passenger vehicles, which make up over 71% of imports.

2.3.3. MEDICAL TOURISM

During multiple visits to Piedras Negras and Eagle Pass by the US 57 corridor team, many mentions were made by local citizens and business owners regarding the area's attraction in the field of medical care. "Medical tourism" was the definition given for the patients that drive from Maverick, Zavala, and Frio counties and beyond to cross the border into Mexico to get treatment or undergo a procedure in Mexico. According to the Center for Disease Control and Prevention (CDC), each year millions of U.S. residents participate in medical tourism seeking procedures for dental care, surgery, cosmetic surgery, fertility treatments, organ and tissue transplantation, and cancer treatment. Reasons for medical tourism, as published by the CDC, consist of:

- ***Cost:*** To get treatment or a procedure that may be cheaper in another country.
- ***Culture:*** To receive care from a healthcare provider who shares the traveler's culture and language.
- ***Unavailable or Unapproved procedure:*** To get a procedure or therapy that is not available or approved in the United States.[6]

2.3.4. EDUCATIONAL INSTITUTIONS

Eagle Pass is home to a Southwest Texas Junior College campus and Sul Ross State University (SRSU). The SRSU campuses in Del Rio, Eagle Pass, and Uvalde comprise Rio Grande College (RGC). In 2022, it was announced that RGC would be building a new facility in Eagle Pass that is a catalyst for Eagle Pass's first four-year university. This new facility is anticipated to bring an additional 10,000 students to Eagle Pass by year 2025. According to Dr. Jorge Garza, RGC's Vice President, the four-year university will bring business classes and degrees, health classes and degrees, and other programs to Eagle Pass.

[5]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 5-8 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[6]Medical Tourism: Travel to Another Country for Medical Care. Center for Disease Control and Prevention. https://wwwnc.cdc.gov/travel/page/medical-tourism Sourced: 10/13/2022.

2.4 TRAFFIC CONDITIONS

2.4.1. ROADWAY GEOMETRY

The existing 97.7 miles of Route US 57 are predominately super 2 highway, with 76 miles of this type of roadway section along the corridor (**Figure 2.9**). The super 2 highway section transitions back and forth between the westbound and the eastbound directions, providing a passing lane at intermittent spacing along the corridor. The western 14.5 miles of US 57 are four-lane undivided roadway (see **Figure 2.8**). The longest stretch of continuous two-lane roadway in the eastbound direction is 6.1 miles and the westbound direction is 7.4 miles. The average distance between super 2 highway sections both eastbound and westbound is close to 3.5 miles. This high frequency of recurring passing lanes in each direction along US 57 is beneficial for vehicles that may need to pass a slow-moving vehicle but may not feel comfortable doing so on a two-lane roadway. Rolling terrain and horizontal curvature limits the availability of passing opportunities along US 57, resulting in an increased importance of the super 2 highway along this corridor.

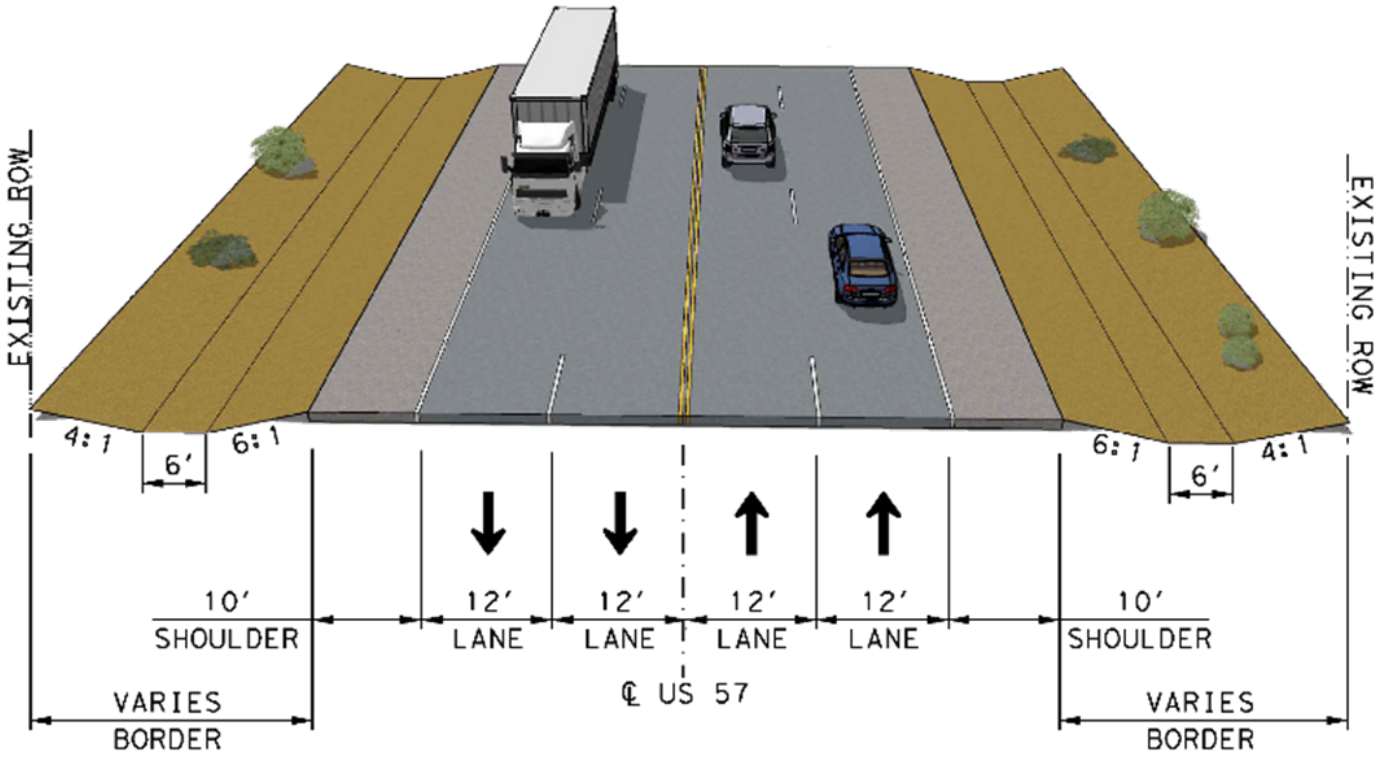


Figure 2.8 - Existing Four-Lane Undivided Highway Section

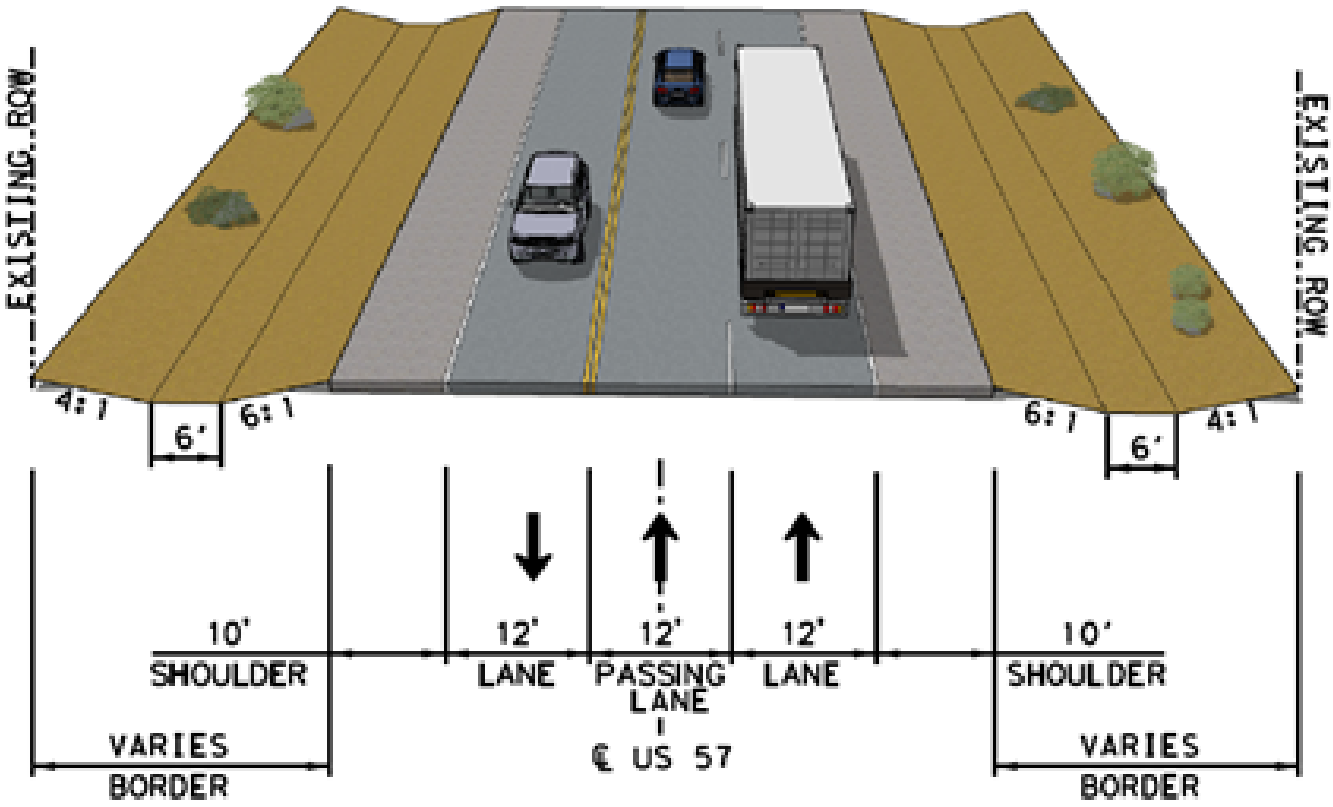


Figure 2.9 - Existing Super 2 Highway Section

2.4.2. EXISTING (2021) TRAFFIC VOLUMES AND TRAVEL TIMES

According to TxDOT's Statewide Planning Map, the US 57 corridor between SL 480 and I-35 has accommodated 2,000 to 7,400 daily vehicles since 2002. Within Eagle Pass, US 57 traffic increases between Bibb Avenue and US 277 to approximately 25,000 vehicles per day (per 2021 data). Year 2021 truck percentages along US 57 were approximately 15 percent outside of Eagle Pass, with roughly 800 trucks per day using the rural portion of the corridor.

The existing 97.7-mile US 57 corridor from the Bridge I border crossing in Eagle Pass to the I-35 junction provides an approximate travel time of 1 hour, 40 minutes. The posted regulatory speed throughout the western rural portion of the corridor in Maverick County and Zavala County is 75 mph. The posted regulatory speed for the rural portion of US 57 is 70 mph within Frio County. The 70-mph speed is assigned for the eastern 23.5 miles from the Zavala-Frio County line near Yoledigo Creek to I-35. Reduced regulatory speeds are present within the city limits of La Pryor and the city limits of Batesville, approximately 2.5 miles adjacent to and within each city.

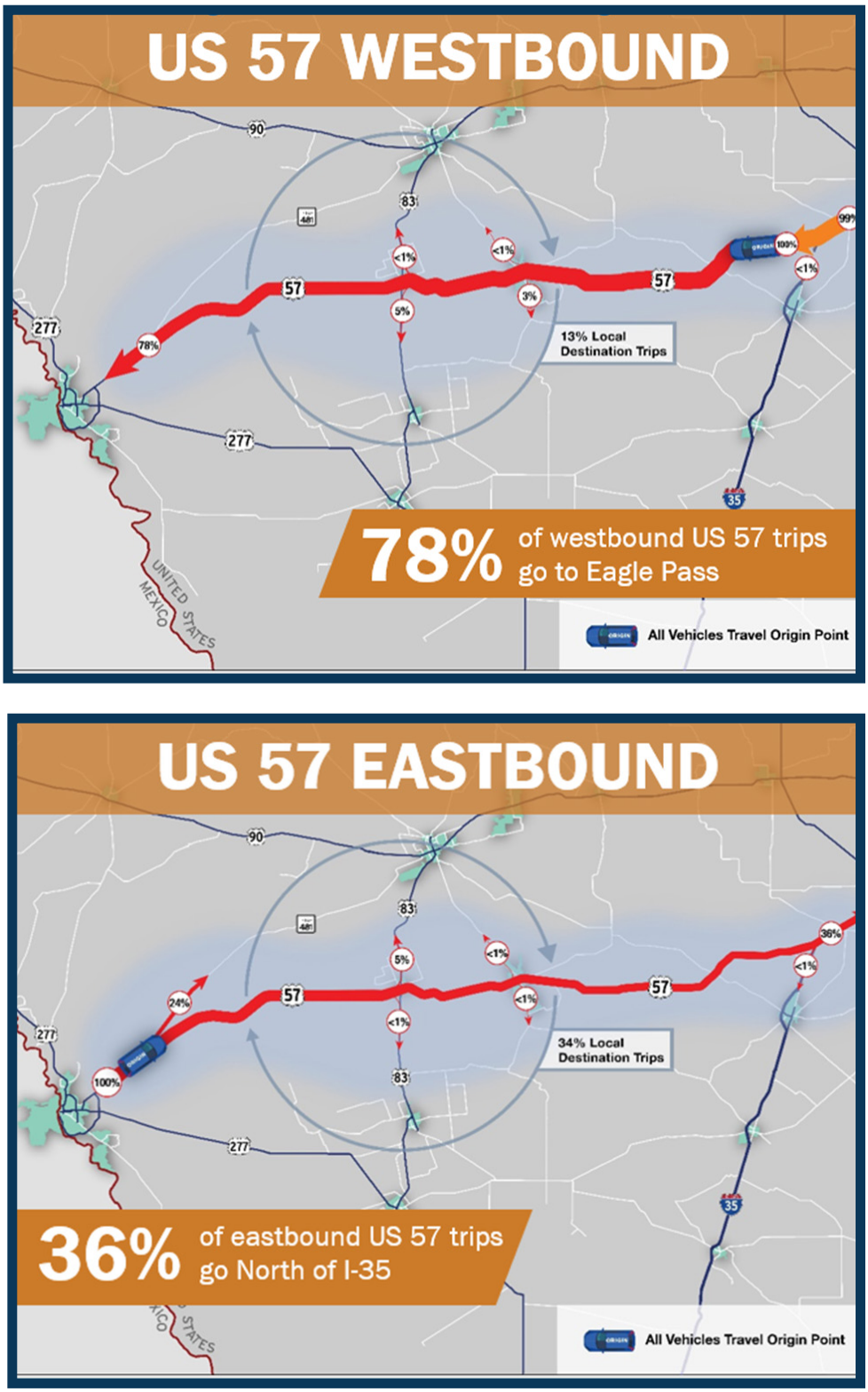


Figure 2.10 - Trip Distribution Along US 57

Highway Capacity Software (HCS), Synchro, and origin-destination data were used to study the existing traffic conditions along the corridor and at specific intersections along US 57. A Traffic Analysis Methodology Memo (included in **APPENDIX A**) describes the process by which US 57 has been analyzed from a traffic operations perspective.

2.4.3. MULTI-MODAL FREIGHT FLOW

The number of trains, rail containers, commercial motor vehicles (CMVs), and CMV containers entering the US between 2018 and 2020 at the Bridge 2 Port of Entry (POE) in Eagle Pass is listed in **Table 2.1**. Between 2006 and 2019, the Eagle Pass POE value of cross-border rail trade grew by 154 percent, or $13 billion.[7]

In Eagle Pass in 2017, cross-border trade imports were transported 25 percent by CMV and 75 percent by rail (percentage based on value) as shown in **Figure 2.11**. This substantial reliance on rail crossing versus roadway crossing likely has to do with the types of imports due to the trend in heavier goods (commercial vehicles, beer, passenger vehicles. Exports to Mexico were transported 43 percent by CMV and 57 percent by rail (see **Figure 2.11**, Source: City of Eagle Pass). Nearly half the value of the region's trade movements was related to automobiles. Key import commodities were vehicles, vehicle parts, beverages (primarily beer from Piedras Negras), computers, electrical machinery, and apparel.[8]

Figure 1.8 (page 9) shows the vastness of the trade routes between Mexico and the U.S. Whether by rail or by interstate, the ports located in Mexico provide a tremendous opportunity to distribute goods into most geographic regions of the U.S.. The U.S.-Mexico border crossings are branched and connected to the border crossings in Texas predominately by I-10, I-25, I-35, I-69, and I-10.

Table 2.1 - Eagle Pass Border Crossing U.S. Import Data, 2018-2020
Source: Bureau of Transportation Statistics, www.bts.gov

Measure	2018	2019	2020
Rail Containers Empty	200,780	183,435	185,309
Rail Containers Full	158,308	153,105	148,203
Trains	3,452	3,430	3,338
Truck Containers Empty	28,013	30,298	67,200
Truck Containers Full	145,394	149,732	105,437
Trucks	173,105	179,832	173,975

[7]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 3-43 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[8]City of Eagle Pass, Texas Border Facts; Page 2 https://ftp.txdot.gov/pub/txdot/move-texas-freight/resources/fact-sheets/border/eagle-pass.pdf

Figure 2.11 - 2017 Cross-Border Trade by Mode, Source: City of Eagle Pass

The railroad network beyond Eagle Pass routes toward Spofford, TX, 32 miles to the north. The Union Pacific Kinney Yard opened in 2015 and is located south of the City of Spofford in Kinney County. This railport is primary used for cleaning, maintaining, and preparing rail cars to be transported to Mexico to be loaded with beer bound for the United States. The rail network beyond Eagle Pass is shown in red in **Figure 2.12**.

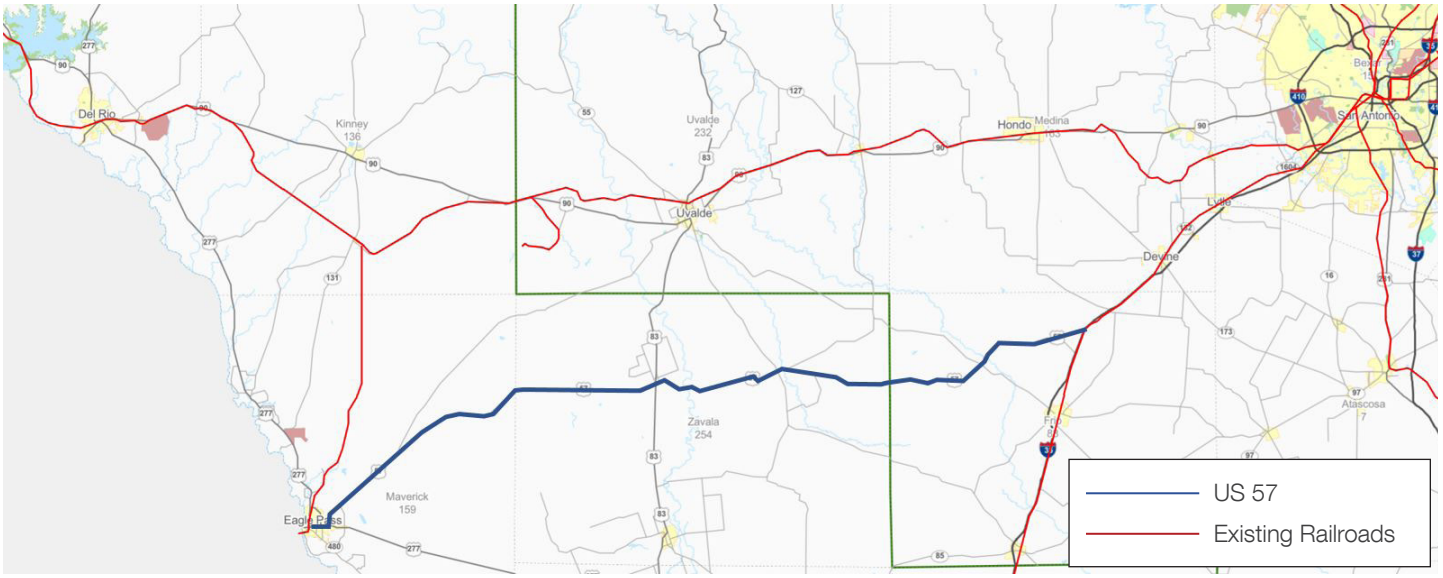


Figure 2.12 - Existing Rail and Truck Network Within Study Area

2.4.4. TOTAL TONNAGE

According to IHS Markit, US 57 had a total of 3.2 to 4.1 million tons in freight between Eagle Pass and I-35 in 2015. In comparison, in 2019, the Eagle Pass total rail freight crossing the Texas-Mexico border was 15.0 million tons.

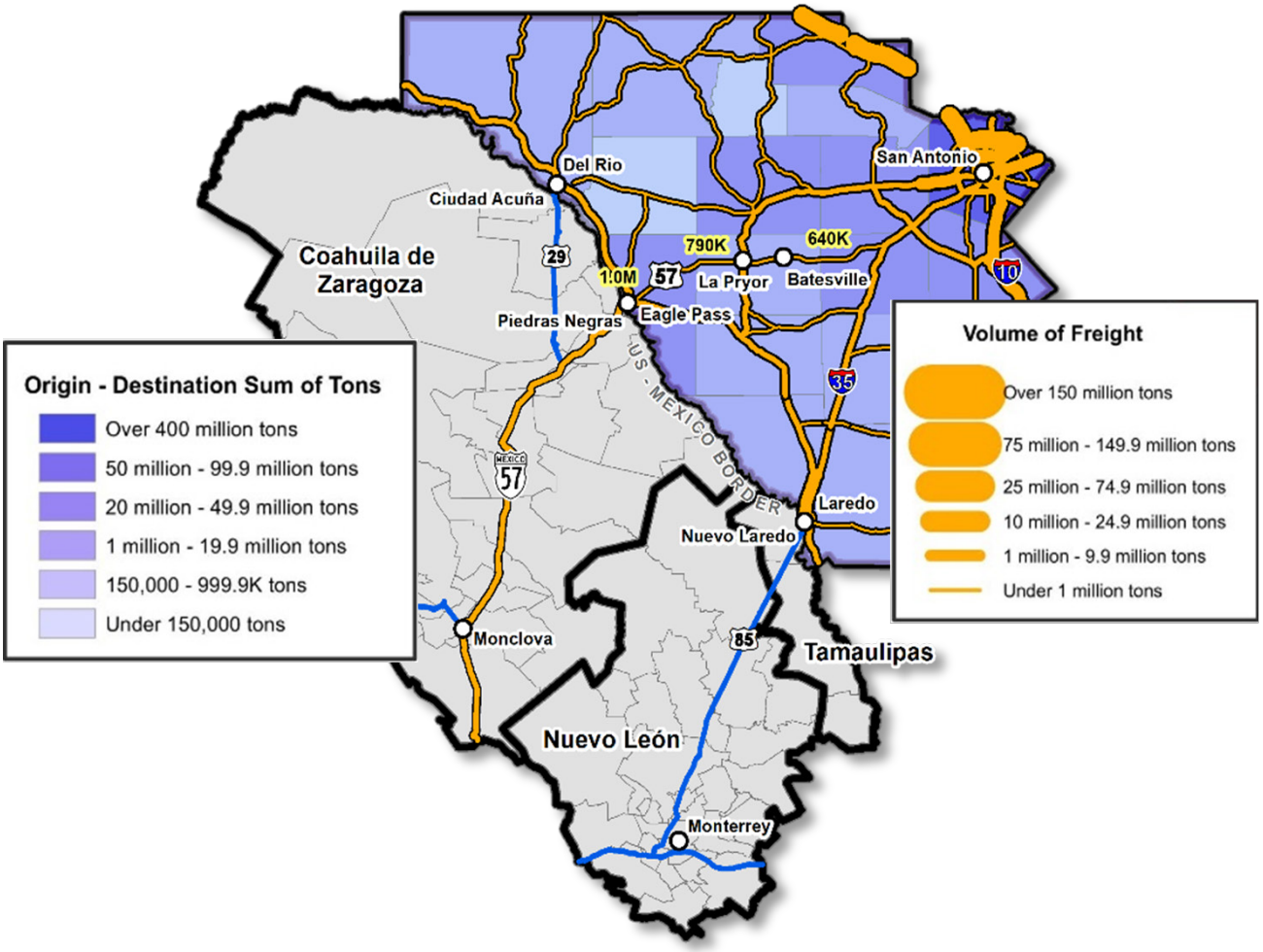


Figure 2.13 - Freight Tonnage of Study Area

2.4.5. TRUCK PARKING

Providing adequate facilities for long-haul truck drivers is an ongoing focus in Texas. TxDOT's Truck Parking Studies for the Laredo District and the San Antonio District identify these facilities as a medium-capacity need (**Figure 2.14**), while the junction of US 57 and I-35 is identified as a high-capacity need (**Figure 2.15**).

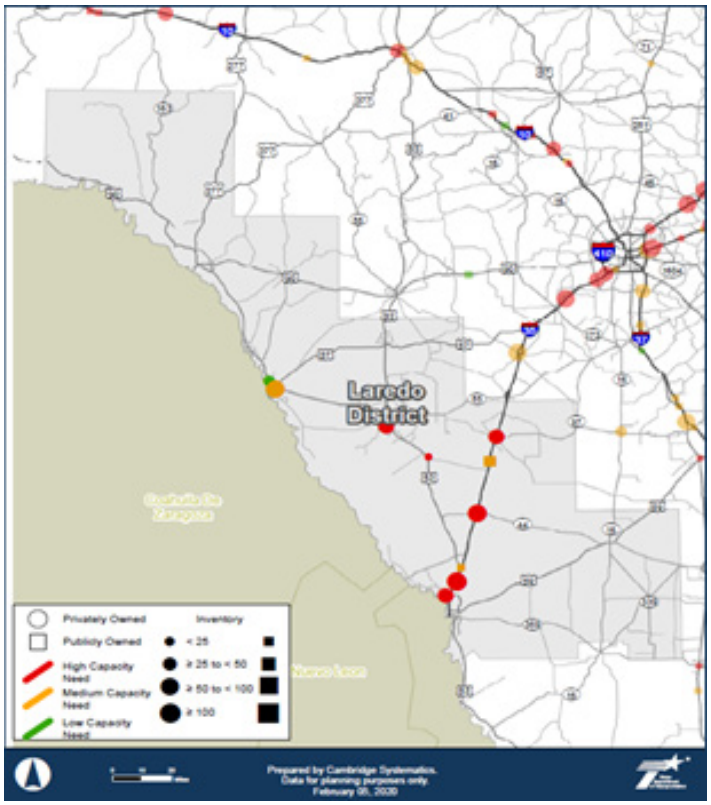


Figure 2.14 - Laredo District Truck Parking Study

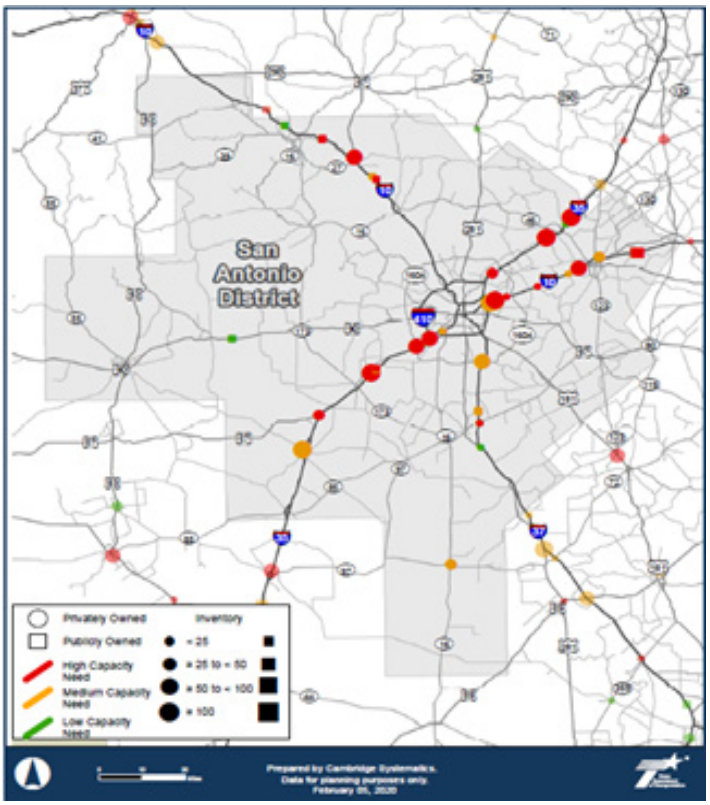


Figure 2.15 - San Antonio District Truck Parking Study

2.4.6. ROADWAYS AND BRIDGES

The general terrain along the US 57 corridor is flat to slightly rolling with moderate elevation changes east of Eagle Pass, east of the Nueces River, and near the Frio River (see **Figure 2.16**[9]).

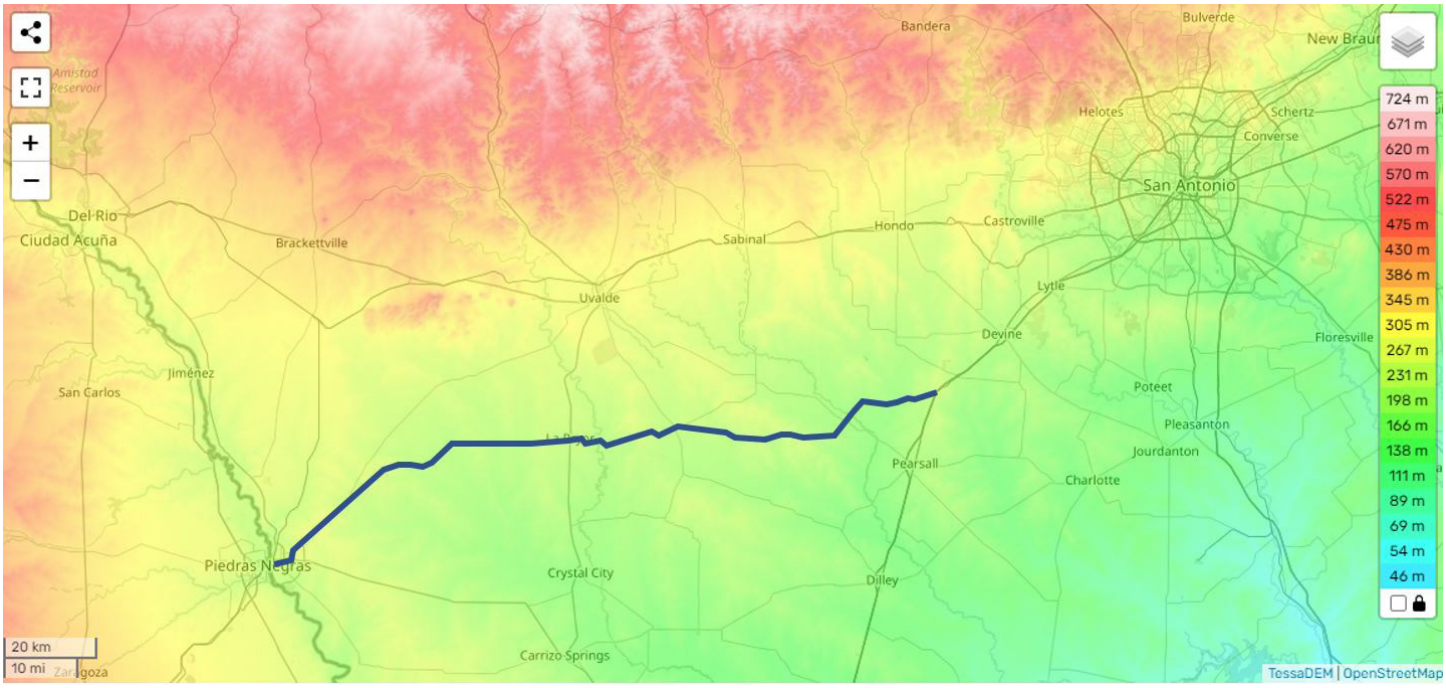


Figure 2.16 - 2050 Terrain Map of the US 57 Corridor[9]

The US 57 alignment nearly follows the northern edge of the Eagle Ford Shale Play, Western Gulf Basin, as shown in the salmon color in **Figure 2.17**. Due to the proximity of US 57 to the Eagle Ford Shale Play, an abundance of natural/other gas transmission pipelines cross this corridor. Based on a desktop review of the Texas Railroad Commission website, there are about a dozen pipeline crossings within the US 57 limits, mainly within Zavala County.

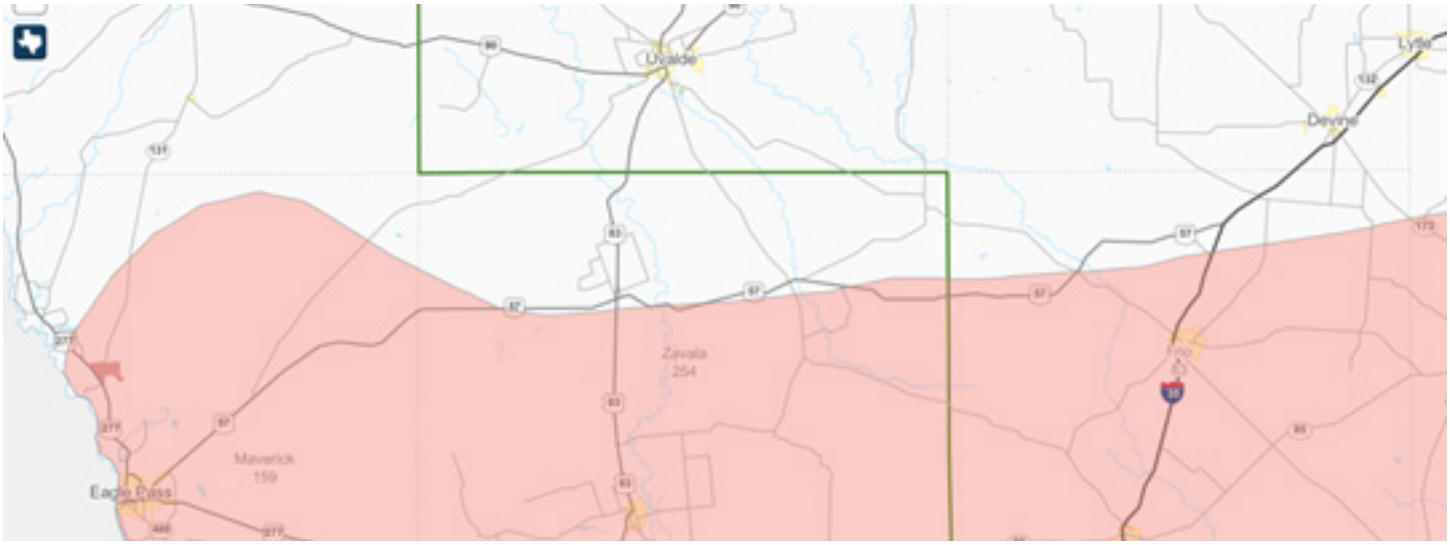


Figure 2.17 - 2050 Shale Play Map Along the US 57 Corridor

[9]Topographic-map.com, Eagle Pass; https://en-gb.topographic-map.com/maps/q0bz/Eagle-Pass

According to FHWA records, there are 68 total structures along the US 57 corridor. These are primarily bridge class culvert crossings that convey runoff from north to south. Of these, 32 percent of the structures are noted to require maintenance, based on TxDOT's Open Data Portal (2022). The average age of these structures is approximately 60 years old, with the oldest constructed in 1926. West of La Pryor, a series of nine structures need maintenance/replacement within a 20-mile stretch.

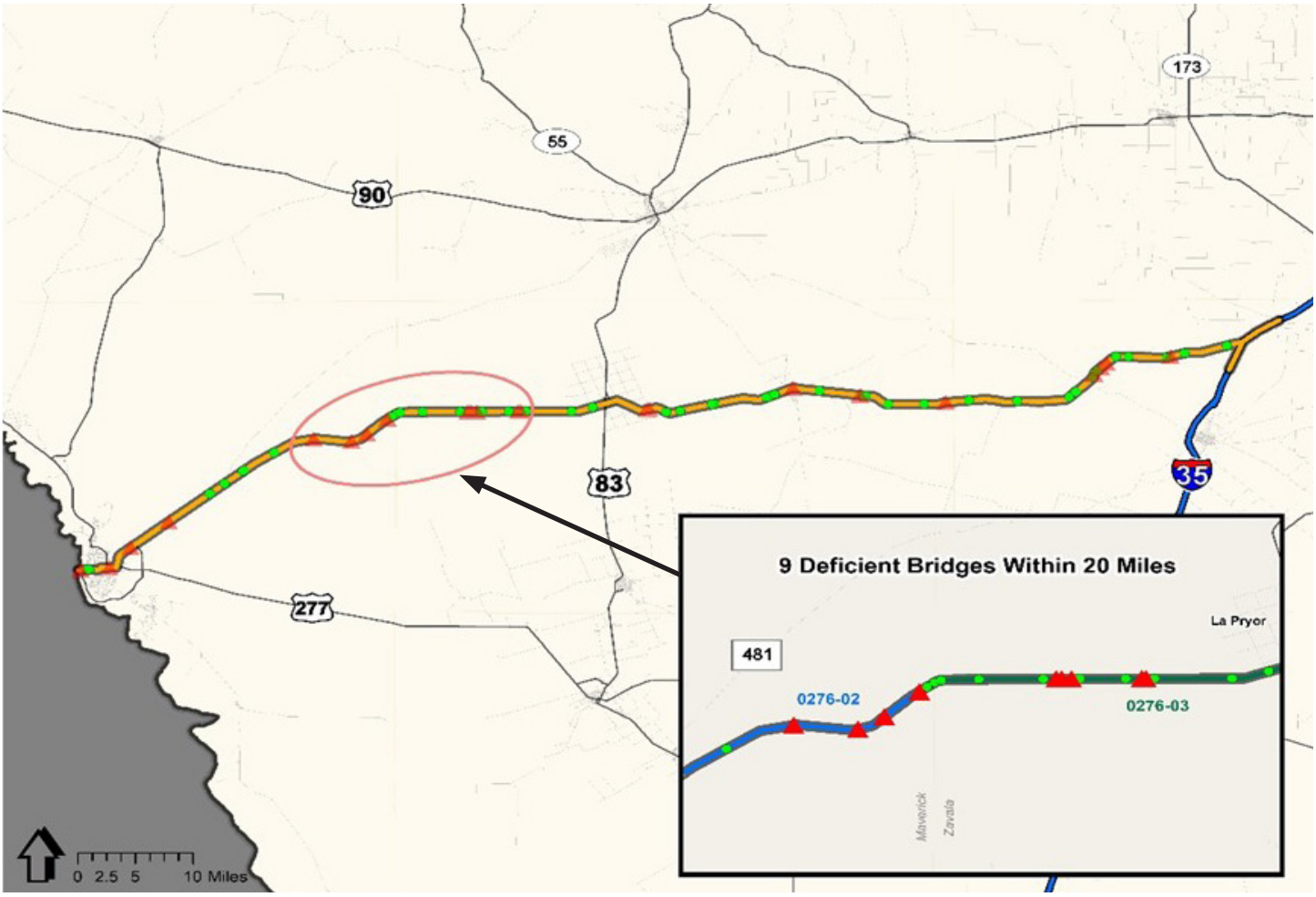


Figure 2.18 - 2050 Structures Along the US 57 Corridor

2.4.7. MULTI-MODAL ACCOMMODATIONS

While a majority of the US 57 corridor is rural, the urban areas of Eagle Pass, La Pryor, and Batesville do provide a need for multimodal accommodations for pedestrians, bicyclists and the mobility-challenged. Future intersection improvements that incorporate facilities and devices to accommodate these types of users would be assumed. Specifically, those intersections where pedestrian-vehicle crashes have been documented.

2.5 SAFETY ANALYSIS

TxDOT's Crash Record Information System (C.R.I.S.) was sourced to study the number, location, and severity of crashes along the US 57 corridor between January 2017 to July 2022. Overall, 1,354 unique crashes were identified, of which there were 27 fatalities and 332 crashes that resulted in an injury. Nearly half of the fatal crashes (10 out of 22) occurred during nighttime conditions. Notably, **89% of the total crashes occurred along two-lane sectios of US 57**. A breakdown of the corridor's crash rate, by segment, is included in **Table 2.2**. These crashes are for the entire study area, including along I-35 and cross streets.

Outside of Eagle Pass, the US 57 corridor has a vehicular crash rate (per 100 million vehicle miles) that is lower than the statewide average. However, **between Bridge I and US 277 within Eagle Pass, US 57 has a crash rate six to seven times the statewide average based on classification, and three to four times the statewide average based on roadway type**. Contributing factors may be the increase in average daily traffic (ADT) within this segment of US 57 (nearly 20,000 vehicles per day), closely spaced intersections, and a high frequency of driveways.

The intersection of Veterans Boulevard and US 277 in Eagle Pass yielded a total of 288 crashes within this study period. Bibb Avenue at FM 375 saw a total of 160 crashes during the same timeframe. These two intersections account for nearly one-third of the crashes documented along the 98-mile corridor. Both of these intersections operate with signalized control.

Of the 1,354 crashes in the analysis period, 142 crashes (~9.5%) involved a commercial motor vehicle, with seven crashes resulting in a fatality. The US 57 Safety Study can be found in **Appendix B**.

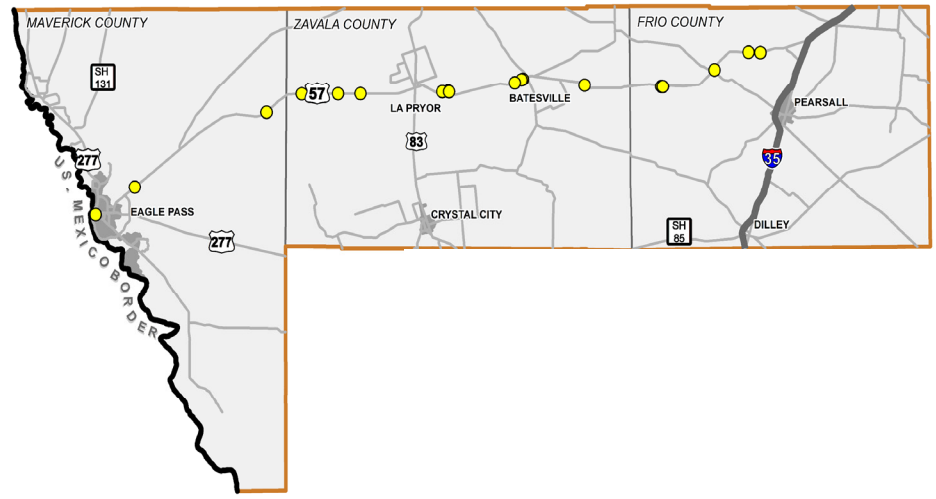
Table 2.2 - US 57 Segment Crash Summary

AVERAGE OVER STUDY PERIOD (2017-2022)										
Segment	**Facility**	**Start**	**End**	**ADT**	**Length (mi)**	**Class**	**Type**	**Crashes**	**Years**	**Crash Rate**
A1-A4	US 57	In Bridge	US 277	18658	2.8	Urban	4 lane, undivided (5 dual left)	855	5.58	803.85
A4-B	US 57	US 277	SL 480	9725	2.9	Urban	4 lane, undivided (5 dual left)	35	5.58	60.95
B-C	US 57	SL 480	FM 481	5565	9.1	Rural	4 lane, undivided (5 dual left)	41	5.58	39.76
C-D3	US 57	FM 481	US 83	4467	31.6	Rural	2 lane (super 2)	122	5.58	42.45
B-D3	US 57	SL 480	US 83	4676	40.7	Rural	varies	163	5.58	42.07
D3-I3	US 57	US 83	I-35	5095	51.9	Rural	2 lane (super 2)	202	5.58	37.52
Z	I-35	FM 3352	FM 462	29874	6.4	Rural	4 lane, divided	99	5.58	25.43

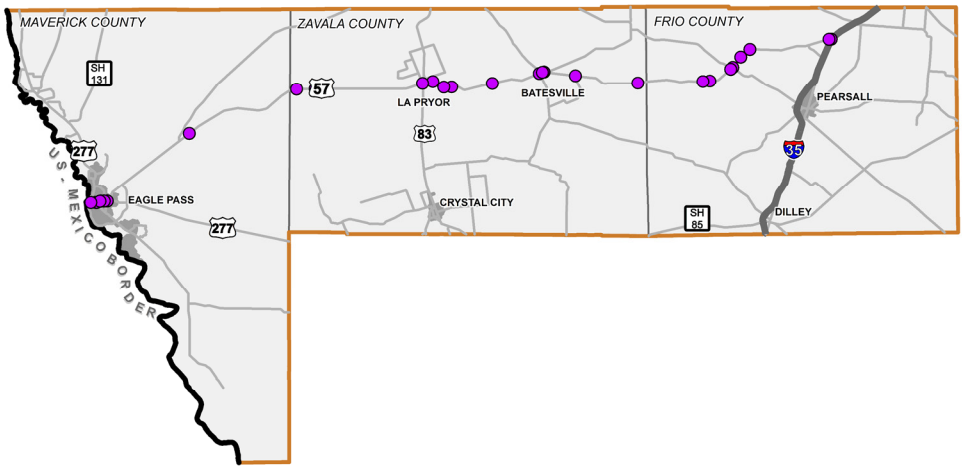
2.5.1. PEDESTRIAN CRASH MAP

In the US 57 crash study period, there were ***nine crashes involving a pedestrian or bicyclist***. Eight of the nine crashes occurred within Eagle Pass on US 57 and one occurred on I-35. The crash on I-35 resulted in a fatality (K). Of the eight crashes on US 57, four crashes resulted in a possible injury (C), three resulted in a suspected serious injury (A), and one resulted in no injury (N). Four of the crashes occurred due to the driver's failure to yield to the pedestrian. Four of the crashes occurred at an intersection and only one of these crashes, located at Washington Street in Eagle Pass, did not have striped crosswalks. The other intersections involved in pedestrian-related crashes were Commercial Street (State Loop 240), Adams Street, and Main Street.

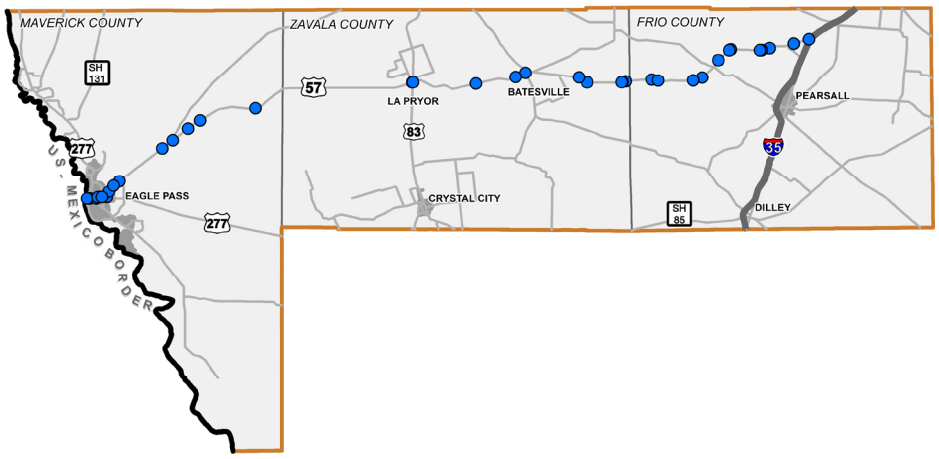
Figure 2.19 - Pedestrian and Bicycle Crashes Along US 57 in Eagle Pass



27
Fatalities



44
Incapacitating Injuries



69
Non-Incapacitating Injuries

Figure 2.20 - Crash Statistics

2.5.2. COMPARISON OF CRASH RATES OF BORDER CROSSING HIGHWAYS

Crash rates from eight Texas corridors that are located near the Texas-Mexico border were analyzed to compare to the crash rates along US 57. In general, other than the urban section of US 57 from SL 480 to the International Bridge, the remaining US 57 segments have crash rates below the statewide average and below the average of other border highways analyzed.

Table 2.3 - Texas Corridors Near the TX-Mexico Border Crash Rates

Road Name	Location/Mileage	Crash Rate (Calculated)					Laneage
		2020	2019	2018	2017	2016	
Zaragoza Rd	El Paso, TX						
Segment 1	3.05	583.3	704.4	740.7	708	557.5	4 lane undivided
US 67	Presidio, TX						
Segment 1	1	145.7	0	383.4	117.3	210.8	2 lane with two-way left-turn lane
Loop 239	Del Rio, TX						
Segment 1	0.7	230.3	322.3	225	255.2	0	4 lane undivided with two-way left-turn lane
Segment 2	3.65	271.1	335.5	249.5	425.3	384.6	4 lane undivided with two-way left-turn lane
SH 255	Laredo, TX						
Segment 1	3.8	170.1	174.1	134.8	173.3	132.4	4 lane divided
Segment 2	3	0	53.3	71.1	0	0	2 lane
South Cage Boulevard	Pharr, TX						
Segment 1	3.6	458.5	527.7	575	478.6	360.4	4 lane undivided with two-way left-turn lane
Segment 2	0.6	64.1	0	115	27	141.9	4 lane undivided
Segment 3	1.6	215.2	175.4	329.2	367.5	231.7	4 lane undivided with two-way left-turn lane
FM 493	Donna, TX						
Segment 1	0.75	169.7	576.2	235.4	118.2	0	4 lane divided
Segment 2	4	207.5	77	113.4	138.8	254.9	2 lane
FM 1015	Progreso, TX						
Segment 1	3.35	11	72.5	133.6	48.9	94.6	4 lane undivided with two-way left-turn lane
Segment 2	0.9	117.9	21.9	20.4	40.7	58.1	4 lane undivided
SH 4(International Blvd)	Brownville, TX						
Segment 1	5.93	321.3	371	443.2	339.1	485.1	4 lane undivided with two-way left-turn lane

2.5.3 CRASH AND CONVERSION ANALYSIS

Crash data in the study area over the crash analysis period is shown in **Figure 2.21** by type of vehicle. The majority of crashes involved privately owned vehicles (POV). However, **while only eight percent of crashes on the US 57 Corridor involved Commercial Motor Vehicles (CMV), they accounted for 33 percent of fatalities** as shown in **Figure 2.22**. The total number of annual crashes increased through 2019 but dropped in 2020, as shown in **Figure 2.23**. Fatal crashes reached the highest count in 2019 with six and dropped to one in 2020.

The study calculated potential crash reduction for various conversion scenarios for US 57. The **four lane divided improvement option resulted in a crash reduction of over 17 percent** as compared to both the four lane undivided or Super-2 improvement option.

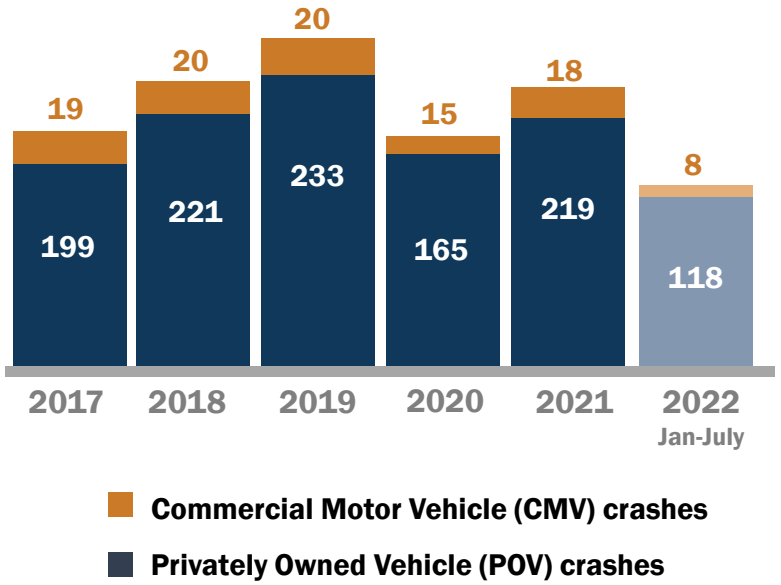


Figure 2.21 - Corridor Crash Counts

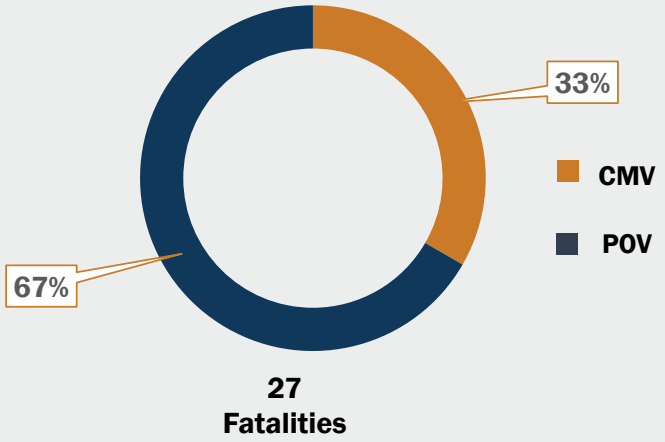


Figure 2.22 - Fatalities by Vehicle Type

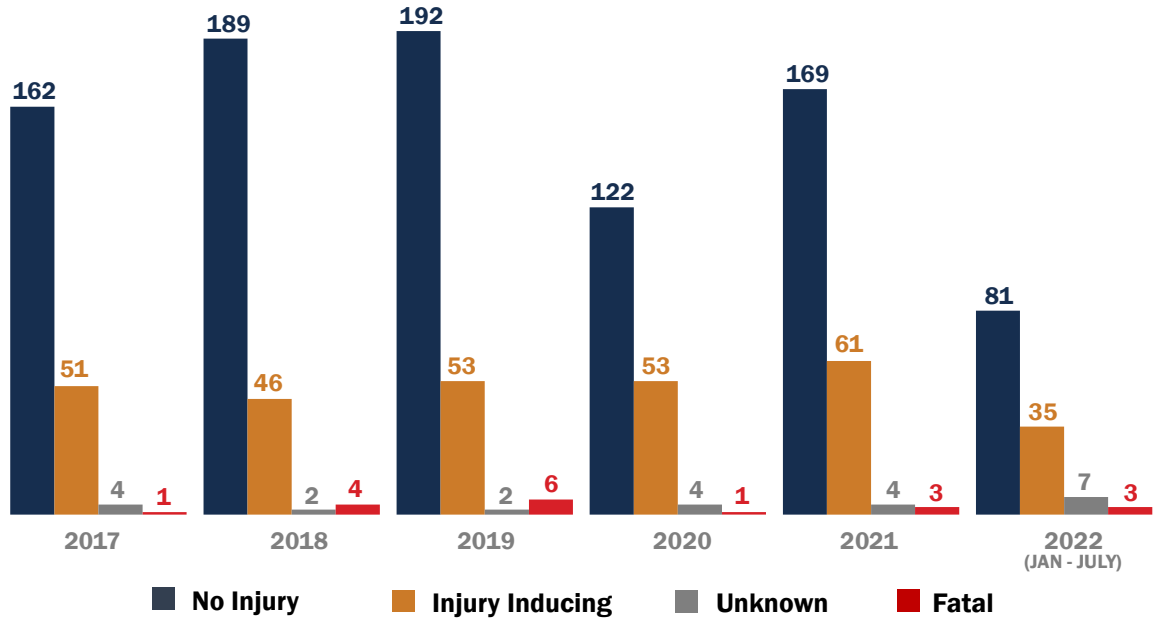


Figure 2.23 - Crashes by Injury

2.6 US-MEXICO BORDER CROSSING CONSIDERATIONS

2.6.1. BORDER CROSSING STRUCTURES

Beyond the limits of US 57 in Eagle Pass are three separate U.S.-Mexico border crossings: The Eagle Pass-Piedras Negras International Bridge (Bridge I) that connects to E Garrison St.; the Camino Real International Bridge II ("Bridge II") that connects to Monroe St.; and the U.S.-Mexico Railroad Crossing. Bridge I and Bridge II both accommodate non-commercial, and pedestrian uses. At the time of this study, Bridge II provides commercial and cargo crossings between 8:00 a.m. and 10:45 p.m. Monday through Friday and 8:00 a.m. to 2:00 p.m. on Saturday. Bridge II is closed to commercial traffic on Sunday. The international railroad bridge is owned and operated by Union Pacific, and BNSF also has track rights at the rail border crossing.

- ***Eagle Pass-Piedras Negras International Bridge (Bridge I)***
  - Built in 1927
  - Connects the central business districts of Eagle Pass and Piedras Negras
  - Two lanes (one lane in each direction)
  - Non-commercial and pedestrian crossings
  - 2019 Northbound crossing times: less than 30 minutes (43%), 30-60 minutes (57%)[10].
  - Between 2014-2018, operated at 149% Volume-to-Operational Capacity

Image 2.1 - Eagle Pass Border Crossings, Source: TxDOT

- ***Camino Real International Bridge (Bridge II)***
  - Opened in 1999, cost of $30 million
  - Connects to Libramiento Fausto Martinez – a four-lane divided roadway in Piedras Negras
  - Six lanes (four lanes into the U.S. and two lanes into Mexico)
  - Commercial, non-commercial, and pedestrian crossings
  - 2019 Northbound crossing times: less than 30 minutes (100%)[8]
  - Between 2014-2018, operated at 107% Volume-to-Operational Capacity[9]
  - Northbound pedestrian crossings increased by 302% from 2008 to 2019[12]
- ***International Railroad Crossing (Union Pacific Railroad Bridge)***
  - BNSF Railroad also maintains trackage rights

The value of cross-border rail trade grew by 154%, or $13 billion, between 2006 and 2019[13]

The Texas-Mexico border has 28 vehicular bridges, with 14 serving commercial traffic. **Figure 2.24** shows the border crossings located within 250 miles of Eagle Pass.

[10]TTxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 3-61 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[11]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 5-15 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[12]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 3-33 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[13]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 3-43 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf

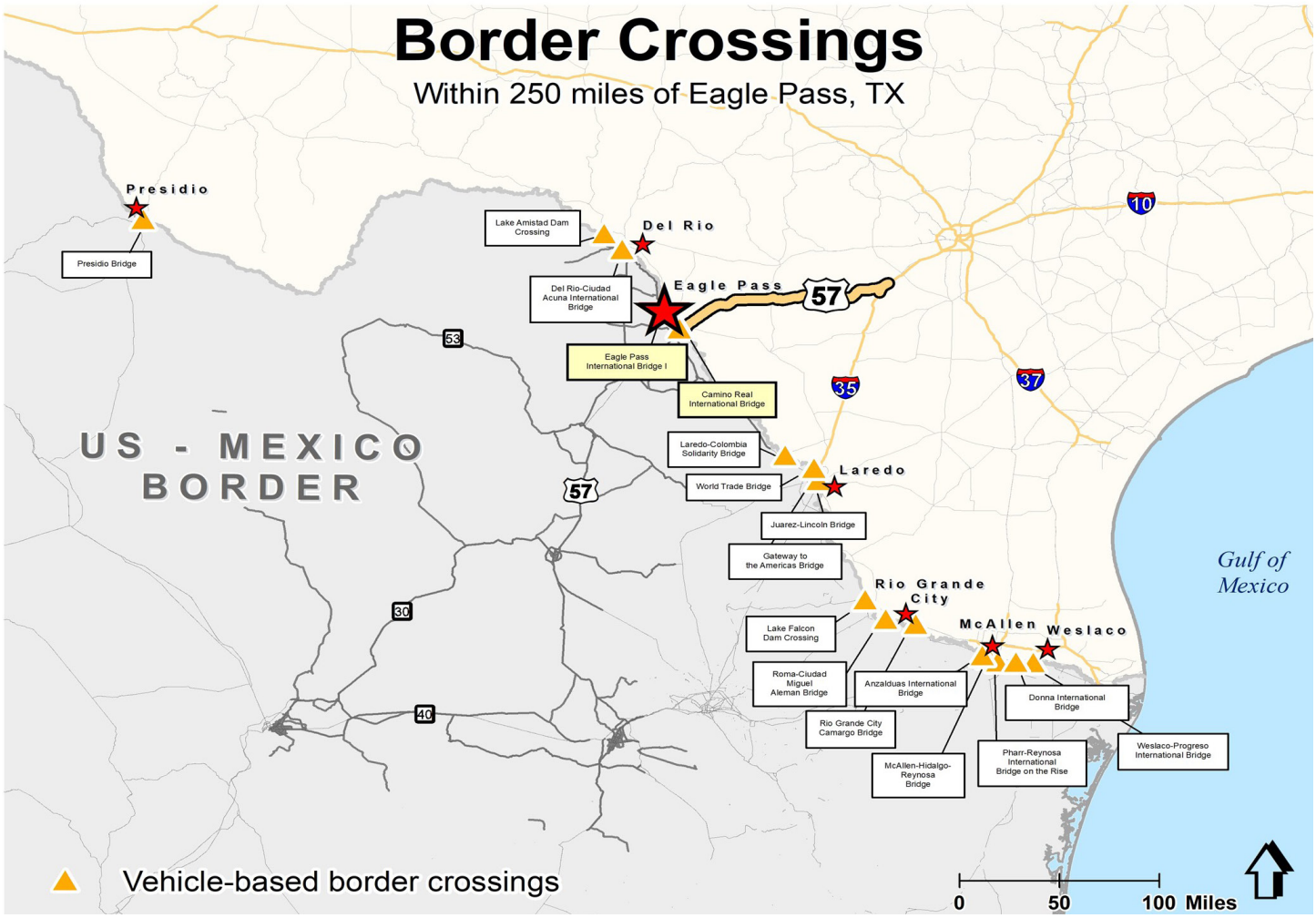


Figure 2.24 - Border Crossings Within 250 Miles of Eagle Pass

2.6.2. BORDER CROSSING TRAFFIC

Eagle Pass is located approximately 100 miles from Laredo and approximately 50 miles from Del Rio. In 2020, the crossing statistics of the three ports were:

Table 2.4 - Adjacent Border Crossings Comparison

Border Crossing	Pedestrians	Personal Vehicles	Trains	Trucks
Del Rio	0	1,083,059	0	68,511
Eagle Pass	532,169	1,804,954	3,338	173,975
Laredo	1,707,840	3,173,619	4,078	2,319,901

Laredo is a popular border crossing for commercial vehicles due to the connection to I-35 and the proximity of Monterrey, Mexico, and populated cities along Mexico Federal Highway 85 and Mexico Federal Highway 1.

The Laredo border crossing exported nearly 10 times the freight of the Eagle Pass border crossing in 2021 and imported more than six times the trade of Eagle Pass, based on GDP. Comparatively, the Eagle Pass border crossing exported five times more goods than Del Rio and imported almost 10 times more goods than Del Rio (see **Figure 2.25**).

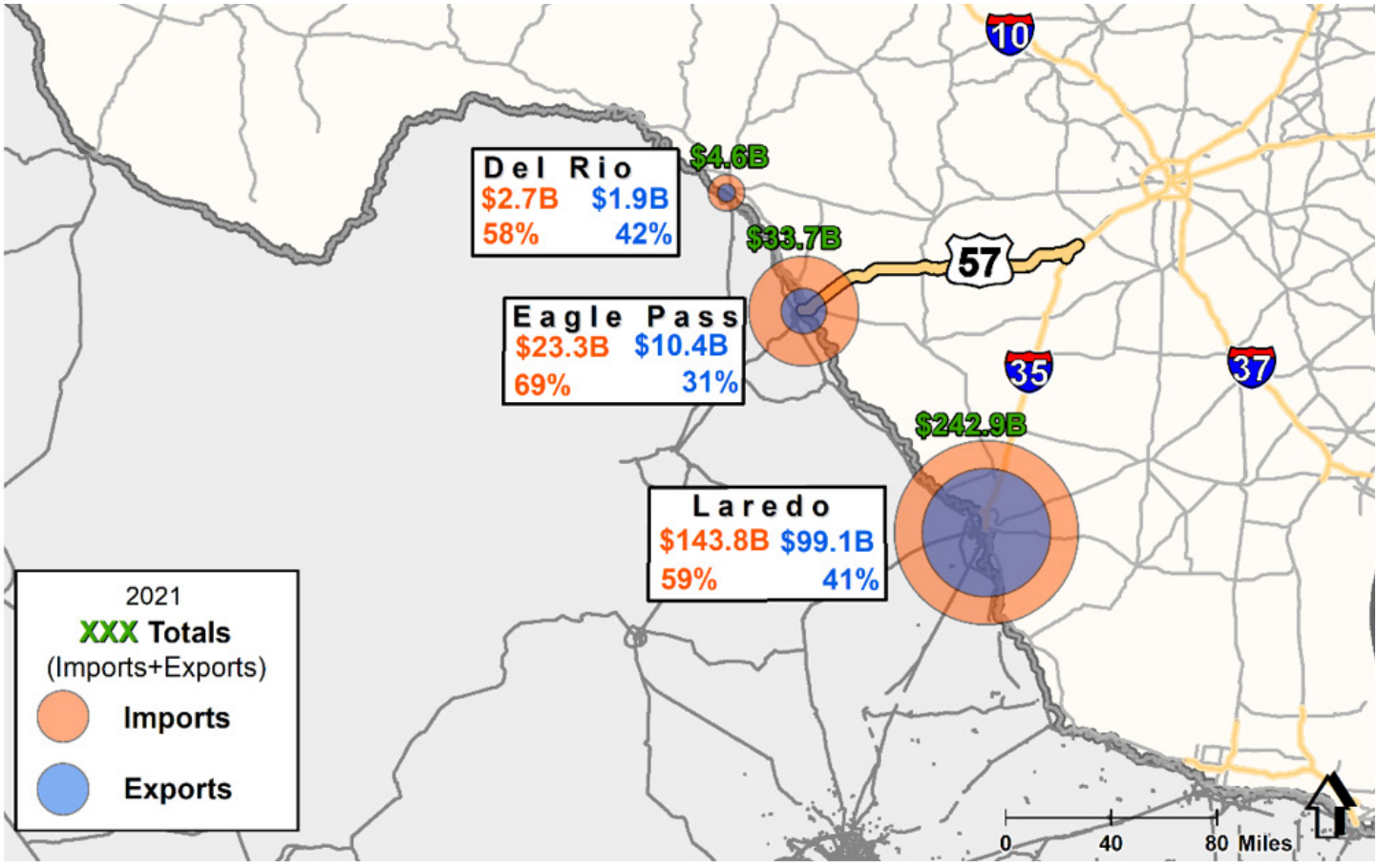


Figure 2.25 - Adjacent Border Crossing Comparisons

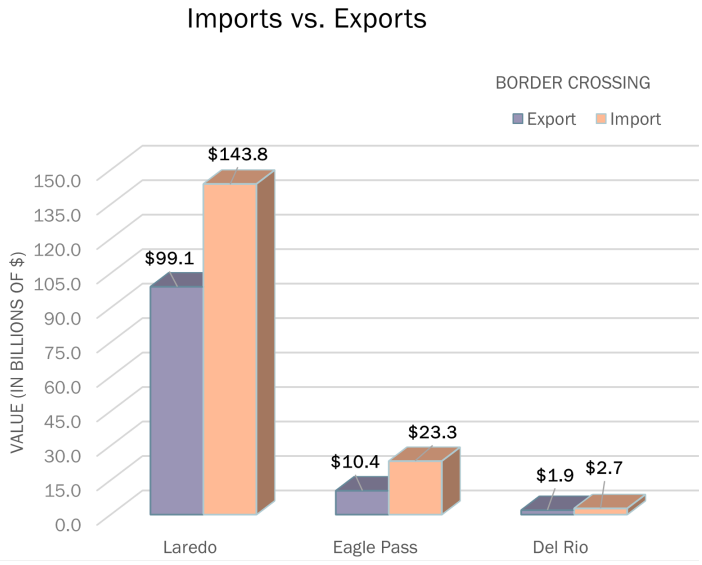


Figure 2.26 - Comparison of Rail and CMV Imports and Exports at Adjacent Border Crossings

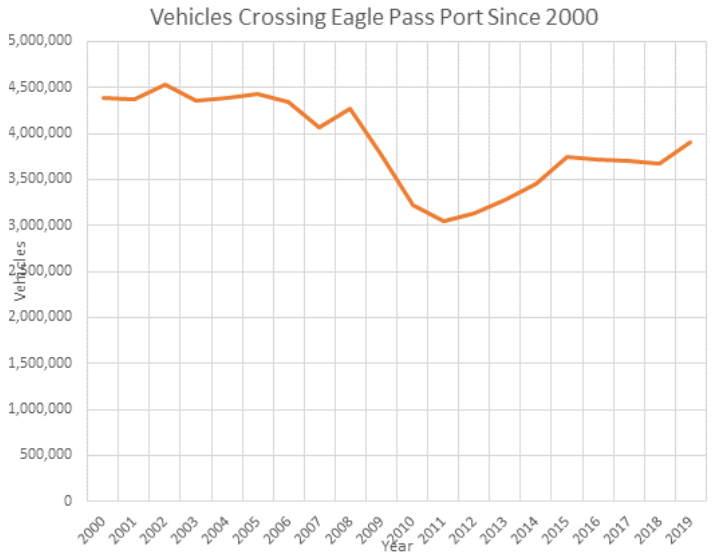


Figure 2.27 - Eagle Pass POV and CMV Crossings 2000 - 2019

Figures 2.23 and 2.27 show the trends over the past two decades (pre-Covid) of the number of vehicles crossing the border in Eagle Pass. A drop in vehicle crossings occurred between 2008 and 2010, likely due to the economic recession in the U.S. during that timeframe.

2.6.3. BORDER CROSSING COMMODITIES

In 2021, trade at the Eagle Pass border crossings was valued at $33.8 billion, with exports totaling $10.5 billion and imports valued at $23.3 billion. Among U.S. airports, seaports, and border crossings in 2021, Eagle Pass ranked 33rd, which is slightly lower than in 2020, when it ranked 31st. Commercial vehicles were the top import by value in 2020, at just under $10 billion, followed by beer ($3 billion), passenger vehicles ($2.8 billion), and motor vehicle parts ($1.4 billion)[14].

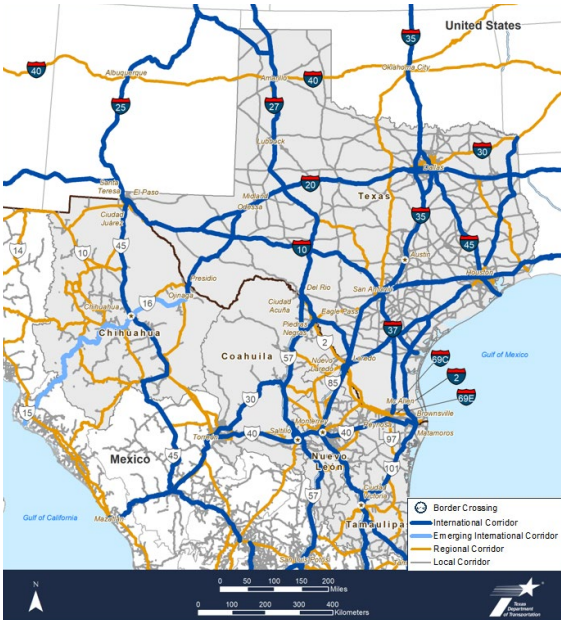


Figure 2.28 - Texas-Mexico Border Transportation Master Plan 2021

[14]City of Eagle Pass, 2020 Eagle Pass Trade Numbers, WorldCity, ustradenumbers.com, 2020.

2.7 TXDOT STATEWIDE PLANS

This Corridor Study combines active TxDOT plans in presenting information relevant to the current and future importance of US 57. Where applicable, US 57-related information has been sourced from various TxDOT publications and is referenced below.

2.7.1. BORDER TRANSPORTATION MASTER PLAN (BTMP)

While US 57 is not mentioned in the BTMP, Mexican Federal Highway 57 is listed as a key regional interstate in Mexico. BTMP mentions the anticipated future alignment of I-27 in Texas, along with I-35, as a major network link in the TxDOT Laredo District[15].

2.7.2. FREIGHT INFRASTRUCTURE DESIGN CONSIDERATIONS (FIDC)

TxDOT's Freight Infrastructure Design Considerations report from April 2021 (https://www.txdot.gov/government/partnerships/freight-planning.html) does not specifically mention US 57. However, it does provide information relevant to this Study regarding certain design criteria when considering an upgrade to meet Interstate standards. A few noteworthy, recommended considerations from the FIDC include:

- Acceleration Lane Length – 1,200 feet, plus taper
- Vertical Grade – 3 percent to 4 percent (TxDOT Roadway Design Manual (RDM))
- Lane Width – 12 feet along the Texas Highway Freight Network (THFN)
- Outside Shoulder Width – 12 feet on freeways and expressways and 10 feet on rural principal arterials
- Passing Sight Distance and Passing/No-Passing Zones – 2,135 feet for a 60 mph design speed. See RDM and AASHTO Green Book.
- Bridge Vertical Clearance – 18.5 feet of clearance along the THFN

2.7.2.1. TRUCK PARKING STUDY-DISTRICT PROFILES

TxDOT's Texas Statewide Truck Parking Study from April 2020[16] does not specifically mention US 57. However, it does provide several data points regarding the roadway's existing conditions related to truck parking. According to this study, from 2013 to 2017 there were 148 crashes involving parked trucks in the Laredo District (3 percent of which were fatal) and 201 crashes involving parked trucks in the San Antonio District (3 percent of which were fatal) (Exhibit 27). There was one crash involving a parked truck along the US 57 corridor near Batesville that resulted in a serious injury (Exhibit 25). US 57 is not designated as a segment of on-system roadway needing truck parking based on crashes involving parked trucks per mile (Exhibit 30). The US 57 and I-35 interchange area is identified as a truck parking high-safety need along I-35. By 2050, US 57 is shown to have a medium need for future truck parking based on combined priority (Exhibit 43).

2.7.2.2. TEXAS FREIGHT MOBILITY PLAN

TxDOT's Texas Freight Mobility Plan[17], approved on March 7, 2018, addresses the freight transportation needs throughout the state. Texas's critical support network of freight consists of highways, railroads, ports and waterways, airports, and pipelines. The U.S. freight policy is guided by federal transportation bills MAP-21 (2012) and FAST Act (2015).

It should be noted that the Texas Delivers 2050 updated Freight Mobility Plan is currently in the final stages of completion. The findings are the same regarding US 57 and its place on the Texas Highway Freight Network. The Texas Delivers 2050 plan does acknowledge the changes coming as a result of the COVID pandemic and supply chain disruptions that are making the nearshoring and reshoring concept a reality as the U.S. seeks to diversify its supply chains for key industries and manufactured goods closer to points of consumption in the U.S. and reduce reliance on imports from Asia.

[15]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, https://www.txdot.gov/government/partnerships/trade-border/btmp.html
[16]TxDOT; Texas Statewide Truck Parking Study, April 2020, https://www.txdot.gov/government/partnerships/freight-planning/statewide-truck-parking-study.html

2.7.2.3. TEXAS TRANSPORTATION PLAN 2050

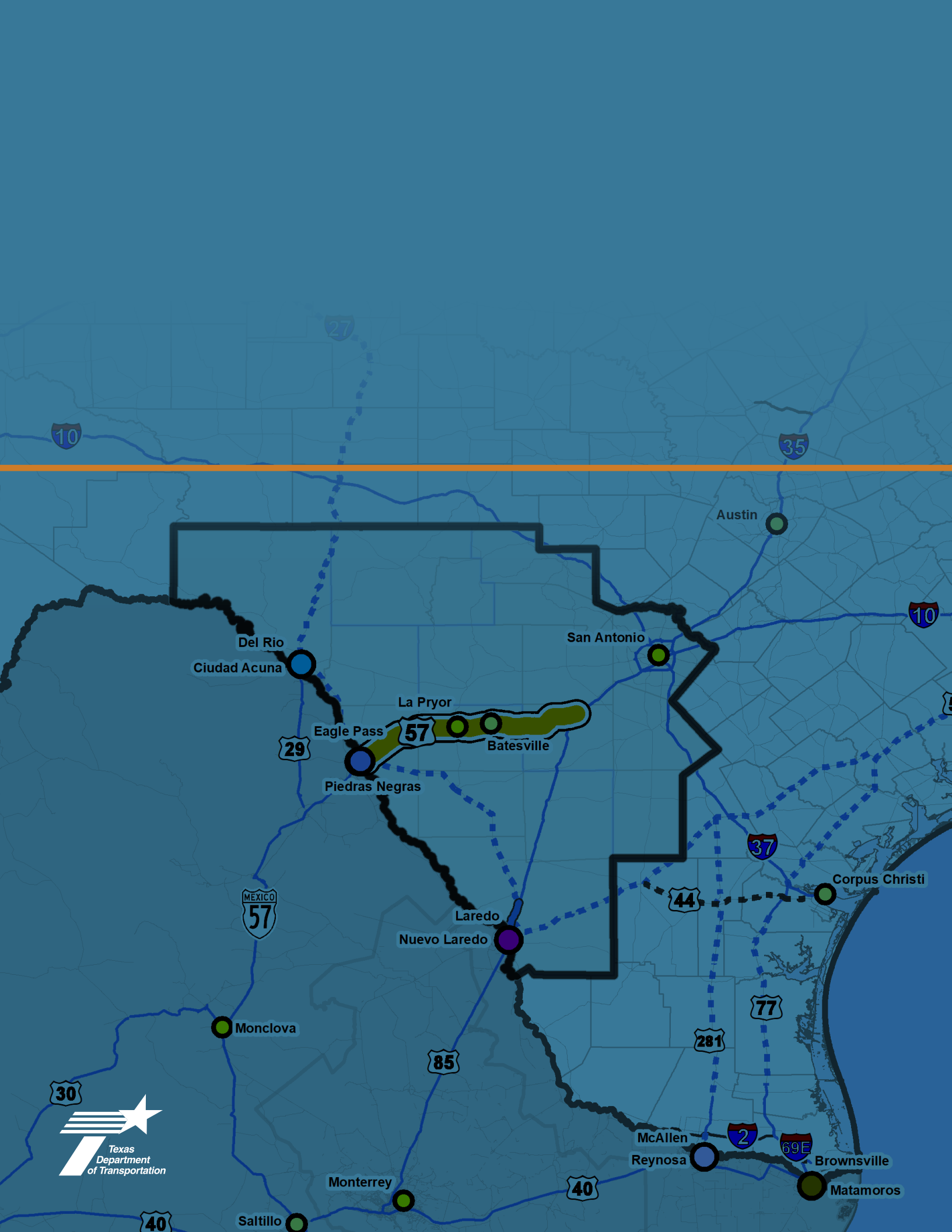
The Texas Transportation Plan (TTP)[18] (https://www.txdot.gov/government/reports/statewide-plan.html) is TxDOT's long-range plan covering a 30-year horizon period. US 57 is designated as a facility on the Texas Primary Highway Freight System. The truck border crossing in Eagle Pass is one of fifteen Commercial Vehicle Border Crossings in Texas.

2.7.2.4. PORTS-TO-PLAINS CORRIDOR FEASIBILITY STUDY REPORT

Ports-to-Plains is a 960+ mile route from the Laredo Texas-Mexico border crossing to the Texas-Oklahoma border in the panhandle. The Ports-to-Plains Corridor Feasibility Study[19] is pertinent due to its roadway alignment through Eagle Pass along US 277. Both US 57 and US 277 share a common route through Eagle Pass for approximately one-half mile from E Garrison Street east to where US 57 diverts from the US 277 alignment. The focus of the Ports-to-Plains study is food security, energy security, and national security.

On March 15, 2022, President Biden signed the Ports-to-Plains/Interstate 27 expansion into law under the Fiscal Year 22 omnibus appropriations bill. The Texas and New Mexico portions of the Ports-to-Plains Corridor are eligible for increased funding to complete the I-27 expansion.

[17]TxDOT; Texas Freight Mobility Plan, March 2018, https://www.txdot.gov/government/partnerships/freight-planning/texas-freight-mobility-plan.html
[18]TxDOT; Texas Transportation Plan (TTP), https://www.txdot.gov/government/reports/statewide-plan.html
[19]TxDOT; Ports-to-Plains Corridor, https://www.txdot.gov/inside-txdot/projects/studies/statewide/ports-plains.html


27
10
35
Austin
10
Del Rio
Ciudad Acuna
San Antonio
La Pryor
Eagle Pass
57
29
Batesville
Piedras Negras
37
Corpus Christi
44
MEXICO
57
Laredo
Nuevo Laredo
77
Monclova
281
85
30
McAllen
2
69E
Reynosa
Brownsville
Monterrey
40
Matamoros
40
Saltillo
Texas
Department
of Transportation

Chapter 3

FORECASTED CONDITIONS

3.1 YEAR 2019 TO 2050 FORECASTED POPULATION

The future (2050) population of the three counties along the US 57 alignment is projected to be 140,000. **Table 3.1**. shows the projected population change for each county along US 57 from year 2019 to year 2050.

Table 3.1 - Population Changes From 2019 to 2050

	Maverick County	Zavala County	Frio County
Year 2019 Population	~58,700	~12,000	~20,000
Year 2050 Population	~94,000`	Less than 15,000	~30,000
Total Change	~48,300		
Tri-County Population in 2050 (projected)	~140,000		

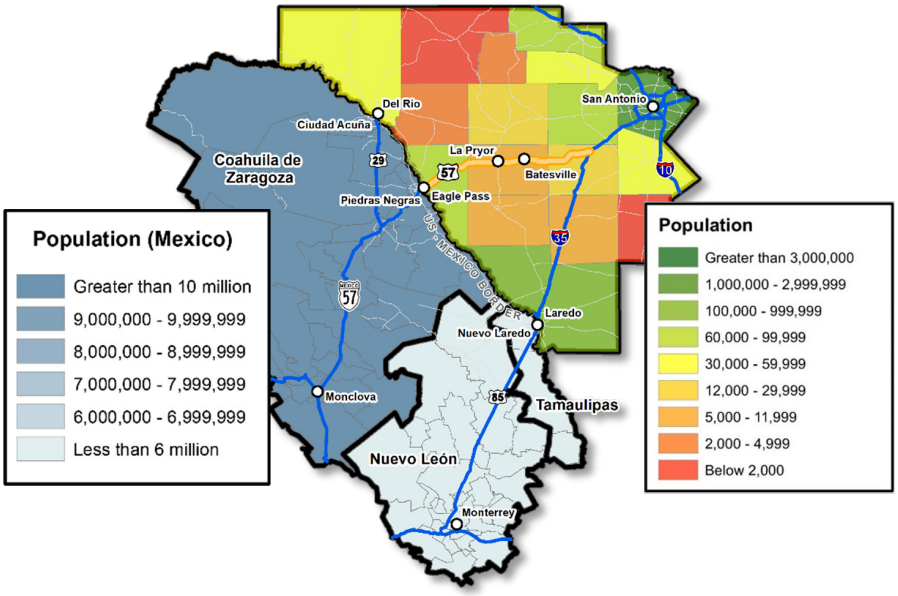


Figure 3.1- Forecasted Population of the Study Area, Year 2050

3.2 FORECASTED ECONOMIC CONDITIONS

3.2.1. 2050 EMPLOYMENT

Employment growth in the study area from year 2021 to 2050 is anticipated to be 36 percent **Figure 3.2** shows the forecasted employment for the study area in year 2050.

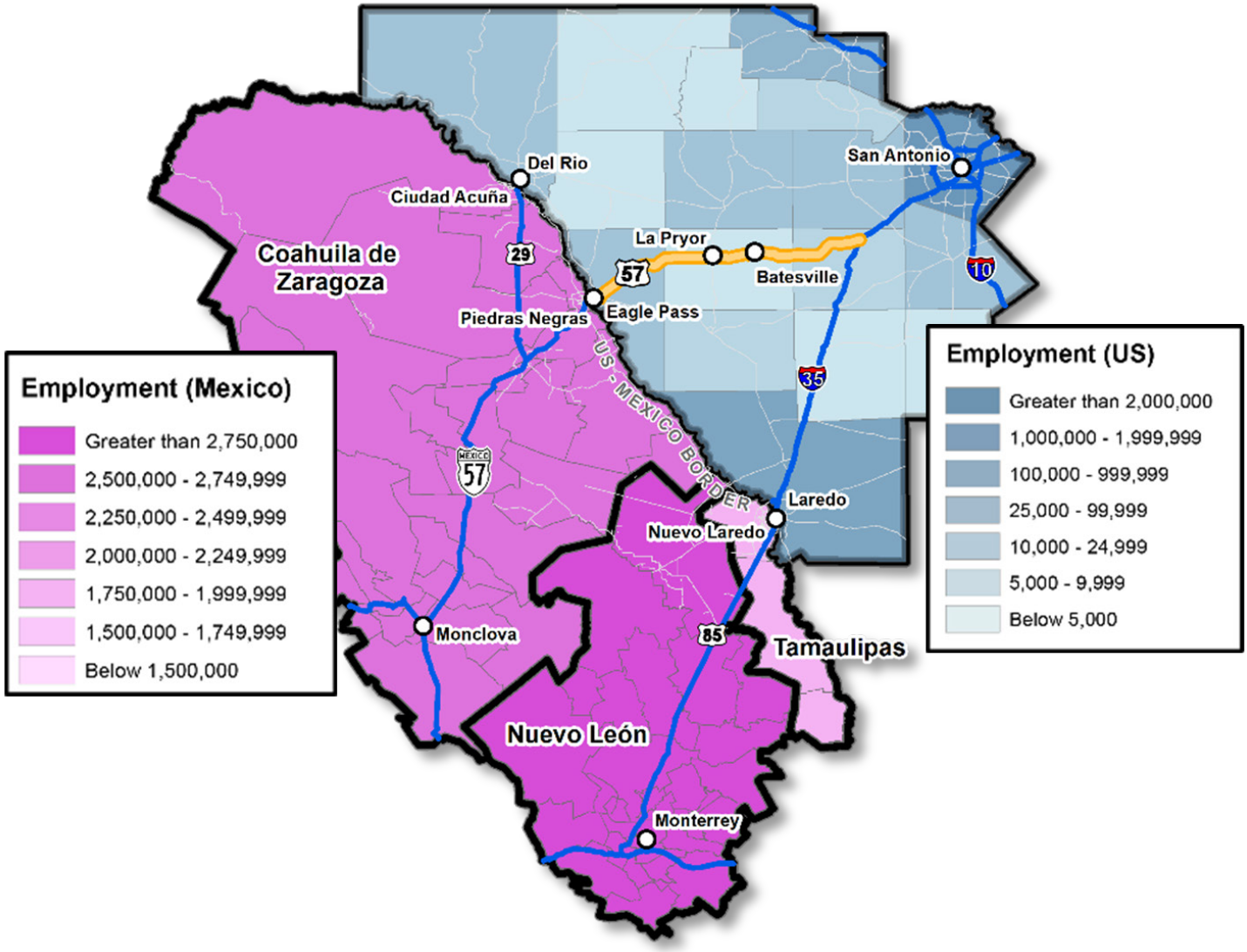


Figure 3.2 - Forecasted Employment of the Study Area, Year 2050

3.2.2. 2050 GROSS DOMESTIC PRODUCT

By year 2050, the gross domestic product of the three-county US 57 area is anticipated to be close to $10 billion combined. GDP growth in the study area between year 2021 and 2050 is anticipated to be 104 percent.

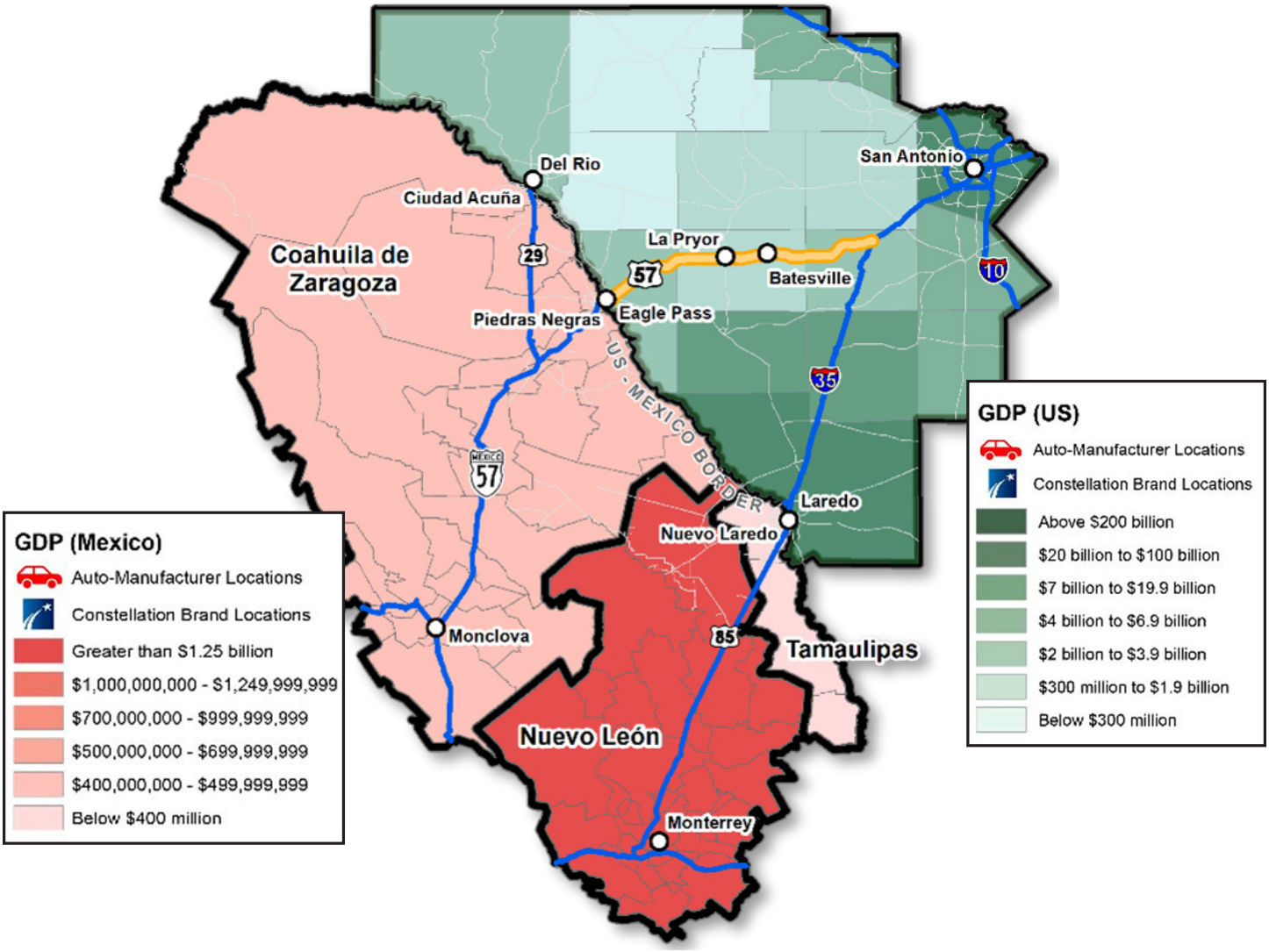


Figure 3.3 - Forecasted GDP of the Study Area, Year 2050

3.3 FORECASTED TRAFFIC CONDITIONS

3.3.1. PROJECTED TRAFFIC VOLUMES AND TRAVEL TIMES IN 2045

Three options were identified early in the development of this Feasibility Study to represent feasible and reasonable options to be studied to compare the existing conditions of US 57 with proposed improvements. The following options were considered and will be expanded on within subsequent chapters of this Study.

OPTION 1: "BASELINE" CONDITION - If US 57 were to remain a U.S. highway, with no widening the anticipated travel time from Eagle Pass to I-35 would be similar to existing conditions, approximately one hour and 40 minutes. This is due to the adequate remaining capacity of US 57 within the 97.7-mile corridor. Additional intersection control delay would likely be present in future years within Eagle Pass and La Pryor.

OPTION 2: INTERSTATE UPGRADE - If US 57 were to be upgraded to an interstate, assuming all interstate design parameters were met or exceeded with a reconstructed corridor, the anticipated travel time from Eagle Pass to I-35 would decrease to one hour and 27 minutes. The 13 minutes of travel time savings would be realized by increased speeds within or around Eagle Pass, Batesville, and La Pryor.

OPTION 3: EXPANDED HIGHWAY - If US 57 were to be widened to a four-lane divided or four-lane undivided facility, several factors need to be weighed and considered. Safety, construction cost, future economic growth, maintenance costs, and other factors would result in trade-offs between the three corridor options. Corridor travel times would be anticipated to be in the 90-minute range for the four-lane divided or four-lane undivided arterial highway options.

TxDOT's Statewide Analysis Model (SAM) output data was used to analyze year 2045 build options. **Figure 3.4** shows the projected traffic volumes along US 57 in a no-build versus build options (if an arterial or interstate is not built versus if an arterial or interstate is built).

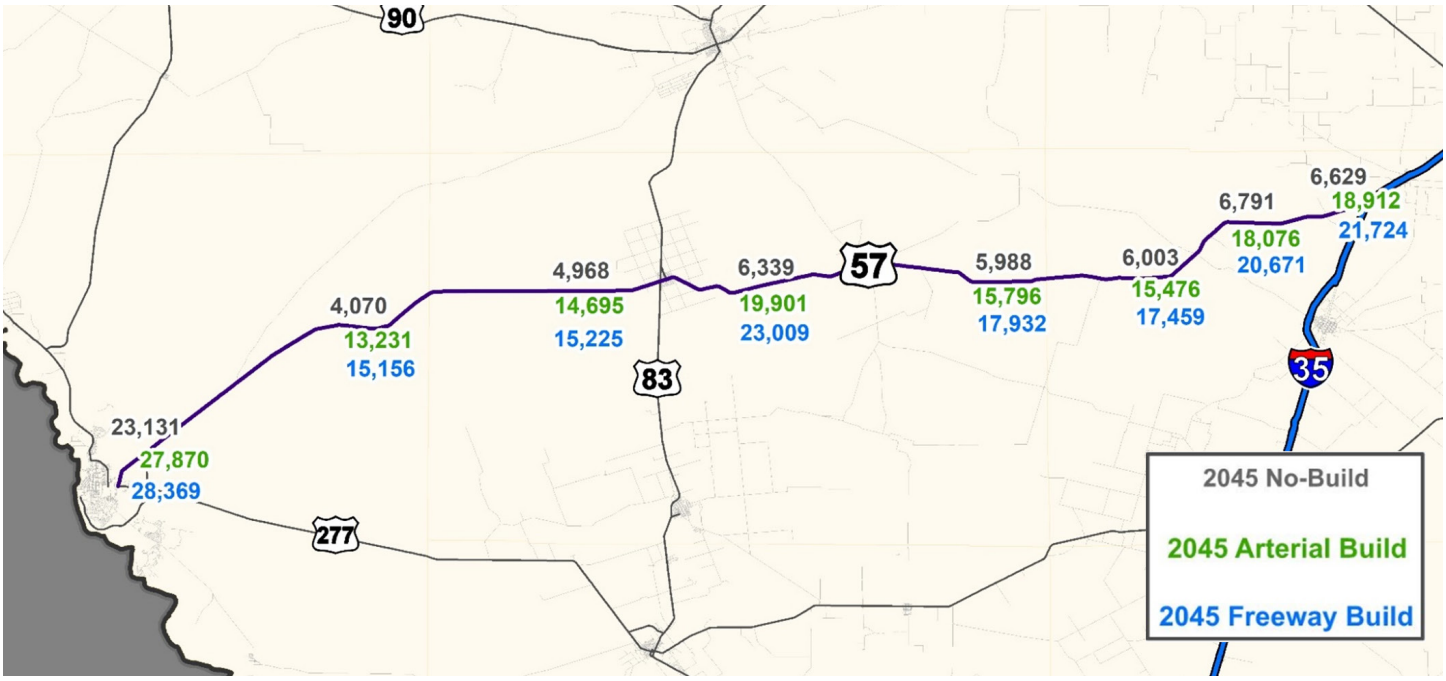


Figure 3.4 - 2045 no-Build (Option 1), 2045 Arterial Build (Option 3), 2045 Freeway Build (Option 2)

A copy of the US 57 Traffic Projections Methodology Memo outlining the development of the ADT and peak hour traffic projections for the study corridor and intersections is included in **APPENDIX C**. To consider future improved conditions along the US 57 corridor, the following proposed options were developed.

Table 3.2 includes calculations for additional potential traffic generated by a proposed four-year university in the City of Eagle Pass, medical tourism near Eagle Pass, and diverted traffic from the City of Laredo border crossing due to nearshoring and reshoring activities along Mexican Federal Highway 57 in Mexico that would divert to the Piedras Negras-Eagle Pass Port of Entry. The calculations shown result in additional need to expand SL 480 to a four-lane facility prior to year 2030. The year 2040 traffic volumes from SL 480 to I-35 result in sufficient capacity if a four-lane divided highway or four-lane interstate is constructed.

Table 3.2 - Potential Traffic Generators

Factor	Total # Trips	Eagle Pass (POE to SL 480)	SL 480 to US 83	US 83 to I-35
US-57 Existing Traffic	-	23,131	4,519	6,350
US-57 2030 Traffic	-	27,870	13,963	17,632
US-57 2040 Traffic	-	28,369	15,191	20,159
University (ITE Trip Generation)	18,669	9,335	1,867	933
Medical Tourism (2% increase in Eagle Pass Crossings)	557	557	279	353
Laredo Diversions + Nearshoring/Reshoring (5% increase in Eagle Pass Crossings)	756	756	756	756
Laredo Diversions + Nearshoring/Reshoring (10% increase in Eagle Pass Crossings)	1,512	1,512	1,512	1,512
Laredo Diversions + Nearshoring/Reshoring (20% increase in Eagle Pass Crossings)	3,023	3,023	3,023	3,023
300 Hotel Rooms (ITE Generation)	1,385	693	485	242
Totals 2030 (5% increase in Eagle Pass Crossings)	21,367	39,210	17,350	19,916
Totals 2030 (10% increase in Eagle Pass Crossings)	22,123	39,966	18,106	20,672
Totals 2030 (20% increase in Eagle Pass Crossings)	23,635	41,478	19,617	22,184
Totals 2040 (5% increase in Eagle Pass Crossings)	21,367	39,709	18,577	22,443
Totals 2040 (10% increase in Eagle Pass Crossings)	22,123	40,465	19,333	23,199
Totals 2040 (20% increase in Eagle Pass Crossings)	23,635	41,977	20,845	24,711

3.3.1.1. TRAVEL TIMES

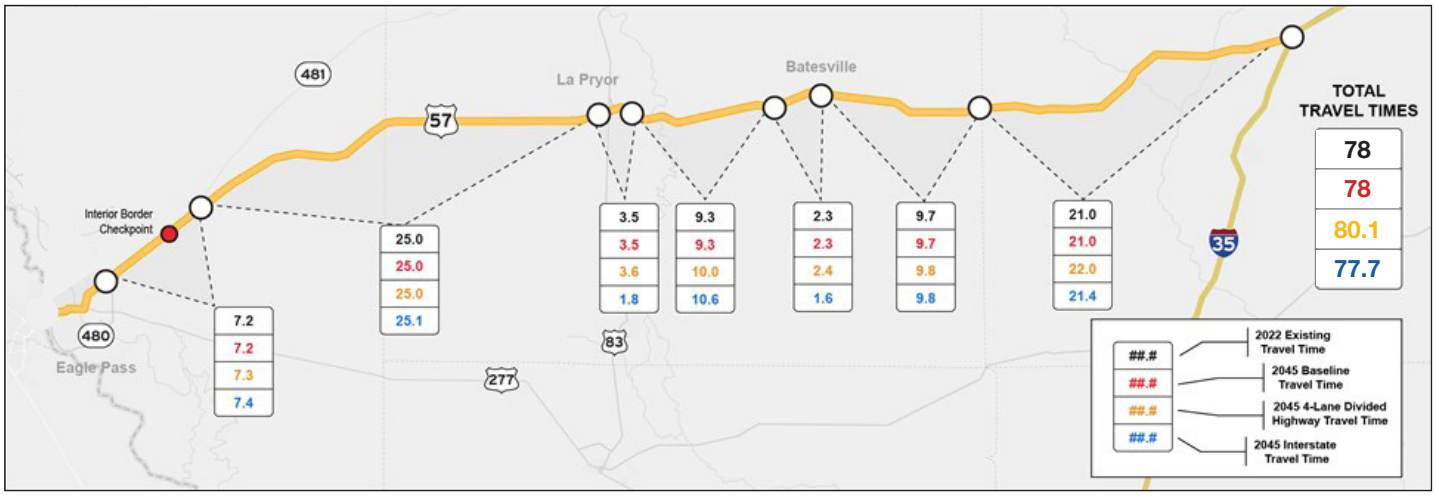


Figure 3.5 - US 57 Travel Time Calculations

A secondary travel time comparison was calculated for the corridor using distance and posted speeds along the corridor in combination with existing and projected traffic volume. **Figure 3.5** shows the corresponding travel times from Bridge I in Eagle Pass along US 57 to the junction with I-35. The times noted (in minutes) do not factor in intersection control delays and eastbound delay encountered at the Interior Border Patrol Checkpoint. Relief routes were considered around La Pryor and Batesville for the Interstate option, which reduced travel times within the proximity of these communities by approximately 1-2 minutes at each City.

As shown in **Figure 3.5**, US 57 corridor travel times are not anticipated to change drastically based on the options analyzed due to several reasons:

- The corridor being less than 100 miles does not provide for a long stretch of roadway that results in significant travel time differences when the existing condition is changed to an expanded highway or interstate.
- Existing posted speeds in Maverick County and Zavala County are 75mph and Frio County is 70mph within the rural portions of the corridor. Since most of the existing US 57 corridor provides these posted speeds there is not a significant travel time improvement with a proposed highway or interstate that would operate with similar 70-75mph posted speeds.
- As shown in **Figure 3.4**, the difference in projected daily traffic from the No-Build option to the 4-lane divided option (Arterial) to the Interstate option is significant. As more vehicles are attracted to US 57 and use US 57 daily, the corridor will experience slight friction and delay which is anticipated to result in slightly greater travel times between Eagle Pass and I-35.

3.3.2. FUTURE FREIGHT FLOW

COMMERCIAL MOTOR VEHICLES

CMVs currently account for a quarter of the traffic on US 57. The volume of commercial motor vehicles (CMVs) along US 57 is anticipated to increase from 1,000 CMVs per day in 2019 to 2,500 CMVs per day in 2050. This rate of CMV increase on US 57 is attributed to the projected increase in border crossing CMVs in Eagle Pass. CMV trade value is expected to increase in Eagle Pass from $8 billion in 2019 to $54 billion in 2050. CMV movements in Eagle Pass at the Port of Entry are expected to increase from 300,000 in 2019 to 600,000 in 2050.

An increase in CMV traffic along US 57 results in substantially more wear and tear to the roadway section. Due to the continuous routing of trucks that may be at or near maximum weight distribution, a future reconstruction of US 57 will need to take into account the presence of truck traffic and the frequency of near-capacity gross weight vehicles.

RAIL

The Laredo Rail Bridge and Eagle Pass Rail Bridge will account for more than 80 percent of rail border crossings in 2050 in the Laredo/Coahuila/Nuevo Leon/Tamaulipas Region.[20] According to the Bureau of Transportation Statistics, for the past several years, Eagle Pass has had approximately 340,000 empty and loaded rail cars crossing the border annually in the northbound direction. The number of northbound rail car crossings is anticipated to increase to 943,700 by 2050. While the increase in rail cars and tonnage in Eagle Pass does not have a direct proportional impact to US 57, the US 57 corridor is undoubtedly one of the major routes that will be impacted by increased border crossing rail trade. By 2050, the Eagle Pass Rail Bridge is forecast to have more goods by tonnage moving through than any other rail crossing. However, the Laredo Rail Bridge is forecast to have the most goods by value at $112.8 billion.[21]

3.3.3. 2045 FREIGHT TONNAGE

CMVs

Total CMV tonnage in Eagle Pass is anticipated to increase from 2 million in 2019 to 12 million in 2050, according to TxDOT's T-MBTMP.

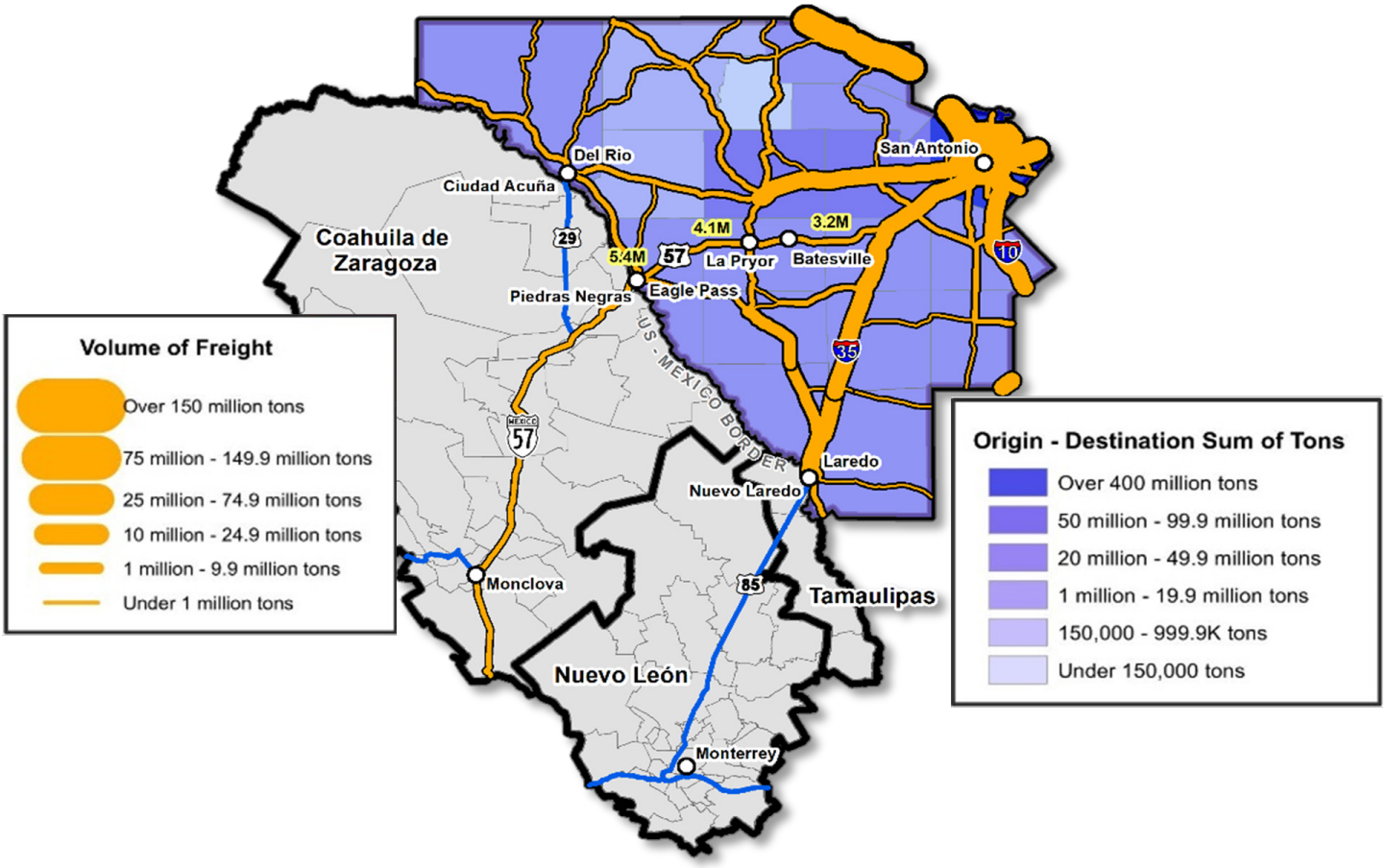


Figure 3.6 - Freight Tonnage of the Study Area, Year 2045

[20]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 6-21 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[21]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 6-19 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf
[22]TxDOT; Texas-Mexico Border Transportation Master Plan 2021, Executive Summary, March 19, 2021; Page 6-21 https://ftp.dot.state.tx.us/pub/txdot/tpp/btmp/btmp-final-report.pdf

3.3.4. ENERGY SECTOR CORRIDORS (EXISTING)

US 57 is part of the Texas Energy Sector Corridor, from La Pryor east to I-35. Energy Sector Corridors are routes identified by the State as important to connect energy sector activity nodes that serve the oil, gas, and renewable energy market. Energy Sector Corridors are purposefully inventoried and reviewed for the need to strengthen pavement and provide safety enhancements due to the heavy truck traffic on these roadways.

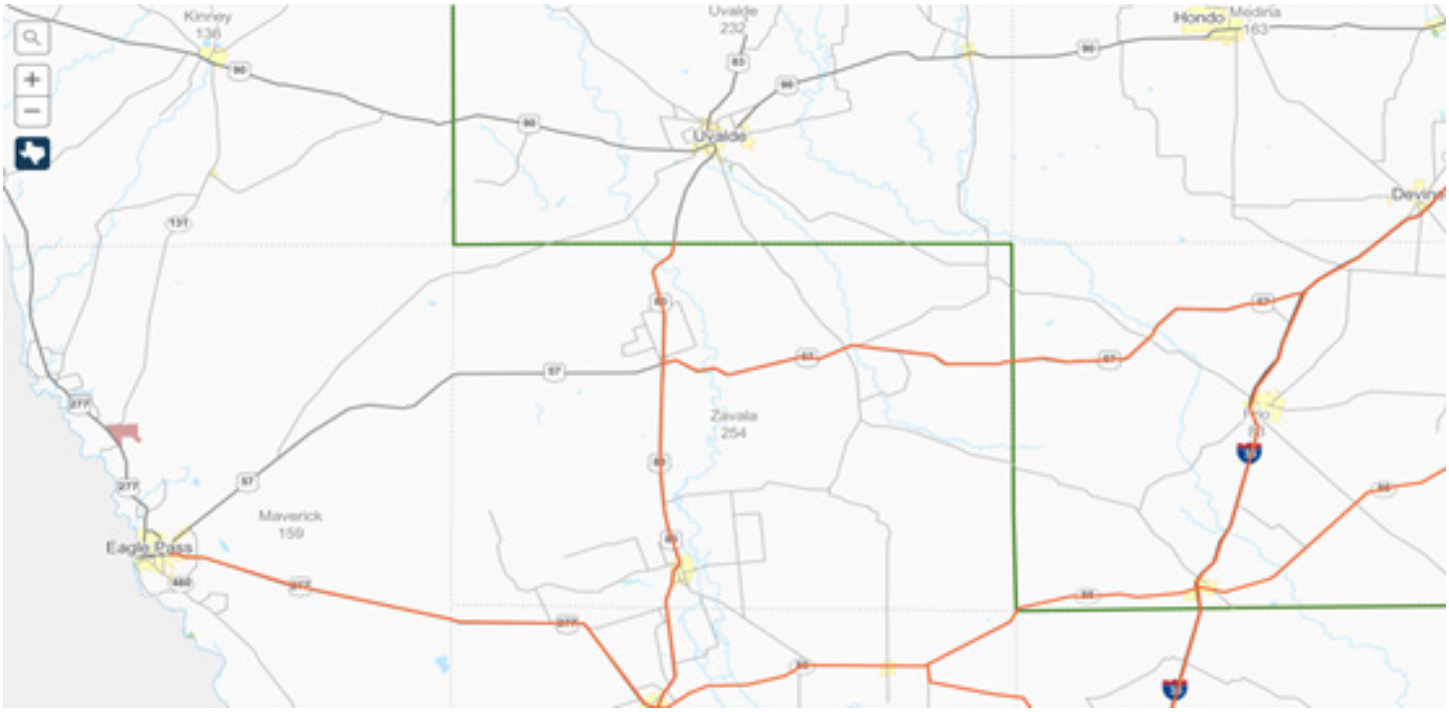


Figure 3.7 - TxDOT Energy Sector Corridors Map

Based on a review of TxDOT's Pavement Management Information System, nearly 41 percent of the US 57 corridor experienced an improvement in pavement condition (see **Figure 3.8**) between 2015 and 2021. Most of these improvements made were along the eastern stretch of the Energy Sector Corridor-section of US 57, with additional improvements made in La Pryor and Eagle Pass.

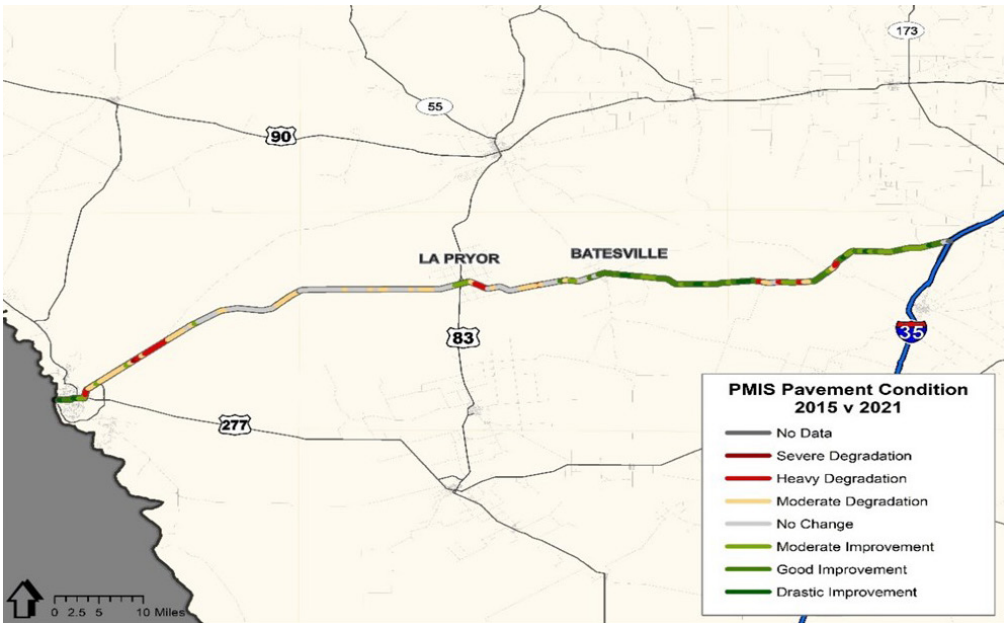


Figure 3.8 - TxDOT PMIS Pavement Condition Comparison Along US 57, 2015-2021

3.3.5. US-MEXICO BORDER CROSSING CONSIDERATIONS

The Eagle Pass POE is one of 11 Texas-Mexico crossings currently overutilized that require operational improvements. It is estimated that the Eagle Pass Bridge I was operating at 149 percent utilization between 2014 and 2018 and Bridge II was at 107 percent utilization. By year 2050, Eagle Pass Bridge I is expected to be at more than double its operational capacity and Bridge II at 132 percent of capacity without additional improvements.

As noted in the T-MBTMP, congestion is present between the BNSF and Union Pacific sidings at Eagle Pass and the areas need additional Customs and Border Protection (CBP) security staffing to keep up with the increasing demand. Improvements to the capacity and efficiency of the three border crossings in Eagle Pass will be required for US 57 to experience the anticipated increase in traffic volume between now and 2050.

According to the Eagle Pass Business Journal, the expected international trade growth at the Eagle Pass-Piedras Negras, Coahuila Port of Entry in the next 30 years is estimated to grow from $33.8B to over $700B.[23] This growth is projected due to significant economic development from the USMCTA and the Asia-Pacific Rim region through the Port of Mazatlan, Sinaoloa, Mexico through overland highways to the states of Sinaloa, Durango, and Coahuila to the Texas-Mexico border at Eagle Pass and Del Rio, Texas.

3.4 FUTURE BORDER CROSSING ASSESSMENT AND NEEDS

3.4.1. INTERNATIONAL TRADE

- Rail crossings in Texas are projected to more than double throughput tonnage between 2016 and 2045. (TFMP)
- Rail car movements of 336,500 in 2019 are expected to grow to 943,700 in 2050. (TMBTMP)
- Total rail tonnage was 15.0 million tons in 2019 and is expected to grow to 45.6 million tons in 2050. (TMBTMP)
- Total rail trade value was $21.4 billion in 2019 and is expected to grow to $57.0 billion in 2050. (TMBTMP)
- Total commercial motor vehicle tonnage at the Eagle Pass border crossing (Bridge II) is anticipated to increase from 2 million tons in 2019 to 12 million tons in 2050. (TMBTMP)
- By 2050, the Eagle Pass Rail Bridge is expected to have more goods by tonnage moving through than any other U.S.-Mexico rail crossing. (TMBTMP)
- Total commercial motor vehicle trade value for Bridge II is anticipated to increase from $8 billion in 2019 to $54 billion in 2050. (TMBTMP)
- Commercial motor vehicle trips are anticipated to increase from 200,000 in 2019 to 600,000 in 2050. (TMBTMP)

3.4.2. BORDER CROSSINGS

- Eagle Pass-Piedras Negras International Bridge (Bridge I)
  - Anticipated to be at 218% capacity in 2050
- Camino Real International Bridge (Bridge II)
  - Anticipated to be at 132% capacity in 2050
- International Railroad Crossing (Union Pacific Railroad Bridge)
  - Congestion between the BNSF and UP sidings and need for additional CBP border security staffing identified in the TMBTMP, 2021
  - Limited train speeds and limited freight capacity due to need for improved infrastructure and expanded track.

[23]TxDOT Survey of U.S. Highway 57 to Solicit Input at Eagle Pass-Maverick County Economic Developoment Alliance Meeting on October 12th. Eagle Pass Business Journal. Sourced October 25, 2022. https://www.epbusinessjournal.com/2022/09/txdot-survey-of-expanding-u-s-highway-57-results-to-be-presented-at-eagle-pass-maverick-county-economic-development-alliance-meeting-on-october-12th/

3.4.3. OTHER CONSIDERATIONS

Factors that could lead to a future impact of traffic volume, goods, and services relying on the existing US 57 corridor alignment include:

- ***High-speed passenger train from Monterey to San Antonio*** – While this potential project would likely impact the border crossing in Laredo more than in Eagle Pass, there could be variance in passenger car crossings in the future if a high-speed train were built between the City of Monterey, Mexico, and the City of San Antonio, Texas, USA.
- ***I-27 Corridor Enhancements*** – If the Ports-to-Plains study progresses to the funding and construction phase of a continuous interstate from Laredo to the Texas panhandle, the number of CMVs crossing in Eagle Pass to access the I-27 route could fluctuate.
- ***Upgraded Rail Crossing Amenities and Capacity in Eagle Pass*** – the number of rail cars crossing the border in Eagle Pass is anticipated to nearly triple by year 2050. This will not happen unless additional trackage is added within Eagle Pass to stage and store rail cars.
- ***Increase in production and imports of beer bottled in Mexico to the U.S.*** — While rail may serve as a common transportation method, CMV trips and tonnage is anticipated to increase across the border in Eagle Pass for beer.

3.5 PLANNED AND PROGRAMMED PROJECTS

The following list of planned and programmed projects is provided as a resource for consideration when reviewing this study (see **Figure 3.9**). Some of the projects listed, while falling within the limits of the US 57 corridor, may not necessarily impact the interstate feasibility of US 57. TxDOT's 2022 Unified Transportation Program (UTP) was referenced in creating this list, along with TxDOT's Open Data TxDOT Projects dataset and conversations with TxDOT staff.

3.5.1. TXDOT PROJECTS DATASET (PROJECT TRACKER)

- US 83 and US 57 Seal Coat From I-35 to Zavala County Line (Object IDs: 17332 and 11502)
- US 57 Overlay in La Pryor from US 83 to 1.239 Miles East (Object ID: 1649)
- US 57 Overlay in Eagle Pass from RM 372 to RM 378 (Object ID: 5933)
- US 57 Traffic Signal Improvements in Eagle Pass (Object IDs: 18197 and 18791)
- SL 480 Seal Coat from FM 1021 to US 57 (Object ID: 18536)

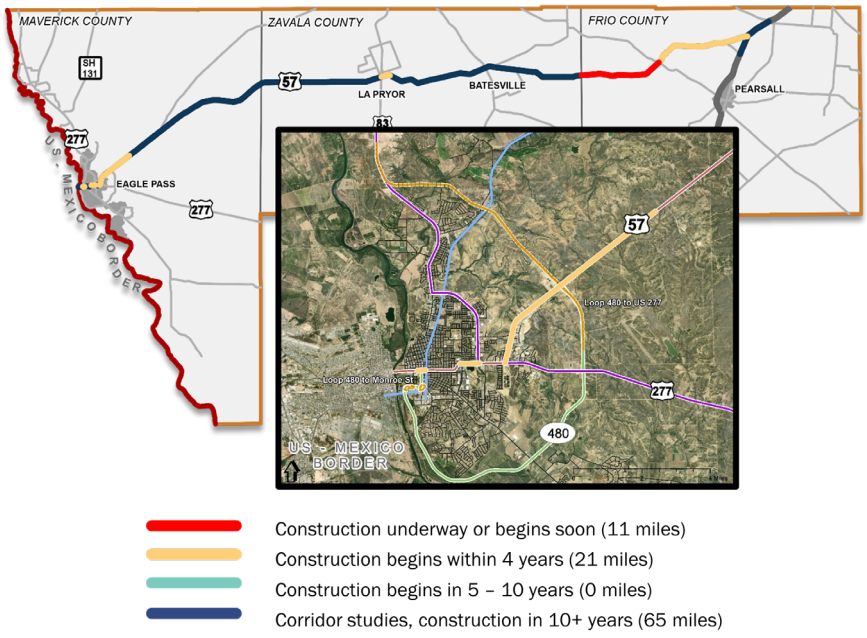


Figure 3.9 - US 57 Corridor Estimated Investments, Active Projects Next 10 Years

3.5.2. PORTS-TO-PLAINS CORRIDOR INTERSTATE FEASIBILITY STUDY

The Ports to Plains Corridor Segments 1, 2, and 3 published Committee Reports in 2020 for the consideration of a continuous interstate from Laredo, TX, to near Stratford, TX, at the Texas-Oklahoma border, as shown in **Figure 3.10**. In March 2022, President Biden signed the Texas and New Mexico portions into law with assigned federal budget.

Figure 3.10 - Ports-to-Plains Corridor

3.5.3. UNION PACIFIC-BNSF JOINT-USE TRACKS IN EAGLE PASS

Based on a FY 2017 TIGER application, this project would install 1.6 miles of new railroad track and improve 1.0 miles of existing yard track in Eagle Pass, as shown in **Figure 3.11**. The "U.S. Trade Connection at Eagle Pass" project involves TxDOT, Union Pacific Railroad, and BSNF Railway.

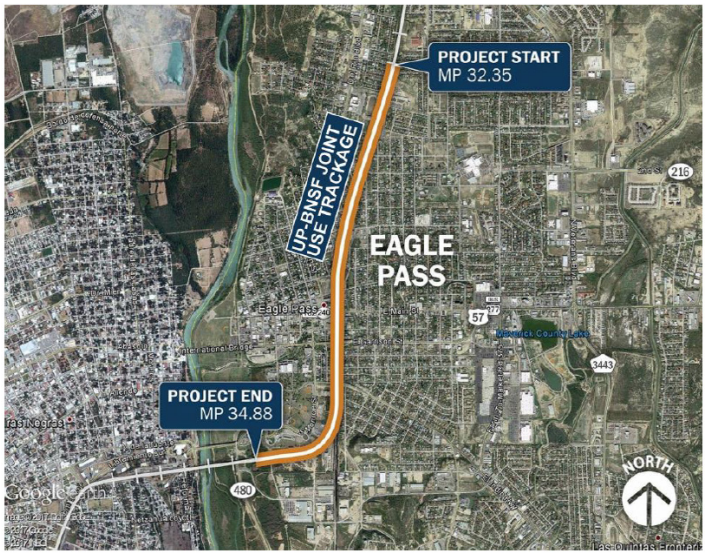


Figure 3.11 - Union Pacific-BNSF Joint-Use Tracks

3.5.4. SL 480 EXTENSION TO US 277

Starting at the SL 280 and US 57 intersection, this project is proposed to install an interchange at this junction and then route north and west until connecting to US 277 north of Eagle Pass. The project is at the 90% PS&E development at the time of this drafted study.

3.5.5. SL 480 TO MONROE STREET IN EAGLE PASS

This project is evaluating the potential to realign a portion of SL 480 near the Eagle Pass border crossing. It is led by the City of Eagle Pass. Refer to **Figure 3.9**.

3.5.6. US 83 CORRIDOR STUDY

A planned TxDOT study of US 83 includes the junction of US 83 at US 57. This intersection is prone to peak period congestion, most notably on Mondays and Fridays.

3.5.7 PLANNED EXPANSION IMPROVEMENTS

- ***Federal Mexico**** POE infrastructure improvements: $57M USD ($1.15B pesos)
- State of Columbia* doubling capacity on International Bridge (250') from six lanes to 12 lanes: $10M USD ($200M pesos)
- The Mexican rail company Ferromex* dual-track railroad: Funding and Schedule to be determined

**Sponsor of the project*

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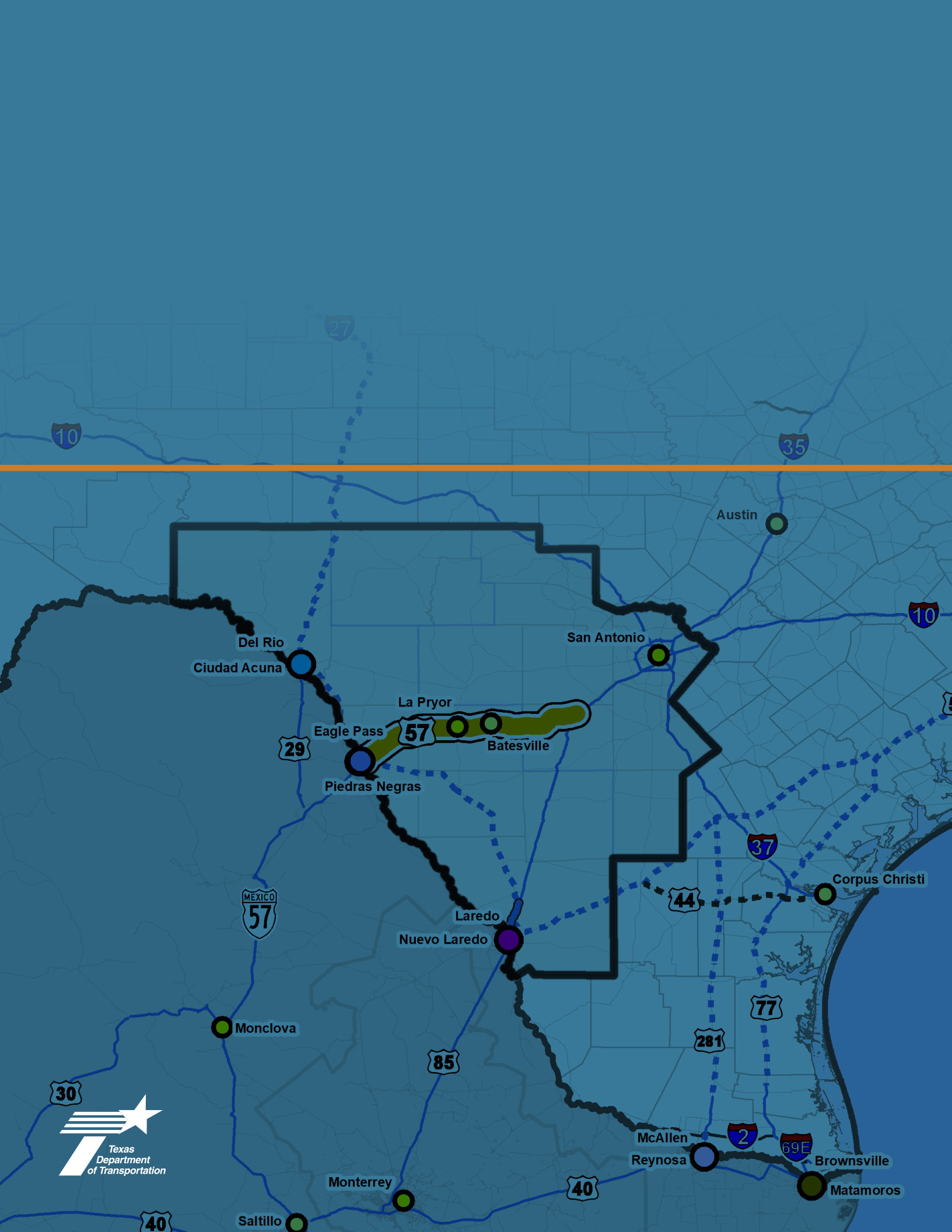
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Saltillo
Texas
Department
of Transportation

Chapter 4

ENVIRONMENTAL DOCUMENTATION

Environmental documentation was performed along a 100-foot width on both sides of the existing US 57 corridor, using resources including: environmental tables describing existing resources, with the geographic information system (GIS) mapping of those resources; a description of methodologies; select photos from a pre-National Environmental Policy Act (NEPA) drive through survey; notes regarding resources that should be investigated in detail once the NEPA phase starts; and key issues/constraints for consideration in determining the feasibility of improving the US 57 corridor to an interstate based on the drive-through survey.

4.1 GIS DATA SOURCES

GIS data was collected from several sources for each resource category evaluated. The GIS data sources used for each data layer are described in **APPENDIX D**.

4.2 METHODOLOGY AND EVALUATION BY RESOURCE CATEGORY

On November 17, 2021, the Corridor Study team performed a preliminary drive-through survey of the proposed study area. **APPENDIX D** contains select photographs from the drive-through survey with a Photo Location Map with corresponding photolog key. A summary of the identified environmental constraints for the study area can be found in **APPENDIX D**.

4.2.1. CULTURAL RESOURCES

Compliance with laws protecting cultural resources often requires consultation with the Texas Historical Commission (THC), the Texas State Historic Preservation Office (SHPO), federally recognized tribes, and/or municipalities to determine potential impacts of proposed projects on cultural resources. Both state and federal laws mandate the consideration and protection of cultural resources during the project planning stage.

Section 4(f) of the Department of Transportation Act and its implementing regulations prohibit the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of a historic site of national, state or local significance for transportation projects unless there is no feasible and prudent option to using the land and the project includes all possible planning to minimize harm to the property resulting from the use, or the impact is de minimis.

Due to the strength of Section 4(f) regulations which protect historic sites, impacting even one National Register of Historic Places (NRHP)-eligible resource or part of a district could result in a significant constraint. Adverse effects to historic properties must be avoided unless there is no prudent and feasible option. Cultural resources have been documented along the US 57 corridor; additional information is provided for each of the following areas within **APPENDIX D**:

- Historic resources
- Archeological resources

- Archeological sites
- NRHP properties and districts
- Historic markers
- Cemeteries
- Historic bridges
- Park land

4.2.2. NATURAL RESOURCES

- Ecological setting
- Water resources
- Biological resources

4.2.3. HUMAN ENVIRONMENT

- Land use
- Community resources
- Environmental justice
- Hazardous materials

4.3 SUMMARY

Environmental constraints were identified and documented in this report. Field investigations have not been conducted to verify or supplement these assessments. Note that this study is a high-level constraints review and does not include ground truthing or other more detailed analysis that would take place for a subset of stations during the NEPA phase.

A few of the higher priority constraints documented along the US 57 consist of:

- Texas Water Development Board (TWDB) Groundwater Wells
- Well Pads
- Woodlawn and St.Patrick Cemeteries (near Batesville, directly adjacent to US 57 ROW)
- National Wetlands Inventory (NWI) Wetlands
- Recorded Archeological Sites
- NRHP-Eligible Resources in Eagle Pass and La Pryor

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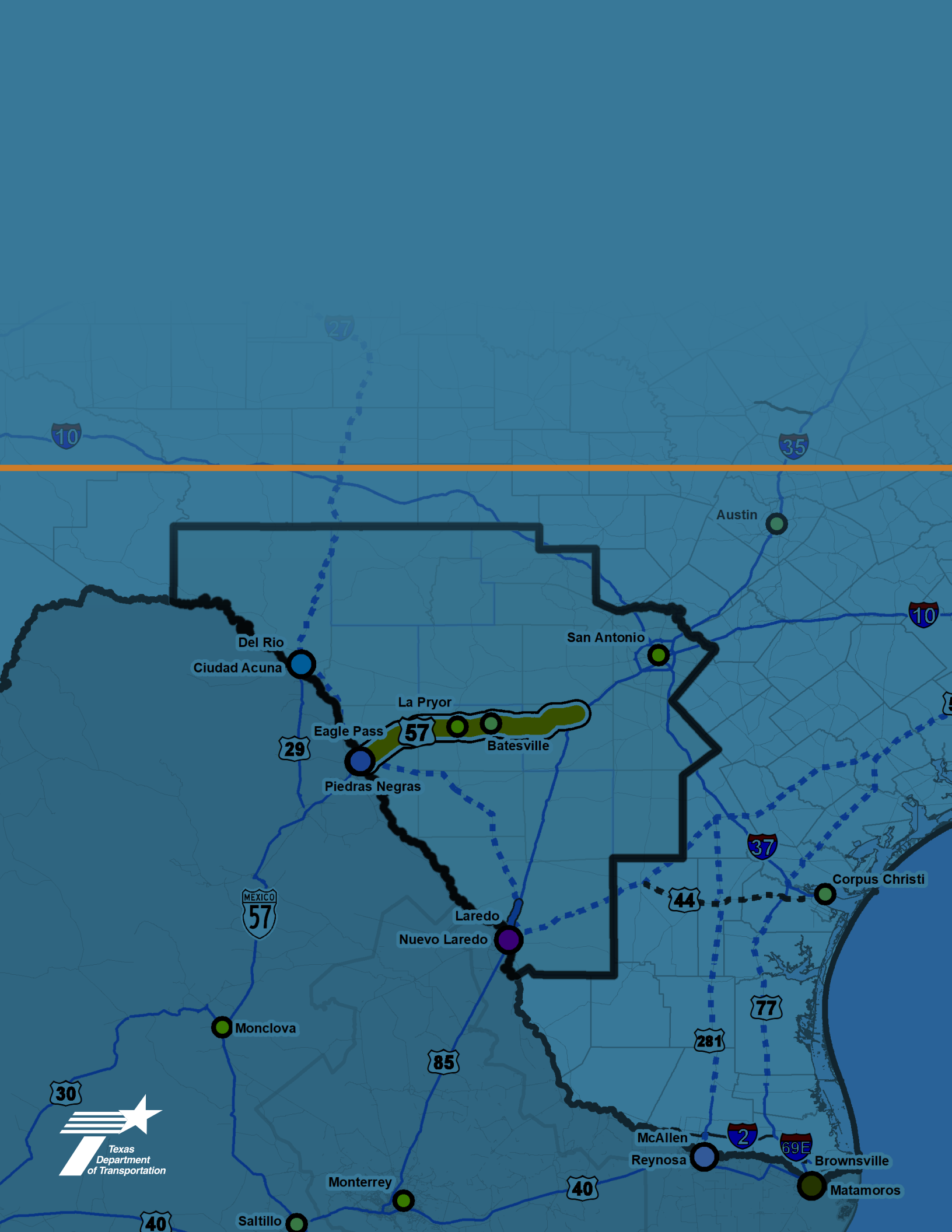
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MEXICO
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Laredo
Nuevo Laredo
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Brownsville
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Saltillo
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Chapter 5

INTERSTATE DESIGNATION PROCESS

5.1 INTERSTATE DESIGNATION REGULATORY FRAMEWORK

The administrative path and congressional path for new interstate designations is briefly summarized within TxDOT's Interstate Designation Process Technical Memorandum. Since US 57 is not currently identified as a high-priority corridor although US 57 is identified as part of the THFN, on the National Highway System (NHS), any effort to designate US 57 as an interstate would follow the administrative path in its determination to be potentially designated as a new interstate segment.

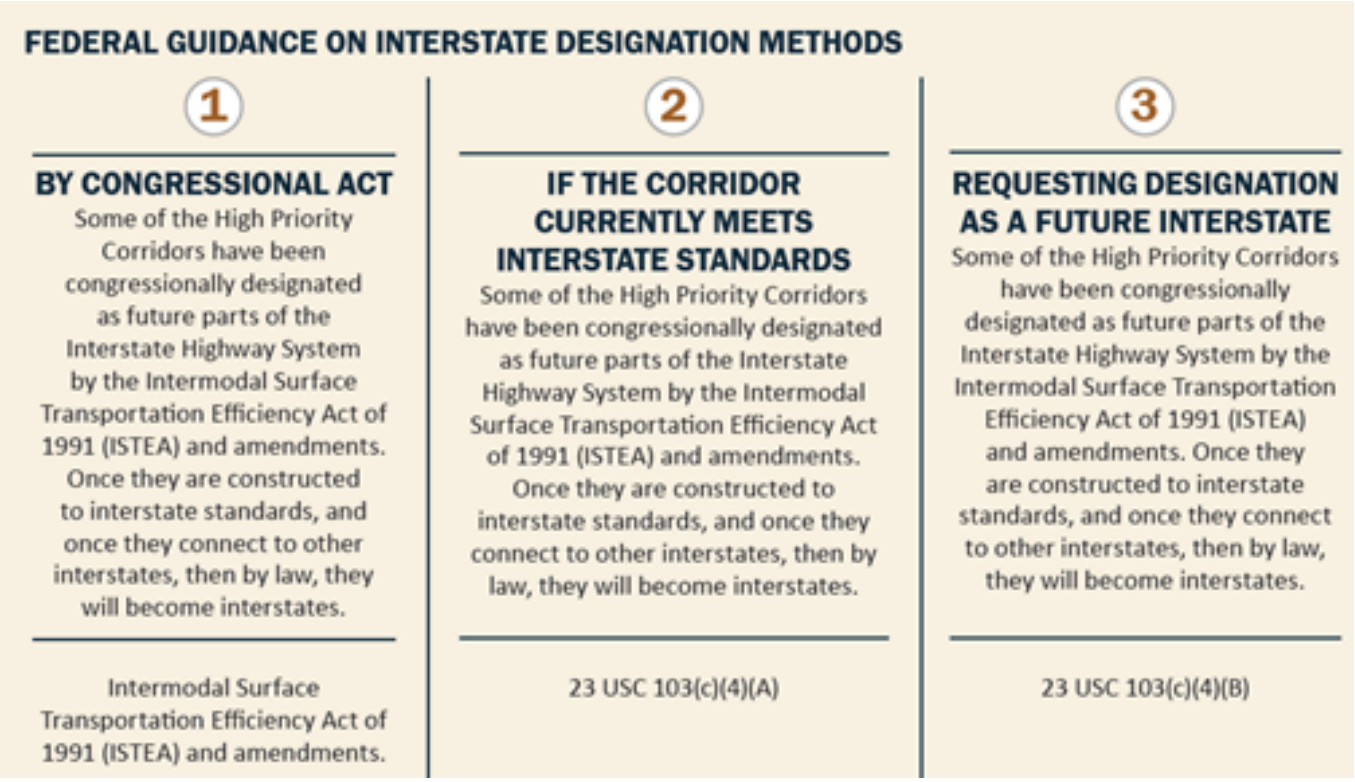

Figure 5.1 - TxDOT's Interstate Highway System Designations Graphic

The following are federal regulations and enacted Congressional legislation that provide the framework for both the administrative and Congressional path processes:

5.1.1. 23 CFR § 470.111 – INTERSTATE SYSTEM PROCEDURES

Title 23 of the United States Code, Section 470.111, covers information pertaining to Interstate System procedures. A full version of this text is in **APPENDIX E**.

5.1.2. 23 UNITED STATES CODE (U.S.C.) § 109

Title 23 of the United States Code, Section 109, covers information pertaining to uniform standards for the interstate system. A few areas addressed in this code include:

- Geometric and construction standards
- Design criteria for the National Highway System
- Installation of safety devices
- Coordination with the Environmental Protection Agency (EPA)

Title 23 of the United States Code, Section 109, is significant relative to the US 57 Corridor Interstate Feasibility Study. Section 109 provides the basis of geometric design criteria required for a roadway to be a part of the National Highway System. Without meeting these design parameters, US 57 is not eligible for interstate designation. Furthermore, US 57 must meet all applicable criteria before FHWA and AASHTO will process a designation request.

A full version of this text is in **APPENDIX F**.

5.1.3. 23 UNITED STATES CODE (U.S.C.) SECTION 625.4

Title 23 of the United States Code, Section 625.4, covers information pertaining to standards, policies, and standard specifications for:

- Roadway and appurtenances
- Bridges and structures
- Materials
- Documents incorporated by reference
- Design resources to achieve context sensitive designs when guides are not in conflict with federal laws and regulations

A full version of this text is in **APPENDIX G**.

5.1.4. INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991 (ISTEA) (PUBLIC LAW 102-240). SECTION 1105, AS AMENDED

Section 1105 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). covers information pertaining to high-priority corridors on the National Highway System (see **APPENDIX H**).

The US 57 corridor limits studied are not part of Section 1105, as currently amended, of ISTEA, so a designation of US 57 as a new interstate would follow the administrative path by:

- meeting interstate designation standards
- being a logical addition or connection to the interstate system
- having the affirmative recommendation from the State of Texas

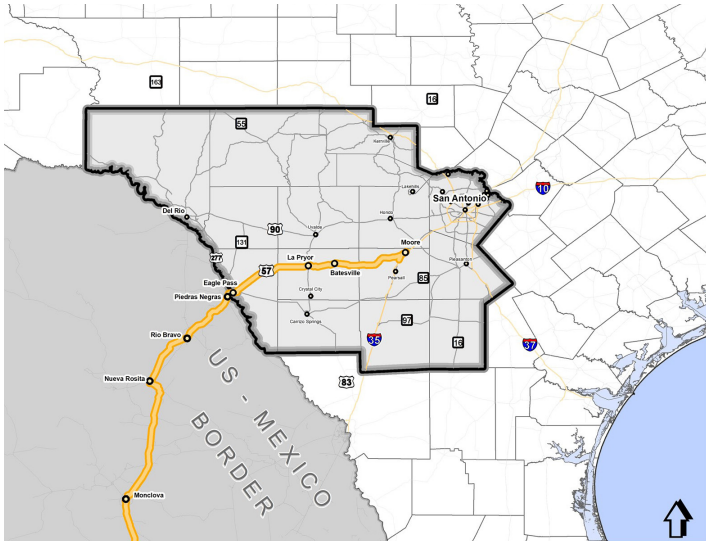

Figure 5.2 - Continuation of Mexican Federal Highway 57

5.1.5. US 57 INTERSTATE DESIGNATION PROCESS AND CONSTRAINTS

The US 57 corridor interstate upgrade evaluation, following the administrative path, would apply FHWA 23 CFR 470.111(b) and Appendix A to Subpart A of Part 470. From the itemized list of applicable FHWA procedures and criteria in accordance with these codes, the following are potential constraints for future US 57 interstate upgrade:

- A highway that meets all the standards of a highway on the interstate system.
- The proposed route must meet all the current geometric and safety standards criteria as set forth in 23 CFR 625 for highways on the interstate system.

Step 3 of TxDOT's Interstate Designation Process Technical Memorandum is a meeting with FHWA Texas Division Officials facilitated by TxDOT's Transportation Planning and Programming Division (TPP).

5.2 INTERSTATE ROUTE NUMBERING

5.2.1. AASHTO INTERSTATE ROUTE NUMBERING SYSTEM

The Interstate System uses routes with even numbers that run east-to-west that are one- or two-digit numbers developed by officials of the AASHTO. The lowest-numbered east-west interstate routes are in the southern portion of the U.S. Where a route traverses through an urban area, a partial circumferential beltway around or within an urban area may carry a three-digit number.

The US 57 route does not parallel or intersect an existing designated interstate until its eastern limit, where it converges into I-35. The western portion of US 57 does share a limited alignment with TxDOT's Ports-to-Plains Corridor Study area in the City of Eagle Pass, TX. The Ports-to-Plains Corridor Study is focused on a future continuous alignment of I-27 from Laredo, TX, north to the northern border of Texas, where US 87 and US 287 cross to New Mexico and Oklahoma, respectively. The overall Ports-to-Plains Corridor extends for 2,300 miles into western Canada.

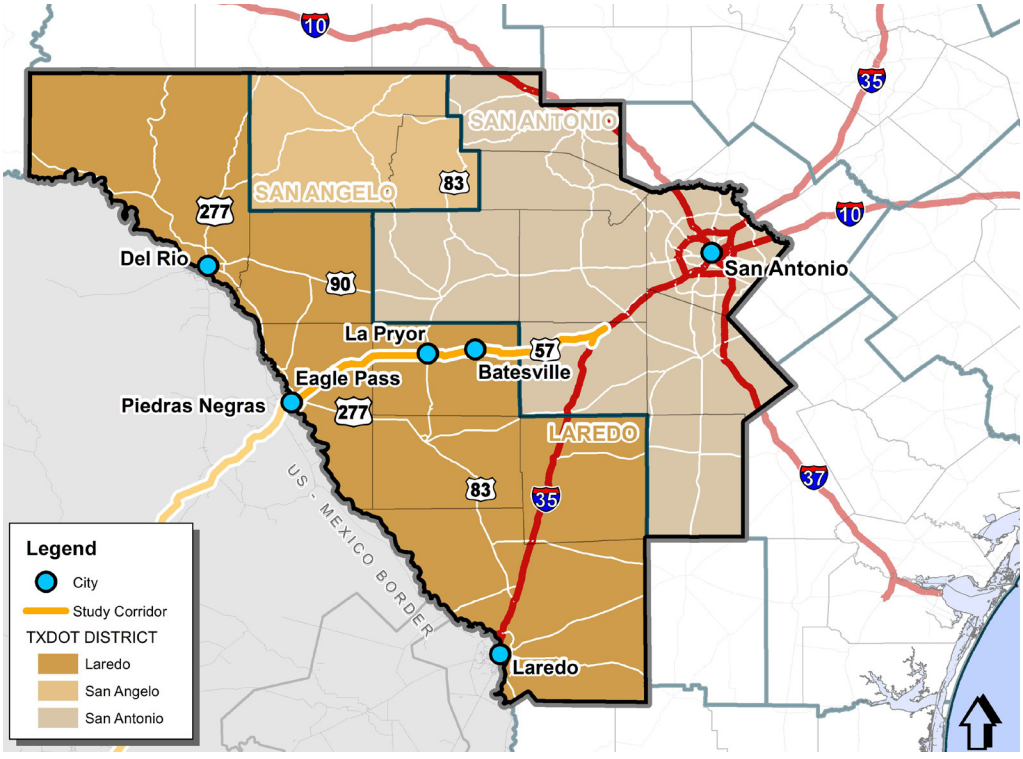

Figure 5.3 - Interstate Route Numbering in the Project Area

5.3 SEGMENT ALIGNMENT

The proposed limits of US 57 studied within this report begin at 28d42'19.8"N and 100d30'43.0"W at the western and southern limit, and end at 29d03'34.8"N and 99d00'12.0"W at the eastern and northern limit. This equates to a change in 23.5 miles from south to north and 91.9 miles from west to east. The route starts at Eagle Pass Bridge I in Eagle Pass, TX, and terminates at I-35, southwest of Moore, TX.

5.4 POTENTIAL SEGMENT DESIGNATION

The US 57 corridor alignment exists south of Interstate 10 and north of Interstate 2 as shown in **Figure 5.4**. Therefore, a logical designation for US 57 would be I-4, I-6, or I-8. I-4 (Florida) and I-8 (Arizona, California) currently exist on the Interstate System. "Interstate 6" is currently not an active designation in the contiguous United States. Therefore, a potential segment designation of Interstate 6 (I-6) would be reasonable along the US 57 alignment if all other parameters are met to achieve interstate upgrade.

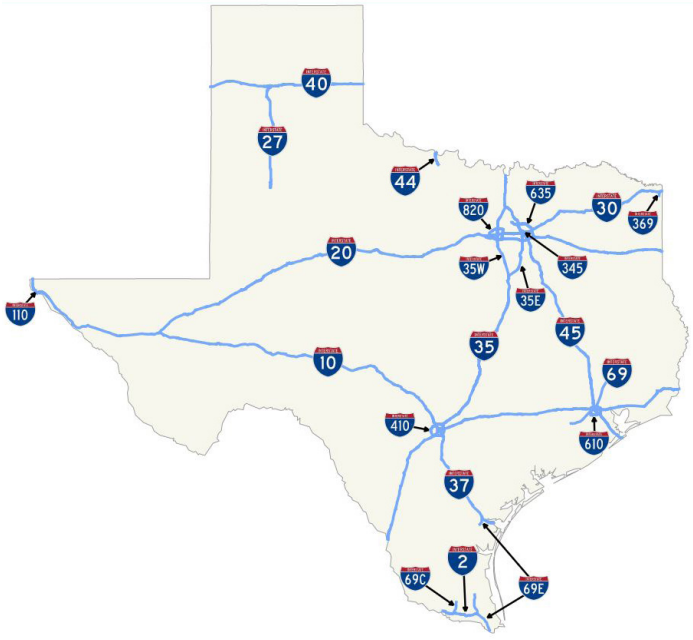

Figure 5.4 - Existing Interstate Designations in Texas

5.5 DESIGNATION PROCESS

The US 57 corridor is not identified as a high-priority corridor by the ISTEA (1991), as currently amended. Several steps would be followed in preparing for and receiving interstate upgrade of the US 57 segment, consisting of:

1. Identify segments of the US 57 corridor that do not currently meet interstate standards.
2. Re-construct segments of the existing US 57 corridor that do not currently meet interstate standards.
3. Prepare a request for interstate designation, including a technical report, in accordance with Title 23, Part 470 of the Code of Federal Regulations. Design exceptions would be identified and coordinated with the FHWA.
4. Obtain local and TxDOT support resolutions.
5. Submit the request to FHWA
6. If approval is received by FHWA, submit a route number request to AASHTO.

5.6 INTERSTATE DESIGN STANDARDS

5.6.1. REQUIREMENTS

Interstate highways are defined by and maintained to meet or exceed a uniform set of standards across the U.S. The standards include:

- Full control of access
- Design speeds (70 mph for rural interstate)
- A minimum of two travel lanes in each direction
- 12-foot lane widths
- 10-foot right-paved shoulders
- 4-foot left-paved shoulders
- Limited access points
- Ramp lengths to accommodate exit deceleration and access acceleration

Before beginning the designation process, US 57 would need to be re-designed and re-constructed to fully comply with interstate system standards. These parameters, for both rural and urban sections, are shown on the following page.

Table 5.1 - Interstate Designation Design Requirements

No.	Elements of Design	Design Requirement	US 57 Existing Conditions	
			Rural Freeway	Urban Freeway
1	Design Speed	**RURAL:** 70 mph (min.) **URBAN:** 50 mph (min.)	Met	Not met
2	Lane Width	**RURAL / URBAN:** 12 feet	Met	Met
3	Shoulder Width	**RURAL/URBAN:** 4 LANE SECTION – 4 feet (inside)/10 feet (outside) 6 LANE SECTION – 10 feet (inside)/10 feet (outside)	Not met Not met	Not met Not met
4	Horizontal Curve Radius	**RURAL:** 2,040 feet (70 mph) **URBAN:** 833 feet (50 mph)	Not met	Not met
5	Superelevation Rate	**RURAL/URBAN:** Emax = 6%	TBD	TBD
6	Stopping Sight Distance (SSD)	**RURAL:** 730 feet (70 mph) **URBAN:** 425 feet (50 mph)	TBD	TBD
7	Maximum Grades	**RURAL:** 3% max. (70 mph, level) **URBAN:** 4% max. (50 mph, level)	TBD	Met
8	Cross Slope	**RURAL/URBAN:** Travel lane – 1.5% to 2.5%, 2% desirable (on tangent), Shoulders – 2% to 6%	Met	Met
9	Vertical Clearance	**RURAL/URBAN:** 16 feet min. for a single interstate route; 14 feet min. for other interstate urban routes if a 16-feet alternate is also available. Sign trusses and pedestrian overpasses have a 17-foot min.	Met	Met
10	Design Loading Structural Capacity	**RURAL/URBAN:** HS-20 existing bridges should meet requirements of #9, #10, #13, and have a 20-year service life	Not met	TBD
11	Vert. Alignment	**RURAL/URBAN:** Combination of #6 and #7 above	Not met	Met
12	Lateral Offset to Obstructions	**RURAL:** 30 feet min. (70 mph) **URBAN:** 24 feet min. (50 mph)	Not met	Not met
13	Bridge Width	**RURAL/URBAN:** 3.5 feet (inside shoulder)/10 feet (outside shoulder) and 12-foot lane width x # lanes (bridge length < 200 feet), 3.5 feet (inside and outside shoulder) and 12-foot lane width x # lanes (bridge length > 200 feet)	Not met	N/A
14	Number of Lanes	**URBAN/RURAL:** 2 lanes each direction	Not met	Not met

No.	Elements of Design	Design Requirement	US 57 Existing Conditions	
			Rural Freeway	Urban Freeway
15	Median Width	**RURAL:** 36 feet **URBAN:** 10 feet	Not met	Not met
16	Side Slopes	**RURAL/URBAN:** 1 Vertical:4 Horizontal, max. unprotected slope	N/A	N/A
17	Horizontal Clear Zone	**RURAL:** 30 feet min. (70 mph) **URBAN:** 24 feet min. (50 mph)	Not met	Not met
18	Curbs	**RURAL/URBAN:** 4-inch sloping curbs at outside edge of shoulder	Not met	Not met
19	Interchanges	**RURAL:** 3 miles min. (crossroad to crossroad) **URBAN:** 1 miles min. (crossroad to crossroad)	N/A	N/A

For more detailed information on the above-listed design criteria refer to the following publications:

- AASHTO – A Policy on Design Standards – Interstate System, 5th Edition (2005)
- AASHTO – A Policy on Geometric Design of Highways and Streets, 6th Edition "Green Book" (2011)
- AASHTO – Roadside Design Guide, 4th Edition (2011)

According to United States Code (Title 23) an interstate designation can be justified by:

1. The proposed route having a sufficient length to serve long-distance interstate travel, such as connecting routes between principal metropolitan cities or industrial centers important to national defense and economic development.
2. The proposed route should not duplicate other interstate routes. It should serve interstate traffic movement not provided by another interstate route.
3. The proposed route should directly serve major highway traffic generators with an urbanized area of population greater than 100,000.
4. The proposed route should connect to the Interstate System at each end, with the exception of routes that connect with continental routes or at international borders.

US 57 does not directly serve an urbanized area in the United States of population greater than 100,000. US 57 is an important border route that provides direct connectivity to Piedras Negras in Mexico.

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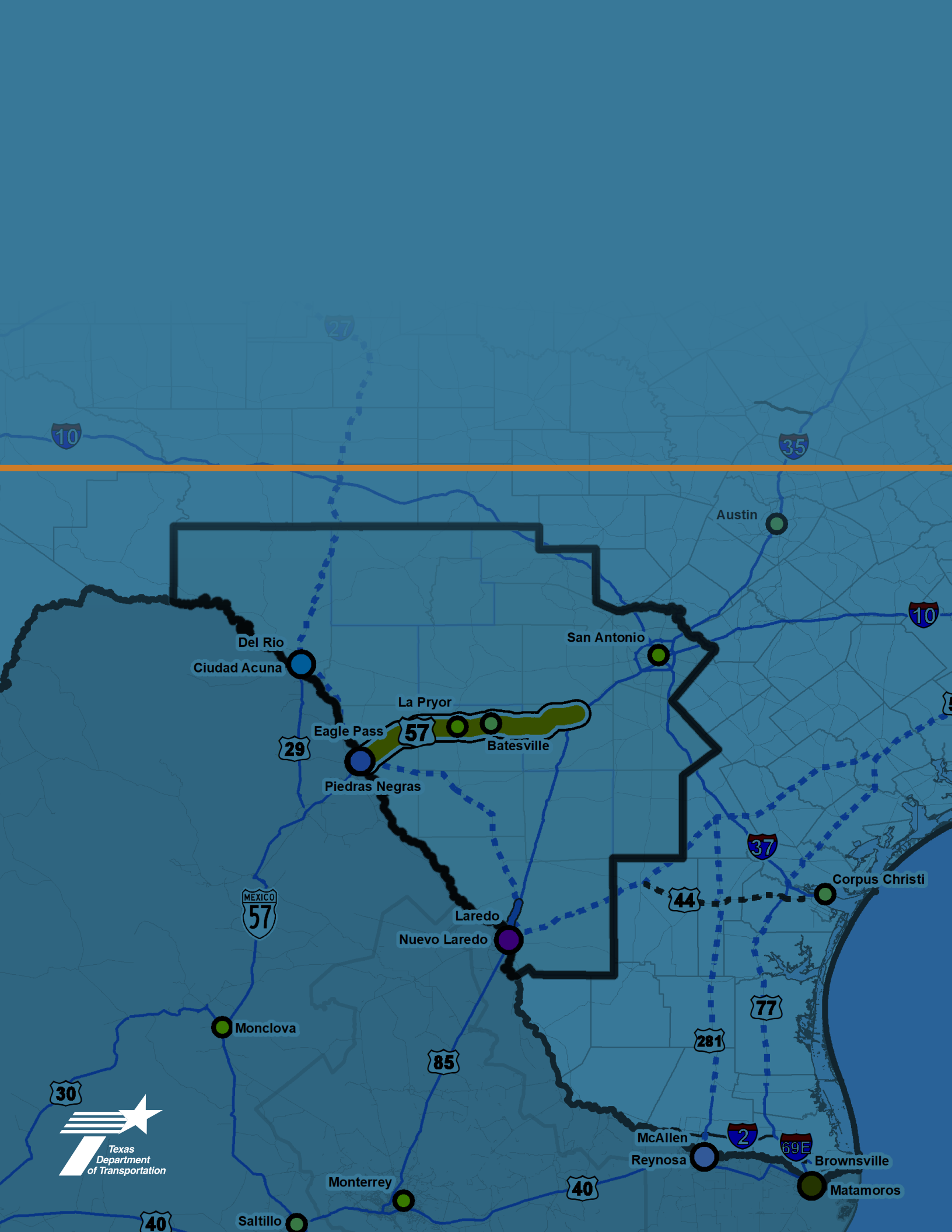
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Chapter 6

CORRIDOR INTERSTATE FEASIBILITY ANALYSIS AND FINDINGS

US 57 has been divided into segments to present the findings and results based on logical changes in posted speeds, transitions from rural to urban and urban to rural context, and the Zavala County at Frio County line (see **Figure 6.1**). The varying proposed roadway sections are presented here in Chapter 6 regarding travel time, safety, and anticipated construction costs. Segment A has two routes with one along the existing US 57 alignment and one around Eagle Pass following the SL 480 alignment. Relief routes have been considered for the cities of La Pryor and Batesville for Segment D and Segment F, respectively, to establish an alternate interstate solution adjacent to these communities.

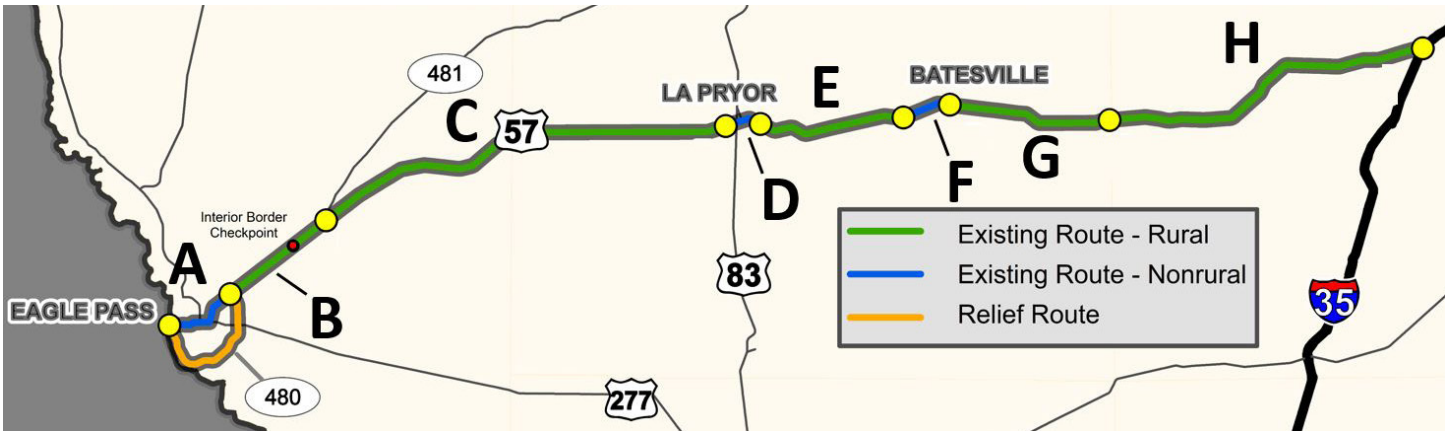


Figure 6.1 - US 57 Segment Nodes

6.1. BASELINE (OPTION 1)

The baseline option assumes only currently planned and programmed projects will be implemented along US 57, as noted within **Section 3.4**. The existing lane assignments along US 57 would be maintained including nonrural roadway sections within the three cities as well as the various rural lane configurations between SL 480 and I-35.

6.1.1. ROADWAY SECTION

Three typical roadway sections make up most of the US 57 corridor, **Figure 6.3** and **Figure 6.4** show the various lane configurations from Eagle Pass to I-35 along US 57. **Figure 6.5** shows the alternating pattern of two-lane highway and super 2 highway starting near the center of Maverick County approximately 0.5 miles east of FM 481 east to I-35.

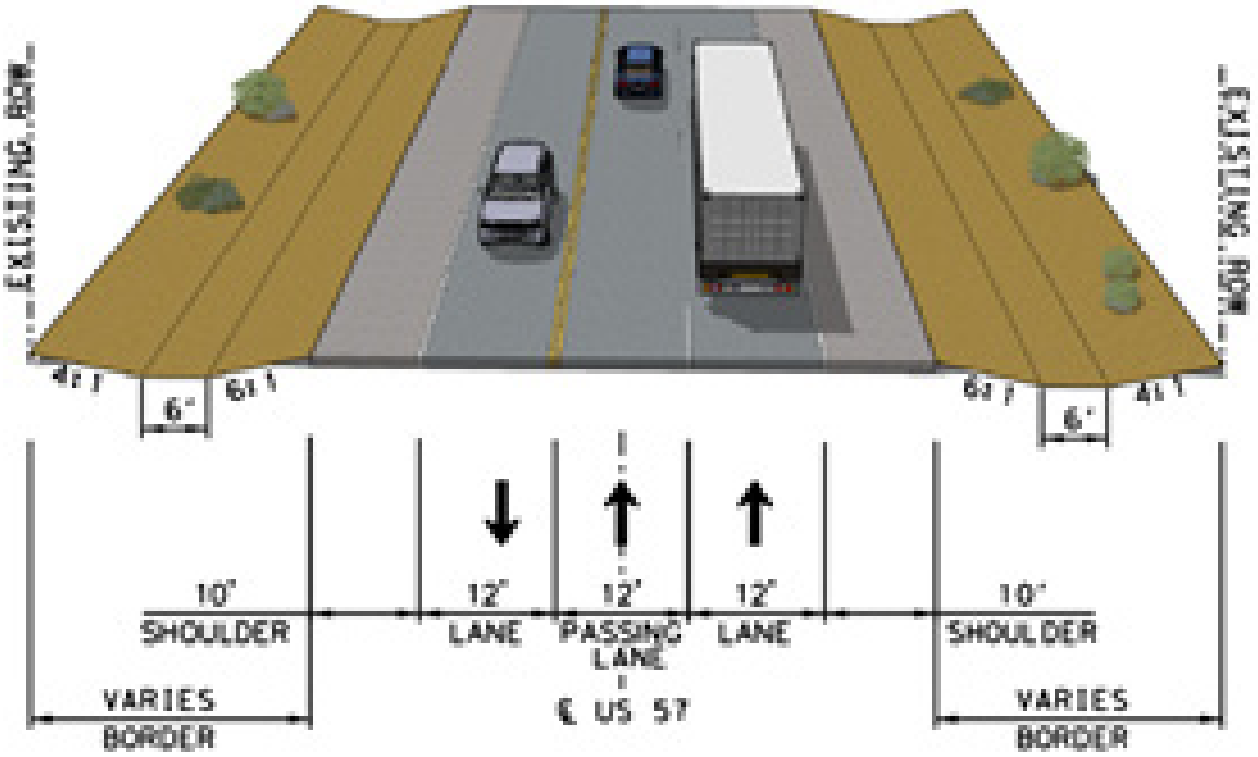


Figure 6.2 - Existing Super 2 US 57 Highway Section

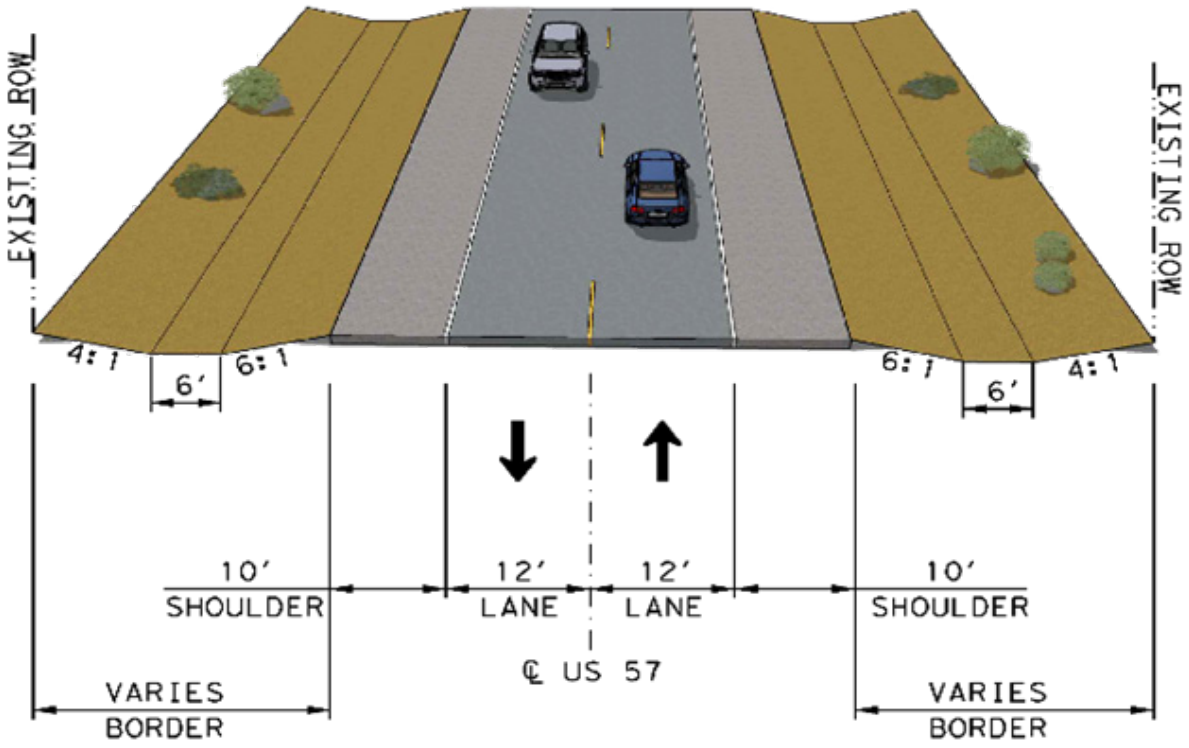


Figure 6.3 - Existing Two-Lane Undivided US 57 Rural Highway

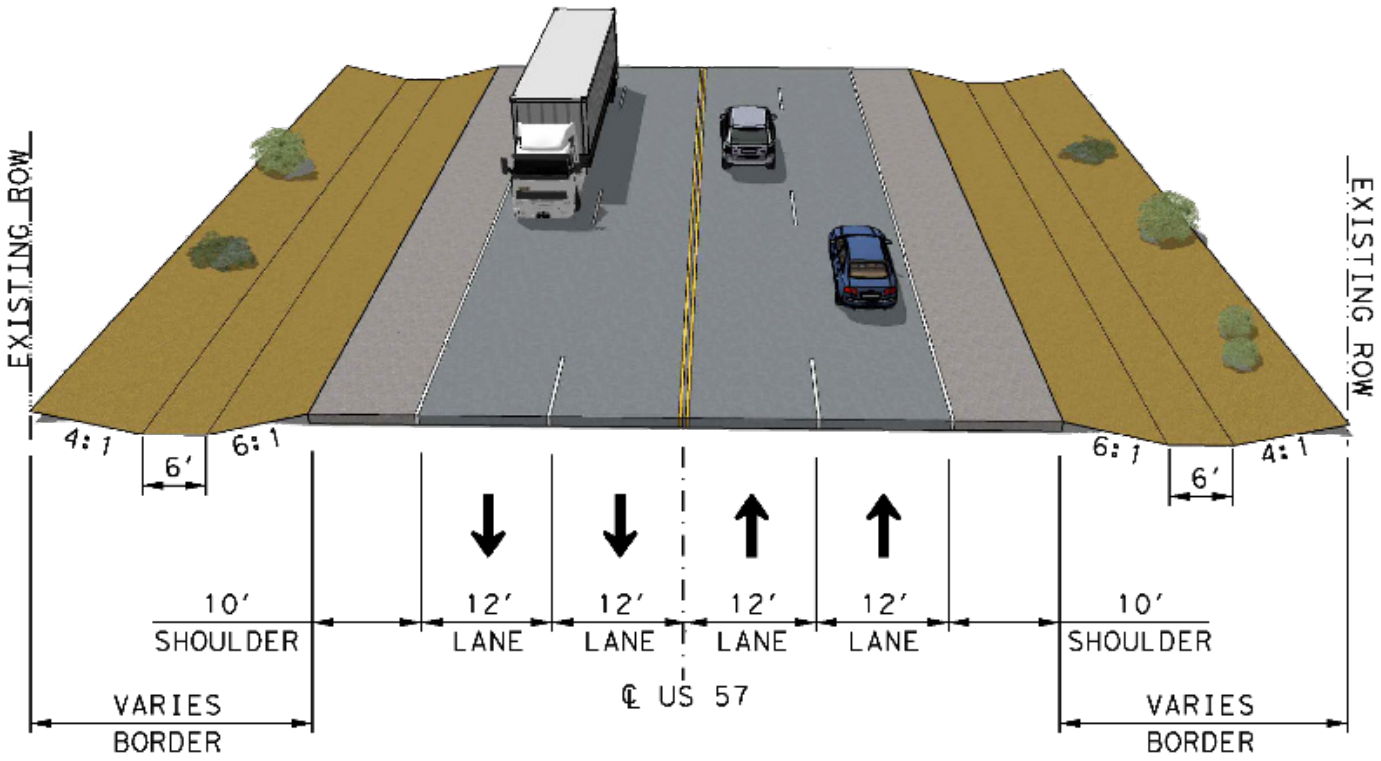


Figure 6.4 - Existing Four-Lane Undivided US 57 Roadway Section

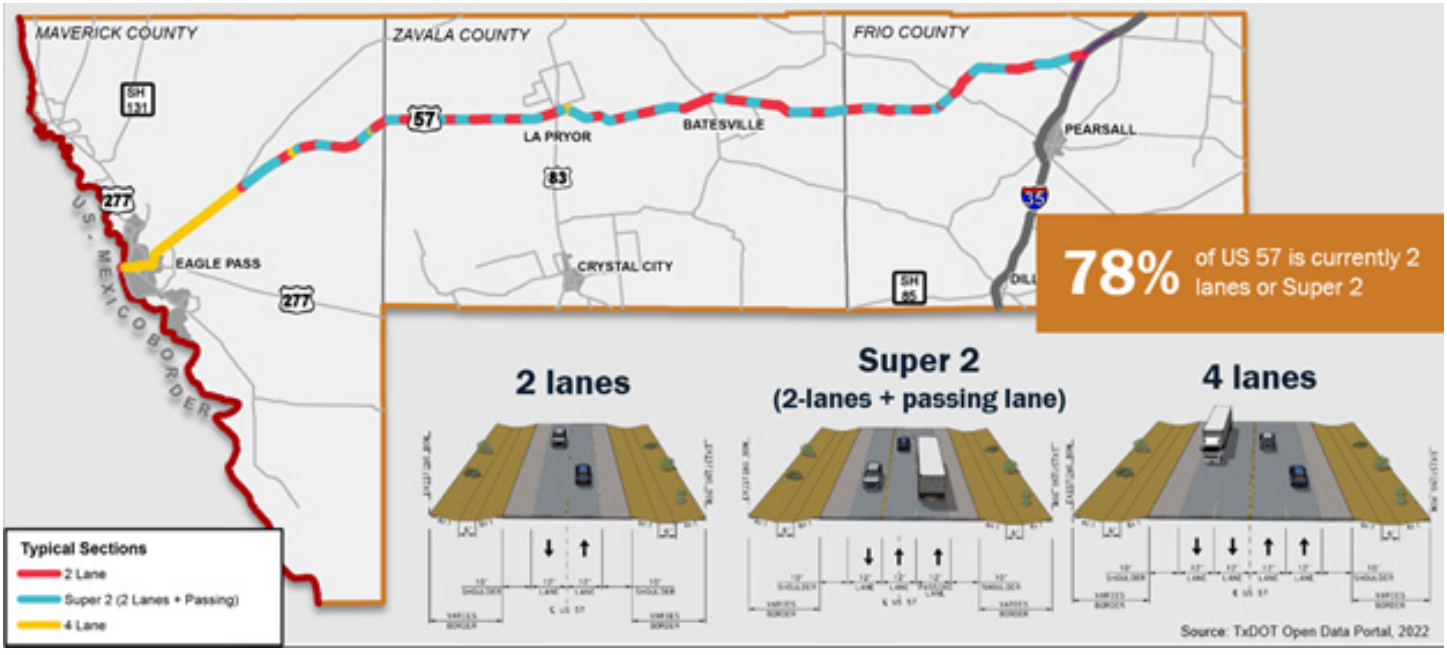


Figure 6.5 - Existing Lane Configurations Along US 57

6.1.2. TRAFFIC DATA

The triangle formed by Laredo to Del Rio to San Antonio consists of multiple Texas-Mexico border crossings that connect Mexico to I-35 and to future I-27, providing a north-south route through the State of Texas for the movement of goods. Several US highways complement this routing, consisting of US 83, US 277, US 57, and US 90. Traffic volumes along these highways are subject to fluctuation, as indicated by the September 2021 temporary closing of the Del Rio Port of Entry that diverted border crossing traffic to Eagle Pass for approximately one week.

While historic traffic data was collected and analyzed, future anticipated traffic along US 57 will be subject to changes in routes, potential border crossing impacts, and future development. The potential for US 277 to be upgraded to I-27 and achieve interstate designation may influence traffic using US 57. However, the I-27 alignment is more directed for traffic crossing the U.S.-Mexico border and traveling to/from the New Mexico-Colorado-western Oklahoma areas and beyond.

6.1.2.1. PASSENGER VEHICLES (DAILY AND PERCENTAGE) (STARS II DATA)

Daily traffic volumes along US 57 from Eagle Pass to I-35 have increased approximately three percent to four percent per year over the past 20 years. Typical annual average daily traffic along the corridor ranged from 4,000 vehicles per day to 5,000 vehicles per day, with a slight increase in traffic as US 57 approaches I-35.

Vehicle speeds along US 57 are near free-flow aside from the populated areas of Eagle Pass, La Pryor, and Batesville. As shown in **Figure 6.6**, the area adjacent to the US Interior Border Patrol Checkpoint is the one exception, due to the stoppage of every vehicle that is driving eastbound on US 57.

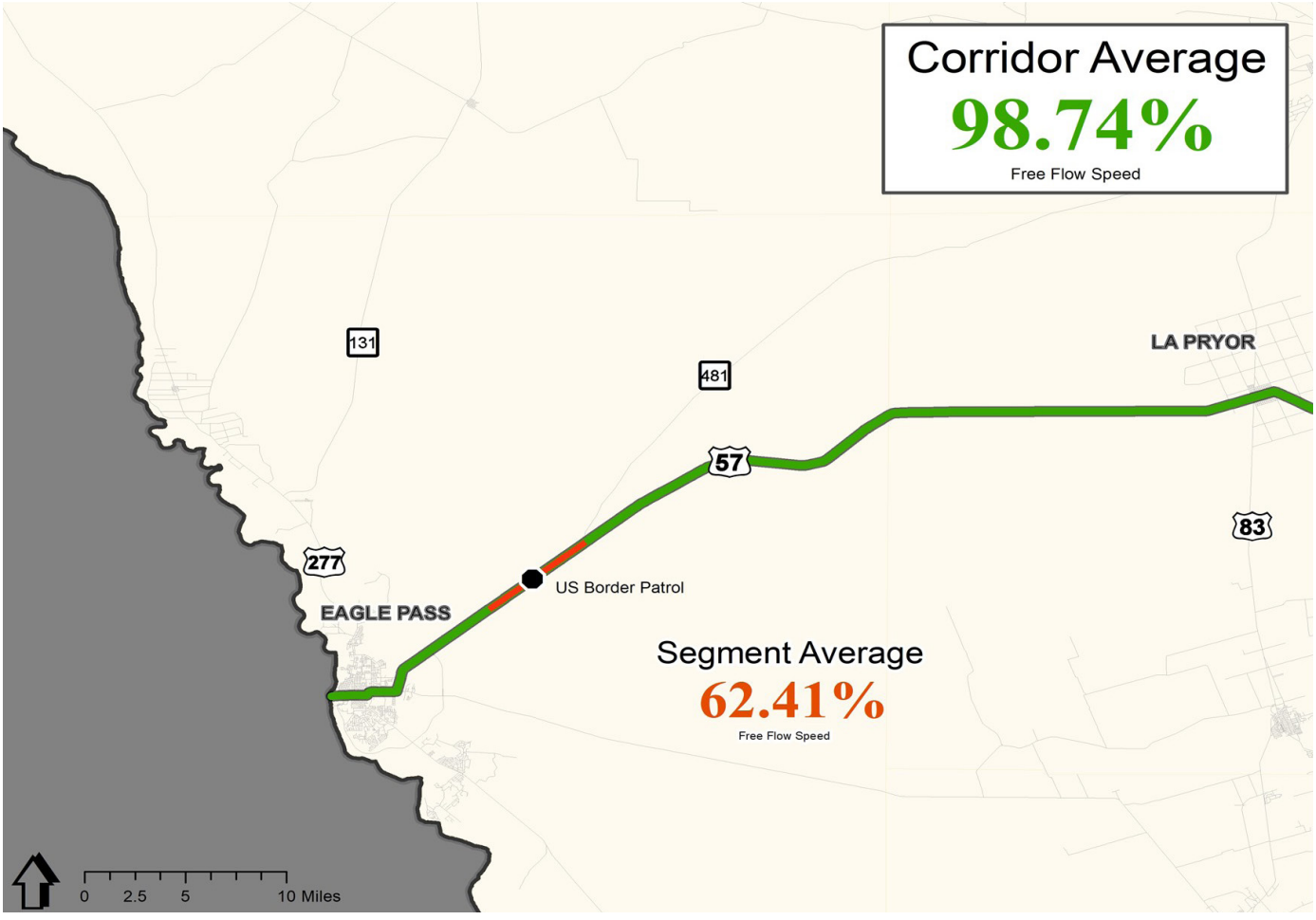


Figure 6.6 – Free Flow Vehicular Speeds Along US 57 (2021)

6.1.2.2. TRUCKS (DAILY AND PERCENTAGE)

The US 57 corridor has approximately 1,000 CMVs per day, with that number set to increase to 2,500 CMVs by year 2050. **CMVs make up nearly 25 percent of the traffic along US 57 from Eagle Pass to I-35**. With freight vehicles making up one out of four vehicles on US 57, it is important that safe zones for passing be provided to discourage drivers from making attempts to pass slow-moving vehicles in restricted zones. The existing super 2 highway sections provide a means of safe passing zones. However, both directions of traffic could be better accommodated by the installation of a four-lane facility (two lanes in each direction).

Starting from I-35, 68 percent of westbound US 57 CMV trips route to Eagle Pass. This high percentage of direct CMV trips represents the importance of US 57 as a connector from I-35 to the Texas-Mexico border.

6.1.2.3. BORDER CROSSINGS

One issue noted within the data collection and subsequent analysis is the lack of remaining capacity of the Eagle Pass border crossings. Unless upgraded, all three border crossings in Eagle Pass will meter the vehicular volume, train cars, and goods that can readily access US 57, resulting in a constrained increase in volume and goods to be transported via this route into the future.

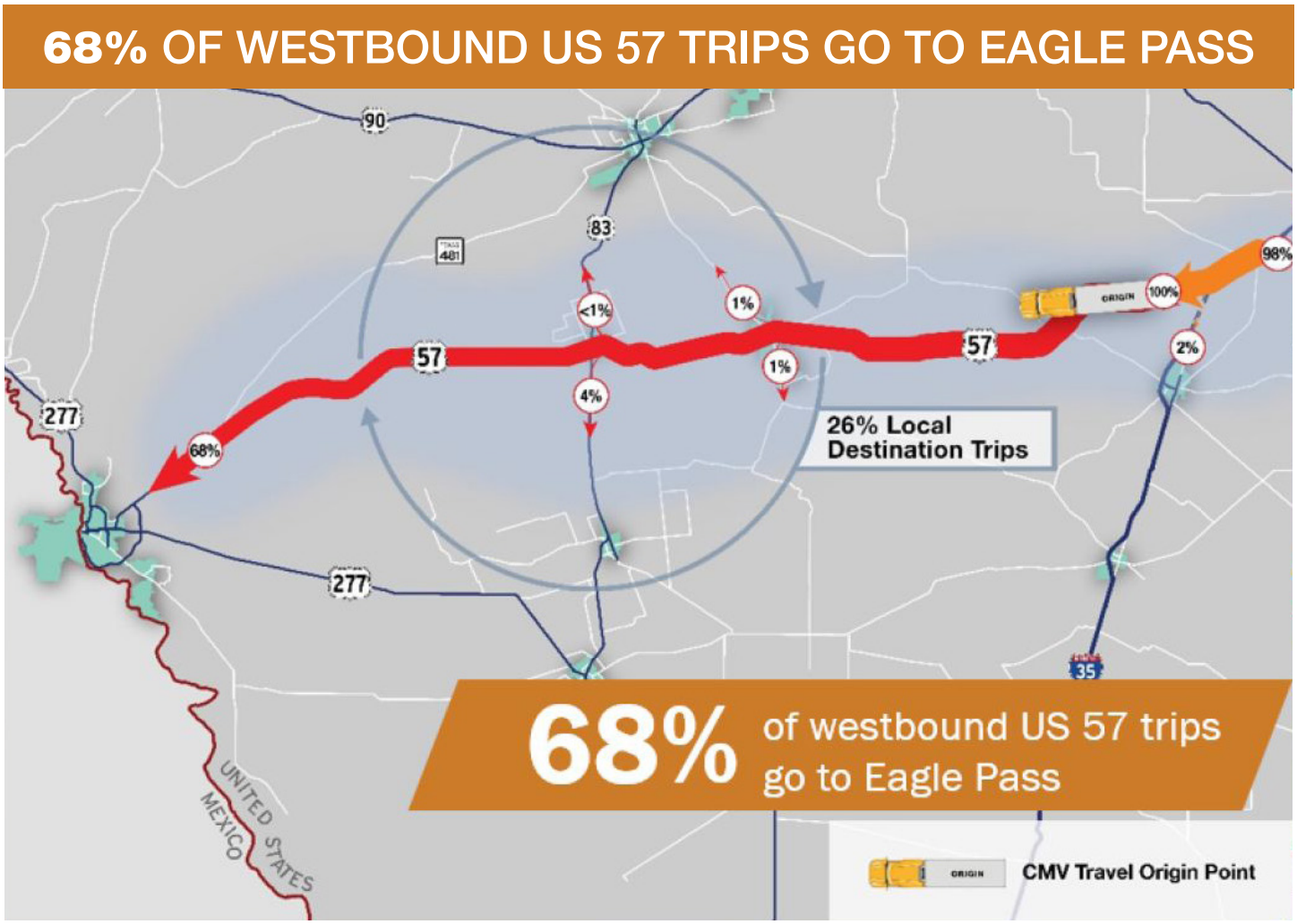


Figure 6.7 - Eagle Pass CMV Capture from I-35 (2021)

6.1.2.4. ORIGIN-DESTINATION DATA

US 57 is a continuous route for CMVs driving east from Eagle Pass. A majority (57 percent) of CMVs that leave Eagle Pass route directly to I-35, compared to 36 percent of Privately owned vehicles (POV).

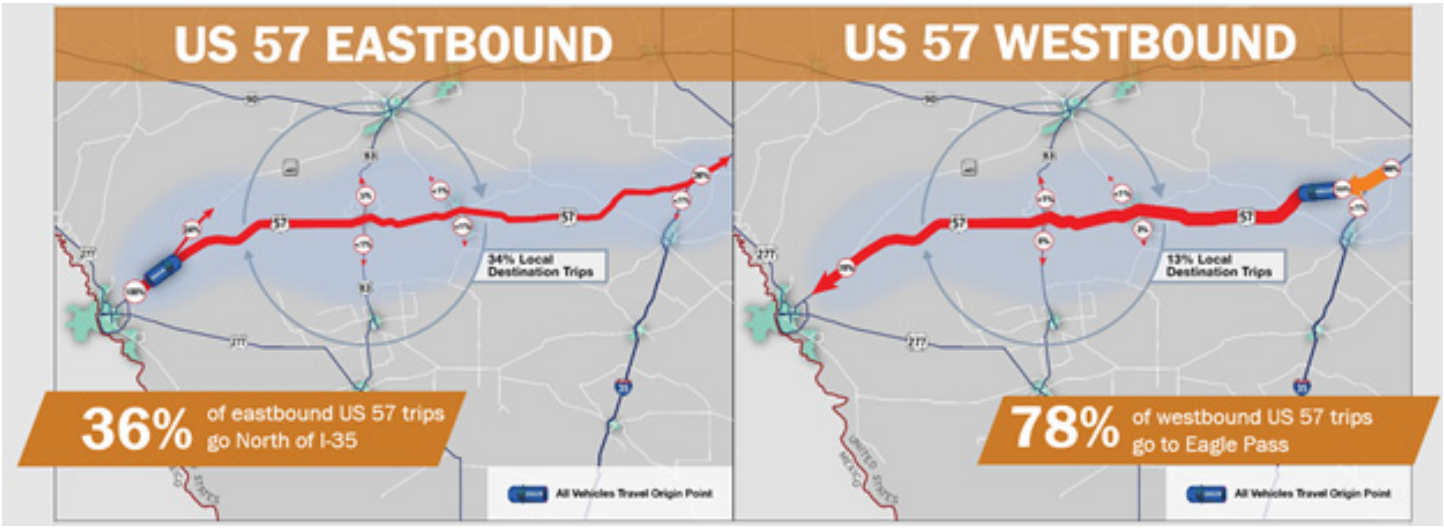


Figure 6.8 – All Vehicles Origin-Destination Along US 57

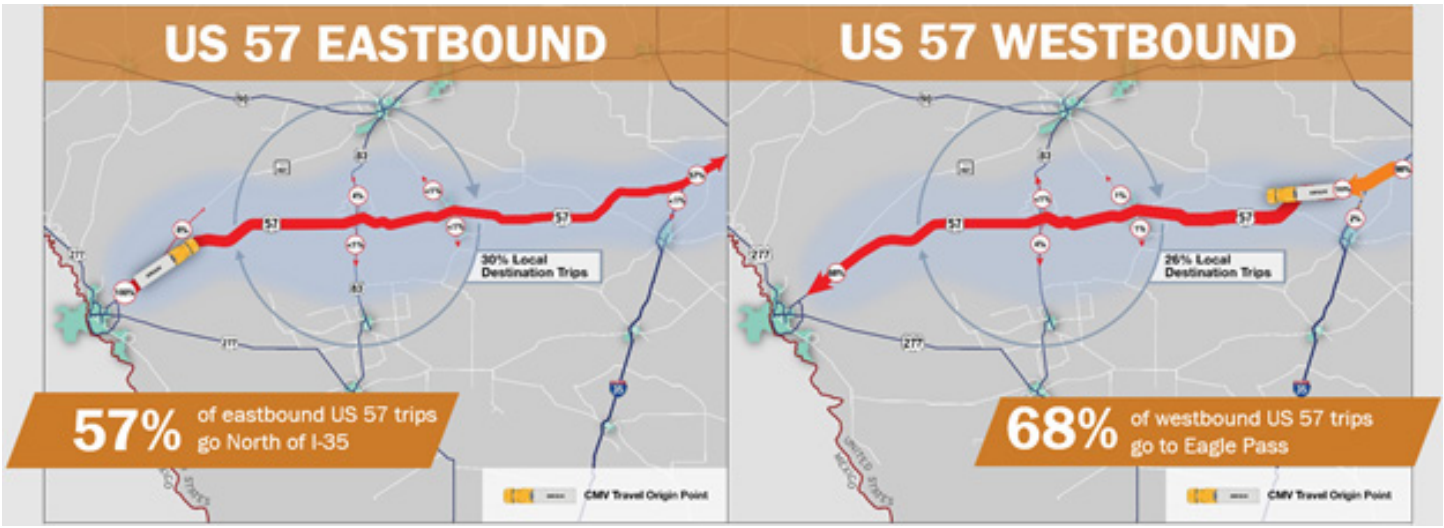


Figure 6.9 - CMV Origin-Destination Along US 57

From a rail perspective, the Maverick Rail Park located approximately five miles north of the rail border crossing serves as a large-scale rail car storage and loading/unloading location. The Union Pacific Kinney Yard located 26 miles north of the Maverick Rail Park, serves as another rail park for storing rail cars as well as preparing rail cars for transport into Mexico. The rail network from the border crossing in Eagle Pass does not align with US 57. Instead, trains and rail cars mostly navigate north toward FM 1572 and eventually north of US 90 and beyond. Based on the data collected, most rail goods crossing the border in Eagle Pass bypass US 57, remaining on-rail to the north and beyond, with exception of those trains and rail cars that access the Union Pacific Eagle Pass Yard.

6.1.2.5. 2045 TRAVEL DEMAND MODEL (TDM) ANALYSIS

Three options were analyzed using TxDOT's Travel Demand Model (TDM) along the US 57 corridor for future conditions analysis.

- Baseline ("No-Build," US 57 remains as-is, with the current lane assignments along the corridor)
- Interstate (US 57 is improved to meet/exceed the Interstate Designation Design Requirements shown in **Table 5.1**).
- Arterial (US 57 is reconstructed to a four-lane divided principal arterial from SL 480 to I-35)

Results from the TDM analysis show that the Interstate option increases traffic volumes by 150% by year 2045, as compared to the No-Build option, with a corridor average of 20,000 vehicles per day. The Arterial option shows an increase of 125% traffic volume by year 2045, as compared to the No-Build option, with a corridor average of 18,000 vehicles per day.

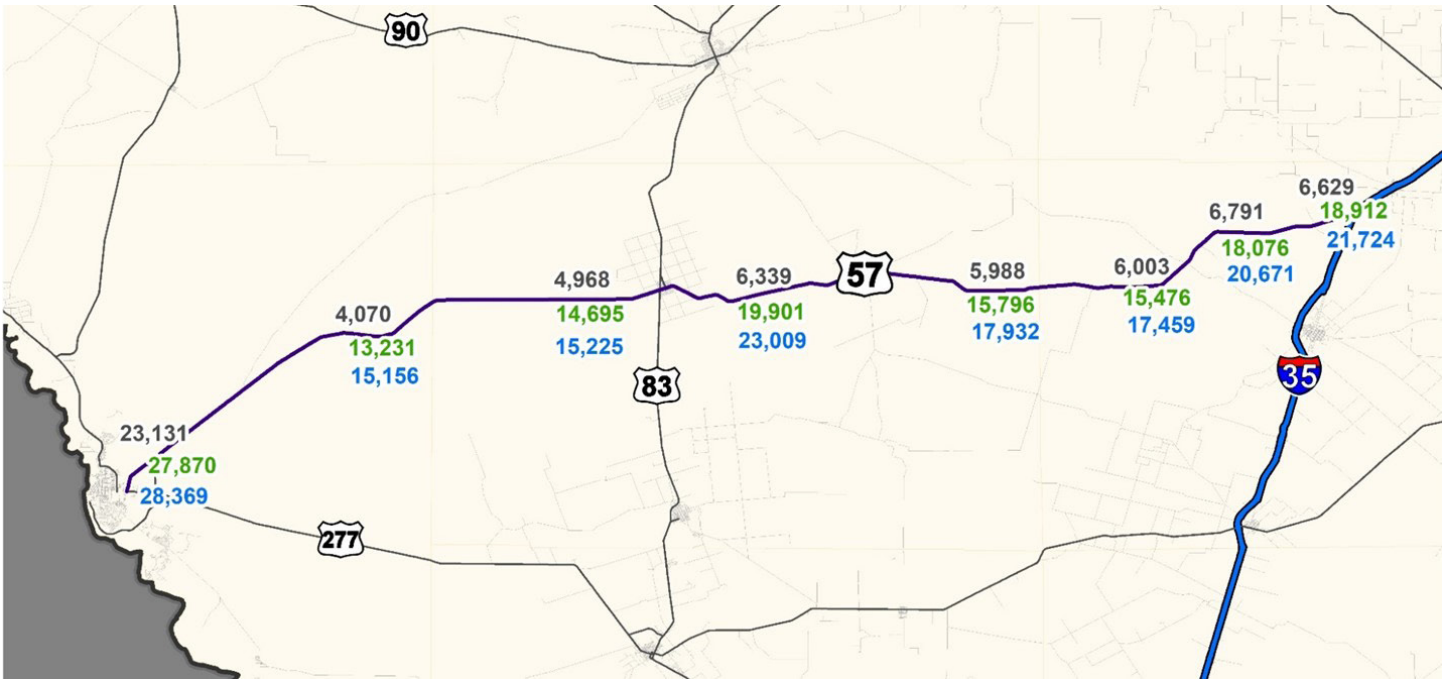


Figure 6.10 - TDM Model with Three Future Conditions Analyzed

Additional information regarding the US 57 corridor projected Level of Service (LOS) is provided in **APPENDIX M** and **APPENDIX N** in the form of Level of Service Diagrams and Traffic Projections Line Diagrams.

Upgrading US 57 to a divided four-lane highway, or constructing a four-lane interstate, has a regional impact on alleviating traffic on other routes adjacent to US 57 in the study area.

Figure 6.11 shows how the regional TDM is impacted by US 57 being converted to a four-lane arterial highway. **Figure 6.12** shows how the regional TDM is impacted by an interstate conversion. The salmon-colored lines along adjacent corridors reflect a decrease in traffic volumes related to the US 57 improvements.

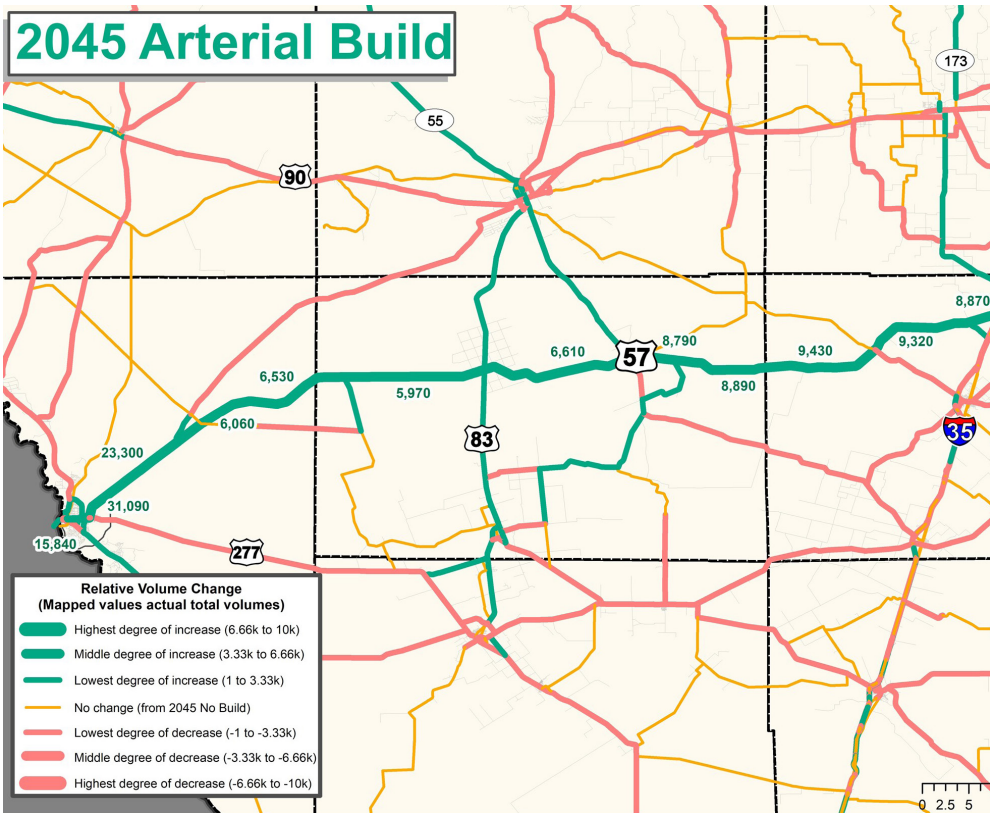


Figure 6.11 - 2045 TDM US 57 Arterial Upgrade

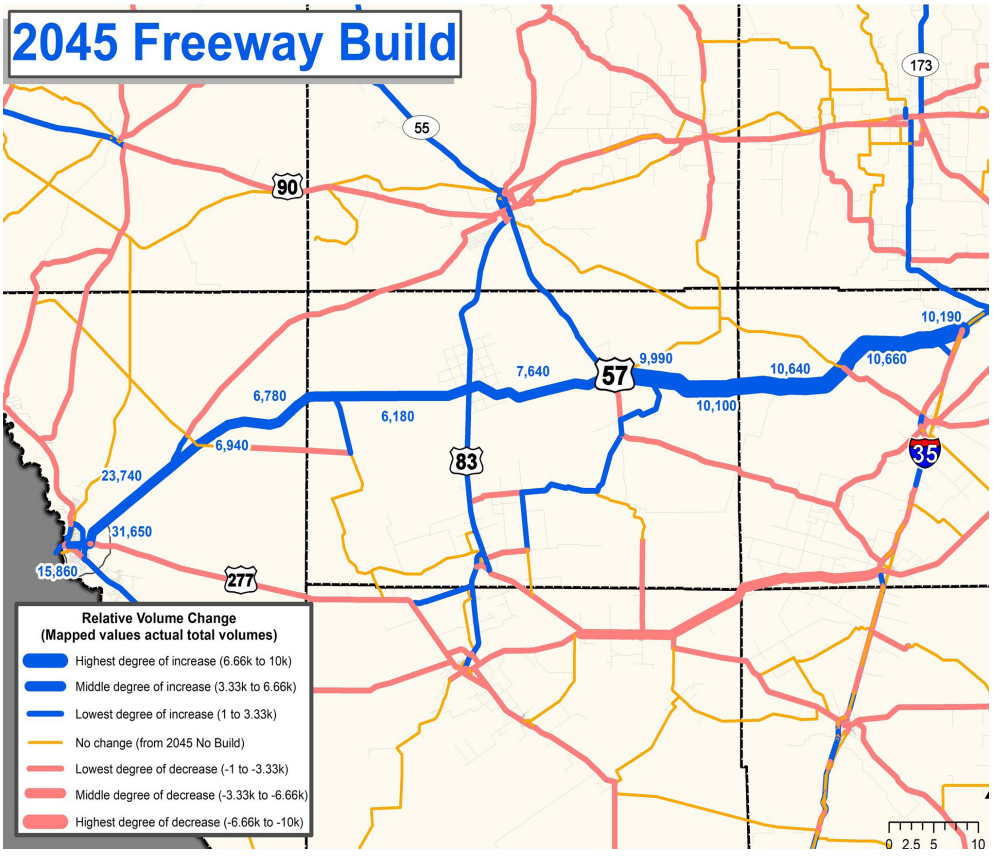


Figure 6.12 - 2045 TDM US 57 Interstate Upgrade

6.1.3. CRASH DATA – YEAR 2016 TO 2020

EXISTING CRASH DATA (CRIS)

- ***Segment analyses*** – As shown in **Figure 6.13**, the only portion of US 57 that has experienced a higher rate of vehicular crashes than the statewide average over the past five years is between the Bridge I border crossing and US 277 in Eagle Pass. This is an urbanized section of the corridor that has closely spaced intersections and numerous driveways that access adjacent commercial properties.

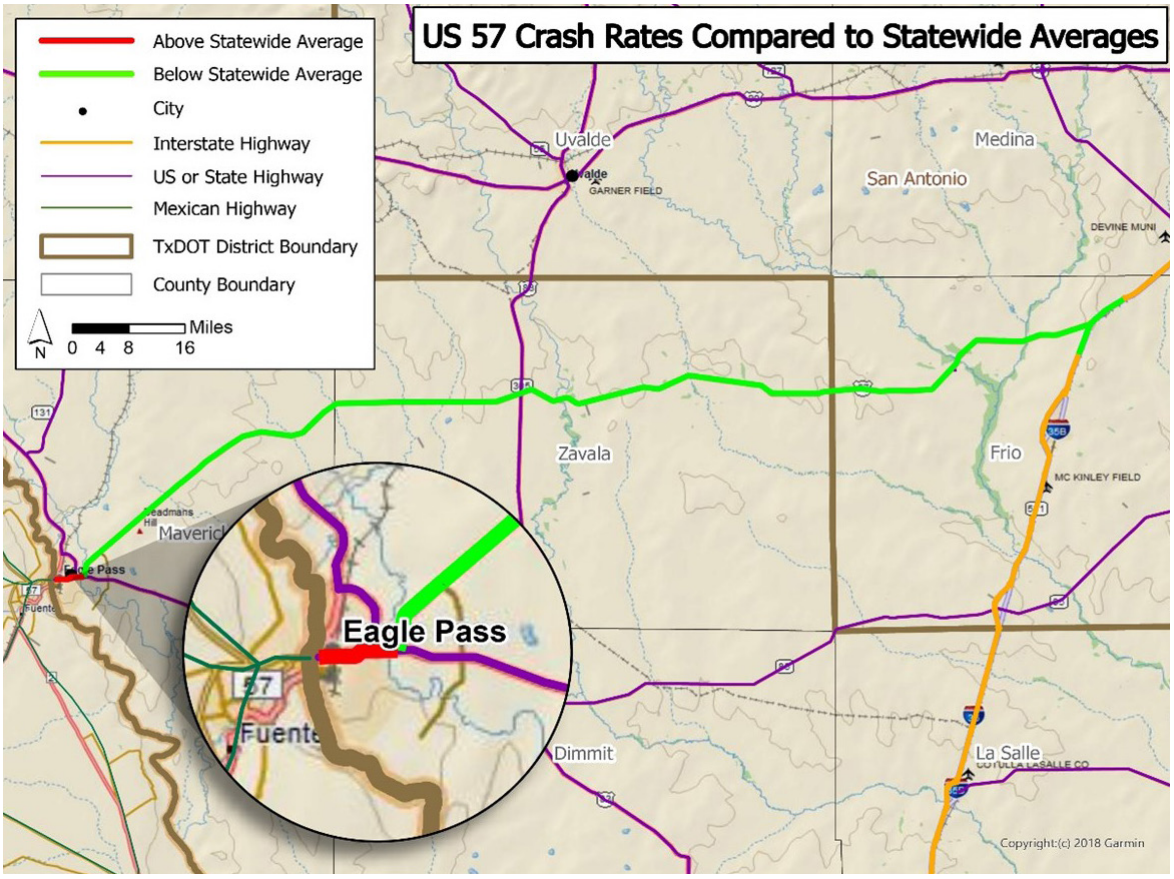


Figure 6.13 - US 57 Crash Rates

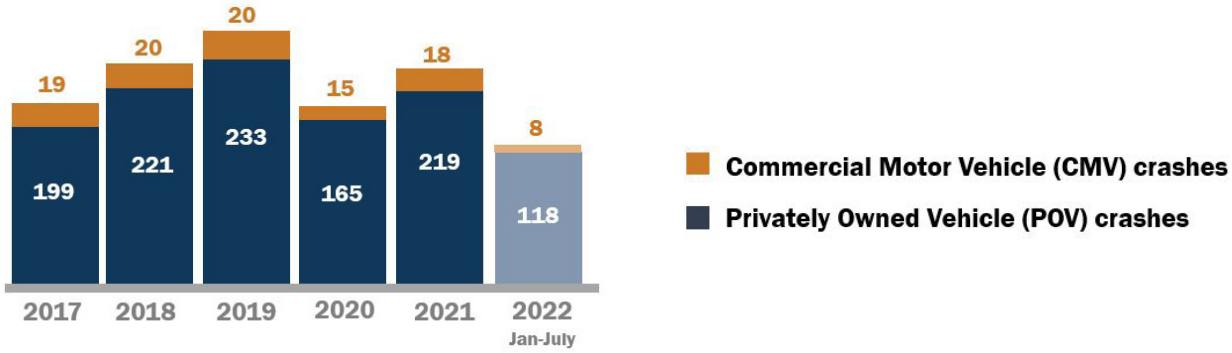


Figure 6.14 - Commercial versus Private Vehicle crashes

The US 57 corridor had 889 crashes in urban areas which account for 71% of the total crashes for the corridor. While approximately 25% of the US 57 traffic is CMV, only 8% of crashes involved a CMV. As shown in **Figure 6.14**, the number of crashes along US 57 has remained somewhat similar year-to-year dating back to 2017, with an average of 225 crashes annually over the five-year period.

- ***Intersections analyses*** – Two intersections accounted for more than 50 percent of the intersection-related crashes along US 57 for the five-year period analyzed. US 57 at Veterans Blvd. (288 crashes) and Bibb Ave/FM 375 (160 crashes) combined had 55.4 percent of the 809-total intersection-related crashes. Although none of these crashes resulted in a fatality, 165 crashes did result in an injury.

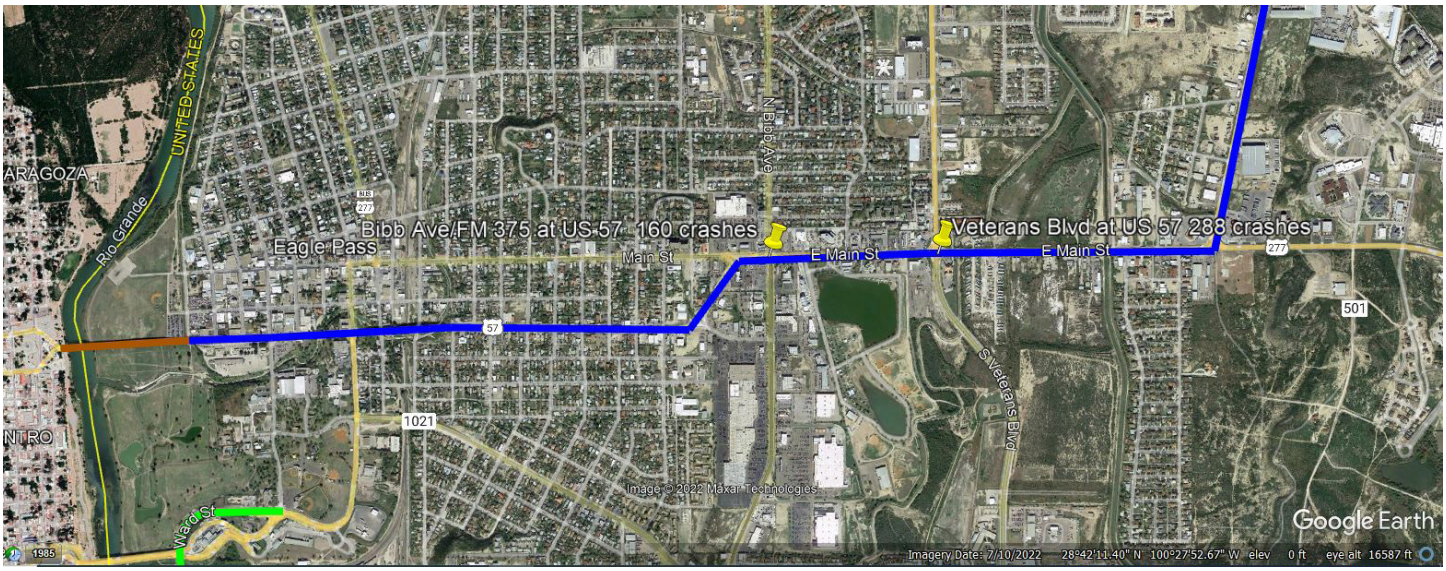


Figure 6.15 - Intersections Analyses

Injury-inducing crashes have remained somewhat constant over the five-year crash analysis period as Shown in **Figure 6.16**. The reduction in crashes in 2020 is likely attributable to the COVID pandemic. Similar crash reduction during 2020 occurred throughout the U.S. as less vehicle miles traveled resulted in less crashes occurring.

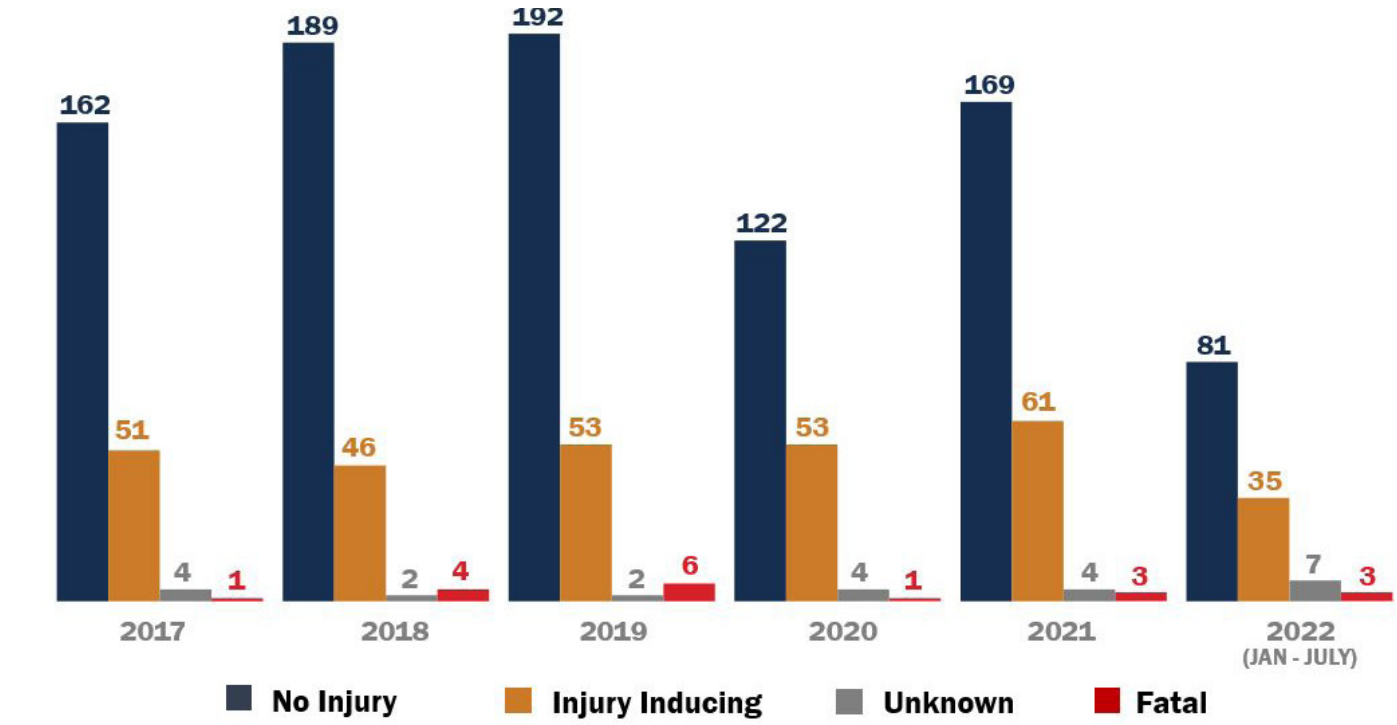


Figure 6.16 - Crash Severity

The highest US 57 fatality rate by year was 2.9 deaths per 100 million vehicles miles travelled and occurred in 2018. US 57 had a higher fatality rate than the statewide average for two of the five study years (2018 and 2019). Fatality crashes occurred throughout the corridor in a scattered manner. This is typical of fatal-type crashes because most vehicular fatalities are due to a mistake being made by a driver and are not likely caused by a repetitive feature associated with the roadway or intersection.

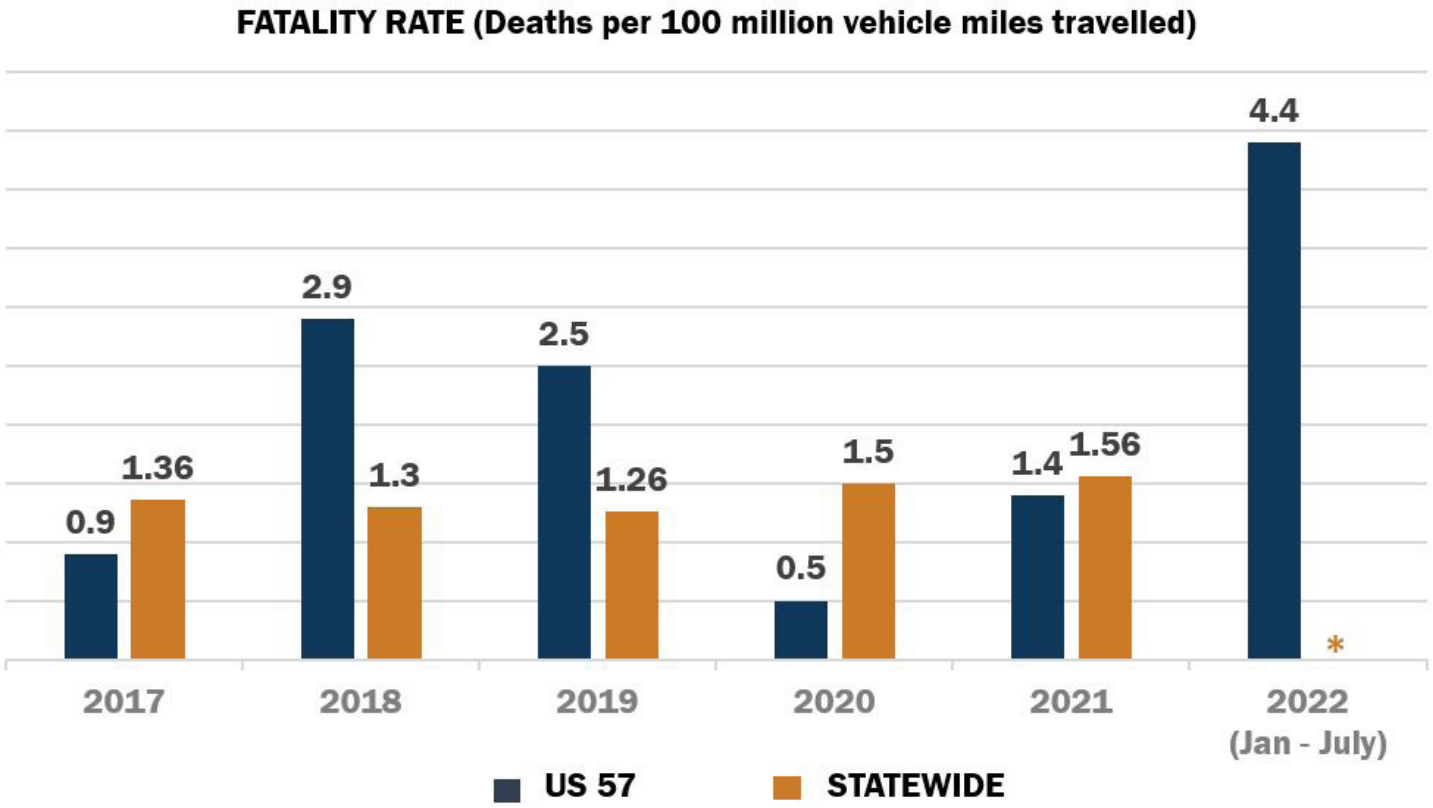


Figure 6.17 - Fatality Rates

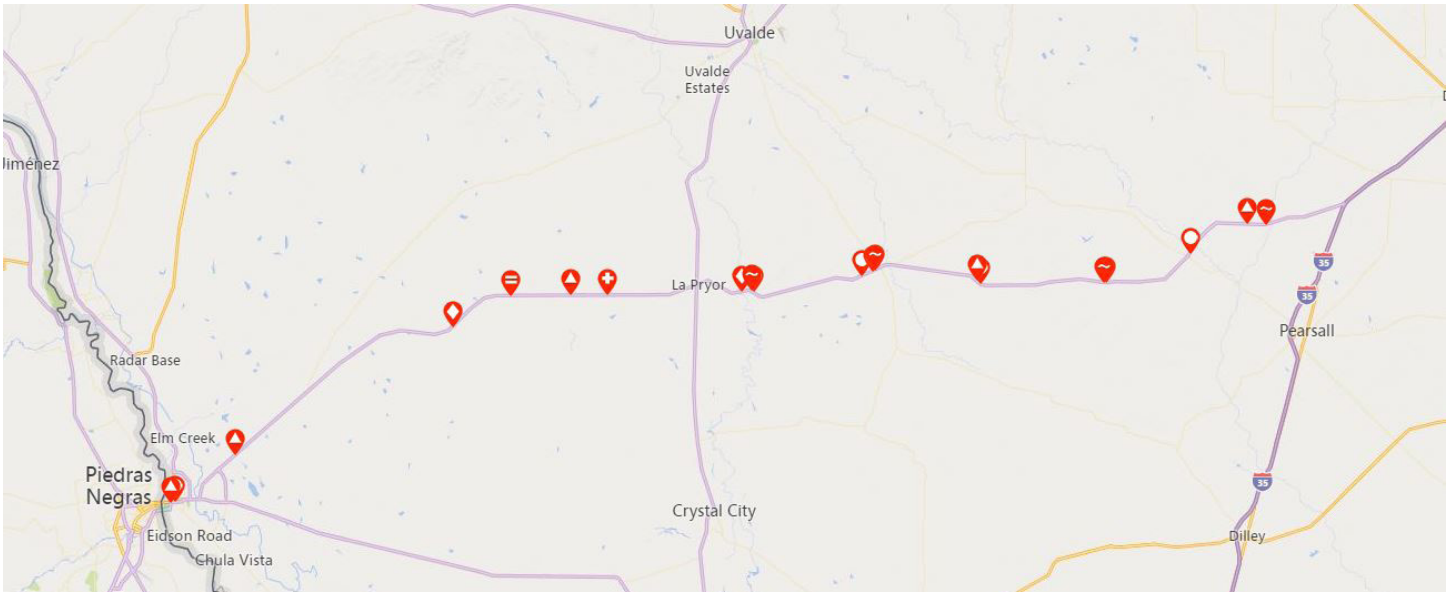


Figure 6.18 - Fatal Crash Locations

All fatal crashes on the US 57 Corridor involved either distracted driving, driver inattention, driving under the influence of drugs or alcohol, speeding, or a combination of these factors. The top five contributing factors for all crash types are listed in **Figure 6.19**.

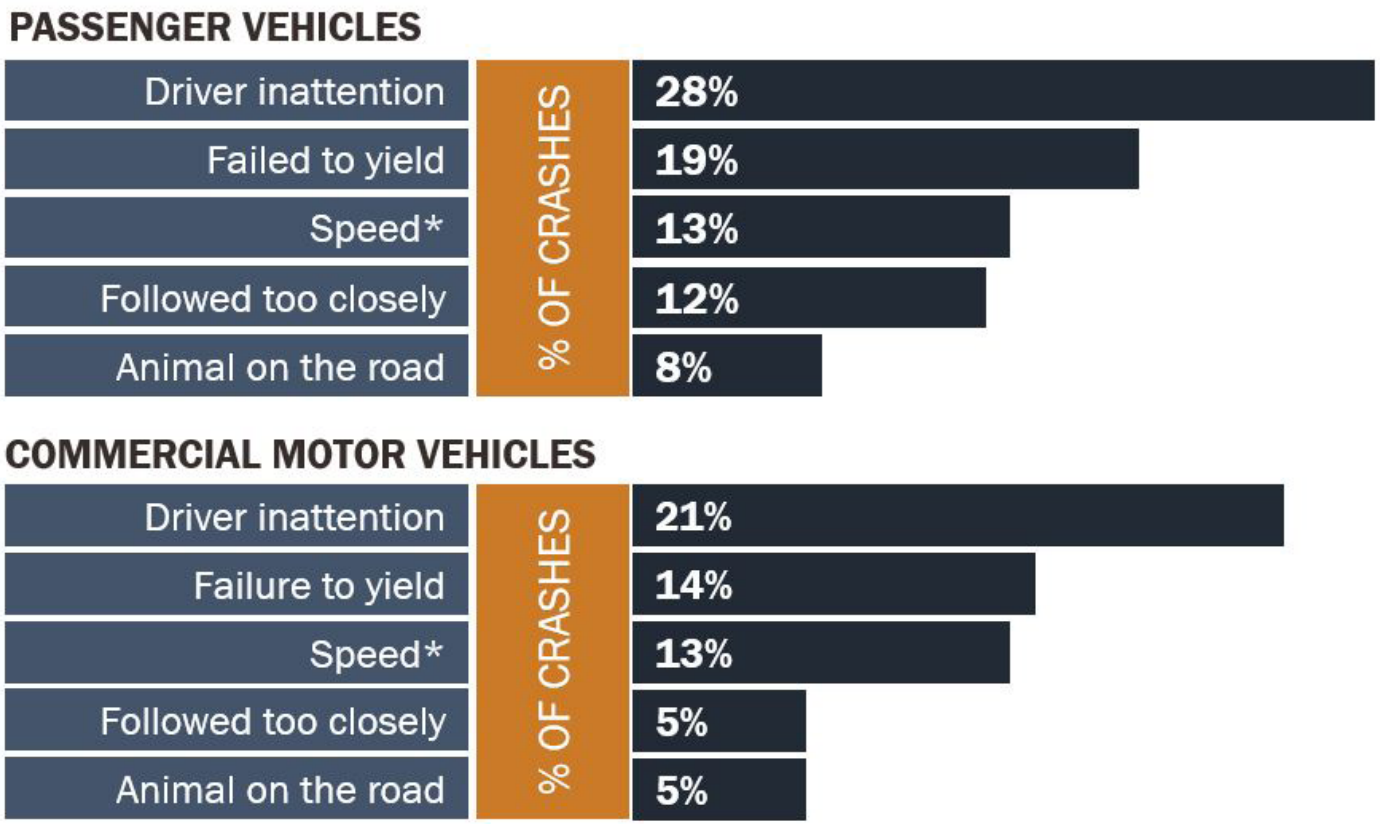


Figure 6.19 - Contributing Factors

The three proposed US 57 options discussed in Chapter 6 were studied to determine the potential total crash reduction if the corridor was converted to the various types of lane configurations and classifications. **Table 6.1** reflects the corridor crash reduction for each conversion, as well as a scenario that analyzed the addition of super 2 highway between US 83 and I-35.

Table 6.1 - Corridor Conversion Crash Rate Prediction

Conversion Type	Potential Total Crash Reduction
Interstate Conversion	22.1%
Four-Lane Divided Arterial Conversion	21.3%
Four-Lane Undivided Arterial Conversion	1.8%
Super 2 Improvements	6.6%

Assumptions made in developing the crash reduction values shown in **Table 6.1** consist of:

- The interstate conversion extends through Eagle Pass, La Pryor, and Batesville and creates an access controlled urban interstate within these communities. A relief route option was not considered.
- For the four-lane undivided arterial conversion, no corridor lane configuration changes would take place west of the existing four-lane roadway section that transitions to a two-lane highway nine miles east of SL 480.
- Super 2 improvements would only be applied between FM 481 and I-35 to reduce the two-lane highway mileage and convert sections of existing two-lane highway to super 2 highway.

6.1.4. US 57 ROADWAY GEOMETRICS (EXISTING)

PAVEMENT CONDITION (TXDOT PMIS, 2022)

According to TxDOT's Pavement Management Information System (PMIS), only two percent of the corridor has below a fair pavement condition (poor or very poor condition). Since 2015, more than 40 percent of the corridor length has experienced an improvement in pavement condition due to reconstruction, rehabilitation, or overlay.

98% OF US 57 HAS FAIR OR BETTER PAVEMENT CONDITION

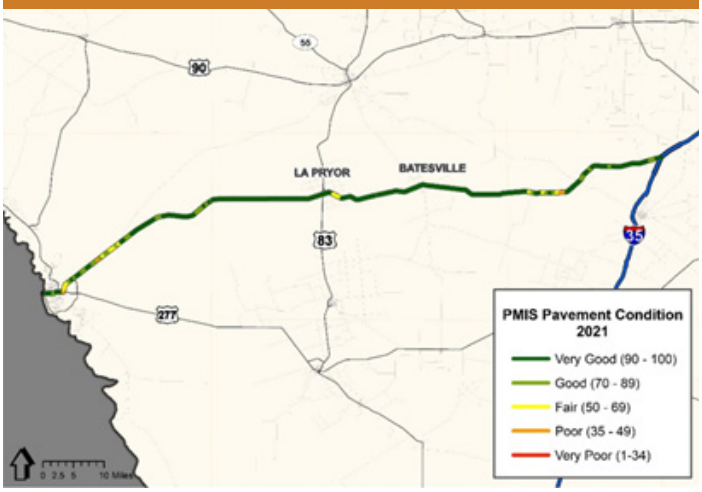


Figure 6.20 - US 57 Pavement Condition

40.7% OF US 57 HAD AN IMPROVEMENT IN PAVEMENT CONDITION

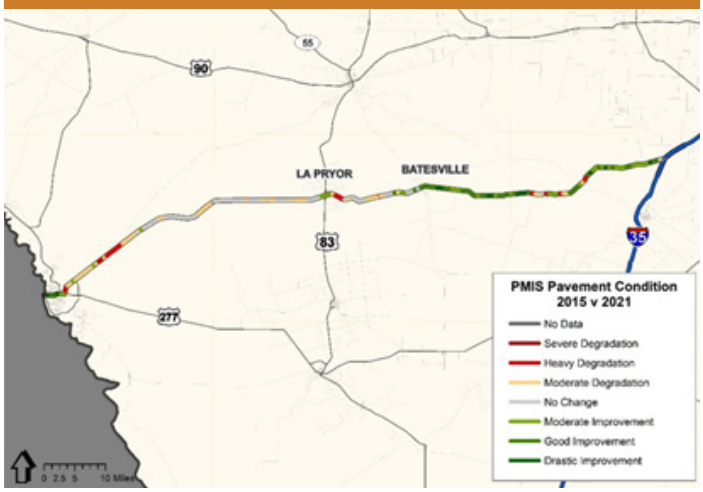


Figure 6.21 - US 57 Pavement Condition Comparison, 2015 versus 2021

VERTICAL CLEARANCES

To achieve interstate designation the current U.S. requirement is 16 feet of vertical clearance for overpass structures. However, the Texas Highway Freight Network requires an 18.5-foot vertical clearance as a minimum. The existing bridge at US 57 and FM 140 between Batesville and I-35 is currently signed, with a 16 foot-5-inch vertical clearance between the US 57 roadway surface and the bridge structure.

Image 6.1 - US 57 at FM 140 Bridge Clearance

HORIZONTAL CURVATURE (MINIMUM RADII)

A desktop review of the existing corridor using TxDOT's as-built plans and Google Earth resulted in the identification of four potential horizontal curves along the US 57 alignment that would not meet the 70 mph AASHTO/TxDOT minimum values for radii. A radius of 2,040 feet was assigned as the minimum, as published in TxDOT's Roadway Design Manual, Table 2-3. The values published in the as-builts, or measured via aerial imagery, are 1,450 feet, 1,912 feet, 1,891 feet, and 1,306 feet. Additional ROW would likely be needed within the locations of these horizontal curves to achieve the minimum radius in a reconstructed interstate option.

K-VALUES

As-built drawings provided by TxDOT were reviewed for consistency with minimum vertical curve k-values. A k-value of 181 (sag curve) and 247 (crest curve) were assigned as the minimums, as published in TxDOT's Roadway Design Manual, Figure 2-6. This review of as-built drawings did not find any k-values below TxDOT's required minimum values along US 57.

6.1.5. EXISTING ROW

The existing right-of-way width along the US 57 corridor varies within its urban and rural areas. In the rural zones, US 57 has an average ROW width of 120 feet to 170 feet, with the existing travel lanes approximately centered within the ROW.

The typical minimum ROW width for a rural interstate is approximately 185 feet to accommodate various width requirements for shoulders, lanes, the median, and parkways. Therefore, a major constraint US 57 would have in seeking interstate upgrade is the necessary additional ROW for nearly the entire length of rural corridor section (approximately 90 miles).

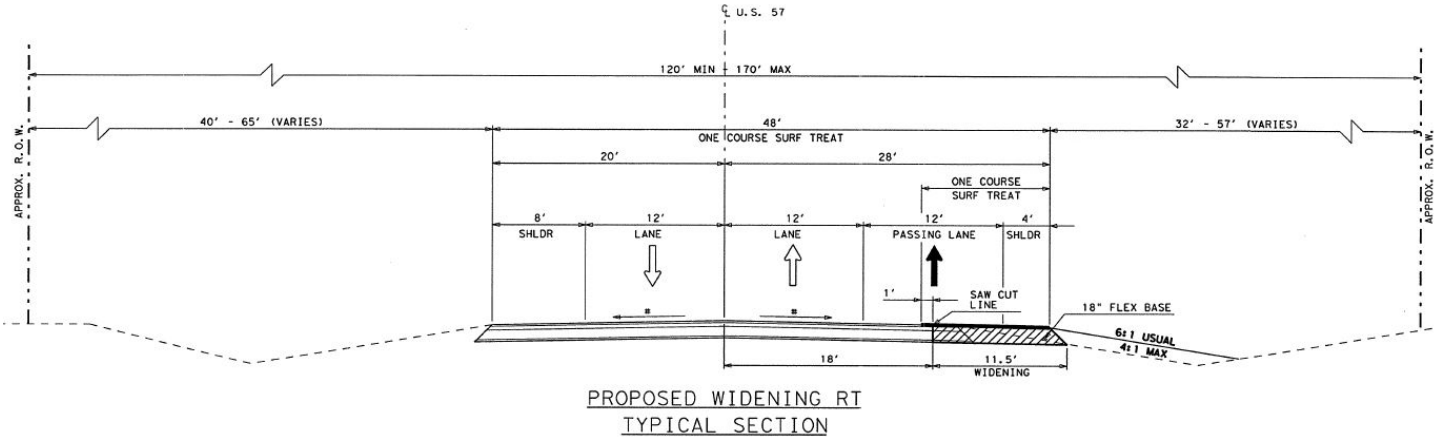


Figure 6.22 - US 57 ROW Width

6.1.6. POTENTIAL UTILITY CONSTRAINTS

Existing utilities were documented along the US 57 corridor by sourcing available GIS data, record drawings, and information provided by local utility providers, including: AEP Texas, AT&T, City of Eagle Pass Energy Transfer, Fiberlight LLC, Howard Energy Partners, Medina Electric Cooperative Inc., Plains All American, Rio Grande Electric Co-Op, DCP Midstream, Moore Water Supply Co., Faraday Pipeline, Kinder Morgan, Spectrum, Windstream, Texas State Natural Gas, West Texas Gas, Whitewater Midstream, Zavala County, and Zayo Group.

Potential Utility Conflict Maps are provided in **APPENDIX I**. **Table 6.2** shows the calculated difference in utility conflicts between various corridor improvements. Calculations for **Table 6.2** are provided in **APPENDIX J**. A listing of utility contacts and correspondence that has taken place as part of the US 57 corridor study is included in **APPENDIX K**.

Table 6.2 - Utility Impacts by Proposed Option

Option	ROW width Neccessary	Existing Utilities within Necessary ROW (LF)	Itility Point Types within Necessary ROW (EA)
Existing (no build)	150-160 feet	890,300	589
4-Lane Undivided	140 feet	598,500	263
4-Lane Divided	184 feet	890,700	714
4-Lane Interstate (with Frontage Roads)	332 feet	1,147,500	1,118

For the four-lane divided and the four-lane interstate options shown in Table 6 2, there are multiple communications/cell towers that may be impacted by the expanded ROW section.

6.1.7. STORM DRAINAGE

With a total of 68 drainage structures along US 57 and the typical runoff direction from north-to-south across the corridor, there will be improvements needed to the storm drainage structures within the project area. The Nueces River is considered a Principal River of Texas that crosses US 57 near the center of Zavala County. It outfalls into Nueces Bay on the Gulf of Mexico near Corpus Christi, TX.

Figure 6.23 - Principal Rivers of Texas
Source: texasalmanac.com

6.1.8. BRIDGE INVENTORY, INSPECTION, AND APPRAISAL PROGRAM (BRINSAP) DATA/ REPORTS

BRINSAP data was sourced to prepare an inventory of existing structures along US 57. This data reflects many characteristics for each structure crossing US 57, such as year built, structure length, operating rating (US tons), inventory rating, and other pertinent information. A copy of the BRINSAP data is included in **APPENDIX L**. Out of 68 structures located on US 57 and four structures located on I-35 directly adjacent to the project limits, six structures are noted as having been designed based on H-15 design loading requirements. H-15 loading represents two-axle trucks weighing 30,000 pounds, with 6,000 pounds on its steering axle and 24,000 pounds on its drive axle. H-20 loading is the design criteria of AASHTO with 32,000 pounds or wheel loading of 16,000 pounds. All six of the H-15 design load structures are box culverts.

6.2. INTERSTATE UPGRADE (OPTION 2)

To pursue an interstate upgrade for US 57, AASHTO and FHWA interstate design parameters would need to be met or exceeded before legislative action would be allowed to move forward in the designation process. The following considerations would need to be addressed to satisfy the requirements of interstate upgrade:

1. The existing 150 feet to 160 feet of rural ROW width would need to become a 332 feet rural ROW width via ROW acquisition (see Figure 6.17 - Proposed Interstate Highway Typical Section (With Frontage Roads)) to accommodate frontage roads. ROW acquisition would need to occur for nearly the entire length of the rural US 57 segments (approximately 85 miles).

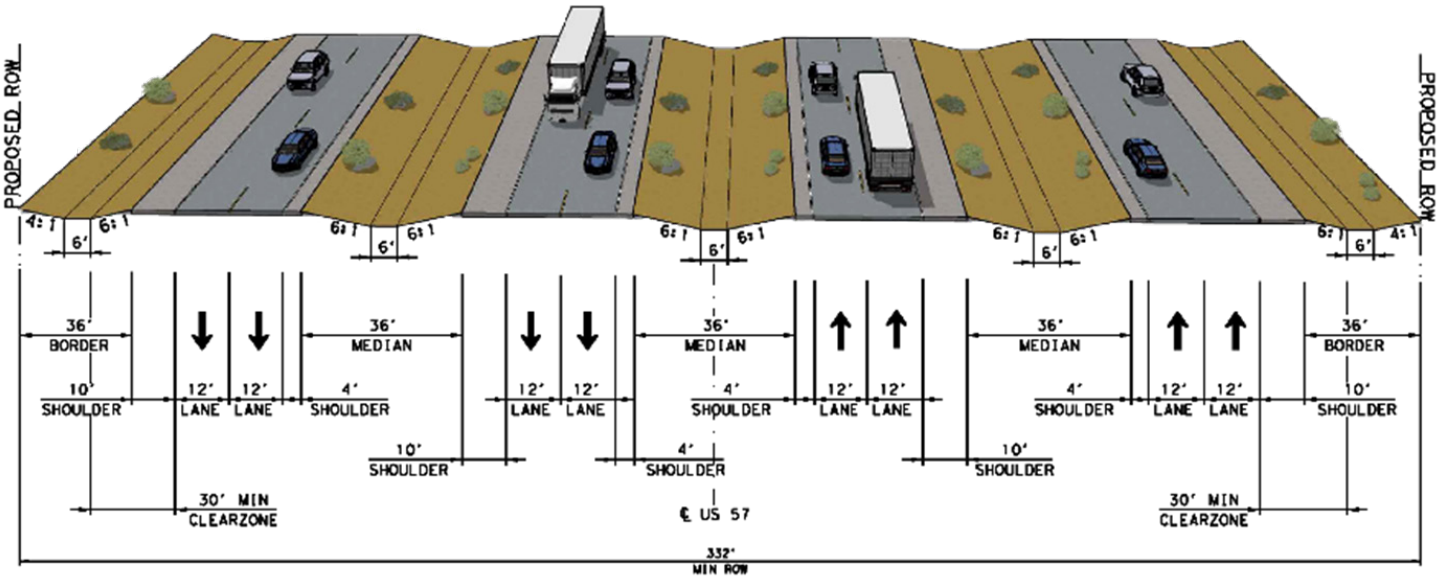


Figure 6.24 - Proposed Interstate Highway Typical Section (With Frontage Roads)

2. Nonrural interstate routes within Eagle Pass, La Pryor, and Batesville would need to be considered to form a continuous interstate alignment along the existing route of US 57. The nonrural interstate section would require, at a minimum, 180 feet of ROW as shown in Figure 6.18. Relief routes around these three cities could also be considered to minimize ROW impacts within the populated areas.

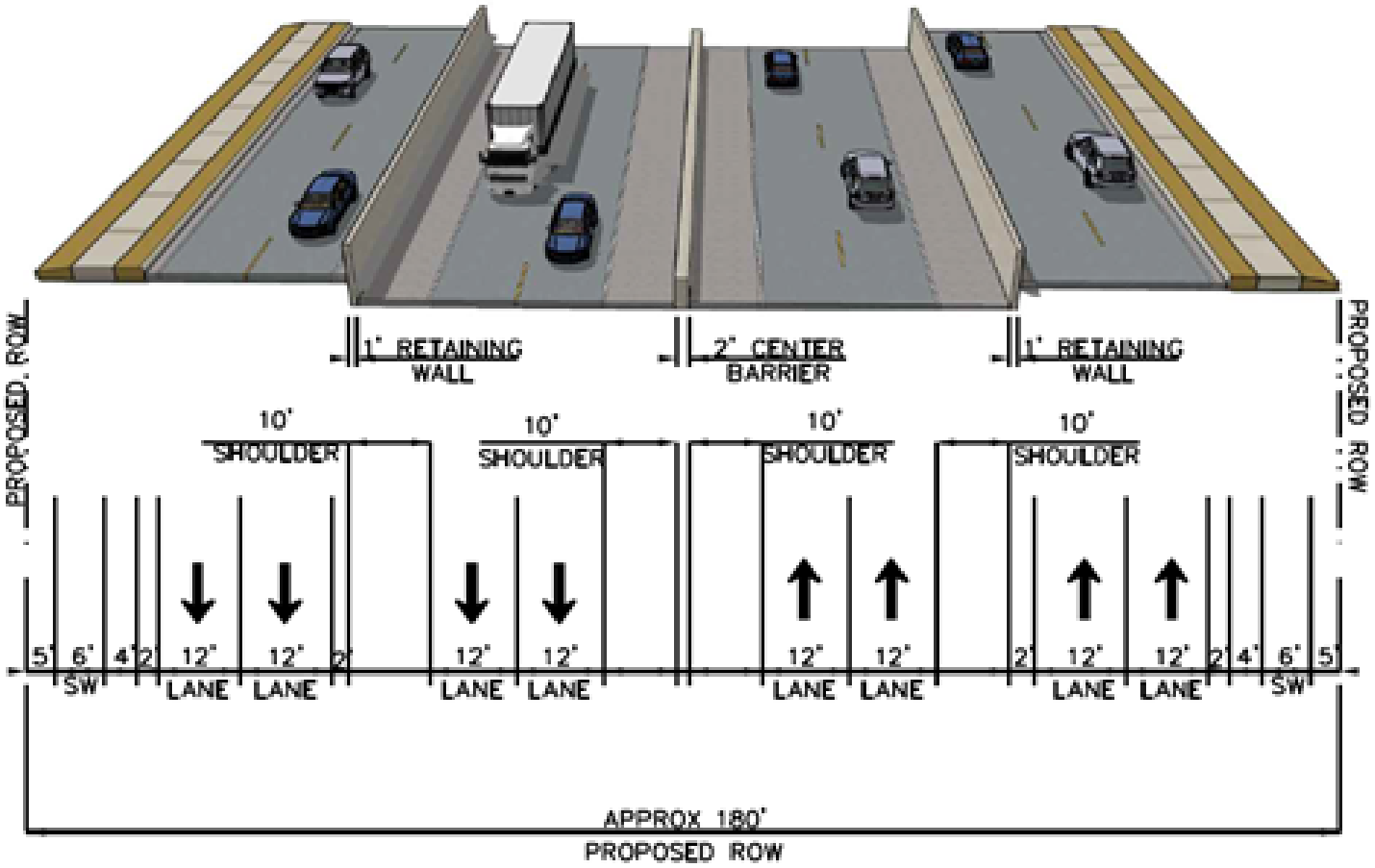


Figure 6.25 - Proposed Nonrural Interstate Highway Typical Section (With Frontage Roads)

3. Expanded ROW along the corridor would result in utility displacements and disruptions. Measurements were taken in GIS software to calculate the potential impact to existing utilities beyond the existing ROW (**Table 6.2**).
4. US 57 would need to re-route around the cities of La Pryor and Batesville to avoid displacements of businesses and property owners within these two cities. An interstate around each city, however, could remove the pass-by trips that provide a revenue source to local businesses. The re-alignment of US 57 around these cities would also require substantial ROW acquisition, utility clearances, and potential improvements to crossing roadways (US 83 and FM 117).

5. Interstate designation requires full control of access, meaning no driveways may directly connect to the main lanes of the interstate in rural or urban areas. The existing US 57 corridor from SL 480 to I-35 has more than 260 direct points of access from adjacent properties. Many of these properties do not have a readily available second point of access to an adjacent road. These access points would require the construction of frontage roads and grade-separated interchanges for crossover traffic along the entire portion of US 57, including within (or around) the cities of La Pryor and Batesville.

Image 6.2 - I-35 in Laredo, TX Interstate Terminus
Source is Google Maps

6. 68 cross drainage structures would likely be required to be extended or removed and replaced with the construction of a widened interstate typical roadway section. Upstream storage via drainage easements or additional ROW acquisition beyond the typical proposed ROW width may also need to be provided to accommodate proposed storm drainage runoff at or near the typical ROW width.
7. At the four locations along US 57 where the existing horizontal curvature of the roadway alignment does not meet interstate standards, additional ROW acquisition, grading, and reconstruction would be required to provide a larger horizontal radius.
8. Most, if not all, of the existing bridge structures would need to be demolished and reconstructed due to inadequate lane widths, shoulder widths, and/or structural capacity to meet the requirements of an interstate upgrade.

6.3. EXPANDED HIGHWAY SECTION (OPTION 3)

Upon review of the various attributes of the corridor, an optional proposed improvement not involving interstate upgrade is prudent to consider. This would equate to the installation of a proposed four-lane divided highway or four-lane undivided highway to replace or complement the existing two-lane highway and super 2 highway sections of US 57. Additional considerations would be required within the populated areas of La Pryor and Batesville where a four-lane roadway section may not currently exist, as well as treating intersections with the appropriate lane configurations based on intersection control method and projected traffic volumes. It is assumed that additional improvements to US 57 west of SL 480 would be avoided, with SL 480 being used as a relief route and primary route for CMVs to and from the U.S.-Mexico border crossing.

The following options are deemed feasible and reasonable solutions for US 57 in comparison to the baseline (Option 1) and interstate upgrade (Option 2).

OPTION 3.1 – Four-lane divided highway with opposing lanes separated by a wide median (36 feet) and centered within the existing ROW of US 57 (see **Figure 6.26**).

- ***Pros:*** Enhanced safety for motorists, enhanced safety for first responders, enhanced efficiency (reduced travel time), and enhanced capacity.
- ***Cons:*** ROW acquisition required, utility displacements and relocations, higher construction cost, and constructability.

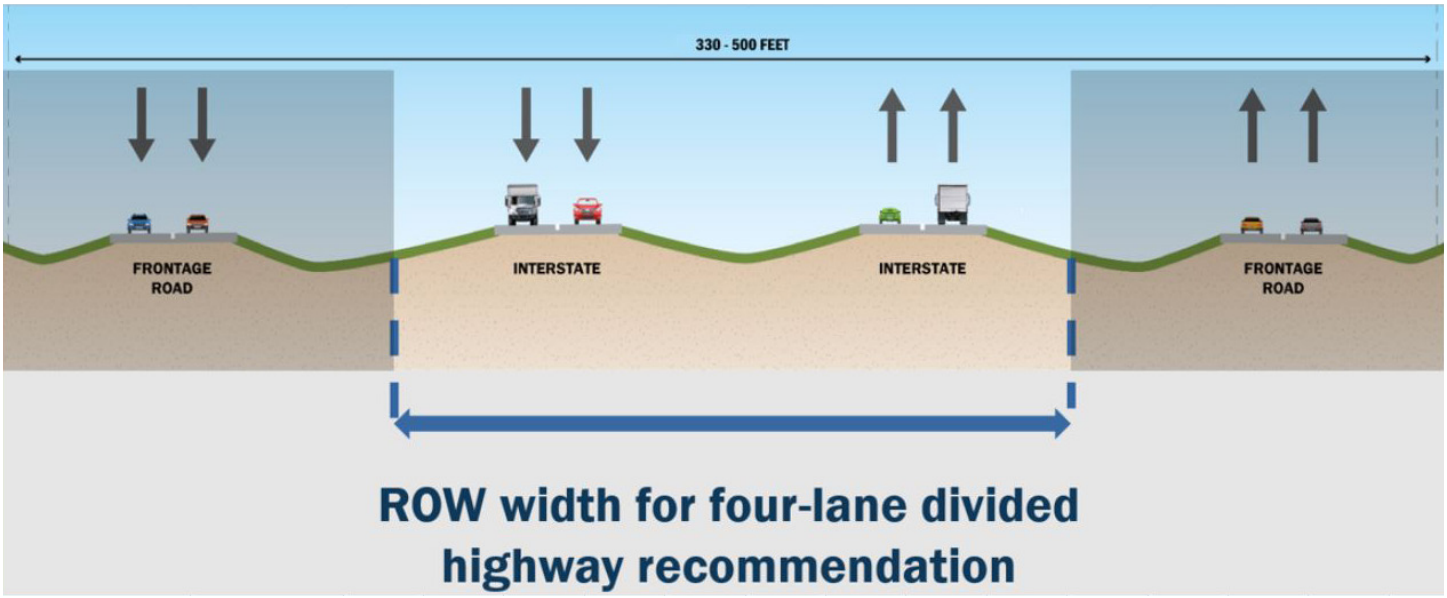


Figure 6.26 - Proposed Four-Lane Divided Highway

OPTION 3.2 – A four-lane divided highway with opposing lanes separated by a wide median (36 feet) while re-using as much of the existing US 57 travel lanes as reasonable/feasible (see **Figure 6.27**).

- ***Pros:*** Enhanced safety for motorists, enhanced safety for first responders, enhanced efficiency (reduced travel time), enhanced capacity, limits ROW acquisition to one side of the corridor (north and south would likely be affected, but would alternate along the corridor), constructability improved by keeping traffic on existing US 57 while building the additional two-lane section. Select structures may be able to be re-used if geometrically and structurally sufficient. Construction costs would be lower than Scenarios 2 and Scenario 3.1.
- ***Cons:*** ROW acquisition width on a given side (north or south) of US 57 would increase, along with utility displacements and relocations.

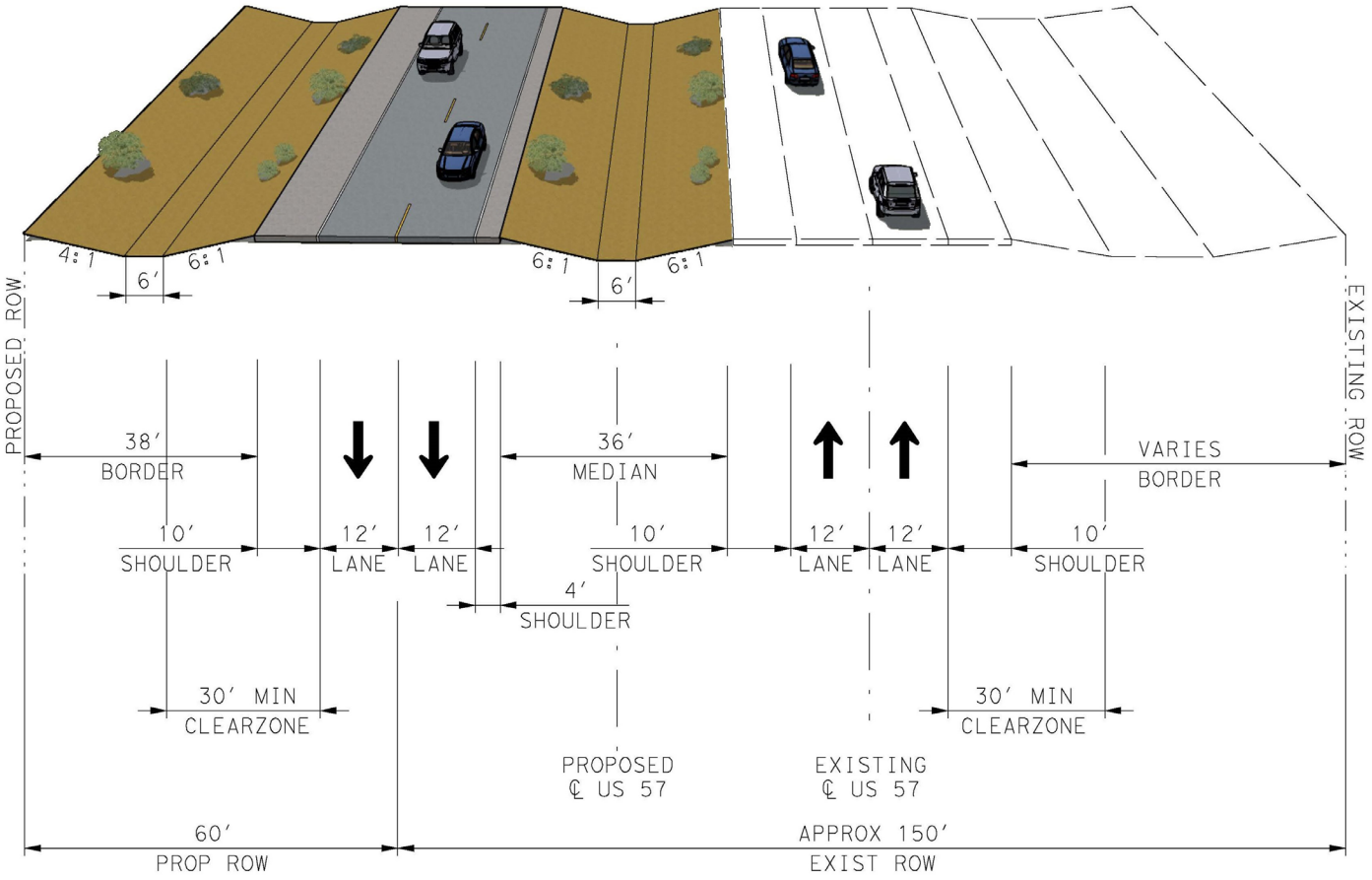


Figure 6.27 - Proposed Four-Lane Divided Highway, Reuse Existing US 57 Lanes

OPTION 3.3 – A four-lane undivided highway; re-use as much of the existing US 57 travel lanes as reasonable/ feasible (see **Figure 6.28**).

- ***Pros:*** Enhanced capacity as compared to Scenario 1; no ROW acquisition anticipated; construction duration lessened as compared to Scenario 2, Scenario 3.1 and Scenario 3.2; fewer utility impacts; construction costs less than Scenario 2, Scenario 3.1 and Scenario 3.2; and fewer potential impacts to cultural and historic resources.
- ***Cons:*** Rural corridor safety is not enhanced; travel time may be only slightly improved as compared to Scenario 1; and construction worker safety would be reduced due to less buffer space between active traffic and work zones.

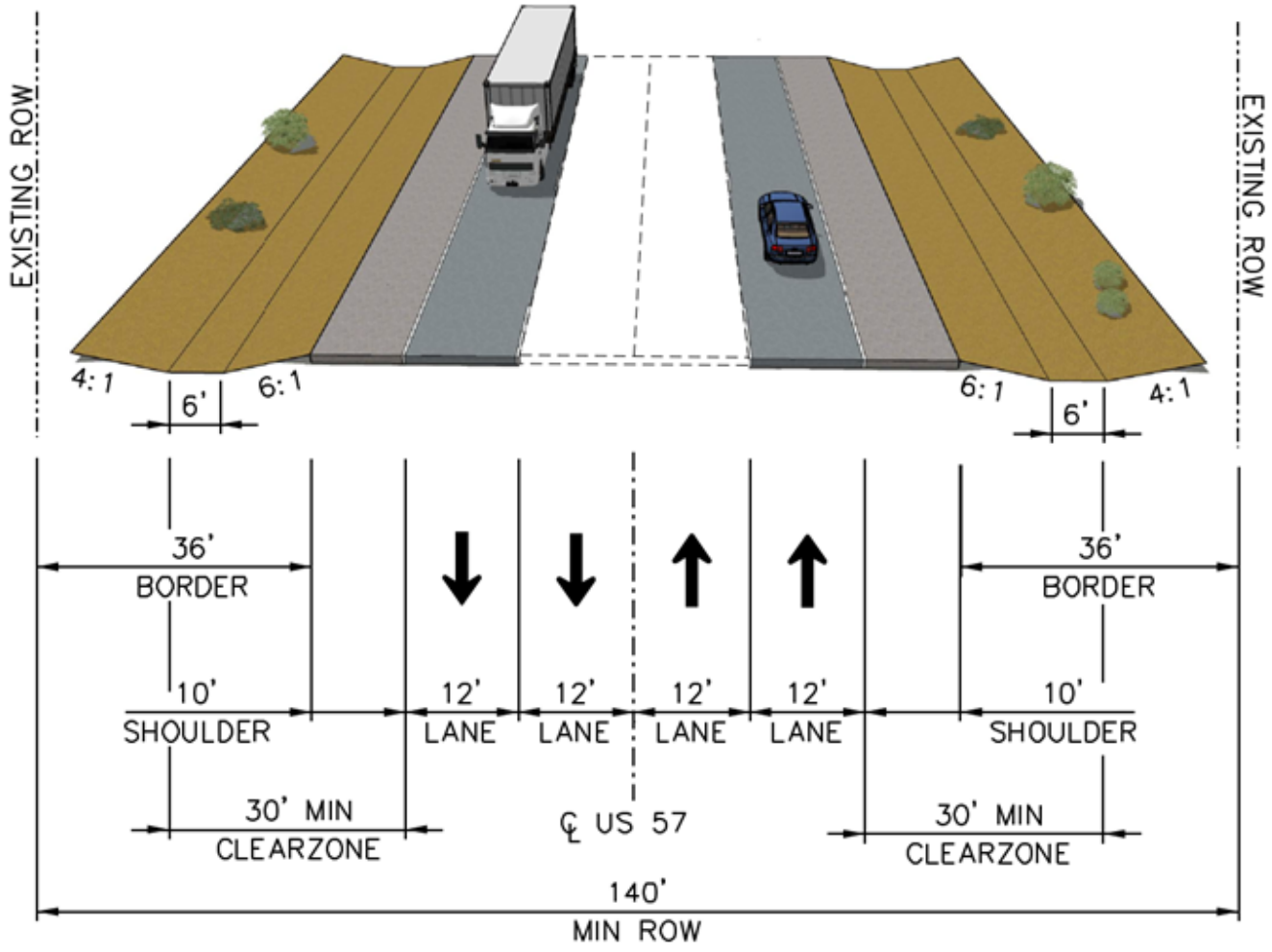


Figure 6.28 - Proposed Four-Lane Undivided Highway, Reuse Existing US 57 Lanes

6.4. OPTIONS COMPARISON

As introduced at the beginning of Chapter 6, the US 57 route was divided into segments to analyze proposed conditions at a more granular level. This segmented analysis allows for the potential mixing and matching of proposed options between the U.S.-Mexico border crossing and I-35, considering distance, anticipated travel time, costs, and potential crash reduction. Each proposed option has undergone this segmented analysis presented here in **Section 6.4**.

6.4.1. BASELINE (NO-BUILD), OPTION 1

Table 6.3 - Baseline Option Results

Comparison	BASELINE (NO-BUILD)								
	Segment Designator								
	A	B	C	D	E	F	G	H	Total
Miles: US 57 Route	5.4	9.0	31.2	2.5	11.6	2.0	12.1	24.2	**98.0**
Travel Time (min):									
Existing*	7.0	7.2	25.0	3.5	9.3	2.3	9.7	21.0	**85.0**
Year 2045*	8.1	7.2	25.0	3.5	9.3	2.3	9.7	21.0	**86.1**
Potential Crash Reduction	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Total Cost ($M)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$0.0**

Does not include intersection control delay. Calculation is based on regulatory posted speed and distance traveled along US 57. Actual travel time for the US 57 corridor in year 2022 is approximately 100 minutes when factoring in intersection control delays, acceleration/deceleration, and stoppage at the interior border patrol checkpoint.

***** US 57-related programmed projects are not accounted for in the Option 1 cost***

Refer to Appendix B for a Summary of the Potential Crash Reduction calculation.

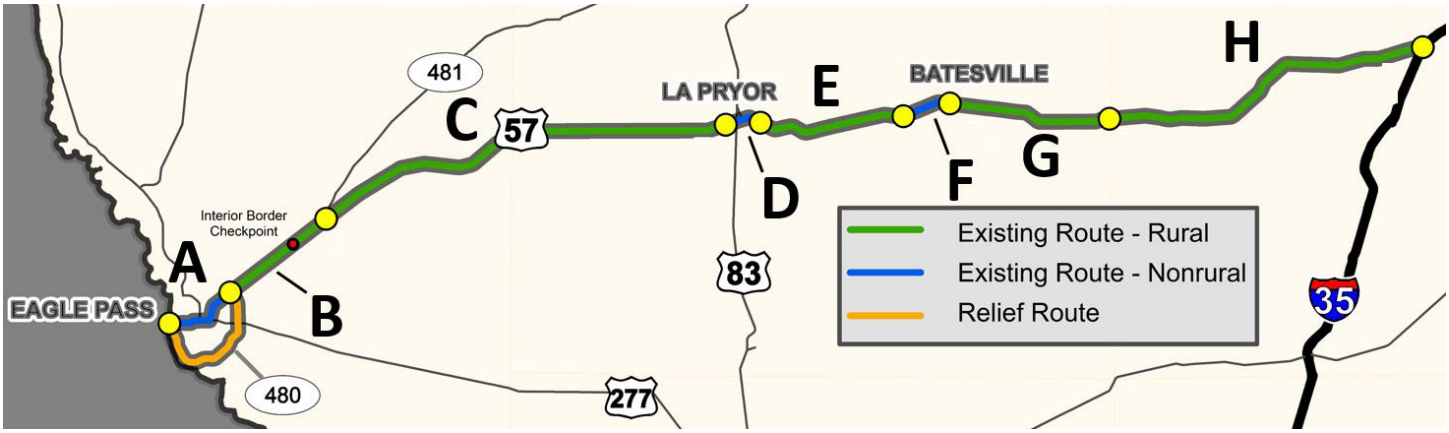


Figure 6.29 - US 57 Corridor Segment Map

It should be noted that, based on TDM, there is a difference in projected year 2045 traffic for the No-Build option compared to the expanded highway and interstate (Build) options. Additional traffic will bring added congestion to intersections along the US 57 route. However, it offers many benefits to the three-county area, including safety and travel time reliability.

6.4.2. INTERSTATE CONVERSION AND UPGRADE, OPTION 2

Table 6.4 presents the segmental results for the interstate conversion and upgrade option.

Table 6.4 - Interstate Conversion and Upgrade Results

Comparison	INTERSTATE CONVERSION AKND UPGRADE								
	Segment Designator								
	A	B	C	D	E	F	G	H	Total
Miles:									
US 57 Route	5.4	9.0	31.2	2.5	11.6	2.0	12.1	24.2	**98.0**
Relief Route(s)	11.1	-	-	2.2	-	1.9	-	-	**103.3**
Travel Time (min):									
US 57 Route	8.4	7.4	25.1	2.6	10.6	1.9	9.8	21.4	**87.2**
Relief Route(s)	9.7	-	-	1.8	-	1.6	-	-	**87.4**
Potential Crash Reduction	25.0%	20.9%	20.9%	20.9%	20.8%	20.8%	20.8%	20.8%	**22.1%**
Construction Cost ($M)									
US 57 Route	$169.0	$134.3	$507.2	$78.0	$200.1	$72.8	$183.6	$398.1	**$1,743.2**
Relief Route(s)	$185.3	-	-	$60.6	-	$59.6	-	-	**$1,728.8**
ROW Cost ($M)									
US 57 Route	$51.0	$8.6	$29.7	$3.5	$11.0	$2.5	$11.5	$23.0	**$140.7**
Relief Route(s)	$6.1	-	-	$3.8	-	$3.3	-	-	
Utilities Cost ($M)									
US 57 Route	$16.9	$13.4	$50.7	$7.8	$20.0	$7.3	$18.4	$39.8	**$174.3**
Relief Route(s)	$18.5	-	-	$6.1	-	$6.0	-	-	**$172.9**
Total Cost ($M)									
US 57 Route	$237.0	$156.2	$587.6	$89.3	$231.2	$82.6	$213.5	$460.9	**$2,058.2**
Relief Route(s)	$209.9	-	-	$70.5	-	$68.9	-	-	**$1,998.7**

Refer to Appendix B for a Summary of the Potential Crash Reduction calculation.

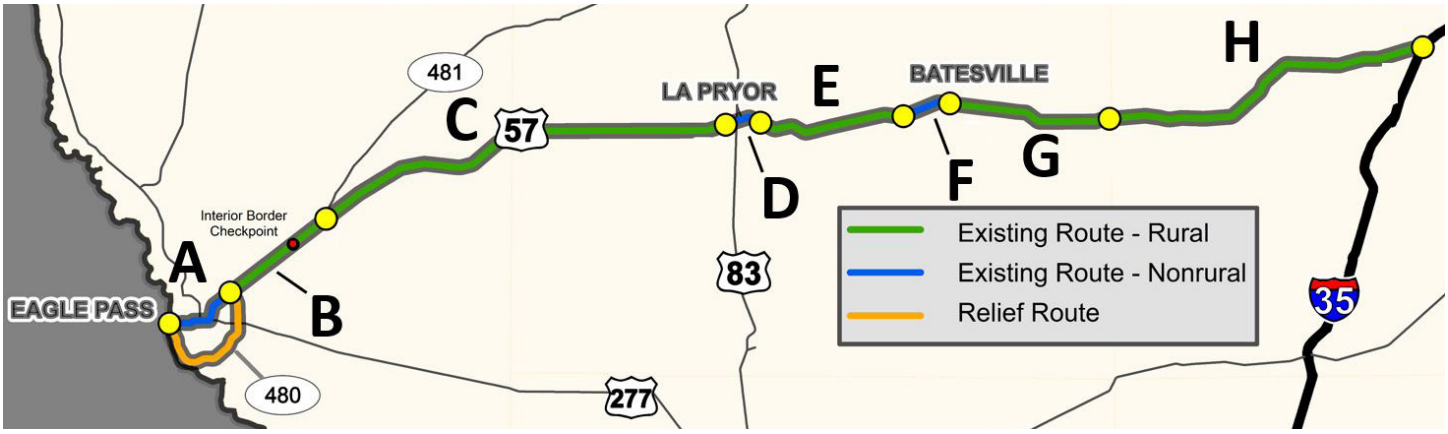


Figure 6.30 - US 57 Corridor Segment Map

Relief routes were included in the **OPTION 2** analysis due to the substantial ROW impacts that would result from a nonrural interstate along the existing US 57 alignment within Eagle Pass, La Pryor, and Batesville. ROW costs reflect a planning-level estimate of land and improvement values on parcels adjacent to US 57 within these three communities. Other financial costs related to relocation assistance were not included in the ROW costs shown.

6.4.3. FOUR-LANE DIVIDED HIGHWAY WITH FULL RECONSTRUCTION, OPTION 3.1

Table 6.5 presents the segmental results for the four-lane divided highway with full reconstruction option.

Table 6.5 - Four-Lane Divided Highway With Full Reconstruction Results

Comparison	FOUR-LANE DIVIDED HIGHWAY WITH FULL RECONSTRUCTION OPTION								
	Segment Designator								
	A	B	C	D	E	F	G	H	Total
Miles:									
US 57 Route	5.4	9.0	31.2	2.5	11.6	2.0	12.1	24.2	**98.0**
Relief Route(s)	11.1	-	-	2.2	-	1.9	-	-	**103.3**
Travel Time (min):									
US 57 Route	9.4	7.3	25.0	3.6	10.0	2.4	9.8	22.0	**89.4**
Relief Route(s)	9.7	-	-	1.3	-	1.3	-	-	**86.4**
Potential Crash Reduction	21.3%	4.9%	27.9%	27.9%	34.7%	34.7%	34.7%	34.7%	**21.3%**
Construction Cost ($M)									
US 57 Route	$80.4	$70.0	$256.5	$22.8	$103.4	$21.5	$93.7	$202.0	**$850.3**
Relief Route(s)	$64.1	-	-	$18.7	-	$18.1	-	-	**$826.6**
ROW Cost ($M)									
US 57 Route	$51.0	$1.6	$5.6	$3.7	$2.1	$2.7	$2.2	$4.3	**$73.2**
Relief Route(s)	$0.0	-	-	$2.1	-	$1.8	-	-	**$19.8**
Utilities Cost ($M)									
US 57 Route	$8.0	$7.0	$25.7	$2.3	$10.3	$2.1	$9.4	$20.2	**$85.0**
Relief Route(s)	$6.4	-	-	$1.9	-	$1.8	-	-	**$82.7**
Total Cost ($M)									
US 57 Route	$139.4	$78.7	$287.8	$28.8	$115.8	$26.3	$105.2	$226.6	**$1,008.5**
Relief Route(s)	$70.5	-	-	$22.7	-	$21.7	-	-	**$929.1**

Refer to Appendix B for a Summary of the Potential Crash Reduction calculation.

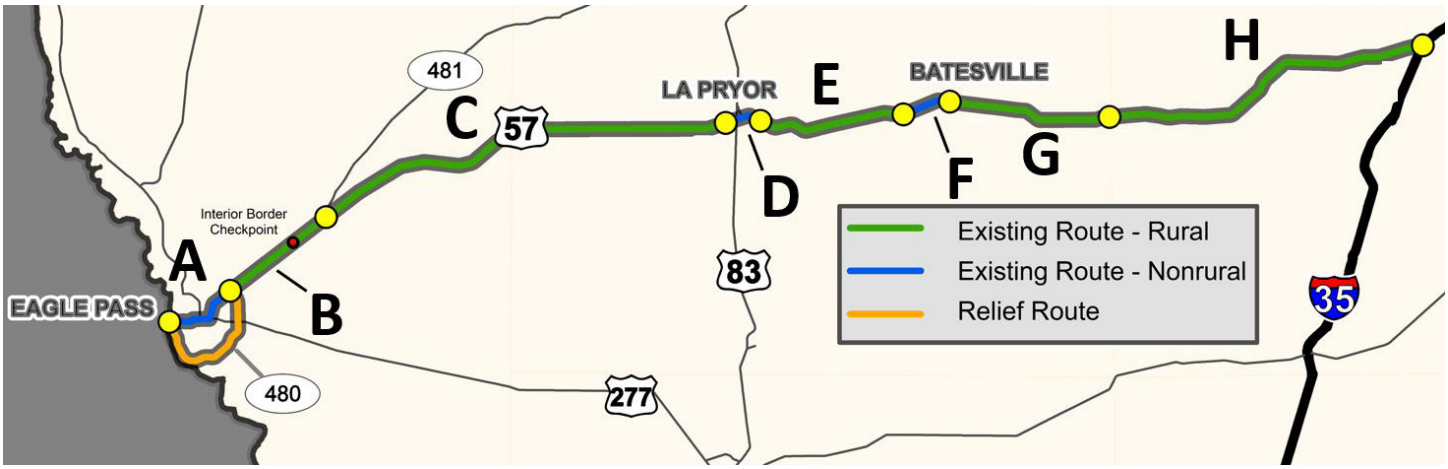


Figure 6.31 - US 57 Corridor Segment Map

6.4.4. FOUR-LANE DIVIDED HIGHWAY USING EXISTING US 57 LANES OPTION 3.2

Table 6.6 presents the segmental results for the four-lane divided highway using existing US 57 lanes option.

Table 6.6 - Four-Lane Divided Highway Using Existing US 57 Lanes Results

Comparison	FOUR-LANE DIVIDED USING EXISTING US 57 LANES HIGHWAY OPTION								
	Segment Designator								
	A	B	C	D	E	F	G	H	Total
Miles:									
US 57 Route	5.4	9.0	31.2	2.5	11.6	2.0	12.1	24.2	**98.0**
Relief Route(s)	11.1	-	-	2.2	-	1.9	-	-	**103.3**
Travel Time (min):									
US 57 Route	9.4	7.3	25.0	3.6	10.0	2.4	9.8	22.0	**89.4**
Relief Route(s)	9.7	-	-	1.3	-	1.3	-	-	**86.4**
Potential Crash Reduction	21.3%	4.9%	27.9%	27.9%	34.7%	34.7%	34.7%	34.7%	**21.3%**
Construction Cost ($M)									
US 57 Route	$3.3	$38.8	$140.7	$13.1	$55.4	$11.8	$52.5	$110.9	**$426.7**
Relief Route(s)	$3.3	-	-	$18.7	-	$18.1	-	-	**$438.5**
ROW Cost ($M)									
US 57 Route	$0.0	$2.9	$9.9	$5.4	$3.7	$3.5	$3.8	$7.7	**$36.8**
Relief Route(s)	$0.0	-	-	$2.1	-	$1.8	-	-	**$31.9**
Utilities Cost ($M)									
US 57 Route	$0.3	$3.9	$14.1	$1.3	$5.5	$2.1	$5.3	$11.1	**$42.7**
Relief Route(s)	$0.3	-	-	$1.9	-	$1.8	-	-	**$43.9**
Total Cost ($M)									
US 57 Route	$3.6	$45.6	$164.7	$19.9	$64.7	$16.5	$61.6	$129.7	**$506.1**
Relief Route(s)	$3.6	-	-	$22.7	-	$21.8	-	-	**$514.3**

Refer to Appendix B for a Summary of the Potential Crash Reduction calculation.

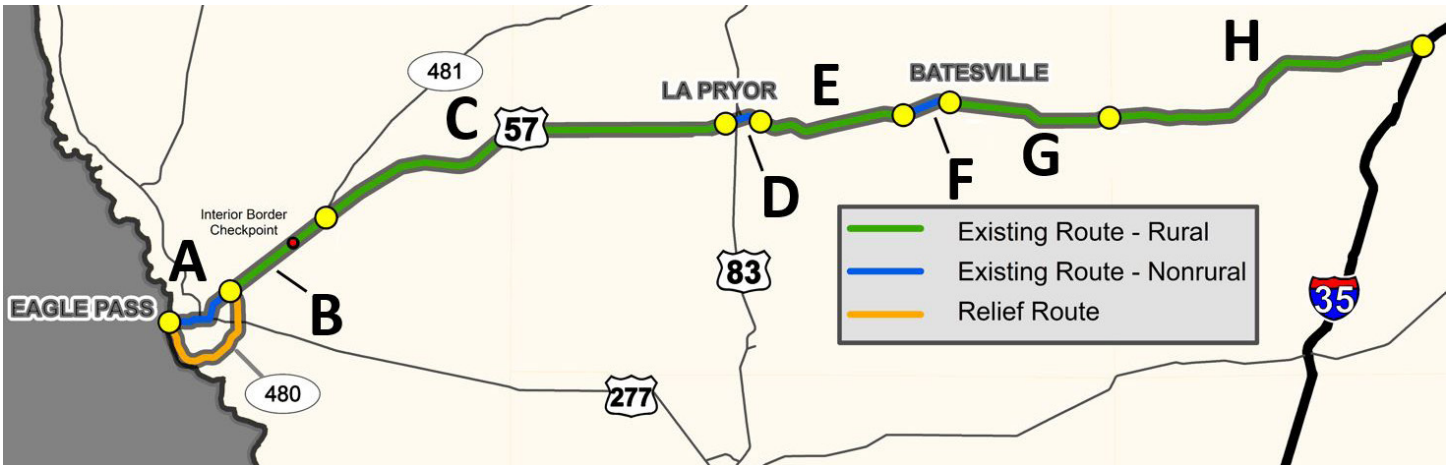


Figure 6.32 - US 57 Corridor Segment Map

6.4.5. FOUR-LANE UNDIVIDED HIGHWAY USING EXISTING US 57 LANES OPTION 3.3

Table 6.7 presents the segmental results for the four-lane undivided highway using existing US 57 lanes option.

Table 6.7 - Four-Lane Undivided Highway Using Existing US 57 Lanes Results

Comparison	FOUR-LANE UNDIVIDED HIGHWAY USING EXISTING US 57 LANES OPTION								
	Segment Designator								
	A	B	C	D	E	F	G	H	Total
Miles:									
US 57 Route	5.4	9.0	31.2	2.5	11.6	2.0	12.1	24.2	**98.0**
Relief Route(s)	11.1	-	-	2.2	-	1.9	-	-	**103.3**
Travel Time (min):									
US 57 Route	9.4	7.3	25.0	3.6	10.0	2.4	9.8	22.0	**89.4**
Relief Route(s)	9.7	-	-	1.3	-	1.3	-	-	**86.4**
Potential Crash Reduction	0%	0%	8.2%	8.2%	6.9%	6.9%	6.9%	6.9%	**1.8%**
Construction Cost ($M) US 57 Route	$3.3	$0.5	$135.2	$13.1	$57.6	$13.6	$47.0	$107.5	**$377.8**
ROW Cost ($M) US 57 Route	$0.0	$0.0	$0.0	$0.8	$0.0	$1.3	$0.0	$0.0	**$2.1**
Utilities Cost ($M) US 57 Route	$0.3	$0.1	$13.5	$1.3	$5.8	$1.4	$4.7	$10.8	**$37.8**
Total Cost ($M) US 57 Route	$3.6	$0.6	$148.8	$15.2	$63.3	$16.2	$51.7	$118.3	**$417.7**

Refer to Appendix B for a Summary of the Potential Crash Reduction calculation.

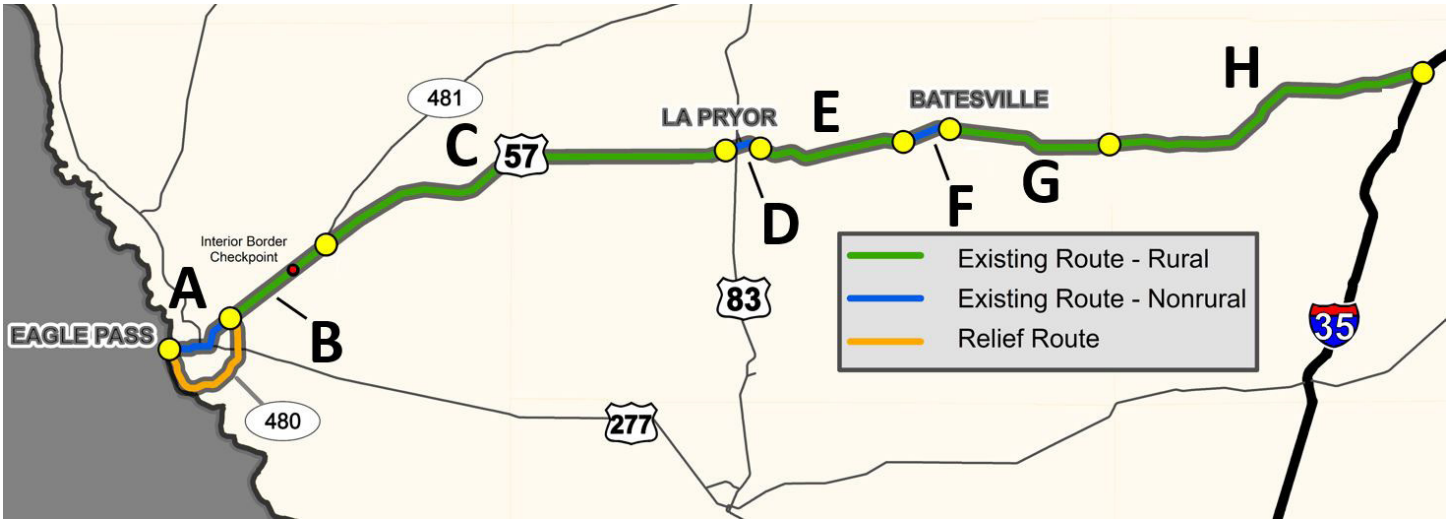


Figure 6.33 - US 57 Corridor Segment Map

6.4.6. COSTS TO UPGRADE THE CORRIDOR TO OPTIONS STUDIED

Table 6.8 shows a summary of the options, compares costs, and presents potential safety benefit in terms of total crash reduction.

Table 6.8 - Options Results Summarized

Description	OPTION 2: Interstate Conversion and Upgrade Cost (Millions)	OPTION 3.1: Four-Lane Divided Highway with Full Reconstruction Cost (Millions)	OPTION 3.2: Four-Lane Divided Highway using Existing US 57 Lanes Cost (Millions)	OPTION 3.3: Four-Lane Undivided Highway using Existing US 57 Lanes Cost (Millions)
Construction	$1,743.2	$850.3	$426.7	$377.8
Right-of-Way	$140.7	$73.2	$36.8)	$2.1
Utilities	$174.3	$85.0	$42.7	$37.8
Potential Total Crash Reduction	25.7%	17.7%	17.7%	1.3%
Total Cost	$2,058.2	$1,008.5	$506.1	$417.7

To determine the anticipated reconstruction cost of each roadway option, the following costs were applied (values are rounded):

- Rural Interstate Cost Per Mile: $13,900,000
- Nonrural/Urban Interstate Cost Per Mile: $18,500,00
- Four-lane Divided Highway Cost Per Mile: $7,400,00
- Four-lane Divided Highway Re-Use of Two US 57 Lanes Cost Per Mile: $4,300,000
- Four-lane Undivided Highway Re-Use of Two US 57 Lanes Cost Per Mile: $3,500,000
- Bridge Cost Per Square Foot: $75.30
- Signalized Intersection Cost Per Each: $1,000,000
- Unsignalized Intersection Cost Per Each: $500,000
- Major Interchange Cost Per Each: $12,000,000
- Minor Interchange Cost Per Each: $6,000,000
- Rural ROW Cost Per Acre: $43,560 ($1 per SF)
- Urban/Nonrural ROW Cost: Based on Tax Assessed Values of Land + Improvements for those parcels impacted by a widening of US 57
- Construction Cost Contingency Applied: 30%
- Utility Relocations Cost: 10% of Construction Cost

6.5. ECONOMIC ANALYSIS

Two distinct economic analyses were prepared for the US 57 Corridor Interstate Feasibility Study. Benefit-cost analysis (BCA) and economic impact analysis (EIA) were performed for the proposed US 57 options shown in Section 6.4 of this Report using a 20-year time horizon. To the extent possible, benefits have been monetized. A qualitative discussion is also provided when a benefit is anticipated to be generated but is not easily monetized or quantified. A summary of existing socio-economic conditions and the overall economic analysis approach for this study is presented in **Appendix O**.

In the analyses conducted in the following sections, the base case (No Build option) assumes no adjustments to the current US 57 Corridor. The project options (Build options) address varying updates to the corridor and include the following:

- Option 2: Interstate Conversion and Upgrade
- Option 2A: Interstate Conversion and Upgrade, No Eagle Pass
- Option 3.1: Four-Lane Divided Highway with Full Reconstruction
- Option 3.1A: Four-Lane Divided Highway with Full Reconstruction, No Eagle Pass
- Option 3.2: Four-Lane Divided Highway using Existing US 57 Lanes
- Option 3.2A: Four-Lane Divided Highway using Existing US 57 Lanes, No Eagle Pass
- Option 3.3: Four-Lane Undivided Highway

The "No Eagle Pass" alternatives do not include changes to US 57 between the Eagle Pass International Bridge and SL 480.

6.5.1. BENEFIT-COST ANALYSIS

A benefit-cost analysis (BCA) is a conceptual framework that can be used to evaluate the cost-effectiveness of transportation infrastructure projects. A BCA attempts to describe, quantify, and monetize the societal benefits and costs generated by a project. A project's societal return-on-investment is estimated by comparing the monetized benefits against the project's total costs. Costs include the resources required to develop the project, and the costs of maintaining the new or improved asset over time are considered dis-benefits in this analysis.

The benefits of the project are based on the expected impacts on both users and non-users of the facility. In addition, a BCA evaluates the benefits and costs over the entire life cycle of the project. Therefore, all benefits and costs that occur in future years need to be discounted to present values in order to be compared equitably. A real discount rate based on U.S. Department of Transportation (USDOT) BCA guidance has been identified for this purpose as 7 percent.

The BCA produced several important measures to assess the cost-effectiveness of a proposed project. The benefit-cost ratio (BCR), calculated by dividing the project's discounted societal benefits by its discounted costs, measures the societal return on each dollar spent in project costs. In other words, a BCR greater than 1.0 indicates that for every dollar spent in project costs, more than one dollar will be generated in benefits. The net present value (NPV), calculated by subtracting the discounted project costs from the project's discounted societal benefits, measures the total benefit that society enjoys as a result of the project improvements.

The BCA for the Project was conducted using a customized benefit-cost model developed in Microsoft Excel. The excel-based BCA model adheres to the requirements and monetization factors stipulated by the USDOT. The resulting values are consistent with the latest USDOT BCA guidance.

The methodology makes several important assumptions and seeks to avoid overestimation of benefits and underestimation of costs (a full list of assumptions is shown in Appendix O). Specifically:

- Prices are expressed in 2022 dollars;
- The period of analysis includes project development and construction years (2027-2029) and 20 years of operations (2030-2049);
- A constant 7 percent real discount rate is assumed throughout the period of analysis except for carbon dioxide emissions, which has a discount rate of 3 percent.

6.5.2. BCA ASSUMPTIONS

Table 6.9 - BCA Assumptions

Parameter	Unit	Value	Source
Project Information			
Base Year (for discounting)	year	2022	
Analysis Start Year	year	2022	US 57 Project Assumptions
Project Open Year	year	2030	
Construction Years	years	2027-2029	
Benefits Period	years	20	U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
General Discount Rate	percent	7%	U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
Environmental Discount Rate (CO2)	percent	3%	
Annualization Factor (Weekdays)	days/year	365	Used to annualize daily vehicle delay at project intersections
Truck Percentage	percent	0.25	US 57 Assumptions
CPI Index (2020 $ to 2022$)	ratio	1.10	Bureau of Economic Analysis
Operations & Maintenance Assumptions			
Starting Year for O&M Costs	year	2030	Project Assumption
Freeway - Annual O&M Cost	2022 $	$5,170,705	HDR Estimate based on a unit cost of $10,000 with 784.14 lane miles (existing lane miles is 267.07)
4-Lane Undivided Arterial - Annual O&M Cost	2022 $	$1,250,015	HDR Estimate based on a unit cost of $10,000 with 392.07 lane miles (existing lane miles is 267.07)
4-Lane Divided Arterial - Annual O&M Cost	2022 $	$1,250,015	
Travel Time Inputs			
Passenger Vehicle Average Vehicle Occupancy (AVO)	persons/vehicle	1.67	U.S.DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
Truck Average Vehicle Occupancy (AVO)	persons/vehicle	1.00	
Value of Time, Passenger Car	2022 $/hour	$32.83	TxDOT Road User Costs 2022
Value of Time, Truck	2022 $/hour	$45.05	
Vehicle Operating Cost Assumptions			
Light Duty Vehicles	2022 $/mile	$0.49	U.S.DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022; Inflated to 2022 $
Commercial Trucks	2022 $/mile	$1.03	
Emission Cost Inputs			
Idling Speed	mph	2.5	Assumption: 2.5 mph is midpoint estimate assuming speed of vehicles delayed are between 0-5mph. It is a conservative assumption (increasing idling speed for emissions estimation from delays will result in increased emissions benefits since as miles per hour increase so do the displaced emissions).

Parameter	Unit	Value	Source
Project Information			
Base Year (for discounting)	year	2022	
Analysis Start Year	year	2022	US 57 Project Assumptions
Project Open Year	year	2030	
Construction Years	years	2027-2029	
Benefits Period	years	20	U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
General Discount Rate	percent	7%	U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
Environmental Discount Rate (CO2)	percent	3%	
Annualization Factor (Weekdays)	days/year	365	Used to annualize daily vehicle delay at project intersections
Truck Percentage	percent	0.25	US 57 Assumptions
CPI Index (2020 $ to 2022$)	ratio	1.10	Bureau of Economic Analysis
Operations & Maintenance Assumptions			
Starting Year for O&M Costs	year	2030	Project Assumption
Freeway - Annual O&M Cost	2022 $	$5,170,705	HDR Estimate based on a unit cost of $10,000 with 784.14 lane miles (existing lane miles is 267.07)
4-Lane Undivided Arterial - Annual O&M Cost	2022 $	$1,250,015	HDR Estimate based on a unit cost of $10,000 with 392.07 lane miles (existing lane miles is 267.07)
4-Lane Divided Arterial - Annual O&M Cost	2022 $	$1,250,015	
Travel Time Inputs			
Passenger Vehicle Average Vehicle Occupancy (AVO)	persons/vehicle	1.67	U.S.DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022
Truck Average Vehicle Occupancy (AVO)	persons/vehicle	1.00	
Value of Time, Passenger Car	2022 $/hour	$32.83	TxDOT Road User Costs 2022
Value of Time, Truck	2022 $/hour	$45.05	
Vehicle Operating Cost Assumptions			
Light Duty Vehicles	2022 $/mile	$0.49	U.S.DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022; Inflated to 2022 $
Commercial Trucks	2022 $/mile	$1.03	

Parameter	Unit	Value	Source
Emission Cost Inputs			
Idling Speed	mph	2.5	Assumption: 2.5 mph is midpoint estimate assuming speed of vehicles delayed are between 0-5mph. It is a conservative assumption (increasing idling speed for emissions estimation from delays will result in increased emissions benefits since as miles per hour increase so do the displaced emissions).
Average Speed in No Build	mph	50	Assumption based on Traffic Model Results presented in Traffic Data Worksheet.
Average Speed in Build	mph	70	
Environmental Damage Costs	2022 $/ton	varies by year	USDOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022, Table A-6
Crash Cost Inputs			
Cost of Damaged Vehicle (PDO)	2020 $/vehicle	$4,600.00	U.S. Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022, Table A-2
Vehicles Damaged per PDO Crash	events/crash	1.59	California Department of Transportation (Caltrans), TASAS Unit, 2010 to 2013 Average
Cost of Fatal Crash	2022 $/crash	$14,092,886	USDOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs - March 2022, Table A-1; Inflated to 2022 $
Cost of Injury Crash	2022 $/crash	$332,194	Calculation based on U.S.DOT BCA Guidance and Caltrans Inputs; Inflated to 2022 $
Cost of PDO Crash	2022 $/crash	$8,029	

To the extent possible, the following economic benefits are measured, monetized, and discounted on an annual basis throughout the lifecycle of the project (assumed to be 20 years) for the Build options:

- **TRAVEL TIME SAVINGS** – Reductions in travel time from reduced congestion or improved accessibility for both passenger vehicles and trucks
- **VEHICLE OPERATING COST SAVINGS** – Changes in the costs of owning (i.e., depreciation) and operating (i.e., fuel, oil, tiers, and maintenance) a vehicle resulting from reduced congestion or improved accessibility.
- **CRASH COST SAVINGS** – Reductions in the economic cost of 1) crash fatalities and injuries and 2) property damage only (PDO) crashes as a result of reduced congestion or roadway geometric improvements (e.g., fewer conflict points).
- **EMISSIONS COST SAVINGS** – Changes in the economic cost of vehicular emissions of criteria air pollutants (nitrogen oxides, sulfur dioxide, and fine particulate matter) and greenhouse gases (carbon dioxide) as a result of improved speed or reduced VMT.
- **OPERATIONS AND MAINTENANCE (O&M) COSTS** – There is a net increase in O&M costs expected for all Build options. This is included in the benefit-cost analysis as a dis-benefit.

Table 6.9 summarizes the BCA findings for the seven options. **Tables 6.10** through **6.12** provide further breakdowns of the benefits for the Interstate Conversion and Upgrade, Four-Lane Divided Highway, and Four-Lane Undivided Highway options. As stated previously, construction costs are distributed from 2027 through 2029 and benefits accrue during the full operation of the project, which begins in 2030 after construction and continues through 2049.

For each project option, benefits are most influenced by annual crash cost savings. The total benefits are the same for each of the interstate conversion and upgrade options and each of the four-lane divided highway options because the traffic and crash inputs do not change; however, the costs vary for each of the seven unique options.

Table 6.10 - Summary of Benefits and Costs By Option, in Millions of Dollars

Option	Description	Benefits (Discounted)	Costs (Discounted)	BCR
2	Interstate Conversion and Upgrade	$490.0	$1,387.9	0.35
2A	No Eagle Pass	$490.0	$1,229.1	0.40
3.1	Four-Lane Divided Highway with Full Reconstruction	$418.1	$680.3	0.61
3.1A	No Eagle Pass	$418.1	$586.9	0.71
3.2	Four-Lane Divided Highway using Existing US 57 Lanes	$418.1	$413.5	1.01
3.2A	**No Eagle Pass**	**$418.1**	**$320.6**	**1.30**
3.3	Four-Lane Undivided Highway using Existing US 57 Lanes	$312.9	$280.6	1.12

OPTIONS 2 AND 2A: INTERSTATE CONVERSION AND UPGRADE

Considering all monetized benefits and costs and a 7 percent real discount rate, it is estimated that the investment would result in $490.0 million in total net benefits. The best-performing Interstate Conversion and Upgrade option is **OPTION 2A** (Interstate Conversion and Upgrade, No Eagle Pass), with a BCR of approximately 0.40 and a NPV of -$739.1 million.

Table 6.11 - Estimates of Economic Benefits – Interstate Conversion and Upgrade, in Millions of Dollars

Benefits	Undiscounted	Discounted
Travel Time Savings	$232.0	$73.9
Vehicle Operating Cost Savings	-$2.2	-$0.7
Crash Cost Savings	$1,501.2	$469.1
Emissions Cost Savings	-$31.8	-$18.2
O&M Cost Savings	-$103.3	-$34.1
Total Benefits	$1,595.8	$490.0

OPTIONS 3.1, 3.1A, 3.2, AND 3.2A: FOUR-LANE DIVIDED HIGHWAY

Considering all monetized benefits and costs and a 7 percent real discount rate, it is estimated that the investment would result in $418.1 million in total net benefits. The best-performing Four-Lane Divided Highway option is **OPTION 3.2A** (Four-Lane Divided Highway using Existing US 57 Lanes, No Eagle Pass), with a BCR of approximately 1.30 and a NPV of $97.5 million.

Table 6.12 - Estimates of Economic Benefits – Four-Lane Divided Highway, in Millions of Dollars

Benefits	Undiscounted	Discounted
Travel Time Savings	$120.5	$38.4
Vehicle Operating Cost Savings	-$2.0	-$0.6
Crash Cost Savings	$1,296.6	$405.2
Emissions Cost Savings	-$29.0	-$16.6
O&M Cost Savings	-$25.0	-$8.2
Total Benefits	$1,361.1	$418.1

OPTION 3.3: FOUR-LANE UNDIVIDED HIGHWAY USING EXISTING US 57 LANES

Considering all monetized benefits and costs and a 7 percent real discount rate, it is estimated that the investment would result in $312.9 million in total net benefits and a BCR of approximately 1.12. The NPV is $32.3 million.

Table 6.13 - Estimates of Economic Benefits – Four-Lane Undivided Highway, in Millions of Dollars

Benefits	Undiscounted	Discounted
Travel Time Savings	$120.5	$38.4
Vehicle Operating Cost Savings	-$2.0	-$0.6
Crash Cost Savings	$960.2	$300.0
Emissions Cost Savings	-$29.0	-$16.6
O&M Cost Savings	-$25.0	-$8.2
Total Benefits	$1,024.5	$312.9

RESULTS SUMMARY

Each project option has high construction costs which drive down the BCRs. However, three of the scenarios have a BCR greater than 1. **OPTION 3.2A** (Four-Lane Divided using Existing US 57 Lanes, No Eagle Pass) has the highest BCR, with a value of 1.30.

In addition to the monetized benefits presented in the tables above, the project would generate other benefits that are difficult to monetize with available data so are not included in this analysis at this time. These benefits are not reflected in the BCR, and they include the following:

- Increased economic output from improved international trade opportunities. The project improvements create secure and efficient flows of commerce that are critical for the competitiveness of trade between the United States and Mexico.
- Increased connectivity and community development at the border and along the corridor.

6.5.3. ECONOMIC IMPACT ANALYSIS

The benefits and economic impacts of **OPTION 3.2A** (Four-Lane Divided Highway using Existing US 57 Lanes, No Eagle Pass) were further evaluated using the Transportation Regional Economic Development Information System (TREDIS). TREDIS is an integrated system designed to cover a wide range of applications including the assessment of benefits, costs, finance, and macroeconomic impacts. TREDIS was used to estimate transportation benefits (such as vehicle operating cost savings, travel time savings, etc.) and macroeconomic impacts (such as employment, labor income, and GDP impacts) resulting from **OPTION 3.2A**. The analysis used traffic analysis inputs for 17 Texas counties (such as number of trips, vehicle miles traveled, and vehicle hours traveled) for the baseline (No Build) option and for **OPTION 3.2A**. TREDIS does not account for anticipated economic benefits due to increased trade between Texas and Mexico.

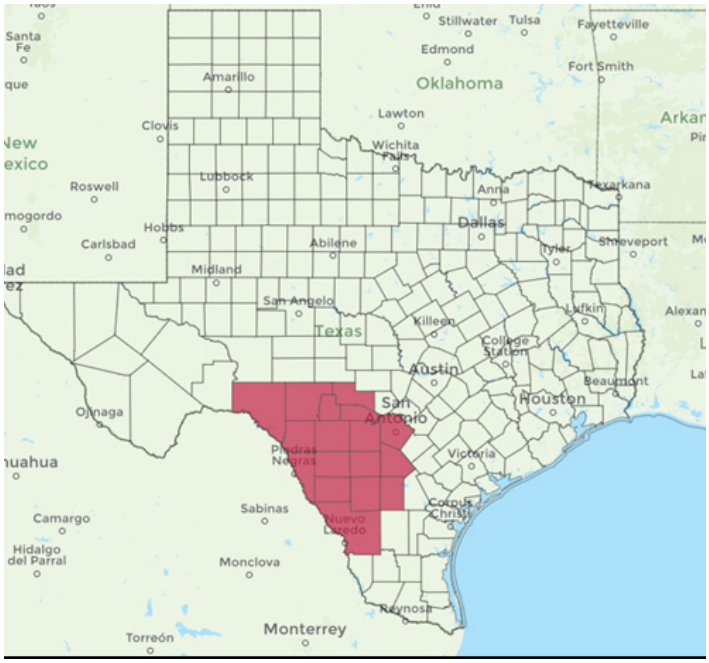


Figure 6.34 - Texas Counties Analyzed

The implementation of **OPTION 3.2A** is expected to improve travel times and increase employment and labor income. Gross domestic product and business output decrease with the implementation of **OPTION 3.2A** compared to the current facility. **Table 6.14** summarizes these impacts for the entire project. The change in economic outcomes reflects direct, indirect, and induced economic impacts.

Table 6.14 - Economic Impacts Summary, Option 3.2A

Metric	Baseline 2030	Baseline 2049	2049 4-Lane Divided (Half Build, No Eagle Pass)	Change
Employment	1,768,288	2,007,123	2,007,126	3.00
Labor Income	$125,186	$188,636	$188,636	$0.03
Value Added	$198,534	$314,517	$314,516	-$1.15
Output	$350,097	$569,355	$569,352	-$2.61

**Dollar values are in Millions of Dollars; Source: TREDIS*

The industries with the highest change in employment between the baseline option and **OPTION 3.2A** in 2049 are Other Services and Transportation, both with a projected increase of six jobs. Employment growth by industry is shown in **Figure 6.35**.

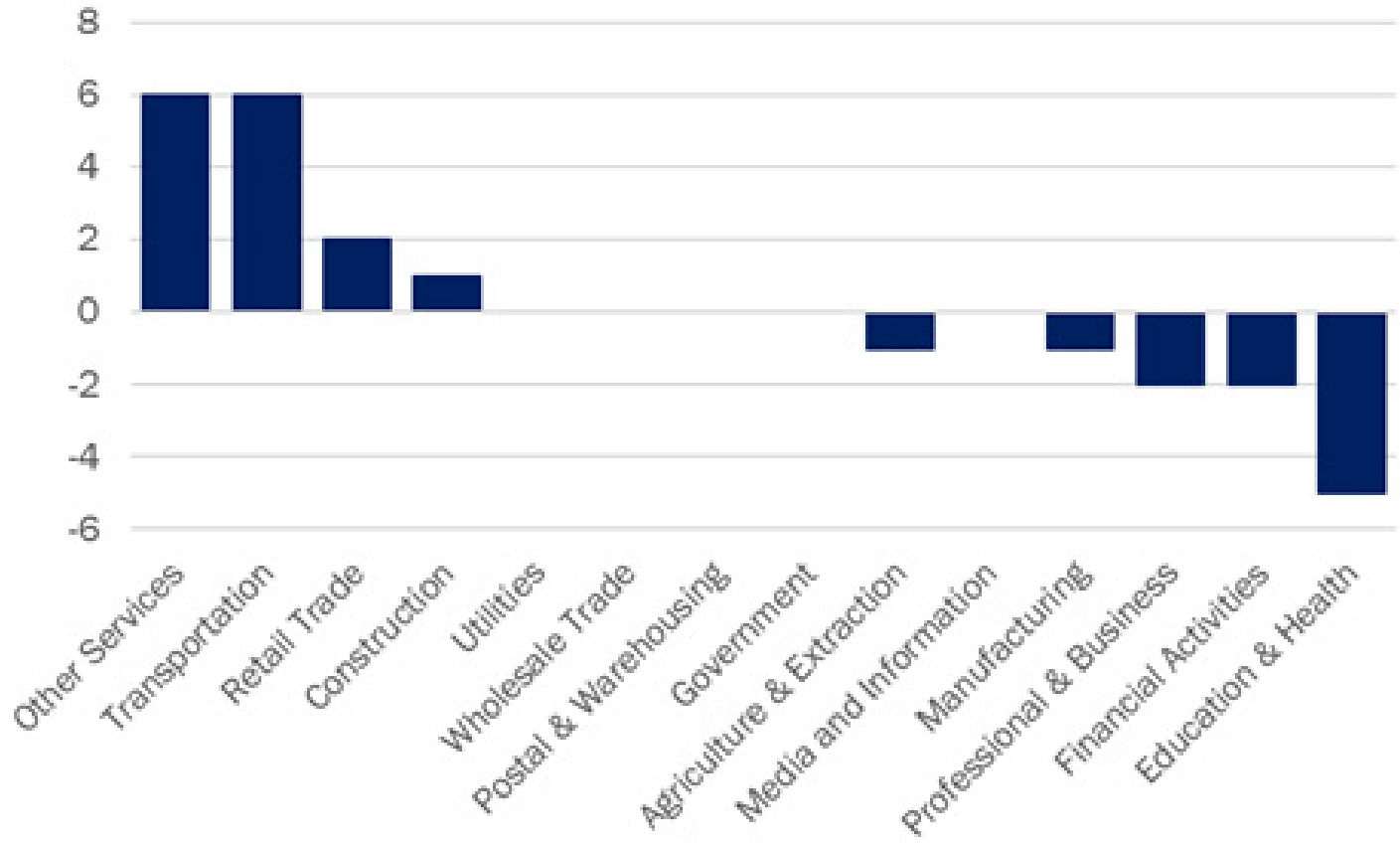


Figure 6.35 - Employment Growth by Industry, in Number of Jobs

Table 6.15 provides a summary of the benefits associated with implementing **OPTION 3.2A** in the final year of analysis (2049). As detailed below, the BCR from TREDIS is 1.26.

In terms of output and GDP, transportation, other services, retail trade, and construction are all impacted positively. Impacts to remaining industries that are not transportation-related are negative because households are allocating a larger percentage of their budget to transportation-related expenses.

The project's overall negative impact on output and GDP in 2049 is a result of the increase in vehicle miles traveled due to project implementation. Project benefits due to reduced congestion and vehicle hours traveled are not enough to offset the negative impacts of increased vehicle miles traveled.

Table 6.15 - Summary of Project Benefits Final Analysis Year

Total Capital Costs ($M)		**$245.95**
Operating and Maintenance Cost ($M)		**$6.34**
Residual Value of Captial Spending ($M)		**-$5.86**
Total Costs ($M)*		**$243.43**
BCR		**1.26**
Project Annual Output ($M)		**-$2.61**
Transportation	$0.71	
Other Services	$1.27	
Retail Trade	$0.39	
Construction	$0.22	
Utilities	-$0.14	
Wholesale Trade	-$0.17	
Postal & Warehousing	-$0.01	
Media and Information	-$0.30	
Government	-$0.06	
Agriculture & Extraction	-$0.18	
Manufacturing	-$2.21	
Financial Activities	-$0.81	
Professional & Business	-$0.36	
Education & Health	-$0.97	
Project Annual Increase in GDP ($M)		**-$1.15**
Transportation	$0.19	
Other Services	$0.89	
Retail Trade	$0.28	
Construction	$0.09	
Utilities	-$0.07	
Wholesale Trade	-$0.09	
Postal & Warehousing	-$0.09	
Media and Information	-$0.14	
Government	-$0.03	
Agriculture & Extraction	-$0.10	
Manufacturing	-$0.87	
Financial Activities	-$0.52	
Professional & Business	-$0.20	
Education & Health	-$0.59	

Total Capital Costs ($M)		**$245.95**
Operating and Maintenance Cost ($M)		**$6.34**
Residual Value of Captial Spending ($M)		**-$5.86**
Total Costs ($M)*		**$243.43**
BCR		**1.26**
Project Annual Output ($M)		**-$2.61**
Transportation	$0.71	
Other Services	$1.27	
Retail Trade	$0.39	
Construction	$0.22	
Utilities	-$0.14	
Wholesale Trade	-$0.17	
Postal & Warehousing	-$0.01	
Media and Information	-$0.30	
Government	-$0.06	
Agriculture & Extraction	-$0.18	
Manufacturing	-$2.21	
Financial Activities	-$0.81	
Professional & Business	-$0.36	
Education & Health	-$0.97	
Project Annual Increase in GDP ($M)		**-$1.15**
Transportation	$0.19	
Other Services	$0.89	
Retail Trade	$0.28	
Construction	$0.09	
Utilities	-$0.07	
Wholesale Trade	-$0.09	
Postal & Warehousing	-$0.09	
Media and Information	-$0.14	
Government	-$0.03	
Agriculture & Extraction	-$0.10	
Manufacturing	-$0.87	
Financial Activities	-$0.52	
Professional & Business	-$0.20	
Education & Health	-$0.59	
Project Increase in Employment		**3**
Transportation	6	
Other Services	6	
Retail Trade	2	
Construction	1	
Utilities	0	

Total Capital Costs ($M)		**$245.95**
Operating and Maintenance Cost ($M)		**$6.34**
Residual Value of Captial Spending ($M)		**-$5.86**
Total Costs ($M)*		**$243.43**
BCR		**1.26**
Wholesale Trade	0	
Postal & Warehousing	0	
Media and Information	0	
Government	0	
Agriculture & Extraction	-1	
Manufacturing	-1	
Financial Activities	-2	
Professional & Business	-2	
Education & Health	-5	

**Discounted at 7%; May not sum due to rounding; Source: TREDIS*

Table 6.15 summarizes the total economic impacts by Industry (2020 $M) for the three construction years (2027-2029) followed by the 20-year analysis period. Economic impacts during construction are positive but then slightly negative once the project is implemented.

Table 6.16 - Economic Impact Summary by Year

Year	Output	Value Added	Jobs	Labor Income ($M)
2027	$201.26	$103.59	1,180	$80.52
2028	$201.26	$103.60	1,172	$80.52
2029	$201.26	$103.61	1,163	$80.53
2030	-$1.26	-$0.55	11	$0.15
2031	-$1.32	-$0.58	11	$0.14
2032	-$1.38	-$0.60	10	$0.13
2033	-$1.45	-$0.63	9	$0.13
2034	-$1.51	-$0.66	9	$0.12
2035	-$1.58	-$0.69	8	$0.11
2036	-$1.64	-$0.72	7	$0.11
2037	-$1.71	-$0.75	7	$0.10
2038	-$1.78	-$0.78	6	$0.10
2039	-$1.85	-$0.81	6	$0.09
2040	-$1.92	-$0.84	5	$0.08
2041	-$1.99	-$0.87	5	$0.08
2042	-$2.06	-$0.91	5	$0.07
2043	-$2.14	-$0.94	4	$0.06
2044	-$2.21	-$0.97	4	$0.06
2045	-$2.29	-$1.01	4	$0.05
2046	-$2.37	-$1.04	3	$0.04
2047	-$2.45	-$1.08	3	$0.04
2048	-$2.53	-$1.11	3	$0.03
2049	-$2.61	-$1.15	3	$0.02

Overall, **OPTION 3.2A** performs well in the EIA, with a BCR of 1.26. Economic impacts are most positive during the construction years, then slightly negative after the project is implemented due to increased vehicle miles traveled.

6.5.4. SENSITIVITY ANALYSIS

The BCA and EIA outcomes presented in the previous sections rely on several assumptions and long-term projections, both of which are subject to considerable uncertainty. The primary purpose of the sensitivity analysis is to help identify the variables and model parameters whose variations have the greatest impact on the economic outcomes.

The sensitivity analysis can also be used to:

1. Evaluate the impact of changes in individual critical variables – how much the results would vary with reasonable departures from the most like value for the variable; and,
2. Assess the robustness of the analysis and evaluate whether the conclusions reached under the baseline set of input values are significantly altered by reasonable departures from those values.

The outcomes of the quantitative sensitivity analysis for **OPTION 3.2A** are summarized below.

Table 6.17 - Sensitivity Analysis – BCA Analysis

Parameters	Change in Parameter Value	Current NPV	New NPV	New BCR
Crash Data	Reduce crash rates in the Build scenario by 10%	$97.50	$112.63	1.35
Discount Rate	Reduce the general discount rate to 3%	$97.50	$404.67	2.01
Time Savings-Laredo	Include time savings from vehicles diverting from Laredo to cross through Eagle Pass	$97.50	$157.48	1.49

As shown in **Table 6.17** above, each of the tested sensitivity scenarios drives the BCR higher. Decreasing the crash rate in the Build scenario increases the BCR to 1.35. Reducing the discount rate to 3% has the most significant impact on the BCR, increasing the value to 2.01. The discounting concept reflects the principle that benefits and costs that occur sooner in time are more highly valued than those that occur in the more distant future, and that there is thus a cost associated with diverting the resources needed for an investment from other productive uses in the future. The discounting process results in future streams of benefits and costs being expressed in the same present value terms. The USDOT's recommendation of a 7 percent discounting rate is used as the baseline of this analysis. However, to determine the impact of a low discount rate scenario where present benefits are more highly valued, the sensitivity analysis uses the 3 percent discount rate that is also provided in the USDOT guidance.

Additionally, one important consideration that was not included in the analysis is the potential truck travel time savings as a result of trucks shifting their routes to cross the Mexico border in Eagle Pass rather than Laredo. The sensitivity analysis incorporates the travel time benefits from this shift, assuming 200,000 vehicles per year that currently cross the Mexico border in Laredo would now cross in Eagle Pass, and assuming each of these trucks would save one hour of travel time in doing so.

Assuming a combination of the three parameters in the sensitivity analysis, the BCR from the BCA for **OPTION 3.2A** increases to 2.36.

Table 6.18 - Sensitivity Analysis – EIA Analysis

Parameters	Change in Parameter Value	Current NPV	New NPV	New BCR
Crash Data	Increase net crash rates by severity by 10%	$62.54	$77.64	1.32
Discount Rate	Reduce the general discount rate to 3%	$62.54	$241.73	1.75
Time Savings-Laredo	Include time savings from vehicles diverting from Laredo to cross through Eagle Pass	$62.54	$122.53	1.50

A similar sensitivity analysis was performed on the EIA results. As shown in **Table 6.18** above, each parameter change in the sensitivity analysis results in a positive impact on the BCR. Assuming a combination of the three parameters in the sensitivity analysis, the BCR from the EIA for **OPTION 3.2A** increases to 2.17.

The sensitivity analyses for the BCA and EIA highlight that there are potential reasonable changes that increase the benefits of **OPTION 3.2A** beyond what is shown in the baseline analysis.

The sensitivity analyses for the BCA and EIA highlight that there are potential reasonable changes that increase the benefits beyond what is shown in the baseline analysis. The benefit cost ratios associated with the BCA are more comprehensive than those from the EIA because they include additional benefits quantified in accordance with USDOT guidance. The benefit-cost ratio from the BCA for the 4-lane Divided (Half Build, No Eagle Pass) is 1.30, and increases further under all sensitivity tests.

6.5.5. ECONOMIC ANALYSIS CONCLUSIONS

OPTION 3.2A (Four-Lane Divided Highway using Existing US 57 Lanes, No Eagle Pass) performs the best out of all options in the BCA and performs well in the EIA, with BCRs of 1.30 and 1.26 respectively. BCRs associated with the BCA are more comprehensive than those from the EIA because they include additional benefits quantified in accordance with USDOT guidance. The BCRs for **OPTION 3.2A** increase further under all sensitivity tests, indicating a potential for benefits beyond what is shown in the baseline BCA and EIA.

OPTION 3.2A is the recommended option from this economic analysis.

6.6. CONCLUSION TO OPTIONS COMPARISON

Based on the quantitative and qualitative data collected and reviewed for the US 57 corridor, the existing alignment from SL 480 to I-35 should be improved for the following reasons:

- Increase freight connectivity at the Eagle Pass Port of Entry to/from both Mexico and the United States
- Enhance safety along the corridor
- To promote International Trade and development of the related infrastructure in both Mexico and United States
- Augment economic benefit of Mexico and the United States
- Commensurate with the Border Transportation Master Plan and Texas Freight Plan
- Accommodate future growth
- Strengthen the Supply Chain by providing a redundant route for freight traffic

6.7. FINDINGS

- There are safety incidents along US 57 that can be addressed with a widened corridor
- Freight connectivity is currently limited between the Eagle Pass Port of Entry and major interstates, and providing a redundant route for freight traffic would strengthen supply chains and help relieve traffic at other Mexico-Texas Ports of Entry
- Future population, employment, and trade growth will need to be accommodated
- International manufacturers are relocating operations closer to the U.S.-Mexico border due to shifts in the global supply chain. An upgraded US 57 will promote international trade and support economic development in both countries.
- Making improvements to the corridor aligns with other regional planning efforts, including the 2023 Texas Freight Mobility Plan and Texas-Mexico Border Transportation Master Plan 2021

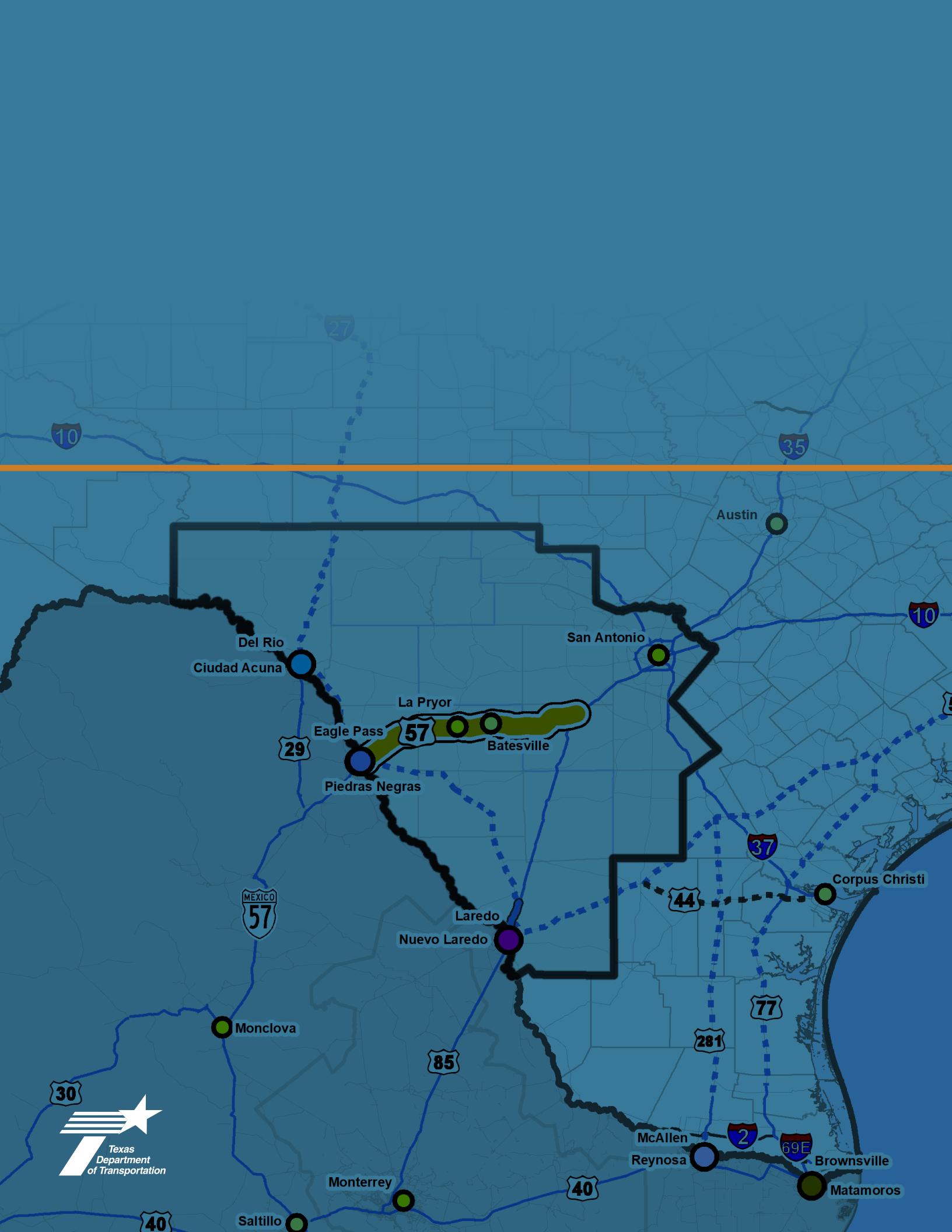
According to United States Code (Title 23) an interstate designation can be justified by:

1. The proposed route having a sufficient length to serve long-distance interstate travel, such as connecting routes between principal metropolitan cities or industrial centers important to national defense and economic development.
2. The proposed route should not duplicate other interstate routes. It should serve interstate traffic movement not provided by another interstate route.
3. The proposed route should directly serve major highway traffic generators with an urbanized area of population greater than 100,000.
4. The proposed route should connect to the Interstate System at each end, with the exception of routes that connect with continental routes or at international borders.

US 57 does not directly serve an urbanized area in the United States of population greater than 100,000. US 57 is an important border route that provides direct connectivity to Piedras Negras in Mexico.

6.7.1. RECOMMENDATIONS

- Plan and implement short-term spot improvements within the City of Eagle Pass to improve safety and connectivity
- Develop a segmented and phased implementation plan for a Four-Lane Divided Highway east of SL 480 to the I-35 junction, that will:
  - Facilitate reuse of existing lanes, where possible, to reduce cost
  - Enhance safety and operations
  - Improve connectivity, freight mobility, and economic vitality
  - Consider potential freight relief routes around La Pryor and Batesville
  - Minimize impact to adjacent properties
  - Serve as a logical progression towards an interstate-level freeway


27
10
35
Austin
10
Del Rio
Ciudad Acuna
San Antonio
La Pryor
Eagle Pass
57
29
Batesville
Piedras Negras
37
Corpus Christi
44
MEXICO
57
Laredo
Nuevo Laredo
77
Monclova
281
85
30
McAllen
2
69E
Reynosa
Brownsville
Monterrey
40
Matamoros
40
Saltillo
Texas
Department
of Transportation

Chapter 7

PUBLIC INVOLVEMENT AND STAKEHOLDER ENGAGEMENT

7.1. PAST AND PLANNED PUBLIC INVOLVEMENT FOR THE STUDY AREA

The US 57 Corridor Interstate Feasibility Study project team has been working in close coordination with TxDOT staff to determine appropriate channels of communication and facilitate proactive meetings with key stakeholders in gathering information for the study area as well as informing elected officials about the purpose and goals of the study and progress being made. Engagement activities held to date can be seen in the schedule shown in **Figure 7.1**.

The Binational importance of the US 57 Corridor is a significant element of the study and has been reflected in stakeholder engagement activities through Spanish translation of materials and the study website as well as intentional engagement with the Mexican delegation and industries that have cross-border operations. The State of Coahuila Governor, Miguel Ángel Riquelme Solís, and Secretary of Economy, Claudio Bres, were specifically engaged through small group stakeholder meetings as well as two in-person trips to Mexico.

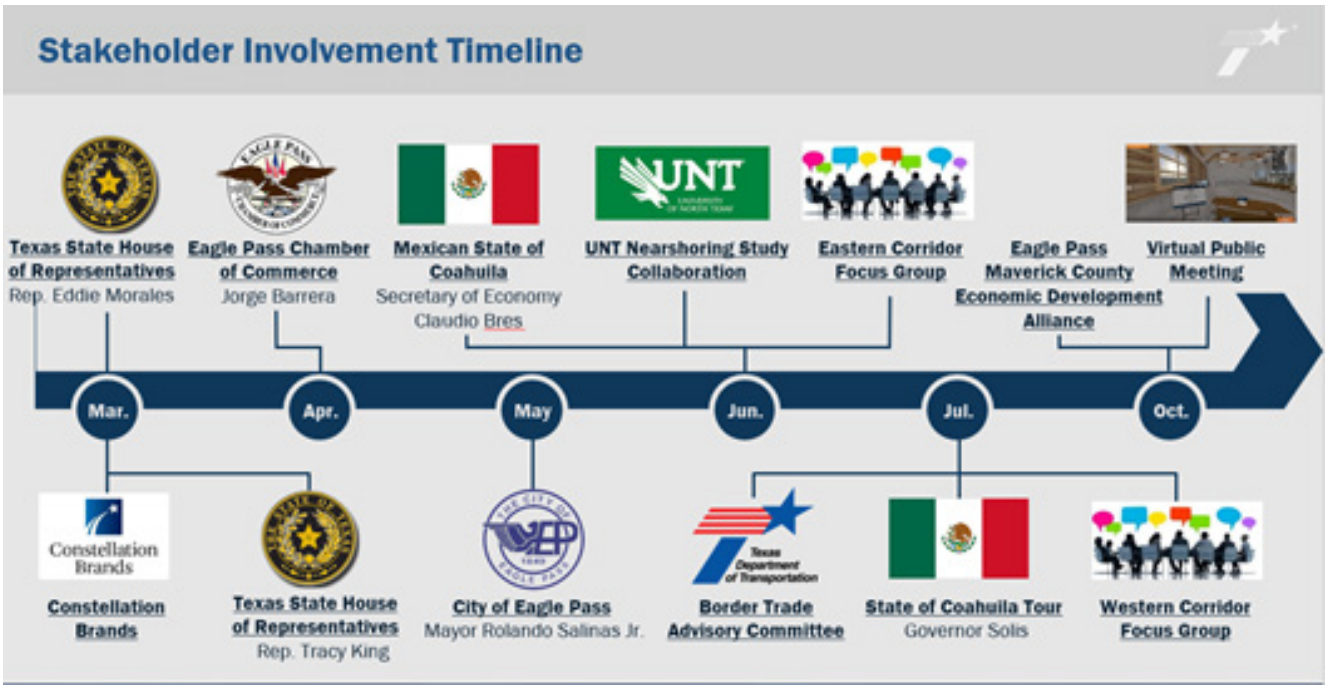


Figure 7.1 - US 57 Study Public Involvement and Stakeholder Engagement Schedule

Engagement activities held throughout the study include:

- February 24, 2022 – Border Trade Advisory Committee Presentation
- March 10, 2022 – State Representative Eddie Morales Virtual Stakeholder Meeting
- March 18, 2022 – Constellation Brands Virtual Stakeholder Meeting
- March 21, 2022 – State Representative Tracy King Virtual Stakeholder Meeting
- April 4, 2022 – Eagle Pass Chamber of Commerce Virtual Stakeholder Meeting
- May 9, 2022 – City of Eagle Pass, Mayor Rolando Salinas Virtual Stakeholder Meeting
- June 3, 2022 – Coahuila, Mexico Secretary of Economy Claudio Bres Virtual Stakeholder Meeting
- June 10, 2022 – University of North Texas Nearshoring Study Collaboration Virtual Stakeholder Meeting
- June 28, 2022 – Eastern Corridor (East of Eagle Pass) Virtual Focus Group and Survey
- July 19, 2022 – Border Trade Advisory Committee Presentation
- July 24-July 26, 2022 – State of Coahuila Tour/ Mexican Delegation Presentation
  - Coahuila Governor Miguel Ángel Riquelme Solís Stakeholder Meeting in Torreón
  - Site Visit in Torreón to Peñoles Mining Company
  - Site Visits in Saltillo to Chrysler Truck Assembly Plant and Daimler Freightliner Assembly Plant
  - Site Visit in Ramos Arizpe to General Motors Assembly Plant
  - Site Visit in Piedras Negras to Constellation Brands
- July 27, 2022 – Western Corridor (Eagle Pass and Piedras Negras) Virtual Focus Group and Survey
- October 4, 2022 – Legislative Briefing Virtual Stakeholder Meeting
- October 7, 2022 – Eagle Pass/Mexico Delegation Workshop in Piedras Negras
- October 12, 2022 – Eagle Pass-Maverick County Economic Development Alliance Presentation in Eagle Pass and Questionnaire
- October 13-28, 2022 – Virtual Public Meeting with Bilingual Recorded Presentations and Interactive Website

7.2. STAKEHOLDER MEETINGS

The project team hosted eight stakeholder meetings including local, state, and Mexican elected officials, private sector and industry representatives, and other local community representatives. These meetings were necessary to gather the most up to date information to be used and incorporated into the study. A total of 25 participants attended a stakeholder meeting, including two participants from Mexico. Meeting notes for each stakeholder meeting including date, attendees, discussion, and next steps is included in the appendix.

The project team made presentations to stakeholder groups throughout the study. Presentations were made to the Border Trade Advisory Committee at two regular meetings, the Eagle Pass-Maverick County Economic Development Alliance (EPMCEDA) at a regular meeting, and to a delegation from the Mexican State of Coahuila and City of Eagle Pass on two separate trips to Mexico. Summaries of the EPMCEDA meeting and two visits to Mexico are included in the Appendices.

7.3. STAKEHOLDER AND INDUSTRY FOCUS GROUP MEETINGS

The project team hosted Focus Group meetings to gather information from additional groups and stakeholders interested in the study. The meetings provided an opportunity for the study team to review study information, as well as communicate data about current and future conditions, study scope and timeline. Participants provided input on community and industry needs, guidance for the study's future outreach, and opinions on potential recommendations to be included in the study's final report.

Two Focus Group meetings were held:

- One Focus Group included city/county elected officials or staff, agency stakeholders, and industry representatives of the La Pryor and Batesville area, on the eastern side of the study area
- One Focus Group included the Mexican Delegation and the city/county elected officials or staff, agency stakeholders, and industry representatives of the Eagle Pass and Border area, on the western side of the study area

A total of 24 participants attended a Focus Group meeting. Interactive polling questions were used during the presentation and ample time was allotted for questions and discussion. A survey was conducted in conjunction with the meetings, which the City of Eagle Pass shared on Facebook following the western Focus Group, helping drive a total of 85 survey responses. A summary report of the date, attendees, answers to polling questions, discussion, and survey results for each Focus Group meeting is included in the appendix.

Figure 7.2 - Public Involvement Schedule

7.4. VIRTUAL PUBLIC MEETING

The study team conducted a virtual public meeting for participants to obtain information on the feasibility study process and recommendations, as well as submit comments. There was not an in-person option for this public meeting. Notice was provided for the virtual public meeting via several methods, including an announcement on TxDOT's website; three emails to different stakeholder groups and subscribed members of the public; print ads in three local publications and digital ad campaigns with two publications; and a postcard sent to all property owners within one mile of the corridor.

The virtual public meeting consisted of pre-recorded video presentations in both English and Spanish, as well as a dedicated website featuring the presentations and other project information. The virtual public meeting website was available beginning at 5 p.m. on Thursday, October 13, 2022. The comment period was open until 11:59 p.m. on Friday, October 28, 2022. Meeting participants had the option of viewing the virtual public meeting at any convenient time during the comment period. Over that time, the English presentation received 169 views on YouTube and the Spanish presentation received 63 views. The meeting website included a survey as well as a general comment form and interactive map on which participants could leave a comment in a particular location. In addition to the presentation, a Spanish webpage, comment form, and survey were available on the meeting website and a Google Translate feature was embedded on every webpage. At the close of the comment period, the website received 237 views from 71 unique users. Comments were accepted by mail, email, voicemail, or the meeting website.

All comments received during the comment period were collected into a database. A total of 15 official comments were received, in addition to four comments left on the interactive map, and one survey response. Comments were generally supportive of the study as well as safety and capacity improvements along the corridor. Five comments highlighted safety concerns, two comments requested further development of Loop 480 in Eagle Pass, and two comments mentioned the potential economic benefits of capacity improvements. Concerns expressed included potential displacement of an environmental resource on private property located near the highway and opposition to a potential route for US 57 around La Pryor and Batesville. Three of the four comments on the interactive map called for safe bicycle and pedestrian access in the three cities along the corridor. A virtual public meeting summary that includes meeting documentation, survey results and comments was developed and is included in the appendix. https://www.txdot.gov/projects/hearings-meetings/statewide/us-57-corridor.html

7.5. OUTREACH TOOLS

TxDOT set up a study webpage that includes a project map, study purpose and scope, study milestone schedule, fact sheets, and notification of the virtual public meeting. The consultant team set up a Social Pinpoint website with information about the study, an interactive project map, a survey and comment form, and the virtual public meeting presentation and materials. A Google Voice number with a greeting in English and Spanish was established to collect verbal comments. https://www.txdot.gov/projects/projects-studies/statewide/us57-corridor.html

The project team developed two fact sheets, one to cover general information on the corridor and study area and one to focus specifically on safety data gathered along the corridor. These fact sheets were included on the study webpage and shared directly via email with stakeholders. https://burnsmcd.mysocialpinpoint.com/us57/home/

7.6. TXDOT DISTRICT COORDINATION

The US 57 Corridor spans two TxDOT Districts: San Antonio and Laredo. Coordination with District leadership occurred throughout the Corridor Interstate Feasibility Study. The Districts provided information regarding stakeholders, current studies, roadway construction projects, and planned and programmed projects along the Corridor. TxDOT District leadership also participated in the stakeholder meetings, Focus Group meetings, and provided input into development of the virtual public meeting.

7.7. FEEDBACK RECEIVED ON US 57 CORRIDOR INTERSTATE FEASIBILITY STUDY

As shown in **Table 7.7**, the project team collected feedback through four primary channels: interactive polling as well as dialogue during the two focus groups, an online survey sent to focus group participants and publicized on City of Eagle Pass social media, a targeted questionnaire distributed to the Eagle Pass Maverick County Economic Development Alliance (EPMCEDA), and virtual public meeting with bilingual recorded presentations, a survey, comment form, andinteractive map.

Input received from all channels was overwhelmingly supportive of improvements to the corridor, with most respondents noting safety, traffic and mobility, and/or economic development as priorities for the corridor's evaluation. Several comments from the virtual public meeting noted access and right-of-way concerns.

In response to stakeholder feedback that fatalities recorded as of July 2022 had already surpassed the statewide average to date, the study team extended the crash data period beyond 2021. This revision, as shown in **Figure 7.3**, allowed the study team to more effectively consider current safety and crash data trends.

While many open responses did not name a particular typical section, there was strong support for making US 57 four lanes (encompassing the interstate, four-lane divided, and four-lane undivided improvement options) through both the focus groups and questionnaire.

Early in the study, stakeholders expressed interest in a four-lane interstate with frontage roads, reflective of the local support that brought about the study. However, as findings were shared including the criteria needed to upgrade to interstate standards and cost of doing so, stakeholders showed strong support for a fourlane divided highway. The online survey demonstrated this preference for the four-lane divided highway with 77 percent of respondents ranking it as their first or second priority, as shown in **Figure 7.4**.

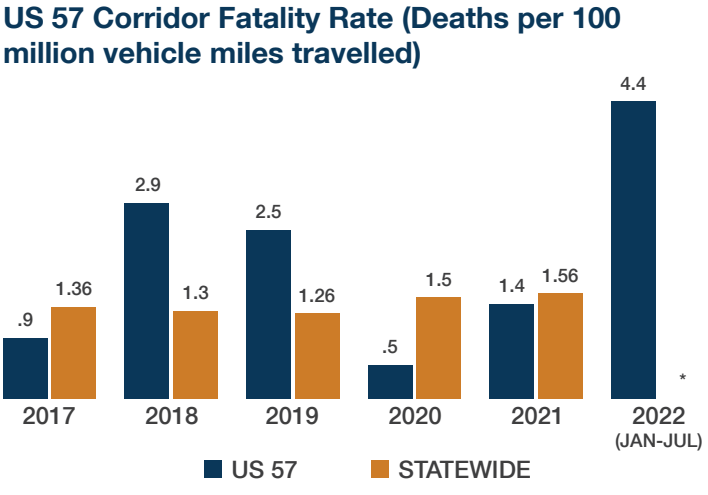
WHAT WE HEARD

- Safety is a common concern, with respondents noting a range of challenges along the corridor, including unsafe passing behavior, speeding, poor lighting, limited cell phone connectivity, wildlife hazards, and limited rest area availability.
- Freight connectivity is currently limited between the Eagle Pass Port of Entry and major interstates, and providing a redundant route for freight traffic would strengthen supply chains and help relieve traffic at other Ports of Entry.
- Future population, employment, and trade growth will need to be accommodated.
- Making improvements to the corridor aligns with other regional planning efforts, including the 2023 Texas Freight Mobility Plan and Texas-Mexico Border Transportation Master Plan 2021.
- Improvements to US 57 are needed to better promote international trade and improvements to related infrastructure, especially as more manufacturers locate closer to home due to shifts in the global supply chain.
- The border patrol checkpoint in Eagle Pass causes significant congestion along US 57.

Table 7.1 – Public Engagement Across All Outreach Methods

	Focus Groups Interactive Polling*	Focus Groups Online Survey	Questionnaire for EPMCEDA	Virtual Public Meeting Comments
Safety Related Comments**	5	49% of respondents ranked safety as their highest priority, with a total of 71% ranking it as their first or second highest priority.	4	6
Traffic/Mobility Related Comments**	5	Improving east/west connectivity was either first or second by 52% of respondents.	5	6
Access/Right-of-way Related Comments**	Not targeted in survey	Not targeted in survey	1	5
Economic Development Related Comments**	4	Supporting economic growth was either first or second by 48% of respondents.	5	3
Total Comments Received***	13 Interactive Polling Participants	85 Respondents	5 Questionnaires	15 Comments
Comments Supportive of Improvements****	11	Throughout the survey, 99% of respondents expressed support for some type of improvement along the corridor. Of all improvement options presented, "other" received the lowest rating, indicating higher support for the other improvement options provided.	5	13
Comments Directly Supportive of Making US 57 Four Lanes	7	54% of respondents ranked a four-lane divided highway as their highest priority, with a total of 77% ranking it as their first or second highest priority.	5	2

**Not all focus group attendees participated in interactive polling.*
***Some comments are counted in multiple categories.*
****These metrics reflect total responses not respondents as outreach methods included an option to remain anonymous.*
***** Does not include neutral comments.*



**Statewide annual statistics are not yet avaliable for 2022. Even if there are no other fatalities recorded in the remainder of 2022, the fatality rate for the corridor would be approximately 2.5 deaths per 100 million vehicle miles traveled, which is higher than the statewide average in the study period of date.*

Figure 7.3 – US 57-Satewide Fatal Crash Rate Comparison

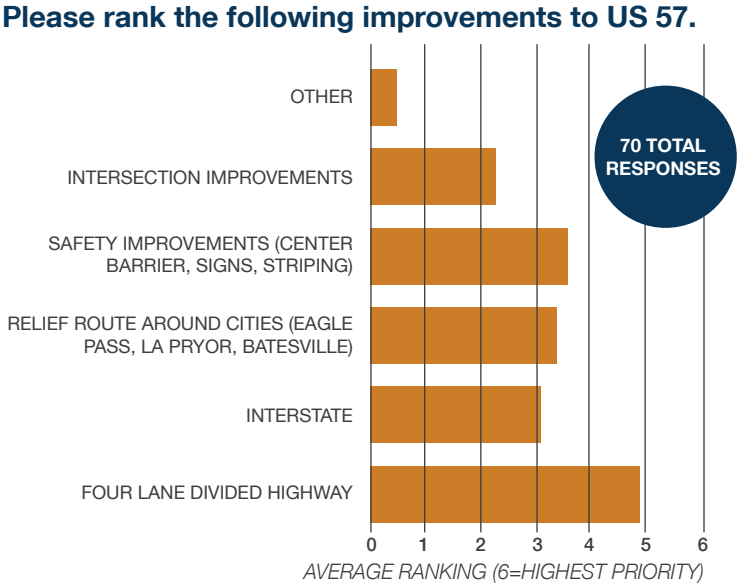
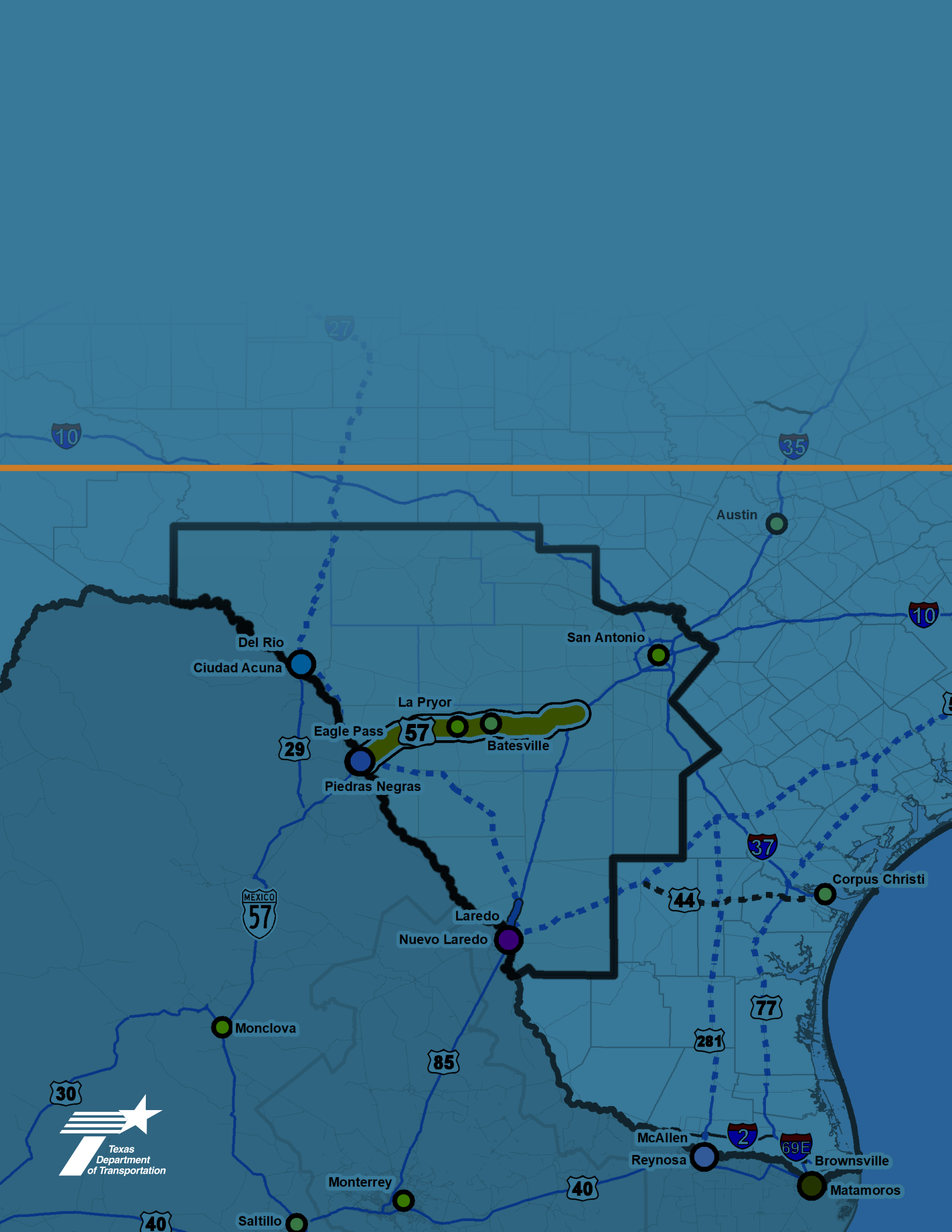


Figure 7.4 – Focus Group Online Survey Responses, Results to Question 7 of 12


27
10
35
Austin
10
Del Rio
Ciudad Acuna
San Antonio
La Pryor
Eagle Pass
57
29
Batesville
Piedras Negras
37
Corpus Christi
44
MEXICO
57
Laredo
Nuevo Laredo
77
Monclova
281
85
30
McAllen
2
69E
Reynosa
Brownsville
Monterrey
40
Matamoros
40
Saltillo
Texas
Department
of Transportation

Chapter 8

RECOMMENDATIONS

8.1. RECOMMENDATIONS

8.1.1. OPTIONAL ROADWAY SECTIONS SELECTION

It is recommended that the US 57 corridor improvements continue by programming and developing a Schematic Design for the four-lane divided highway section with the following considerations:

- Where possible, reuse existing lanes to reduce reconstruction costs;
- Provide a low-impact solution to adjacent properties and maintain access points to all driveways and connecting roadways;
- Develop the design to be interstate compatible (e.g. structures, lane widths, shoulder widths, etc.)
- The viability of relief routes around La Pryor and Batesville
- Plan and implement short-term improvements within the City of Eagle Pass
- Implement the expansion of SL 480 as part of the freight network to complement the improvements along US 57

The four-lane divided highway option is being recommended due to its continued preference within the benefit-cost analyses iterations, its increased safety and operational benefits, its improved connectivity for freight mobility, and the economic vitality it provides. Preparing the four-lane divided highway section that is compatible with interstate standards will also allow future exploration of converting US 57 to an interstate upgrade as border crossing capacity is increased and if traffic increases beyond the levels currently predicted for the next 20 years.

8.1.2. CHALLENGES WITHIN US 57 SEGMENTS

SEGMENT A (U.S.-Mexico Border Crossing to SL 480) – Narrow existing ROW, heavy traffic, and an abundance of closely-spaced driveways are challenges within the western portion of the US 57 corridor within Eagle Pass. Conversion to an interstate along the existing alignment of US 57 in Eagle Pass would lead to substantial property owner displacements. While this study has estimated an approximate $51M worth of ROW costs within **SEGMENT A**, this is only based on the tax assessed value of land and improvements of parcels directly adjacent to US 57 that would potentially require full acquisition of the parcel. A similar facility as provided for I-35 in Laredo would be assumed in Eagle Pass with the interstate beginning six-to-eight blocks from the border crossing to allow for circulation on surface streets to be maintained near the border.

Currently, CMVs at the U.S.-Mexico commercial motor vehicle border crossing (Bridge #2) are routed towards SL 480 around the southern and eastern limits of Eagle Pass instead of towards US 57 through town. Monroe Street connects Bridge #2 to US 57 but is primarily used by POVs. The connection of Monroe St to E Garrison St (US 57) would be another reason to begin highway widening farther east of the border crossing.

Another consideration is the UPRR railroad underpass 700 feet east of Monroe St. This bridge structure would reasonably remain forcing the beginning of highway widening east along US 57 to an approximate location between Colorado Street and Blanco Street.

Based on the options analysis, the alignment of an interstate between Brazos Street and Bibb Avenue would divert from the existing US 57 alignment due to the need to provide a larger horizontal radius for interstate standards. A similar diversion from the existing US 57 alignment would be needed at the US 57 and US 277 junction east of Calle Carr due to elevated direct connectors.

Any future improvements of US 277 between US 57 and Veterans Boulevard would need to be incorporated into a widening of US 57 due to their overlapping routes within Eagle Pass.

If avoidance of an expanded US 57 is warranted within Eagle Pass, SL 480 may serve as a viable relief route from the border crossings to the current junction of US 57 and SL 480. SL 480 is currently built with a single-lane in each direction, however, has the available ROW width to construct additional lanes that would convert SL 480 to a four-lane divided highway. Multiple options involving the SL 480 alignment from Point A to Point B were analyzed and included within the cost estimation portion of this Study.

SEGMENT B (SL 480 to FM 481) – 11 miles east of Eagle Pass is an Interior Border Patrol Checkpoint that requires the stoppage of every vehicle traveling eastbound on US 57. Converting this segment from its four-lane undivided highway section to a four-lane divided highway or an interstate would require the incorporation of the continued operation of the Interior Border Patrol Checkpoint.

SEGMENT D AND SEGMENT F (La Pryor and Batesville City Limits) – Similar to Segment A, the existing US 57 route through these two communities has a narrow ROW that would require substantial ROW acquisition for widening. An elevated interstate roadway section or relief route around the two cities would be scenarios to consider. However, taking existing traffic that currently drives through these cities that provide economic benefits and removing them to a relief route could have a negative impact on local businesses and economies.[24] Such impacts shall be evaluated in subsequent phases of this corridor study/project.

SEGMENT H (Frio County) – The existing ROW within Frio County appears to lessen from that in Maverick County and Zavala County based on observations along the corridor of adjacent fence lines. Performing a boundary survey along the US 57 corridor would be an ideal next step to determine the potential impacts to properties adjacent to US 57.

8.1.3. RECOMMENDED RELIEF ROUTE PROJECTS

SEGMENT A (SL 480) – The construction of SL 480 has provided a relief route for commercial vehicles for over six years. While only half of the four-lane highway section is currently built around Eagle Pass, future expansion of SL 480 would lead to considerable benefits for CMVs and POVs that may opt to use the SL 480 route instead of US 57. Although the distance traveled along SL 480 from the border crossing to US 57 (start of Segment B) would increase from 5.4 miles to 11.1 miles, the travel time along SL 480 would only be a few minutes longer on an average due to the intersection control delays within Eagle Pass.

SEGMENT D AND SEGMENT F (La Pryor and Batesville) – The existing 100-foot ROW widths within La Pryor and Batesville cannot accommodate a nonrural interstate section. Expansion of the existing roadways within these two communities would result in potential business and residential displacements. Therefore, the four-lane divided highway and the interstate option for these two segments would result in a relief route alignment around each city that would have less impact on existing property owners. Constructing the four-lane divided highway to interstate standards would be the logical solution if a relief route were constructed for Segment D and Segment F.

Constructability would also be enhanced by building in a greenfield area. Efficient identification of the relief route alignments would be beneficial to ensure proposed ROW can be attained. This would avoid obstructions being built within the proposed alignment that could negatively impact future ROW acquisition costs and schedule.

[24]ECONOMIC EFFECTS OF HIGHWAY RELIEF ROUTES ON SMALL- AND MEDIUM-SIZE COMMUNITIES. AN ECONOMETRIC ANALYSIS. May 2001. Center for Transportation Research, Austin, TX. Kockelman, Srinivasan, and Handy.

8.1.3.1. INTERSECTIONS WITHIN EAGLE PASS

248 crashes were reported at US 57 and Veterans Boulevard within the five years studied. 168 crashes were reported at US 57 and Bibb Avenue/FM 375 during the same period. Enhanced pedestrian accommodations, pavement markings, signage, illumination, and intersection improvements are recommended at these two intersections.

8.1.3.2. HORIZONTAL CURVATURE

Based on a desktop review of the existing US 57 rural highway alignment, there are at least four horizontal curves with radius values less than 2,040 feet. 2,040 feet is a minimum horizontal radius value established for 70mph design speeds using an emax = 6% superelevation value. It is possible that two of these curves may be using an emax = 8% superelevation which lowers the minimum radius of curve value to 1,810 feet.

8.1.3.3. EXISTING BRIDGE RAILINGS/ CROSSINGS

For the structures along US 57, a review of existing bridge railings would be reasonable to identify potential upgrades to establish railings that are compliant with current TxDOT standards.

8.1.3.4. VERTICAL CLEARANCES

The existing interchange structure along FM 140 over US 57 includes a vertical clearance sign showing 16ft 5in. At I-35, the existing interchange has a posted vertical clearance warning sign of 16ft 4in. With a major improvement of US 57, it is assumed these vertical clearance values would be re-established to meet or exceed the standards of the Texas Highway Freight Network of 18ft 6in. No other vertical structures currently exist along the US 57 alignment.

8.2. FUNDING ANALYSIS

The purpose of this section is to introduce potential funding sources and approaches aligned with the proposed improvements to US 57 from Eagle Pass to I-35 (US 57 Project). The study area falls within the Laredo and San Antonio TxDOT Districts. These boundaries are important to consider for the purpose of funding distributions and eligibilities.

The analysis in this section begins with an overview of the Unified Transportation Program (UTP) process by which the Texas Department of Transportation (TxDOT) funds major projects, as well as the likely UTP funding categories applicable to the US 57 Project. Next, this section describes expansions in federal funding opportunities resulting from the Infrastructure Investment and Jobs Act (IIJA), with a focus on the most promising competitive grant opportunities based on the transportation needs and challenges the corridor improvements will address. The analysis concludes with a brief discussion of potential state and federal financing approaches which could be used to accelerate project implementation assuming the availability of a long-term dedicated repayment source.

8.2.1. TXDOT UTP FUNDING

The UTP is TxDOT's 10-year plan, combining anticipated revenue from Federal-Aid Highway Programs and dedicated State revenue sources. There are twelve UTP funding categories, with each category intended to address a specific type of project or a range of eligible activities.

Some federal programs, such as the Surface Transportation Block Grant (STBG), flow through nearly all categories, while other programs, such as the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, can only be used for specific UTP categories. The distribution of federal funds is made based on the requirements of each program and the types of projects that are eligible under each UTP category.

State sources of funding reflected in the UTP include the traditional State Highway Fund, Proposition 1, Proposition 7, the State Infrastructure Bank, and legislative actions. These funds are generally not limited by UTP category but can only be spent as directed by law. For example, the State Highway Fund can be used for any project type, whereas funding from Propositions 1 and 7 can only be used for non-tolled highway projects.

Table 8.1 summarizes the most promising funding categories for the US 57 Project, either for the

entire project, a specific implementation phase or specific project elements. Estimated 10-year planning target amounts for each category as of the 2023 UTP are provided to offer a sense of scale, with the understanding that implementation the proposed improvements would likely be incorporated in future iterations of the UTP.

Table 8.1 - UTP Funding Categories and Applicability

Category	2022 UTP Planning Target AMount ($ in Billions)	Most Common Project Types	Distribution Method	Alignment with US 57 Project
1 - Preventive Maintenance and Rehabilitation	$16.6	Road surface treatment, road rehab and restoration, rural passing lanes	Allocated to TxDOT Districts	Low – most funds reserved for O&M of existing facilities
2 - Metro and Urban Area Corridor Projects	$10.8	Roadway widening, freeway interchanges, operational improvements	Allocated to MPOs	N/A
3 - Non-Traditionally Funded Transportation Projects	$4.9	Varies	Varies	TBD
4 - Statewide Connectivity Corridor Projects	$12.2	Roadway widening, freeway interchanges, new location rural highways, operational improvements	Majority allocated to TxDOT Districts – statewide allocation selected by TxDOT's TPP Division	High
5 - Congestion Mitigation and Air Quality Improvement	$2.3	Intersection improvements, freeway interchanges, bike and pedestrian infrastructure, traffic management & signals	Allocated to MPOs	N/A
6 - Structures (Bridge)	$4.2	Bridge replacement, bridge rehab or widening, bridge maintenance	Dedicated to statewide bridge program	Moderate – most structures are relatively minor
7 - Metropolitan Mobility and Rehabilitation	$5.7	Roadway widening, new-location urban roadway, operational improvements, freeway interchanges	Allocated to MPOs	N/A

Category	2022 UTP Planning Target AMount ($ in Billions)	Most Common Project Types	Distribution Method	Alignment with US 57 Project
8 - Safety	$3.7	Medians and safety barriers, intersections and rail crossings, turn lanes/passing lanes/ shoulders	Dedicated to statewide traffic safety and federal railway-highway safety programs	Moderate – could fund certain project components
9 - Transportation Options	$1.7	Bike and pedestrian infrastructure, border crossing facilities	Allocated to MPOs	Low
10 - Supplemental Transportation Projects	$0.7	Coastal ferry facilities, border region infrastructure, culverts and storm drainage, state park infrastructure	Allocated to TxDOT Districts	High, although limited to Eagle Pass area
11 - District Discretionary	$4.4	Road rehab and restoration, rural passing lanes, operational improvements	Allocated to TxDOT Districts	High
12 - Strategic Priority	$17.7	Roadway widening, freeway interchanges, new-location highways	Selected at the discretion of the Texas Transportation Commission.	High
Total (10 year period covered by the 2022 UTP)	$85.1			

Funding the US 57 Project will likely require a phased implementation approach. This Study identified eight potential project segments, with discrete project elements, estimated costs, and anticipated benefits. These segments could be used to create an incremental implementation and funding approach that creates discrete "phases" to better facilitate the process of securing UTP as well as competitive federal grants.

8.2.1.1. CASE STUDY: US 59 IMPROVEMENTS

TxDOT is currently planning improvements to the US 59 corridor in the southern portion of the Laredo District. The planned implementation segments are shown (along with other district projects) in **Figure 8.1**. Costs and funding categories for each segment are shown in **Table 8.2**. The total cost for the US 59 corridor is over $500 million, but most of the segments are under $50 million. This approach could provide a model for funding the US 57 Project. Note, however, that much of the funding for the US 59 corridor in the Laredo urban area comes from Category 2, which likely will not apply to US 57 improvements. The US 57 Project will be much more reliant on funding from Category 4.

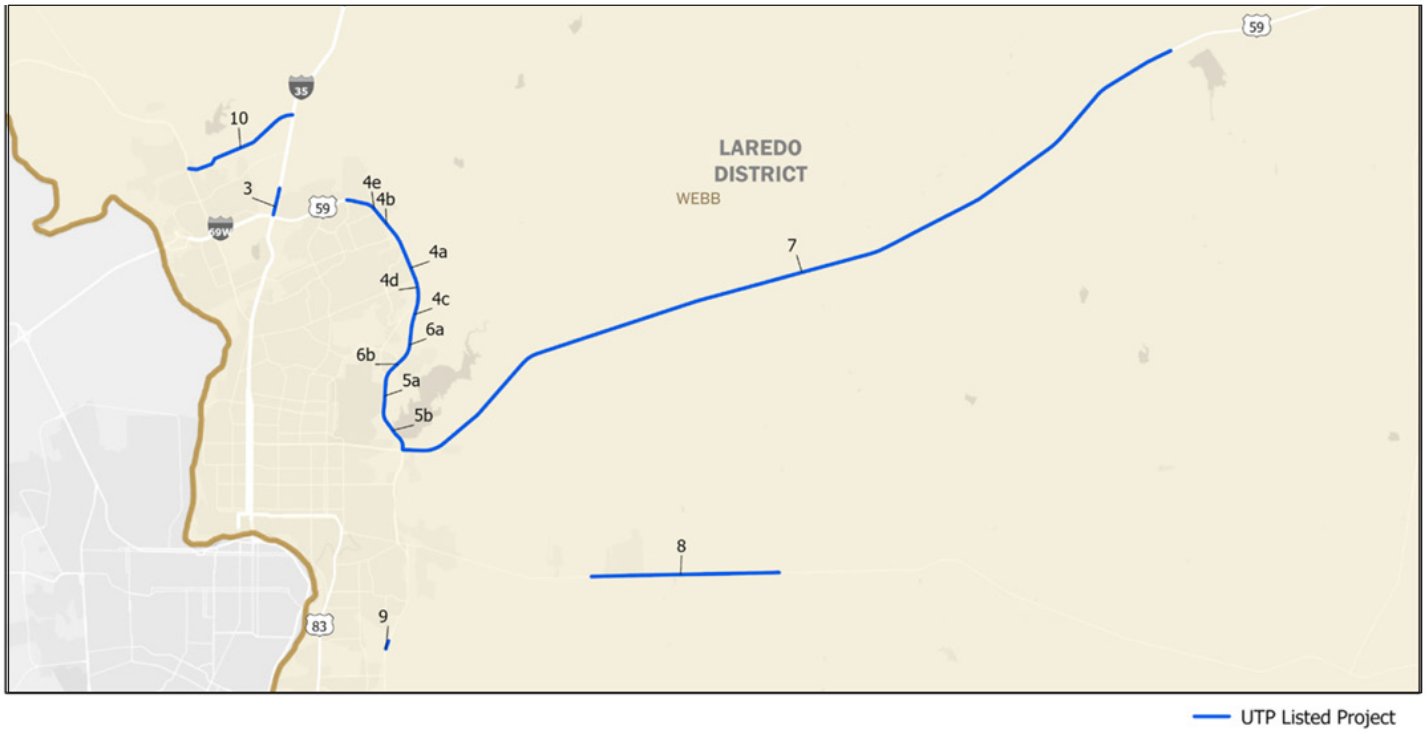


Figure 8.1 - Laredo District UTP Projects, 2023

Table 8.2 - Case Study - UTP Funding Breakdown of US 59 Improvements

Map ID	Date Range	Authorized Construction Funding by Category ($ in Millions)	
4a	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 10 Border Infrastructure TOTAL	$24 $4 $28
4b	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 10 Border Infrastructure TOTAL	$22 $10 $32
4c	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 10 Border Infrastructure TOTAL	$17 $3 $19
4d	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 10 Border Infrastructure Cat. 11 Border TOTAL	$12 $22 $12 $45
4e	FY 2023-2026	Cat. 1 Cat. 2 Metro/Urban Corridor Cat. 10 Border Infrastructure Cat. 11 Border TOTAL	$0.07 $32 $4 $3 $38
5a	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 12 Strategic Priority TOTAL	$12 $16 $29
5b	FY 2023-2026	Cat. 12 Strategic Priority TOTAL	$29 $29
6a	FY 2023-2026	Cat. 2 Metro/Urban Corridor Cat. 12 Strategic Priority TOTAL	$3 $22 $24
6b	FY 2023-2026	Cat. 12 Strategic Priority TOTAL	$31 $31
7	FY 2027-2032	Cat. 4 Rural TOTAL	$302 $302
Total US 59 Corridor Cost			**$578**

8.2.2. POTENTIAL SUPPLEMENTAL FEDERAL FUNDING SOURCES

This section provides descriptions of potential discretionary (competitive) federal funding programs that could support implementation of elements of the US 57 project. From 2009 to 2021, the major USDOT discretionary grant programs (including RAISE/BUILD/TIGER, INFRA/FASTLANE, CRISI, and Port Infrastructure Development) awarded approximately $16.5 billion in grant funding. The IIJA creates over a dozen new discretionary programs for surface transportation projects. The total discretionary funding available as a result of the new legislation for transportation projects is over $100 billion from FY 2022 to FY 2026.

As the preferred option is defined and moves through the environmental and design process, there may be opportunities to leverage federal funds for specific cost elements of the various segments through competitive grant opportunities offered by USDOT.

Table 8.3 provides a brief overview of competitive grant programs used to support planning, engineering, and/or construction, along with analysis of applicability to the US 57 project.

Federal competitive grant programs with the strongest potential to provide supplemental funding for the project include:

- Rebuilding American Infrastructure with Sustainability and Equity (RAISE)
- Infrastructure for Rebuilding America (INFRA)
- Mega Program
- Rural Surface Transportation Grant Program
- National Culvert Removal, Replacement, & Restoration Grant

Additional programs with some potential, typically to fund portions of the project, include:

- Bridge Investment Program
- Strengthening Mobility and Revolutionizing Transportation (SMART) Grants
- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)

Table 8.3 - Initial Screening of Potential Federal Grant Opportunities

Program Name	Administering Agency	Approximate Total Funds Available Per Year ($ in billions)	Program Description	Potential Applicability to US 57
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) - Local and Regional Project Assistance Grants	USDOT Office of Multimodal Freight Infrastructure and Policy	$1.5	Formerly TIGER and BUILD, provides funding for a wide range of projects that will have a significant local/ regional impact.	The entire project is likely eligible for this program. The prevalence of USDOT-identified Areas of Persistent Poverty in the study area improves competitiveness. **Recommended for further consideration.**
Infrastructure for Rebuilding America (INFRA) - Nationally Significant Freight and Highway Projects	USDOT Office of Multimodal Freight Infrastructure and Policy	$1.5	Awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas.	The entire project is likely eligible for this program. The project's emphasis on reliving freight pressure on Laredo crossing improves competitiveness, addressing a specific program emphasis area addressing border crossings. **Recommended for further consideration**.
Mega Program - National Infrastructure Project Assistance	USDOT Office of Multimodal Freight Infrastructure and Policy	$1.0	Supports large, complex projects that are difficult to fund by other means and likely to generate national or regional economic, mobility, or safety benefits.	The entire project is likely eligible for this program, which requires a minimum $100 million project cost. Options considered are above this threshold. **Recommended for further consideration**.
Rural Surface Transportation Grant Program	USDOT Office of Multimodal Freight Infrastructure and Policy	$0.3	Supports projects to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.	The entire project is likely eligible. The cutoff for eligibility is urbanized area with population under 200,000. **Recommended for further consideration**

Program Name	Administering Agency	Approximate Total Funds Available Per Year ($ in billions)	Program Description	Potential Applicability to US 57
Bridge Investment Program	FHWA	$2.5	Supports projects to improve bridge and culvert condition, safety, efficiency, and reliability.	68 structures identified in the study area, mostly "bridge-class culvert crossings." There is potential applicability through the culvert set-aside and/or bundling approach to fund a portion of the overall project. However, there is minimal funding available through the program for projects of this type. **Somewhat recommended for further consideration**.
National Culvert Removal, Replacement, & Restoration Grant	USDOT Office of Multimodal Freight Infrastructure and Policy	TBD	Funds projects projects that replace, remove, and/or repair culverts or weirs.	See bridge program analysis – however, there is potential applicability for "bundle" of culvert replacements required as part of project. **Recommended for further consideration**
Strengthening Mobility and Revolutionizing Transportation (SMART) Grants	USDOT Office of Multimodal Freight Infrastructure and Policy	TBD	Provides funding to conduct demonstration projects focused on advanced smart city or community technologies and systems in a variety of communities to improve transportation efficiency and safety.	Applicability depends on extent of ITS, TSMO, and similar technology planned for the preferred option. Likely to be most relevant to the Eagle Pass area. This program would only fund a portion of the project. **Somewhat recommended for further consideration**.
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) - Discretionary	FHWA	$0.3	Supports planning, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure.	Improved redundancy of border crossings in the region offer potential applicability. Relatively low natural disaster risk (see Figure 4) is a potential challenge. **Somewhat recommended for further consideration**.

Additional funding details related to the four grant programs that best align with the goals of the US 57 Project can be found in **Table 8-4**.

*Table 8.4: Additional Information Pertaining to Most Applicable Federal Grant Programs**

Program Name	Funding Details	Maximum Federal Share
RAISE	$1 Million minimum grant for rural areas, $25 million maximum grant amount. At least 1% of funding must go to historically disadvantaged communities or areas of persistent poverty. No more than 15% of funds can go to a single state.	80%
INFRA	$5 Million minimum grant award. Small project (capital cost less than $100M) account for 15% of funs. 30% of this setaside must go to rural areas. Large project (capital cost greater than $100M) gets remaining 85%.	60%
Mega Program	Half of funding allocated to projects between $100 million and $500 million in project costs; remainder to those above $500 million. Grants may be single or multi-year agreements.	60%
Rural Surface Transportation Gran Program	No significant restrictions on project costs or grant amounts.	80%

**FY 2022 Grant award announcements for the INFRA, Mega, and Rural Surface Transportation Grant programs will be announced by September 30, 2022. These announcements will provide precedent for future application cycles on the average and maximum grant award for each program.*

8.2.3. PREPARING FOR GRANT APPLICATIONS

As the US 57 project is defined, work can begin to improve the competitiveness of any potential grant application. The following subsection provides a framework for obtaining information and developing key messages that will help advance competitive applications. Applicants may be able to improve their chances of securing federal funding by developing a clear understanding of what sets apart a given project or project element, whether it is serving a critical population and/or addressing a clear deficiency of the current transportation network.

8.2.3.1. ELEMENTS OF SUCCESSFUL GRANT APPLICATIONS

Major federal competitive grant programs typically require a detailed narrative and benefit cost analysis (BCA) as part of the application. The evaluation/selection criteria generally address three functional categories: 1) Existing Conditions, 2) Planning Process, and 3) the Anticipated Benefits of the Proposed Improvements. These categories are summarized in the following sections.

CATEGORY #1 – EXISTING CONDITIONS: Existing conditions include metrics related to current operations within a project's study area, such as crash rates, delay, usage, and demographic conditions. It is also important to understand likely changes in the future (such as forecasts for population, employment, and travel demand). These are important data points for several reasons:

Many funding programs prioritize projects that serve specific kinds of communities. For example, the USDOT's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary program for FY 2022 focuses on Areas of Persistent Poverty (shown in **Figure 8.2**). Other funding mechanisms prioritize projects that fall within identified urban centers or locations with a strong population or employment base.

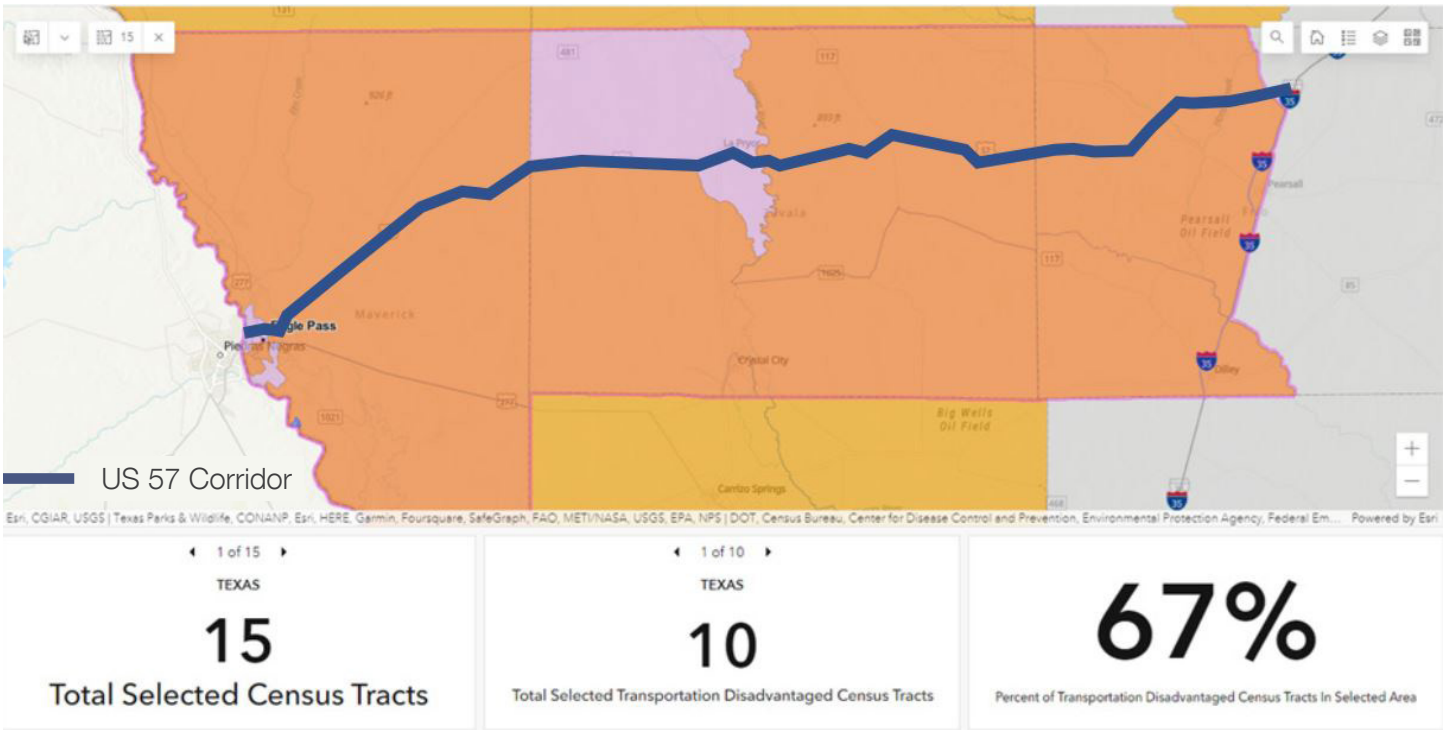


Figure 8.2 - Study area census tracts identified by the USDOT as Areas of Persistent Poverty and/or Transportation Disadvantaged.

These existing data points form the basis for defining and estimating the expected benefits of planned infrastructure improvements (No Build versus Build comparison). For example, the most common method of determining safety benefits is through crash modification factors (CMF), which use existing quantitative research to anticipate a reduction in crashes associated with a given improvement. This methodology requires an understanding of both the rate and type of existing crashes.

The adopted land-use forecast (and associated travel demand model) can also address questions likely to be asked by funding programs. These forecasts help determine the likely users of the corridor in the future, and funding applications frequently request specific forecasts for population and employment bases as well as expected demand on the corridor.

CATEGORY #2 – PLANNING PROCESS: Many funding programs evaluate the process by which the capital project has been identified and defined. The typical emphasis of this evaluation focuses on how the project sponsor has built support with the community, partner agencies, and/or the private sector.

This support can be demonstrated through documentation of the public engagement process, as well as documented outcomes such as funding commitments or letters of support. Both elements can be much easier to strategize during project development – if a particular funding source is a likely target, the project sponsor should work to understand the goals of that source or program. Often, even if the project itself is not a perfect match for the criteria of a specific funding program, the engagement or partnership building efforts of the project can offer a pathway to alignment. For example, many grant programs focus on the involvement and empowerment of disadvantaged communities. As project teams engage with historically underserved communities through the planning and design process, maintaining clear and concise records of that engagement can greatly facilitate future grant applications or funding requests.

Demonstration of the commitment of various partners is also critical in securing funds. This can take the form of obtaining or establishing a pathway toward required approvals (such as NEPA clearances or secured right-of-way). It can also be more generalized support for the project – the more "binding" the agreement, the better. A commitment of funding support or formalized agreements are valuable, but even identifying partners who will endorse the project by providing a letter of support for the application can be very helpful. Additionally, recent USDOT competitive grant applications have requested documentation that

projects incorporate considerations of climate change and environmental justice in the planning stage and in project delivery. This includes the use of environmental justice tools, such as EJSCREEN, to help understand and minimize adverse impacts to relevant communities.

CATEGORY #3 – PROPOSED IMPROVEMENTS: The final category of positioning for a competitive grant is clearly defining what the project intends to do – the physical improvements, the anticipated cost, and the expected use of the facility. This involves developing a very clear Build option to be compared against a No-Build option derived from the existing conditions analysis.

The first aspect of defining the proposed improvements is establishing a project definition that is approved by the necessary stakeholders (in many cases, just the sponsor agency). This should include as much detail about the project scope as possible, but at a minimum, it is important to document the specific improvements proposed as well as the exact location and alignment of the project. Many funding sources prioritize certain kinds of improvements – for example, nearly all federal discretionary programs reward "innovative" project elements such as intelligent transportation systems (ITS) and transportation system management and operations (TSMO), or innovative financing or project delivery methods. USDOT has further enhanced their focus on innovation and the extent to which the project incorporates innovative technologies or practices that drive safety, equity, climate and resilience, or economic outcomes.

Eligibility for most funding sources also requires a clear implementation plan focused on capital cost estimates and a milestone implementation schedule (NEPA/ Preliminary Engineering, final design, right-of-way (ROW), utilities, procurement, and construction). These details help make a case for the "shovel readiness" of a project, which is key to demonstrating the quality of the investment from the perspective of the agency responsible for allocating funds.

Clear documentation of anticipated O&M costs, as well as a plan for paying these lifecycle costs (such as a dedicated O&M fund and/or asset management plan), is another common requirement.

Finally, defining the anticipated benefit categories and level of benefit is critical to making the case for the project in most funding applications. More specifically, the ability to provide monetized analysis results provides a stronger justification than quantitative or qualitative discussions on potential benefits. While monetized benefits are critical to conducting a formal BCA, most funding programs also consider clearly articulated quantitative and qualitative benefits as well.

8.2.4. STATE AND FEDERAL FINANCING OPTIONS

The federal and state sources described previously represent potential funding sources. The following sections provide an overview of potential innovative financing options that could be used to support implementation of the project. To pursue any of these innovative financing options, a dedicated funding source that will provide a long-term stable revenue stream would need to be identified.

8.2.4.1. STATE INFRASTRUCTURE BANK (SIB)

The overall goal of the SIB program is to provide innovative financing methods to communities to assist them in meeting their infrastructure needs. The SIB program allows borrowers to access capital funds at or below market interest rates. The SIB operates as a revolving loan fund, where the account balance grows through the monthly interest earned and repaid principal and interest payments. In Texas, SIB financial assistance can be granted to any public or private entity authorized to construct, maintain, or finance an eligible transportation project.

SIBs were authorized in 1995 as a part of the National Highway Designation Act (NHS) to help accelerate needed mobility improvements through a variety of financial assistance options made to local entities through state transportation departments. The State of Texas was chosen as one of the ten states to test the pilot program and the state legislature authorized the Texas Department of Transportation (TxDOT) to administer the SIB program in 1997. Over the last 25 years, the Texas Transportation Commission has approved 140 loans totaling more than $689 million from the SIB Program which have helped leverage more than $7.9 billion in transportation projects in Texas.

SIB funds can be used on all costs incidental to the

construction or reconstruction of eligible projects. These uses typically include:

- Right of way acquisition.
- Utility relocation.
- Engineering and design.
- On or off system construction or reconstruction.
- Contingency for rising costs or potential overruns.
- Inspection and construction engineering.
- Financial and legal fees incurred during the course of the SIB loan application and loan agreement.

While planning, preliminary studies, feasibility, and environmental studies are permitted uses of the SIB, all SIB loans must have environmental clearance, if required, prior to commission consideration.

8.2.4.2. TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT (TIFIA)

The TIFIA program's fundamental goal is to leverage federal funds by attracting substantial private and other non-federal co-investment in critical improvements to the nation's surface transportation system. TIFIA was established to provide credit assistance to support state and local governments seeking to finance large-scale transportation projects and programs with forms of user-backed revenue. Prior to the creation of the TIFIA program in 1998, project sponsors had difficulty obtaining financing at reasonable rates due to the uncertainties associated with user-backed revenue streams. These revenues, such as tolls and innovative revenue sources including value capture mechanisms (tax increment finance districts or benefit assessment districts), are difficult to predict during the initial "ramp-up" years after construction of a new infrastructure improvement, though they can become a predictable revenue source over the long term. The TIFIA program helps address this challenge. In addition to user-backed revenues, applicants can also apply for TIFIA financing backed by dedicated revenue sources, including sales tax.

TIFIA credit assistance offers the following advantages relative to traditional financing approaches:

- Long-term loans at the comparable U.S. Treasury yield (State and Local Government Series ("SLGS") rate plus one basis point) – the current interest rates is 3.24 percent (htt1).
- Ability to lock in the interest rate several years in advance of a drawdown, without any additional cost.
- Right to prepay loan drawdowns in whole or in part at any time, without penalty.
- Potential willingness of USDOT to accept more flexible terms, such as backloading.
- Debt service to reflect anticipated growth in the pledged revenue stream, and thinner debt service coverage margins than otherwise required to obtain an investment-grade rating in the capital markets.
- Diversified source of debt capital (U.S. Treasury as lender), reducing market saturation.
- Lower transaction costs.
- Ability to include multiple related improvement projects in one application, as long as the individual components meet TIFIA eligibility requirements, and the related projects are secured by a common pledge (revenue source).

8.2.4.3. PRIVATE ACTIVITY BONDS

Private Activity Bonds (PABs) are debt instruments issued by state or local governments whose proceeds are used to construct projects with significant private involvement. Transportation infrastructure became eligible for PAB financing in 2005 with the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA – LU). This change allows private activity on infrastructure projects while maintaining the tax-exempt status of the bonds. Providing private developers and operators with access to tax-exempt interest rates lowers the cost of capital significantly and increases the involvement of private investors in transportation projects. Encouraging the use of PABs reflects the federal government's desire to increase private sector investment in U.S. transportation infrastructure and the corresponding goal of generating new sources of money, ideas, and project implementation efficiency.

Depending on market demand, PABs financing may be more expensive than traditional tax-exempt bonds or other options. However, PABs provide assistance to projects which are beneficial to the public but have too much private involvement to qualify for tax-exempt financing. The level of financing costs with PABs may also enable innovative project procurement. Finally, though project elements funded with federal funds must follow all federal-aid requirements, not all elements of the PAB project may have to follow all federal-aid requirements.

8.2.5. FUNDING ANALYSIS CONCLUSION

The primary conclusion from this review of potential funding sources is the need to be proactive. Successful pursuit of federal competitive grant programs and other supplemental financing programs will require careful planning and coalition-building, as well as a clear plan to leverage local matching dollars. Still, alternative funding sources will likely serve to fill funding gaps. The majority of funding will likely still need to come from the TxDOT UTP categories that are providing funding for similar scale interstate highway corridor programs and segments.

The options for US 57 range in cost from $500 million to $2.5 billion. Funding improvements at this scale will require drawing from all possible sources. Still, the Project aligns well with many priorities of the statewide UTP process as well as the new and expanded federal competitive grant programs. Considering these priorities, eligibility requirements, and parameters early in the planning process will go a long way toward creating a pathway to a complete financial strategy.

8.3. IMPLEMENTATION PLAN

The Short-Term, Mid-Term, and Long-Term recommended projects resulting from a review of the US 57 corridor offer a strategic plan towards improving capacity, efficiency, and safety along this route. It is important to note that the Mid-Term construction of a four-lane divided highway should be treated as a potential step towards an interstate facility. Since interstate designation requires specific design parameters, as reflected in **Section 5.6.1** of this Report, it will be important to incorporate the interstate design parameters into the construction of an expanded four-lane divided highway.

Of highest priority among currently programmed projects is the expansion of current SL 480 highway that serves as a relief route near the U.S.-Mexico border that will complement the future added capacity of US 57 by providing two lanes in each direction from the Port of Entry in Eagle Pass to the I-35 and US 57 junction near Moore, TX. **Table 8.5** and **Figure 8.3** below reflect the proposed implementation plan along the US 57 corridor.

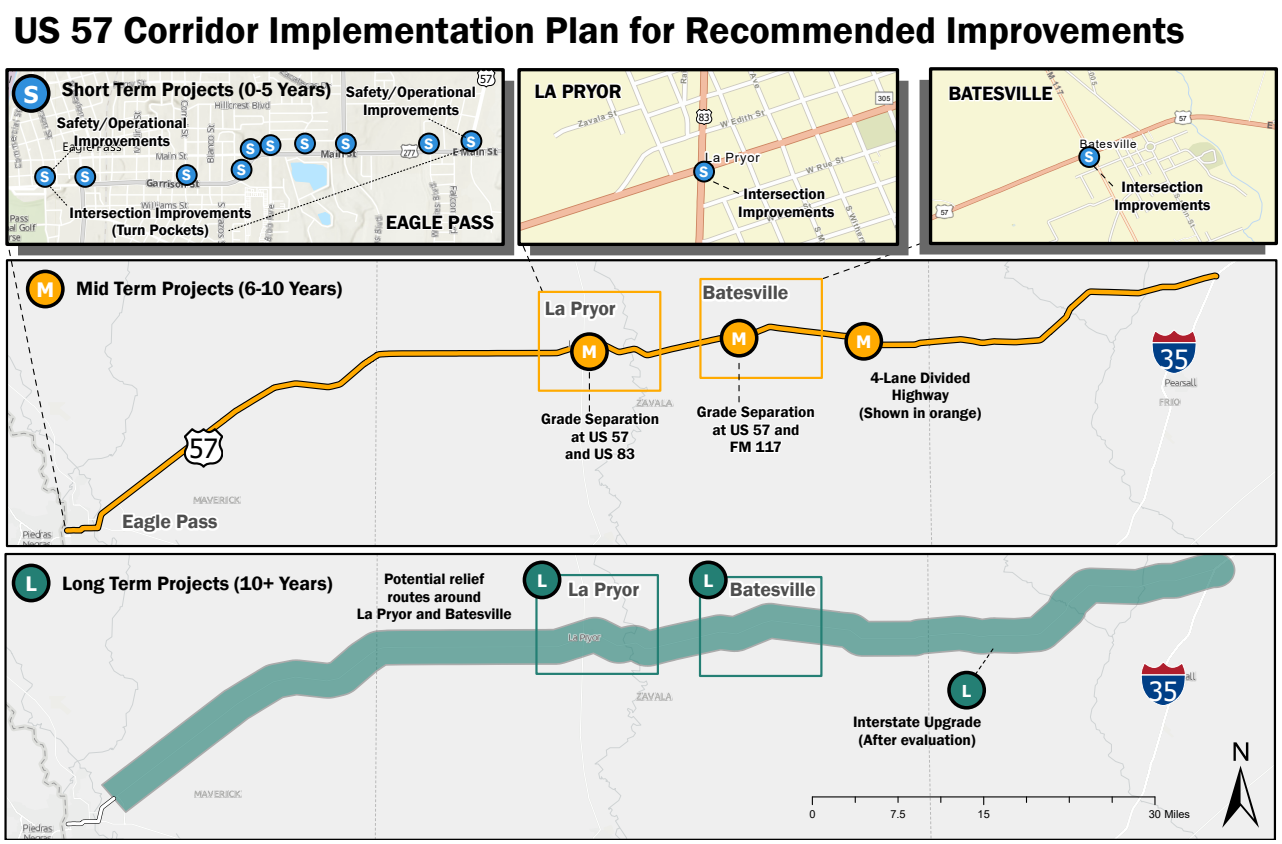


Figure 8.3 - US 57 Implementation Map

Spot safety, operational and intersection improvements should be planned and implemented in Eagle Pass in the short-term scenario over the next five years. Intersection improvements at the intersections with US 83 in La Pryor and FM 117 in Batesville should be studied. The emphasis should be placed on increasing safety and operations in Eagle Pass in an attempt to lessen the frequency and severity of crashes along the urban portion of US 57.

In the mid-term, over the next six to ten years, the current study recommendation is to further develop the Four-Lane Divided Highway improvement option for the US 57 Corridor east of State Loop 480 to I-35. Grade separation is recommended at the two intersection locations recommended in the short-term scenario.

Long-term, the study recommends further assessment of interstate upgrade along US 57 as well as potential relief routes around La Pryor and Batesville. The need for an interstate designation may elevate as nearshoring and reshoring takes place in Mexico and the Port of Entry in Eagle Pass expands to add more capacity for both rail and commercial motor vehicles crossings.

Table 8.5 Implementation Plan for Recommended Projects

Project Segment(s)	Project Type	Description of Work	Phases in the Short-Term (0-5 years)	Phases in the Mid-Term (6-10 years)	Phases in the Long-Term (10+ years)
A	Safety / Operational Improvement	Within the City of Eagle Pass	$1M	-	-
A	Intersection Improvements (Turn Pockets)	Within the City of Eagle Pass	$10M	-	-
D	Intersection Improvements (Turn Pockets)	At US 57 and US 83 in the City of La Pryor	$100,000	-	-
F	Intersection Improvements (Turn Pockets)	At US 57 and FM 117 in the City of Batesville	$100,000	-	-
B thru I	Four-lane Divided Highway	Along US 57 from SL 480 to I-35	-	$510M	-
D	Grade Separation	At US 57 and US 83 in the City of La Pryor	-	$20M	-
F	Grade Separation	At US 57 and FM 117 in the City of Batesville	-	$20M	-
B thru I	Interstate Upgrade	Along US 57 from SL 480 to I-35	-	-	$2B
D	Relief Route	Around the City of La Pryor	-	-	$TBD
F	Relief Route	Around the City of Batesville	-	-	$TBD

FOR MORE INFORMATION:

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