# RGV MPO 2045

## Metropolitan Transportation Plan

December
2020

This document was prepared by

The Rio Grande Valley Metropolitan Planning Organization

In cooperation with

The Texas Department of Transportation

The document was reviewed and approved by:

The Rio Grande Valley Metropolitan Planning Organization – Transportation Policy Board

On 12/10/2020

Rio Grande Valley Planning Organization (RGVMPO)

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"The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Questions or other interest regarding the plan may be directed to:

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# 1 INTRODUCTION TO THE PLANNING PROCESSES

This chapter provides an introduction to the Metropolitan Transportation Planning process and the purpose of this document.

The chapter also provides a review of Federal and State enabling legislation for Metropolitan Planning Organization; background on the formation of the Rio Grande Valley Metropolitan Planning Organization; and a discription of the committees and staff that help ensure the process is conducted efficiently and in compliance with Federal and State requirements.

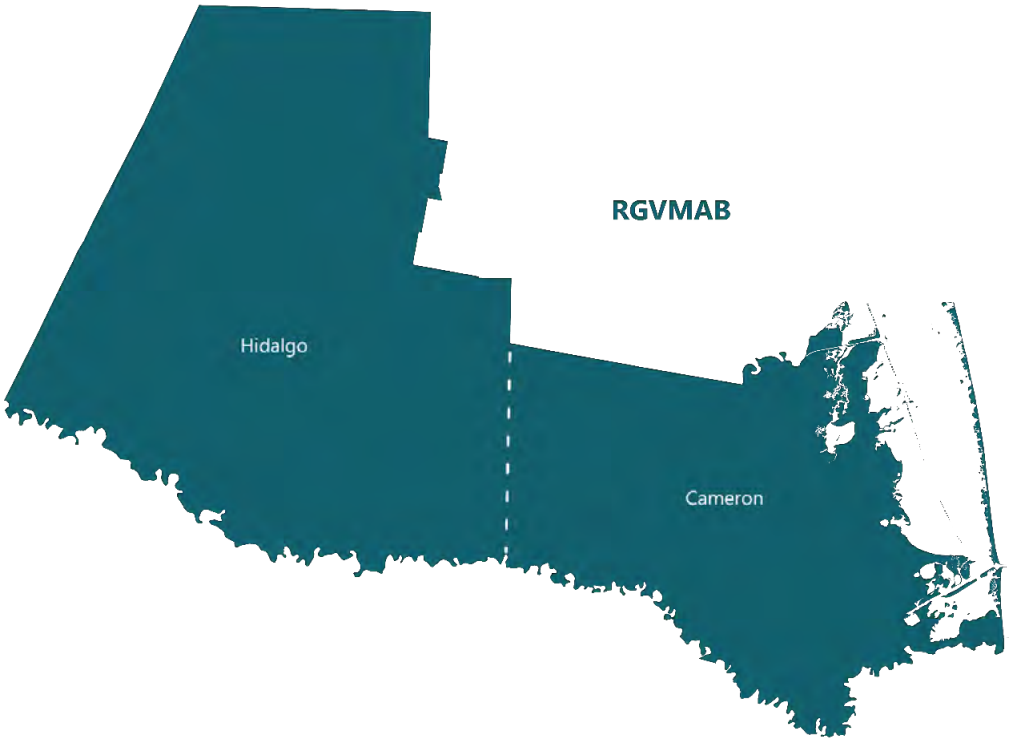
# INTRODUCTION TO THE MTP PROCESS

Since the establishment of the Federal Highway Act of 1962, all major cities within the United States are required to adopt a Metropolitan Transportation Plan (MTP) to guide the long-term development of each region's multimodal transportation system. The Act established specific rules and regulations for carrying out the long-range transportation planning process and required the formation of metroplitan planning organizations (MPOs) for any urbanized area (UZA) with a population greater than 50,000.

The Metropolitan Transportation Planning Process is a cooperative, comprehensive, and continuous (3-C) effort conducted by an MPO. Although the process is federally mandated, the process must be executed in coordination with the state's Department of Transportation, local transit operators, regional stakeholders, and the public to create a vision for the community and future multimodal transportation system.

The Rio Grande Valley Metropolitan Planning Organzation (RGVMPO) is the newly designated MPO for the Rio Grande Valley Metropolitan Area Boundary (RGVMAB). The RGVMPO 2045 MTP update is the first MTP using comprehensive methods and data for the newly aggregated RGV Metropolitan Area Boundary (RGVMAB) which consists of Cameron and Hidalgo counties (Figure 1-1). This plan is driven by previous state, regional, and local plans; robust technical analysis on all aspects of the RGVMAB transportaton system; as well as inclusive stakeholder and public outreach. The plan is developed in coordination with the Texas Department of Transportation (TxDOT).

***Figure 1-1: RGV Metropolitan Area Boundary***



## Plan Purpose

The MTP is critical for creating and maintaining an efficient multimodal transportation system. The MTP achieves this outcome through the facilitation of regional coordination and the prioritization of multimodal transportation projects. This prioritization is accomplished through a performance-driven, outcome-based approach to planning.

MTP updates are conducted every four to five years to ensure that the MPO is basing its decsions on the latest planning assumptions and that changing local conditions and trends are being taken into consideration in the long-range transportation planning process The initial planning is also followed by a performance management process that collects data on the performance of the regional transportation system to track progress over time and ensure that the MTP results in the continuous enhancement of the region's transportation system.

Federal regulations require specific content to be included in the plan document which ties into project prioritization. The RGVMPO is responsible for carrying out provisions of 23 USC §134, 59 USC §5303 (Metropolitan Transportation Planning) and 23 CFR 450.300 et seq. (Metropolitan Transportation Planning and Programming). Under these regulations, the planning process and final MTP are required to include:

- A vision that aligns with community goals;
- A multimodal approach that includes projects spanning all aspects of the transportation system;
- A minimum 20-year planning horizon (the RGVMPO 2045 MTP update planning horizon is approximately 25 years);
- A financial outline proving the plan is financially responsible and fiscally constrained;
- An air quality analysis to show forecasted emissions will not exceed National Ambient Air Quality Standards (NAAQS); and
- A comprehensive and inclusive public participation process that engages all interested parties with particular sensitivity to traditionally disenfranchised communities.

This process allows for the creation of an MTP that promotes an understanding of existing regional conditions of the transportation system, supports intergovernmental coordination, and develops a fiscally constrained and prioritized list of transportation projects and strategies to achieve regional mobility goals.

### A Comprehensive Approach

The RGVMPO 2045 MTP update is being created concurrently with the RGVMPO Active Transportation and Transit Development Plans. While the MTP process has been designed to create a framework for multimodal transportation planning within the RGVMPO, it also works in tandem with these other two plans to create a deeper understanding of the conditions and needs of the multimodal network.

Public engagement efforts for all three plans were carefully coordinated to ensure that the community vision, goals and objectives were aligned across the plans. This comprehensive approach allows for more informed multimodal transportation investments and implementation moving forward.

# ROLE OF THE MPO

The development of the RGVMPO 2045 MTP is goverend by the requirements of the Fixing America's Surface Transportation (FAST) Act and its accompanying metropoltan planning regulations. Under these federal regulations, the RGVMPO is responsible for carrying out the 3-C planning process in cooperation

with all levels of government to develop the MTP. Doing so allows the RGVMPO and its planning partners to determine how best to invest federal transportation funding in the region. The RGVMPO also serves as the designated forum for transportation program related decision making by principal elected officials of general-purpose local governments in the metropolitan planning area.

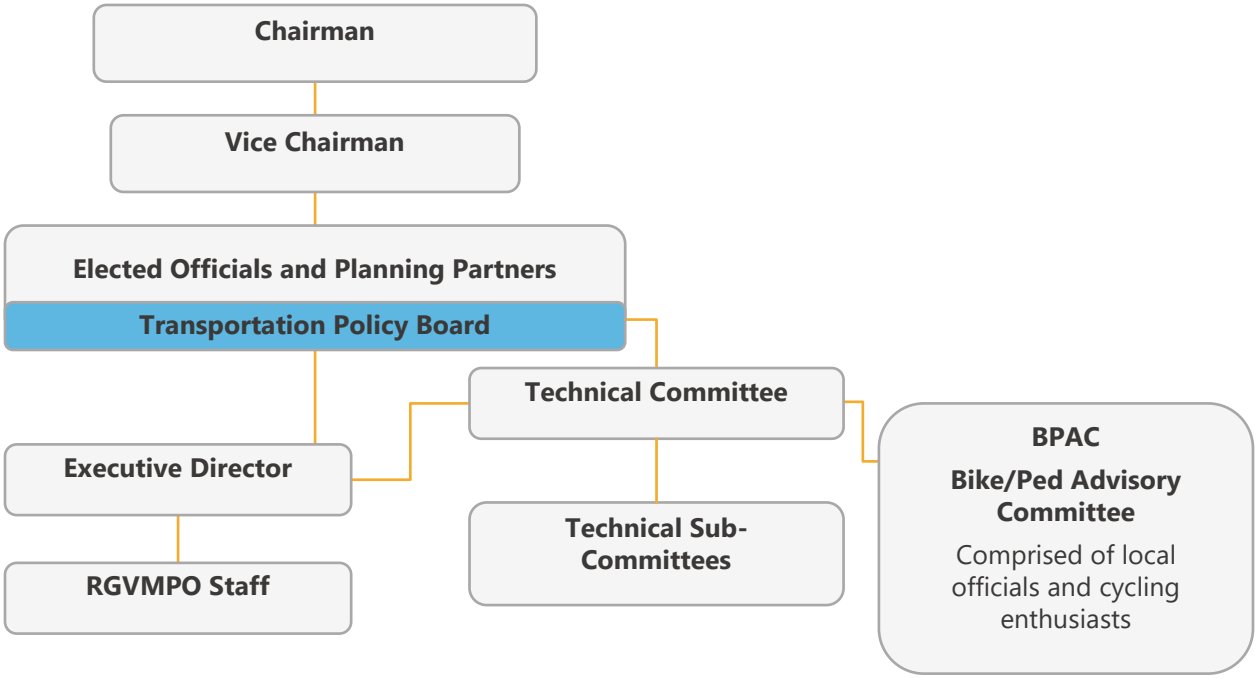
## Formation of the RGVMPO

On April 24, 2019 elected officials from units of general-purpose local governments that together represented at least 75% of the existing metropolitan planning area population (previously Brownsville, Harlingen-San Benito, and Hidalgo County MPOs - as well as the largest city in each of these MPOs), executed an agreement to re-designate into one consolidated MPO. This agreement established a proposed boundary area for the RGVMPO to include all the territory in the existing metropolitan planning areas for the three MPOs (i.e., Hidalgo and Cameron counties). After a period of review, Governor Abbot accepted and signed the proposed re-designation agreement. On October 1, 2019, the RGVMPO was officially formed.

Since its formation, the RGVMPO has sought to improve the area's quality of life through its vision/mission "to provide clear, concise transportation planning to positively impact the daily lives of RGV residents by planning for a safe and efficient multimodal system." The RGVMPO strives to accomplish this by incorporating four core values: trust, communication, innovation, and collaboration.

The following sections detail the personnel behind the MTP planning process, which consists of the Transportation Policy Board, Technical Advisory Committee, Bicycle and Pedestrian Advisory Committee, and MPO staff. Figure 1-2 represents the RGVMPO Organizational Chart.

*Figure 1-2: RGVMPO Organizational Chart*



## Transportation Policy Board

Elected and appointed officials comprise the Transportation Policy Board (TPB), which is responsible for approving and adopting all transportation planning activities and programs of the RGVMPO. The TPB was established in 2019 with the re-designation of the RGVMPO to meet federal requirements and serves as a spokesperson for citizens of the RGVMAB. Membership of the TPB is governed by an agreement between the affected local governments and the Governor of Texas and is reviewed periodically to ensure adequate representation of all parties. The current TPB consists of 14 voting members, with representatives from member agencies as presented in Table 1-1.

*Table 1-1: RGVMPO Transportation Policy Board*

| Title/Representation | Current Representation |
|---|---|
| City of Pharr - Mayor | Ambrosio "Amos" Hernandez (Chairperson) |
| Cameron County - Judge | Eddie Treviño, Jr. (Vice-Chairman) |
| Cameron County – Regional Mobility Authority | Frank Parker, Jr. |
| City of Brownsville - Mayor | Trey Mendez |
| City of Edinburg - Mayor | Richard Molina |
| City of Harlingen - Mayor | Chris Boswell |
| City of McAllen - Mayor | Jim Darling |
| City of Mission - Mayor | Armando O'Caña |
| City of San Benito - Mayor | Benjamin Gomez |
| Hidalgo County - Commissioner Precinct 2 | Eduardo "Eddie" Cantu |
| Hidalgo County - RMA | S. David Deanda, Jr. |
| TxDOT Pharr District - Engineer | Pedro "Pete" Alvarez, P.E. |
| Valley Metro - Director | Tom Logan |
| LRGVDC* - Executive Director | Manuel Cruz |

**Lower Rio Grande Valley Development Council*

## Technical Advisory Committee

The Technical Advisory Committee (TAC) makes planning recommendations to the TPB regarding subject matter issues such as MPO generated documents and analysis; project selection criteria; special transportation planning studies; and other issues for immediate action. The TAC totals 19 voting members, and includes planners, engineers, and representatives from ports and transit providers as listed in Table 1-2.

*Table 1-2: RGVMPO Technical Advisory Committee*

| Representation | Current Representation |
|---|---|
| Cameron County - Regional Mobility Authority | Pete Sepulveda, Jr. (Chairman) |
| City of Mission | JP Terrazas, P.E. |
| Cameron County | Benjamin L. Worsham, P.E. |
| City of Brownsville | Joel Garza |
| City of Edinburg | Tomas D. Reyna |
| City of Harlingen | Carlos Sanchez |
| City of McAllen | Yvette Barrera |
| City of Pharr | Eleazar Guajardo |
| City of San Benito | Bernard Rodriguez |
| Hidalgo County | Armando Garza |
| Hidalgo County - Regional Mobility Authority | Eric Davila |
| TxDOT - Pharr District | Melba Schaus, P.E. |
| Valley Metro | Frank Jaramillo |
| Brownsville Metro | Norma Zamora |
| McAllen Metro | Jon Ray Bocanegra |
| Port of Harlingen | Alan Johnson |
| Cameron County Spaceport Development Corp | Mark Yates |
| Port of Brownsville | N/A |
| Port Isabel - San Benito Nav. District | N/A |

## Bicycle & Pedestrian Advisory Committee

The Bicycle and Pedestrian Advisory Committee (BPAC) is a subcommittee of the TAC. The BPAC addresses subject matter concerning bicycle and pedestrian mobility and presents its recommendations to the TAC. Members include appointed TAC members, bicycle advocates, pedestrian advocates, and organizations with a stake in bicycle and pedestrian mobility (Table 1-3).

*Table 1-3: RGVMPO Bicycle & Pedestrian Advisory Committee*

| Title/Representation | Current Representation |
|---|---|
| Citizen at Large | Rose Gowen (Chair) |
| Citizen at Large | Michael McNew (Vice Chair) |
| Bicycle Advocate at Large | William "Bill" Barr |
| City of Brownsville | Cody Baczewski |
| City of Brownsville | Antonio Zubieta |
| Citizen at Large | Eudy Carrillo |
| City of Pharr | Cynthia Garza Reyes |
| City of Pharr | Maria Rangel |
| Citizen at Large | Michael Padgett |
| City of McAllen | Marlen Garza |
| City of McAllen | Martina Mejia |
| Citizen at Large | Richard Cavin |
| Rio Grande Valley B-Cycle | Juan Macias |
| Valley Metro | Frank Jaramillo |
| Estero Llano Grande State Park | Javier De Leon |
| City of Harlingen | Andy Vigstol |
| City of Harlingen | Javier Mendez |
| City of Edinburg | Larry Ayala |
| Bicycle World Rio Grande Valley | Ana Adame |
| TxDOT | Craig Wuensche |
| TxDOT | Joseph E. Leal |
| TxDOT | Evan Roberts |

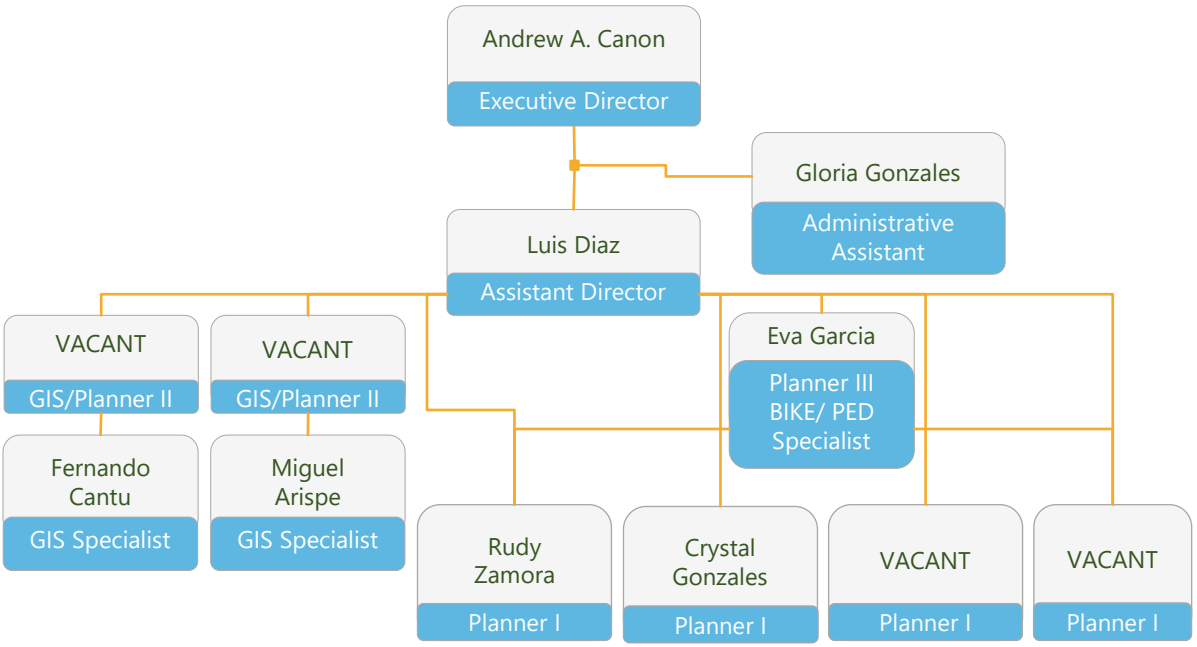
## RGVMPO Staff

The MPO Board and Committees are supported by a staff of professional planners and administrators who conduct and oversee the Metropolitan Planning Process and carry out the day to day administration of the metropolitan planning program in accordance with federal, state and local guidelines. Table 1-4 lists existing MPO staff and Figure 1-3 shows the organizational structure for the staff.

*Table 1-4: RGVMPO Staff*

| Title | Current Representative |
|---|---|
| Executive Director | Andrew Canon |
| Administrative Assistant | Gloria Gonzales |
| Assistant Director | Luis Diaz |
| Planner III & Bike/Ped Specialist | Eva Garcia |
| Planner I | Crystal Gonzales |
| Planner I | Rudy Zamora |
| GIS Specialist | Miguel Arispe |
| GIS Specialist | Fernando Cantu |

*Figure 1-3: RGVMPO Staff Organizational Chart*



# 2 DEVELOPING VISION, GOALS, AND OBJECTIVES

This chapter describes the process used in developing the guiding vision, goals, and objectives of the planning process established for the RGVMPO 2045 MTP.

The Chapter further summarizes how this process uses performance measures to gauge how well proposed strategies support the established vision and goals.

Together the vision, goals, objectives, and performance measures comprise the RGVMPO 2045 MTP's guiding principles.

# FEDERAL GUIDELINES

In 2015, the Fixing America's Surface Transportation (FAST) Act became the fifth intermodal surface transportation bill passed by Congress since 1991, the previous four laws being the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Equity Act for the 21st Century (TEA-21), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act and its predecessors have served as a means to provide funding to states and local governments for surface transportation planning and investment. The FAST Act authorized $305 billion nationally for projects related to highways, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs over five fiscal years (2016 – 2020). Though this initial time period is concluding, Congress is reviewing continuing legislation to extend FAST Act authorization on a yearly basis untill a new bill is formed.

## *Planning Factors*

The FAST Act retains the eight federal planning factors established under ISTEA and expanded under SAFETEA-LU, while adding two additional factors for consideration in the planning process. This MTP describes how the RGVMPO provides for consideration and implementation of projects, strategies, and services that address these FAST Act planning factors, which include investments that:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users
4. Increase accessibility and mobility of people and freight
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation
8. Emphasize the preservation of the existing transportation system
9. Improve resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation*, and
10. Enhance travel and tourism*.

*New factors introduced by the FAST Act

Though these planning factors are discussed throughout the entirety of the MTP, Chapter 5 describes, in detail, how each of these factors is given consideration during the planning process.

## *National Performance Goals*

The FAST Act also maintains the requirement for a continuing, cooperative, and comprehensive long-range transportation planning process for making transportation decisions in metropolitan areas, while

continuing and further defining requirements set forward in MAP-21 for state DOTs and MPOs to set performance measures and goals.

The application of performance measures to evaluate whether policies and transportation investments addresses goals in transportation planning creates the framework for a performance-based decision-making process. This decision-making process uses objective, data-driven analysis to identify issues and assess proposed improvements against existing and expected future performance in these goal areas. The process also inspires reasonable expectations that this data driven approach inherently increases transparency in decision making, and in turn yields investments that better align with the long-term mobility needs and goals of the community.

As major stakeholders in the multimodal transportation system, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have set forward National Performance Goals in order to encourage efficient investment of Federal transportation funds, increase the accountability and transparency of funding decisions, and to improve project decision-making through performance-based planning and programming. The FHWA defined national performance goals[1] are as follows:

1. **Safety** — To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure condition** — To maintain the highway infrastructure asset system in a state of good repair
3. **Congestion reduction** — To achieve a significant reduction in congestion on the National Highway System (NHS)
4. **System reliability** — To improve the efficiency of the surface transportation system
5. **Freight movement and economic vitality** — To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environmental sustainability** — To enhance the performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delays** — To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The FTA has set additional performance goals focusing on Safety and Asset Management that provide guidance on the implementation of scalable systems-level thinking processes for FTA funding recipients nationwide. Both FHWA and FTA performance goal areas and associated performance measures are presented in Table 2-1.

The application of these goals and the performance measures used in identifying existing needs and reporting transportation system performance to inform the decision-making process are discussed in greater detail in Chapters 4 and 5. A system performance report is also provided in the final chapter of the MTP.

[1] https://uscode.house.gov/view.xhtml?req=(title:23%20section:150%20edition:prelim)

*Table 2-1: Performance Goal Areas and Associated Performance Measures*

| Performance Goal Area | Performance Measure |
|---|---|
| FHWA PM1 Safety | Number of Fatalities |
| | Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT) |
| | Number of serious injuries |
| | Rate of serious injuries per 100 million VMT |
| | Number of non-motorized fatalities |
| | Number of non-motorized serious injuries |
| FHWA PM2 Infrastructure Condition | Percentage of pavements of the Interstate System in Good condition |
| | Percentage of pavements of the Interstate System in Poor condition |
| | Percentage of pavements of the non-Interstate NHS in Good condition |
| | Percentage of pavements of the non-Interstate NHS in Poor condition |
| | Percentage of NHS bridges classified as in Good condition |
| | Percentage of NHS bridges classified as in Poor condition |
| FHWA PM3 System Performance/Freight/ Congestion Management and Air Quality | Percentage of person-miles traveled on the Interstate that are reliable |
| | Percentage of person-miles traveled on the non-Interstate NHS that are reliable |
| | Percentage of Interstate system mileage providing for reliable truck travel time (TTTRI) |
| | * Annual Total Tailpipe CO2 Emission on NHS |
| | * Annual Hours of Peak Hour Excessive Delay (PHED) per capita |
| | * Percent of Non-SOV Travel on network |
| FTA State of Good Repair | Percentage of revenue vehicles (by type) that exceed useful life benchmark (ULB) |
| | Percentage of non-revenue service vehicles (by type) that exceed ULB |
| | Percentage of facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale |
| FTA Safety | Total number of reportable fatalities |
| | Rate of reportable fatalities per total vehicle revenue miles by mode |
| | Total number of reportable injuries |
| | Rate of reportable injuries per total vehicle revenue miles by mode |
| | Total number of reportable events |
| | Rate of reportable events per total vehicle revenue miles by mode |
| | Mean distance between major mechanical failures by mode |

**Applies to areas designated as nonattainment or maintenance for ozone, carbon monoxide or particulate matter.*

# PLAN REVIEW

The metropolitan transportation planning process also considers directly or by reference how the goals, objectives, performance measures, and targets beyond those set by federal guidance. The additional input is derived from state, regional, and local transportation plans and transportation processes, as well as other locally developed plans by providers of public transportation, all of which are integrated in the metropolitan transportation planning process.

The integration of the goals, objectives, and performance measures in these plans helps both ensure that the stakeholder input is maximized, and that the planning process is comprehensive.

The following sections review and summarizes planning documents at the state, regional, and local level as part of this process to ensure consistency with regional planning efforts and ongoing state and local planning activities.

## *Multimodal Transportation Planning Efforts*

Documents produced by the three former MPOs in the Rio Grande Valley (Brownsville MPO, Harlingen San Benito MPO, and Hidalgo County MPO, represent considerable effort and coordination in establishing and working towards regional goals. These three MPOs and their regional planning partners, have been the primary authors of the following documents.

### *Hidalgo County MPO 2015-2040 Metropolitan Transportation Plan*

In 2014, the HCMPO adopted the 2015-2040 MTP, a long-range transportation planning document which identifies priorities for development programs and transportation projects within the Hidalgo County Urbanized Planning Area. The document identified existing and future land use trends and transportation needs and developed coordinated strategies to deliver transportation projects essential for the continued mobility and economic vitality of the Hidalgo County Urbanized Planning Area.

The Hidalgo County MTP sought to balance investments in various transportation modes against anticipated funding from federal, state, and local sources, while maintaining flexibility to address the dynamic changes in both the needs and resources of the community. Levels of acceptable system performance may vary among local communities, so performance measures were tailored to the specific needs of the area and established cooperatively by the state, the MPO, and local officials in consultation with the operators of major modes of transportation in the coverage area.

### *2040 Harlingen-San Benito Metropolitan Transportation Plan*

In 2014, the HSBMPO adopted the 2040 Harlingen-San Benito MTP. The plan assessed the existing conditions of the region related to demographics, socioeconomics, and the transportation system, set a vision for the future of the transportation system to be implemented by stated goals and objectives, explored potential areas of system improvements, defined a program of transportation projects, set forth a financial plan to fund the projects, and discussed concerns about environmental/community impacts and how the MPO planned to address such impacts. In addition, the plan provided a summary of public engagement efforts conducted, the questions asked, and feedback provided by citizens who participated in the process.

The most recent update of the list of 2040 MTP projects were adopted in October of 2018 and identified 31 projects falling into the following categories:

- Mobility (contains primarily roadway projects along with a handful of sidewalk projects)
- Safety
- On/Off System Bridges
- Transportation Enhancements
- Operational Improvements
- Comprehensive Development Agreement
- Preliminary Engineering
- Transit

## *2020-2045 Brownsville Metropolitan Transportation Plan*

In 2019, the Brownsville MPO adopted the 2020-2045 MTP, which identified policies, programs, and improvement projects to address the evolving needs of the Brownsville Urbanized Planning Area over the long-range planning horizon of 25 years. This plan also prioritized transportation projects based on a variety of values (such as indicating environmental impacts, adding roadway capacity, contributing towards economic vitality, improving transit, etc.), which guide the development of the overall transportation system. The overarching goals for this MTP were to:

- Support economic vitality
- Increase safety and security
- Increase accessibility and mobility
- Protect and enhance the environment
- Promote efficient management and operation of the transportation system

## *One Vision, One Harlingen*

One Vision, One Harlingen is the City of Harlingen's 2016 Comprehensive Plan and was adopted in 2016. The plan's transportation-focused goal is that "Harlingen will continue to maintain and create excellent regional and local transportation options that enhance the character of the city and provide for all modes of travel." Objectives to meet this goal include planning for connectivity, improving the appearance and aesthetics of key roadways in gateway areas, diversifying mode choice by providing more options for pedestrian and bicyclists, and strengthening the networks that provide for freight movement (airport, rail, ports) and border crossings. The plan lists a set of key strengths that already exist within the region and that should be expanded or utilized to their full potential to help achieve the plan's vision. Two of these strengths include the existing transportation network with its potential to increase connections to the international network, and the Valley International Airport with its potential to expand and act as an engine for economic growth. In addition, one of the major themes in the plan's vision and goals is economic development, which is directly affected by the quality and extent of the region's transportation system. The plan's transportation section recommends a multimodal approach to address transportation issues as well as context sensitive solutions and complete streets as guides for decisions about the future transportation system.

## City of Hidalgo Comprehensive Plan 2015-2035

Adopted in August 2015, the *City of Hidalgo Comprehensive Plan 2015-2035* focuses on issues of growth and development including community facilities/infrastructure, economic development, transportation, housing, social vulnerability, parks, and environment. Issues and threats are addressed with proposed solutions and supported with maps and other analytical tools. Through a brief description of grants and other funding opportunities in the areas of transportation, community facilities, historic preservation, economic development, parks and environment, and housing, the comprehensive plan provides an implementation table which matches funding programs to action items.

## City of Edinburg Comprehensive Plan 2025 & Ongoing Edinburg Gateway Plan

The Edinburg Comprehensive Plan provides goals, objectives, and related policies as ways to determine planning and development strategies through the year 2025. Currently, the City is developing an updated comprehensive plan entitled Edinburg Gateway Plan. The current plan integrates the areas of land use and community character, growth and development, transportation, economic development, and utilities while offering short- and long-term program and development activities.

## Harlingen Long-Range Thoroughfare Plan

Adopted in May 2013, the City of Harlingen's Long-Range Thoroughfare Plan consists of a map that shows the locations of existing and proposed roadways, from local roadways up to freeways/expressways. The plan is meant to act as "a tool for guiding right-of-way dedications, land subdivisions, and other development actions." The map shows that the north and south sides of the City's Extraterritorial Jurisdiction (ETJ) contain the most proposed new roadways, particularly major and minor arterials.

## San Benito Comprehensive Plan

In 2016, the City of San Benito adopted its most recent Comprehensive Plan. Some of the plan's guiding principles most directly related to transportation include a diversified economy, maintenance of infrastructure, a revitalized downtown, recreational amenities, trails, and connectivity. The Transportation and Circulation chapter identifies several focus areas as part of a policy framework to guide the future development of the San Benito multimodal transportation network. These focus areas include:

- Improving International and Regional Mobility
- Ensuring a Well-Connected and High-Quality Street Network
- Improving Corridor Design and Appearance
- Providing Enhanced Pedestrian and Bicycle Mobility
- Establishing a New Thoroughfare Plan

In addition, a set of strategies, initiatives, and actions is provided to aid in accomplishing or implementing the goal of each focus area. The plan's implementation section also identifies a list of transportation programs and projects, the time frame in which each should be accomplished, and entities that should be involved.

## La Feria Comprehensive Plan

The *La Feria Comprehensive Plan* was adopted in 2007 with a plan horizon of 2025. The plan's stated purpose is to act as "a guide for the physical development of the community by identifying characteristics and features, which influence community growth patterns." The plan includes sections on implementation, history of the area, economy, population, housing, land use, parks and recreation, thoroughfares, the central business district, subdivision regulations, zoning, and capital improvements. The thoroughfare section identifies two goals with several objectives each. These goals relate to implementing the City's street standards and possibly updating them as well as developing "major" and "collector" streets with adequate right-of-way and pavement width. Key recommendations identified in the plan involve developing some specified roadways into "major" streets. Several transportation-related objectives are also reiterated in other sections of the plan, such as the economic section, the housing section, the land use section, and the parks and recreation section.

## Imagine Brownsville, Comprehensive Plan, 2014

In 2009, the City of Brownsville adopted the *Imagine Brownsville Comprehensive Plan*, which strives to take a holistic approach at connecting the community vision and goals, which were based on public feedback, to future growth and development patterns. The plan consists of four sections: Planning Process, Vision and Challenges, Comprehensive Plan Elements, and the Implementation Plan. Facilitation of this plan was done by forming a planning task force, which was made up of representatives from all core elements of the plan. Comprehensive Plan Elements consist of ten elements, which include four core elements supported by six smart growth/sustainability elements. Core elements include Land Use, Downtown, Economic Development, and Mobility/Infrastructure, which are supported by Smart Growth/Sustainability Elements (Civic, Education, Equity, Healthcare, Emergency Management, and Environment).

## Comprehensive Plan, South Padre Island, 2014

In 2014, the City of South Padre Island adopted their latest Comprehensive Plan. This mission of the plan is as follows:

"South Padre Island is a unique, friendly seaside resort community that values its residents and tourists, preserves and protects the natural environment, and provides for quality sustainable growth and development that is highly diverse and responsive to changing economic conditions."

This mission statement is the basis of the comprehensive plan, which can be seen through the goals and objectives set throughout. The plan focuses on increasing the quality of life for current residents by continuing to provide attractive amenities to the tourist culture they have cultivated. This includes enhancing physical aesthetics, while minimizing health risks and environmental hazards and degradations, which includes enhancing parks and recreational opportunities. Another aspect of the plan focuses on providing more efficient, reliable multimodal transportation to support local travel and help move tourists throughout the city.

With these two goals in mind, the plan would also like to ensure that future growth is both smart and met with the proper amount of public service by facilitating growth using infill development, building with sustainable resources, and preventing future development from becoming a source of pollution or degradation. As growth occurs, the City would also like to ensure that the proper precautions are taken to ensure the economy and the residents are safe from any type of emergency or unexpected event.

### South Padre Island, Transportation Plan Report, 2011

The Transportation Plan Report, which was drafted in 2011, expands on Comprehensive Plan goal of providing an efficient and reliable multimodal transportation system, while creating a corridor master plan focused on the Entertainment District and Padre Boulevard. This plan includes a market analysis of future market demand and short- and long-term forecasts. The plan report also contains, a summary of design workshops and meetings used to establish a vision for Padre Boulevard and the Entertainment District, a form-based code, and an integrated multimodal plan. A stated purpose in this report is to establish a framework to address transportation needs of the future as the population grows and tourism increases.

### Cameron County Non-Radioactive Hazardous Material Route Plan

This plan, adopted in May 2010, was created to designate routes where commercial vehicles carrying non-radioactive hazardous materials can travel through Cameron County. The objective of the study was to select "routes that minimize both the potential for hazardous materials incidents and the consequences for the residents of Cameron County should an incident occur." The recommended routes that resulted from the study include segments of US 77, SL 499, FM 106, US 83, FM 509, and SH 550.

### Traffic Light Synchronization Study

The HSBMPO's Traffic Light Synchronization Study was adopted in 2012. Its purpose was to "improve overall traffic flow at signalized intersections by optimizing traffic signal timings and reducing overall delays." The study collected data such as turning movement counts, intersection lane configurations, speed limits, storage lengths and pedestrian volumes to conduct its analysis and make recommendations for signal timing optimization. The result of the study was optimized signal timing plans for 41 signalized intersections throughout Harlingen, San Benito, and La Feria. Operations are expected to improve with the implementation of the timing recommendations, however the study also found that some of the intersections in the region did not have adequate configurations to handle the traffic volumes experienced regardless of signal timing optimization. The study provided a set of intersection improvement recommendations for those intersections.

### Congestion Management Plan – Currently Being Drafted

The scope of Congestion Management Process (CMP) is to gather data on congestion levels in the urbanized areas of Rio Grande Valley. This CMP network consists of roadways within the RGVMPO area that are either FHWA functionally classified or identified as a transit route. The information to be gathered, includes but is not limited to, the travel times and delays for each identified road segment in the network. This process resulting plan likewise informs cost balanced strategies for reducing delay and congestion. Data gathering and traffic counts for the current CMP are being carefully reviewed and balanced in light of atypical traffic due to COVID-19.

## Public Transportation Planning Efforts

### Public Transportation Operational Analysis and Implementation Plan

Adopted in February 2013, this plan's purpose was "to evaluate existing transit services within the former HSBMPO's service area and to determine how service can be improved over the next decade." The plan inspects the existing system, which is served by Valley Metro, including the current routes, ridership information, and markets served. The plan also provides design guidelines, service improvement

scenarios, and a funding analysis. The service improvement scenarios include recommendations for new routes, bus stops and passenger amenities, and proposed adjustments to existing routes and services.

### LRGVDC Valley Metro Transit Asset Management Plan

On October 17th, 2018, HSBMPO passed a resolution in support of *Valley Metro's Transit Asset Management (TAM) Plan*. TAM Plans are required by the FTA for transit agencies receiving federal funding. The purpose of TAM plan is to help ensure that transit agencies maintain a state of good repair for all their assets so that their operations will continue to be safe and cost effective. The Valley Metro TAM Plan sets forth a series of performance targets and measures that will help the agency plan ahead for asset replacement and cap amount of allowable assets past their ULB or in an unacceptable condition at any given time for each year of the plan.

### Move McAllen: A Short-Range Transit Plan for Metro McAllen

*Move McAllen*, a Short-Range Transit Plan for Metro McAllen, which was adopted in 2019, is a three-phased, five-year study. The plan aims to improve ridership, productivity, and on-time performance of the transit service by assessing the strengths and weaknesses of the existing system, identifying opportunities to improve service for exiting riders, attracting new riders, and ensuring the best use of public funds.

### Brownsville Transit Plan

Adopted in 2017, the Brownsville Public Transit Plan was comprised of an assessment of existing conditions in the Brownsville area, a transit market analysis, the identification of service issues and opportunities, the development of service scenarios, and final service recommendations. The final recommendations included a mixture of elements from the service scenarios developed, which incorporated immediate, short, and long-term implementation strategies. The proposed service changes resulted in a 0.14% increase in annual revenue service, which ultimately resulted in a cost-neutral upgrade to the past services. Detailed route alignments and service schedules were produced as a result of this plan for all routes and ADA paratransit services.

### LRGV Regional Public Transportation Coordination Plan

The *Lower Rio Grande Valley Regional Public Transportation Coordination Plan* was adopted in January 2017 with the purpose of meeting the Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements for the FTA's Section 5310 Program. The Section 5310 Program's purpose is to enhance mobility for seniors and persons with disabilities. The overarching goal of the Regional Public Transportation Coordination Plan is to "help provide for more trips for more people while providing cost effective high quality and safe transportation for our community."

The plan provides an identification and analysis of existing transportation resources, an analysis of needs, a gap analysis, and a set of transportation strategies and pilot programs to meet goals and implement the plan. These strategies include coordination strategies, service strategies, and financial strategies focusing on coordination between FTA funded service and health and human services transportation (medical transport, etc.).

### RGVMPO Transit Development Plan - Currently Being Drafted

As a major component of the RGVMPO 2045 MTP, the newly formed RGVMPO is working collaboratively with regional transit providers to develop a Transit Development Plan (TDP). This plan, being developed concurrently with the 2045 MTP, will help tell the regional transit story of the Rio Grande Valley community. The development and delivery of tools and strategies will empower the MPO and the regional transit providers to evaluate, coordinate, and deliver transit on behalf of the community. The TDP will provide the following key components:

- Operational Analysis
- Market Analysis
- Origins and Destinations/Ridership Analysis
- Regional Service Standards
- Route and Service Recommendations
- Implementation Plan

## Active Transportation Planning Efforts

The following represent a sampling of active transportation planning efforts at the regional and local level in the Rio Grande Valley.

### The Active Plan

The *Lower Rio Grande Valley Active Transportation and Tourism Plan* was adopted in September of 2016. The goal of the plan is to help create "one of the finest and most extensive region-wide non-motorized transportation networks anywhere in the United States" by providing facilities and infrastructure for active transportation, and active tourism more specifically, which will create benefits for transportation, health, and the economy. The plan proposes a network of various active transportation and recreational facilities, some of which include multi-use trails and bike facilities and provides design considerations and potential facility costs. The plan also proposes a set of catalyst projects, two of which fall within the HSBMPO planning area (Arroyo-Resaca Multi-Use Trail segment and Arroyo Colorado Paddling Trail segment). The Active Tourism portion of the plan explores the possibility of bicycle tourism and trail tourism as potential programs and economic markets, which would have a significant impact on the use of and need for active transportation facilities in the HSBMPO region.

### Hidalgo County MPO Bicycle Plan

Adopted in 2017 by the HCMPO, the Bicycle Plan 2018 serves as a complement to the existing HCMPO Pedestrian Plan and as a core component in the overall multimodal plan for Hidalgo County. Additionally, the Bicycle Plan provides solutions to issues such as gaps within the sidewalk network, identifies safer approaches to street crossings and paths, provides environmental and health benefits, and encourages a bicycle-friendly environment.

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the HCMPO's Bicycle and Pedestrian Advisory Committee (BPAC), Technical Advisory Committee (TAC), and through a series of public meetings and workshops.

The plan uses the 5 E's approach: engineering, education, enforcement, encouragement, and evaluation of outcomes. The plan also includes an approach to document and monitor trends through data collection

to recognize progress and to identify achievement of plan goals and objectives. Localized data gathered in this process allows planners to better recommend courses of action designed to increase bicycling compared to more general data available at the national level. Surveys are used on a recurring basis to assess presumed preferences for driving over cycling and provide insight for ways to encourage a shift in behavior.

### *Hidalgo County MPO 2016 Pedestrian Plan*

The 2016 Pedestrian Plan, adopted by the former HCMPO, was updated from the 2014 plan and was intended to serve as a comprehensive planning tool for the Texas Department of Transportation (TxDOT), the HCMPO, and the local jurisdictions within the former MPO's boundaries to develop a safe and comfortable pedestrian network and an increased standard for walkable communities. Coordination and collaboration with the other neighboring former MPO's like HSBMPO and Brownsville MPO was designed to improve regional connectivity on cooperative projects. Planning directly for a pedestrian network has previously been left to the cities within the HCMPO's old planning boundaries resulting in a lack of connectivity in sidewalk infrastructure between cities. The Pedestrian Plan promoted a continuous and safe pedestrian network required as part of a federally mandated comprehensive multimodal transportation plan. This cross MPO coordination has been adopted and merged into the newly formed RGVMPO's vision and efforts.

### *2016 Bicycle and Pedestrian Master Plan*

Finalized in 2016, the HSBMPO Bicycle and Pedestrian Master Plan provided a set of recommended projects, policies, and practices meant to improve and expand the active transportation network in the old HSBMPO study area. The plan's recommendations resulted from a combination of public engagement, best practices, and an assessment of community conditions and needs. In addition, the plan includes an implementation program that defines roles and responsibilities, identifies funding options, and provides detailed information about the recommended projects.

### *Harlingen Trails Master Plan*

Adopted in March of 2010, the Harlingen Trails Master Plan's purpose is to aid in the creation of a trails system that provides safety, accessibility, and connects people to existing destinations; represents the identity and character of the city and enhances its physical appearance; and provides opportunities to learn about the city and form public/private partnerships. The plan aims to create a trails system that provides recreational/functional mobility opportunities for active transportation modes, promotes a sense of place, and provides a safe environment; develop tools and mechanisms to implement the plan and facilitate trail development; develop and identify funding sources; and incorporate public participation into the planning and design process for new trails. The plan's recommendations identify four types of opportunities for trail development, including arroyo trails, irrigation trails, rail trails, and street trails.

### *Harlingen Parks and Recreation Master Plan*

In conjunction with the City of Harlingen's One Vision and One Harlingen Comprehensive Plan, the city also developed a Parks and Recreation Master Plan, which was adopted in early 2016. One of the major findings to come out of this plan is the need for trails. Citizen input resulting from a needs assessment ranked "Add more trails or places to ride a bicycle" as the community's second highest concern under the

parks and recreation umbrella. Therefore, the plan includes trails under the list of "very high" needs, noting that there are still key gaps and that the western part of the city currently has no trails.

The plan includes trail development as one of the improvement categories in its final recommendations, with an aim of "developing a citywide connected trails system based on the recommendations of the city's adopted 2010 Trails Master Plan."

## San Benito Parks and Recreation Master Plan

With its most recent draft in 2015, the San Benito Parks and Recreation Master Plan acts as a supplemental piece of the San Benito Comprehensive Plan. The Parks and Recreation Master Plan's purpose is to "provide thoughtful guidance and sound direction to the city in its commitment to acquire, develop, and manage an adequate and easily accessible system of parks and recreation facilities and programs to serve the residents of San Benito." One of the specific goals of the plan involves building an active transportation network to improve connectivity throughout the community. Under this goal, the plan provides a set of actionable objectives as recommendations for achieving the goal. These actionable objectives include items such as taking steps to create more focused and detailed plans/designs, identifying and obtaining funding, coordinating with relevant entities, and obtaining the necessary rights-of-way or easements to use in the creation of the network.

## San Benito Downtown Revitalization Plan

Adopted in August of 2016, the *San Benito Downtown Revitalization Plan* is a supplement to the San Benito Comprehensive Plan. Though transportation is not the primary focus of this plan, there are concerns, opportunities, and recommendations discussed that are related to transportation. Traffic is listed as both a major opportunity and concern for the downtown area. Some of the recommendations in the plan include steps such as enhancing connectivity to downtown, in particular for active transportation modes and the trail network, improving the traffic environment through traffic calming strategies, reconfiguring certain roadway sections, and implementing Complete Streets.

## Brownsville Parks & Recreation Open Space Master Plan, 2008

This plan takes an inventory of the existing parks and open space in Brownsville, while creating an implementation plan to connect the existing infrastructure to the current and anticipated needs of community by improving the quality of the resources available with a planning horizon of 2008-2022. Procedures within this plan follow guidelines set forth by the Texas Parks and Wildlife Department (TPWD) to ensure the city continues to maintain eligibility for funding future parks projects.

Priorities identified through community engagement included:

- Provide more efficient maintenance and security
- Provide more recreational amenities and facilities
- Include educational/interactive opportunities with natural areas
- Expand the existing park system through acquisition of more open space/natural areas

The plan's goals also focus on improving existing parks and open space, while identifying potential areas for acquisition that would play a major role in improving connectivity between open spaces and enhance the quality of life of Brownsville residents.

## Connecting Brownsville, The 2013 Bicycle and Trail Master Plan

The City of Brownsville took a progressive approach in 2013 to meet the evolving transportation needs of their fast-growing population. To increase resident's quality of life and number of transportation choices, the City created *Connecting Brownsville* which builds on the previous efforts set forth in the *Parks & Recreation Open Space Master Plan*. This plan emphasizes five major goals to accomplish its overarching mission:

- Create an interconnected network
- Form partnerships throughout the community that will help facilitate this mission
- Invest, when feasible, in comfortable infrastructure that separates non-vehicular and vehicular traffic
- Ensure ease of accessibility to infrastructure
- Encourage short trips to connect longer trips (i.e. bike to a bus stop)
- Provide a variety of facility types

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the public participation process. The public participation process was conducted through a series of public meetings, workshops, surveys, and conversations at local events. Recommendations were also separated into four different phases based on timeline of implementation (rapid implementation, near-term, mid-term, and long-term).

## South Padre Island, Parks & Open Space Master Plan, 2013

The *Parks & Open Space Master Plan*, adopted in 2013, takes an inventory of existing parks, open space, and recreational facilities, while identifying opportunities to improve those existing spaces or acquire new lands to be converted to parks, open spaces, or recreational facilities. Public participation was used to highlight and support the existing facilities analysis, giving the community a voice to help identify and set priorities within the scope of the plan. Additionally, this plan holds strong connections to the tourism sector of South Padre Island's economy, ensuring that all parks and open spaces will continue or build upon the support of tourist activities. Through the planning process, the Parks & Open Space Master Plan identified three major goals:

- Protect and improve the existing system of parks and open space.
- Enhance tourism by networking local resources and system of parks and open space.
- Provide healthy environments to residents.

## RGVMPO Active Transportation Plan - Currently Being Drafted

In coordination with the RGVMPO 2045 MTP update, the RGVMPO Active Transportation Plan includes a holistic examination of the MAB to assess where current facilities for walking and biking exist, while also conducting an analysis to examine where demand for walking and biking is most prominent. Gap areas where demand is not adequately served by either walking or biking facilities are identified, and projects are recommended to serve those high demand areas. In addition, an important component of this plan is creating a unified approach to improvements to the active transportation network. To help support the design of new infrastructure for walking and biking, guidelines were developed based on national best practice to support MPO staff and partners. A policy review at the state, MPO, county, and municipal level shows where policies and programs supporting active transportation do, and do not occur, along with an

action plan of approaches to build support and implement such policies and programs. The collection of these analyses and recommendations provide a unified path forward to benefit those who use or will use the active transportation network throughout the Rio Grande Valley.

# Economic and Cultural Development Planning Efforts

## Cameron County Regional Mobility Authority Annual Report 2017

The Cameron County Regional Mobility Authority (CCRMA) releases this report annually to identify progress made towards objectives and key transportation projects in the county. This report also lists out the financial information related to these projects, such as the traffic counts and toll revenue. The latest annual report summarized efforts in 2017, some of the highlighted transportation projects include:

- State Highway (SH) 550
    - A stretch already signed as Interstate 169 (I-169)
- The first toll road opened in the Rio Grande Valley (RGV) and South Texas
- The West Railroad Relocation Project
    - The first International Railroad crossing into Mexico in over 100 years

## Cameron County Regional Mobility Authority Strategic Plan 2017-2021

The CCRMA Strategic Plan outlines eight different goals for CCRMA to tackle over the five-year period of 2017 to 2021, which directly focus on meeting the transportation needs of Cameron County as the population continues to grow. The plan then identifies strategies and transportation projects that correspond with the eight goals, as well as key partnerships that will make these goals feasible. "The ultimate goal of the CCRMA is to make significant contributions to a high quality of life by providing our residents and visitors with effective, accelerated mobility to encourage economic growth in South Texas from borders to beaches, at a minimal cost to the taxpayers."

## Downtown in Action, Main Street Brownsville, 2017

In 2017, the Main Street Brownsville Program published *Downtown in Action*, a plan to revitalize and preserve downtown Brownsville while utilizing a four-point approach. Through revitalization, the program aims to make downtown Brownsville a "vibrant, prosperous business district offering premier leisure, retail, cultural, and entertainment experiences."

The four-point approach focuses on the following areas: Organization, Promotion, Design, and Economic Vitality. Ten (10) goals were then identified, and strategies were detailed and separated into the four focus areas.

## Mitte Cultural District Master Plan, 2015

The Brownsville Historical Association, along with several other local partners, came together to create the *Mitte Cultural District Master Plan*, which was adopted in April of 2015. This plan incorporates five different sections, which are composed of a peer comparison of other cultural districts, the stakeholder engagement process, identification of design and development opportunities immediate, mid- and long-range), and additional information consisting of community engagement results and further analysis. Immediate actions include developments that create a structure to facilitate more long-term developments, such as creating revenue streams through priced parking and the creation of a City Pass

(allowing residents to buy a single pass to gain entrance to all facilities), while also hiring a district director to maintain oversight of the program. The more long-term developments include actions that would require more effort such as building a large performance plaza, museum, and unified sidewalk branding and system.

### *Revitalizing Downtown Brownsville, 2013*

*Revitalizing Downtown Brownsville* is a culmination of policies and programs that seek to reinvent the way downtown Brownsville will look and operate. The program was released in November of 2013, forming an action plan for reactivating downtown Brownsville. These policies include: Place-Based Planning, Complete Streets, Traffic-Calming, Improving Parking Efficiency, "Town-Gown" Connection, Re-Envision the Alleys, and Envision It. Together these policies will create a more active lifestyle for the city of Brownsville, while improving connectivity and making downtown Brownsville a focal point of the city.

### *RGV2020*

RGV2020 is a regional economic plan being developed by Lower Rio Grande Valley Development Council (LRGVDC) using the Comprehensive Economic Development Strategy (CEDS) method, which launched in 2017 and is expected to be implemented in 2020. This effort includes a comprehensive assessment of the region's current needs using a SWOT analysis (strengths, weaknesses, opportunities, and threats) combined with community engagement to help determine the region's priorities. Based on the determined priorities, the plan sets the framework to prioritize investments in the following areas of concern:

- Education & Workforce
- RGV Destinations, Geographic Assets & Quality of Life Factors
- Urban & Rural Entrepreneurship
- Industry, Growth, Diversity & Resilience
- Transportation, Technology & Infrastructure
- Foreign Trade & International Competitiveness
- Operations and Management Planning Efforts

## *Texas Statewide Documents*

The following documents were authored by state agencies and contain statewide applications for the state of Texas, which in turn applies to the entire Rio Grande Valley Region.

### *Freight Mobility Plan*

The 2018 Texas Freight Mobility Plan gives a blueprint for increasing economic growth in Texas through a plan for addressing freight and transportation needs in all parts of the state. The plan took a comprehensive approach building on the 2017 Mobility plan and used an outreach process with the Texas Freight Advisory Committee along with stakeholder workshops and webinars with MPOs. The plan concludes with an implementation strategy for meeting TxDOT freight transportation needs, along with a list of projects and considerations regarding funding and performance measures.

## The Texas Rural Transportation Plan

Adopted by the Texas Transportation Commission in 2012, the *Texas Rural Transportation Plan* is the rural component of the Statewide Long-Range Transportation Plan (SLRTP) 2035. This plan brings forth the priorities of the rural transportation stakeholders within the state, which adds their concerns to the overall priority list for transportation projects and improvements. This expands on the effort to create coordination between transportation stakeholders within the state to create one unified mission of improving Texas' multimodal transportation system by giving weight to rural interests.

## Statewide Long-Range Transportation Plan 2050

The Texas Transportation Commission adopted the Texas Transportation Plan (TTP) 2050 in 2020 to serve as TxDOT's performance-based long-range transportation plan (LRTP). This plan is the culmination of coordination between planning partners and transportation agencies throughout Texas to guide and improve the development, management, and operation of the multimodal transportation system on a statewide basis over the next 25 years. This plan also sets performance goals, measures, and targets for the following items:

- Promote Safety
    - Utilize the 5 "E's" of Evaluation, Engineering, Encouragement, Education, and Enforcement to support a safety culture that decreases the number of crashes and fatalities.
        - 2030: 2,280 Fatalities & 0.70 Fatality Rate
        - 2050: 0 Fatalities & 0 Fatality Rate
- Preserve Assets
    - Keep Texas' infrastructure in good repair by providing cost efficient preventative maintenance.
        - 90% Good or Better Pavement Lane-miles by 2030, maintain through 2050
        - Statewide Bridge Condition Score of 90 by 2030, maintain through 2050
- Optimize System Performance
    - Manage an integrated transportation system that offers reliable travel, accessible mobility, and encourages economic growth.
        - Decrease Urban Congestion Index to 1.2 by 2030, to 1.15 by 2050
        - Decrease Rural Reliability Index to 1.12 by 2030, maintain through 2050
- Deliver the Right Projects
    - Effectively use state resources to help deliver the right projects on time and within budget
- Foster Stewardship
    - Environmental considerations should be included in all TxDOT activities to ensure future generations of Texans can benefits from the state's natural, historic, and cultural resources.
- Focus on the Customer
    - TxDOT's decision should be transparent to the public and stakeholders, while feedback from the public is being actively heard.

## 2020 Unified Transportation Program (UTP)

The 2020 Unified Transportation Program (UTP) identifies planned investments totaling $77 billion in infrastructure improvements over the next 10 years that address TxDOT's strategic goals in the areas of safety, preservation, congestion relief, and connectivity.

The UTP is a mid-range transportation plan that links statewide LRTPs, regional MTPs, and rural transportation plans to the STIP and other short-term investment programs. Specifically, the UTP lists projects and programs planned for construction and/or development within the first 10 years of the 24-year SLRTP. Project development includes activities such as preliminary engineering work, environmental analysis, and right-of-way acquisition and design. It is a critical tool in guiding transportation project development within the long-term planning context. In addition, it serves as a communication tool for stakeholders and the public in understanding the project development commitments TxDOT is making.

## 2019-2022 Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is the programming document for prioritizing and scheduling projects. The STIP contains programmed dollars for all projects for all programs including roadway, transit, and active transportation and is based on a set of needs set out in the Statewide LRTP. The STIP is revised as needed on a quarterly basis to maintain communication and transparency on the programmed components involved in delivering State and Federally funded projects. The STIP is accompanied by a System Performance report that details the performance measures and targets in support of the goals set in the TTP 2050.

## Texas Strategic Highway Safety Plan 2017-2022

The 2020 update to the Texas Strategic Highway Safety Plan (SHSP) acknowledged a steady improvement in roadway safety performance since the implementation of the 2017 SHSP. The SHSP maintains a vision of moving to zero deaths on roadways, and represents a multidiscipline collaboration aspiring to make Texas travel safer by reducing crashes, fatalities, and injuries by focusing on seven key emphasis areas, being distracted driving, impaired driving, intersection safety, older road users, pedestrian safety, roadway and lane departures, and speeding.

This targeted, data driven approach to addressing roadway safety exemplifies TxDOT and partner agencies dedicated implementation of the directives set in the Highway Safety Improvement Program (HSIP). Additionally, statewide efforts are reviewed to create a uniform effort that connects and aligns goals from different planning partners throughout the state.

## Texas Transportation Asset Management Plan, 2019

The Federal Highway Administration (FHWA) requires all states to develop a *Transportation Asset Management Plan (TAMP)*. The TAMP is a statewide document that sets forth standards and performance targets for managing and maintaining both the state's bridge and pavement systems. The state of Texas is required to meet the following requirements in accordance with the MAP-21 Act and Fixing America's Surface Transportation Act (FAST Act):

- Description of National Highway System (NHS) pavement and bridge assets inventory
- Statement of the asset management objectives and performance measures
- Performance gap identification
- Life cycle planning (LCP)

- Risk management analysis
- Financial plan for a minimum of 10 years
- Investment strategies

### *TxDOT Transit Asset Management Group Sponsored Plan*

Transit Asset Management (TAM) planning follows a similar principle of asset management as the TAMP process detailed above but deals with assets used in the provision of public transportation rather than with pavement and bridge conditions. TxDOT sponsored a group Transit Asset Management Plan building on the standards and performance measures set forth by FTA, which then fall upon the local transit agencies throughout Texas to use during the adoption of their agency specific TAM Plans. The latest Texas TAM Plan was adopted in 2019, its planning process resulted in the following seven (7) priorities: 1) Deliver the right projects, 2) Focus on the customer, 3) Foster Stewardship, 4) Optimize system performance, 5) Preserve our assets, 6) Promote safety, and 7) Value our employees.

### *International Trade Corridor Plan, 2018*

The International Trade Corridor Plan is a biannual report conducted by TxDOT as required by the Texas Transportation Code which aims to:

- Include strategies and projects to aid the exchange of international trade using the Texas multimodal transportation system;
- Assign priorities based on amount of international trade; and
- Address implementation of the recommendations of the Border Trade Advisory Committee.

The plan highlights information on global trade in Texas (i.e. major commodities and trading partners), the state's infrastructure facilitating trade, planned investments in relevant infrastructure, and non-highway investments that affect trade. The plan also details infrastructure improvement activity at various locations such as the Pharr-Reynosa International Bridge.

### *Border District Trade Transportation Report, 2019*

This report describes border trade activity for TxDOT's three border districts – El Paso, Laredo, and Pharr and uses that information to identify transportation needs and develop strategies and investments that support safe and efficient movement of United States (US) and Texas trade with Mexico. The report provides figures for under construction or completed project cost and type, highlighting areas of need for future analysis.

### *Truck Parking Study: Overview and Draft Recommendations*

This study provides an overview of the findings from the Statewide Truck Parking Study for all TxDOT Districts. The study highlights the results of inventory and utilization analysis and discusses the draft findings for preliminary recommendations.

## PRELIMINARY GOALS AND OBJECTIVES

The tenets, goals, objectives, and related performance measures from the aforementioned plans were compiled and reviewed alongside the federally proscribed goals, objectives, and performance measures in order to develop the preliminary goals for this MTP update. These goals and objectives were then used as a starting point for the regional visioning process carried out during public involvement.

The preliminary RGVMPO 2045 MTP Goal Areas (Values) and objectives represented in Table 2-2 are a synthesis of previous planning efforts, current scoring criteria, and national performance goals. These proposed goals were crafted to help create a unified regional perspective on long-range transportation planning and inform the project scoring and public involvement processes.

***Table 2-2: RGVMPO 2045 MTP Preliminary Visioning Goals***

| RGVMPO 2045 MTP Goal Areas | RGVMPO 2045 MTP Goal objectives | National Goal/ Process |
|---|---|---|
| Regional Planning | Conduct a planning process that builds a sense of regional identity and community by being inclusive of all geographic areas and sensitive to needs of communities across the region while promoting the theme of regional collaboration | 3C Metropolitan Planning Process |
| Safety | Develop and invest in projects that promote and improve system safety | Safety |
| Security | Develop and invest in projects that promote and improve system security | |
| Asset Management | Maintain transportation asset systems in states of good repair (all modes – roadway, bridge, sidewalk, bicycle facilities, transit facilities, vehicles and equipment) to support system safety, resilience, and reliability | Infrastructure Condition & Transit Asset Management |
| Efficient System | Reduce congestion and improve travel time reliability. | Congestion Reduction |
| | Investment in improved/innovative technology | |
| Sustainable System | Design and implement a system that is resilient in the face of natural disasters and weather events (able to survive or recover from extreme events) | |
| Connectivity (people & freight) | Improve connectivity of transportation system | System Resilience and Reliability |
| | Fill in gaps in current roadway network and improve first mile/last mile connectivity (people & freight) | |
| Mobility and Accessibility (all modes – people & freight) | Provide access to and invest in transit | |
| | Provide adequate and accessible truck safety rest areas with enough parking and amenities | |
| | Provide access to and invest in bicycle facilities | |
| | Provide access to and invest in recreational trails | |
| | Provide access to an invest in sidewalks and ADA accessibility | |
| | Implement and combine multimodal context sensitive solutions where appropriate (Complete Streets) | |
| Economic growth | Provide multimodal access to medical facilities, employment, shopping, and recreation | Freight Movement and Economic Vitality |
| | Improve freight movement | |
| Environment | Improve or preserve the environment to ensure community resilience and sustainability | Environmental Sustainability |

| RGVMPO 2045 MTP Goal Areas | RGVMPO 2045 MTP Goal objectives | National Goal/ Process |
|---|---|---|
| | Design and implement a context sensitive system that minimizes impact to neighborhoods, cultural resources, and historic sites. | |
| | Design and implement a transportation system that benefits all members of the community in a fair and equitable manner and conduct a planning process that is transparent and considers the needs and input of all segments of the community | Environmental Justice / Social Equity |
| Fiscal Responsibility in Improvements | Invest in feasible and regionally significant projects | Reduced Project Delivery Delays |
| Goals that Align with the Public Values | Leverage public outreach to refine goals and inform project prioritization process | Public Involvement |

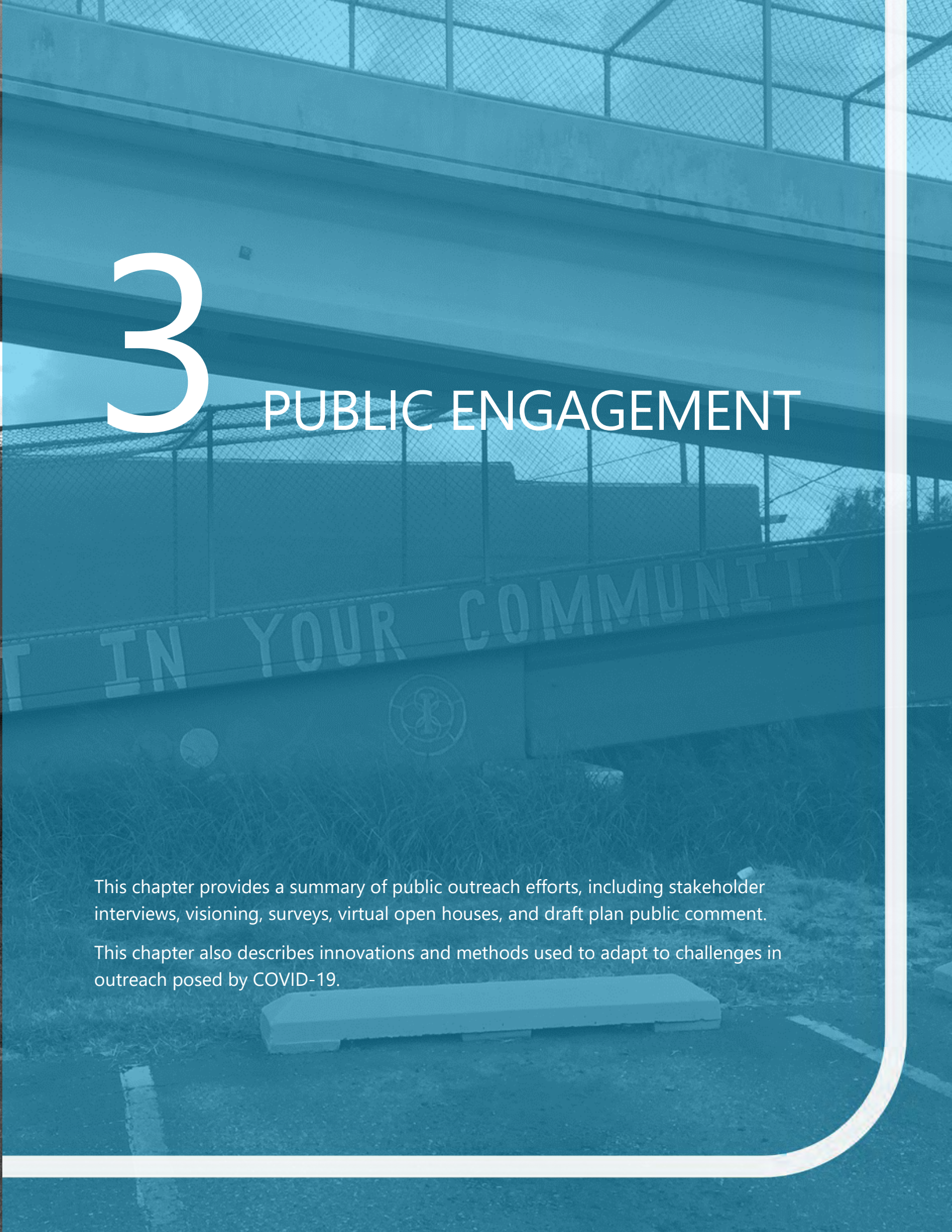
# REGIONAL VISIONING PROCESS

Though the planning process used for the creation of the RGVMPO 2045 MTP is prescribed by state and federal regulations, the vision is developed locally. This plan focuses on forging a new regional vision by combining the knowledge and wisdom of the previous MPOs and local community, while following the state and federal guidelines that direct the general planning process.

The vision is achieved not only through a review of locally generated plans and information described in the previous section, but extensive public input and collaboration of regional stakeholders including local, state, and federal agencies and governing bodies, public and private transportation providers, and the business community.

Input from the public and from these stakeholders is integrated into the metropolitan planning process so that the community's visions and goals coalesce into defined principles that help guide transportation policy and investment decisions within the RGVMAB. The resulting recommendations and proposed improvements impact all users of the transportation system.

The specific ways in which the research and planning review conducted in this chapter were used in the public involvement and regional visioning process and the community vision developed from that effort is described in Chapter 3 Public Involvement.




# 3 PUBLIC ENGAGEMENT

This chapter provides a summary of public outreach efforts, including stakeholder interviews, visioning, surveys, virtual open houses, and draft plan public comment.

This chapter also describes innovations and methods used to adapt to challenges in outreach posed by COVID-19.

The backbone of every well-developed MTP is public engagement. Involving early input from the public, helps ensure that planners and decision makers better understand the community's transportation needs and goals. This public input process enables decisionmakers to be more readily equipped to maintain community dialogue and address needs and goals with more effective impact.

Methods may vary by region, but the collaborative process of public involvement remains an integral part of creating a well-rounded transportation plan. To maximize public input, public participation plans were implemented early in the development of the RGVMPO 2045 MTP.

A variety of engagement strategies were used in accordance with and in addition to the federally required Public Participation Plan (PPP), including online visioning exercises, surveys, stakeholder meetings, and virtual open houses. The following sections in this chapter outline the legal requirements for a PPP and the different methods used to engage the RGVMAB community.

# LEGAL REQUIREMENTS FOR PUBLIC PARTICIPATION

In addition to the federal guidelines discussed in Chapter 2, MPOs are required to provide "reasonable opportunity" for the public to comment on the MTP, TIP, and any major plan revisions, according to the FAST-Act, and 23 CFR 450.316.

The public includes "citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties." [1201(i)(6)(A)] The RGVMPO is also required to consult with state and local agencies and coordinate the transportation plan with other existing plans.

## *Public Participation Process*

As required by the FAST-Act and 23 CFR 450.316, the RGVMPO followed the guidelines below to create the RGVMPO 2045 MTP:

- Develop a **documented PPP** that defines the process for all affected individuals and stakeholders. The RGVMPO PPP was adopted on August 7, 2019.
- **Consult** with all interested parties to develop the PPP.
- Provide reasonable **public access**. All technical and policy information used in development of the MTP, TIP, and other appropriate transportation plans and projects should be provided in electronic-accessible formats. Open house meetings should be conducted at convenient and accessible locations and times.
- Leave time for **public comment**. The public should have ample time to respond to the PPP before it is adopted; at a minimum, the comment period should be 45 days. Comment periods before the adoption of MTPs, TDPs, 5307 Program of Projects, and other appropriate transportation plans or projects should be no less than 30 days.
- **Notify** the public of participation opportunities. Notice of the public comment period should be advertised in the newspaper and sent via mail to the entire RGVMPO mailing list *before* the start of the 45-day comment period.
- **Respond in writing** (when applicable) to public input, specifically in response to substantial comments made during public engagement. Summary, analysis, and report of disposition of comments shall be made as part of the final document.

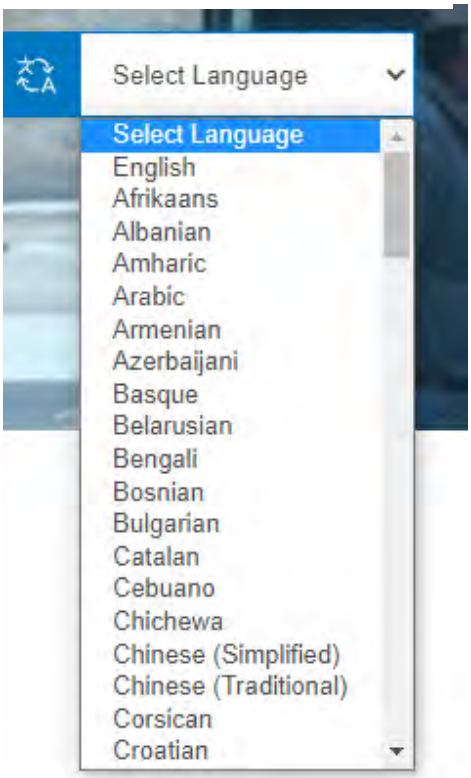
- **Seek out** and consider those traditionally underserved by existing transportation systems, such as minorities, older adults, disabled individuals, and low-income households.
- **Coordinate** the PPP with statewide transportation planning public involvement and consultation processes wherever possible.

## Limited English Proficiency Plan

Under Title VI of the Civil Rights Act of 1964, the MPO planning process and tasks shall not be discriminatory of race, color, or national origin. Residents are also entitled to language assistance in compliance with Executive Order 13166 ("Improving Access to Service for Persons with Limited English Proficiency"). These requirements apply to all federal agencies, and those receiving funds from federal agencies. The following are techniques the RGVMPO has employed to ensure individuals with Limited English Proficiency (LEP) are able to participate in the public involvement process:

- Use of non-technical language to describe plans and proposed changes
- Visualization techniques to display data and proposed transportation plans
- Connecting with community leaders and organizations who can help the MPO reach more LEP residents
- Translation into different languages available (see Figure 3-1)

*Figure 3-1: Desktop Translation Screenshot*




## PPP Evaluation

Continuous evaluation of public involvement strategies is required by the FHWA and TxDOT. Some of the key performance indicators include evaluating the extent to which the PPP:

- Provides direction for public involvement activities
- Includes descriptions of roles and responsibilities of the MPO and other agencies in the public involvement process
- Lists techniques that are or could be used by the MPO to encourage the public to engage in the planning process

A general evaluation guide for PPP key performance indicators can be found in the public involvement technical memorandum.

# PUBLIC OUTREACH EFFORTS

The RGVMPO conducted multiple public and stakeholder outreach efforts to better understand the community's transportation challenges, needs, and opportunities. The participants' responses provided insight into their vision for the future of the transportation system and their goals for the RGVMAB in

2045. This section describes all public engagement strategies used for the RGVMPO 2045 MTP update, including an online visioning exercise, public surveys, stakeholder meetings, and virtual open houses.

## Online Visioning Tool

The main objective of the online visioning process for the RGVMPO 2045 MTP was to solicit input from the public regarding their priorities for the future RGVMAB transportation system. Due to unforeseen circumstances caused by the COVID-19 pandemic, the entirety of the visioning process was conducted online. Community members were notified of the survey primarily through social media posts, outreach to stakeholders, and posts on the RGVMPO website. A social media post is presented in Figure 3-2.

***Figure 3-2: Online Visioning Facebook Post***

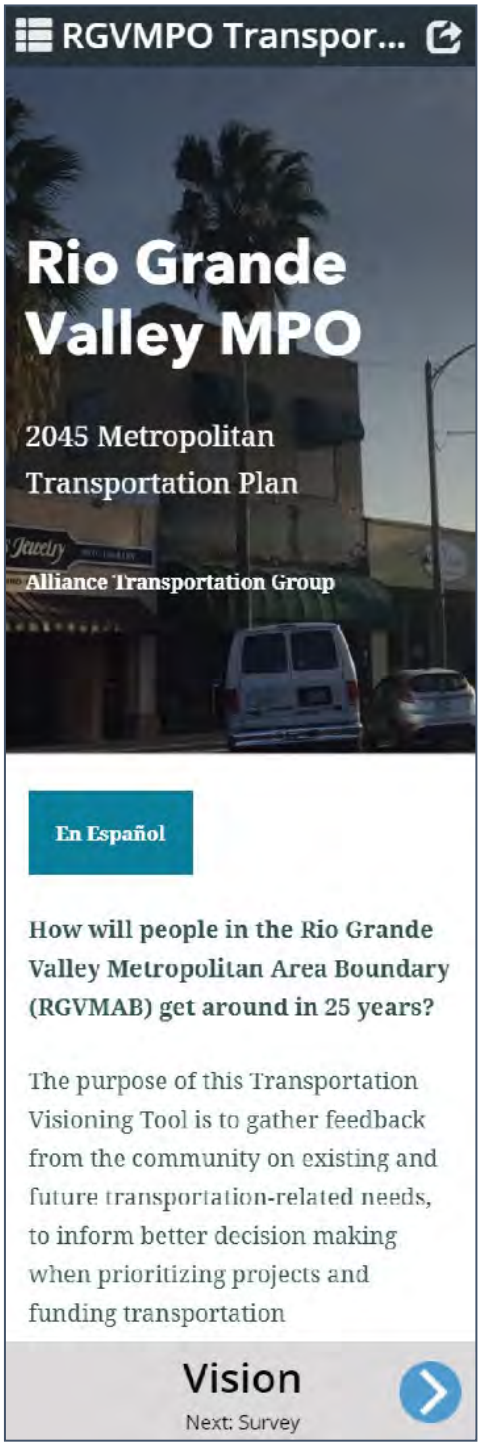
The feedback received from the online visioning tool played a role in shaping the MTP goals and objectives and provided critical insights that helped the RGVMPO prioritize the transportation improvement projects proposed for inclusion in the plan. The online tool was opened on April 1, 2020 and closed on July 20, 2020. During this time, the tool received a total of 83 survey responses and 200 comments on the interactive map.

The digital visioning process was custom-built for the development of the MTP. The tool consisted of modules that both educated the public about the plan development process and requested feedback about community values and existing conditions in the region.

Accessibility for the online visioning tool was prioritized throughout the design process, starting with responsive web design. The mobile-friendly version of the website, as shown in Figure 3-3, allowed users who only had access to a mobile device to participate in the online visioning process. Access for LEP residents was also taken into consideration. The mobile site can be accessed in English or Spanish, and the desktop site can be accessed in English, Spanish, and translated into several other languages using an imbedded translation engine.

The structure of the tool included a survey that gathered information about participants' transportation usage and an interactive map of the region. The responses from these modules are summarized in the following section.

*Figure 3-3: Online Visioning Mobile Web Design*




## Online Visioning Responses

The survey and interactive mapping tool solicited insightful feedback from participants, and patterns often emerged in the responses. Some of the most common comments focused on inefficiency in the transportation systems, congestion and traffic, connectivity, and safety – especially for bicyclists and pedestrians.

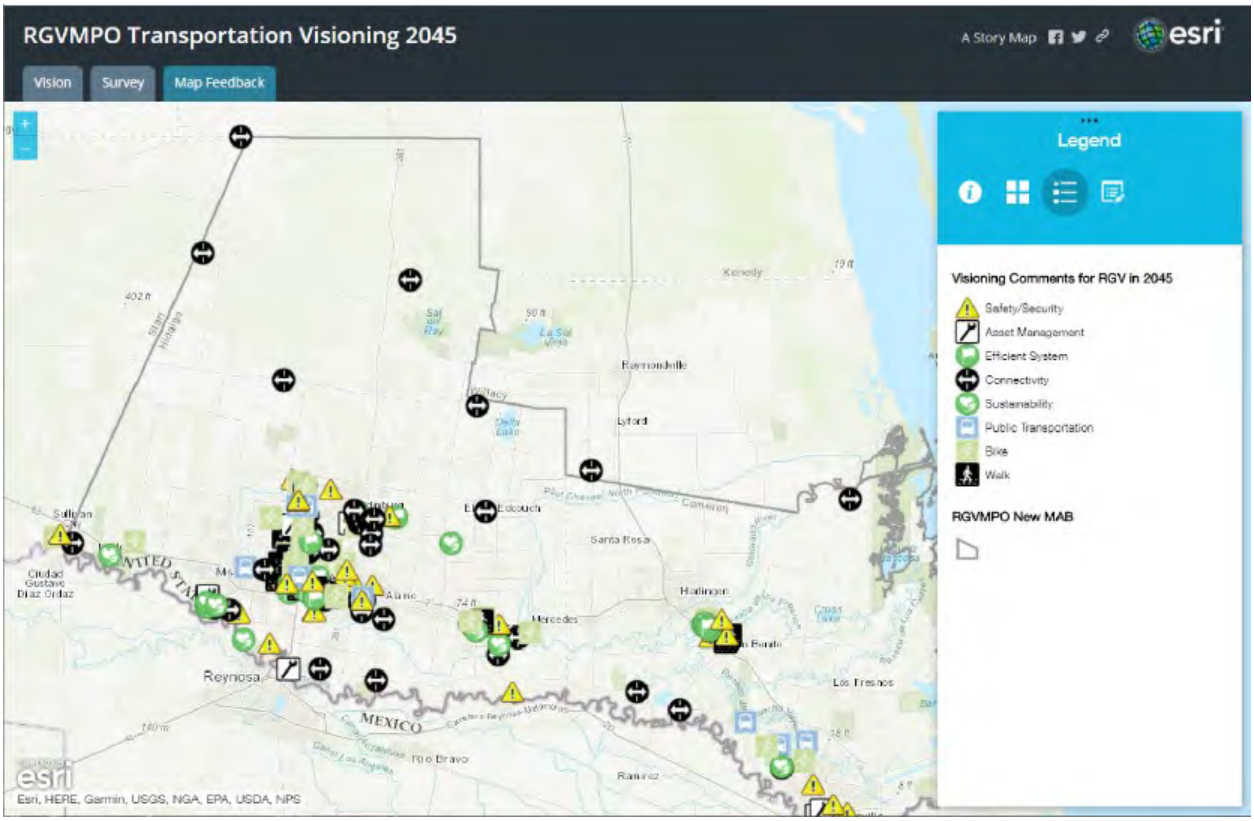
Most frequently, participants voiced a need for safer bike and pedestrian routes. One comment said, ***"Bikers often share the roads with distracted drivers and are putting themselves at risk. Creating safe biking and walking trails would give people the options of choosing these means of conveyance over a car."***

Additionally, the heat in South Texas was mentioned, prompting the suggestion for improved bus stop amenities that provide shade, protect riders from the elements, prevent heat exhaustion, and subsequently, increase ridership.

Minimizing the delays travelers experience due to congested roadways and improving travel time reliability was also a common theme in both the survey and the interactive mapping tool. One respondent summed up the topic, accordingly, referring to transit: "We need something to help us go to other cities quicker." Additionally, some mentioned the information about bus routes and schedules was hard to find, creating another obstacle to using public transit.

System connectivity was the third-highest priority on the survey and the most common category for responses received on the interactive mapping tool. Fragmented transit and active transportation routes in the RGVMAB were a repeated complaint, and many participants expressed a desire for a regional transit connection that travels the length of the RGVMAB.

***Figure 3-4: Screenshot of Feedback Map Module***



## Stakeholder Interviews

The RGVMPO conducted interviews with stakeholders from a diverse and wide-ranging set of communities across the RGVMAB. The stakeholder groups included environmental groups, transit providers, municipal and county governments, educational institutions, freight industry leaders, port authorities, law enforcement and emergency services, bicycle and pedestrian advocacy organizations, and community interest groups. The purpose of the interviews was to listen and record any regional transportation issues or opportunities that stakeholders identified for the next 25 years. Like the Online Visioning Process, stakeholder interviews were conducted online via Microsoft Teams due to concerns amid the COVID-19 pandemic. Staff recorded notes during the meetings and summarized a comprehensive list of topics discussed. The feedback from stakeholders has been summarized by topic in Table 3-1 below and by general comments by group in Table 3-2.

***Table 3-1: Summary of Stakeholder Comments***

| Topic | Stakeholder Comments |
|---|---|
| Safety | *Lacking bike/ pedestrian infrastructure causes people to travel in unsafe conditions* |
| | *More education for drivers on how to share the road is needed* |
| Efficient System | *Congestion can cause delays for EMS workers during emergencies* |
| | *Evening and weekend transit service is needed* |
| | *An outer loop could help with freight traffic* |
| Connectivity | *Improve bike/ped regional connections, especially to eco-tourism sites* |
| | *Desire better transit connections: connecting college campuses has been good* |
| | *Connect rural areas to transit* |
| Environmental Stewardship | *Flooding is a big issue; it can cause vehicular crashes and oil runoff that is bad for the environment. Desire for better drainage on roadways* |
| Asset Management | *Roads should be better maintained* |
| | *Leveled railroad crossings and even sidewalks will allow for more active transportation* |
| | *Desire for faster completion of construction projects* |
| Inclusive Transportation System | *Poor sidewalk infrastructure is an ADA accessibility concern* |
| | *Transit dependent population needs better access to transit to prevent isolation* |
| Economic Growth | *Truck traffic should be isolated; trucks divert into city streets to save time and cause inappropriate noise and heavy traffic for residential areas* |
| | *Desire for more ports of entry at the U.S.-Mexico Border to encourage more commercial traffic* |

*Table 3-2: Summary of Stakeholder Comments by Group*

| Stakeholder Group | Summary of Comments |
|---|---|
| Freight and Port | *Congestion common during peak travel times, outer loops could help*<br>*More relief routes should be identified*<br>*Freight traffic has been increasing, and will continue to increase*<br>*Bike and pedestrian trails are being used more often*<br>*AV transportation should be highlighted in MTP*<br>*Truck parking can be a challenge and cause visibility issues* |
| Valley Tourism Professionals | *RGV has drastically imporved hike and bike trails, but better connectivity still needed*<br>*Need better maps of hike and bike trails for tourists*<br>*Consider transit for eco tourism areas*<br>*Flooding is an issue in several areas*<br>*Information about transit should be easier to find* |
| Community Group Professionals | *Information about transit should be easier to find*<br>*Transit is vital to quality of life, especially because most families have one vehicle and often live very remote*<br>*Lack of sidewalks and ADA infrastructure* |
| EMS and Law Enforcement | *Flooding is an issue; it has caused vehicular crashes on expressways*<br>*Bus stops need better amenities*<br>*More bike and pedestrian infrastructure needed*<br>*Sidewalks need improvement* |
| Medical | *Traffic is a problem, especially at interchange*<br>*Small accidents can cause a large delay, and minutes are very important in the case of an emergency*<br>*Additional lane on major highways for emergency vehicles*<br>*Better signage for hospital needed* |
| Bike and Pedestrian Advisory Committee | *More driver education about sharing the road with bikes and pedestrians*<br>*Chip seal roads are rough and difficult to ride bikes on*<br>*Biking is becoming more common and people are using existing trail networks*<br>*There is a need for better signage / wayfinding information, especially for those with a language barrier*<br>*Better connectivity needed* |
| City Stakeholders | *Freight traffic has steadily been increasing*<br>*Desire to extend public transit service hours and add Sunday service*<br>*Improve hike and bike systems with safer crossings and grade separations when possible*<br>*Drainage systems are not diesgned to accommodate runoff, flooding is common*<br>*Cyclists are active in civic meetings and provide insightful feedback* |
| EDC and Chamber of Commerce | *Congestion is an issue during peak hours*<br>*Desire for outer loop to decrease traffic*<br>*Freight traffic has been steadily increasing*<br>*Lack of sidewalks and bike lane has become apparent as more people are using active transportation*<br>*Would like consideration of AV solutions for the future* |

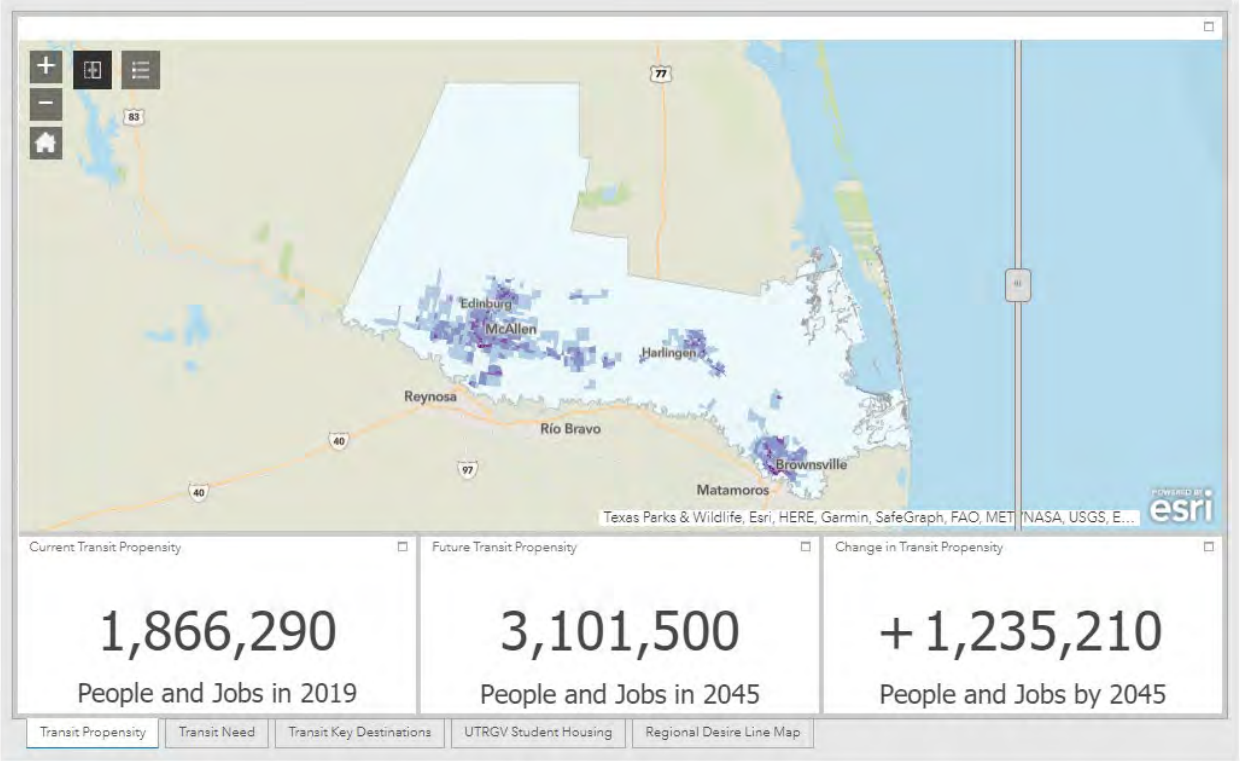
| Stakeholder Group | Summary of Comments |
|---|---|
| Education | *Connection between campuses has been successful*<br>*Expansion in modes could be beneficial*<br>*Fiscal constraints are a challenge to creating efficient routes*<br>*Education needed about the benefits of transit*<br>*Lack of bike / ped infrastructure is a safety hazard*<br>*Campus is projected to grow, and transit is free to students* |
| Environmental | *Flooding is an issue in Brownsville*<br>*Active transportation between green spaces is needed (often close in proximity but not in access)*<br>*Connectivity is needed on major roadways where the road acts as a barrier*<br>*Leverage funding to increase nature education and wayfinding for ecotourism in Cameron County*<br>*Consider equity in terms of access and connectivity to nature* |

## *Draft Plan Review and Adoption*

A virtual open house was held on November 4, 2020 to December 4, 2020 with the purpose of presenting the analysis work completed in the development of the plan as well as the 30-day public comment period for the RGVMPO 2045 MTP document, in accordance with federal PPP guidelines.

Similar to the visioning process, all open house activities were conducted virtually due to COVID-19 pandemic limitations. A custom-built website was created to display the open house information and solicit public feedback. The RGVMPO publicized the virtual open houses via social media posts and information on their website, ensuring the public was notified of the comment periods, and a mobile-friendly version of the open house site was available for people without access to desktop computers.

*Figure 3-5: Interactive Transit Propensity Map*

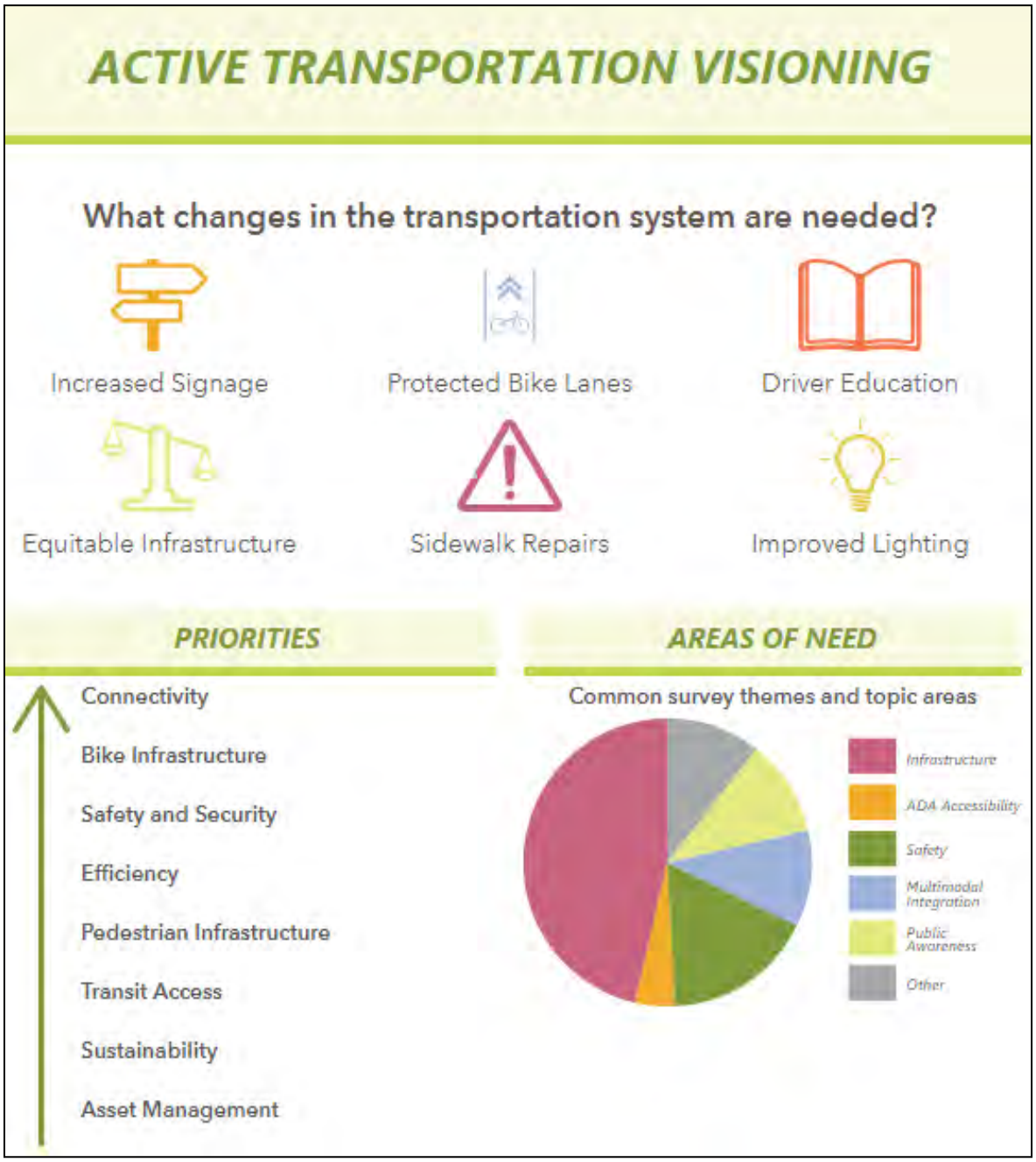



The website provided residents with an overview of the draft RGVMPO 2045 MTP, including the proposed plan of fiscally constrained projects, and solicitations for feedback. The homepage of the open house website also included educational aspects about what an MTP is and why the MPO needs to develop one.

The Current Conditions Assessment discussed in the following chapter (Chapter 4) was a key aspect used to visualize findings and allow users to interact with data. For example, the Transit section included a map (shown in Figure 3-5) that allowed users to slide a vertical bar to reveal the future transit propensity in the RGVMAB based on demographic growth projections from the regional Travel Demand Model.

Users could also view the results of the online visioning process, shown in Figure 3-6, and take an additional survey. The draft plan received 5 responses, much of the feedback echoing themes from stakeholders and the visioning process public feedback.

*Figure 3-6: Screenshot of Infographics Displaying Active Transportation Visioning Results*



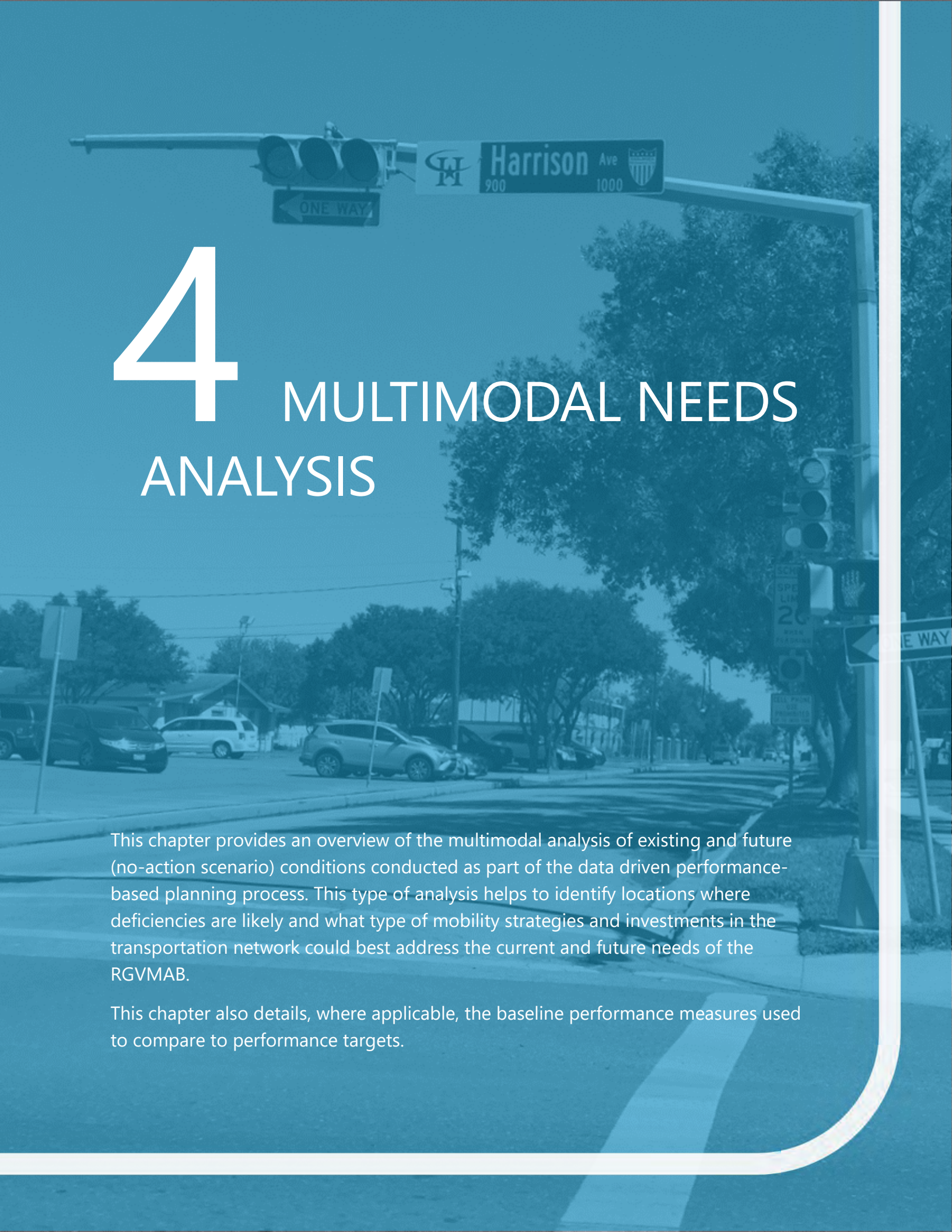

Additionally, the project team provided a digital copy of the draft plan on the virtual open house platform. This section of the open house also allowed the public to navigate the proposed plan of fiscally constrained projects and provide feedback. Further to this, the RGVMPO uploaded a digital copy of the draft plan to the agency website to increase accessibility during public comment. Many comments were received during this period. A full summary of public comments and responses from the RGVMPO can be found in the public involvement technical memorandum.

The RGVMPO Transportation Policy Board, having reviewed the draft RGVMPO 2045 MTP, and having incorporated and considered public comments given during the public comment period, adopted the RGVMPO 2045 MTP as the MTP for the RGVMAB on December 10, 2020.

## Summary

A robust public involvement and stakeholder engagement process was carried out by the RGVMPO to identify issues and understand the needs of the public, as well as those of agencies and organizations with a specific interest in the RGVMAB transportation system. Public participation has long been a federal requirement for the long-range transportation planning process. The public participation process carried out by the RGVMPO in support of the MTP not only complies with federal regulations, but also ensures the plan goes above and beyond the results of the technical analyses and incorporates information on how the public experiences and perceives the transportation system, which may not always align with the technical data. Developing a plan in close cooperation with the public and key stakeholders also helps to ensure broad community support for plan adoption and implementation.

Goals and objectives provide guidance to the RGVMPO and policy makers in selecting projects for inclusion in the RGVMPO 2045 MTP and help to link other transportation planning processes and documents produced by the MPO, like the TIP and the Unified Planning Work Program (UPWP), with the long term vision of the community. As state DOTs and MPOs across the nation transition to a performance-based planning and programming process as required under MAP- 21, it will be increasingly important to develop outcome-based goals and objectives that are closely tied to the adopted performance measures. A key principle of a performance-based planning and programming process is that each step in the planning process needs to be clearly connected to the next, starting with the initial goal setting phase.




# 4 MULTIMODAL NEEDS ANALYSIS

This chapter provides an overview of the multimodal analysis of existing and future (no-action scenario) conditions conducted as part of the data driven performance-based planning process. This type of analysis helps to identify locations where deficiencies are likely and what type of mobility strategies and investments in the transportation network could best address the current and future needs of the RGVMAB.

This chapter also details, where applicable, the baseline performance measures used to compare to performance targets.

# MULTIMODAL NEEDS ANALYSIS

A robust data driven analysis of current and expected future needs is a critical component of informed decision making. This performance-based planning analysis is based on the latest available estimates and assumptions for population, land use, travel, employment, congestion, economic activity, and equity in the RGVMAB.

This process includes an analysis of the current and projected transportation demand of persons and goods in the RGVMAB over the period of the MTP using the latest available estimates and forecasts from the RGVMPO 2045 Travel Demand Model. The analysis is multimodal in nature, providing an assessment of existing transportation facilities that function as an integrated metropolitan transportation system, including:

- Major roadways,
- Public transportation facilities,
- Intercity bus facilities,
- Multimodal and intermodal facilities for both passengers and freight,
- Nonmotorized transportation facilities (e.g. pedestrian walkways and bicycle facilities),
- Intermodal connectors, and
- Existing facilities that serve important international, national, and regional transportation functions.

The multimodal needs assessment conducted for the RGVMPO 2045 MTP helps ensure that mobility strategies and investments recommended by the plan address the needs of the RGVMAB. The needs that drive project recommendations were analyzed for existing conditions (2019), and where applicable, for conditions likely to exist in 2045. To understand and identify transportation and mobility needs within the RGVMAB multimodal network, the analysis included the following general categories:

- Equity
- Demographics
- Roadway
- Freight
- Transit
- Active Transportation
- System Safety

This chapter is a high-level summary of the in-depth information contained in a series of nine needs analysis technical memorandums. All technical memorandums can be accessed through the RGVMPO and provide in depth detail on all analysis conducted and their key findings.

Analysis was also conducted, where applicable, to obtain baseline performance measures used to compare to FAST Act performance targets. These findings are summarized in Chapter 9. The following sections detail the tools, data, and resources used to create the multimodal needs analysis chapter.

## Tools & Data Used

Due to the complexity of travel needs and the variety of modal systems available to address them, the project team used various resources and methods to create robust analysis detailing all multimodal aspects of the RGVMAB transportation system. The following sections define the tools and data used for the multimodal need analysis for the RGVMAB.

### Federal Data Sources

To ensure a) a complete understanding of existing conditions on the RGVMAB roadway and freight networks and b) a federally compliant MTP, the project team used FHWA's National Performance Management Research Data Set (NPMRDS) to calculate baseline FAST Act system reliability performance measures for the existing system. These values were aggregated from the NPMRDS and joined to the NPMRDS Texas roadway network to spatially analyze and target areas of concern. The results of this analysis provide the RGVMPO with quantitative values for performance measures for use in the evaluation and prioritization of transportation investments. The mobility measures used in the analysis include:

- Level of Travel Time Reliability (LOTTR)
- Truck Travel Time Reliability Index (TTTRI)
- Percent of person-miles traveled on interstate segments that are reliable
- Percent of person-miles traveled on non-interstate NHS segments that are reliable

The project team also used FHWA's National Bridge Index (NBI) dataset and Highway Performance Monitoring System (HPMS) data to complete the operations and maintenance analysis for the RGVMAB roadway network. This in turn produced baseline federal performance measures for the infrastructure condition goal area.

This data was used alongside the FHWA *Computation Procedure for the Bridge Condition Measures* and the Code of Federal Regulations (23 C.F.R 490.409) to determine the condition of each bridge asset, as well as guidance from the Code of Federal Regulations (23 C.F.R. 490.313) to categorize pavement conditions by International Roughness Index (IRI).

### TxDOT Data Sources

Data sets from TxDOT were used throughout the multimodal needs assessment. TxDOT's Crash Records Information System (CRIS) was the basis for all regional safety analyses and provided baseline federal performance measures for the safety goal area. CRIS covers the most recent five-year period (2015-2019) of data available in support of the requirements set forward in the Safety Performance Management Measures Final Rule (49 CFR part 490). CRIS is a database that contains a collection of records regarding motor vehicle traffic crashes as submitted by law enforcement officers through a standardized crash report. These reports are processed to exclude personal information but include other crash details relevant to analysis, such as crash severity, contributing factors, time of day, location, and roadway condition.

Further, the Texas Statewide Freight Network and Texas Trunk System from TxDOT were used to define and analyze the RGVMAB freight network.

## Transportation Demand Model (TDM)

Using the Lower Rio Grande Valley's (LRGV) Travel Demand Model (TDM) and Traffic Analysis Zones (TAZ) demographic inputs, existing and future population and employment values were developed to inform the needs analysis. Existing demographics are represented by the 2019 milestone year and future demographics by the 2045 forecast year.

Further, a TDM roadway network was generated and used to analyze existing and future roadway network conditions. An existing plus committed (E+C) network was created by coding TIP projects underway or soon to be started to represent the existing roadway network. The E+C network was compared to the 2045 no-build network – a network with no other transportation investments beyond the 2019 E+C network – to highlight deficient areas within the RGVMAB. 2019 E+C values were also compared to the 2045 build scenario to show potential improvements generated by the recommended projects.

The socioeconomic data necessary to run the model was gathered from a mixture of sources. The datasets included public domain data sources, published commercial datasets, stakeholder input via a Delphi Process, table-top GIS analysis, and limited field review of the study area.

## Census Demographic Data

Many demographic characteristics were used to determine the location and characteristics of people in the region. The analysis focused on existing populations and their demographic characteristics. The analysis relied primarily on 2014-2018 American Community Survey (ACS) data. ACS data is based on a sample population measured at the block group level. Employment data is derived from the work-based Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES) for 2017, which is similarly an aggregate dataset based on the census block group geography.

## Destination Data

Data for destinations in the region was collected using the ArcGIS Business Analyst Web Business and Facilities Search Feature. This data is extracted from a comprehensive list of businesses licensed from InfoGroup. The data includes an estimate of total employees and categories for the business locations using North American Industry Classification System (NAICS) codes. The NAICS codes are typically six-digit codes that identify the type of business; however, these codes have been adjusted to 8 digits for this feature set by InfoGroup. The 8-digit codes provide a greater level of detail than the traditional six-digit codes. Business categories were developed from these NAICS codes to provide comparisons for different types of businesses in the RGVMAB. Businesses with no employees were excluded from this analysis. Only a subset of the available business location data (roughly 44%) was complete enough to be categorized for this analysis.

## Geographical Information Systems (GIS)

Throughout the RGVMPO 2045 MTP multimodal needs assessment, GIS analysis was used to visualize data spatially, and accordingly generate key findings for all aspects of the transportation system. This quantitative analysis was paired with qualitative findings from public and stakeholder outreach, as well as plan reviews to create an in depth understanding of system deficiencies and needs currently and over the next 26 years. The primary tools used for analysis were ArcGIS Pro and ArcGIS Online.

## Existing Efforts and Resources

Existing planning resources were also used to inform the multimodal needs analysis. Existing plans spanning all levels of government were reviewed to guide analysis. This effort also included plans currently being conducted (e.g. RGVMPO Congestion Management Plan, Active Transportation Plan, Transit Development Plan). Further information from the plan review can be found in Chapter 2.

*Figure 4-1: McAllen South Broadway Park and Ride*

# ANALYSIS RESULTS

The following sections highlight all multimodal category analyses and their key findings. As previously mentioned, detailed analysis can be found in the RGVMPO 2045 MTP technical memorandums accessible through the RGVMPO.

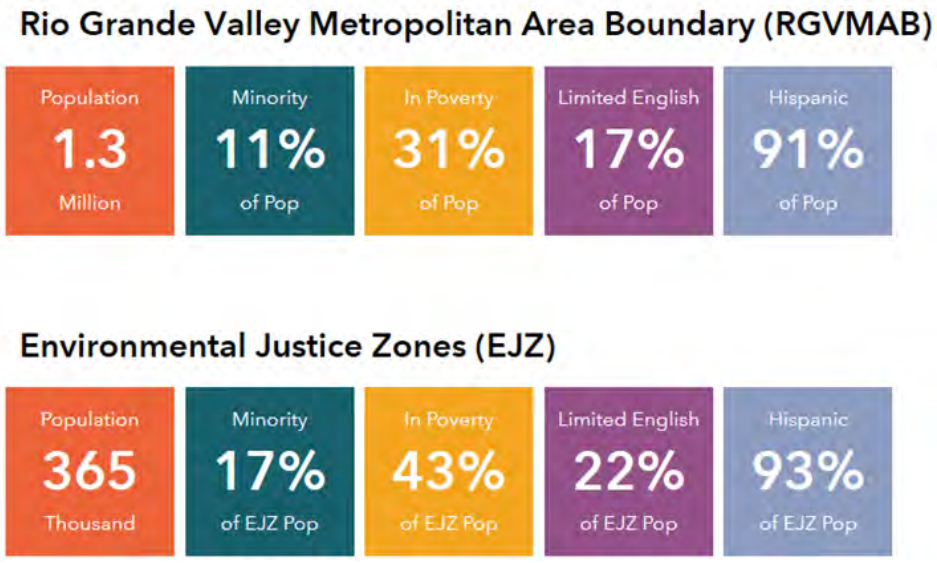
## *Equity*

Equitable implementation of projects and plans takes into consideration historically disenfranchised people to ensure that all people regardless of race, color, national origin, or income are accounted for when planning for a region. This can be achieved analyzing Environmental Justice Zones (EJZs), which are areas that contain a high minority population, high population in poverty, or populations with high limited English proficiency (LEP). These zones are used to evaluate proposed transportation projects for equitable impacts. EJZs were defined as having at least two of the following criteria:

- High Minority Population – Block groups whose percentage of racial minorities is greater than the RGVMAB's total percentage of racial minorities (11%).
- High Population in Poverty – Block groups whose percentage of population in poverty is greater than the RGVMAB's total percentage of population in poverty (31%).
- High LEP Population – The top 10% of block groups with the highest percentage of LEP population.

'High concern' EJZs were also identified. These block groups were identified as high concern due to meeting all three of the above-mentioned criteria. It must be noted that ACS minority data is represented by race subcategories (e.g. White; Black/African-American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; and other Race) that do not include Hispanic, Latino, or Spanish origin ethnicity populations. Accordingly, Hispanic, Latino, or other Spanish origin ethnicities are also included in this section using overlay analysis of EJZs to identify potentially underserved and underrepresented cohorts within the RGVMAB. Results at the RGVMAB and EJZ level are presented in Figure 4-1 below.

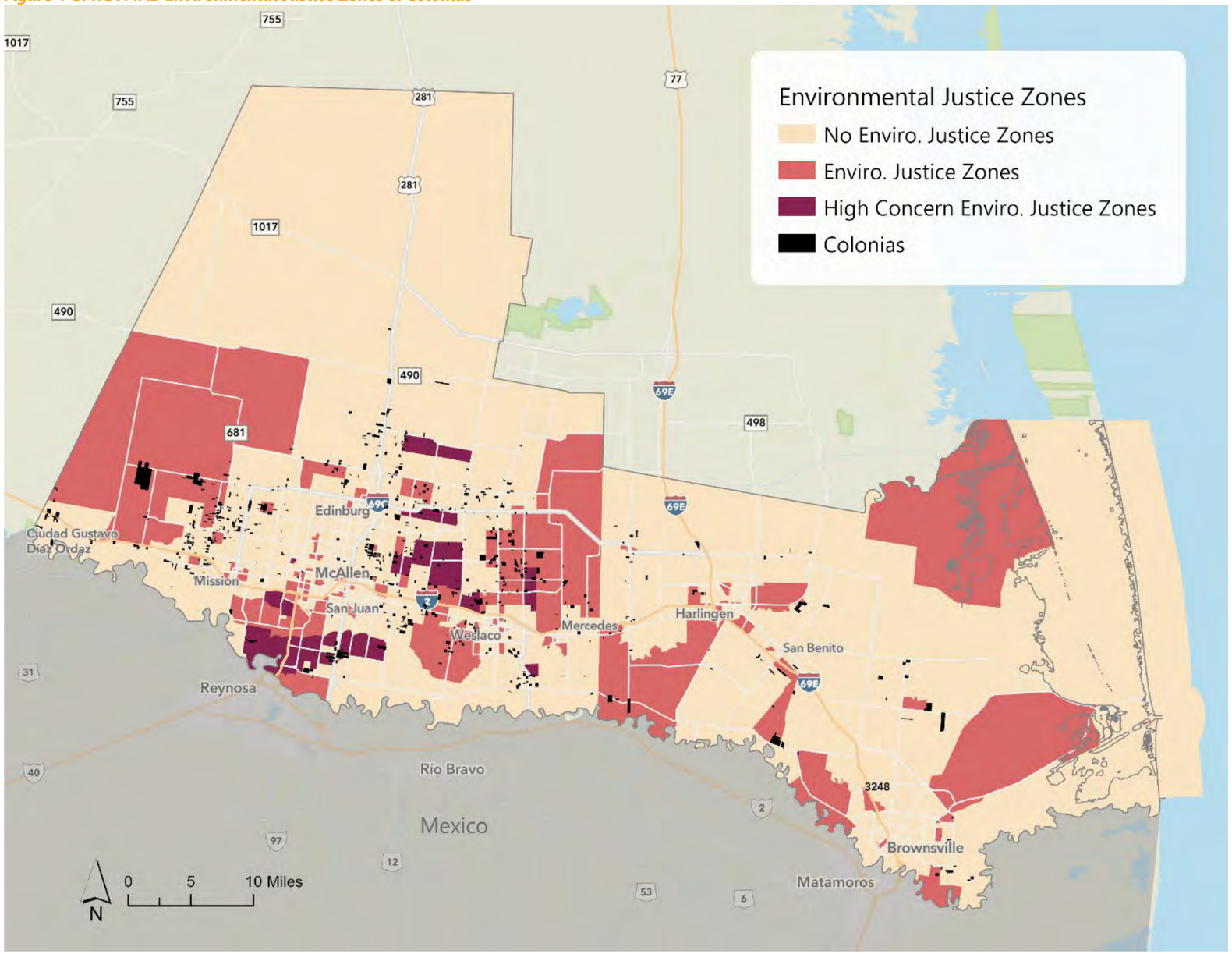
***Figure 4-2: RGVMAB Environmental Justice Results***



Analysis shows 28% of the RGVMAB population (Figure 4-2) falling within an EJZ. Within this vulnerable group we see a consistent trend of higher likelihood of each demographic category being redirected to an EJZ. For instance, 11% of the total population in RGVMAB and 17% of EJZs are considered minority population - this means almost 44% of the total minority population in RGVMAB lives within an EJZ. Similar trends are seen for RGVMAB's impoverished population and LEP population where upwards of 40% of these vulnerable populations end up in a defined EJZ.

Figure 4-2 also displays colonias, which are unincorporated border communities that often lack adequate water and sewer systems, paved roads, and safe, sanitary housing. Colonias flourish in counties along the United States - Mexico border which includes the RGVMAB. Overlaying areas identified as colonias with identified EJZs creates a composite image of areas that should represent a priority when future transportation projects are being taken into consideration.

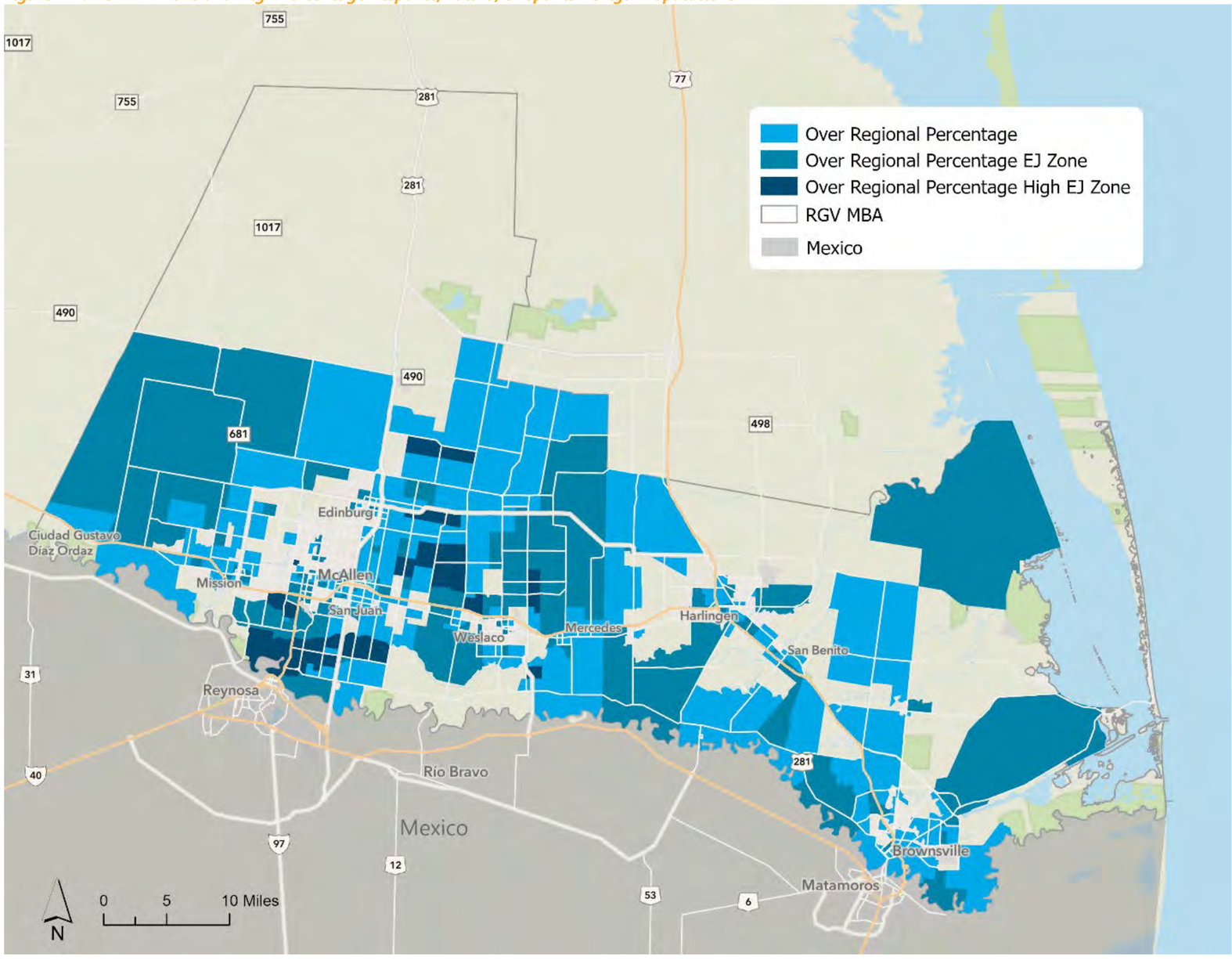
*Figure 4-3: RGVMAB Environmental Justice Zones & Colonias*



Due to the substantial amount of population self-reported as Hispanic, Latino, or of Spanish origin in the RGVMAB, there is a tendency for demographic measures to disguise some of the issues that the EJ analysis tries to pinpoint. While this ethnic group makes up 91% of the RGVMAB - and accordingly does not appear to be a minority population - at a national level, this population group is considered historically disadvantaged and must not be left out of the EJ analysis. Similar methods for defining EJ zones were used to find block groups with Hispanic, Latino, or Spanish origin populations greater than the regional average.

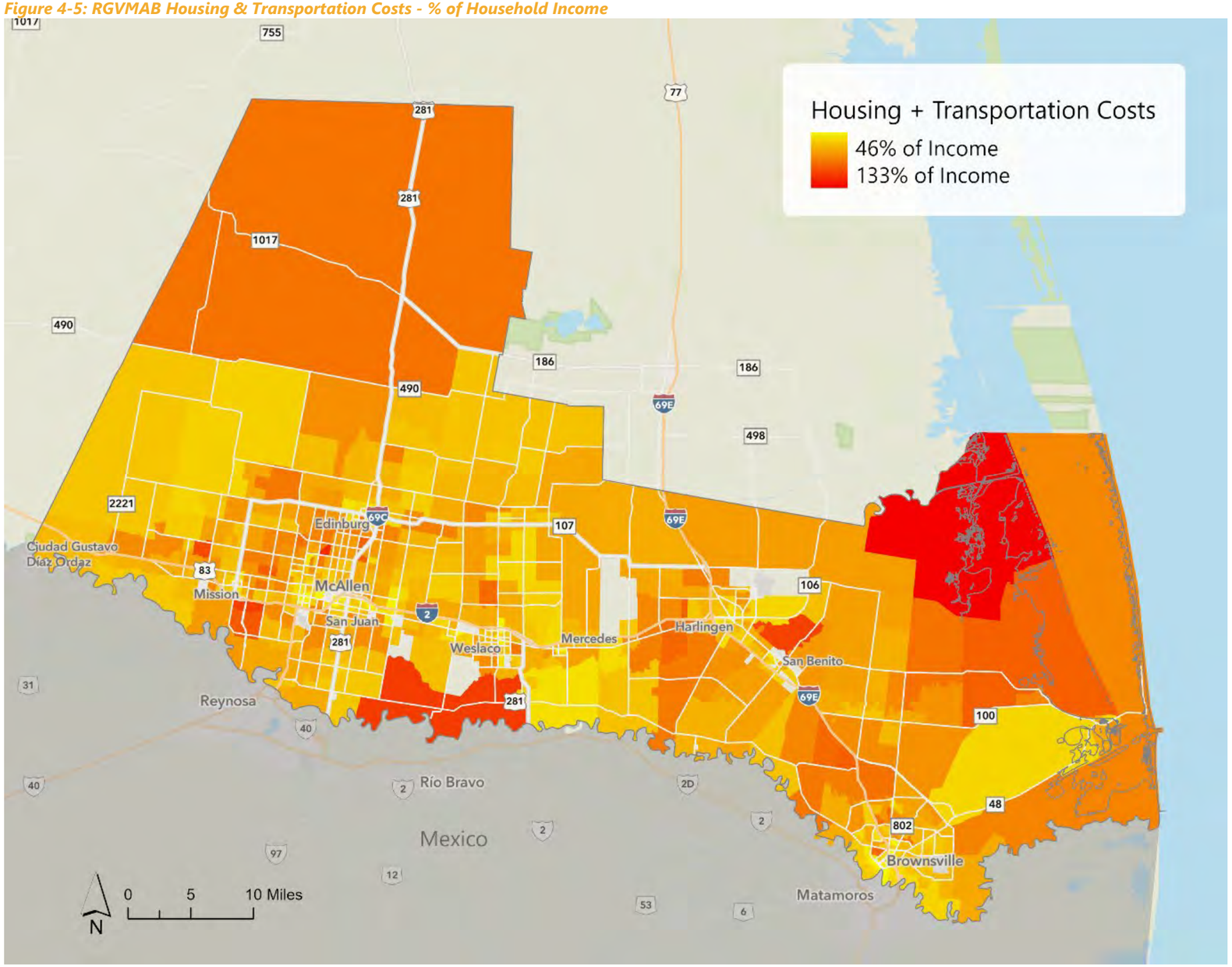
Figure 4-3 displays above average Hispanic/Latino/Spanish origin block groups overlaid with EJZs and high concern EJ zones. Colors represented by darker shades of blue indicate block groups designated as EJZs/high concern EJZs. This overlay analysis further highlights overlap in historically disadvantaged areas within the RGVMAB which can inform decision making necessary later in the planning process.

*Figure 4-4: RGVMAB EJZs and High Percentage Hispanic, Latino, or Spanish Origin Populations*



Further, 98% of block groups within the RGVMAB are considered unaffordable when analyzing the Housing and Transportation (H+T) Affordability Index. The index shows what percentage of a household's income is spent on housing and transportation combined, with the unaffordable threshold being 45% of income (Figure 4-4).

*Figure 4-5: RGVMAB Housing & Transportation Costs - % of Household Income*



# Demographics

When planning for the next 25 years, it is important to understand the population and employment trends within the RGVMAB as these factors greatly impact the transportation network. Demographic analysis was conducted using RGVMPO TDM data to compare the current estimated population and employment in 2019 to the future projections for population and employment in 2045. This analysis provides important insights into where population and employment are concentrated today and where changes are expected to occur in the future. It also helps the RGVMPO prioritize projects to ensure the transportation system is meeting the needs of the community.

## Regional Growth

It is critical to understand and visualize where growth is occurring within the region to guide the MTP planning process. The RGVMAB is a dynamic, growing area in terms of both population and employment, with projected growth presented in Figure 4-5.

*Figure 4-6: Projected RGVMAB Population & Employment Growth*

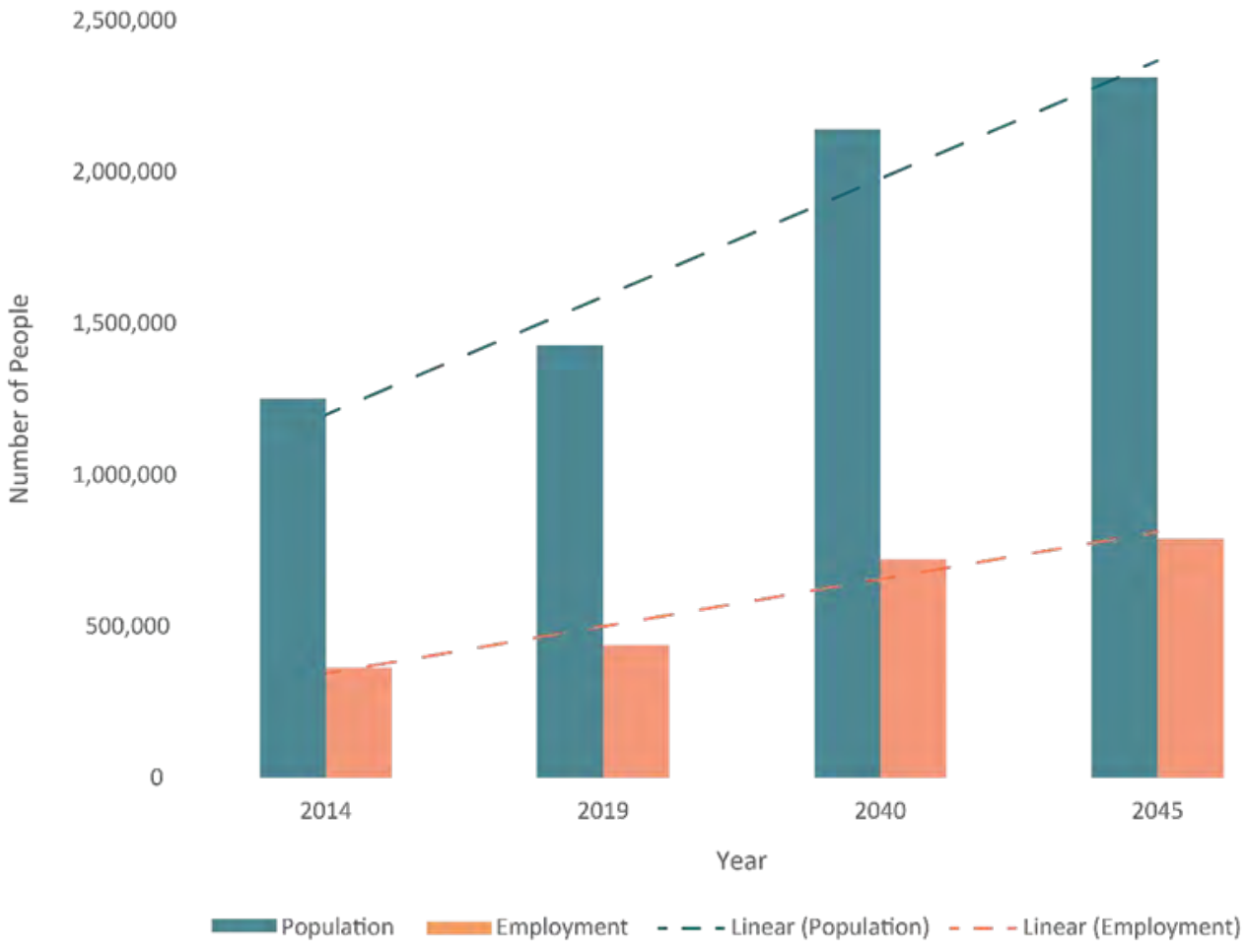


Figure 4-6 presents population growth by density (per acre) at the block group level over the 26-year forecast horizon. High growth is projected near McAllen/Pharr along the I-2 corridor, in Harlingen east of the I-69E corridor, and throughout the Brownsville area.

*Figure 4-7: Projected RGVMAB Population Growth (2019 - 2045)*

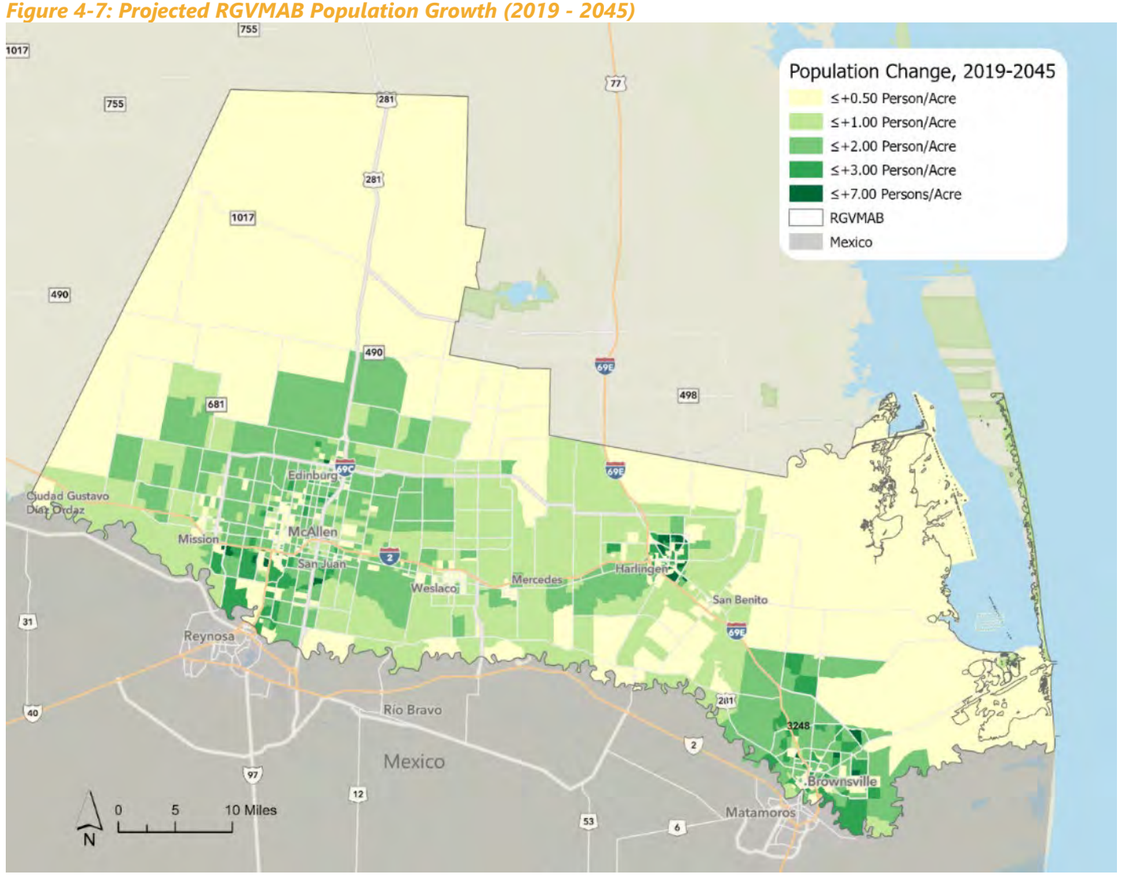
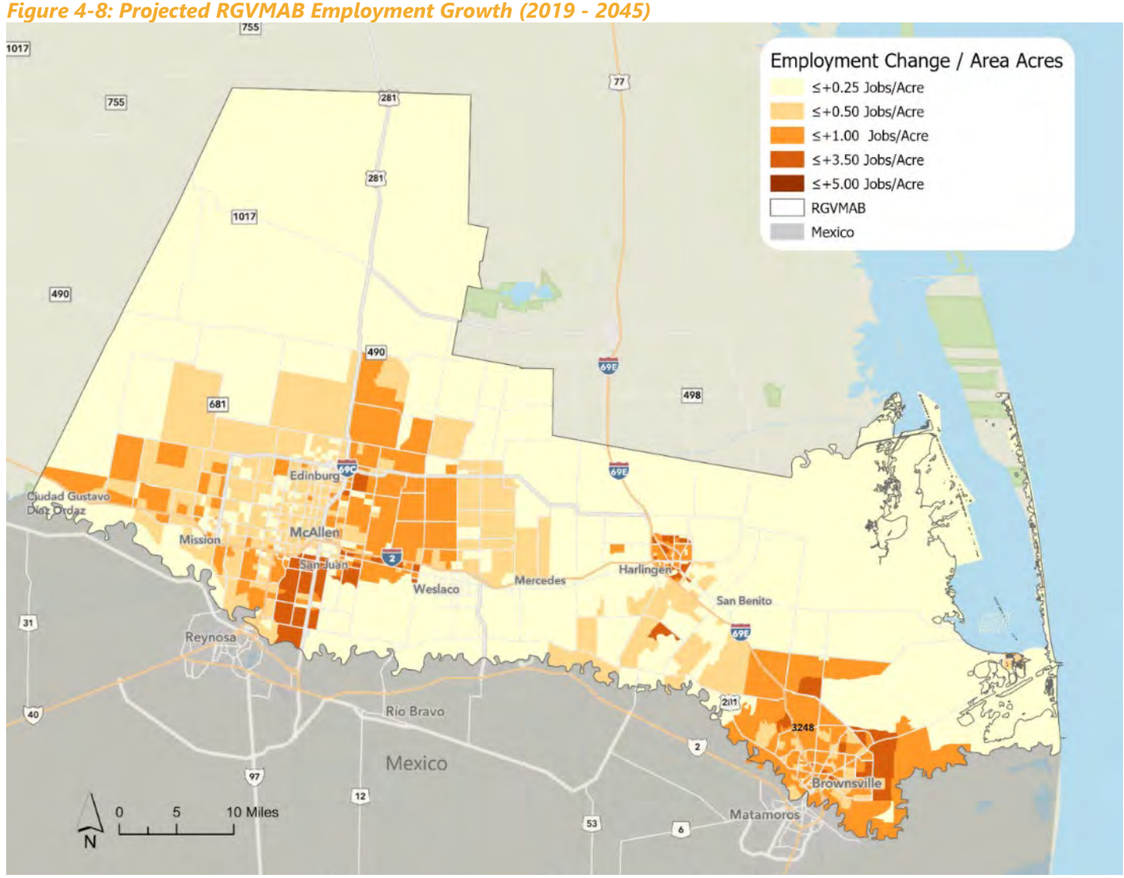



Figure 4-7 presents employment growth by density (per acre) at the block group level over the same forecast horizon. Areas projected to experience high employment growth cluster around the I-69C/US 281 corridor from the United States – Mexico border north beyond Edinburg, throughout the Harlingen municipality, and within and surrounding the Brownsville area.

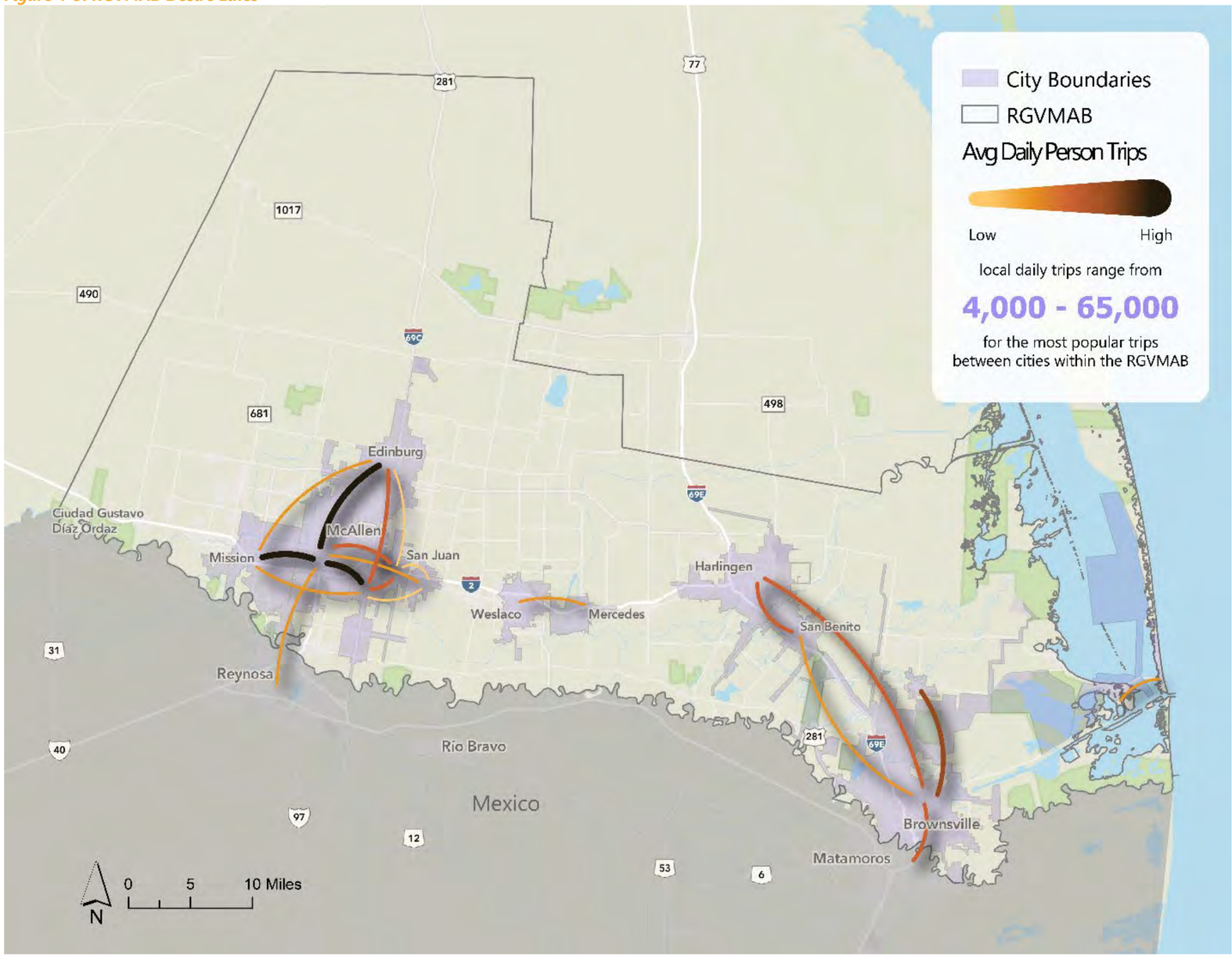
*Figure 4-8: Projected RGVMAB Employment Growth (2019 - 2045)*



## Travel Patterns

The most common transportation mode in the RGVMAB is the automobile. Understanding where most of the population in the region is traveling reveals the most heavily used travel patterns or 'desire lines' in the region. RGVMPO TDM outputs were used to better understand the movement of people in the RGVMAB within municipal boundaries (Figure 4-8). Accordingly, results display the most traveled city pairs to be in Hidalgo County between Mission, McAllen, Pharr, and Edinburg (roughly 65,000 annual trips). This analysis works in tandem with population and employment growth projections in the previous sections to understand where transportation improvements are most needed within the RGVMAB.

*Figure 4-9: RGVMAB Desire Lines*



## Roadway

The roadway analysis provides policy makers and the public with a better understanding of how the roadway network will be impacted by changes in the region over time if no improvements are made to the existing transportation system. The project team looked at three aspects of roadway performance for the analysis, listed below:

- Existing roadway performance using FHWA's NPMRDS
- Transportation system performance over time using the RGVMPO TDM to report anticipated trends in roadway performance over the MTP planning horizon
- Capacity deficiencies analysis using the RGVMPO TDM

This approach provided a holistic understanding of the state of the RGVMAB's roadway infrastructure, as well as where improvements should be focused as the RGVMPO moves forward with the MTP planning process. Key findings from the RGVMPO 2045 MTP roadway analysis include:

- The existing interstate network meets the system reliability target of 90%; the non-interstate NHS network does not meet the system reliability target
- The percentage of non-SOV travel on the NHS network suggests SOV to be the RGVMAB's mode of choice
- TDM outputs show large increases in all congestion measures at the regional and per capita level between 2019 and the 2045 No-Build scenario

The following sections detail findings from analyses based on FHWA's NPMRDS and the RGVMPO TDM to create a robust understanding of existing and future roadway conditions.

## Congestion & Delay Analysis

LOTTR is a measure of "the consistency or dependability of travel times from day to day or across different times of day" for a given roadway. While congestion typically focuses on the average roadway conditions in terms of delay, travel time reliability indicates the level to which traffic or roadway conditions can be anticipated for travelers to plan around expected delays. Reliability of the roadway network is important because it allows travelers to reach their destinations at their planned time. LOTTR is a federally mandated performance measure. RGVMPO LOTTR measures can be found in Chapter 9.

Per the 2019 NPMRDS, the current system reports 93.7% percent of person-miles traveled on interstate segments that are reliable. The current system further reports 88.4% percent of person-miles traveled on non-interstate National Highway System (NHS) segments that are reliable. Figure 4-9 displays segments at the RGVMAB level for Interstate and non-interstate NHS facilities with an LOTTR greater than 1.5. This value represents the threshold for a roadway segment concerning its designation as 'reliably congested'. Those segments with values greater than 1.5 are considered unreliably congested and should be prioritized when considering transportation infrastructure improvements. Accordingly, contiguous segments with flagged LOTTR values exist on I-2, I-69C, and I-69E. Non-interstate NHS segments are dispersed throughout the region

To bolster the NPMRDS national performance measure information on existing conditions, separate congestion measures from the RGVMPO TDM outputs were analyzed for both 2019 and 2045 and compared to no-build outputs to highlight potential future issues in terms of congestion and delay. Outputs were calculated to represent performance trends at a system and per capita level. The following measures were used to gain this detailed understanding:

- Vehicle Miles Traveled (VMT) - The amount of roadway miles traveled by vehicles within a specified segment for AM and PM peak period travel times
- Vehicle Hours Traveled (VHT) - The number of hours traveled by vehicles
- Vehicle Hours of Delay - Additional hours spent in traffic due to congestion on the roadway network
- Travel Time Index (TTI) - The ratio of travel time during peak travel periods (congested time) required to make the same trip at free-flow speeds

Table 4-1 shows the existing and 2045 No-Build transportation systems to be inefficient based on TDM outputs.

*Figure 4-10: RGVMAB Interstate & Non-Interstate NHS Segments - 2019 LOTTR > 1.5*

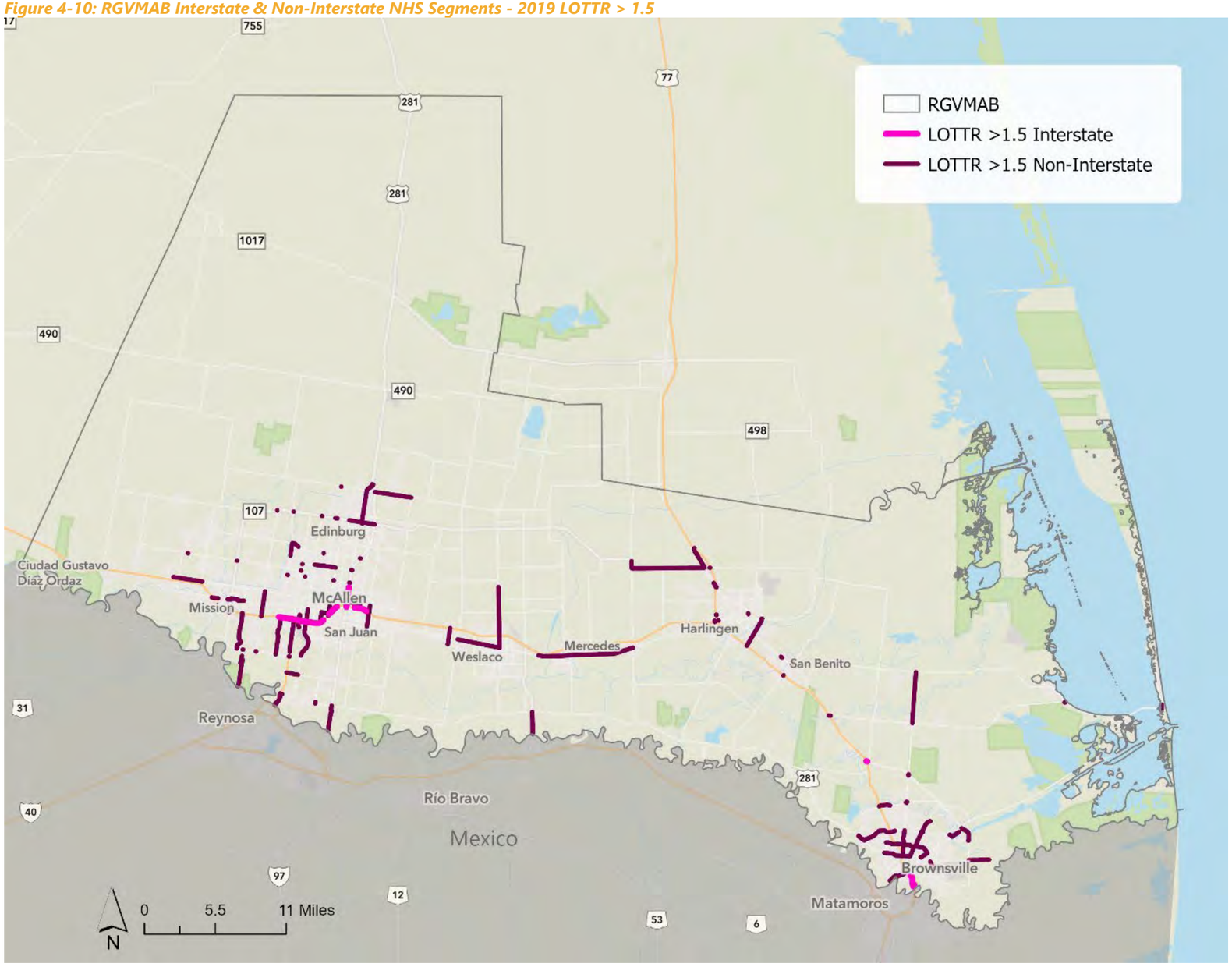


*Table 4-1: RGVMAB Congestion Trends*

| Measure | 2019 – Existing Conditions* | | | 2045 – No-Build | | | % Change for Totals |
|---|---|---|---|---|---|---|---|
| | Interstate & Toll | Arterials | Total | Interstate & Toll | Arterials | Total | |
| Daily VMT** | 1,253 | 3,659 | 4,912 | 2,030 | 6,501 | 8,531 | 74% |
| per person | | | 3.44 | | | 3.69 | 7% |
| Daily VHT | 28,422 | 124,215 | 152,637 | 70,253 | 763,769 | 834,022 | 446% |
| per person | | | 0.11 | | | 0.36 | 237% |
| Annual Wkday Vehicle Hrs of Delay** | 1,019 | 9,157 | 10,176 | 7,998 | 196,716 | 204,714 | 1912% |
| per person | | | 7.13 | | | 88.53 | 1142% |
| Weighted Avg. TTI | 1.17 | 1.61 | 1.39 | 1.84 | 6.79 | 4.32 | 211% |

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

The TDM also provides capacity attributes, which create the base for the RGVMAB roadway system deficiencies analysis of anticipated 2045 transportation system performance. Volume to Capacity (V/C) Ratio was used to generate Level of Service (LOS) values and is defined below.

- V/C Ratio – The ratio of traffic flow to capacity (maximum allowable traffic flow) on a roadway segment, where a ratio of 1 represents a segment at full capacity and higher values indicate more severe congestion

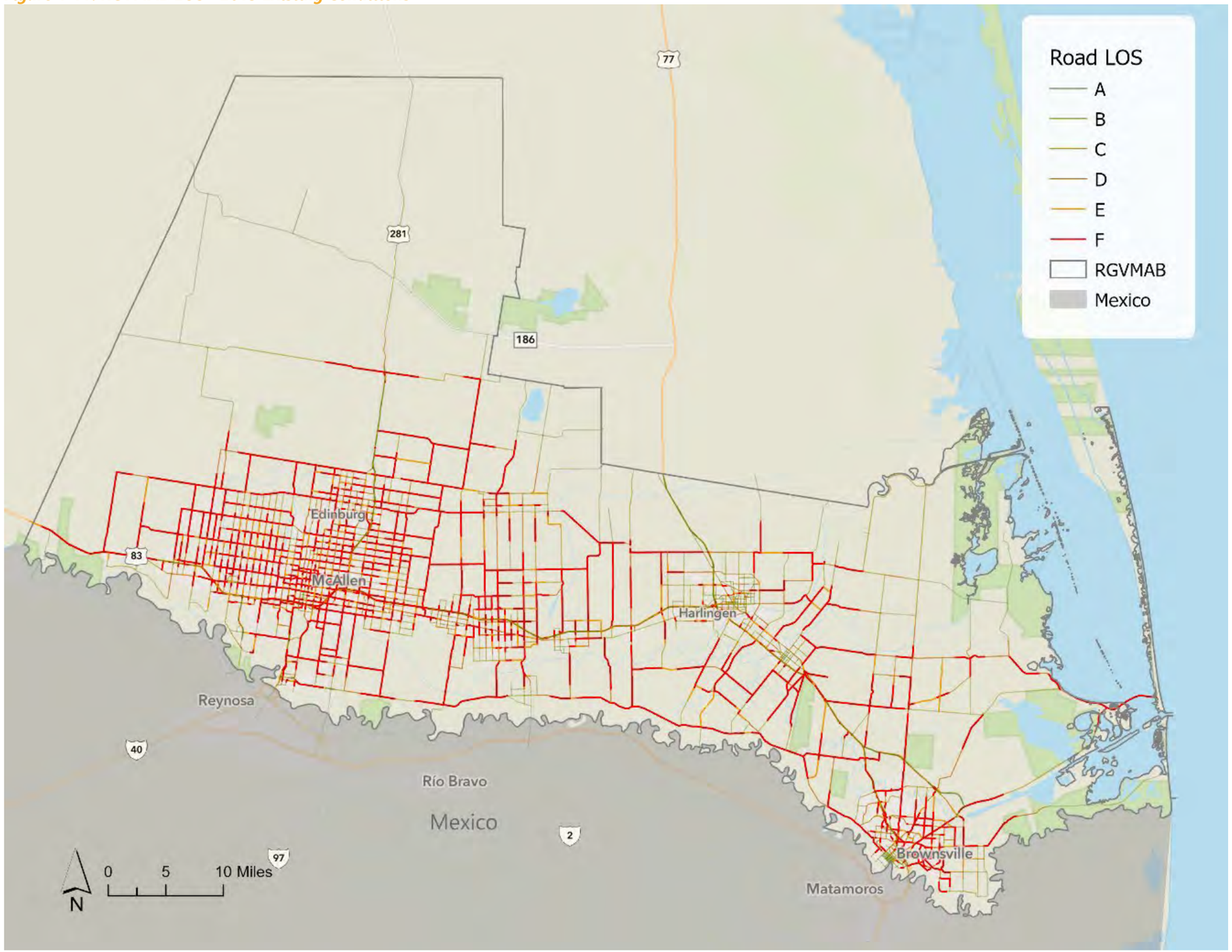
Table 4-2 displays RGVMAB capacity measures. The 2045 average V/C ratio suggests that the roadway network will be roughly 26% above capacity during peak travel periods, increasing by 63% from 2019. The 2045 No-Build average V/C ratio falls within LOS F, which indicates severe congestion as the status quo for the RGVMAB if no action is taken.

*Table 4-2: RGVMAB Capacity Measures*

| Measure | 2019 – Existing Conditions* | | | 2045 – No Build | | | |
|---|---|---|---|---|---|---|---|
| | Interstate & Toll | Arterials | Total | Interstate & Toll | Arterials | Total | % Change for Totals |
| Avg. V/C Ratio | 0.78 | 0.76 | 0.77 | 1.27 | 1.25 | 1.26 | 63% |
| % of Roadway Miles with Heavy Congestion | - | - | 43% | - | - | 80% | 85% |

Figure 4-10 displays RGVMAB roadway network LOS values for 2019 to further illustrate potential roadway system deficiencies within the RGVMAB. LOS is an indicator of congestion on a scale from A to F, with A representing a high-quality LOS under which the traveler experiences free-flow traffic conditions and F represents a failure in service delivery under which the traveler experiences severe congestion with major delays. TDM outputs forecast severe LOS conditions not only within major and minor municipalities, but similar conditions expanding throughout peripheral areas and rural highways.

*Figure 4-11: RGVMAB LOS - 2019 Existing Conditions*



## Operations & Maintenance

In addition to being federally required, creating an inventory of the region's bridge and roadway conditions helps to promote the safe and efficient movement of people and goods throughout the RGVMAB. This inventory allows regional and local decision-makers to understand which facilities are in a state of good repair, which are in fair condition and require oversight, and which are in poor condition and must be prioritized for improvement.

### BRIDGE CONDITIONS

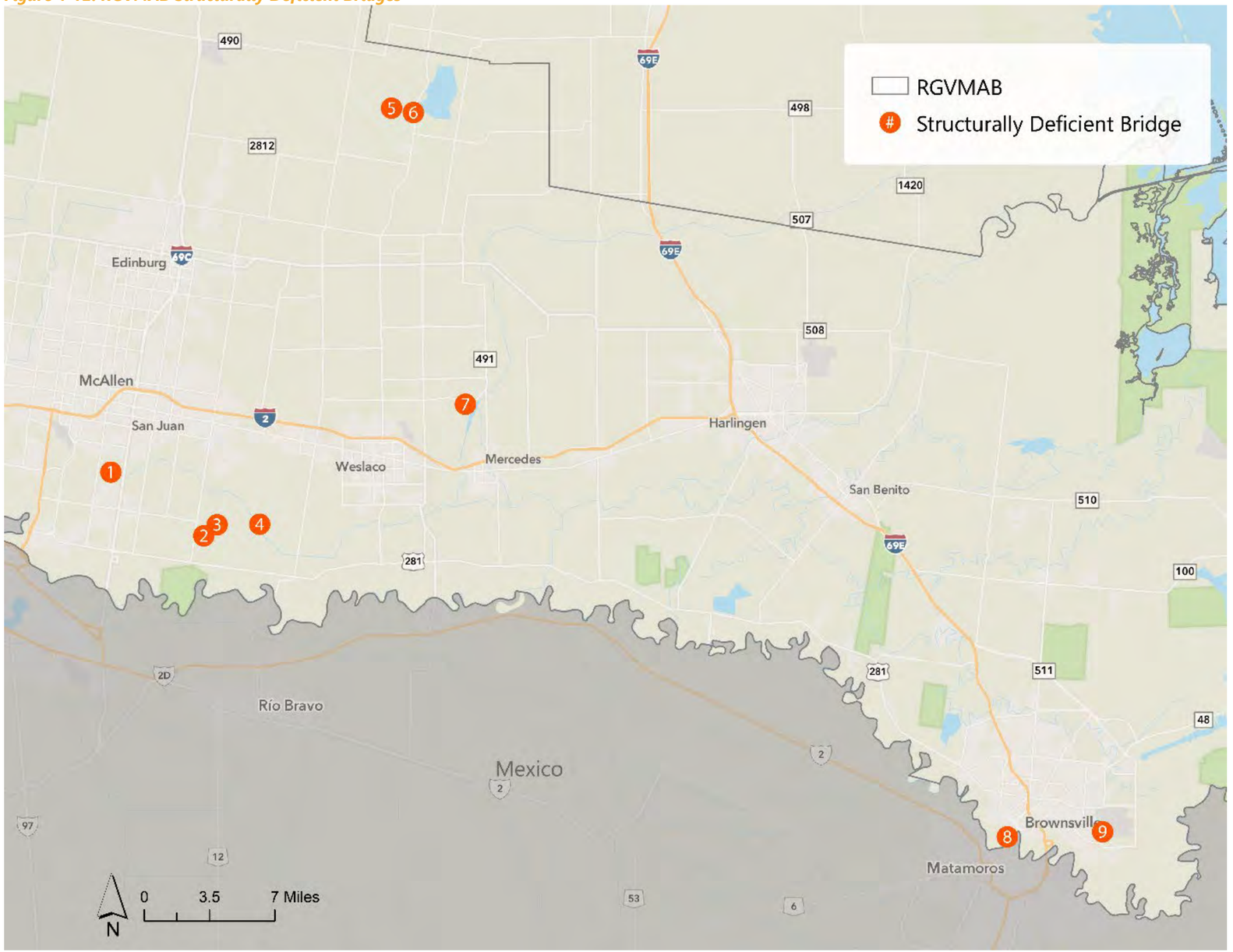
The bridge conditions analysis was based on the most up-to-date version of the FHWA's NBI. The NBI included location and condition information for 765 bridges within the RGVMAB as of April 2020. It must be noted that bridges identified were limited to the NBI dataset, and more deficient bridges likely exist that are off system and/or locally owned. The project team followed guidance provided in FHWA's Computation Procedure for the Bridge Condition Measures and the Code of Federal Regulations (23 C.F.R 490.409) to determine the condition of each bridge asset.

Out of the 765 bridges considered for the analysis, only 9 were identified as being structurally deficient. Table 4-3 shows the percentage of bridge deck area by condition for bridges in the RGVMAB, as well as those located on the NHS in the study area. Figure 4-11 displays structurally deficient bridges at the RGVMAB level, showing poor bridge infrastructure to largely occur in rural and/or local areas of the roadway network.

*Table 4-3: RGVMAB Bridge Conditions*

| | Total | Interstate and Non/Interstate NHS |
|---|---|---|
| % in Good Condition | 59% | 51% |
| % in Poor Condition | 0.13% | 0% |

*Figure 4-12: RGVMAB Structurally Deficient Bridges*



## ROADWAY CONDITIONS

Roadway pavement condition analysis for the RGVMPO 2045 MTP was based on 2018 data from FHWA's Highway Performance Monitoring System (HPMS). HPMS data provided a condition rating based on the International Roughness Index (IRI) for roadways in the RGVMAB. This includes roadway segments found on the National Highway System (NHS), as well as other roadways critical to the movement of people and goods in the region.

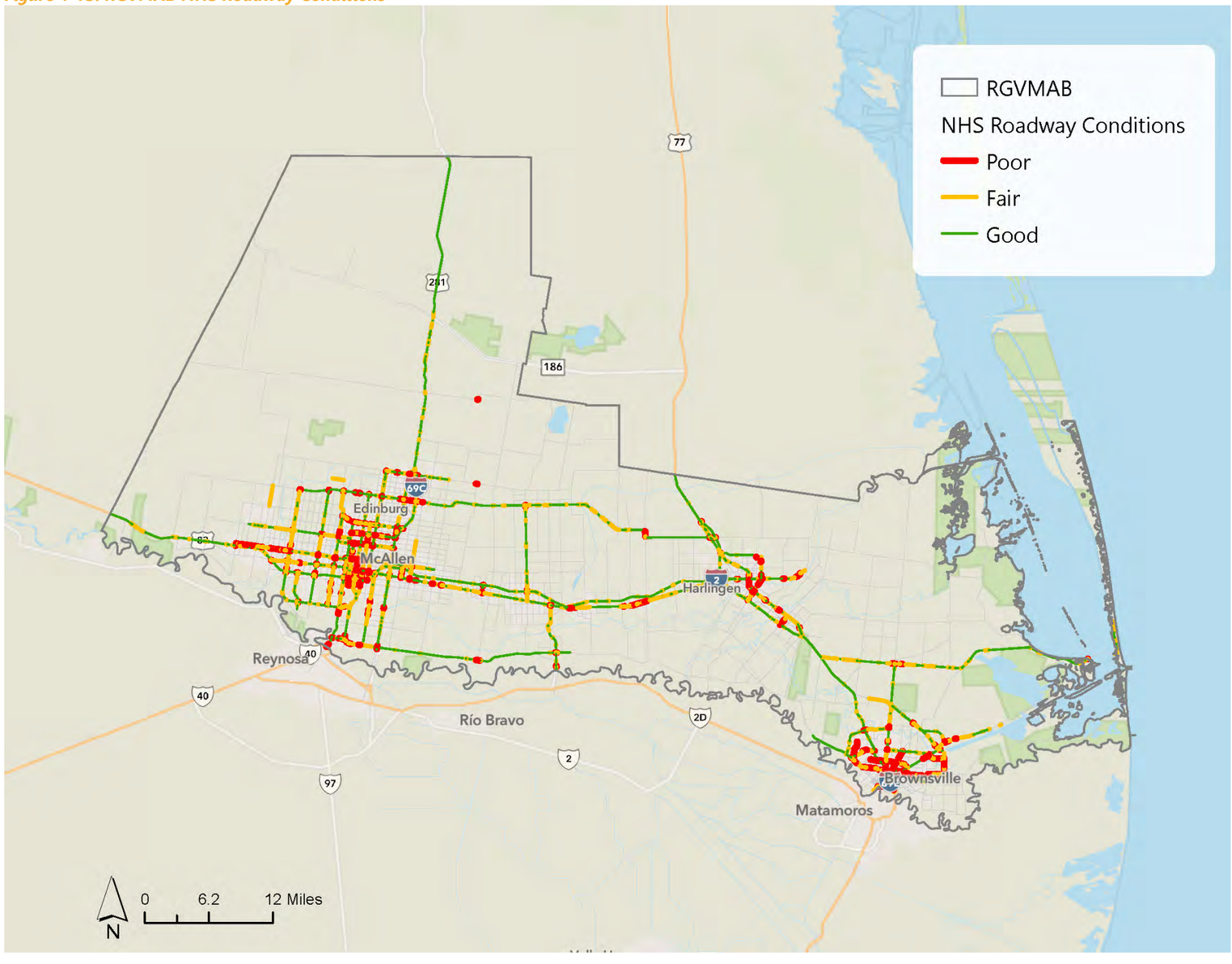
HPMS data was then totaled to represent the number of lane miles for each of the three pavement condition categories, allowing the project team to calculate the percentage of interstate (NHS) and non-interstate NHS lane miles and percentage of lane miles by condition. Table 4-4 presents the pavement condition results which coincide with the national performance measures identified by the FHWA using values derived from representative roadway segments reported in the HPMS.

*Table 4-4: RGVMAB NHS Roadway Conditions*

| Condition | Total Lane Miles | | | % of Total Lane Miles | | |
|---|---|---|---|---|---|---|
| | Inter-state | Non-Interstate NHS (with condition scores) | Total NHS | Inter-state | Non-Interstate NHS (with condition scores) | Total NHS |
| Poor | 1 | 42 | 43 | 1% | 9% | 8% |
| Fair | 16 | 152 | 168 | 15% | 34% | 30% |
| Good | 86 | 256 | 342 | 84% | 57% | 62% |
| Total | 102 | 451 | 552 | 100% | 100% | 100% |

Figure 4-12 displays roadway pavement conditions for the NHS (both Interstate and Non-Interstate) at the RGVMAB level, showing the majority of major interstate and highway infrastructure to be in a state of good repair.

*Figure 4-13: RGVMAB NHS Roadway Conditions*



## Freight

The RGVMAB is a multimodal freight and international trade hub due to its location on the United States – Mexico border and the Gulf of Mexico. This creates a unique need for freight connectivity in the region. The RGVMPO multimodal freight network serves critical connections throughout the RGVMAB, state of Texas, United States, and beyond through an intricate network of freight facilities. This includes major interstate and highway infrastructure, railroads, deep water and inland ports, and airports, all connected to efficiently move goods throughout the region and beyond. Key takeaways from the RGVMPO 2045 MTP freight analysis are listed as follows:

- NPMRDS TTTR analysis displays several areas are experiencing unreliable travel times, which may impact on-time delivery of freight and cause the deviation of freight traffic onto surrounding infrastructure
- The TDM forecasts suggest that a majority of the freight network is likely experience severe peak hour LOS conditions by 2045
- Due to the many intermodal facilities and geographical location of the RGVMAB, the region contains many important freight generators with transportation connectivity needs
- The RGVMAB contains several border crossing facilities, four of which allow commercial/freight truck traffic. These facilities have experienced increasing northbound crossings over the last decade

***Figure 4-14: RGVMAB Border Crossing 2008 to 2018***

## Assets

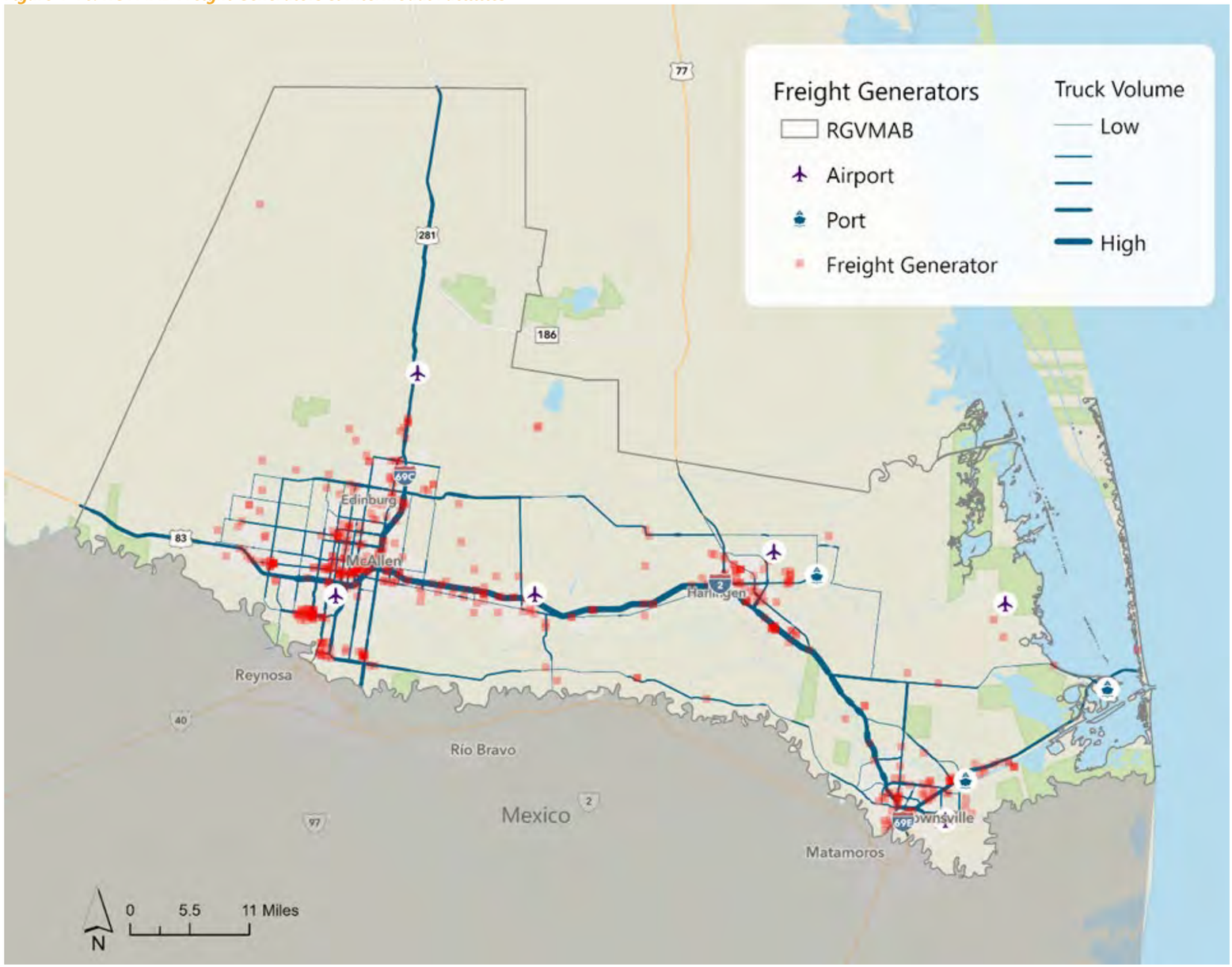
The Freight Roadway Network was defined based on a combination of sources that identify major roadways in the region that support freight truck traffic. Identified roadways include the Interstate Highway System, the NHS, the Texas Statewide Freight Network, and the Texas Trunk System, which defines rural/off-system roadways capable of handling freight. Due to the high volume of freight traveling within and through the RGVMAB, it must be noted that not all roads experiencing significant freight travel were included in the defined RGVMAB freight network. The freight network mainly includes roads more local and/or rural in nature that may currently serve as through routes or handle freight spillover from dedicated freight routes.

Figure 4-14 shows the designated freight network with associated 2019 truck volumes within the RGVMAB.

*Figure 4-15: RGVMAB Freight Network & Truck Flow - 2019 Existing Conditions*

Figure 4-15 identifies the locations of freight generators and intermodal facilities in the RGVMAB in relation to the freight network. Freight generators are represented by concentrations of employment in the following industries: natural resources extraction, utilities, constructions, manufacturing, wholesale trade, and transportation/warehousing jobs. Generators tend to cluster near intermodal facilities. Intermodal facilities represent break of bulk points where cargo changes freight mode (i.e. airports and ports). These generators contribute significantly to truck traffic; this includes the Port of Harlingen and Port of Brownsville which are considered nationally significant ports in reference to goods movement.

*Figure 4-16: RGVMAB Freight Generators & Intermodal Facilities*



The RGVMAB's inland and border location creates opportunity for the region, because the area has become a crossover station for both international and domestic rail freight traffic – specifically east-west traffic in the United States (Figure 4-16). The RGVMAB contains roughly 535 miles of railroad facility, 8 miles of rail bridges, and 6 railyards. Both the Union Pacific Railroad (UP) and BNSF Railway (BNSF) connect with the Ferrocarril Mexicano Railroad (FXE) in Ciudad Juarez and Chihuahua, Mexico, producing 11% of annual rail freight border crossings in Texas.

While the RGVMAB's rail facilities have a substantial impact on the generation of freight in the region, the existing infrastructure also creates externalities due to a series of at-grade crossings with freight network roadways. Such crossings create potential delays which may impact roadway congestion and safety.

*Figure 4-17: RGVMAB Railroad Assets*

## Conditions & Performance

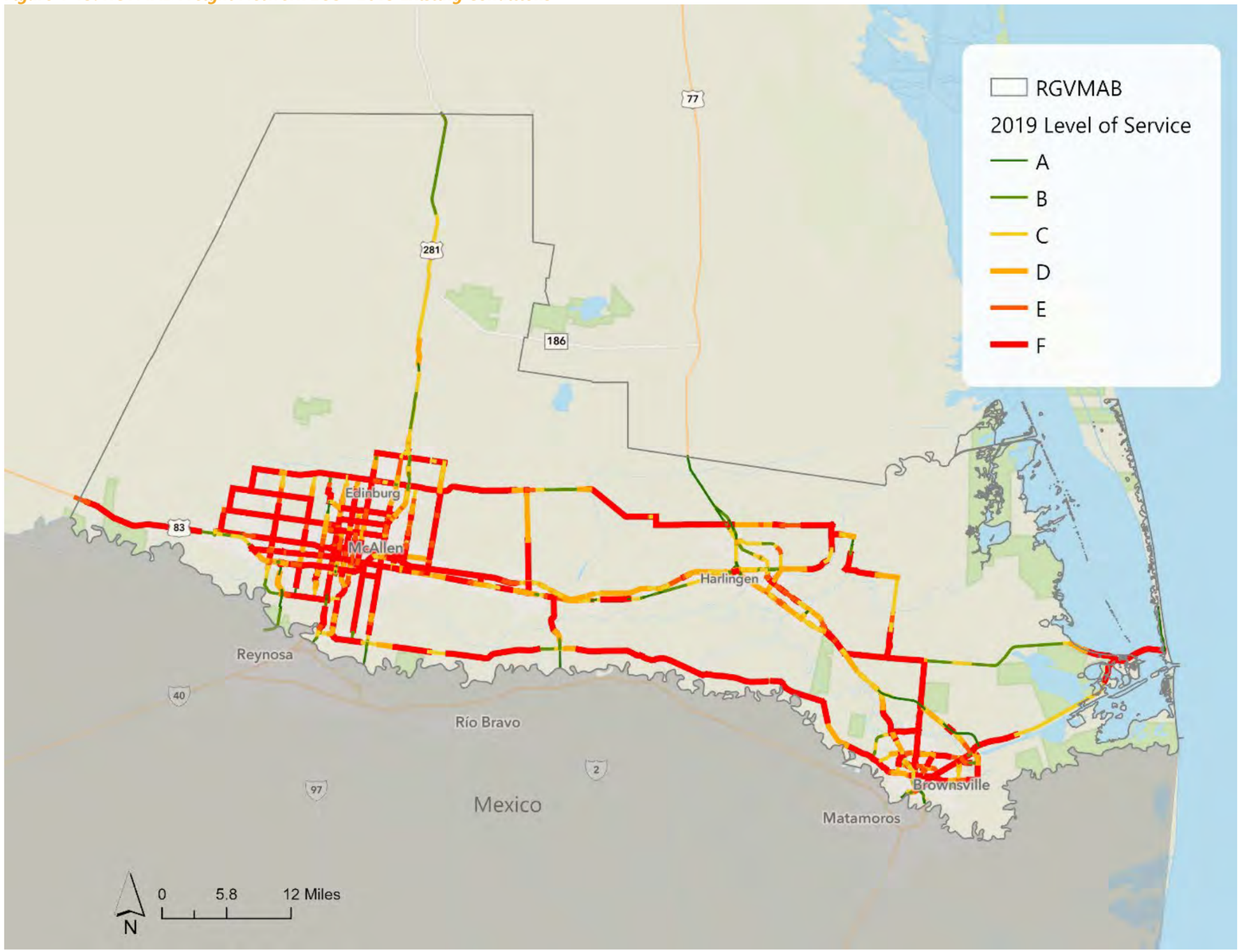
Trucks carry more freight tonnage than any other single mode (rail, water, and air) operating in the Texas multimodal freight transport system. The roadway network is critical to the movement of freight within, into, and out of the RGVMAB. It is critical that the RGVMPO's roadways provide safe, efficient, reliable routes for the movement of goods.

TTTRI is an indicator of unexpected delay or the predictability of congestion specific to freight. TTTRI is an important measure to consider for freight analysis as many businesses rely on predictable, just-in-time freight deliveries as part of their operations. FHWA provides data resources for reporting TTTRI values specifically for interstate segments. Figure 4-17 presents all interstate segments in the RGVMAB with TTTRI score that indicates that travel times on the segment are unreliable.

*Figure 4-18: RGVMAB 2019 Interstate Segments; TTTRI greater than 1.5*

Figure 4-18 presents 2019 peak period LOS for the RGVMAB freight network and displays high levels of congestion along major freight corridors throughout the region. Like the roadway analysis, TDM outputs suggest severe existing congestion occurring along the RGVMAB freight network, with LOS projected to worsen by the 2045 no-build period. Not only is congestion inconvenient to freight traffic, but it also comes with a cost. With the e-commerce boom in full swing, the movement of goods is at a higher demand than ever, and when goods do not arrive on time there are inherent costs due to congestion.

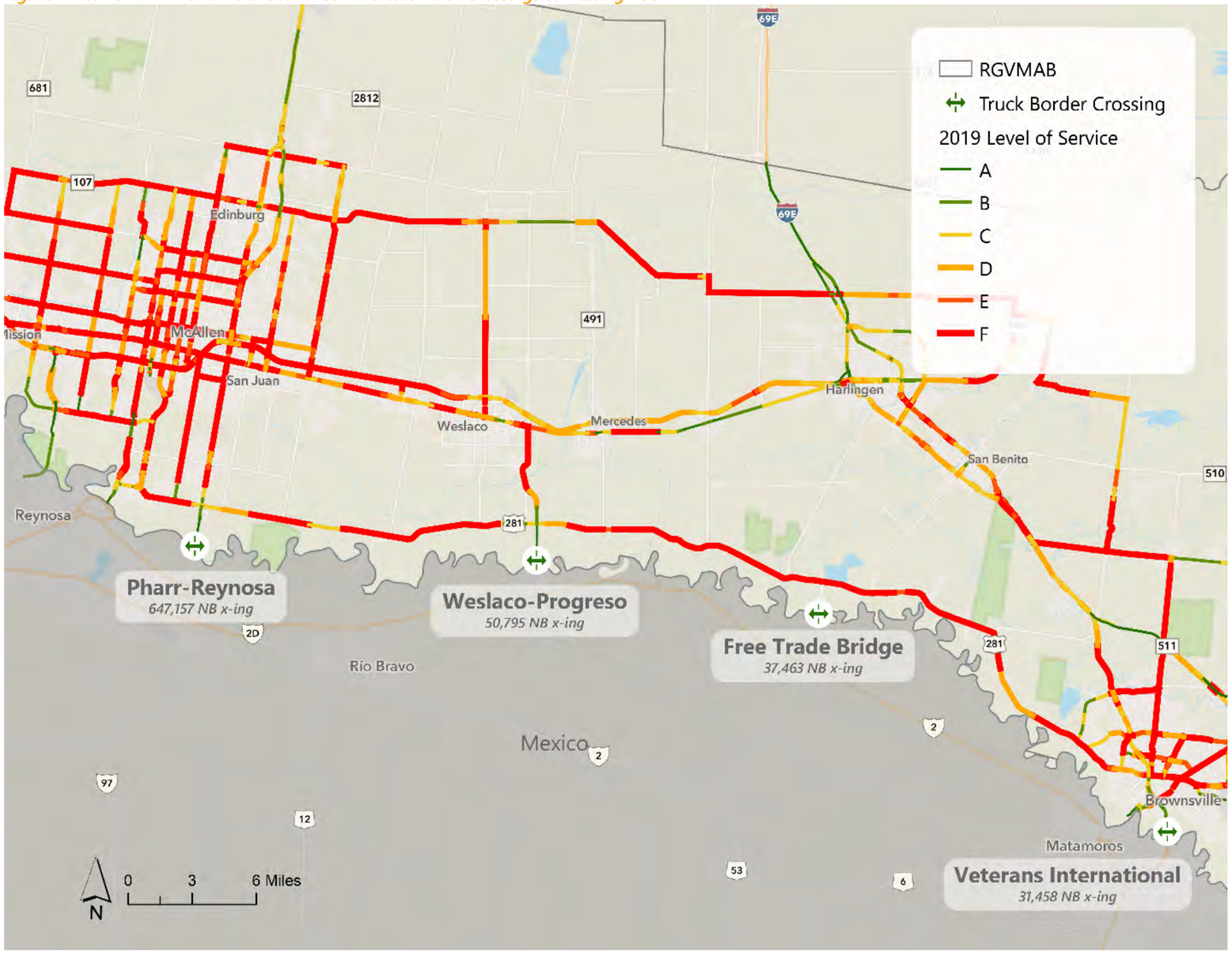
*Figure 4-19: RGVMAB Freight Network LOS - 2019 Existing Conditions*



The RGVMAB contains 11 border crossings (including roadway and railway infrastructure) that facilitate the movement of goods between the region and Mexico. Accordingly, it is important to understand current conditions of the RGVMAB's border crossing facilities as they heavily influence truck volumes in the region. Out of the 11 total RGVMAB border crossings, four allow commercial truck traffic: Pharr-Reynosa, Weslaco-Progreso, Free Trade Bridge, and Veterans International. All 4 facilities have seen an increase in truck volume since 2008, with Pharr-Reynosa (36%) outpacing the volume change seen throughout the Texas-Mexico border region, per the TxDOT-TPP Texas-Mexico International Bridges and Border Crossings Study.

Figure 4-19 presents the four border crossing facilities which contain commercial truck traffic, displaying each facility's 2018 northbound crossings and the RGVMAB freight network's existing LOS. While immediate border connections show relatively low congestion, surrounding roadway segments display high peak hour strain (LOS E and F).

*Figure 4-20: RGVMAB 2018 Northbound Commercial Truck Crossings & Existing LOS*



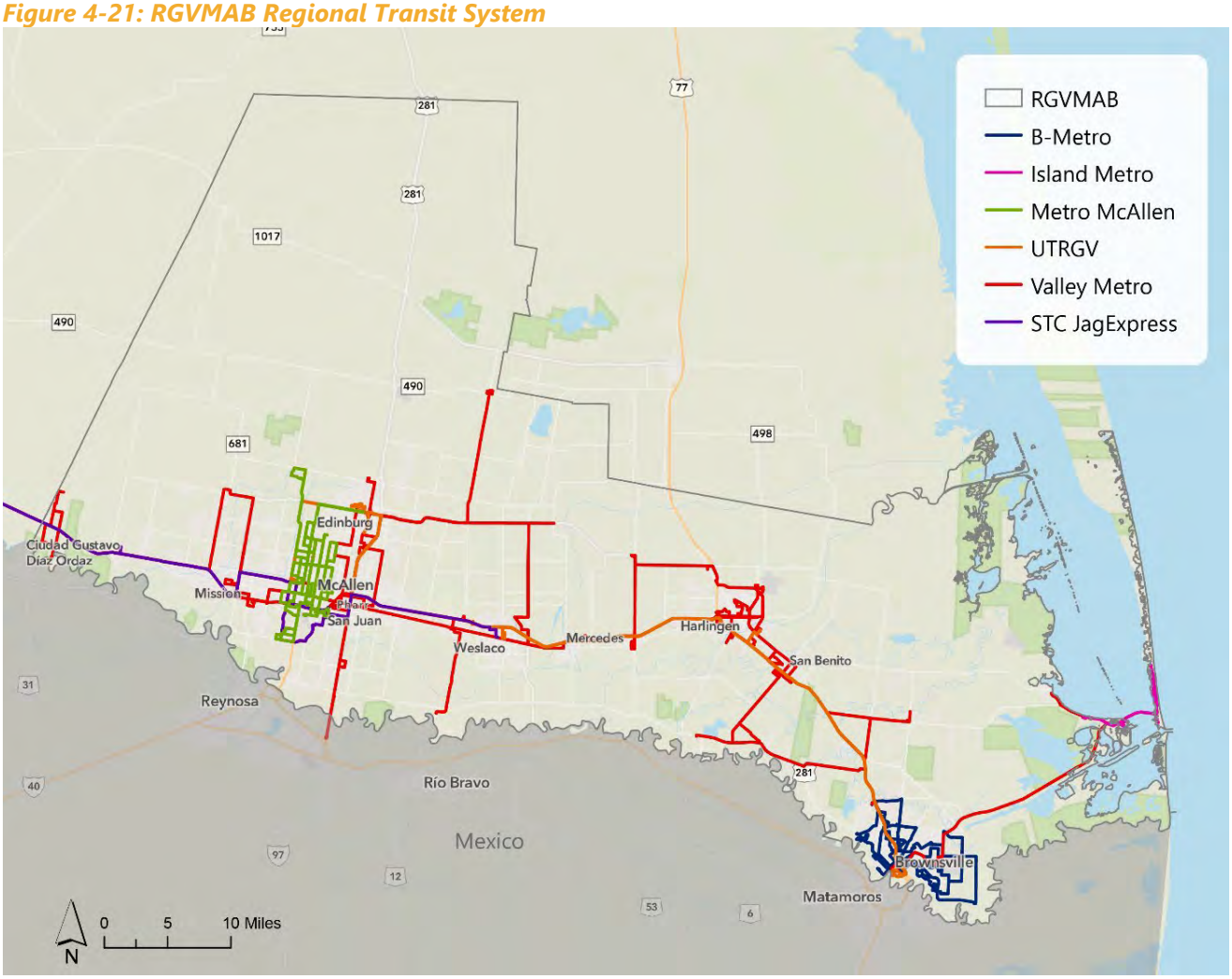
## Transit

The RGVMAB contains an intricate and interrelated transit system comprised of several different service providers. To identify system strengths and weaknesses, it is critical to create an existing inventory of current transit provider's services in the region. This level of understanding helps inform the processes and methodologies used to create locally sensitive solutions which address existing gaps and duplications in service. Key takeaways from the RGVMPO 2045 MTP transit analysis include:

- 38% of the RGVMAB population are within a 0.25-mile walkshed to a regional transit route; roughly 60% of RGVMAB jobs are within the same walkshed
- Areas with higher transit propensity tend to include downtown districts, high density neighborhoods, medical centers, and shopping centers
- Transit need is spread throughout the region; however, the highest-ranking areas tend to be near regional transit coverage
- Transit connectivity to schools should be prioritized
- Transit gaps include northwest Edinburg, Hidalgo near the United States – Mexico border, Weslaco/Mercedes area, northwest of Harlingen near Primera, south of I-2 west of Harlingen, and northeast Brownsville near Cameron Park

The RGVMAB contains five major transit providers: B Metro, Island Metro, Metro McAllen, UTRGV Transit, and Valley Metro. Figure 4-20 displays current transit routes in the region.

*Figure 4-21: RGVMAB Regional Transit System*




## *Transit Potential, Need, Coverage, & Gaps in Service*

### TRANSIT POTENTIAL

The RGVMAB is a fast-growing region with expected sustained economic and population growth. Development and land use that has a mix of jobs, retail and housing indicate areas with high activity and potential for supporting transit use. One method for identifying transit potential is looking at locations that have the potential to support transit service. For the RGVMPO 2045 MTP, transit potential is measured through examining population and employment density, or transit propensity. Figure 4-21 displays the dispersion of transit propensity within the RGVMAB. Future growth areas regarding propensity can be identified in Figure 4-22. For both figures, TAZs with darker shading represent areas containing the highest potential for transit ridership.

*Figure 4-22: Current RGVMAB Transit Propensity - 2019*

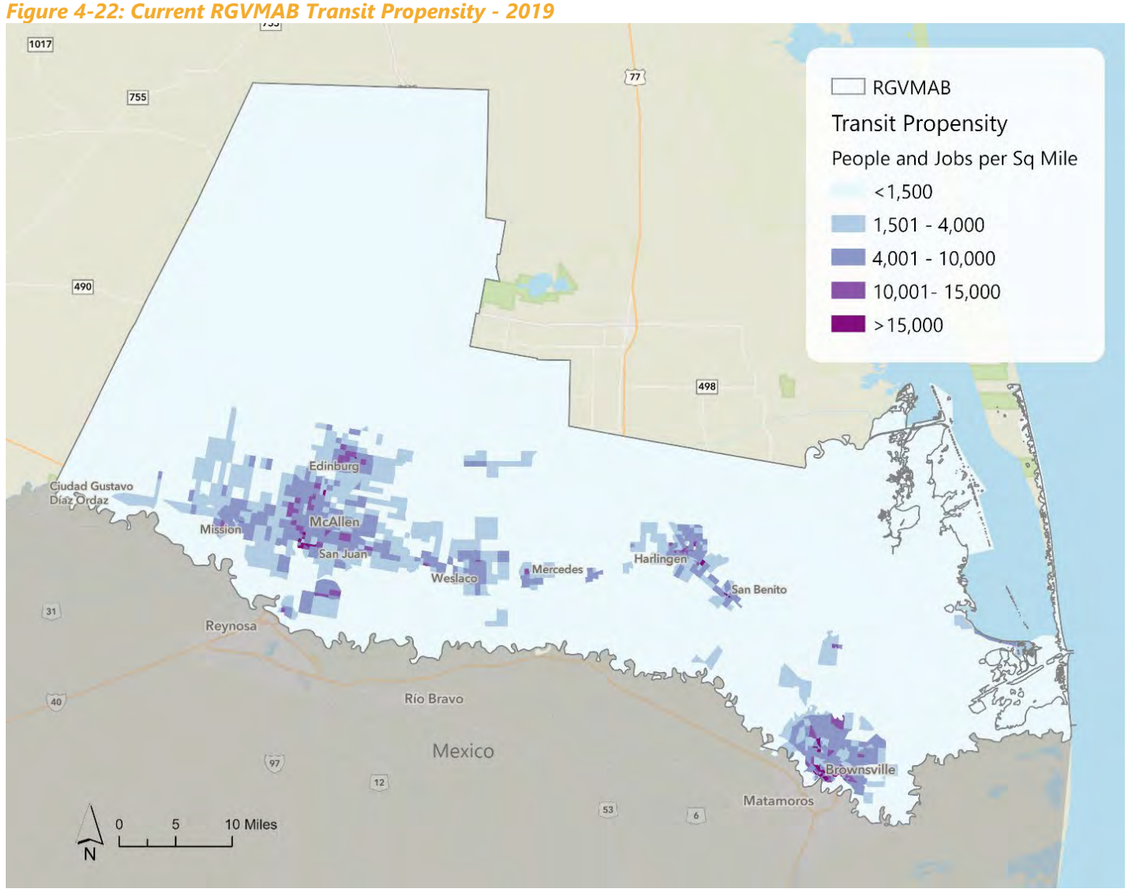
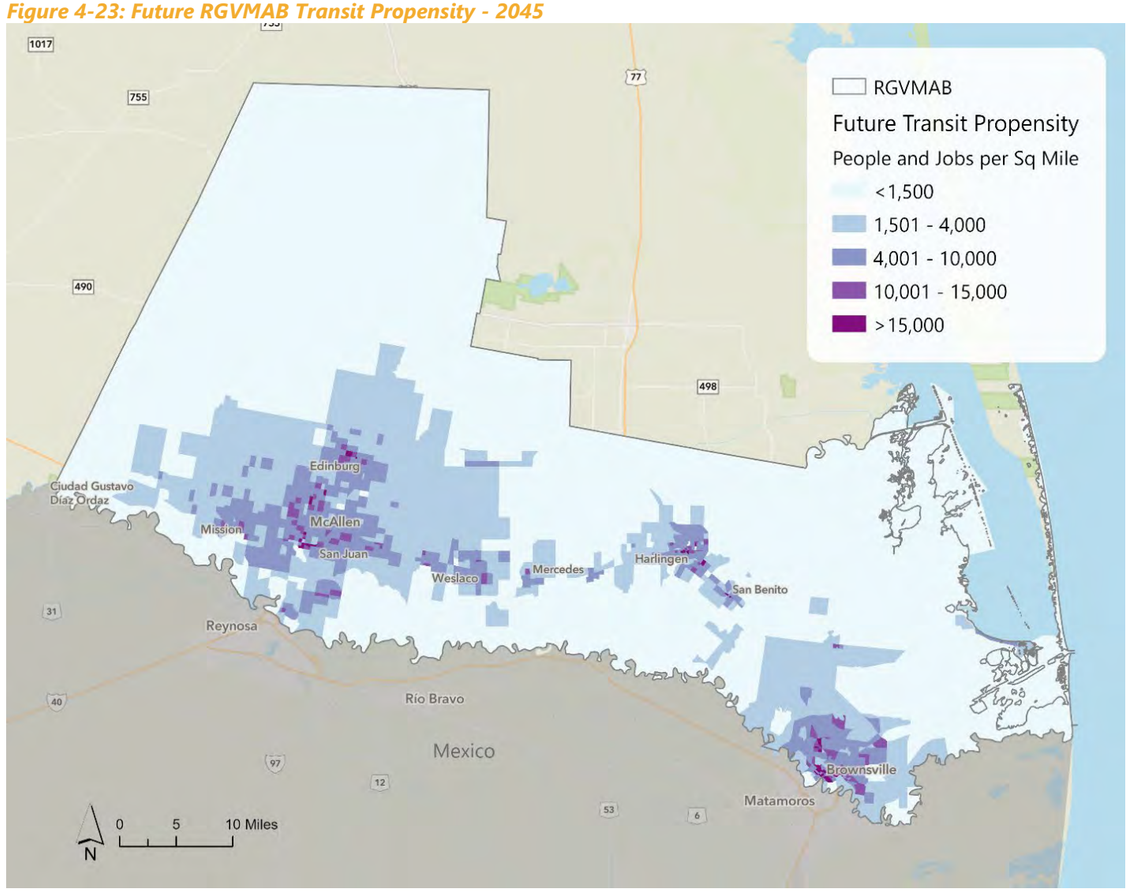



*Figure 4-23: Future RGVMAB Transit Propensity - 2045*



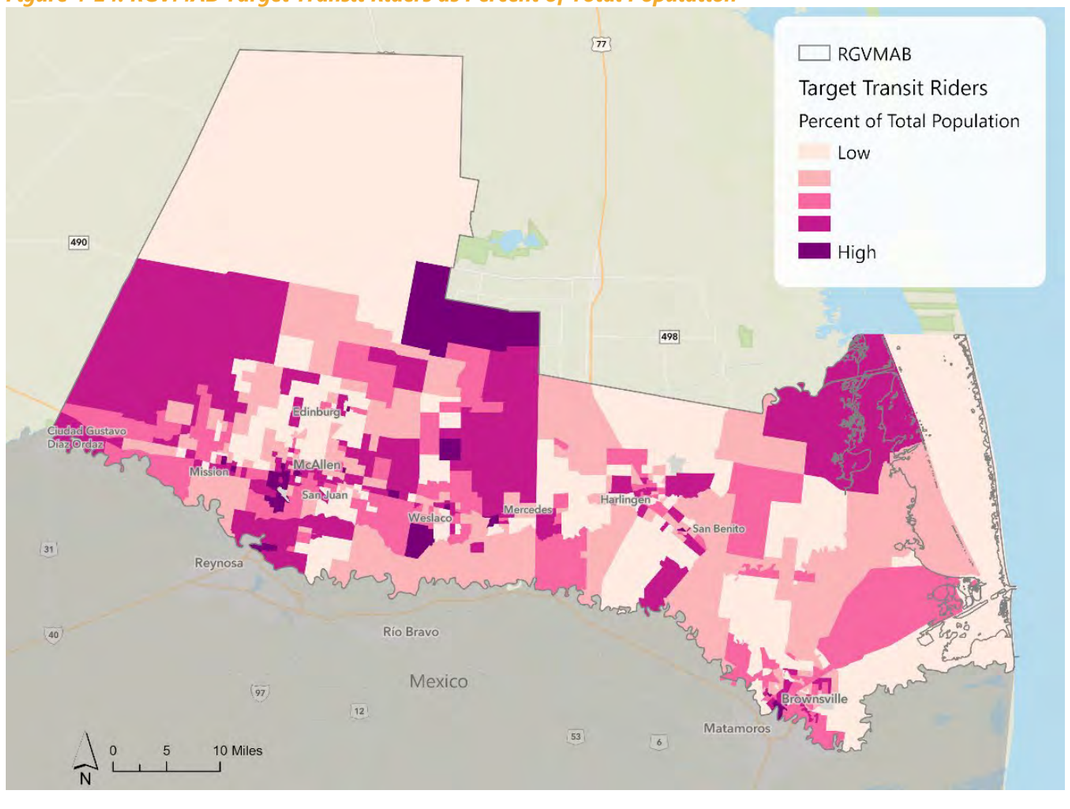
## TRANSIT NEED

An analysis of target transit riders can help to identify the locations which have a higher need for transit service and help to prioritize transit adjustments to better support the community. A target transit rider (TTR) includes the following demographic subgroups:

- Non-driving population (Youth under 18, and Elderly over 65)
- Population with LEP
- Minority populations
- Population with disabilities
- Population living in poverty
- Population without access to a personal automobile

It is generally assumed that individuals in these demographic subgroups are more likely to rely on public transportation for their mobility needs. Locating the areas in which these subgroups are concentrated can help ensure that the people with the highest need for services have access to reliable and effective transit. These demographic subgroups are considered as categories of transit need for the analysis. A graphic representation of the analysis of TTR for the region can be found in Figure 4-23.

*Figure 4-24: RGVMAB Target Transit Riders as Percent of Total Population*

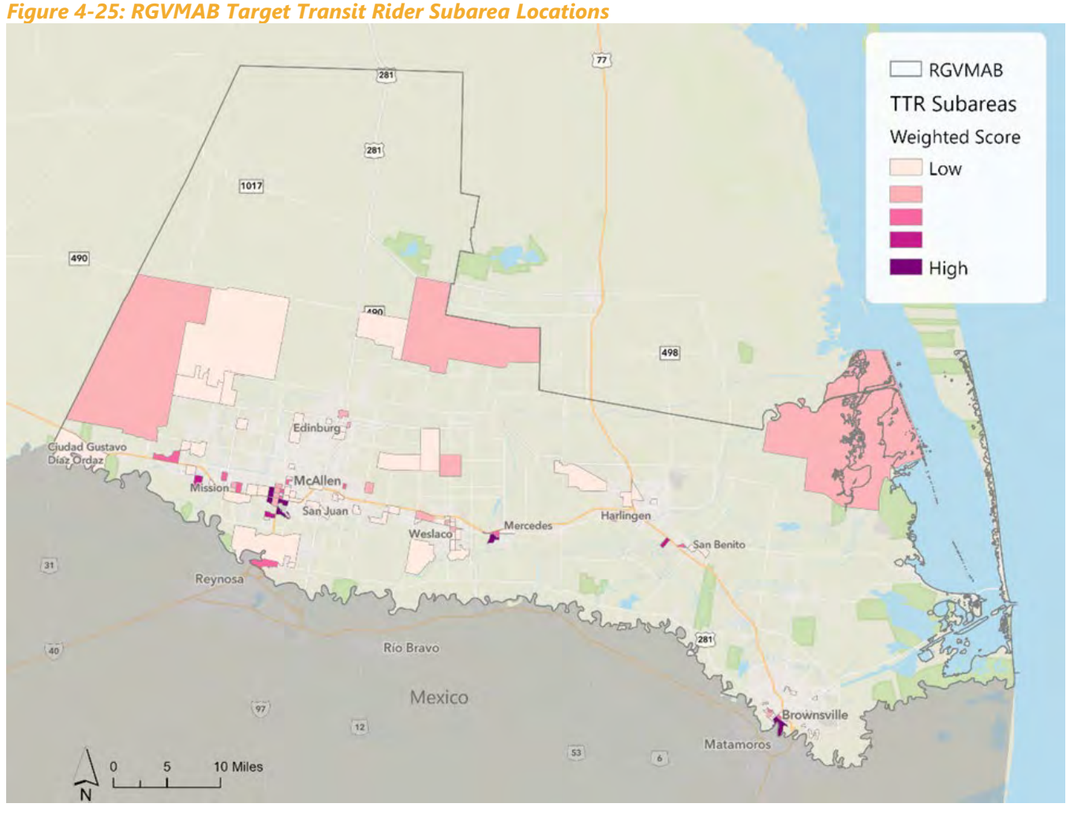



The TTR analysis compares the percent of target transit riders relative to the total population and provides insight into where these populations are concentrated. To further understand the areas with greatest transit need, TTR subareas were developed. These TTR subareas were selected from the locations determined to have higher concentrations of target transit riders from the TTR analysis and are based on U.S. Census block group delineations. The process for selecting and comparing the relative need of the TTR subareas followed four steps:

- Identify potential TTR subareas
- Develop weights by rank for each needs category
- Develop concurrent category weighting for TTR subareas
- Generate weighted score in TTR subarea

A total of 104 TTR Subareas exist in the RGVMAB, displayed in Figure 4-24. These subareas provide more detailed information in the TTR analysis and allowed the project team to better understand where transit need exists within the RGVMAB.

*Figure 4-25: RGVMAB Target Transit Rider Subarea Locations*



To further understand transit need in the RGVMAB, the existing conditions analysis considered the accessibility to destinations, especially key destinations, by transit within the RGVMAB. Destinations data was collected using an ArcGIS Business Facilities Search Tool. A total of 32,149 businesses were discovered in the RGVMAB. From this total, roughly 44% could be categorized for this analysis. Accessibility to many amenities can ensure that residents who rely on transit are able to access the basic goods and services for daily life. Although it is important for transit riders to have access to many goods and services throughout their communities, some services are essential for "daily" life. There are 895 key destinations identified in the RGVMAB (Figure 4-25), including:

- Government Facilities: Community and Recreation Centers, Post Offices, Libraries, and Social Service and Welfare
- Hospitals and Medical Centers
- Major Grocery Stores
- Public Schools and Colleges

Table 4-5 breaks down key destination by category and percent currently covered by transit service.

*Figure 4-26: RGVMAB Key Destinations*

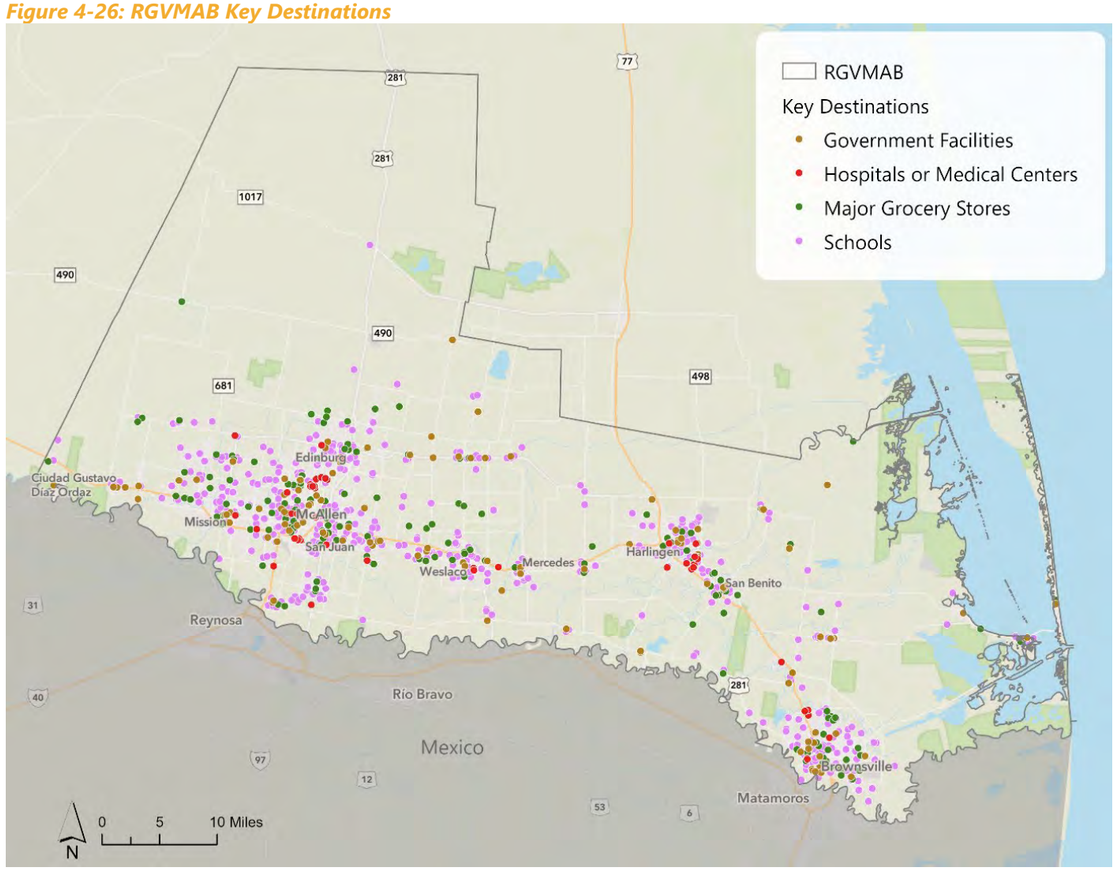



*Table 4-5: Regional Transit Coverage of Key Destinations by Category*

| Key Destination Category | RGVMAB | Within Regional Transit Walkshed | % Covered by Transit |
|---|---|---|---|
| Government | 122 | 97 | 80% |
| Hospitals/Medical | 51 | 49 | 96% |
| Major Grocery Stores | 169 | 130 | 77% |
| Schools | 570 | 290 | 51% |

## SERVICE GAPS

Locations of people and jobs which have the potential to support transit, populations in need of transit, and desirable destinations to be served by transit all indicate and contribute to the demand for transit in the region. Identifying locations that have high potential demand and inadequate transit supply can assist in the prioritization of future transit investments. Criteria from the previous sections were selected, standardized, and scored to provide a cumulative look at transit demand in relation to the transit supply. This comparison identifies gaps where demand is not met with current transit supply.

To make it easier to draw comparisons between these criteria the data was standardized. The first method for creating a standard unit of measurement was to develop one identical unit of geography for all of the datasets, which each have their own geography (TAZ, Census BG, Point Data). One method is to use hexagon grids to aggregate and compare data. This helps reveal patterns in the data and is suitable for both shape-based and point-based data. For this analysis, the region was divided into hexagons that are 0.25 square miles each.

To finalize the standardization process, the project team converted the criteria to a 100-point scale. Each measure was normalized through scoring assignments based on a scale of 0 - 100 for each hexagon. Once each measure was scaled from 0 -100, the measures were aggregated to generate final combined scores (Figure 4-26). Final scores were also normalized on a scale from 0 -100. This final combined score is a transit demand score which indicates the demand for transit based on the cumulation of these measures (Figure 4-27).

Gaps in transit service exist where demand scores are high and transit supply does not exist. This condition indicates areas with some combination of high transit potential or need, as well as destinations and key destinations that do not fall within the transit walkshed. Conversely, gaps also exist where transit supply covers areas with low transit demand scores; this is representative of transit service covering areas that may not need or use transit. This type of gap can be helpful when creating alternative transit scenarios as it informs decision-makers where inefficient service exists and can possibly be reallocated somewhere containing higher transit demand.

*Figure 4-27: Development of Transit Demand Score*

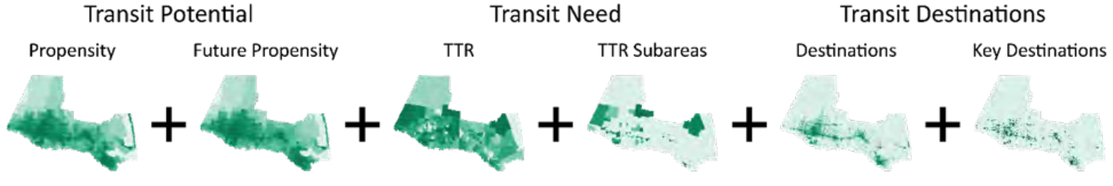
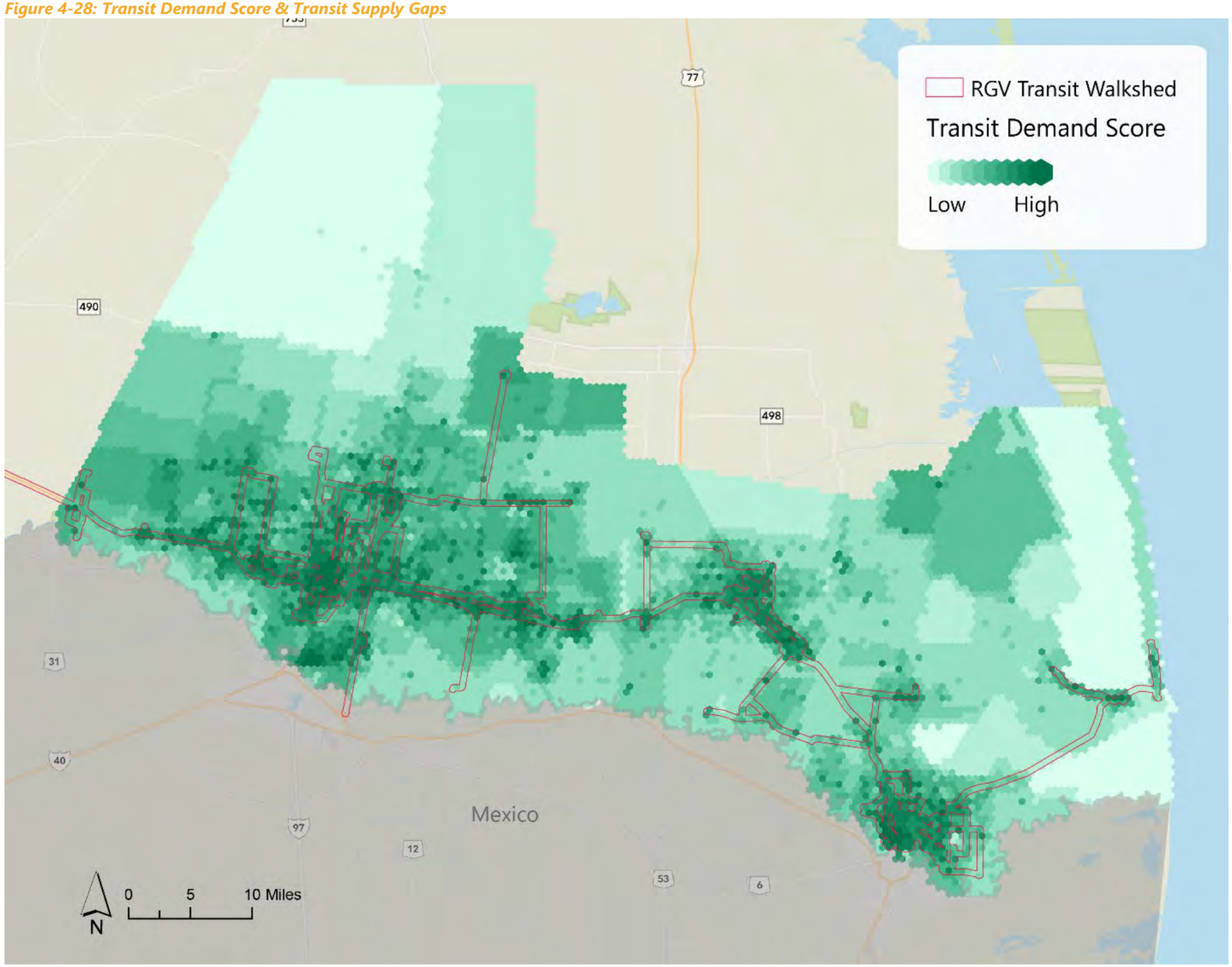


*Figure 4-28: Transit Demand Score & Transit Supply Gaps*



## Active Transportation

The active transportation existing conditions and deficiencies analysis provides policy makers and the public with a better understanding of how the transportation network serves the mobility of persons relying on non-motorized transportation throughout the region.

The analysis reviewed three primary aspects (existing conditions, safety, and network analysis) in gauging active transportation network performance. These three aspects were then aggregated to create a gaps analysis which serves to inform the RGVMPO during the project prioritization process. The primary takeaways from the RGVMPO 2045 MTP active transportation analysis include:

- Opportunities for additional policy and program elements can be found in all major cities within the RGVMAB
- Crashes involving bicyclists and/or pedestrians happen most often during PM peak travel times
- Safety findings suggests that active transportation users bear a disproportionate amount of risk of injury or fatality
- Many urban areas have an array of low stress roadways due to gridded roadway networks
- Low stress connections between urban areas are limited
- Active transportation gaps were most substantial in Alton, Donna, Edcouch, and Harlingen

## *Existing Conditions*

The RGVMAB has a mixture of on-street and off-street active transportation facilities. As urban areas in the RGVMAB continue to densify and grow, walking and bicycling become an increasingly vital component of the transportation system.

### EXISTING BICYCLE & PEDESTRIAN FACILTIES

Within the RGVMAB there are nearly 178 miles of on-street bike facilities, consisting of bike lanes, cycle tracks or shared lanes with either a shared lane marking or signage (Figure 4-29). Protected bikeways, which are the most comfortable for the broad range of people using the facility, make up about 2 miles or 1% of the total on-street bike facilities. Brownsville, Edinburg, Harlingen, McAllen, and Pharr make up the largest portion of urban bike facilities throughout the RGVMAB, while bike facilities outside of the urban centers comprise 14% of the total 292 miles.

### EXISTING SIDEWALK FACILITIES

There are nearly 2,200 miles of sidewalk infrastructure and 114 miles of hike and bike trails within the RGVMAB (Figure 4-30). Sidewalk facilities in the RGVMAB are prevalent within urban areas. In addition to the quantity of pedestrian facilities, the sidewalk network coverage was calculated by selecting roadways within each city with a speed limit of less than 60 miles per hour (mph) because roadways with speeds at or above 60mph do not commonly contain sidewalks and are not conducive to walking.

*Figure 4-29: RGVMAB Active Transportation Facility Summary Statistics*

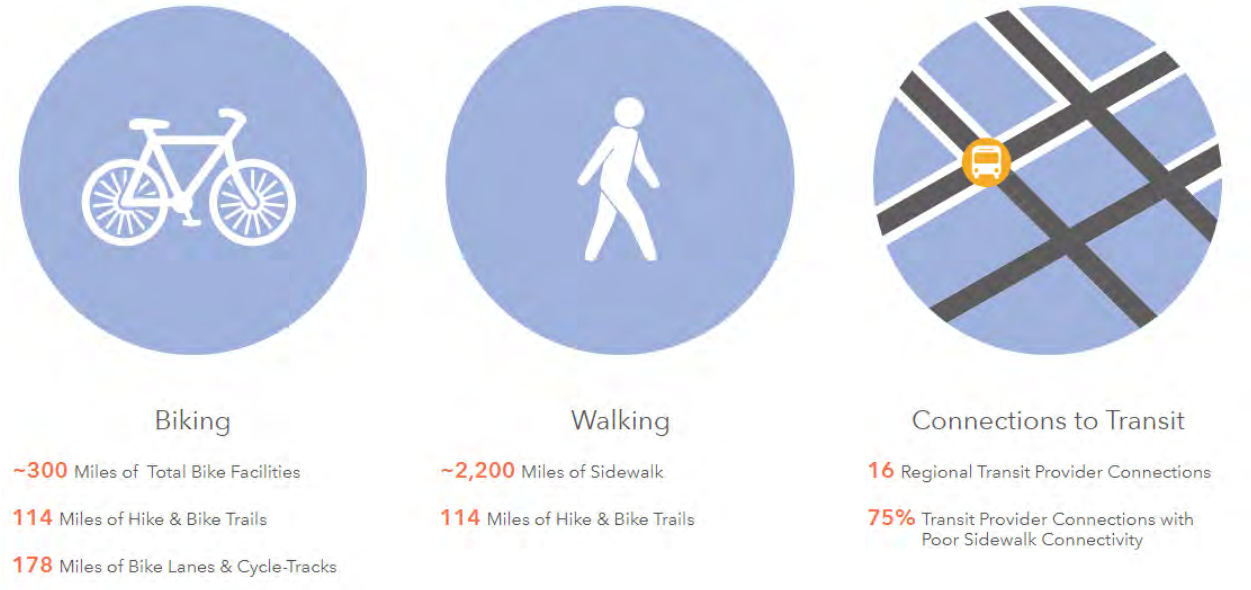


*Figure 4-30: RGVMAB Existing Bicycle Facilities*

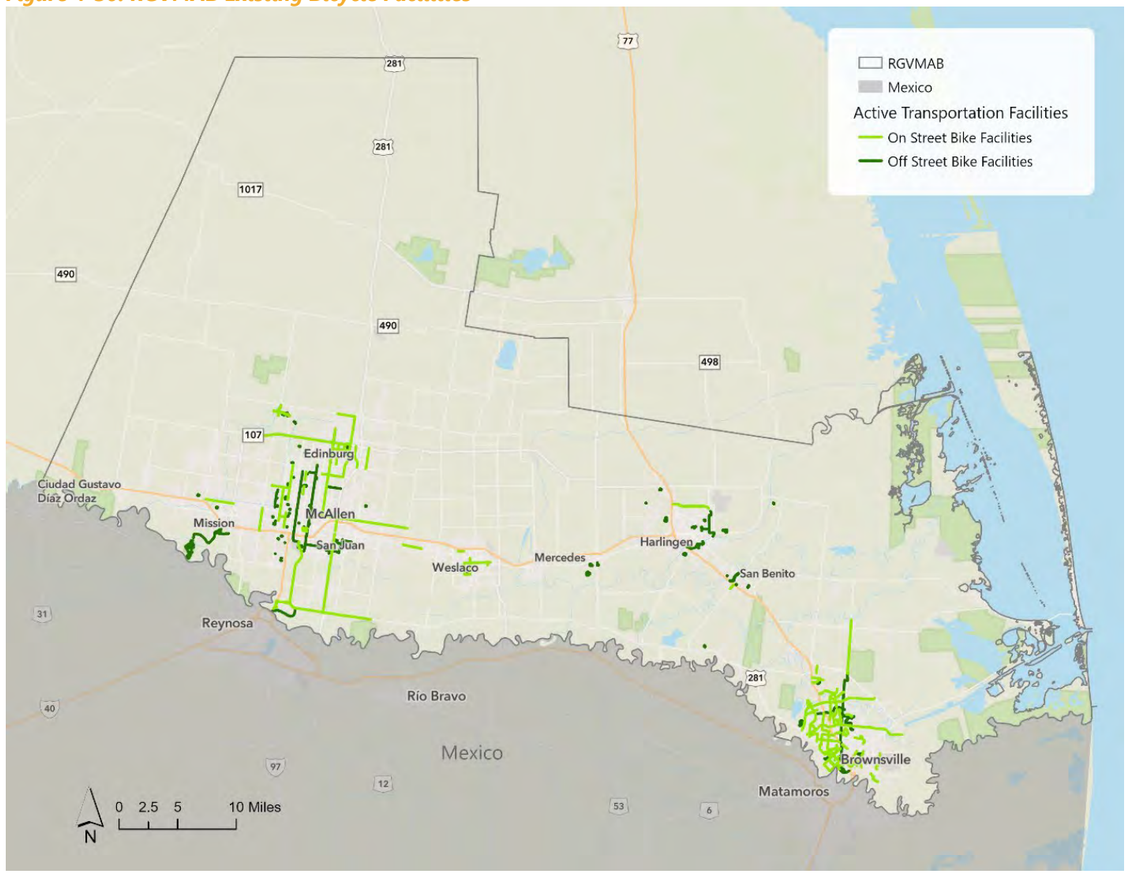
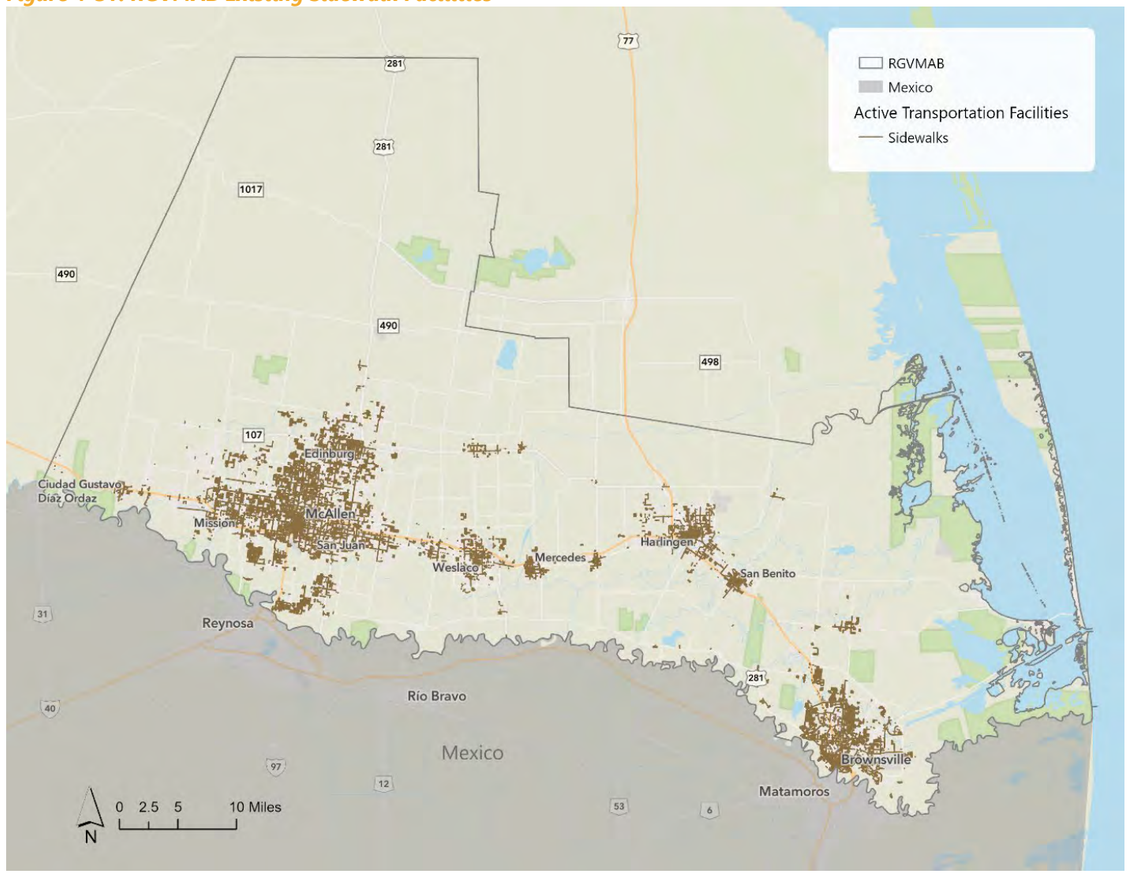



*Figure 4-31: RGVMAB Existing Sidewalk Facilities*



## Needs Analysis

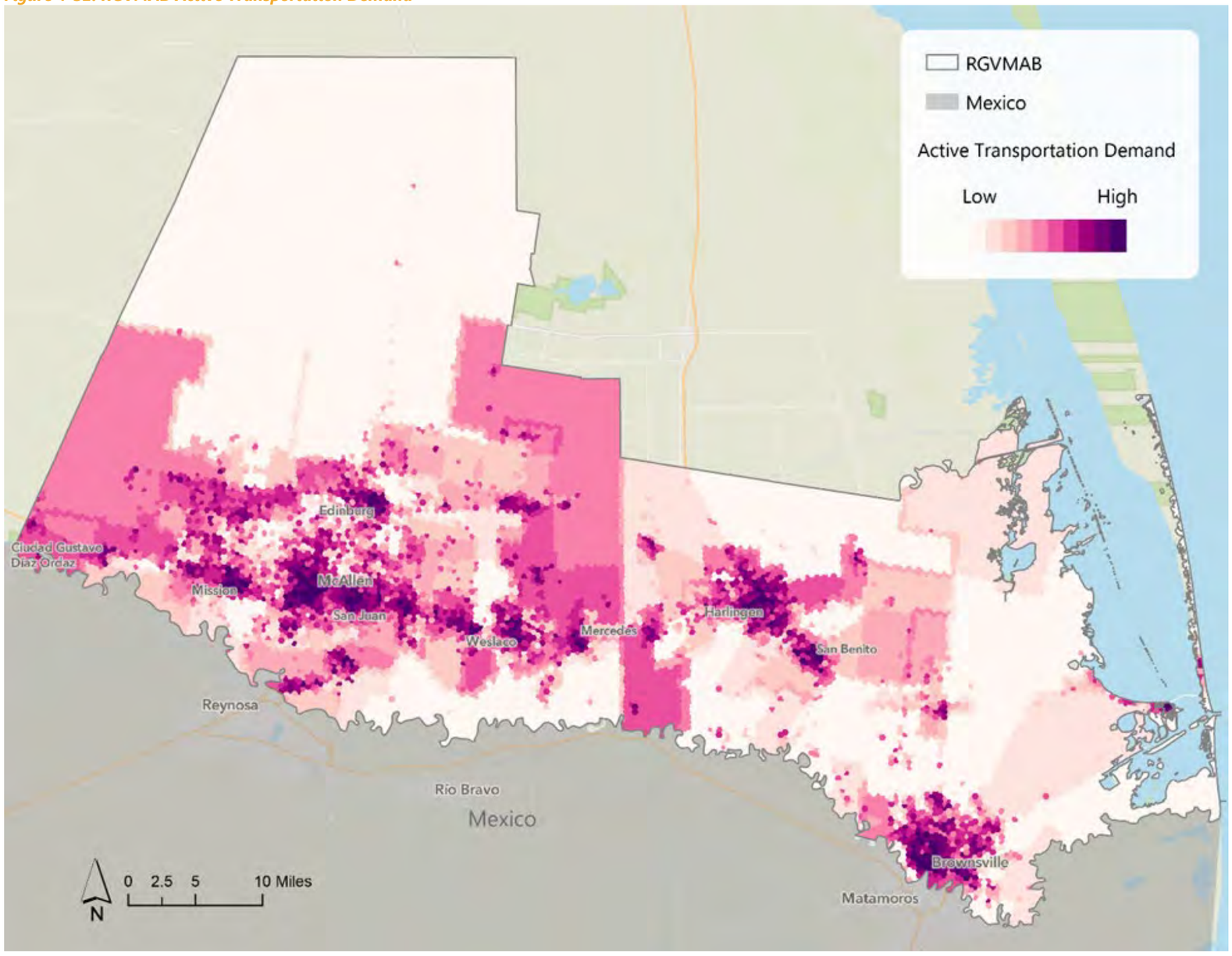
In addition to the review of the existing conditions for active transportation, a granular analysis was conducted to review the safety, level of stress, transit proximity, and expected travel patterns as part of the deficiencies, or needs analysis for non-motorized travel choices. These separate analyses informed the gaps analysis which allowed the project team to identify areas in need of active transportation infrastructure improvements. The following section details key findings.

### ACTIVE TRANSPORTAITON GAPS ANALYSIS

To better understand where disparities within the RGVMAB occur between demand and supply for active transportation facilities, a gap analysis was conducted. Creating a comprehensive view of existing supply and demand for active transportation facilities allows gaps to be identified and discussed with the community, which provides solutions tailored towards community needs.

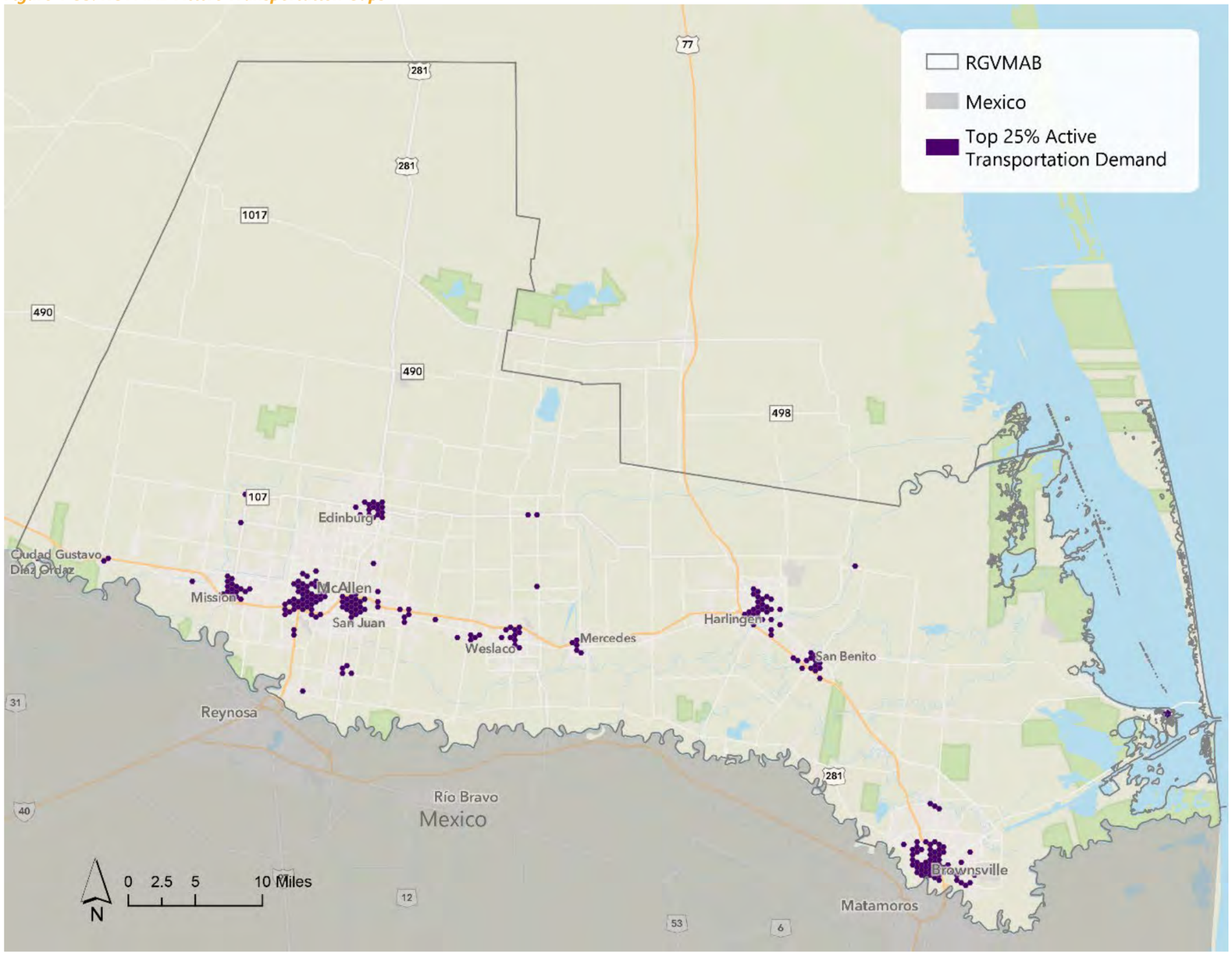
Current walking and biking facilities were overlaid with active transportation demand, based on several criteria covering populations more likely to use active transportation modes derived from the 2018 ACS. The criteria were standardized into hexagonal grids and then normalized to a 100-point scale to rank each hexagon, like the transit gap analysis. This final combined score indicates the relative demand for active transportation options occurring in each hexagon, based on the criteria. Figure 4-31 shows demand dispersed across the RGVMAB and will be used (along with the GIS data used to create the graphic) to inform decisions on active transportation improvements.

*Figure 4-32: RGVMAB Active Transportation Demand*



Current supply of active transportation facilities (sidewalks, bike lanes, and hike & bike trails) were overlaid on the top 25% of demand score hexagons to identify where areas of high demand have insufficient facilities. Figure 4-32 shows the areas with the top 25% of active transportation demand. The analysis showed many gaps occurring in rural or semi-rural areas, many of which contain gridded street networks, but lack adequate sidewalk facilities.

*Figure 4-33: RGVMAB Active Transportation Gaps*



## System Safety

Transportation safety data analysis provides planners, policy makers, and the public with a better understanding of where critical safety issues are occurring in the transportation system and what factors may be contributing to regional crashes and crash rates. As such, safety data analysis is a critical component of regional transportation planning. The primary takeaways from the RGVMPO 2045 MTP safety analysis include:

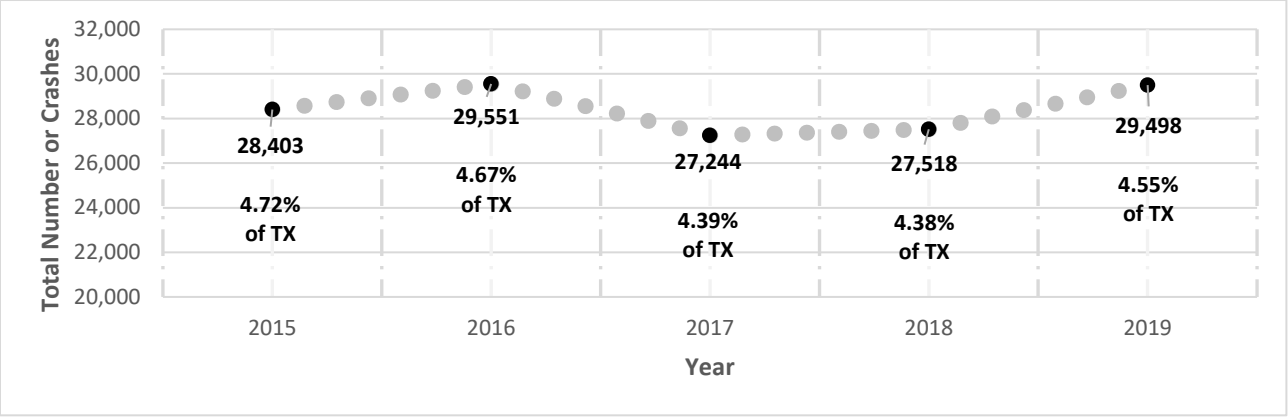
- Crash locations do not necessarily correlate directly with the amount of travel (i.e. VMT), as the crash rate did not consistently increase along with VMT over the five-year period
- The serious injury and fatality rates for the RGVMAB are all significantly lower in comparison to the Texas statewide average rates
- The total number of crashes involving pedestrians is around 2.41 times higher than the number of crashes involving cyclists
- The interstates and frontage roads within the region appear to have the highest crash rates and should be a priority when considering safety improvements

The following analysis on regional crash trends for the RGVMAB multimodal transportation network will help the RGVMPO prioritize projects by understanding where high priority intersections exist, and how to best implement safety enhancements. This information will also help the MPO understand and identify factors that contribute to crash totals and severity, which will in turn inform future planning efforts within the RGVMAB.

### Regional Crash Trends

Between 2015 and 2019, a total of 142,216 crashes occurred within the RGVMAB. Over this five-year period, the total number of crashes per year has remained between the range of 27,000 to 30,000, with the largest single-year total (29,551) occurring in 2019. The region experienced an 8% decrease in the total number of crashes between 2016 and 2017 and a 7% increase between 2018 and 2019. Figure 4-33 summarizes the annual number of reported crashes in the region between 2015 and 2019.

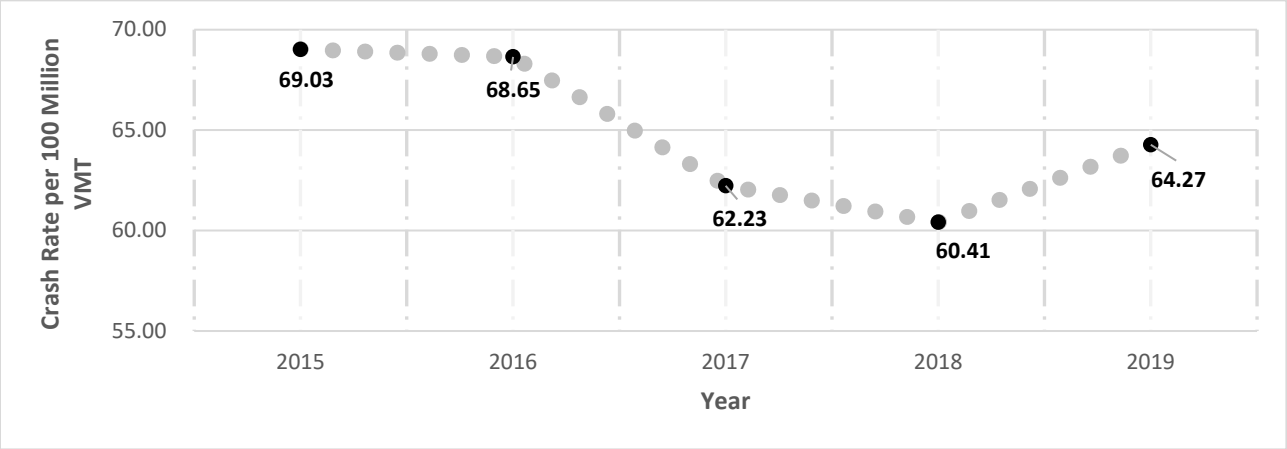
*Figure 4-34: Regional Crash Totals by Year & as a % of Total Statewide Crashes, 2015 - 2019*




Crash rate is a metric that illustrates the ratio of crashes that occurred per vehicle miles traveled (VMT) within the region. This provides a method to normalize the gross crash count by including a consideration of roadway usage (i.e. VMT). Crash rates over the five-year period remain consistent, with a gradual decrease from 2016 to 2018 and a gradual increase from 2018 to 2019.

Over this five-year period, VMT gradually increased from 22.5 million VMT to 25.2 million VMT. Figure 4-34 shows the crashes per 100 million vehicle miles traveled for the region between 2015 and 2019.

*Figure 4-35: Regional Crashes per 100 Million VMT by Year, 2015 - 2019*




Crash severity is a crucial aspect of each reported accident because crashes that result in fatalities or serious injuries represent a higher risk to life and safety, and understanding where there are concentrations of these types of crashes can illuminate opportunities for operational or design improvements. The RGVMPO 2045 MTP reviews crash data in three different ways – total crashes/crash rate, the total number/rate of crashes resulting in fatality, and the total number/rate of crashes resulting in serious injury – and compares the rolling averages of these values to those at the statewide level. The data represented in Table 4-6 demonstrates that, on average, only 1.38% of crashes in the region resulted in a serious injury, and just under 0.31% resulted in a fatality.

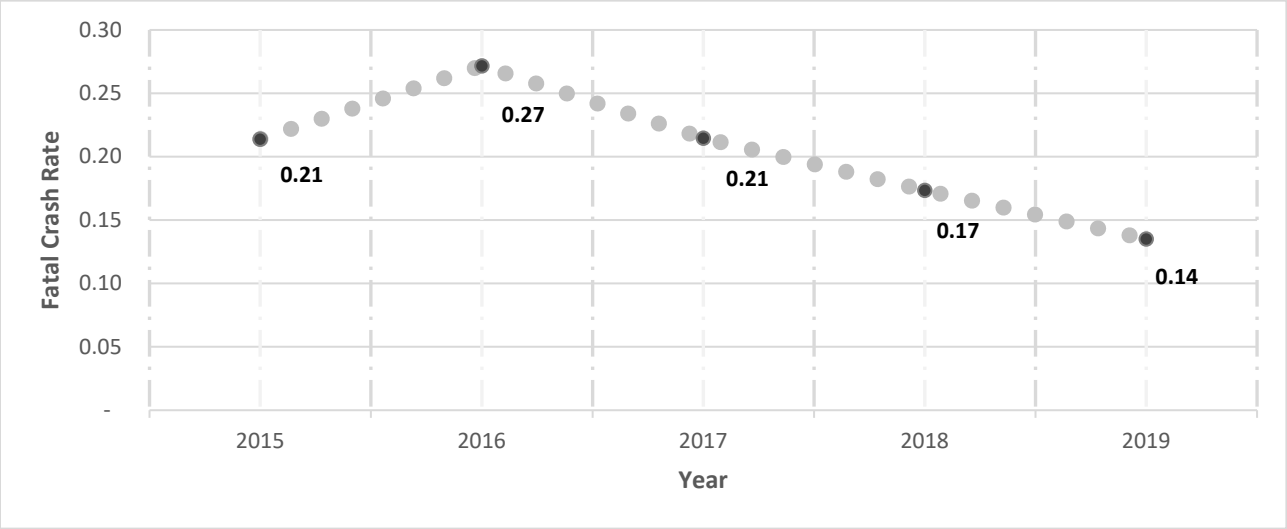
*Table 4-6: RGVMAB Crash Totals & Rates by Year & 2019 5-Year Rolling Average*

| Measure | 2015 | 2016 | 2017 | 2018 | 2019 | 2019 5 Yr. Rolling Average | % of Total |
|---|---|---|---|---|---|---|---|
| Number of Crashes | 28,403 | 29,551 | 27,244 | 27,518 | 29,500 | 28,443.2 | 100% |
| Rate of Crashes per 100 million VMT | 69.03 | 68.65 | 62.23 | 60.41 | 64.27 | 64.92 | - |
| Number of Fatalities | 88 | 117 | 94 | 79 | 62 | 88 | 0.309% |
| Rate of Fatalities per 100 million VMT | 0.21 | 0.27 | 0.21 | 0.17 | 0.14 | 0.20 | - |
| Number of Serious Injuries | 384 | 421 | 398 | 338 | 427 | 393.6 | 1.384% |
| Rate of Serious Injuries per 100 million VMT | 0.93 | 0.98 | 0.91 | 0.74 | 0.93 | 0.90 | - |

Though the region experienced its second highest total number of crashes in 2019 (29,551) compared to the other four years in the five-year period, 2019 also had the lowest number of crashes resulting in fatality (62). The five-year rolling average rate of fatal crashes per 100 million VMT in the RGVMAB over the reporting period was 0.20. A comparison to the Statewide five-year rolling average rate of fatal crashes (1.35) indicates that fewer crashes in the region have resulted in fatality compared to the rest of the State over the last five years.

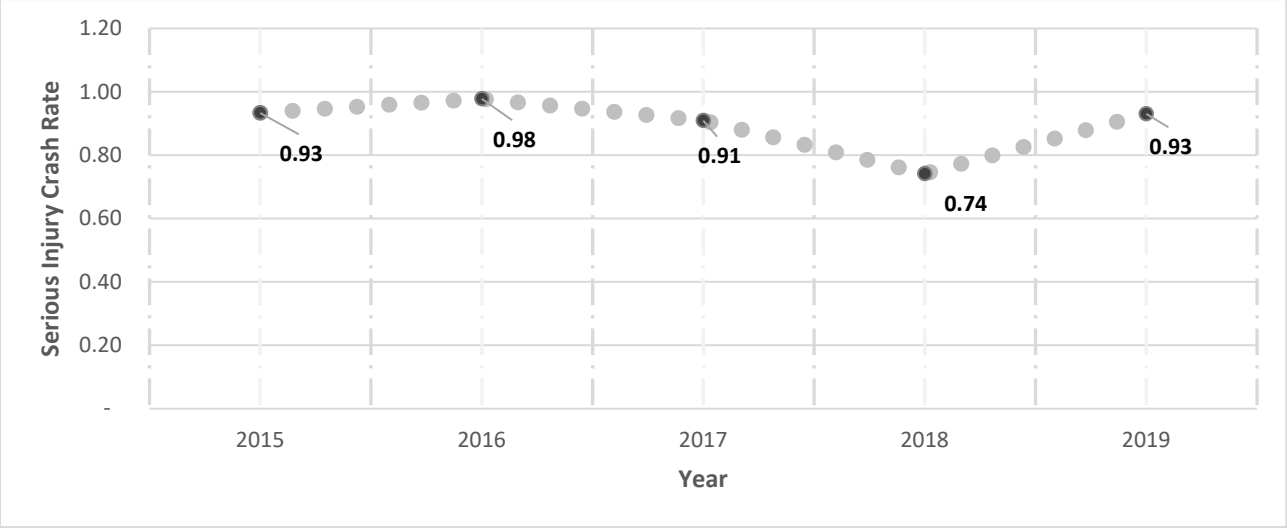
Figure 4-35 illustrates annual rates of fatal crashes and Figure 4-36 shows annual rates of serious injury crashes. It is worth noting that while the total crash rate over the five-year period has varied with an increase in 2019, the rate of fatalities has decreased over the same period.

*Figure 4-36: Regional Rate of Fatal Crashes per 100 Million VMT by Year, 2015-2019*




In contrast to the downward trend in fatality rates, the rate of serious injury crashes seems to follow a similar trend in variance over the five-year period as the total crash rate.

*Figure 4-37: Regional Rate of Serious Injury Crashes per 100 Million VMT by Year, 2015-2019*

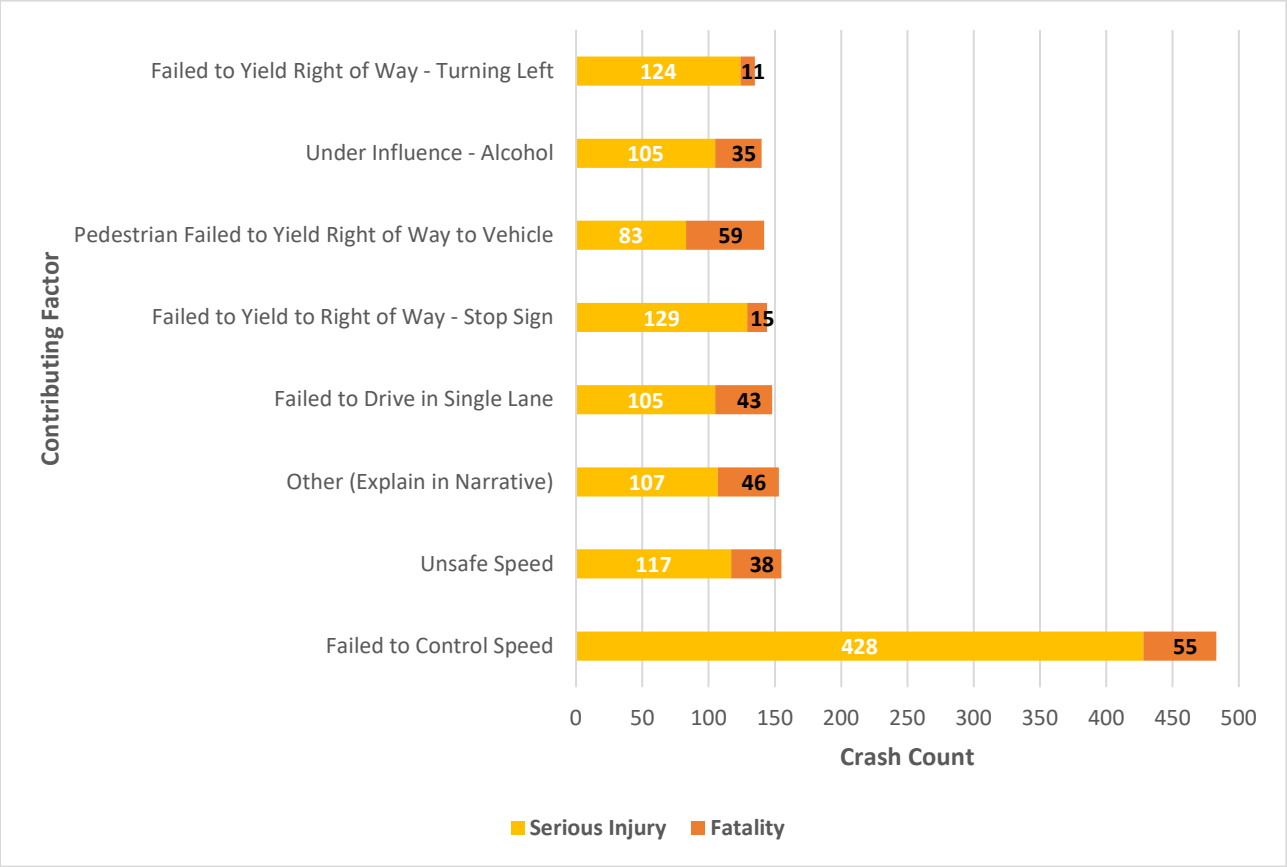



## Top Contributing Factors

It is vital to understand common factors that contribute to crashes, especially those resulting in serious injuries or fatalities. The importance of understanding these factors applies both to assessing location specific improvements as well as setting a framework to address safety needs where location data is not available, e.g. new roadways. Identifying the top contributing factors allows the RGVMPO and its planning partners to incorporate proven safety countermeasures and crash modification factors into the design and prioritization of future roadway investments in order to address or mitigate these contributing factors.

Of the top eight contributing factors, the top two (in terms of total crashes) involved speeding, while three others involved failing to yield the right of way. The top eight contributing factors are represented in Figure 4-37 and categorized by crash severity.

*Figure 4-38: Number of Fatal and Serious Injury Crashes by Contributing Factor, 2015-2019*




FHWA has set out a variety of proven safety countermeasures, such as implementing a roundabout at an intersection with a high crash rate or installing walkways to increase safety for pedestrians on segments where pedestrian-related crashes were higher than others (Figure 4-36).

In some cases where the implementation of a proven safety countermeasure in response to a top contributing factor is not possible, a risk management approach can be used by applying crash modification factors. One example of this concept can be illustrated using the top contributing factor represented in Figure 4-37.

Failure to control speed might indicate that the improvement of a roadway should incorporate traffic calming techniques, however, in the case of interstates, traffic calming measures would be prohibited. Crash modification factors (CMF) become useful tools the goal to reduce the risk and/or severity of a crash where speeding was a factor. One such CMF would be to install cable rails in the clear zone for non-elevated portions of the interstate. A crash might still occur in this location, but the likely severity of the crash could be greatly reduced by the cable rail compared to the potential severity if no rail or concrete barriers were present.

Additionally, the consideration of safety countermeasures and CMFs is useful when scoring and comparing new roadways where no data is yet available. In these instances, the design and scope of the new roadway can be scored based on what safety countermeasures and CMFs it incorporates in comparison to the region's top contributing factors. A new commercial corridor that implements access management should ostensibly receive a better score than a roadway that allows any number of driveways, as the first example has a higher likelihood of improving regional safety performance because it directly addresses the top contributing factor of failure to yield.

Point scale and range for this scoring process is then a critical step to consider thoroughly and carefully to avoid creating a false sense of bias. Figure 4-38 shows the safety countermeasures promoted by FHWA, and further detail can be found on FHWA's safety page.[1] Additional information on CMFs can be found on the CMF Clearinghouse.[2]

***Figure 4-39: FHWA Proven Safety Countermeasures[3]***


[1] https://safety.fhwa.dot.gov/provencountermeasures/fhwasa18029/
[2] http://www.cmfclearinghouse.org/
[3] https://safety.fhwa.dot.gov/provencountermeasures/

## Crash Hotspots

Crash hotspots were identified within the RGVMAB through spatial analysis of intersections and roadway segments that experienced the highest number of crashes over the five-year period. Total crashes, crashes involving pedestrians, crashes involving bicyclists, and crashes resulting in serious injury or fatality are all considered in this analysis. Figure 4-39 displays crash hotspots identified through geolocation of the collected crash data.

Using the TDM network, a GIS points layer was generated to identify all intersections in the roadway network for the region. Along with crash point data, these intersection points were used to conduct a proximity analysis that associated intersection crashes to the nearest intersection. Texas crash data was filtered using attributes provided in the dataset that flagged crashes occurring at intersections. Once the crash data was narrowed down, the number of crashes for each intersection was calculated by assigning each crash to its closest intersection. Table 4-7 shows the intersections that experienced the most crashes between 2015 and 2019.

*Figure 4-40: RGVMAB Crash Hotspots, 2015 - 2019*

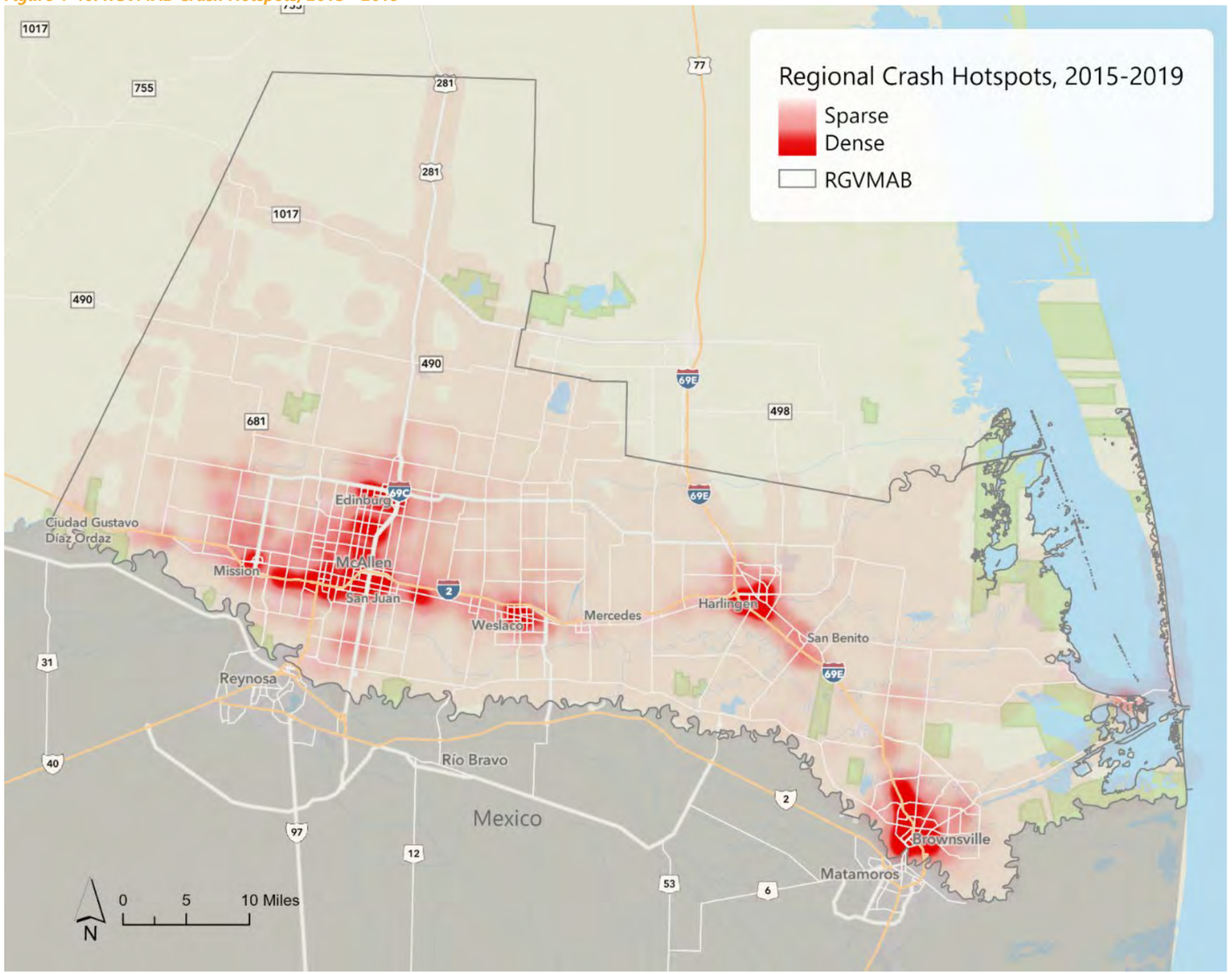


*Table 4-7: RGVMAB Top 20 Crash Intersection, 2015 - 2019*

| Intersection | Crash Count | Bicyclist Crashes | Pedestrian Crashes | Serious Injury Crashes | Fatal Crashes |
|---|---|---|---|---|---|
| E. Ruben M. Torres Sr. Blvd. & Old Hwy 77 | 106 | 0 | 0 | 24 | 0 |
| E./W. Frontage Rd. (US-83) & S. Ware Rd. | 86 | 0 | 1 | 1 | 0 |
| Spur 206 & I-69E | 80 | 0 | 2 | 1 | 0 |
| E./W. Frontage Rd. (US-83) & S. Shary Rd. | 79 | 0 | 1 | 1 | 0 |
| E./W. Frontage Rd. (US-83) & S. Bryan Rd. | 67 | 0 | 0 | 1 | 0 |
| E. Tyler Ave. (Spur 206) & S. 15th St. | 67 | 1 | 3 | 0 | 0 |
| E./W. Frontage Rd. (US-83) & N. Cage Blvd. | 66 | 0 | 1 | 1 | 0 |
| E. Earling St./E. Nolana Loop & N. Cage Blvd. | 61 | 0 | 2 | 1 | 0 |
| E. Rueben M. Torres Blvd. & N./S. Frontage Rd. (IH-69E) | 56 | 0 | 0 | 1 | 0 |
| W. Alton Gloor Blvd. & N./S. Frontage Rd. (I-69E) | 54 | 0 | 0 | 0 | 0 |
| W. Price Rd. & N./S. Frontage Rd. (I-69E) | 54 | 0 | 0 | 0 | 0 |
| Ed Cary Dr. & N./S. Frontage Rd. (I-69E) | 53 | 0 | 0 | 0 | 0 |
| W. Wisconsin Rd. & S. McColl St. | 53 | 1 | 0 | 2 | 0 |
| US-83 & Jackson Rd. | 50 | 1 | 1 | 1 | 0 |
| E./W. Frontage (US-83) & S. 10th St. | 47 | 1 | 3 | 2 | 0 |
| Wilson Rd. & I-69E | 46 | 0 | 0 | 0 | 0 |
| W. Ferguson Ave. & N. Cage Blvd. | 46 | 0 | 0 | 0 | 0 |
| TX-54-SPUR & I-69E | 45 | 1 | 0 | 1 | 0 |
| Primera Rd./TX-499-Loop & N. 77 Sunshine Strip | 44 | 0 | 0 | 1 | 0 |
| BUS-83 & Alamo Rd. | 43 | 0 | 0 | 0 | 0 |

## Active Transportation Safety Trends

Over the course of the five-year period, a total of 2,238 active transportation (AT) crashes occurred in Cameron and Hidalgo Counties. 71% of these crashes involved pedestrians, while 29% involved bicyclists. In all, AT crashes accounted for only 1.6% of all crashes in the RGVMAB (involving all modes of transportation) for the same five-year period. Table 4-8 shows a breakdown of total crashes involving pedestrians or bicyclists.

*Table 4-8: RGVMAB Active Transportation Crashes & Crashes by Mode*

| Crash Types | Crash Count | Percent of All AT Crashes | As %of Total Crashes (All Modes) |
|---|---|---|---|
| Pedestrian Crashes | 1,582 | 71% | 1.1% |
| Bicyclist Crashes | 656 | 29% | 0.5% |
| **Total** | **2,238** | **100%** | **1.6%** |

Figure 4-40 represents a heat map that illustrates concentrations of AT crashes within the region. The map indicates that higher densities of AT crashes occur in the larger urban areas, correlating with the levels of traffic in these areas.

Table 4-9 summarizes the five-year counts and percentage of active transportation crashes in comparison to regional totals for all crashes. While non-motorized crashes comprise only 1.57% of all crashes for this period, they comprise 26.14% of all fatal crashes

*Table 4-9: Comparison of Five-Year Crash Totals; Active Transportation vs. All Users, 2015-2019*

| Measure | All Users | Active Transportation | Percent of Measure |
|---|---|---|---|
| Crash Count | 142,216 | 2,238 | 1.57% |
| Fatalities | 440 | 115 | 26.14% |
| Serious Injuries | 1,968 | 248 | 12.60% |

Like regional crashes, the project team identified specific intersections that experienced the most AT crashes over the five-year period to further fine-tune any potential solutions to its active transportation safety issues and distribute resources more efficiently. Table 4-10 displays the top AT crash intersections within the RGVMAB.

*Figure 4-41: RGVMAB Active Transportation Crash Hotspots*

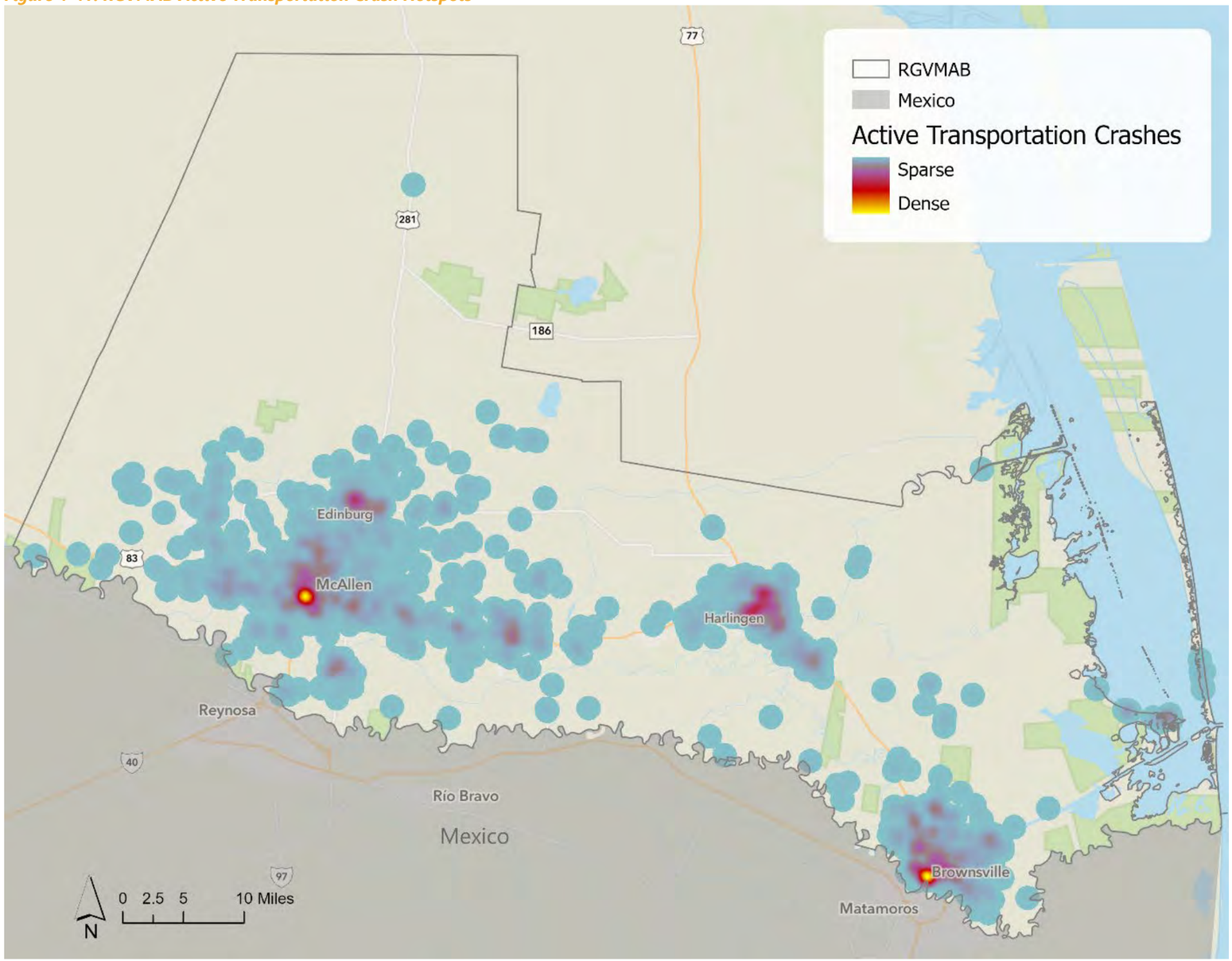


*Table 4-10: RGVMAB Top Active Transportation Crash Intersections*

| Intersection | Location | Crash Count |
|---|---|---|
| International Blvd. (SH 4) @ Southmost Blvd. (FM 1419) | Brownsville | 11 |
| Spur 206 @ I-69E | Harlingen | 8 |
| Jackson St. (FM 3362) @ W. University Dr. (SH 107) | Edinburg | 6 |
| Paredes Line Rd. (FM 1847) @ E. Alton Gloor Blvd. (FM 3248) | Brownsville | 6 |
| 16th St. @ W. US Business 83 | McAllen | 6 |
| 15th St. @ W. US Business 83 | McAllen | 6 |
| Sugar Rd. @ W. University Dr. (SH 107) | Edinburg | 6 |
| N. 10th St. (SH 336) @ Pecan Blvd. (SH 495) | McAllen | 5 |
| N. Ware Rd. (FM 2220) @ Pecan Blvd. (SH 495) | McAllen | 5 |
| I-69E @ Boca Chica Blvd. (SH 48) | Brownsville | 5 |
| Beaumont Ave. @ S. 15th St. | McAllen | 5 |
| E. 12th St. @ US Business 77 | Brownsville | 5 |
| Spur 206 @ US Business 77 (S. 77 Sunshine Strip) | Harlingen | 4 |
| N. 7th St. @ US Business 77 (N. 77 Sunshine Strip) | Harlingen | 4 |
| E. 7th St. @ E. Jackson St. | Brownsville | 4 |
| SH 100 @ Padre Blvd. (PR 100) | South Padre | 4 |
| 10th St. (SH 336) @ W. US Business 83 | McAllen | 4 |
| N. McColl Rd. (FM 2061) @ Nolana Ave. (FM 3461) | McAllen | 4 |
| 1st St. @ Jackson St. | Harlingen | 4 |

# SUMMARY ON ANALYSIS OF MULTIMODAL NEEDS

The findings of the RGVMAB multimodal needs assessment reflect the current state of the region's transportation system and show projections where possible for the future of its various components. Overall, the region is growing and will continue to do so over the next 25 years. This growth will impact each aspect of the regional transportation network, requiring the community to invest in transportation policy and projects that address the infrastructure, land use, and socioeconomic changes that will arise in the coming years. The analysis summarized here provides a holistic understanding of the regional transportation system encompassing the community's roadways, transit and active transportation systems, freight network, and socioeconomic landscape. This framework provides data-driven insight into the needs of the community and informs the review and consideration of investments and strategies that are laid out in subsequent chapters of the RGVMPO 2045 MTP, specifically Chapter 5, Strategies for Regional Mobility.

# 5 STRATEGIES FOR REGIONAL MOBILITY

As a venue for continuous, cooperative, and comprehensive planning, the RGVMPO helps review and coordinate strategies, services, and investment projects that address regional goals and priorities for mobility. This chapter reviews technology, coordination, and policy strategies. It is intended as a toolkit of methods to address and improve regional mobility and introduces how the RGVMPO reviews and adopts infrastructure investment projects for the Metropolitan Mobility and Rehabilitation Program and the Transportation Alternatives Set-Aside Program.

# REGIONAL MOBILITY STRATEGIES

This chapter is intended to serve as a toolkit and reference point of current and possible strategies to address several factors, summarized here as regional mobility. Beyond the implementation of the planning initiatives, goals, and objectives discussed in Chapter 2, this toolkit provides a review of strategies beyond infrastructure investment and capacity projects that can, in concert, help provide scalable alternatives that address regional issues.

Additionally, due to inherent fiscal constraints involved in infrastructure investment, it is critical to understand and implement strategies including available technology, coordination, policy, and alternative modes of travel.

The following sections provide a comprehensive description of possible strategies beyond the fiscal constraints of typical infrastructure investments and provides a broader palette of methods for meeting the RGVMAB transportation needs discussed in the Multimodal Needs Assessment (Chapter 4).

# TECHNOLOGY STRATEGIES

The following section details strategies to address mobility needs related to Transportation and System Management Operations (TSMO). These strategies focus on the utilization of up-to-date transportation facility technologies that aim to help the RGVMPO meet its mobility needs.

## *Intelligent Transportation Systems*

Transportation infrastructure is no longer limited to concrete pavement and asphalt. Recent improvements in operations and data collection have led to digital controls and integrated computer networks that require maintenance and management.

Opportunities for advancing the RGVMAB's electronic infrastructure comes in the form of Intelligent Transportation Systems (ITS), which includes technologies that improve transportation safety and mobility by integrating advanced communications into infrastructure and vehicles. The RGVMPO as an entity, serves as a stakeholder giving input on the Lower Rio Grande Valley Regional ITS Architecture and works in close coordination with the TxDOT Pharr District office as they implement, maintain, and record/monitor ITS performance in the region. The following electronic infrastructure has the potential to provide the RGVMAB with a favorable return on investment in terms of improved safety and mobility for the transportation network.

### Ramp Meters

Ramp meters are traffic signals installed on the entrance ramps of freeways that alternate between red and green light signals to control the flow of vehicles as they enter the freeway facility. This infrastructure allows for more controlled merging movements and could therefore provide benefit on major roadway entrance ramps where merging has proven to be particularly dangerous.

### Traveler Information Systems (TIS)

TIS is a strategy that involves making information about trip departures, routes, and travel time readily available to travelers and can be used for a variety of modes of transportation. This can be accomplished via websites, telephone hotlines, television, and radio, and particularly with dynamic messaging signs, which are digital signs that are installed along roadways and are updated with real-time travel information. Examples of the latter can be found on I-2 near the I-69C junction in Pharr/San Juan.

### Signal Preemption for Emergency Vehicles

Signal preemption is a technology that allows emergency vehicles to change signal cycles, allowing them to advance through traffic lights efficiently and safely. A preemption device is located on mast arms and detects/alters signal cycles when emergency vehicles approach the intersection. This technology is most effective along roadways in which emergency vehicles will typically need to travel longer distances, or intersections where minor arterials/roads connect to larger road classifications. The end goal for signal preemption is to reduce overall response rates for emergency vehicles.

### Video Detection (Non-Pavement-Invasive Detection)

Video detection is a form of non-pavement-invasive detection, also known as a traffic detector, which allows for the collection of traffic information, such as vehicle presence, volume, speed, and occupancy. Video detection provides a method of data gathering that does not require invasive procedures to be carried out on the pavement and thus has little to no impact on pavement resilience. This detail of information allows for more informed decisions when making infrastructure improvements.

## Traffic Signal & Intersection Improvements

Roadway users encounter traffic control signage and intersection signals on nearly every route they travel. While the primary function of intersection traffic control is to improve safety at intersections, it is also often a significant source of delay. Improper signage and poor signal timing result in unnecessarily long queues and impacts the reliability of the transportation system. Improving signage, signal timing, and equipment is a cost-effective way to facilitate traffic flow along a corridor.

This strategy has been implemented in Hidalgo County through expenditure of $1 million in Category 7 funding to address operational improvements. The funds were used to purchase new control boxes, clocks, etc. for McAllen, Pharr, Mission, and Edinburg in a regional attempt to address light synchronization. Similar efforts have also been undertaken in the Brownsville area to improve intersections for pedestrians along wide or highspeed corridors, such as installing median pedestrian islands on Boca Chica Blvd. to make conditions for pedestrians safer. Safety considerations include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings. The RGVMPO continues to work with its planning partners to identify corridors, which would benefit from traffic signal and intersection improvements and to prioritize projects.

## Traffic Signal Optimization


Traffic signal optimization is critical to managing congestion and traffic flow. The timing and phasing of signalized intersections should be reviewed periodically, especially in areas of the region experiencing rapid development or increased commercial activity. Traffic signals can also be coordinated along a corridor or throughout an entire system. As traffic volumes increase, signal coordination can be used to optimize high priority traffic corridors and increase the throughput of critical thoroughfares.

Adaptive signal control, which adjusts the timing of traffic lights based on real-time travel conditions, can also provide significant relief to congested corridors and cut costs associated with traffic signal timing data collection and computation.

Significant investments were recently made in the Brownsville area to improve traffic flow by setting aside a dedicated portion of Category 7 for CMP related improvements. This type of improvement is far less expensive for the MPO than a build or capacity-oriented solution for solving congestion issues. While success is not yet quantifiable, the RGVMPO received feedback from the public who have praised the installation of adjacent sidewalks, pushbuttons, and crosswalk signals related to the traffic signal upgrades.

## Traffic Data Collection

As transportation technology grows increasingly sophisticated, obtaining the amount of data required by new traffic optimization interfaces presents significant challenges to due to fiscal constraints. Automated traffic data collection creates an opportunity for transportation management agencies to receive a continuous supply of traffic data at a low cost. Because automated traffic data collection gathers data in real time, it facilitates many of the demand responsive TSMO strategies discussed earlier in this section (such as traffic signal optimization). New types of traffic data collection, such as Bluetooth and Wi-Fi detectors, are particularly appealing due to their lower operational and maintenance costs compared to in-road loop detectors. These types of detectors have the added benefit of being able to gather traveler information beyond traditional roadway vehicles to include bicycle and pedestrian roadway users.

# Emerging Technologies

In addition to the implementation of some of the ITS capability mentioned above, the emergence of new technologies and the adoption of policies and legislation will provide future decision makers with a new set of strategies to consider.

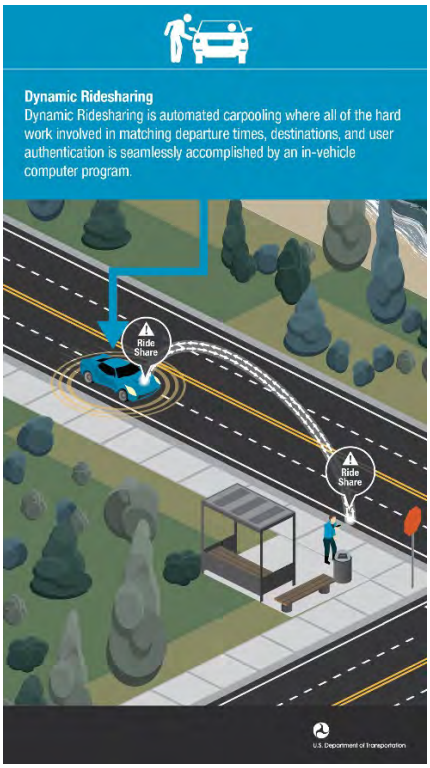
## Connected & Autonomous Vehicles

Connected and autonomous vehicles (AV) can be integrated into existing ITS architecture and could potentially improve mobility, traffic operations, and safety. Automated public transportation could help reduce congestion and the space needed to accommodate single-occupant vehicles, while also potentially improving efficiency and reducing fatalities and severe injuries due to fewer drivers on the road. This technology could also benefit freight and economic growth since improved travel times and traffic operations could have positive impacts on the economic vitality of rural and urbanized areas within the region. The National Association of City Transportation Officials (NACTO) provides further advice and guidance about AV in their "Blueprint for Autonomous Urbanism". Similarly, the Society of Automotive Engineers (SAE) and the National Highway Traffic Safety Administration (NHTSA) are working to provide guidance for safety and programming levels of automation. Staff of the urban area can help the development and deployment of these technologies throughout the region by beginning discussions on policy and land use, as well as keeping its planning partners informed about developments in autonomous vehicle technology.

## Smartphone Applications

As previously mentioned, TNCs and rideshare applications for smartphones are already influencing how people are choosing to commute. Uber recently unveiled (February 2018) their new "Express Pool" service in the Washington D.C. Metro Area. This new service uses traffic analytics and routing software to reduce backtracking and rerouting to pick up multiple passengers, as was the case with their "UberPool" service. In exchange for significant discounts and more direct routing, riders are picked up within two blocks of their origins, and dropped off within two blocks of their destinations, which entails passengers walking more at the beginning and end of their trips.

Smartphones are also already being used at Metro McAllen, Valley Metro, and Brownsville Metro to improve transit service and user experience through route information apps. The Metro McAllen, Brownsville Metro, and Valley Metro Transit Agencies can continue to work with its planning partners to develop or enhance the functionality of smartphone transit applications to further encourage travelers to use transit.



# COORDINATION & POLICY STRATEGIES

The following section details strategies to address mobility needs related to Transportation Demand Management (TDM). These strategies utilize coordination and policy programs that aim to help the RGVMPO meet its mobility needs.

## *Transportation Demand Management*

TDM strategies seek to reduce congestion on existing roadways by reducing the overall number of cars using roads or by redistributing cars away from congested areas and peak periods of travel. Encouraging the use of alternative modes of transportation (such as transit, biking, or walking) and increasing the number of travelers in each vehicle are the primary ways in which TDM strategies reduce single-occupant vehicle demand on existing roadways. Simply put, transportation demand can be managed by providing travelers with a wide range of efficient and accessible choices for reaching their destination.

With limited funding available to address congestion through increasing roadway capacity, TDM is a cost-effective means to improve use of the transportation system. TDM strategies are designed to accomplish the following:

- Improve mobility and accessibility by expanding and enhancing the range and quality of available travel choices.
- Reduce congestion and improve system reliability by decreasing the number of vehicles using the roadway.
- Reduce congestion and improve system reliability by shifting vehicle travel to non-peak periods.
- Increase safety by addressing congestion, which is generally related to higher occurrences of traffic incidents.
- Improve air quality by reducing the number of vehicle miles traveled, thereby saving energy, and decreasing the number of short vehicle trips.

The following sections detail best practices for TDM.

### *Strategies to Reduce Single Occupancy Vehicle Trips*

Carpool, vanpool, and school-pool programs encourage travelers with common destinations, particularly employment and school destinations, to share vehicles. These can be based on informal arrangements between individuals or formally arranged through ride-matching services. Available research indicates that improving awareness, trust, and willingness to ride with strangers, as well as flexibility in scheduling, may help to increase carpool use. Incentives are another effective tool for encouraging ridesharing.

Resources that may help to increase the use of carpooling, vanpooling, and school-pooling include publishing a webpage with "Frequently Asked Questions" (FAQs) that address the benefits of carpooling, tips for finding other carpoolers, advice on how to organize pick-ups and drop-offs, carpooling etiquette, and safety concerns, among others.

Additionally, some entities have used websites to facilitate the matching of individuals with other carpoolers by either hosting their own free ride-matching service using online ride share software, or publicizing ride-matching applications available to the public, such as web-based carpooling apps.

## *Incentives*

The RGVMPO can play a valuable role in working with area employers and schools to develop employer-based incentives to encourage ridesharing, such as tax incentives and preferential parking.

### TRANSPORTATION MANAGEMENT ORGANIZATIONS

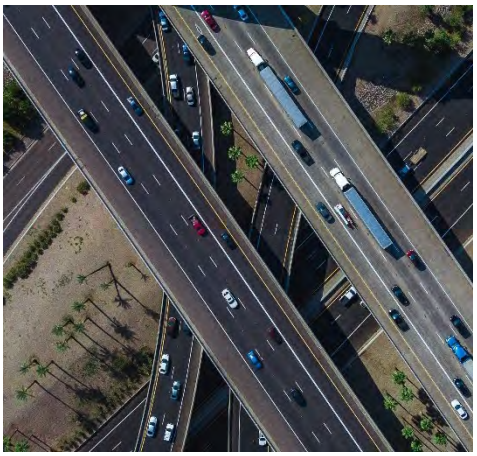
Transportation Management Organizations (TMOs) are non-profit organizations voluntarily created by a group of businesses – often with local government support – to coordinate transportation services in a defined area (typically a commercial district, medical center, or industrial park). Because they tend to serve a small geographic area and constituency, these groups can be very responsive to members' needs. TMOs provide a variety of TDM services that encourage more efficient use of transportation and parking resources, particularly through commute trip reduction strategies and ridesharing.

### EMPLOYER-BASED TOOLS & INCENTIVES

The commute to and from work is a significant contributor to traffic congestion along area roadways, particularly during peak travel times. TDM strategies that focus on employer-based tools and incentives can be an effective way to reduce travel by single occupant vehicles by coordinating ridesharing among employees, encouraging the use of alternate transportation modes for work trips, shifting work trips away from peak hours, and reducing work travel times and the number of overall trips. Examples of alternate modes of transportation include walking, biking, using transit, skateboarding, etc.

Employer-based TDM strategies fall into several categories:

- Encouraging employees to travel by alternate modes.
- Shifting trips away from peak periods of travel and reducing the total number of trips.
- Providing route information to divert commuters from congested routes.
- Using location-specific solutions - such as locating in developments with a mix of employment, residential, and service uses - to shorten the work commute.



Regional transportation planning entities can actively work with area employers to reduce congestion by expanding the transportation options available to their employees. This type of information can be provided on a website or delivered through a "speaker series" for educating area employers regarding options available and their benefits to employers, employees, and the community.

### PARKING MANAGEMENT & INCENTIVES

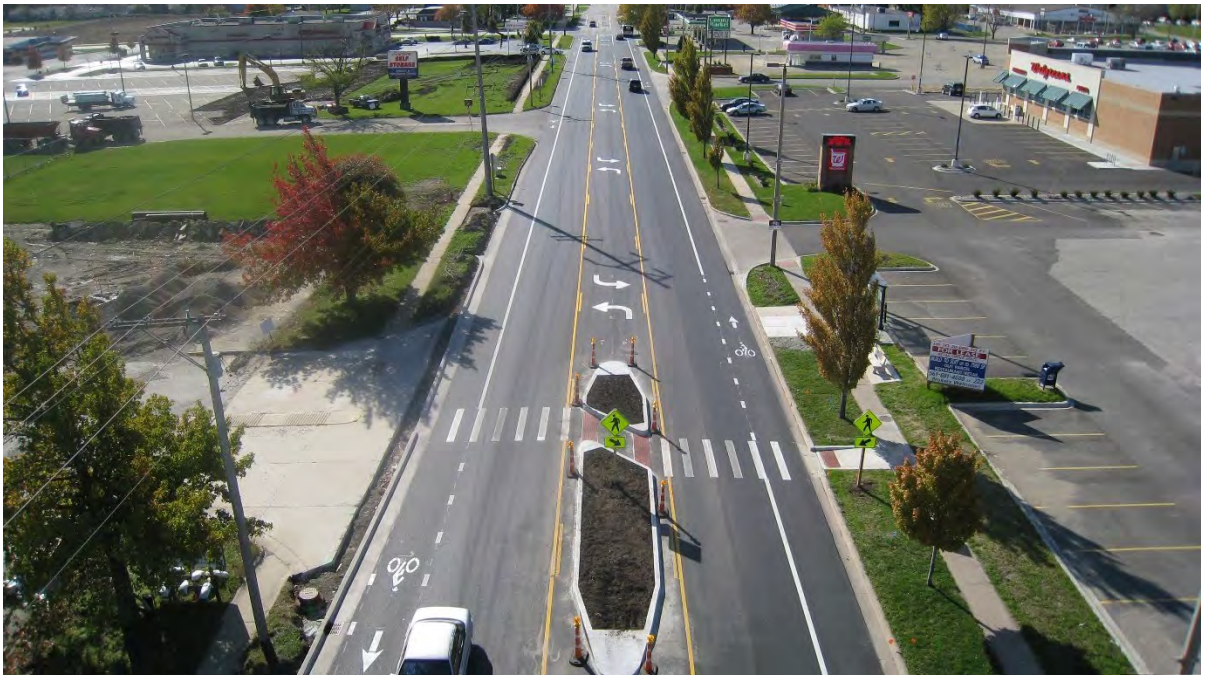
Parking management strategies and incentives encourage the use of alternate modes and can be implemented by both local jurisdictions and employers. These strategies typically rely on dis-incentivizing travel by single occupant vehicle by passing along more of the cost of parking to employees and/or limiting the availability of parking. Improved management of parking facilities can result in potential savings to communities and may reduce parking requirements.

## Complete Streets

The concept of "Complete Streets" is rooted in the idea that roads should be built with all users in mind, not just the private automobile. While Complete Streets principles include many TDM and TSMO strategies, the concept focuses less on improving traffic conditions and more on the livability of places through a combination of safety, efficiency and comfort. Complete Streets strategies address the needs of all users of the transportation system, including the young and the old, the disabled, and users of transit or non-motorized forms of transportation. They yield a wide range of benefits related to safety, equity, access, economic development, air quality, health, and livability.

Per the HCMPO 2014 Pedestrian Plan and 2018 HCMPO Bicycle Plan, several cities had noted efforts to implement Complete Streets, including Alton, Donna, McAllen, Mercedes, Mission, Palmhurst, and Weslaco. However, specific methods were not provided.

While policies adopted by local governments represent most Complete Streets policies adopted nationwide, MPOs can be integral partners in promoting and implementing Complete Streets strategies. Moving forward, it will be crucial for the RGVMPO and BPAC to continue to engage with localities and their community members to implement more Complete Streets practices.



## Maintenance

Infrastructure maintenance is a critical aspect of TSMO. Most infrastructure management agencies prefer to schedule routine repairs and inspections instead of embarking on ad-hoc patching and repairing. Schedule management for inspection and street repairs will enable city and county personnel to efficiently use limited resources. Regularly scheduled roadway resurfacing is necessary to provide uniform improvements to the existing roadways and to extend their useful life. Older roads, especially those built according to discontinued standards, should be reviewed to upgrade deficient sections based on modern design standards.

## Access Management

Access management refers to the regulation of the number of access points between a development and the adjacent roadway network. Many access management solutions involve installation of roadway medians where feasible to guide turning movements to the appropriate locations and improve traffic flow and safety. Another example of access management is optimizing the number and locations of driveway curb cuts in commercial or industrial zones.

Previous endeavors within the RGVMAB included MPO staff helping sponsor access management workshops for TAC members and city staff to attend. The RGVMPO sees many benefits from access management tools such as placement of laminations on the number and spots that curb cuts are permitted along a roadway.

## Targeted Traffic Enforcement

Consistent and reliable enforcement of traffic laws helps address public concerns about traffic issues. Focused speed studies (using radar trailers and traffic counters) and enforcement can be employed in the RGVMAB to discourage speeding on roadways within the region.

Safe Passing Ordinances are an example of traffic enforcement that can help encourage RGVMAB citizens to use alternative modes of transportation as they increase bicycle and pedestrian safety. These ordinances protect vulnerable road users by requiring a safe passing distance of 3 feet by motor vehicles and 6 feet for commercial vehicles when conditions allow. Currently, several cities within the RGVMAB have enacted such safe passing ordinances, including Brownsville, Edinburg, Harlingen, McAllen, Mission, Pharr, San Benito, San Juan, and Weslaco.

The same can be said for parking enforcement laws, which prevent automobiles from parking in ways that may be harmful to or discourage pedestrian and bicycle travel. Edinburg, Pharr, and San Juan currently have such enforcements in place, while Brownsville is currently making progress towards implementation.

## Traffic Calming

Because there are many instances where the number of aggressive drivers is greater than the capacity to enforce traffic laws, many cities and counties have implemented various "self-enforcing" speed and volume control devices. Most of these measures are referred to as "traffic calming." These physical devices can assist law enforcement in influencing driver behavior.

Most traffic calming measures are applied to residential streets, though certain measures can be applied to higher volume roadways as well. Broadly defined, the goals of traffic calming measures are:

- To slow down the average vehicle speeds for a roadway.
- To address excessive volumes for a roadway.
- To make drivers aware of the context and surroundings of roadways.

Traffic calming measures can sometimes impact access and response time for emergency personnel. Representatives of fire, police, and emergency services departments should be involved in the review of proposed traffic calming devices. The RGVMPO can work with its planning partners and emergency response agencies to identify locations suitable for traffic calming implementation. Common examples of traffic calming installations include:

- Speed humps or cushions
- Bulb outs
- Chicanes
- Raised crosswalks
- Traffic circles

## Traffic Incident Management

Traffic Incident Management (TIM) consists of a planned and coordinated process to detect, respond to, and quickly clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM strategies reduce the duration and impacts of traffic incidents and improve the safety of motorists, crash victims, and emergency responders. Traffic incident management involves coordination among several public and private sector partners, including:

- Law enforcement
- Emergency management and preparedness
- Fire and rescue
- Emergency medical services
- Towing and recovery
- Transportation departments
- Hazardous materials contractors
- Public safety communications
- Traffic information media

## All Ages & Abilities Facilities

Active transportation facilities which are designed and built to provide a high comfort level for all users including young, old, or disabled, is a more equitable approach to include more people in the active transportation network. All ages and abilities facility types focus on intuitive design, separation from motor vehicles, and a high level of comfort along all segments of the route. Occasionally, bike facilities may often have gaps which place vulnerable users in an uncomfortable position on the roadway, whereas all ages and abilities facility types will have a continuous and connected system. An example of an all ages and abilities facility in the RGVMAB is the Heavin Resaca Trail which connects BUS-77 with W. Stenger St. in San Bento and provides a separated, paved pathway comfortable for all users.

## Safe Routes to School Programs

Safe Routes to School (SRTS) programs aim to improve the ability to walk, bike, or wheel to schools. The program works with parents, schools, and local governments to prioritize and select projects that improve active transportation access to schools and ensure safe and comfortable routes for all students. Moving forward, the 2019 TxDOT Transportation Alternatives Set-Aside Program/Safe Routes to School Program Guide can be used as a guideline for SRTS implementation.

## Open Streets Events

Open Street events, also known as "Ciclovias" or Sunday Parkways, are dedicated to non-vehicle use for a pre-determined period of time. Residents use the streets for activities such as exercise, games, or playing music. Community vendors, and business may be involved to incorporate local traditions. The purpose of Open Streets events is two-fold: first, to provide an opportunity to build community and enjoy public space in a safe, quiet environment, and secondly, promote and encourage residents to use active modes of travel such a walking, biking, or transit, for daily activities.

Municipalities or local non-profits group can both host such events, and often the two work in unison to accomplish the event. The City of Brownsville currently hosts "CycloBia", its Open Streets event which makes selected Brownsville streets available to residents for recreational and sport activities. The City of Harlingen has also hosted similar events known as "Viva Streets". The Open Streets Project provides many resources and tools for communities who would like to start an open streets event.

## Social Behavior Change Programs

Many urban areas have started to offer residents who are interested in learning more about using active modes of travel additional information and support. Municipalities, transit agencies, and non-profit groups have maintained such programs to help reduce single occupancy vehicle trips, and increase trips made by walking, biking, or taking transit. Generally, programs work with individuals who are already interested, or who have considered making such changes, as not to waste effort with those residents who are not interested or ready to change their mode of travel. Community events, social media campaigns, and door to door marketing are all methods used to communicate with residents who choose to participate with the program. Successful programs have been shown to accomplish reductions in vehicle miles traveled within the communities the program is active.

## Safety & Security

The FAST Act requires that the transportation planning process address both the safety and security of the transportation system for motorized and non-motorized users. Federal guidelines define safety as "freedom from unintentional harm," and define security as "freedom from intentional harm."

The RGVMPO is responsible for addressing safety and security through the programming of transportation improvements. The MPO's role in coordinating regional transportation needs between the various local, state, and federal transportation agencies are vital to creating successful safety and security policies and enhancing regional mobility. By integrating the safety and security goals and objectives of regional stakeholders into the transportation planning process, the MPO can ensure that its plans and studies are consistent with and help support safety and security planning in the RGVMAB.

This also helps ensure that planning efforts contain strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and non-motorized users. The following sections discuss the various safety and security initiatives relevant to the RGVMAB and focus on implementation strategies. Please refer to Chapter 2 for full descriptions of referenced plans.

## Texas Strategic Highway Safety Plan

The SHSP identifies safety concerns and classifies them into seven key emphasis areas. The plan describes the trends in fatalities within each emphasis area, defines a specific target for 2022, and suggests strategies that should be undertaken to achieve the performance targets that are tailored to the unique circumstances of crashes within each emphasis area.

The strategies recommended in the SHSP should provide the basis for countermeasures that the RGVMPO consider addressing crash types and locations, as well as driving behaviors, that are responsible for the greatest number of crashes in the region – particularly those resulting in serious injuries or fatalities. Further information on RGVMAB safety trends can be found in Chapter 4.

## Highway Safety Improvement Plan

The HSIP's goal is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands. The program must be consistent with the Texas SHSP and report annually on the following:

- HSIP program structure
- Progress towards implanting HSIP-funded projects
- Progress made in achieving safety performance targets
- Assessment of the effectiveness of implemented improvements


TxDOT selects projects for implementation through HSIP following a data-driven approach that identifies safety problems in a systemic manner, identifies countermeasures to address them, and prioritizes projects based on the goals and objectives outlined in the SHSP.

## Texas Department of Emergency Management

The state emergency management program is coordinated by the Texas Division of Emergency Management (TDEM). This program is intended to ensure that the State of Texas and its local governments respond to and recover from emergencies and disasters. The program also implements plans and programs to help prevent or lessen the impact of emergencies and disasters, as well as programs to increase public awareness about threats and hazards.

The TDEM also coordinates emergency planning and administers disaster recovery, hazard mitigation, and homeland security grant programs in the State of Texas.

## *Previous MPO Safety and Security Efforts*

RGVMPO has embraced and is working to continue, integrate and expand the safety and security programs and relationships developed over time by the three former MPOs covering portions of the consolidated RGVMAB. This section describes those programs and how the RGVMPO is tying these historical efforts into a cohesive and comprehensive regional safety and security program.

### HSBMPO

The former HSBMPO used the "4-Es" of traffic safety to improve safety on roadways. The "4-Es" of traffic safety are Engineering, Enforcement, Emergency services, and Education. By using each of the "4-Es" the HSBMPO took steps to reduce crashes on roadways within the RGVMAB through safety related investments.

Several hurricane evacuation routes also pass through previously defined HSBMAB, which are vital roadways during emergency management events. The prioritization of these roadways in the project identification process is key to keeping a properly functioning disaster preparedness program.

Four international border crossings exist in the previous HSBMAB. Border security is vital to the region, state, and country, so interagency collaboration is needed to protect transportation infrastructure.

### HCMPO

The former HCMPO worked with state and federal agencies to study and monitor safety in the region while working locally to make the transportation system safer.


The implementation of a Traffic Incident Management System (TIMS) was developed in 2010 to analyze state crash records and help guide decisions on where to make roadway improvements. This data is also used to assess specific roadway areas for pedestrian, cyclist, transit, and freight safety, as well as where roadway improvements can be made.

Disaster preparedness was also a primary concern for the region and the HCMPO worked closely with TxDOT and the LRGVDC to coordinate plans for the event of a natural disaster.

Six international border crossings are present in what previously was the HCMAB. Close relationships have been formed with U.S. Customs and Border Protection along with the City of Reynosa, in Tamaulipas, Mexico to provide security to border crossings and bridges that connect the region economically and socially to Mexico, and RGVMPO must continue moving forward to ensure regional safety and security.

### BMPO

The former BMPO 2040 MTP update included four policy statements regarding safety and security planning, which were as follows:

- The Brownsville MPO supports, along with transportation partners, the development of a safe transportation system for all users (pedestrian, bicycle, private auto and trucking and public transportation).
- The Brownsville MPO will examine and consider increased transportation system security when evaluating or sponsoring funding requests for transportation improvement projects.
- The Brownsville MPO will champion or support agency coordination, training, and information-sharing efforts to promote security preparedness within the MPO planning area.
- The Brownsville MPO will seek available funding to strengthen the security of the MPO's transportation system.

Directed by these policy statements, the BMPO enacted various methods of incorporating safety and security measures. For example, in the project identification process, rankings included points for safety, and FHWA-sponsored safety workshops were held for MPO and local staff members.

The MPO also coordinated with many relevant agencies such as U.S. Homeland Security, Brownsville Police Department, and the Cameron County Police department.

Currently, the City of Brownville Office of Emergency Management and Homeland Security (OEMHS) serves Brownsville citizens by making plans to prepare for and respond to emergencies or disasters, either man-made or natural.

### RGVMPO ACTIONS TO CONTINUE AND INTEGRATE PREVIOUS SAFETY AND SECURITY EFFORTS

RGVMPO is working to continue the previous safety and security program development begun by the three former MPOs by undertaking a variety of actions and strategies, including but not limited to:

1. Evaluating the programs in each area to identify the most effective strategies and considering how they might be expanded to regional programs.
2. Identifying common themes and effective branding (such as the HSBMPO '4E' terminology) to develop common and consistent vocabulary for use in planning and program development efforts across the RGVMAB.
3. Looking for opportunities to consolidate and streamline task groups or committees to reduce redundancy and make the most effective use of people's available time, particularly emergency management and emergency response personnel that are so critical to both creating and carrying out the programs.
4. Respecting the uniqueness of each community by preserving and supporting independent safety and security programs where a customized, site specific, approach is the most effective and most likely to achieve the desired safety and security outcomes.
5. Continuing to work with federal, state, and local agencies and emergency managers to identify steps to be taken that may not have been previously considered or have become necessary due to emerging circumstances and challenges.

# STRATEGIES TO INCREASE TRAVEL BY ALTERNATIVE MODES OF TRANSPORTATION

Strategies to increase travel by alternative modes (i.e. transit and active transportation) can also help the RGVMAB reduce the number of automobile trips and enhance regional mobility. These strategies typically focus on the following objectives:

- Expand the service area of transit (regional and local) and connect bicycle and pedestrian infrastructure to transit facilities to reach more citizens, increasing connectivity to key destinations within the region.
- Improve the quality of transit service to increase convenience, comfort, ease of access, and affordability to encourage mode switch by providing various levels of service focused on community context.
- Educate the public on the availability of various alternative transportation modes and services and provide intuitive and accessible resources to help travelers navigate the region.
- Understanding and reducing congestion allowing for more efficient and safe travel of alternative transportation modes on the RGVMAB roadway network.

The following sections detail mode-specific strategies based on plans currently under development which will provide the RGVMAB with recommendations for alternative transportation mode implementation.

## *RGVMPO Active Transportation Plan*

Active transportation refers to non-motorized modes of travel, such as walking, bicycling, or using a wheelchair or mobility device. Because these modes provide fundamental means of mobility and accessibility to individuals, it is crucial for the metropolitan planning process to consider the needs of active transportation users. In addition, active transportation can provide communities with opportunities for enhanced recreation, leisure, and tourism by creating pedestrian and bicycle networks that allow people to spend time outdoors and encourage economic development. Some standard strategies include:

- Increasing bicycle/pedestrian safety through signage, lighting, facility type upgrades, etc.
- Increasing the continuity of facility networks
- Increasing availability of parking/storage and availability of amenities (e.g. RGVMPO Bike Friendly Business Program)

Accordingly, the RGVMPO Active Transportation Plan is being conducted in tandem with this MTP update to help address such strategies. The plan contains robust analysis on the RGVMAB's current state of active transportation infrastructure and ensuing needs; a set of network recommendations with a staged implementation plan; and facility design guidelines. The plan also conducted public engagement efforts alongside the MTP process to consider community priorities and locally identified needs.

All elements of the plan aim to guide the creation of a successful active transportation network that supplements the project prioritization described in this MTP update, specifically in Chapter 9. This will allow for the RGVMPO and its planning partners to optimize the multimodal transportation project implementation process in an effective and fiscally constrained manner, while increasing the quality of life for the RGVMAB residents by providing more multimodal mobility options.

To maintain focus on active transportation issues, the BPAC exists to address pertinent active transportation matters and present recommendations to the TAC. This subcommittee contains a mixture of TAC members, bicycle advocates, pedestrian advocates, and other relevant stakeholders. Continued support from the RGVMPO BPAC will be essential to the enhancement of the RGVMAB active transportation network. The full Active Transportation Plan is available for review on the RGVMPO website.

## RGVMPO 2030 Transit Development Plan

While personal automobiles typically offer comfort and ease to users, traveling by transit typically requires longer travel times and less flexibility in schedule. Improving transit services involves strategies and planning that makes the option of taking transit competitive to that of using a personal automobile by creating time and cost savings. Such strategies include:

- Shortening overall travel times
- Increasing traveler comfort
- Providing added flexibility regarding travel times and destinations

Certain aspects of bus travel will always be less convenient than travel by car, however, there are several improvements that can be made to existing regional (i.e. Valley Metro) and local (i.e. Brownsville Metro, Island Metro, McAllen Metro, UTRGV) service to influence a future transition to transit ridership.

The RGVMPO is also conducting the 2030 Transportation Development Plan (TDP) in concurrence with this MTP update to ensure a coordinated effort in the multimodal transportation planning process. The TDP contains in depth analysis on the RGVMAB's existing transit conditions and needs; a set of service standards to create a unified regional state of transit; scenario alternatives for Valley Metro to efficiently connect to existing service providers; and a transit investment analysis detailing the level of funding necessary to achieve the scenarios developed. The plan also conducted a series of public engagement events alongside the MTP outreach efforts to understand community priorities and obtain local input on specific areas of need. These engagement findings were paired with the TDP's technical analyses to provide better mobility options within the RGVMAB via transit.

The addition of the TDP, alongside the MTP prioritization process, will allow for the RGVMPO and its planning partners to better understand how to enhance the existing transit system, in turn reducing single occupancy vehicle travel and improving multimodal options for RGVMAB citizens. The full TDP is available for review through the RGVMPO website.

### *RGVMPO Congestion Management Plan*

The CMP is also currently under development and aims to gather data on congestion levels in the urbanized areas of the RGVMAB and ties in closely to the technology, coordination, and policy strategies discussed earlier in this chapter. The CMP network being analyzed consists of roadways within the RGVMAB that are either FHWA functionally classified or identified as a transit route. This process informs cost balanced strategies for reducing delay and congestion and is an integral resource used in the development of this MTP as well as in the decision-making framework established in the MTP for future investments strategies prioritization.

## INFRASTRUCTURE INVESTMENT STRATEGIES

The following section outlines the steps taken to address or mitigate the deficiencies identified through the multimodal needs analysis (Chapter 4). Steps include the development of an unconstrained list of potential infrastructure projects, completing a project prioritization process based on the 10 FAST Act planning factors and community values, and creating a staged implementation plan for the MTP planning horizon (Chapter 6). This process allows for the RGVMPO to build off data-driven analyses and community input to create a subjective project prioritization which will in turn allow the region to implement projects that address gaps in transportation infrastructure in a timely and fiscally feasible manner.

## Project Identification

No-build strategies were considered and potential projects to expand or build new facilities were examined. The results of technical reviews, available planning studies, highway and corridor studies, consultation with community members and other stakeholders. The RGVMPO 2045 MTP projects were identified by each previous individual MPOs and include existing projects, projects from the 2040 MTP, and a call for projects during the development of the 2019 MTP.

Once the alternative policy and program strategies were considered, potential projects to expand or build new facilities within the RGVMAB were examined.

The combined results from public and stakeholder engagement, plan review, multimodal needs assessment, and a call for transportation projects was used to develop a list of candidate projects for further consideration.

## Project Selection

The RGVMPO works in close coordination with the TxDOT Pharr District, using objective data and quantitative analysis tools, to identify and address regional needs based on state and national goals. Through this process, TxDOT category funding is allocated towards transportation infrastructure projects. This includes funding categories such as preventative maintenance and rehabilitation, corridor and connectivity enhancements, non-traditionally funded transportation projects, grade separation programs, safety improvements, border infrastructure, and other supplemental transportation projects.

Regarding Category 7 and 9 funding projects, the RGVMPO and TAC incorporated the federal planning factors and feedback received during the visioning process to help determine regional priorities and develop a draft prioritized project list. FAST Act planning factors can be referenced in Chapter 2. The TAC, with assistance from RGVMPO staff, used a project evaluation process based on technical findings, stakeholder input, and professional judgement to evaluate and prioritize the project list. The project selection process is further discussed in Chapter 9.

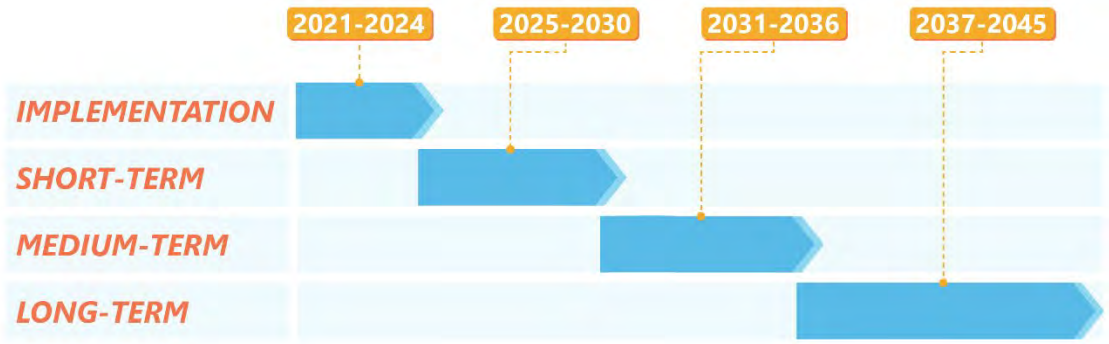
## Project List Adoption & Staged Improvement Plan

The TPB oversees final approval of the draft project list after the prioritization process is finalized. Once the TAC completed their project selection process, the draft list of prioritized projects was sent to the TPB, which approved the draft list for public review and feedback. Following public comment, the TPB approved the final project list upon adoption of the RGVMPO 2045 MTP.

The final list of prioritized projects is presented in the following chapter, which displays the project list in a phased plan for fiscally constrained implementation over the 26-year plan horizon. The implementation phases are listed below:

- Implementation Stage (2021 – 2024)
- Short-Term Stage (2025 – 2030)
- Medium-Term Stage (2031 – 2036)
- Long-Term Stage (2037 – 2045)

*Figure 5-1: Project List Adoption & Staged Improvement Plan*




Chapter 6 also provides corresponding maps to identify projects in each stage of the plan.

# 6 STAGED IMPROVEMENT PLAN

This chapter details the staged improvements over the life of the MTP, shown in bands of time coinciding with the TIP, UTP, and remaining planning horizon beyond the UTP.

This chapter also details the specific fiscally constrained program of projects for Roadway Projects, including Active Transportation Projects, and Transit Projects.

This chapter includes maps and tables that illustrate the RGVMPO 2045 MTP project list. The fiscally constrained projects in this chapter have been grouped into four stages based on related transportation improvement programming and planning documents, as well as staging of revenue forecasts discussed in Chapter 8. The first stage is set up to coincide with projects in the Transportation Improvement Program (TIP), as well as the first stage of the 2021 Unified Transportation Program (UTP). The next segment includes projects expected to be in operation within the second stage of the current 2021 UTP. The remaining projects represented in this chapter are those that fall beyond 2030 and within the horizon of this MTP (2031-2045). The period between 2031 to 2045 is seperated into two segments in order to support the development of future TIPs and MTPs.

Additionaly, projects listed in the previous MTP as planned in fiscal year 2020 have been included in this chapter for illustrative purposes (Figure 6-1 and Table 6-1).

The years covered by the stages of the RGVMPO 2045 MTP are separated as following:

- 2021-2024 Implementation Stage (TIP & near term UTP)
- 2025-2030 Short-Term Stage (Remaining Years of 2021 UTP)
- 2031-2036 Medium-Term Stage
- 2037-2045 Long Term Stage
- Unfunded Projects

In addition to the fiscally constrained project list, this chapter includes a breakdown of TxDOT regionwide grouped projects and locally funded, unfunded, or illustrative projects identified and/or submitted as part of the MTP development process.

# FISCALLY CONSTRAINED PLAN OF ROADWAY PROJECTS

The following maps (Table 6-2 through Figure 6-4) show the locations of the fiscally constrained multimodal projects in the RGVMAB. The projects are split by the four project stages previously mentioned. Table 6-2 through Table 6-5 present the fiscally constrained multimodal transportation system project listed by year with associated estimated year of expenditure (YOE) costs. Projects that have an asterik (*) by their project number are projects with active transportation elements and projects that have a superscript plus sign ($^{+}$) are projects with transit components. The development of the estimated total project costs associated with projects including future year of expenditure dollars is discussed in greater detail in Chapter 8. The total costs discussed in Chapter 8 include:

- Current Construction Cost Estimate
- Letting Year Construction dollars
- Right of way (ROW) cost (12% of construction cost)
- Preliminary Engineering (4.9% of construction cost)
- Construction Engineering (CE) Cost (<$2 M 7.5%, $2-$10 M 5%, >$10 M 4.5%, of construction cost)

Table 6-6 represents the unconstrained, unfunded projects. These projects are still included as illustrative regionally significant projects to support the consideration of future planning efforts.

*Figure 6-1: RGVMPO 2020 Illustrative*

*Table 6-1: RGVMPO Fiscal Year 2020 Projects*

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 1 | South Port Connector | On South Port Connector, From Ostos Road | SH 4 | Construct a direct connector at Port of Brownsville | C | 0921-06-288 | BND | $20,363,457 |
| 2 | CS | B Metro Eastside Transfer Station | At Jose Colunga Jr & Billy Mitchell | Construct Bus Facility | | 0921-06-304 | City of Brownsville | $812,862 |
| 3 | FM 802 | FM 1847 | Old Port Isabel Rd. | Proposed 6 lanes with raised center median. | C | 1140-02-038 | TxDOT | $6,354,499 |
| 4 | Veterans International Bridge at Los Tomates | Port of Entry | | Expansion of primary lanes for passenger vehicles. | E | 0921-06-313 | CCRMA | $500,000 |
| 5 | CS | On Stuart PL Rd., 0.18 MI N of Primera Rd. | FM 2994/Wilson Rd. | Construction of 1.2mi of ADA-accessible 5 to 6-foot-wide sidewalk | C,E | 0921-06-311 | City of Primera | $578,412 |
| 6 (not mapped) | Donna Int'l Bridge Commercial Approach | Donna BSIF | Future IBTC / FM 493 intersection | Construct 4 lane, controlled access tolled facility | R | 0921-02-382 | Donna | $3,300,000 |
| 7 (not mapped) | Owassa Rd | I Rd. | Cesar Chavez Rd. | Construct a 4 lane, urban roadway | R | 0921-02-374 | HC 2 - 4 | $800,000 |
| 8 (not mapped) | Signal Improvements | Within Hidalgo County | | Traffic signal hardware improvements | | 0921-02-155 | Various | $1,000,000 |
| 9 | Pharr Comprehensive Pedestrian Safety Wellness Plan | City limits | City limits | Planning study for new construction pedestrian safety improvements | TAP | 0921-02-389 | Pharr | $254,000 |
| 10 | Vision Zero Planning Study | City limits | City limits | Vision Zero Planning Study | TAP | 0921-02-390 | McAllen | $150,000 |
| 11 | SH 68 | US-83 | FM 1925 | Construct new 4 lane divided rural highway facility | R | 3629-01-001 | TxDOT | $92,629,626 |

*Figure 6-2: RGVMPO Implementation Stage Projects (2021 -2024)*

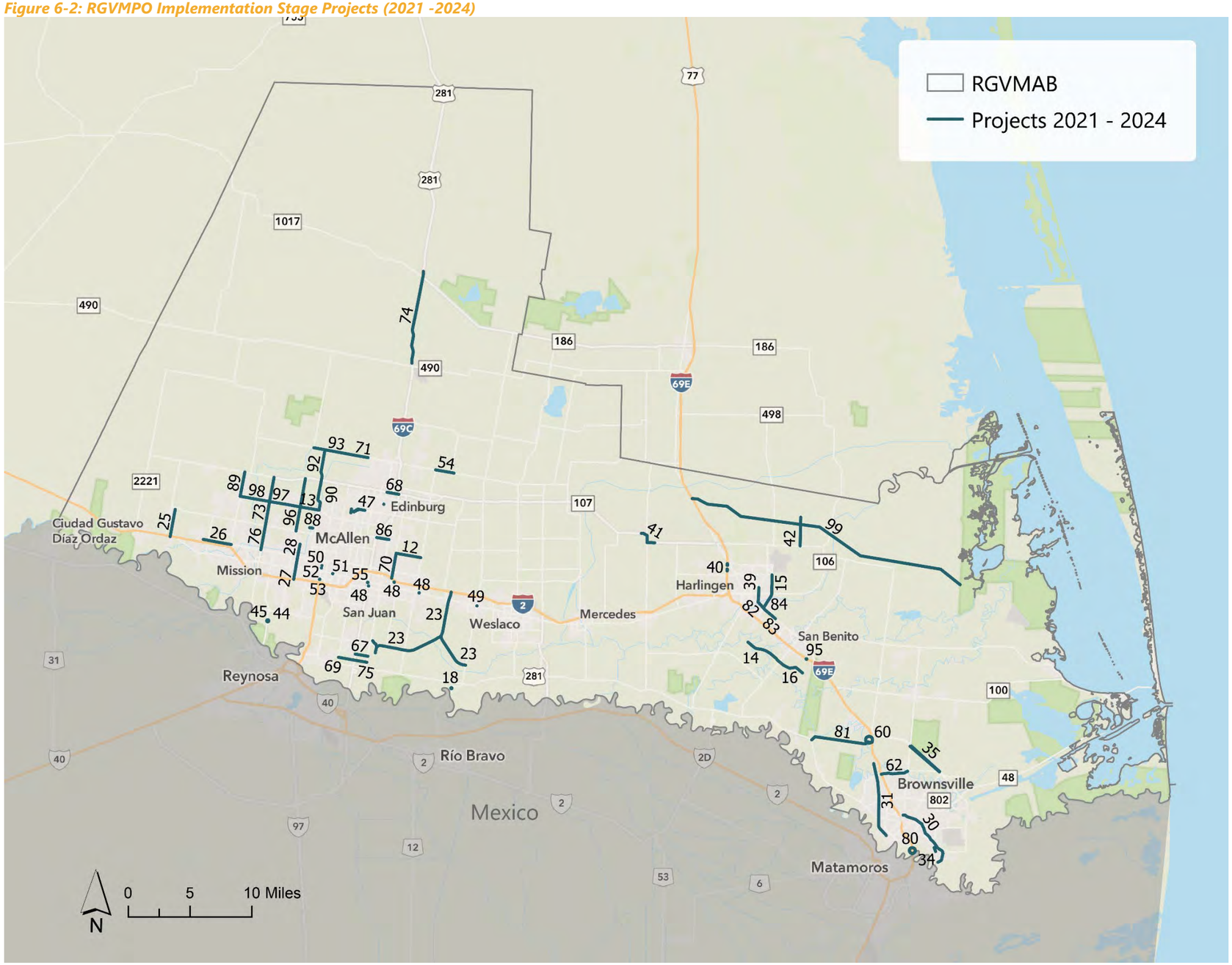


*Table 6-2: RGVMPO Implementation Stage Projects and Funding (2021-2024)*

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 12 | CS - Nolana Loop (S1) | On Nolana Loop from FM 1426 (Raul Longoria) | FM 907 | Widen to 4 Lane Divided | R | 0921-02-361 | HC 2 / McAllen | $2,000,000 |
| 13 | FM 676 | Taylor Rd. | FM 2220 | Widen to 4 Lane Divided | E | 1064-01-043 | McAllen / HC 4 | $671,870 |
| 14 | CS | S. Parallel Corridor FM 509 | FM 2520 | Construct 2 lane rural | C | 0921-06-252 | Cameron County | $7,500,000 |
| 15* | Loop 499 | Rio Hondo Rd. | FM 106 (Harrison Ave.) | Construction of 1.48 mi of ADA accessible 6 ft wide sidewalks | C,E | 0921-06-312 | City of Harlingen | $544,711 |
| 16 | CS | S. Parallel Corridor, FM 2520 | FM 1577 | New Location - 2 lane Rural roadway in a proposed 120 Foot ROW | E,R | 0921-06-257 | Cameron County | $2,200,000 |
| 17* | VA | Cano St. | Freddy Gonzalez | Installation of solar powered lighting along the Cano walking trail | TAP | 0921-02-392 | Edinburg | $534,400 |
| 18 | CS | At Donna Int'l Bridge | | Construction commercial facilities NB loaded/empty & SB loaded trucks | C | 0921-02-394 | Donna | $44,529,491 |
| 19 (not mapped) | SH 495 Ext. (Section 1) | FM 1423 | FM 493 | Proposed construction of 4 lane divided urban section within 100ft of ROW | E | 0921-02-470 | PCT 1 | $2,244,851 |
| 20 (not mapped) | SH 495 Ext. (Section 2) | FM 493 | Mile 6 Rd. | Proposed construction of 4 lane divided urban section within 100ft of ROW. | E | 0921-02-471 | PCT 1 | $1,560,643 |
| 21 (not mapped) | FM 1925 (Section 1) | FM 2221 | 3.1 Miles N | Proposed 2-lane rural highway with 10 ft. shoulders in 120 ft. of ROW | E | 0921-02-472 | PCT 3 | $1,320,315 |
| 22 (not mapped) | FM 1925 (Section 2) | Jara Chinas Rd. | 8.6 Miles East (New Location) | Proposed 2-lane rural highway with 10 ft. shoulders in 120 ft. of ROW | E | 0921-02-473 | PCT 3 | $2,764,113 |
| 23 | CS | On 365 Tollway, FM 396 (Anzalduas Highway) | US-281 Military Highway | Construct 4-lane controlled access tolled facility | C | 0921-02-368 | HCRMA | $262,389,609 |
| 24 | International Bridge Trade Corridor (IBTC) | 365 Tollway at FM 493 | I-2 | Construct non-tolled 4 lane divided (at grade) highway (interim) | E | 0921-02-142 | HCRMA | $8,000,000 |
| 25 | CS (Phase I) | Liberty Blvd, from Mile 3 | US-83 | Widen from 2 to 4 lanes with dedicated left turn lane | R | 0921-02-194 | Hidalgo County | $1,185,242 |
| 26 | CS | On Veterans SH 495 from I-2/US-83 | SH 364 (La Homma Rd.) | Construct 4 lane divide urban section | R | 0865-01-108 | Palmview/ HC 3 | $2,699,360 |
| 27 | CS | On Taylor Rd, from Bus 83 | I-2 (US-83) | Widen from 2 to 4 lanes Roadway | R | 0921-02-327 | HC 3 | $1,192,488 |
| 28 | CS | On Taylor Rd. @Mile 2 N | Business 83 | Widen from 2 lanes to 4 lane divided urban | R | 0921-02-328 | HC 3 | $2,011,852 |
| 29 (not mapped) | CS | On Indiana Ave, 0.1 Mile North of California Rd. | 0.62 Mile North of FM 1419 (Southmost Rd.) | Realignment, construct 2 lane rural roadway | E | 0921-06-305 | CCRMA | $312,500 |
| 30* | VA | Southmost Nature Trail, from FM 1847 | Alameda Dr./Monsees Rd. | Construct 10' concrete trail | C | 0921-06-289 | City of Brownsville | $6,968,000 |
| 31* | CS | On West Rail Trail, From Palm Blvd. @ Former Rail Line | I-69E SB Frontage Road, W. of Old Alice Rd. | Construct Multimodal Facility | E | 0921-06-293 | CCRMA | $1,000,000 |
| 32 (not mapped) | CS | On East Loop, from I-69E | SH 4 | Construction of 4 to 6 lane roadway | E | 0921-06-315 | CCRMA | $3,875,000 |
| 33 (not mapped) | CS | On Old Alice Rd., SH 100 | Sports Park Blvd. | Widen from 2 lane to 4 lane Urban Roadway | E | 0921-06-290 | Cameron County | $1,100,000 |

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 34* | VA | Southmost Nature Trail Phase, from Manzano St. | La Posada Dr. | Construct 10' concrete trail | C, E | 0921-06-280 | City of Brownsville | $375,000 |
| 35 | SH 550 | 0.203mi S of FM 1847 | 1.13mi SE of UPRR Overpass @ FM 3248 | Widen from 2 lanes to 4 lanes | C,E, E | 0684-01-068 | CCRMA | $17,500,000 |
| 36* (not mapped) | VA | 2 Mi North of FM 511/FM 1847 int. | Along Canal, .7 mi E, .38 mi N, 0.3 mi W | Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos | C | 0921-06-322 | City of Brownsville | $999,080 |
| 37 (not mapped) | West Blvd. | FM 3248 ( Alton Gloor) | FM 802 (Ruben Torres Blvd.) | Roadway/ Trail Construction Phase of Multi Modal Corridor | C | 0921-06-340 | CCRMA | $6,378,902 |
| 38 (not mapped) | CS | On Military HW Connector, from I-69E & SH 100 | US-281 Military Highway | Construction of a 4-lane divided highway | E | 0921-06-339 | CCRMA | $750,000 |
| 39 | Bus 77X | Jefferson Ave. | 0.035 Mi S of SS 206 | Install Raised Median | C | 0327-08-102 | TxDOT | $651,026 |
| 40 | I-69E | Industrial Blvd. | Loop 499/ Primera Rd. | NB and SB Ramps Reversal | C | 0327-08-092 | TxDOT | $2,758,544 |
| 41* | SH 107 | Louisiana St. | Hooks E. Hodges Rd. | Reconstruct to 4 lanes C&G and add ADA sidewalk | C | 0342-03-037 | TxDOT | $10,185,301 |
| 42 | CS | FM 509 on New Location from FM 508 | FM 1599 | New Location 2 lane Rural Roadway | C,E,R | 0921-06-254 | CCRMA | $9,686,000 |
| 43 | CS | On Taylor Rd. @Mile 2 N | Business 83 | 4 lanes divided urban | C, E | 0921-02-328 | HC 3 | $8,306,011 |
| 44 | Anzalduas Int'l Port of Entry | Anzalduas Int Bridge Port of Entry | South Bound | Construction of Southbound Inspection Station | C | 0921-02-303 | McAllen | $10,000,000 |
| 45 | Anzalduas Int'l Port of Entry (NB) | Anzalduas Land Port of Entry NB Empties | 0 | Inbound commercial inspection pre-primary inspection pre-cleared cargo traffic | C | 0921-02-379 | McAllen | $43,700,000 |
| 46 | CS | On Mile 3 N, Tom Gill Rd. | FM 492 (Goodwin Rd.) | Widen to 4 Lane Divided - Curb & Gutter Section | C,E,R | 0921-02-321 | HC 3 | $17,213,674 |
| 47* | VA | Canton Rd & Jackson Rd. (Edinburg) | Bicentennial H/B & Wisconsin (McAllen) | Jackson Rd Hike & Bike Project Phase II | TAP | 0921-02-431 | McAllen / Edinburg | $2,753,775 |
| 48* | VA | City of Pharr | City of Alamo | PSJA Tri-City Pedestrian Safety Improvements - New Construction Safety Improvement | TAP | 0921-02-391 | Alamo / San Juan / Pharr | $2,286,000 |
| 49* | VA | Donna Sidewalk Project | S. International Blvd. | Rehabilitation of deteriorated sidewalks and construction of new sidewalks | TAP | 0921-02-393 | Donna | $340,741 |
| 50 | FM 1926 (23rd St.) | FM 1926 (23rd St.) & Hackberry Ave. | 0 | Addition of North and South bound center turn lanes | C | 1804-01-068 | McAllen | $86,265 |
| 51 | SH 336 | Intersection Business US-83 | 135ft S Intersection US Business 83 | Addition of north bound right turn lane | C | 0621-01-106 | McAllen | $77,958 |
| 52 | FM 1926 (23rd St.) | FM 1926 (23rd St.) & Ebony Ave. | 0 | Addition of east, north, and south bound center turn lanes | C | 1804-01-071 | McAllen | $141,219 |
| 53 | FM 1926 (23rd St.) | FM 1926 (23rd St.) & Jackson Ave. | 0 | Addition of North and South bound center turn lanes | C | 1804-01-072 | McAllen | $116,618 |
| 54 | FM 1925 | FM 907 (Alamo Rd.) | Sharp Rd. | Widen to 4 Lane Divided | C | 1803-02-035 | TxDOT | $10,000,000 |
| 55* | VA | City Pharr | City Alamo | PSJA Tri-City Ped Improvement Phase II | TAP | 0921-02-432 | Pharr / San Juan / Alamo | $2,196,840 |
| 56* (not mapped) | VA | Within Hidalgo County | 0 | RGV B-Cycle Bikeshare | TAP | 0921-02-429 | LRGVDC | $544,000 |

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 57* (not mapped) | VA | Within Hidalgo County | 0 | Hidalgo County Active Mobility Plan | TAP | 0921-02-430 | Valley Metro | $330,000 |
| 58 | International Bridge Trade Corridor (IBTC) | 365 Tollway at FM 493 | I-2 | Construct non-tolled 4 lane divided (at grade) highway (interim) | R | 0921-02-142 | HCRMA | $40,000,000 |
| 59* (not mapped) | VA | Phase 1 terminus, 1 Mile North | 0.38 miles west, 0.1 miles north | Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos | C | 0921-06-324 | City of Brownsville | $999,080 |
| 60* | Mesquite St. | Interior Roads at Olmito Townsite | FM 1732 | Construct 5' concrete sidewalks | C & E | 0921-06-326 | Cameron County | $418,243 |
| 61 (not mapped) | CS | On Whipple Rd., FM 1575 | FM 1847 | Proposed 2 lane roadway with continuous left turn lane. | E | 0921-06-292 | CCRMA | $380,300 |
| 62 | FM 3248 | I-69E | FM 1847 | Widen from 4 lanes to 6 lanes with raised median. | C | 2717-01-027 | TxDOT | $15,120,000 |
| 63* (not mapped) | VA | On W side of FM 1847, Henderson Rd. | First Street | Construct sidewalk on west side of FM 1847 | C | 0921-06-325 | City of Los Fresnos | $412,608 |
| 64 | CS | S. Parallel Corridor, FM 2520 | FM 1577 | New Location - 2 lane Rural roadway in a proposed 120 Foot ROW | C | 0921-06-257 | Cameron County | $9,000,000 |
| 65 (not mapped) | Bus 77X | SS 206 | Commerce St. | Construct Raised Median | C | 0327-08-098 | TxDOT | $5,203,597 |
| 66 | FM 676 | Taylor Rd. | FM 2220 | Widen to 4 Lane Divided | C | 1064-01-043 | TXDOT / HC 4 | $6,000,000 |
| 67 | CS | On Anaya Rd., from Cage Blvd. | Veterans Blvd. | Widen to 5 lanes | C,R | 0921-02-400 | Pharr | $5,930,000 |
| 68 | SH 107 | Bus 281-W | I-69C (US-281) | Operational Improvements and Rehabilitation | C | 0342-01-093 | TxDOT / HC 2 | $19,000,000 |
| 69 | CS | On Hi Line W, Jackson Rd. | Cage Blvd. | Widen to 2 lane with continuous left turn lane | C,R | 0921-02-376 | Pharr | $5,860,000 |
| 70 | FM 1426 (Raul Longoria) | Nolana Loop | I-2 | Widen from 4 lanes to 6 lanes with raised median | C | 1429-02-036 | TxDOT/ HC 2 | $16,000,000 |
| 71 | FM 1925 | 10th St. | McColl Rd. | Widen to 6 lane with raised median | C | 1803-01-092 | TXDOT | $9,125,000 |
| 72 | CS | Liberty Blvd. from Mile 3 | US-83 | Widen to 4 lanes with dedicated left turn lane | C, E | 0921-02-194 | HC 3 | $10,535,477 |
| 73 | SH 107 (Conway) | FM 1924 N (Mile 3 N) | FM 676 (Mile 5 N) | Construct 6 Lane Divided Rural | C | 0528-01-113 | TxDOT/HC 3 | $10,812,000 |
| 74 | US-281 | 0.273 mi S SH 186 | 0.023 mi N FM 490 | Rural Expy Facility- Construct 4 lanes with overpasses & two - 2 lanes frontage roads | C | 0255-07-140 | HC 4 | $118,700,000 |
| 75 | CS | On Hi-Line Rd., From Cage Blvd. | Veterans Rd. | Widen to 2 lane with continuous left turn and shoulders | C &R | 0921-02-375 | Pharr | $4,523,551 |
| 76 | SH 107 (Conway) | FM 1924 (Mile 3 N) | SH 495 | Construct 6 Lane w Raised Median | C | 0528-01-118 | TxDOT/ HC 3 | $20,400,000 |
| 77 | SH 107 (Conway) | FM 676 | FM 681/FM 2993 | Widen from 4 lanes to 6 lanes divided urban | C | 0528-01-112 | TxDOT/ HC 3 | $15,300,000 |
| 78 | SH 495 | Veterans Blvd., from I-2 | La Homa Rd. | Construct 4 lane divide urban section | C | 0865-01-108 | TxDOT | $12,745,750 |
| 79* (not mapped) | VA | Interior Roads at Las Palmas Mobile Estates | FM 802 | Construct 5' concrete sidewalks | C & E | 0921-06-327 | Cameron County | $315,925 |
| 80 | VA | Vicinity of GSA Facility at Brownsville | Veterans Intl Bridge at los Tomates | Construction of Border Safety Inspection Facility | C | 0921-06-207 | TxDOT | $15,600,000 |
| 81 | FM 1732 | US-281 | I-69E | Widen from 2 lanes to 4 lanes Urban | C | 0684-03-019 | TxDOT | $22,560,000 |
| 82 | Bus 77X | Commerce St. | Arroyo Bridge | Construct Raised Median | C | 0039-12-254 | TxDOT | $1,386,434 |

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 83 | Bus 77X | Arroyo Colorado Bridge | FM 510 | Widen from 4 lanes to 6 lanes with Raised Median | C | 0039-12-057 | TxDOT | $37,543,328 |
| 84 | Loop 499 | Business 77 | SS 206 | Widen from 4 lanes to 6 lanes with Raised Median | C | 1137-02-038 | TxDOT | $15,300,000 |
| 85 | CS | On Taylor Rd. from Bus 83 | I-2 (US-83) | Widen 4 lanes with left turn lane | C,E | 0921-02-327 | Hidalgo County | $6,750,196 |
| 86 | CS | On Owassa Rd., from I-69 (US-281) | I Rd. | Widen from 2 lanes to 4 Lane roadway | C | 0921-02-358 | TXDOT | $5,500,000 |
| 87 (not mapped) | US-281 | Hidalgo/ Brooks CL | 0.315Mi N of SH 186 | Construct 4 Lanes with overpasses and two-2 lane frontage roads | C | 0255-06-069 | TXDOT | $194,000,000 |
| 88 | CS | On Dove St., from 41st St. | Bentsen Rd. | Construct 4 lane divide roadway (New Location) | C | 0921-02-341 | McAllen | $1,404,225 |
| 89 | SH 364 (La Homa) | FM 2221 | FM 676 | Widen from 2 lanes to 5 lane curb and gutter | C | 2966-01-014 | TxDOT | $5,500,000 |
| 90 | FM 2220 (Ware Rd.) | SH 107 | Mile 5 N (Auburn Ave.) | Proposed 6 Lane Median | C | 2094-01-062 | TxDOT | $17,470,000 |
| 91 | FM 494 | SH 107 | FM 676 (Mile 5) | Widen to 4 lane | C | 0864-01-068 | TxDOT | $13,942,377 |
| 92 | FM 2220 (Ware Rd.) | FM 1925 (Monte Cristo) | SH 107 | Widen from 2 lanes to 6 lanes with median | C | 2094-01-063 | McAllen /TxDOT | $18,774,045 |
| 93 | FM 1925 | Wallace Rd. | 10th St. | 6 lane with raised median | C | 1803-01-094 | TxDOT | $23,500,000 |
| 94 | SH 68 | US-83 | FM 1925 | Construct new 4 lane divided rural highway facility | C | 3629-01-001 | TxDOT | $183,600,000 |
| 95 | I-69E/US-77/83 Northbound | At I-69 & FM 732 Intersection | At Sherer Rd./ Bus 77 Intersection | Proposed Continuous Frontage Roads and Intersection improvement | C | 0039-07-049 | 0 | $17,810,000 |
| 96 | FM 494 | FM 676 (Mile 5) | FM 1924 (Mile 3) | Widen to 4 lane | C | 0864-01-069 | TXDOT / HC 3 | $392,000 |
| 97 | FM 676 (Mile 5) | SH 107 (Conway) | Taylor Rd. | Widen to 4 Lane Divide | C | 1064-01-027 | TxDOT | $11,894,902 |
| 98 | FM 676 (Mile 5 N) | SH 364 E (La Homa Rd.) | SH 107 (Conway) | Widen to 4 Lane Divided | C | 1064-01-032 | TXDOT / HC 3 | $15,000,000 |
| 99 | Outer Parkway | I-69E | FM 106/General Brant Rd. | New Location - Controlled Access 4 lane Toll Facility | C | 0921-06-283 | 0 | $220,000,000 |

*Figure 6-3: RGVMPO Short-Term Stage Projects (2025-2030)*

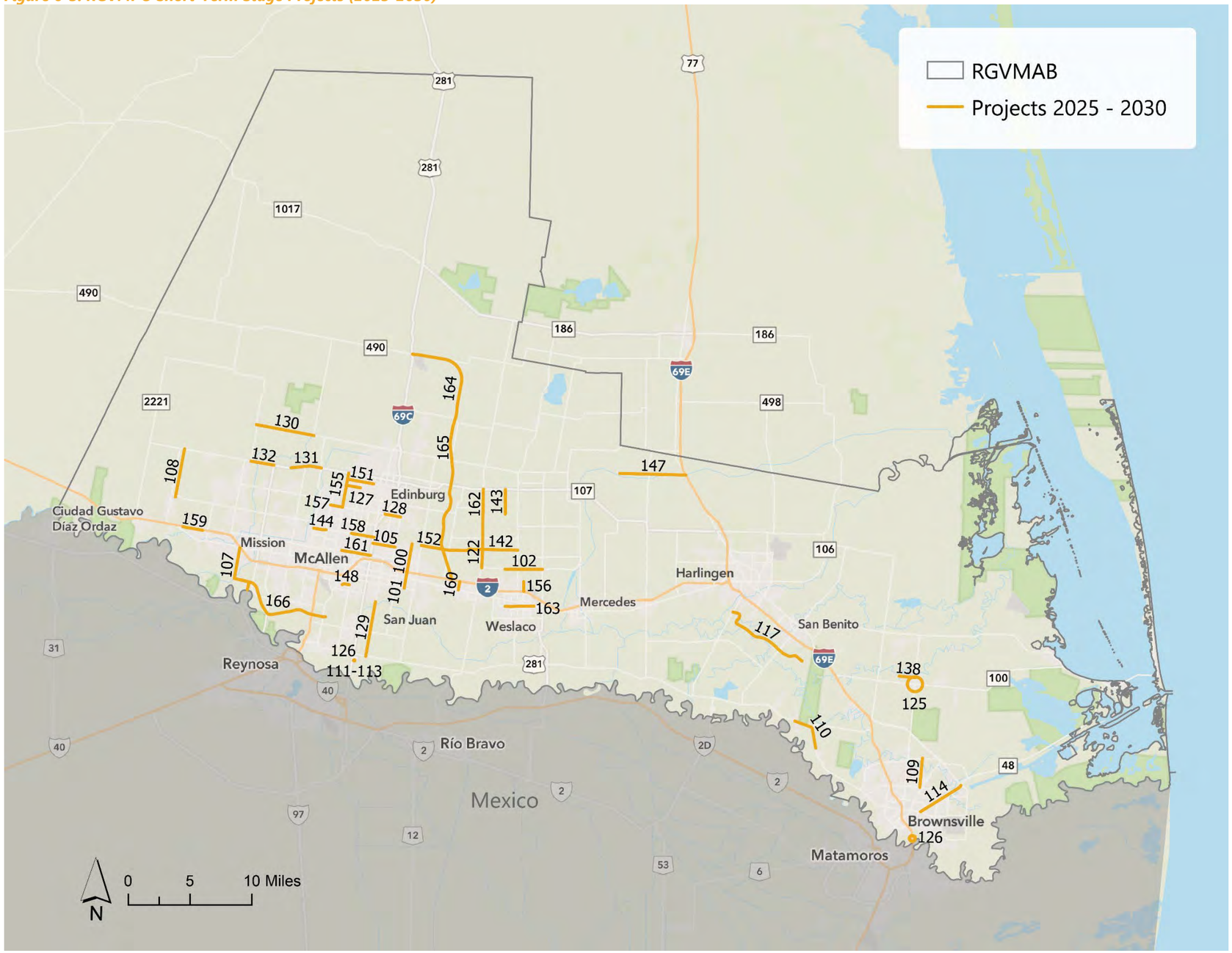


*Table 6-3: RGVMPO Short-Term Stage Projects and Funding (2025-2030)*

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 100 | CS | On Cesar Chavez from Business 83 | Nolana Loop | Widen to 4 lanes | R | 0921-02-405 | San Juan / Alamo / HC 1-2 | $4,570,000 |
| 101 | CS | On Cesar Chavez from Bus 83 | Ridge | Widen to 4 lanes | R | 0921-02-399 | San Juan / Alamo / HC 1-2 | $1,000,000 |
| 102 | Mile 10 North | Westgate (Mile 6 W) | FM 1015 | Widen to 4 lanes - Urban | E | 0921-02-360 | Weslaco / HC 1 | $1,240,022 |
| 103 | CS | On Cesar Chavez from Bus 83 | Ridge | Widen to 4 Lanes | E | 0921-02-399 | San Juan / Alamo / HC 1-2 | $249,994 |
| 104 | CS - Cesar Chavez Rd | On Caesar Chavez from Business 83 | Nolana Loop | Widen to 4 Lanes | E | 0921-02-405 | San Juan / Alamo / HC 1-2 | $1,151,217 |
| 105 | Eldora Rd | FM 3362 (Jackson Rd) | Veterans Blvd (I Rd) | Divided Urban Section | R | 0921-02-403 | HC 2 | $1,200,000 |
| 106 | CS | On Mile 10 N from Mile 6 (Westgate) | FM 1015 | Widen from 2 to 4 lanes | R | 0921-02-360 | Hidalgo County | $2,200,000 |
| 107 | CS - Inspiration Rd/ Military Pkwy Loop | IH-2 | FM 1016 | Widen from 2 to 4 lane Divided | R,E | 0921-02-395 | Hidalgo County | $3,000,000 |
| 108 | CS | On Liberty Blvd, from Mile 3 Rd | FM 2221 | Construct 2 lanes with shoulders (on new location from mile 4 to FM 2221) | R | 0921-02-322 | HC 3 | $2,030,000 |
| 109* | Dana Road | FM 802 | FM 3248 | Widen roadway and add sidewalks | E | 0921-06-330 | City of Brownsville | $517,440 |
| 110 | US 281 | 0.05 Mi W of FM 1577 | FM 1421 | Widen from 2 lanes to 4 lanes rural | C | 0220-04-049 | TxDOT | $12,000,000 |
| 111 | Pharr Bridge Dock Expansion Phase I | At Pharr/Reynosa Int'l Bridge | 0 | Dock Expansion Phase I | C | 0921-02-424 | Pharr | $14,577,764 |
| 112 | Pharr Bridge Dock Expansion Phase II | At Pharr/Reynosa Int'l Bridge | 0 | Dock Expansion Phase II | C | 0921-02-425 | Pharr | $13,610,000 |
| 113 | Pharr Bridge Commercial Staging Site | At Pharr/Reynosa Int'l Bridge | 0 | Pharr Commercial Vehicle Staging Area | C | 0921-02-423 | Pharr | $7,500,000 |
| 114 | SH 48 | SH 4 | FM 511 | Proposed 6 lanes with raised median | C | 0220-05-076 | TxDOT | $31,408,160 |
| 115* | West Rail Trail | West Blvd on Palm Blvd @ Rail Line | I-69E SB Frontage Road, W. of Old Alice Road | Construct Multimodal Facility | C, E | 0921-06-293 | CCRMA | $6,900,000 |
| 116 (not mapped) | FM 1423 | Minnesota Rd | IH-2 | Widen and reconstruct roadway (2 to 6 lanes) divided urban | C & CE | 1427-01-037 | TXDOT | $28,202,304 |
| 117 | US 281 | FM 732 | FM 1577 | Widen to 4 Lane Rural | C | 0220-04-050 | TxDOT | $8,890,000 |
| 118 | Outer Parkway | IH 69E | FM 106/General Brant Rd | New Location - Controlled Access 4 lane Toll Facility | E | 0921-06-283 | CCRMA | $2,800,000 |
| 119 | Mile 3 N (Phase II) | Tom Gill Road | FM 2221 | New Location 2 Lane Rural Roadway | | 0921-02-332 | HC 3 | $7,190,000 |
| 120 | Mile 1 East | Bus 83 | Mile 8 North | Reconstruct & widen to urban 2 lanes & shoulders | | 0921-02-254 | Mercedes | $10,900,896 |
| 121 | Nolana Loop (S1) | FM 1426 (Raul Longoria) | FM 907 | Widen to 4 Lane Divided | C & E | 0921-02-361 | HC 2 / McAllen | $13,340,418 |
| 122 | FM 493 (La Blanca) | Mile 14 N Rd | Mile 10 N Rd | Widen to 4 Lane Divided | C | 0863-01-048 | HC 1-4 | $8,330,000 |
| 123 | FM 1015 | Mile 12 N Rd | SH 107 | Widen to 4 Lane Divided 1228-03-900 | C | 1228-03-041 | HC 1/ Edcouch | $8,600,000 |

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 124 (not mapped) | SH 107 | FM 1425 | West Levee | Reconstruct and Widen to 4 lane rural | C | 0342-02-052 | TxDOT | $49,958,751 |
| 125* | Los Fresnos Hike and Bike Trail | Circles the City of Los Fresnos | 0 | Establish Hike and Bike Trail | C | 0921-06-334 | City of Los Fresnos | $3,511,436 |
| 126 | Veterans International Bridge at Los Tomates | CBP Primary Inspection Lanes | CBP Primary Inspection Lanes | Expansion of primary lanes for passenger vehicles. | C, E | 0921-06-313 | CCRMA | $16,778,845 |
| 127 | Freddy Gonzalez | SH 336 (10th St) | FM 2061 (McColl Rd) | Widen to 5 Lane with traffic street improvements | R | 0921-02-440 | Edinburg | $560,000 |
| 128 | Trenton Rd | US 281 | FM 1426 (Raul Longoria) | Construct 4 Lane | R | 0921-02-442 | HC 4/ Edinburg | $715,000 |
| 129 | I Rd | Rancho Blanco | Military Hwy | Construct 2 Lane w/ Shoulders | | 0921-02-363 | Pharr/San Juan/ HC 2 | $11,698,586 |
| 130 | FM 1925 | FM 681 | Wallace Rd | Proposed 4 lanes curb and gutter | C | 1803-01-095 | HC 3 | $24,000,000 |
| 131 | SH 107 | FM 681 | FM 2220 | Widen to 6 lane with raised median | C | 0528-01-116 | HC 3 | $15,510,006 |
| 132 | FM 681 | FM 2221 | SH 107 (Conway) | Widen to 6 lane with raised median | | 0669-01-060 | HC 3 | $8,388,750 |
| 133 | Cesar Chavez | Bus 83 | Ridge | Widen to 4 lanes | C & CE | 0921-02-399 | San Juan / Alamo / HC 1-2 | $6,848,200 |
| 134 | Cesar Chavez Rd | Business 83 | Nolana Loop | Divided Urban Section | | 0921-02-405 | San Juan / Alamo / HC 1-2 | $25,202,068 |
| 135 | Inspiration Rd/ Military Pkwy Loop | IH-2 | FM 1016 | Widen to 4 Lane Divided | C | 0921-02-395 | Mission / McAllen / Hidalgo | $22,253,200 |
| 136 | Liberty Blvd (Phase II) | Mile 3 Rd | FM 2221 | Construct 2 lanes roadway with shoulders ( On New Location from Mile 4 to FM 2221) | C,CE, R | 0921-02-322 | HC 3 | $10,175,384 |
| 137 | Eldora Rd | FM 3362 (Jackson Rd) | Veterans Blvd (I Rd) | Divided Urban Section | C | 0921-02-403 | Pharr/San Juan/HC 2 | $13,722,559 |
| 138 | Whipple Rd | On Whipple Rd, FM 1847 | FM 1575 | Proposed 2 lane roadway with continuous left turn lane | C & CE | 0921-06-292 | CCRMA | $5,703,727 |
| 139 (not mapped) | CS | On Old Alice Road, SH 100 | Sports Park Blvd | Widen from 2 lane to 4 lane Urban Roadway | C & CE | 0921-06-290 | Cameron County | $19,899,794 |
| 140* (not mapped) | West Blvd | Palm Blvd. | US 281 / Boca Chica Blvd | Construct Trail | C | | CCRMA | $1,945,500 |
| 141 | Mile 10 North | Westgate (Mile 6 W) | FM 1015 | Widen to 4 lanes - Urban | CE & C | 0921-02-360 | Weslaco / HC 1 | $13,894,434 |
| 142 | Nolana Loop (S 2-4) - ROW | FM 907 | FM 88 | Widen to 4 Lane Divided | R | 0921-02-169 | HC 1-2 | $3,500,000 |
| 143 | Mile 6 W Rd | SH 107 | Mile 14 1/2 | Widen to 4 Lane | C & CE | 0921-02-448 | HC 1 | $12,000,000 |
| 144 | Nolana Loop | FM 2220 (Ware Rd) | FM 1926 (23rd St.) | Widen to 6 Lane | | 0921-02-396 | McAllen | $3,730,959 |
| 145* | Dana Road | FM 802 | FM 3248 | Widen roadway and add sidewalks | C | | City of Brownsville | $13,618,176 |
| 146 (not mapped) | Indiana Ave Realignment | 0.1 Mile North of California Rd. | 0.62 Mile North of F.M. 1419 | Realignment, construct 2 lane rural roadway | C | 0921-06-305 | CCRMA | $3,848,500 |
| 147 | FM 1925 | IH 69E | Cameron/Hidalgo County Line | New Location 4 lane roadway | | | CCRMA | $35,000,000 |
| 148 | E Yuma Ave | Jackson Rd | McColl Rd | Widen to 4 Lane Urban with siphon | | 0921-02-398 | McAllen | $2,101,363 |
| 149 | Freddy Gonzalez | SH 336 (10th St) | FM 2061 (McColl Rd) | Widen and Reconstruct Roadway (2 to 4 Lanes) Divided Urban | | 0921-02-440 | Edinburg | $6,370,467 |

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 150 | Trenton Rd | US 281 | FM 1426 (Raul Longoria) | Construct 4 Lane | C | 0921-02-442 | Edinburg / HC 4 | $12,864,094 |
| 151 | Sprague Ave | Sugar Rd | SH 336 (N 10th St) | Widen to 4 Lane | | 0921-02-466 | Edinburg | $5,643,323 |
| 152 | Nolana Loop (S2) | FM 907 | FM 1423 | Widen to 4 Lane Divided | C | 0921-02-460 | HC 1-2 | $3,974,259 |
| 153 | Nolana Loop (S3) | FM 1423 | FM 493 | Widen to 4 Lane Divided | C | 0921-02-461 | HC 1 | $5,223,179 |
| 154 | Nolana Loop (S4) | FM 493 | FM 88 | Widen to 4 Lane Divided | C | 0921-02-169 Pending new CSJ | HC 1 | $4,149,299 |
| 155 | SH 336 (10th st) | Trenton Rd | SH 107 | Widen to 6 Lanes | | | Edinburg / McAllen | $9,976,868 |
| 156 | Mile 4 1/2 W Rd | US 83 | Mile 9 N Rd | Widen to 4 Lane Divided | | 0921-02-458 | Weslaco | $2,447,001 |
| 157 | Trenton Rd | FM 1926 (23rd st) | SH 336 (10th St) | Widen 6 lanes divided with landscaped median | | 0921-02-468 | McAllen | $3,346,151 |
| 158 | FM 3461 (Nolana) | FM 2061 (McColl Rd) | US 281 | Widen to 6 Lanes | | 1802-02-008 | McAllen / Pharr | $9,922,126 |
| 159 | US 83 | FM 1427 (Abram) | 0.5 Mi E of Bus 83 | Widen to 6 lanes | | 0039-02-068 | TXDOT | $5,353,842 |
| 160 | Hutto Rd | US 83 | Bus 83 | Widen to 4 Lane | | 0921-02-456 | Donna | $2,141,126 |
| 161 | FM 495 | 2nd St (McAllen) | US 281 | Widen to 6 lane divided | | | McAllen / Pharr | $13,049,990 |
| 162 | FM 493 (La Blanca) | SH 107 | Mile 14 N Rd | Widen to 4 Lane Divided | | 0863-01-051 | HC 1-4 | $9,128,356 |
| 163 | 6th St (Weslaco) | Westgate Drive | Bus 83 | Widen to 4 Lane | | 0921-02-449 | Weslaco | $7,035,129 |
| 164 | SH 68 - Phase II | FM 1925 | IH 69C / US 281 | Divided Rural Highway | | 3629-01-002 | TxDOT | $135,687,307 |
| 165 | SH 68 - Phase III | IH 2 / US 83 | IH 69C / US 281 | Main Lanes with Overpasses | | 3629-01-003 | TxDOT | $550,103,452 |
| 166 | SH 365 (Phase II) | FM 396 (Anzalduas Highway) | FM 1016 (Conway Rd) | Toll improvement being a 4 lane, controlled access facility | | 3627-01-002 | HCRMA | $53,637,812 |
| 167 | Pharr Bridge Agricultural Lab | @ Pharr Int'l Bridge | 0 | Agricultural Lab and Training Center | | 0921-02-943 | Pharr | $12,428,552 |

*Figure 6-4: Medium-Term Stage Projects (2031-2036)*

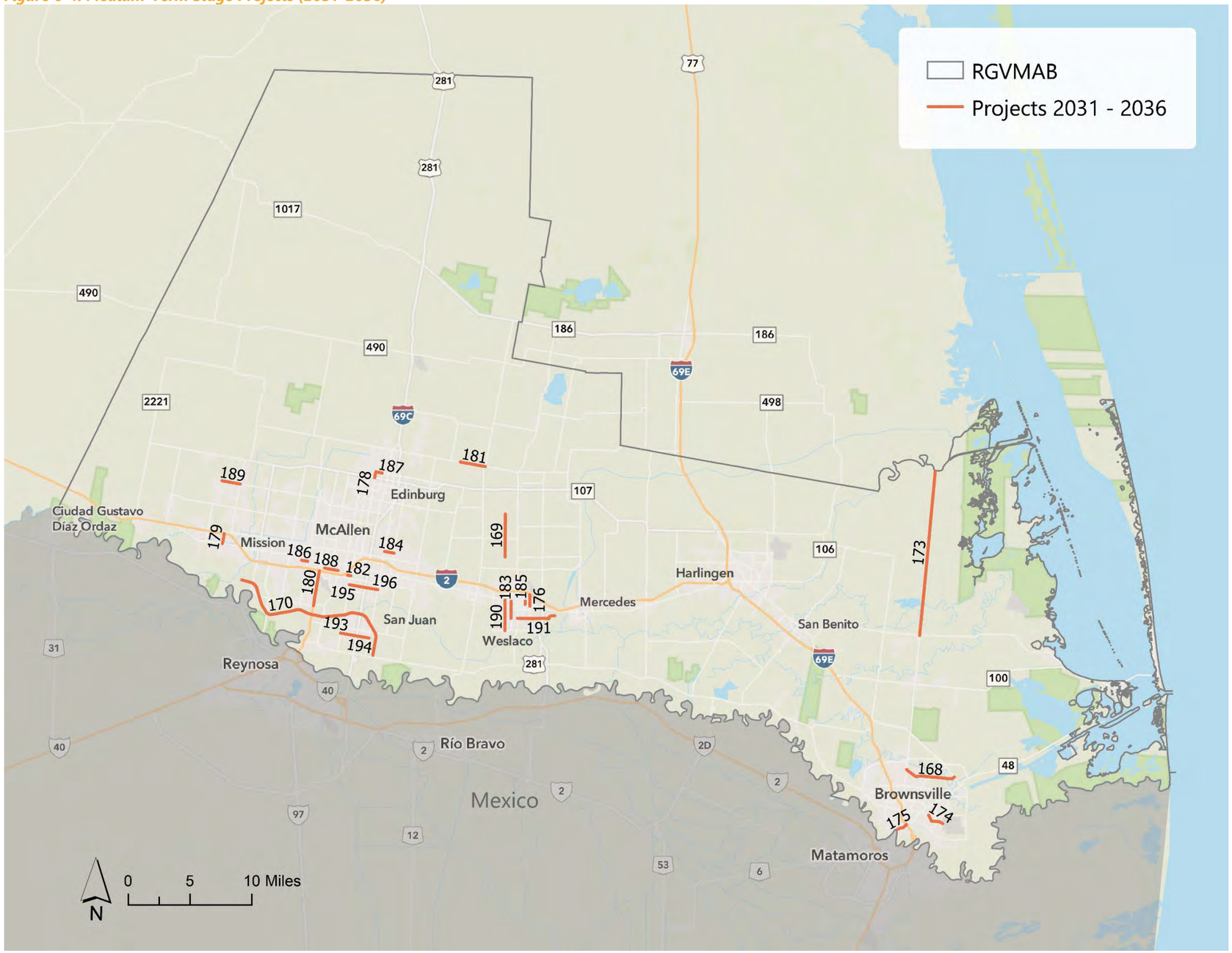


*Table 6-4: RGVMPO Medium-Term Stage Projects and Funding (2031-2036)*

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 168 | CS | On Morrison Rd, from FM 1847 | FM 511 | Construct 4 lane Urban Roadway. | E | 0921-06-291 | CCRMA | $500,000 |
| 169 | CS | On Mile 6 W from SH 107 | Mile 11 N | Widen to 4 Lane | R | 0921-02-286 | HC 1 | $4,396,313 |
| 170 | SH 365 (Ultimate Construction) | US 281 Military Highway | FM 1016 (Conway Rd) | Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes) | PE | | HCRMA | $3,841,693 |
| 171 | CS Morrison Rd | On Morrison Rd, from FM 1847 | FM 511 | Construct 4 lane urban roadway | C | 0921-06-291 | CCRMA | $20,992,000 |
| 172 (not mapped) | IH-69E Grade Separation | .5 MI N of University Blvd | .5 MI S of University Blvd | Construct a grade separation | C | | TxDOT | $14,080,000 |
| 173 | FM 1847 | FM 510 | FM 2925 | Expand to 4 lanes-rural | C | 1801-02-020 | TxDOT | $35,200,000 |
| 174* | Billy Mitchell Blvd FM 2519 | SH 4 | Jose Colunga Street | Construct raised median, sidewalks, pavement overlay. | C | 0487-01-015 | TxDOT/ Brownsville | $1,920,000 |
| 175 | International Blvd | IH-69E | Washington St. | Install raised median | C | 1504-01-038 | TxDOT/ Brownsville | $1,080,000 |
| 176 | Airport Drive (Weslaco) | Bus 83 | US 83 | Widen to 4 Lane | | 0921-02-451 | Weslaco | $3,349,295 |
| 177 | Mile 6 W Rd | Mile 14 1/2 | Mile 11 N | Widen to 4 Lane | | 0921-02-447 | HC 1 | $22,612,489 |
| 178 | Sugar Rd | SH 107 | Schunior Ave | Widen to 4 Lane | | 0921-02-467 | Edinburg | $1,860,720 |
| 179 | FM 2062 (Bentsen Palm) | US 83 S | Bus 83 | Widen to 4 Lane Divided | | 0921-02-455 | Mission | $3,163,223 |
| 180 | SP 115 (S 23rd St) | US 83 | FM 1016 (Military Hwy) | Widen to 6 Lane Divided Urb | | 1804-01-057 | McAllen/Hidalgo/HC 2 | $22,414,450 |
| 181 | FM 1925 | 3rd Street | FM 493 (La Blanca) | Widen to 4 Lane Divided | | 1803-02-901 | HC 4 | $10,649,088 |
| 182 | Oakland Ave | K-Center | Jackson Rd | Add 4 lanes | | 0921-02-462 | McAllen | $452,099 |
| 183 | Border Ave | S 18th St (Mile 6 N) | Bus 83 | Widen to 4 Lane | | 0921-02-453 | Weslaco | $5,809,167 |
| 184 | Sioux Rd | I Rd | FM 1426 (Raul Longoria) | Widen to 4 Lane | | | San Juan | $2,977,151 |
| 185 | Paso del Norte | Bus 83 | 2nd St | Widen to 4 Lane Divided | | | Weslaco | $1,116,432 |
| 186* | Kennedy | Ware Road (FM 2220) | Bentsen Rd | 2 lane divided with bike lanes | | | McAllen | $3,562,220 |
| 187 | Schunior Ave | Sugar Rd | 4th St | Widen to 4 Lane | | 0921-02-463 | Edinburg | $1,935,148 |
| 188 | Jackson Ave | S Bicentennial Ave | S 2nd St | Widen to 4 Lane | | 0921-02-457 | McAllen | $3,163,223 |
| 189 | FM 676 (Mile 5 N) | FM 492 (Doffing) | SH 364 (La Homa Rd) | Widen to 4 Lane Rev TIP 05'06 Revised Estimate | | | HC 3 | $5,582,159 |
| 190 | Westgate | Business 83 | Mile 5 N | Widen to 4 lane divided | | 0921-02-469 | Weslaco | $20,825,206 |
| 191 | Mile 6 N (18th St) | FM 88 | Mile 2 W | Widen to 4 Lane | | 0921-02-459 | Weslaco/ Mercedes/HC 1 | $11,908,606 |
| 192 | SH 365 (Ultimate Construction) | US 281 Military Highway | FM 1016 (Conway Rd) | Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes) | | | HCRMA | $81,401,281 |
| 193 | Las Milpas Rd West | Jackson Rd | Cage Rd | Widen to 4 lane curb and gutter rd | | 0921-02-434 | Pharr | $5,595,923 |
| 194 | Las Milpas Rd East | Cage Rd | I Rd | Widen to 4 lane curb and gutter rd | | 0921-02-435 | Pharr | $5,595,923 |
| 195 | Moore Rd West | Jackson Rd | Cage Rd | Widen to 5 lane curb and gutter road with left turn lane | | 0921-02-436 | Pharr | $8,327,387 |
| 196 | Moore Rd East | Cage Rd | I Rd | Widen to 5 lane curb and gutter road with left turn lane | | 0921-02-437 | Pharr | $8,327,387 |

*Figure 6-5: Long-Term Stage Projects (2037 – 2045)*

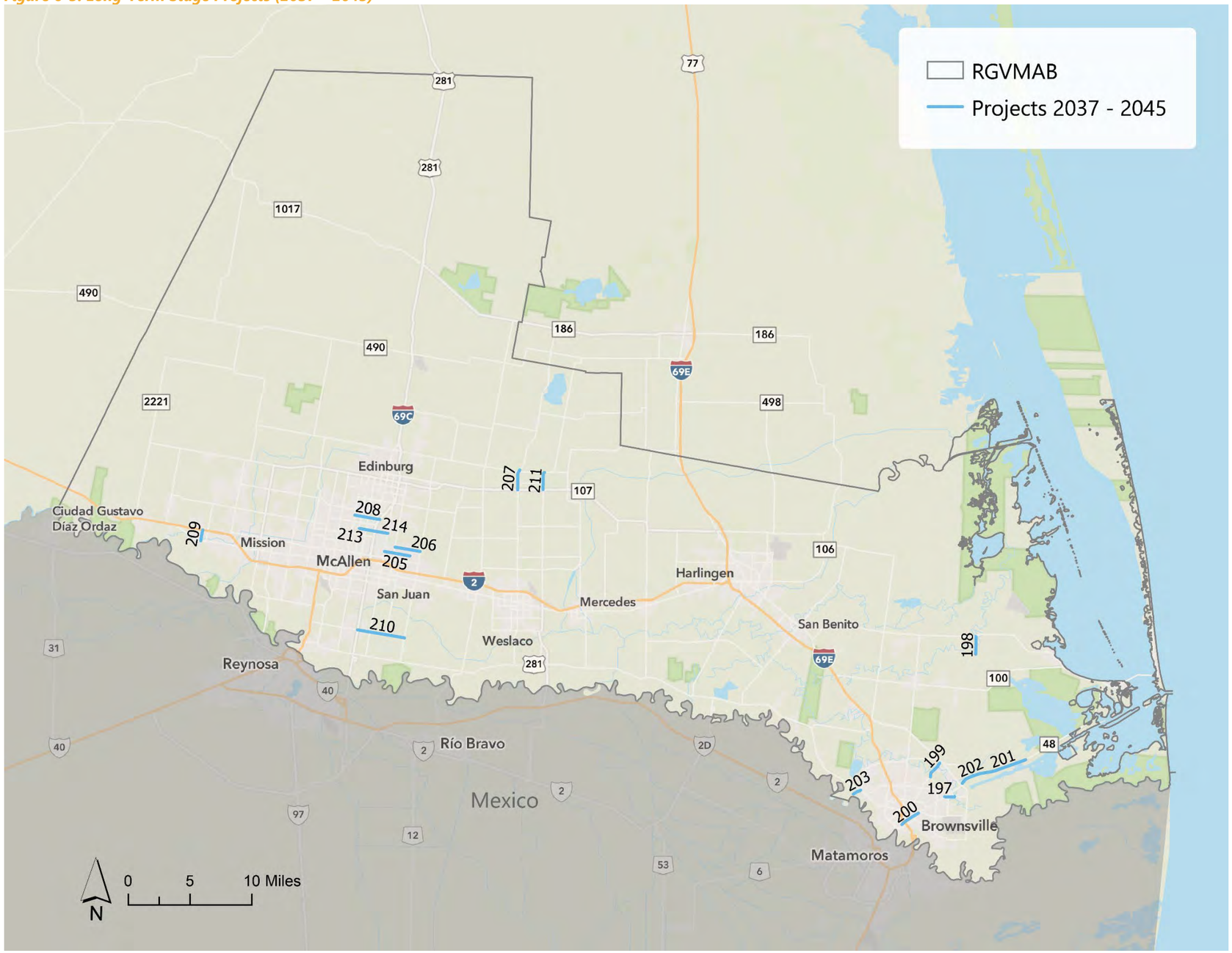


*Table 6-5: Long-Term Stage Projects and Funding (2037 – 2045)*

| 2045 MTP ID | Highway | From | To | Project Description | Project Phase | CSJ | Project Sponsor | Year of Expenditure Dollars (YOE) |
|---|---|---|---|---|---|---|---|---|
| 197 | Coffee Port Road | FM 802 | SH 48 N. Central Ave. | Full road reconstruction Road Reconstruction and add shoulders | C | 0921-06-329 | City of Brownsville | $17,419,776 |
| 198* | San Roman Rd. | FM 2480 | SH 100 | Full road reconstruction | C | | CCMRA | $3,955,546 |
| 199 | Old Port Isabel Rd | Morrison Road | 240' NE of Randy Lee Rd. | Full road reconstruction | C | | CCRMA | $5,280,000 |
| 200 | 14th Street | Security Dr. | Tyler Street | Reconstruction of Roadway | C | 0921-06-332 | City of Brownsville | $6,220,800 |
| 201 | SH 48 | 1/4-mile East of FM 511 | 1/4-mile East of entrance to the Fishing Harbor | Construct 2 lane frontage road and ramps (East bound) | C | | TxDOT | $15,200,000 |
| 202 | SH 48 | 1/4-mile East of entrance to the Fishing Harbor | FM 511/SH 48 overpass | Construct 2 lane frontage road and ramps (West bound) | C | | TxDOT | $15,840,000 |
| 203 | FM 3248 Extension to Flor the Mayo Intl Bridge | US 281 | Flor de Mayo Bridge | Construct 4 divided highway to the Flor de Mayo Intl. Bridge | C | 0921-06-331 | CCRMA | $10,880,000 |
| 204 | US 77/83 South Parallel Corridor | FM 1479 | FM 1577 | Widen to 4 lanes | | | Cameron County | $36,790,733 |
| 205 | Sioux Rd | Cesar Chavez Rd On Sioux Rd from N I RD | I Road (Veterans Blvd) Cesar Chavez Rd | Divided Urban Section | | 0921-02-464 | San Juan | $25,525,288 |
| 206 | East Eldora Rd (Segment II) | FM 907 (Alamo Rd) | I Rd | Divided Urban Section | | 0921-02-454 | San Juan/ HC 2 | $10,939,409 |
| 207 | FM 88 | SH 107 | 0.2mi N of FM 1925 | Widen to 4 Lane Divided | | 0698-02-043 | Elsa/ HC 1 | $13,907,230 |
| 208 | Alberta Rd | McColl Rd | US 281 | Widen to 4 Lane | | 0921-02-452 | Edinburg | $9,372,339 |
| 209 | Abram Rd | Bus 83 | US Expressway 83 | 4 Lane Divided Urban Section | | 0921-02-450 | Palmview / HC 3 | $9,116,174 |
| 210 | FM 3072 (Dicker Rd) | S Cage Blvd | FM 907 (Alamo Rd) | Widen to 4 Lane Divided | | 3098-01-018 | San Juan / Pharr | $18,110,800 |
| 211 | FM 1015 | SH 107 | FM 1925 | Widen to 4 Lane Divided | | 1228-02-031 | Edcouch / HC 1 | $6,313,457 |
| 212 | International Bridge Trade Corridor (IBTC) - Phase II ultimate | 365 Tollway at FM 493 | IH-2 | 6 lane non-tolled controlled access facility with 4 lane access roads | | 0921-02-202 | HCRMA | $275,000,000 |
| 213 | Minnesota Rd West | Jackson Rd | Cage Rd | Widen to 3 lane curb and gutter road with shoulders and left turn lane | | 0921-02-932 | Pharr | $8,857,544 |
| 214 | Minnesota Rd East | Cage Rd | I Rd | Widen to 3 lane curb and gutter road with shoulders and left turn lane | | 0921-02-933 | Pharr | $8,857,544 |

As mentioned at the beginning of this chapter, Table 6-6 represents the unconstrained, unfunded projects. These projects are included as illustrative regionally significant projects to support the consideration of future planning efforts.Total Project Costs are listed for these projects without inflation for future year dollars.

*Table 6-6: RGVMPO Projects Unfunded*

| 2045 MTP ID | Highway | From | To | CSJ # | Project Description | Project Sponsor | Total Project Cost |
|---|---|---|---|---|---|---|---|
| 215 | SH 48 | | | | Build an SH 48 overpass (with ramps) at the entrance to the Next Decade LNG facility. | TxDOT | $16,777,500 |
| 216 | SH 550 Connector | IH-69E | IH-169E | | Construct direct connector | CCRMA | $47,740,000 |
| 217 | Flor de Mayo Bridge | FM 3248 | US 281 | | Construct International Bridge | CCRMA | $22,370,000 |
| 218 | Old Port Isabel Rd | SH 550 | SH 100 | | Construct two lane rural | CCRMA | $22,870,000 |
| 219 | N. Vermillion Ave. | SH 4 | FM 802 | | Reconstruct roadway and add shoulders | Cameron County | $6,891,563 |
| 220+ | IH-69E | 13th Street | 14th Street | | Construct a Park and Ride facility under IH-69E | City of Brownsville | $3,355,500 |
| 221+ | FM 3248 | On FM 3248, .2 miles west of IH-69E | | | Construct a North-West side transit transfer station | City of Brownsville | $1,648,125 |
| 222* | Palo Alto Hike and Bike Trail | Palo Alto Battlefield National Historical Park | Eco Tourism at Laguna Vista | | Construct Hike and Bike trail | CCRMA | $8,948,000 |
| 223+ | West Blvd. | US 281/ Boca Chica Blvd. | IH-69E SB Frontage Road, W. of Old Alice Rd. | | Construct Multimodal Facility | CCRMA | $13,422,000 |
| 224 | ITS changeable message signs | IH-69E various locations | | | Install ITS changeable message signs | TxDOT | $1,677,750 |
| 225 | Pharr Intl Bridge | At Pharr/Reynosa Intl bridge | | 0921-02-255 | Improvements (cold storage) at Pharr/Reynosa Intl bridge | County | $484,352 |
| 226 | Trenton Rd | SH 336 (10th St) | FM 2061 (McColl Rd) | | Widen 6 lanes divided with landscaped median | Edinburg/ McAllen | $1,682,160 |
| 227 | FM 907 (Alamo Rd) | SH 107 | Nolana | 1586-01-075 | Proposed 4 Lanes curb and gutter | County 2-4 | $32,184,000 |
| 228 | FM 907 (Alamo Rd) | FM 1925 (Monte Cristo) | SH 107 | | Widen to 4 Lanes | County | $7,520,775 |
| 229 | US 83 | 0.25 Mi W of FM 2221 | FM 1427 | | Widen to 6 lanes | TXDOT | $17,049,474 |
| 230 | Bryan Rd | FM 676 (Mi 5 N) | FM 495 | | Widen to 4 Lane Divided | Alton/Palmhurst/Mission | $12,033,240 |
| 231 | Sioux Rd (La Vista Ave) | FM 2061 (McColl Rd) | US 281 | | Widen to 4 Lane | McAllen / Phr / County | $5,414,958 |
| 232 | Mile 17 N Rd | Mile 6 West | FM 491 | | Widen to 4 Lane | County | $17,083,670 |
| 233 | Pike Blvd | Mile 6 W (Westgate) | US 83 | | Widen to 4 Lane Divided | Weslaco | $5,715,789 |
| 234 | SH 336 (10th St.) | S 2nd St. | US 281 Military Hwy (widening of Bridge) | 0621-01-095 | Widen to 6 Lanes Divided 2966-01-009 | McAllen / Hidalgo / County 2 | $15,737,976 |
| 235 | Daffodil Ave | Taylor Rd | FM 2220 (Ware Rd) | | Widen to 4 Lane | McAllen / Mission | $3,038,393 |
| 236 | FM 495 | Conway Ave | FM 1926 (23rd Street) | | Widen to 6 lane divided | McAllen | $16,721,600 |
| 237 | FM 495 | FM 1423 (Val Verde) | FM 1015 | | Extend 2 Lane FM Road | County | $23,480,240 |
| 238 | Roosevelt (Mile 12 1/2 N Rd.) | FM 1423 | FM 88 | | Widen to 4 Lane | County | $15,884,816 |
| 239 | Wisconsin Rd | Main street | SH 336 (10th St) | | Construct new 4 Lanes Urban | McAllen | $1,184,014 |
| 240 | Cesar Chavez | FM 2128 (Schunior) | Sioux Rd | | Widen to 4 Lane | County | $18,881,951 |
| 241 | FM 492 | US 83 | FM 2221 | | Widen to 4 Lane | County | $19,481,378 |
| 242 | FM 492 (Doffing) | FM 1924 (Mile 3 N) | FM 2221 | | Widen to 4 Lane Divided | Palmview | $12,033,240 |

| 2045 MTP ID | Highway | From | To | CSJ # | Project Description | Project Sponsor | Total Project Cost |
|---|---|---|---|---|---|---|---|
| 243 | Violet Ave (Minnessota) | FM 2061 (McColl Rd) | US 281 | | Widen to 4 Lane | McAllen | $5,414,958 |
| 244 | Jackson Rd | FM 1925 (Monte Cristo) | Chapin Rd | | Widen to 4 Lane | Edinburg | $4,512,465 |
| 245 | Victoria Rd | Mile 10 N Rd | US 83 | | Widen to 4 Lane | Donna / county | $4,512,465 |
| 246 | FM 2993 (N Conway) | FM 1925 (Monte Cristo) | SH 107 | | Widen to 4 Lane Rural | County | $9,024,930 |
| 247 | Sugar Rd | FM 495 | Sam Houston Blvd | | Widen to 4 Lane Divided | Pharr | $6,016,620 |
| 248 | FM 491 (Base Line) | Mile 10 N Rd | SH 107 | | Widen to 4 Lane Divided | La Villa / county | $19,481,378 |
| 249 | Daffodil Ave | FM 2220 (Ware Rd) | FM 1926 (23rd Street) | | Widen to 4 Lane | McAllen | $3,008,310 |
| 250 | FM 1925 | FM 2993 (N Conway) | FM 2220 (Ware Rd) | | Widen to 4 Lane Rural | County | $10,829,916 |
| 251 | El Rancho/Hall Acres | 2nd St (McAllen) | S Cage Blvd | | Widen to 4 Lane | McAllen / Pharr | $7,219,944 |
| 252 | Military Hwy | S Cage Blvd | Mile 3 E - Cameron County Line | 0220-01-901<br>0220-01-902<br>0220-01-903<br>0220-02-900<br>0220-01-023 | Widen to 4 Lane Divided Rural | County | $67,471,521 |
| 253 | Owassa Rd | I road | FM 1426 (Raul Longoria) | | Widen to 4 Lane | Phr/SJ/Co | $6,124,300 |
| 254 | FM 1425 | SH 107 | MILE 9 N | | Widen to 4 Lane Divided | County | $17,982,810 |
| 255 | FM 491 (Base Line) | SH 107 | FM 1925 (Monte Cristo) | | Widen to 4 Lane Divided | La Villa | $4,512,465 |
| 256 | Goodwin Rd | US 83 | FM 1924 (Mile 3 N) | | Widen to 4 Lane | County | $6,618,282 |
| 257 | Pleasantview Dr (Mile 3 1/2 W Rd) | Mile 5 N | Mile 9 N | | Widen to 4 Lane Divided | Weslaco | $12,033,240 |
| 258 | Mile 11 N Rd | Mile 6 West | FM 491 | | Widen to 4 Lane | County | $17,982,810 |
| 259 | Mile 6 1/2 W Rd | Mile 12 North | Mile 5 N Rd | | Widen to 4 Lane | Weslaco / County | $20,979,945 |
| 260 | Tower Rd | US 83 | SH 107 | | Widen to 4 Lane | Alamo | $21,579,372 |
| 261 | Abram Rd | US 83 | FM 2221 | | Widen to 4 Lane | Palmview / County | $17,982,810 |
| 262 | Trenton Rd | FM 1426 (Raul Longoria) | FM 1423 (Val Verde) | | Construct 4 Lane | County | $12,935,733 |
| 263 | FM 1016 (S Conway) | US 83 | Military Hwy | | Widen to 6 Lanes | Mission / county | $7,075,586 |
| 264 | Sugar Rd | Schunior Ave | FM 1925 | | Widen to 4 Lane | County | $6,016,620 |
| 265 | FM 907 (Alamo Rd) | Ridge Rd | Military Hwy | | Widen to 4 Lane Divided | County | $17,982,810 |
| 266 | Wisconsin Rd | .25 miles E of 2nd St | US 281 | | Widen to 4 Lane | Edinburg | $8,724,099 |
| 267 | Bentsen Palm Drive (FM 2062) | 1 Mile Line Rd | US 83 | | Widen to 4 Lane | Palmview | $615,072 |
| 268 | Mon Mack Rd. | SH 107 | FM 1925 | | Widen to 4 lane | Edinburg | $7,520,775 |
| 269 | 8th St | Mile 5 1/2 W Rd | Airport Dr | | Widen to 4 Lane Divided | Weslaco | $4,512,465 |
| 270 | Owassa Rd | FM 1426 (Raul Longoria) | FM 907 | | Widen to 4 Lane | County | $12,114,000 |
| 271 | Mile 12 N Rd | Mile 6 West | FM 1015 | | Widen to 4 Lane | County | $9,024,930 |
| 272 | Los Ebanos Rd | FM 1924 (3 Mile N) | Bus 83 | | Widen to 4 Lane | Palmhurst/Mission/County | $9,024,930 |
| 273 | Alberta Rd | I road | FM 1423 (Val Verde) | | Widen to 4 Lane | County | $15,285,389 |

| 2045 MTP ID | Highway | From | To | CSJ # | Project Description | Project Sponsor | Total Project Cost |
|---|---|---|---|---|---|---|---|
| 274 | Nebraska Ave (Alamo) | Cesar Chavez | Border Ave | | Widen to 4 Lane | Alamo | $7,520,775 |
| 275 | Goodwin Rd | Bus 83 | FM 492 | | Widen to 4 Lane | County | $3,008,310 |
| 276 | FM 2062 (Bentsen Palm) | Bus 83 S | Bentsen State Park | | Widen to 4 Lane Divided | County | $8,122,437 |
| 277 | FM 491 (Base Line) | US 83 | Mile 10 N Rd | | Widen to 4 Lane Divided | Mercedes | $9,024,930 |
| 278 | FM 493 (La Blanca) | SH 107 | FM 1925 (Monte Cristo) | | Widen to 4 Lane Divided | La Blanca | $5,715,789 |
| 279 | FM 1425 | US 83 | Mile 9 N Rd | | Widen to 4 Lane Rural | County | $5,414,958 |
| 280 | Seminary Rd | FM 1925 | FM 2812 (W of US 281) | | Widen to 4 lane | Edinburg | $8,573,684 |
| 281 | Russell Rd | Bus 281 (Closner) | Doolittle Road | | Widen to 4 lane | Edinburg | $3,910,803 |
| 282 | Doolittle Rd | FM 2128 (Richardson Road) | FM 1925 | | Widen to 4 lane | Edinburg | $6,016,620 |
| 283 | Doolittle Rd | FM 1925 | FM 2812 | | Widen to 4 Lane Divided w/ Br | Edinburg / County | $10,529,085 |
| 284 | Schunior Ave | Mon Mack Rd | Sugar Rd | | Widen to 4 Lane | Edinburg | $4,512,465 |
| 285 | FM 2812 | US 281 | 2 mi E of US 281 | | Widen to 4 Lane with left turn lane | Edinburg | $8,076,000 |
| 286 | FM 676 (Mile 5 N) | Jara Chinas | FM 492 | | Extend 2 Lane FM Road | County | $16,436,168 |
| 287 | SP 433 (Main St-Donna) | US 83 | Bus 83 | | Widen to 4 Lane Divided | Donna | $2,460,288 |
| 288 | El Gato Rd | S Cage Blvd | FM 907 (Alamo Rd) | | Widen to 4 Lane | Pharr / San Juan | $11,431,578 |
| 289 | Military Hwy | FM 494 (Shary Rd) | FM 1427 (Abram) | | Construct 4 Lane | Mission | $17,982,810 |
| 290 | 28th St (Mile 5 1/2 N Rd) | S. Bridge St | FM 1015 | | Widen to 4 Lane Divided | Weslaco | $4,512,465 |
| 291 | Border Ave | Bus 83 | Mile 10 N Rd | | Widen to 4 Lane Divided | Weslaco | $7,821,606 |
| 292 | Moore Field Rd | FM 2221 | US 83 | | Widen to 4 Lane | County | $19,481,378 |
| 293 | Inspiration Rd | 2 Mile Line Rd | US 83 | | Widen to 4 Lane | Mission | $8,724,099 |
| 294 | Delta Blvd | US 83 | Mile 9 N Rd | | Construct new 4 Lane | Weslaco | $2,460,288 |
| 295 | Tower Rd | Bus 83 | Ridge Rd | | Widen to 4 Lane | Alamo | $2,306,520 |
| 296 | Jara Chinas | FM 2221 | US 83 | | Widen to 4 Lane Divided Rural | La Joya | $18,762,065 |
| 297 | Russell Rd | Doolittle | FM 907 (Alamo Rd) | | Widen to 4 Lane | County | $4,512,465 |
| 298 | Wichita Ave | SH 336 (S 10th St) | 2nd St | | Widen to 4 Lane | McAllen | $1,845,216 |
| 299 | Oxford (Hobbs) | Ware Rd | FM 1926 (Depot Rd) | | Construct New 4 Lane | McAllen | $3,609,972 |
| 300 | Colbath Ave | FM 2220 | Taylor Rd | | Widen to 4 Lane | McAllen | $3,008,310 |
| 301 | Mile 6 N (Mercedes) | FM 491 E to Mile 1 East | Mile 1 East | | Widen to 4 Lane | Mercedes | $1,537,680 |
| 302 | Nolana Loop | FM 494 (Shary Rd) | Taylor Rd | | Construct New 4 Lane | Mission / Palmhurst | $768,840 |
| 303 | FM 1427 | US 83 | Abram | | Widen to 4 Lane Divided | County | $13,487,108 |
| 304 | Rooth Rd | Russell Rd | FM 1925 (Monte Cristo) | | Widen 4 lanes with left turn lane | McAllen | $3,008,310 |
| 305 | Rooth Rd | SH 107 | Russell Rd | | Widen 4 lanes with left turn lane | McAllen | $4,512,465 |
| 306 | Trenton Rd | FM 1423 (Val Verde) | FM 1015 | | Construct New 4 Lane Divided | County | $21,579,372 |
| 307 | Mile 4 1/2 W Rd | SH 107 | Mile 9 N Rd | | Widen to 4 Lane | County | $22,478,513 |

| 2045 MTP ID | Highway | From | To | CSJ # | Project Description | Project Sponsor | Total Project Cost |
|---|---|---|---|---|---|---|---|
| 308 | Mile 1 East | Mile 11 North | US 83 | | Improve widen to 4 Lane | Mercedes | $11,130,747 |
| 309 | FM 1427 | Abram E & N | Bus 83 | | Widen to 4 Lane Divided | Peñitas / Mission | $6,317,451 |
| 310 | FM 2812 W | Seminary Rd | US 281 | | Construct new 4 lane | Edinburg | $3,609,972 |
| 311 | Kennedy Ave | Taylor Rd | Bentsen Rd. | | Construct New 4 Lane | McAllen | $4,519,868 |
| 312 | Inspiration Rd | US 83 | Military Hwy | | Widen to 4 Lane | Mission | $9,325,761 |
| 313 | Alberta Rd | US 281 | I road | | Widen to 4 Lane | County | $2,152,752 |
| 314 | FM 493 (Salinas) | Champion St | Military Hwy (US281) | | Widen to 4 Lane | TxDOT | $16,092,000 |
| 315 | Thomas Road | FM 2061 (McColl Rd) | FM 2557 (Stewart Rd) | | Construct 52-foot urban roadway with curb and gutter | County | $15,671,600 |
| 316 | 29th street | Oxford Ave | SH 107 | | 2 lane with center turn lane | McAllen | $5,103,750 |
| 317 | Mile 5 N | FM 1015 | Westgate | | Widen to 4 lane divided | Weslaco / County 1 | $20,828,943 |
| 318 | West Eldora Rd | FM 3662 (Jackson Rd) | US 281 | | Divided Urban Section | Pharr | $7,947,400 |
| 319 | US 83 @ 2nd St | FM 2061 (McColl Rd) | SH 336 (10th St) | 0039-17-188 | Convert existing Underpass to diamond intersection Overpass | McAllen / County 2 | $29,843,590 |
| 320 | Anzalduas Int'l POE | @ Anzalduas Int'l POE | | | Construction of two additional northbound passenger lanes | Anzalduas Int'l Bridge | $6,688,600 |
| 321 | FM 1423 (Val Verde) | Roosevelt | SH 107 | 1427-01-032 | Proposed 4 Lanes curb and gutter | County 4 | $32,424,000 |
| 322 | Russell Rd | FM 2220 | US 281 | | | Edinburg/McAllen/County 4 | $13,610,000 |
| 323 | Freddy Gonzalez Dr | Ware Rd (FM 2220) | 10th St (SH 336) | | Construct & Widen 4 Lane Urban Roadway | McAllen / County 4 | $16,424,002 |
| 324 | S Jackson Rd | W Moore Rd | Bus 83 | | Widen to 6 lane curb and gutter road | Pharr | $16,000,000 |

# GROUPED PROJECTS

For projects and project types that are recurring in nature, the FHWA allows TxDOT to develop statewide groupings of projects that are identified by a statewide CSJ. Use of statewide groupings of projects allows for a more efficient method of programming and letting projects by decreasing the need to revise the TIP.

These projects typically use the funding categories discussed in Chapter 8, and are representative of a continuous, comprehensive, and coordinated effort by the Pharr District and the RGVMPO in identifying ongoing needs of the transportation system. Table 6-7 shows the statewide groupings of projects and provides a description of the type of projects that are placed in each grouping.

*Table 6-7: CSJ Categories*

| Proposed CSJ | Grouped Project Category | Definition |
|---|---|---|
| 5000-00-950 | PE-Preliminary Engineering | Preliminary Engineering for any project except added capacity projects in a nonattainment area. Includes activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed. |
| 5000-00-951 | ROW Acquisition | ROW Acquisition for any project except added capacity projects in a nonattainment area. Includes relocation assistance, hardship acquisition, and protective buying. |
| 5000-00-952<br>5000-00-957<br>5000-00-958 | Prevention Maintenance and Rehabilitation | Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoration, and rehabilitation done with existing ROW. Also includes modernization of a highway by reconstruction, adding shoulders or adding auxiliary lanes (e.g., parking, weaving, turning, climbing, non-added capacity) or drainage improvements associated with rehabilitation. |
| 5000-00-953 | Bridge Replacement and Rehabilitation | Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges. |
| 5000-00-954 | Railroad Grade Separations | Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity |
| 5800-00-950 | Safety | Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, highway signs, curb ramps, railroad/highway crossing warning devices, fencing, intersection improvements (e.g., turn lanes), signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program, Federal Railroad Signal Safety |

| Proposed CSJ | Grouped Project Category | Definition |
|---|---|---|
| | | Program, or Access Managements projects, except those that result in added capacity. |
| 5000-00-956 | Landscaping | Project consisting of typical ROW landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities. |
| 5800-00-915 | Intelligent Transportation System Deployment | Highway traffic operation improvement projects including the installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs. |
| 5000-00-916 | Bicycle and Pedestrian | Construction or rehabilitation of bicycle and pedestrian lanes, paths, and facilities. |
| 5000-00-917 | Safety Rest Areas and Truck Weigh Stations | Construction and improvement of rest areas and truck weigh stations. |
| 5000-00-918 | Transit Improvements and Program | Projects include the construction and improvement of small passenger shelters and information kiosks. Also includes the construction and improvement of rail storage/maintenance facilities and bus transfer facilities where minor amounts of additional land are required and there is not a substantial increase in the number of users. Also includes transit operating assistance, acquisition of third-party transit services, transit marketing, and mobility management/coordination. Additionally, includes the purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet. |

# 7 SYSTEMS-LEVEL ANALYSIS OF PROJECTS

Metropolitan transportation planning is concerned with more than the best way to move people and goods. The planning process also examines the interaction of proposed transportation improvements with the natural and human environment. The MTP program of projects is evaluated for its system-wide environmental resources and quality of life impacts.

A more detailed analysis of the specific impacts associated with each project is typically performed later in project development using processes defined under the National Environmental Protection Act (NEPA).

# SYSTEMS-LEVEL ANALYSIS

The primary goal of the systems-level analysis is to evaluate whether potential transportation improvements will impact environment features or have negative impacts on historically disenfranchised populations (refer to Chapter 4 for equity analysis). It is intended to serve as a guide for evaluation by agencies and elected officials as projects progress through the development process. The analysis will allow the RGVMPO to prioritize projects with lessened environmental impacts. The RGVMPO currently has 186 projects planned from 2021-2045, the time period covered by this MTP. A more detailed analysis of the specific impacts associated with each project is performed later using processes that meet the requirements of the National Environmental Protection Act (NEPA). It must be noted that the analysis in this chapter does not take the place of the NEPA assessment, however, the analysis does provide the RGVMPO an initial understanding of project impacts on the region.

The systems-level analysis also includes a review of the potential mitigation activities for the impacts of these projects. The environmental mitigation analysis aims to balance the need for transportation improvements with environmental protection and to increase access to natural and cultural resources within the RGVMAB. Environmental mitigation activities should be considered throughout the planning process (i.e. project planning, design, construction, and maintenance). Prioritization should be given to projects that do not interfere with the elements identified in the analysis.

The systems-level analysis incorporates Environmental Justice Zones (EJZs) to ensure both the benefits and the burdens of new transportation projects are distributed more equitably throughout the RGVMAB. Environmental Justice was first defined in the metropolitan transportation planning process in 1994 with Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The executive order is meant to ensure that minority and low-income populations are not adversely affected by federal actions.

Identifying potential impacts caused by these new transportation projects involves a three-step process that includes:

- Inventorying the environmental and cultural resources, minority populations, and populations near or below the poverty line.
- Assessing the potential impacts, both positive and negative, of proposed transportation improvements.
- Addressing possible mitigation activities system wide.

The following sections describe the assumptions, data, approach, and outcomes of the systems-level analysis.

## *Methodology*

A buffer analysis was conducted for all capacity expansion projects. The buffer distance was based on potential project impact per environmental/cultural resource. For this analysis, water features have a greater buffer than other elements due to increased sensitivity to potential transportation project impacts. Not only can water features suffer impacts due to a project's proximity but can experience further externalities affecting water quality.

Accordingly, resources were scaled by their area of influence; for example, cultural features may only be affected by a project directly adjacent to the resource while water features may be impacted from a greater distance. Table 7-1 summarizes the elements in each category and the buffer for each category.

*Table 7-1: Buffer Distances for Expansion Projects*

| Element Type | Capacity/Expansion |
|---|---|
| Water Features (Wetlands, Rivers, and Streams) | .25 miles |
| Cultural Features (Cemeteries, Museums, Historic Sites, Historic Districts, Public Lands, Schools) | 250 feet |
| Environmental Hazards (Solid Waste Sites, Brownfields, Superfund Sites, Industrial Waste) | 250 feet |
| Colonias | 50 feet |

The buffer analysis creates a boundary based on input data. Each separate element was counted where they intersected the project buffer. The counts of each feature that intersects the projects buffer boundary was compiled in an ArcGIS project and provided to the RGVMPO for future planning and analysis purposes.

Polygon features counted how many times a project crossed the feature boundary. This includes floodplains (500-year and 100-year), EJZs, and above average Hispanic and Latino population block groups.

Further analysis is required to gauge what the actual impacts of these projects will be. The preliminary findings in the systems-level analysis will give the implementing agency an idea of which projects will require greater review.

# ENVIRONMENTAL MITIGATION ANALYSIS

The RGVMAB's environmental and cultural resources, including rivers and streams, wetlands, floodplains, parks, and historic sites, were inventoried and mapped. The analysis included floodplain maps from the Federal Emergency Management Agency (FEMA), wetlands maps from the U.S. Fish and Wildlife Service, historic sites from the National Register of Historic Places, and state and federal wildlife and environmental protection resources. These inventoried resources are shown in Figure 7-1 through Figure 7-4.

Table 7-2 shows the count of features that are affected by the proposed projects. Water features present the greatest potential challenge when implementing these projects due to the higher rate of interaction.

*Table 7-2: Count of Potential Impacts: Environmental Assets*

| Element Type | Buffer Intersect Count |
|---|---|
| Water Features (Wetlands, Flood Hazards, Rivers and Streams) | 1952 |
| Cultural Features (Cemeteries, Museums, Historic Sites, Historic Districts, Public Lands, Schools) | 127 |
| Environmental Hazards (Solid Waste Sites, Brownfields, Superfund Sites, Industrial Waste) | 11 |

*Figure 7-1: RGVMAB Flood Zones & Potential MPO Projects*

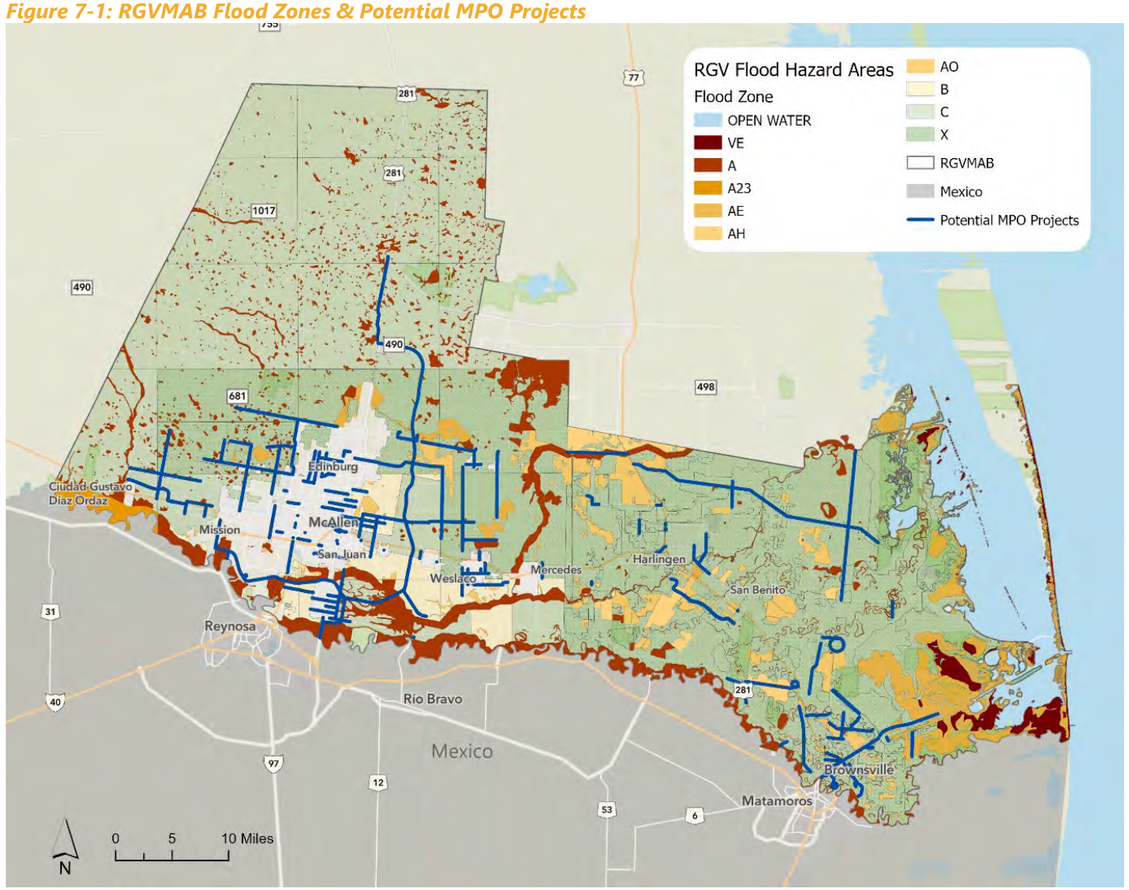



*Figure 7-2: RGVMAB Cultural and Community Assets & Potential MPO Projects*

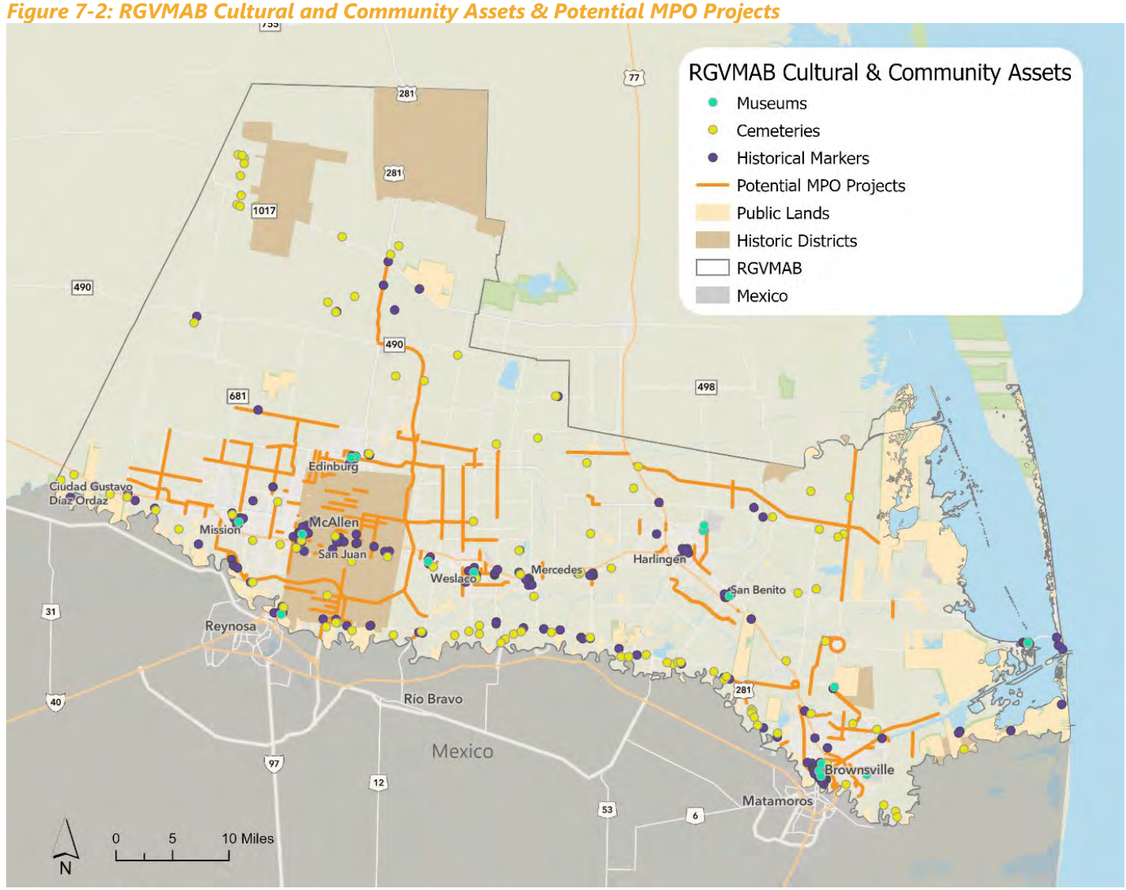


*Figure 7-3: RGVMAB Environmental Hazards & Potential MPO Projects*

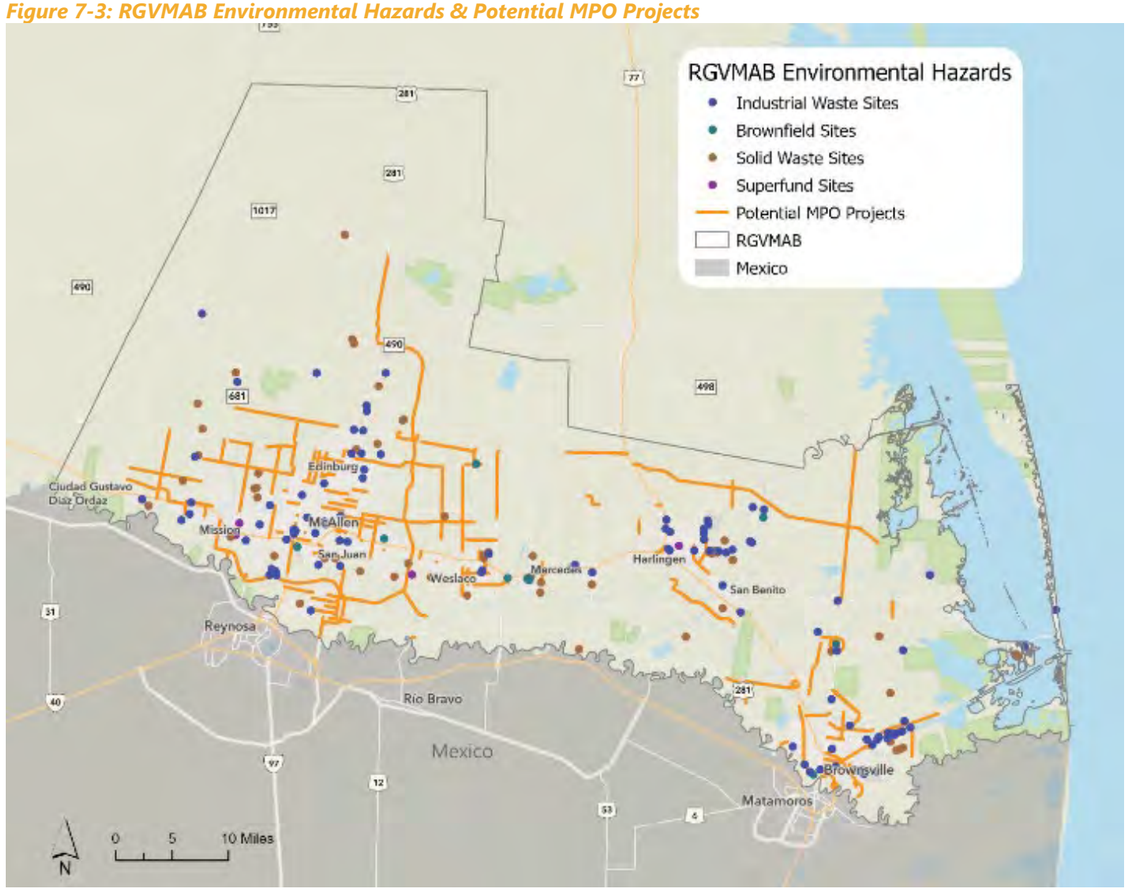
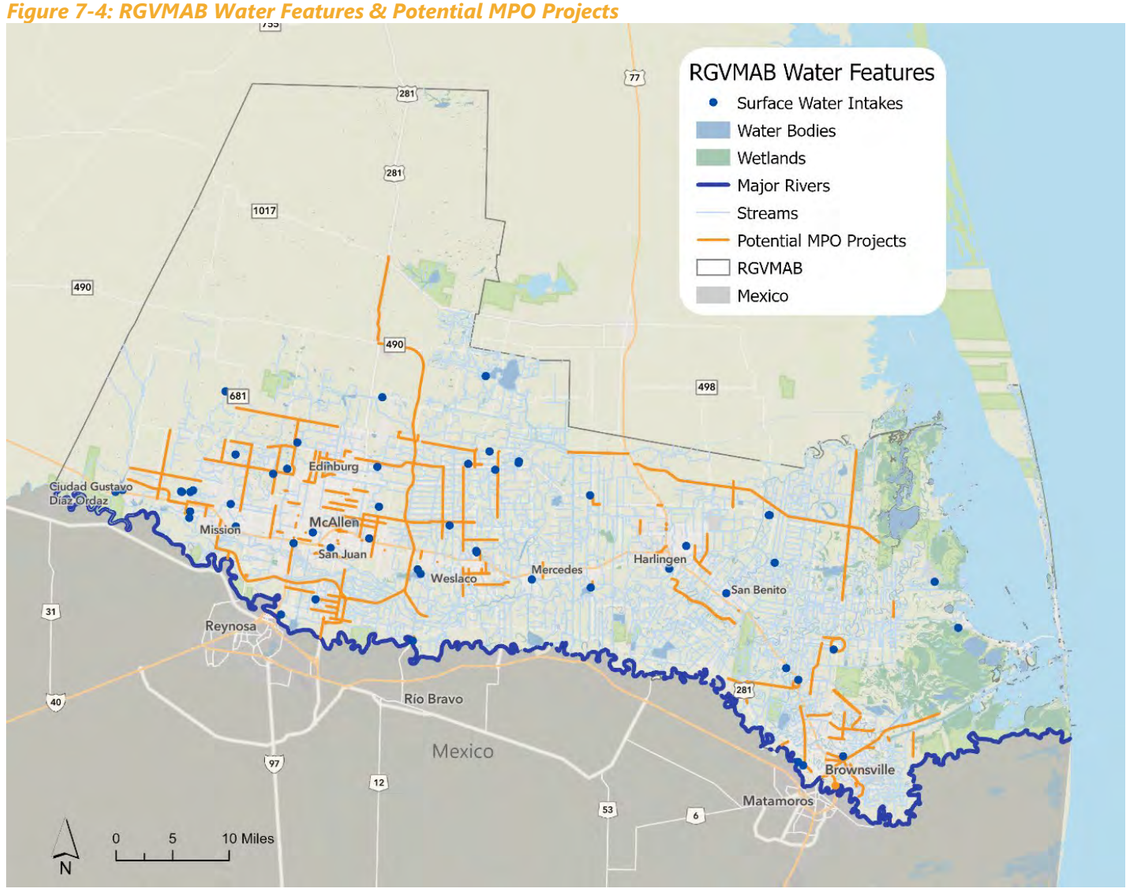



*Figure 7-4: RGVMAB Water Features & Potential MPO Projects*



## Environmental Justice Analysis

Title VI of the Civil Rights Act (42 US Code 2000 and Executive Order 12898) requires an Environmental Justice review, which is a comprehensive review of the effects of federally funded projects to low-income populations and minority groups. Environmental Justice is the fair treatment and involvement of all people regardless of race, color, national origin, educational level, or income with respect to the development, implementation, and enforcement of environmental laws. Environmental Justice works to provide access to public information for health, environmental planning, regulations, and enforcement for minority and low-income populations. It ensures that no populations are forced to shoulder a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental hazards caused by a federally funded project.

Using the guidance in the metropolitan planning regulations, the study team incorporated Environmental Justice considerations into the development of the RGVMPO 2045 MTP. The study team identified and mapped EJZs, colonias, and Hispanic and Latino populations and performed a GIS-based analysis of the proximity of proposed transportation improvements to these communities.

The EJZs, colonias, and areas above the regional average percentage of Hispanic or Latino residents with the proposed project's buffer are shown in Figure 7-5 and Figure 7-6. Further description of the Environmental Justice analysis can be found in Chapter 4 of the MTP.

Table 7-3 shows the count of Environmental Justice features that are affected by the porposed projects. As displayed in the table below, there are more instances of intersection than there are projects (186). This is due to projects being implemented along a boundary of an EJZ or an area of above average percentage of Hispanic or Latino residents.

*Table 7-3: Counts of Potential Impacts: Environmental Justice*

| Element Type | Buffer Intersect Count |
|---|---|
| Environmental Justice Zones | 722 |
| High Percentage Hispanic or Latino Population | 549 |
| Colonias | 114 |

*Figure 7-5: RGVMAB Environmental Justice Zones & Potential MPO Projects*

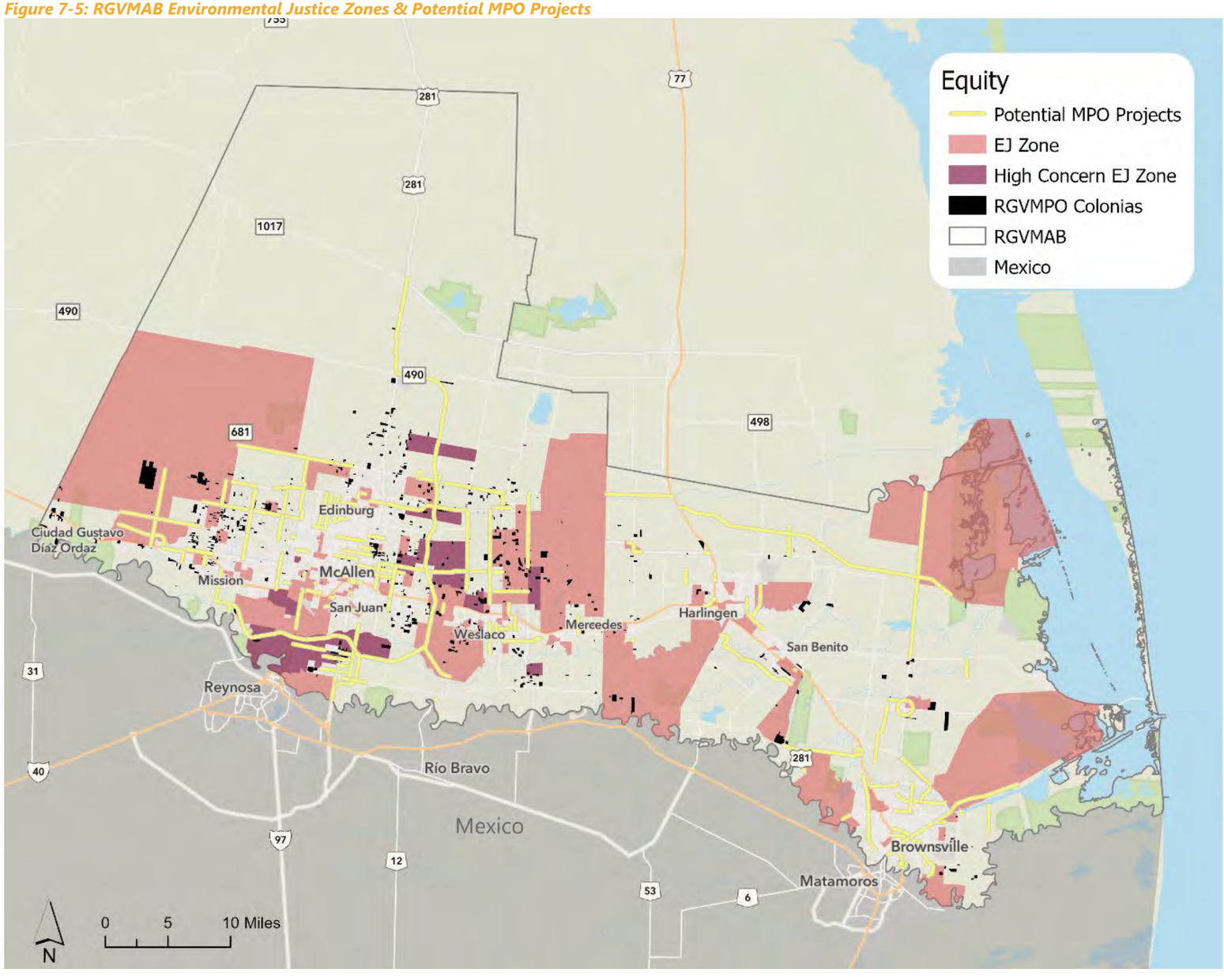
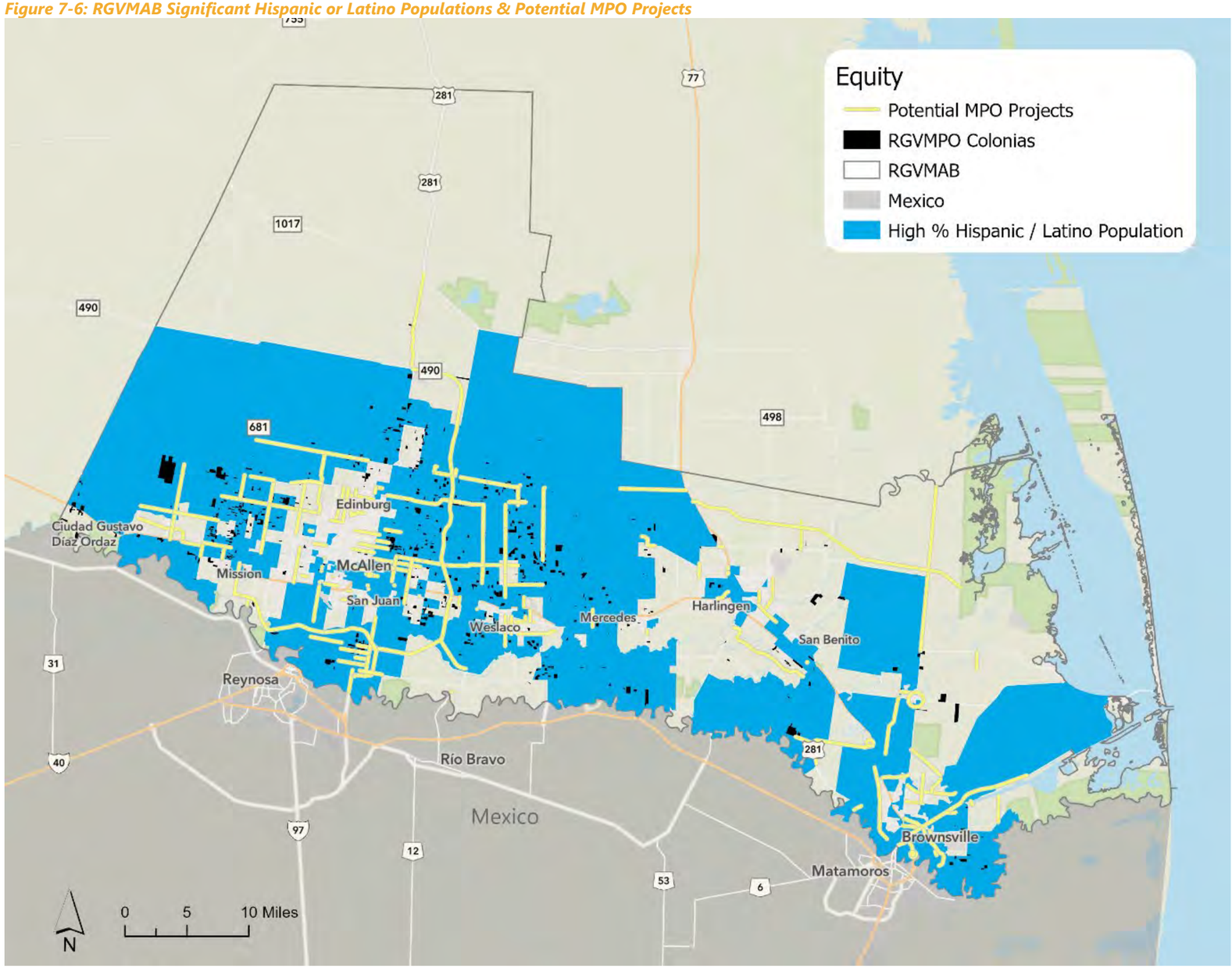


*Figure 7-6: RGVMAB Significant Hispanic or Latino Populations & Potential MPO Projects*



## Air Quality

Improving regional air quality and maintaining compliance with federal air quality standards is a fundamental consideration in the MTP process. The construction of new transportation infrastructure increases the capacity for vehicles on regional roadways, which has the potential to increase traffic-related air pollutants in the RGVMAB. In 1963, in response to increasing air pollution, the U.S. Congress passed the original Clean Air Act which established a federal program for researching techniques to monitor and control air pollution. The Clean Air Act of 1970 increased federal enforcement authority and authorized the development of national ambient air quality standards to limit common and widespread pollutants. These standards, known as the National Ambient Air Quality Standards (NAAQS), define the allowable concentration of pollution in the air for six "criteria" pollutants, including carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. The RGVMAB is in attainment for air quality and should continue to work toward limiting air pollutants.

The Clean Air Act identifies two types of national ambient air quality standards:

- Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.
- Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The existing standards for each of the six criteria pollutants are listed in Table 7-4. The units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m3). The EPA issued its final rule strengthening the ozone standards to 0.070 ppm on October 1, 2015.

EPA has delayed issuing guidance on conformity requirements for transportation planning in relation to the 2015 Ozone rule. Until then, the RGVMPO 2045 MTP is only required to maintain compliance with the 2008 standard definition.

*Table 7-4: National Ambient Air Quality Standards (NAAQS)*

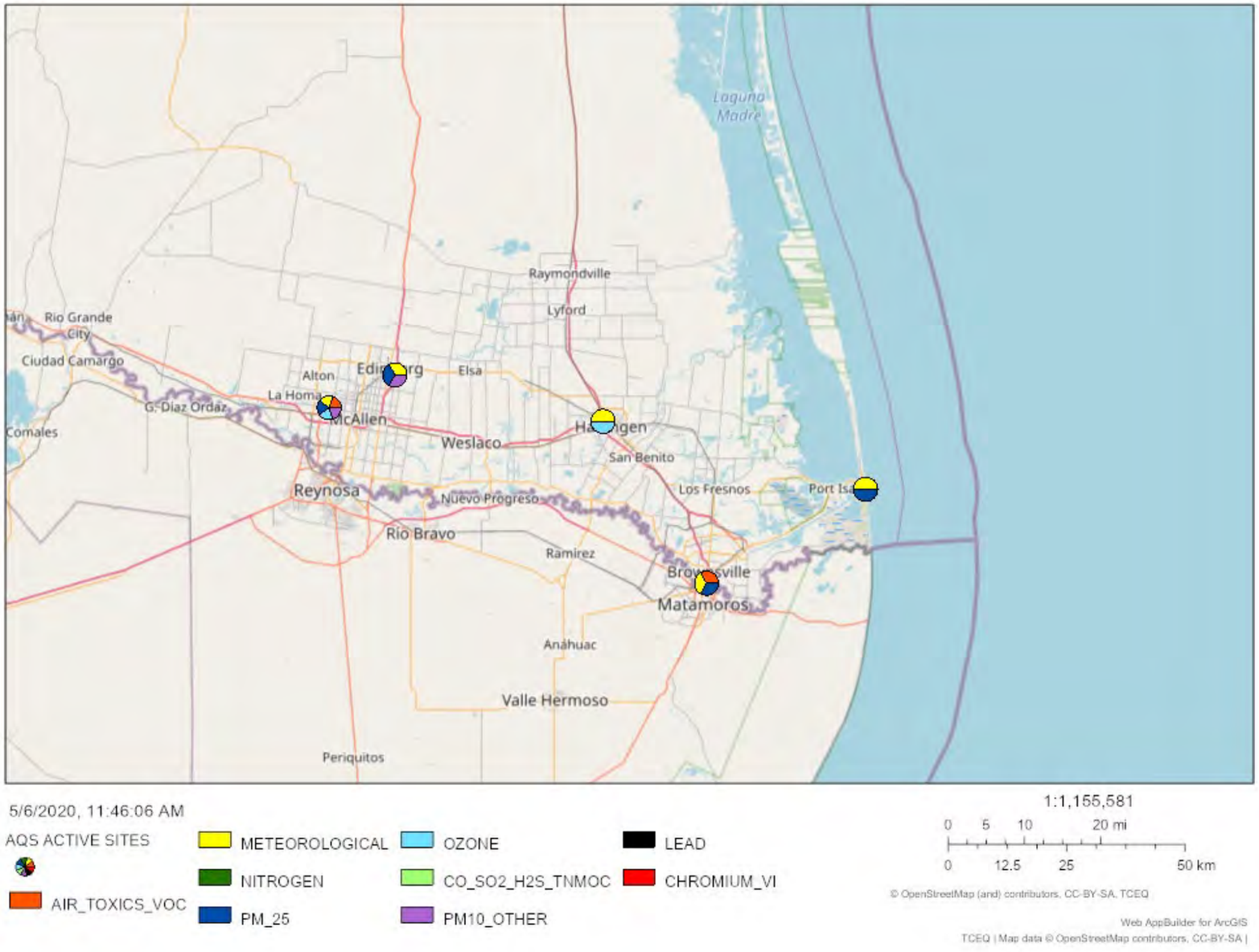
| Pollutant | Primary/Secondary | Averaging Time | Level | Form |
|---|---|---|---|---|
| Carbon Monoxide (CO) | Primary | 8 hours<br>1 hour | 9 ppm<br>35 ppm | Not to be exceeded more than once per year |
| Lead | Primary and Secondary | 3 month rolling average | 0.15 $\mu g/m^3$ | Not to be exceeded |
| Nitrogen Dioxide (NOX) | Primary<br><br>Primary/Secondary | 1 hour<br><br>Annual | 100 ppb<br><br>53 ppb | 98$^{th}$ percentile, averaged over 3 years<br>annual mean |
| Ozone | Primary/Secondary | 8 hours | o.075 ppm | Annual, fourth highest maximum daily 8-hour concentration averaged over 3 years. |
| Particle Pollution PM 2.5 | Primary<br><br>Secondary | Annual<br><br>Annual | 12 $\mu g/m^3$<br><br>15 $\mu g/m^3$ | Annual mean averaged over 3 years<br>Annual mean averaged over 3 years |
| Particle Pollution PM10 | Primary and Secondary<br><br>Primary and Secondary | 24 hours<br><br>24 hours | 35 $\mu g/m^3$<br><br>150 $\mu g/m^3$ | 98th percentile, averaged over 3 years<br><br>Not to be exceeded more than once per year, averaged over 3 years |
| Sulfur Dioxide | Primary<br><br>Secondary | 1 hour<br><br>3 hours | 75 ppb<br><br>0.5 ppm | 9$^{th}$ percentile of daily 1 hour maximum, averaged over 3 years<br>Not to be exceeded more than once per year |

Regions are designated by the EPA as either in attainment or nonattainment for the standards set by NAAQS. Attainment means the concentration of each pollutant does not exceed NAAQS. Non-attainment means the concentration of at least one pollutant exceeds the maximum defined threshold. If an area is designated as non-attainment, the State must develop and submit a State Implementation Plan (SIP). Areas of nonattainment can apply for Congestion Mitigation Air Quality (CMAQ) funds which can be used to help develop the SIP and use the funding to implement the mitigation activities. CMAQ and other funding opportunities are further described in Chapter 8. The SIP addresses each pollutant that exceeds NAAQS and establishes an overall regional plan to reduce air pollution emission levels and maintain attainment status.

Once a nonattainment area meets the standards, EPA will designate the area to attainment as a "maintenance area." Maintenance areas are required to have a Maintenance Plan in place to ensure continued attainment of the respective air quality standard. The Clean Air Act defines specific timetables to attain air quality standards and requires nonattainment areas to demonstrate reasonable progress in reducing air pollutants until the area achieves attainment. Collection area locations are presented in Figure 7-7.

Even if an area has achieved attainment, this does not mean that a proposed project's impact on air quality can be ignored. Projects should look to limit producing pollutants throughout implementation.

*Figure 7-7: RGVMAB Air Quality System Active Sites*



## Potential for Roadway Condition Improvements

The systems-level analysis also highlights projects that would likely overlay and thus improve roadways in fair or poor condition. This element of the analysis was included to highlight areas where capacity expansion projects can have a positive impact upon the overall transportation network. Further explanation of what is considered fair- or poor-quality roadway condition can be found in Chapter 4. The buffer distance for these elements was 50 feet. Table 7-5 shows the lane miles of Interstate and Non-Interstate National Highway System (NHS) potentially improved by the plan of projects.

*Table 7-5: Potential Roadway Condition Improvements*

| Element Type | Interstate | Non-Interstate NHS |
|---|---|---|
| Fair or Poor Condition Roadways | 0.93 mi. | 40.83 mi. |

## Potential Mitigation Activities

Federal regulations require the MTP process to include a discussion about potential mitigation activities that can revive and maintain the environmental resources of an area. These mitigation strategies apply to areas for air quality and Environmental Justice concerns. FHWA recommends an ordered approach to mitigation known as "sequencing" that involves understanding the affected environment and assessing transportation effects through project development. This ordered approach involves:

- Avoiding the impact altogether (this should be the priority); minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected area.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources.

The type and level of mitigation activities will vary depending on the scope of the project. The project team proposes a multitude of mitigation measures and general areas where these activities can be implemented. These measures, presented in Table 7-6, are intended to be regional in scope and may not necessarily address potential project-level impacts. As proposed projects progress through the project development process, mitigation should be an integral part of alternatives development and the analysis process to maximize the effectiveness of mitigation strategies.

*Table 7-6: Mitigation Measures by Resource*

| Resource | Mitigation Measures |
|---|---|
| Wetlands or Water Resources | Avoidance, Minimization or Compensation<br>• Preservation<br>• Creation<br>• Restoration<br>• In-lieu Fees<br>• Riparian Buffers<br>• Design Exceptions and Variances<br>Environmental Compliance Monitoring |
| Cultural Resources | Avoidance Minimization<br>Landscaping for Historic Properties<br>Preservation in Place or Excavation for Archaeological Sites<br>Design Exceptions and Variances<br>Environmental Compliance Monitoring |
| Parks and Recreation Areas | Avoidance, Minimization, Mitigation<br>Design Exceptions and Variances<br>Environmental Compliance Monitoring |
| Ambient Air Quality | Transportation Control Measures<br>Transportation Emission Reduction Measures |
| Forested and Other Natural Areas | Avoidance, Minimization<br>Replacement Property for Open Space Easements to be of Equal Fair Market Value and of Equivalent Usefulness<br>Design Exceptions and Variances<br>Environmental Compliance Monitoring |
| Agricultural Areas | Avoidance, Minimization<br>Design Exceptions and Variances<br>Environmental Compliance Monitoring |
| Endangered or Threatened Species | Avoidance, Minimization<br>Time of Year Restrictions<br>Construction Sequencing<br>Design Exceptions and Variances<br>Species Research/Fact Sheets<br>Memoranda of Agreements for Species Management<br>Environmental Compliance Monitoring |

# SYSTEMS LEVEL ANALYSIS CONCLUSION

The systems-level analysis was performed to give the RGVMPO an understanding of potential environmental and quality of life impacts of their proposed projects. The Environmental Justice impacts of the projects were also analyzed by observing which project's buffers are slated to be in or near an area designated as an EJZ or an area above the regional average percentage of Hispanic or Latino residents. Summary counts of the potential impacts are found in the text of this chapter. More detailed information in is compiled for the RGVMPO in the aforementioned ArcGIS project. The individual impacts on the projects will need to be further analyzed as these projects move towards programming and implementation. The RGVMPO and its planning partners will perform this consultation over time after plan adoption with appropriate land use and natural resource agencies to coordinate on possible mitigations and project programming. This systems-level analysis provides a basis for initial discussion and consultation on projects in conjunction to potential impacts on water features and EJZs will be evaluated at a greater depth as projects move through the development process and more detailed information becomes available.

# 8 FINANCIAL PLAN

The Financial Plan summarizes the funding programs available at the federal, state, and local levels for transportation projects, and forecasts estimated project costs and available funds for all transportation projects programmed into the planning horizon of the RGVMPO 2045 MTP.

# ESTIMATING FUNDING

Federal regulations require that proposed investments in an MTP show fiscal constraint by demonstrating that projects can be implemented using committed, available, or reasonably available revenue sources. This funding must reasonably support the anticipated project costs, while validating the ability to adequately operate and maintain the transportation system.

The Financial Plan includes descriptions of the funding categories, sources, and specific dollar amounts that are expected to be available to fund projects listed in the RGVMPO 2045 MTP. This chapter also steps through the process of determining available funding levels and project cost development for Year of Expenditure (YOE).

Federal regulations also require these financial forecasts to consider inflation regarding the value of the dollar over time, which should be considered for both funding sources and project costs that are discussed within this chapter. These funding sources and project costs were estimated in year-of-receipt and YOE dollars, respectively.

The following sections will summarize the processes used to forecast both roadway and transit funding levels over the 25-year period in the RGVMPO 2045 MTP.

## *Roadway Funding Sources*

Federal, state, and local funding programs were considered when reviewing and forecasting the total amount of funding for roadway projects within the 2045 MTP timeframe. The funding estimated to be available for projects in the RGVMAB through the lifespan of the 2021 UTP (2021-2030) was used in conjunction with a review of historical spending by each funding category. These estimates were used to form the base-year funding assumptions that were extrapolated to complete the funding forecast for the duration of the MTP.

The following section describes funding sources at the federal, state, and local levels available for roadway projects.

### *Potential Federal Funding Sources*

In late 2015, the federal administration enacted the Fixing America's Surface Transportation Act (FAST Act), which provides funds for surface transportation activities. The FAST Act provided just over $300 billion dollars for surface transportation projects through the fiscal years of 2016 to 2020. The FAST Act builds upon the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was enacted in 2012, by expanding its scope to include improving highway mobility, supporting economic growth by creating jobs, and accelerating project delivery and promoting innovation. MAP-21 set out to make surface transportation projects streamlined, performance based, and multimodal, while improving safety, maintaining infrastructure, reducing traffic congestion, improving efficiency, protecting the environment, and expediting project delivery.

#### NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

Every year the FAST Act provides a little over $23 billion for the NHPP to preserve the condition and performance of the National Highway System (NHS). NHPP funds can also be used to construct new NHS facilities and ensure that projects are making progress toward performance goals set out in each state's asset management plan.

MAP-21 eliminated the programs with dedicated funding for repair by consolidating the Interstate Maintenance and Highway Bridge Repair programs and shifting these funds to the new NHPP. NHPP provides funding for improvements to rural and urban roads that are part of the NHS, including the Interstate System and designated connections to major intermodal terminals. Under certain circumstances, NHS funds may also be used to fund transit improvements in NHS corridors.

The FAST Act created additional eligibilities for the NHPP:

- A State may use NHPP funds to pay the subsidy and administrative costs for Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance.
- Vehicle-to-Infrastructure (V2I) communication equipment.
- Reconstruction, resurfacing, restoration, rehabilitation, or preservation of a non-NHS bridge if the bridge is on a Federal-aid highway.

### SURFACE TRANSPORTATION BLOCK GRANT (STBG) PROGRAM

Previously titled the Surface Transportation Program (STP) The STBG is a block grant funding program with subcategories for states and urban areas. STBG funding may be used for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.

These funds can be used for any road, including an NHS roadway, that is not functionally classified as a local road or rural minor collector. The state portion can be used on roads within (or outside) an urbanized area, while the urban portion can only be used on roads within an urbanized area. The funding ratio is 80/20 (federal/local).

For urban areas with a population of greater than 200,000 people (such as within the RGVMAB), the MPO is the lead agency for funding allocation in consultation with the State. Urban areas with a population of less than 200,000 people the State is the leading agency for fund allocation in consultation with the MPO.

### HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

As referenced in Chapter 5, the purpose of the HSIP is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands.

"The primary features of the current HSIP are retained, including the requirement for a comprehensive, data-driven, SHSP that defines State safety goals and describes a program of strategies to improve safety. To obligate HSIP funds, a State must develop, implement and update a SHSP, produce a program of projects or strategies to reduce identified safety problems, and evaluate the SHSP on a regular basis.

The SHSP remains a statewide coordinated plan developed in cooperation with a broad range of multidisciplinary stakeholders.

States are required to have a safety data system to perform problem identification and countermeasure analysis on all public roads, adopt strategic and performance-based goals, advance data collection, analysis, and integration capabilities, determine priorities for the correction of identified safety problems, and establish evaluation procedures."[1]

[1] https://www.fhwa.dot.gov/fastact/factsheets/hsipfs.cfm

The FAST Act continues MAP-21 authorization of a lump sum for this program, and it is the responsibility of the State to divide up these funds according to the State's priorities. For a project to be eligible under the HSIP program, the project must be consistent with the State's SHSP and correct or improve a hazardous road location or feature or address a highway safety problem. Workforce development, training, and education activities are also eligible uses of HSIP funds. The Federal share for HSIP is 90%.

### TRANSPORTATION ALTERNATIVES (TA) PROGRAM

The FAST Act replaced the MAP-21 Transportation Alternatives Program (TAP) with a set-aside of STBG program funding for Transportation Alternatives (TA) to provide funding for a variety of alternative transportation projects that were previously eligible activities TAP. Unless a State opts out, it must use a specified portion of its TAP funds for recreational trails projects. Eligible activities include:

- Facilities for pedestrians, bicyclists, and other non-motorized forms of transportation
- Safe routes for non-drivers
- Conversion and use of abandoned railroad corridors for trails
- Community improvement activities

States and MPOs (for urbanized areas with more than 200,000 people) conduct a competitive application process for use of the sub-allocated funds. Other than the recreational trails set-aside, States are given broad flexibility to use these funds. A 20% local funding match is required for most projects.

### CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

Urban areas that do not meet ambient air quality standards are designated as non-attainment areas by the U.S. Environmental Protection Agency (EPA). CMAQ funds are apportioned to those urban areas for use on projects that contribute to the reduction of mobile source air pollution through reducing vehicle miles traveled, fuel consumption, or other identifiable factors. Both roadway and transit projects are eligible for CMAQ funds. Starting in FY 2013, all CMAQ projects were required to provide a 20% local match, with the exception of carpool and vanpool projects, which will remain 100% federally funded. To be eligible for CMAQ funds, projects must meet the following three criteria:

- Be a transportation project;
- Contribute to emission reductions; and
- Located in or benefit a nonattainment or maintenance area for ozone, carbon monoxide, and particulate matter.[2]

Neither Cameron or Hidalgo County are currently considered non-attainment or maintenance areas.

### COMPETITIVE HIGHWAY BRIDGE PROGRAM (CHBP)

These funds go toward highway bridge replacement or rehabilitation projects on public roads that demonstrate cost savings by bundling at least two highway bridge projects into a single contract.

[2] https://www.nps.gov/subjects/transportation/upload/CMAQ_Fact_Sheet_Final.pdf

## *Potential State Funding Sources*

The State of Texas maintains categorized funding programs that coincide with Federal funding programs. Traditionally this funding is used to match federal sources and to fund the operations of the state Department of Transportation. The primary funding source for the Texas state program comes from motor fuels taxes allocations, motor vehicle registration fees, severance taxes allocations, and many other revenue sources and fees, including voter approved constitutional amendments Proposition 1 and Proposition 7, which redirect funding from the general fund to be spent on transportation projects. Categories 1-9 of the Texas UTP are federal and state programmatic funding categories, while categories 10, 11, and 12 are strategic and discretionary funding categories.

TxDOT's 2021 UTP provides the following definitions and criteria for each funding category.

### CATEGORY 1: PREVENTATIVE MAINTENANCE AND REHABILITATION

Category 1 deals with preventative maintenance and rehabilitation of the existing highway system, which includes pavement, signs, traffic signalization, and other assets that can be considered part of the highway infrastructure. Preventative maintenance works to preserve, rather than improve the structural integrity of current pavements and structures. Rehabilitation focuses on repairing (which can also be considered modernizing) existing main lanes, structures, frontage roads, and other infrastructure assets.

Projects are selected by districts using a performance based prioritization process that assesses district-wide maintenance and rehabilitation needs. The Texas Transportation Commission allocates funds through a formula allocation program.

### CATEGORY 2: METROPOLITAN AND URBAN AREA CORRIDOR PROJECTS

Category 2 addresses mobility and added capacity projects on urban corridors to mitigate traffic congestion, as well as increaseing traffic safety and improving roadway maintenance or rehabilitation. Projects must be located on the state highway system. Roadway widening (both freeway and non-freeway), interchange improvements, and roadway operational improvements are common within Category 2.

Projects are selected by MPOs in consultation with TxDOT using a performance based prioritization process that assesses mobility needs within the MPO boundaries. Project funds must be authorized by the Texas Transportation Commission by formula.

### CATEGORY 3: NON-TRADITIONALLY FUNDED TRANSPORTATION PROJECTS

Transportation-related projects that qualify for funding from sources not traditionally part of the state highway fund, including state bond financing under programs such as Proposition 12 (General Obligation Bonds), Texas Mobility Fund, pass-through toll financing, unique federal funding, regional toll revenue, and local participation funding. New-location roadways, roadway widening, and interchange improvements are common project types that receive Category 3 funds.

Projects are determined by legislation, Texas Transportation Commission approved Minute Order, or local government commitments.

### CATEGORY 4: STATEWIDE CONNECTIVITY CORRIDOR PROJECTS

Category 4 funds are used for mobility and added capacity projects on major state highway system corridors that provide statewide connectivity between urban areas and other statewide corridors, to

create a highway connectivity network composed of the Texas Highway Trunk System, NHS, National Freight Network, hurrican evacuation routes, and connections to major ports of entry on international borders and Texas water ports.

Corridors are selected by the Texas Transportation Commission based on engineering analyses of three corridor types; mobility, connectivity, and strategic. Funds are allocated by the Commission to TxDOT districts. Districts select projects along approved corridors in consultation with MPO's, the Transportation Planning and Programming Division (TPP), and TxDOT Administration using a performance- based evaluation.

### CATEGORY 5: CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ)

Congestion mitigation and air quality improvement projects address attainment of a national ambient air quality standard in non-attainment areas of the state, which does not include the RGVMAB. Projects that relate to maintaining the non-attainment status may also be eligible for CMAQ funds.

Projects are selected by MPOs in consultation with TxDOT. The Texas Transportation Commission allocates funds distributed by population and weighted by air quality severity to non-attainment areas. Nonattainment areas are designated by the EPA.

### CATEGORY 6: STRUCTURES REPLACEMENT & REHABILITATION (BRIDGE)

Replacement and rehabilitation of deficient existing bridges located on public highways, roads, and streets in the state; construction of grade separations at existing highway and railroad grade crossings; and rehabilitation of deficient railroad underpasses on the state highway system.

Projects are selected by the Bridge Division (BRG) based on a listing of eligible bridges prioritized first by deficiency categorization (structurally deficient followed by functionally obsolete) and then by sufficiency ratings. Railroad grade separation projects are selected based on a cost-benefit index rating. Projects in the Bridge Management and Improvement Program (BMIP) are selected statewide based on identified bridge maintenance and improvement needs to aid in ensuring the management and safety of the state's bridge assets. The Texas Transportation Commission allocates funds through the Statewide Allocation Program.

### CATEGORY 7: METROPOLITAN MOBILITY & REHABILITATION

Projects that address transportation needs within the boundaries of designated metropolitan planning areas of metropolitan planning organizations located in a transportation management area (areas with populations of 200,000 or more).

Projects are selected by MPOs operating in transportation management areas, in consultation with TxDOT. The MPOs use a performance-based prioritization process that assesses mobility needs within the MPO boundaries.

### CATEGORY 8: SAFETY

Safety-related projects both on and off the state highway system including the federal Highway Safety Improvement Program, Safety Bond Program, Systemic Widening Program, Federal Railway Set-Aside, and Road to Zero (RTZ). Projects are selected statewide by federally mandated safety indices and a prioritized listing. Projects selected in each program are evaluated by relevant safety or railroad factors and indexes. The Texas Transportation Commission allocates funds through the Statewide Allocation Program.

## CATEGORY 9: TRANSPORTATION ALTERNATIVES SET-ASIDE PROGRAM

Transportation-related activities as described in the Transportation Alternatives (TA) Set-Aside Program, such as on- and off-road pedestrian and bicycle facilities, and infrastructure projects for improving access to public transportation. For urbanized areas with populations over 200,000, the MPO selects TA projects through a competitive process in consultation with TxDOT.

Funds allocated to small urban areas and non-urban areas (i.e., areas with populations below 200,000) are administered by TxDOT through a competitive process to be managed by the Public Transportation Division through a competitive process. The Texas Transportation Commission selects projects for funding under a TxDOT administered call for projects. Statewide TA Flex projects are also selected by the Commission. All projects are selected using a performance-based prioritization process that assesses local transportation needs, including bicycle and pedestrian access.

## CATEGORY 10: SUPPLEMENTAL TRANSPORTATION PROGRAMS

Transportation-related projects that do not qualify for funding in other categories, including landscape and aesthetic improvement, erosion control and environmental mitigation, construction and rehabilitation of roadways within or adjacent to state parks, fish hatcheries, and similar facilities, replacement of railroad crossing surfaces, maintenance of railroad signals, construction or replacement of curb ramps for accessibility to pedestrians with disabilities, and miscellaneous federal programs.

### Coordinated Border Infrastructure Program (CBI), Congressional High Priority Projects, and Federal Lands Access Program (FLAP)

CBI projects are selected by districts with FHWA review and approval. Discretionary funds are congressionally designated. In FLAP, project applications are scored and ranked by the Programming Decision Committee (PDC). Members of the PDC include a representative from FHWA, a representative from TxDOT, and a member from a political subdivision of the state. Projects selected under FLAP are managed by TPP.

### Supplemental Transportation Projects

The Texas Parks and Wildlife Department (TPWD) selects State Park Roads projects in coordination with districts. The TxDOT Rail Division in coordination with districts selects Railroad Grade Crossing Re-planking and Railroad Signal Maintenance projects. Landscape Incentive Awards are distributed to 10 locations based on the results of the Keep Texas Beautiful Awards Program and managed by the TxDOT Design Division.

Green Ribbon allocations are based on one-half percent of the estimated letting capacity for the TxDOT districts that contain air quality non-attainment or near non-attainment counties and managed by the TxDOT Design Division. Curb Ramp Program projects are selected based on conditions of curb ramps or the location of intersections without ramps and are managed by the Design Division.

## CATEGORY 11: DISTRICT DISCRETIONARY

Projects eligible for federal or state funding selected at the district engineer's discretion. Additionally, Category 11 addresses transportation needs that may impact the Energy Sector and Border Infrastructure (Rider 11(b)). Projects are selected by districts. The Texas Transportation Commission allocates funds through a formula allocation program.

A minimum $2.5 million allocation goes to each district per legislative mandate. The Commission may supplement the funds allocated to individual districts on a case-by-case basis to cover project cost overruns, as well as energy sector initiatives. Rider 11 (b) is also selected by the Commission dependent on the number of land border ports of entry, incoming commercial freight traffic, incoming personal motor vehicles and buses, and the weight of incoming cargo by commercial trucks.

#### CATEGORY 12: STRATEGIC PRIORITY

Projects with specific importance to the state, including those that generally improve congestion and connectivity, energy sector access, and border and port connectivity, promote economic opportunity, increase efficiency on military deployment routes or retain military assets in response to the federal military base realignment and closure reports, and maintain the ability to respond to both manmade and natural emergencies. The Texas Transportation Commission selects projects statewide using a performance-based prioritization process.

## *Potential Local Funding Sources*

It is typically the responsibility of the local government jurisdictions to cover any costs not covered by federal and state programs. Local funding can come from a variety of sources including property taxes, sales taxes, user fees, special assessments, and impact fees. Match requirements make local funds critical to maintain eligibility for several federal and state funding sources, which is typically around 20% of total project costs for federal funding sources.

#### PROPERTY TAXES

Property taxation has historically been the primary source of funding for local governments in the United States. Property taxes account for more than 80% of all local tax revenues. Property is not subject to federal government taxation but is taxed at a high rate within the state of Texas given the lack of state and local-option income taxes.

#### GENERAL SALES TAXES

The general sales and use tax is also an important funding source for local governments. The most commonly known form of the general sales tax is the retail sales tax. The retail sales tax is imposed on a wide range of commodities, and the rate is usually a uniform percentage of the selling price.

#### USER FEES

User fees are fees collected from those who use a service or facility. The fees are collected to pay for the cost of a facility, finance the cost of operations, and/or generate revenue for other uses. User fees are commonly charged for public parks, water and sewer services, transit systems, and solid waste facilities. The theory behind the user fee is that those who directly benefit from these public services pay for the costs.

#### SPECIAL ASSESSMENTS

Special assessment is a method of generating funds for public improvements, whereby the cost of a public improvement is collected from those who directly benefit from the improvement. In many instances, new streets are financed by special assessment. The owners of property located adjacent to the new streets are assessed a portion of the cost of the new streets based on the amount of frontage they own along the new streets.

### IMPACT FEES

Development impact fees have been generally well received in other states and municipalities in the United States. New developments create increased traffic volumes on the streets around them, and development impact fees are a way of attempting to place a portion of the burden of funding improvements on developers who are creating or adding to the need for improvements. There are currently no municipalities in the RGVMAB that assess a transportation-specific impact fee.

### BOND ISSUES

Property tax and sales tax funds can be used on a pay-as-you-go basis, or the revenues from these taxes can be used to repay general obligation or revenue bonds. These bonds are issued by local governments upon approval of the voting public.

## REVENUE FORECAST DEVELOPMENT

Historically, transportation improvement projects in the RGVMAB have been funded through a combination of Federal, State, and local dollars. The process of developing reasonable expectations for future revenues includes several factors in reviewing these historical funds. Historical TIPs and lists of obligated projects from the last 20 years were compiled and project funding was sorted by year and funding category. The revenue history was then screened for outliers. Events such as changes in funding categories or additional funds received after a hurricane could ostensibly create a skew in understanding the normal trends and are identified early in the process. The resulting normalized trends in funding were analyzed over that historical 20-year period to establish preliminary growth rates for funding by category. Table 8-1 summarizes the totals for each applicable funding category broken out into 5-year periods over the last 20 years. Historical transit funding was compiled through a similar process using historical TIPs and compared to the current 2021-2024 TIP.

***Table 8-1: Historical Roadway Funding***

| UTP Category | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 |
|---|---|---|---|---|
| 1 | $106,475,070 | $146,873,380 | $137,592,995 | $175,176,929 |
| 2* | $0 | $0 | $14,916,819 | $160,646,855 |
| 3 | $237,763,856 | $79,866,202 | $107,901,095 | $57,480,479 |
| 4 | $153,628,235 | $0 | $18,712,000 | $157,069,355 |
| 6 | $25,771,532 | $16,088,976 | $29,982,000 | $17,411,736 |
| 7 | $46,565,092 | $71,833,047 | $56,590,778 | $89,525,572 |
| 8 | $11,157,753 | $28,463,055 | $21,368,320 | $33,275,266 |
| 9 | $6,647,048 | $3,982,675 | $6,598,805 | $13,265,206 |
| 10 | $52,480,451 | $85,504,150 | $94,811,651 | $36,987,633 |
| 11 | $82,246,778 | $66,659,183 | $7,191,837 | $40,362,174 |
| 12 | $1,400,000 | $9,000,000 | $10,511,460 | $204,580,000 |
| LC | $20,339,204 | $26,304,676 | $42,509,893 | $38,207,678 |

**Includes 2M and 2U*

## Roadway Funding Forecast

To determine the fiscal feasibility of implementing a program of projects in the MTP, an analysis of programmed funding was conducted. The RGVMPO coordinated with TXDOT to determine projected funding and acceptable inflation rates for projects. This resulted in a compounded annual inflation rate of 4.0% in Texas.

The RGVMPO 2045 fiscally constrained MTP is partitioned into segments of time. The first two segments of time are developed to coincide with other planning and programming efforts such as the TIP which typically covers three to four years, and the UTP covering ten years. The remaining fifteen years of the MTP planning horizon are banded into segments to help set up future TIP and UTP development efforts.

The first ten years of the RGVMPO 2045 MTP, FY 2021-2030, are fiscally constrained by funding category based on funding allocations identiifed through the Texas 2021 UTP. The remaining 15 years are also fiscally constrained based the comparison of project costs submitted through the MTP project listings and funding projections estimated based off historical funding totals and funding targets established by TxDOT for certain funding categories for the RGVMAB.

For some of the UTP funding categories, the UTP does not identify specific projects, but rather identifies funding levels for programs. Individual projects are then identified through a performance-based prioritization process. Examples of these programs include Category 1-Preventative Maintenance and Rehabilitation, Category 6-Structure Replacement and Rehabilitation, and Category 8-Safety. Local contributions above the required local match to federal funds are captured under Category 3.

Unless otherwise noted, most of these funding categories continue throughout the RGVMPO 2045 MTP. For the periods within the current 2021 UTP, the funding targets set out by TxDOT were used to populate revenue forecasts where available. For the outlying years beyond 2030, the historical growth rates based on the previous 20 years of funding were used to generate a revenue forecast out to the 2045 horizon, which were adjusted for inflation by applying the expected average statewide inflation rate (2.23%).

Most of the funding categories under which the RGVMAB receives funding are administered by TxDOT in consultation with the MPO. However, there are two specific funding categories that the RGVMPO leads the administrative process in conjunction with TxDOT. These categories include:

- Surface Transportation Program for metropolitan mobility projects (STP-MM) allocated through TxDOT UTP Category 7
- Transportation Alternatives (TA) Program allocated through TxDOT UTP Category 9

The total amount estimated to be available from 2021-2045 in the RGVMAB through the TA program is $54M. TxDOT introduced additional funding assumptions in the RGVMPO 2045 MTP for non-programmatic funding categories:

- $12.5M reconstruction of Mile 3 N. by widening to 4 lanes, in 2023
- $18.3M reconstruction of Liberty Blvd. by widening to 4 lanes, in 2022
- $203M to construct 4 lanes with overpasses and 2 lanes with frontage roads on US-281 in 2024
- $216M to construct a new 4-lane divided rural highway facility on SH 68 in 2024
- $301M to construct a 4-lane controlled access facility on 365 Tollway in 2021
- $312M for construction of the International Bridge Trade Corridor and toll facility in 2021-2022

## Roadway Funding Overview

Reviewing the project funding, annual forecast amounts, appropriate growth rates to relevant funding categories, and appropriate inflation rates resulted in the following levels (Table 8-2) of roadway funding estimated to be available for each stage of the plan. Table 8-3 displays the total funding estimated to be available by source over the 25-year period of the MTP. Federal funding administered by the RGVMPO in the 2045 MTP is in line with historical trends and no reduction of these funds are expected in the future.

*Table 8-2: Total Roadway Funding by Stage- All Categories*

| Stage | Amount |
|---|---|
| 2021-2024 | $902,545,042 |
| 2025-2030 | $1,733,933,310 |
| 2031-2036 | $1,842,362,870 |
| 2037-2045 | $1,529,493,080 |
| **Total (2021-2045)** | **$6,008,334,302** |

*Table 8-3: 2021-2045 Total Estimated MTP Funding by Category*

| Stage | Amount |
|---|---|
| 1 – Preventative Maintenance & Rehabilitation | $1,004,287,994 |
| 2 – Metropolitan Area (TMA) Corridor Projects | $1,013,893,078 |
| 3 – Local Contribution | $678,447,888 |
| 4 – Statewide Urban Connectivity Corridor Projects | $203,372,437 |
| 6 – Structures Replacement & Rehabilitation | $171,308,637 |
| 7 – STP – MM | $256,282,574 |
| 8 – Safety Projects | $170,206,534 |
| 9 – Transportation Alternatives-Set Aside | $54,097,074 |
| 10 – Transportation Enhancements Program (TxDOT) | $569,566,767 |
| 11 – District Discretionary | $126,437,254 |
| 12 – Strategic Priority | $1,388,661,491 |
| Local Funds | $270,158,066 |
| TBD | $101,614,509 |
| **Total MTP Estimated Roadway Funding** | **$6,008,334,303** |

# Transit Funding Sources

Transit providers in the RGVMAB are funded through a combination of federal, state, and local sources. Aside from local funding, the FTA administers the primary funding programs used by transit providers in the study area. Of these programs, the Section 5307 Urbanized Area Formula program is the largest source of funding. Other FTA funding programs are more limited in nature.

## Federal Funding Sources

### SECTION 5307 (URBANIZED AREA FORMULA PROGRAM)

Section 5307, the Urbanized Area Formula program (49 U.S.C. 5307) makes federal funding available to urbanized areas for transit capital and operating assistance and for transit-related planning activities. Funding for the formula program is determined based on the level of transit service provision, population, and other factors.

### SECTION 5311 (FORMULA GRANTS FOR RURAL AREAS)

This formula-based program (49 U.S.C. 5311) provides states and tribal governments with funding for administration, capital, planning, and operating assistance to support public transportation in rural areas, defined as areas with fewer than 50,000 residents.

There are set-asides within this program for the Intercity Bus Program, the Rural Transit Assistance Program (RTAP), Public Transportation on Indian Reservations, and the Appalachian Development Public Transportation Program.

### SECTION 5310 (ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES)

The Enhanced Mobility program provides formula funding to assist in meeting the transportation needs of the elderly and persons with disabilities when the primary transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The purpose of this program is to enhance mobility for seniors and persons with disabilities by providing funds for programs to serve the special needs of transit-dependent populations beyond traditional public transportation services and paratransit services.

Funds from the 5310 program can be used for both capital improvements and operating expenses. However, at least 55% of program funds must be used on capital projects (“traditional” project) that are public transportation projects planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The remaining 45% of program funds may be used for capital and operating expenses for new public transportation services (“nontraditional” projects) and alternatives beyond those required by the ADA, designed to assist individuals with disabilities and seniors.

Funds are apportioned for urbanized and rural areas based on the number of seniors and individuals with disabilities. The federal share for capital projects (including acquisition of public transportation services) is 80%; the federal share for operating assistance is 50%.

### SECTION 5339 (BUS AND FACILITIES)

The FAST Act updated this previously formula-based program (49 U.S.C. 5339) authorizes FTA to award Bus Program grants through a competitive process. This provides capital funding to states and designated recipients to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct bus-related facilities and is intended to improve the condition of the nation's public transportation bus fleets, expand transportation access to employment, educational, and healthcare facilities, and to improve mobility options in rural and urban areas throughout the country. This ties to Transit Asset management and Safety directives and also includs prioritization for projects that demonstrate connectivity and imlementation of advanced technologies. Competitive grants go towards eligible projects under the Bus Program from an authorized $213 million. However, an oversight takedown reduces this amount to $211

million. The Section 5339 program also includes authorization for Low or No Emission Bus Programs and prioritizes the implementation of adoption of these technologically advanced vehicles.

## OTHER FTA FORMULA AND DISCRETIONARY FRANTS

There are several other FTA grant programs with funding available. Most of these grant programs are focused on fixed guideway systems or on temporary assistance.

### Section 5309 (Capital Investment Grants)

The Capital Investment Grant (CIG) Section 5309 program is a discretionary grant program for funding major transit capital investments. These investments includes:

- Heavy rail
- Commuter rail
- Light rail
- Streetcars
- Bus rapid transit

By law, projects seeking CIG funding must complete a series of steps over several years to be eligible for funding. New Starts and Core Capacity projects are required by law to complete the Project Development and Engineering phases in advance of receipt of a construction grant agreement. Small Starts projects are required by law to complete the Project Development phase in advance of receipt of a construction grant agreement.

- New Starts Projects
    - Total project cost is equal to or greater than $300 million or total New Starts funding sought equals or exceeds $100 million
    - New fixed guideway system (light rail, commuter rail etc.)
    - Extension to existing system
    - Fixed guideway BRT system
- Small Starts Projects
    - Total project cost is less than $300 million and total Small Starts funding sought is less than $100 million
    - New fixed guideway systems (light rail, commuter rail etc.)
    - Extension to existing system
    - Fixed guideway BRT system
    - Corridor-based BRT system
- Core Capacity Projects
    - Substantial corridor-based investment in existing fixed guideway system
    - Located in a corridor that is at or over capacity or will be in five years
    - Increase capacity by 10%
    - "Not include project elements designated to maintain a state of good repair"[3]

[3] https://www.transit.dot.gov/funding/grant-programs/capital-investments/about-program

By law FTA rates projects at various points in the process, evaluating project justification and local financial commitment according to statutory criteria. FTA provides policy guidance on the CIG process and the evaluation criteria on their website.

*Flexible Federal Funding Sources*

Funding from the NHPP, the STP, CMAQ, and TAP can be "flexed" to transit projects, with certain eligibility restrictions depending on the funding source.

## Transit Funding Forecast

From 2021-2024, the RGVMPO will continue to receive traditional FTA 5307 & 5310 formula funds for programs such as capital maintenance, planning and ADA Paratransit for nearly $101M, and for Transit Enhancement projects covered by FTA 5339 funds for just over $4M, which includes funding to purchase both buses and bus facilities. Based on historical funding trends and population growth in the RGVMAB, the FTA 5307, 5310, and 5339 funds are expected to grow at a modest rate of just over 6.31% through 2045.

### Transit Funding Overview

Table 8-4 shows the total transit funding forecast for the various stages of the RGVMPO 2045 MTP. Table 8-5 breaks down forecast transit funding by source. Including local matching funds, the total amount of transit funding estimated to be available for the duration of the MTP is approximately $888M.

***Table 8-4: 2021-2045 Transit Funding Forecast (All-Sources)***

| Stage | Amount |
|---|---|
| 2021-2024 | $104,995,340 |
| 2025-2030 | $189,891,761 |
| 2031-2036 | $214,326,717 |
| 2037-2045 | $379,187,658 |
| **Total (2021-2045)** | **$888,401,476** |

***Table 8-5: 2021-2045 Transit Funding Forecast by Source***

| Section Funding | Amount |
|---|---|
| 5307 | $820,821,178 |
| 5310 | $32,964,068 |
| 5339 | $34,616,230 |
| **Total** | **$888,401,476** |

# ESTIMATING COSTS

Federal regulations define "total project cost" for the purpose of estimating fiscal constraint in the MTP to include:

- Planning elements (e.g. environmental studies and functional studies);
- Engineering costs (e.g. preliminary engineering and design);
- Preconstruction activities (e.g. ROW acquisition);
- Construction activities; and
- Contingencies.

The following assumptions helped guide the development of cost estimates for the proposed projects in the MTP as well as the maintenance and operation of the existing transportation system.

1. Because federal regulations do not require that the cost of maintenance and operations activities be computed for individual projects, the funding needed for maintenance and operation of the transportation infrastructure was estimated on a system-wide level.
2. Whenever a detailed engineering estimate for a particular project was not available, generalized planning-level cost figures (developed by the RGVMPO in close coordination with TxDOT Pharr district) were used to assess the cost of each of the project's elements. These generalized cost figures were based on estimates provided by TxDOT, and other available resources.
3. In the absence of detailed, local inflation information for construction related activities, an inflation rate of 4.0% for Texas portions of projects was used for project cost estimation based on TxDOT guidance.
4. Project costs are estimated to include construction costs as well as right-of-way acquisition and engineering costs in consultation with project sponsors.

Both typical improvement costs and local knowledge of other project costs were used to develop cost estimates for the projects considered for the MTP. In keeping with federal regulations, cost estimates were computed in average YOE dollars across 5-year periods within the MTP planning horizon using the inflation factors outlined above in accordance with FHWA, TxDOT guidance. Table 8-6 displays the aggregate total estimated project costs for each period addressed by the MTP. Each period also includes programmatic cost estimates for general system maintenance and operation. The complete list of projects considered for inclusion in the MTP, along with estimated YOE costs, can be found in Chapter 6.

Estimated roadway funds include the Statewide Mobility Program (Categories 2, 3, 4, 5, 7, 8, 9, 10, 11, & 12) and the Statewide Preservation Program (Categories 1 & 6).

The process of summarizing the funding for both mobility and preservation programs in contrast to the total costs of projects shows fiscal constraint not only for the development and construction of the planned projects, but for the sustained maintenance and operations of these projects as well.

*Table 8-6: Summary of Estimated Costs (YOE)*

| Stage | Roadway Costs | Transit Costs |
|---|---|---|
| 2021-2024 | $1,450,753,182 | $104,995,340 |
| 2025-2030 | $1,572,155,945 | $189,891,761 |
| 2031-2036 | $303,900,577 | $214,326,717 |
| 2037-2045 | $460,795,908 | $379,187,658 |
| **Total (2021-2045)** | **$3,787,605,612** | **$888,401,476** |

## Maintenance and Operations

The maintenance and operation of the transportation system was considered in the development of the RGVMPO 2045 MTP and its staged improvement program. Typically, maintenance costs are applicable to the system as a whole. Where possible, maintenance projects are identified individually. However, it is not possible to develop project-specific maintenance schedules beyond the near term. The maintenance costs identified in this plan are the responsibility of various governmental jurisdictions.

The balancing act of meeting identified transportation improvement needs and maintaining the present transportation system will continue as the system ages. Recommendations in this plan are conservative, because they factor in the impact of maintenance costs in the determination of available funding.

A variety of federal and state funds are used to implement the statewide overlay, maintenance, and operations program. Based on the review of funds available for Categories 1 and 6, it is estimated that $1.17B and $171M will be available within the next 25 years, respectively.

Reviewing the estimated funding available in the RGVMAB for maintenance and operations as administered by the TxDOT Pharr district helps to better inform decision making at the MPO level when coordinating strategies with regional planning partners. This includes considerations for operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods as described in greater detail in the grouped project categories listed in Chapter 6.

# CONSTRAINING THE PLAN

Projects not already included in the current TIP or UTP were sorted into 2031-2036 and 2037-2045 stages by priority ranking, estimated project costs, and expected funding availability. Projects remaining once expected levels of funding were exhausted have been categorized as unfunded projects.

Total anticipated constrained program costs are estimated to be just under $3.79 billion in YOE dollars for roadway projects and just under $888.4 million for transit. Because the total program funding is expected to be greater than program costs the RGVMPO 2045 MTP is fiscally constrained. In accordance with TxDOT's UTP process, the first ten years of the plan (2021-2030) are also fiscally constrained by funding category based on the projected UTP allocations in the 2021 UTP.

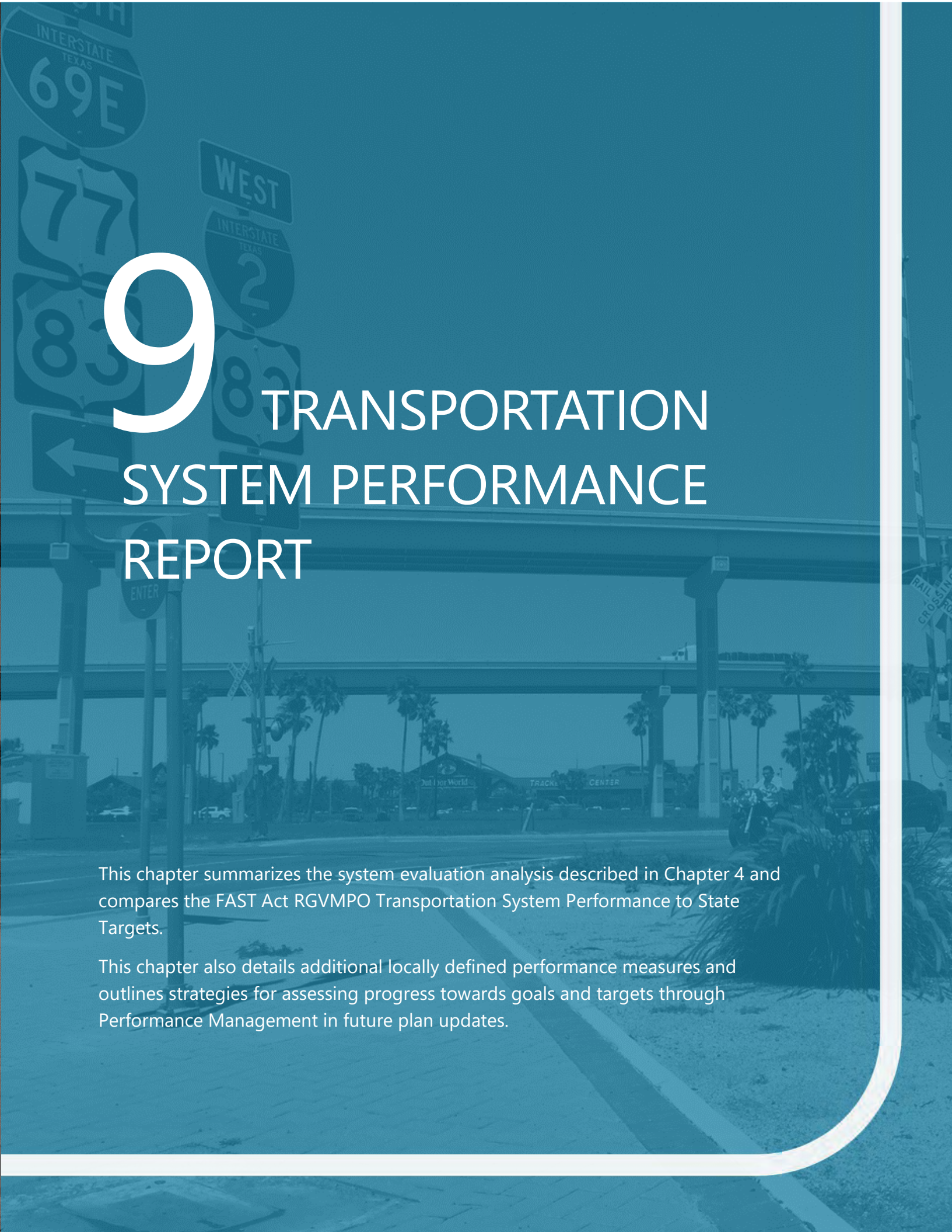
Table 8-7 shows the fiscal constraint summaries for the years covered in the 2045 MTP. It includes a summation of the estimated roadway (Table 8-2) and transit (Table 8-4) funds in comparison to the programmed and planned costs.

***Table 8-7: 2021-2045 MTP Fiscal Summary***

| | Estimated Funding | Estimated Costs |
|---|---|---|
| Roadway | $6,008,334,303 | $3,787,605,612 |
| Transit | $888,401,476 | $888,401,476 |
| **Total** | **$6,896,735,779** | **$4,676,007,088** |

A full listing of the fiscally constrained program of projects over the lifespan of this MTP update (2021-2045) can be found in Chapter 6. This listing includes 2021 UTP Projects, regionally significant District Area projects within the RGVMAB, and the MPO prioritized list of projects discussed in Chapter 6.

A listing of unconstrained projects, or unfunded needs projects is also included in Chapter 6. The unconstrained projects represent project costs exceeding expected funding for mobility projects over the next 25 years as has been stated. Although the current projections show an unexpended amount and some of the unfunded illustrative projects could be advanced into the program, there is a basis for caution. As the economic impacts of the shutdown associated with COVID-19 become better understood, there is a likelihood that the financial revenue projections may need to be adjusted downward. Maintaining a cushion between expenditures and revenues pending further insight into current economic trends provides a conservative outlook that allows the RGVMPO to be confident that the MTP is financially constrained even if the economy is slow to recover from the current economic uncertainties.



# 9 TRANSPORTATION SYSTEM PERFORMANCE REPORT

This chapter summarizes the system evaluation analysis described in Chapter 4 and compares the FAST Act RGVMPO Transportation System Performance to State Targets.

This chapter also details additional locally defined performance measures and outlines strategies for assessing progress towards goals and targets through Performance Management in future plan updates.

This chapter summarizes the system evaluation analysis described in Chapter 4 to provide the MTP Transportation Systems Performance Report. This report compares RGVMPO system performance vs. State performance targets and describes additional locally defined measures and strategies. For each of the applicable goals areas the chapter then discusses how these performance measures and targets are used in assessing performance of the transportation system resulting from the current RGVMPO 2045 MTP update.

The Rio Grande Valley Metropolitan Planning Organization (RGVMPO) has a responsibility to follow the Transportation Performance Management (TPM) guidelines provided by the Fixing America's Transportation (FAST) Act, which continues Moving Ahead for Progress in the 21st Century (MAP-21) Act TPM objectives. The Federal Highway Administration (FHWA) defines TPM as "a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals".

The implementation of TPM provides the following general benefits: [1]

- Enhanced investment decisions
  - Goals, measures, and data allow for organizations to make better informed decisions about how to invest in transportation funding at a multimodal level
  - Allows organizations to use taxpayer dollars as efficiently as possible
- Creates a better performing transportations system
  - Targets, plans, and reporting TPM results ensures accountability for system performance
  - Helps identify system strengths and deficiencies, highlighting areas in need of improvement and/or maintenance
- Produces safe, connected, and productive communities
  - Focuses on the safe and efficient delivery of people and goods
  - Emphasizes reliable commutes to work, school, recreation, and community activities

In order to do so, the RGVMPO strives to achieve targets set by the Texas Department of Transportation (TxDOT) compliant with FHWA rules, and continuously reports on progress towards these targets to align with federal and state regulations. RGVMPO performance reporting is accomplished primarily through the Metropolitan Transportation Plan (MTP) planning process, which performs detailed systems analyses to produce necessary TPM measures.

## Previous Rio Grande Valley Area Performance Reporting

This transportation systems report is the first report covering the RGVMAB as a comprehensive study area and therefore documents the RGVMPO baseline transportation system performance. To gain historical perspective, interested parties can obtain additional information from earlier performance-based planning reports developed by the three previous MPOs from which the RGVMAB was formed. This information is available in the consolidated MPO 2019 MTP update hosted on the current RGVMPO website.

[1] Source: https://www.fhwa.dot.gov/tpm/about/tpm.cfm

# RGVMPO PERFORMANCE BASED PLANNING

The following sections represent federal performance measures for the current RGVMPO 2045 MTP update. This is the first set of performance measures attributed to the RGVMAB following the consolidation of the three former MPOs found in the region (HCMPO, HSBMPO, and BMPO). Accordingly, these performance measures serve as the baseline for the RGVMPO's TPM process.

The RGVMPO 2045 MTP update fulfills its TPM responsibility using Federal performance goals and measures, as well as compliant TxDOT performance measure targets to align with guidelines created by MAP-21 and continued by the FAST Act. The transportation system needs assessment provides existing target measures, which creates a base to understand the state of the current RGVMAB transportation system in comparison to assigned TxDOT targets. Additionally, this section describes the RGVMPO's approach to performance-based decision making to support the national goals described in 23 U.S.C. 150(b) discussed in chapter 2 and throughout this MTP.

To track progress towards goals, federal performance measures are continuously tracked in coordination with TxDOT's TPM targets (Table 9-1). Due to the RGVMPO's current air quality attainment status, the organization currently reports performance measures for 15 of the 18 federal performance measures.

These measures focus on the safety of the RGV Metropolitan Area Boundary (MAB) transportation network, condition and reliability of interstate and remaining National Highway System (NHS) infrastructure, and reliability of freight movement throughout the region. Data producing these measures derives from TxDOT's Crash Record Information System (CRIS), FHWA's National Performance Management Research Data Set (NPMRDS), and through coordination with regional FTA funded transit agencies.

***Table 9-1: Federal Performance Measures applicable to RGVMPO***

| Goal Area | Measure |
|---|---|
| FHWA PM1 Safety | Number of Fatalities |
| | Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT) |
| | Number of serious injuries |
| | Rate of serious injuries per 100 million VMT |
| | Number of non-motorized fatalities |
| | Number of non-motorized serious injuries |
| FHWA PM2 Infrastructure Condition | Percentage of pavements of the Interstate System in Good condition |
| | Percentage of pavements of the Interstate System in Poor condition |
| | Percentage of pavements of the non-Interstate NHS in Good condition |
| | Percentage of pavements of the non-Interstate NHS in Poor condition |
| | Percentage of NHS bridges classified as in Good condition |
| | Percentage of NHS bridges classified as in Poor condition |

| Goal Area | Measure |
|---|---|
| FHWA PM3 System Performance/Freight/CMAQ | **System Performance:** Percentage of person-miles traveled on the Interstate that are reliable (LOTTR) |
| | **System Performance:** Percentage of person-miles traveled on the non-Interstate NHS that are reliable (LOTTR) |
| | **Freight Movement**: percentage of Interstate system mileage providing for reliable truck travel time (TTTRI) |
| | ***CMAQ:** Annual Total Tailpipe CO2 Emission on NHS |
| | ***CMAQ:** Annual Hours of Peak Hour Excessive Delay (PHED) per capita |
| | ***CMAQ:** Percent of Non-SOV Travel on network |
| FTA Transit Asset Management (TAM) | Percentage of revenue vehicles (by type) that exceed useful life benchmark (ULB) |
| | Percentage of non-revenue service vehicles (by type) that exceed ULB |
| | Percentage of facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale |
| FTA Public Transportation Agency Safety Plan (PTASP) | Total number of reportable fatalities |
| | Rate of reportable fatalities per total vehicle revenue miles by mode |
| | Total number of reportable injuries |
| | Rate of reportable injuries per total vehicle revenue miles by mode |
| | Total number of reportable events |
| | Rate of reportable events per total vehicle revenue miles by mode |
| | Mean distance between major mechanical failures by mode |

**Applies to areas designated as nonattainment or maintenance for ozone, carbon monoxide or particulate matter.*

## Category 7 Scoring

In addition to the continuous comprehensive coordination on regional needs for UTP funding categories with the Pharr TxDOT district mentioned in chapter 8, the RGVMPO has also developed a performance-based scoring process for projects submitted for Category 7 funding consideration.

A spectrum of methods exists for prioritizing projects using data and performance based planning (PBP) principles. Regardless of the method, the various factors and considerations that contribute to the process of applying existing and historical performance measures to the evaluation of expected performance of proposed investments rely on one core principle which is using and referencing data to perform due diligence in assessing expected performance of investments as much as is possible.

The PBP project scoring process applies due diligence by reviewing contributing factors and applying technical expertise to gauge and score how well proposed improvements will contribute to national, state, and regional goals and targets in order to improve the system. The RGVMPO staff have coordinated extensively with the Technical Advisory Committee to develop scoring criteria that reflect the regional and national priorities.

Through an iterative discussion, the RGVMPO staff and TAC refined a scoring for Category 7 projects to both leverage the technical expertise embodied in the TAC and reference performance criteria and regional goals to provide a robust scoring process for vetting and promoting projects geared to contribute towards targets.

This scoring process likewise provides a platform to communicate with project sponsors and decision makers about project implications. The process also investigates what conditions a proposed project is improving and asks the sponsor to reflect on why they are submitting the project being reviewed. The continuity of this process invariably will refine and improve the process by which projects are submitted for consideration as well as the projects themselves.

Table 9-2 shows the Scoring Criteria used by the staff and TAC when evaluating the submitted projects. The table contains evaluation criteria, the maximum points a project can receive for each criteria, the description and factors related to each criteria, and the evaluation method that instructs evaluators on how to assign points to the projects based on the criteria.

***Table 9-2: RGVMPO Category 7 Scoring Criteria***

| Evaluation Criteria | Evaluation Method - Scoring | Goal Area |
|---|---|---|
| Increased Safety | Submitting sponsor is asked to provide explanation of Safety improvements and attach available supportive documentation. Project reviewed against safety data and regional contributing factors. **10 Points** | Safety |
| Fills gaps in current roadway network | Submitting sponsor is asked to provide explanation of Roadway Network Gaps Filled and attach available supportive documentation. **10 Points** | Connectivity (people & freight) |
| Regionally Significant | Within Local Government, **0 Points**<br>Connects 2 Local Governments, **5 Points**<br>Connects 3 or more Local Governments, **10 Points** | |
| Increases economic development opportunities | Submitting sponsor is asked to provide explanation of Economic Development Opportunities and attach available supportive documentation. **10 Points** | Freight Movement and Economic Vitality |
| Corridor completes or aides International Trade / Port Connectivity | Submitting sponsor is asked to provide explanation of corridor relation to international trade / port connectivity and attach available supportive documentation. **10 Points** | |

| Evaluation Criteria | Evaluation Method - Scoring | Goal Area |
|---|---|---|
| Access to Transit Facility in Miles | Project distance from transit facility in miles<br>Greater than .75, **0 Points**<br>0.5 to 0.75, **2 Points**<br>0.25 to 0.5, **5 Points**<br>0 to 0.25, **10 Points** | Mobility and Accessibility (Increase multi-modal options) |
| Access to Pedestrian Facility in Miles (Bicycle / Trail) | Project distance from pedestrian facility in miles<br>Greater than .75, **0 Points**<br>0.5 to 0.75, **2 Points**<br>0.25 to 0.5, **5 Points**<br>0 to 0.25, **10 Points** | |
| Adds Sidewalks | None, **0 Points**<br>One Side, **5 Points**<br>Both Sides, **10 Points** | |
| Most Recent ADT Count | 1000 - 5000, **5 Points**<br>5000 - 10000, **10 Points**<br>10000 - 15000,**15 Points**<br>15000 - 40000, **20 Points** | |
| * Congestion Reduction | *For Internal Use (Based on TDM)<br>0-25%, **5 Points**<br>25-50%, **10 Points**<br>50-75%, **15 Points**<br>75-100%, **20 Points** | Congestion Reduction and System Reliability |
| * Improves Travel Time * | *For Internal Use (Based on TDM)<br>Less than 10%, **0 Points**<br>10% - 20%, **5 Points**<br>Greater than 20%, **10 Points** | |
| ROW Status | Pending, **0**<br>Started, **5**<br>Complete, **10** | Reduced Project Delivery Delays |
| Environmental Status | Pending, **0**<br>Started, **5**<br>Complete, **10** | |
| Project Schematic Status | Pending, **0**<br>Started, **5**<br>Complete, **10** | |
| Local Match Available | Pending, **0**<br>Started, **5**<br>Complete, **10** | |
| **Total Points** | **170** | |

## *Transportation Alternatives Set Aside (TASA) Scoring*

RGVMPO uses a set of specific criteria to evaluate and score projects submitted for TASA funding in the MAB to ensure an equitable and calculated approach for prioritizing projects. Table 9-3and Table 9-4 show the Scoring Criteria used by the BPAC and TAC when evaluating the submitted projects. The table contains evaluation criteria, the maximum points a project can receive for each criteria, the description and factors related to each criteria, and the evaluation method that instructs evaluators on how to assign points to the projects based on the criteria.

*Table 9-3: RGVMPO TASA Scoring Criteria*

| Evaluation Criteria | Description/Factors | Evaluation Method |
|---|---|---|
| Improving Safety (Please use whole numbers) | Provides safer and less intimidating facilities for pedestrians, bicyclists, or other non-drivers by improving safety in areas with high numbers of crashes. This involves improved crossing, signalization, traffic calming and other safety improvements. | **13 PTS** - Improves safety in area with high # of crashes within a block (300ft)<br>**8 PTS** - Improves mobility for elderly, disabled, and/or youth (disadvantaged population)<br>**8 PTS** - Improves visibility of non-drivers to vehicular traffic |
| Making Linkages and Connections (Please use whole numbers) | Improves connections between neighborhoods, cities, transit services, bicycle facilities, or schools. This can be achieved through gap closures, extension of regional facilities, linking multiple jurisdictions, and providing access to rail stations, bus stops, & bicycle facilities via trails and sidewalks. | **6 PTS** - Connects other cities/ neighborhoods<br>**6 PTS** - Connects to schools/public building<br>**6 PTS** - Extends existing system (bike/ped/transit)<br>**6 PTS** - Eliminates gaps in system (bike/ped/transit) |
| Incorporates Pedestrian and Bicycle Design Enhancements and Promotes Active Living (Please use whole numbers) | Provides pedestrian and bicycle areas with landscaping, sidewalk design, crossing treatments, street furniture, bike racks, or lighting which encourages pedestrian and cyclists to utilize area, thus providing health and environmental benefits | **5 PTS** - Provides design enhancements<br>**5 PTS** - Provides bicycle parking/ seating for pedestrians, rest areas<br>**5 PTS** - Provides trailheads, staging area and parking |
| Implementing Active Transportation or Mobility Plan (Please use whole numbers) | Improves ability to use walking and bicycling facilities for everyday activities including travel to work, school, and shopping as described in RGVMPO's Regional Bike Plan, Regional Pedestrian Plan, Regional Transit Plan, or other related community Master Plan adopted by a city or county's governing body | **4 PTS** - City Plan<br>**3 PTS** - Regional Plan<br>**3 PTS** - MPO Plan |
| Connecting to Employment, Households, and Activity Centers. Activity Centers include schools, gyms, birding | Provides access to major entertainment destinations, parks & recreation, residencies, and general businesses for large numbers of residents and/or employees. | **4 PTS** - Improves access to commercial areas<br>**4 PTS** - Improves access to parks and recreational areas |

| Evaluation Criteria | Description/Factors | Evaluation Method |
|---|---|---|
| centers, parks, Boys and Girls Club, etc. (Please use whole numbers) | | **4 PTS** - Improves access to educational areas |
| Serving Disadvantaged (Environmental Justice) Areas (Please use whole numbers) | Provides access for underserved communities | **10 PTS** - Improves access to areas of commerce within or adjacent to 50% of households below poverty rate, as defined by Census |
| | **Total Points** | **0 to 100 Points** |

*Table 9-4: RGVMPO TASA 'Above and Beyond Criteria'*

| Evaluation Criteria | Evaluation Method |
|---|---|
| Local Match is: (Please use whole numbers) | • **2 PTS** = 21-30%<br>• **4 PTS** = 31-40%<br>• **6 PTS** = 41-50%<br>• **8 PTS** = 51-60%<br>• **10 PTS** = Above 61% |
| Project Readiness: PS&E, ROW (Please use whole numbers) | • **1 PT -** If ROW acquisition is 90% complete or not required<br>• **2 PTS -** PS&E is at least 90% Complete |
| Funding completes the project (Please use whole numbers) | • **5 PTS -** Yes |
| Location of project has safe passing ordinance (Please use whole numbers) | • **2 PTS -** Yes |
| **Total Points** | **120 Points** |

# RGVMPO 2045 MTP Update Performance Reporting

For each federal performance goal area relevant to the RGVMPO, current performance measures are compared to existing TxDOT targets, providing the status of the MPO's progress towards meeting the established targets. All recorded performance measures derive from the most up-to-date and readily available data.

## PM1 Safety Performance

Current safety performance measures are presented in Table 9-5 below:

*Table 9-5: Safety Performance Measures*

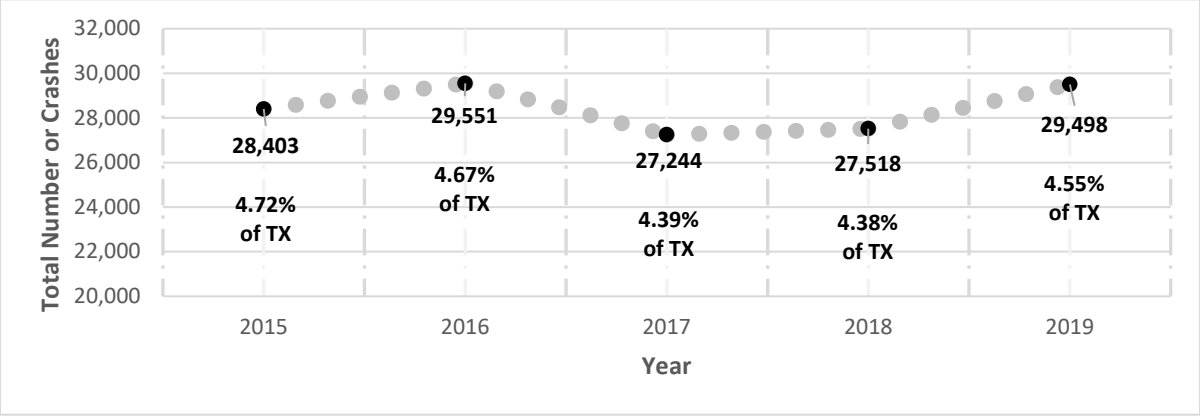
| Measures | RGVMPO | 2020 TxDOT Target | 2030 TxDOT Target* |
|---|---|---|---|
| Number of fatalities | 88 | 3,840 | 2,280 |
| Rate of fatalities per 100 million Vehicle Miles Traveled (VMT) | 1.01 | 1.406 | 0.70 |
| Number of serious injuries | 393.6 | 17,394 | - |
| Rate of serious injuries per 100 million VMT | 4.49 | 6.286 | - |
| Number of non-motorized fatalities | 24.6 | * | |
| Number of non-motorized serious injuries | 55.2 | **2,285 | |

**TxDOT Targets represent 2030 available reported targets as published in the 2021 UTP*
***Target represents combined Non-Motorized Fatalities & Serious Injuries*

### REGIONAL CRASH TRENDS

Between 2015 and 2019, a total of 142,216 crashes occurred within the RGVMAB. Over this five-year period, the total number of crashes per year has remained between the range of 27,000 to 30,000, with the largest single-year total (29,551) occurring in 2019. The region experienced an 8% decrease in the total number of crashes between 2016 and 2017 and a 7% increase between 2018 and 2019. Figure 9-1 summarizes the annual number of reported crashes in the region between 2015 and 2019.

*Figure 9-1: Regional Crash Totals by Year & as a % of Total Statewide Crashes, 2015 - 2019*



### ASSESSMENT OF PROGRESS

RGVMPO PM1 performance measures, specifically rate of fatalities per 100 million VMT and Rate of serious injuries per 100 million VMT are currently below 2020 TxDOT targets suggesting successful regional safety performance. The remaining four measures are not included in the TxDOT 2030 targets, however, should be continuously tracked to better understand RGVMPO safety performance as they are federally required performance measures. They also provide important insight into other harmful incidents related to automobiles as well as active transportation modes of transportation.

As noted in the Safety Analysis portion of chapter 4, though regional rate if fatality and serious injury are relatively low compared to statewide performance targets, the percentage of non-motorized users involved in fatal and sever crashes warrants a focus on bicycle and pedestrian safety and infrastructure improvements. Strategies to address these needs are implemented through the TASA scoring process as well as the RGVMPO Active Transportation Plan.

## PM2 Infrastructure Condition Performance

Current infrastructure condition performance measures are presented in Table 9-6 below:

*Table 9-6: Infrastructure Condition Performance Measures*

| Measures | 2019 Value - RGVMPO | 2019 TxDOT Target | 2030 TxDOT Target* |
|---|---|---|---|
| Percentage of pavements of the Interstate System in good condition. | 84% | 92.2% | **90% Good or Better |
| Percentage of pavements of the Interstate System in poor condition. | 1% | - | |
| Percentage of pavements of the non-Interstate NHS in good condition. | 57% | 52% | |
| Percentage of pavements of the non-Interstate NHS in poor condition. | 9% | 14.3% | |
| Percentage of NHS bridges classified as in good condition. | 51% | 50.58% | **90% |
| Percentage of NHS bridges classified as in poor condition. | 0% | 0.8% | |

**TxDOT Targets represent 2030 available reported targets as published in the 2021 UTP*

***Target represents a combined system pavement, or bridge condition score*

### ASSESSMENT OF PROGRESS

RGVMPO PM2 performance measures currently all meet or contribute to TxDOT available reported targets. Percent of pavements of the non-interstate NHS in good condition demonstrates successfully achieving the target by exceeding the target by 5%, while percentage in poor condition demonstrates successfully achieving the target by measuring below the TxDOT target by roughly 5%. Similarly, percentage of NHS bridges classified as in good condition successfully measures just above the TxDOT target, while those classified as in poor condition successfully measure at 0%, which is 0.8% below target. Percentage of pavement of the Interstate System in good and poor condition should continue to be monitored, not just because it is a federally required performance measures, but also because it provides the MPO and decision-makers with information on pavement conditions for some of the region's most heavily used roadways (e.g. I-2).

### PM3 System Performance & Freight Reliability Performance

Current safety performance measures are presented in Table 9-7 below:

*Table 9-7: System Performance and Freight Reliability Performance Measures*

| Measures | 2019 Value - RGVMPO | 2020 TxDOT Target | 2030 TxDOT Target* |
|---|---|---|---|
| Percentage of person-miles traveled on the interstate that are reliable. | 94% | 61.2% | **1.2 |
| Percentage of person-miles traveled on the non-Interstate NHS that are reliable. | 88% | | |
| Truck Travel Time Reliability Index (TTTRI) | 1.39 | 1.7 | |

**TxDOT Targets represent 2030 available reported targets as published in the 2021 UTP*

***Target represents a combined urban congestion score*

#### ASSESSMENT OF PROGRESS

While TxDOT currently does not provide targets for 2030 PM3 targets, it is critical for the RGVMPO to continue to monitor percentage of person-miles traveled on the interstate that are reliable and unreliable, as well as TTTRI. These are federally required performance measures and provide the region with information that suggests which segments of interstate roadway may be inconsistently congested and cause increased delays for both automobile and freight traffic.

## Additional Performance Measures

The RGVMPO also calculates and monitors performance measures additional to those provided in the FAST Act TPM guidelines. Incorporating additional measures which summarize regional performance and trends further helps decision-makers make enhanced investment decisions. This in turn leads to a better performing transportation system which produces safe, connected, and productive communities within the RGVMAB.

### Travel Demand Model Performance Measures

These additional performance measures derive from the RGVMPO TDM and provide further information on system congestion in terms of delay. The measures help bolster the NPMRDS national performance measure information for existing multimodal transportation system conditions. Explanations for each measure can be found in Chapter 4. Table 9-8 through Table 9-10 display the additional performance measures provided by the RGVMPO. Current year (2019 E+C) outputs were compared to both the 2045 no-build (Table 9-8) and build outputs (Table 9-9) to emphasize potential issues on the RGVMAB roadway network, as well as highlight expected improvements and performance resulting from the implemented set of MTP projects (2045 build scenario).

*Table 9-8: RGVMPO TDM Performance Measures – E+C No Build Analysis*

| Measures | 2019 – Existing Conditions* | | | 2045 – No Build | | | % Change for Totals |
|---|---|---|---|---|---|---|---|
| | Interstate & Toll | Arterials | Total | Interstate & Toll | Arterials | Total | |
| Daily VMT** | 1,253 | 3,659 | 4,912 | 2,030 | 6,501 | 8,531 | 74% |
| per person | | | 3.44 | | | 3.69 | 7% |
| Daily VHT | 28,422 | 124,215 | 152,637 | 70,253 | 763,769 | 834,022 | 446% |
| per person | | | 0.11 | | | 0.36 | 237% |
| Annual Weekday Vehicle Hours of Delay** | 1,019 | 9,157 | 10,176 | 7,998 | 196,716 | 204,714 | 1912% |
| per person | | | 7.13 | | | 88.53 | 1142% |
| Weighted Avg. TTI | 1.17 | 1.61 | 1.39 | 1.84 | 6.79 | 4.32 | 211% |

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

*Table 9-9: RGVMPO TDM Performance Measures – Build Analysis*

| Measure | 2019 – Existing Conditions* | | | 2045 – Build | | | % Change for Totals |
|---|---|---|---|---|---|---|---|
| | Interstate & Toll | Arterials | Total | Interstate & Toll | Arterials | Total | |
| Daily VMT** | 1,253 | 3,658 | 4,911 | 1,932 | 6,668 | 8,600 | 75% |
| per person | | | 3.44 | | | 3.72 | 8% |
| Daily VHT | 28,422 | 124,215 | 152,637 | 57,739 | 379,881 | 437,621 | 187% |
| per person | | | 0.11 | | | 0.19 | 77% |
| Annual Weekday Vehicle Hours of Delay** | 1,019 | 9,157 | 10,176 | 5,154 | 72,227 | 77,381 | 660% |
| per person | | | 7.13 | | | 33.46 | 369% |
| Weighted Avg. TTI | 1.17 | 1.61 | 1.39 | 1.18 | 1.06 | 1.12 | 45% |

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

Table 9-10 compares the E+C No Build with the Build network, which is comprised of the capacity projects represented in the current MTP. The difference in the metrics between No-Build and Build scenarios helps provide a decision-making tool to gauge expected improvements in reducing congestion and delay for future demographic, job growth, and land use scenarios represented in the TDM.

***Table 9-10: RGVMPO TDM Performance Measures – E+C No Build Vs Build Analysis***

| Measure | 2045 – No Build | | | 2045 – Build | | | Change from No Build |
|---|---|---|---|---|---|---|---|
| | Interstate & Toll | Arterials | Total | Interstate & Toll | Arterials | Total | |
| Daily VMT** | 2,030 | 6,501 | 8,531 | 1,932 | 6,668 | 8,600 | 0.81% |
| per person | | | 3.69 | | | 3.72 | 1% |
| Daily VHT | 70,253 | 763,769 | 834,022 | 57,739 | 379,881 | 437,621 | -48% |
| per person | | | 0.36 | | | 0.19 | -47% |
| Annual Weekday Vehicle Hours of Delay** | 7,998 | 196,716 | 204,714 | 5,154 | 72,227 | 77,381 | -62% |
| per person | | | 88.53 | | | 33.46 | -62% |
| Weighted Avg. TTI | 1.84 | 6.79 | 4.32 | 1.18 | 1.06 | 1.12 | -74% |

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

## ASSESSMENT OF PROGRESS

The comparison of the no-build and build TDM outputs suggests substantial improvements created by the build scenario across a majority of the measures. Negative values are highlighted in darker green as they represent measures that have decreased after project implementation, and therefore project decreases in regional and per capita congestion and delay. Only Daily VMT at the regional and per capita level show increases, however, these are incremental as they do not exceed 1%. All other measures are projected to decrease significantly with the implementation of RGVMPO capacity projects.

## *Transit Performance Measures*

Moving Ahead for Progress in the 21st Century (MAP-21) granted the Federal Transit Administration (FTA) the authority to establish and enforce a comprehensive framework to oversee the safety of public transportation throughout the United States. MAP-21 expanded the regulatory authority of FTA to oversee safety, providing an opportunity to assist transit agencies in moving towards a more holistic, performance-based approach to Safety Management Systems (SMS). This authority was continued through the Fixing America's Surface Transportation Act (FAST Act).

In compliance with MAP-21 and the FAST Act, FTA promulgated a Public Transportation Safety Program on August 11, 2016 that adopted SMS as the foundation for developing and implementing a Safety Program. FTA is committed to developing, implementing, and consistently improving strategies and processes to ensure that transit achieves the highest practicable level of safety. SMS helps organizations improve upon their safety performance by supporting the institutionalization of beliefs, practices, and procedures for identifying, mitigating, and monitoring safety risks.

There are several components of the national safety program, including the National Public Transportation Safety Plan (NSP), that FTA published to provide guidance on managing safety risks and safety hazards. One element of the NSP is the Transit Asset Management (TAM) Plan. Public transportation agencies implemented TAM plans across the industry in 2018. The subsequent final ruling by FTA to implement the NSP is the Public Transportation Agency Safety Plan (PTASP) rule, 49 CFR Part 673, and guidance provided by FTA.

### PTASP PERFORMANCE MEASURES

Safety is a core business function of all public transportation providers and should be systematically applied to every aspect of service delivery. For the transit agencies within the RGVMAB, all levels of management, administration and operations are dedicated to and responsible for the safety of their clientele and themselves. To improve public transportation safety to the highest practicable level in the State of Texas and comply with FTA requirements, the Texas Department of Transportation (TxDOT) has developed individual Agency Safety Plans (ASP) in collaboration with the Rio Grande Valley Metropolitan Planning Organization (MPO), and the three primary Section 5307 Public Transportation Providers in the RGVMAB.

To ensure that the necessary processes are in place to accomplish both enhanced safety at the local level and the goals of the NSP, The City of Brownsville and B-Metro, City of McAllen and Metro McAllen, and the Lower Rio Grande Valley Development Council (LRGVDC), dba Valley Metro all have recently adopted their respective PTAPs and the tenets of SMS including a Safety Management Policy (SMP) and the processes for Safety Risk Management (SRM), Safety Assurance (SA), and Safety Promotion (SP), per 49 U.S.C. 5329(d)(1)(A).[2] Though the RGVMPO is not yet required to report these targets, they have been included and considered throughout the planning process.

[2] Federal Register, Vol. 81, No. 24

Table 9-11: Rio Grande Valley 5307 Agencies: PTASP Performance Measures Table 9-11 displays the five-year average safety performance measures by mode of service provided by each agency. The modes of service represented in the table are fixed route, flex route, and demand response (DR). As the development and implementation of SMS is a relatively new requirement, each agency has also elected to maintain the benchmark performance as the first reporting year's target.

***Table 9-11: Rio Grande Valley 5307 Agencies: PTASP Performance Measures***

| Measure/Target | B Metro | | Metro McAllen | | Valley Metro | |
|---|---|---|---|---|---|---|
| | Fixed Route | DR | Fixed Route | DR | Flex Route | DR |
| Total number of reportable fatalities | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rate of reportable fatalities per total vehicle revenue miles by mode | 0 | 0 | 0 | 0 | 0 | 0 |
| Total number of reportable injuries | 5.8 | 2 | 35 | 0 | 5.6 | 1 |
| *Rate of reportable injuries per total vehicle revenue miles by mode | 0.78 | 1.26 | 1.5 | 0 | 0.28 | 0.72 |
| Total number of reportable events | 0 | 0 | 36 | 0 | 6.2 | 1.2 |
| *Rate of reportable events per total vehicle revenue miles by mode | 0 | 0 | 1.5 | 0 | 0.31 | 0.87 |
| Mean distance between major mechanical failures by mode | 4,175 | 18,468 | 4,114 | 81,795 | 82,200 | 57,738 |

*rate = total number x 100,000/total revenue vehicle miles traveled

### ASSESSMENT OF PROGRESS

Because the rule establishing safety performance targets for urban transit agencies is a new requirement, as of yet there is no measurable assessment of progress. RGVMPO coordination and participation in the RTAP will help provide a clearinghouse for transit capacity and safety grant coordination and will ensure ongoing maintenance and evaluation of these metrics.

### TRANSPORATION ASSET MANAGEMENT (TAM) PERFORMANCE MEASURES

Following the FAST Act, a 2015 FTA study found that about 40 percent of buses and 23 percent of rail transit assets were listed in marginal or poor condition, with a total backlog of around 90 billion dollars. Thus, the FTA took action to prevent further deterioration of public transit networks. In July 2016, TAM plans were codified as a legal requirement for transit agencies receiving FTA funding that provide open public transportation. Given limited funding, this framework establishes procedures and guidance for all public transportation networks to move towards a state of good repair.

The majority of transit assets owned or managed by the qualifying FTA-funded (Federal Transit Administration) public transportation providers in the RGVMAB are in good condition.

The transit providers in the RGVMAB are dedicated to continuously providing transportation solutions for accessibility to employment, education, medical care, grocery stores, and other services. With limited funding and a growing backlog of needs, it is critical to maximize existing resources, maintain a State of Good Repair (SGR), and provide the tools necessary for Public Transportation providers to provide safe, reliable, and cost-effective services.

Though asset management is a data focused endeavor, developing a plan is a collaborative process, requiring coordination and data sharing from many different agencies with different operating systems and reporting processes. Table 9-12 through Table 9-14 represent the TAM targets of the three 5307 transit agencies in the RGVMAB.

***Table 9-12: B-Metro TAM Targets***

| Measure | Asset Class | 2021 | 2022 |
|---|---|---|---|
| **Revenue** | | | |
| % of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark | Bus | 0% | 11% |
| | Cutaway | 0% | 7% |
| **Equipment** | | | |
| % of vehicles within a particular asset class that have met or exceeded their useful life benchmark | Non-revenue/service automobile | 0% | 0% |
| **Facilities** | | | |
| Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale | Administration | 0% | 5% |
| | Maintenance | 0% | 2% |
| | Parking Structures | 0% | 2% |
| | Passenger Facilities | 5% | 0% |

***Table 9-13: Metro McAllen TAM Targets***

| Measure | Asset Class | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| **Revenue** | | | | | |
| % of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark | Bus | 0% | 20% | 12% | 8% |
| | Cutaway | 0% | 0% | 0% | 0% |
| | Sport Utility Vehicle | 0% | 0% | 0% | 0% |
| **Equipment** | | | | | |
| % of vehicles within a particular asset class that have met or exceeded their useful life benchmark | Non-revenue/service automobile | 0% | 0% | 0% | 0% |
| | Trucks and other Rubber Tire Vehicles | 0% | 0% | 0% | 0% |
| **Facilities** | | | | | |
| Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale | Administration | 0% | 0% | 0% | 0% |
| | Maintenance | 0% | 0% | 0% | 0% |
| | Parking Structures | 0% | 0% | 0% | 0% |
| | Passenger Facilities | 0% | 0% | 0% | 0% |

*Table 9-14: Valley Metro TAM Targets*

| Measure | Asset Class | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Revenue | | | | |
| % of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark | Bus | 1% | 1% | 1% |
| | Cutaway | 14% | 14% | 14% |
| | Van | 36% | 36% | 36% |
| Equipment | | | | |
| % of vehicles within a particular asset class that have met or exceeded their useful life benchmark | Non-revenue/service automobile | 1% | 1% | 1% |
| Facilities | | | | |
| Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale | Administration | 1% | 1% | 1% |
| | Maintenance | 1% | 1% | 1% |
| | Parking Structures | 1% | 1% | 1% |

### ASSESSMENT OF PROGRESS

As the goal of TAM targets is preservation of the conditions of public transportation vehicles and facilities and moving to a State of Good Repair priority, maintenance and capital projects for transit have a positive effect in moving TAM performance targets. Ultimately, Transit is an integral part of the multimodal network for the region and dependability is a key factor. Target achievement is based upon the actual conditions derived from the region's public transit providers, as reported in Transit Asset Management Plans, as of July 2020. For all three reporting agencies, targets are manageable for all four transit asset performance areas, though with expected reductions in funding, in some instances future targets reflect a managed decline in SGR.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