REGIONAL TRANSPORTATION NEEDS

3

3. REGIONAL TRANSPORTATION NEEDS & PRIORITIES

Presented in this chapter are three main assessments that were developed to helped identify the future regional transportation needs for RMS 2050 MTP. Based on these evaluations, the MPO identified opportunities to leverage transportation investments to grow and improve multimodal mobility throughout the region. These assessments are:

A) Regional Mobility Strategy – RMS 2019,

B) Multimodal Network Evaluation, and

C) Congestion Management Process

A) REGIONAL MOBILITY STRATEGY- RMS 2019

Conceived as a mechanism to establish a transportation vision as -One Voice- for the El Paso Region; the Regional Mobility Strategy (RMS), completed in 2019, was envisioned as an input to the MTP process since its early stages. It originated with several corridor studies developed by TxDOT and followed by stakeholder engagement (listening sessions) to obtain knowledge on their priorities. The ultimate objective was to identify individual concepts and ideas that can be translated into formal projects and transition these into the MPO process for future development and implementation. Refer to Appendix G for the full RMS document. Below is a summary of the RMS key elements.

RMS 2019 ELEMENTS

Central to RMS 2019 development was the gathering of input from stakeholders through listening sessions. Ranging from the public sector, the private sector and looking at a tri-state area including Texas, New Mexico, and Chihuahua. Also, listening sessions included others from multiple agencies and levels of government: Federal, State, MPO, City, and County. Details on the listening sessions are presented in Chapter 7.

RMS 2019 evaluated several projects that were deemed significant to the region and had broad community support at different levels to better understand specific challenges and opportunities. Following this evaluation, a total of 27 priority projects were later identified by stakeholders during several rounds of discussions at the Transportation Policy Board meetings. The list includes operational projects and highway improvements, as well as transit and multimodal projects. These 27 priorities are considered the byproduct of RMS 2019 and now comprise the Regional Mobility Strategy - RMS 2020. Appendix H identifies the projects in a map.

Another key element of RMS 2019 was the data analysis developed for the different modes of transportation: Transit, Bicycle and Pedestrian, Freight, Cross-Border and Highway. A brief summary of this analysis developed for each mode is presented next in this chapter. At the time RMS 2019 was developed, the latest travel demand model available was from the Destino 2045 MTP. Therefore, the analysis is based on 2045 data.

ROADWAY NETWORK ANALYSIS

As part of the RMS 2019 evaluation of regional transportation needs, volume-to-capacity (V/C) ratios from the regional Travel Demand Model (2020 analysis year) provided insight into the relationship between vehicle travel demand and roadway capacity for the region. The V/C ratio is a measure that reflects mobility and quality of travel. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity).

A V/C ratio less than 0.75 generally indicates that adequate capacity is available, and vehicles are not expected to experience extensive queues and delays. As the V/C ratio rises above 0.75 traffic flow becomes unstable, and traffic operations begin to break down.

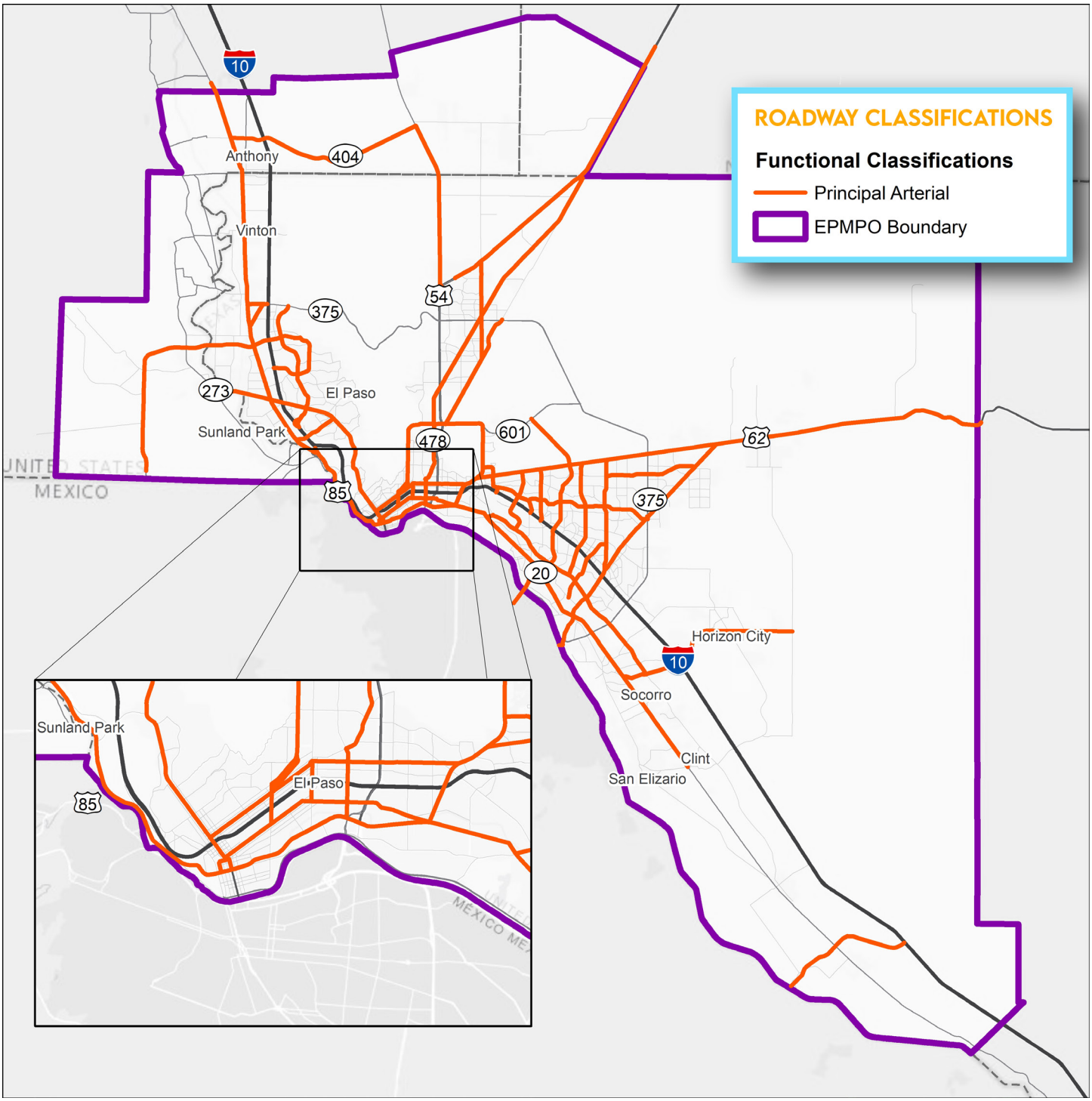
The main takeaways from the RMS V/C ratio analysis include:

- 50% of the region's travel demand occurs on the principal arterial system
- 72% of IH-10 and principal arterial mileage within the MPO region is congested
- 48% of IH-10 mileage within the MPO region is at or above capacity
- 28% of the principal arterial mileage is at or above capacity

V/C analysis was also conducted for the forecast year of 2045. The 2045 analysis included all fiscally constrained improvement programmed in the Destino 2045 MTP. Key takeaways from the 2045 V/C ratio analysis include:

- 30% increase in regional travel demand
- 51% of the region's demand occurs on the principal arterial system (**Figure 3-1**)
- 68% of IH-10 and principal arterial mileage within the MPO region is congested
- 51% of IH-10 is at or above capacity
- 42% of the principal arterial network is at or above capacity
- 35% increase in vehicle hours traveled (VHT)

FIGURE 3-1: PRINCIPAL ARTERIAL

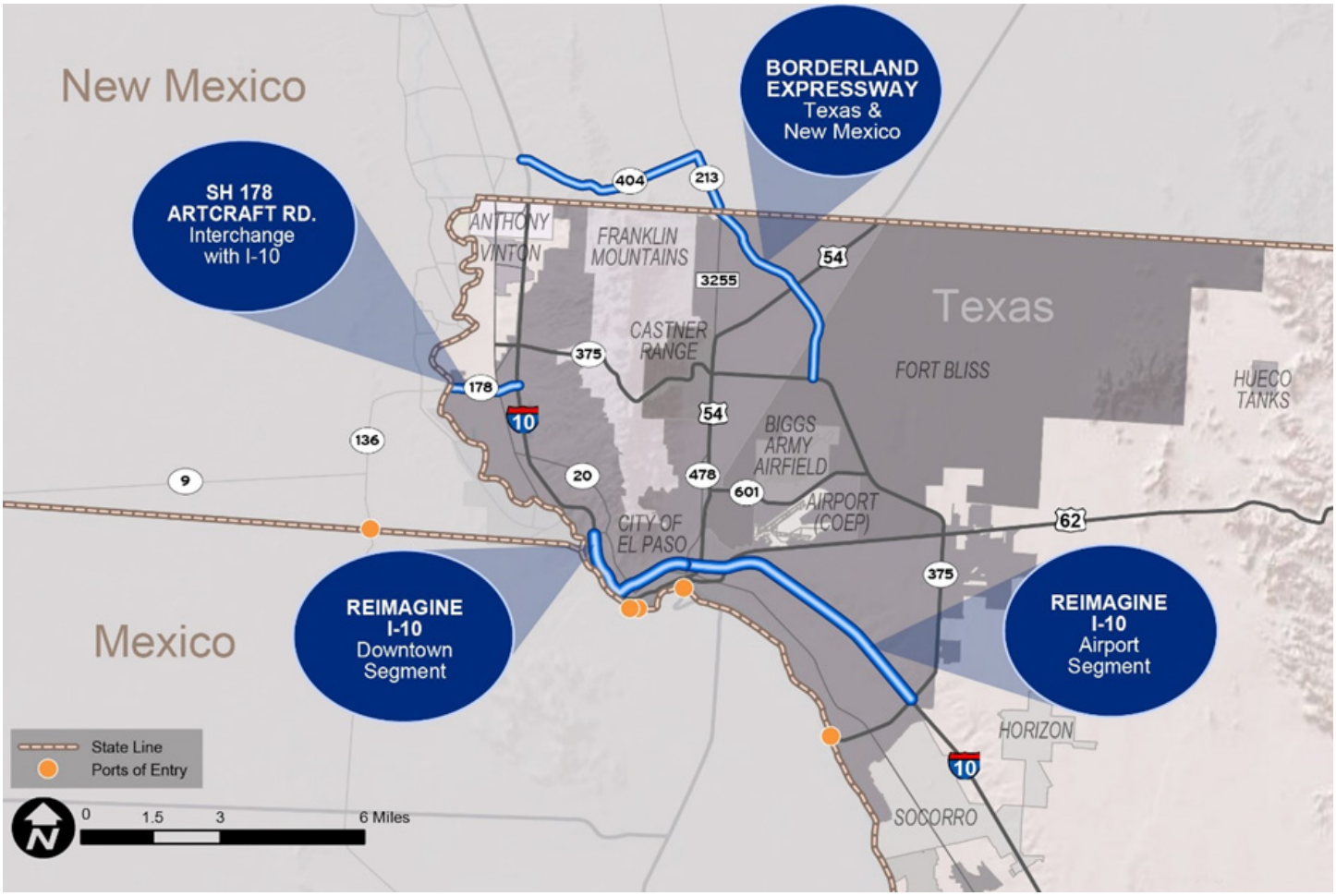


From the analysis it is observed that highways and principal arterials will experience an increase of 50% in demand by 2045. It is certain that as we continue to grow, problem areas on our roadways are likely to worsen and conditions will degrade over time. Therefore, RMS 2019 considered the function that multimodal improvements can have in improving overall mobility in the region, such as increases in roadway capacity, improvements to cross-border traffic flow, improved transit service, and better bicycle and pedestrian facilities.

As part of the highway analysis, RMS 2019 looked into "Outside the box" and unconstrained environment type of initiatives or concepts, potential new connections/capacity expansion, and, through stakeholder listening sessions, identified support for four regionally significant projects shown in **Figure 3-2**. These projects are among the 27 proposed projects for inclusion in RMS 2050 MTP:

- Borderland Expressway (Texas & New Mexico)
- Artcraft Road (SH 178) and I-10 Interchange
- IH-10 Downtown Segment
- IH-10 Airport Segment

FIGURE 3-2: RMS IDENTIFIED REGIONALLY SIGNIFICANT PROJECTS



INTERNATIONAL CROSSINGS ANALYSIS

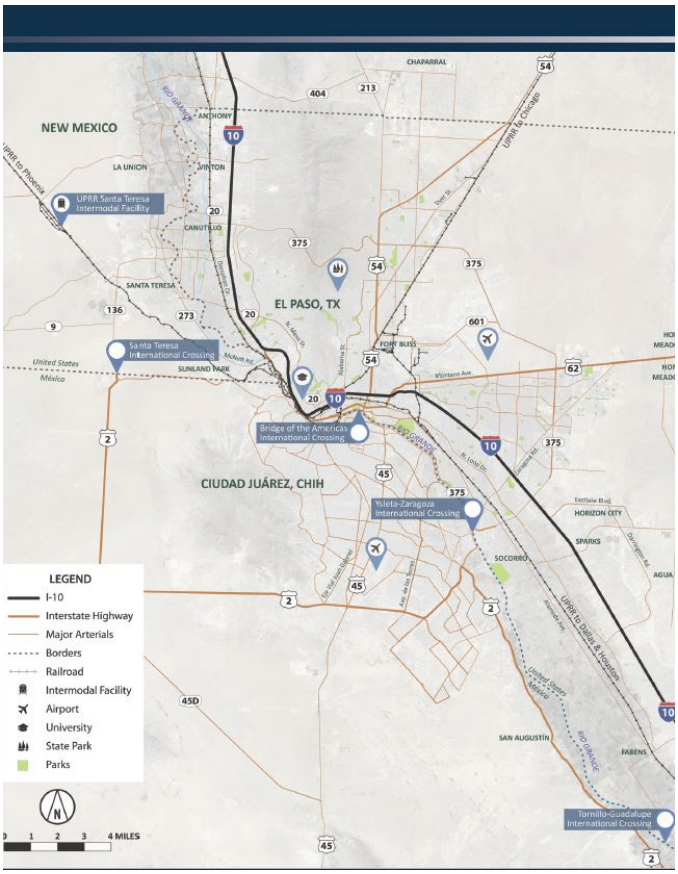
RMS 2019 also analyzed cross-border travel patterns by assessing both the existing and future transportation network using the El Paso regional travel demand model (TDM), Destino 2045. In regards to cross-border analysis, it is important to understand traffic patterns (origin-destination pairs) south of the border since they directly affect the El Paso Region in terms of the planning of our transportation.

This analysis resulted in the identification of preferred POEs and key corridors along the U.S.-Mexico border that provide access to area POEs. Among the notable findings from this analysis are the following:

- The Bridge of the Americas (BOTA) and Ysleta-Zaragoza Ports of Entry are the most commonly used border crossings
- The most commonly selected routes to industrial parks in El Paso are I-10, US 54, and Loop 375
- The most commonly selected routes to industrial parks in Mexico are Avenida Tecnologico, Boulevard Juan Pablo II, Avenida Bermudez and Avenida Independencia.

In 2019 the City of Sunland Park conducted a feasibility study for a proposed new international crossing to be located between the downtown El Paso bridges and the Santa Teresa crossing. In consideration of this study and a commitment from the city to contribute funding toward its completion, the TPB approved adding the project to the project list for this MTP.

FIGURE 3-3: INTERNATIONAL CROSSINGS



TRANSIT ANALYSIS

In terms of transit, RMS 2019 collected and analyzed Sun Metro's strategic plan, the County of El Paso Regional Transit Study and potential expansions and partnership for regional and cross-border opportunities. In addition, RMS 2019 analyzed pedestrian and bike plans within the region (i.e., TxDOT, City of El Paso, County, public-private partnerships) and identified gaps and opportunities.

Using information provided by regional transit providers (City of El Paso, Sun Metro, El Paso County Transit, the South Central Regional Transit District (SCRTD) and the BravoBus BRT service in Ciudad Juarez and independent research, an assessment that focused on existing fixed-route, shared mobility and intercity transit options available in the region was conducted to pinpoint current and future transit needs. Short-, mid-, and long-term opportunities were identified for enhancing the overall quality and attractiveness of the transit system. Among these opportunities were several large projects that have already been implemented or are under construction, such as:

- The expansion of the Sun Metro Brio service and improvement of headways and travel times
- Advancement of transit-oriented developments
- Integration of metropolitan and rural transit service into a seamless fare system

ACTIVE TRANSPORTATION ANALYSIS

Several regional bicycle and pedestrian plans prepared by TxDOT, the City of El Paso, the County of El Paso, and NMDOT were analyzed for RMS 2019 to understand current connectivity and gaps in the region-wide system. Furthermore, after discussions with Velo Paso Bicycle-Pedestrian coalition, RMS 2019 identified many needs that still exist within the region:

- Illustrative networks for bicycle and pedestrian facilities require significant capital to create a complete network with seamless linkages. No single revenue source will be able to fund all the identified connectivity improvements desired by residents and municipalities.
- Existing bike facilities may not be comfortable or accommodating for all riders, such as families with younger children or riders with less experience. A similar issue for sidewalks is that they may not serve all users due to insufficient lighting, lack of buffer from high speed traffic, and/or poor connectivity to schools and overall connectivity to neighborhoods, transit, etc.
- Addressing connectivity to/from key activity centers in existing and developing areas is challenging due to the distance between activity areas and housing.
- Accommodating car, bike, and pedestrian facilities on roadways sometimes impacts one or two modes of capacity and/or design features.

FREIGHT RAIL ANALYSIS

Since El Paso continues to be a very important trade hub, included in the RMS 2019 analysis was the Burlington Northern and Santa Fe Railway (BNSF) & Union Pacific Railroad (UPRR) fright rail that includes proposed passenger rail & fright rail corridors. Chapter 2 presents in more detail the review of these plans.

RMS 2019 conducted a high level assessment of BNSF and UPRR railroad corridors in the border region, including potential opportunities related to mobility within the region. Existing conditions of railroad crossings with major roadways, highways, and freeways were evaluated via Microsimulation (VISSIM) modeling and future conditions were forecasted.

Feedback from the listening sessions indicate that a bi-national rail bypass involving three railroad owners (Ferromex, UPRR, and BNSF), that would result in El Paso freight traffic being diverted to the Santa Teresa POE, continues to be a high priority for states of New Mexico and Chihuahua.

B) MULTIMODAL NETWORK EVALUATION

To supplement the RMS 2019 multimodal analysis, a multimodal needs assessment and gap analysis was also performed to help guide where capital improvements to the roadway network can have an immediate impact toward improving multimodal travel. This evaluation identified multimodal supportive projects among those recently proposed by TxDOT, NMDOT and local governments for inclusion in the RMS 2050 MTP. Contrary to RMS 2019, at the time the Multimodal Network Evaluation was done, there was already updated demographic information for 2050 and the analysis was done with information from the Travel Demand Model under development for the RMS 2050 MTP.

The relationship between prioritized gaps in the network and proposed capital projects offers a way that investments in the roadway network can be programmed and leveraged to enhance the safety and connectivity of multimodal networks in the region. This section outlines the highlights of the Multimodal Network Evaluation (October 2020) and presents the outcomes and recommendations that were incorporated into the RMS 2050 MTP. The full document is presented in Appendix I. The final update to the document is presented as a Story Map and can be found at the following website: https://storymaps.arcgis.com/stories/09bbbe98450b4f0d9f293041144c04a6

EVALUATION CRITERIA AND DESCRIPTIONS

Consistent with the vision statement, goals, and objective of RMS 2050, the evaluation criteria (**Table 3-1**) directly aligns multimodal needs with proposed RMS 2050 MTP capital projects to make sure that investments are coordinated to the greatest extent possible. Focusing on pedestrian and bicycle safety, connectivity to the busiest bus stops in the region, and corridors with the highest multimodal demand, the purpose of the evaluation criteria was to identify multimodal network gaps and provide an objective, data-driven evaluation of how some projects proposed for inclusion in the RMS 2050 MTP would be supportive of multimodal networks.

TABLE 3-1: EVALUATION CRITERIA AND DESCRIPTION

EL PASO MPO REGIONAL TRANSPORTATION GOALS & OBJECTIVES		MULTIMODAL NETWORK EVALUATION CRITERIA	
RMS 2050 GOAL	**OBJECTIVES**		
Safety	-Reduce the number of fatalities and serious injuries related to traffic incidents.	**-Severe Pedestrian Injury Areas -Severe Bicyclists Injury Areas**	
	-Reduce the number of crashes at high-speed intersections with an abnormal number of incidents.		
	-Reduce the number of conflict points between vehicles and active transportation users – e.g., pedestrian and cyclists.		
Maintenance & Operations	-Decrease the percentage of facilities and assets not in a state of good repair.	***Many projects include these types of investments***	***Leveraging Investment in the transportation system***
	-Increase the number of Intelligent Transportation System (ITS) technology assets.		
	-Reduce delay at traffic signals.		
Mobility	-Reduce delay on major thoroughfares.	**-Transit Reliability -Project Travel Time Reduction -Network Travel Time Reduction -Project Congestion Reduction**	
	-Reduce travel time to key destinations.		
	-Improve response time and clearance capabilities for first responders and emergency personnel.		
Accessibility & Travel Choices	-Increase the number of jobs and key destinations that are accessible by all transportation modes.	**-Sidewalk Gaps -Protected Bike Lane Gaps -Pedestrian Demand Corridors -Bicycle Demand Corridors -Transit Demand Corridors**	
	-Ensure that transportation system improvements provide equitable benefits to the region.		
	-Expand access to and improve reliability of transit services, particularly for underserved areas and areas with high transit need.		
	-Fill major connectivity gaps in the side walk, bike lane, and trail networks that support regional travel.		
	-Encourage infill development and transit-supportive land use.		
	-Expand multi-modal access at regional Ports of Entry.		
Sustainability	-Increase the attractiveness of transportation options other than single-occupancy vehicles.	**-Current High Density (2017 Pop/Emp) -Projected High Growth (2050 Pop/Emp)**	
	-Reduce emissions produced by vehicles.		
	-Achieve maintenance designation from EPA from criteria pollutants.		
	-Increase percentage of transportation assets that use alternative energy sources.		
Economic Vitality	-Improve accessibility to key tourist destinations.		
	-Reduce delay on designated freight corridors and roads connecting to intermodal or freight facilities.		
	-Increase access to major employment centers.		
	-Improve operational efficiency at regional Ports of Entry.		
Quality of Life	-Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.	***Meet 2 or more multimodal equation criteria***	
	-Encourage livable communities which support sustainability and economic vitality.		

Gaps and priorities for the purpose of the Multimodal Network Evaluation were considered as follows:

Gaps are locations in the region where pedestrian and bicycle safety are at highest risk, where pedestrian and bicycle connectivity to transit lacks sidewalks or protected bike lanes, and where pedestrian, bicycle and transit travel demand is greatest.

Priorities include improving gaps in safety and connectivity, improving reliability in terms of travel time and congestion, and building new infrastructure in areas around the region with higher densities and greater projected growth.

MULTIMODAL NETWORKS

The multimodal networks considered in this evaluation include pedestrian and bicycle infrastructure as well as public transportation. Local roads off of the TxDOT roadway system were also analyzed. Each of the networks is briefly described below.

Pedestrian Network includes the sidewalk and roadway crossing infrastructure throughout the region. In addition to sidewalks, landscaping, lighting and pedestrian crossing enhancements all help to improve the quality and safety of the overall pedestrian network. Pedestrian infrastructure should be part of every major roadway project.

Bicycle Network includes clearly marked and dedicated bicycle lane infrastructure. Safe, protected, and continuous bike connections to public transit and areas where peak demand for bicycle travel has been identified should be prioritized.

Transit Network includes the Brio rapid transit system operated by Sun Metro which forms the "backbone" of the regional transit network, offering 10-minute peak service in four of the busiest transit corridors

Off-System Roadway incudes the majority of roadway infrastructure in the region. The term "off-system" is employed to identify roadways that are not part of the TxDOT state-wide highway system, which includes most controlled-access freeways, farm-to-market roads and some of the region's busiest arterial roadways. Off-System roadways are those maintained by the County and municipalities.

MULTIMODAL EVALUATION

The multimodal evaluation of projects that were proposed for inclusion in the RMS 2050 MTP began with identification of gaps and priorities as defined by the evaluation criteria and using available data, followed by identification of proposed projects that overlap with two or more gaps or priorities.

The process followed for this evaluation was composed of four steps as summarized below:

STEP 1:

- Collect data associated with criteria and organize for evaluation of proposed RMS 2050 MTP projects.

- Refine criteria and organize data according to gaps and priorities

STEP 2:

- Use data to identify gaps and priorities across the region where multimodal networks are in need of investment.
- Compare gaps and priorities with proposed RMS 2050 MTP projects.

STEP 3:

- Identify proposed RMS 2050 MTP projects that have the opportunity to address the needs.
- Highlight the proposed projects that overlap with 2 or more multimodal criteria

STEP 4:

- Recommend multimodal supportive projects, clarify the safety and connectivity gaps.
- Recommend next steps.

MULTIMODAL GAPS

As we look toward building out multimodal networks in the border region, there must be considerations for how to prioritize these investments. Of most importance are locations in the region where pedestrian and bicyclist safety are at highest risk, where pedestrian and bicycle connectivity to transit lacks sidewalks or protected bike lanes, and where pedestrian, bicycle and transit travel demand is greatest.

The gaps identified in this evaluation correspond with safety and connectivity. The pedestrian safety analysis identified 40 gap areas in El Paso County referred as Severe Pedestrian Injury Areas (SPIAs). The 40 SPIAs comprise 16 total miles of roadway, and represent just 0.4% of all the roadways in El Paso County. Approximately 44% of all severe and fatal pedestrian crashes occur within these SPIAs. With just 1.3% of people in El Paso County walking as their primary mode of transportation to work and 17% of all severe and fatal crashes regardless of mode involving pedestrians (between 2015 and 2020), this safety analysis shows there are a disproportionate number of pedestrians involved in these crashes. In addition, the bicycle safety analysis identified four Severe Bicycle Injury Areas (SBIAs) in El Paso County comprising three total miles of roadway. Approximately 30% of all severe and fatal crashes involving bicyclists occurred within these four SBIAs. **Figure 3-4** identifies both of these areas (SPIAs and SBIAs).

To identify pedestrian and bike connectivity gaps to transit, the busiest transit stops in the system were located. Most of the busiest transit stops are Transit Centers where bus riders have access to customer services and multiple bus routes in the Sun Metro and in some cases in the El Paso County Transit systems. The first and last mile connections to these locations are likely to have a high demand for people primarily on foot, but also on bike, that are bound to transit. These are the portions of the trip where passengers walk or ride to and from the bus stop. This is important throughout the transit system, particularly where sidewalks are incomplete.

While a complete sidewalk system is very important, sidewalk gaps within a ½-mile of the busiest bus stops were prioritized for the purpose of this evaluation. This is the distance on average that a person can walk in about 15 minutes, which is typically about the maximum distance most people would be willing to walk to transit. Separated or protected bike lanes offer the safest travel path for bicyclists. Proposed protected bike lane gaps within 3 miles of the busiest bus stops were prioritized for the purposes of this evaluation. This is the distance on average that a person can typically ride in about 15 minutes, which is about

the maximum distance most people would be willing to ride to transit. **Figure 3-5** presents the sidewalk gaps and bicycle lane gaps identified for this evaluation along with the highest ridership transit stops.

FIGURE 3-4: BICYCLE AND PEDESTRIAN SAFETY GAPS

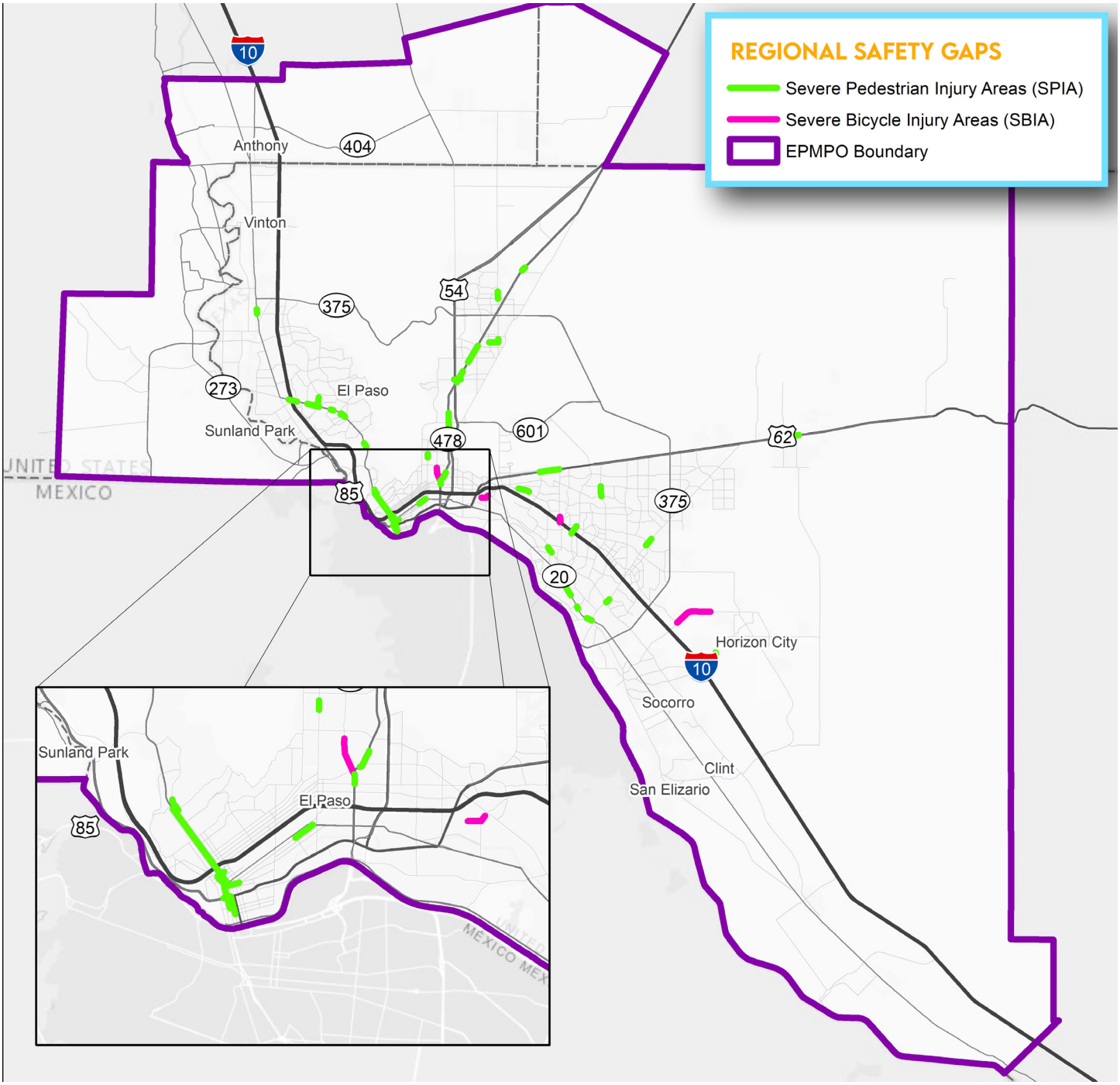
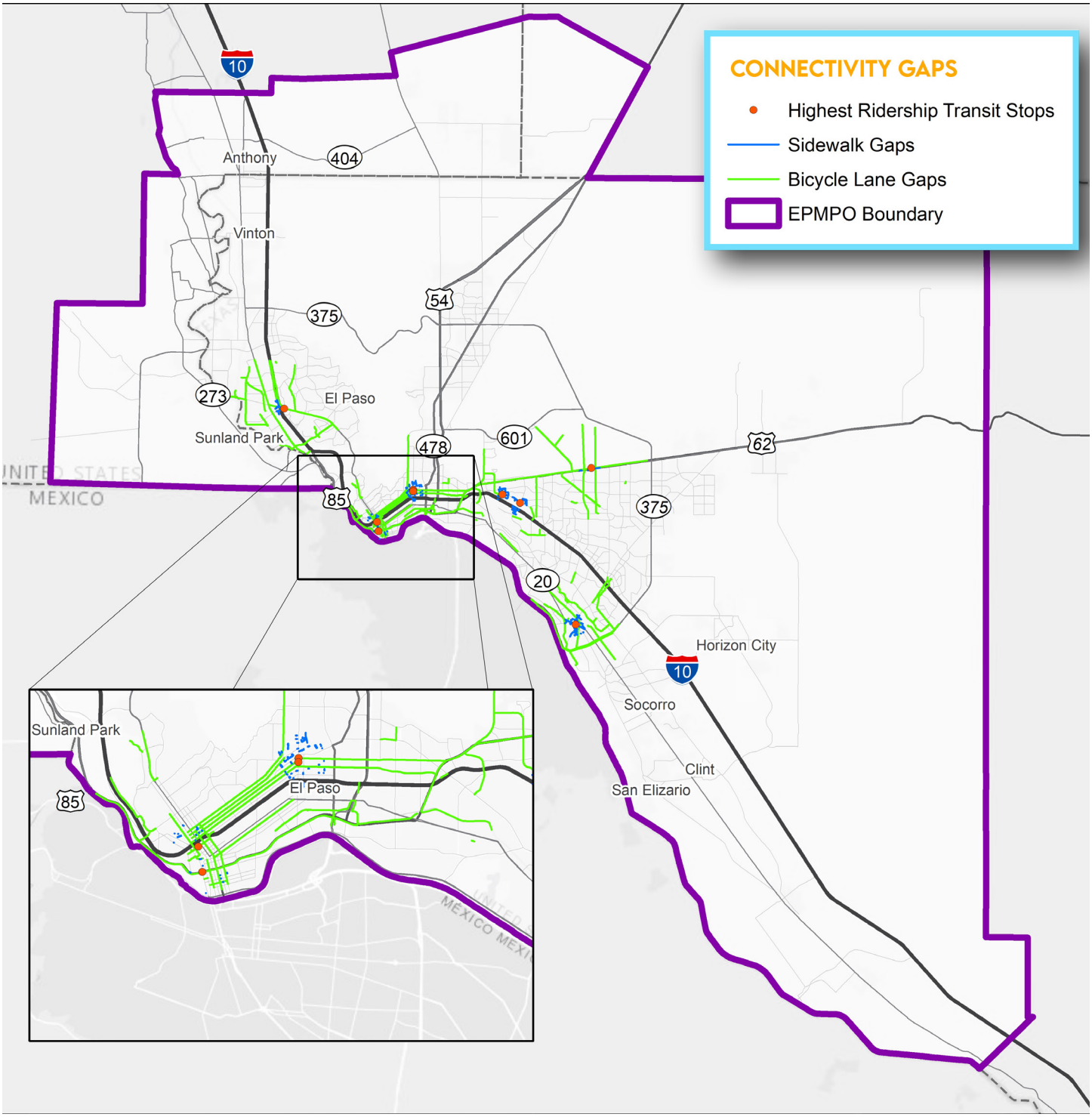
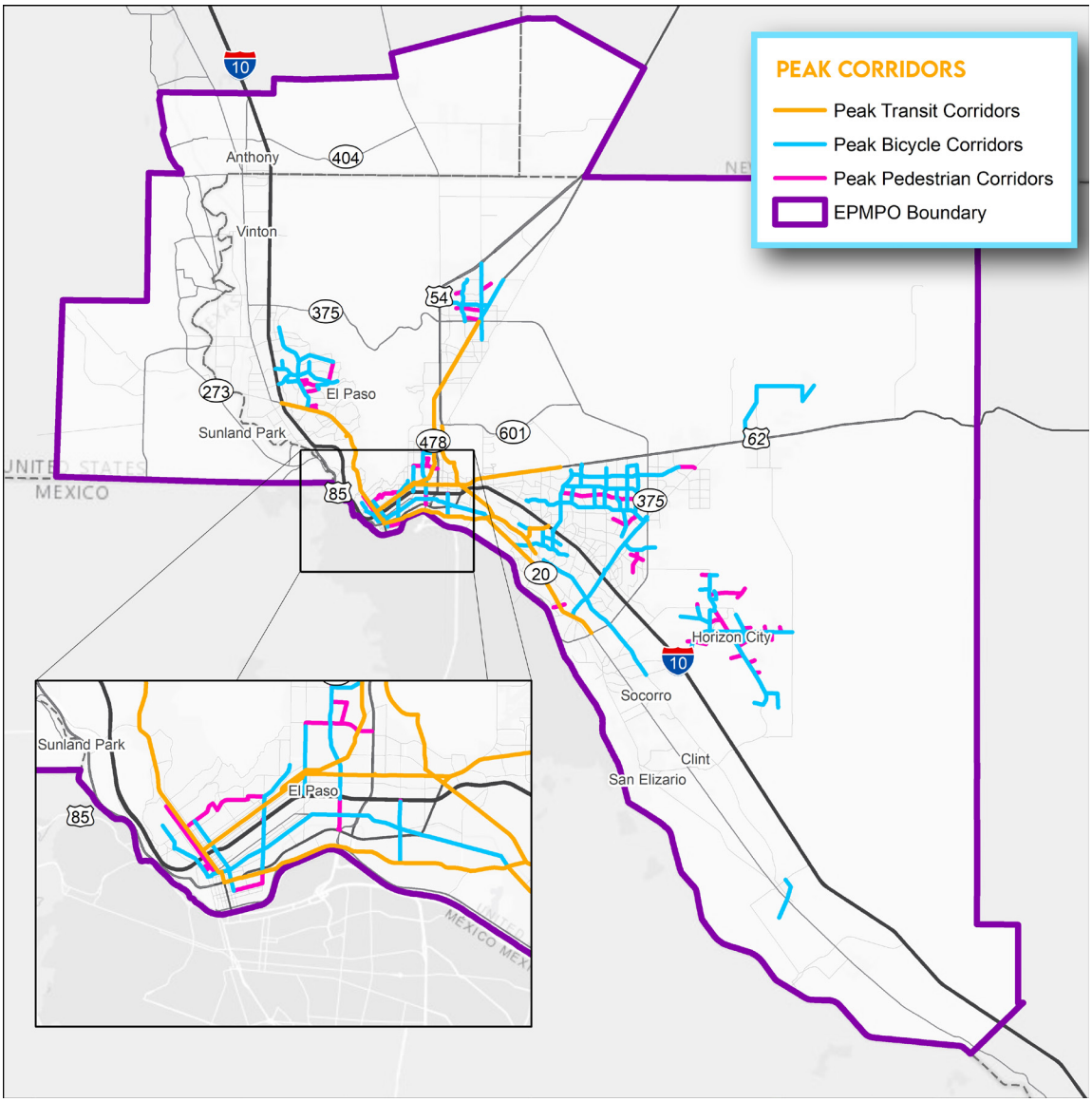


FIGURE 3-5: CONNECTIVITY GAPS



Peak demand corridors were determined as part of the connectivity criterion. Pedestrian, bicycle and transit travel flows projected for 2050 were first applied to the base year 2017 travel network. Then, any travel time impediments within the network were removed, allowing the travel demand model to identify segments of the roadway network that provide the shortest travel path and show where demand is highest. **Figure 3-6** shows corridors where there are several roadway segments with the highest demand in that corridor and most direct path for pedestrian travel. Similarly, the peak bicycle corridors have the highest demand in the network for bicycle travel during peak travel hours of the day. Like the pedestrian and bicycle corridors, peak transit corridors were also determined by using the regional travel demand model to illustrate projected peak travel flow for each mode.

FIGURE 3-6: PEAK DEMAND CORRIDORS



In addition, a network reliability analysis was developed where projects that were proposed to be included in the RMS 2050 MTP that improve travel time or congested conditions on either the existing roadway or on the surrounding road network were identified. Specifically, vehicle hours traveled (VHT) were used to determine if the project improves travel time on both the adjacent local road network and on the project's existing roadway. The traffic volume to roadway capacity ratio (V/C ratio) was used to determine if congestion was improved on the project's existing roadway.

EVALUATION RESULTS

Proposed RMS 2050 MTP projects that have been identified as supportive of multimodal networks are shown in **Figure 3-7**. These are projects that overlapped with two or more of the evaluation criteria or that were identified as multimodal-specific, located off the road network. A list of all proposed RMS 2050 MTP Projects with Criteria Ratings is provided in Appendix I.

PROJECTS SUPPORTIVE OF MULTIMODAL NETWORKS:

Projects overlapping with two or more gaps or priorities

The Multimodal Network Evaluation identified safety and connectivity gaps that can help guide where capital improvements to the roadway network can have an immediate impact toward improving multimodal travel networks where there is highest demand. **Table 3-2** presents a list of only the projects that met the evaluation criteria. The identified projects were then evaluated during the project selection process and were assigned points as part of the criteria used as input into Decision Lens Software as described in Chapter 2.

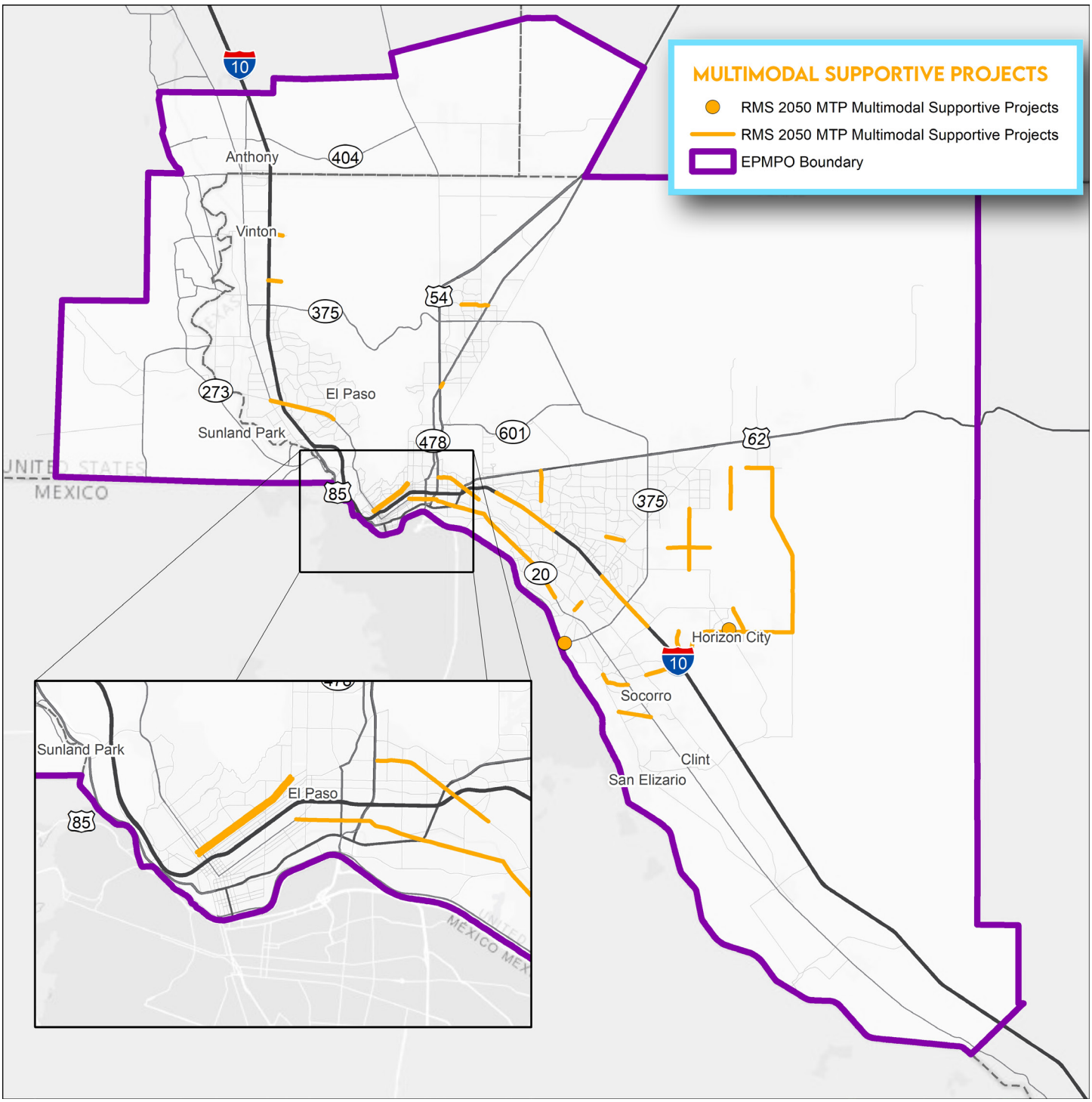
TABLE 3-2: LIST OF PROPOSED RMS 2050 MULTIMODAL SUPPORTIVE PROJECTS

PROPOSED PROJECT DETAILS			
PROJECT NAME	**PROJECT DESCRIPTION**	**PROJECT SPONSOR**	**PROPOSED FISCAL YEAR OF EXPENDITURE**
4-D Tigua Spur of Paso del Norte Trail	A 12-foot shared-use path for bicyclists and pedestrian along the Franklin Feeder canal (4-B Socorro Spur of PDN Trail)	Socorro	2022
Segment of 4-B Socorro Spur of Paso del Norte Trail	A 12-foot shared-use path for bicyclists and pedestrian along the Socorro Lateral segment of 4-B Socorro Spur of PDN Trail	Socorro	2022
Zaragoza POE Pedestrian Shade Canopies	Project includes design and construction of canopy shade structures for pedestrians, sidewalks as required, illumination, landscaping and irrigation.	COEP	2025
Horizon City Transit Plaza	Development of Transit Plaza with parking within the Horizon Country Club Estates Subdivision(s)	Horizon	2025
Trowbridge Dr I-10 to Marlow Street Improvements	Project includes complete roadway reconstruction, parkway improvements, bicycle facilities, street illumination, landscaping and irrigation, and striping on Trowbridge Dr and Trowbridge Ave from Marlow Rd to Gateway Blvd East.	COEP	2025
Zaragoza POE Pedestrian Drop Off and Pick Up Areas	Project includes design and construction of pedestrian drop off and pick up areas for pedestrians walking to and from Juarez. Drop off and pick up areas will include sidewalks, illumination, landscaping and irrigation.	COEP	2026
Dyer Pedestrian Sidewalk Improvements	Project includes sidewalk improvements to pedestrian connectivity and accessibility on Dyer St from Gateway to Hercules Ave. Improves access to BRIO stations at Dyer and Hercules.	COEP	2026
Arizona - Rio Grande Two Way Conversion	Project includes complete roadway reconstruction, two way conversion, road diet, parkway improvements, bicycle facilities, street illumination, landscaping and irrigation, and striping on Arizona Ave and Rio Grande Ave from Oregon St. to N Cotton St.	COEP	2026

PROPOSED PROJECT DETAILS			
PROJECT NAME	**PROJECT DESCRIPTION**	**PROJECT SPONSOR**	**PROPOSED FISCAL YEAR OF EXPENDITURE**
McRae Shared Use Path	The project consists of a shared use path with shade trees, vegetation, pedestrian illumination and other amenities.	COEP	2027
Pipeline Trail Shared Use Path	The project consists of a shared use path with shade trees, vegetation, pedestrian illumination and other amenities.	COEP	2027
N. Kenazo Avenue Reconstruction	Reconstruction of existing 4-lane roadway to include pedestrian and bicycle facilities and illumination.	Horizon	2028
Trowbridge Dr US54 to I-10 Street Improvements	Project includes street rehabilitation, parkway improvements, bicycle facilities, street illumination, landscaping and irrigation, and striping on Trowbridge Dr from Gateway Boulevard North to Gateway Boulevard West.	COEP	2028
Arizona - Grant Two Way Conversion Alabama to Cotton	Project includes complete roadway reconstruction, two way conversion, road diet, parkway improvements, bicycle facilities, street illumination, landscaping and irrigation, and striping on Arizona Ave and Grant Ave from Alabama St. to N Cotton St.	COEP	2028
Greg Rd Widening/ Reconstruction	Widen/rebuild from 2-lane to a 4-Lane divided with bike lanes road	County EP	2028
Sun Valley Street Improvements Rushing to Dyer	Project includes complete roadway reconstruction, road diet, parkway improvements, bicycle facilities, street illumination, landscaping and irrigation, and striping on Sun Valley Dr from Rushing Rd. to Dyer St.	COEP	2028
SH 20 Road/Interchange Imp.(Texas-Delta)	Replace Pavement, Center Raised Median, side lighting, continuous sidewalk, on-street parking, new signals, access management	TXDOT	2029
SH 20 Roadway & interchanges Improvements (Delta to Prado)	REPLACE PAVEMENT, CENTER RAISED MEDIAN, SIDE LIGHTING, CONTINUOUS SIDEWALK ON-STREET PARKING, NEW SIGNALS, ACCESS MANAGEMENT	TXDOT	2029
Ascension Widening	Build/Widening of a 2-lane road to a 6-Lane divided with bike lanes	County EP	2030

PROPOSED PROJECT DETAILS			
PROJECT NAME	**PROJECT DESCRIPTION**	**PROJECT SPONSOR**	**PROPOSED FISCAL YEAR OF EXPENDITURE**
I-10 SEG3C(AIRWAY TO YARBROUGH)	WIDEN FROM 4 to 6 LANES EACH DIRECTION (INCLUDING ONE GENERAL PURPOSE LANE AND ONE ADAPTIVE LANE IN EACH DIRECTION), ADD BIKE/PED AMENITIES	TXDOT	2031
Zaragoza Rd. RR Overpass	Construction of a new bridge over the Railroad	COEP	2034
Westway Blvd. Widening/ Reconstruction	Widen from 2-lanes to 3-lanes in each direction from Desert Blvd. to De Alva Dr. and from 1-lane to 3-lanes each direction from De alva Dr. to Tom Mays Dr. divided roadway with bike lanes.	County EP	2034
Tim Floyd	Widening road from 2-lane to 4-Lane divided with bike lanes	County EP	2036
I-10 SEG3D2 (FM659 TO EASTLAKE)	WIDEN FROM 2/4 TO 4/6 EACH DIRECTION (INCLUDING ONE GENERAL PURPOSE LANE AND ONE ADAPTIVE LANE IN EACH DIRECTION), AND BIKE/PED AMENITIES	TXDOT	2037
SH20 Doniphan (Mesa-SPark) Widen & Op Imp	Widen to 6-Lanes divided, included: median and buffer, sidewalk, illumination, intersection improvements, aesthetic elements (Alternative A)	TXDOT	2039
Widen to 6 lane divided FM 1281 (I-10 to Ascension)	RECONSTRUCT HORIZON BLVD NORTH OF I-10 TO FROM 2-LANES TO 3-LANES IN EACH DIRECTION WITH A 14' RAISED MEDIAN, DIRECTIONAL MEDIAN OPENINGS, AND BUS PULLOUTS	TXDOT	2039
Peyton Rd. Widening	Widening road from 2-lane to 4-Lane with bike lanes	County EP	2039
Widen to 4 lane divided FM 1281 (North Loop to I-10)	Reconstruct Horizon Blvd south of I-10 to two lanes in each direction with a 14' raised median directional median openings, and bus pullouts	TXDOT	2041
Vista del Sol Ext.	Build 4-Lane divided with bike lanes	County EP	2043
Rich Beam / Peyton Extension	Build 4-Lane divided with bike lanes	County EP	2044
Los Mochis Ext.	Build 4-Lane divided with bike lanes	County EP	2045

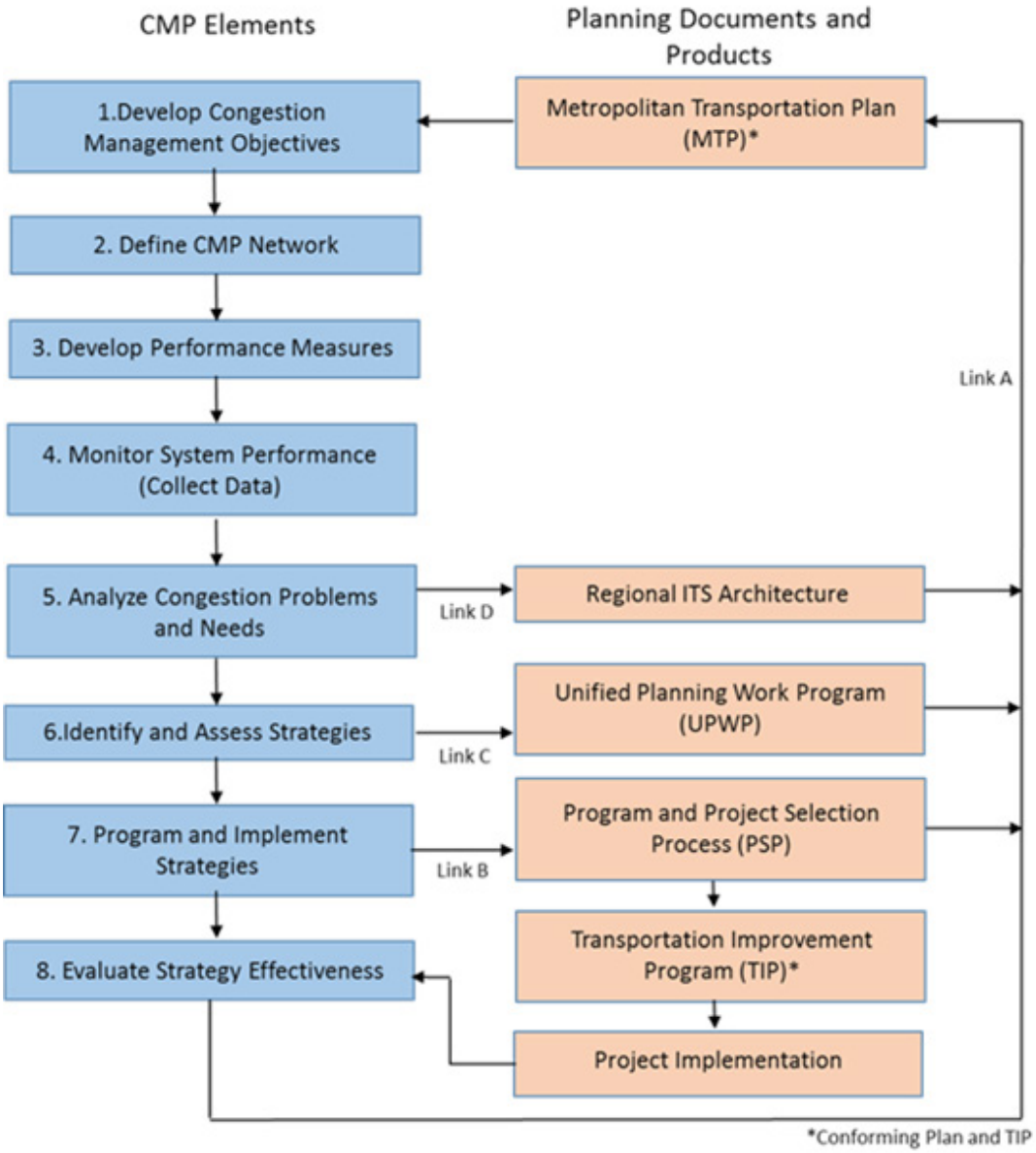
FIGURE 3-7: RMS 2050 MTP MULTIMODAL SUPPORTIVE PROJECTS



C) CONGESTION MANAGEMENT PROCESS

Identified congestion needs are assessed through the Congestion Management Process (CMP). The CMP is a systematic approach applied in a metropolitan region to identify congestion and its causes, propose mitigation strategies, and evaluate the effectiveness of implemented strategies. The CMP is an integral part of the planning process and influences the decision-making process in the selection of projects and strategies for the MTP. **Figure 3-8** shows how all these pieces fit together in the planning process.

FIGURE 3-8: CMP ELEMENTS AND THE PLANNING PROCESS



An update to the Congestion Management Process was completed in 2019, in which the goals & objectives, network definition and performance measures were reviewed and revised, along with an update to the criteria definition of congestion. Based on this definition developed for the identification of congestion problems and needs, several highway and arterial segments were identified as congested (**Figure 3-9** and **Figure 3-10**).

As part of the rigorous ongoing data collection and analysis deemed necessary to support the CMP or implementation of CMP strategies, a segment performance analysis was developed for the identified congested segments. A summary of this analysis is presented in this section. The complete document can be found in Appendix J.

FIGURE 3-9: IDENTIFIED CONGESTED ARTERIAL SEGMENTS

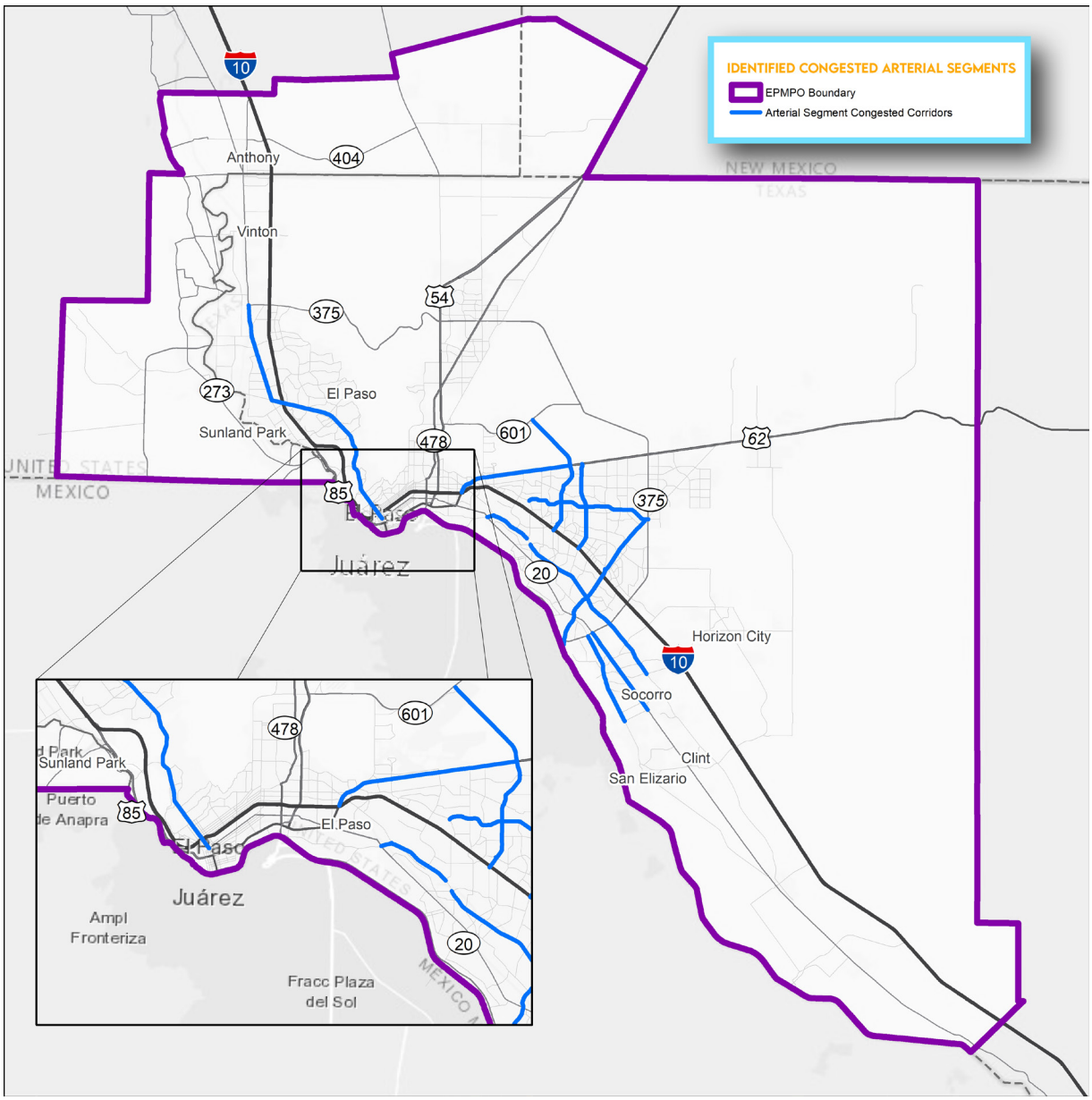
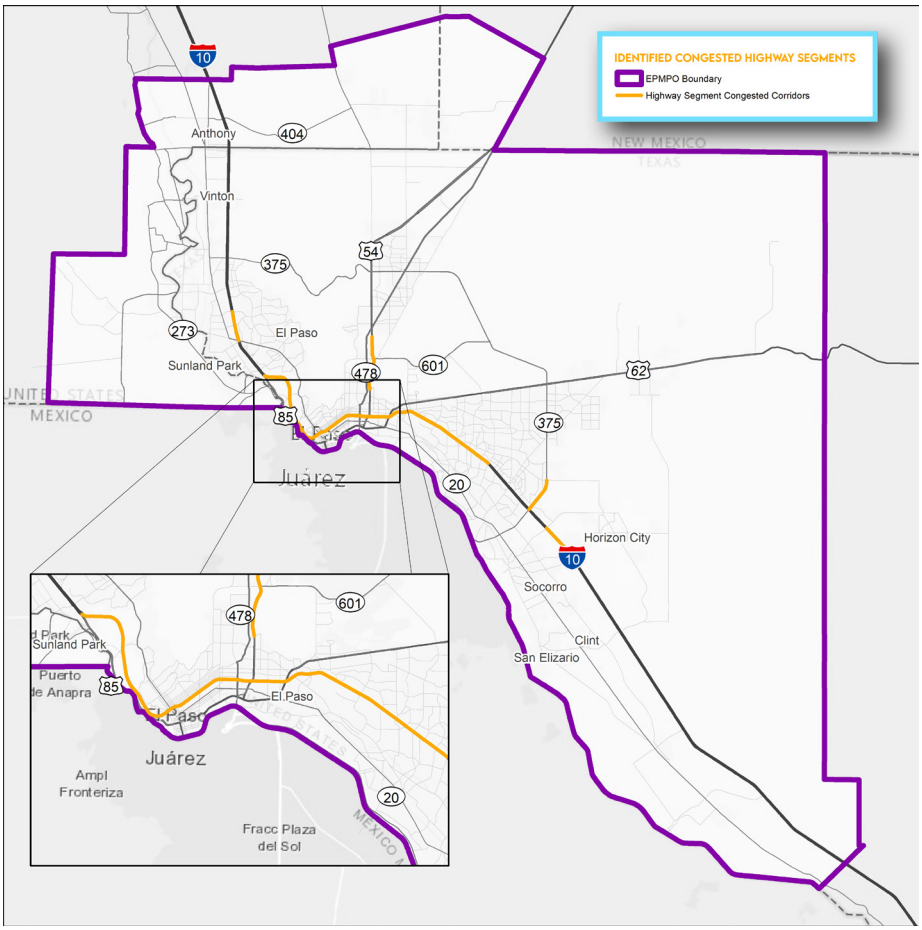


FIGURE 3-10: IDENTIFIED CONGESTED HIGHWAY SEGMENTS

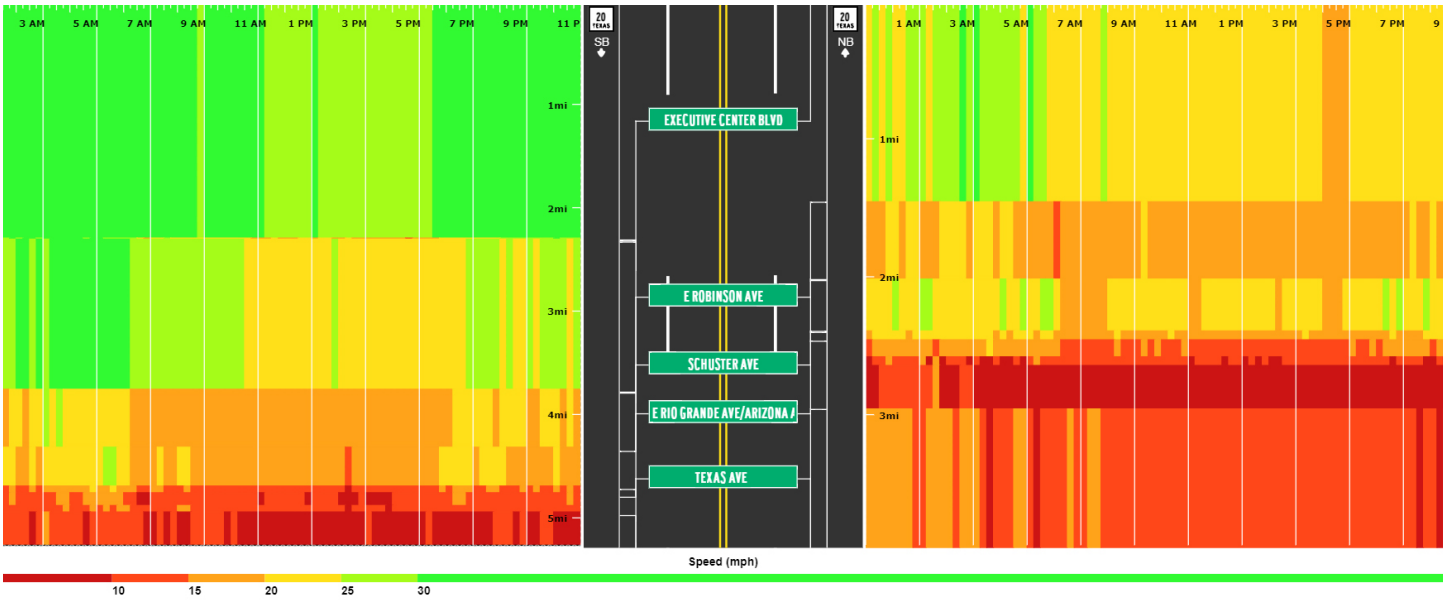


SEGMENT PERFORMANCE ANALYSIS

The initial step for this analysis was to develop a profile for each congested segment with the segment's specific characteristics such as length, type of access control, number of lanes, existing and forecasted traffic volumes, posted speed limits, and congested speeds. In addition, the profile identified any strategies that have already been implemented along the corridor, such as Intelligent Transportation Systems (ITS), Transit, Incident Management Strategies as well as projects that have recently been constructed and/or are planned or under study. These profiles provide a detailed look at each segment's congestion problems and needs.

Another element of the profile was a congestion scan, which is a color representation of the speeds throughout the day. This type of visualization tool allowed a more detailed analysis of the segment's congestion needs. As an example, **Figure 3-11** shows the segment of Mesa Street between Texas Avenue and Executive Center Boulevard. From this image it can be observed that low speeds are pretty much constant through the day at the lower end limits of the segment which is near downtown from Rio Grande Avenue to Schuster Avenue. Speeds are 10 to 15 miles per hour on both directions.

FIGURE 3-11: EXAMPLE OF CONGESTION SCAN FOR MESA STREET



In accordance with the Transportation Performance Management (TPM) guidance, travel time metrics for system performance, freight and air quality were analyzed for each segment for years 2017, 2018 and 2019. Travel time metrics gathered by the Texas A&M Transportation Institute are available to MPOs via the Congestion Management Process Tool (COMPAT). The gathered metrics are:

- Travel Time Index (TTI)
- Average Annual Passenger Hours of Delay
- Average Annual Truck Person Hours of Delay
- CO_2 Released

Figure 3-12 and **Figure 3-13** show the comparison analysis done for the congested segments in the Northwest area. For example, the congested segment on IH-10 from Downtown to North Mesa Street (IH-10 South) experienced an overall decrease in congestion levels as shown by the Travel Time Index from 2017 to 2019. Therefore, this translated into reduced commuting times in the corridor. This reduction also had an impact on Passenger Person Hours of Delay and CO2 released, as both metrics also saw a decrease for all years. This reduction in times/delay can be associated with the GO 10 Project from Mesa Street to Executive Center Boulevard which was a complete transformation of IH-10 that included 2 collector distributor lanes in each direction and various interchange improvements that were competed in 2019.

Looking at the northbound segment of IH-10 from Mesa Street to Artcraft Road, there was no major change for any of the performance metrics analyzed. There was a slight decrease in Travel Time Index and Passenger Person Hours of Delay, however, these changes are not significant enough to heavily alter the perceived congested levels.

FIGURE 3-12: NORTHWEST STUDY AREA CO2 RELEASED

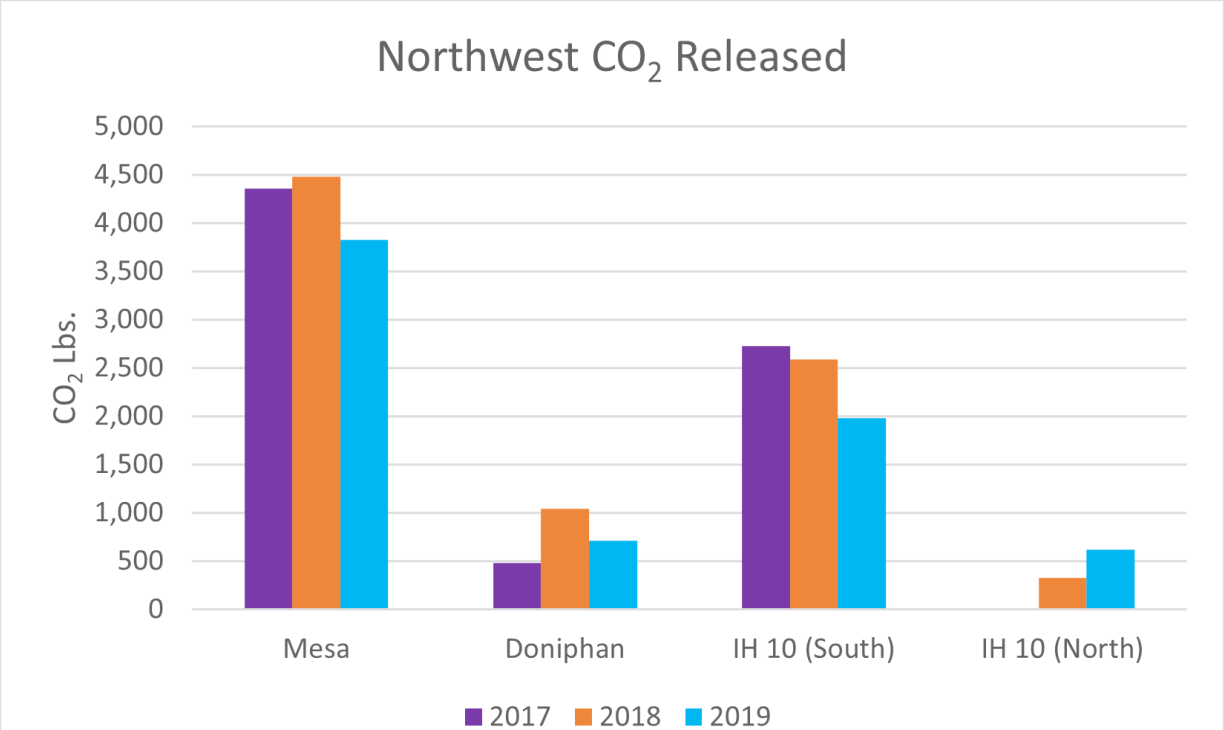
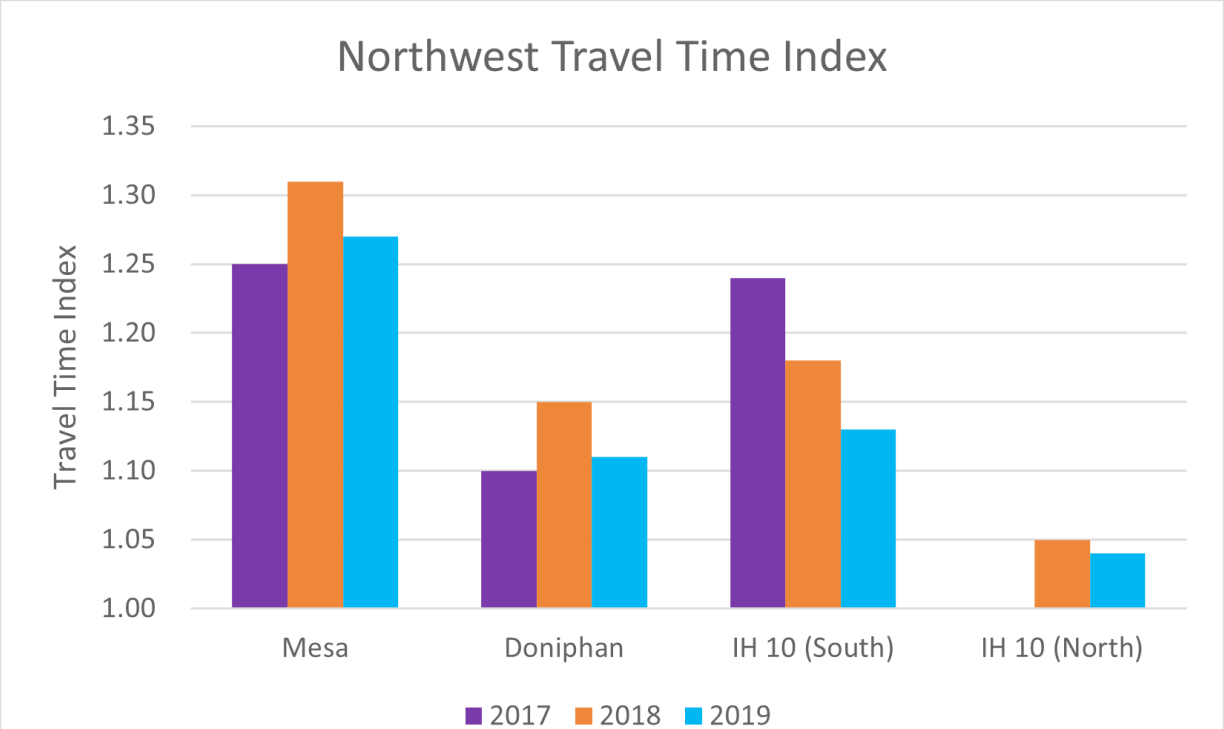


FIGURE 3-13: NORTHWEST STUDY AREA TRAVEL TIME INDEX



Within the framework of the segment profile analysis, the proposed RMS 2050 capacity and non-capacity projects were evaluated based on their proximity to an identified congested corridor and the potential to reduce overall congestion levels. **Figure 3-14** and **Figure 3-15** depict the arterial and highway congested corridors along with the identified proposed projects.

FIGURE 3-14: IDENTIFIED CONGESTED ARTERIAL SEGMENTS AND PROPOSED PROJECTS

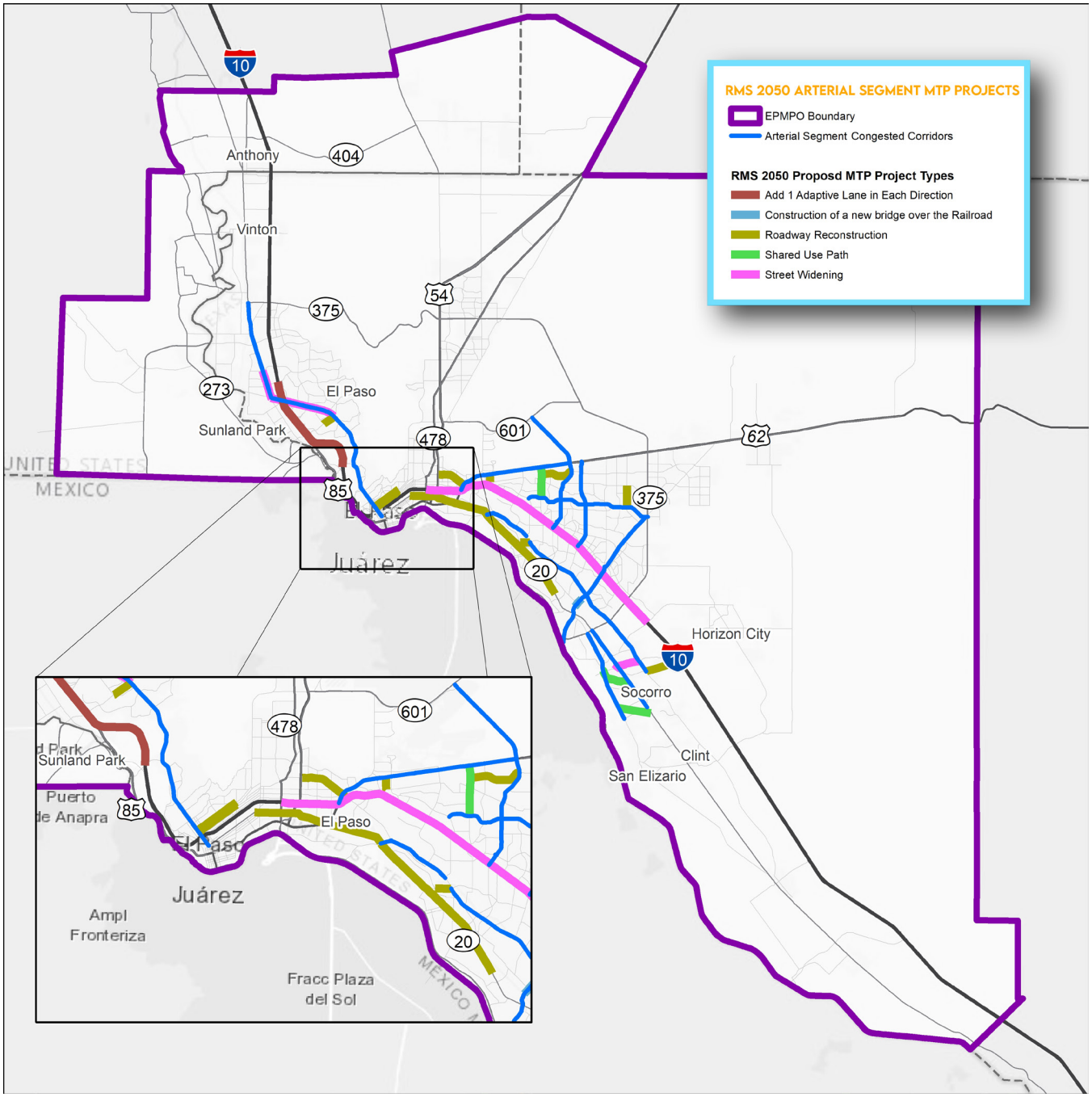
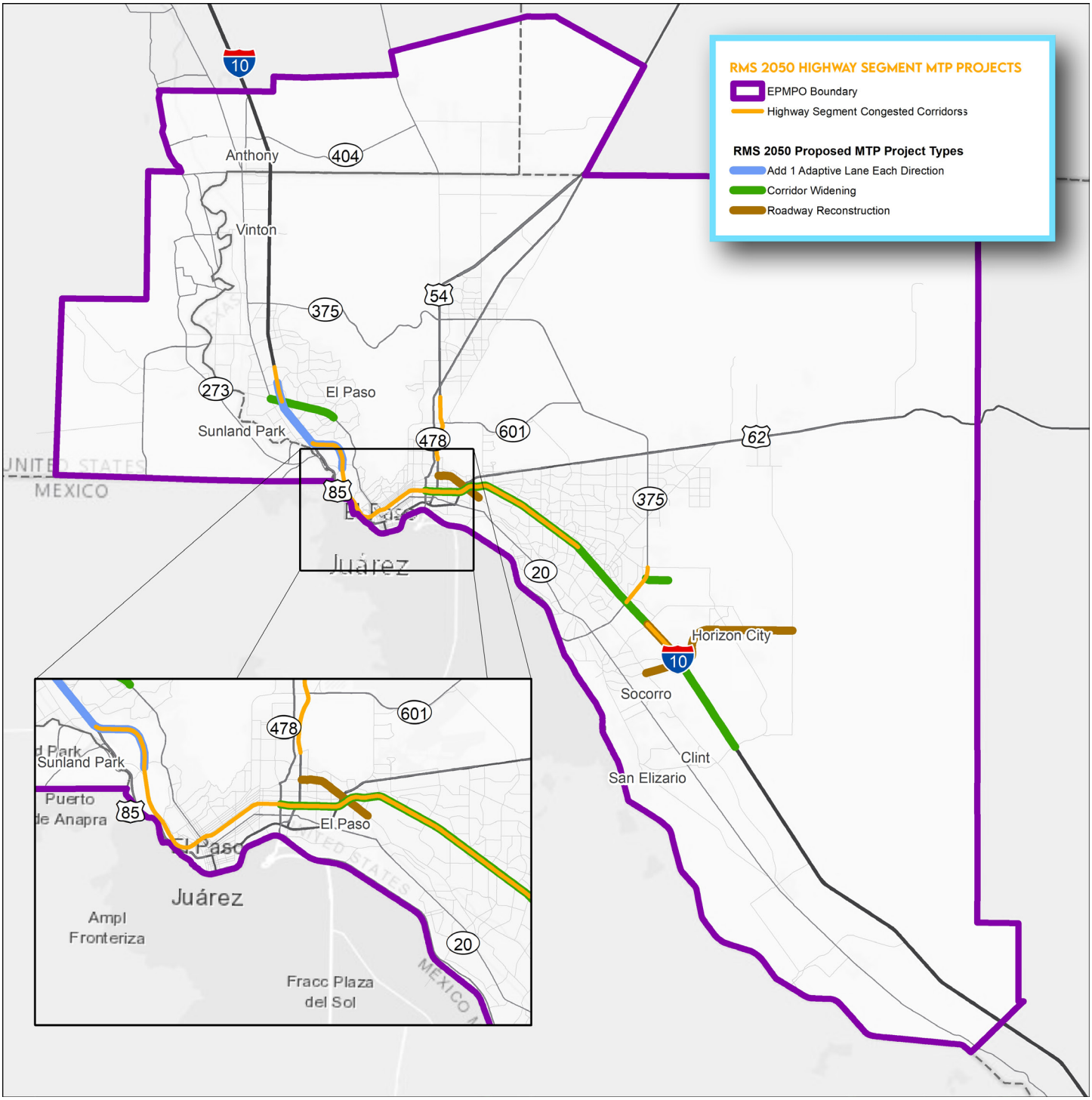


FIGURE 3-15: IDENTIFIED CONGESTED HIGHWAY SEGMENTS AND PROPOSED PROJECTS



CONGESTION ANALYSIS

The RMS 2050 follows the same methodology utilized for Destino 2045 which combines two performance measures into an index to better analyze congestion trends. These two measures are TDM outputs that are commonly used to project travel trends for the region.

- Volume over Capacity (VOC) Ratio - ratio of traffic flow to maximum allowable traffic flow on a road segment.
- Speed Index - ratio of peak hour speed and free-flow speed for a given roadway segment.

To calculate the Congestion Index, Speed Index and Volume over Capacity ratios were first calculated and assigned a rank value from 1 to 5, being 1 the lowest rank and 5 the highest rank as shown on **Table 3-3**. The next step was to calculate the congestion index by adding the two ranks and dividing them by two to obtain an average number that was categorized as shown on **Table 3-4** as either minimal, light, medium or heavy congestion.

TABLE 3-3: RANK VALUE FOR PERFORMANCE MEASURES

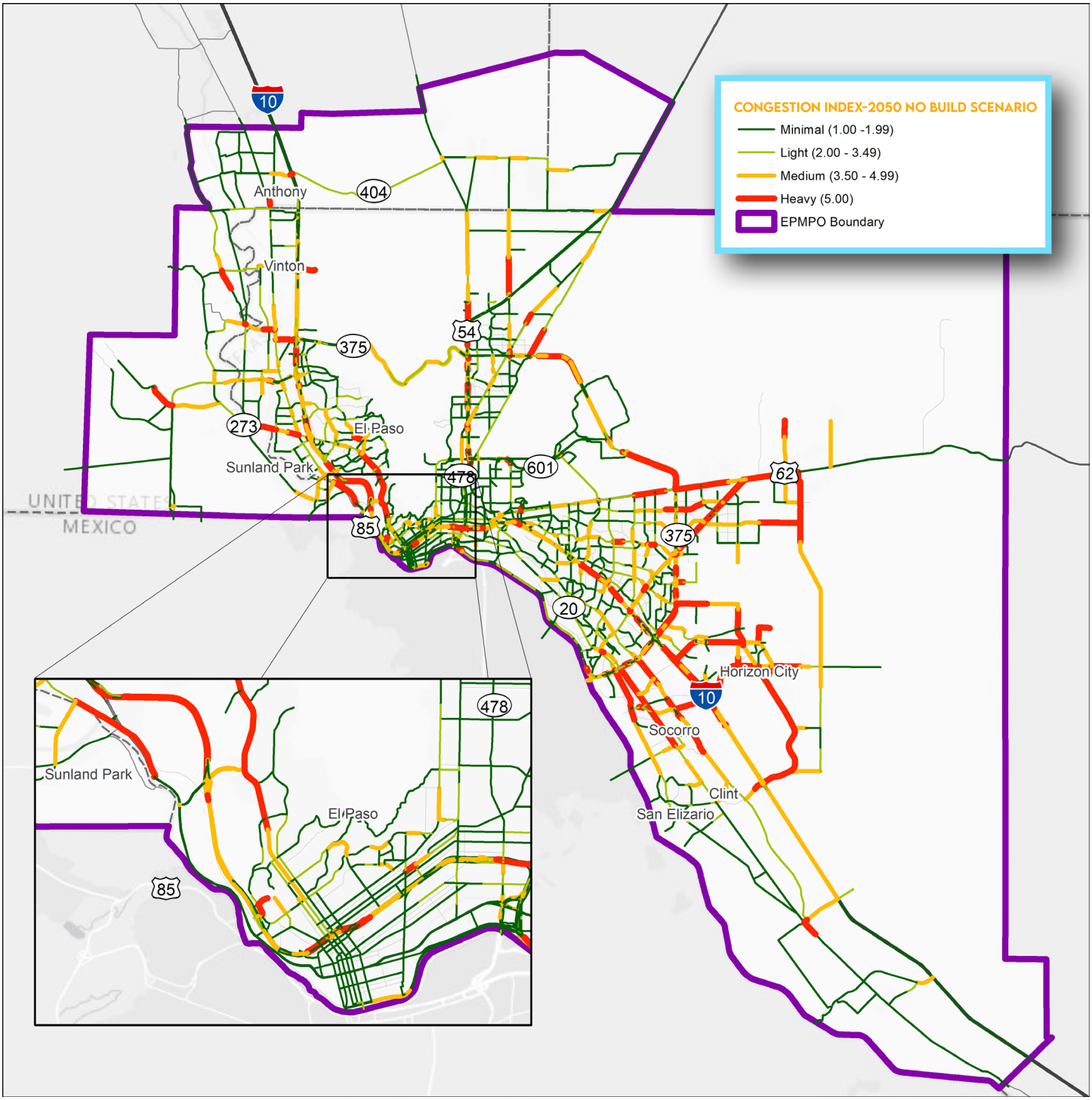
RANK VALUE	SPEED INDEX= MAX PEAK HOUR SPEED/FREE-FLOW SPEED	MAX PEAK VOC
1 (Low)	>=0.9	>=0 to < 0.6
2	>=0.8 to <0.9	>=0.6 to <0.7
3	>=0.7 to <0.8	>=0.7 to <0.8
4	>=0.6 to <0.7	>=0.8 to <0.95
5 (High)	>=0 to <0.6	>=0.95

TABLE 3-4: CONGESTION INDEX CATEGORIES

CONGESTION CATEGORIES	CONGESTION INDEX= (SPEED RANK + VOC RANK)/2
Minimal	1.00-1.99
Light	2.00-3.49
Medium	3.50-4.99
Heavy	5.00

The 2050 No Build roadway network shows congestion primarily occurring on major highways and regional connectors (**Figure 3-16**). IH-10 displays medium to heavy congestion along most of the network from Fabens to Vinton. Loop 375 shows medium to heavy congestion at various portions from the Ysleta-Zaragoza POE to IH-10 and from Montana Avenue to Railroad Drive. Other noteworthy roadways displaying medium to heavy congestion are Mesa Street and Montana Avenue in the City of El Paso and several roadways in the City of Socorro and Horizon City.

FIGURE 3-16: CONGESTION INDEX - 2050 NO BUILD SCENARIO



FREIGHT CONGESTION ANALYSIS

The El Paso MPO Region is one of the most active land port regions in the United States and serves as a critical transfer point for goods crossing the United States-Mexico border. Accordingly, addressing current and future freight transportation issues is crucial to the region's economic success. For a freight system to perform well, delays along the transportation system should be minimized and traffic should be predictable. To understand how freight movement might be impacted by traffic delays, RMS 2050 analyzes congestion along the Texas highway freight network and New Mexico's Critical Urban and Rural Freight Corridors as approved by the FHWA NM office on March 2021.

Figure 3-17 displays the areas with high basic (industrial/manufacturing) employment growth for the region compared to the Texas and New Mexico highway freight corridors symbolized by the amount of daily forecasted freight traffic for the 2050 No Build scenario. Major highway facilities such as IH-10, US 54, and Loop 375 are forecasted to experience the most substantial freight traffic. Major arterials such as Mesa Street, Montana Avenue, Horizon Boulevard, North Loop Drive, and Alameda Avenue also show notable levels of freight traffic. The figure displays increase in congestion generally correlate with large increases in employment. **Figure 3-18** shows the peak period congestion index for the Texas highway freight network.

FIGURE 3-17: NO BUILD DAILY FREIGHT TRUCK TRAFFIC (2050)

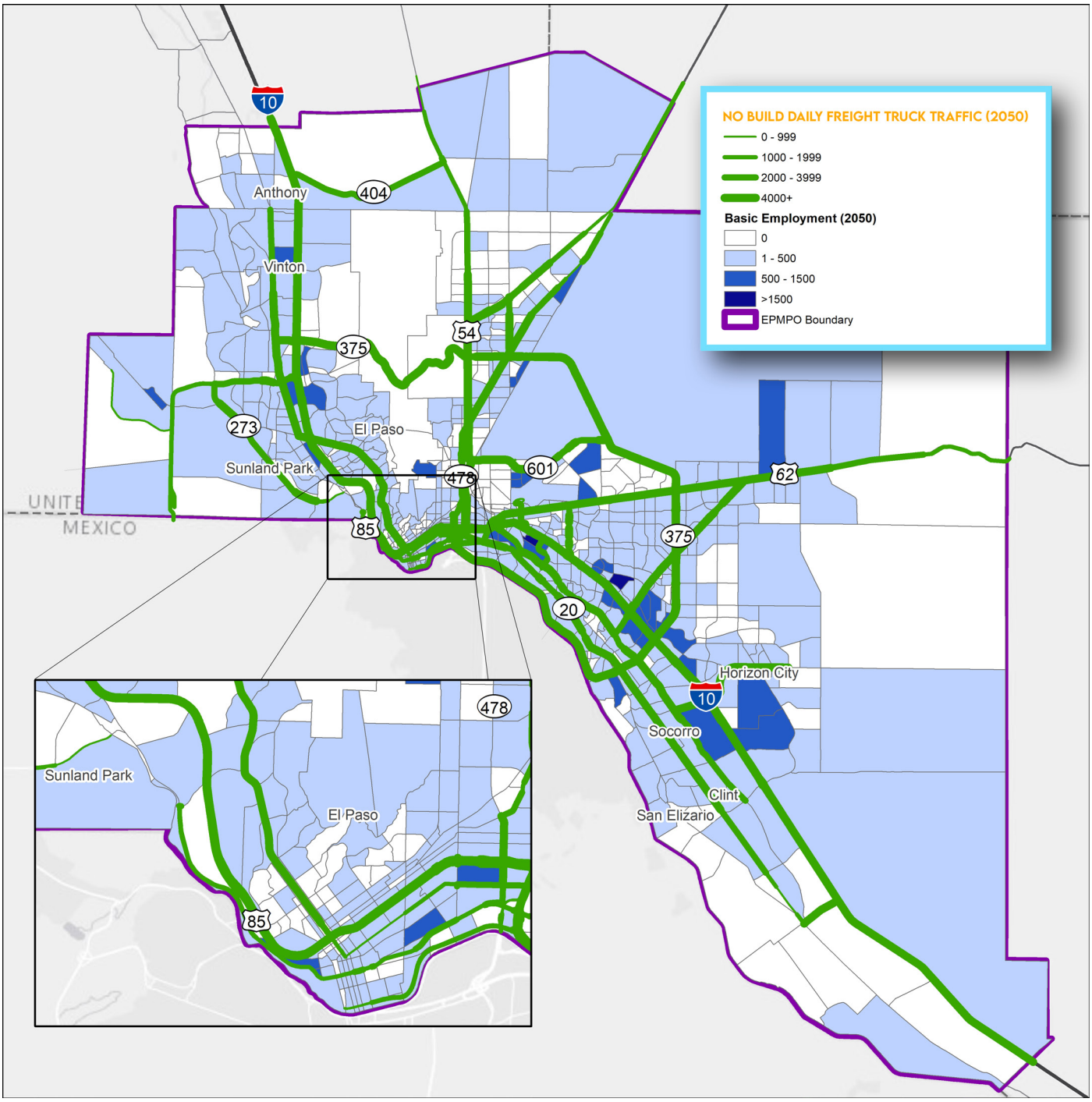


FIGURE 3-18: 2050 NO BUILD FREIGHT CONGESTION INDEX