Appendix D: Existing Needs Analysis

RMS 2052
EL PASO METROPOLITAN TRANSPORTATION PLAN
Existing Needs Analysis

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INTRODUCTION

This technical memorandum assesses the current transportation needs of the El Paso Metropolitan Planning Organization (MPO) to inform the Regional Mobility Strategy 2052 (RMS 2052), the region's Metropolitan Transportation Plan (MTP). It identifies the needs for roadways, freight, transit, bicycle and environmental considerations. The data used in this memorandum are drawn from various sources – U.S. Census Bureau, Texas Department of Transportation (TxDOT), Federal Transit Administration (FTA), and the City of El Paso amongst other sources. By understanding and identifying transportation needs for the region, this analysis aims to provide specific recommendations to the MTP for closing gaps and enhancing the overall transportation system in the El Paso region.

ROADWAY NEEDS

SAFETY

Roadways are the core of the region's transportation network, enabling the flow of people and goods within or through the region. They not only serve vehicular traffic but also support other modes of transport. They offer routes for transit buses and often incorporate bicycle lanes and pedestrian walkways, creating a comprehensive transportation ecosystem. Roadways are categorized and designated in various ways important in understanding the regional network's operation, monitoring, and funding. The most fundamental categorization is functional classification, which groups roadways based on their primary purpose and characteristics. Mobility and access are the two key factors that derive the functionality of the roads. While the interstates offer the highest level of mobility with minimum access level, the local roads provide the highest level of access to traffic generator points but less mobility.

To identify roadways with safety needs, an analysis of annual average daily traffic (AADT) and crashes was completed. Utilizing 2023 AADT values in the TxDOT Roadway Inventory, the top five roadway segments with highest traffic volumes in the MPO were identified for each functional classification. Crash data was compiled from TxDOT's Crash Records Information System (CRIS) for the years 2019-2023.

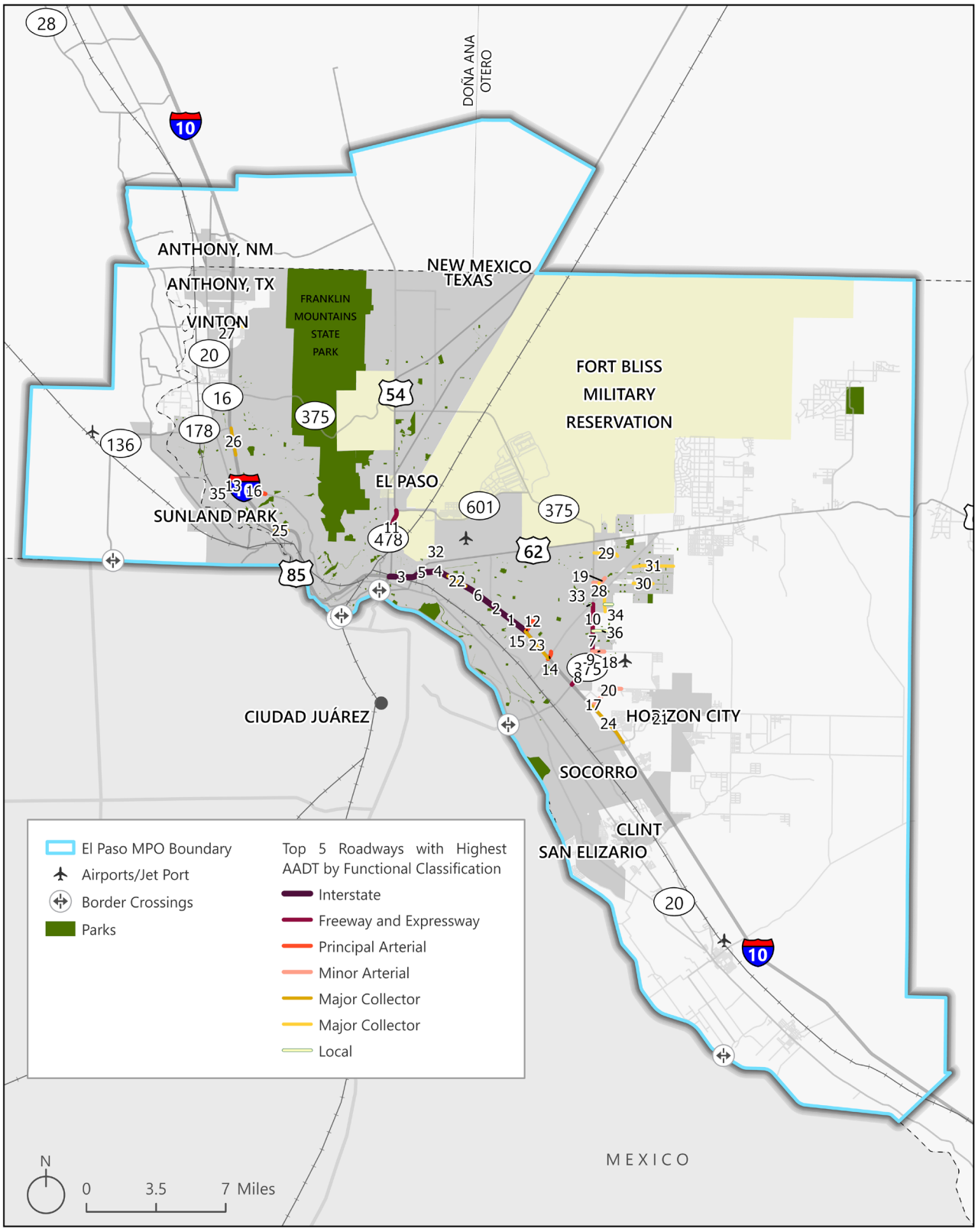
Table 1 shows the roadway segments with the highest AADT values per roadway classification. Figure 1 illustrates the location of these roadway segments. All the identified roadways are within the MPO's urbanized areas, and many are located on or near IH 10 and SH Loop 375. In Figure 2, these roadways are shown on top of crash hotspots consisting of all crashes. This overlay analysis shows that many of the roadway segments with the highest AADT overlap with crash hotspots. When superimposed on fatal crash hotspots as seen in Figure 3, several of the high AADT roadways overlap with the hotspots. When identifying transportation projects for improvements, these roadway segments should be considered for improvements at these locations will help improve regional roadway transportation safety.

Table 1: Top 5 Roadways with Highest AADT by Functional Classification

Map Number	Functional System	Rank	Roadway Name	Roadway Segment	Current AADT
1	Interstate	1	IH 10	from N Yarbrough Dr to N Lee Trevino Dr	184,259
2		2	IH 10	from McRae Blvd to Yarbrough Dr	184,197
3		3	IH 10	from Patriot Freeway to E Paisano Dr	181,753
4		4	IH 10	from Geronimo Dr to Airway Blvd	178387
5		5	IH 10	from E Paisano Dr to Geronimo Dr	172,840
6		6	IH 10	from Hawkins Blvd to McRae Blvd	172,647
7	Freeway and Expressway	1	SH Loop 375	from Vista Del Sol Dr to Pellicano Dr	104,166
8		2	SH Loop 375	from IH 10 to Bob Hope Dr	98,043
9		3	SH Loop 375	from Vista Del Sol Dr to Bob Hope Dr	90,648
10		4	SH Loop 375	from Montwood Dr to Vista Del Sol Dr	83,888
11		5	SH Loop 375	from Fred Wilson Ave to Pershing Dr	72,423
12	Principal Arterial	1	N Lee Trevino Dr	from Pellicano Dr to Rojas Dr	49,766
13		2	SH 20	from Doniphan Dr to I-10	47,032
14		3	George Dieter Dr	from Summerford Ln to N Zaragoza Rd	43,304
15		4	N Lee Trevino Dr	from Gateway Blvd W to Rojas Dr	42,742
16		5	SH 20	from N Desert Blvd to Resler Dr	42,627
17	Minor Arterial	1	Eastlake Blvd	from Gateway Blvd W to Rojas Dr	37,466
18		2	Pellicano Dr	from Joe Battle Blvd to Sun Fire Dr	35,920
19		3	Pebble Hills Dr	from Joe Battle Blvd to Tierra Este Rd	33,713
20		4	Eastlake Blvd	from Rojas Dr to Peyton Dr	33,154
21		5	Horizon Blvd	on S Darlington Rd intersection	27,540
22	Major Collector	1	Gateway Blvd W	from Airway Blvd to Hawkins Blvd	33,502
23		2	Gateway Blvd E	from N Lee Trevino Dr to N Zaragoza Rd	32,141
24		3	Gateway Blvd W	from Eastlake Blvd to Horizon Blvd	29,439
25		4	W Paisano Dr	from SH 85 to I-10	27,808
26		5	N Desert Blvd	from Paseo Del Norte Rd to E Redd Rd	26,857
27	Minor Collector	1	Westway Dr	from N Desert Blvd to Tom Mays Dr	8,542
28		2	Sun Fire Blvd	from Pebble Hills Blvd to Flora Alba Dr	8,130
29		3	R C Poe Rd	from Joe Battle Blvd to Edgemere Blvd	7,593
30		4	Charles Foster Ave	from Rich Beem Blvd to John Hayes St	6,737
31		5	Ralph Seitsinger Dr	from Rich Beem Blvd to Tim Floyd St	6,256
32	Local	1	Airway Blvd	Airport Road Connection	29,170
33		2	N Zaragoza	Montwood Dr Connection	24,363
34		3	Montwood Dr	from Sun Fire Blvd to Shreya St	22,143
35		4	Charl Ann Rd	from Charl Ann Lake to W Sunset Rd	20,003
36		5	Vista Del Sol	from Joe Battle Blvd to Cherrington St	18,951

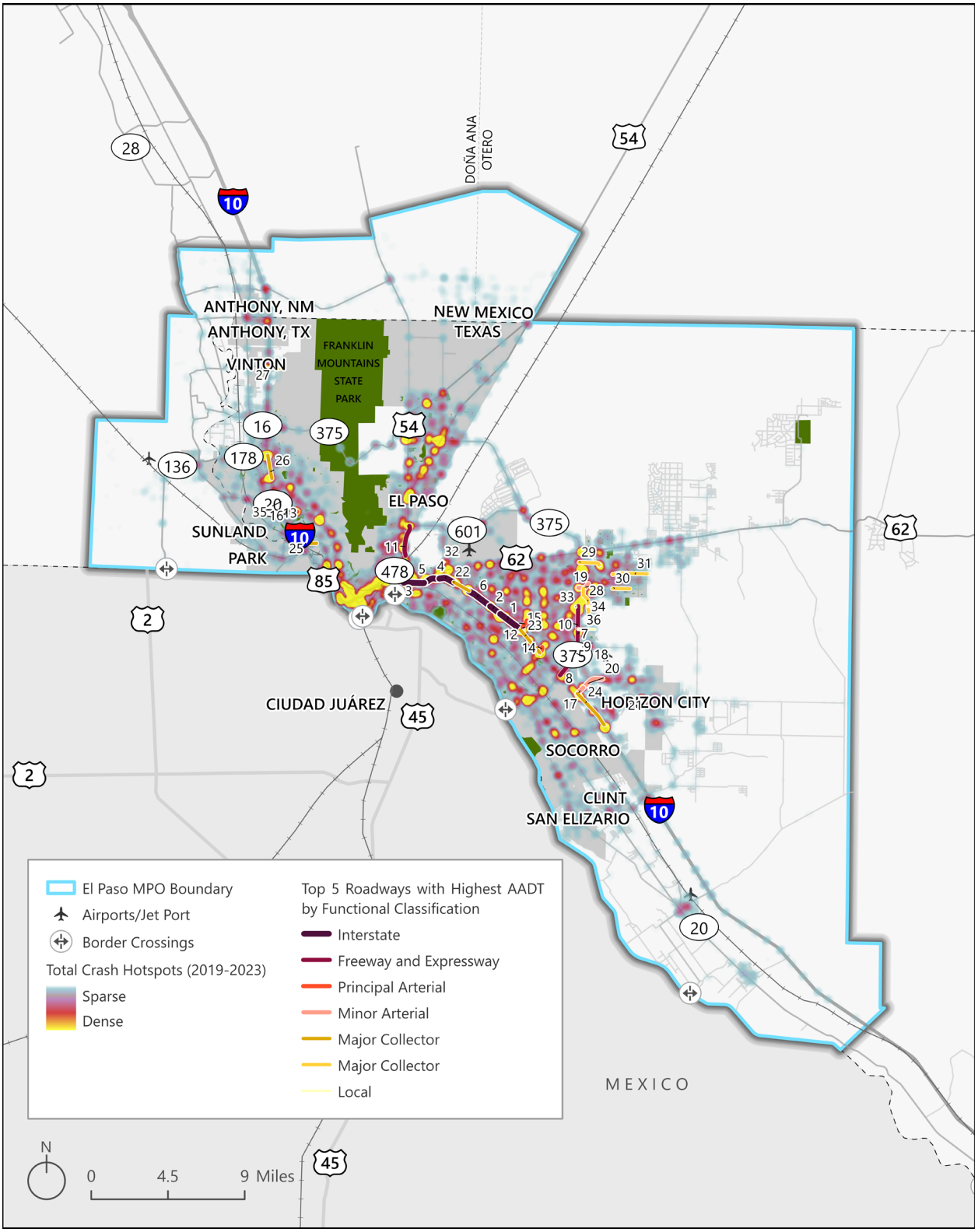
Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

Figure 1: Top 5 Roadways with Highest AADT by Functional Classification



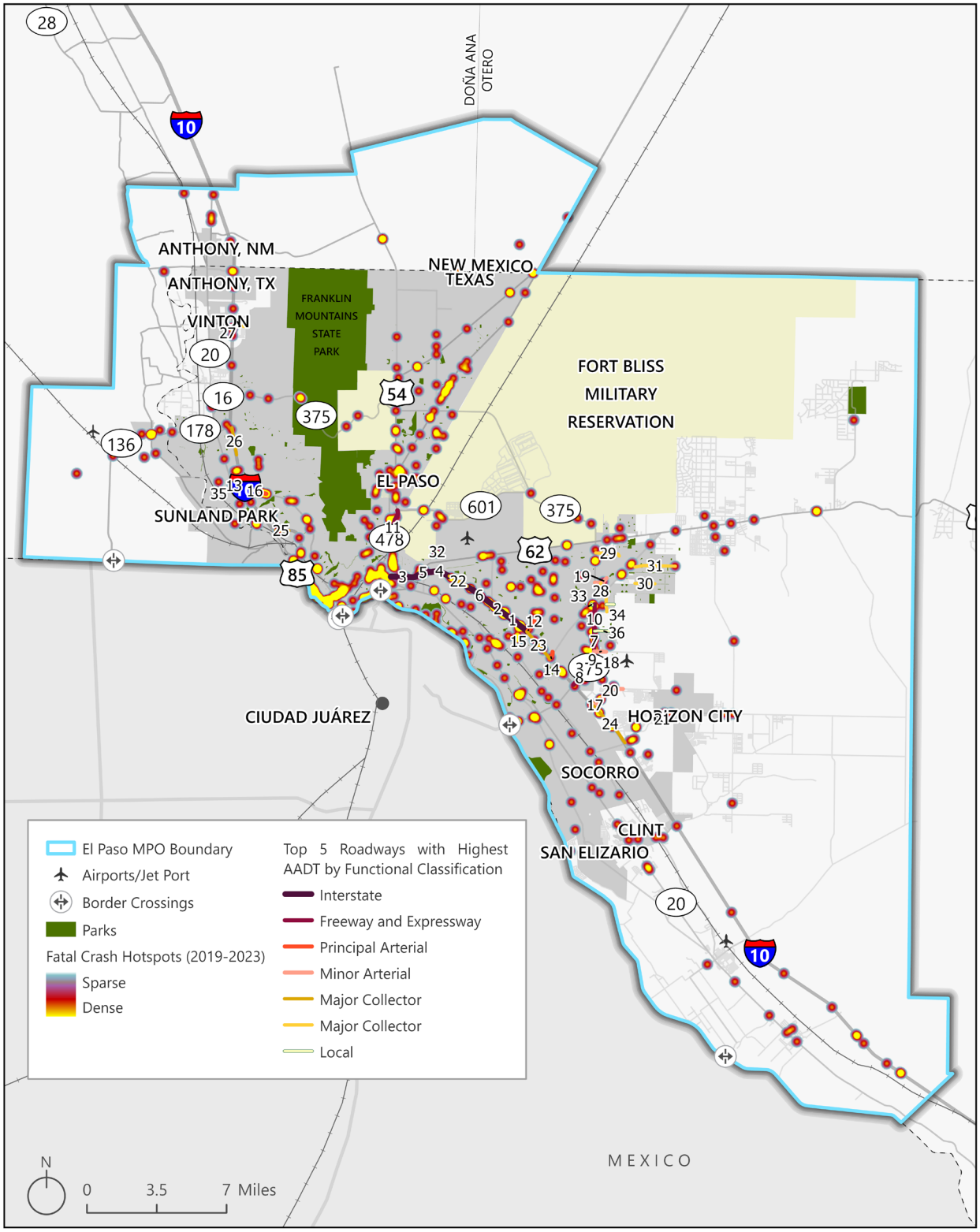
Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

Figure 2: Crash Hotspots and Top 5 Roadways with Highest AADT by Functional Classification



Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

Figure 3: Fatal Crash Hotspots and Top 5 Roadways with Highest AADT by Functional Classification



Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

CONGESTION

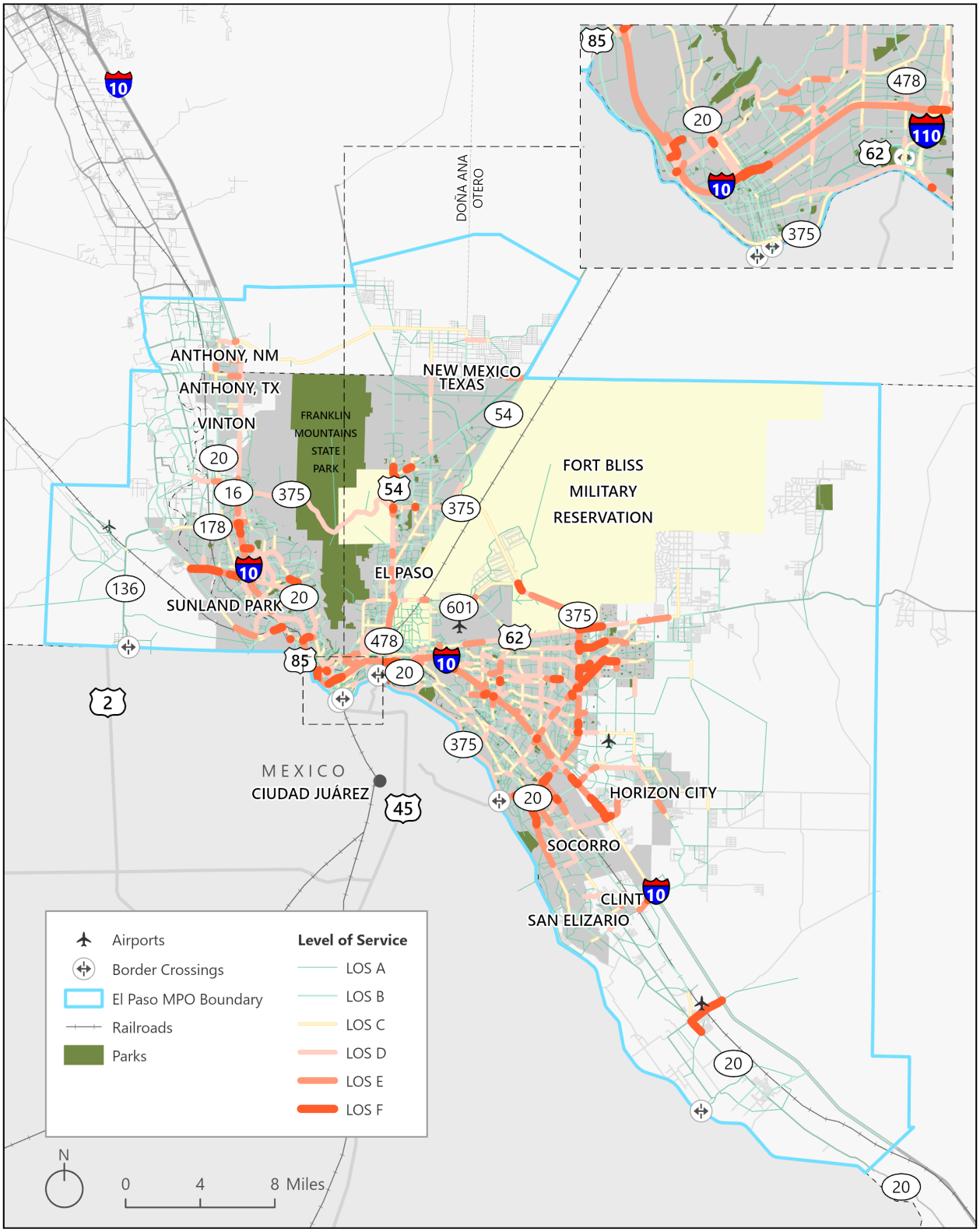
Level of service (LOS) is a collection of automobile congestion and travel time delay metrics intended to represent a driver's perceived quality of service provided by a roadway as measured by free-flowing automobile traffic. For the purposes of this analysis, the Volume-to-Capacity (VC) ratio of roadways in the MPO are used to determine the LOS that would be observed on the roadway. The VC ratio compares roadway volume (or user demand) to the number of vehicles the roadway was designed to accommodate. When roadway volume approaches or exceeds the capacity of the roadway, the roadway loses the ability to efficiently move traffic and becomes congested. A VC ratio of 1 represents full capacity and a value greater than 1 represents a roadway over capacity. Table 2 shows how LOS is separated into categories based on the VC Ratio and provides a description of the travel conditions experienced for the LOS as defined by the USDOT.

Table 2: Level of Service VC Ratios Used and General Definitions

Level of Service	Volume to Capacity Ratio	General Operating Conditions
A	0.0 - 0.2	Free flow, with low volumes and high speeds.
B	0.2 – 0.4	Reasonably free flow, but speeds beginning to be restricted by traffic conditions.
C	0.4 – 0.6	Stable flow, but most drivers are restricted in the freedom to select their own speeds.
D	0.6 – 0.8	Approaching unstable flow; drivers have little freedom to select their own speeds.
E	0.8 – 1.0	Unstable flow; may be short stoppages.
F	>1.0	Forced or breakdown flow; unacceptable congestion; stop-and-go.

Figure 4 shows the LOS of EPMPO roadways as observed in the evening between the hours of 3:30 pm and 7:30 pm. Analyzing LOS during a peak traffic time provides insight into roadway performance during the most strenuous times of the day as roadway demand is highest. While several roadways experience congestion during this time period, among the top ten most congested roadway segments during this time are IH 10, IH 10 frontage roads, and portions of Socorro Road, Talbot Street, Artcraft Road, and Eastlake Drive. Roadway improvements that mitigate congestion across heavily strained roadways should be considered. Additionally, policy considerations, such as those related to land use or parking, across the EPMPO that would decrease the number of cars on the road would help with congestion.

Figure 4: PM LOS in the EPMPO Area

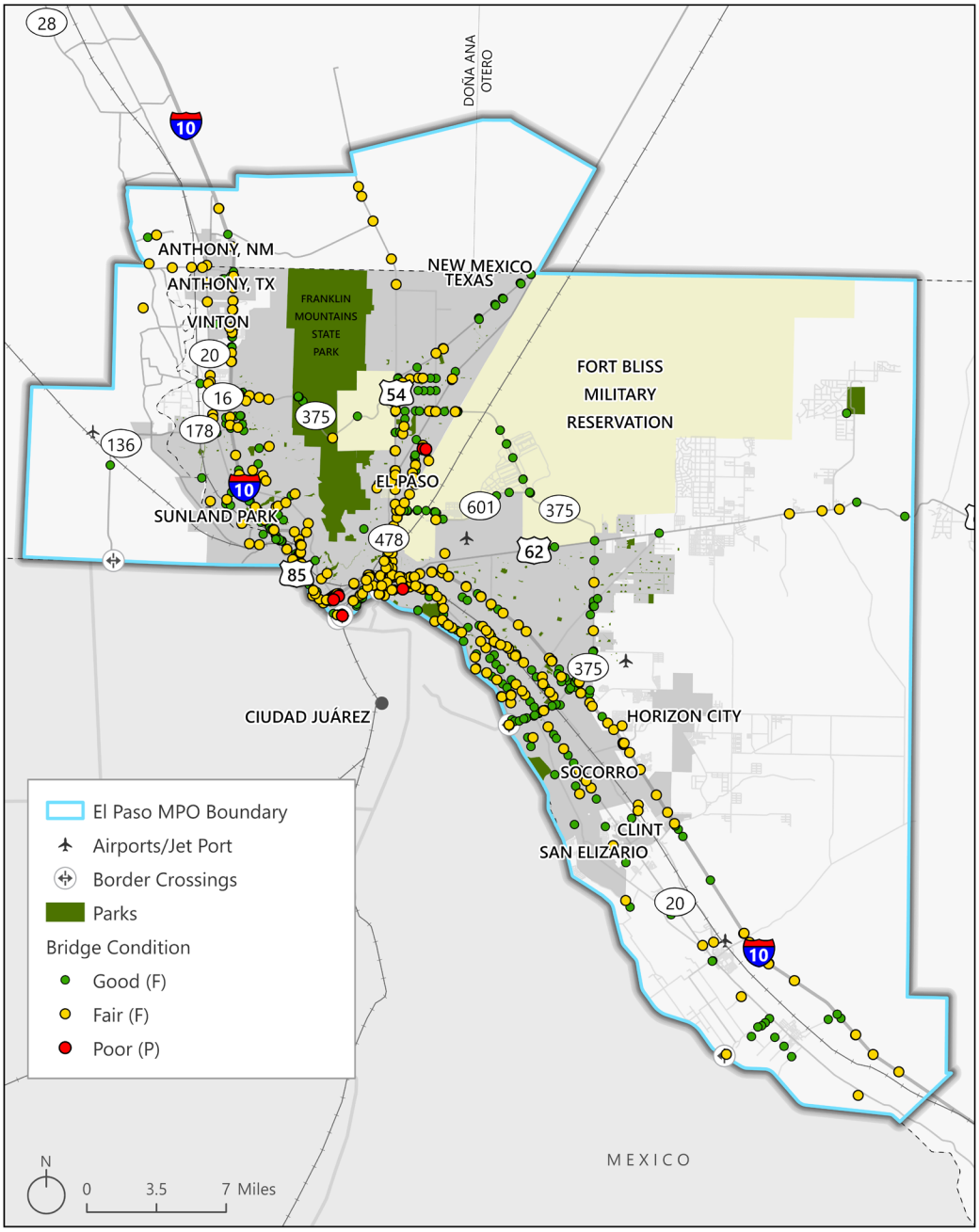


Source: El Paso MPO Travel Demand Model Output, 2025.

ROADWAY BRIDGE CONDITIONS

Transportation asset conditions are crucial to the overall safety, reliability, and efficiency of the EPMPO transportation network. For instance, evaluation of bridge condition for the 800 bridges in the EPMPO region could help determine which bridges need attention. Figure 5 shows the 363 (45%) bridges that are in Fair conditions and 6 (1%) bridges that are in Poor condition. Improvements to bridges with a Poor or Fair condition rating will help improve the MPO's transportation network.

Figure 5: Bridge Conditions



Source: FHWA National Bridge Inventory

ROADWAY PLANNING RECOMMENDATIONS

The El Paso MPO will consider the following guidance to effectively address areas with high roadway congestion that follows strategies described in *Accommodating Truck Traffic on Texas Highways* developed by TxDOT, *Safe System Roadway Design Hierarchy* developed by the Federal Highway Administration, and recommendations from the El Paso MPO Regional Mobility Strategy 2052 Metropolitan Transportation Plan.

1 Capacity and Traffic Operations

- Implement parking controls, such as removing parking spots or requiring less parking.
- Improve roadway functionality to enhance traffic flow and reduce congestion.
- Install ITS systems.

2 Safety

- Prioritize traffic safety by incorporating traffic calming measures.
- Improve lighting, signage, and lane markings.
- Implement countermeasures at crash hotspots such as lower speed limits, roundabouts, and/or protected bike lanes.
- Implement roadway design improvements at curves, dedicated turning lanes at intersections, and/or median barriers.

3 Multimodal Transportation and Asset Conditions

- Increase and/or improve public transportation available to reduce single-occupancy vehicle (SOV) trips.
- Increase and/or improve bike and pedestrian infrastructure such as bike lanes and sidewalks.
- Improve Poor and Fair Condition Bridges
- Enhance system reliability, longevity, and safety by developing an asset maintenance framework to manage, assess, repair, and maintain bridges and other assets.

PORTS OF ENTRY

PORT OF ENTRY NEEDS IDENTIFIED IN THE TEXAS-MEXICO BORDER TRANSPORTATION MASTER PLAN AND TEXAS DELIVERS 2050

The EPMPO's location on the U.S.-Mexico border introduces unique freight related needs as it hosts several ports of entry in Texas and in New Mexico. The U.S.-Mexico border connects the people and goods of the United States and Mexico and according to the 2021 Texas-Mexico Border Transportation Master Plan (BTMP), the Texas-Mexico border is North America's busiest trade gateway, with over $107 billion or about 24% of all US-Mexico trade passing through the El Paso region in 2019.

Texas ports of entry in the EPMPO area include Paso Del Norte Bridge, Good Neighbor (Stanton St) Bridge, Bridge of the Americas, Ysleta-Zaragoza Bridge, and Tornillo-Guadalupe Bridge. There is one New Mexico port of entry in the MPO, the Santa Teresa Bridge.

The Texas-Mexico BTMP is a comprehensive long-range plan for the Texas-Mexico border region and outlines transportation needs, policies, programs, and project strategies for the area. A summary of port of entry and transportation related needs identified for the El Paso MPO area are bulleted in the section that follows.

Texas Delivers 2050 is a freight mobility plan that provides the state with a blueprint for continued economic growth using a comprehensive, multimodal strategy to ensure the efficient and resilient movement of goods needed as the state population continues growing and the demand on essential supply chains increases. Key takeaways from the plan are bulleted in the section that follows.

PORT OF ENTRY NEEDS

1. Comprehensive Texas-Mexico coordination, collaboration, and cooperation to better plan, invest, manage, and operate ports of entry.
2. Expansions of existing funding sources and development of new dedicated funding for the ports of entry to procure sustainable funding for the area.
3. Coordinated border management, advanced technologies, increased border inspection staff and hours of operation, improved distribution of passenger vehicles (POV) and commercial motor vehicles (CMV), and streamlined procedures.
4. Expanded and new border crossings to address overutilization, and develop a performance monitoring system.
5. Improved design and physical separation of lanes for CMVs at higher traffic crossings, hazardous material safety practices, site-specific safety needs, and bike/pedestrian right-of-way infrastructure at ports of entry and feeder routes.
6. Greater connectivity to and between ports of entry and enhanced pedestrian and transit connections between ports of entry and urban centers.
7. Development of an asset management program for ports of entry and sustainable funding sources.

PORT OF ENTRY PASSENGER VEHICLE AND BIKE/PED OPERATIONAL CAPACITY

According to the BTMP, most of the crossings in the EPMPO face border crossing delays, resulting from growth in population, trade, and people movement that has outpaced the rate of infrastructure investment. Delays hinder the mobility and reliability of the border area transportation system. Mechanical factors leading to crossing delays include limited hours of operation for CMV border crossings, uneven demand placed on the existing capacity of border crossings between POVs and CMVs, and uneven distribution of utilization across the border crossings. Table 3 shows the Volume-to-Operational Capacity of the six bridges in the MPO per transportation mode.

Table 3: Passenger Vehicle and Bike/Pedestrian Volume-to-Operational Capacity at EPMPO Ports of Entry

Border Crossing	Privately Owned Vehicles	Bike and Pedestrian
Paso Del Norte Bridge	93%	N/A
Good Neighbor (Stanton St) Bridge	133%	N/A
Bridge of the Americas	114%	96%
Ysleta-Zaragoza Bridge	145%	112%
Tornillo-Guadalupe Bridge	41%	7%
Santa Teresa Bridge	116%	58%

Out of the six ports of entry in the MPO, five approach or exceed their volume-to-operational capacity for POVs. Capacity ranges between 41% and 145%, illustrating the need for improved utilization distribution across ports of entry throughout the border. While Paso Del Norte allows pedestrians to cross, no data is included in the BTMP on volume-to-operational capacity for this mode.

Similarly, Good Neighbor Bridge allows for southbound pedestrian traffic, but no information is included in the BTMP for this mode. The remaining four bridges either have low or high utilization, again illustrating a need for improved utilization distribution.

PORT OF ENTRY RECOMMENDATIONS

1. Engage in coordination, collaboration, and cooperation among binational, federal, state, regional, local and rail partners on policies, programs, and projects at border crossings.
2. Address operational efficiency using a comprehensive and coordinated border management strategy and the advanced and expanded broad integration and adoption of technologies. For example, use technologies to measure port of entry wait times, facilitate the use of digital processes instead of using paper, and monitor systems used at ports of entry.
3. Advance shared binational understanding of port of entry capacity conditions and needs.
4. Maximize use of existing border crossings by redistributing traffic demand among underutilized crossings.
5. Address border crossing throughput and capacity to accommodate growing traffic volumes over time and foster Texas-Mexico evaluations and planning processes for system capacity improvements at border crossings, such as border crossing expansions or new border crossings.
6. Alleviate border crossing times using new technologies.
7. Enhance bike/ped connectivity near border crossings and fill gaps in the transportation network.
8. Develop Texas-Mexico asset management frameworks to preserve border crossings and facilities.

FREIGHT NEEDS

FREIGHT NEEDS IDENTIFIED IN THE TEXAS-MEXICO BORDER TRANSPORTATION MASTER PLAN AND TEXAS DELIVERS 2050

The Texas-Mexico BTMP is a comprehensive long-range plan for the Texas-Mexico border region and outlines transportation needs, policies, programs, and project strategies for the area. A summary of freight related needs identified in the BTMP for the El Paso MPO area are bulleted in the section that follows.

Texas Delivers 2050 is a freight mobility plan that provides the state with a blueprint for continued economic growth using a comprehensive, multimodal strategy to ensure the efficient and resilient movement of goods needed as the state population continues growing and the demand on essential supply chains increases. Key takeaways from the plan are bulleted in the section that follows.

FREIGHT TRANSPORTATION SYSTEM NEEDS

1. Comprehensive Texas-Mexico coordination, collaboration, and cooperation to better plan, invest, manage, and operate the multimodal transportation network.
2. Sufficient capacity and reliability of key freight corridors that are on the Texas Multimodal Freight Network (TMFN) outlined in Texas Delivers 2050.
3. A reduction in the number of truck-involved crashes and the severity of those crashes in terms of fatalities and serious injuries.
4. Consistent planning to integrate and deploy future technological advances across the border transportation system.
5. Consistent data collection, harmonization, sharing, and analysis of trade and transportation data among Texas-Mexico federal, state, local, and private partners.
6. Institutional framework for system monitoring of the border transportation system.

7 Advance U.S. and Mexico policy coordination, connecting transportation infrastructure, and response to potential network disruptions to enhance economic competitiveness.

8 Enhanced network redundancy and border resiliency policies with programmatic planning for systemic processes, procedures, and investments in the case of unforeseen and disruptive events to improve cross border resiliency.

9 Expansions of existing funding sources and development of new dedicated funding for corridors to procure sustainable funding for the area.

10 Harmonization of U.S. and Mexico standards and regulations, air quality strategies, improved routing and design, renewable energy, and hazardous material policies and disposal sites to foster community stewardship and enhance sustainability.

11 Expanded lane capacity on key roads, lanes, and intersections, highway/rail grade separation, alternative transportation choices, and enhanced CMV parking capacity and staging.

12 Physical separation of lanes for CMVs at higher-traffic crossings.

13 Address conflicts at highway/rail grade crossings.

14 Updated asset management programs for pavements and bridges along key freight corridors, roadways, and connections.

PORT OF ENTRY CMV OPERATIONAL CAPACITY

Most of the crossings in the EPMPO face border crossing delays, resulting from growth in population, trade, and people movement that has outpaced the rate of infrastructure investment. Delays hinder the mobility and reliability of the border area transportation system. According to *Texas Delivers 2050*, Texas' freight mobility plan, delays at ports of entry are longer for CMVs (one hour) than POVs (30 minutes). Crossings in the El Paso region have the highest crossing time across the Texas border, with 78% of northbound crossings taking more than 30 minutes. Border trade, comprised of a binational infrastructure system, underpins the regional economy and has impacts across the entire U.S. and Mexico. In 2019, border crossing delays accounted for $2.3 billion in economic losses between the GDP of the U.S. and Mexico.

Mechanical factors leading to crossing delays include limited hours of operation for CMV crossings, limited staffing and physical capacity of crossing facilities, and uneven distribution of utilization across the border crossings. Table 4 shows the CMV volume-to-operational capacity of the six bridges in the MPO.

Table 4: CMV Volume-to-Operational Capacity at EPMPO Ports of Entry

Border Crossing	Volume-to-Operational Capacity (2014-2018)
Paso Del Norte Bridge	N/A
Good Neighbor (Stanton St) Bridge	N/A
Bridge of the Americas	97%
Ysleta-Zaragoza Bridge	97%
Tornillo-Guadalupe Bridge	N/A
Santa Teresa Bridge	100%

Paso Del Norte Bridge and Good Neighbor (Stanton St) Bridge do not serve commercial vehicles. Tornillo-Guadalupe International Bridge did not serve northbound commercial vehicles at the time of publication of the BTMP. The remaining three bridges are at or near capacity for CMV operational capacity.

TRUCK VOLUME AS A PERCENTAGE OF AADT AND ADJACENT LAND USE

Traffic volume is crucial in determining the type of improvements needed for different roadways. AADT is used as a metric to measure traffic volume and estimates the average number of vehicles traveling on a specific roadway segment over the course of a year. The AADT for roadways within the MPO area was obtained from the TxDOT Roadway Inventory and New Mexico Department of Transportation (NMDOT). Truck volume as a percentage of AADT was obtained using these sources and is shown on top of land use data in Figure 6.

High percentage of truck AADT (10% to 25%) is shown in red, and Very High percentage of truck AADT (more than 25%) is shown in dark red. Roadway segments with very high percentage of truck AADT range from 25% to 92%. The top roadways of truck percentage of AADT are labeled in Figure 6 and listed in Table 5. High percentage of truck AADT can have negative effects on the MPO's roadways such as increased pavement wear and tear, slower traffic speeds, and increased crash risks. Improvements to the roadways identified in Table 5 should be considered during the project identification process for the MTP.

Additionally, some locations throughout the MPO were identified where high or very high percentages of truck AADT roadways exist adjacent to residential land uses. This situation could cause unfavorable living conditions due to the volume of trucks traveling on neighborhood adjacent roads and resulting damage to the roadways, truck noise, diesel emissions, and potential for accidental cargo spills. These locations are listed in Table 6 and, while not an exhaustive list, consist of roadways and adjacent areas with the highest levels of incompatibility. Projects that would alleviate these locations of truck volume should be considered during the project identification process for the MTP.

Table 5: Top Roadway of Truck Percentage of AADT

Map Number	Roadway
1	IH 10 from Horizon Boulevard to El Paso County Boundary
2	Ysleta-Zaragoza Bridge
3	Stockyard Drive from Ballard Coldwell Ct to Horizon Boulevard
4	Intersection of Henry Brennan Drive, Don Haskins Drive, and Peter Cooper Drive
5	Vista Del Sol from North Zaragoza Road to TX-Loop 375
6	Strauss Roads from Pete V Domenici Highway to entry of Santa Teresa Intermodal Terminal
7	IH 10 from Paseo del Norte to Woodrow Bean Transmountain Drive
8	Stan Roberts Dr Ave from McCombs Street to Gateway Boulevard

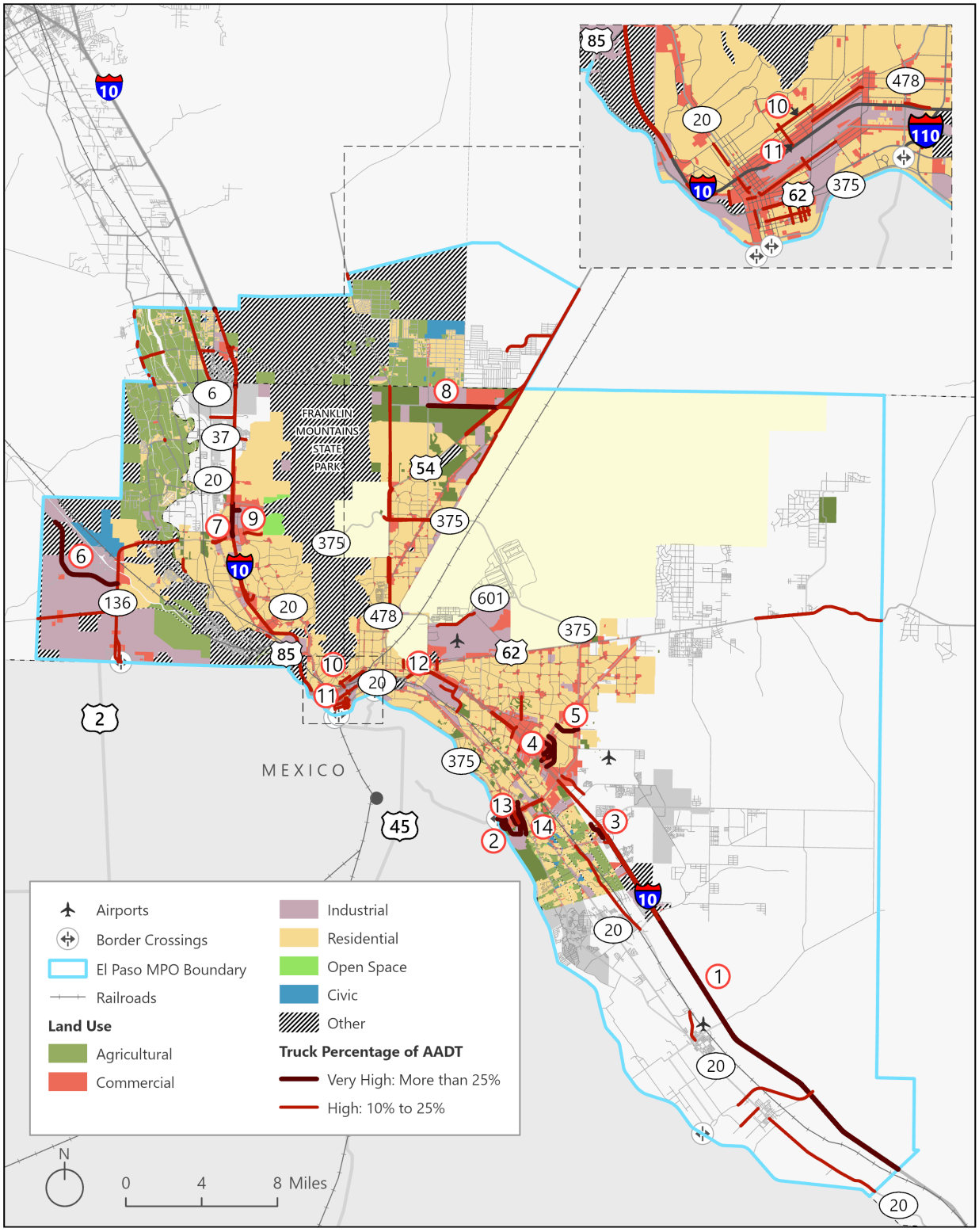
Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

Table 6: Roadways with High or Very High Percentage of Truck AADT that are Adjacent to Residential Land Use

Map Number	Roadway (Percent of Truck AADT)	Adjacent Land Use
5 (same as Table 5)	Vista Del Sol North Zaragoza Road to TX-Loop 375 (27.6%)	Residential and some commercial
9	Paseo Del Norte Road from N Resler Drive to Northern Pass Drive	Mostly residential
10	Arizona Avenue from Brown Street to N Cotton Street (10.0%)	Residential only
11	Newman Street from IH 35 to E Nevada Avenue (13.4%)	Residential and commercial
12	Chelsea Street from Timberwolf Dr to Trowbridge Dr (11.7%)	Residential only
13	Carl Longuemare Rd from Nakitu Drive to TX-Loop 375 (31.5%)	Residential and other land uses
14	Carl Longuemare Rd from TX-Loop 375 to Winn Drive (31.5%)	Residential and other land uses

Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data. City of El Paso. City of Socorro. Doña Ana County CAD.

Figure 6: Top Roadway of Truck Percentage of AADT



Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data. City of El Paso. City of Socorro. Doña Ana County CAD.

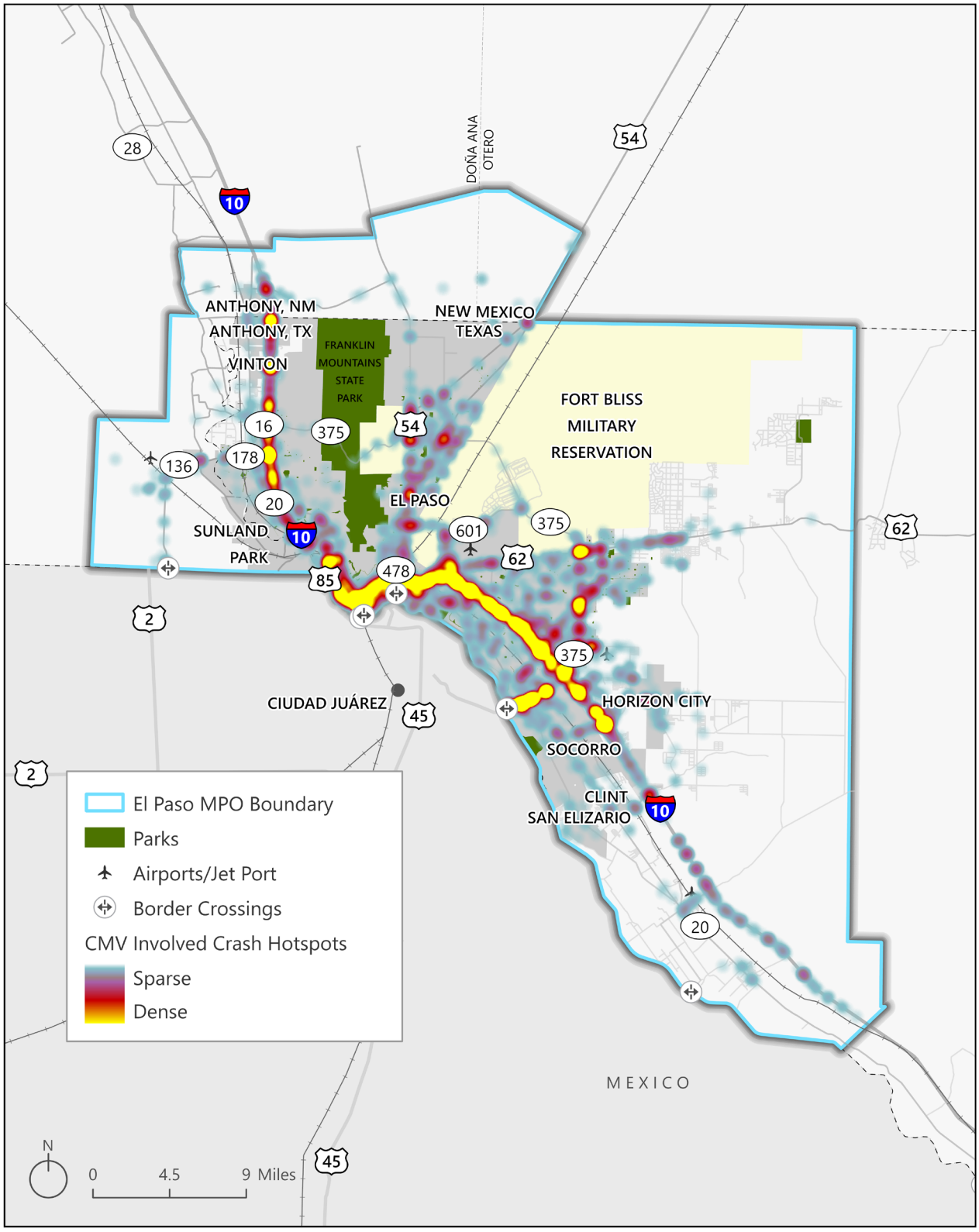
TRUCK SAFETY

According to the TxDOT CRIS and NMDOT STRS data, 6,345 crashes that involved CMVs occurred from January 1, 2019, through December 31, 2023. Of the CMV-involved crashes, 31 involved pedestrians and 7 involved cyclists. The most common crash severity is crashes with no injury at 5,166, followed by crashes with a possible injury at 498 and minor injury crashes at 440. Serious and fatal crashes accounted for the least number of crashes at 70 and 47 crashes. Table 7 shows the total number of crashes by crash severity and involved party. As shown in Figure 7, crash hotspots for crashes that involved CMVs are along major corridors such as IH-10, SH 20, US 62, Loop 375, US 54, and US 85.

Table 7: CMV Involved Crash Summary

Crash Severity	CMV Involved Crash Count	CMV and Pedestrian Involved Crash Count	CMV and Bike Involved Crash Count
Unknown	124	0	0
Not Injured	5,166	0	0
Possible Injury	498	5	1
Suspected Minor Injury	440	8	6
Suspected Serious Injury	70	8	0
Fatal Injury	47	10	0
Total	**6,345**	**31**	**7**

Figure 7: CMV Involved Crash Hotspots



Source: WSP Analysis of Texas Department of Transportation, New Mexico Department of Transportation Data

BRIDGE VERTICAL CLEARANCE

Bridge vertical clearance is the distance from the ground to the bottom of a bridge. Bridge vertical clearance is the most important factor in route usability by trucks as proper clearance is important for preventing bridge strikes, defined as an accident that occurs when a vehicle crashes into a bridge. The US Department of Transportation maintains data on bridges across the country and publicly publishes this data, known as the National Bridge Inventory (NBI). The NBI includes data on bridge vertical clearance. Bridges with a vertical clearance of 15 feet or less are considered to have a very low vertical clearance. A vertical clearance of 18.4 or greater provides a comfortable space for vehicles to pass underneath a bridge.

The NBI provides data on 325 bridges across the EPMPO. Most bridges are in Texas while two are in New Mexico. Figure 8 shows the counts and percentages of the bridge vertical clearance categories. Across the MPO, there are 19 bridges with a vertical bridge clearance less than 15 feet, 42 with a clearance of 15 feet to 16.4 feet, 149 bridges with a clearance of 16.5 feet to 18.4 feet, and 115 bridges with a clearance of 18.4 feet or greater. Bridge vertical clearances are categorized and mapped in Figure 9.

Bridges with a vertical clearance of 15 feet or less are largely concentrated on IH 10 and US 62 in the City of El Paso. According to NBI data, all bridge vertical clearances are at least 14 feet.

Figure 8: Counts of Bridges by Bridge Vertical Clearance

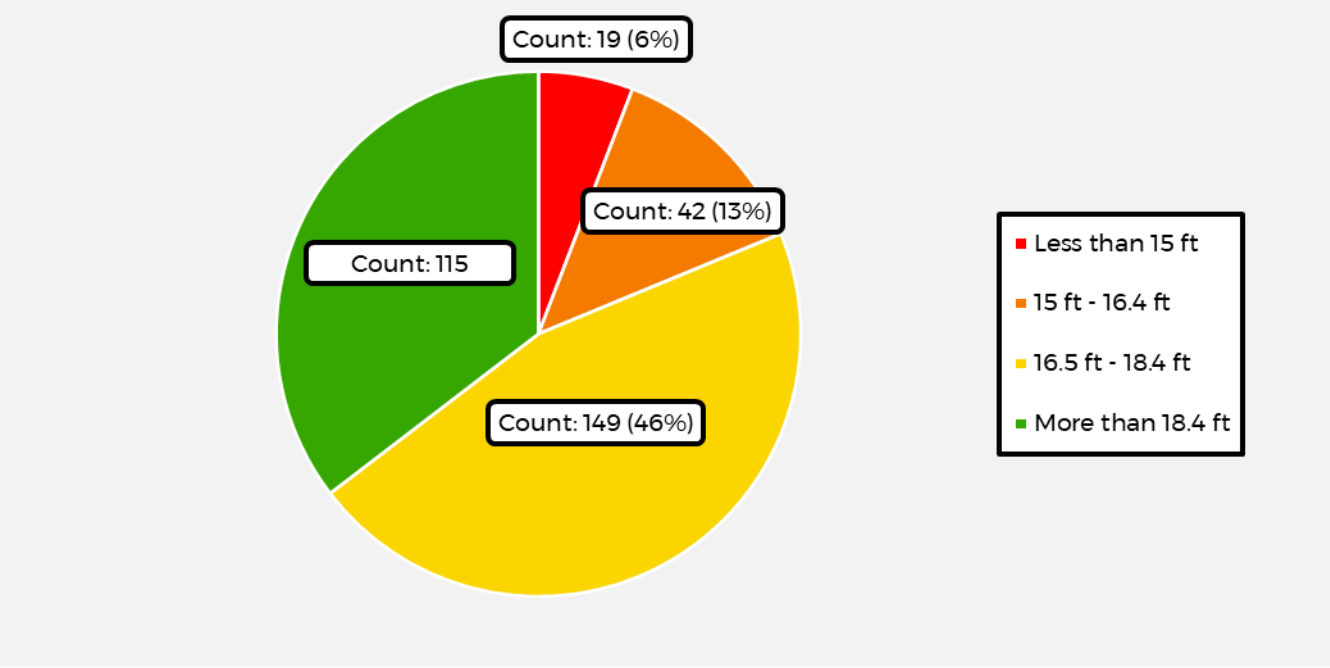
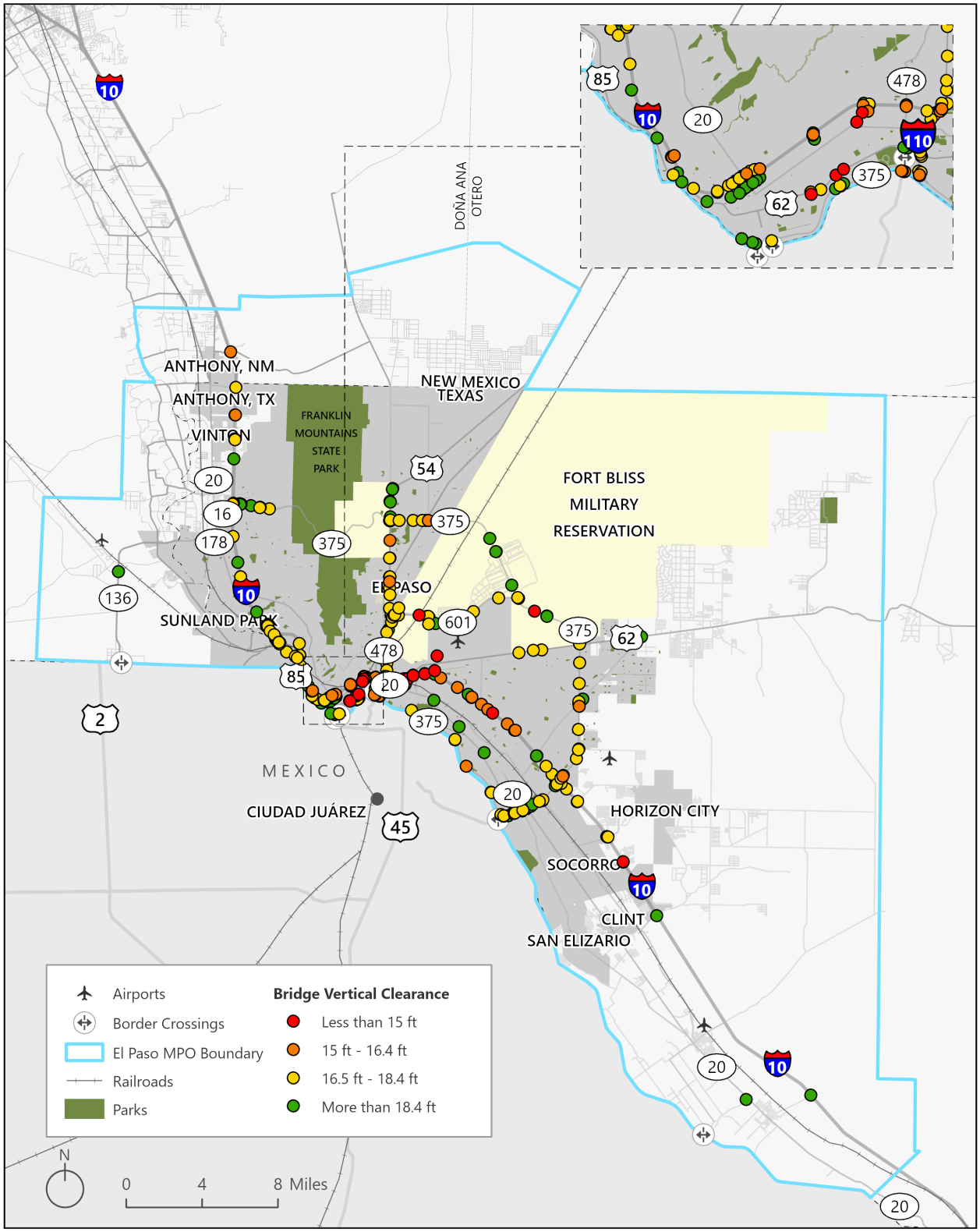


Figure 9: Bridge Vertical Clearance in the EPMPO



Source: FHWA National Bridge Inventory

FREIGHT PLANNING RECOMMENDATIONS

The El Paso MPO will consider the following guidance to effectively address the freight related needs described. Guidance follows strategies described in TxDOT's *Texas-Mexico Border Transportation Master Plan (BTMP)* and TxDOT's *Texas Delivers 2050.*

1 Engage in coordination, collaboration, and cooperation among binational, federal, state, regional, local and rail partners on policies, programs, and projects for the transportation systems supporting the border.

- Harmonize border processes on both sides of the border.
- Facilitate joint understanding and analysis of the border travel process to more effectively address border freight transportation issues.
- Advance shared understanding of corridor system capacity conditions and needs.
- Foster binational evaluations and planning processes for future/planned transportation facilities.
- Coordinate transportation infrastructure investment timelines on both sides of the border.
- Harmonize Texas-Mexico data collection and analysis among all border stakeholders to improve borderwide planning, investments, management, and operations.
- Address environmental impacts throughout the Texas-Mexico transportation system by harmonizing environmental, air quality, vehicle idling at the border, and hazardous material regulations on both sides of the border.
- Foster standardization of regulations and practices across the border between the U.S and Mexico.

2 Transportation System Recommendations

- Coordinate with TxDOT on a roll-out of Texas Delivers 2050 policies and initiatives.
- Alleviate roadway congestion along corridors that impede the efficient cross-border movement of people and goods.
- Enhance the mobility and reliability of cross-border trips by utilizing data and technologies to inform users.
- Address the potential impact of disruptive events by providing enhanced network redundancy on both sides of the border.
- Develop dedicated funding for border region multimodal corridors such as a Texas-Mexico trade lanes program intended to enhance transportation system connections.
- Facilitate modal connections and upgrade highway networks to meet the demands of increased movements to intermodal facilities between ships, rail and trucks for transporting goods.
- The BTMP identifies 238 projects on the Texas (U.S.) side of the border which include large highway projects.

3 Pavement and Design

- Strengthen pavement to accommodate wear and tear from heavy trucks.
- Continue to use the adopted Texas Multimodal Freight Network as the strategic framework for statewide transportation investment decisions.
- Incorporate safety and security factors into transportation infrastructure design and investment decisions.

4 Safety

- Improve signage indicating truck restrictions, weight limits, and speeds.

- Install speed bumps, rumble strips, and buffers.
- Install overweight vehicle warning systems.
- Address safety hot spots, or locations with high truck-related crashes) and identify potential crash remediation strategies.
- Facilitate safe movement of hazardous materials and oversize/overweight loads at border crossings and through urban population centers.

5 Traffic Operations

- Provide separate turning lanes at intersections and special signing along high-volume truck traffic routes.
- Install ITS systems.
- Provide wider shoulders along controlled access facilities.

6 Bridges

- Improve the freight network by increasing the bridge vertical clearance of bridges that are 15 feet or lower.
- Enhance system reliability, longevity, and safety by developing a bridge asset maintenance framework to manage, assess, repair, and maintain bridges.

TRANSIT NEEDS

The public transportation system within the MPO area serves a diverse region with significant transit-dependent populations. The area is served by three primary transit providers, each playing a crucial role in regional mobility. Sun Metro, the largest provider, served almost 5.2 million annual passengers in 2022 with a fleet of 252 revenue vehicles. El Paso County Transit provided service to 398,104 annual passengers with 121 revenue vehicles, while the South Central Regional Transit District (SCRTD) served 85,075 annual passengers with 14 revenue vehicles in the same year.

RIDERSHIP

The COVID-19 pandemic significantly impacted transit ridership across the region, though recovery patterns have varied among providers. Sun Metro experienced substantial decreases in ridership between 2019 and 2021, and while 2022 showed signs of recovery, ridership remains below pre-pandemic levels. Notably, vanpool services maintained consistent ridership throughout the pandemic period, demonstrating the resilience of this service model. SCRTD has shown robust recovery, with 2022 ridership exceeding pre-pandemic levels, indicating growing demand in its service area.

FUNDING

The funding structures vary significantly among the three providers, reflecting different operational models and service areas. Sun Metro relies heavily on federal funding, which comprises 62% of its budget, supplemented by local government funding (29%) and user fares (9%). El Paso County Transit maintains a more diversified funding structure, with federal funding and user fares each contributing approximately one-third of the budget, complemented by local and state government support. SCRTD operates primarily on federal (53%) and local government (48%) funding, with minimal fare revenue.

SERVICE PERFORMANCE

The service performance analysis of EPMPO's transit systems reveals significant trends across three key metrics: service effectiveness, efficiency, and cost-effectiveness. Sun Metro, the largest provider, shows varying performance across its services, with streetcar and fixed routes demonstrating higher service effectiveness (passengers per revenue mile/hour) than demand response

services. The COVID-19 pandemic notably impacted service effectiveness across all providers, with most services showing decline during 2020-2021 before beginning recovery in 2022. Service efficiency metrics, measured by operating expenses per revenue mile and hour, indicate increasing costs across most services, particularly evident in Sun Metro's streetcar operations and fixed routes. Cost-effectiveness data shows significant variations, with Sun Metro's fixed routes being most cost-effective at $8.86 per unlinked passenger trip in 2022, compared to higher costs for demand response ($38.57) and streetcar services ($33.57). El Paso County Transit's vanpool service demonstrates strong cost-effectiveness at $4.75 per trip, while SCRTD maintains moderate cost-effectiveness at $21.07 per trip. These metrics suggest opportunities for service optimization, particularly in areas where operating costs have increased without corresponding improvements in service effectiveness.

TRANSIT GAP

Based on a comprehensive analysis of vehicle access, elderly population distribution, and population density patterns in the El Paso MPO area, several critical locations emerge as priorities for transit service enhancement and expansion. These areas demonstrate overlapping needs based on multiple vulnerability factors, suggesting where transit investments might have the greatest impact. Figure 10 shows the availability of transit option for people who do not own personal vehicle. Figure 11 illustrates the transit availability across the region, highlighting the need for more service pertaining to population density. Figure 12 and Figure 13 indicate the transit availability for the low-income and senior population respectively. Downtown El Paso emerges as a primary area of concern, as some of the neighborhoods around the downtown area have the highest concentration of households without vehicle access (50-100%), and median household incomes less than $20,000. Most likely this is attributed to the presence of a greater student community as these neighborhoods are close to University of Texas at El Paso. While this area currently benefits from extensive Sun Metro route coverage, the intensity of need suggests that service frequency enhancements may be warranted to better serve this transit-dependent population.

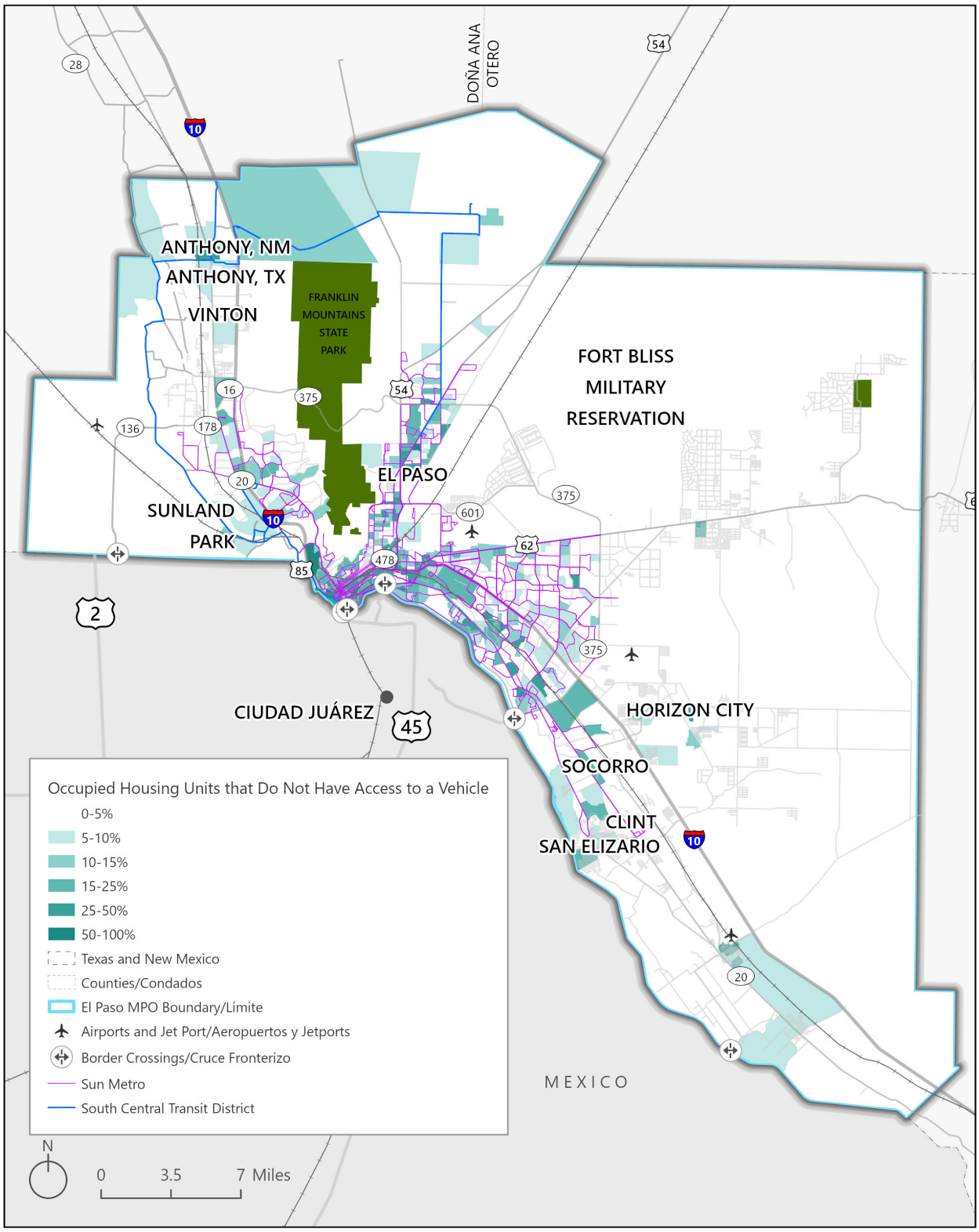
The Mission Valley corridor, including Socorro and San Elizario, presents a critical gap where moderate levels of households without vehicles (15-25%) coincide with a substantial elderly population (25-50%), low household incomes (less than $20,000 in many census tracts), and dispersed population density patterns. While current Sun Metro routes serve this corridor, the combination of these factors suggests a need for service enhancement and possible route optimization to better connect residents with key destinations.

In the northern portion of the metropolitan area, the Anthony region (both New Mexico and Texas sides) presents unique challenges. This area shows moderate levels of car-free households and notable elderly population concentrations, though with lower overall population density. The current service provided by the SCRTD may need enhancement to better serve these communities, particularly in creating stronger connections to the city center.

Horizon City represents an emerging area of transit need, characterized by moderate levels of households without vehicles and a growing elderly population with median household incomes ranging from $20,000 to $40,000. While current population density remains lower than El Paso City, the rapid development of this area suggests a need for proactive transit planning and service expansion to prevent future gaps in mobility access.

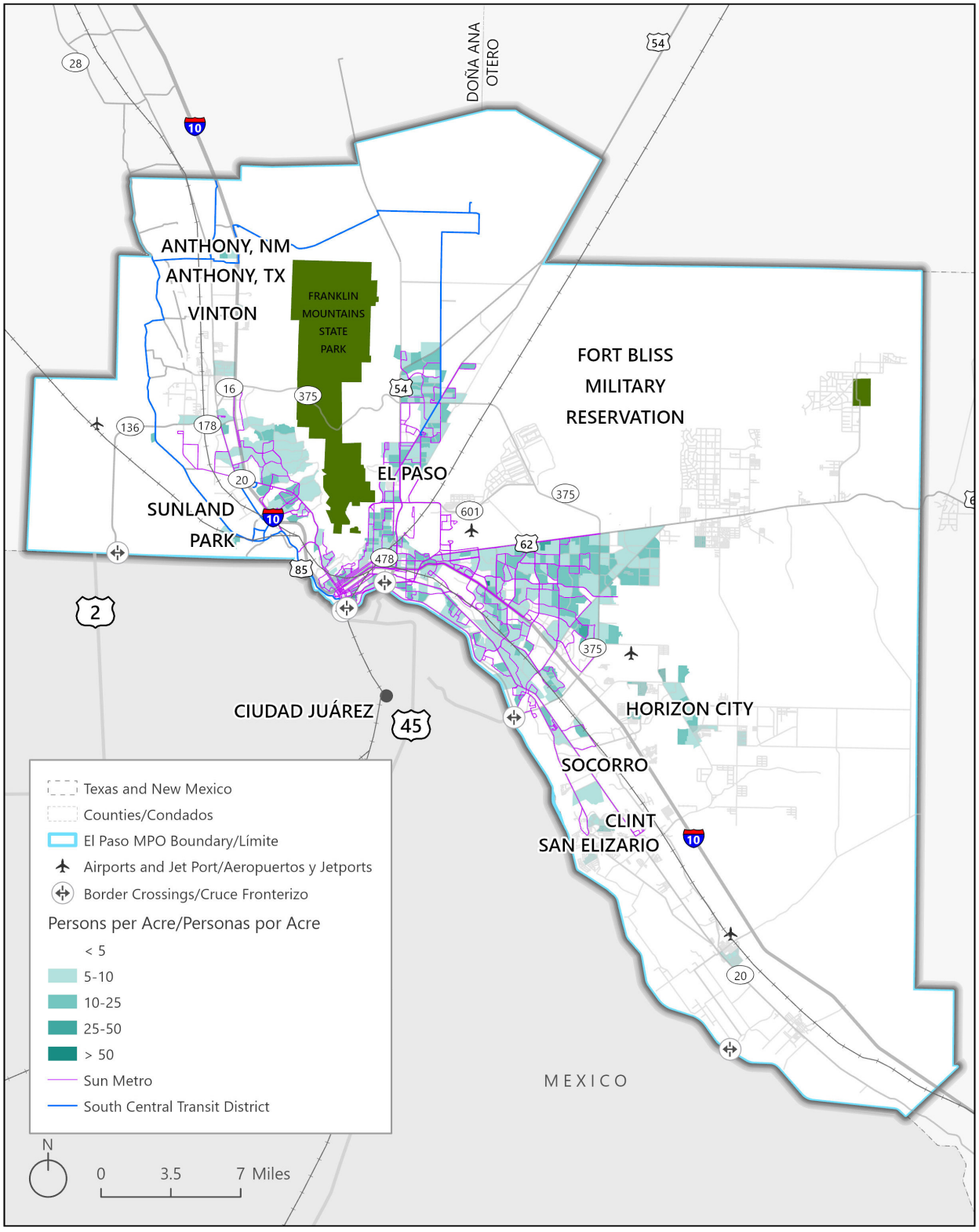
Of particular concern are the areas where low household income (less than $20,000) overlaps with high percentages of vehicle-free households, especially in central El Paso and along the Mission Valley corridor. While these areas have some transit coverage through Sun Metro routes, the intensity of need - as demonstrated by the combination of income constraints, vehicle access limitations, and demographic factors - suggests that current service levels may be insufficient to meet community needs. Additionally, as discussed in the Texas-Mexico Border Transportation Master Plan, demand on the Texas – Mexico multimodal transportation network has outpaced capacity. Residents have expressed concerns about the frequency of transit service, bus delays, and wait times. Projects and policy that fosters cross-border transit services and connectivity in the border region should be considered to improve EPMPO’s multimodal transportation network.

Figure 10: Transit Accessibility for People without Access to a Vehicle



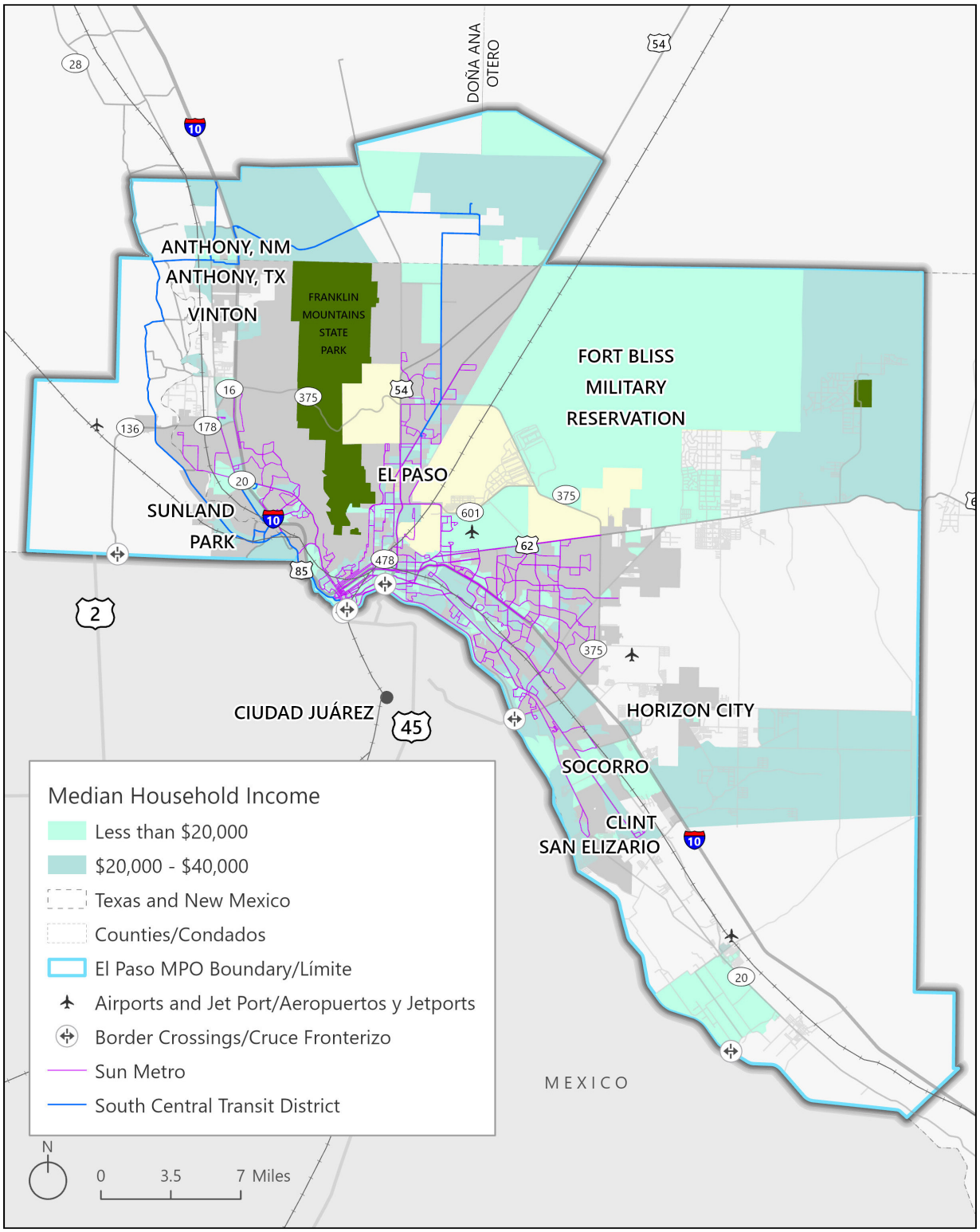
Source: U.S. Census Bureau. 2018-2022 American Community Survey 5-Year Estimates. Table B11001*; Sun Metro and South Central Transit District*

Figure 11: Transit Availability



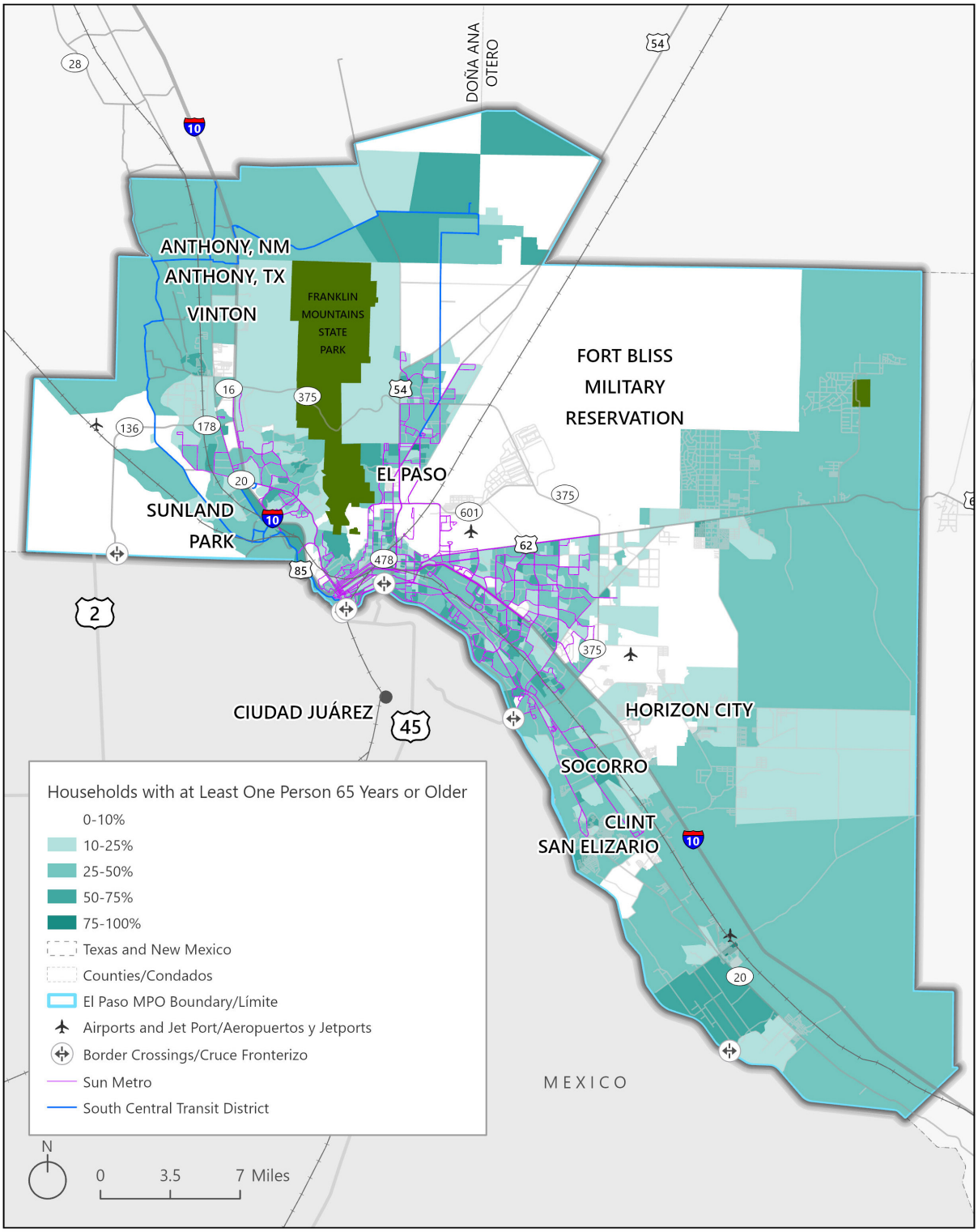
Source: U.S. Census Bureau. 2018-2022 American Community Survey 5-Year Estimates. Table B11001*; Sun Metro and South Central Transit District*

Figure 12: Transit Accessibility for Low Income Population



Source: U.S. Census Bureau. 2018-2022 American Community Survey 5-Year Estimates. Table B11001*; Sun Metro and South Central Transit District*

Figure 13: Transit Accessibility for Elderly Population



Source: U.S. Census Bureau. 2018-2022 American Community Survey 5-Year Estimates. Table B11001*; Sun Metro and South Central Transit District*

TRANSIT PLANNING RECOMMENDATIONS

Based on the needs analysis, listed below are key recommendations for improving transit system within the MPO region:

1 Service Frequency Enhancement in High-Need Areas

- Increase service frequency in central El Paso where multiple vulnerability factors converge (e.g., low income, high vehicle-free households, elderly population).
- Focus on peak hour service optimization in areas with median incomes below $20,000 and high elderly populations.
- Target routes connecting to major employment centers.

2 Regional Integration Strategy

- Develop coordinated scheduling between Sun Metro, El Paso County Transit, and SCRTD.
- Implement unified fare system across providers.
- Create seamless transfers at key connection points.

3 Cost Optimization Strategy

- Address increasing operational costs (e.g., Sun Metro's service cost is currently $8.51 per vehicle revenue mile for fixed routes. Refer to Table 4-22 of *El Paso MPO Existing Conditions Technical Memorandum.*
- Implement route optimization based on ridership patterns.
- Implement flexible transit services in lower-density, low-income areas.
- Develop demand-response services for elderly populations in areas with limited fixed-route service.
- Target reduction in cost per passenger trip from $8.86 to pre-pandemic level of $4.21 for Sun Metro fixed routes (Refer to Table 4-25 of Existing Conditions Report).

4 Suburban Service Expansion

- Extend service to growing areas like Horizon City and denser areas that are not currently served by transit, such as the east side of El Paso to strengthen the first-last mile connections.
- Focus on areas with low-income and high elderly populations currently outside service areas.
- Create better east-west connections to improve access to services

5 Cross-Border Transit Enhancement

- Strengthen connections to border crossing points.
- Coordinate schedules with Mexican transit services.
- Implement bilingual wayfinding and passenger information.
- Improve service reliability for transborder commuters.

The analysis indicates that while existing transit services provide essential mobility options, there are significant opportunities to enhance and expand service to better meet community needs. Strategic investment in these identified priority areas would improve mobility options for those most dependent on public transportation.

ACTIVE TRANSPORTATION NEEDS

The MPO region features several types of bicycle infrastructure, including standard bike lanes, buffered lanes, protected cycle tracks, shared lane markings, multi-use paths, and two-way cycle tracks. These facilities are primarily clustered in three main areas: the region just west of Franklin Mountain State Park, the area surrounding the University of Texas at El Paso, and the district southeast of El Paso International Airport.

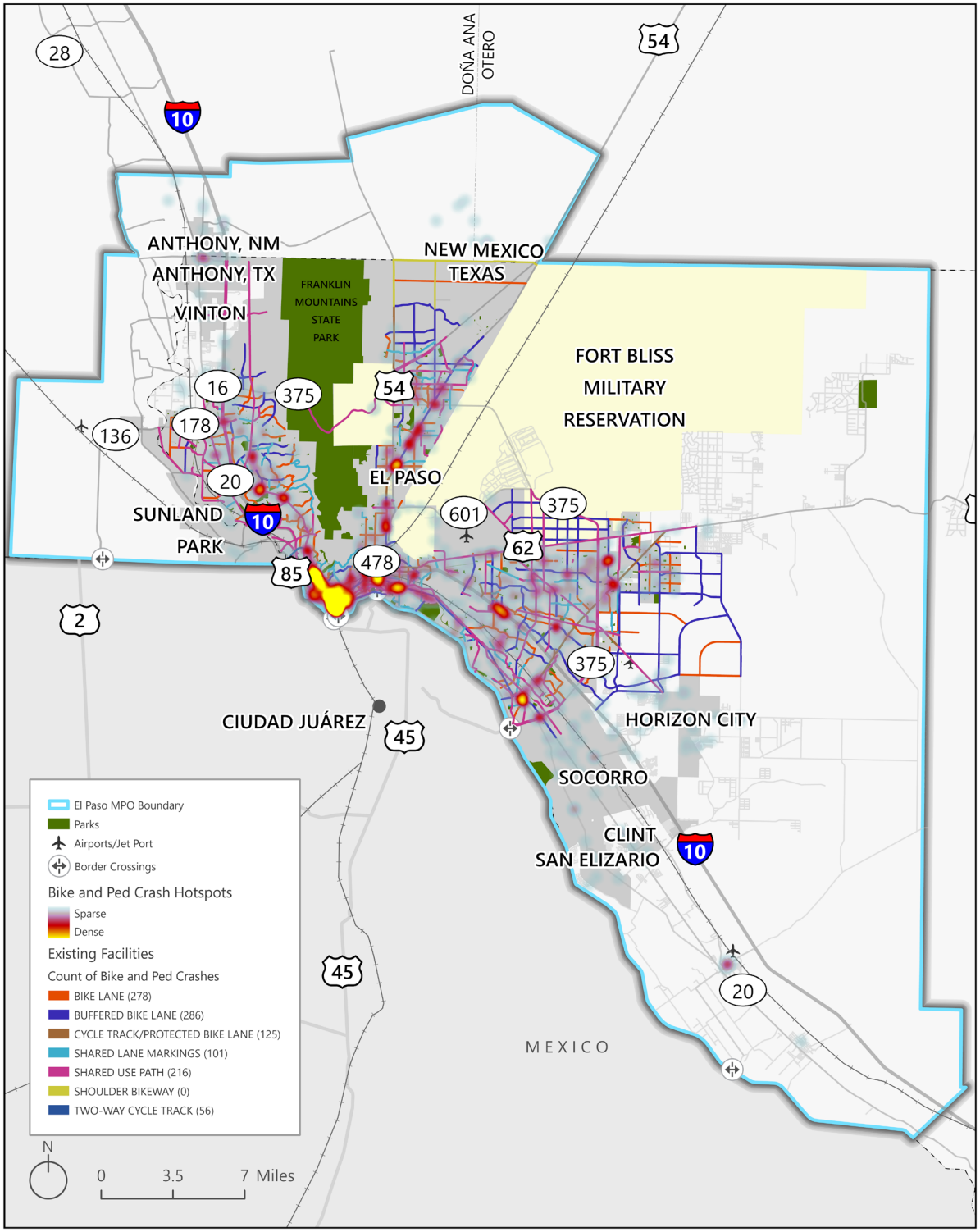
Loop 375 serves as a key corridor, featuring a continuous shared bike lane that provides extensive access to both the broader EPMPO planning area and the trail network within Franklin Mountain State Park. Additional connectivity is provided by bicycle facilities along major routes like FM 20, which serves the northwest section, and FM 76, which connects to the southeast portion of the EPMPO region.

INFRASTRUCTURAL GAP

The active transportation network in the region serves both commuting and recreational purposes, with census data showing that 2.28% of El Paso County residents (about 8,000 people) use taxicabs, motorcycles, or bicycles for commuting, while 1% use public transit and 1.51% walk. These usage patterns are similar across El Paso, Doña Anna, and Otero counties, where private vehicles are used for roughly 95% of commutes. The existing active transportation infrastructure directly connects to 28% of transit stops and 37% of parks and recreational facilities, while 40% of transit stops and 60% of parks and recreational facilities lie within 500 feet of active transportation routes. These findings indicate that while some connectivity exists between the active transportation network and community facilities, there remains considerable room for expanding and improving these connections, particularly regarding transit stop accessibility.

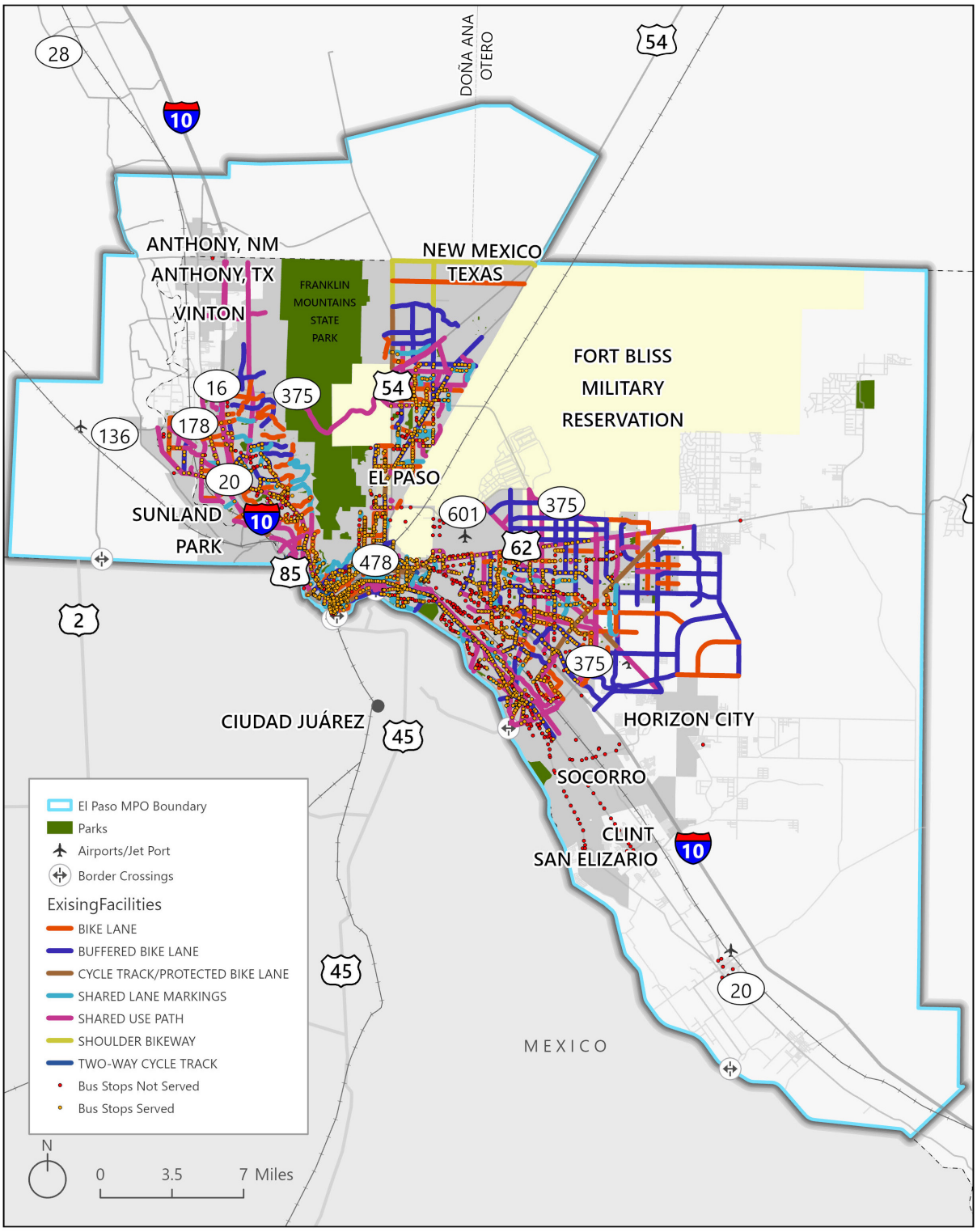
Figure 14 shows the bike and/or pedestrian crash locations around existing biking facilities and Figure 15 shows the transit accessibility by active transportation. While there is a concentrated network of various bicycle facilities (bike lanes, buffered bike lanes, shared paths, etc.) in the metropolitan area, the connectivity becomes sparse moving outward, particularly in the far east near Horizon City and in the southern areas near Socorro and San Elizario, mostly because these facilities are owned by City of El Paso. The crash location map reveals that bicycle and pedestrian crashes are heavily concentrated in areas with existing bicycle infrastructure, especially on facilities that are bike lane, buffered bike lane and shared use path, suggesting high utilization of these routes but also potential safety concerns. Figure 6 indicates that many bus stops, particularly in outlying areas, lack bicycle facility connections, creating first mile-last mile challenges for multi-modal transportation users.

Figure 14: Bike and/ or Pedestrian Crash Locations Around Existing Facilities



Source: Texas Department of Transportation Crash Record Inventory System and the New Mexico Department of Transportation Statewide Traffic Records System; City of El Paso Open Data Portal

Figure 15: Transit Accessibility by Active Transportation



Source: Texas Department of Transportation Crash Record Inventory System and the New Mexico Department of Transportation Statewide Traffic Records System; City of El Paso Open Data Portal

EL PASO BIKE PLAN 2016

The El Paso Bike Plan of 2016 establishes a vision and goals for cycling within El Paso, describes existing conditions, conducts a needs analysis, and provides recommendations and strategies for implementation. In describing the existing conditions, the El Paso Bike Plan stated that there were 140 total miles of existing cycling facilities within El Paso and that the system had three primary deficiencies. These deficiencies include a lack of overall system connectivity, lack of low-stress facilities for less experienced bicyclists, and a lack of pavement markings leading up to and throughout intersections along existing bikeways. The needs analysis conducted within the El Paso Bike Plan found that cycling demand was highest in areas of greater population density, near schools and the University of Texas at El Paso, and areas closer to transit access.

The recommendations from the Bike Plan aim to make El Paso one of the most bicycle-friendly cities in the country by taking a comprehensive approach that combines infrastructure improvements with supporting programs and policies. The plan includes network and facility recommendations, program and policy recommendations and implementation strategies, including:

1 Network and Facility Recommendations

- Build a low-stress, interconnected system of 938 miles of bikeways linking El Pasoans to key destinations like schools, parks, employment centers, transit, and cultural amenities.
- Expand existing facilities like shared-use paths, buffered bike lanes, bike lanes, shoulder bikeways, shared lane markings, two-way cycle tracks, protected bike lanes, bicycle boulevards, signed shared roadways, etc.

2 Program Recommendations

- Education and awareness programs to promote safe bicycling.
- Enforcement initiatives to improve safety.
- Encouragement programs like Open Streets events and Bike Month.
- Evaluation of program effectiveness through data collection and monitoring.
- Expansion of bike share system.
- Enhanced bicycle wayfinding signage.
- Increased end-of-trip facilities like bike parking.

3 Policy Recommendations

- Focus on implementing a "6 Es" approach: Engineering, Education, Encouragement, Enforcement, Evaluation, and Equity.
- Hire a dedicated Bicycle/Pedestrian Coordinator.
- Update design standards and street cross sections.
- Develop interdepartmental coordination strategies.
- Establish maintenance standards and procedures.
- Create funding mechanisms to support infrastructure and programs.

ACTIVE TRANSPORTATION PLANNING RECOMMENDATIONS

Based on the needs analysis, some key recommendations for improving active transportation within the MPO region include:

1. Regional Connectivity Expansion
    - Develop continuous east-west and north-south bicycle corridors to connect outlying communities like Anthony, Socorro, and Horizon City to El Paso City.
    - Focus on creating safe routes parallel to and under or over major highways (I-10, US-54) that currently act as barriers.
2. Transit-Bicycle Integration
    - Implement complete bicycle facilities (lanes, racks, storage) at all major transit stops and stations.
    - Create protected bicycle lanes along key bus routes to support first/last mile connections.
    - Develop secure bike parking at major transfer centers and park-and-ride facilities.
3. Safety Improvements at High-Crash Locations
    - Install protected intersections and bicycle signals at locations with high crash concentrations.
    - Upgrade existing bike lanes to buffered or protected facilities in areas with documented safety issues.
    - Implement traffic calming measures along corridors with frequent bicycle-vehicle conflicts.
4. Regional Trail Network
    - Build trail connections between parks and major destinations throughout the region.

These recommendations can set the stage for an improved multimodal transportation future in the MPO area. EPMPO may leverage the El Paso Bike Plan 2016 by the City of El Paso to initiate a coordinated comprehensive effort to make the whole MPO region connected by the active transportation network.

ENVIRONMENTAL CONSIDERATIONS

Projects considered in the MTP may have impacts to the natural and human environment that can be positive (e.g., reducing greenhouse gas emissions through improved active transportation systems) or negative (e.g, converting existing land uses to transportation facilities). As the population continues to grow, the region will face the challenge to strike an acceptable balance between urban development, mobility, and economic development with the desire for a high quality of life that includes clean air and water, environmental preservation, and recreation and tourism opportunities. To reduce the impacts of transportation improvements, potential environmental mitigation activities must be developed in consultation with federal, state, tribal, wildlife, land management, and regulatory (resource) agencies. The El Paso MPO is committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environment in order to preserve the natural environment and the region's quality of life. Accordingly, the MPO recognizes that not every project will require the same type or level of mitigation. Some projects, such as new roadways and new interchanges, involve major construction with considerable disturbance to the environment. Others, like intersection improvements, street lighting, and resurfacing projects, involve minor construction and minimal disturbance to the environment. The mitigation efforts used for a project should depend upon how severe the impact on environmentally sensitive areas is expected. The National Environmental Policy Act (NEPA) suggests mitigation in the following five steps:

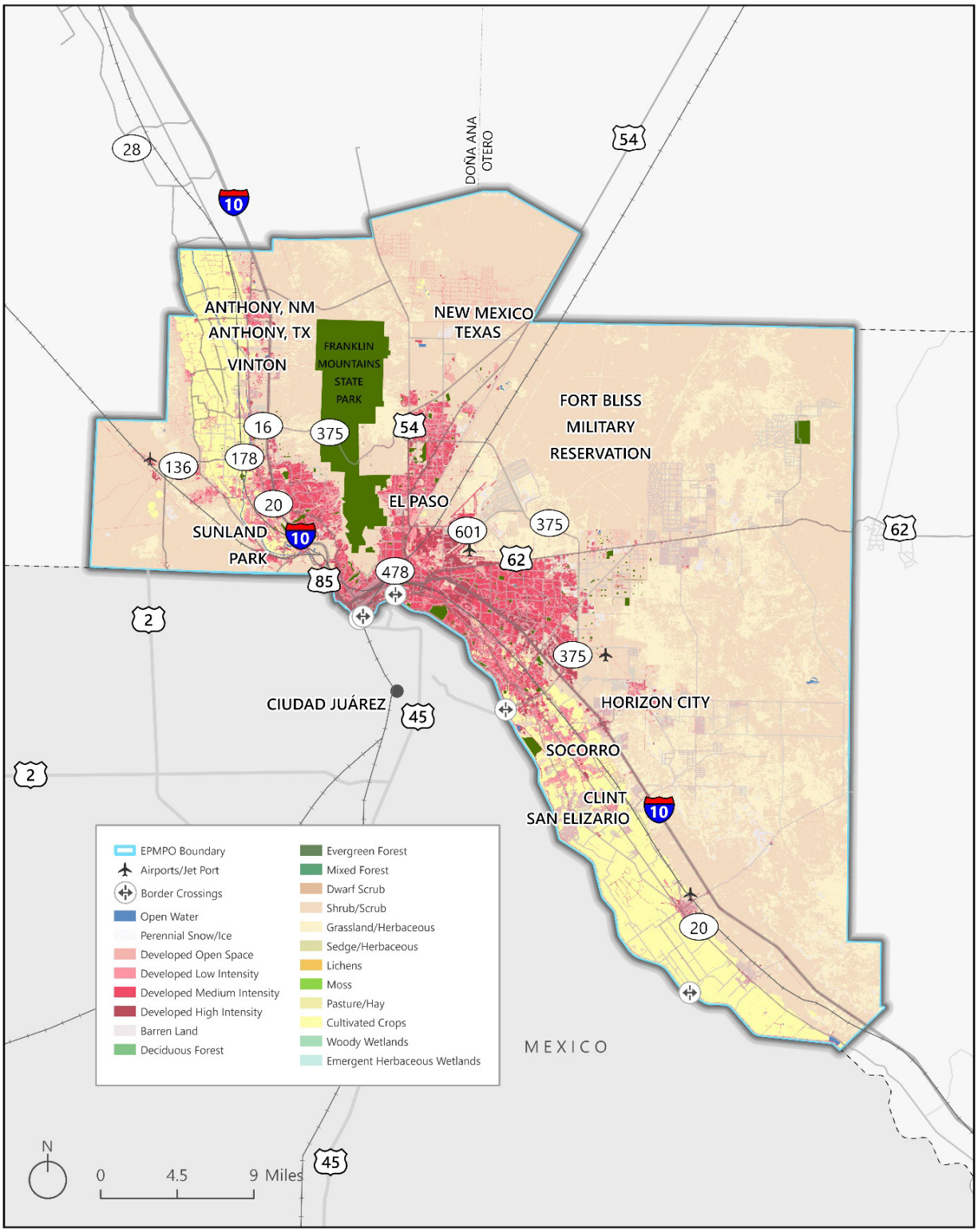
1. Avoiding the impact altogether
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing or providing substitute resources.

The following analysis documents the existing land use patterns, environmental hazards, and environmental and cultural resources in the El Paso MPO region, assesses potential impacts on these assets and resources from development patterns and improvement projects identified in this MTP, and examines possible strategies to prevent or mitigate these impacts.

EXISTING LAND COVER

Land use and development is a major factor that could impact the environment. As the region grows, more land development may be required to support its growth. Furthermore, land use also directly influences the way the transportation system is developed. The location, density, and design of the activities carried out by residents of the region impact the amount of travel and travel modes on highways, roads, and other similar pathways in a transportation system. Therefore, it is important to consider both land use and transportation in conjunction to ensure the overall environmental health of a region. As shown in Figure 16, the El Paso MPO is comprised of a large developed inner core encompassing the City of El Paso. The City of El Paso houses the majority of residents in the region. Land use in the central area of the region is predominantly residential with some commercial use. Commercial land use in the city center is mostly service oriented businesses and small retail shops. The surrounding areas include long stretches of farmland, shrubs, and grassland.

Figure 16: Existing Land Cover



Source: U.S. Geological Survey

NATURAL, CULTURAL, AND HISTORIC ASSETS, ENVIRONMENTAL HAZARDS, AND TRIBAL POPULATIONS

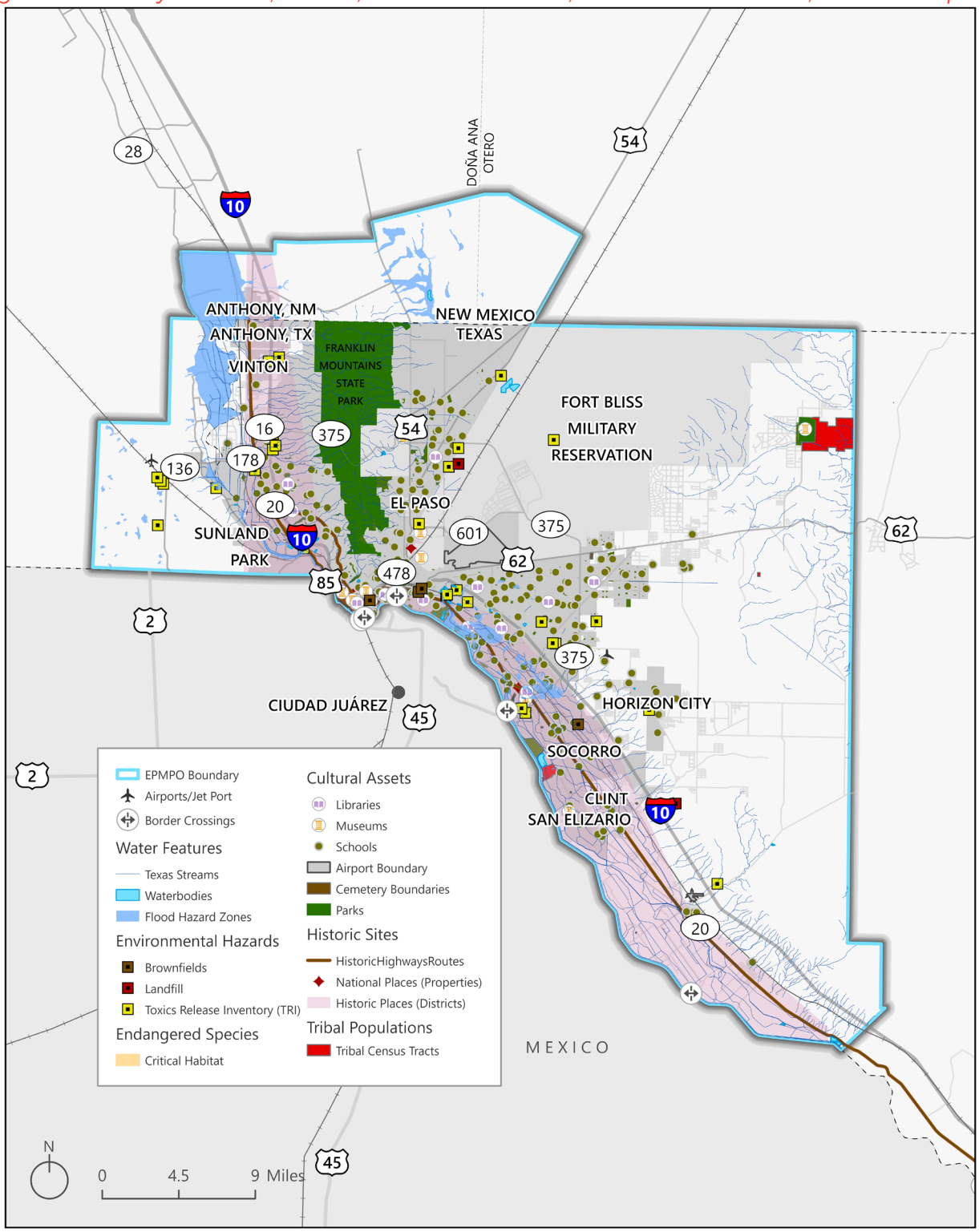
Natural assets in the region include rivers, lakes, reservoirs, ponds, parks, and critical habitat areas. These environmental features are critical to the regional ecosystem and contribute to the attractiveness of the region. However, transportation projects may contribute to their degradation. Hence, developing in harmony with natural and geographical features, instead of against them, is a smart investment strategy for a sustainable future. In addition to the environmental features discussed above, potential environmental hazards were identified in the region. These hazards included municipal solid waste sites, Toxics Release Inventory (TRI) sites, and brownfield sites.

Cultural and community resources are significant and meaningful assets that serve the needs of a community and enrich its identity. For the purposes of this analysis, cultural and community resources comprise schools, libraries, parks, airports, county courthouses, museums, and cemeteries are among others that are found within the region. These assets should be preserved and protected, as they are popular recreation and tourism destinations for residents and visitors of all ages, as well as important community landmarks and critical service facilities. Depending on the type of facility, careful consideration and planning for transportation projects and investments should be undertaken to avoid negative impacts to the community.

Historic sites include those deemed historically significant at either the local, state, or national level. Under Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended in 1976, 1980, and 1992) and Section 4(f) of the Department of Transportation Act of 1966, the Federal Highway Administration (FHWA) is required to identify, evaluate, and protect properties of historical significance. The National Register of Historic Places (NRHP), as administered by the National Park Service, is the official list of the nation's historic landmarks and sites considered historically important and worthy of preservation. For the purposes of this analysis, historical sites include historic properties, districts, and highway routes. Planning for transportation projects and investments should consider and avoid impacts to these sites. Tribal census tracts are considered and include communities such as Ysleta del Sur Pueblo, also known as Tigua Pueblo.

Figure 17 provides an inventory of natural, cultural, tribal populations, and historical assets as well as environmental hazards in the El Paso MPO region based on available GIS data. This inventory does not identify the various levels of potential impacts and does not waive the responsibility of a project sponsor to complete a more-in depth environmental assessment.

Figure 17: Inventory of Natural, Cultural, and Historical Assets, Environmental Hazards, and Tribal Populations



Source: Texas Commission on Environmental Quality, U.S. Fish & Wildlife, Texas Historical Commission, Texas State Library and Archives Commission, Texas Education Agency, U.S. Census Bureau

Effective mitigation starts at the beginning of the environmental process, not at the end. Mitigation must be included as an integral part of the alternative development and analysis process. Table 8 below details possible mitigation measures that could be considered when dealing with environmental impacts. Many of the measures are considered by the El Paso MPO and project partners during the project development phase. As projects are selected and programmed, additional project level evaluations of impacts are required. Impacts at the project level should be minimized through an alternative analysis process.

Table 8: Environmental Impact Mitigation Measures

Resource	Mitigation Measures
Agricultural Areas	Mitigation sequencing requirements involving avoidance, minimization, compensation (could include preservation, creation, restoration, in-lieu fees); design exceptions and variances; environmental compliance monitoring.
Ambient Air Quality	Transportation control measures, transportation emission reduction measures, adoption of local air quality mitigation fee program, development of energy efficient incentive programs; adoption of air quality enhancing design guidelines.
Cultural Resources	Avoidance, minimization; landscaping for historic properties; preservation in place of excavation for archeological sites; Memoranda of Agreement with the Texas Historical Commission and the TxDOT Environmental Division; design exceptions and variances; environmental compliance monitoring.
Endangered and Threatened Species	Avoidance, minimization; time of year restrictions; construction sequencing; design exceptions and variances; species research; species fact sheets; Memoranda of Agreement for species management; environmental compliance monitoring.
Forested and other Natural Areas	Avoidance, minimization; replacement property for open space easements to be of equal fair market value and of equivalent usefulness; design exceptions and variances; environmental compliance monitoring.
Neighborhoods, communities, homes, and businesses	Impact avoidance or minimization; context sensitive solutions for communities (appropriate functional and/or aesthetic design features).
Parks and recreation areas	Avoidance, minimization, mitigation; design exceptions and variances; environmental compliance monitoring.
Wetlands or water resources	Avoidance, minimization; design exceptions and variances; environmental compliance monitoring.

Source: Federal Regulation 40 CFR 1508.20

STORMWATER MITIGATION

Stormwater is defined as rainfall runoff that flows across the ground and impervious surfaces such as roads, parking lots, and buildings. Stormwater includes overland water flow and the water flow in ditches. When measures are not taken to reduce or mitigate the stormwater from surface transportation, the transportation system is at risk of disruption and damage to assets. Urbanization, including transportation activities, increases stormwater volume and velocity due to an increasing amount of impervious surfaces. Rapid runoff from impervious surfaces increases the risk of flooding. Stormwater runoff can increase flooding, soil erosion, sedimentation, stream bank erosion and channel enlargement, and pollution of waterways.

For the State of Texas, the TxDOT Hydraulic Design Manual: Storm Water Management provides guidelines to reduce or mitigate the impacts of storm water from surface transportation. This manual provides recommended stormwater management measures that are both structure and nonstructural including:

- Erosion control to minimize erosion and sediment transport,
- Stormwater detention and retention systems to reduce peak runoff rates and improve water quality, Sedimentation and filtration systems to remove debris, suspended solids, and insoluble pollutants, and
- Vegetation buffers to reduce transport of pollutants.

The manual recommends several best management practices to mitigate stormwater quantity and quality including detention and retention ponds, rock filter dams, silt fences, and vegetation to filter and slow the flow of water. The NACTO Urban Street Stormwater Guide provides a supplementary manual that augments the guidelines of the TxDOT manual. As the El Paso MPO area continues to urbanize and experience development pressures, the stormwater impacts of surface transportation become increasingly important to reduce and mitigate through policies and design standards.

AIR QUALITY

Air quality is an important factor in long-range transportation planning. The National Ambient Air Quality Standards (NAAQS) are federal standards that set allowable concentrations and exposure limits for certain pollutants. Primary standards are intended to protect public health, while secondary standards protect public welfare. Air quality standards have been established for the following six pollutants: ozone, carbon monoxide, particulate matter, nitrogen dioxide, lead, and sulfur dioxide. If monitored levels of any of these pollutants violate the NAAQS, then the Environmental Protection Agency (EPA), in cooperation with the State of Texas, will designate the contributing area as “nonattainment”.

As of November 20, 2024, the El Paso MPO area is designated as a moderate nonattainment area for Particulate Matter (PM10), meaning that the area does not meet applicable air quality standards. A portion of City of El Paso is designated as a maintenance area for Carbon Monoxide, meaning that the area has successfully achieved and is maintaining air quality standards. The El Paso MPO is required to establish targets and report progress for the performance measures to ensure that air quality in these areas is not negatively impacted by federally funded transportation projects. . The EPMPO will work in consultation with Texas Department of Transportation (TxDOT), Texas Commission on Environmental Quality (TCEQ), the United States Environmental Protection Agency (EPA), Federal Transit Administration (FTA), Federal Highway Administration (FHWA), Sun Metro Mass Transit Department, South Central Regional Transit District (SCRTD), and local air quality offices. The El Paso MPO recognizes the importance of air quality standards and is cognizant of the importance of meeting the region’s performance targets.

NEXT STEPS

The insights from this technical memorandum will be pivotal in shaping discussions with transportation stakeholders to identify projects and policy recommendations that meet regional needs. By analyzing roadway, freight, transit, active transportation and environmental considerations, this needs analysis offers a robust data foundation for the MTP. It identifies critical issues such as road congestion for personal vehicles and freight movement, transit gaps, bicycle infrastructure gaps and potential environmental impacts. The recommendations aim to tackle these challenges to achieve a more sustainable, safe, and efficient transportation system. Moving forward, this analysis will serve as a critical informational resource for the EPMPO's MTP, guiding strategic decisions to enhance the future transportation infrastructure as well as developing project and policy recommendations for the El Paso region.