CMP Segment Performance Analysis

Sept. 2021

Table of Contents

Table of Figures

I. Section 1 – Introduction

I.1. Overview

The purpose of this document is to present an analysis of the previously identified congested segments, as part of the rigorous ongoing data collection and analysis required to support the CMP. This analysis is based on the various performance metrics required by the Federal Highway Administration (FHWA) under the national goals for the El Paso Metropolitan Planning Organization (EPMPO) Area. The national performance goals include safety, congestion reduction, and environmental sustainability. The main objectives of said goals are to reduce traffic fatalities and serious injuries on public roads, achieve a significant reduction in congestion along the National Highway System, and enhance the transportation systems while protecting the natural environment.

The CMP analyses the regional transportation network and has identified various congested segments which are discussed in more detail in the following sections along with the appropriate performance metrics associated with the national goals. The performance metrics analyzed for this document are:

Travel Time Index (TTI). TTI is the ratio of the travel time during peak traffic conditions to the time required to make the same trip at free-flow speeds. What this means is that this metric is a comparison between travel time during congested conditions and non-congested conditions. For this metric the values usually range between 1 and 2, meaning that if the TTI is 1.3, one can expect 30% longer travel times during peak periods.

Average Annual Passenger Hours of Delay. This metric identifies the average extra travel times that are a result of congestion, having a specific focus for passenger vehicles only. Similarly, Average Annual Truck Person Hours of Delay also measures the average extra travel times as a result of congestion with a focus on trucks. To calculate these two metrics, a reference travel time is obtained using the free-flow speeds (e.g., speed limits) for the segment and then is compared to peak period speeds to obtain the difference using the average daily traffic.

CO_2 Released. CO_2 Released measures the extra CO_2 produced during congestion. In order to obtain this metric, vehicle emission rates and vehicle speeds to generate CO_2 are imputed into a model to compare with CO_2 during free-flow speeds to calculate the extra CO_2 released as a result from congestion.

I.2. Congested Segments

El Paso MPO has identified several arterial and highway congested segments that are of particular interest for the analysis of non-capacity strategies which will aid in reducing and management of congestion based on metrics identified in the CMP. The criteria used to identify these corridors within the CMP network involved two measures from the Travel Demand Model: Volume over Capacity ratio (v/c) and Traffic Flow values. The identified congested segments are shown in Figure 1 and 2 and are grouped by pla area for visualization as presented in the following sections.

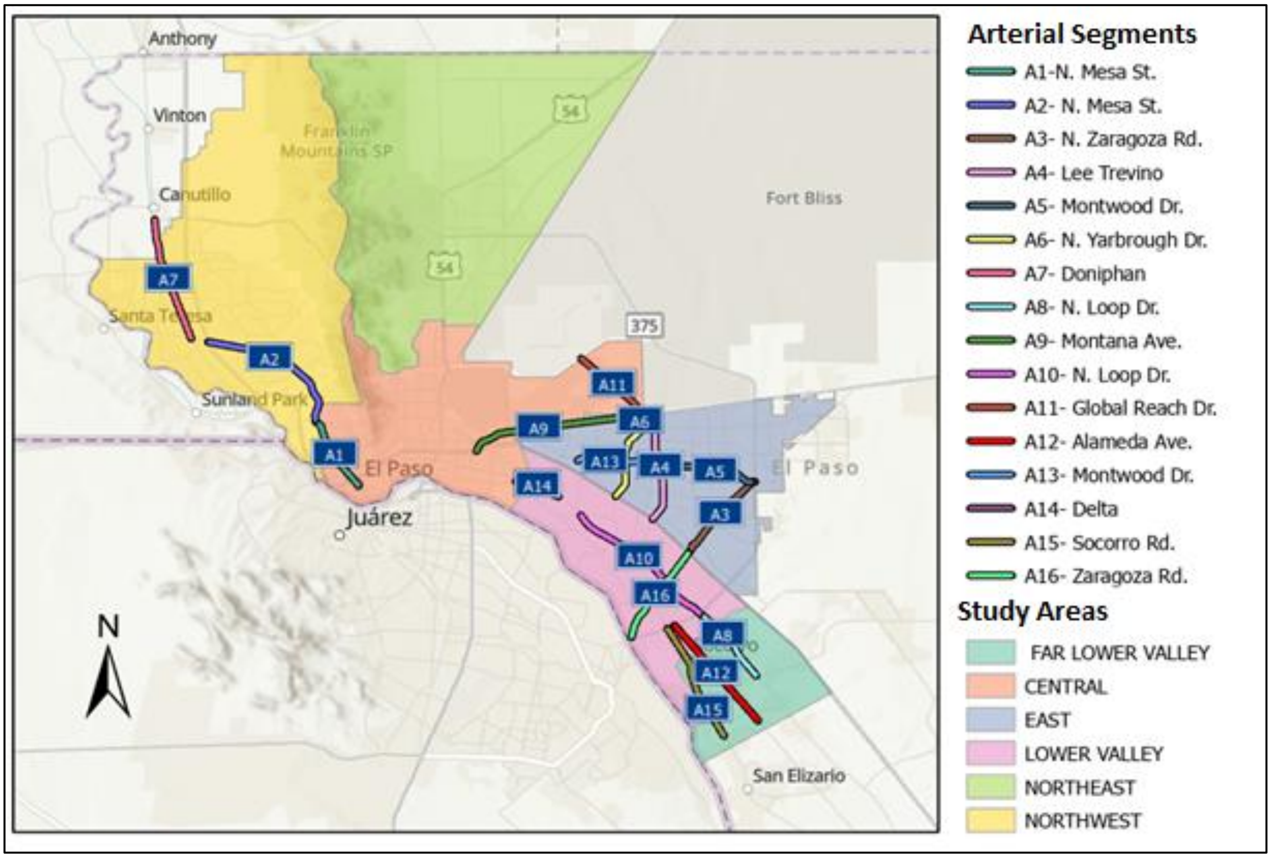


Figure 1-Arterial Congested Segments

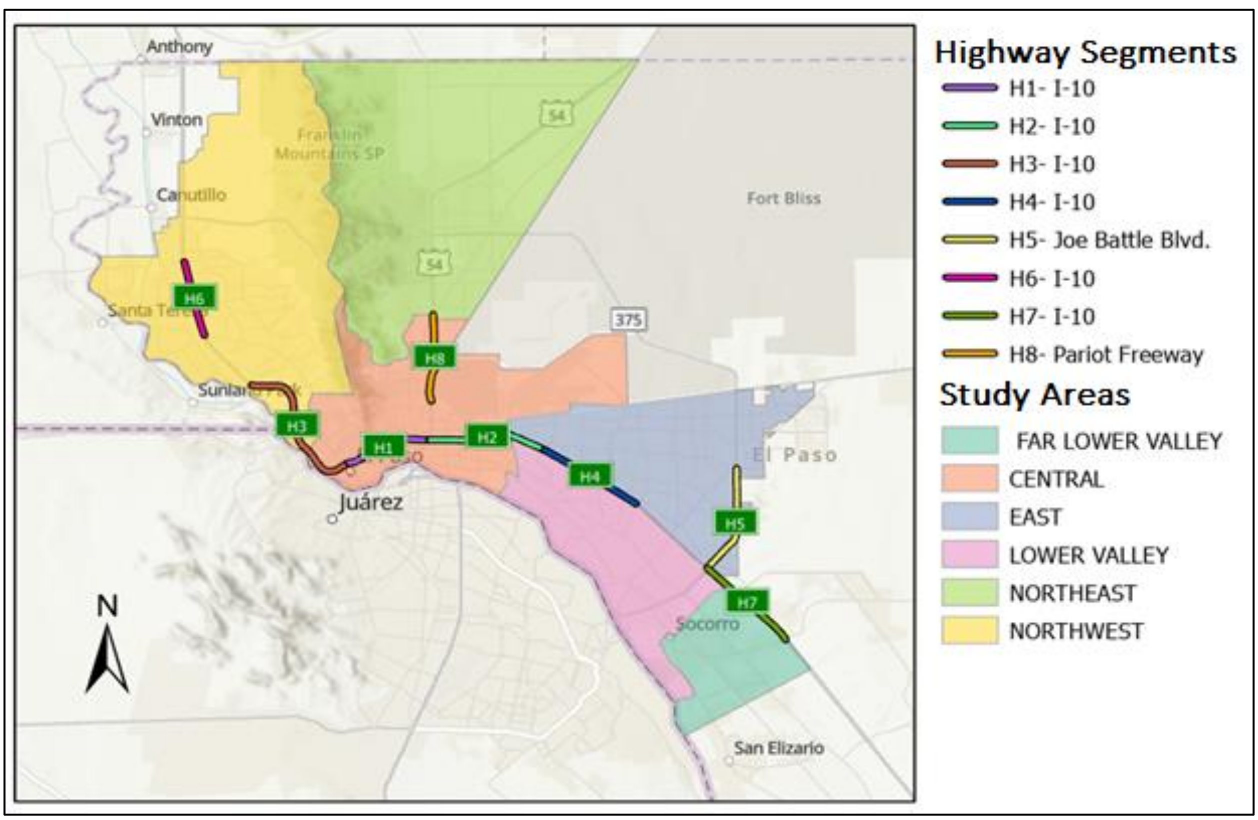


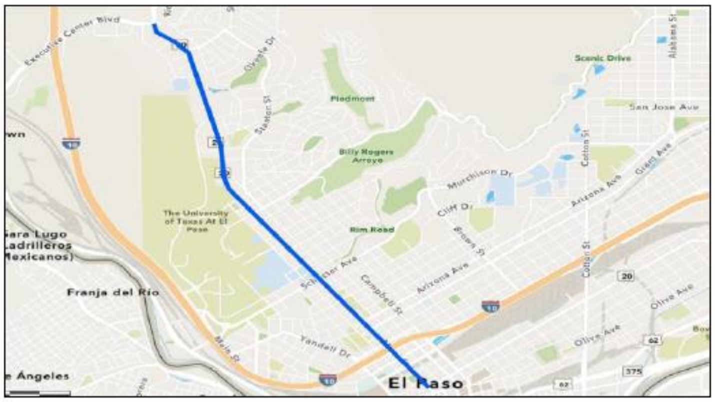
Figure 2- Highway Congested Segments

II. Section 2– Segment Profiles

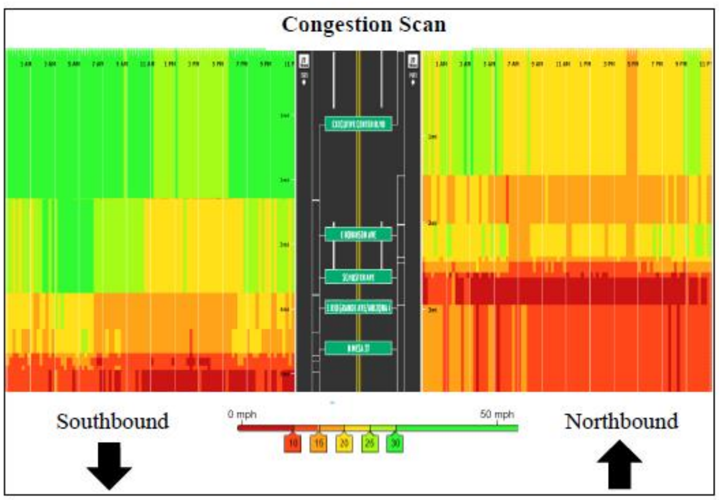
To summarize corridor performance data, a detailed profile for each segment has been developed. In addition to a map for location purposes, each profile consists of a description of the congested corridor, which include basic characteristics such as length of the corridor, access control, number of lanes, and bus routed that provide service through the corridor. In addition to this information, the profile includes a summary of daily volumes, for both passenger cars and trucks, for base year 2019 and the estimated daily volumes in year 2045. To provide an analysis of the corridor within this segment profiles, the congested speeds, person hours of delay, travel time index, and congested costs are also displayed within the summary table. For visualization of the congested speeds in relation to the posted speed limits of the corridor, a congestion scan has been developed and added for each segment to help understand the severity of congestion within each corridor in relation to the free-flow speeds. Lastly, a description is also incorporated within the segment profile that details the type of zoning area that surrounds the corridor for identification of the primary use of the corridor, such as residential or commercial use.

In Figure 3 shown below, an example of an arterial segment profile is presented with the information previously described. In this case, the example contains an identification of the corridor by ID as well as the street name for the corridor and the extent of it. In the congestion scan we can see a visual representation of the congestion conditions within this congested segment. Green represents almost free-flow conditions for traffic levels in which congestion is not a big issue. However, when the colors turn yellow or red, this represents a slowing down of speeds and therefore an increase in traffic. The congestion scan also provides an analysis of the different hours of the day in which traffic levels increase. Then using this information, we can make a further analysis to improve the congestion levels in different sectors of the corridor and adjust the corridor needs to accommodate the peak traffic volumes. A similar profile has been developed for all the congested segments and can be found on the EPMPO website under the CMP section (https://www.elpasompo.org/departments/CMP).

Segment A1-N. Mesa St. / SH 20 (Executive Center Blvd. to Texas Ave.)



Segment Profile A1		
Length	2.9 miles	
Functional Class	Prinipal Arterial	
Access Control	Partial	
Lanes	2-3	
Intelligent Transportation Systems	Designated Corridor? Yes	
	ITS Deployment: Cameras	
Served by Transit?	Yes- Route 10 (Partial), Route 14, Route 15, Route 36 (Partial)	
Part of National Freight Network?	Yes	
Intermodal Connector/Facility	No	
Segment Summary Data		
Daily Volume: 2019/2045 (TDM)	41,040	37,423
Truck Volume: 2019/2045 (TDM)	1,313	2,772
Posted Speed	40 mph-45 mph	
Congested Speed	22.7 mph	
Person Hours of Delay: 2018/2019	631,394	482,713
Travel Time Index: 2018/2019	1.28	1.21
Congested Cost	$10,011,033	



Other Corridor Characteristics

- This arterial corridor is currently under SH-20 Corridor Study for improvement strategies which include the upgrade to a Smart Corridor with the implementation of ITS technologies such as dynamic message signs (DMS) and speed feedback signs.
- The corridor is mostly surrounded by a commercial and low to medium density residential areas (City of El Paso Planning Department)

Latest Update: 2020

Figure 3-Segment Profile Example

III. Section 3 – Study Area Analysis

The congested segments were divided into different study areas for their analysis, which include Northwest, Northeast & Central, East, Lower Valley, and Far Lower Valley. To provide explanation for variations in the different metrics, construction projects that aligned with the analysis period were discussed to account for this increase in congestion levels. By dividing them into different study areas, the corridors were able to be identified in a much clearer way which allowed for the identification of different congestion patterns that could have impacted other congested corridors in the area. To obtain the information for all the metrics used to analyze the congested segments, Texas A&M Transportation Institute's COMPAT Tool was utilized. Since this tool was utilized as the main sources of information, changes made with the COMPAT Tool affected the outcome of this analysis. One important instance in which this occurred and that should be noted is in congested segments marked with an asterisk (*). These segments changed in length from 2017 to 2018, therefore an accurate analysis could not be performed, and only the information for 2018 and 2019 was used.

III.1. Northwest

The Northwest study area of El Paso includes two arterial corridors and two highway corridors identified as congested as shown in Table 1. The arterial corridors are N. Mesa St. (**A2**) from I-10 to Executive Center Blvd. and Doniphan (**A7**) from Talbot Ave. to I-10. For the highway corridor they include I-10 (**H3**) from W. Paisano Dr. to N. Mesa St. in downtown and I-10 (**H6**) from Mesa Ave. to Redd Rd. The analysis parameter and results for the Far Lower Valley region are shown in Figures. 4, 5, 6, and 7 and are described below.

Segment ID	Road Name	From	To
A2	N Mesa St / SH20	IH 10 / US 180 / US 85	Executive Center Blvd
A7	Doniphan / SH 20	Talbot Ave / SL 375	Canam Hwy / IH 10/ US 180
H3	IH 10	W Paisano Dr / US 85	N Mesa St / SH 20
H6	IH 10	Mesa Ave	Artcraft Rd

Table 1- Northwest Congest Segments

For the N. Mesa St. corridor analysis, an increased in TTI was observed, especially for 2018, then a returned back to more normal levels in 2019. This increase in TTI results in higher traffic levels as travel times through the corridor increase. The increase in TTI was also reflected with an increase in the Truck Hours of Delay. However, despite the slight increase in congestion there was a small decrease for Passenger Person Hours of Delay while the CO_2 emissions also experienced a small decrease. The increase in traffic in the corridor can be the result of drivers using this corridor as an alternate route while construction took place in I-10 with the I-10 Widening Project from Mesa St. to Executive Center. Doniphan St. corridor experienced a similar increase in traffic congestion levels, especially in 2018. This can be seen in the increase in TTI from 2017 to 2018, but then a decrease back to more normal values in 2019. This created a ripple in all the performance measures, as they all exhibited a similar increase in 2018. Both N. Mesa St. and Doniphan St. are part of the proposed SH 20 Widen and Operational Improvement Project (CSJ- 0001-02-073) which has plans to widen the corridor into a 6-lane divide corridor along with intersection improvements from the intersection of Mesa St. and Sunland Park Rd to the intersection of Doniphan Dr. and Redd Dr.

For the highway corridors analyzed for this study area, I-10 (H3) experienced an overall decrease in congestion levels as shown by the performance metrics. A significant decrease in TTI was observed for all three years, which translated to reduce commuting times in the corridor. This reduction in TTI had an impact on Passenger Person Hours of Delay and CO_2 Released, as both metrics also saw a decrease for all years. Although there was a decrease in congestion levels, this did not reflect meaningful change for trucks since the Truck Hours of Delay remained relatively the same with a slight increase. The reduction in traffic in the corridor can be associated with the GO 10 Project from Mesa St. To Executive Center (CSJ -2121-02-137) which was a complete transformation of I-10. The project added 2-collector distributor lanes in each direction and various interchange improvements initiating in 2014 and completed in 2019. Lastly, I-10 (H6) saw mostly the same congestion levels for all three years as there was no major change for any of the performance metrics analyzed. There was a slight decrease in TTI and Passenger Person Hours of Delay, but these changes are not significant enough to heavily alter the perceived congested levels.

III.1.A. Travel Time Index

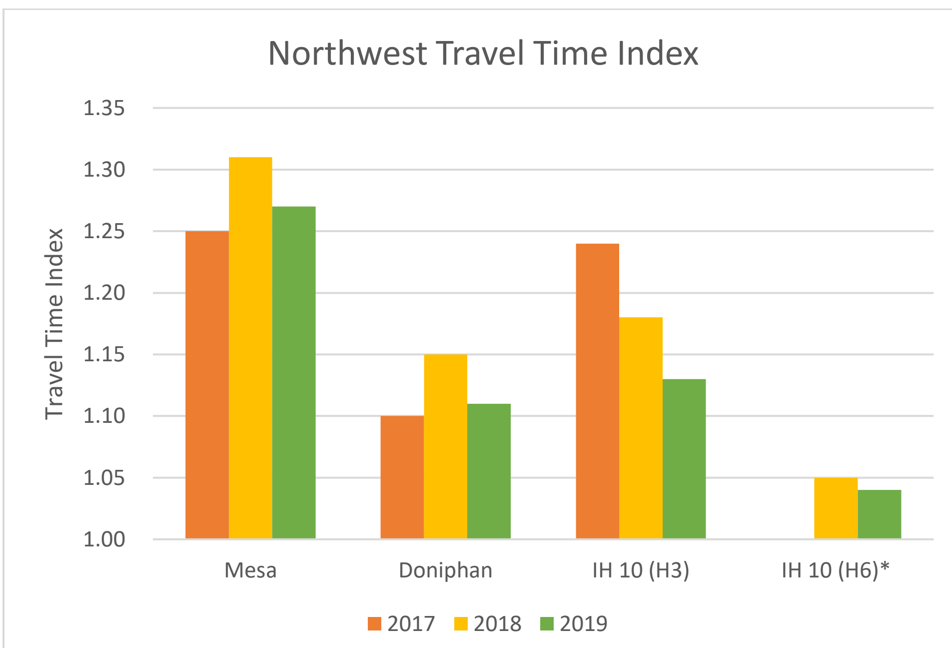


Figure 4- Northwest Travel Time Index (Change in segment length)*

III.1.B. Average Annual Passenger Person Hours of Delay

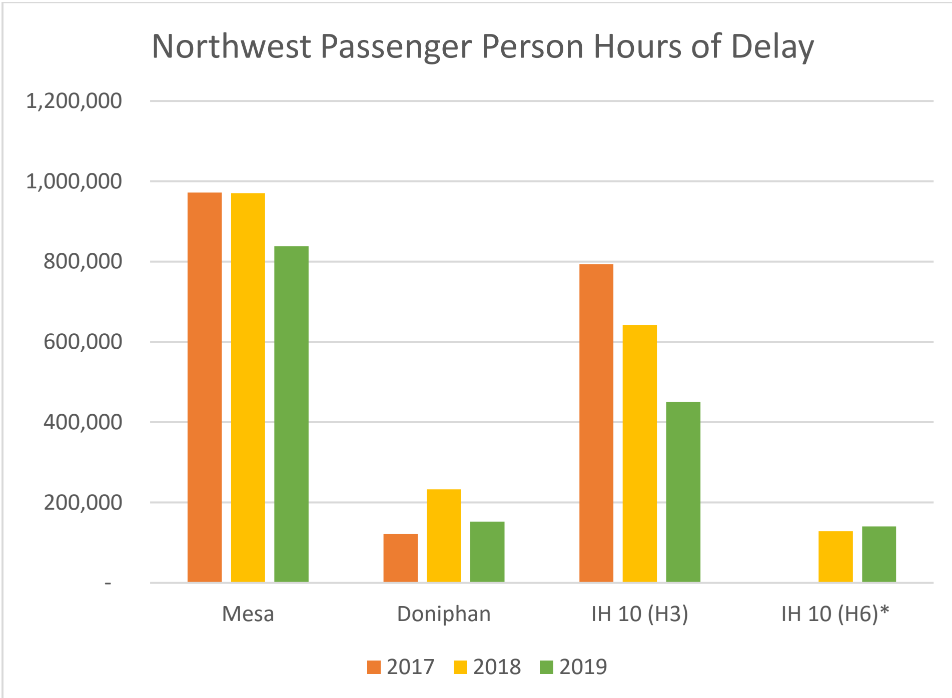


Figure 5- Northwest Passenger Person Hours of Delay (Change in segment length)*

III.1.C. Average Annual Truck Person Hours of Delay

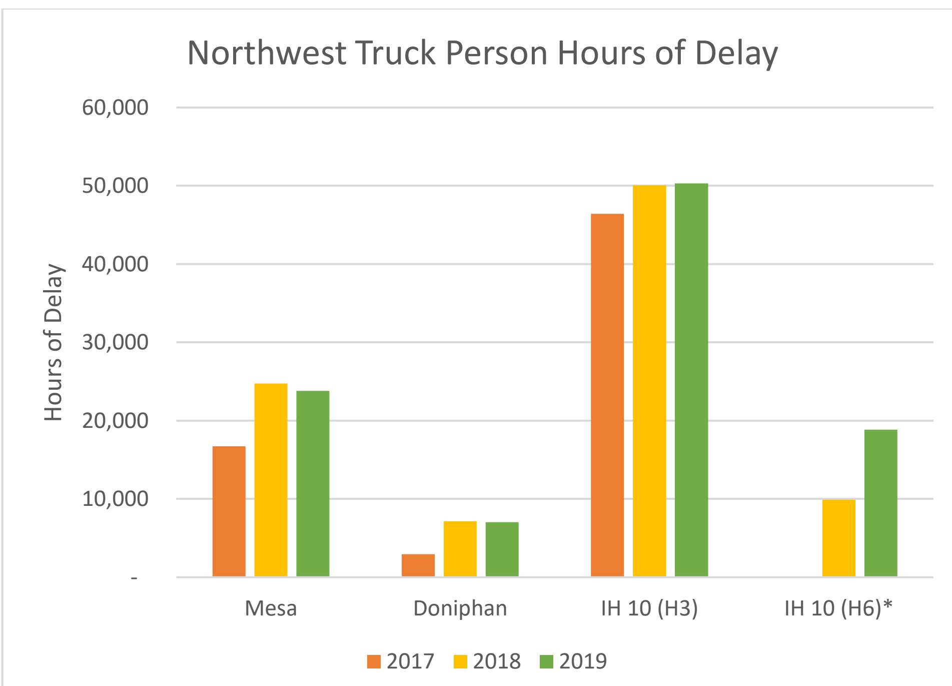


Figure 6- Northwest Truck Person Hours of Delay (Change in segment length)*

III.1.D. CO_2 Released

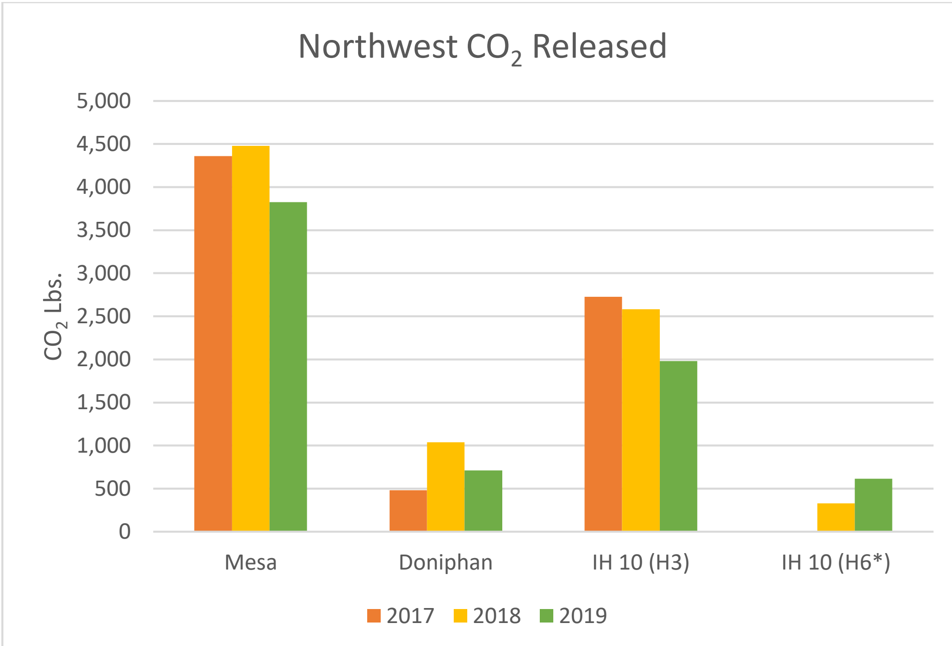


Figure 7- Northwest CO_2 Released (Change in segment length)*

III.2. Northeast & Central

The Northwest study area of El Paso consists of three arterial congested corridors and three highway congested corridors as shown in table 2. The arterial corridors include N. Mesa St. (**A1**) from Executive Center Blvd. to Texas Ave., Montana Ave. (**A9**) from Gateway Blvd. to Global Reach Dr., and Global Reach Dr. (**A11**) from Liberty Expressway. To Montana Ave. The highway corridors included in the Northeast and Central study areas include I-10 (**H1**) from N. Mesa St. to US-54, I-10 (**H2**) from US-54 to Howkins Blvd., and US-54 (**H8**) from Dyer St. to Pershing St. The analysis parameter and results for the Northeast and Central region are shown in Figures. 8, 9, 10, and 11 and are described below.

Segment ID	Road Name	From	To
A1	N Mesa St / SH20	Executive Center Blvd	Texas Ave
A9	Montana Ave / US 180 / US 62	Gateway Blvd / IH 10	Global Reach Dr
A11	Global Reach Dr	Liberty Expy/ Supur 601	Montana Ave / US 180 / US 62
H1	IH 10	N Mesa St / SH 20	Patriot Fwy / US 54
H2	IH 10	Patriot Fwy / US 54	Hawkins Blvd
H8	Patriot Freeway/ US 54	Dyer St	Pershing

Table 2- Northeast and Central Congested Segments

For N. Mesa St. and Global Reach Dr. There was a clear decrease in TTI for the three years analyzed. This decrease in TTI was also reflected in Passenger Person Hours of Delay and CO_2 since these performance metrics also experienced a significant overall decrease. Despite this decrease in congestion levels in the corridors, the Truck Hours of Delay remained relatively the same, however, there was a slight increase for this metric in N. Mesa. It is anticipated that Global Reach will experience construction in the following years under the Global Reach Reconstruction Project (CSJ- 0924-06-532) which goal is the reconstruction of existing main lanes (6 lanes, 3 in each direction) and construct 4 lane frontage roads.

For Montana Ave., the results were different, as there was an increase in TTI throughout the three years. This increased commuting times were not reflected in the Passenger Person Hours of Delay since there was a decrease in this metric, rather, the increase in TTI had a more significant impact in Truck Person Hours of Delay. As can be seen from the graph, the increase in Truck Hours of Delay was significant, which also helps explain the increase for the CO_2 released levels. For this corridor, there is a project recommendation (CSJ- 0374-02-100) under consideration from Global Reach to Zaragoza that may help ease the traffic in the area and therefore decrease Truck Hours of Delay.

After both I-10 corridors were analyzed, it was determined that they both had very similar results, which should be expected since these two corridors are connected. It was observed that these corridors experienced an increase in TTI for all three years, having their biggest increase in 2018. This overall increase in travel times that is a result of congestion levels, meant that Passenger Person Hours of Delay and Truck Hours of Delay also experienced an upward trend. This ultimately had a negative impact on CO_2 released levels since the more time trucks and cars remained stuck in traffic the more CO_2 emissions they generated.

For the segment of I-10 referred as H2, the IH 10 Operational Improvements Project (CSJ- 2121-03-154) from Airway Blvd. to Viscount Blvd. had a construction period from August 2017 to July 2018, which could have impacted the TTI particularly in 2018 when the biggest increase for this metric was seen. This corridor is also under consideration for the I-10 SEG A Project (CSJ- 2121-02-168) that could add one lane in each direction, starting at Copia St.

Lastly, US-54 corridor has had little congestion levels throughout the analyzed period as can be seen by the small TTI values, which means that during peak hours traffic conditions were not severely affected. These small congestion levels are also reflected in the Passenger Person Hours of Delay and Truck Hours of Delay since they also had small values, especially when comparing them with other highway corridors. Since there was little congestion in this corridor, the CO_2 released barely registers, as almost no extra CO_2 was released due to congestion.

III.2.A. Travel Time Index

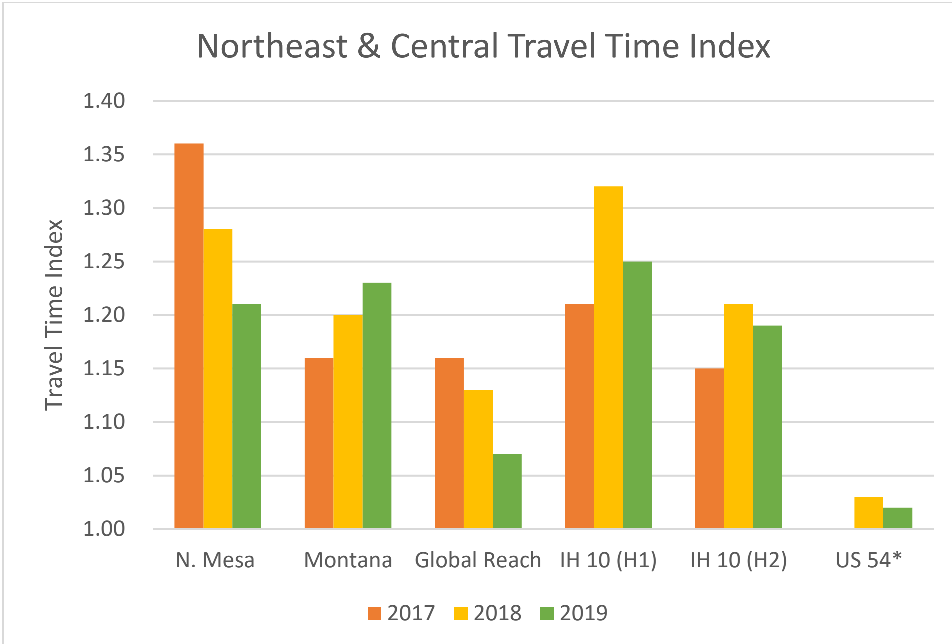


Figure 8- Northeast and Central Travel Time Index (Change in segment length)*

III.2.B. Average Passenger Person Hours of Delay

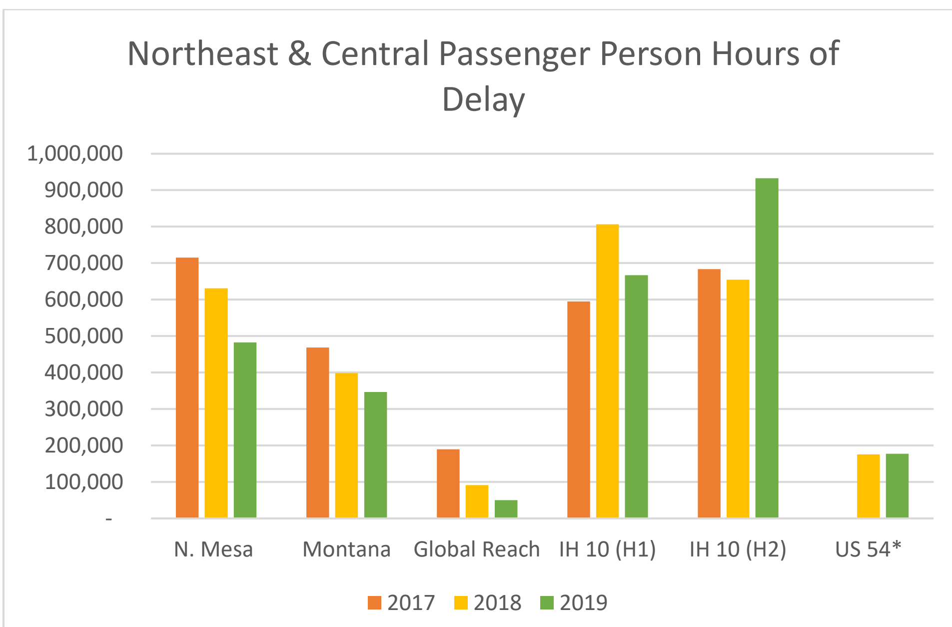


Figure 9- Northeast and Central Passenger Person Hours of Delay (Change in segment length)*

III.2.C. Average Truck Person Hours of Delay

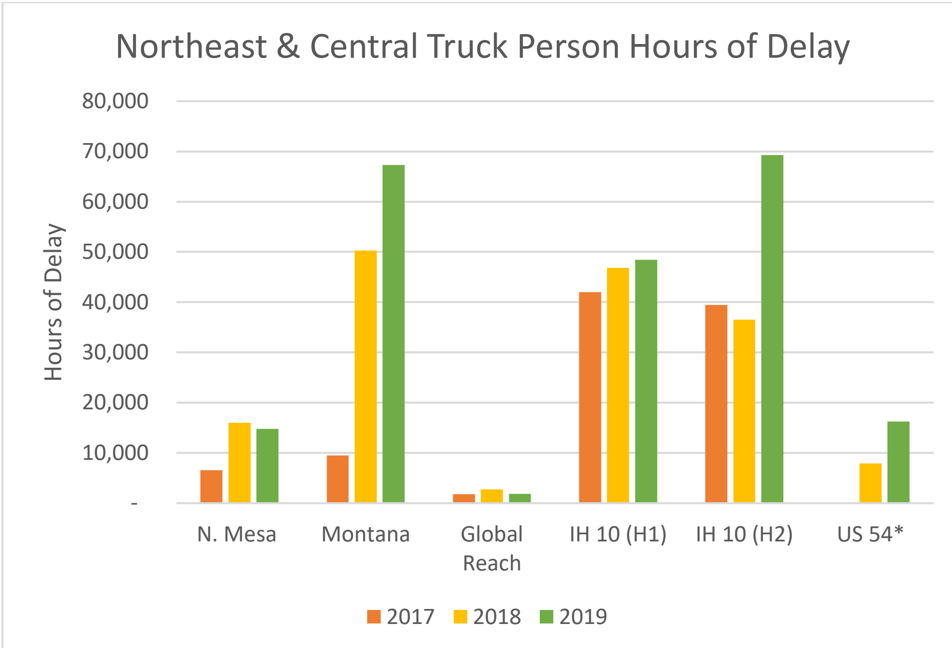


Figure 10- Northeast and Central Truck Person Hours of Delay (Change in segment length)*

III.2.D. CO_2 Released

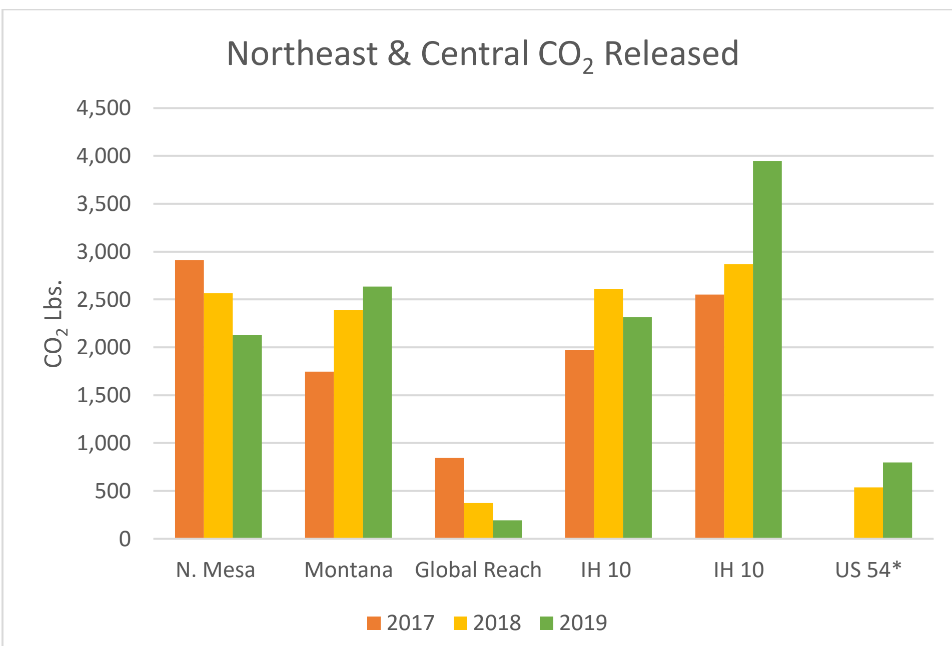


Figure 11- Northeast and Central CO_2 Released (Change in segment length)*

III.3. East

The East study area of El Paso consists of five arterial corridors and only one highway corridor as shown in Table 3. The arterial corridors include N. Zaragoza Rd. (**A3**) from Gateway Blvd. to Joe Battle Blvd., Lee Trevino (**A4**) from Montana Ave. to Gateway Blvd., Montwood Dr. (**A5**) from Lee Trevino Dr. to N. Zaragoza Rd., N. Yarbrough Dr. (**A6**) from Montana Ave. to Gateway Blvd, and Montwood Dr. (**A13**) from Viscount Blvd. to Lee Trevino Dr. The highway corridor (**H5**) analyzed for this study area was the segment of Joe Battle Blvd. from I-10 to Montwood Dr. The analysis parameter and results for the East region are shown in Figures. 12, 13, 14, and 15 and are described below.

Segment ID	Road Name	From	To
A3	N Zaragoza Rd / FM 659	Gateway Blvd / IH 10	Joe Battle Blvd / TX 375 Loop
A4	Lee Trevino	Montana Ave / US 180 / US 62	Gateway Blvd / IH 10
A5	Montwood Dr	Lee Trevino Dr	N Zaragosa Rd
A6	N Yarbrough Dr	Montana Ave / US 180 / US 62	Gateway Blvd / IH 10
A13	Montwood Dr	Viscount Blvd	Lee Treviño
H5	Joe Battle Blvd / Loop 375	IH-10	Montwood Dr

Table 3

It was observed that N. Zaragoza Rd. and Montwood Dr. (A5) corridors experienced an overall increase in TTI. This increase in TTI was reflected in the Passenger Person Hours of Delay, especially for N. Zaragoza Rd., which also experienced an increase for this metric. For both corridors, the increase in TTI affected slightly CO2 emissions, as there was a slight increase for this metric as well. To deal with this congestion, FM 659 Project (CSJ- 1046-01-020) from TxDOT is being proposed along segment N. Zaragoza Rd. which plans to widen FM 659 from 4 to 6 lanes including roadway and operational improvements on the existing 6 lane segment. On the other hand, Lee Trevino Dr. experienced a decrease in TTI and Passenger Person Hours of Delay. However, despite these decreases for these two metrics, it was observed that there was a significant increase in the Truck Hours of Delay for this segment. Due to this decrease for TTI but increase for Truck Hours of Delay, the overall CO_2 emission levels for this corridor remained relatively the same, with an increase in 2018.

The N. Yarbrough Dr. arterial corridor experienced the same TTI in 2017 and 2018, however there was a slight increase in 2019. This slight increase in TTI was reflected in the Passenger Person Hours of Delay and the Truck Hours of Delay, as these two metrics also saw a slight increase. This increase in congestion levels also affected the CO_2 levels, however, these changes are small when compared to the overall metric values, meaning that perceived congestion levels should have remained the same for the three years. Lastly, the arterial corridor of Montwood Dr. (A13) and the highway corridor of Joe Battle maintained constant congestion levels with very slight variations. This translates to no significant changes in TTI or Passenger Person Hours of Delay. However, it should be noted that for Truck Hours of Delay there was a considerable increase for this metric in Joe Battle Blvd, but the CO_2 released levels remained the same for both corridors in the analyzed period.

III.3.A. Travel Time Index

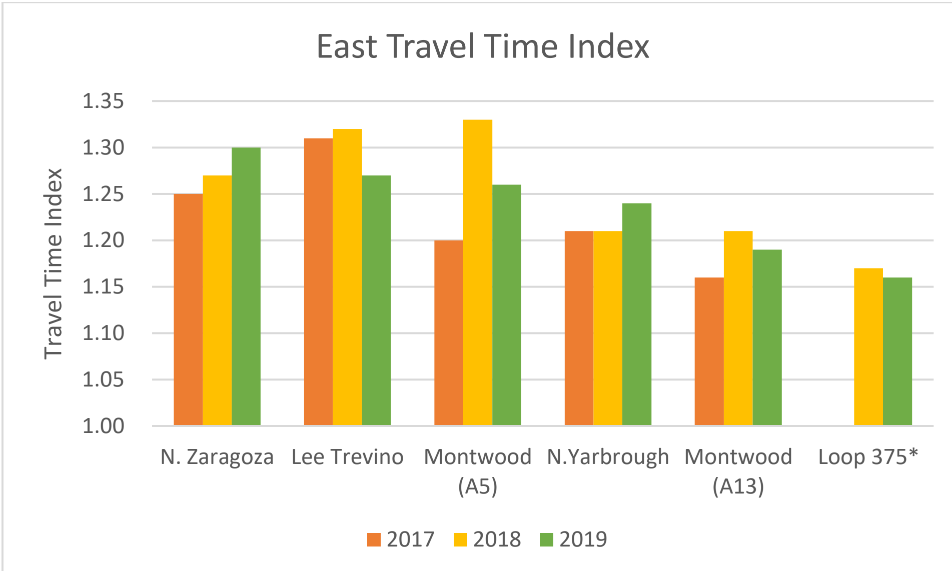


Figure 12- East Travel Time Index (Change in segment length)*

III.3.B. Average Passenger Person Hours of Delay

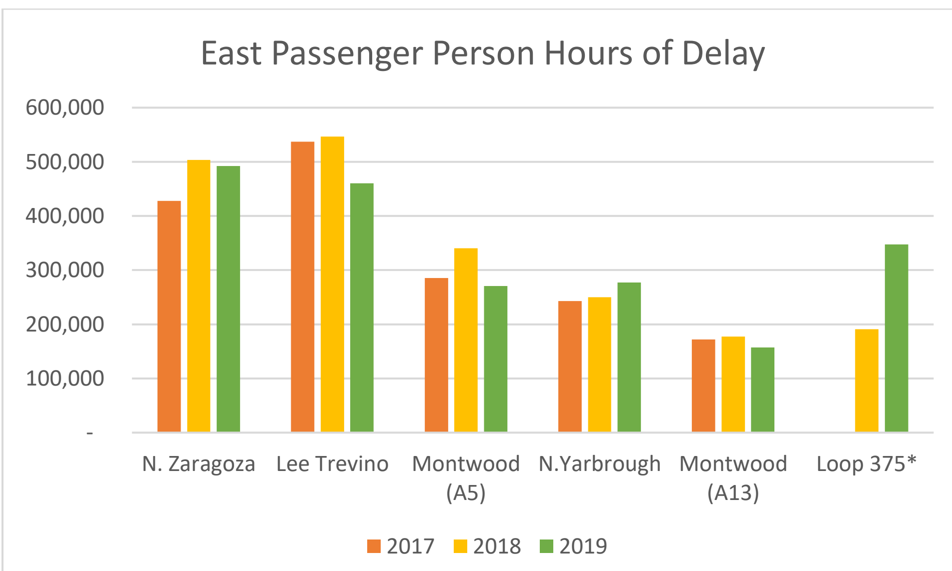


Figure 13- East Passenger Person Hours of Delay (Change in segment length)*

III.3.C. Average Truck Person Hours of Delay

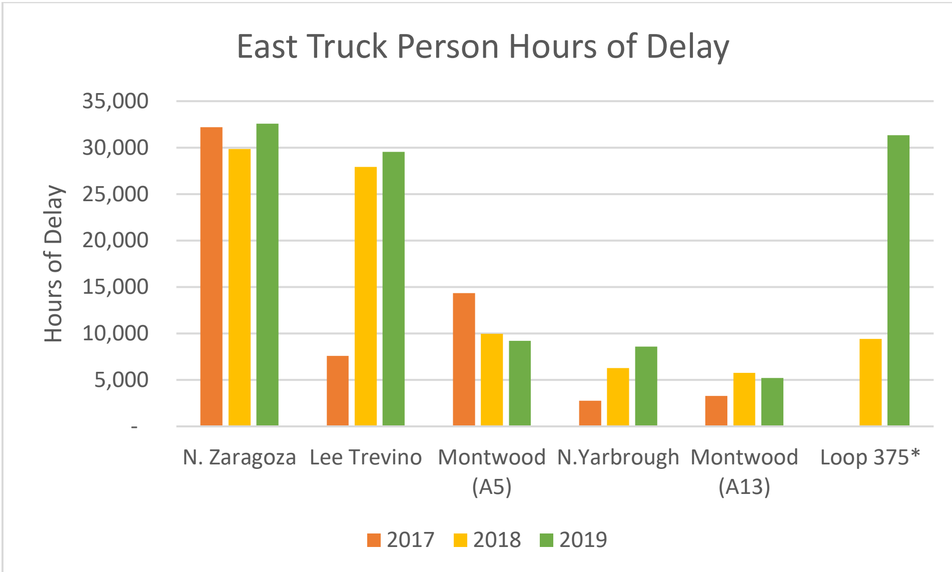


Figure 14- East Truck Person Hours of Delay (Change in segment length)*

III.3.D. CO_2 Released

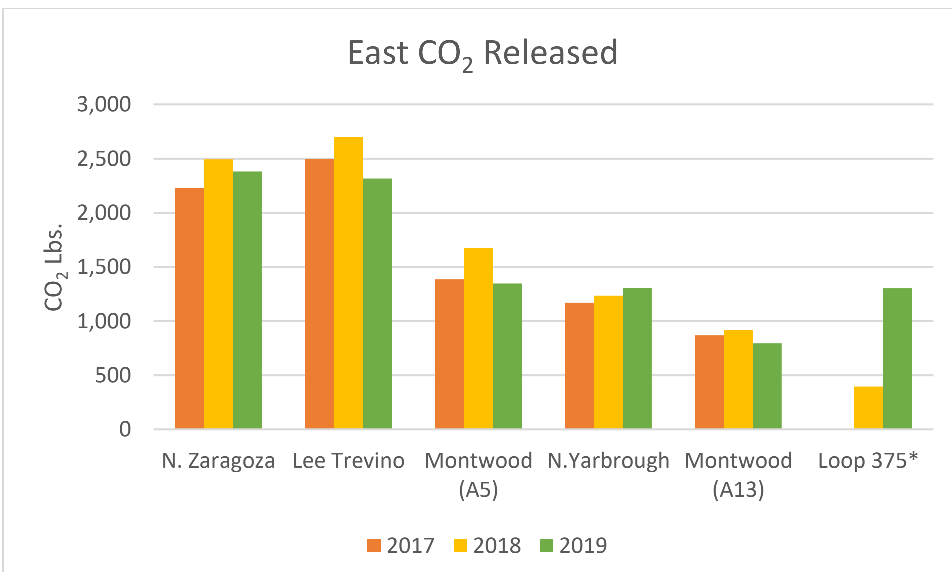


Figure 15- East CO_2 Released (Change in segment length)*

III.4. Lower Valley

The Lowe Valley study area of El Paso consists of three arterial corridors and only one highway corridor as shown by Table 4. The arterial corridors include N. Loop Dr. (**A10**) from North Carolina Dr. to N. Americas Ave., Delta/North Loop (**A14**) from Alameda Ave. to Hawkins Blvd., and Zaragoza Rd. (**A16**) from Waterfill to Gateway Blvd. The highway corridor analyzed for this region was I-10 from Hawkins Blvd to Lee Trevino Dr. (**H4**). The analysis parameter and results for the Lower Valley region are shown in Figures. 16, 17, 18, and 19 and are described below.

Segment ID	Road Name	From	To
A10	N Loop Dr / FM 76	North Carolina Dr	N Americas Ave / SL 375
A14	Delta/North Loop	Alameda Ave	Hawkins Blvd
A16	Zaragoza Rd	Waterfill	Gateway Blvd / IH 10
H4	IH 10	Hawkins Blvd	Lee Trevino Dr

Table 4

For the arterial corridors of N. Loop Dr. and Zaragoza Rd., it was determined that they had a similar TTI pattern since both experienced an increase for this metric which results in increased travel times as congestion levels increase. This increase in congestion also affected the Passenger Person Hours of Delay and Truck Hours of Delay as should be expected, it resulted in a similar increase. When the CO_2 released levels were analyzed for both corridors it was determined that due to increased slow-moving traffic the CO_2 levels also increased. To deal with the increased traffic in the Zaragoza corridor the construction of a new bridge over the railroad is being proposed, which should help as there will be no delay associated with traffic stopping due to trains. For the Delta/North Loop corridor the TTI performance metric remained relatively the same, but there was a slight increase in 2018 but then returned to normal in 2019. Due to these constant levels of congestion levels, the Person Hours of Delay and Truck Hours of Delay had slight change through the analyzed period. Since there was no drastic change in congestion levels that also meant that the CO_2 levels also remained constant, as there was no increase in traffic levels that usually contributes the most to CO_2 emissions.

In the Lower Valley, the analyzed highway corridor was I-10 from Hawkins Blvd. to Lee Trevino Dr. This corridor experienced the greatest change in congestion levels in a favorable way from all the corridors in the area. As can be seen in the presented graphs, the TTI performance metric experienced a significant decrease from 2017 to 2019. This is good for commuters as there is a considerable decrease in travel times due to reduced congestion levels. This decrease in TTI had an important effect on Person Hours of Delay and Truck Hours of Delay because these two metrics also experienced a decrease. The result of all of this can also be quantified with the CO_2 released metric, as there were lower emission levels commonly associated with traffic. This decrease in TTI for I-10 can be attributed to the completion of the I-10 Operational Improvement Project (CSJ-2121-03-151) which has added one lane in each direction from Viscount Blvd to Zaragoza Rd including ramp improvement, which helped improve mobility.

III.4.A. Travel Time Index

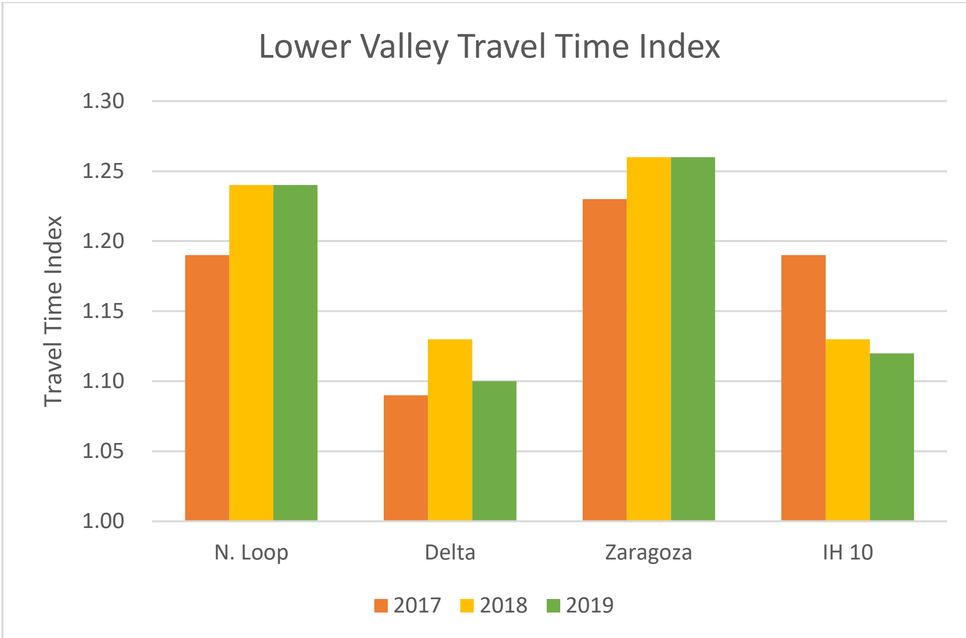


Figure 16- Lower Valley Travel Time Index

III.4.B. Average Passenger Person Hours of Delay

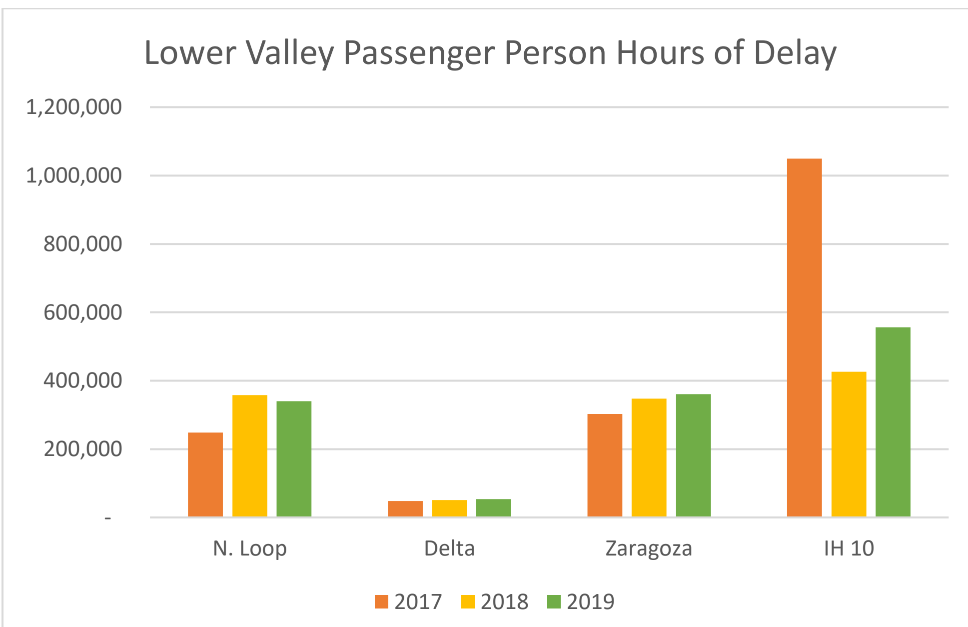


Figure 17- Lower Valley Passenger Person Hours of Delay

III.4.C. Average Truck Person Hours of Delay

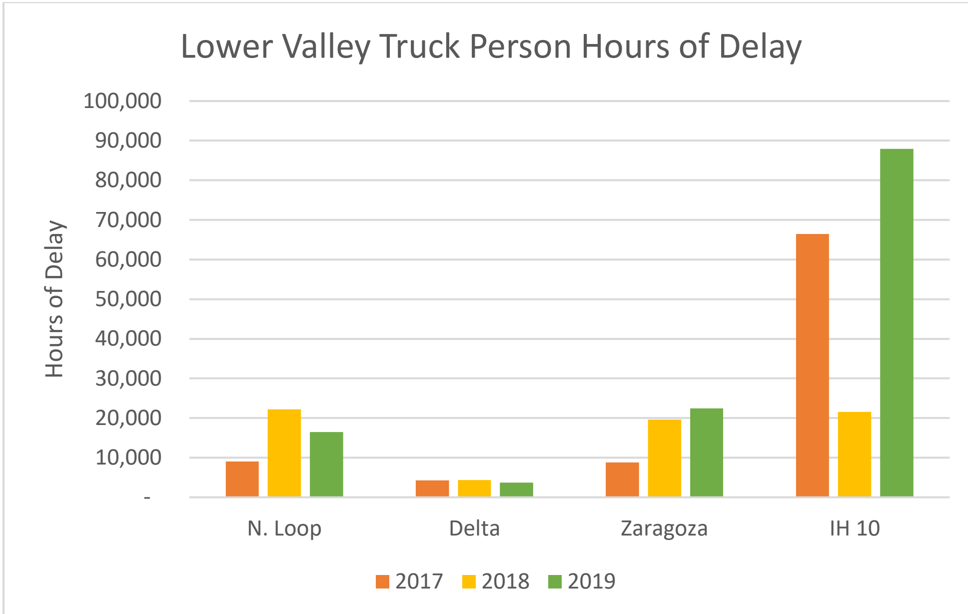


Figure 18- Lower Valley Truck Person Hours of Delay

III.4.D. CO_2 Released

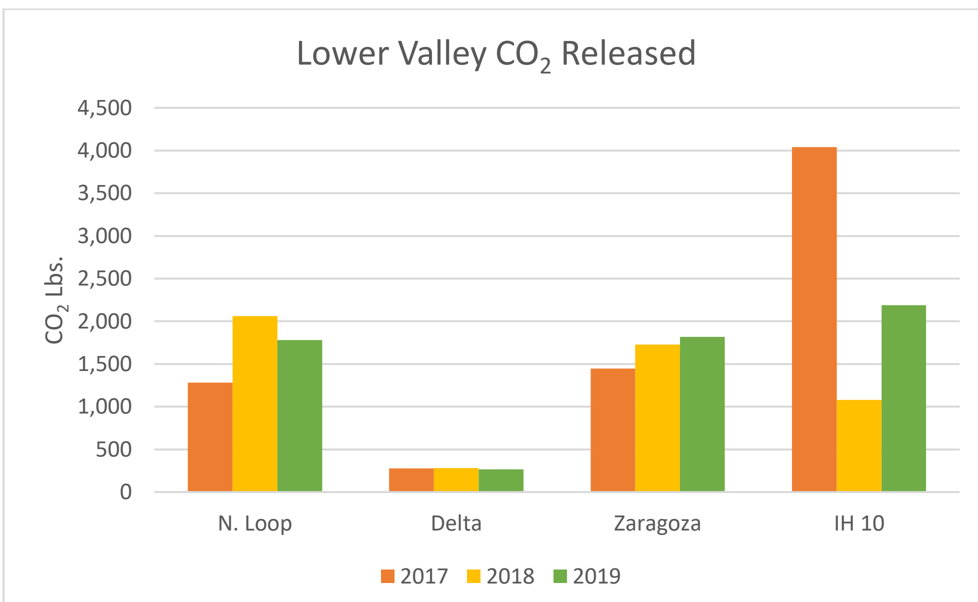


Figure 19- Lower Valley CO_2 Released

III.5. Far Lower Valley

For the Far Lower Valley study area four corridors were analyzed, consisting of three arterial corridors and one highway corridor as shown by Table 5. The arterial corridors consist of N. Loop Dr. (**A8**) from America Ave. to Horizon Blvd., Alameda Ave. (**A12**) from Americas Ave. to Passmore Rd., and Socorro Rd. (**A15**) from Americas Ave. to Passmore. The highway corridor analyzed for this region was I-10 from Joe Battle Blvd to Horizon Blvd. (**H7**). The analysis parameter and results for the Far Lower Valley region are shown in Figures. 20, 21, 22, and 23 and are described below.

Segment ID	Road Name	From	To
A8	N Loop Dr / FM 76	N Americas Ave / SL 375	Horizon Blvd / FM 1281
A12	Alameda Ave/ SH 20	Americas Ave/Loop 375	Passmore Rd
A15	Socorro Rd/258	Americas Ave/Loop 375	Passmore Rd
H7	IH 10	Joe Battle Blvd	Horizon Blvd / FM 1281

Table 5

After analyzing the TTI performance metric it was observed that for N. Loop Dr. corridor there was an increase in 2018 for TTI levels but then returned to more normal values in 2019. This similar pattern was observed for the same corridor when the CO_2 released metric was analyzed, which is a direct reflection of congestion levels. Despite this, it should be noted that there was a slight decrease in Passenger Person Hours of Delay and a slight increase for Truck Hours of Delay.

When Alameda Ave. and Socorro Rd. were analyzed they both experienced a similar pattern in TTI as both corridors saw a significant decrease in the three years. This was also reflected in Passenger Person Hours of Delay and Truck Hours of Delay which also experienced a similar decrease. This reduction for the performance metrics is a good indicator that overall congestion levels in the area have decreased, which also has a positive effect on CO_2 released levels. As can be seen in the graph presented, CO_2 emissions also decreased as a result of decreased congestion. There is currently a proposed project along Alameda Ave., SH 20 Alameda Widening from TxDOT (CSJ-0002-02-902), that could further improve the traffic conditions in the corridor, which will widen the corridor from 4 to 6 lanes divided from Loop 375 to FM 1110.

The highway corridor analyzed for the Far Lower Valley was the section of I-10 from Joe Battle Blvd. to Horizon Blvd. This corridor had the lowest TTI values from the start of the analysis, which meant that delays associated to traffic conditions are not a major issue. Despite having initial low TTI values, the corridor was able to see a decrease for this metric, resulting in more reliable travel times in the corridor. Similarly, Passenger Person Hours of Delay and Truck Hours of Delay had considerably low initial values and are further reduced going into 2019. This is a good indicator that as the region continues to grow, the I-10 corridor will have the capacity to deal with the potential increase in traffic. Lastly, the CO_2 released metric was analyzed and as expected due to the low congestion levels, this metric had considerably low emissions, especially in 2019 which barely register in the presented graph.

III.5.A. Travel Time Index

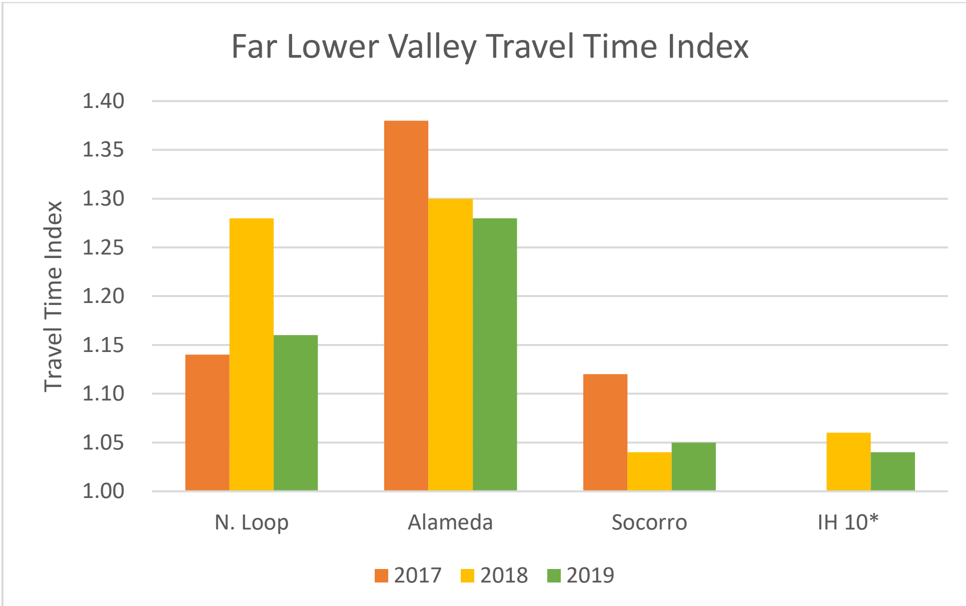


Figure 20- Far Lower Valley Travel Time Index (Change in segment length)*

III.5.B. Average Passenger Person Hours of Delay

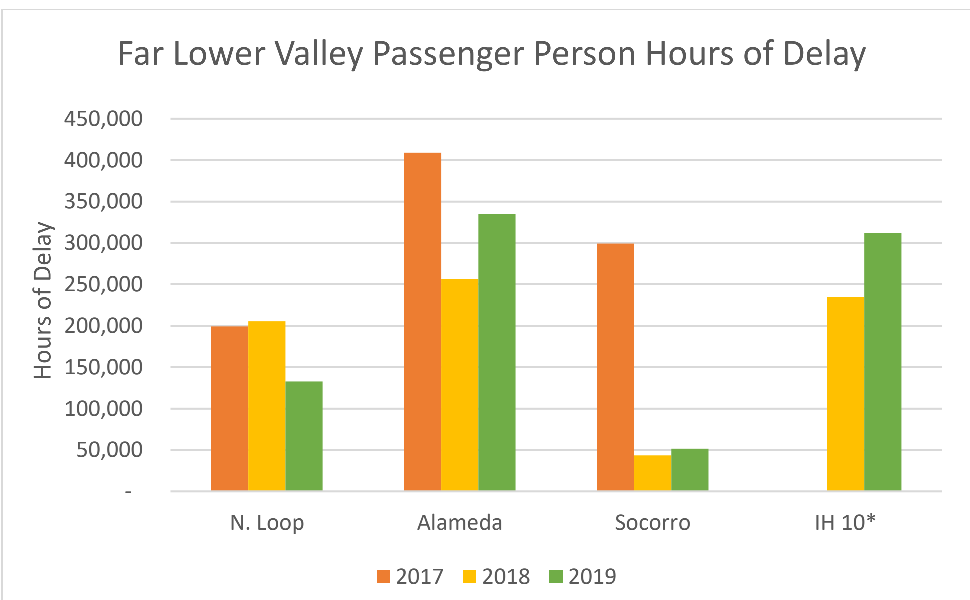


Figure 21- Far Lower Valley Passenger Person Hours of Delay (Change in segment length)*

III.5.C. Average Truck Person Hours of Delay

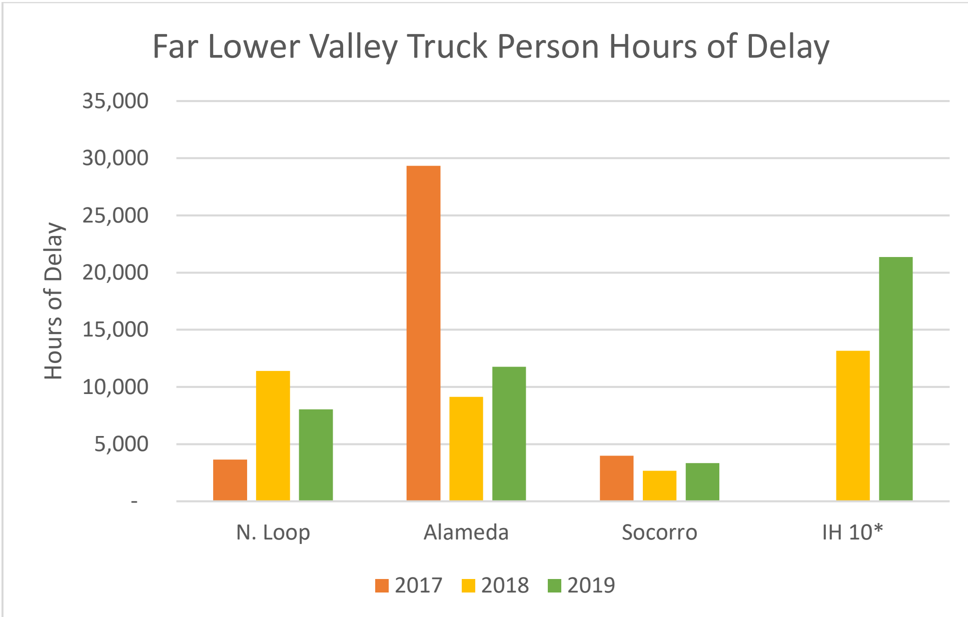


Figure 22- Far Lower Valley Truck Person Hours of Delay (Change in segment length)*

III.5.D. CO_2 Released

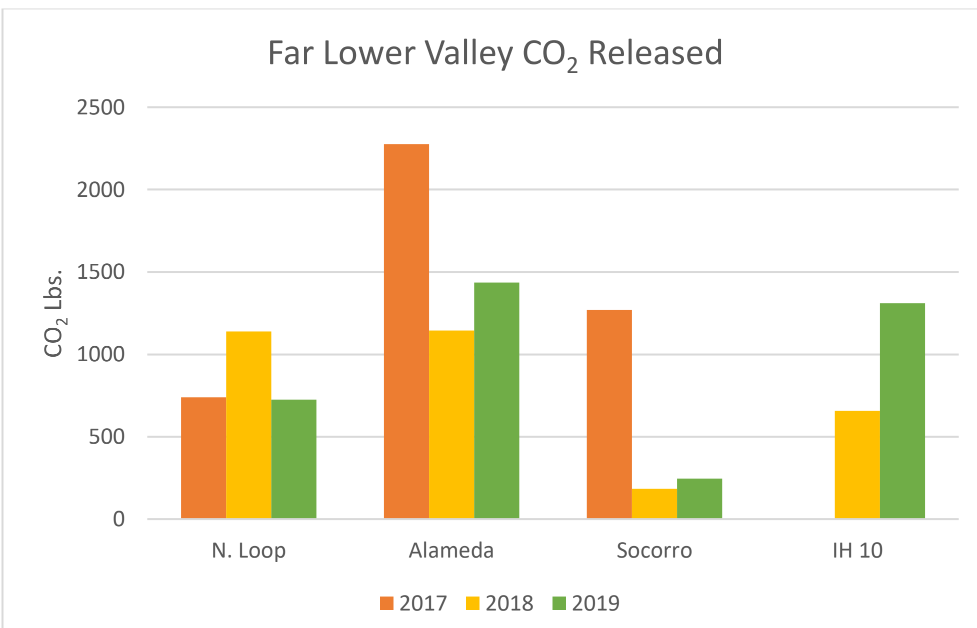


Figure 23- Far Lower Valley CO_2 Released (Change in segment length)*

IV. Section 4 – Potential Strategies to Address Congested Segments

As part of the continuing strategy to address congested segments' traffic problems, several potential strategies have been identified. These strategies include capacity and non-capacity projects that have the potential to address congestion levels within the previously identified arterial and highway corridors. The projects identified are part of the 2050 Metropolitan Transportation Plan (MTP)and have been selected based on their proximity to an identified congested corridor and that have the potential to reduce overall congestion levels. The following maps, shown by Figure. 26 and Figure. 27, depict the arterial and highway corridors along with the proposed projects which have been labeled based on diverse types of projects. These projects have also been listed as two separate tables in Table 6 and Table 7. In addition, some of the identified projects have been labeled by their CSJ or MPO ID to signify that they have been previously discussed in their corresponding prior section.

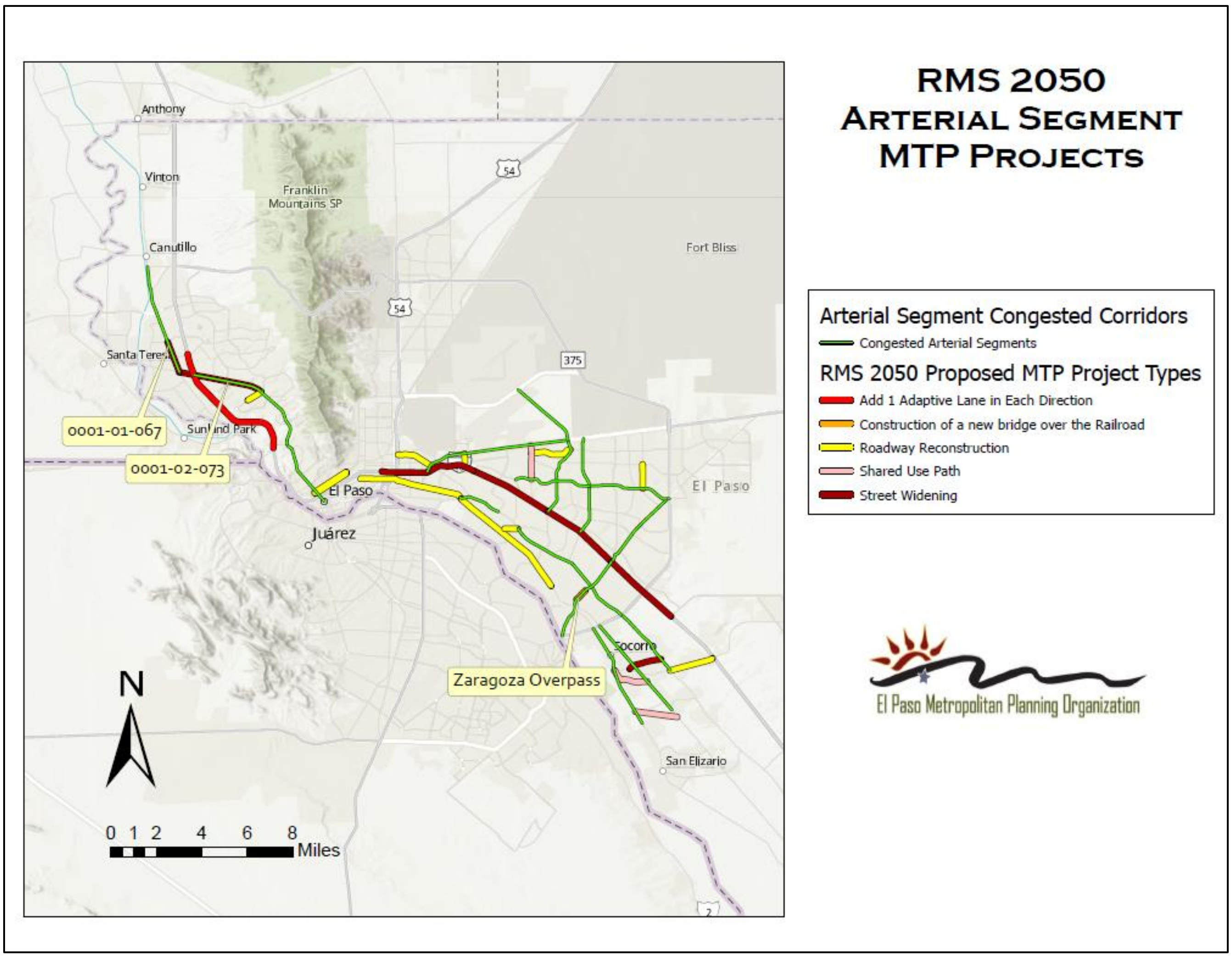


Figure 24- RMS 2050 Arterial Segment MTP Projects

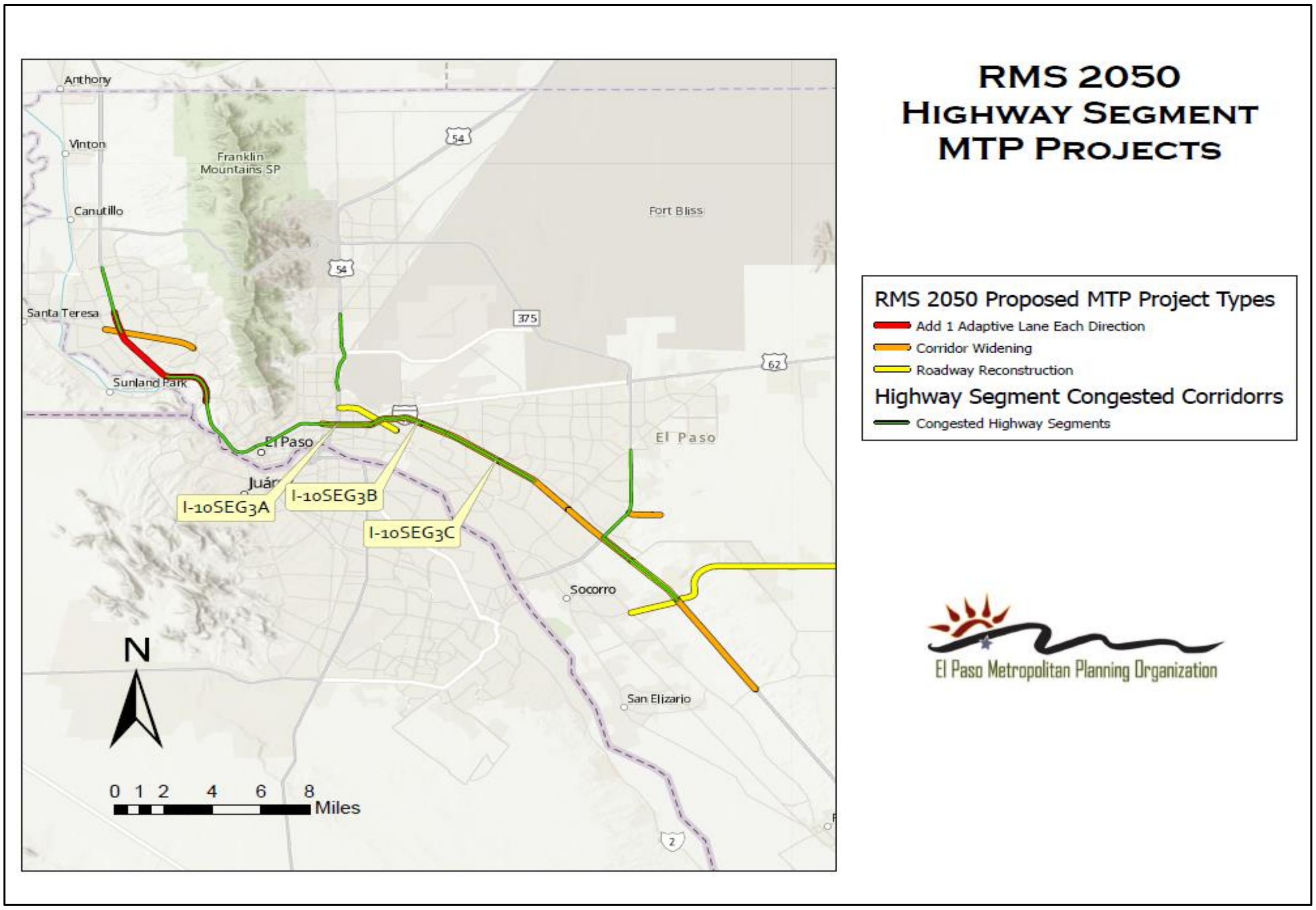


Figure 25- RMS 2050 Highway Segment MTP Projects

Project Name	From	To	Category
Trowbridge Dr US54 to I-10 Street Improvements	Gateway Blvd North	Gateway Blvd West	Roadway Reconstruction
SH20 Doniphan (Mesa-SPark) Widen & Op Imp	Mesa Street (SH 20)/ Country Club Road	Sunland Park Drive	Corridor Widening
Widen to 6 lane divided FM 1281 (I-10 to Ascension)	I-10	Ascension	Roadway Reconstruction
Widen to 4 lane divided FM 1281 (North Loop to I-10)	I-10	North Loop	Roadway Reconstruction
Bob Hope Ext. PE Phase	Loop 375	Mission Ridge Blvd (arterial 1)	Corridor Widening
Trowbridge Dr I-10 to Marlow Street Improvements	Marlow Rd	Gateway Blvd East	Roadway Reconstruction
I-10 SEG1G (THORN TO EXECUTIVE)	Thorn Ave.	Executive Center Blvd.	Add 1 Adaptive Lane Each Direction
I-10 SEG3C(AIRWAY TO YARBROUGH)	AIRWAY BLVD	YARBROUGH DR	Corridor Widening
I-10 SEG3D1 (YARBROUGH TO FM659)	Airway blvd.	Yarbrough Dr.	Corridor Widening
I-10 SEG3D2 (FM659 TO EASTLAKE)	Yarbrough Dr.	FM 659 (Zaragoza)	Corridor Widening
I-10 Reconstruction (EASTLAKE BLVD to FM 1281 (HORIZON BLVD)	Eastlake	FM 1281 (Horizon Blvd.)	Roadway Reconstruction
IH10 Widening (FM1281 to FM1110)	FM 1281 (Horizon Blvd.)	FM 1110 (Clint)	Corridor Widening
I-10 SEG3B (Paisano to Airway)	US 62 (Paisano Dr.)	Airway Blvd.	Corridor Widening
I-10 SEG3A (Copia to Paisano)	SL 478 (Copia St.)	US 62 (Paisano Dr.)	Corridor Widening

Table 6 -Highway Segments MTP Projects

Project Name	From	To	Category
Trowbridge Dr US54 to I-10 Street Improvements	Gateway Blvd North	Gateway Blvd West	Roadway Reconstruction
SH 20 Road/Interchange Imp.(Texas-Delta)	Texas Avenue	Delta St.	Roadway Reconstruction
SH20 Doniphan (Mesa-SPark) Widen & Op Imp	Mesa Street (SH 20)/ Country Club Road	Sunland Park Drive	Street Widening
SH20 Doniphan Widen (Redd-Mesa) & Interchange Imp	Redd Road	Mesa Street (SH 20) Country Club Road	Street Widening
Sunland Park Street Improvements	Mesa St	Cadiz St	Roadway Reconstruction
Arizona - Rio Grande Two Way Conversion	Arizona Ave from Oregon St; Rio Grande Ave from Oregon St	Arizona Ave to N Cotton St; Rio Grande Ave to N Cotton St	Roadway Reconstruction
SH 20 Roadway & interchanges Improvements (Delta to Prado)	Delta Drive	Prado Road	Roadway Reconstruction
Zaragoza Rd. RR Overpass	Rabe Ct.	Sunland Rd.	Construction of a new bridge over the Railroad
Widen to 4 lane divided FM 1281 (North Loop to I-10)	I-10	North Loop	Roadway Reconstruction
Rio Vista Road Widening	FM 76 - North Loop Drive	Buford Road	Street Widening
Robert E Lee Street Improvements	Edgemere Blvd	Montana Ave	Roadway Reconstruction
Carolina Street Improvements	Stiles Dr	North Loop Dr	Roadway Reconstruction
Edgemere Street Improvements	McRae Blvd	Yarbrough Dr	Roadway Reconstruction
Saul Kleinfeld Street Improvements	Montwood Dr	Pebble Hills Blvd	Roadway Reconstruction
4-D Tigua Spur of Paso del Norte Trail	Alameda Avenue/Franklin Feeder Canal	Socorro Rd./Franklin Feeder Canal	Shared Use Path
McRae Shared Use Path	Montwood Dr.	Montana Ave.	Shared Use Path
Segment of 4-B Socorro Spur of Paso del Norte Trail	Alameda Avenue/Place Road	Socorro Rd./Holguin Rd.	Shared Use Path
I-10 SEG1G (Thorn to Executive)	Thorn Ave.	Executive Center Blvd.	Add 1 Adaptive Lane in Each Direction
I-10 SEG3C(Airway to Yarbrough)	Airway blvd.	Yarbrough Dr.	Street Widening
I-10 SEG3D1 (Yarbrough to FM659)	Yarbrough Dr.	FM 659 (Zaragoza)	Street Widening
I-10 SEG3D2 (FM659 to Eastlake)	FM 659 (Zaragoza)	Eastlake	Street Widening
I-10 SEG3B (Paisano to Airway)	US 62 (Paisano Dr.)	Airway Blvd.	Street Widening
I-10 SEG3A (Copia to Paisano)	SL 478 (Copia St.)	US 62 (Paisano Dr.)	Street Widening

Table 7 – Arterial Segments MTP Projects