

APPENDIX C PURPOSE AND NEED TECHNICAL REPORT

BORDER HIGHWAY EAST STUDY

CSJ: 0924-06-090

EL PASO COUNTY, TEXAS

TEXAS DEPARTMENT OF TRANSPORTATION

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

*Ciudad Juarez,
Chihuahua,
Mexico*



Border Highway East

SEPTEMBER 2014



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1.0 INTRODUCTION

The anticipated growth of the City of El Paso and Ciudad Juarez, Mexico, will continue to affect the communities of the Lower Valley by bringing increased economic opportunities, as well as substantial challenges to the existing transportation system. The communities of the Lower Valley include Socorro, San Elizario, Town of Clint, Fabens, and Tornillo Census Designated Places (CDPs). Overall, the Lower Valley land is changing from primarily agricultural and rural uses to residential, commercial, and industrialized urban uses. This document provides background information and data to support the purpose and need for transportation improvements within the Border Highway East (BHE) study area located in the Lower Valley within El Paso County, Texas. Interstate 10 (I-10) is the primary route through southeast El Paso County. North Loop Drive (Farm-to-Market 76 (FM 76)) Alameda Avenue (State Highway 20 (SH 20)), and Socorro Road (FM 258) are the primary arterials which provide routes from the City of El Paso to the southeastern portion of the county. Information on previous studies, current and future conditions in the study area, and problems and solutions related to mobility within the El Paso Metropolitan Planning Organization (MPO) region is provided in this document.

The purpose and need discussed in this document is part of the Planning and Environmental Linkages (PEL) process and will be used to compare transportation alternatives and help determine solutions that will be evaluated further in subsequent stages of project development. Improvements within the study area are needed to address the following issues identified thus far:

- lack of direct access/connectivity to I-10 and Loop 375 (Americas Avenue);
- congestion along east-west arterials;
- high volumes of truck traffic along the existing east-west arterials;
- at-grade train crossings along the study area that cause delay and impede traffic movement;
- increasing demand on area transportation infrastructure (roadways, railroads and ports of entry) associated with the increasing international and interregional trade and freight rail movements; and
- lack of other modes of transportation (buses, bicycle lanes, etc.)

These issues lead to increased vehicle delay to area residents, commuters, businesses, and emergency vehicles. Further issues may be identified during the PEL public involvement process through coordination with technical workgroups and the public.

The purpose of the BHE PEL Study is to develop conceptual transportation alternatives that would address inadequate transportation system capacity, inadequate system linkage, and lack of modal connectivity issues mentioned above by:

- improving transportation facilities that connect or are parallel to I-10 and Loop 375 to provide alternate routes of travel;

- 1 • improving the level of service (LOS) along the primary east-west transportation
2 arterials;
- 3 • implementing Transportation Systems Management (TSM), Transportation
4 Demand Management (TDM), and/or Intelligent Transportation Systems (ITS)
5 improvements;
- 6 • considering the expansion of transit, bus, and pedestrian options that are better
7 integrated with the overall transportation system; and
- 8 • integrating existing transportation facilities to complement other modes of
9 transportation.

10 The PEL process will provide an opportunity for early coordination with the public as
11 well as local, state and federal agencies in a collaborative environment. By working
12 together, alternatives (including tolling), and avoidance measures can be developed at a
13 local level.

14
15 In order to advance with the PEL process and associated public involvement, this
16 document references available information from the current El Paso regional
17 transportation plan, *Horizon 2040 Metropolitan Transportation Plan* (MTP), in addition to
18 traffic and analysis developed from the *Horizon 2040 MTP* travel demand model.

20 **1.1 Purpose for Improvements in the BHE PEL Study Area**

21
22 Transportation system improvements within the BHE PEL study area are needed for the
23 safe and efficient movement of people and goods in the Lower Valley. In addition to the
24 projects identified in the 1997 feasibility study, other specific transportation solutions
25 may emerge from the PEL process, and are referred to as "future BHE project(s)" in this
26 document. To date, the MPO has already identified several other planned
27 transportation improvements within the study area, including a new location project
28 referred to by the MPO as "Loop 375 Border Highway East" anticipated to help improve
29 mobility, as well as a new Bus Rapid Transit (BRT) link along Alameda Avenue to
30 Horizon Boulevard. The "Loop 375 Border Highway East" project as referenced in the
31 MTP, as well as other improvements will be considered throughout the PEL process as
32 potential transportation solutions for analysis and development.

34 **1.2 Background**

35
36 Since the late 1980s, the Lower Valley area has transformed from a primarily
37 agricultural area to increasingly commercialized, industrialized, and residential
38 communities. Typical residential communities as well as "colonia" developments have
39 emerged.¹ This section provides background information relevant to the study area,
40 previous studies, and regional planning context.

41

¹ The term "colonia" refers to residential areas along the Texas-Mexico border that may lack some of the most basic living necessities, such as potable water and sewer systems, electricity, paved roads, and safe and sanitary housing (Texas Secretary of State 2010).

1 **1.2.1 BHE PEL Study Area**

2

3 The BHE PEL study area or “study area” is located within the southwest portion of El

4 Paso County in an area known as the Lower Valley. The northern limit of the study area

5 is Loop 375 (Americas Avenue) between the Zaragoza International Port of Entry (POE)

6 and I-10. The study area extends approximately 20 miles in a southeasterly direction to

7 just south of the Fabens International POE (future Tornillo-Guadalupe International

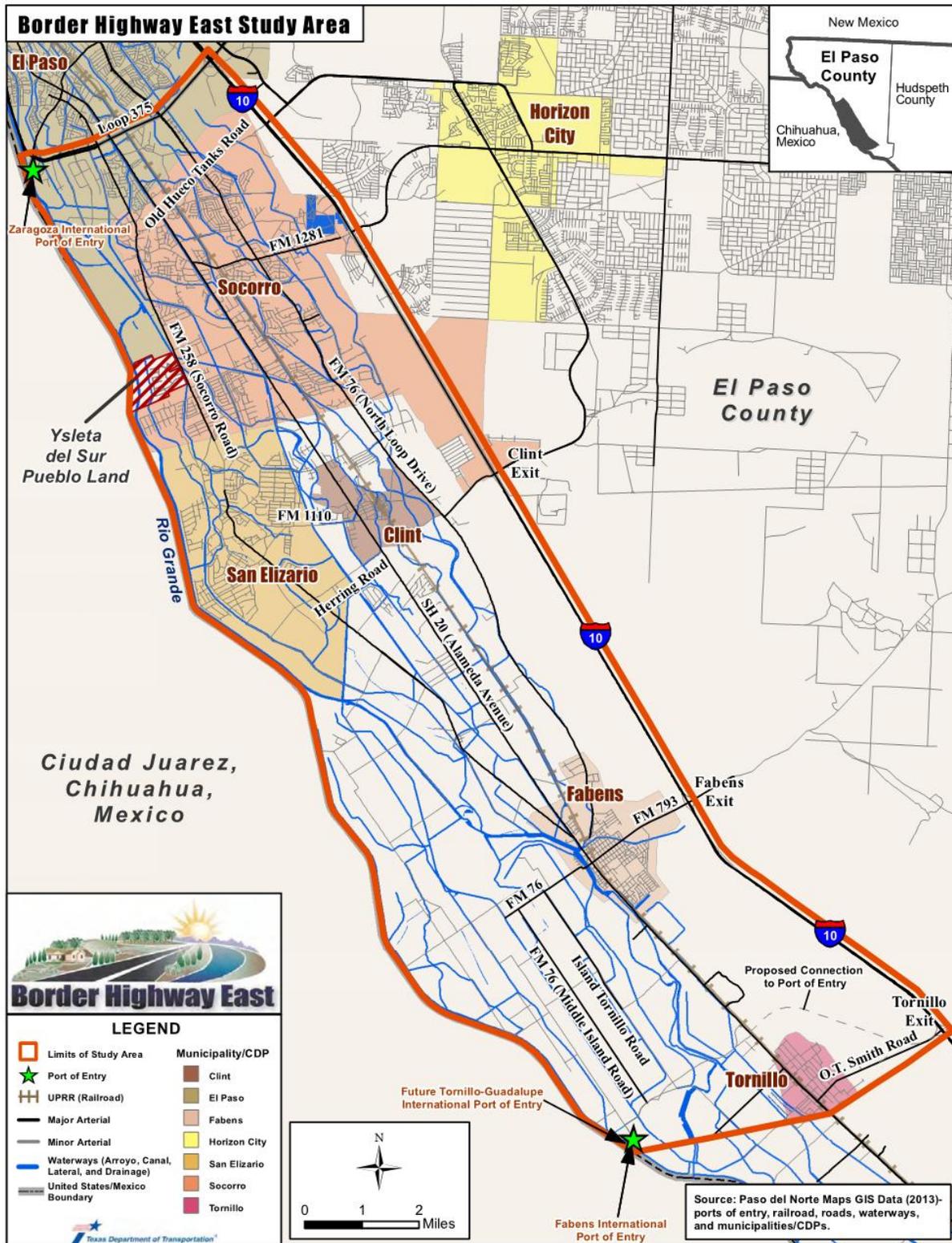
8 POE). The western limit is the Rio Grande and the eastern limit is I-10. The study area

9 is depicted on **Figure 1**.

10

1

Figure 1: BHE PEL Study Area



2

1.2.2 Previous Studies

A study to assess transportation solutions within the previously defined BHE study area was completed in 1997. The *1997 Border Highway Extension Feasibility Study* (TxDOT 1997) identified and analyzed constraints within the study area, assessed the existing transportation system, developed traffic projections, and considered alternatives. The study integrated the public involvement process and technical evaluation to analyze and screen alternatives and determine a feasible alignment/route. The study concluded that based on travel demand in the study area, a new highway would best serve the corridor. The most feasible route would connect with Loop 375 approximately at Southside Feeder Road (Southside Drive) and continue along this road; cross the Riverside Canal to the north and across the Riverside International Industrial Center; cross the Riverside Canal once more and head southeast; cross the El Gran Valle, Las Azaleas and Bosque Bonito subdivisions; and continue in an easterly direction across mostly agricultural areas in the Lower Valley to its terminus at FM 1109. The most feasible route per the *1997 Border Highway Extension Feasibility Study* is depicted in **Attachment A**.

During the preparation of the *1997 Border Highway Extension Feasibility Study*, the purpose and need was developed based on the public's insight to transportation problems and needs in the study area. The public involvement process consisted of an initial meeting, three public meetings, an agency follow-up meeting, a dozen personal interviews, and several follow-up mail-outs. After recognizing the need to improve the transportation system within the Lower Valley, the MPO included the *1997 BHE Feasibility Study* in the 1994-1999 Transportation Improvement Program (TIP).

The alternatives developed during the 1997 study will be taken into consideration and incorporated into the PEL process, which will include alternatives analysis and public involvement.

1.2.3 Regional Planning Context

The El Paso MPO is responsible for long-range transportation planning in the greater El Paso metropolitan area. The most recently approved MTP is the *Horizon 2040 MTP*, approved by the Policy Board on October 4, 2013. The MPO's MTP includes projects such as new roadways, improvements to existing roadways, new transit service, safety, illumination, and intersection improvements, pedestrian and bicycle enhancements, and international POE efficiencies planned for the 2012-2040 time period. Currently, the El Paso MPO is developing the conformity analysis associated with the *Horizon 2040 MTP*, anticipated for approval by February 2014.

Currently, two new two-lane divided roadways within the study area referred to by the El Paso MPO as the "Loop 375 Border Highway East", are listed in the *Horizon 2040 MTP*. These projects would extend from Loop 375 to the Herring Road extension and from Herring Road to the Fabens International POE (future Tornillo-Guadalupe International POE). The projects would be funded by El Paso County and are planned

1 to be open to traffic by 2030 and 2040, respectively. The PEL process may determine
2 that further refinements to the MTP are required as other project(s) are identified and
3 recommended in coordination with El Paso MPO, other agencies, local communities
4 and the public.

6 **1.3 Need for Improvements in the BHE PEL Study Area**

7
8 Transportation improvements are needed to address the following issues within the
9 study area:

10 Inadequate System Capacity:

11 Inadequate transportation system capacity along primary existing east-west arterials
12 and insufficient transportation alternatives to meet the increasing demand (for the
13 movement of people and goods) resulting from population and employment growth in
14 the region.

15 Inadequate System Linkage:

16
17 Currently, the vehicular traffic (including emergency vehicles) traveling from the south
18 part of the study area to I-10 need to cross several at-grade railroad intersections that
19 may result in travel delays. There is a lack of system connectivity and continuity within
20 the study area to primary transportation arteries (I-10 and Loop 375) from the border
21 communities and the major roadways (e.g. I-10, Socorro Road, Alameda Avenue, and
22 North Loop Drive).

23 Lack of Modal Connectivity:

24
25 There is an increasing demand on area transportation infrastructure (roadways,
26 railroads and ports of entry) associated with increasing international and interregional
27 trade and freight rail movements.

28
29
30 The issues indicate that there is a need for improved transportation system capacity,
31 transportation system linkage, and improved modal relationships within the BHE PEL
32 study area.

33 **1.3.1 System Capacity**

34
35
36 I-10 is a vital trans-continental trade corridor and the only continuous east-west route
37 through El Paso. According to recent studies by the Texas department of
38 Transportation (TxDOT) and the Texas Transportation Institute (TTI), four El Paso
39 roadway segments, including I-10 between United States Highway (U.S.) 54 and Loop
40 375 which is immediately north of the study area, are among the 100 most congested
41 road sections in the state (TxDOT 2012). The study was conducted on all roads in
42 Texas using annual average of traffic speed for each road segment on each day for
43 every 15 minutes - 672 day/time period cells (24 hours x 7 days x 4 times per hour).²

² Traffic counts are recorded 365 days a year at select locations across Texas called Automatic Traffic Recorders. These locations provide factors on how any one specific day relates to the average annual traffic for the year, including volume, speed and classification. These factors are then applied to similar facilities, in this case I-10, such that a daily or weekly set of data can be extrapolated to represent the average annual traffic flow. The detailed

1 The I-10 segment mentioned ranked No. 34th in the list and is expected to result in
2 232,773 annual hours of delay per mile, which translates into \$59.87 million in annual
3 cost of delay.

4
5 The existing Fabens International POE, near the study area's southern end, is not
6 currently designed to accommodate commercial traffic. A Master Plan for southeast
7 El Paso County features a new POE between the United States (U.S.) and Mexico
8 border near Tornillo that would allow commercial traffic to cross the border at the
9 eastern part of the county. The permit application, which authorized construction,
10 operation, and maintenance of the future Tornillo-Guadalupe International POE bridge
11 between the U.S. and Mexico, was obtained in March 21, 2005. Construction of the
12 new bridge in the U.S. began in April 2011 and is scheduled to be completed in 2014.
13 Construction of the Mexican portion of this POE is planned to begin construction in
14 2014. Once the future Tornillo-Guadalupe International POE is operational, population
15 growth is expected to greatly increase because this area is proposed for industrial and
16 commercial development.

17
18 Transportation system capacity is the primary need to be addressed and the following
19 sections support the need for adding capacity within the study area. Supporting data
20 include traffic forecasts and LOS for primary roadway arteries, for both existing and
21 future conditions. In addition to the roadway LOS, the analysis includes an modal
22 assessment of trips that can reasonably be accounted for by alternate modes based on
23 information provided by the El Paso MPO, Sun Metro, and El Paso County. Based on
24 an assessment of modal splits within the study area, it was determined that transit will
25 account for up to 3 percent of the total peak period trips within the study area. Bicycle
26 and pedestrian mode share is forecasted to account for an additional 3 percent of
27 forecasted trips within the study area as well. The study will include alternatives and
28 strategies to address the forecasted portion of non-roadway trips (approximately 6
29 percent) within the study area including: expanding bus service frequency during peak
30 periods, incorporating transit recommendations identified in the *Horizon 2040 MTP*
31 including development of a BRT line along Alameda Avenue, recommendations for
32 extensions of existing bus routes to more directly serve activity centers such as the
33 future Tornillo-Guadalupe International POE, provision of additional bicycle and
34 pedestrian facilities to connect transit routes to programmed bicycle and pedestrian
35 improvements, and accommodation of bicycle and pedestrian facilities on future
36 roadway capacity improvements. The remaining vast majority of trips within the study
37 area (approximately 94 percent) will need to be addressed by future roadway network
38 improvements within the BHE PEL study area. Consequently, the recommendations to
39 improve capacity of the transportation network will prioritize those roadway alternatives
40 that best satisfy the transportation demand that is not satisfied by non-roadway
41 strategies.

methodology for determining volumes and speeds analyzed in the TTI report can be found at:
<http://mobility.tamu.edu/files/2011/11/ccr-appendix-b.pdf>.

LOS

A LOS operational analysis of the primary roadway network arterials (including freeway main lanes, entrance and exit ramps, and urban arterials) was performed for the existing traffic and projected conditions (year 2040) using traffic counts provided by TxDOT-El Paso District and traffic projections derived from the El Paso MPO's travel demand model, according to procedures specified in the 2010 publication, *Highway Capacity Manual (HCM2010)*, published by the Transportation Research Board.

LOS is an indication of the less tangible attributes of corridor travel, such as freedom to maneuver in the travel stream, traffic interruptions, comfort and convenience. Much like a student's report card, LOS is represented by the letters "A" through "F", with "A" generally representing the most favorable driving conditions and "F" representing the least favorable or most congested. According to the *HCM2010*, operations at LOS F are volatile because there are virtually no usable gaps in the traffic stream. Any alteration of the traffic stream such as a vehicle changing lanes, can establish a disruption wave that ripples throughout the upstream traffic flow. At capacity (LOS E), the traffic stream has no ability to dissipate; even the most minor disruption, and any incident such as a disabled vehicle or debris on the roadway, can potentially produce a serious breakdown in vehicle flow. The LOS is based on a volume to capacity ratio (v/c). The v/c ratio is the daily roadway segment volume divided by the capacity of the roadway segment; the higher the v/c ratio the lower the LOS.

Existing traffic Conditions

The existing roadway network is comprised of four parallel major facilities: Socorro Road, Alameda Avenue, North Loop Drive, and I-10. Within the study area, Socorro Road and North Loop Drive begin at Loop 375 on the west and end in Fabens. Alameda Avenue and I-10 are the only continuous east-west routes within the study area. To evaluate the existing network within the study area, recently collected traffic counts and the *Horizon 2040* model were utilized to estimate LOS. Refer to **Table 1** and the **2010 Level of Service Map** in **Attachment A** for existing traffic information. As shown in **Table 1**, the highest percent of truck traffic occur along I-10, followed by Horizon Boulevard (FM 1281), North Loop Drive, Socorro Road, Fabens Road (FM 793), Alameda Avenue, and Clint Cutoff Road (FM 1110).

Table 1: 2010 Roadway Level of Service

Location	2010 Traffic Counts	2010 Truck % ***	2010 ADT (Model)	2010 Capacity	2010 V/C	2010 LOS
FM 258 (Socorro Rd.)						
FM 258 b/t Loop 375 and Buford Rd.*	22,859	8.0	11,764	17,700	1.29	F
FM 258 b/t Buford Rd. and Tiwa Blvd.*	17,239	9.2	10,099	17,700	0.97	E
FM 258 b/t Tiwa Blvd. and Herring Rd.*	15,164	n/a	9,811	18,588	0.82	D
FM 258 b/t Herring Rd. and SH 20*	1,888	n/a	573	18,588	0.10	A
SH 20 (Alameda Ave.)						
SH 20 b/t Loop 375 and Tiwa Blvd.	23,840	4.9	34,211	42,226	0.56	C
SH 20 b/t Tiwa Blvd. and Herring Rd.	11,302	n/a	13,409	42,226	0.27	A
SH 20 b/t Herring Rd. and FM 258*	5,402	n/a	2,175	19,432	0.28	B
SH 20 b/t FM 258 and FM 1109*	7,318	n/a	2,008	17,700	0.41	B
FM 76 (North Loop Dr.)						
FM 76 b/t Loop 375 and Old Hueco Tanks Rd.	25,776	15.8	24,644	32,038	0.80	D
FM 76 b/t Old Hueco Tanks Rd. and FM 1281	19,435	n/a	17,377	21,112	0.92	E
FM 76 b/t FM 1281 and FM 1110	5,022	15.5	10,593	21,112	0.24	A
FM 76 b/t FM 1110 and FM 793*	3,958	n/a	1,089	17,700	0.22	A
I-10						
I-10 b/t Loop 375 and Old Hueco Tanks Rd.**	n/a	18.0	75,762	77,642	0.98	E
I-10 b/t Old Hueco Tanks Rd. and FM 1281	60,000	22.5	70,008	77,642	0.77	D
I-10 b/t FM 1281 and FM 1110	31,000	29.5	42,483	79,250	0.39	B
I-10 b/t FM 1110 and FM 793	25,000	29.5	31,545	42,240	0.59	C
I-10 b/t FM 793 and FM 1109	21,000	29.5	20,860	49,920	0.42	B
Old Hueco Tanks Rd.						
Old Hueco Tanks Rd. south of FM 76	4,435	n/a	7,386	17,546	0.25	A
Old Hueco Tanks Rd. b/t FM 76 and I-10	n/a	n/a	n/a	n/a	n/a	n/a
FM 1281 (Horizon Blvd.)						
FM 1281 south of FM 76	13,359	18.4	7,139	17,848	0.75	D
FM 1281 b/t FM 76 and I-10	27,000	n/a	21,821	42,226	0.64	C
FM 1110 (Clint Cut-off Rd.)						
FM 1110 south of FM 76	5,510	1.6	6,492	11,590	0.48	C
FM 1110 b/t FM 76 and I-10	7,300	n/a	7,828	17,546	0.42	B
FM 793 (Fabens Rd.)						
FM 793 south of SH 20	2,916	n/a	2,119	16,746	0.17	A
FM 793 b/t SH 20 and I-10**	n/a	5.3	14,693	16,018	0.92	E
FM 3380 (Manuel F. Aguilera Highway)						
FM 3380 south of SH 20**	n/a	n/a	924	17,546	0.05	A
FM 1109 (O.T. Smith Rd.)						
FM 1109 b/t SH 20 and I-10*	3,632	n/a	1,104	19,068	0.19	A

2 Sources *Horizon 2040* MTP model, Jacobs 2013

3 v/c: volume-to-capacity ratio, ADT: Average Daily Traffic, b/t: between, n/a: not available

4 Assuming free flowing speed of 55 miles per hour, the LOS was determined as follows: for maximum v/c of 0.27, LOS A; for maximum v/c of 0.44, LOS B; for maximum v/c of 0.64, LOS C; for maximum v/c of 0.85, LOS D; for maximum v/c of 1.00, LOS E; and for v/c greater than 1.00, LOS F.

7 **2010 V/C and LOS based on 2010 Traffic Counts. Where 2010 Traffic Counts are not available, the 2010 V/C and LOS were based on 2010 ADT (Model).

9 ***2010 Truck Percentage from 2010 Traffic Counts except I-10 Truck Percentage from 2006 T-Log.

1 **Future Traffic Conditions**

2 According to the *Horizon 2040 MTP*, the daily total vehicle miles of travel in the MPO
 3 study area is anticipated to be approximately 26.3 million by 2040, an increase of 84
 4 percent from the 14.3 million vehicle miles of travel in 2010 (EL Paso MPO 2010).
 5 **Table 2** summarizes the *Horizon 2040* model data for the major roadways within the
 6 study area, the v/c ratio and LOS for 2040 forecasts at selected locations within the
 7 study area. The 2040 truck percentages within the study area were obtained from the
 8 *Horizon 2040 MTP* model. The future truck percentages are forecasted to be range
 9 from approximately 7 percent to 15 percent within the study area. As shown in **Table 2**,
 10 the highest percent of truck traffic in 2040 is forecasted to occur along O.T. Smith Road,
 11 followed by Horizon Boulevard, North Loop Drive, FM 1110, Alameda Avenue, I-10,
 12 Fabens Road, and Socorro Road. Refer to **Table 2** and the **2040 Level of Service Map**
 13 in **Attachment A**.

14
15

Table 2: 2040 Traffic Forecast within the Study Area

Location	2040 ADT (Model)	2040 Truck % (Model)	Annual Growth Rate	2040 ADT (Forecasted)	2040 Capacity	2040 V/C	2040 LOS
FM 258 (Socorro Road)							
FM 258 b/t Loop 375 and Buford Rd.*	15,765	8.1	1.18%	29,584	17,700	1.67	F
FM 258 b/t Buford Rd. and Tiwa Blvd.*	12,489	7.6	0.85%	20,914	17,700	1.18	F
FM 258 b/t Tiwa Blvd. and Herring Rd.*	13,022	7.7	1.14%	19,478	18,588	1.05	F
FM 258 b/t Herring Rd. and SH 20*	1,123	6.8	2.73%	3,173	18,588	0.17	A
SH 20 (Alameda Avenue)							
SH 20 b/t Loop 375 and Tiwa Blvd.	43,809	9.3	0.99%	43,809	42,226	1.04	F
SH 20 b/t Tiwa Blvd. and Herring Rd.	19,586	8.0	1.53%	19,586	42,226	0.46	C
SH 20 b/t Herring Rd. and FM 258*	4,309	9.7	2.77%	9,138	19,432	0.47	C
SH 20 b/t FM 258 and FM 1109*	4,336	8.1	3.13%	13,024	17,700	0.74	D
FM 76 (North Loop Drive)							
FM 76 b/t Loop 375 and Old Hueco Tanks Rd.	32,038	9.7	1.06%	32,038	35,696	0.90	E
FM 76 b/t Old Hueco Tanks Rd. and FM 1281	37,154	9.6	3.09%	37,154	39,168	0.95	E
FM 76 b/t FM 1281 and FM 1110	14,357	10.2	1.22%	14,357	21,112	0.68	D
FM 76 b/t FM 1110 and FM 793*	2,042	10.3	2.55%	6,473	18,588	0.35	B
I-10							
I-10 b/t Loop 375 and Old Hueco Tanks Rd.**	127,190	7.8	2.09%	127,190	137,582	0.92	E
I-10 b/t Old Hueco Tanks Rd. and FM 1281	94,781	8.7	1.22%	94,781	81,250	1.17	F
I-10 b/t FM 1281 and FM 1110	65,864	8.5	1.77%	65,864	79,250	0.83	D
I-10 b/t FM 1110 and FM 793	53,477	8.6	2.13%	53,477	42,240	1.27	F

Location	2040 ADT (Model)	2040 Truck % (Model)	Annual Growth Rate	2040 ADT (Forecasted)	2040 Capacity	2040 V/C	2040 LOS
I-10 b/t FM 793 and FM 1109	44,792	9.4	3.10%	44,792	49,920	0.90	E
Old Hueco Tanks Road							
Old Hueco Tanks Rd. south of FM 76	14,606	7.5	2.76%	14,606	17,546	0.83	D
Old Hueco Tanks Rd. b/t FM 76 and I-10	17,854	8.6	n/a	17,854	35,090	0.51	C
FM 1281 (Horizon Boulevard)							
FM 1281 south of FM 76	16,240	11.7	3.34%	16,240	38,554	0.42	B
FM 1281 b/t FM 76 and I-10	32,008	10.5	1.54%	32,008	42,226	0.76	D
FM 1110 (Clint Cut-off Road)							
FM 1110 south of FM 76	10,482	8.9	1.93%	10,482	19,068	0.55	C
FM 1110 b/t FM 76 and I-10	15,685	9.9	2.82%	15,685	17,546	0.89	E
FM 793 (Fabens Road)							
FM 793 south of SH 20	4,755	5.9	3.29%	4,755	16,018	0.30	B
FM 793 b/t SH 20 and I-10	13,791	9.2	-0.25%	13,791	16,018	0.86	E
FM 3380 (Manuel F. Aguilera Highway)							
FM 3380 south of SH 20	1,419	9.0	1.73%	1,419	17,546	0.08	A
FM 1109 (O.T. Smith Road)							
FM 1109 b/t SH 20 and I-10*	2,956	15.1	4.02%	7,269	19,068	0.38	B

1 Sources: Horizon 2040 Model and 2009 TxDOT Traffic Map ([ftp://ftp.dot.state.tx.us/pub/txdot-](ftp://ftp.dot.state.tx.us/pub/txdot-info/tpp/traffic_counts/2008/elp_base.pdf)
2 info/tpp/traffic_counts/2008/elp_base.pdf), Jacobs 2014.

3 v/c: volume-to-capacity ratio, ADT: Average Daily Traffic, b/t: between Notes: this scenario does not include the "Loop
4 375 Border Highway East" project.

5 *2040 model volumes were lower than 2010 count data. The 2010 count volumes were then used as the 2010 traffic
6 volume and then the 2010 traffic volume was then projected to the 2040 Volume using the growth rate obtained from the
7 TDM.

8
9 In **Table 2**, the "2040 ADT Model" consists of the raw traffic data from the regional travel
10 demand model, based on future population and employment, roadway capacities,
11 speeds, and various factors calibrated against existing known travel
12 characteristics. This travel demand model is calibrated and validated within acceptable
13 standards of accuracy to represent travel patterns within the El Paso metropolitan
14 planning area.

15
16 Of the primary arterials which parallel I-10, North Loop Drive, and Socorro Road
17 terminate near Fabens, Texas. Only Alameda Avenue continues to the southeastern
18 most point of El Paso County. Each of these roadways is heavily utilized, nearing or
19 exceeding their capacity by the design year. To maintain acceptable LOS within
20 southeast El Paso County, additional east-west person carrying capacity is required.

21
22 **Population, Households, Employment, and Economic Growth**

23 According to the *Horizon 2040 MTP* forecast data, population in the MPO study area is
24 expected to increase to 1,158,195 by 2040, which represents a population growth of
25 approximately 39 percent. As shown in the **Metropolitan Planning Organization**

1 **Study Area Map** included in **Attachment A**, the MPO study area covers all of El Paso
 2 County in Texas and portions of Doña Ana and Otero Counties in New Mexico. The
 3 anticipated population growth of 39 percent within the MPO study area will directly
 4 impact the number of households, which is expected to result in an increase of
 5 approximately 48 percent by 2040. Employment growth within the same area is
 6 expected to increase from 306,656 in 2010 to 429,455 in 2040. This represents an
 7 employment growth of approximately 40 percent. **Table 3** lists the *Horizon 2040 MTP*
 8 forecast data for population, households, and employment growth for the MPO study
 9 area.

10
 11 **Table 3: Regional Forecasts for Population, Household,
 12 and Employment within the MPO Study Area**

Demographics	2010	2020	2030	2040	% Change 2010-2040
Population	832,836	951,072	1,060,674	1,158,195	39
Housing	270,326	314,789	358,115	399,153	48
Employment	306,656	340,998	382,021	429,455	40

13 Source: El Paso MPO *Horizon 2040 MTP*, October 2013.

14
 15 According to the El Paso Regional Economic Development Corporation (REDCo), the
 16 El Paso region is home to more than 2.6 million residents and comprises one of the
 17 largest bi-national metro areas in the world. Major contributors of the region's economy
 18 include military/defense, international trade and advanced manufacturing, with
 19 significant clusters in automotive, high tech consumer electronics, and medical devices.

20
 21 Fort Bliss is a major contributor to the economy of the El Paso area. Today, Fort Bliss
 22 produces approximately \$80 million in products and services annually, with about \$60
 23 million of those products and services purchased locally. Fort Bliss' total economic
 24 impact on the area has been estimated at more than \$1 billion, with 12,000 soldiers
 25 currently stationed at the fort. It is expected that the Fort Bliss expansion will increase
 26 traffic volume and alter local circulation patterns.

27
 28 Expansion has continued at Fort Bliss since it quadrupled in troop count as a result of
 29 the Base Realignment and Closure (BRAC) decisions, marking the largest net gains of
 30 any military installation in the country. As a major hub for trade and commerce, more
 31 than \$71 billion, or about 18 percent of the total trade between the United States and
 32 Mexico, passed through El Paso's ports in 2010 (REDCo 2011). In addition to
 33 employing military personnel, Fort Bliss increased their civilian personnel to support
 34 expanded activities at the facilities. Most of the population growth is expected to occur
 35 in the eastern area of the city. In March 2013, Fort Bliss began the final stage of what
 36 has been a major housing expansion since 2005. Since 2005, nearly 1,700 new homes
 37 have been built, another 1,700 existing homes have been renovated and about 750
 38 outdated homes have been demolished. When the final phase is complete, nearly \$700
 39 million will have been spent on housing at Fort Bliss. The final phase is planned for
 40 completion in the Spring 2016.

1 Education is also a driving force in the El Paso area's economy. The University of Texas
 2 at El Paso (UTEP) has an annual budget of nearly \$250 million and employs nearly
 3 3,600 people. A 2002 study by the University's Institute for Policy and Economic
 4 Development stated that the University's impact on area businesses has resulted in
 5 \$349 million. The Texas Tech University Health Sciences Center at El Paso (TTUHSC),
 6 which includes the Texas Tech Medical School, will officially be a stand-alone campus
 7 in 2015. By becoming a stand-alone university, TTUHSC at El Paso will have its own
 8 administration, offering more administrative jobs to the area, and also assisting in
 9 expanding the medical research and services capabilities of the facility.

10
 11 According to data obtained from the U.S. Census Bureau (USCB) (Census 2010) from
 12 1990 to 2010 and included in **Table 4**, the study area's population increased from
 13 45,872 individuals to 71,665 individuals, an increase of approximately 56.2 percent.
 14 Between 1990 and 2010, population growth within the study area (56.2 percent) was
 15 substantially higher than the population growth experienced within El Paso County for
 16 the same period, which was approximately 35.3 percent.

17
 18 **Table 4: Study Area Population Growth 1990-2010**

Geography	1990 Population	2000 Population	2010 Population	Percent Change 1990-2000	Percent Change 2000-2010	Percent Change 1990- 2010
El Paso County	591,610	679,622	800,647	14.9%	17.8%	35.3%
City of El Paso	515,342	563,662	649,121	9.4%	15.2%	26.0%
City of Socorro	22,995	27,152	32,013	18.1%	17.9%	39.2%
Town of Clint	1,035	980	926	-5.3%	-5.5%	-10.5%
Fabens CDP	5,599	8,043	8,257	43.7%	2.7%	47.5%
San Elizario CDP	4,385	11,046	13,603	151.9%	18.3%	210.2%
Tornillo CDP*	---	1,609	1,568	---	-2.5%	---
Study Area Census Tracts	45,872	64,601	71,665	40.8%	10.9%	56.2%

19 *Tornillo CDP did not exist in 1990.

20 Source: USCB, *Census 1990, 2000, and 2010*. Summary File 1 (SF 1) 100-percent data. Summary File 1 provides
 21 population counts collected from all people and housing units.

22
 23 Demographic data obtained from the USCB revealed demographic trends for several
 24 communities that are partially or wholly contained by the study area. The City of El Paso
 25 experienced an approximately 26.0 percent increase in population from 1990 to 2010.
 26 The City of Socorro experienced an approximately 39.2 percent increase in population
 27 from 1990 to 2010. The Town of Clint experienced an approximately 10.5 percent
 28 decrease in population from 1990 to 2010; however Fabens CDP grew approximately
 29 47.5 percent between during the same time period. San Elizario CDP experienced an
 30 extremely robust period of growth from 1990 to 2010, which more than doubled its
 31 population from 4,385 to 13,603 for a growth of approximately 210.2 percent. Between
 32 2000 and 2010, Tornillo CDP's population decreased by approximately 2.5 percent.

33
 34 One economic development endeavor within the study area is the Revolving Loan Fund
 35 (RLF) program. El Paso County created the RLF from program income via grants
 36 provided by U.S. Department of Housing and Urban Development (HUD) through the

1 State of Texas. A Joint RLF program is partially funded through the State of Texas from
2 HUD. It is also funded by the City of El Paso through the U.S. Economic Development
3 Administration. The RLF program is designed to stimulate economic growth in the rural
4 areas of El Paso County and provide capital for private projects, which would not be
5 possible without such assistance. In accordance with national objectives, the funds
6 support the creation of permanent new jobs and/or the retention of existing jobs; it
7 targets primarily low and moderate-income persons. The RLF program is another
8 approach to help stimulate new investment in the county and to expand employment. It
9 is anticipated that the economic growth would result in the need for improved mobility
10 and access within the study area. These needs could be addressed with the
11 implementation of future BHE project(s).

12
13 The anticipated growth of the El Paso metropolitan area would continue to impact the
14 Lower Valley with increased economic opportunities as well as significant challenges to
15 the existing transportation network. The projected population, households,
16 employment, and economic growth is expected to place an even greater demand on the
17 existing roadway facilities within the El Paso region and the BHE PEL study area.

18 19 **1.3.2 System Linkage**

20
21 I-10 is the primary transportation route through southeast El Paso County and serves
22 the predominant traffic pattern (southeast to northwest) within the study area. It is
23 heavily utilized and experiences substantial peak period congestion. The primary
24 parallel arterial alternatives to I-10, which also provide connections from the City of El
25 Paso to the southeastern portion of the county, are North Loop Drive, Alameda Avenue,
26 and Socorro Road. Each of these roadways is heavily utilized and only Alameda
27 Avenue provides network connectivity to the most southeastern point of El Paso
28 County. In addition to the limited east-west connections noted above, the north south
29 crossing links between the border communities and I-10 are limited and circuitous. The
30 primary crossing roadways in the corridor are Horizon Boulevard, FM 1110, Fabens
31 Road, and O. T. Smith Road. All of these existing roadways have circuitous and
32 disjointed connections to the border communities they serve, placing additional strain on
33 the existing east-west arterials. Compounding the impact of the lack of roadway
34 connections are a lack of mode connection alternatives, as there are minimal bus
35 transit, bicycle or pedestrian routes, serving populations without access to a single
36 occupancy vehicle. Consequently, there is currently a need to improve access and
37 linkage in the study area that can be addressed by providing additional transportation
38 network connections to I-10 and an alternate route to existing roadways.

39
40 Future BHE alternative(s) including alternate connection(s) to I-10 for travel through the
41 study area, paralleling Socorro Road, Alameda Avenue, and North Loop Drive would
42 help manage congestion on these parallel facilities and provide a more direct route for
43 vehicles traveling southeast from Loop 375 and northwest from the Fabens International
44 POE (future Tornillo-Guadalupe International POE). In addition to these roadway
45 oriented links, alternatives need to consider closing the gaps in between connecting
46 major activity centers to potential modal connections. As an example, increased

1 pedestrian traffic at the Fabens International POE (future Tornillo-Guadalupe
2 International POE) may be better served by improvements to El Paso County Rural
3 Transit routes with more direct connections to the POE and other similar activity centers
4 that attract heavy pedestrian traffic without access to a vehicle.

5
6 The El Paso MPO has identified several planned transportation improvements within the
7 study area in the *Horizon 2040 MTP*. These projects, listed in **Table 5**, are currently
8 being proposed as a solution to growing traffic demand along I-10. The projects,
9 denoted with a Map ID, are those presented graphically on the **Border Highway East –**
10 **2040 MTP Projects Included in the Study Area** exhibit included in **Attachment A**.
11 The projects would provide additional capacity and an alternate relief route to I-10 from
12 the New Mexico state line to the Loop 375/Americas Interchange. The establishment of
13 a relief route would provide I-10 motorists with additional transportation alternatives and
14 a balanced distribution of traffic within this corridor. It is important that these planned
15 improvements are taken into account in the BHE PEL process to establish a system of
16 efficient and compatible transportation links.

17

18

Table 5: Planned Improvements within the BHE PEL Study Area

Location	Map ID	Project Description	Implementation Year
Darrington Road from LTV Road to I-10	A407X-25A	Widen to 4 lanes divided	2030
Betel Road from Ivey Rd. to Americas Ave. (Loop 375)	A502X-15A	Build 4 lanes undivided	2020
FM 1281 from FM 76 North Loop Dr. to SH 20	A506X-05A and A506X-ROW	Widen to 4 lanes divided with striped median and ROW for widening	2020
Belen Rd. (Socorro) from Border Hwy. East to FM 258	A507X-15A	Build 2 lanes undivided	2030
Billy the Kid St. from approx. 1 mile Southeast of Zaragoza Rd. to Loop 375	A520X-MOD	Build 4 lanes undivided	2030
FM 3380 - Miguel F. Aguilera Hwy. from 0.35 mile South of SH 20 to I-10	A522C-MOD	Build 2 lanes undivided including overpass at SH 20/UPRR	2020
FM 3380 - Miguel F. Aguilera Hwy. from 0.35 mile South of SH 20 to I-10	A522D-CAP	Widening from 2 lane undivided to 4 lane divided, including overpass widening at SH 20/UP railroad	2030
Zaragoza POE Campus to Pan American Dr. at Loop 375 (Americas Ave.)	A524X-CAP	Build/reconstruct 2 lane divided road for international truck traffic crossing at the Zaragoza POE to Loop 375 to include signage and lighting	2020
Zaragoza POE Campus to Pan American Dr. at Loop 375 (Americas Ave.)	A524B-CAP	Widen from 2 to 4 lane divided road for international truck traffic crossing at the Zaragoza POE to Loop 375 to include landscaping, median, sidewalk, and parkway improvements (4 lane road at completion of both phases)	2020
Zaragoza Rd. POE	C023X	Widening Zaragoza Rd. POE main lanes (6 additional lanes- 2 regular lanes in each direction and a fast lane in each direction)	2030
Loop 375 (Americas Ave.) from FM 659 Zaragoza Rd. to FM 76 North Loop Dr.	F040X-MOD	Widen to 6 lanes divided (Additional lanes -tolled)	2020

Location	Map ID	Project Description	Implementation Year
Loop 375 (Americas Ave.) from FM 76 to Zaragoza POE	F048X	Ramp reconfiguration and frontage road extension with grade separation at rail road crossing	2020
Loop 375 from FM 76 North Loop to Bob Hope	F402X-CAP	Widen Loop 375 frontage roads from 2 to 3 lanes	2020
Loop 375 (Americas/Joe Battle) from FM 76 North Loop Dr. to Bob Hope	F403X-CAP	Widen from 4 to 6 lanes	2020
I-10 at Loop 375 (Americas Ave.)	I007E-1 and I007E-2	Interchange improvements include construction of remaining direct connectors EB to SB and WB to SB	2020
I-10 at Loop 375 (Americas Ave.)	I007F	Interchange improvements include construction of the remainder direct connector NB to EB and SB to EB	2020
I-10 from FM 659 (Zaragoza) to Loop 375 (Americas)	I055B-MOD	Add 1 lane each direction main lanes and widen west bound and east bound frontage roads from 2 to 4 lanes and upgrading to urban design that eliminates low water crossings.	2020
I-10 at Loop 375 to FM 656 Zaragoza along I-10	I058X	I-10 at Loop 375 interchange improvements westbound braided ramp	2020
I-10/O.T. Smith interchange to 1.2 miles east of O.T. Smith/I-10	I401X-CAP	Eastbound 2-lane frontage road at O.T. Smith including entry ramp to I-10	2020
I-10 at Loop 375 to Eastlake Blvd.	I403X-CAP	On I-10 widen eastbound and westbound frontage roads from 2 to 3 lanes	2020
FM 1281 (Horizon Blvd.) from I-10 to Antwerp	P431X-MOD	Widen to 6 lanes divided	2040
Eastlake Blvd. from I-10 to Approx. 0.25 miles west of Darrington Rd.	P439X-MOD	Widen 4 lanes divided to 6 Lanes divided	2020
I-10 at FM 1110	P456X-CAP	Widening FM 1110 bridge from 2 to 4 lanes undivided including operational improvements	2020
Border Highway East from Herring Rd. Extension to Tornillo-Guadalupe POE	P505D-MOD	Build 2 lanes divided	2040
Border Highway East from Loop 375 (Americas Ave.) to Herring Rd. Extension	P505E-MOD	Build 2 lanes divided	2030
Old Hueco Tanks Rd. (Socorro) from I-10 (Gateway East)/Eastlake Blvd. to FM 76 (North Loop Dr.)	P509X-05A	Build 4 lanes divided to extend Eastlake Blvd. to FM 76 including bike lanes	2020
Tiwa Blvd. (Socorro) from Border Hwy Extension East to FM 258 (Socorro Rd.)	P512X-15A	Build 2 lanes	2030
Tiwa Blvd. (Socorro) from FM 258 (Socorro Rd.) to Alameda (SH 20)	P517A-15A	Build 2 lanes	2030
Tiwa Blvd. (Socorro) from SH 20 (Alameda Ave.) to I-10 (Gateway East)	P517B-15A	Build 4 lanes	2040
Herring Road from Border Highway Extension to Alameda Avenue (SH 20)	P520A-15A	Build 2 Lanes from Border Highway Extension to Riverside Rd. and upgrade/rehabilitate the existing Herring Rd. from Riverside Rd. to Alameda Ave.	2030

Location	Map ID	Project Description	Implementation Year
Clint Road from Alameda Avenue (SH 20) to I-10	P520B-15A	Build 2 Lanes from Alameda Ave. to North Loop Dr. and upgrade/rehabilitate the existing Clint Cutoff Rd. from Northloop Dr. (FM 76) to I-10	2030
Ysleta, Socorro, San Elizario	N/A	Purchase of three 19-passenger busses and operating funds for 3 years for a circulator bus route connecting Usleta, Socorro, San Elizario and all unincorporated areas in between.	2020
Zaragoza POE	N/A	Park-N-Ride: To promote the use of mass transit with transit station, taxi stand at the Zaragoza border safety inspection facility (BSIF) stations for cross-border travel to improve air quality.	2020
Zaragoza POE	N/A	A freight shuttle system (FSS): The system will increase the security of the border while facilitating international trade, improving air quality and promoting regional economic development. Design of commercial entrance and exit to the CBP compound at the POE connected to the new access road through Pan American and Winn Rd.	2020
Zaragoza POE	N/A	Construct a state of the art toll collection facility; the state of the art facility will use dynamic tolling to increase traffic efficiency.	2020
Zaragoza POE	N/A	Reconfigure lanes by reducing the sidewalks width on each side of the bridge from 10 ft. to 5 ft. widths to increase number of lanes from 5 to 6.	2020
Tornillo-Guadalupe POE	N/A	Design and installation of tolling equipment for manned toll booths; design and construction of express toll lanes with electronic toll collection equipment.	2020
County of El Paso	N/A	Transportation for elderly/disable provided by LCL nonprofit organization and New Freedom Program.	2020
City of El Paso	N/A	Creation of a bicycle plan, education and outreach, internal staff training and education, and program implementation through the construction of bicycle facilities and infrastructure.	2020
City of Socorro	N/A	Pedestrian safety initiative to provide education and outreach material to empower residents in the city safely walk and bicycle within the adopted safe routes to school within the city	2020
City of Socorro	N/A	Feasibility study for Socorro Port of Entry	2020

Location	Map ID	Project Description	Implementation Year
FM 1281 from North Loop to Alameda	N/A	ROW for widen to 4 lanes divided with striped median	2020
City of El Paso	N/A	Geometric improvements that may include construction of curb and gutter, left and right turn bays, signalization, roundabouts, pedestrian/bicycle amenities, traffic control devices	2020-2040
FM 793 (Fabens Street) from K Ave. to I-10	N/A	Upgrade 2 lane street	2040
City of El Paso	N/A	Great Streets and Corridor Plan: to emphasize a mechanism to improve right-of-ways into high quality public spaces intended to serve all modes of transportation, including walkability, bicycling and mass transit.	2020
City of El Paso	N/A	Aesthetics Improvements along I-10	2020
I-10 from Zaragoza Road to Eastlake Blvd.	N/A	Upgrade to 8-lane section	2020
I-10/Loop 375 Interchange	N/A	Cloverleaf Expansion	2020
City of El Paso	N/A	Quiet Zones (Medical Center and Five Points) includes construction or reconstruction of railroad crossings to include gates, approaches, signals, pedestrian crossings, enhance the safety element.	2020
Regional	N/A	Regional Bike Improvements (on-state)	2020
SH 20 from Padres Street to Americas Avenue	N/A	Intersection improvements and rehabilitation	2020
SH 20 from 0.7 South of Horizon Blvd. to 0.6 North of Horizon Blvd.	N/A	Reconstruct intersection at Horizon Blvd./Buford Rd. – Socorro	2020
FM 76 (North Loop Drive)	N/A	Construct a pedestrian bridge on Cadwalleder St. over RR crossing	2020
Various Locations	N/A	School Zone Safety: Installing new school flasher and/or upgrading existing flashers citywide, also includes signage, striping and ADA ramps	2020
El Paso MPO Region	N/A	Teens in the Driver Seat Program: Peer to peer public outreach program for teens that focuses on traffic safety and major risks for this age group, feared toward high school and junior high/middle school students	2020
Regional	N/A	Activate/customize Smartrek Mobile and Smartrek Synergy, the no construction intelligent transportation system that will transform the driver experience by rewarding drivers for helping reduce congestion and emissions within their cities.	2020
Tornillo ISD	N/A	2-propane school buses for Tornillo ISD	2020
Regional	N/A	Vanpool Program	2020
City of El Paso	N/A	Video surveillance and count stations phase 2	2020

Location	Map ID	Project Description	Implementation Year
Transit loop serving El Paso Community College Mission Del Paso Campus, Clint, San Elizario and Socorro	N/A	Bus Purchase in exchange for service by Sun Metro	2020
City of El Paso	N/A	Forty foot bus purchases	2020
City of El Paso	N/A	Park and Ride Routes: Zaragoza Bridge to DTC thru MV.	2020
City of El Paso	N/A	Various Improvements: Arterial Lighting Median Landscaping Safety Lighting Rehabilitation Projects Sign Replacement Program Street Resurfacing and maintenance Bridge replacement/rehabilitation Install protective RR crossing devices	ALL
City of El Paso	N/A	Bus Shelters citywide	2020
Zaragoza POE	N/A	Zaragoza, Alameda, Montana connection (Bus and roadway improvements)	2020
City of El Paso	N/A	Job access and reverse commute: welfare to work, access to jobs (yearly assumption to be program)	2020
City of El Paso	N/A	Paratransit Van and Vehicle Replacement	2020
City of El Paso	N/A	Public outreach for one-call/one-click or single entity that can provide information about all the public transportation services available in the region to include veteran community.	2020

1 Source: *Horizon 2040 MTP Project List* (October 2013).

2 *N/A=Not applicable.*

3

4 By establishing a transportation link between the future Tornillo-Guadalupe International
 5 POE and the existing regional transportation system, future BHE project(s) would
 6 contribute to the trans-continental trade network by providing an alternate route to I-10.
 7 Improving freight mobility in the El Paso metropolitan transportation network can result
 8 in substantial cost savings to regional business and ultimately increase the El Paso
 9 Region’s economic competitiveness (El Paso MPO 2006).

10

11 In the City of Socorro, city officials have already begun long-term initiatives to provide
 12 roadway connections to I-10, including widening Horizon Boulevard, Eastlake
 13 Boulevard, and Tiwa Boulevard, as residents in the area continue to experience heavy
 14 levels of congestion on FM 76 (Rollow 2006). Additionally, the BHE PEL process would
 15 evaluate a potential direct connection (interchange) to Loop 375 near the Zaragoza
 16 International POE in the City of El Paso.

17

18 The BHE PEL process and future BHE project(s) will include the evaluation of potential
 19 connections to I-10. These potential system links to I-10 are crucial to the Lower Valley
 20 transportation network.

1.3.3 Modal Connectivity

The El Paso metropolitan area faces unique challenges as a border city. There are six POEs within the El Paso MPO study area: the Santa Teresa POE, Paso del Norte POE, Stanton Street Bridge POE, Bridge of the Americas POE, Ysleta-Zaragoza POE, and Fabens International POE. The *Horizon 2040 MTP* examines issues of concern for pedestrian, passenger vehicle, commercial trucks, and bus crossings. With an increase in pedestrian and truck traffic exhibited by increased wait times, two of the POEs currently operate at or above operational capacity. Opportunities may exist for transit services near or at the international POEs. The El Paso MPO recommends operational improvements at all POEs and construction of additional POEs. **Table 6** lists the type of traffic the POEs currently service and associated traffic volumes reported for 2012. The location of the POEs is shown on the **Ports of Entry within MPO Study Area in Attachment A**. Of the six POEs within the MPO study area, the Ysleta-Zaragoza and the Fabens International POEs (future Tornillo-Guadalupe International POE) are within the BHE PEL study area.

Table 6: 2012 Traffic Volumes for the Ports of Entry within MPO Study Area

POE	Pedestrian Annual Volume from the U.S. to Mexico/From Mexico to the U.S.	Commercial Annual Volume from the U.S. to Mexico/From Mexico to the U.S.	Privately Owned Vehicles Annual Volume from the U.S. to Mexico/From Mexico to the U.S.
Santa Teresa POE	104,519/103,119	80,744/81,339	381,903/381,903
Paso Del Norte POE	2,154,485/4,111,579	No commercial traffic	No privately owned vehicles traffic/2,065,071
Stanton Street Bridge POE	667,913/No pedestrian traffic	No commercial traffic	1,036,089/1,192,299
Bridge of the Americas POE*	Unavailable/879,409	Unavailable/314,730	Unavailable/3,281,025
Ysleta-Zaragoza POE	566,498/1,099,885	353,555/409,930	2,308,964/2,172,301
Fabens International POE	61,216/57,698	No commercial traffic	303,851/237,929

Sources: City of El Paso, International Bridges, accessed July 26, 2013 and US DOT, Bureau of Transportation Statistics (BTS), accessed July 26, 2013; and CBP (June 2013).

*Traffic volumes for the Bridge of the Americas POE from the U.S. to Mexico are unavailable from CBP.

As shown in **Table 6**, the number of trucks entering the U.S. in 2012 were 314,730 for Bridge of the Americas POE, 409,930 for Ysleta-Zaragoza POE, and 81,339 for Santa Teresa POE. The Fabens International POE is located approximately 16 miles east of the El Paso city limits. The Fabens International POE will soon be replaced by the future Tornillo-Guadalupe International POE to accommodate commercial truck traffic and the need for additional capacity, access, and east-west mobility in the study area. The Fabens International POE (future Tornillo-Guadalupe International POE), which can only process automobiles, light trucks, and pedestrians, would be upgraded to process commercial trucks, diverting some of the international truck traffic from the other POEs in the region. Traffic forecasts show two-way average daily traffic volumes of the new Tornillo-Guadalupe International bridge increasing from 6,190 vehicles per day (vpd) in 2004 to 17,200 vpd in 2025 (U.S. Department of State 2005). Future BHE project(s)

1 would serve additional traffic between the future Tornillo-Guadalupe International POE
2 and the El Paso metropolitan area.

3
4 Improving freight movement is one of the federal highway program goals identified in
5 the *Horizon 2040 MTP*. In addition to the demands for increasing freight volume, the
6 key industries in the El Paso region fit a profile of service sensitivity with regard to
7 freight transportation. Due to El Paso's border location relative to the concentration of
8 Juarez maquiladoras, coupled with its location on along the I-10 Corridor, it can be
9 expected that freight traffic volumes in the El Paso Region will continue to grow at a
10 brisk pace. International freight tonnages are anticipated to nearly triple between 1998
11 and 2020 (El Paso MPO 2006).³ The proposed expansion of the Tornillo-Guadalupe
12 International POE would provide border residents with economic development
13 opportunities and relief from commercial traffic backups at other existing POE facilities.
14 Wait times as described in the *Horizon 2040 MTP* exceed operational capacity at the
15 Bridge of the Americas and Santa Teresa POEs. Wait times are estimated to exceed
16 capacity at all POEs by 2040 if no new POEs are built.

17
18 Lastly, in addition to the new POEs, planned operational improvements to existing
19 POEs would include High Security Lanes for access into the Bridge of the Americas and
20 Ysleta-Zaragoza POEs. In theory, construction of new POEs could reduce wait times to
21 acceptable levels even on existing POEs, beyond 2035 (El Paso MPO 2013).

22 23 **Increasing International and Interregional Trade**

24 Increasing international and interregional trade and associated freight movement is
25 placing more demand on area highways and railroads. In January 1994, the enactment
26 of the North American Free Trade Agreement (NAFTA) spurred already increasing trade
27 levels between the U.S. and Mexico to higher levels (TxDOT 2005).

28
29 The El Paso region's six ports of entry process the second-largest volumes of trucks
30 and passenger vehicles along the southern U.S. border. Total cross border freight
31 volumes are expected to increase to a total of 25.5 million tons with a value of \$111.0
32 billion, an increase of more than 75 percent by 2035. Nearly all of the volume (78
33 percent by weight) will be transported by truck, increasing volumes at the commercial
34 crossings, on connections to warehousing and distribution facilities, and along the major
35 trade corridors (I-10 and US 54). This growth is expected to affect the region's ports of
36 entry, where total commercial movements are expected to grow to 20,000 crossing per
37 day in 2035 (TxDOT 2011).

38
39 Because New Mexico has no major border crossing, it has missed most international
40 trade opportunities. There has been considerable support from New Mexico officials to
41 expand the Santa Teresa border crossing. Adding a new rail crossing along with new
42 railyards for both Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe

³ Mexico has trade agreements all over the world, especially with U.S. Ciudad Juarez, which is one of the largest industrialized cities in Mexico due to its low cost. U.S. companies send raw materials to the maquiladoras in Juarez. The maquiladoras are responsible for manufacturing and/or assembling products to ship back to the U.S. as finished products. Maquiladoras are arranged in different categories such as automotive, electrical, electronics, plastics/metals, medical devices, services, office products and packing material.

1 Railway (BNSF) would enhance economic development plans. Other benefits would be
 2 provided by eliminating the rail line through downtown Juarez and permitting closure of
 3 two railyards closest to Downtown El Paso, the BNSF railyard on Santa Fe Street and
 4 Union Pacific's Chamizal Yard along the Rio Grande (El Paso 2012). Construction of
 5 the Santa Teresa rail crossing began in 2011. The facility is anticipated to increase rail
 6 connectivity and economic opportunities for the region and expected to help alleviate
 7 regional freight congestion.

8
 9 Zaragosa Road at the POE holds the highest percentage of truck traffic among the
 10 arterial facilities studied in the *Horizon 2040 MTP*. I-10 near Vinton carries the highest
 11 truck traffic on freeway facilities at 37 percent for vehicles exiting the El Paso region.

12
 13 The increasing volume of freight moved by commercial truck traffic throughout the
 14 region has contributed to congestion and deterioration of the roadway network in the
 15 MPO study area. Between 2005 and 2010, the number of trucks entering the U.S. has
 16 varied from a maximum of 782,936 (2007) prior to the start of the 2008 recession, to a
 17 minimum of 644,272 (2009) during the recession. From 2010 to 2012, there has been
 18 an increase of approximately 2 percent in truck traffic. It is anticipated that this trend will
 19 continue as the economy continues to improve. Trucks enter the city of El Paso from
 20 Mexico primarily through four international POEs: Bridge of the Americas, Ysleta-
 21 Zaragoza, Paso Del Norte, and Stanton Street Bridge. Historic data for truck traffic
 22 entering the U.S. through the four El Paso's POEs is shown in **Table 7**.

23
 24 **Table 7: Historic Truck Data Entering the U.S. through the El Paso International POEs**

POEs	2005	2006	2007	2008	2009	2010	2011	2012
Paso Del Norte, Stanton Bridge, Bridge of the Americas, and Ysleta- Zaragoza	740,654	744,951	782,936	758,856	644,272	710,363	714,699	724,694

25 Sources: City of El Paso, International Bridges, accessed July 26, 2013 and US DOT, Bureau of Transportation Statistics
 26 (BTS), accessed July 26, 2013; and CBP (June 2013).

27
 28 Although number of trucks entering the U.S. has fluctuated since 2005, it remains to be
 29 one of the highest in the country. In 2012, the El Paso ports (composed of the four
 30 POEs listed above) ranked 5th with the most truck traffic among the 102 ports in the
 31 country (U.S. Department of Transportation, Research and Innovative Technology
 32 Administration 2012). According to *Horizon 2040 MTP*, the Ysleta-Zaragoza Bridge was
 33 the most heavily used POE in 2012.

34 **Freight Rail**

35
 36 El Paso's central location on the rail network allowed its smelters to serve gold, silver,
 37 lead, and copper mines in northern Mexico and southwestern United States. A rail
 38 connection to Galveston's port further expanded the importance of El Paso smelters
 39 which could then process ore arriving by ship from South American mines. The
 40 completion of the transcontinental railroad reoriented the traditional north-south trade

1 corridors onto an east-west axis, linking El Paso more closely to U.S. than to Mexican
2 commerce. It is estimated that combined rail and truck traffic between U.S. and Mexico
3 will increase approximately 50 percent by 2025. Congestion along rail lines is becoming
4 a significant issue (City of El Paso 2012).

5
6 El Paso is home to a major railroad service center and junction with the UPRR and
7 Tucumcari Line that connects El Paso with Kansas City and Chicago. El Paso is also
8 served by the BNSF with a line that connects to the BNSF main line near Albuquerque,
9 New Mexico. Both railroads connect to the Mexican carrier Ferromex (FXE) via bridges
10 across the Rio Grande/international border south of downtown El Paso. It is estimated
11 that 15 to 20 percent of imports/exports to Mexico pass through El Paso and 13 percent
12 of U.S. goods transported by rail pass through El Paso (City of El Paso 2012).

13
14 Freight concerns have been arising due to the consideration of construction of a new
15 port at Punta Colonet in Baja California, Mexico and the rising demand for rail freight.
16 East-west UPRR traffic through El Paso is expected to increase steadily through 2015.
17 Traffic is projected to increase about 2 percent per year, from about 77 trains per day in
18 2012 to 85 trains per day by 2016 and 130 trains per day in 2035. El Paso has 68 at-
19 grade rail crossings, which cause serious traffic delays when long freight trains are
20 passing (City of El Paso 2012). Anticipated increases in freight rail movement
21 throughout the study area would have a direct correlation to increased truck traffic on
22 the existing facilities.

23
24 Due to the extent of the border line and the geographical size of the U.S./Mexico border
25 communities, a system of POEs working as a network can effectively provide improved
26 transborder mobility; this includes improving the operation of current POEs as well as
27 adding new ones. In this regard, proposed new POEs would include the following:

- 28
- 29 • Green POEs: light rail transit (LRT), BRT, pedestrian, bicycle modes (motor
30 vehicles only as dedicated commuter lane (DCL)/ non-commercial)⁴;
- 31 • Freight Shuttle POEs: elevated structure moving containers only; and
- 32 • Freight Rail POE at Santa Teresa/San Jerónimo POE.
- 33

34 **1.4 Study Goals**

35
36 In addition to the purpose and need, the following goals and objectives will guide the
37 PEL process and future BHE Project(s):

- 38
- 39 • Enhancing east-west mobility;
- 40 • Improving local and regional access;
- 41 • Providing pedestrian and bicycle friendly facilities;

⁴ DCL refers to Secure Electronic Network for Travelers Rapid Inspection (SENTRI). SENTRI provides expedited U.S. Customs and Border Protection (CBP) processing for pre-approved, low-risk travelers. Applicants must voluntarily undergo a thorough biographical background check against criminal, law enforcement, customs, immigration, and terrorist indices; a 10-fingerprint law enforcement check; and a personal interview with a CBP Officer.

- 1 • Ensuring compliance with the MTP;
- 2 • Providing transportation solutions that help reduce delay and congestion
- 3 caused by incidents on I-10 and parallel arterials;
- 4 • Ensuring an open public participation process;
- 5 • Minimizing disruption to traffic during construction;
- 6 • Maximizing cost efficiency;
- 7 • Developing a design that coexists with border security;
- 8 • Avoiding and/or minimizing impacts to the human and natural environment;
- 9 • Developing the facility utilizing context sensitive solutions;
- 10 • Optimizing opportunities for economic development, including creating
- 11 Transportation Reinvestment Zones; and
- 12 • Accelerating delivery through innovative financing options.

13

14 **Utilize Alternative Funding Opportunities, including Toll Implementation and**

15 **Transportation Reinvestment Zones**

16 In December 2003, the Texas Transportation Commission issued Minute Order 109519
17 which states that controlled access mobility projects in any phase of development or
18 construction must be evaluated for tolling. Because of expected limited growth in
19 conventional highway funding, the use of tolling as an additional funding source would
20 play a strategic role in developing future roadway projects within the study area.
21 Therefore, tolling alternatives will be evaluated and considered.

22

23 In December 2012, the El Paso county's first Transportation Reinvestment Zone (TRZ)
24 was approved by county commissioners. The TRZ initiative represents a way to raise
25 revenues for road projects in developing areas. Under the TRZ program, taxes collected
26 due to an increase in property values or the county tax rate are used to pay off debt or
27 money spent on road projects in the TRZ designated area. The approved TRZ (Zone
28 No. 1) area, on the far east side of the county, includes portions of Socorro and Horizon
29 City. The TRZ funds could pay for the design and construction of existing roadways,
30 new connections, landscaping, sidewalks, lighting, bicycle paths and more. The TRZ
31 funding mechanism could represent an opportunity to help fund future BHE project(s).

32

33

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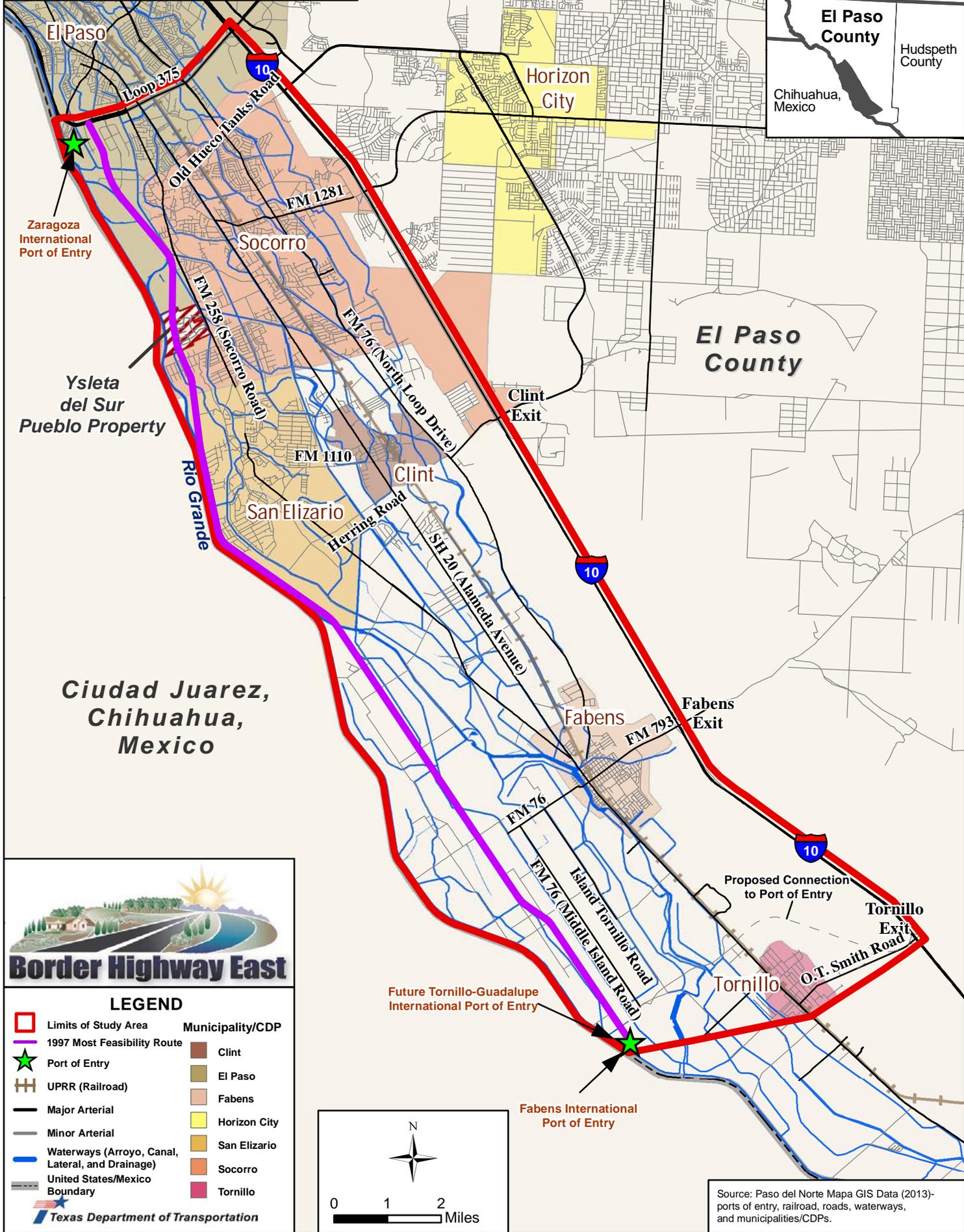
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- 1 of Homeland Security, U.S. Customs and Border Protection, Office of Field Operations.
- 2 December 2012.
- 3
- 4 Transportation Research Board. Highway Capacity Manual. Washington D.C., 2000,
- 5 pages 23-4
- 6
- 7 U.S. Department of State. "Presidential permit 05-01: Tornillo-Guadalupe New
- 8 International Bridge" March 2005. Web. December 2010.
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Attachment A

1997 Most Feasible Route Map



Zaragoza International Port of Entry

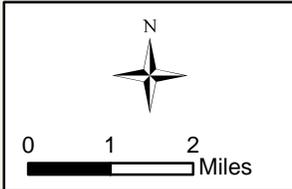
Ysleta del Sur Pueblo Property

Ciudad Juarez, Chihuahua, Mexico



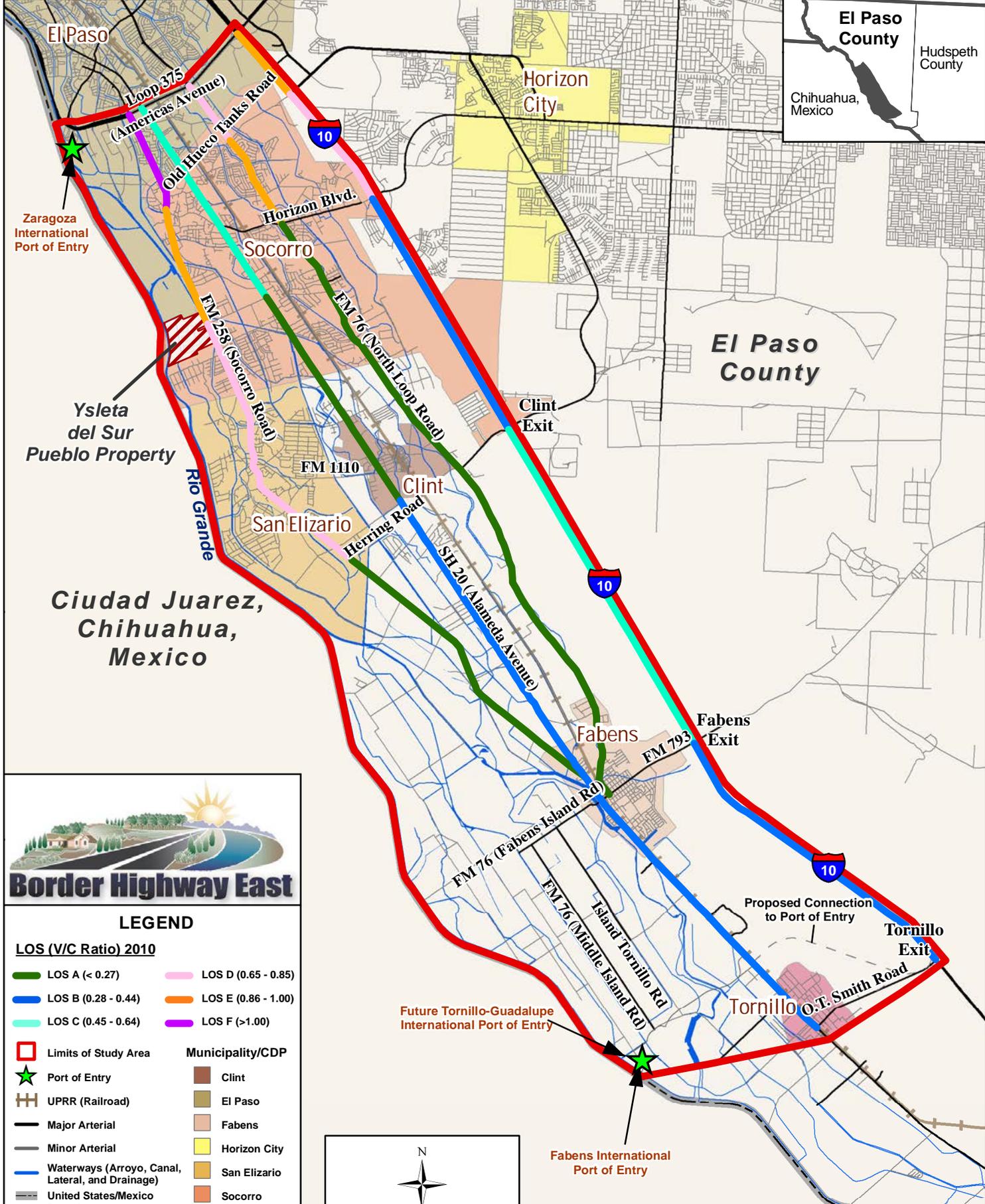
LEGEND

	Limits of Study Area		Municipality/CDP
	1997 Most Feasibility Route		Clint
	Port of Entry		El Paso
	UPRR (Railroad)		Fabens
	Major Arterial		Horizon City
	Minor Arterial		San Elizario
	Waterways (Arroyo, Canal, Lateral, and Drainage)		Socorro
	United States/Mexico Boundary		Tornillo



Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

2010 Level of Service Map



LEGEND

LOS (V/C Ratio) 2010

- LOS A (< 0.27)
- LOS B (0.28 - 0.44)
- LOS C (0.45 - 0.64)
- LOS D (0.65 - 0.85)
- LOS E (0.86 - 1.00)
- LOS F (>1.00)

Limits of Study Area

Port of Entry

UPRR (Railroad)

Major Arterial

Minor Arterial

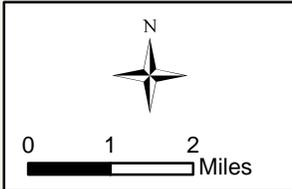
Waterways (Arroyo, Canal, Lateral, and Drainage)

United States/Mexico Boundary

Municipality/CDP

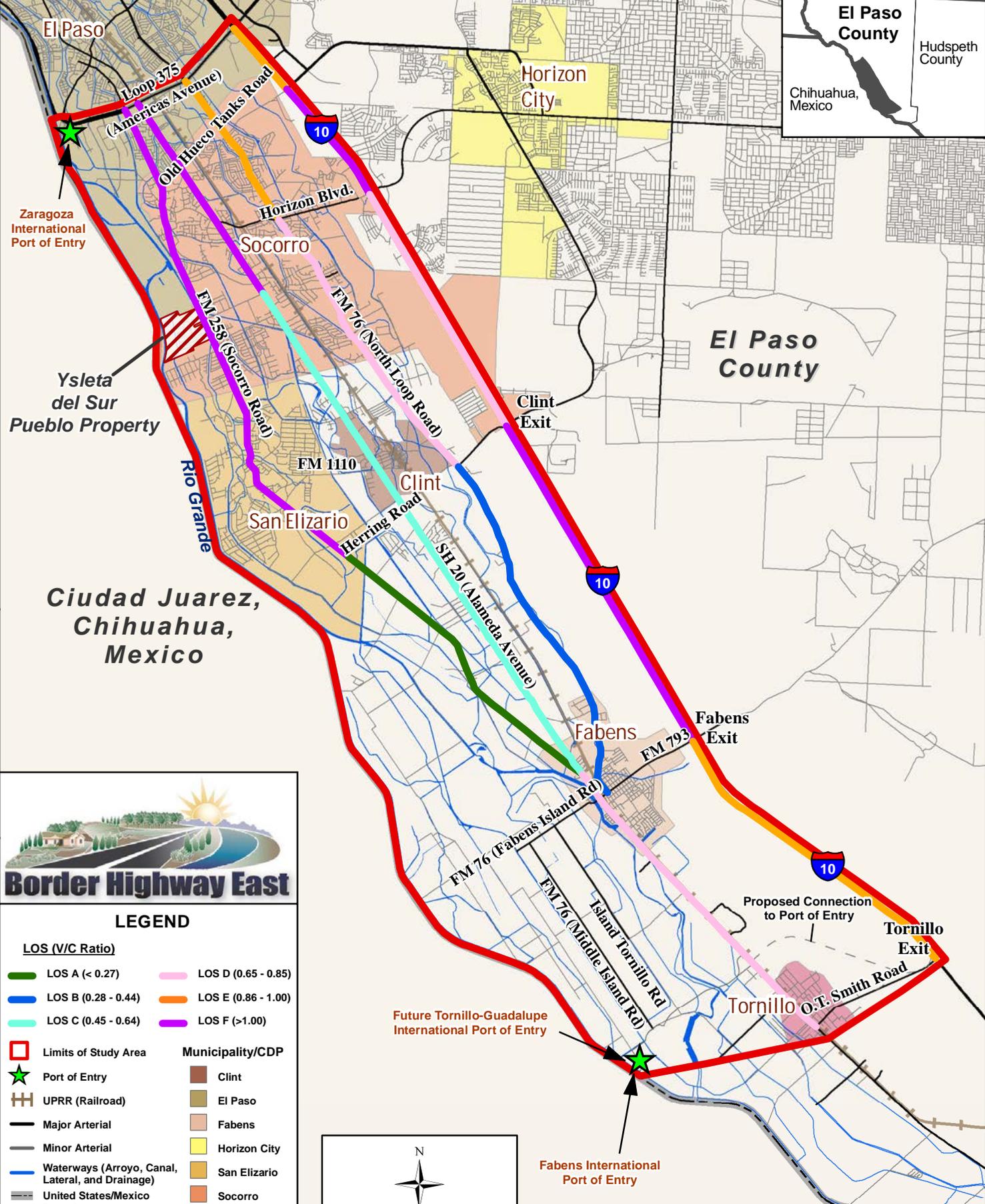
- Clint
- El Paso
- Fabens
- Horizon City
- San Elizario
- Socorro
- Tornillo

Texas Department of Transportation



Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

2040 Level of Service Map



LEGEND

LOS (V/C Ratio)

- LOS A (< 0.27)
- LOS B (0.28 - 0.44)
- LOS C (0.45 - 0.64)
- LOS D (0.65 - 0.85)
- LOS E (0.86 - 1.00)
- LOS F (>1.00)

Limits of Study Area

Port of Entry

UPRR (Railroad)

Major Arterial

Minor Arterial

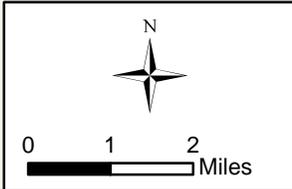
Waterways (Arroyo, Canal, Lateral, and Drainage)

United States/Mexico Boundary

Municipality/CDP

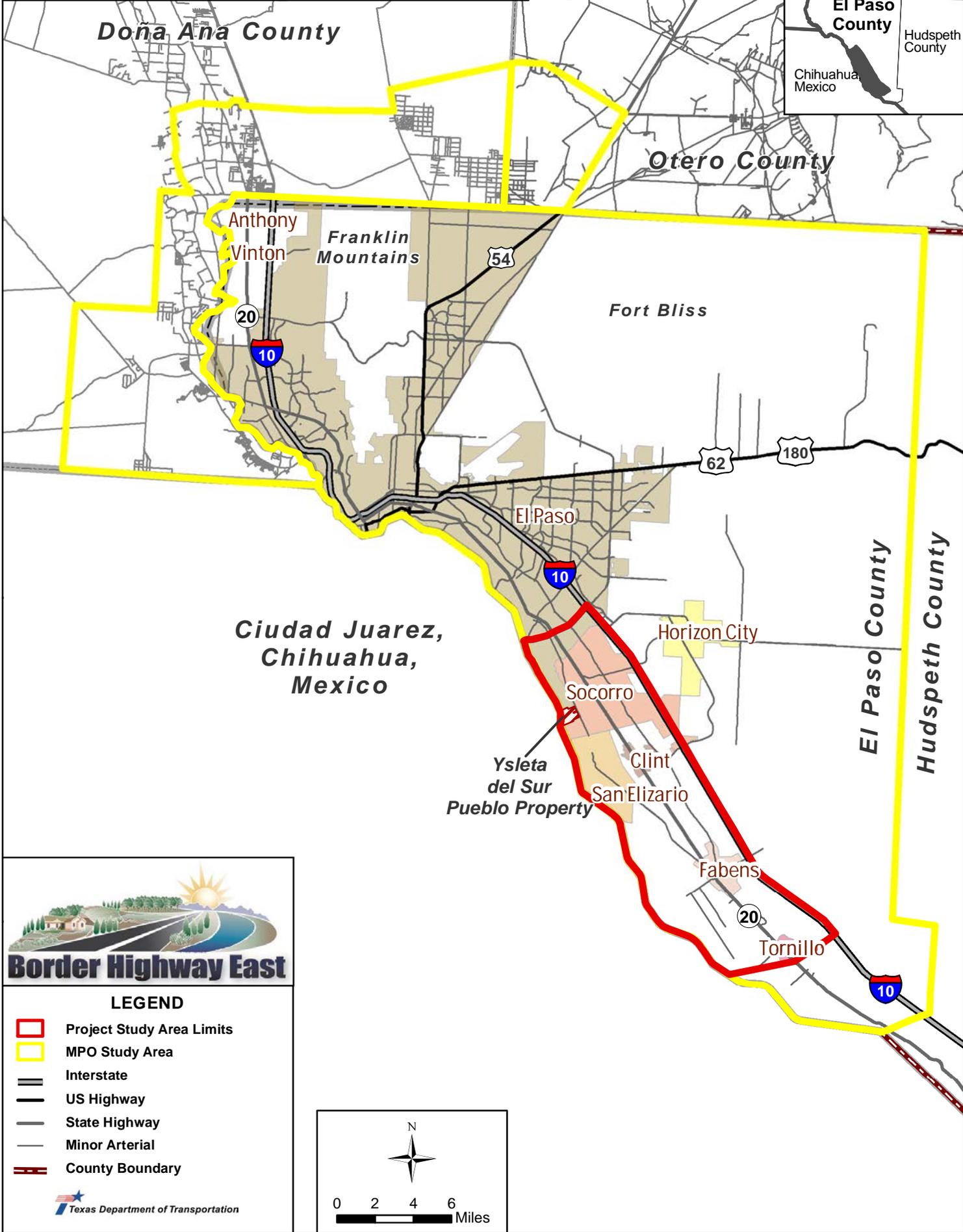
- Clint
- El Paso
- Fabens
- Horizon City
- San Elizario
- Socorro
- Tornillo

Texas Department of Transportation



Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

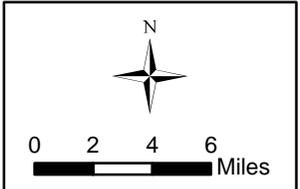
Metropolitan Planning Organization Study Area



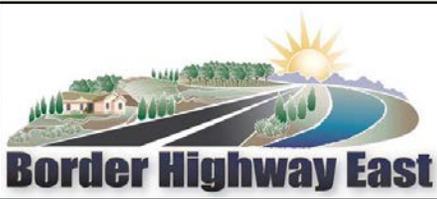
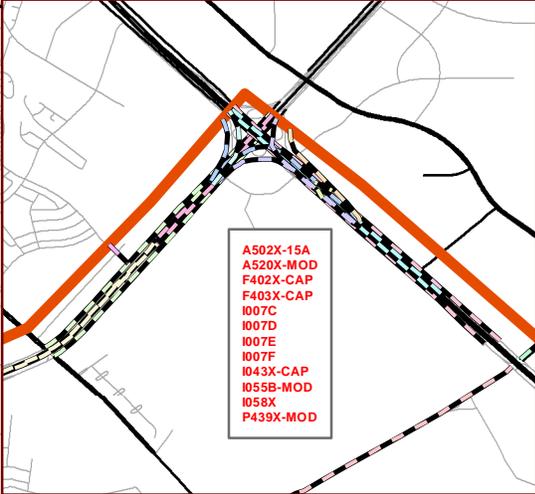
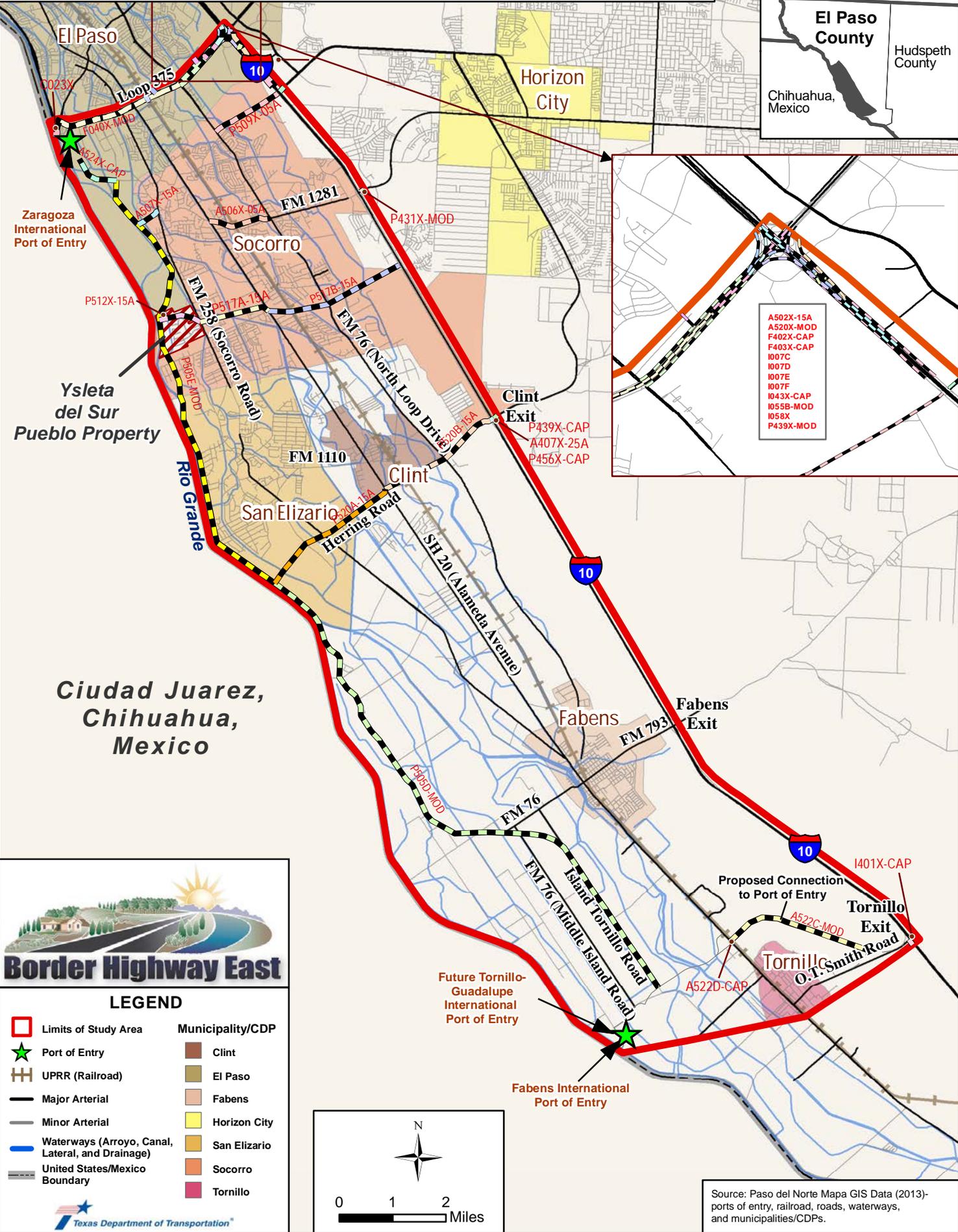
LEGEND

- Project Study Area Limits
- MPO Study Area
- Interstate
- US Highway
- State Highway
- Minor Arterial
- County Boundary

Texas Department of Transportation

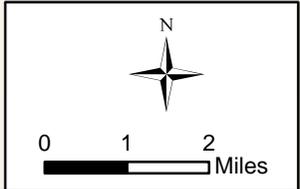


Border Highway East - 2040 MTP Projects Within The Study Area



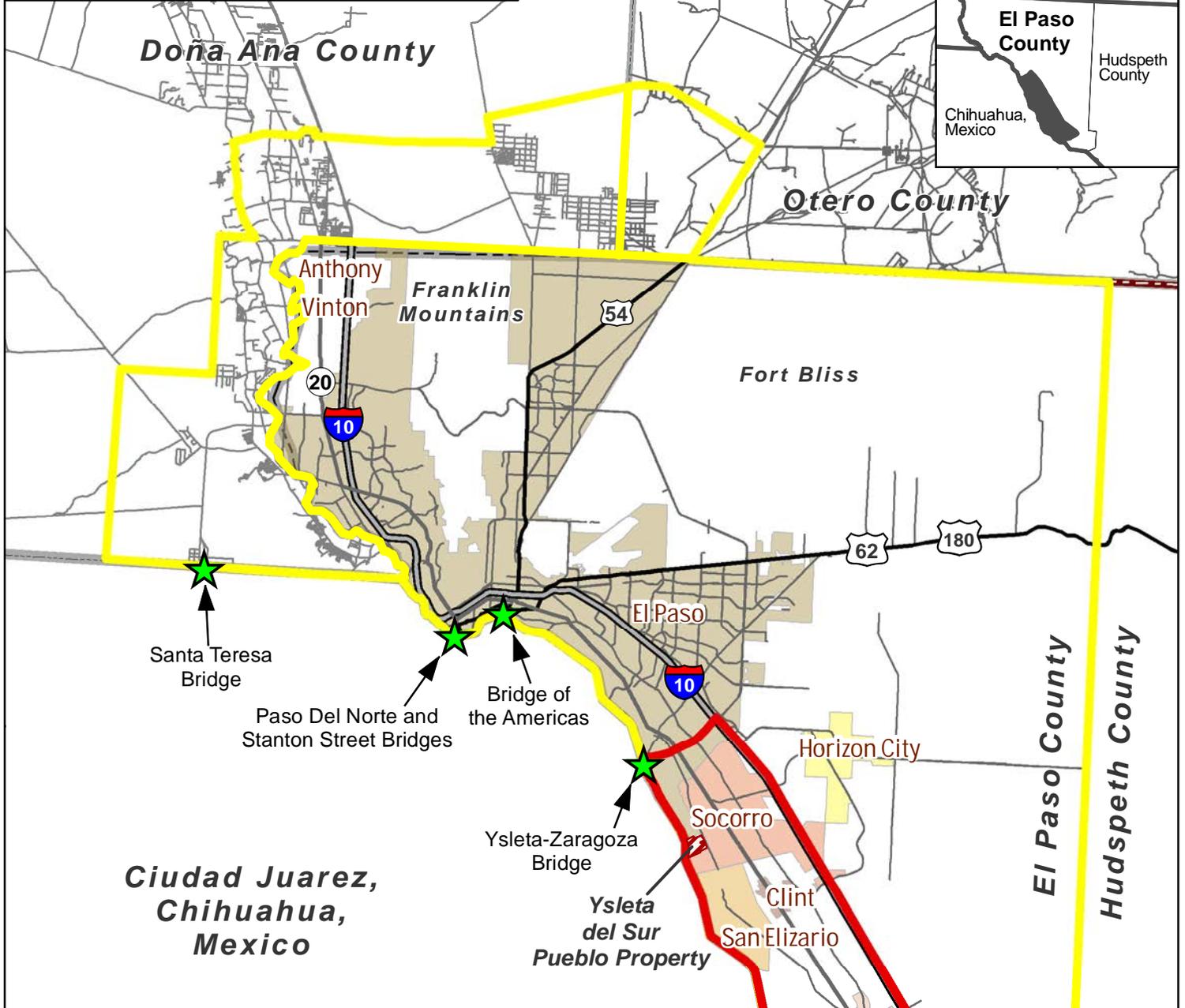
LEGEND

Limits of Study Area	Municipality/CDP
Port of Entry	Clint
UPRR (Railroad)	El Paso
Major Arterial	Fabens
Minor Arterial	Horizon City
Waterways (Arroyo, Canal, Lateral, and Drainage)	San Elizario
United States/Mexico Boundary	Socorro
	Tornillo



Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

Ports of Entry within MPO Study Area



LEGEND

- Limits of Study Area
- ★ Port of Entry
- MPO Study Area
- Interstate
- US Highway
- State Highway
- Minor Arterial
- County Boundary

