

APPENDIX B ENVIRONMENTAL CONSTRAINTS 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 1.0 INTRODUCTION

2 The anticipated growth of the City of El Paso and Ciudad Juarez, Mexico, will continue
 3 to affect the communities of the Lower Valley by bringing increased economic
 4 opportunities, as well as substantial challenges to the existing transportation system.
 5 Overall, the Lower Valley is experiencing a change from its primarily agricultural and
 6 rural communities to residential, commercial, and industrialized urban communities.
 7 The communities of the Lower Valley include Socorro, Town of Clint, San Elizario,
 8 Fabens and Tornillo Census Designated Places (CDP).

9
 10 The purpose of assessing the Border Highway East (BHE) study area was to develop
 11 transportation solutions that would address transportation system capacity, system
 12 linkage, and modal connectivity issues. The *BHE Planning and Environmental Linkages*
 13 *(PEL) Study Purpose and Need Technical Report (Appendix C)* provides additional
 14 information on the problems and potential solutions for the BHE PEL study area or
 15 “study area.”
 16
 17

Table 1: BHE Purpose and Need

	Need (Problem)	Purpose (Solution)
System Capacity	<ul style="list-style-type: none"> Congestion and heavy truck volumes along primary arterials parallel to I-10 	<ul style="list-style-type: none"> Improving the level of service (LOS) along the primary arterials parallel to I-10 Implementing Transportation Systems Management (TSM), Transportation Demand Management (TDM), and/or Intelligent Transportation Systems (ITS) improvements
System Linkage	<ul style="list-style-type: none"> Lack of direct access/connectivity to I-10 and Loop 375 At-grade train crossings along the study area that cause delay and impede traffic movement 	<ul style="list-style-type: none"> Improving transportation facilities that connect or are parallel to I-10 and Loop 375 to provide alternate routes of travel
Modal Connectivity	<ul style="list-style-type: none"> Increasing demand on area transportation infrastructure associated with the increasing international and interregional trade and freight rail movements Lack of other modes of transportation (buses, bicycle lanes, etc.) 	<ul style="list-style-type: none"> Considering the expansion of transit, bus, and pedestrian options that are better integrated with the overall transportation system Integrating existing transportation facilities to complement other modes of transportation

18 Source: *BHE PEL Study Purpose and Need Technical Report* (TxDOT 2014)
 19

20 The purpose of this report is to document the existing infrastructure and environmental
 21 constraints within the study area. The study area was defined during the early stages of
 22 preparation of the Environmental Constraints Report in 2011 in coordination with Texas
 23 Department of Transportation’s (TxDOT) Environmental Affairs Division (ENV). The
 24 northern limit of the study area is Loop 375 (Americas Avenue) between, and inclusive
 25 of, the Zaragoza International Port of Entry (POE) and I-10. The study area extends

1 approximately 20 miles in a southeasterly direction to just south and inclusive of the
2 Fabens International POE (future Tornillo-Guadalupe International POE). The western
3 limit of the study area is the Rio Grande and the eastern limit is I-10. The study area
4 includes the Cities of El Paso, Socorro, and San Elizario; Fabens and Tornillo CDP; and
5 the Town of Clint. The proposed study area encompasses approximately 110 square
6 miles and is shown on **Exhibit 1: Project Study Area** in **Attachment A**.

7
8 The *1997 Border Highway Extension Feasibility Study* identified a feasible
9 alignment/route from Loop 375 to near the Fabens International POE (future Tornillo-
10 Guadalupe International POE). The study also identified opportunities, constraints, and
11 feasibility of providing transportation in El Paso County. Constraints that were identified
12 in the *1997 Border Highway Extension Feasibility Study* are summarized in each section
13 of this report as a basis of comparison for the study area. The BHE PEL Environmental
14 Constraints Report is not a comprehensive environmental analysis to satisfy National
15 Environmental Policy Act (NEPA) requirements, but a planning tool for future project
16 specific studies. The report is part of planning and data collection activities within the
17 PEL process prepared for the BHE project. The PEL process is a partnership between
18 the Federal Highway Administration (FHWA) and TxDOT.

19
20 The purpose of the PEL process is to conduct analysis and planning activities with
21 resource agencies and the public in order to produce transportation planning products
22 that effectively serve the community's transportation needs. By following the PEL
23 process, smaller negative impacts and more effective environmental stewardship and
24 decisions may result, which can be used to inform a subsequent project-specific NEPA
25 process.

26
27 Analysis and decisions resulting from the PEL process are documented in the BHE PEL
28 Study Report. The BHE PEL Study Report is a comprehensive transportation planning
29 document that incorporates public involvement, agency coordination, project history,
30 purpose and need, alternatives analyses, the affected environment and environmental
31 consequences. The *BHE PEL Study NEPA Transition Report (Appendix H)* was also
32 prepared to identify the potential issues that may arise when the recommended
33 alternatives are being developed at a project-specific level during NEPA.

34 35 **2.0 METHODOLOGY**

36
37 In order to identify the environmental and infrastructure constraints associated with the
38 study area, information was collected through database searches, imagery analyses,
39 Google Maps (<http://maps.google.com>), desktop geographic information system (GIS)
40 analyses, and limited field reconnaissance of the study area. The field reconnaissance
41 consisted of windshield surveys performed in January and May 2006, September 2010,
42 and June 2013. The on-line data sources and relevant data utilized during the
43 preparation of this report are listed in **Table 2**.

1

Table 2: Constraints Report On-Line Data Sources

On-Line Data Source	Relevant Data
Paso del Norte Mapa (GIS data for El Paso County and City of El Paso)	Airports, Bike ways, Existing/Proposed Roads, Fire Stations, Historic Districts, Industrial Sites, Land Use, Municipal Boundaries, Parcels, Parks, Ports of Entry, Police Stations, Railroad, Schools, Subdivisions, Census Data, and Waterways
Texas Commission on Environmental Quality (TCEQ)	Hazardous Material Sites
Environmental Protection Agency (EPA)	Hazardous Material Sites
Texas Natural Resources Information System (TNRIS)	2012 Aerials and FEMA data
Texas Historical Commission (THC)	Historic Resources
Texas Archeological Resource Library (TARL)	Archeological Resources
United States Geological Survey (USGS)	USGS Quadrangle Maps for Clint, Isla, San Elizario, Tornillo, and Ysleta
United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) GeoSpatial Data Gateway	Land Cover and Soils
Federal Emergency Management Agency (FEMA)	100-year Floodplains
United States Census Bureau (USCB)	Census Data
Texas Parks and Wildlife Department	Annotated County List of Rare Species (Revised August 7, 2012)
U.S. Fish and Wildlife Service (USFWS) – Southwestern Region	Threatened and Endangered Species List (Updated June 27, 2013)

2

3 The following tasks were performed as part of the evaluation and preparation of this
4 Environmental Constraints Report:

5

- 6 • Listing of the constraints from the *1997 Border Highway Extension Feasibility Study*;
- 7 • Validation of the results from the *1997 Border Highway Extension Feasibility Study*; and
- 8 • Update of constraints per more recent available data and expansion of the
9 study area.

10

11 As part of the PEL process and agency coordination efforts, the environmental and
12 infrastructure constraints were provided to agency and technical work group members
13 and the public for review and input.

14

15 3.0 EXISTING CONDITIONS ANALYSIS

16

17 Potential environmental and infrastructure constraints were identified within the study
18 area using baseline data gathering and field verification. When applicable, details from
19 the *1997 Border Highway Extension Feasibility Study* were included as a comparison to
20 show the changes that have occurred in the study area since 1997. The previous study
21 did not quantify data for each section; therefore, data from the *1997 Border Highway
22 Feasibility Study* may not be itemized in each of the following sections.
23
24

3.1 Infrastructure Constraints

The infrastructure constraints within the study area include utilities, existing/proposed roadways, rail lines, airports, ports of entry, and other constraints. The infrastructure constraints identified within the study area are shown in **Attachment A, Exhibit 2: Engineering Constraints**.

3.1.1 Utilities

The *1997 Border Highway Extension Feasibility Study* identified 15 utility companies that had facilities located within the area. Of these 15, it was estimated that facilities associated with 13 utility companies may be affected. The locations of these facilities were not provided in the *1997 Border Highway Extension Feasibility Study*.

Utility companies with the potential to have resources within the study area were first contacted in February 2006. The companies were requested to provide information regarding existing and proposed utilities in the study area. The *1997 Border Highway Extension Feasibility Study* and utilities identified by other nearby projects were utilized as a basis for developing the list of potential utilities in the study area. Numerous utilities were identified from the as-built plans that were provided and from field reconnaissance. In spring 2013, the preparation of a comprehensive list of all utility companies within the study area began. Thirty-seven utility companies have been identified within the study area and are listed in **Attachment B**.

The utility information obtained for this study is based on information received from the utility companies and from field reconnaissance in 2006, 2010, and 2013. It is not guaranteed to be all inclusive. Due to the number of facilities present, coordination to obtain specific locations of utilities will not occur until after the alternatives analysis process has been initiated. Coordination with all of the potentially affected utility companies would continue to occur as appropriate throughout the project development process.

Water and wastewater facilities are located at two sites within the study area. In the northern portion of the study area, the Roberto Bustamante and the Jonathan Rogers Water Treatment Plants operate together at the same site. The southern portion of the study area contains the Fabens Wastewater Treatment Plant. The utilities identified within the study area are shown in **Attachment A, Exhibit 2: Engineering Constraints**.

3.1.2 Existing/Proposed Roadway Network

The primary existing north-south parallel arterials in the study area are North Loop Drive (Farm-to-Market 76 (FM 76)), Alameda Avenue (State Highway 20 (SH 20)), and Socorro Road (FM 258). The *1997 Border Highway Extension Feasibility Study* indicates these three primary arterials are all heavily utilized in the northern quarter of the project within the Cities of El Paso and Socorro. The level of service analysis

1 quantifies the traffic service in the corridor and indicates that additional corridor capacity
 2 is needed to maintain acceptable service. Except for northern portions of the study area,
 3 these arterials are primarily two-lane facilities that provide routes from the City of El
 4 Paso to southeastern El Paso County. I-10 is located at the eastern limits of the study
 5 area and provides a continuous east-west route through El Paso County.

6
 7 Exclusive of the study area, the El Paso Metropolitan Planning Organization (MPO) has
 8 identified several other planned transportation improvements within the study area in
 9 the *Horizon 2040 Metropolitan Transportation Plan (MTP)*, as shown in **Table 3**. These
 10 proposed improvements will be considered throughout the PEL process as
 11 transportation solutions are analyzed and developed. In addition, northwest of the study
 12 area, the Loop 375 Border Highway West Extension from Mesa Street (SH 20) to United
 13 States (US) Highway 54 and the Loop 375 (Cesar Chavez Border Highway) from US 54
 14 to Zaragoza Road - projects will provide additional capacity and provide congestion
 15 relief to I-10 between Mesa Street and Zaragoza Road.

16
 17 **Table 3: Planned Improvements within the BHE PEL Study Area**

Location	Project Description	Implementation Year
Darrington Rd. from LTV Rd. to I-10	Widen to four lanes divided.	2030
Betel Rd. from Ivey Rd. to Loop 375 (Americas Avenue)	Build four lanes undivided.	2020
Horizon Boulevard (FM 1281) from North Loop to Alameda Avenue	Widen to four lanes divided with striped median.	2020
Belen Rd. (Socorro) from Border Highway East to Socorro Road (FM 258)	Build two lanes undivided.	2030
Billy the Kid Street from approx. 1 mile southeast of Zaragoza to Loop 375 (Americas Avenue)	Build four lanes undivided.	2030
FM 3380 - Manuel F. Aguilera Highway from 0.35 mile south of Alameda Avenue to I-10	Build two lanes undivided including overpass at SH 20/UPRR.	2020
FM 3380 - Manuel F. Aguilera Highway from 0.35 mile south of Alameda Avenue to I-10	Widening from two lanes undivided to four lanes divided, including overpass widening at SH 20/UP railroad.	2030
Zaragoza POE Campus to Pan American Drive at Loop 375	Build/reconstruct two-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 Drive at Loop 375	Widen from two- to four-lane divided road for international truck traffic crossing at the Zaragoza POE to Loop 375 to include landscaping, median, sidewalk, and parkway improvements (four lane road at completion of both phases).	2020
Zaragoza Rd. POE	Widening Zaragoza Rd. POE main lanes (six additional lanes - two regular lanes in each direction and a fast lane in each direction).	2030
Loop 375 from FM 659 Zaragoza Rd. to North Loop Drive	Widen to six lanes divided (Additional lanes - tolled).	2020

Location	Project Description	Implementation Year
Loop 375 from FM 76 North Loop Drive to Zaragoza POE	Ramp reconfiguration and frontage road extension with grade separation at rail road crossing	2020
Loop 375 from North Loop Drive to Bob Hope	Widen Loop 375 frontage roads from two to three lanes.	2020
Loop 375 (Americas/Joe Battle) from FM 76 North Loop Drive to Bob Hope	Widen from four to six lanes.	2020
I-10 at Loop 375	Interchange improvements include construction of remaining direct connectors EB to SB and WB to SB.	2020
I-10 at Loop 375	Interchange improvements include construction of two remainder direct connector NB to EB and SB to EB.	2020
I-10 from FM 659 (Zaragoza) to Loop 375	Add one lane each direction main lanes and widen west bound and east bound frontage roads from two to four lanes and upgrading to urban design that eliminates low water crossings.	2020
I-10 at Loop 375 to FM 656 Zaragoza along I-10	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	Eastbound two-lane frontage road at O.T. Smith including entry ramp to I-10	2020
I-10 at Loop 375 to Eastlake Blvd.	On I-10, widen eastbound and westbound frontage roads from two to three lanes.	2020
Horizon Blvd. from I-10 to Antwerp	Widen to six lanes divided.	2040
Eastlake Blvd. from I-10 to Approx. 0.25 miles west of Darrington Rd.	Widen four lanes divided to six lanes divided.	2020
I-10 at FM 1110	Widening FM 1110 bridge from two to four lanes undivided including operational improvements.	2020
Border Highway East from Herring Rd. Extension to Tornillo-Guadalupe POE	Build two lanes divided.	2040
Border Highway East from Loop 375 (Americas Avenue) to Herring Rd. Extension	Build two lanes divided.	2030
Old Hueco Tanks Rd. (Socorro) from I-10 (Gateway East)/Eastlake Blvd. to North Loop Drive	Build four lanes divided to extend Eastlake Blvd. to FM 76 including bike lanes.	2020
Tiwa Blvd. (Socorro) from Border Hwy Extension East to Socorro Rd.	Build two lanes.	2030
Tiwa Blvd. (Socorro) from Socorro Rd. to Alameda Ave.	Build two lanes.	2030
Tiwa Blvd. (Socorro) from Alameda Avenue to I-10 (Gateway East)	Build four lanes.	2040
Herring Rd. from Border Highway Extension to Alameda Avenue	Build two lanes from Border Highway Extension to Riverside Rd. and upgrade/rehabilitate the existing Herring Rd. from Riverside Rd. to Alameda Ave. (SH 20).	2030

Location	Project Description	Implementation Year
Clint Rd. from Alameda Avenue to I-10	Build two lanes from Alameda Avenue (SH 20) to North Loop Drive (FM 76) and upgrade/rehabilitate the existing Clint Cutoff Road from North Loop Drive (FM 76) to I-10.	2030
Ysleta, Socorro, San Elizario	Purchase of three nineteen-passenger buses and operating funds for three years for a circulator bus route connecting Ysleta, Socorro, San Elizario and all unincorporated areas in between.	2020
Zaragoza POE	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	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	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	Reconfigure lanes by reducing the sidewalks width on each side of the bridge from ten ft. to five ft. widths to increase number of lanes from five to six.	2020
Tornillo-Guadalupe POE	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	Transportation for elderly/disable provided by LCL nonprofit organization and New Freedom Program.	2020
City of El Paso	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	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	Feasibility study for Socorro Port of Entry	2020
FM 1281 from Ashford Street to Rifton Street	Install approximately three miles of pathway to accommodate bikes and pedestrians.	2020
FM 1281 from North Loop to Alameda	ROW for widen to four lanes divided with striped median	2020

Location	Project Description	Implementation Year
City of El Paso	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 Avenue to I-10	Upgrade two lane street.	2040
City of El Paso	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	Aesthetics Improvements along I-10	2020
I-10 from Zaragoza Rd. to Eastlake Blvd.	Upgrade to eight-lane section.	2020
I-10/Loop 375 Interchange	Cloverleaf Expansion	2020
City of El Paso	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	Regional Bike Improvements (on-state)	2020
SH 20 from Padres Street to Americas Avenue	Intersection improvements and rehabilitation	2020
SH 20 from 0.7 South of Horizon Blvd. to 0.6 North of Horizon Blvd.	Reconstruct intersection at Horizon Blvd./Buford Rd. – Socorro.	2020
Various Locations	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	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	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 Independent School District (ISD)	2-propane school buses for Tornillo ISD	2020
Regional	Vanpool Program	2020
City of El Paso	Video surveillance and count stations, phase 2	2020
Transit loop serving El Paso Community College Mission Del Paso Campus, Clint, San Elizario and Socorro	Bus Purchase in exchange for service by Sun Metro	2020
City of El Paso	Forty foot bus purchases	2020
City of El Paso	Park and Ride Routes: Zaragoza Bridge to DTC thru MV	2020

Location	Project Description	Implementation Year
City of El Paso	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	Bus Shelters	2020
Zaragoza POE	Zaragoza, Alameda, Montana connection (Bus and roadway improvements)	2020
City of El Paso	Job access and reverse commute: welfare to work, access to jobs (yearly assumption to be program)	2020
City of El Paso	Paratransit van and vehicle replacement	2020
City of El Paso	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: El Paso MPO Horizon 2040 MTP Project List (October 2013):

2 <http://www.elpasompo.org/MTPDocs/AmendedMission2035MTPcomp.pdf>. Accessed November 2013.

3.1.3 Rail

6 The *1997 Border Highway Extension Feasibility Study* identified one railroad, the
7 Southern Pacific Railroad, in the study area; that operates a main line, runs parallel to
8 the Alameda Avenue corridor and has declined over the past 50 years. This railroad
9 has been currently identified as the Union Pacific Railroad (UPRR). The UPRR
10 maintains and operates the railroad line that generally parallels Alameda Avenue
11 through the study area. There are no other railroad lines within the study area. The
12 UPRR is shown in **Attachment A, Exhibit 2: Engineering Constraints**.

3.1.4 Airports

16 One airport, Fabens Airport, is located within the Fabens CDP in the southern portion of
17 the study area. The *1997 Border Highway Extension Feasibility Study* did not identify
18 the Fabens Airport as a potential constraint; however, Fabens Airport has been active
19 since 1944. The Fabens Airport is a public airport owned by El Paso County and
20 operates two runways. The east-west oriented runway is approximately 4,200 feet in
21 length, and the north-south oriented runway is approximately 2,300 feet in length. Due
22 to the location of the Fabens Airport within the study area, airway-highway clearance
23 would need to be evaluated and would be completed during the appropriate stage of the
24 project development process. The location of the Fabens Airport is shown in
25 **Attachment A, Exhibit 2: Engineering Constraints**.

3.1.5 Ports of Entry

The 1997 *Border Highway Extension Feasibility Study* identified two international ports of entry within the study area. These include the Zaragoza International POE and the Fabens International POE (future Tornillo-Guadalupe International POE). Proposed improvements are currently under development by the City of El Paso to provide a direct connection from the Zaragoza International POE to the mainlanes of Loop 375. Other improvements to the Zaragoza International POE are detailed in **Table 3**.

The existing Fabens International POE (future Tornillo-Guadalupe International POE) is not currently designed to accommodate commercial traffic. The future Tornillo-Guadalupe International POE, between the United States and Mexico near Tornillo, is currently being planned to facilitate commercial traffic traveling from the U.S./Mexico International Border to the eastern part of El Paso County. The future Tornillo-Guadalupe International POE would replace the Fabens International POE. Construction of the new bridge began in April 2011 and is scheduled to be completed in 2014. Any project(s) proposed for further study during the NEPA process would be coordinated with appropriate future Tornillo-Guadalupe International POE staff. The locations of the identified POEs within the study area are shown in **Attachment A, Exhibit 2: Engineering Constraints**.

3.2 Other Constraints

Along the Rio Grande additional constraints include the U.S. International Boundary and Water Commission (IBWC) levees and the U.S. Customs and Border Protection fence. The IBWC levees were part of the Rio Grande Rectification Project for construction of the floodway. The levees provide protection against flooding and act as maintenance roadways. The levees are not shown on **Exhibit 2**, but they follow the western boundary of the study area. Likewise, the U.S. Customs and Border Protection fence (not shown on **Exhibit 2**) follows the western boundary of the study area. The U.S. Customs and Border Protection constructed the border fence in 2008-2009. The fence spans the entire length of the western boundary of the study area.

3.3 Socio-economic Demographics

3.3.1 BHE PEL Study Area/Regional Growth

Demographic Characteristics

The 1997 *Border Highway Extension Feasibility Study* identified seven census tracts (CT) either wholly or partially contained by the study area as delineated by the USCB in 1990. The CTs identified were CT 40.02, CT 103.10, CT 104.01, CT 104.02, CT 104.03, CT 104.04, and CT 105.00. Demographic analyses associated with the 1997 *Border Highway Extension Feasibility Study* used data from *Census 1990* and summarized social characteristics such as age, education, occupation, and border and trade activities. In 1990, approximately 93.3 percent of the study area's population was of Hispanic ethnicity, and approximately 18.8 percent of El Paso County's Native

1 American population resided within the study area. For all seven CTs located within the
 2 study area, median household incomes in 1990 were lower than that for El Paso
 3 County.

4
 5 The study area encompasses all or portions of 15 CTs as delineated by the USCB in
 6 2010. Census Tracts partially or wholly contained by the study area as delineated by
 7 the USCB in 2010 are provided in **Attachment A, Exhibit 3: 2010 Census Tracts**.

8
 9 According to data obtained from the USCB (*Census 2010*) from 1990 to 2010 and
 10 included in **Table 4**, the study area's population increased from 45,872 individuals to
 11 71,665 individuals, an increase of approximately 56.2 percent. Between 1990 and
 12 2010, population growth within the study area (56.2 percent) was substantially higher
 13 than the population growth experienced within El Paso County for the same period,
 14 which was approximately 35.3 percent.

15
 16 **Table 4: Population Growth 1990-2010**

Geography ¹	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 ^{1, 2}	4,385	11,046	13,603	151.9%	18.3%	210.2%
Tornillo CDP	--- ³	1,609	1,568	---	-2.5%	---
Project Study Area Census Tracts	45,872	64,601	71,665	40.8%	10.9%	56.2%

17 Notes: 1. CDP - Census Designated Place

18 2. San Elizario, during this period (1990 – 2010) was a CDP, but has recently become a city.

19 3. Tornillo CDP did not exist in 1990.

20 Source: U. S. Census Bureau, *Census 1990, 2000, and 2010*. Summary File 1 (SF 1) 100-percent data.

21 Summary File 1 provides 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 as a CDP experienced
 30 an 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 rate of approximately 210.2 percent.
 32 Between 2000 and 2010, Tornillo CDP's population decreased by approximately 2.5
 33 percent.

3.3.2 Environmental Justice Populations

Executive Order (EO) 12898 entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs on minority and low-income populations. The FHWA Order 6640.23A defines a minority as a person who is Black (having origins in any of the black racial groups of Africa); Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or American Indian and Alaska Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).¹ A low-income population is defined as one with a median income for a family of four equal to or below the Department of Health and Human Services (DHHS) poverty guidelines of \$23,850 in the year 2014 (2014 DHHS Poverty Guidelines).

Executive Order 12898, signed by President Clinton on February 11, 1994, requires that minority and low-income populations not receive disproportionately high and adverse human health effects from environmental impacts. Minority populations within the CTs that are either wholly or partially contained by the study area account for approximately 97.3 percent of the total population. The study area has a higher percentage of minority populations than the City of El Paso (at 84.9 percent) but is similar to the City of Socorro and the community of Fabens. Racial and ethnic population data for all CTs partially or wholly contained within the study area as well as comparison areas are provided in **Table 5**.

Table 5: Racial and Ethnic Composition of the Population within the BHE PEL Study Area

Area/ Census Tract	Total Population	Minority Population of One Race / Not Hispanic or Latino				Hispanic or Latino of Any Race	Total Minority Population
		Black or African American	American Indian and Alaska Native	Asian American	Pacific Islander		
Comparison Areas							
El Paso County	800,647	20,649 2.6%	2,269 0.3%	7,551 0.9%	805 0.1%	658,134 82.2%	689,408 86.1%
City of El Paso	649,121	18,155 2.8%	1,633 0.3%	7,092 1.1%	737 0.1%	523,721 80.7%	551,338 84.9%
City of Socorro	32,013	29 0.1%	260 0.8%	14 <0.1%	1 < 0.1%	30,964 96.7%	31,268 97.7%
Town of Clint	926	1 0.1%	2 0.2%	0 0.0%	0 0.0%	832 89.8%	835 90.2%

¹ U. S. Department of Transportation, FHWA. *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 6640.23. December 2, 1998.

Area/ Census Tract	Total Population	Minority Population of One Race / Not Hispanic or Latino				Hispanic or Latino of Any Race	Total Minority Population
		Black or African American	American Indian and Alaska Native	Asian American	Pacific Islander		
Fabens CDP	8,257	6 0.1%	4 <0.0%	6 0.1%	0 0.0%	7,993 96.8%	8,009 97.0%
San Elizario CDP*	13,603	6 <0.0%	40 0.3%	6 < 0.1%	0 0.0%	13,428 98.7%	13,480 99.1%
Tornillo CDP	1,568	3 0.2%	0 0.0%	0 0.0%	0 0.0%	1,547 98.7%	1,550 98.9%
BHE PEL Study Area							
CT 40.02	8,382	8 0.1%	11 0.1%	2 <0.1%	0 0.0%	8,164 97.4%	8,185 97.6%
CT 103.46	4,445	2 <0.1%	18 0.4%	5 0.1%	1 < 0.1%	4,305 96.9%	4,331 97.4%
CT 103.47	4,350	4 0.1%	4 0.1%	9 0.2%	0 0.0%	4,146 95.3%	4,163 95.7%
CT 104.01	5,981	9 0.2%	30 0.5%	4 0.1%	0 0.0%	5,789 96.8%	5,832 97.5%
CT 104.04	4,726	10 0.2%	14 0.3%	0 0.0%	0 0.0%	4,550 96.3%	4,574 96.8%
CT 104.05	6,261	3 <0.1%	194 3.1%	4 0.1%	0 0.0%	5,990 95.7%	6,191 98.9%
CT 104.06	4,395	2 <0.1%	8 0.2%	3 <0.1%	0 0.0%	4,345 98.9%	4,358 99.2%
CT 104.07	6,341	4 0.1%	13 0.2%	3 <0.1%	0 0.0%	6,282 99.1%	6,302 99.4%
CT 104.08	4,019	8 0.2%	7 0.2%	2 <0.1%	0 0.0%	3,936 97.9%	3,953 98.4%
CT 104.09	6,377	19 0.3%	15 0.2%	0 0.0%	1 <0.1%	6,143 96.3%	6,178 96.9%
CT 105.01	4,291	2 <0.1%	11 0.3%	0 0.0%	0 0.0%	4,126 96.2%	4,139 96.5%
CT 105.02	2,281	14 0.6%	2 0.1%	11 0.5%	0 0.0%	2,049 89.8%	2,076 91.0%
CT 105.04	1,834	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1,766 96.3%	1,766 96.3%
CT 105.05	4,000	3 0.1%	2 0.1%	1 <0.1%	0 0.0%	3,762 94.1%	3,768 94.2%
CT 105.06	3,982	3 0.1%	0 0.0%	0 0.0%	0 0.0%	3,933 98.8%	3,936 98.8%

Area/ Census Tract	Total Population	Minority Population of One Race / Not Hispanic or Latino				Hispanic or Latino of Any Race	Total Minority Population
		Black or African American	American Indian and Alaska Native	Asian American	Pacific Islander		
Total BHE PEL Study Area	71,665	91 0.1%	329 0.5%	44 0.1%	2 < 0.1%	69,286 96.7%	69,752 97.3%

*San Elizario, during this period (1990 – 2010) was a CDP, but has recently become a city.

Source: U.S. Census Bureau, *Census 2010*.

According to the *2007-2011 American Community Survey (ACS)*, which collects detailed economic and housing data from a sample of households over a five-year period, the median household income of the study area ranged from \$19,867 to \$35,682. Data collected for the *2007-2011 ACS* are collected for CTs as delineated for *Census 2010*. Percentages of study area CT populations below the poverty level ranged from 16.4 to 58.0 percent. Three of the CTs (103.47, 105.05, and 105.06) have median household incomes below the 2014 DHHS poverty guidelines of \$23,850 for a family of four. Impacts to low-income populations would necessitate further evaluation later in the project development process to assess if disproportionate impacts would occur. Median household income data for the study area are summarized in **Table 6**.

Table 6: Median Household Income and Poverty Status within the BHE PEL Study Area

Census Tract	Population*	Median Household Income	Persons Below Poverty Level	
			Number	Percent
CT 40.02	7,778	\$35,682	1,273	16.4%
CT 103.46	4,811	\$32,616	1,516	31.5%
CT 103.47	3,690	\$22,807	2,142	58.0%
CT 104.01	6,182	\$32,643	1,281	20.7%
CT 104.04	4,360	\$31,776	999	22.9%
CT 104.05	6,211	\$28,465	1,718	27.7%
CT 104.06	4,543	\$30,624	1,752	38.6%
CT 104.07	6,986	\$25,417	3,134	44.9%
CT 104.08	3,690	\$25,322	1,149	31.1%
CT 104.09	5,593	\$30,969	1,828	32.7%
CT 105.01	4,100	\$23,963	2,231	54.4%
CT 105.02	2,038	\$35,160	878	43.1%
CT 105.04	1,687	\$26,806	829	49.1%
CT 105.05	4,013	\$19,867	2,029	50.6%
CT 105.06	3,393	\$22,288	1,894	55.8%
Total Study Area	62,075	N/A	24,653	35.7%

Source: U.S. Census Bureau, *2007-2011 American Community Survey*

*Population estimate for whom poverty status has been determined.

3.3.3 Limited English Populations

Executive Order 13166, “Improving Access to Services for Persons with Limited English Proficiency (LEP)” requires federal agencies to examine the services they provide and identify any need for services to those with LEP. The Executive Order requires federal agencies to work to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally assisted programs and activities may violate the prohibition under Title VI of the Civil Rights Restoration Act of 1987 and Title VI regulations against national origin discrimination.

Census Tract data for “Ability to Speak English” for the population five years and over indicate approximately 47.14 percent of the population within the CTs partially or wholly contained by the study area speaks English less than “Very Well.” Data indicating the level of English language proficiency for the study area are provided in **Table 7**. A field reconnaissance (windshield survey) indicated that English and Spanish were both used for building signage and other forms of posted information and advertisement along the project corridor. Because of the LEP populations in the study area, public involvement efforts will employ the use of bilingual material and/or simultaneous translation so that LEP populations would have meaningful access to the programs, services, and information provided.

Table 7: Percentage LEP Population within the BHE PEL Study Area

Census Tract	Total Population 5 Years and Older	Total Number Who Speak English Less than “Very Well”	% LEP
CT 40.02	7,100	3,501	49.3%
CT 103.46	4,484	1,654	36.9%
CT 103.47	3,392	2,222	65.5%
CT 104.01	5,574	2,457	44.1%
CT 104.04	4,151	1,658	39.9%
CT 104.05	5,792	2,789	48.2%
CT 104.06	4,076	1,570	38.5%
CT 104.07	6,178	3,403	55.1%
CT 104.08	3,360	1,628	48.5%
CT 104.09	4,995	2,596	51.9%
CT 105.01	3,749	1,501	40.0%
CT 105.02	1,851	687	37.1%
CT 105.04	1,614	816	50.6%
CT 105.05	3,604	1,804	50.1%
CT 105.06	3,113	1,427	45.8%
Total Study Area	63,033	29,713	47.14%

Source: U.S. Census Bureau. 2007-2011 American Community Survey.

3.4 Land Use

The 1997 *Border Highway Extension Feasibility Study* land use study area encompassed approximately 80 square miles with essentially flat topography throughout the valley. The current study area encompasses approximately 110 square miles in southwestern El Paso County and includes the entire area of the City of Socorro, the City of San Elizario, the Town of Clint, the Fabens CDP, the majority of the Tornillo CDP, and a small portion of the City of El Paso. Although much of the land contained by the study area is unincorporated, the majority of the unincorporated land in the northern and central portions of the study area is located within the City of Socorro's extra-territorial jurisdiction, which allows the City of Socorro to exercise some limited control of land use, land subdivision, and character of development in this portion of the study area beyond its municipal boundaries.

Topographically, the study area is relatively flat. The study area is characterized by a mix of landscape features including an abundance of irrigated farmland situated along arroyos, canals, drains, and laterals running northwest to southeast in the study area's western and central portions, desert land in the eastern portion of the study area, scattered low-density suburban residential development mostly concentrated in the northern portion of the study area, and small pockets of low-density commercial and industrial land throughout. Much of the agricultural land throughout the study area is attributed to cotton and onion production, colonies of bees, and orchards of fruit and nut trees including pecans. According to the 2007 U.S. Census of Agriculture, El Paso County ranks second among counties in the state of Texas and eighth among counties nationally in the value of sales from the production of pecans and third among counties in the state of Texas in the value of sales from raising bees.

El Paso County GIS parcel data from Paso del Norte Mapa reveal that approximately 65 percent of the study area is comprised of completely undeveloped land, the majority of which is currently used for agricultural purposes or is native desert land. The project study area is approximately 10 percent developed residential, 3 percent developed commercial, 1 percent developed industrial, 4 percent undeveloped but platted residential lots, and 4 percent residential farmstead. Approximately 13 percent of the study area's total land area is attributed to public uses or other unclassified uses. The various land use types identified within the study area can be found in **Attachment A, Exhibit 4: Land Use**.

Three local jurisdictions retain planning and zoning authority to direct existing and future land uses and the character of development or redevelopment within the study area. These include the City of El Paso, the City of Socorro, and the Town of Clint. All three of these incorporated municipalities are zoned; however, only the City of El Paso has an adopted comprehensive plan as a planning policy guide for the City. The City of Socorro is currently developing a comprehensive master plan that will focus on the direction of land use, transportation, and public spaces and how these three community elements are intended to interact. Therefore, there are no legally adopted planning

1 policy guides indicating the future direction of land uses or development character in the
2 study area except the portion of the study area located within the City of El Paso.

3
4 According to the *Plan El Paso* (March 2012), there are two open-space sectors and two
5 growth sectors mapped in this portion of the City of El Paso. The open-space sectors
6 are comprised of lands that will not be developed (preserved) due to their ownership
7 and current use and active farmland. The preserved lands are located between Socorro
8 Road and the Rio Grande and include the Rio Bosque Park and Wetland Preserve. The
9 farmlands are located on either side of North Loop Drive and a coordinated effort would
10 occur to protect significant portions of farmlands. The two growth sectors are
11 comprised of transitional neighborhoods developed from the 1950s through the 1980s
12 and industrial areas. The neighborhoods are primarily located just west of Socorro
13 Road to east of Alameda Avenue and at Loop 375 and I-10. The development of
14 industrial areas would primarily occur between Socorro Road and the Rio Grande.

15
16 Although there are no land use planning policy guides indicating the future of land use
17 in the remainder of the study area, these areas of the study area will likely continue to
18 develop with low-density residential uses and pockets or corridors of low-density
19 commercial uses.

20 21 **3.4.1 Schools**

22
23 The study area identified in the *1997 Border Highway Extension Feasibility Study*
24 contained all or part of five of the nine recognized independent school districts (ISDs) in
25 El Paso County. The study area includes six of the nine recognized ISDs and one
26 Educational Service Center Region (Region 19) in El Paso County. The districts within
27 the study area include the Ysleta ISD, Socorro ISD, San Elizario ISD, Clint ISD, Fabens
28 ISD, and Tornillo ISD. In addition, educational properties owned by the Ysleta Del Sur
29 Pueblo Sovereign Nation, one state university (Texas A&M University), and two
30 community colleges (Western Technical College and El Paso Community College) are
31 located within the study area. Fifty-two individual schools and school-related properties
32 were identified within the study area and are shown in **Attachment A, Exhibit 5:**
33 **Environmental Constraints**. Of the 52 schools identified, there are 21 elementary/pre-
34 kindergarten schools, 14 secondary schools (middle schools and high schools), and 17
35 other educational facilities. A complete listing of these schools, their addresses, and
36 affiliated districts can be found in **Attachment B: Supporting Data – Schools within**
37 **the BHE PEL Study Area**.

38 39 **3.4.2 Places of Worship**

40
41 The *1997 Border Highway Extension Feasibility Study* did not identify specific places of
42 worship. Field reconnaissance of the study area in 2006, 2010 and 2013 identified 79
43 places of worship within the study area. These places of worship are located within
44 residential and commercial areas. Of the 79 places of worship identified, 29 are located
45 in the City of Socorro, 14 are located within the City of San Elizario, 14 are located in
46 the Town of Clint, 17 are located within Fabens CDP, and five are located in within the

1 Tornillo CDP. The identified places of worship and the municipality/CDP in which they
 2 are located are listed in **Attachment B: Supporting Data – Places of Worship within**
 3 **the BHE PEL Study Area** and are shown in **Attachment A, Exhibit 5: Environmental**
 4 **Constraints**. Two of the identified places of worship, the Socorro Mission and San
 5 Elizario Church, are also listed in the National Register of Historic Places (NRHP).

6 7 **3.4.3 Cemeteries**

8
9 The *1997 Border Highway Extension Feasibility Study* did not identify cemeteries.
 10 Under the current effort, seven cemeteries were identified within the study area from
 11 field reconnaissance and city or county maps. The cemeteries located partially or
 12 entirely within the study area are the San Lorenzo Cemetery, San Elizario Cemetery,
 13 San Elizario Catholic Church Cemetery, Socorro Mission La Purisima Cemetery, Our
 14 Lady of Guadalupe Cemetery, La Isla Cemetery, and Clint Cemetery. The cemeteries
 15 are shown in **Attachment A, Exhibit 5: Environmental Constraints** and **Table 8**
 16 below lists the identified cemeteries and the city or town in which they are located. The
 17 San Elizario Cemetery and the Socorro Mission La Purisima Cemetery are also listed in
 18 the NRHP.

19
20 **Table 8: Cemeteries within the BHE PEL Study Area**

Name	Municipality/CDP
Socorro Mission La Purisima Cemetery	Socorro
San Elizario Cemetery	San Elizario
San Elizario Catholic Church Cemetery	San Elizario
Clint Cemetery	Clint
San Lorenzo Cemetery	Clint
La Isla Cemetery	Fabens
Our Lady of Guadalupe Cemetery	Fabens

21 Source: Field reconnaissance (2006, 2010, and 2013) and the use of city or
 22 county maps accessed in 2006, 2010, and 2013.

23 24 **3.4.4 Drainage and Irrigation Features**

25
26 The *1997 Border Highway Extension Feasibility Study* identified the irrigation facilities
 27 present within the study area to be important community facilities serving the farming
 28 community in El Paso County. From data provided by El Paso County and the IBWC,
 29 several surface water drainage features occur within the study area.

30
31 There are approximately 288 miles of drainages and irrigation features present in the
 32 study area. These features are responsible for draining excess water and for supplying
 33 irrigation water. The types of features present are arroyos, canals, drains, and laterals.
 34 The drainage and irrigation features are shown in **Attachment A, Exhibit 6: FEMA**
 35 **Floodplain and USGS Quadrangle Map**, and are summarized in **Table 9**.

1

Table 9: Drainages and Irrigation Features

Surface Water Features	Approximate Length (Miles)
Arroyo	2
Canal	38
Drain	145
Lateral	103
Total	288

2

3 The Franklin Canal is listed in the NRHP for its significance in supplying irrigation water
4 to El Paso County for over a century, and in serving as the impetus for a joint irrigation
5 project mandated by the International Treaty of 1906-1907 between the United States
6 and the Republic of Mexico.

7

8 Certain design criteria would need to be followed for crossing the existing drainage and
9 irrigation features. The El Paso County Water Improvement District No.1 (EPCWID1)
10 has design standards for culverts under or bridges over the canals, laterals, drains, and
11 waterways.

12

13

3.4.5 Parks and Recreational Facilities

14

15 The *1997 Border Highway Extension Feasibility Study* stated that five parks were within
16 the study area, but only provided the names of two of these parks/wetland preserves.
17 They were the Rio Bosque Wetlands Park and the proposed Las Azaleas Constructed
18 Wetlands. To date, the Las Azaleas Constructed Wetlands (proposed in 1997) have not
19 been constructed.

20

21 Field reconnaissance and research of city and county maps identified 25 properties
22 within the study area that serve as recreational/parkland or wetland preserve uses. The
23 identified parks and recreational areas are shown on **Attachment A, Exhibit 5:**
24 **Environmental Constraints** and are also identified in **Table 10** below along with the
25 city or town in which they are located and their affiliation. Two wetland preserves, Rio
26 Bosque Wetlands Park and Basin "G" Wetlands, are located within the study area. Rio
27 Bosque Wetlands Park is managed by the University of Texas-El Paso's (UTEP) Center
28 for Environmental Resource Management. The Basin "G" Wetlands, located along the
29 Rio Grande, is stewarded by the City of El Paso. The Rio Grande Riverpark Trail
30 System also lies partially within the study area. This system of trails is a joint effort
31 between the City of El Paso and El Paso County, and once fully constructed, would
32 terminate south of the Tornillo CDP near the Hudspeth/El Paso County line.

33

1 **Table 10: Parks and Recreational Facilities within the BHE PEL Study Area**

Name	Municipality/CDP	Affiliation	Ownership
Basin "G" Wetlands	El Paso	City of El Paso	Public
Caribe Park	El Paso	City of El Paso	Public
Rio Bosque Wetlands Park	El Paso	UTEP/City of El Paso	Public
Rio Grande Riverpark Trail System	El Paso	City of El Paso/El Paso County	Public
Amistad Neighborhood Park	Socorro	Neighborhood	Public
Bonita Neighborhood Park	Socorro	Neighborhood	Public
Bulldog Championship Park	Socorro	City of Socorro	Public
Hermosa Neighborhood Park	Socorro	Neighborhood	Public
Joe Carrasco Park	Socorro	City of Socorro	Public
Moon City Park	Socorro	City of Socorro	Public
Paradise Park	Socorro	City of Socorro	Public
Rio Vista City Park	Socorro	City of Socorro	Public
Socorro Cougar Park	Socorro	City of Socorro	Public
Tigua Recreation and Wellness Center	Socorro	Ysleta Del Sur Pueblo Sovereign Nation	Private
Unnamed Park (Cielo Azul Drive)	Socorro	Neighborhood	Public
Alexandra Flores Park	San Elizario	San Elizario ISD/El Paso County	Public
Parque de los Ninos	San Elizario	Neighborhood	Public
San Elizario Neighborhood Park (San Elizario Road)	San Elizario	Neighborhood	Public
Skate Park (Alarcon Road)	San Elizario	Neighborhood	Public
Baseball Fields (Brown Street)	Clint	Clint ISD	Public
Soccer Fields (North Loop Drive)	Clint	Neighborhood	Private
Fabens Neighborhood Park (North Loop Drive)	Fabens	Neighborhood	Public
O'Donnell Park	Fabens	El Paso County	Public
Risinger Park	Fabens	Neighborhood	Public
Tornillo Neighborhood Park (O.T. Smith Road)	Tornillo	Neighborhood	Public

2 Source: Field reconnaissance (2006, 2010, and 2013) and research of city and county maps accessed in
3 2006, 2010, and 2013.

4

5 **3.4.6 Section 4(f) Properties**

6

7 A Section 4(f) property is any significant publicly owned park, recreation area, wildlife
8 and waterfowl refuge, or historic property (including archeological sites) protected by 23
9 Code of Federal Regulations (CFR) 774. Examples of Section 4(f) properties located
10 within the study area include NRHP-listed properties (including historic districts), historic
11 trails, NRHP-listed irrigation canals/drains stewarded by the EPCWID, city parks, and
12 constructed wetlands. If future project(s) result in a use of these types of properties, a
13 Section 4(f) evaluation may be required.

14

3.4.7 Section 6(f) Properties

A Section 6(f) property is any public outdoor recreational land acquired or improved with funds authorized under the Land and Water Conservation Fund (LWCF) Act of 1965. Section 6(f) of the LWCF Act established restrictions on the use of these properties, and conversion of these properties to a use other than public recreation would require a Section 6(f) evaluation. The identified 6(f) properties are identified in **Table 11** below. If future projects result in any ROW acquisition or other impacts to a Section 6(f) property, the Section 6(f) evaluation process would be followed.

Table 11: Section 6(f) Properties within the BHE PEL Study Area

Section 6(f) Resource Type	Existing Constraint/Conditions
City Parks and Recreation Areas	Rio Grande Riverpark Trail System
City Parks and Recreation Areas	Rio Bosque Wetlands Park

3.4.8 Community Facilities

Community facilities identified during field reconnaissance and research of city and county maps consisted of community fire stations, police stations, post offices, medical centers, and other community centers. Of the 29 identified community facilities, eleven are located in the City of Socorro, two are located within the City of San Elizario, six are located in the Town of Clint, seven are located in Fabens CDP, and three are located in Tornillo CDP. The identified community facilities are identified in **Table 12** below and on **Exhibit 2: Engineering Constraints**.

Table 12: Community Facilities within the BHE PEL Study Area

Name	Type	Municipality/CDP
Clint Community Center	Community Center	Clint
Clint Fire Station	Fire	Clint
Clint Volunteer Station	Fire	Clint
Border Patrol	Police	Clint
Clint Police Station	Police	Clint
Clint U.S. Post Office	Post Office	Clint
Fabens Community Center	Community Center	Fabens
Fabens Fire Station	Fire	Fabens
El Paso County Library	Library	Fabens
Border Patrol Office	Police	Fabens
Fabens U.S. Post Office	Post Office	Fabens
University Medical Center	Healthcare	Fabens
Community Partnership Clinic	Healthcare	Fabens
ESD 2 and Murati Fire Station	Fire	San Elizario
Centro De Salud Familiar La Fe	Healthcare	San Elizario
Aliviane Inc.	Healthcare	Socorro

Name	Type	Municipality/CDP
Socorro Community Center	Community Center	Socorro
Ambulance Service Building	Fire	Socorro
Inactive Fire Station	Fire	Socorro
Old Fire Station	Fire	Socorro
Socorro Fire Station	Fire	Socorro
Socorro Volunteer Fire Station	Fire	Socorro
Police Training Station	Police	Socorro
Socorro Police Station	Police	Socorro
Tigua Tribal Police	Police	Socorro
Socorro U.S. Post Office	Post Office	Socorro
FDC	Fire	Tornillo
Tornillo Volunteer Fire Station	Fire	Tornillo
Tornillo U.S. Post Office	Post Office	Tornillo

1 Source: Field reconnaissance (2006, 2010, and 2013) and research of city and county maps accessed in
2 2006, 2010, and 2013.

3 3.5 Natural Resources

4
5
6 The natural environment comprises all living and non-living things that occur naturally.
7 The natural environment within the study area includes vegetation, wildlife and habitat,
8 water features, floodplains, and soils. For those sections where previous data was
9 readily available, a comparison of various current data with the *1997 Border Highway*
10 *Extension Feasibility Study* was prepared. Vegetation and wildlife habitat descriptions in
11 the *1997 Border Highway Extension Feasibility Study* provided general descriptions of
12 the area. Therefore, comparisons of these two sections are not included in this report.

13 3.5.1 Vegetation

14
15
16 A new Memorandum of Understanding (MOU) between TxDOT and TPWD became
17 effective September 1, 2013. Based on the requirements of the 2013 MOU, data from
18 the Ecological Mapping Systems of Texas was utilized to identify the ecological region
19 and vegetation types within the study area. The data was also utilized to identify areas
20 of potential habitat for federal and state listed species.

21
22 The study area lies within the Chihuahuan Desert and Arizona-New Mexico Mountains
23 ecological region. The region is arid and contains desert grassland, arid shrubland
24 lowlands, and areas of oak, juniper, and pinyon pine in the higher elevations.
25 Agriculture is also prevalent in the region.

26
27 According to the mapped EMST habitat types, the study area is comprised of nine MOU
28 habitat types. The habitat types and acreage amount are in **Table 13**.

1

Table 13: MOU Habitat Types

MOU Habitat Type	Approximate Acreage
Agriculture	28,625
Mesquite Woodland, Shrubland	22
Mixed, Arid, Sand Grassland	11
Riparian	40
Scrub, Thornscrub, Shrubland	19
Urban Low Intensity	5,777
Warm Desert Badland, Pavement	69
Warm Desert Dunes	13,365
Warm Desert Riparian, Wash	21,445
Total	69,383

2

3 Naturally occurring riparian habitats within the region have been drastically altered,
 4 leaving narrow riparian corridors along irrigation drains and canals. These riparian
 5 corridors are dominated by an exotic invader, five-stamen tamarisk (*Tamarix chinensis*),
 6 with lesser populations of Russian thistle (*Salsola iberica*), burningbush (*Bassia*
 7 *scoparia*), mormon tea, desert seepweed (*Suaeda suffrutescens*), Torrey wolfberry
 8 (*Lycium torreyi*), curly dock (*Rumex crispus*), and a few scattered specimens of honey
 9 mesquite (*Prosopis glandulosa*), black willow (*Salix nigra*), and Rio Grande cottonwood
 10 (*Populus wislizeni*).

11

12 Other vegetation observed throughout the study area consists of crops such as cotton,
 13 onions, and pecan orchards primarily in the southern portion of the study area.
 14 Dominant vegetation observed within the undeveloped areas consisted of Russian
 15 thistle (*Salsola sp.*), tobosa grass (*Pleuraphis mutica*), black grama (*Bouteloua*
 16 *eriopoda*), and creosote bush (*Larrea tridentate*). The urbanized areas contain
 17 landscape vegetation consisting of various grasses such as Bermuda grass (*Cynodon*
 18 *dactylon*), small ornamental shrubs, and various species of cacti. Trees consisted of
 19 elms (*Ulmus sp.*), eastern red cedar (*Juniperus virginiana*), and pines (*Pinus sp.*).

20

21 As alternatives are identified, additional site investigations would be needed to
 22 determine the presence or absence of habitats to be considered for non-regulatory
 23 mitigation.

24

25 **3.5.2 Wildlife Habitat and Migration Patterns**

26

27 The available habitat in the study area is desert-like in nature with undulating plains.
 28 Short grasses and thorny shrubs cover much of the study area. Basins with no drain
 29 outlets may form shallow playa lakes that contain water for short time periods after a
 30 rain event.

31

32 A diverse abundance of mammalian, reptilian, and avian species are associated with
 33 the habitat in the study area. The most common mammalian species are small rodent
 34 like species, such as, striped skunk (*Mephitis mephitis*), hispid cotton rat (*Sigmodon*
 35 *hispidus*), northern grasshopper mouse (*Onychomys leucogaster*), Mearn's

1 grasshopper mouse (*Onychomys arenicola*), western harvest mouse (*Reithrodontomys*
2 *megalotis*), desert cottontail rabbit (*Sylvilagus audubonni*), white-footed mouse
3 (*Peromyscus leucopus*), black-tailed jackrabbit (*Lepus californicus*), Merriam's kangaroo
4 rat (*Dipodomys merriami*), cactus mouse (*Peromyscus eremicus*), and Mexican woodrat
5 (*Neotoma Mexicana*). Mammalian predators would include the coyote (*Canis latrans*)
6 and bobcat (*Lynx rufus*). Common avian species include gambel's quail (*Callipepla*
7 *gambelii*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*),
8 killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), white-winged dove
9 (*Zenaida asiatica*), greater roadrunner (*Geococcyx californianus*), and barn swallow
10 (*Hirundo rustica*).

11
12 Reptilian species are very common due to the xeric conditions in the study area. Some
13 common snakes include western coachwhip (*Masticophis flagellum testacous*),
14 checkered garter snake (*Thamnophis marcianus*), Trans-Pecos rat snake (*Elaphe*
15 *subocularis*), western diamondback rattlesnake (*Crotalus atrox*), mountain patchnose
16 snake (*Salvadora grahamiae*), and the ground snake (*Sonora semiannulata*). Common
17 lizards found in the study area would be the southern prairie lizard (*Sceloporus*
18 *undulates consobrinus*), desert side-blotched lizard (*Uta stansburiana stejnegeri*),
19 desert grassland whiptail (*Cnemidophorus uniparens*), Texas spotted whiptail
20 (*Cnemidophorus gularis*), marbled whiptail (*Cnemidophorus tigris marmoratus*), lesser
21 earless lizard (*Halbrookia maculata*), and Texas horned lizard (*Phrynosoma cornutum*).
22 The ornate box turtle (*Terrapene ornata ornata*) may also be found within the study
23 area.

24
25 The riparian vegetation along the Rio Grande, arroyos, canals, drains, and laterals
26 provide locally important wildlife habitat. In addition to providing a relatively diverse
27 vegetative assemblage for wildlife and avian utilization, these corridors provide
28 important travel routes for wildlife movement throughout the study area. These riparian
29 corridors also provide important habitat for reptilian and amphibian species.

30
31 Amphibian species are not as diverse in the region due to the limited areas for
32 prolonged hydrated fauna. The areas that are common for amphibian species are stock
33 tanks and irrigation ditches. Some species that may be found in the study area are the
34 tiger salamander (*Ambystoma tigrinum*), canyon treefrog (*Hyla arenicolor*), red-spotted
35 toad (*Bufo punctatus*), Woodhouse's toad (*Bufo woodhousii*), Couch's spadefoot
36 (*Scaphiopus couchii*), western spadefoot (*Spea hammondi*), green toad (*Bufo debilis*),
37 and Blanchard's cricket frog (*Acris crepitans blanchardi*).

38 39 **3.5.3 Threatened and Endangered Species**

40
41 Six plants, one mollusk, one reptile, one fish, one mammal, and 11 bird species were
42 federally listed at the time of the *1997 Border Highway Extension Feasibility Study*.
43 There are currently five bird and one plant species federally listed for El Paso County.

44
45 The U.S. Fish and Wildlife Service (USFWS) threatened and endangered species list
46 (May 1, 2013) and TPWD Annotated County list of Threatened, Endangered, and Rare

1 Species (August 7, 2012) were reviewed for this project and a complete listing of these
2 species is provided in **Attachment B: Supporting Data – Federal and State-Listed**
3 **Threatened/Endangered Species in El Paso County**. This list provides the state-
4 listed and federal-listed threatened and endangered species indigenous to El Paso
5 County, Texas as well as the TPWD determined rare species with no regulatory
6 protection status found within El Paso County. Federally listed species, obtained from
7 the USFWS Southwest Region Ecological Services website, are protected under the
8 Endangered Species Act of 1973. In general, this act protects both the species and the
9 habitat. State listed species are protected under the Texas Administrative Code, Title
10 31, Part 2, Chapter 65, Subchapter G, Rules 65.71 - 65.176 and under the Texas Parks
11 and Wildlife Statutes Chapters 67 and 68 revised May 31, 2002. These regulations
12 primarily address direct effects to the state listed species only and do not include
13 habitat. Potential impacts to protected species would be evaluated during the
14 appropriate stage of the project development process.

15
16 Data was obtained from the Texas Natural Diversity Database (TXNDD) in June 2013.
17 The TXNDD is a geo-referenced database of documented sightings of rare, threatened
18 and endangered species of Texas maintained by TPWD. The species present within
19 the study area are the Pecos River muskrat, sand prickly-pear, western burrowing owl,
20 and Wheeler's spurge. The TXNDD data would need to be updated and potential
21 impacts to species evaluated during the appropriate stage of the project development
22 process.

23
24 All avian species considered migratory are protected under the Migratory Bird Treaty
25 Act (MBTA). The federal and state-listed species in El Paso County are all avian
26 species that are considered migratory. Some specimens may be local residents year
27 round but the species in general does migrate. The MBTA makes it unlawful to take, kill,
28 possess, transport or harm migratory birds, their eggs, parts and nests. Any impacts to
29 migratory species would be evaluated during the appropriate stage of the project
30 development process.

31
32 **3.5.4 Waters of the U.S., including Wetlands**

33
34 The *1997 Border Highway Extension Feasibility Study* indicated the presence of narrow
35 linear wetlands along irrigation and drainage features as well as a few ponds and
36 wetlands adjacent to the Rio Grande. Included were the Rio Bosque Wetlands Park
37 and the Los Azaleas wetland area. The Los Azaleas project was proposed in 1997 as a
38 constructed wetland but was never constructed.

39
40 Pursuant to EO 11990 (Protection of Wetlands) and Section 404 of the Clean Water
41 Act, a preliminary investigation was conducted to identify potential waters of the U.S.,
42 including wetlands, within the study area. According to the U.S. Corps of Engineers
43 (USACE), the Federal agency having jurisdictional authority over waters of the U.S.,
44 wetlands must possess three essential characteristics. Under normal circumstances,
45 these characteristics include the presence of hydrophytic vegetation, wetland hydrology,
46 and hydric soils.

1 The preliminary investigation identified potential jurisdictional features through field
2 reconnaissance, desktop review, and review of National Wetland Inventory (NWI) maps.
3 A formal delineation, as outlined by the USACE in their *1987 Wetlands Delineation*
4 *Manual and Regional Supplement to the Corps of Engineers Wetland Delineation*
5 *Manual: Arid West Region (Version 2.0)*, was not conducted at this stage in the project
6 development process.

7
8 The Rio Grande is a jurisdictional water and is considered a traditional navigable water
9 within the study area. A series of managed wetlands is located in the northwest portion
10 of the study area. The Rio Bosque Wetlands Park is an approximately 372-acre City of
11 El Paso park that UTEP manages through its Center of Environmental Resource
12 Management. The Basin "G" Wetlands are located north of the Bustamante Water
13 Treatment Plant and encompasses approximately 36 acres.

14
15 Available online GIS data was obtained from the NWI for the study area. The NWI data
16 identified approximately 138 acres of wetlands, 81 acres of freshwater ponds, 160 acres
17 of lake, and 2,362 acres of river features throughout the study area. Not all of the
18 features contained within the NWI data are currently present. A more detailed
19 investigation to evaluate and delineate features would need to be completed to
20 determine if those features meet the requirements and are under the jurisdiction of the
21 USACE further along in the project development process.

22
23 Drainage features (arroyos, canals, drains, and laterals) within the study area may be
24 considered potentially jurisdictional if they act as a tributary to a traditional navigable
25 water such as the Rio Grande. Wetlands associated with these water features may also
26 be considered potentially jurisdictional. Several possible narrow linear wetland features
27 were observed within the drainage features and inside the levees of the Rio Grande. A
28 more detailed delineation to map and evaluate these features would be conducted to
29 determine if these features meet the requirements and are under the jurisdiction of the
30 USACE further along in the project development process.

31
32 According to the 2012 Texas 303(d) List contained in the Texas Integrated Report of
33 Surface Water Quality, the Rio Grande (Segment 2307) is considered an impaired water
34 segment. Segment 2307 is listed as impaired due to bacteria, chloride and total
35 dissolved solid levels that do not meet water quality standards. This stream is the only
36 stream segment listed on the 303(d) list that is located within the study area, or within
37 five miles downstream of the study area.

38 **3.5.5 Floodplains**

39
40
41 The *1997 Border Highway Extension Feasibility Study* identified two major floodplains
42 within the study area. The first floodplain is located along the Rio Grande and
43 contained by a levee, and the second floodplain is located along the embankment of the
44 Mesa Spur Drain.

1 The FEMA Flood Insurance Rate Maps for the study area were reviewed to determine
 2 potential floodplains impacts. El Paso County is a participant in the National Flood
 3 Insurance Program. The study area crosses the 100-year floodplain (Zone A), that are
 4 associated with the waterways and drainage features in the eastern portion of the study
 5 area. In total, there are 17 FEMA Map panels and three unmapped panels. Portions of
 6 the study area are within both the 100-year and 500-year floodplains. A complete listing
 7 of the mapped FEMA flood zones located within the study area are shown in **Table 14**,
 8 and the locations of the 100-year floodplains are shown on **Attachment A, Exhibit 6:**
 9 **FEMA Floodplain and USGS Quadrangle Map.**

10
 11 **Table 14: FEMA Flood Zones within the BHE PEL Study Area**

Flood Zone Designation	FEMA Map Panel Number(s)	Zone Description
A	4802120225B, 4802120236B, 4802120237B, 4802120239B, 4802120277B, 4802120281B, 4802120283B, 4802120300B, 4802120325B, 4802120350B, 4802120375B	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A2	4802120225B, 4802140049B, 4802140050B	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A3	4802120225B, 4802140050B	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
AE	4802120237B, 4802120239B, 4802120277B, 4802120281B, 4802120283B	Base flood elevations determined.
AH	4802120225B, 4802140048B, 4802140049B, 4802140050B, 4802140051B, 4802140052B	Areas of 100-year shallow flooding where depths are between 1 and 3 ft; base flood elevations shown, but no flood hazard factors are determined.
AO	4802120236B, 4802120237B, 4802120239B, 4802120277B, 4802120279B, 4802120281B, 4802120283B, 481260A	Areas of 100-year shallow flooding where depths are between 1 and 3 ft; average depths of inundation are shown, but no flood hazard factors are determined.
B	4802120225B, 4802140048B, 4802140049B, 4802140050B, 4802140051B	Areas between limits of the 100-year flood and 500 year flood; or certain areas subject to 100-year flooding with average depths less than 1 foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
C	4802120225B, 4802140048B, 4802140049B, 4802140050B, 4802140051B, 4802140052B	Areas of minimal flooding.
X	4802120236B, 4802120237B, 4802120239B, 4802120277B, 4802120279B, 4802120281B, 4802120283B, 4802120300B, 4802120325B, 4802120350B, 4802120375B, 481260A	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

12 Source: FEMA map panels accessed through the online FEMA Map Service Center.

13
 14 Several drains and laterals, managed by the EPCWID1 and the IBWC, are located
 15 within the study area, which aid in restricting and reducing flooding associated with the

1 Rio Grande. Also, levees have been constructed to assist in decreasing flood risk in El
2 Paso County.

3
4 The Hueco-Mesilla Bolsons Aquifer is the principle aquifer for the El Paso region. A
5 portion of the aquifer is located within the study area. Any potential indirect impacts to
6 the aquifer from project-induced development north and west of the project area should
7 be determined. The location and proper plugging of abandoned or acquired water wells
8 should be considered.

9 10 **3.5.6 Soils**

11
12 The *1997 Border Highway Extension Feasibility Study* identified the Harkey-Glendale
13 Association as the primary soil association within the study area. According to the *Soil*
14 *Survey of El Paso County Texas* (Soil Conservation Service, November 1971), the
15 study area is located within two general soil associations; the Bluepoint Association and
16 the Harkey-Glendale Association.

17
18 The Bluepoint Association is characterized by deep, gently sloping to strongly sloping
19 soils that have loamy sand underlying material. It is located just above the Rio Grande
20 floodplain and below the escarpment of the Hueco Bolson. Bluepoint soils account for
21 98 percent of the association and contain a loamy fine sand surface layer about six
22 inches thick and is underlain by very pale brown, moderately alkaline, loose material of
23 sandy texture that is several feet thick. Bluepoint soils at higher elevations have a
24 gravelly sand surface layer. The Parjarito soils and Badlands account for the remaining
25 two percent of the Bluepoint Association. Parjarito soils are in low lying places just
26 above the Rio Grande floodplain. Badlands occur as outcrops or areas of exposed clay.

27
28 The Harkey-Glendale Association is typified by deep, nearly level soils that have loamy
29 very fine sand to silty clay loam underlying material, and is found on the Rio Grande
30 floodplain. Harkey soils account for 37 percent of the association, the Glendale soils
31 account for 16 percent, and minor soils account for the remaining 47 percent. The
32 Harkey soils consist of deep, pale-brown to pink soils that developed in friable, loamy
33 sediments having a high lime content. The Harkey sediments were recently deposited
34 on the Rio Grande floodplain. The Glendale series are deep, brown soils that have
35 developed in stratified, loamy, friable sediments having a high content of lime that also
36 were recently deposited on the Rio Grande floodplain. The Saneli, Tigua, Gila, Anapra,
37 Vinton, and Brazito are minor soils found within the Harkey-Glendale Association.

38
39 The Farmland Protection Policy Act protects prime, unique, or state-wide/locally
40 important farmland. The USDA Natural Resources Conservation Service has not
41 identified any prime or unique farmland in El Paso County.

3.6 Other Items of Consideration

3.6.1 Cultural Resources

Cultural resources is a general term referring to buildings, structures, objects, sites, and districts that are generally more than 50 years of age with the potential to have significance in local, state, or national history. Historic resources may be archeological or non-archeological. Archeological historic resources are those material remains of past human existence of archaeological interest. Non-archeological historic resources refer to any site, district, object, building, or structure that is listed in the NRHP or eligible to be listed in the NRHP and is primarily non-archeological in nature.

The Antiquities Code of Texas (Title 9, Chapter 191 of the Texas Natural Resources Code of 1977) protects cultural resources including resources listed in the NRHP or designated as State Antiquities Landmarks (SAL) and located on land owned or controlled by the State of Texas or one of its cities or counties or other political subdivisions. Under this code, any archeological property located on publicly-owned land may be determined eligible as a SAL whereas in order for a non-archeological property to be designated as a SAL, it must first be listed in the NRHP. Conditions for the formal SAL designation are covered in Chapter 26 of the THC's Rules of Practice and Procedure for the Antiquities Code of Texas. All groundbreaking activities affecting public land must be authorized by the THC Department of Antiquities Protection. Authorization includes a formal Antiquities Permit, which stipulates the conditions under which survey, discovery, excavation, demolition, restoration, or scientific investigations would occur.

Future project(s) may entail the planning of a federally funded, permitted, or licensed action. If any properties listed in or eligible to be listed in the NRHP are located on parcels wholly or partially within the area of potential effect (APE) of the recommended alternative, these are considered under Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended, (16 USC 470, NHPA) and the NEPA of 1969. Section 106 of the NHPA and NEPA also requires federal agencies to consider the effects of proposed undertakings on traditional cultural properties. Properties eligible for the NRHP may include cultural properties valued by Native American Tribes. According to the National Park Service (NPS) National Register Bulletin – Guidelines for Evaluating and Documenting Traditional Cultural Properties (TCP), a TCP “can be defined generally as one that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining cultural identity of a community.” A TCP may be determined eligible for the NRHP by a Tribal Historic Preservation Officer (THPO) because the THPO has first-hand, extensive knowledge of the history and cultural identity of his/her tribe.

In accordance with 36 CFR Part 800, Protection of Historic Properties, Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties, and also afford the Advisory Council on Historic

1 Preservation (ACHP) a reasonable opportunity to comment on the said undertakings.
2 Under the Section 106 process, consultation between the federal agency official and
3 interested parties should occur at the project planning stages in order to address the
4 potential effects of the undertaking on historic properties. If an effect is determined to
5 be adverse, steps must be taken to avoid, minimize, and/or mitigate the adverse effect.
6 The consultation process of identification, evaluation, and assessment used to address
7 the requirements of Section 106 of the NHPA is described in the First Amended
8 Programmatic Agreement among the FHWA, TxDOT, the Texas State Historic
9 Preservation Officer (SHPO), and the ACHP Regarding the Implementation of
10 Transportation Undertakings (PA-TU). Section 106 of the NHPA requires that the
11 FHWA consult with federally-recognized American Indian tribes and the PA-TU does not
12 apply to undertakings on tribal lands. Consultations regarding tribal lands must be
13 carried out in accordance with 36 CFR 800.

14
15 Because future project(s) may be a transportation activity classified as a federal
16 undertaking, Section 4(f) of the Department of Transportation Act of 1966 must also be
17 considered. Section 4(f) (23 CFR 774) applies to transportation projects that use federal
18 funds or require a federal permit or a federal license. Under this law, projects that
19 propose the use of a historic property may not be approved if they will adversely affect
20 that property unless there is no feasible or prudent alternative to the use of the property
21 *and* the project includes all possible planning to minimize harm to the historic site.

22
23 Chapter 26 of the Texas Parks and Wildlife Code contains provisions to protect publicly
24 owned historic sites as well as publicly owned parks, recreation and scientific areas,
25 and wildlife refuges. Project sponsors that propose to take or use from these protected
26 lands must notify the governmental entity that governs the land and provide the public
27 notice and hearing procedures prescribed in Section 26.002. They must also consider
28 clearly enunciated local preferences per Section 26.001(c). Consideration of protected
29 lands under Chapter 26 is independent of an analysis conducted under Section 4(f) of
30 the Department of Transportation Act of 1966. The TxDOT Environmental Handbook for
31 Parks and Wildlife Code Chapter 26 (02/2014) (<http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/parks-wildlife.html>) states that although
32 Section 4(f) only applies to historic sites “of national, State, or local significance,”
33 Chapter 26 applies to public land designated and used as a historic site regardless of its
34 significance. Also, unlike Section 4(f), Chapter 26 has no *de minimis* provisions so any
35 take or use of a publicly owned historic site or other protected land, no matter how
36 small, would require the process described in Chapter 26.

37
38
39 The National Trails System Act of 1968 (Public Law 90-543) introduced National Scenic
40 Trails and National Recreation Trails. Regulations regarding National Scenic and
41 National Historic Trails (16 USC §1244 (21)) designate the El Camino Real de Tierra
42 Adentro National Historic Trail and describe it as “a 404 mile long trail from the Rio
43 Grande near El Paso, Texas to San Juan Pueblo, New Mexico.” The trail is
44 administered by the NPS and coordination with that agency was conducted for the BHE
45 PEL study. Documentation of the coordination is included in the *BHE PEL Study*
46 *Agency Coordination Technical Report (Appendix D)*.

1 Cemeteries are protected from any disturbance by Section 711.035 of the Health and
2 Safety Code and under the Texas Administrative Code, Title 13, Part 2, Chapter 22,
3 Rule Section 22.4. Under some circumstances, cemeteries of historic-age (50 years or
4 older) may also be protected as historic properties under the NHPA or ACT. TxDOT
5 has adopted a Cemetery Policy to ensure conformance to legal and regulatory
6 requirements. The TxDOT Cemetery Policy for compliance to applicable cemetery laws
7 may be found in the *TxDOT Environmental Handbook – Archeological Sites and*
8 *Cemeteries (02/2014)* available at:
9 <http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/toolkit.html>.

10 11 **3.6.1.1 Archeological Resources**

12 13 1997 Border Highway Extension Feasibility Study

14 A reconnaissance archeological survey was conducted of the connecting corridors
15 leading to I-10 from the Rio Grande – U.S./Mexico International border. A total of four
16 corridors as well as the U.S./Mexico International Border were surveyed; all four
17 corridors fall within the existing study area. The corridors consisted of Old Hueco Tanks
18 Road, as well as a main corridor from the border to SH 20 from San Elizario to Fabens,
19 Horizon Boulevard (Buford Road), Clint Highway, and the Fabens Highway corridors.
20 The archeological properties discovered during this reconnaissance are mostly situated
21 on the sandhills escarpment leading from I-10 to the valley floor.

22
23 The Hueco Tanks corridor contained the most numerous archeological remains. This
24 corridor contained a total of four previously recorded sites. The previously recorded
25 sites consist of sites 41EP427, 41EP429, 41EP430, and 41EP431. The Clint corridor
26 contained six prehistoric areas, a historic-age camp, a late historic-age dump, and a
27 historic-age cemetery. These nine properties are situated in various areas of the Clint
28 corridor. A total of seven prehistoric areas were discovered during the survey of the
29 Fabens corridor. All of these areas are located north of FM 793 that provides access to
30 I-10.

31
32 In summary, the *1997 Border Highway Extension Feasibility Study* suggested numerous
33 archeological properties are potentially eligible for listing in the NRHP. The areas of
34 greatest concern are in the area of the Hueco Tanks Road corridor, as numerous
35 archeological properties were found along this corridor.

36 37 2007 Preliminary Archeological Properties Investigation

38 A detailed site-file search was conducted with the Texas Archeological Resource
39 Library (TARL) on-line. The search resulted in the identification of 404 cultural
40 properties within a study area, which is completely bounded by the proposed study
41 area. Additional sources used to retrieve site data consisted of previously documented
42 reports about investigations conducted within the study area (Weedman et al. 1994;
43 Peterson and Brown 1994; Brown et al. 1995; Vierra et al. 1997; Holmes et al. 2001;
44 Holmes 2002; Perez 2002; Peterson et al. 2002).

1 **Table 15** summarizes the most common names used to describe all of the cultural
 2 property types. Whenever two types appeared similar, these were grouped into one.
 3 For example, farmstead and farmhouse were grouped together.

4
 5 **Table 15: Cultural Property Type Summary within the BHE PEL Study Area**

Cultural Property Type	Total
Adobe Structure	104
Adobe Walls	3
Canals/Drains	9
Farmhouse	33
Historic-age Building	2
Historic-age Cotton Gin	1
Historic-age Debris	5
Historic-age Homestead	23
Historic-age Residential	16
Historic-age Structure	136
Historic-age – No Data	2
Home and Sanitarium	1
Labor House	8
Missions	4
No Data	45
Old Barn	1
Old County Jail	1
Prehistoric Sites	2
Railroad House	1
Railroad Stop	1
Sherd Scatter	6
Total	404

6 Source: Texas Archeological Research Laboratory (TARL on-line).

7
 8 The highest concentration of archeological properties is located in the northern portion
 9 of the study area. These properties are associated with the Spanish Missions and
 10 agricultural properties. The majority of the historic-age properties previously identified
 11 within the study area are associated with the late 19th century to mid-20th century
 12 cultural component. The labor houses, homesteads, adobe structures, and historic-age
 13 residences are associated with agricultural activities, such as cotton. Historically, cotton
 14 farming is predominant in the area and farmers continue to farm cotton today.

15 16 Tribal Consultation

17 The FHWA is the lead federal agency responsible for consultation with sovereign Indian
 18 nations in regards to proposed transportation projects. Coordination letters were sent to
 19 the Ysleta Del Sur Pueblo Sovereign Nation during the PEL process to initiate the
 20 coordination for this project. Tribal consultation with Indian nations would continue to
 21 occur as appropriate throughout project development process.

22 23 Archeological Resources Conclusion

24 During the PEL process, additional coordination, analysis and online investigations
 25 occurred and are documented in the BHE PEL Study. Once future projects are initiated

1 in the NEPA process, archeological investigations will be performed in accordance with
2 Section 106 of the National Historic Preservation Act; 36 CFR 800 which provides the
3 implementing regulation of Section 106; the PA-TU; Section 4(f) (23 CFR 774); and the
4 Antiquities Code of Texas (Title 9, Chapter 191 of the Texas Natural Resources Code of
5 1977). Impact avoidance, minimization, and mitigation efforts would be evaluated if
6 results of the investigations indicate a potential for impacts to archeological resources.
7

8 **3.6.1.2 Non-Archeological Historic Resources**

9

10 In 1997, a non-archeological historic resource investigation was conducted during the
11 development of the *1997 Border Highway Extension Feasibility Study* to identify
12 resources previously surveyed or designated as historic in the study area, and to
13 identify other historic-age properties that existed within the study area corridor. The
14 study area utilized in the 1997 investigation does not share the same boundaries as the
15 existing proposed study area; however, the existing proposed study area encompasses
16 the previous 1997 study area. Fieldwork was undertaken to identify historic-age
17 resources for the 1997 study area and the results were reviewed during the
18 consideration of historic resources for the BHE PEL Study. Another study was
19 conducted in 2007 and the combined data of the 1997 and 2007 reports provided a
20 pattern of historic-age resources. However, there were no determinations of NRHP-
21 eligibility made as a result of those studies.
22

23 For the BHE PEL Study, research was conducted by a historian pre-certified in TxDOT
24 classifications 2.8.1 (Surveys, Research & Documentation of Historic Buildings,
25 Structures, and Objects) and 2.11.1 (Historical and Archival Research). The historian
26 conducted desktop review of online resources as well as a review of GIS data provided
27 by TxDOT ENV from reports prepared for TxDOT for previous projects located within
28 the study area. The historian also reviewed the online THC Historic Sites Atlas to
29 identify NRHP, Recorded Texas Historic Landmarks (RTHL), SAL, Official Texas
30 Historical Markers (OTHM), and neighborhood surveys within and near the study area.
31 Other websites and documents reviewed include:
32

- 33 • City of El Paso Website Documents:
 - 34 ○ City of El Paso Historic Preservation Manual, Chapter 8, The Missions
 - 35 ○ El Paso Mission Trail Historical Area Zoning Regulations
 - 36 ○ City of El Paso Design Guidelines, Section Two, The Mission Trail Historic
37 Corridor & District
- 38 • El Paso County Website Documents:
 - 39 ○ Parks and Recreation – Rio Grande Riverpark Trail System
 - 40 ○ Socorro Mission Preservation Project
- 41 • City of Socorro Ordinance 123 – Historic Landmark Preservation, passed
42 06/15/1991 and amended by Ordinance No. 131 passed 08/05/1992
- 43 • The National trails System Memorandum of Understanding, No. 06-11132424-
44 196 (MOU with FHWA)
- 45 • Local Government Code, Title 7, Chapter 231, Subchapter I. Zoning and Other
46 Regulation in El Paso Mission Trail Historical Area

- 1 • The El Paso Mission Trail A Review of Recommendations for Improving the Trail
2 (2013)
- 3 • El Camino Real de Tierra Adentro National Historic Trail New Mexico and Texas,
4 NPS Website
- 5 • Ysleta del Sur Pueblo Website – Tribal Property Management webpage and
6 Tribal Property Map
- 7 • Working with the Tigua Community: Tips for Community Engagement, Consulting
8 & Data Collection, Ysleta del Sur Pueblo Economic Development Department
9 (2013)
- 10 • Texas State Library and Archives Online Map Collection
- 11 ○ 1908 El Paso County, Rio Grande river and valley by U.S. Reclamation
12 Service, R.U. Goode and E.M. Douglas, Geographers in charge (Map No.
13 3029)
- 14 ○ 1940 El Paso County General Highway Map, Texas Highway Department
15 (Map No. 4853)
- 16

17 As a result of the research, properties were identified that were previously determined to
18 be listed in or eligible for listing in the NRHP; properties designated by state or local
19 governments as a historically significant properties; properties that THC lists as
20 previously surveyed for listing in the NRHP; cemeteries; and historical markers. Those
21 resources are listed in **Table 16**.

22

1
2

Table 16: Previously Identified Historic Resources within the BHE PEL Study Area

Name of Resource	Address/Location of Resource and Comments	Eligibility/ Designation
Resources with Historic Designations or Associations		
Mission Socorro Archeological Site (location shown on the Texas Historic Sites Atlas)	Southeast of the intersection of Buford and Nicholas Roads, Socorro, Texas	NRHP, SAL
Socorro Mission/Mission Nuestra Senora De La Concepcion Del Socorro	South Nevarez Road, near Socorro Road, Socorro, Texas	NRHP, RTHL, Centennial Marker
Socorro Mission Historic District	South Nevarez Road, near Socorro Road, Socorro, Texas	NRHP
El Paso Water Improvement District No. 1	Canals, drains, and other irrigation structures located within the irrigation district system.	NRHP
Presidio Chapel of San Elizario	South side of Central Plaza in San Elizario Plaza	NRHP, SAL, RTHL
San Elizario Historic District	Roughly bounded by Rio Grande Road, Socorro Road, Convent Road (Paseo del Convento), and San Elizario Lateral Canal in San Elizario, Texas	NRHP
Rio Vista Farm Historic District	800-801 Rio Vista Road, Socorro, Texas	NRHP, SAL
Franklin Canal	Within the Study Area, the Franklin Canal is located parallel to SH 20/Alameda Avenue, along the southwest side of the road.	NRHP
Pena House	On the southwest corner of SH 20 and Buford Road, Socorro, Texas	NRHP-Eligible
Casa Ortiz	Apodaca Road at Socorro Road, Socorro, Texas. This house may have been built pre-1800. In the 1840s, it was owned by Jose Ortiz, who traded with Comanches and other Indians. An example of frontier architecture with thick adobe walls, vigas, and latias, with a dirt roof.	RTHL
Los Portales	Across the street from Presidio Chapel of San Elizario, on the southwest side of the Central Plaza in San Elizario, Texas. This RTHL (house) was built in 1855 by a local farmer and rancher. It is a good example of the Territorial style with its characteristic milled lumber. In the 1870s it became a schoolhouse. Currently, it is used as a museum for the San Elizario Historic District.	RTHL

Name of Resource	Address/Location of Resource and Comments	Eligibility/ Designation
Old County Jail	Located on the north side of Main Street within San Elizario Historic District. It was constructed circa 1850 of adobe bricks and cottonwood logs.	RTHL, OTHM
Site of Tienda de Carbajal (partially reclaimed)	Socorro Road, Socorro, Texas. This RTHL is the site of a 19th century walled hacienda near the intersection of San Elizario Road and the Acequia Madre, appearing on a map from 1852.	RTHL
Mission Trail Historic District	Shown on Exhibit 7 map as polygon coded with hatch symbology, generally along Socorro Road.	State Government Code
El Camino Real de Tierra Adentro	Generally along Socorro Road until south of San Elizario where the trail veres west toward the Rio Grande and Mexico.	NHT
Ysleta del Sur Pueblo Land (owned, ceremonial, and trust land)	Shown on Exhibit 7 map as polygons coded with hatch symbology for each type of Tigua land.	THPO to determine TCPs in APE during NEPA-level study
National Register Neighborhood Surveys (NRNS)		
Historic-age - previously surveyed	10113 Samuel Road	NRNS
Historic-age - previously surveyed	10100 Socorro Road	NRNS
Historic-age - previously surveyed	10084 Socorro Road	NRNS
Cemeteries		
Clint Cemetery	Southeast of Clint, Texas	Cemetery
La Isla Cemetery	Southwest of Fabens, Texas	Cemetery
La Purisema Cemetery	East of Socorro Road and south of Socorro Mission	Cemetery
Our Lady of Guadalupe Cemetery	Southeast of Fabens, Texas	Cemetery
San Elizario Catholic Church Cemetery	At Presidio Chapel of San Elizario	Cemetery
San Elizario Cemetery	On Thompson Road, 0.3 miles northeast of Socorro Road, San Elizario, Texas	Cemetery
San Lorenzo Cemetery	Off Roberts Ranch Road, east of Clint, Texas	Cemetery
Historical Markers		
Socorro Marker	Socorro Mission	Centennial Marker, OTHM
Mission de Nuestra Senora del	1936 marker in Socorro, Texas (location not mapped in THC	Centennial Marker

Name of Resource	Address/Location of Resource and Comments	Eligibility/ Designation
Perpetua - Socorro	Texas Historic Sites Atlas)	
Salt War Centennial Marker (1936)	Grey granite marker next to Los Portales	Centennial Marker
San Elizario Centennial Marker	Grey granite marker next to Los Portales	Centennial Marker
Camino Real	At Socorro Mission, Socorro, Texas	OTHM
Espejo – Beltran Expedition	Central Plaza in San Elizario	OTHM
Juan de Onate Expedition	Central Plaza in San Elizario	OTHM
Old County Jail	One block northwest of Central Plaza in San Elizario	OTHM
Rodriguez – Chamuscado Expedition - 1581	Central Plaza in San Elizario	OTHM
Salt War Historical Marker (1984)	Central Plaza in San Elizario	OTHM
San Elizario	Central Plaza in San Elizario	OTHM
Tornillo	At SH 20 and O.T. Smith Road, Tornillo, Texas	OTHM

Source: THC *Texas Historic Sites Atlas*, <http://atlas.thc.state.tx.us/>; TxDOT GIS database on previously determined historic properties.

1
2

National Historic Trails

A National Historic Trail (NHT) is a designation for a protected area containing historic trails and surrounding areas. The NHTs are part of the National Trails System. NHTs were authorized under the National Parks and Recreation Act of 1978 (Public Law 95-625), amending the National Trails System Act of 1968 (Public Law 90-543), which had introduced National Scenic Trails and National Recreation Trails. National Scenic Trails and NHTs may only be designated by an act of Congress. NHTs are designated to protect the remains of significant routes to reflect the history of the nation. Most of them are highway routes and are not hiking trails, although they provide opportunities for hiking and other outdoor activities along their routes.

El Camino Real de Tierra Adentro National Historic Trail

Approximately 9.5 miles of the El Camino Real de Tierra Adentro (Spanish for "The Royal Road of the Interior Land") NHT are located within the study area. GIS data furnished by the NPS shows the trail along Socorro Road from Loop 375 to south of San Elizario where the trail veers to the west toward the Rio Grande and Mexico. The full trade route of El Camino Real de Tierra Adentro was 1,600 miles long between Mexico City and San Juan Pueblo, New Mexico, from 1598 to 1882. The 404 mile section of the route within the U.S. was proclaimed as a NHT on October 13, 2000. The trail is overseen by both the National Park Service and the U.S. Bureau of Land Management with aid from El Camino Real de Tierra Adentro Trail Association.

Coordination was conducted with the NPS regarding the El Camino Real de Tierra Adentro NHT and copies of the coordination documents are included in the *BHE PEL Study Agency Coordination Technical Report (Appendix D)*. The understanding between FHWA and TxDOT regarding the NHT is summarized below:

TxDOT is aware of the long term trail development objectives of the National Park Service (NPS) and its responsibility for the administration of the trail. TxDOT understands that the National Trails Systems Act gives the NPS broad authorities to implement the preservation and development of the national historic trail in cooperation and partnership with other entities, including FHWA. TxDOT also appreciates the importance of the trail not only nationally, but internationally; and values NPS involvement in the PEL process as it will enable TxDOT to be more effective in the transportation decision-making process. Their input has helped identify issues early on to help avoid/minimize environmental impacts during the NEPA process.

TxDOT understands NPS concerns about projects that may change the historic character of El Camino Real and Mission Trail along Socorro Road as they may cause negative impacts to NPS efforts to implement the preservation and development of the national historic trail and will take them into consideration throughout the BHE project development process. TxDOT has documented NPS comments and concerns in the BHE PEL Study Agency Coordination Technical Report (Appendix D) and has

1 *agreed to consider a bike and pedestrian national historic trail segment*
2 *(as requested by the NPS) during the next phase of project development.*

3
4 Mission Historic Trail District

5 The Mission Historic Trail District was designated by the State of Texas in the Local
6 Government Code, Title 7, Chapter 231, Subchapter I. This historic district is located
7 along each side of Socorro Road from near the Ysleta del Sur Mission to just south of
8 San Elizario. The Mission Trail Historic District is recognized as a historic district by the
9 Cities of El Paso and Socorro and the State of Texas. Representatives of the Cities of
10 El Paso and Socorro, the El Paso County Historical Commission, the El Paso County
11 Historical Commission – Archeology Division, the San Elizario Incorporation Efforts
12 Group, and THC were among stakeholders invited to participate in the Technical Work
13 Group (TWG). Copies of the TWG coordination are included in the *BHE PEL Study*
14 *Agency Coordination Technical Report (Appendix D).*

15
16 Ysleta del Sur Pueblo (Tigua) Land

17 The Tiguas, originally from the area that is now New Mexico, relocated to the El Paso
18 area after the Pueblo Revolt of 1680. The Ysleta Mission was founded by the Tigua
19 Indians in 1682 and pre-dates the missions in San Antonio, the first of which was
20 established in 1718. The oldest government in Texas is the Tigua Tribal Council. The
21 original Ysleta place of worship was flooded and then re-built only to be flooded again
22 and relocated again, but the tribal community has remained in the same area since their
23 arrival in 1680. Over time, lands have been acquired by the Tiguas and then taken
24 away (Ysleta del Sur Pueblo, 2006).

25
26 Currently, some of the lands of the Ysleta del Sur Pueblo Sovereign Nation are located
27 within the study area. The location of these lands was, which was included in the BHE
28 PEL study maps, was furnished by the Tiguas. These lands are categorized as follows:

- 29
30 • Tigua Property
31 • Tigua Trust Land
32 • Tigua Trust Land Buffer
33 • Tigua Ceremonial Land
34 • Tigua Ceremonial Land Buffer

35
36 During the BHE PEL study, coordination occurred with the Ysleta del Sur Pueblo
37 Sovereign Nation. Several coordination meetings were held exclusively with
38 representatives of the Ysleta del Sur Pueblo Sovereign Nation. The Ysleta del Sur
39 Pueblo Tribal Historic Preservation Office (THPO) and other representatives of the tribal
40 government were also invited to participate in the public involvement and stakeholder
41 meetings. Copies of the coordination are included in the *BHE PEL Study Agency*
42 *Coordination Technical Report (Appendix D).* During the NEPA-level studies, the
43 THPO would make determinations of eligibility and effects for TCPs.

44

Ysleta del Sur Mission Historic District

1 Within the study area, the Ysleta del Sur Mission Historic District is located along each
2 side of Socorro Road from Loop 375 to the El Paso City limit along Socorro Road.
3 North of the study area, the historic district encompasses several El Paso Historic
4 Landmarks including: Ysleta del Sur Mission, Our Lady of Mount Carmel Church, and
5 Ysleta High School. Within the study area, there are three properties classified as
6 “contributing” to the historic district along Socorro Road. This historic district overlaps
7 the Mission Trail Historic District discussed in the next paragraph. Representatives of
8 the City of El Paso, the El Paso County Historical Commission, the El Paso County
9 Historical Commission – Archeology Division, and THC were among stakeholders
10 invited to participate in the Technical Work Group (TWG). Copies of the TWG
11 coordination are included in the *BHE PEL Study Agency Coordination Technical Report*
12 **(Appendix D)**.
13

Historic Resources Conclusion

14
15 During the PEL process, preliminary coordination, online investigations and analysis of
16 online information occurred and are documented in the BHE PEL Study. Once future
17 projects are identified and initiated in the NEPA process, historic resources
18 investigations will be performed in accordance with Section 106 of the National Historic
19 Preservation Act; 36 CFR 800 which provides the implementing regulation of Section
20 106; the PA-TU; and Section 4(f) (23 CFR 774). Impact avoidance, minimization, and
21 mitigation efforts would be evaluated if results of the investigations indicate a potential
22 for impacts to historic resources.
23

3.6.2 Hazardous Materials

24
25 A preliminary environmental investigation was performed for the *1997 Border Highway*
26 *Extension Feasibility Study* to identify sites within the potential alignments which are “at
27 risk” of environmental contamination by hazardous substances. This preliminary
28 investigation consisted of field reconnaissance and review of TCEQ files, referred to in
29 the *1997 Border Highway Extension Feasibility Study* as the “Texas Natural Resources
30 Conservation Commission.” Only the area within the potential alignments was
31 investigated.
32
33

34
35 A limited visual survey of the study area was conducted on sites encountered during
36 field reconnaissance in January and May of 2006, September 2010, and June 2013. A
37 review of federal and state regulatory databases was also conducted in 2006, 2010, and
38 2013. The database search encompassed the entire study area. The databases
39 reviewed contain sites that may potentially affect the location of an alternative due to
40 contamination concerns. The databases identified all recorded hazardous material sites
41 located within the study area. The regulatory databases searched are displayed in
42 **Table 17**.

Table 17: Hazardous Materials Regulatory Database Summary within the BHE PEL Study Area

Database	Acronym	Number of Sites Identified
Federal Databases		
Air Facility Subsystem	AFS	3
*Brownfields Management System	BF	2
Emergency Response Notification System	ERNS	0
*Material Licensing Tracking System	MLTS	0
Resource Conservation and Recovery Information System – Generators	RCRAG	35
*Comprehensive Environmental Response, Compensation, and Liability Information System	CERCLIS	3
*No Further Remedial Action Planned	NFRAP	3
*No Longer Regulated RCRAT Facilities	NLRRCRAT	0
*Open Dump Inventory	ODI	0
*Resource Conservation Recovery Act – Treatment Storage or Disposal	RCRAT	0
*National Priorities List	NPL	0
*Proposed National Priorities List	PNPL	0
*Delisted National Priorities List	DNPL	0
*Resources Conservation and Recovery Act - Corrective Action	RCRAC	0
*No Longer Regulated RCRAC Facilities	NLRRCRAC	0
*Record of Decision System	RODS	0
State (TX) Databases		
Spills Listing	SPILLS	11
Dry Cleaner Registration	DCR	
Industrial and Hazardous Waste	IHW	37
Petroleum Storage Tanks	TXPST	67
*Brownfields Site Assessments	BSA	1
*Closed and Abandoned Landfill Inventory	CALF	1
Innocent Owner/Operator Program	IOP	0
Texas Leaking Underground Storage Tanks	TXLPST	31
*Municipal Solid Waste Landfill Sites	MSWLF	7
*Railroad Commission VCP and Brownfield Sites	RRCVCP	0
*Radioactive Waste Sites	RWS	0
*Texas Voluntary Cleanup Program	TXVCP	1
*Recycling Facilities	WMRF	3
*Texas State Superfund	TXSSF	0
Total		205

*Source: GeoSearch Database searched in July 2013.

A review of regulatory databases and site reconnaissance identified possible hazardous materials sites including industrial sites, wastewater treatment facilities, fueling stations, and dry cleaners. The database searches identified 3 AFS sites, 2 BF sites, 35 RCRAG sites, 3 CERCLIS sites, 3 NFRAP sites, 11 SPILLS sites, 37 IHW sites, 67 TXPST sites, 1 BSA site, 1 CALF site, 31 TXLPST sites, 7 MSWLF sites, 1 TXVCP sites, and 3 WMRF sites. In addition, the field reconnaissance identified a mortuary (Hampton Valley Mortuary), a propane provider (Valley Propane), and a manufacturing company

1 (T and R Chemicals). Hazardous materials sites locations can be found in **Attachment**
2 **A, Exhibit 8: Hazardous Materials Sites.**

3
4 Sites are designated as “high risk” if they are within or adjacent to the study area and
5 considered likely to be contaminated. Examples of locations that are indicated as “high
6 risk” include fueling stations with registered LPSTs, Brownfields, and landfills. Criteria
7 used to determine level of risk included database information such as regulatory status,
8 and site characteristics such as distance from the project and topography. Sites are
9 designated as “low risk” if database information and/or field investigation indicates the
10 potential for site contamination, but it is either unlikely to be impacted by construction
11 activities or the likelihood of encountering contamination is low. Dry cleaners,
12 manufacturing centers, automotive repair/body shops, and salvage yards are examples
13 of these types of sites.

14
15 Based on site reconnaissance and database information, a total of 40 “high-risk” sites
16 were identified. These “high-risk” sites consisted of 31 LPST sites, 7 MSWLF sites, 2
17 BF sites, and the 3 properties identified during site reconnaissance. A complete listing
18 of the Potential High Risk Hazardous Material Sites within the study area, are included
19 in **Attachment B: Supporting Data – Potential High Risk Hazardous Materials Sites**
20 **within the BHE PEL Study Area.** The listing in **Attachment B** provides more
21 information on those sites determined “high risk” if impacted by future roadway
22 construction.

23
24 Leaking Petroleum Storage Tank sites increase the potential for encountering soil
25 contamination in the form of petroleum products during excavation for roadway
26 construction. Three closed MSWLF sites and two active MSWLF sites are located
27 within the study area. Other properties of concern include T and R Chemicals/Resinas
28 Sinteticas, Hampton Valley Mortuary, and Valley Propane. T and R Chemicals/Resinas
29 Sinteticas are manufacturers of pine oil, turpentine, and gum resins. These compounds
30 can cause eye irritation, headache, and nausea in humans, and may be toxic to aquatic
31 life due to their coating properties. Hampton Valley Mortuary may be associated with
32 the embalming chemicals formaldehyde and glutaraldehyde. These compounds can
33 cause respiratory effects and skin irritation in acute exposures, and neurobehavioral
34 impairment over long-term exposure. Volatile organic compound contamination is
35 possible at propane vendors such as Valley Propane.

36
37 Additional assessments may be conducted to determine if future project(s) would impact
38 specific hazardous material sites further along in the project development process.

39 **3.6.3 Traffic Noise**

40
41
42 FHWA’s Regulation 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise*
43 *and Construction Noise* was developed to provide procedures for traffic noise studies
44 and noise abatement measures, to help protect the public health and welfare, to supply
45 noise abatement criteria, and to establish requirements for information to be given to
46 local officials for use in the planning and design of highways. In accordance to this

1 regulation, TxDOT developed the *Guidelines for Analysis and Abatement of Roadway*
2 *Traffic Noise*, which provides guidelines for performing traffic noise analyses for TxDOT
3 highway projects. These guidelines are applicable to all federal, federal-aid, and state
4 funded Type I highway projects.

5
6 Sound is defined as mechanical energy produced by the movement of waves of
7 compressed air radiating spherically from a source that can be sensed by the human
8 ear. Although sounds are perceived differently from one person to another, they can be
9 precisely measured. The strength of sound is commonly measured on a relative scale of
10 sound pressure levels expressed in decibels or “dB.” Noise is commonly defined as
11 “unwanted” sound. Loudness is a term used to describe the manner in which people
12 perceive the intensity of sound, and is considered to be subjective as it varies from
13 person to person. In general, sound becomes unwanted when it either interferes with
14 normal activities such as sleeping or conversation or when it disrupts or diminishes a
15 person’s quality of life.

16
17 The *1997 Border Highway Extension Feasibility Study* identified traffic noise receivers
18 within 131 feet (40 meters) from the ROW line along each one of three alignments
19 evaluated in the 1997 study. The receivers were determined in accordance to noise
20 abatement criteria (NAC) from the *1996 TxDOT Guidelines for Analysis and Abatement*
21 *of Highway Traffic Noise*. In July 2010, the FHWA revised the NAC. Consequently, in
22 April 2011, TxDOT revised the traffic noise guidelines and among other revisions,
23 updated the NAC as listed in **Table 18**.

24
25 This report describes the existing land uses that are most sensitive to traffic noise in
26 accordance to the *2011 TxDOT Guidelines for Analysis and Abatement of Roadway*
27 *Traffic Noise* NAC as established by FHWA in 2010. The NAC are used as one of two
28 means to determine when a traffic noise impact will occur. When a traffic noise impact
29 occurs, traffic noise abatement measures must be considered and evaluated for
30 feasibility and reasonableness. A traffic noise abatement measure is any positive action
31 taken to reduce the impact of traffic noise.

1

Table 18: Noise Abatement Criteria

Activity Category	FHWA [dB(A) L _{eq}]	TxDOT [dB(A) L _{eq}]	Description of Land Use Activity Areas
A	57 (exterior)	56 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	66 (exterior)	Residential.
C	67 (exterior)	66 (exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	51 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	71 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A–D or F.
F	-----	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-----	--	Undeveloped lands that are not permitted.

2 Source: 2011 TxDOT Guidelines for Analysis and Abatement of Roadway Traffic Noise.

3

4 As previously mentioned in the Land Use section, and illustrated in **Attachment A,**
5 **Exhibit 4: Land Use**, the study area is undeveloped (approximately 65 percent),
6 residential (ten percent), commercial (three percent), industrial (one percent),
7 undeveloped/platted residential (four percent), residential farmstead (four percent), as
8 well as developed for public uses, or other unclassified uses, and for utilities (13
9 percent).

10

11 Based on the above described land uses and applying the FHWA traffic noise
12 abatement criteria, the study area is determined to be comprised of land use activity
13 areas represented by the following NACs: residential (NAC B); educational, cemeteries,
14 museums, libraries, hospitals/medical facilities, parks, places of worship, recreational
15 areas, civic facilities, day care centers, recording studios, radio studios, and a television
16 station (NACs C and D); motels, offices, restaurants and bars (NAC E); agricultural
17 lands, an airport, police stations, fire stations, retail facilities, and utilities (irrigation
18 structures, water treatment, wastewater treatment, electrical, etc.), and warehouses
19 (NAC F); and for the most part, undeveloped lands (NAC G). In summary, the study
20 area can be categorized mostly under NACs B, C, D, and G.

21

22 During the appropriate stage of the project development process, a traffic noise study to
23 determine noise impacts at traffic noise receivers representing the aforementioned land

1 use activity areas will be performed in accordance to the FHWA's Regulation 23 CFR
2 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, the
3 latest TxDOT's traffic noise guidelines, and FHWA approved Traffic Noise Model
4 versions available. Noise abatement measures, including traffic noise barriers would be
5 evaluated if results of the study indicate a traffic noise impact.

6 7 **3.6.4 Air Quality**

8
9 In compliance with the Clean Air Act (CAA) of 1970 and the 1990 CAA Amendments
10 (CAAA), the EPA promulgated and adopted the National Ambient Air Quality Standards
11 (NAAQS) to protect public health, safety and welfare from the effects of six specific air
12 pollutants. The air pollutants identified by the EPA as criteria pollutants of concern
13 nationwide include: ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead and
14 particulate matter (10 and 2.5 microns). EPA regulates air quality nationally while the
15 TCEQ Office of Air Quality enforces air quality regulations in Texas.

16
17 When a pollutant level within an area exceeds the NAAQS, the EPA designates the
18 area as "non-attainment" for the pollutant. For non-attainment areas, the 1990 CAAA
19 requires that the MPOs and the state transportation departments demonstrate that
20 transportation plans, programs, and projects funded under Title 23 U.S.C. or the
21 Federal Transit Act conform to state or federal implementation plans. Under the CAAA
22 all transportation projects that are subject to FHWA approval must first be found to
23 conform to an approved State Implementation Plan (SIP).²

24
25 According to the *1997 Border Highway Extension Feasibility Study*, El Paso County was
26 in serious non-attainment for ozone, moderate non-attainment for carbon monoxide
27 (CO) and Particulate Matter-less than 10 microns (PM₁₀). Since 1997, part of El Paso
28 County has been reclassified to a moderate non-attainment for PM₁₀ and in
29 maintenance status for the 8-hour CO NAAQS. The study area is partially located within
30 the part of El Paso County (City of El Paso) that is in moderate non-attainment for the
31 PM₁₀ NAAQS; therefore, the transportation conformity rule applies.³ The study area is
32 outside of the CO maintenance area.

33
34 The El Paso MPO developed the *Horizon 2040 MTP* and the financially constrained
35 plan [FY 2013-2016 transportation improvement program (TIP)] with the purpose of
36 meeting the mobility needs of the El Paso region. The *Horizon 2040 MTP* was approved
37 by the Policy Board on October 4, 2013. The U.S. DOT (FHWA/[Federal Transportation
38 Authority (FTA)]) approved the air quality conformity analysis associated with the
39 *Horizon 2040 MTP* in June 2014. On November 1, 2012, the U.S. DOT approved the FY
40 2013-2016 Statewide TIP (STIP). The *Horizon 2040 MTP* and the 2013-2016 STIP are
41 in conformity with the SIP.

² A SIP is a collection of requirements that delineates how a state would reduce emissions to attain the NAAQS. The SIP must be approved by the EPA.

³ Transportation conformity rules apply nationwide to "all non-attainment and maintenance areas for transportation-related criteria pollutants for which the area is designated non-attainment or has a maintenance plan" (40 C.F.R. 93.102).

1 Currently, two new two-lane divided roadway projects within the study area referred to
2 by the El Paso MPO as the “Loop 375 Border Highway East”, are listed in the *Horizon*
3 *2040* MTP. These projects would extend from Loop 375 (Americas Avenue) to the
4 Herring Road extension and from Herring Road to the future Tornillo-Guadalupe POE.
5 The projects would be funded by El Paso County and are planned to be open to traffic
6 by 2030 and 2040, respectively. Further refinements to the MTP (in coordination with El
7 Paso MPO, other agencies, local communities and the public) would be required as
8 other project(s) were identified and recommended in the BHE PEL.

9 10 **3.6.4.1 Climate Change**

11
12 Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs).
13 Some GHGs such as carbon dioxide occur naturally and are emitted to the atmosphere
14 through natural processes and human activities. Other GHGs such as fluorinated gases
15 are created and emitted solely through human activities. These gases are believed to
16 contribute to climate change. The EPA defines “climate change” as any substantial
17 change in measures of climate (such as temperature, precipitation, or wind) lasting for
18 an extended period (decades or longer). Federal agencies are, on a national scale,
19 addressing emissions of GHGs by reductions mandated in federal laws and EOs, most
20 recently EO 13423 (January 24, 2007), *Strengthening Federal Environmental, Energy,*
21 *and Transportation Management*. Several states have promulgated laws as a means to
22 reduce statewide levels of GHGs as well. In particular, Senate Bill 184 (September 1,
23 2009), which requires the State Comptroller to develop strategies to reduce GHGs, and
24 the *Texas Emission Reductions Plan*, established in 2001, which provides incentives to
25 reduce emissions and improve and maintain air quality in Texas.⁴

26
27 The City of El Paso recognized the urgent need to address the local causes and effects
28 of global climate change. In March of 2008, the City of El Paso Council unanimously
29 passed a resolution authorizing Mayor John Cook to sign the U.S. Mayor’s Climate
30 Protection Agreement. The resolution urges the federal and state governments to enact
31 policies and programs to meet or beat the target of reducing global warming pollution
32 levels to 7 percent below 1990 levels by 2012, including efforts to: reduce the U.S.
33 dependence on fossil fuels and accelerate the development of clean, economical
34 energy resources and fuel-efficient technologies such as conservation, methane
35 recovery for energy generation, waste to energy, wind and solar energy, fuel cells,
36 efficient motor vehicles, and biofuels.

37
38 The El Paso MPO is employing analytic methods and tools, GHGs reduction strategies,
39 potential impacts of climate change on transportation infrastructure, and approaches for
40 integrating climate change considerations into transportation decision making.

41
42 The ultimate source of increased transportation emissions in the study area is
43 population and employment growth, which is expected to increase with or without the
44 implementation of future proposed project(s). Regardless, responsible agencies

⁴ Texas Comptroller of Public Accounts. *State Senate Bill 184 – Greenhouse Gas Emissions Reduction Strategies*. 2010. <http://www.window.state.tx.us/finances/noRegrets/>.

1 implementing future project(s) will be required to adhere to any applicable mandatory
2 regulations regarding GHGs during the appropriate stage of the project development
3 process.

4 5 **3.6.4.2 Mobile Source Air Toxics**

6
7 Controlling air toxic emissions became a national priority with the passage of the CAAA
8 of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known
9 as hazardous air pollutants. The EPA identified a group of 93 compounds emitted from
10 mobile sources that are listed in their Integrated Risk Information System (IRIS)
11 (<http://www.epa.gov/ncea/iris/index.html>). In addition, EPA identified seven compounds
12 with significant contributions from mobile sources that are among the national and
13 regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment
14 (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene,
15 diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene,
16 and polycyclic organic matter. While FHWA considers these the priority mobile source
17 air toxics (MSAT), the list is subject to change and may be adjusted in consideration of
18 future EPA rules.

19
20 Air toxics analysis is a continuing area of research. While much work has been done to
21 assess the overall health risk of air toxics, many questions remain unanswered. In
22 particular, the tools and techniques for assessing project-specific health outcomes as a
23 result of lifetime MSAT exposure remain limited. These limitations impede the ability to
24 evaluate how the potential health risks posed by MSAT exposure should be factored
25 into project-level decision-making within the context of the NEPA. The FHWA, EPA, the
26 Health Effects Institute, and others have funded and conducted research studies to try
27 to more clearly define potential risks from MSAT emissions associated with highway
28 projects. The FHWA will continue to monitor the developing research in this emerging
29 field.

30 31 **4.0 SUMMARY**

32
33 The environmental and infrastructure constraints data collected for this report were
34 compared to the previously completed *1997 Border Highway Extension Feasibility*
35 *Study* to identify changes that have occurred within the 1997 study area as well as new
36 data/resources that occur within the expanded study area. In summary, the
37 environmental and infrastructure constraints in the study area include:

- 38
- 39 • 3 wastewater treatment plants;
- 40 • 1 railroad line (Union Pacific Railroad);
- 41 • 1 airport (Fabens Airport);
- 42 • 3 International Ports of Entry;
- 43 • 1 border fence (U.S. Customs and Border Protection);
- 44 • Levee features (IBWC);
- 45 • 35 schools and 17 other educational facilities;
- 46 • 4 medical centers

- 1 • 79 places of worship;
- 2 • 7 cemeteries;
- 3 • Several drainage and irrigation features;
- 4 • 25 parks and recreational facilities;
- 5 • Potential suitable habitat for three avian species listed on the Endangered
- 6 Species list for El Paso County;
- 7 • 7 historic resources that are listed on the NRHP;
- 8 • 1 national historic trail (including the Mission Trail); and
- 9 • 40 hazardous materials sights that are considered “high-risk”.

10

11 A table that summarizes the existing environmental and infrastructure constraints within
12 the study area as well as potential applicable laws and regulations that could be
13 triggered by the construction of future proposed project(s) are summarized in
14 **Attachment B: Supporting Data – Summary of Existing Constraints.**

15

16 This Environmental Constraints Report was used as a planning tool during the BHE
17 PEL Study. This report is not a comprehensive environmental analysis that would
18 satisfy requirements under NEPA nor is it intended for use in determining municipal,
19 state, and federal permitting or other regulatory requirements.

20

5.0 REFERENCES

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U.S. Department of Health and Human Services. 2014. The 2014 HHS Poverty Guidelines. <http://aspe.hhs.gov/poverty/14poverty.cfm>.

- 1 U. S. Department of Transportation, FHWA. *FHWA Actions to Address Environmental*
- 2 *Justice in Minority Populations and Low-Income Populations*, 6640.23. December 2,
- 3 1998.
- 4

Attachment A: Exhibits

Exhibit 1: Project Study Area

Exhibit 2: Engineering Constraints

Exhibit 3: 2010 Census Tracts

Exhibit 4: Land Use

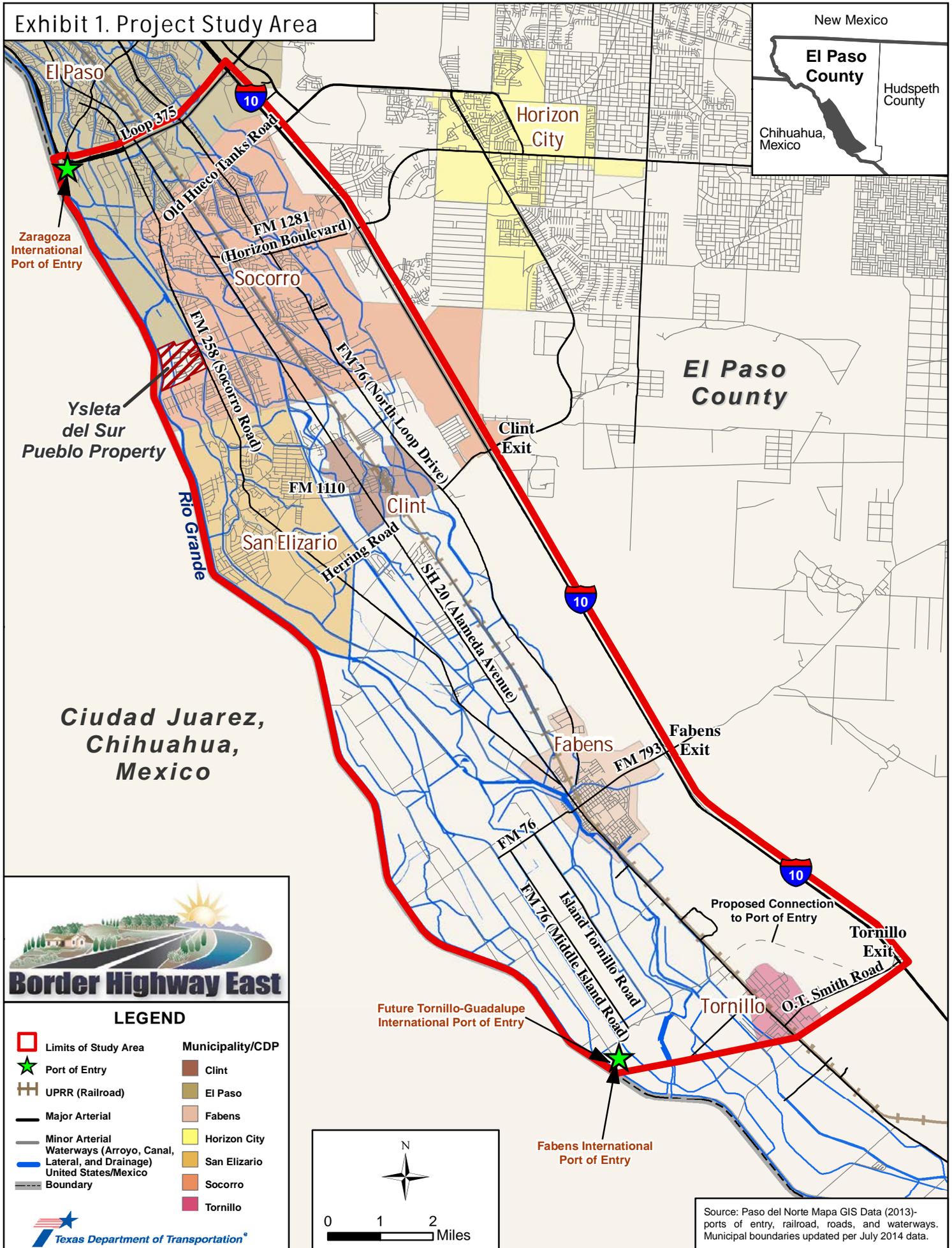
Exhibit 5: Environmental Constraints

Exhibit 6: FEMA Floodplain and USGS Quadrangle Map

Exhibit 7: Historic Resources

Exhibit 8: Hazardous Materials Sites

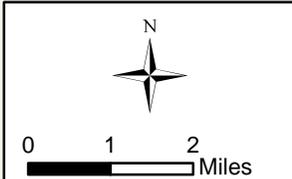
Exhibit 1. Project Study Area



Border Highway East

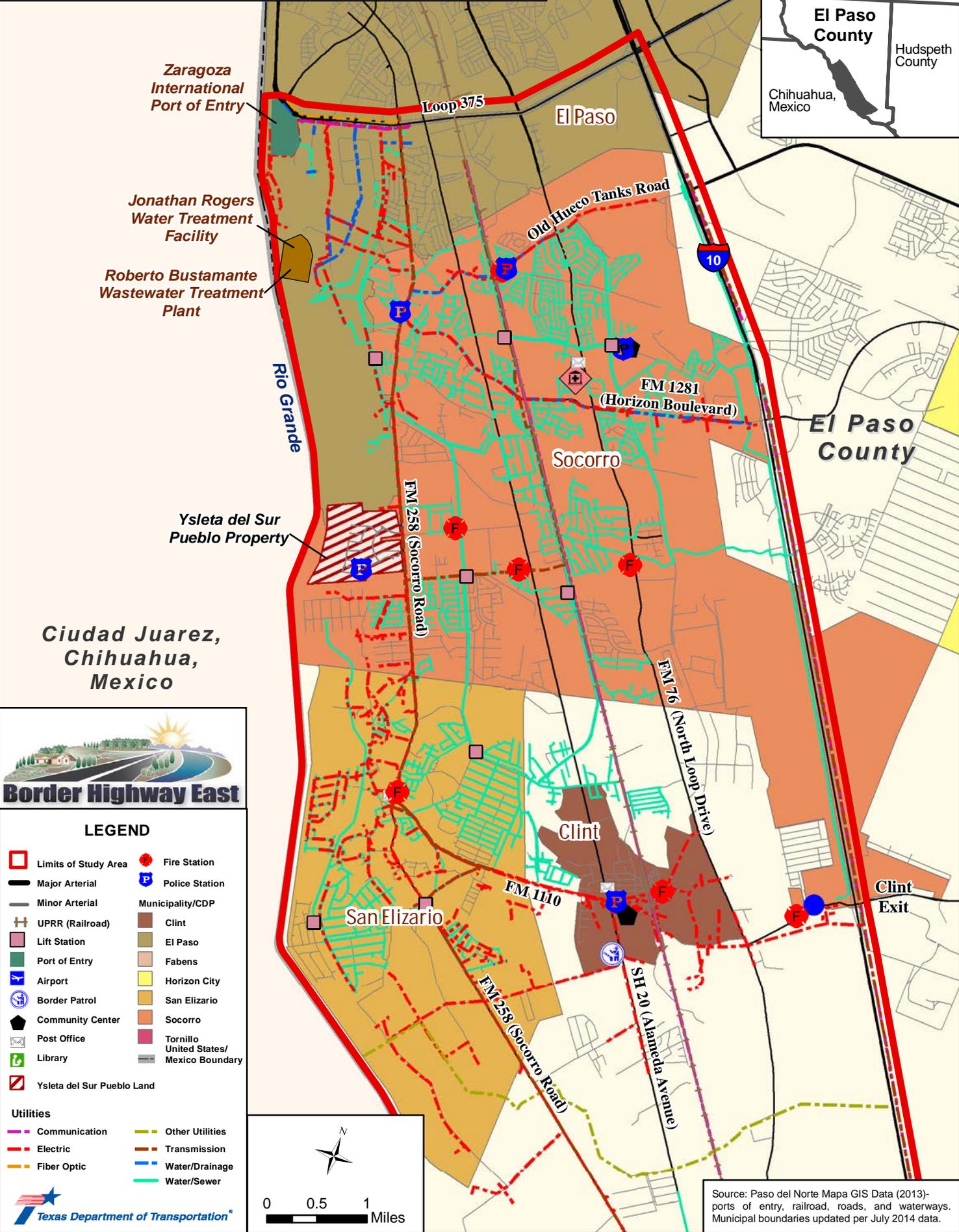
LEGEND

- | | |
|--|-------------------------|
| 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 |
| Boundary | Tornillo |



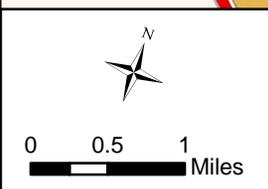
Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, and waterways. Municipal boundaries updated per July 2014 data.

Exhibit 2. Engineering Constraints (Sheet 1 of 2)



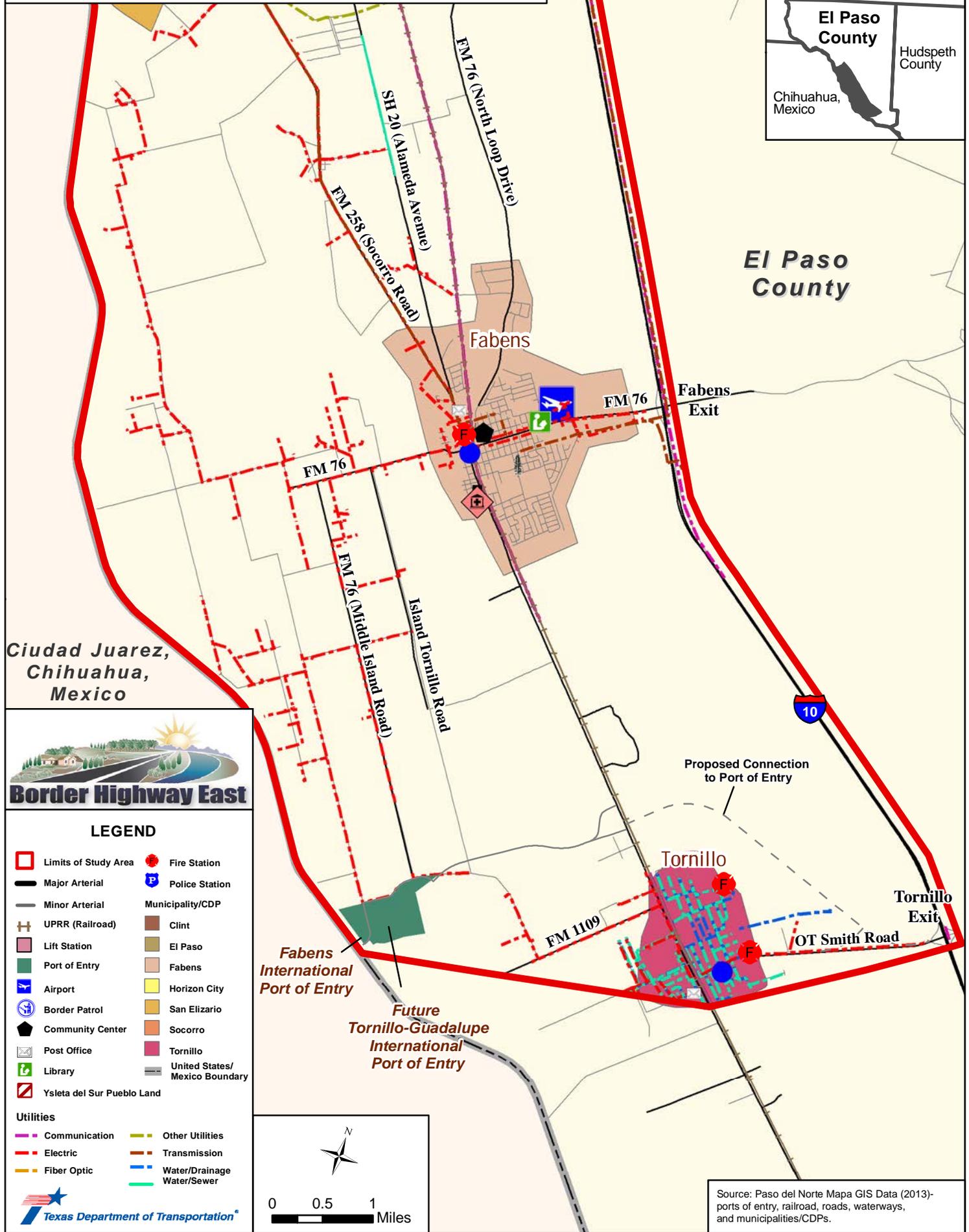
LEGEND

- Limits of Study Area
 - F Fire Station
 - Major Arterial
 - P Police Station
 - Minor Arterial
 - + UPRR (Railroad)
 - L Lift Station
 - P Port of Entry
 - A Airport
 - B Border Patrol
 - C Community Center
 - M Post Office
 - L Library
 - / Ysleta del Sur Pueblo Land
 - / Ysleta del Sur Pueblo Land
-
- Utilities**
- Communication
 - Electric
 - Fiber Optic
 - Other Utilities
 - Transmission
 - Water/Drainage
 - Water/Sewer



Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, and waterways. Municipal boundaries updated per July 2014 data.

Exhibit 2. Engineering Constraints (Sheet 2 of 2)



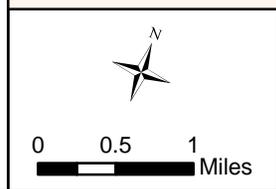
Ciudad Juarez,
Chihuahua,
Mexico

El Paso
County



LEGEND

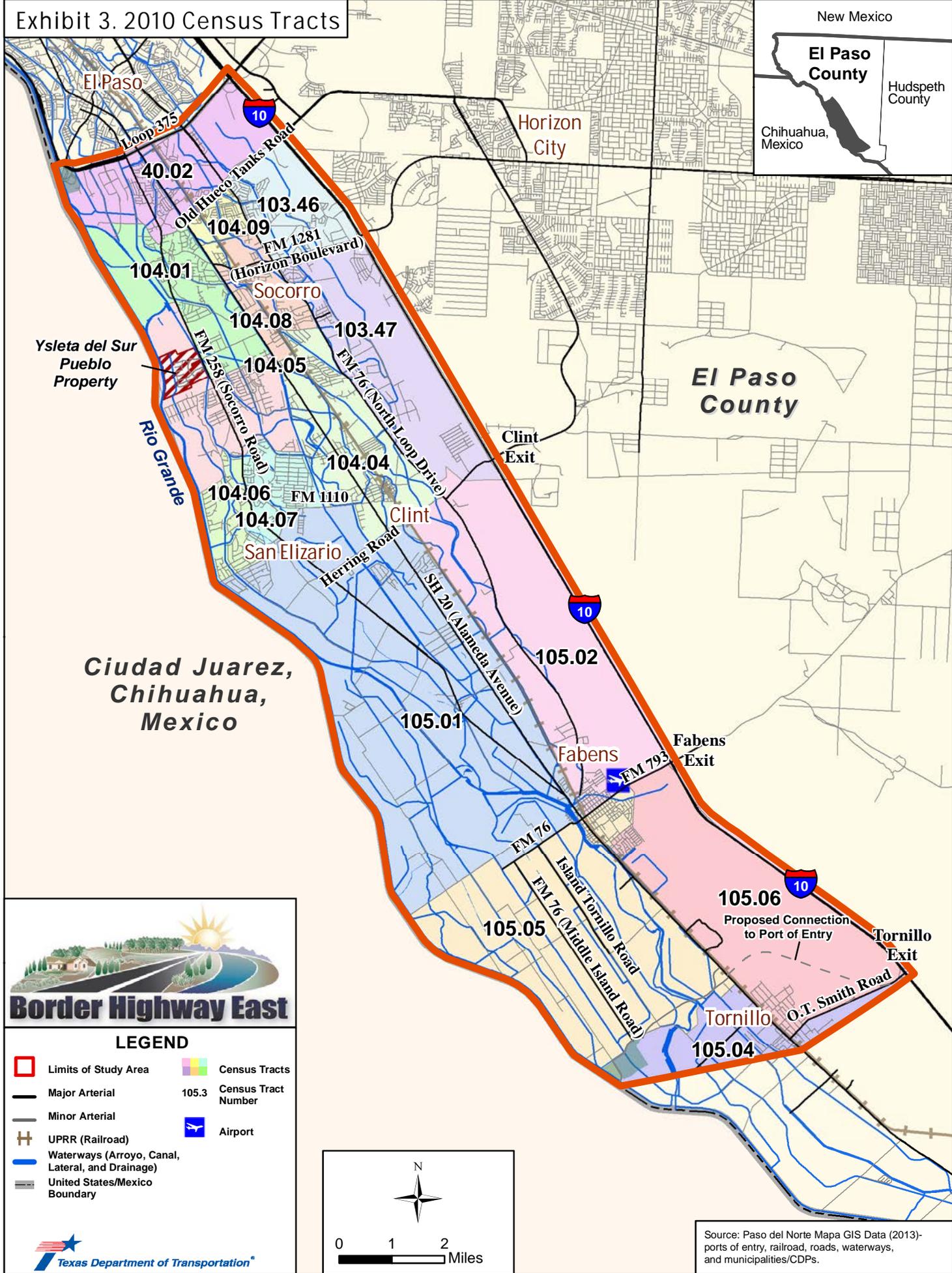
- | | | | |
|--|----------------------------|--|-----------------------------------|
| | Limits of Study Area | | Fire Station |
| | Major Arterial | | Police Station |
| | Minor Arterial | | Municipality/CDP |
| | UPRR (Railroad) | | Clint |
| | Lift Station | | El Paso |
| | Port of Entry | | Fabens |
| | Airport | | Horizon City |
| | Border Patrol | | San Elizario |
| | Community Center | | Socorro |
| | Post Office | | Tornillo |
| | Library | | United States/
Mexico Boundary |
| | Ysleta del Sur Pueblo Land | | |
-
- | | | | |
|------------------|---------------|--|-----------------|
| Utilities | | | |
| | Communication | | Other Utilities |
| | Electric | | Transmission |
| | Fiber Optic | | Water/Drainage |
| | Water/Sewer | | Water/Sewer |



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

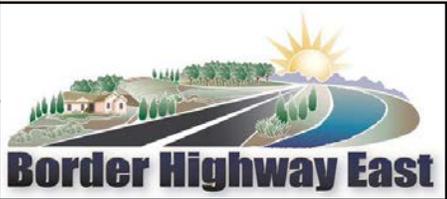


Exhibit 3. 2010 Census Tracts



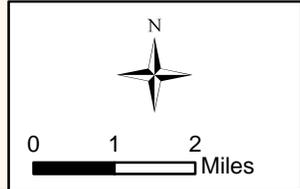
Ysleta del Sur Pueblo Property

Ciudad Juarez, Chihuahua, Mexico



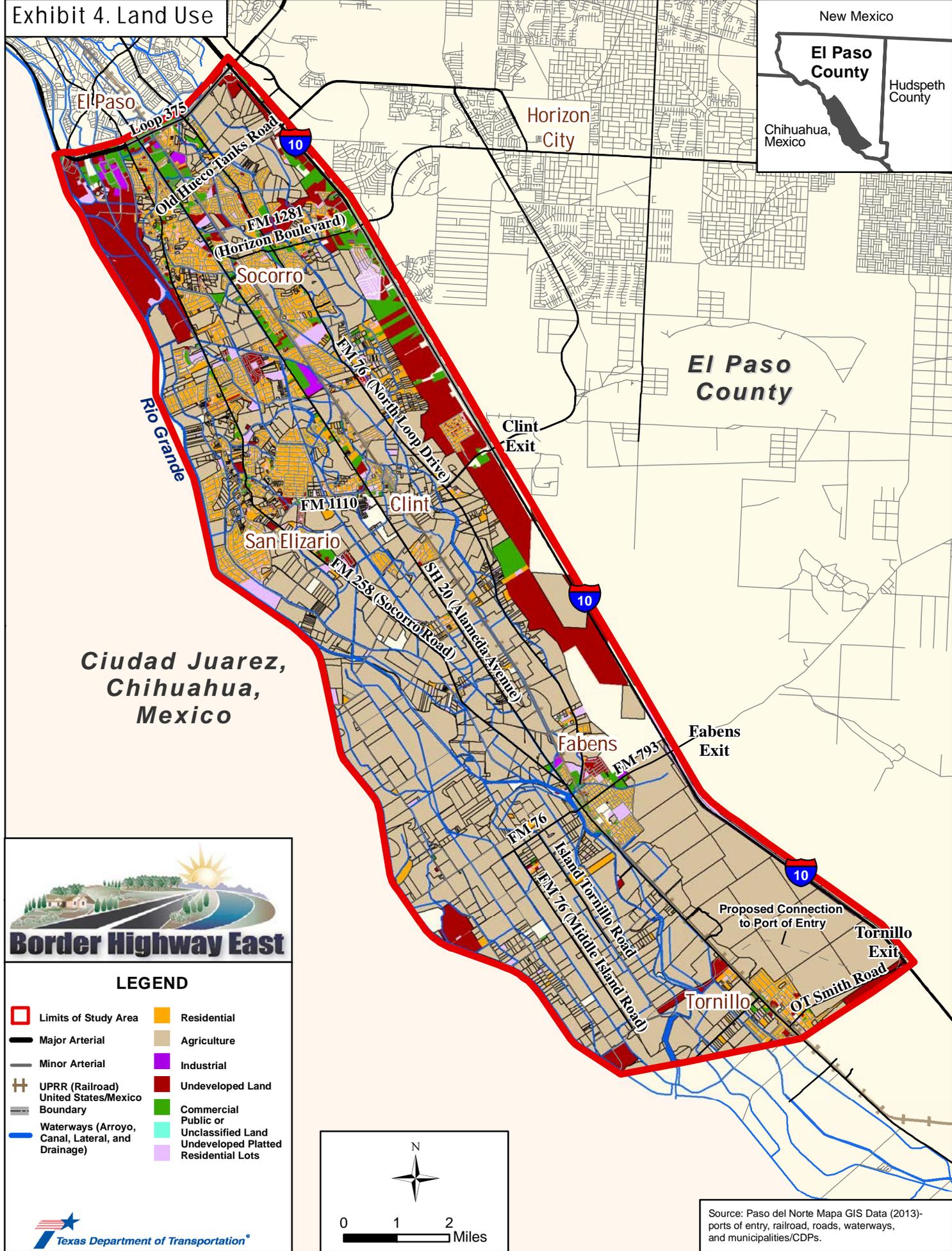
LEGEND

- Limits of Study Area
- Major Arterial
- Minor Arterial
- UPRR (Railroad)
- Waterways (Arroyo, Canal, Lateral, and Drainage)
- United States/Mexico Boundary
- Census Tracts
- 105.3 Census Tract Number
- ✈ Airport

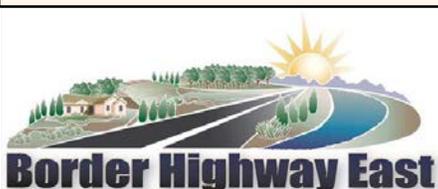


Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

Exhibit 4. Land Use

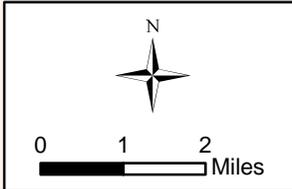


Ciudad Juarez, Chihuahua, Mexico



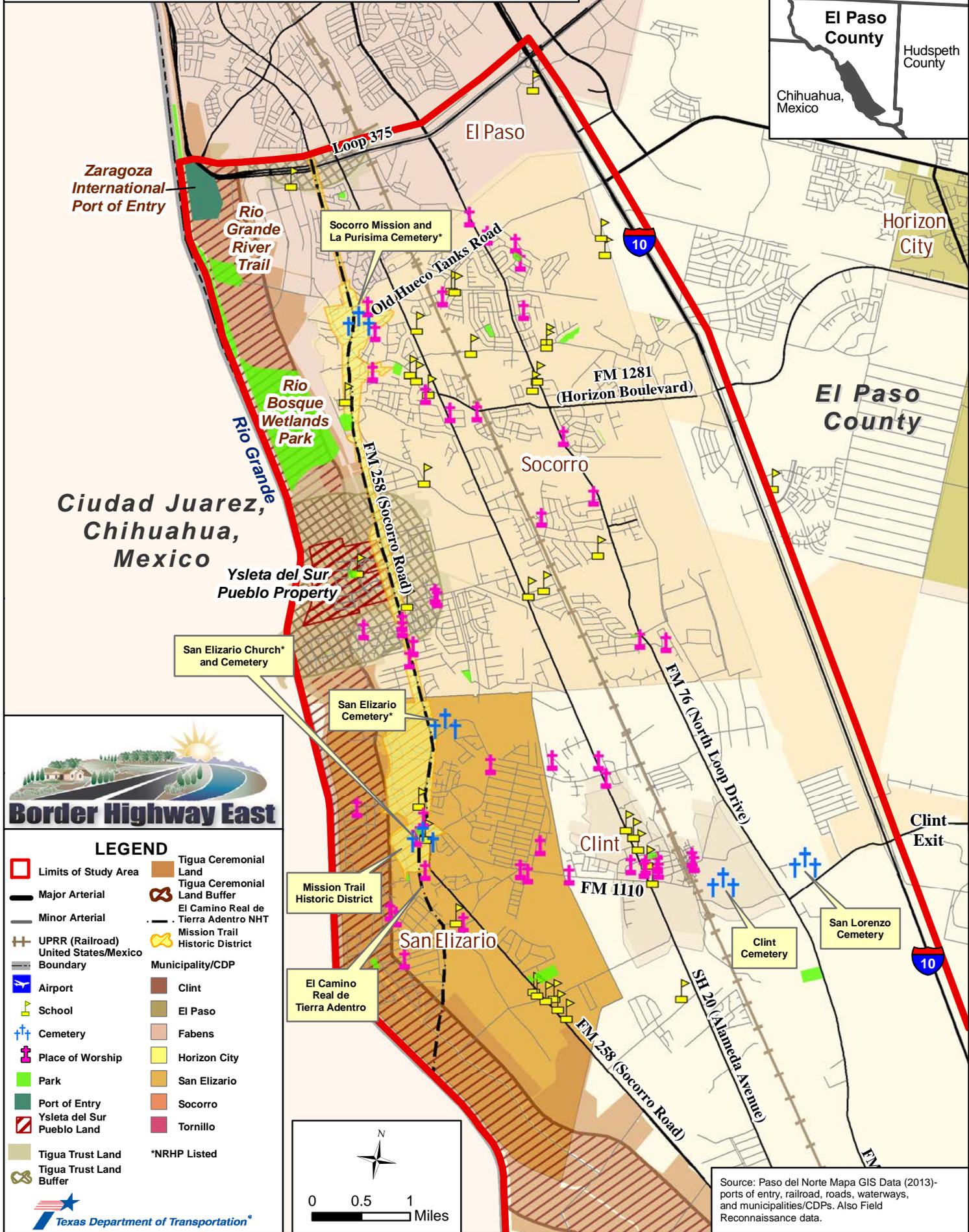
LEGEND

Limits of Study Area	Residential
Major Arterial	Agriculture
Minor Arterial	Industrial
UPRR (Railroad)	Undeveloped Land
United States/Mexico Boundary	Commercial
Waterways (Arroyo, Canal, Lateral, and Drainage)	Public or
	Unclassified Land
	Undeveloped Platted Residential Lots



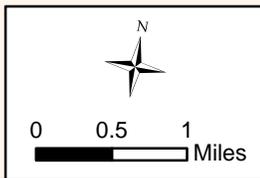
Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs.

Exhibit 5. Environmental Constraints (Sheet 1 of 2)



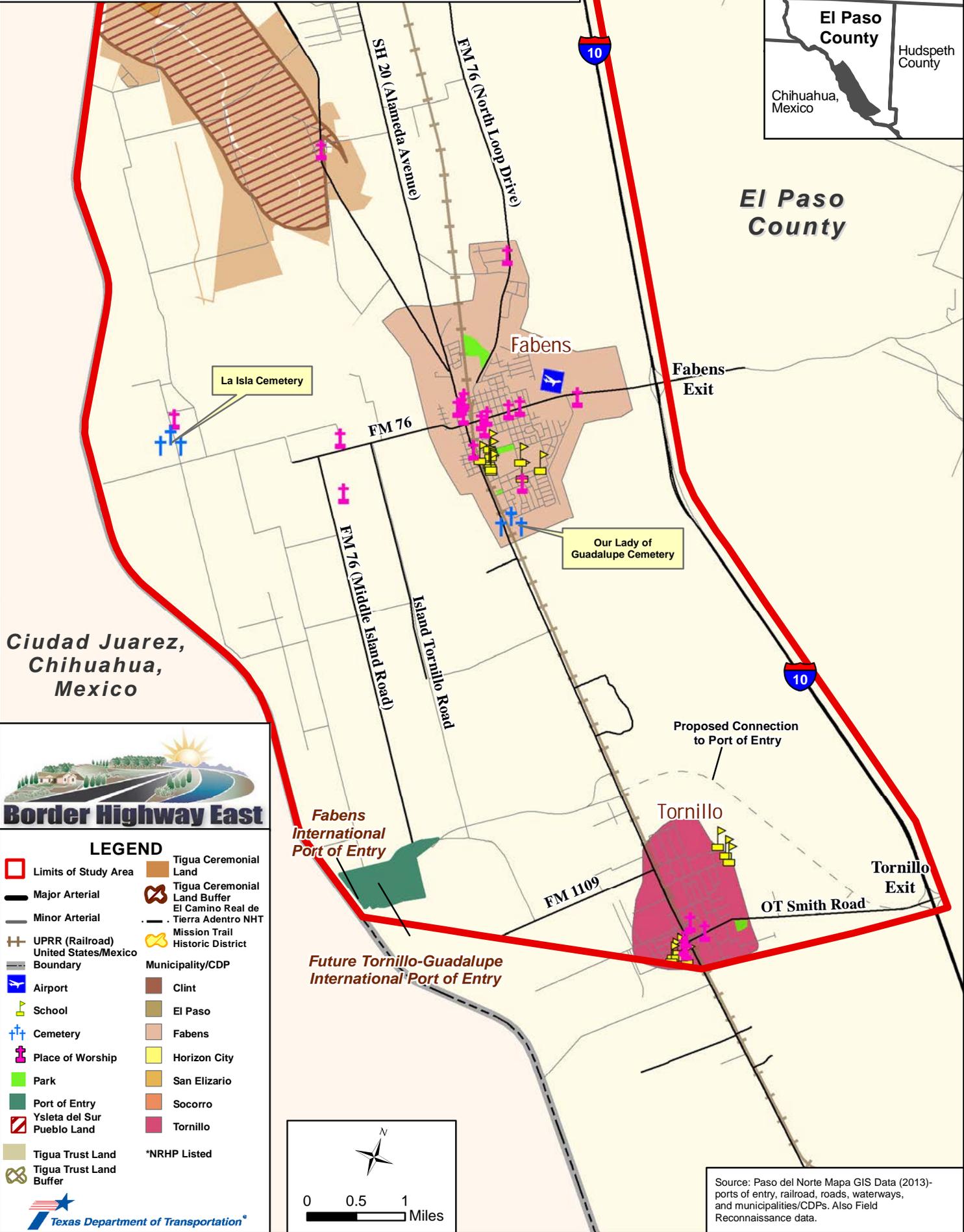
LEGEND

Limits of Study Area	Tigua Ceremonial Land
Major Arterial	Tigua Ceremonial Land Buffer
Minor Arterial	El Camino Real de Tierra Adentro NHT
UPRR (Railroad)	Mission Trail Historic District
United States/Mexico Boundary	Municipality/CDP
Airport	Clint
School	El Paso
Cemetery	Fabens
Place of Worship	Horizon City
Park	San Elizario
Port of Entry	Socorro
Ysleta del Sur Pueblo Land	Tornillo
Tigua Trust Land	*NRHP Listed
Tigua Trust Land Buffer	



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

Exhibit 5. Environmental Constraints (Sheet 2 of 2)



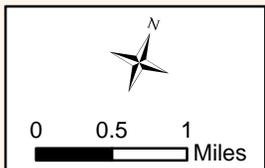
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Chihuahua,
Mexico

El Paso
County



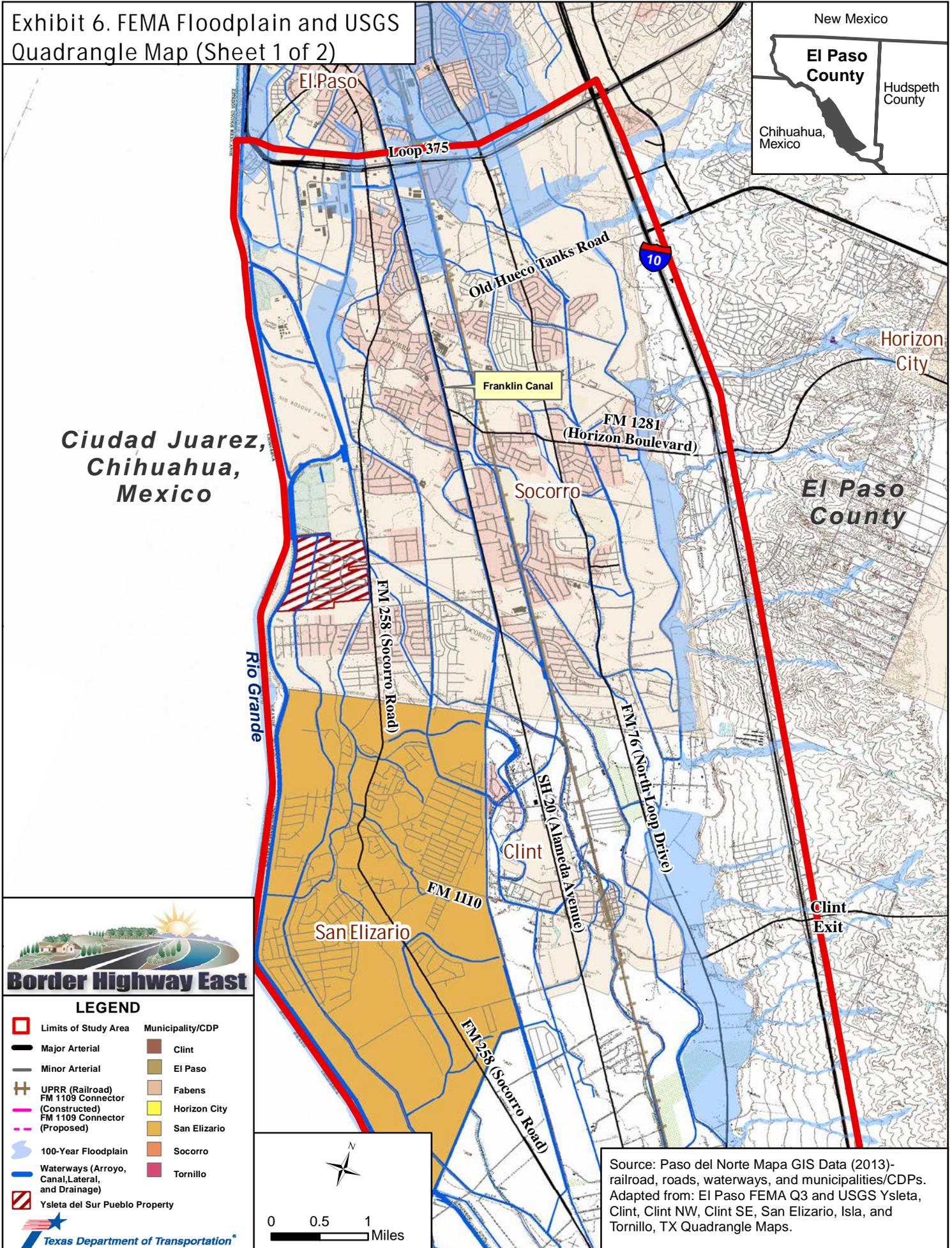
LEGEND

- Limits of Study Area
- Major Arterial
- Minor Arterial
- UPRR (Railroad)
- United States/Mexico Boundary
- ✈ Airport
- 🏫 School
- ✚ Cemetery
- ✚ Place of Worship
- 🌳 Park
- Port of Entry
- Ysleta del Sur
- Pueblo Land
- Tigua Trust Land
- Tigua Trust Land Buffer
- Tigua Ceremonial Land
- Tigua Ceremonial Land Buffer
- El Camino Real de Tierra Adentro NHT
- 🏡 Mission Trail
- 🏡 Historic District
- Municipality/CDP
- Clint
- El Paso
- Fabens
- Horizon City
- San Elizario
- Socorro
- Tornillo
- *NRHP Listed



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

Exhibit 6. FEMA Floodplain and USGS
Quadrangle Map (Sheet 1 of 2)



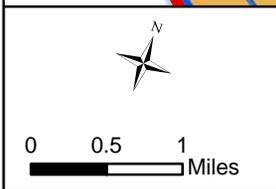
*Ciudad Juarez,
Chihuahua,
Mexico*

**El Paso
County**



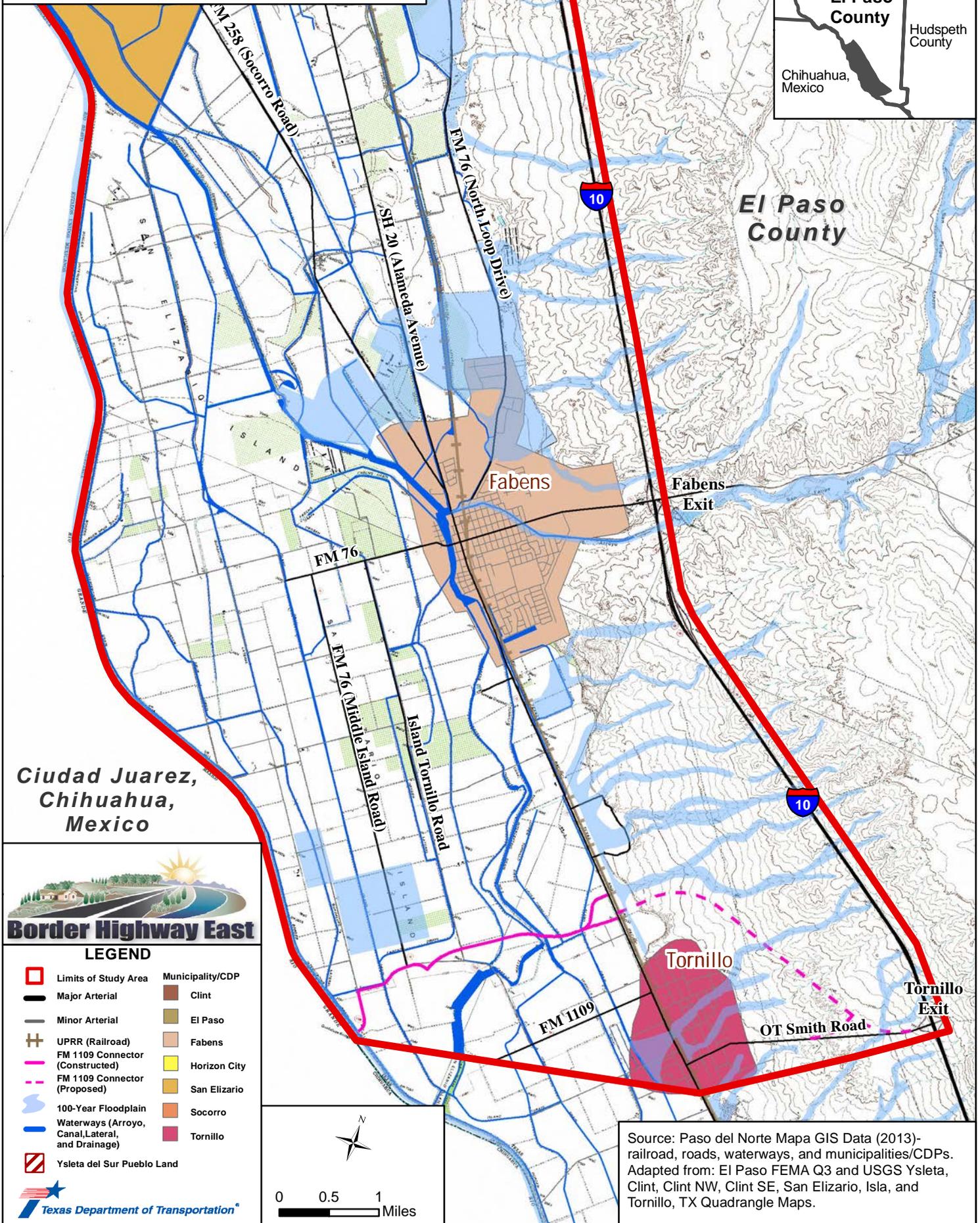
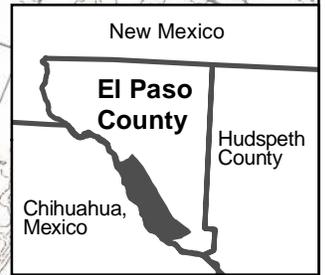
LEGEND

- | | |
|--|-------------------------|
| Limits of Study Area | Municipality/CDP |
| Major Arterial | Clint |
| Minor Arterial | El Paso |
| UPRR (Railroad) | Fabens |
| FM 1109 Connector (Constructed) | Horizon City |
| FM 1109 Connector (Proposed) | San Elizario |
| 100-Year Floodplain | Socorro |
| Waterways (Arroyo, Canal, Lateral, and Drainage) | Tornillo |
| Ysleta del Sur Pueblo Property | |



Source: Paso del Norte Mapa GIS Data (2013)-railroad, roads, waterways, and municipalities/CDPs. Adapted from: El Paso FEMA Q3 and USGS Ysleta, Clint, Clint NW, Clint SE, San Elizario, Isla, and Tornillo, TX Quadrangle Maps.

Exhibit 6. FEMA Floodplain and USGS
Quadrangle Map (Sheet 2 of 2)



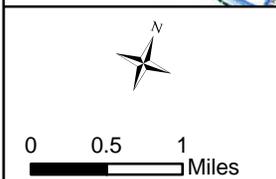
Ciudad Juarez,
Chihuahua,
Mexico

El Paso
County



LEGEND

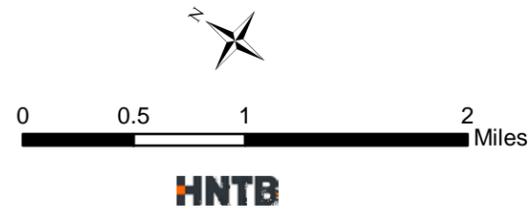
Limits of Study Area	Municipality/CDP
Major Arterial	Clint
Minor Arterial	El Paso
UPRR (Railroad)	Fabens
FM 1109 Connector (Constructed)	Horizon City
FM 1109 Connector (Proposed)	San Elizario
100-Year Floodplain	Socorro
Waterways (Arroyo, Canal, Lateral, and Drainage)	Tornillo
Ysleta del Sur Pueblo Land	



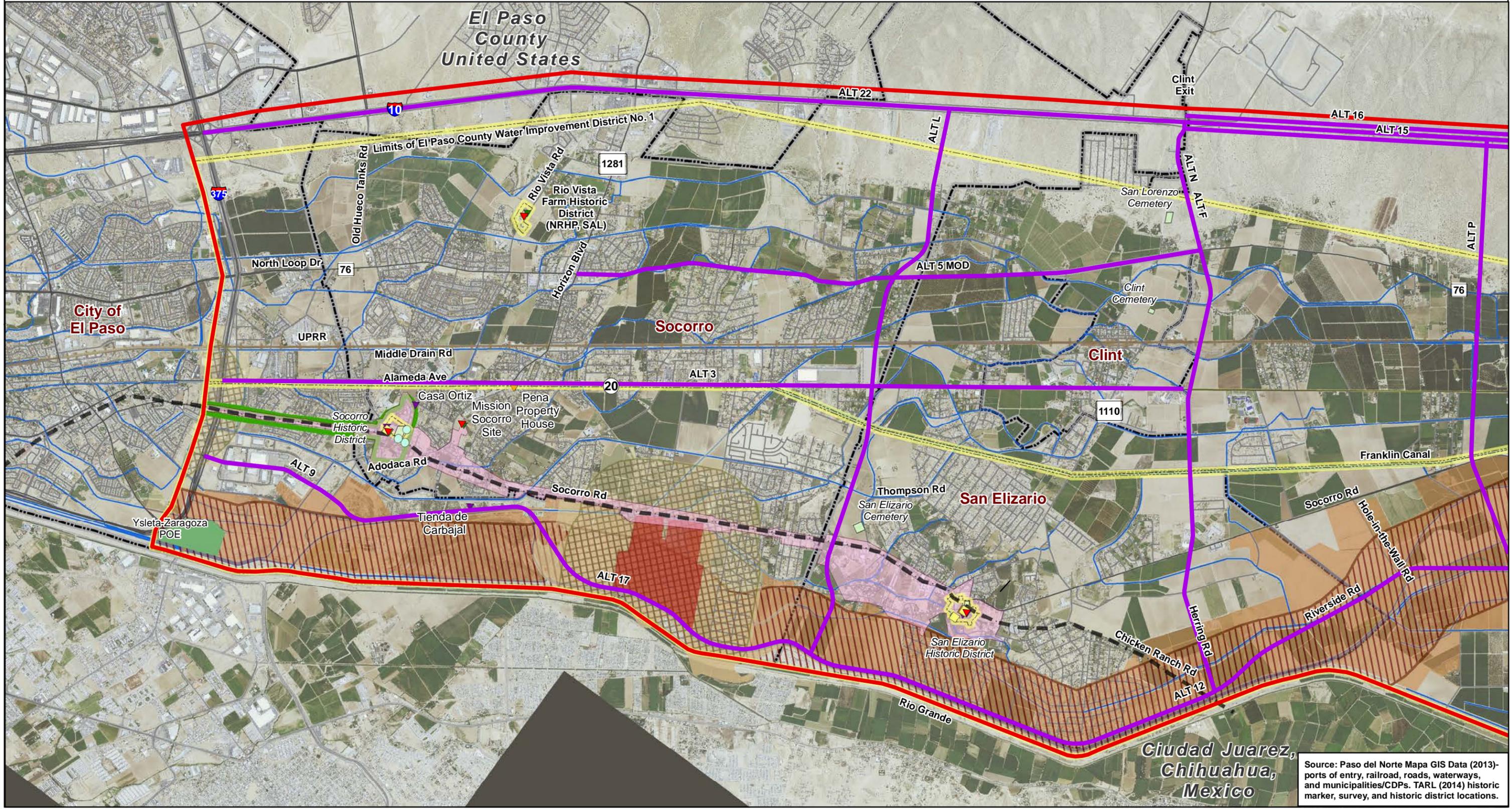
Source: Paso del Norte Mapa GIS Data (2013)-
railroad, roads, waterways, and municipalities/CDPs.
Adapted from: El Paso FEMA Q3 and USGS Ysleta,
Clint, Clint NW, Clint SE, San Elizario, Isla, and
Tornillo, TX Quadrangle Maps.

Exhibit 7: Previously Identified Historic and Potentially-Eligible Historic Resources [Sheet 1 of 3]

- | | | | |
|---------------------|------------------------------|---------------------------------|--------------------------------------|
| Study Area Limits | Tigua Property | NRHP Property | El Camino Real de Tierra Adentro NHT |
| Alternatives | Tigua Trust Land Buffer | NRHP-Eligible Historic Property | Cemeteries |
| Port of Entry | Tigua Trust Land | Centennial Marker | NRHP Districts |
| Road | Tigua Ceremonial Land Buffer | SAL | Mission Trail Historic District |
| Railroad | Tigua Ceremonial Land | RTHL | Mission Trail Historic District |
| Canal/Lateral | | Historical Marker | |
| City Limit Boundary | | NR Survey | |



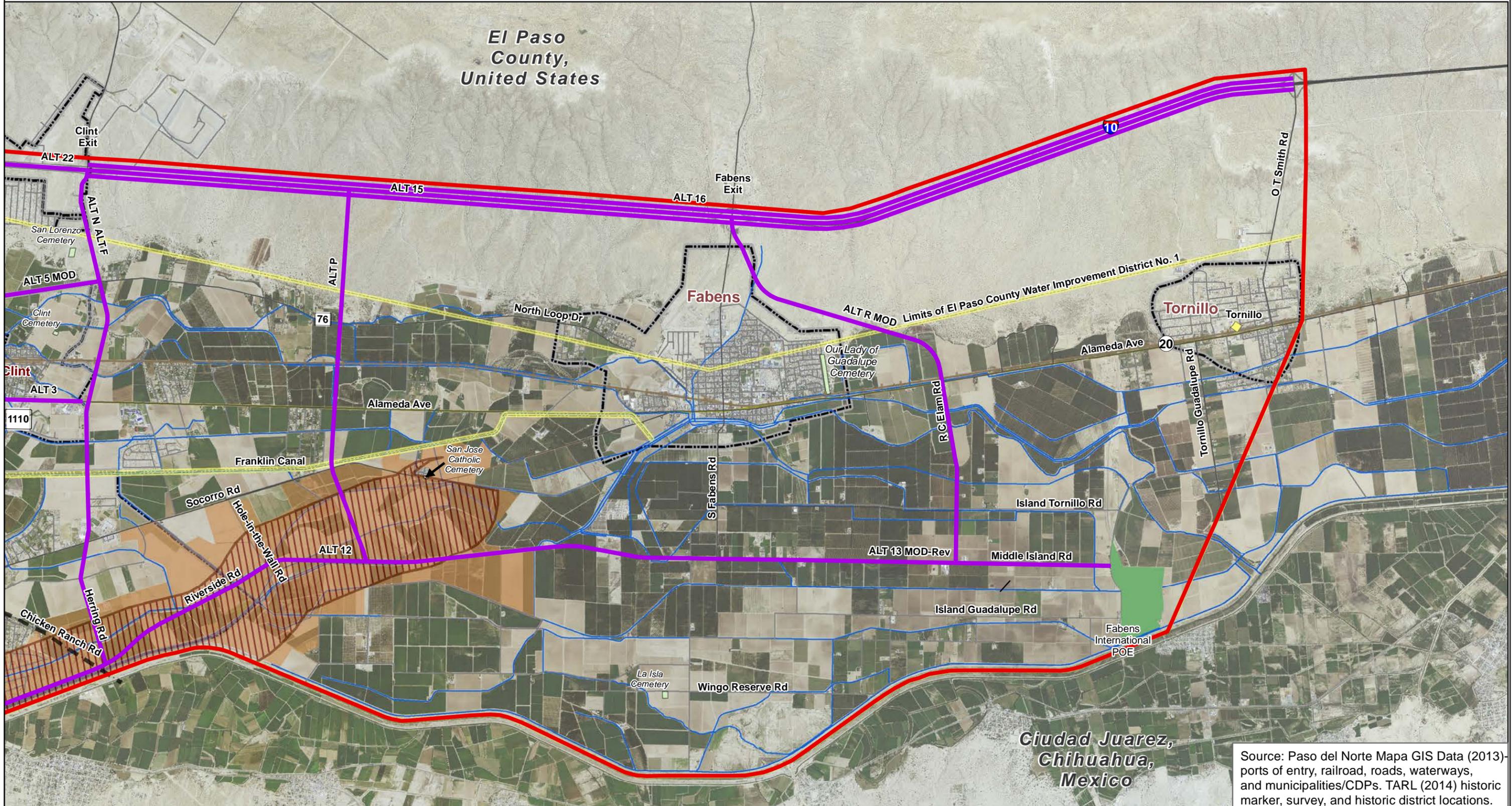
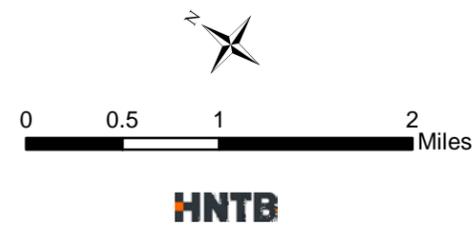
Sheet 1 of 3



Source: Paso del Norte Mapa GIS Data (2013)-ports of entry, railroad, roads, waterways, and municipalities/CDPs. TARL (2014) historic marker, survey, and historic district locations.

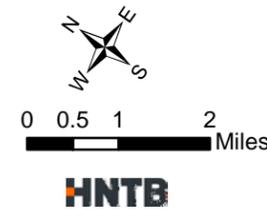
Exhibit 7: Previously Identified Historic and Potentially-Eligible Historic Resources [Sheet 2 of 3]

- | | | | |
|---------------------|------------------------------|---------------------------------|--------------------------------------|
| Study Area Limits | Tigua Property | NRHP Property | El Camino Real de Tierra Adentro NHT |
| Alternatives | Tigua Trust Land Buffer | NRHP-Eligible Historic Property | Cemeteries |
| Port of Entry | Tigua Trust Land | Centennial Marker | NRHP Districts |
| Road | Tigua Ceremonial Land Buffer | SAL | Mission Trail Historic District |
| Railroad | Tigua Ceremonial Land | RTHL | Mission Trail Historic District |
| Canal/Lateral | | Historical Marker | |
| City Limit Boundary | | NR Survey | |

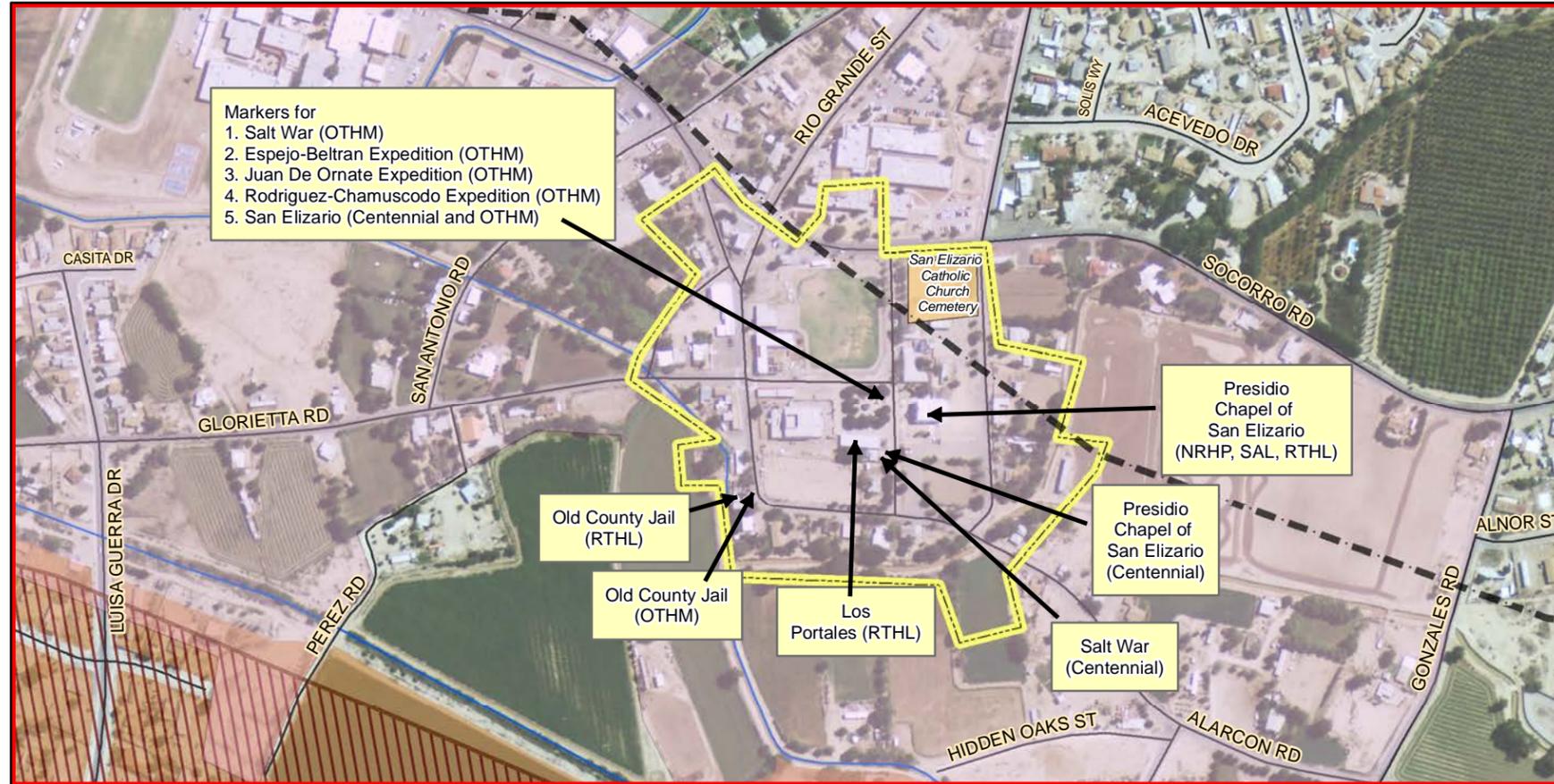


Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs. TARL (2014) historic marker, survey, and historic district locations.

- | | | | |
|---------------|------------------------------|---------------------------------|---|
| Alternatives | Tigua Property | NRHP Property | El Camino Real de Tierra Adentro NHT |
| Port of Entry | Tigua Trust Land Buffer | NRHP-Eligible Historic Property | Cemeteries |
| Road | Tigua Trust Land | Centennial Marker | NRHP Districts |
| Railroad | Tigua Ceremonial Land Buffer | SAL | Mission Trail Historic District |
| Canal/Lateral | Tigua Ceremonial Land | RTHL | El Paso Mission Trail Historic District |
| | | Historical Marker (OTHM) | |
| | | NR Survey | |



San Elizario Historic District

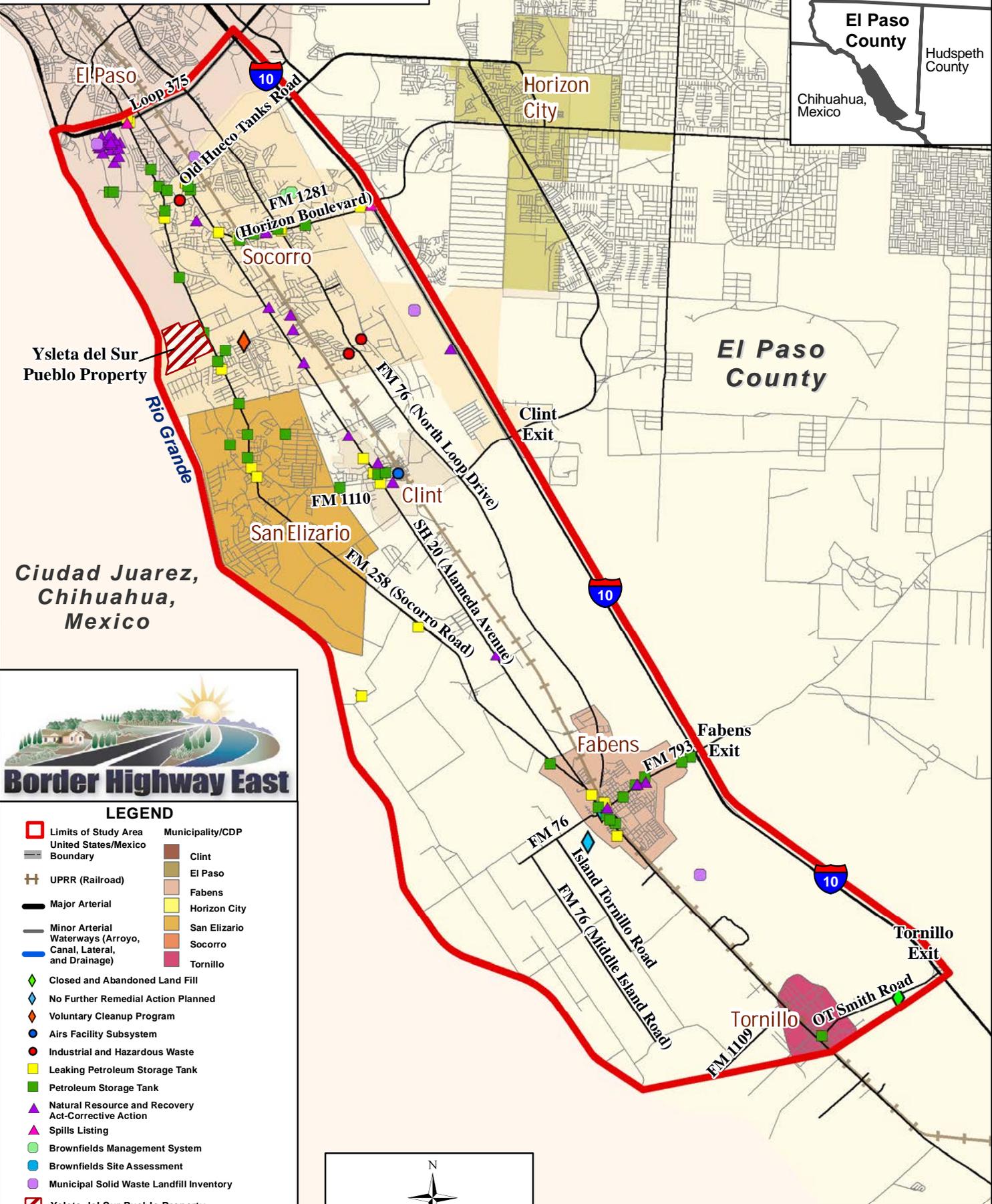


Socorro Historic District



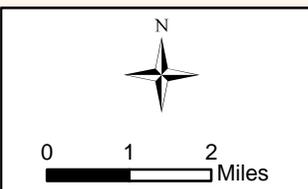
Source: Paso del Norte Mapa GIS Data (2013)- ports of entry, railroad, roads, waterways, and municipalities/CDPs. TARL (2014) historic marker, survey, and historic district locations.

Exhibit 8. Hazardous Materials Sites



LEGEND

Limits of Study Area	Municipality/CDP
United States/Mexico Boundary	Clint
UPRR (Railroad)	El Paso
Major Arterial	Fabens
Minor Arterial	Horizon City
Waterways (Arroyo, Canal, Lateral, and Drainage)	San Elizario
Closed and Abandoned Land Fill	Socorro
No Further Remedial Action Planned	Tornillo
Voluntary Cleanup Program	
Airs Facility Subsystem	
Industrial and Hazardous Waste	
Leaking Petroleum Storage Tank	
Petroleum Storage Tank	
Natural Resource and Recovery Act-Corrective Action	
Spills Listing	
Brownfields Management System	
Brownfields Site Assessment	
Municipal Solid Waste Landfill Inventory	
Ysleta del Sur Pueblo Property	



Source: Paso del Norte Mapa GIS Data (2013)-railroad, roads, waterways, and municipalities /CDPs. Hazardous materials sites were obtained from GeoSearch (2006, 2010, and 2013).

Attachment B: Supporting Data

Utilities within the BHE PEL Study Area

Schools within the BHE PEL Study Area

Places of Worship within the BHE PEL Study Area

Federal and State-Listed Threatened/Endangered Species in El Paso County

Potential High Risk Hazardous Materials Sites within the BHE PEL Study Area

Summary of Existing Constraints

Utilities within the BHE Study Area

Company	Description
Anthony Municipal Water System	Water Utility
AT&T Communications	Telephone Lines
Cincinnati Bell	Cable Line, Telephone Lines
City of Van Horn	Water and Sewer Lines
Dell Telephone Cooperative, Inc.	Telephone Lines
El Paso County Water Authority (Horizon)	Water and Sewer Lines
El Paso County Water Improvement District No. 1	Drainage and Irrigation Structures
El Paso Electric Company	Transmission lines, Electric power lines
El Paso Natural Gas Company (Known as Kinder-Morgan)	Natural Gas Transmission Pipeline
El Paso Water Control & Improvement District #4	Drainage and Irrigation Structures
El Paso Water Utilities	Water and Sewer Lines
Fort Hancock Water Control & Improvement District	Water and Sewer Lines
Holly Energy (Formerly Navajo Pipeline Co.)	Oil Pipelines
Homestead Municipal Utility District	Water Lines
Interior Department of Bureau of Reclamation	Water Transportation and Storage Systems
International Boundary Water Commission	Water Transportation
Kinder Morgan Energy Partners (Formerly Santa Fe Pacific Pipeline Partners)	Oil Pipelines
Level 3 Communications	Communication Lines
Lower Valley Water District	Drainage and Irrigation Structures
Magellan Pipeline (formerly Longhorn Pipeline, Rio Grande Pipeline)	Oil Pipelines
MCI World Com (Verizon)	Telephone Lines
NuStar Energy, LP	Refined Products Pipeline
Oneok WestTex Transmission	Oil and Natural Gas Transmission Lines
Plains Pipeline	Oil Pipelines
PMI/Buckeye Texas Pipe Line	Oil Pipelines
Qwest Communication Corp.	Telephone Lines, Fiber Optics Network
Rio Grande Electric Cooperative, Inc.	Electric Power Lines
Sprint	Telephone Lines, Fiber Optics Network
Texas Gas Service Company	Natural Gas Lines
Texas Western Municipal Gas Corporation	Natural Gas Lines
Time Warner Cable	Cable Lines
Time Warner Telecom (formerly Xspedius)	Telephone Lines, Fiber Optics Network
Tornillo Water Supply Corporation	Water Lines
TRANSTELCO (Formerly McLeod U.S.A , & Caprock)	Fiber Optics Network
U.S. Cable	Cable lines
Valero Energy Corporation (formerly Ultramar Diamond Shamrock)	Oil Pipelines
Windstream Communications (formerly Valor Telecom)	Telephone lines

Schools within the BHE Study Area

Name	Address	School District/Affiliation
Elementary/Pre-Kindergarten Schools		
Socorro Early Head Start	693 N. Rio Vista Rd. El Paso, Texas 79927	Region 19
Campestre Elementary School	11399 Socorro Rd. El Paso, Texas 79927	Socorro ISD
Ernesto Serna School	11471 Alameda Ave. El Paso, Texas 79927	Socorro ISD
Escontrias Early Childhood Center	10400 Alameda Ave. El Paso, Texas 79927	Socorro ISD
Escontrias Elementary School	205 Buford Rd. El Paso, Texas 79927	Socorro ISD
H. D. Hilley Elementary School	693 N. Rio Vista Rd. El Paso, Texas 79927	Socorro ISD
Hueco Elementary School	300 Old Hueco Tanks Rd. El Paso, Texas 79927	Socorro ISD
Keys Elementary Academy	205 Buford Rd. El Paso, Texas 79927	Socorro ISD
Robert R. Rojas Elementary School	500 Bauman Rd. El Paso, Texas 79927	Socorro ISD
San Elizario Early Head Start	13705 Socorro Rd. San Elizario, Texas 79849	Region 19
Alfonso Borrego Sr. Elementary School	13300 Chicken Ranch Rd. San Elizario, Texas 79849	San Elizario ISD
Josefa L. Sambrano Elementary School	200 Herring Rd. San Elizario, Texas 79849	San Elizario ISD
Lorenzo G. Alarcon Elementary School	12501 Socorro Rd. San Elizario, Texas 79849	San Elizario ISD
Lorenzo G. Loya Primary School	13705 Socorro Rd. San Elizario, Texas 79849	San Elizario ISD
Clint Early Head Start	12800 Alameda Ave. Clint, Texas 79836	Region 19
William D. Surratt Elementary School	12675 Alameda Ave. Clint, Texas 79836	Clint ISD
David Sublasky Head Start	810 NE Camp St. Fabens, Texas 79838	Region 19
Fabens Elementary School	1200 Mike Maros St. Fabens, Texas 79838	Fabens ISD
O'Donnell Intermediate School	300 NE Camp St. Fabens, Texas 79838	Fabens ISD
Tornillo Head Start	19230 Gaby Rd. Tornillo, Texas 79853	Region 19
Tornillo Elementary School	19200 Gaby Rd. Tornillo, Texas 79853	Tornillo ISD
Secondary Schools		
Mission Early College High School	10700 Gateway East Blvd. El Paso, Texas 79927	Socorro ISD
Salvador H. Sanchez Middle School	321 N. Rio Vista Rd. El Paso, Texas 79927	Socorro ISD
Socorro High School	10150 Alameda Ave. El Paso, Texas 79927	Socorro ISD
Socorro Middle School	321 Bovee Rd. El Paso, Texas 79927	Socorro ISD
Ann M. Garcia-Enriquez Middle School	12280 Socorro Rd. San Elizario, Texas 79849	San Elizario ISD

Name	Address	School District/Affiliation
San Elizario High School	13981 Socorro Rd. San Elizario, Texas 79849	San Elizario ISD
Clint High School	13890 Alameda Ave. Clint, Texas 79836	Clint ISD
Clint Junior High School	12625 Alameda Ave. Clint, Texas 79836	Clint ISD
Fabens High School	601 NE G Ave. Fabens, Texas 79838	Fabens ISD
Fabens Middle School	800 Walker St. Fabens, Texas 79838	Fabens ISD
Tornillo High School	420 D Oil Mill Rd. Tornillo, Texas 79853	Tornillo ISD
Tornillo Hope Academy	420 D Oil Mill Rd. Tornillo, Texas 79853	Tornillo ISD
Tornillo Intermediate School	420-A Oil Mill Rd. Tornillo, Texas 79853	Tornillo ISD
Tornillo Junior High School	300 Oil Mill Rd. Tornillo, Texas 79853	Tornillo ISD
Other Educational Facilities		
Clint ISD Administration Building	12650 Alameda Ave. Clint, Texas 79836	Clint ISD
Clint ISD Administrative Annex	125 Brown St. Clint, Texas 79836	Clint ISD
Clint ISD Public Library	12625 Alameda Ave. Clint, Texas 79836	Clint ISD
Mission del Paso Campus- El Paso Community College	10700 Gateway East Blvd. El Paso, Texas 79927	El Paso Community College District
Fabens ISD	821 NE G Ave. Fabens, Texas 79838	Fabens ISD
Fabens ISD Technology Building	610 NE Camp St. Fabens, Texas 79838	Fabens ISD
Fabens ISD Ben Madrid Building	208 NE 4th St. Fabens, Texas 79838	Fabens ISD
San Elizario ISD Office	1050 Chicken Ranch Rd. San Elizario, Texas 79849	San Elizario ISD
Texas A&M Agricultural Research and Extension Center Farm	10601 N. Loop Dr. El Paso, Texas 79927	Texas A&M University
Texas A&M Agrilife Extension Center	9521 Socorro Rd. El Paso, Texas 79927	Texas A&M University
Texas A&M Research Center	1380 A and M Circle El Paso, Texas 79927	Texas A&M University
Texas A&M Colonias Program Office	10400 Socorro Rd. El Paso, Texas 79927	Texas A&M University
Tornillo ISD Administration Building	19200 Cobb Ave. Tornillo, Texas 79853	Tornillo ISD
Western Technical College Main Campus	9624 Plaza Cir. El Paso, Texas 79927	Western Technical College
Ysleta Del Sur Pueblo Education and Library Center	11100 Santos Sanchez St. El Paso, Texas 79927	Ysleta Del Sur Pueblo
Socorro ISD: Support Services Complex	201 Tanton Rd. El Paso, Texas 79927	Socorro ISD
San Elizario Excell Academy	13680 Socorro Rd. San Elizario, Texas 79849	San Elizario ISD

Places of Worship Within the BHE Study Area

Place of Worship Name	Municipality/CDP
Asamblea Apostolica de la fen en Cristo Jesus	Socorro
Camino a la Salvacion	Socorro
Camino Al Cielo	Socorro
Centro Nueva Vida	Socorro
Church (114 Socorro Rd.)	Socorro
Church of Jesus Christ of Latter Day Saints	Socorro
Early Site Socorro Mission	Socorro
Fountain Water and Eternal Life Christian Church	Socorro
Iglesia Apostolica de la fe en Cristo Jesus	Socorro
Iglesia de Dios	Socorro
Iglesia de Jesucristo Testigo Fiel y Verdadero	Socorro
Iglesia Eben-Ezer	Socorro
Iglesia Eben-Ezer (2)	Socorro
Iglesia Gracia Divina	Socorro
Iglesia Santuario Pentecostes	Socorro
Iglesia Unidos Para Cristo	Socorro
Nuevo Amanecer Iglesia Cristiana	Socorro
Saint Peter and Paul Catholic Church	Socorro
Salon del Reino de los Testigos de Jehova (Letona St.)	Socorro
Salon del Reino de los Testigos de Jehova (Calcutta Dr.)	Socorro
San Felipe de Jesus Catholic Church	Socorro
Socorro Mission	Socorro
Tabernaculo Nueva Vida	Socorro
Templo Aposento Alto	Socorro
Templo Aposento Alto (N. Loop Dr.)	Socorro
Templo Beteseda	Socorro
Templo Centro de Fe	Socorro
Templo Cristiano El Rey Viene	Socorro
Templo Sendero De La Cruz	Socorro
Alpha International Ministries	San Elizario
Iglesia Dios Con Nostoros	San Elizario
Iglesia Bautista de Nueva Esperanza (FM 1110)	San Elizario
Iglesia de Cristo	San Elizario
Iglesia de Jesu Cristo	San Elizario
Iglesia Evangelica Camino Divino	San Elizario
Movimiento Iglesia Christiana Pentecostal	San Elizario
San Elceario Mission	San Elizario
Templo Bautista Betel	San Elizario
Templo Buen Pastor	San Elizario
Templo Cristiano (San Antonio Rd.)	San Elizario
Templo Cristiano Pentecostes (FM 1110)	San Elizario
Templo El Tabernaculo Asambleas de Dios	San Elizario
Templo Estrella de la Manana (Luisa Guerra Rd.)	San Elizario
Clint First Baptist Church	Clint
Clint Methodist Church	Clint
Iglesia Adventista	Clint
Iglesia Bautista Lilio	Clint
Kingdom Hall of Jehovah's Witnesses	Clint
La Luz del Mundo	Clint
San Lorenzo Church	Clint
San Lorenzo Parish Hall	Clint

Place of Worship Name	Municipality/CDP
Templo Centro de Fe	Clint
Templo Fortaleza Divina	Clint
Templo Buenas Nuevas	Clint
The Body of Christ Church	Clint
Bond Memorial Methodist Church (McKinney St.)	Clint
Todos Son Bienvenidos Church	Clint
Asamblea Apostolica Cristo Jesus	Fabens
Church of Jesus Christ of Latter Day Saints (599 Grace St.)	Fabens
First Baptist Church (Fabens Rd.)	Fabens
First Christian Church (Fabens Rd.)	Fabens
First United Methodist Church (Camp St.)	Fabens
Iglesia Cristiana Shalom	Fabens
Iglesia del Nazareno (Fabens Rd.)	Fabens
International Family Missions	Fabens
Living Word Church	Fabens
Our Lady of Guadalupe Church	Fabens
Psalms 33	Fabens
Salon del Reino de Los Testigos de Jahova (Third St.)	Fabens
San Jose Catholic Church	Fabens
San Jose Funeral Home	Fabens
Tapestries of Life	Fabens
Temple ELIM	Fabens
Wingo Reserve Church	Fabens
Iglesia Bautista Nueva Vida	Tornillo
Montana de Cristo	Tornillo
New Life Border Ministries	Tornillo
Rivas Church Hall	Tornillo
St. Rita Catholic Church	Tornillo

Federal and State-Listed Threatened/Endangered Species in El Paso County*

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
Amphibians				
Northern leopard frog <i>Rana pipiens</i>	—	—	Inhabits streams, ponds, lakes, wet prairies, and other bodies of water; will range into grassy, herbaceous areas some distance from water; eggs laid March-May and tadpoles transform late June-August; may have disappeared from El Paso County due to habitat alteration.	No
Birds				
American peregrine falcon <i>Falco peregrinus anatum</i>	—	T	Potential migrant, but also nests in west Texas on high cliff ledges; eats mostly birds, but will prey on insects and small mammals.	No
Arctic peregrine falcon <i>Falco peregrinus tundrius</i>	—	—	Nests in tundra regions; migrates through Texas; winter inhabitant of coastlines and mountains from Florida to South America. Open areas, usually near water.	No
Baird's Sparrow <i>Ammodramus bairdii</i>	—	—	Inhabits shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties.	Yes
Ferruginous Hawk <i>Buteo regalis</i>	—	—	Inhabits open country, primarily prairies, plains, and badlands; nests in tall trees along streams or on steep slopes, cliff ledges, river-cut banks, hillsides, power line towers; year-round resident in northwestern high plains, wintering elsewhere throughout western 2/3 of Texas.	Yes
Interior least tern <i>Sterna antillarum athalassos</i>	—	E	Nests along sand and gravel bars within braided streams and rivers; also known to nest on man-made structures.	No
Least tern <i>Sterna antillarum</i>	LE	—	Nests along sand and gravel bars with sparse vegetation within braided streams and rivers; also known to nest on man-made structures.	No
Mexican spotted owl <i>Strix occidentalis lucida</i>	LT	T	Remote, shaded canyons of coniferous mountain woodlands (pine and fir); nocturnal predator of mostly small rodents and insects; day roosts in densely vegetated trees, rocky areas, or caves.	No
Montezuma quail <i>Cyrtonyx montezumae</i>	—	—	Inhabits open pine-oak or juniper-oak with ground cover of bunch grass on flats and slopes of semi-desert mountains and hills; travels in pairs or small groups; eats succulents, acorns, nuts, and weed seeds, as well as various invertebrates.	No
Northern aplomado falcon <i>Falco femoralis septentrionalis</i>	LE	E	The Northern Aplomado falcon is currently only found in the United States in the state of Texas, with potential migrants from northern Mexico. Prefers coastal prairies and desert grasslands with scattered yuccas and mesquites. They also utilize oak woodlands and riparian gallery forests in midst of desert grassland.	Yes
Peregrine falcon <i>Falco peregrinus</i>		T	Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (<i>F. p. anatum</i>) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, <i>F.p. tundrius</i> is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	No

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
Prairie falcon <i>Falco mexicanus</i>	—	—	Inhabits open, mountainous areas, plains and prairie; nests on cliffs.	No
Snowy plover <i>Charadrius alexandrinus</i>	—	—	Formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast.	No
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	LE	E	Thickets of willow, cottonwood, mesquite, and other species along desert streams.	Yes
Western burrowing owl <i>Athene cunicularia hypugaea</i>	—	—	Inhabits open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows.	Yes
Sprague's Pipit <i>Anthus spragueii</i>	—	—	Migrates to Texas during winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges	Yes
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	—	—	Uncommon breeder in the Panhandle; potential migrant; winter along coast.	No
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	LC	—	Status applies only west beyond the Pecos River drainage. Breeds in riparian habitat and associated drainages, springs, developed wells, and earthen ponds supporting mesic vegetation; deciduous woodlands with cottonwoods and willows; dense understory foliage is important for nest site selection; nests in willow, mesquite, cottonwood, and hackberry; forages in similar riparian woodlands; breeding season mid May to late September.	Yes
Insects				
A royal moth <i>Sphingicampa raspa</i>	—	—	Inhabits woodlands - hardwood; with oaks, junipers, legumes and other woody trees and shrubs; good density of legume caterpillar foodplants must be present; Prairie acacia (<i>Acacia augustissima</i>) is the documented caterpillar foodplant, but there could be a few other woody legumes used.	No
A tiger beetle <i>Cicindela hornii</i>	—	—	Prefers grassland/herbaceous habitats; burrowing in or using soil; dry areas on hillside or mesas where soil is rocky or loamy and covered with grasses, invertivore; diurnal, hibernates/aestivates, active mostly for several days after heavy rains. the life cycle probably takes two years so larvae would always be present in burrows in the soil.	No
Barbara Ann's tiger beetle <i>Cicindela politula barbarannae</i>	—	—	Prefers limestone outcrops in arid treeless environments or in openings within less arid pine-juniper-oak communities; open limestone substrate itself is almost certainly an essential feature; roads and trails.	No
Poling's hairstreak <i>Fixsenia polingi</i>	—	—	Inhabits oak woodlands with <i>Quercus grisea</i> as substantial component, probably also uses <i>Q. emoryi</i> ; larvae feed on new growth of <i>Q. grisea</i> , adults utilize nectar from a variety of flowers including milkweed and catslaw acacia; adults fly mid May - June, again mid August - early September.	No
Mammals				

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
Big free-tailed bat <i>Nyctinomops macrotis</i>	—	—	Habitat data is sparse, but records indicate that this species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore.	No
Black bear <i>Ursus americanus</i>	—	T	Inhabits bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed threatened.	No
Black-footed ferret <i>Mustela nigripes</i>	—	—	Extirpated. Potential inhabitant of any prairie dog towns in the general area.	No
Black-tailed prairie dog <i>Cynomys ludovicianus</i>	—	—	Inhabits dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; lives in large family groups.	No
Cave myotis bat <i>Myotis velifer</i>	—	—	Species is colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (<i>Hirundo pyrrhonota</i>) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.	No
Desert pocket gopher <i>Geomys arenarius</i>	—	—	Species prefers the cottonwood-willow association along the Rio Grande in El Paso and Hudspeth counties; live underground, but build large and conspicuous mounds; life history not well documented, but presumed to eat mostly vegetation, be active year round, and bear more than one litter per year.	Yes
Fringed bat <i>Myotis thysanodes</i>	—	—	Preferred habitat is variable, ranging from mountainous pine, oak, and pinyon-juniper to desert-scrub, but prefers grasslands at intermediate elevations; highly migratory species that arrives in Trans-Pecos by May to form nursery colonies; single offspring born June-July; roosts colonially in caves, mine tunnels, rock crevices, and old buildings.	Yes
Gray wolf <i>Canis lupus</i>	—	E	Extirpated. Formerly known throughout the western two-thirds of the state in forests, brush lands, or grasslands.	No
Long-legged bat <i>Myotis volans</i>	—	—	Preferred habitat in Texas includes the Trans-Pecos region; high, open woods and mountainous terrain; nursery colonies (which may contain several hundred individuals) form in summer in buildings, crevices, and hollow trees; apparently do not use caves as day roosts, but may use such sites at night; single offspring born June-July.	No
Pale Townsend's big-eared bat <i>Corynorhinus townsendii pallescens</i>	—	—	Species roosts in caves, abandoned mine tunnels, and occasionally old buildings; hibernates in groups during winter; in summer months, males and females separate into solitary roosts and maternity colonies, respectively; single offspring born May-June; opportunistic insectivore.	No

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
Pecos River muskrat <i>Ondatra zibethicus ripensis</i>	—	—	Inhabits creeks, rivers, lakes, drainage ditches, and canals; prefers shallow, fresh water with clumps of marshy vegetation, such as cattails, bulrushes, and sedges; lives in dome-shaped lodges constructed of vegetation; diet mainly consists of vegetation; breeds year round.	Yes
Western red bat <i>Lasiurus blossevillii</i>	—	—	Species roosts in tree foliage in riparian areas, also inhabits xeric thorn scrub and pine-oak forests; likely winter migrant to Mexico; multiple pups born mid-May - late June.	Yes
Western small-footed bat <i>Myotis ciliolabrum</i>	—	—	Inhabits mountainous regions of the Trans-Pecos, usually in wooded areas, also found in grassland and desert scrub habitats; roosts beneath slabs of rock, behind loose tree bark, and in buildings; maternity colonies often small and located in abandoned houses, barns, and other similar structures; apparently occurs in Texas only during spring and summer months; insectivorous.	Yes
Yuma myotis bat <i>Myotis yumanensis</i>	—	—	Prefers desert regions; most commonly found in lowland habitats near open water, where forages; roosts in caves, abandoned mine tunnels, and buildings; season of partus is May to early July; usually only one young is born to each female.	Yes
Mollusks				
Franklin Mountain talus snail <i>Sonorella metcalfi</i>	—	—	Species is terrestrial; prefers bare rock, talus, scree; inhabits igneous talus most commonly of rhyolitic origin.	No
Franklin Mountain wood snail <i>Ashmunella pasonis</i>	—	—	Species is terrestrial; prefers bare rock, talus, scree; talus slopes, usually of limestone, but also of rhyolite, sandstone, and siltstone, in arid mountain ranges.	No
Reptiles				
Big Bend slider <i>Trachemys gaigaea</i>	—	—	Species is almost exclusively aquatic, sliders (<i>Trachemys</i> spp.) prefer quiet bodies of fresh water with muddy bottoms and abundant aquatic vegetation, which is their main food source; will bask on logs, rocks or banks of water bodies; breeding March-July.	Yes
Chihuahuan Desert lyre snake <i>Trimorphodon vilkinsonii</i>	—	T	Mostly crevice-dwelling in predominantly limestone-surfaced desert northwest of the Rio Grande from Big Bend to the Franklin Mountains, especially in areas with jumbled boulders and rock faults/fissures; secretive; egg-bearing; eats mostly lizards.	No
Mountain short-horned lizard <i>Phrynosoma hernandesi</i>	—	T	Diurnal and may be found in open, shrubby, or open wooded areas with sparse vegetation at ground level. Soil may vary from rocky to sandy. Burrows into soil or occupies rodent burrow when inactive. Eats ants, spiders, snails, sowbugs, and other invertebrates. Inactive during cold weather and breeds March to September.	Yes
New Mexico garter snake <i>Thamnophis sirtalis dorsalis</i>	—	—	Inhabits nearly any type of wet or moist habitat; including irrigation ditches, and riparian-corridor farmlands, less often in running water; home range is about 2 acres; active year round in warm weather, both diurnal and nocturnal, more nocturnal during hot weather; bears litter July-August.	Yes

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
Texas horned lizard <i>Phrynosoma cornutum</i>	—	T	Open, arid and semi-arid regions with sparse vegetation, which could include grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March to September.	Yes
Fish				
Bluntnose shiner <i>Notropis simus</i>	—	T	Extirpated. Main river channels, often below obstructions over substrate of sand, gravel, and silt; damming and irrigation practices presumed major factors contributing to decline.	No
Rio Grande silvery minnow <i>Hybognathus amarus</i>	—	E	Extirpated. Historically Rio Grande and Pecos River systems and canals; pools and backwaters of medium to large streams with low or moderate gradient in mud, sand, or gravel bottom; ingested mud and bottom ooze for algae and other organic matter; probably spawned on silt substrates of quiet coves.	No
Plants				
Comal snakewood <i>Colubrina stricta</i>	—	—	In El Paso County, found in a patch of thorny shrubs in colluvial deposits and sandy soils at the base of an igneous rock outcrop; the historic Comal County record does not describe the habitat; in Mexico, found in shrublands on calcareous, gravelly, clay soils with woody associates; flowering late spring or early summer.	No
Desert night-blooming cereus <i>Peniocereus greggii</i> var <i>greggii</i>	—	—	Found in Chihuahuan Desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations, 1,200-1,500 meters (3,900-4,900 ft), on slopes, benches, arroyos, flats, and washes; flowering synchronized over a few nights in early May to late June when almost all mature plants bloom, flowers last only one day and open just after dark, may flower as early as April.	Yes
Hueco rock-daisy <i>Perityle huecoensis</i>	—	—	Found in north-facing or otherwise mostly shaded limestone cliff faces within relatively mesic canyon system; flowering spring-fall.	No
Vasey's bitterwood <i>Hymenoxys vaseyi</i>	—	—	Found in xeric limestone cliffs and slopes at mid to high elevations in desert shrublands. .	Yes
Sand prickly-pear <i>Opuntia arenaria</i>	—	—	Found in deep, loose or semi-stabilized sands in sparsely vegetated dune or sandhill areas, or sandy floodplains in arroyos; flowering May-June.	Yes
Sand sacahuista <i>Nolina arenicola</i>	—	—	Texas endemic; mesquite-sand sage shrublands on windblown Quarternary reddish sand in dune areas; flowering time uncertain May-June, June-September.	Yes
Sneed's pincushion cactus <i>Escobaria sneedii</i> var. <i>sneedii</i>	LE	E	Dry limestone outcrops on rocky slopes in desert mountains of the Chihuahuan Desert; flowering April to September (peak season in April).	No
Texas false saltgrass <i>Allolepis texana</i>	—	—	Found in sandy to silty soils of valley bottoms and river floodplains, not generally on alkaline or saline sites; flowering (May-) July-October depending on rainfall.	Yes
Vasey's bitterweed <i>Hymenoxys vaseyi</i>	—	—	Occurs on xeric limestone cliffs and slopes at mid- to high elevations in desert shrublands.	No
Wheeler's spurge <i>Chamaesyce geyeri</i> var <i>wheeleriana</i>	—	—	Found in sparingly vegetated, loose eolian quartz sand on reddish sand dunes or coppice mounds; flowering and fruiting at least August-September, probably earlier and later, as well.	Yes

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present**
<p>LE, LT - Federally Listed Endangered/Threatened LC – Federally Listed Candidate E - State Endangered T – State Threatened – - Not Federal or State-listed, Rare Species *Data Sources: U.S. Fish and Wildlife Service (May 1, 2013), Texas Parks and Wildlife Department for El Paso County (August, 7, 2012) and field visits (January and May 2006, September 2010, and June 2013). ** Presence of potential suitable habitat was determined according to the USFWS and TPWD species lists and habitat observed during field reconnaissance in 2006, 2010, and 2013.</p>				

Potential High Risk Hazardous Materials Sites within the BHE Study Area

Name	Regulatory Status
Diamond Shamrock 1258 230 Americas Ave. El Paso, TX 79907	LPST 113069 – 3.1, Groundwater impact, public/domestic water supply well within 0.25-0.5 miles. 3, Monitoring. PST 56630.
Diamond Shamrock 1354 201 Americas Ave. El Paso, TX 79907	LPST 98193 – 4.1, Groundwater impacted, no apparent threats or impacts to receptors. 6A, Final concurrence issued, case closed. PST 39610.
Former Party Time Beer Ice Dep. 9971 Alameda Ave. El Paso, TX 79927	LPST 110302 – 3.1, Groundwater impact, public/domestic water supply well within 0.25-0.5 miles. 3, Monitoring. PST 44494.
Ronnie's Service Station 9999 Alameda Ave. El Paso, TX 79927	LPST 113648 – 4.0, Assessment incomplete, no apparent receptors impacted. 1, Pre-assessment/release determination. PST 19723.
Allegretti Rowe, Inc. 9601 Pan American Dr. El Paso, TX 79927	LPST 97757 – 4.2, No groundwater impact, no apparent threats or impacts to receptors. 6A, Final concurrence issued, case closed. PST 43875.
Socorro Shamrock Service Station 10209 Socorro Rd. El Paso, TX 79927	LPST 112081 – 4.0, Assessment incomplete, no apparent receptors impacted. 1, Pre-assessment/release determination. PST 28242.
Rogelios Corypenn/Speedy's Mart 9951 Alameda Ave. Socorro, TX 79927	LPST 97758 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 5, Corrective action plan. PST 1938.
El Paso Auto Truck Stop, Inc./ Flying J C Store 1301 N. Horizon Blvd. El Paso, TX 79927	LPST 98708 – 3.01, Groundwater impact, public/domestic water supply well within 0.25-0.5 miles. 5, Corrective action plan. PST 36577.
Petro Stopping Center 1 1299 Horizon Blvd. El Paso, TX 79927	LPST 111869 – 4.2, No groundwater impact, no apparent threats or impacts to receptors. 6A, Final concurrence issued, case closed. LPST 116520 – 4.0, Assessment incomplete, no apparent receptors impacted. 1, Pre-assessment/release determination. PST 19992.
Good Times Store 17 12370 Socorro Rd. San Elizario, TX 79849	LPST 98544 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 6A, Final concurrence issued, case closed. PST 8353.
Rogelios Country Store/Quality Fuel 2 251 Horizon Blvd. Socorro, TX 79927	LPST – 3.1, Groundwater impact, public/domestic water supply well within 0.25-0.5 miles. 6A, Final concurrence issued, case closed. PST 1939.
Good Times Store 4 602 Horizon Blvd. Socorro, TX 79927	LPST 92990 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 3, Monitoring. PST 8356.
Good Times Store 10 10499 Alameda Ave. Socorro, TX 79927	LPST 102423 – 3.3, Groundwater impact, non-public/non-domestic water supply well within 0.25 miles. 6A, Final concurrence issued, case closed. LPST 115941 – 4.0, Assessment incomplete, no apparent receptors impacted. 1, Pre-assessment/release determination. PST 2553.
Socorro ISD Transportation Department/ Transportes Deva Sa De CV 11350 Middle Drain Rd. El Paso, TX 79927	LPST 115216 – 4.2, No groundwater impact, no apparent threats or impacts to receptors. 6A Final concurrence issued, case closed. PST 53187. IHW 85288. RCRA Generator TXR000023929.

Name	Regulatory Status
El Campestre Grocery 11536 Socorro Rd. Socorro, TX 79927	LPST 105920 – 3.3, Groundwater impact, non-public/non-domestic water supply well within 0.25 miles. 3, Monitoring. PST 30118.
School Bus Garage 12650 Alameda Ave. Clint, TX 79836	LSPT 112717 – 3.1 Groundwater impact, public/domestic water supply within 0.25 – 0.5 miles. 2, Site assessment. PST 10936.
Clint Exxon 13210 Alameda Ave. Clint, TX 79836	LPST 108877 – 3.1, Groundwater impact, public/domestic water supply within 0.25 – 0.5 miles. 6A, Final concurrence issued, case closed. PST 23633.
Quick N Easy Center 12850 Alameda Ave. Clint, TX 79836	LPST 97058 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 6A, Final concurrence issued, case closed. PST 55892.
Lee Moore Children's Home, Unit 1 1855 Lee Moore Rd. San Elizario, TX 79836	LPST 100716 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 6P, Final concurrence pending documentation of well plugging. LPST 100855 – 2.5 Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 6A – Final concurrence issued, case closed. PST 40748.
El Paso Valley Cotton Association, Inc. 212 SE 8 th St. Fabens, TX 79838	LPST 113377 – 3.3, Groundwater impact, non-public/non-domestic water supply well within 0.25 miles. 6P, Final concurrence pending documentation of well plugging. PST 70813.
Exxon Bulk Plant 201 N. Fabens Rd. Fabens, TX 79838	LPST 105100 – 2.5, Groundwater impact, public/domestic water supply well within 0.25 – 0.5 miles. 5, Corrective action plan. PST23632.
El Paso County Dept. of Road and Bridge – Fabens Yard 201 NW 1 st St. Fabens, TX 79838	LSPT 107257 – 3.1, Groundwater impact, public/domestic water supply within 0.25 – 0.5 miles. 6P, Final concurrence pending documentation of well plugging. PST 9036.
Good Time Store 45 101 W. Main St. Fabens, TX 79838	LPST 102425 – 3.5, A designated major or minor aquifer is impacted. 5, Corrective action plan. PST 44963.
Farmers Tires 505 W. Main St. Fabens, TX 79838	LPST 98825 – 3.5, A designated major or minor aquifer is impacted. 3, Monitoring. PST 23637.
Lee Moore Children's Home, Unit 2 14601 Socorro Rd. San Elizario, TX 79849	LPST 98825 – 2C, Group 1 groundwater, off-site migration likely. 6A, Final concurrence issued, case closed. PST 58252.
San Elizario ISD 1364 FM 1110 San Elizario, TX 79849	LSPT 104555 – 5, Minor soil contamination – does not require a remedial action plan (RAP). 6A Final concurrence issued, case closed. PST 63491.
Ghost Tank 461 Horizon Blvd. Socorro, TX 79927	LPST 116556 – 4.0, Assessment incomplete, no apparent receptors impacted. 1, Pre-assessment/release determination.
Karl Perry Enterprises 10791 N. Loop Dr. El Paso, TX 79927	LPST 92268 – 2A, Groundwater other than drinking water aquifer, site characterization incomplete. 6A, Final concurrence issued, case closed.
El Paso County Landfill 3.5 miles northeast of Clint, 0.5 miles southeast of county road intersection. One mile northeast from Clint exit. Clint, TX	Municipal Solid Waste (MSW) Number (No.) 135. Currently closed, authorization superseded 06/02/1976.

Name	Regulatory Status
<p>Fabens Landfill Two miles northeast of Fabens on the northwest cut-off railroad. Fabens, TX</p>	<p>MSW No. 136. Currently closed, authorization revoked 11/03/1992.</p>
<p>Fabens Landfill 3000 feet northeast of State Highway 20, one mile southeast of Fabens city limits. Fabens, TX</p>	<p>MSW No. 901. Currently closed, authorization revoked 05/14/1976.</p>
<p>Clint Landfill 3.5 miles northeast of Clint Clint, TX</p>	<p>MSW No. 1482. Currently in use/active. Permit issued 02/03/1983.</p>
<p>M C Materials, Inc. 12400 Gateway Blvd. East El Paso, TX 79927</p>	<p>MSW No. 100103. Currently in use/active. Permit issued 12/28/2005.</p>
<p>Rio Vista Historical Site 800-801 Rio Vista Road Socorro, TX 79927</p>	<p>BF No. 10897. Phase II Environmental Assessment was been completed in July 2000. No other information reported.</p>
<p>T and R Chemicals/Resinas Sinteticas 700 Celum Rd. Clint, TX 79836</p>	<p>Regulatory status unknown. Identified during field reconnaissance. Manufacturer of pine oil, turpentine, and gum resins.</p>
<p>Hampton Valley Mortuary 300 W. Main St. Fabens, TX 79838</p>	<p>Regulatory status unknown. Identified during field reconnaissance. Possible formaldehyde and glutaraldehyde contaminants.</p>
<p>Valley Propane 450 O.T. Smith Rd. Tornillo, TX 79853</p>	<p>Regulatory status unknown. Identified during field reconnaissance. Possible volatile organic compound (VOC) contaminants.</p>

Summary of Existing Constraints

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Engineering Constraints		
Utilities	N/A	Roberto Bustamante Water Treatment Plant, Jonathan Rogers Water Treatment Plant, and Fabens Wastewater Treatment Plant are located within the project area.
Existing/Proposed Roadway Network	23 USC 109 (m)	The existing roadway network and the <i>Mission 2035 MTP</i> planned improvements are located within the project area.
Rail	N/A	Union Pacific Railroad is located within the project area.
Airports	14 CFR Part 77 Objects Affecting Navigable Airspace	Fabens Airport is located within the project area.
Ports of Entry	N/A	Zaragoza International POE, Fabens International POE, and the (future) Tornillo-Guadalupe International POE are located within the project area.
Socioeconomic Demographics		
Environmental Justice Populations	EO 12898	Approximately 97.3 percent of the total population within the project area is considered minority and 35.7 percent of the population within the project area is considered low income per <i>Census 2010</i> .
Limited English Proficiency	EO 13166	Approximately 47.14 percent of the total population within the project area has Limited English Proficiency per <i>2007-2011 American Community Survey</i> .
Land Use		
Schools	EO 13045	A total of 35 schools and 17 other educational facilities were identified within the project area.

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Places of Worship	Section 106 of the NHPA	A total of 79 places of worship were identified within the project area, 2 of these consist of places of worship that are NRHP listed (Socorro Mission and San Elizario Church).
Cemeteries	Section 106 of the NHPA	A total of seven cemeteries are located within the project area. Of the seven cemeteries, the San Elizario Cemetery and the Socorro Mission La Purisima Cemetery are listed in the NRHP.
Drainage and Irrigation Features	Section 106 of the NHPA	Several drainage and irrigation features are located within the project area. The Franklin Canal is the only drainage feature that is listed in the NRHP.
Parks and Recreation Areas	Section 4(f) of the 1966 Transportation Act and Section 6(f)	Section 4(f) properties located within the project area include historic irrigation canals/drains stewarded by the EPCWID No. 1, city parks, and constructed wetlands. City parks include Socorro Cougar Park, Rio Vista City Park, Tigua Recreation and Wellness Center, Moon City Park, Caribe Park, O'Donnell Park, Alexandra Flores Park, and Basin "G" Wetlands. A Section 6(f) property is any public outdoor recreational land acquired or improved with funds authorized under the LWCF Act of 1965. Section 6(f) properties within the project area include the Rio Grande Riverpark Trail System and the Rio Bosque Wetlands Park.
Community Facilities	N/A	Community facilities located within the project area include local fire stations, police stations, post offices, medical centers, and other community centers. Of the 29 identified community facilities, 11 are located in the City of Socorro, 2 is located in San Elizario, 6 are located in Clint, 7 are located in Fabens CDP, and 3 are located in Tornillo CDP.

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Natural Resources		
Vegetation	Provision (4)(A)(ii) of the 1998 Memorandum of Agreement between TxDOT and TPWD, habitats given consideration for non-regulatory mitigation during project planning; EO 13112; and EM Beneficial Landscaping	Naturally occurring riparian habitats within the region have been drastically altered, leaving narrow riparian corridors along irrigation drains and canals dominated by an exotic vegetation invader. Crops such as cotton, onions, and pecan orchards are also found primarily in the southern portion of the project area. Native grasses, shrubs, and cacti are found in the rural areas and various vegetation utilized for landscaping are found in the urban areas.
Threatened and Endangered Species	Endangered Species Act of 1973, Migratory Bird Treaty Act, EO 13186, and Fish and Wildlife Coordination Act (FWCA)	Potential suitable habitat for the following federally threatened/endangered species is present within the project area (Northern Aplomado falcon, Southwestern willow flycatcher, Western yellow-billed cuckoo). Potential suitable habitat was determined according to the TPWD and USFWS species lists and not field reconnaissance. All avian species considered migratory are protected under the MBTA. The federal and state-listed species in El Paso County are all avian species that are considered migratory.
Waters of the U.S., including Wetlands	EO 11990 and Section 404 of the Clean Water Act	Some of the waterways (arroyo, canal, lateral, and drainage) and associated wetlands within the project area may be considered potentially jurisdictional. A more detailed delineation to map and evaluate these features would need to be conducted further along the project development process.

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Floodplains	EO 11988	Floodplain located along the Rio Grande and contained by a levee, and the floodplain is located along the embankment of the Mesa Spur Drain. Several drains and laterals, managed by the EPCWID No. 1 and the IBWC, that are located within the project area, which aid in restricting and reducing flooding associated with the Rio Grande. Also, the levees have been constructed to assist in decreasing flood risk in El Paso County.
Prime Farmlands	Farmland Protection Policy Act	The USDA Natural Resources Conservation Service has not identified any prime or unique farmland in El Paso County.
Other Items of Consideration		
Historic Sites	Section 106 of the NHPA	There are 435 known historic-age structures including historical markers, National Register properties, and National Register historic districts within the project area based on an online search of the THC's Texas Historic Sites Atlas. Of the 435 historic structures located within the project area, seven resources are listed in the NRHP. These seven NRHP resources are the Old Mission Socorro Archeological Site, Socorro Mission Historic District, San Elizario Mission Historic District, Presidio Chapel of San Elizario, Franklin Canal, El Paso County Water Improvement District (EPCWID) No. 1, and the Rio Vista Farm Historical District.
	National Historic Trail (NHT)	Approximately 9.5 miles of the El Camino Real de Tierra Adentro (Spanish for "The Royal Road of the Interior Land") NHT are located within the BHE Study area. Another historic resource, the Mission Trail is also located within the BHE study area.

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Archeology	Section 106 of the NHPA and EO 13175	<p>A detailed site-file search with the TARL (TARL on-line) was conducted in 2007 and the search resulted in the identification of 404 cultural properties within the proposed BHE project area.</p> <p>The highest concentration of archeological properties is located in the northern portion of the project area. These properties are associated with the Spanish Missions and agricultural properties.</p>
Hazardous Materials	ASTM 1528-00 and ASTM 1527-00	<p>A total of 40 sites (31 LPST sites, 5 MSWLF sites, 1 BF site, 3 other properties) are considered "high risk" hazardous materials sites within the project area, these are: T and R Chemicals/Resinas Sinteticas, Hampton Valley Mortuary, and Valley Propane.</p>
Traffic Noise	FHWA's regulation 23 CFR 772 and TxDOT <i>Guidelines for Analysis and Abatement of Highway Traffic Noise</i>	<p>Based on FHWA noise abatement criteria, the project area is determined to be comprised of land use activity areas represented by residential (NAC B); educational, cemeteries, museums, libraries, hospitals/medical facilities, parks, places of worship, recreational areas, civic facilities; day care centers, recording studios, radio studios, and a television station (NACs C and D); motels, offices, restaurants and bars (NAC E); agricultural lands, an airport, police stations, fire stations, retail facilities, and utilities (irrigation structures, water treatment, wastewater treatment, electrical, etc.), and warehouses (NAC F); and for the most part, undeveloped lands (NAC G). In summary, the project area can be categorized mostly under NACs B, C, D and G.</p>

Resource	Potential Applicable Regulations/Standards	Existing Constraint/Conditions
Air Quality	Clean Air Act of 1970 and the 1990 CAA Amendments and TxDOT's <i>TxDOT's Air Quality Guidelines/National Ambient Air Quality Standards (NAAQS)</i>	<p>The project area is partially located in the part of El Paso County (City of EL Paso) that is in moderate non-attainment for Particulate Matter-less than PM₁₀ NAAQS; therefore, the transportation conformity rules apply.</p> <p>The project area is outside of the maintenance area for the CO standard.</p>
Mobile Source Air Toxics	TxDOT's <i>TxDOT's Air Quality Guidelines</i>	<p>Although there are currently no NAAQS for mobile source air toxics, EPA has identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers. These include acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.</p>