Chapter 3. Demographic, Socio-economic, and Land Use Profile

This chapter of the Border Master Plan provides an overview of the current and projected demographic and socio-economic information obtained for the El Paso/Santa Teresa–Chihuahua Border Master Plan. The chapter summarizes available population, employment, income, and land use data for the Area of Influence. It also includes summary information for the trade corridors that traverse the study area.

3.1 U.S. Demographic and Socio-economic Characteristics

The following sections outline the demographic, socio-economic, and land use data obtained from the Texas State Data Center and Office of the State Demographer, the Texas Health and Human Services Commission, the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the U.S. Bureau of Economic Analysis, and UTEP. The demographic and socio-economic data reflect the latest available data (e.g., 2010 Census data).

As described in Chapter 1, the Area of Influence on the U.S. side is made up of the following border counties: El Paso, Hudspeth, Jeff Davis, and Presidio in Texas and Doña Ana in New Mexico (see Figure 3.1). The U.S. Area of Influence is bordered by:

- TxDOT's Odessa District to the east.
- Brewster and Culberson Counties (part of TxDOT's El Paso District) to the east and north, respectively.
- Reeves and Pecos Counties (part of TxDOT's Odessa District) to the northeast.
- Sierra and Luna Counties (part of NMDOT's District 1) to the north.
- Otero County (part of NMDOT's District 2) to the north.
- Mexico's State of Chihuahua to the south.

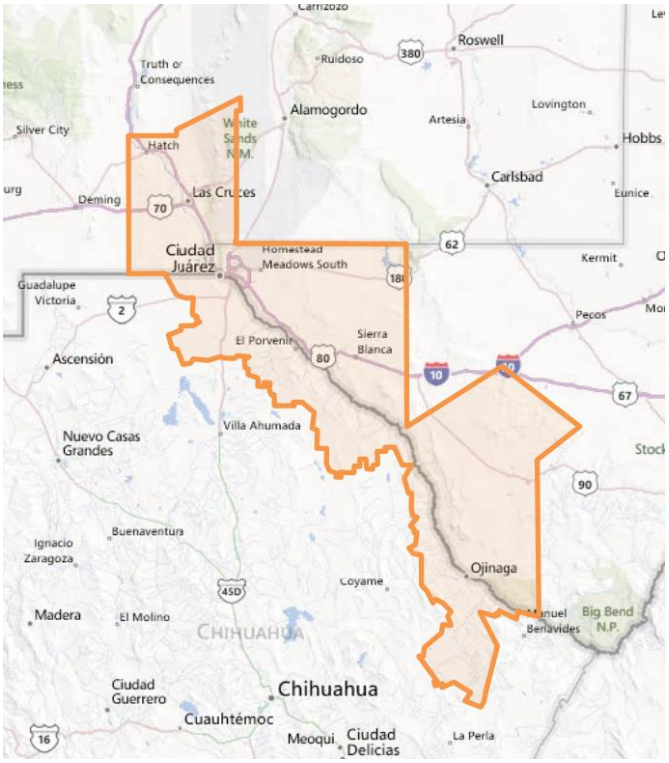


Figure 3.1: Area of Influence

3.1.1 Population

Table 3.1 shows that the total population of the U.S. counties included in the Area of Influence was 929,228 in 2005. Between 2005 and 2010, population in the area increased at an annual average rate of 1.95 percent, to reach a total of 1,023,516 in 2010 (or approximately 3.8 percent of Texas's and New Mexico's total population in 2010).

It is expected that the region's population will continue to increase on average at a rate of 1.38 percent per year between 2010 and 2030. It is anticipated that the population of El Paso County will increase at a marginally higher rate (1.39 percent), while Hudspeth County, Presidio County, and Doña Ana County will see an average increase in their populations of 1.07 percent, 0.95 percent, and 1.35 percent, respectively. Alternately, the population in Jeff Davis County is expected to decrease on average 0.10 percent per year between 2010 and 2030. By 2030, the population in the U.S. Area of Influence is expected to reach 1,345,462, representing an increase of 321,946 people between 2010 and 2030.

Table 3.1: Population (2005–2030)

County	Year			AAGR*	
	2005	2010	2030	2005–2010	2010–2030
El Paso	726,006**	800,647∞	1,055,903∞	1.98%	1.39%
Hudspeth	3,566**	3,476∞	4,304∞	−0.51%	1.07%
Jeff Davis	2,503**	2,342∞	2,297∞	−1.32%	−0.10%
Presidio	7,954**	7,818∞	9,445∞	−0.34%	0.95%
Doña Ana	189,199	209,233	273,513	2.03%	1.35%
U.S. Area of Influence	*929,228*	*1,023,516*	*1,345,462*	*1.95%*	*1.38%*
Texas	*22,859,968***	*25,145,561*∞	*32,927,245*∞	*1.92%*	*1.36%*
New Mexico	*1,932,274*^	*2,059,179*^	*2,613,332*§	*1.28%*	*1.20%*

Note: * Average annual growth rate (AAGR)[1]

Source: ** Texas Department of State Health Services[2]

∞ Texas State Data Center 2012 population projections using 0.5 migration scenario[3]

^ New Mexico Department of Workforce Solutions[4]

§ University of New Mexico Geospatial and Population Studies Group population projections[5]

3.1.2 Employment

Table 3.2 shows that 355,430 people were employed in the U.S. counties in the Area of Influence in 2005. Between 2005 and 2010, employment increased at an average annual rate of 1.4 percent to reach 381,823 in 2010 (representing 3.1 percent of the total employment in Texas and New Mexico). Table 3.2 indicates that the highest average annual increases in employment between 2005 and 2010 occurred in Hudspeth County (6.6 percent) and Presidio County (2.6 percent). El Paso County and Dona Aña County experienced an average annual increase in employment of 1.5 percent and 1.2 percent, respectively. In Jeff Davis County, employment decreased at an average annual rate of 0.2 percent.

Employment in 2030 was estimated by applying the AAGR for employment between 2002 and 2012 to the 2010 employment numbers. Between 2010 and 2030, employment in the Area of Influence is expected to increase at a lower rate of 1.3 percent, to reach approximately 495,490 in 2030, using the calculated AAGR between 2002 and 2012. The highest annual average increase in employment (3.0 percent) is expected in Hudspeth County. Presidio County will also see an increase in employment at an average annual rate of 2.3 percent. Although employment in El Paso County will continue to increase, it will do so at a lower annual average rate of 1.2 percent. Finally, employment in Jeff Davis County and Doña Ana County is expected to continue to increase at an average annual rate of 1.3 and 1.6 percent, respectively.

Table 3.2: Employment (2005–2030)

County	Year			AAGR	
	2005	2010	2030*	2005–2010	2010–2030*
El Paso**	270,293	290,859	369,226	1.5%	1.2%
Hudspeth**	1,240	1,703	3,076	6.6%	3.0%
Jeff Davis**	1,159	1,150	1,489	−0.2%	1.3%
Presidio**	2,892	3,293	5,189	2.6%	2.3%
Doña Ana∞	79,846	84,818	116,510	1.2%	1.6%
U.S. Area of Influence	*355,430*	*381,823*	*495,490*	*1.4%*	*1.3%*
*Texas***	*10,551,547*	*11,273,239*	*15,183,418*	*1.3%*	*1.5%*
New Mexico∞	*866,349*	*861,503*	*970,994*	*−0.1%*	*0.6%*

Note: * Employment projections for 2030 were determined using the AAGR between 2002 and 2012.

Source: ** Texas Workforce Commission[6]

∞ New Mexico Department of Workforce Solutions[4]

3.1.3 Income

The per-capita income in the U.S. Area of Influence of $21,679 was below the statewide per-capita income of $33,220 for Texas and $28,641 for New Mexico in 2005 (see Table 3.3). Between 2005 and 2010, the compound annual growth rate (CAGR) for per-capita income increased by 5.8 percent in the Area of Influence relative to the State average annual growth rates of 2.8 percent for both Texas and New Mexico. Table 3.3 shows all the counties in the U.S. Area of Influence experienced higher average annual per-capita income increases than the statewide averages. Specifically, Hudspeth County and Presidio County experienced average annual income growth rates of 8.5 percent and 7.6 percent, respectively. Per-capita income estimates for the Area of Influence for 2030 were calculated using the 2001 to 2011 CAGR for the counties and were on average 5.8 percent annually.

Table 3.3: Per-Capita Income (2005–2030)

County	Year			CAGR	
	2005*	2010*	2030 **	2005–2010	2010–2030**
El Paso	$23,486	$28,665	$90,213	4.1%	5.9%
Hudspeth	$18,309	$27,543	$97,052	8.5%	6.5%
Jeff Davis	$24,844	$32,205	$87,092	5.3%	5.1%
Presidio	$17,739	$25,627	$69,303	7.6%	5.1%
Doña Ana	$24,017	$29,431	$96,186	4.2%	6.1%
U.S. Area of Influence	*$21,679*	*$28,694*	*$87,969*	*5.8%*	*5.8%*
Texas	*$33,220*	*$38,222*	*$113,656*	*2.8%*	*5.6%*
New Mexico	*$28,641*	*$32,940*	*$82,539*	*2.8%*	*4.7%*

Source: * U.S. Department of Commerce Bureau of Economic Analysis BEARFACTS[7]

** Projections are based on 2002 to 2012 CAGR for States and 2001 to 2011 CAGR for counties, and are not adjusted for inflation.

3.1.4 Land Use

Table 3.4 provides land use information for Texas, New Mexico, and the U.S. Area of Influence. Table 3.4 shows that most of the land area in Texas is designated as farmland (approximately 78.0 percent[8]), while only 55.7 percent of the land area in New Mexico is designated as farmland. Similarly, 71.7 percent of the land area in Texas counties in the Area of Influence is designated as farmland, while 24.1 percent of the land in Dona Aña County is designated as farm land. Table 3.4 indicates that the highest population densities are found in El Paso County and Doña Ana County at 79.4 and 55.0 persons per square mile, respectively. On the other hand, the population densities in Hudspeth, Jeff Davis, and Presidio Counties are well below the population densities in El Paso County, Doña Ana County, and Texas as a whole.

El Paso has grown considerably in the last 50 years. In the 1950s, 19 separate annexations added 90 square miles of developable land to El Paso. In the 1970s, 24 additional annexations (totaling 120 square miles) occurred. In the 1980s, the number of annexations decreased, but expansion continued, filling out the current city boundaries east of Loop 375.[9] The rate at which the city was expanding slowed because the city required annexation of developable land before providing water and sewer services. Recently, the city has occasionally agreed to provide water and sewer services to new subdivisions without the need for annexation.[9]

Table 3.4: Land Use Data

County	Farm Land (Square Miles)*	Land Area (Square Miles)	Population Density (Persons/ Square Miles)
El Paso	263	1,013	79.4
Hudspeth	3,527	4,571	0.8
Jeff Davis	2,173	2,265	1.0
Presidio	2,437	3,855	2.0
Doña Ana	921	3,806	55.0
U.S. Area of Influence	*9,321*	*15,510*	*66.0*
Texas	*203,748*	*261,232*	*96.3*
New Mexico	*67,559*	*121,298*	*17.0*

Note: * Based on 2007 statistics

Source: U.S. Department of Agriculture, Census of Agriculture[10]

U.S. Census Bureau[11]

Two-thirds of the city's current housing units are detached homes. Early industrial development concentrated around the west side at the American Smelting and Refining Company smelter and on the east side around Western Refining. Newer industrial developments such as warehousing and distribution, which primarily serve maquiladoras in the Municipality of Juárez, are located in large industrial parks with access to Zaragoza Road or Loop 375.[9] Newer commercial developments have been occurring on large parcels of land with access to IH 10 or other major arterials. The city's expansion has raised concerns about the effects on farmland surrounding the city.[9]

Table 3.5 provides summarized land use information for El Paso. Only 13.86 percent of the total land area in El Paso is designated as residential. This includes residential areas with high (0.10 percent), medium (12.77 percent), and low (0.99 percent) densities (see Table 3.5). Developed open space accounts for a very small percentage of land use (0.41 percent). Interestingly, most of the land area in El Paso is categorized as vegetation; specifically, 65.72 percent of the total land area is categorized as shrub. Only a small percentage of the land is used for cultivation (6.62 percent). The rest of the area is open water (0.42 percent), grassland (8.76 percent), and barren land of rock, sand, and clay (4.21 percent).

Table 3.5: El Paso Land Use Data

Land Use Category	Percentage of Land Area	Land Area (Square Miles)
High-Density Residential	0.10	0.99
Medium-Density Residential	12.77	129.59
Low-Density Residential	0.99	10.00
Developed Open Space	0.41	4.16
Cultivated Crops	6.62	67.21
Open Water	0.42	4.25
Grassland	8.76	88.84
Shrub	65.72	666.77
Barren Land	4.21	42.69
Total	***100.00***	***1,014.49***

Source: Regional Geospatial Service Center at UTEP[12]

Existing land use maps are provided in Figures 3.2, 3.3, and 3.4. These land use maps represent the Westside/Central/Downtown, Northeast, and Eastside/Mission Valley areas, respectively.

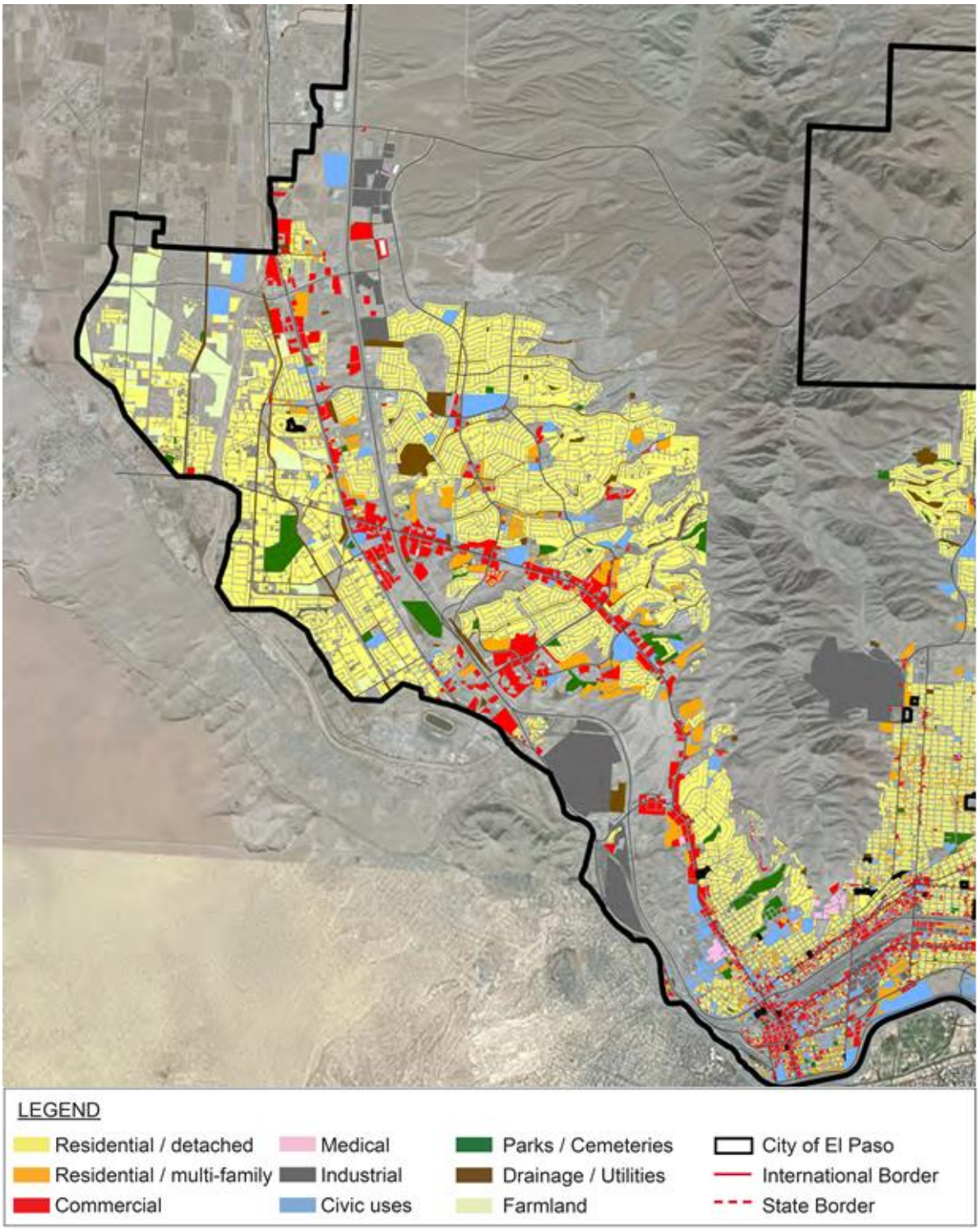
The city also recently developed a Future Land Use Map "…to provide a clear guide to the form, direction, and timing of future growth for the area."[9] Sixteen sectors were identified (see Figure 3.5):

- Seven were designated "O" for open-space sectors where growth will be delayed or is not anticipated.
- Nine were designated "G" for growth sectors where urban development will be encouraged.

Additional information on the Future Land Use Map can be found in the City of El Paso Comprehensive Plan.[13, 9]

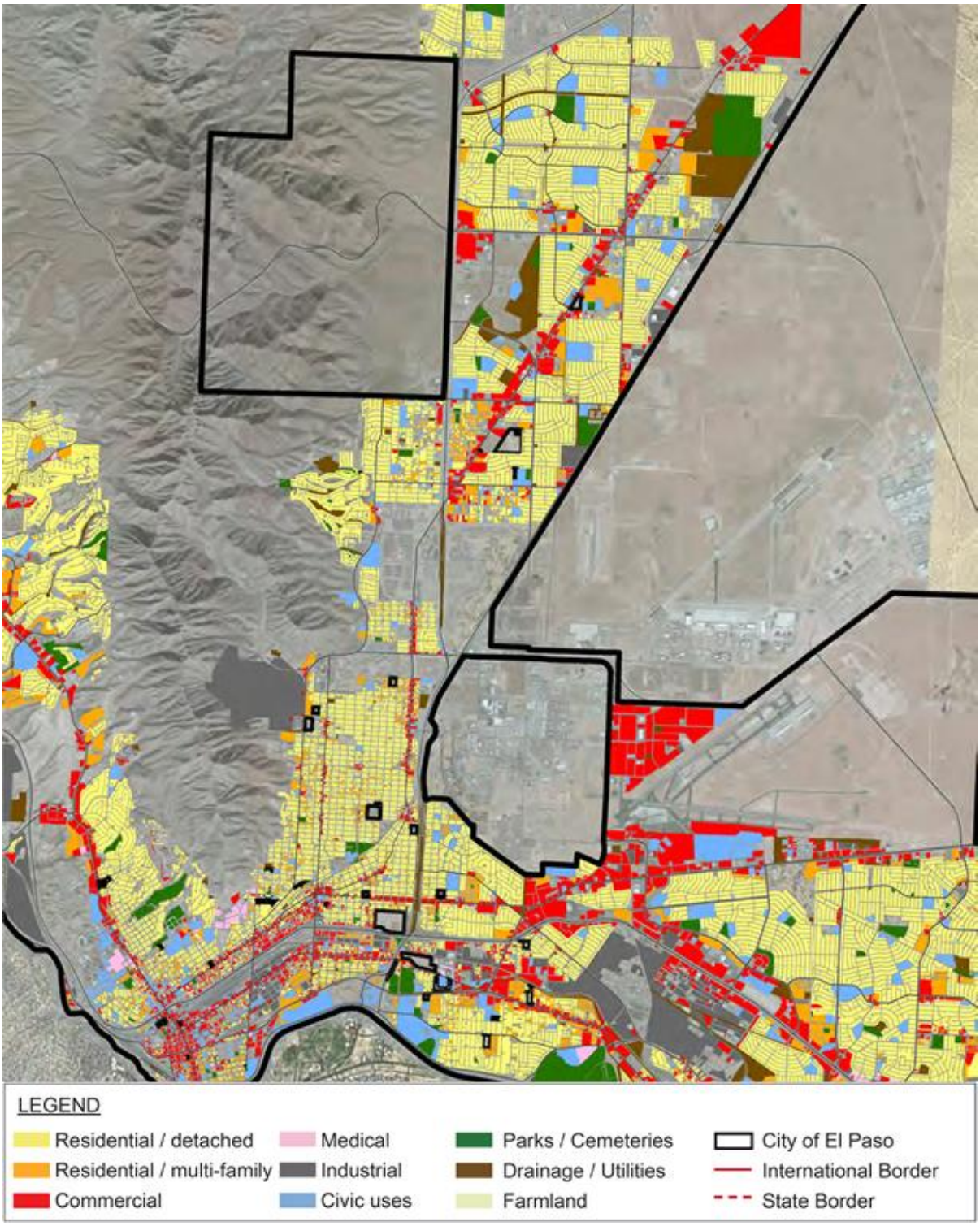
Figure 3.6 provides land use information for Doña Ana County with inlet maps for Las Cruces and Sunland Park. According to the *Doña Ana County New Mexico Regional Plan,*[14] 8.6 percent of the land area in Doña Ana County, excluding Las Cruces, is privately owned.

The remaining land is owned by the Bureau of Land Management (46.7 percent), Department of Defense (23.3 percent), Fish and Wildlife Service (2.6 percent), State Land Trust (11.3 percent), and National Parks Service (2.5 percent).[14] Most of the residential properties are located in the southern parts of the county, near El Paso.[14]



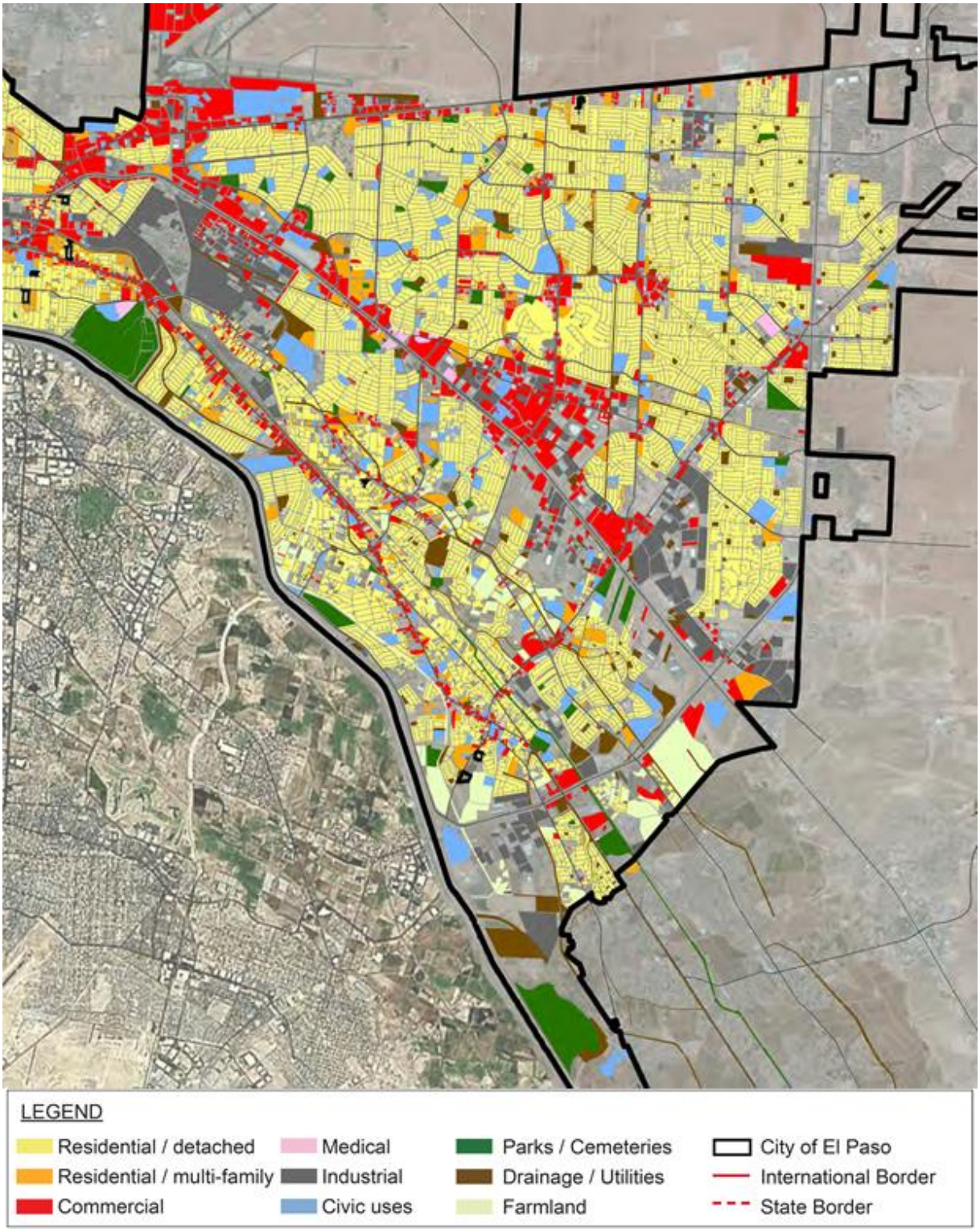
Source: City of El Paso Comprehensive Plan[9]

Figure 3.2: Westside/Central/Downtown Land Use Map



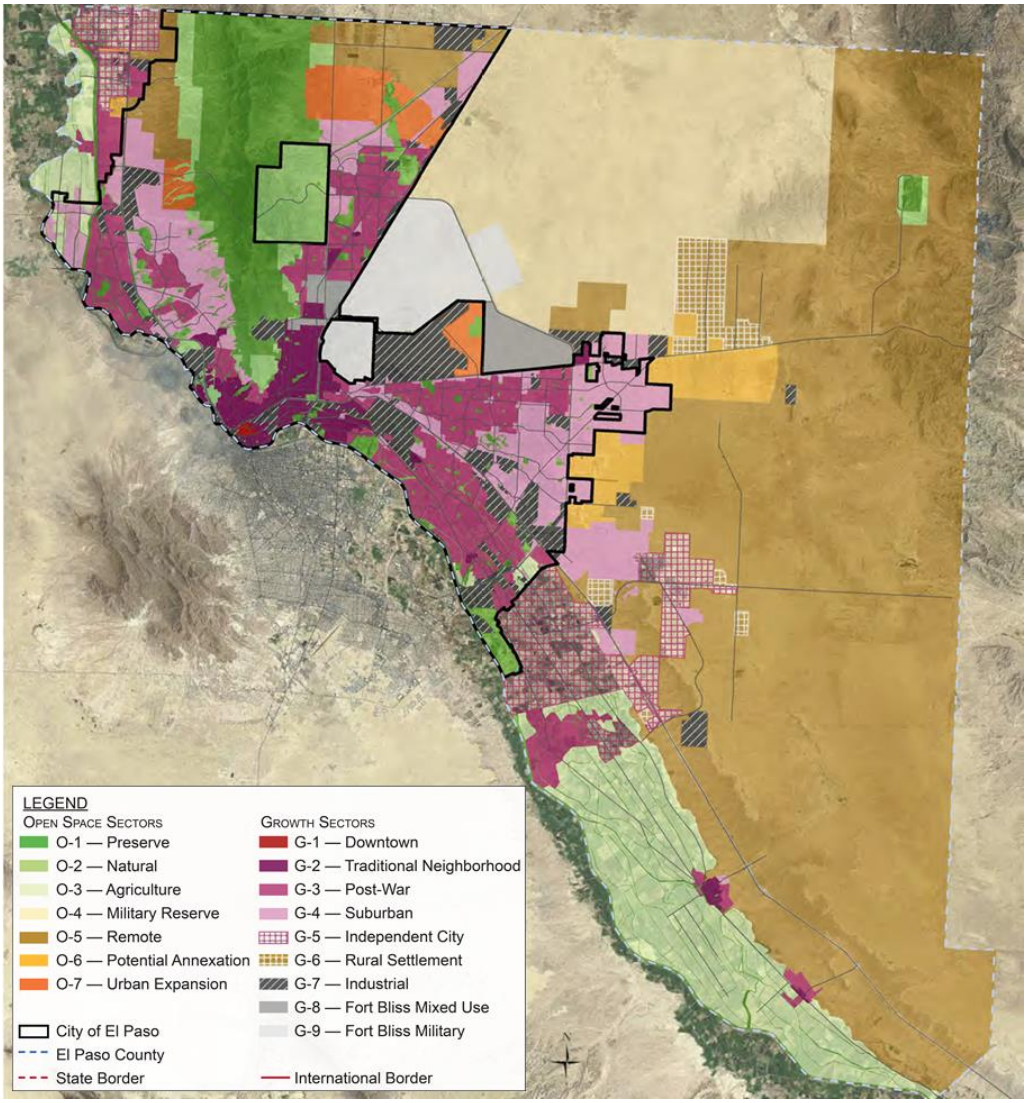
Source: City of El Paso Comprehensive Plan[9]

Figure 3.3: Northeast Land Use Map



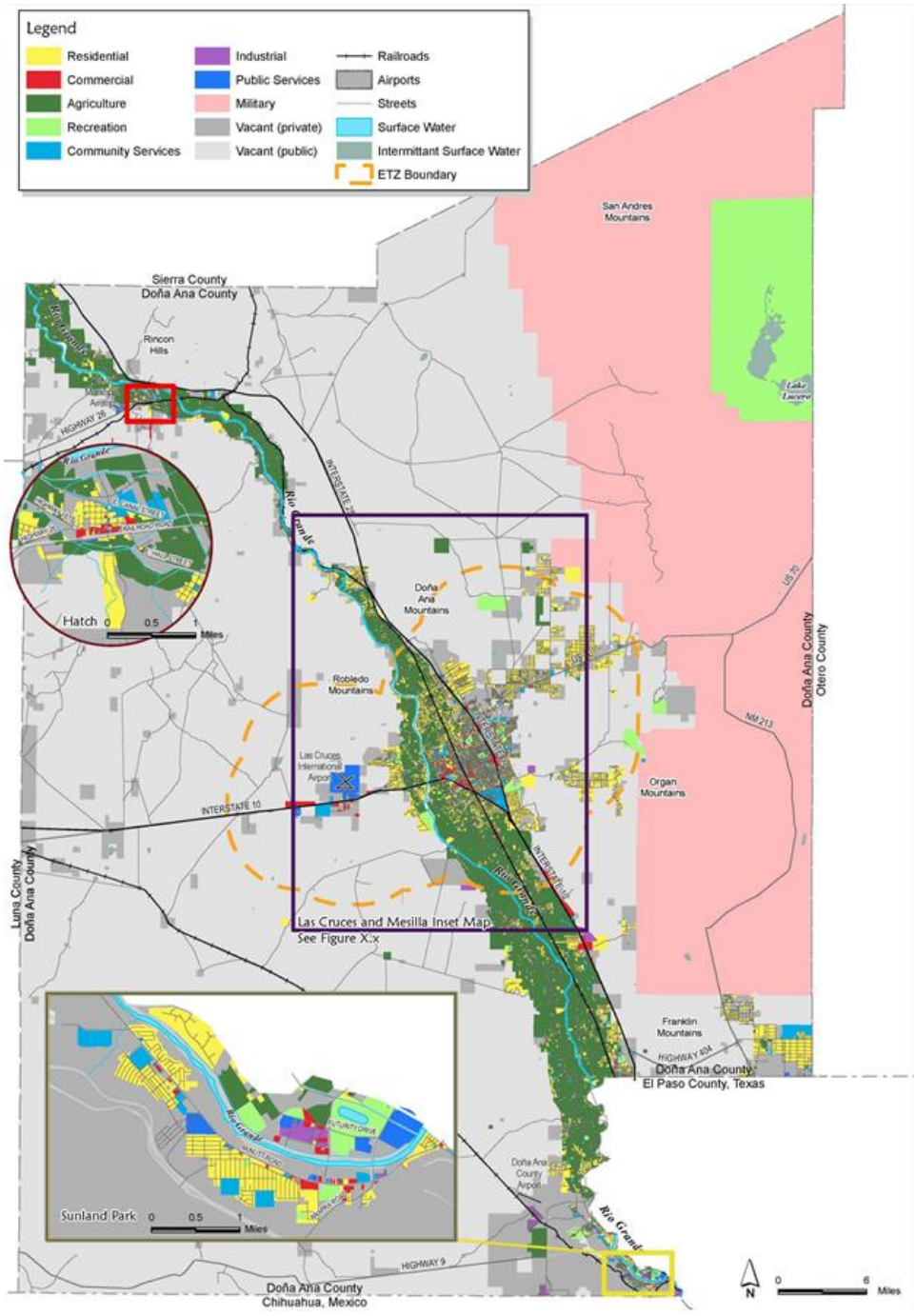
Source: City of El Paso Comprehensive Plan[9]

Figure 3.4: Eastside/Mission Valley Land Use Map



Source: City of El Paso Comprehensive Plan[9]

Figure 3.5: Future Land Use Map[15]—Base Sectors



Source: Doña Ana County New Mexico Regional Plan[14]

Figure 3.6: Doña Ana County Existing Land Use Map

Table 3.6 provides land use information for Las Cruces. Most of the land area (62.5 percent) in Las Cruces was vacant land, excluding right of way; 17.5 percent was residential; 7.7 percent was public; 5.3 percent was commercial; 4.2 percent was community; 1.7 percent was recreational; 1.1 percent was agricultural; and 0.1 percent

was industrial.[14] Since 2007, the city has grown due to annexation by an estimated 8.2 square miles to its current land area of 76.87 square miles. [14,16] However, no updated land use information is available.

Table 3.6: Las Cruces Land Use Data (2007)

Land Use Category	Percentage of Land Area	Land Area (Square Miles)
Vacant	62.5	42.92
Agricultural	1.1	0.76
Residential	17.5	11.99
Commercial	5.3	3.61
Industrial	0.1	0.07
Community	4.2	2.88
Public	7.7	5.26
Recreational	1.7	1.17
Total	***100.0***	***68.67***

Source: Doña Ana County New Mexico Regional Plan[14]

According to the *Doña Ana County New Mexico Regional Plan,*[14] 75 percent of the land in Sunland Park is privately owned and 25 percent is owned by the State Land Trust. Table 3.7 shows that 66.4 percent of the Sunland Park land area was vacant land, excluding right of way; 14.0 percent was residential; 4.9 percent was community; 4.1 percent was recreational; 3.4 percent was agricultural; 2.9 percent was industrial; 2.8 percent was public; and 1.6 percent was commercial.

Table 3.7: Sunland Park Land Use Data (2007)

Land Use Category	Percentage of Land Area	Land Area (Square Miles)
Vacant	66.4	7.17
Agricultural	3.4	0.37
Residential	14	1.51
Commercial	1.6	0.17
Industrial	2.9	0.31
Community	4.9	0.53
Public	2.8	0.30
Recreational	4.1	0.44
Total	***100.0***	***10.80***

Source: Doña Ana County New Mexico Regional Plan[14]

3.2 U.S. Trade Corridors

Texas is the leading U.S. State for exports, and its economy generates substantial import volumes as well. Trade corridors facilitate the movement of goods, both domestic and international, and are therefore an essential component of Texas's transportation system.[17] A number of trade corridors traverse the U.S. Area of Influence in Texas and New Mexico: the IH 10, US 54, and US 67 corridors. This section of the report summarizes some of the salient information about these trade corridors.

3.2.1 IH 10 Corridor

The IH 10 corridor is perhaps the most important NAFTA trade corridor in the U.S. Area of Influence. IH 10 stretches from the Pacific Ocean at State Route 1 (Pacific Coast Highway) in Santa Monica, California, to IH 95 in Jacksonville, Florida. In the U.S. Area of Influence, the corridor stretches from Anthony, New Mexico, in the west to Fort Hancock, Texas, in the east (see Figure 3.7). Two projects are planned for this corridor: the IH 10 Collector-Distributor Lanes and Northeast Parkway. These planned projects are briefly discussed in the following sections.

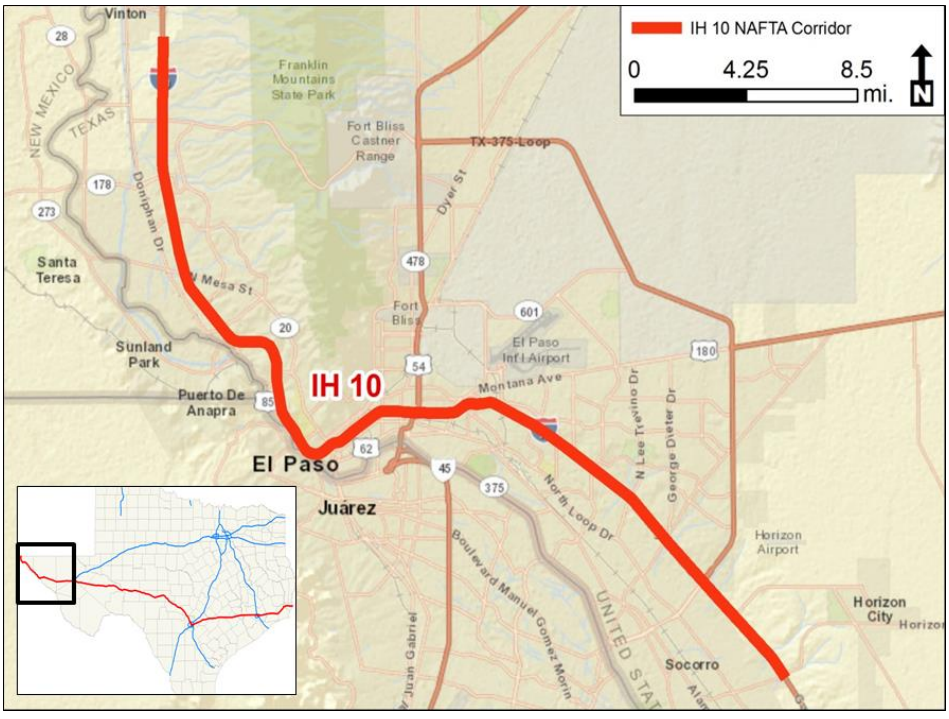


Figure 3.7: IH 10 in El Paso

IH 10 Collector-Distributor Lanes

The planned project includes the construction of collector-distributor (C-D) lanes and improvements to the IH 10 and US 85 interchange. The project has been included in

TxDOT's 2014 UTP and is funded in 2019 with Category 2 (Metropolitan and Urban Area Corridor Projects) Funds. The total project length is approximately 5.75 miles between SH 20 (Mesa Street) and Executive Center Boulevard (see Figure 3.8). The planned improvements will reduce weaving movements and improve safety on the IH 10 main lanes and at the interchanges. The C-D lanes will be constructed adjacent to the outside edges of the existing main lanes. The existing direct connectors at Resler Drive and Sunland Park Drive will be replaced.

The planned project will improve the five major intersections/interchanges within the project limits. At Mesa Street and Sunland Park, improvements include the reconstruction of the existing IH 10 overpass and bridge structure to accommodate new turnarounds and the reconstruction of entrance and exit ramps to accommodate the proposed C-D lanes. At Resler Drive, a new single-lane direct connector and ground ramp will be reconstructed and tied into the proposed C-D lanes. The IH 10/US 85 interchange will be reconstructed to provide full directional access to IH 10 and to provide access to Resler Drive and Sunland Park Drive via the proposed C-D lanes.[18] Most improvements will be accommodated within the existing right of way. Only about 2 acres of additional right of way will be required, which will not result in the displacement of any residences or commercial structures.[19]

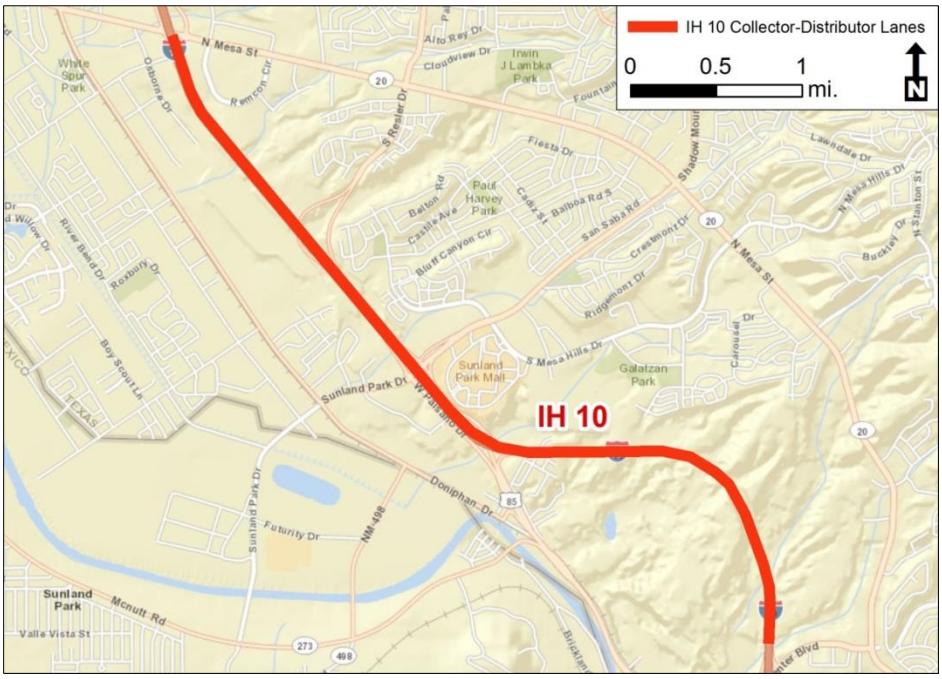
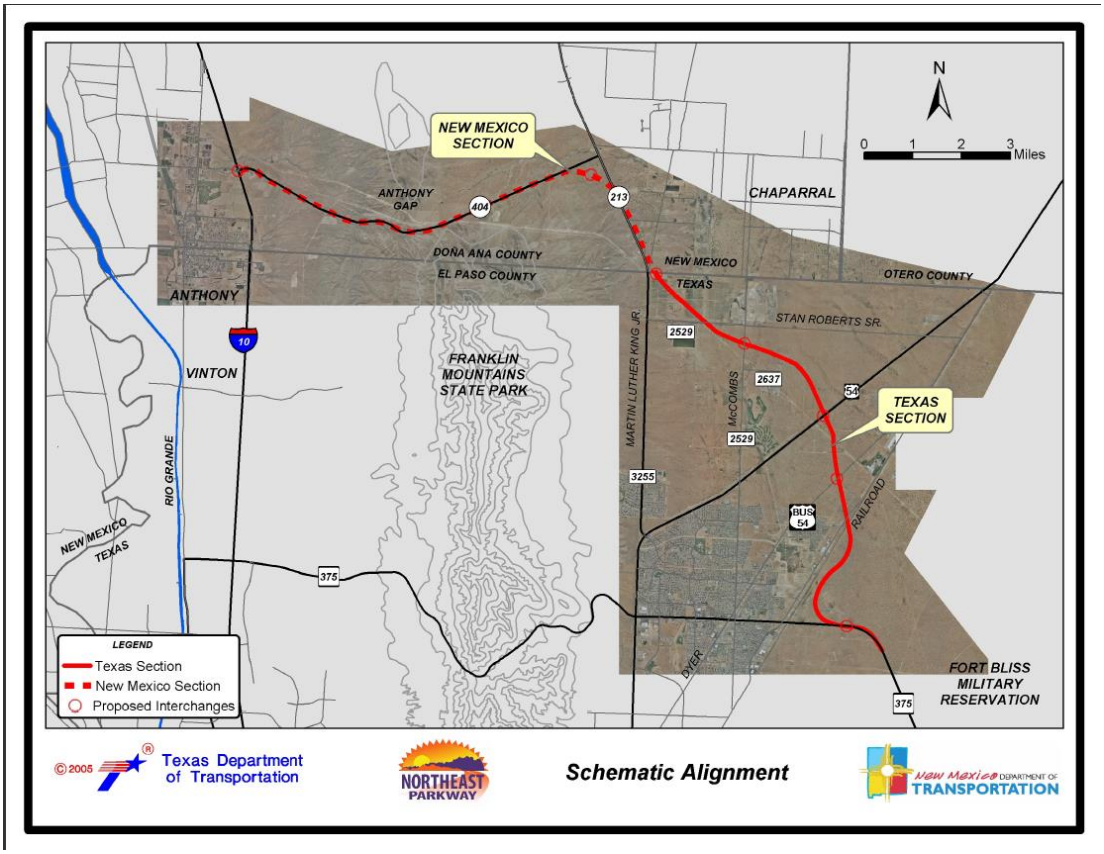


Figure 3.8: Location of New IH 10 Collector-Distributor Lanes

Northeast Parkway

A 21-mile, limited-access highway connecting Loop 375 in northeast El Paso near Railroad Drive to IH 10 in Anthony, New Mexico, has been studied by TxDOT and NMDOT (see Figure 3.9). The planned project is currently included in the 2008 Comprehensive Mobility Plan. The proposed parkway will serve as a bypass for the IH 10 segment that traverses the center of El Paso, an alternate route for traffic destined for the Fort Bliss area, and an emergency evacuation route for Fort Bliss and surrounding areas. The cost of the Texas portion of the project is estimated at $226 million.[20]



Source: TxDOT[18]

Figure 3.9: Schematic Alignment for Northeast Parkway

3.2.2 US 54 Corridor

The US 54 corridor (see Figure 3.10) is experiencing increasing congestion because of recent exponential growth in northeast El Paso. Proposed improvements to the corridor include widening the existing four-lane divided facility to a six-lane divided facility from Yandell Drive to Hondo Pass Drive, a distance of approximately 6.35 miles. This investment will improve local traffic access to four neighborhoods, as well as commercial and business properties located on the east side of US 54 from

Cohen Avenue to the north. A $32.5 million traffic management system (TMS) is planned along the corridor. Bridge and overpass projects along the corridor are planned at Fred Wilson Avenue, Broaddus Avenue, Ellerthorpe Avenue, Hercules Avenue, and Hondo Pass Drive.

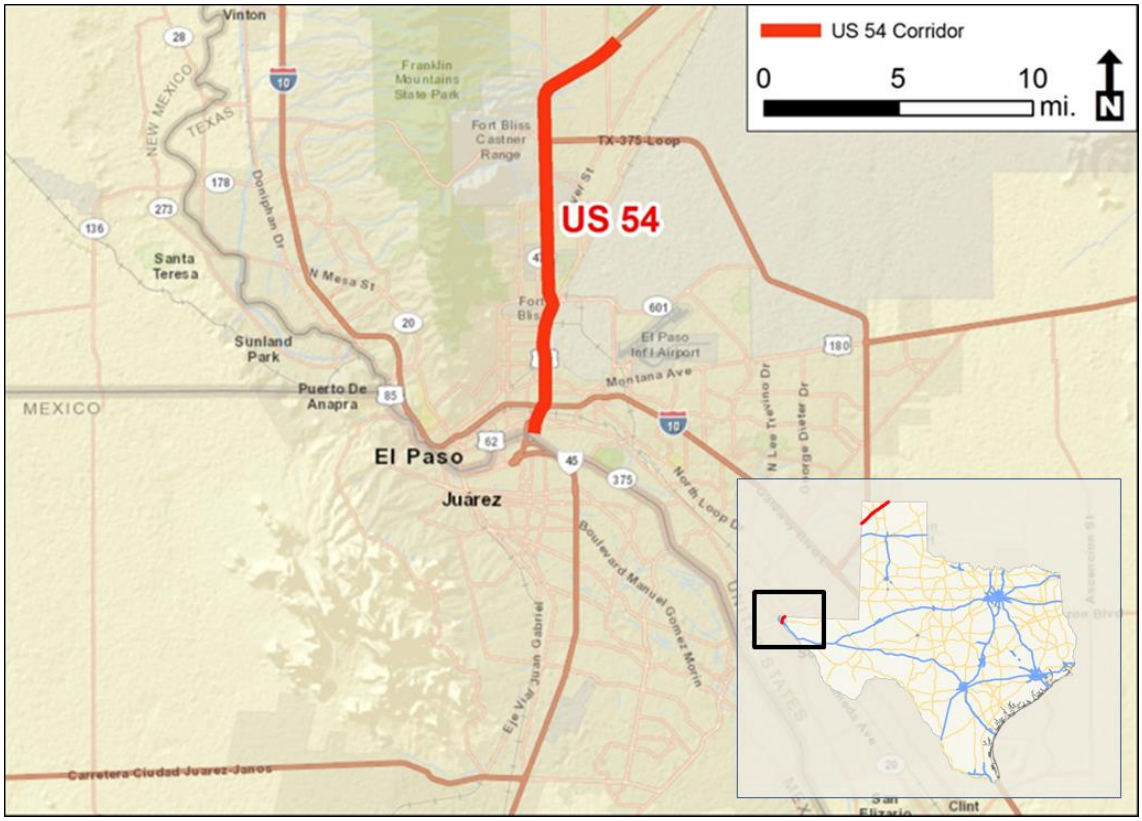


Figure 3.10: US 54 in El Paso

3.2.3 US 67 Corridor

US 67 is part of the La Entrada al Pacifico trade corridor, which was designated as Trade Corridor 56 by the Intermodal Surface Transportation Efficiency Act. The La Entrada al Pacifico corridor starts at Topolobampo in Mexico and proceeds northeast through Texas. The section of the corridor in the U.S. Area of Influence is shown in Figure 3.11. Because US 67 is a component of the La Entrada al Pacifico trade corridor project, the objective of investing in US 67 is to increase the efficiency of people and goods movement from the Pacific Coast ports in Mexico northeast to Midland/Odessa, Texas. The Mexican Pacific Coast ports, such as the Port of Topolobampo, are potentially viable alternatives to the congested ports of Los Angeles and Long Beach in California. In addition, the underused border crossing at Presidio is an opportunity to divert traffic from the congested crossings in El Paso.

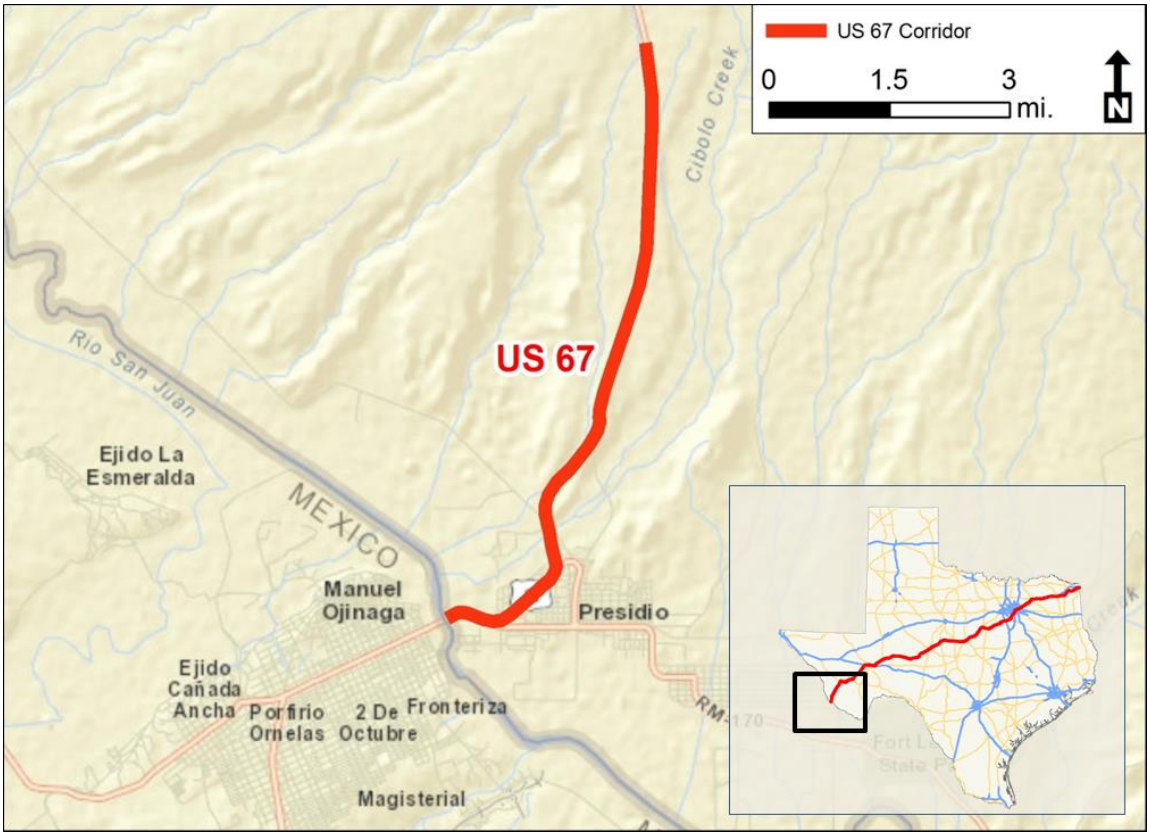


Figure 3.11: US 67 in Presidio

3.3 Mexico's Demographic and Socio-economic Characteristics

As described in Chapter 1 and shown in Figure 3.1, the Area of Influence on the Mexican side includes the Mexican border Municipalities of Guadalupe, Juárez, Ojinaga, and Práxedis G. Guerrero in the State of Chihuahua.

The following demographic, socio-economic, and land use data were obtained from CONAPO, INEGI, and CONASAMI.

3.3.1 Population

Table 3.8 shows that the total population of the Mexican municipalities included in the Area of Influence was 1,352,157 in 2005 (or about 41.7 percent of the total population of Chihuahua in 2005). Between 2005 and 2010, the population in the Area of Influence increased at an average annual rate of 0.3 percent to reach a total of 1,369,692 in 2010 (or about 40.2 percent of the total population in Chihuahua in 2010). The population has increased in only two of the four Mexican Municipalities: Juárez and Ojinaga. The population in the Municipalities of Guadalupe and Práxedis G. Guerrero decreased substantially between 2005 and 2010. In the Municipality of Guadalupe, the population decreased on average 6.7 percent per year between 2005 and 2010. In the

Municipality of Práxedis G. Guerrero, the population decreased even more, at an average annual rate of 10.8 percent.

Between 2010 and 2030, it is expected that the Mexican Area of Influence's population will increase at a higher rate of 1.8 percent per year to reach a total of 1,956,032 by 2030—an increase of 586,340 people. However, only the Municipality of Juárez is anticipated to see an increase in population (of 598,732) between 2010 and 2030. All the remaining municipalities—Guadalupe, Ojinaga, and Práxedis G. Guerrero—are expected to see a decline in population of 2.0 percent per year on average.

Table 3.8: Population (2005–2030)

State/Municipality	Year			AAGR	
	2005	2010	2030	2005–2010	2010–2030
Guadalupe	9,148	6,458	4,313	−6.7%	−2.0%
Juárez	1,313,338	1,332,131	1,930,863	0.3%	1.9%
Ojinaga	21,157	26,304	17,687	4.5%	−2.0%
Práxedis G. Guerrero	8,514	4,799	3,169	−10.8%	−2.1%
Mexican Area of Influence	*1,352,157*	*1,369,692*	*1,956,032*	*0.3%*	*1.8%*
Chihuahua	*3,241,444*	*3,406,465*	*3,838,176*	*1.0%*	*0.6%*

Source: CONAPO[21] and INEGI[22]

3.3.2 Employment

Table 3.9 shows that 563,954 people were employed in the Mexican municipalities in the Area of Influence in 2005 (representing 41.7 percent of the total employment in the State of Chihuahua in 2005). Between 2005 and 2010, employment increased at an average annual rate of 0.9 percent to reach 588,190 in 2010 (representing 40.2 percent of the total employment in the State of Chihuahua). Similar to the population statistics, two municipalities—the Municipalities of Juárez and Ojinaga—experienced an increase in employment, while employment in Guadalupe and Práxedis G. Guerrero decreased between 2005 and 2010 by 6.2 percent and 10.3 percent, respectively.

Between 2010 and 2030, employment is expected to increase at a higher rate of 2.6 percent per year to reach a total of 980,304 by 2030—an increase of 392,114 between 2010 and 2030 (see Table 3.9). Only the Municipality of Juárez is anticipated to see an increase in employment (of 395,630) between 2010 and 2030. All the remaining

municipalities—Guadalupe, Ojinaga, and Práxedis G. Guerrero—are expected to see a decline in employment of 1.2 percent per year on average.

Table 3.9: Employment (2005–2030)

State/Municipality	Year			AAGR	
	2005	2010	2030	2005–2010	2010–2030
Guadalupe	3,815	2,773	2,162	−6.2%	−1.2%
Juárez	547,764	572,060	967,690	0.9%	2.7%
Ojinaga	8,824	11,296	8,864	5.1%	−1.2%
Práxedis G. Guerrero	3,551	2,061	1,588	−10.3%	−1.3%
Mexican Area of Influence	*563,954*	*588,190*	*980,304*	*0.9%*	*2.6%*
Chihuahua	*1,351,934*	*1,462,847*	*1,923,578*	*1.6%*	*1.4%*

Note: The employment information for each municipality is estimated by INEGI from the population data for the respective municipality and States' percentage of economically active population

Source: CONAPO[21] and INEGI[22]

3.3.3 Income

Limited income information is available for the State of Chihuahua and the Mexican municipalities in the Area of Influence. The minimum annual wage in the State of Chihuahua was MXN $46.80 per day in 2005. This number was converted into an annual wage in U.S. dollars of $1,113, assuming a six-day week for 52 weeks a year and using the average annual exchange rate reported by Banco de México, Mexico's central bank, on November 8, 2012.

Table 3.10 shows that the average minimum annual wage increased on average 1.3 percent in the Mexican municipalities in the Area of Influence between 2005 and 2010 to reach US $1,188 in 2010. Between 2010 and 2012, the minimum wage increased at an average annual rate of 2.7 percent to reach the current US $1,253. For comparison, the minimum wage in Texas is US $15,080 per year (assuming a 40-hour week for 52 weeks a year).

Table 3.10: Minimum Wage (2005–2012)

State/Municipality	Year			AAGR	
	2005	2010	2012	2005–2010	2010–2012
Guadalupe	$1,113	$1,188	$1,253	1.3%	2.7%
Juárez	$1,113	$1,188	$1,2453	1.3%	2.7%
Ojinaga*	$1,051	$1,120	$1,182	1.3%	2.7%
Práxedis G. Guerrero	$1,113	$1,188	$1,253	1.3%	2.7%
Chihuahua	$1,113	$1,188	$1,253	1.3%	2.7%

Note: Mexican pesos have been converted based on the exchange rate of MXN $13.11 per dollar reported by Banco de México, Mexico's Central Bank, on November 8, 2012

Minimum wages are calculated based on 48 hours a week for 52 weeks a year

* The Municipality of Ojinaga is classified by CONASAMI[23] as Geographical Area B. Thus, the minimum wage is slightly lower compared to the Municipalities of Guadalupe, Juárez, and Práxedis Guerrero, which are classified as Geographical Area A.

Source: CONASAMI[23] and INEGI[22]

Table 3.11 presents the percentages of workers that have minimum wage jobs in the State of Chihuahua. Approximately 50 percent of the working population has between one and three minimum wage jobs, earning salaries between US $1,188 and US $3,564 on a yearly basis. Chihuahua has a low percentage of workers that earn less than the minimum wage at 4.9 percent and only 11 percent of its workers that earn five or more minimum wages.

Table 3.11: Number of Minimum Wages Earned by the Working Population in Chihuahua (2010)

States	Number of Minimum Wages					Others	
	<1	1–2	2–3	3–5	>5	No Income	Not specified
Chihuahua	4.9%	24.2%	25.6%	18.2%	11%	2.5%	13.6%

Note: The data correspond to the entire State, not only to the municipalities in the Area of Influence

Source: INEGI[22]

3.3.4 Land Use

Tables 3.12 and 3.13 provide land use information for the State of Chihuahua and the Mexican municipalities in the Area of Influence. Table 3.12 indicates that most of the available land in the Area of Influence (approximately 87.4 percent) is currently not developed. Of the developed land area, 11.1 percent is used for agriculture and grazing, and only 1.5 percent is currently designated for urban use (commercial, industrial, and residential purposes). In terms of land area, the largest urban area is found in the Municipality of Juárez (see Table 3.13).

Table 3.12: Land Use Percentages

State/Municipality	Land Use Category			
	Agriculture & Grazing	Not Developed	Urban	Other
Guadalupe	6.0%	93.9%	0.1%	0.0%
Juárez	7.0%	86.8%	6.2%	0.0%
Ojinaga	16.6%	83.1%	0.2%	0.0%
Práxedis G. Guerrero	31.6%	67.4%	1.0%	0.0%
Mexican Area of Influence	11.1%	87.4%	1.5%	0.0%
Chihuahua	26.2%	73.2%	0.3%	0.3%

Source: INEGI[22]

Table 3.13: Land Use Data

State/Municipality	Area (Square Miles)										
	Agriculture	Pasture	Forest	Jungle	Bush	Other Vegetation	Secondary Vegetation	No Vegetation	Water Bodies	Urban	Total
Guadalupe	56.9	82.8	10.9	0.0	2,013.1	9.0	129.0	9.0	0.2	1.3	2,312.1
Juárez	32.7	64.0	0.0	0.0	1,108.9	24.7	0.0	59.8	0.0	84.9	1,375.0
Ojinaga	130.1	304.9	0.0	0.0	2,123.5	30.8	25.7	1.8	1.3	6.0	2,624.1
Práxedis G. Guerrero	43.5	2.0	0.0	0.0	96.3	1.0	0.0	0.0	0.0	1.4	144.2
Mexican Area of Influence	*263.3*	*453.7*	*10.9*	*0.0*	*5,341.6*	*65.5*	*154.7*	*70.6*	*1. 5*	*93.7*	*6,455.4*
Chihuahua	*7,352.3*	*17,696.2*	*22,738.3*	*1,514.2*	*31,112.5*	*253.3*	*13,959.4*	*351.7*	*265.4*	*299.9*	*95,543.0*

Note: Based on 2005 statistics

Source: INEGI[22]

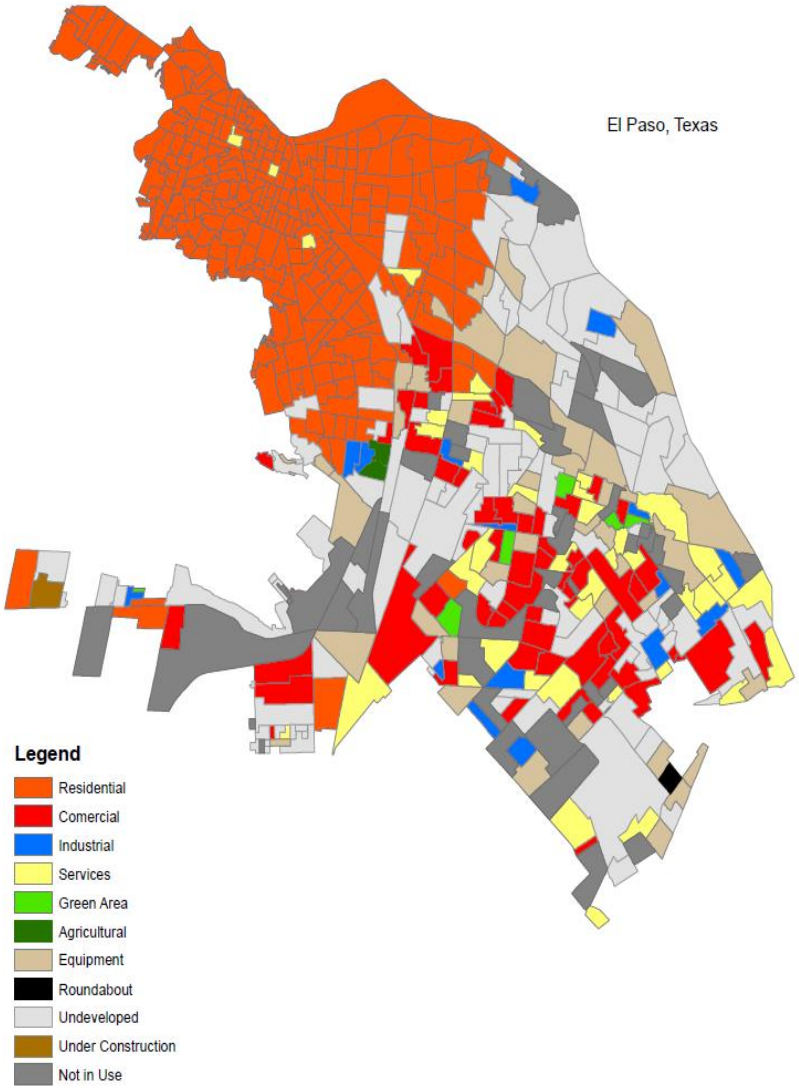
Table 3.14 and Figure 3.12 provide land use information for the City of Juárez. Table 3.14 shows that almost one-third (30.16 percent) of the total land area in the City of Juárez is used for residential purposes. Land used for commercial purposes accounts for 11.54 percent of the total land area, and land designated for industrial purposes accounts for 2.16 percent of the total land area. A significant percentage of the total land area is undeveloped (24.70 percent) or not in use (13.41 percent), and thus potentially available to accommodate future growth.

Table 3.14: City of Juárez Land Use Data

Land Use Category	Percentage of Land Area	Land Area (Square Miles)
Residential	30.16	103.94
Commercial	11.54	39.76
Industrial	2.16	7.45
Services	6.80	23.45
Green Area	0.62	2.12
Agricultural	0.25	0.86
Equipment	9.94	34.27
Roundabout	0.12	0.42
Undeveloped	24.70	85.12
Under Construction	0.29	1.00
Not in Use	13.41	46.22
Total	***100.00***	***344.20***

Source: Regional Geospatial Service Center at UTEP[12]

Table 3.15 provides economic statistics—such as the number of companies, number of employees, total income, total fixed assets, and gross value added (GVA)—for the manufacturing, commercial, and services sectors in the Municipality of Juárez. Table 3.15 shows that there are more commercial establishments (14,943) in the municipality than manufacturing (2,315) or services (12,329) establishments. Nonetheless, the manufacturing sector is the largest employer in the Municipality of Juárez, accounting for 58 percent (or 230,790 jobs) of the total employment in the municipality.



Source: TxDOT[24]

Figure 3.12: Municipality of Juárez Land Use Map (2007)

Table 3.15: Municipality of Juárez Economic Statistics

Measure	Economic Activity			
	Manufacturing	Commercial	Services	Total*
Units—Companies	2,315	14,943	12,329	29,986
Number of Employees	230,790	64,783	79,835	396,911
Total Income**	23,943	2,216	3,569	31,599
Total Fixed Assets**	25,416	5,886	9,008	47,381
Gross Value Added**	43,205	6,214	8,200	62,921

Note: Based on 2009 statistics

* Total includes other activities that were excluded for confidentiality reasons

** Millions of pesos

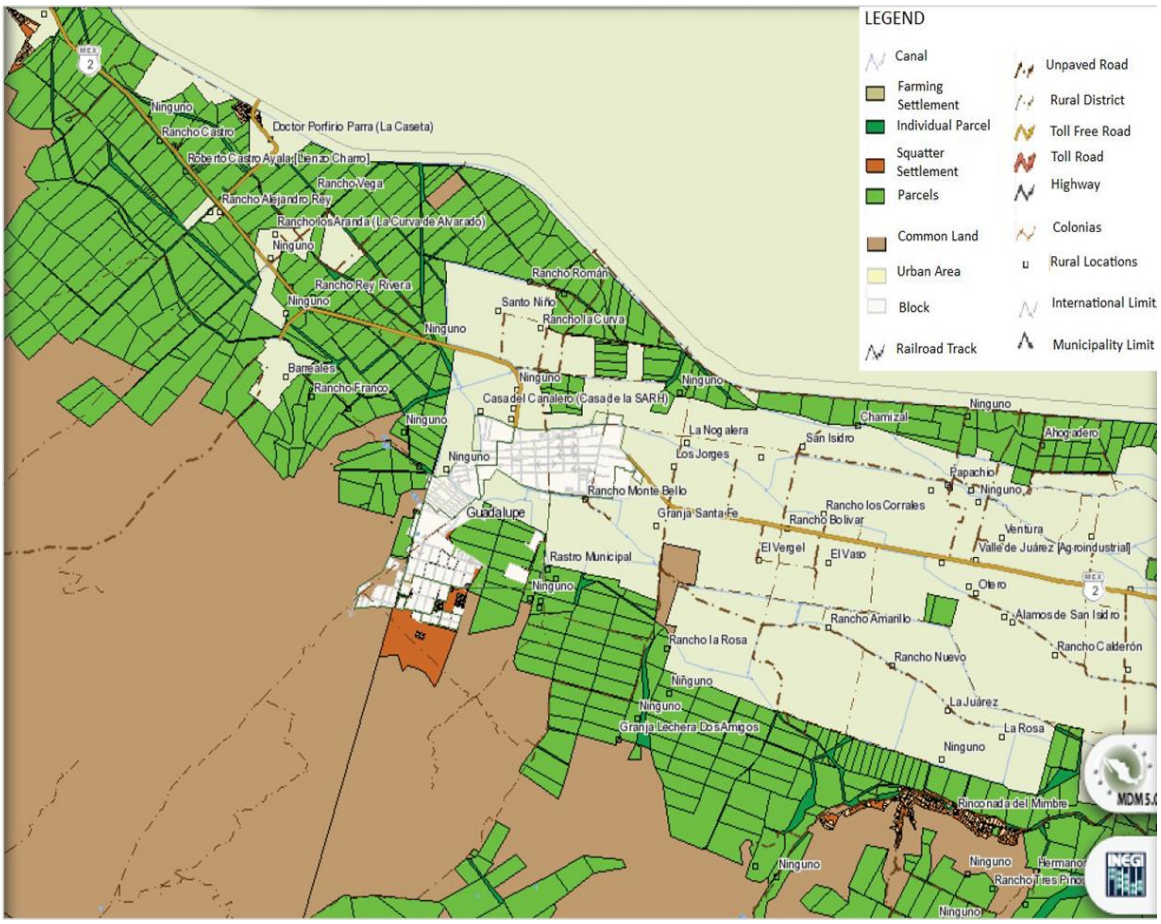
Source: INEGI[22]

In comparison, the commercial sector accounted for 64,783 jobs, and the services sector employed 79,835 people. The total sector income for the manufacturing, commercial, and services industries amounted to MXN $23,943 million, $2,216 million, and $3,569 million, respectively, in 2009. Total income includes salary and benefits paid to employees. Total fixed assets represent buildings, office equipment, machinery, land, and property. The manufacturing sector owned more fixed assets compared to the commercial and services sectors; this is expected because the manufacturing sector is more capital intensive than the commercial and services sectors.

The GVA measures the value of goods and services produced minus the cost of production and consumption. Table 3.15 shows that the manufacturing sector contributed the most to the economy of the municipality, with a GVA of MXN $43,205 million (or 68.99 percent of the total GVA of the municipality). The GVA for the services sector was MXN $8,200 million, and the GVA for the commercial sector was MXN $6,214 million.

Figure 3.13 provides land use information for the Municipality of Guadalupe.

Table 3.16 provides economic statistics for the manufacturing, commercial, and services sectors of the Municipality of Guadalupe. Table 3.16 shows that the commercial sector dominates the Municipality of Guadalupe's economy, accounting for more than half (52.68 percent) of the total employment, 50.68 percent of the number of establishments, 60 percent of the total income generated, and 58.06 percent of the GVA generated in the municipality. In 2009, the commercial sector employed 226 people, accounted for 74 establishments in the municipality, and generated MXN $6 million in total income and MXN $18 million in GVA.



Source: UTEP[24]

Figure 3.13: Municipality of Guadalupe Land Use Map (2009)

Table 3.16: Municipality of Guadalupe Economic Statistics

Measure	Economic Activity			
	Manufacturing	Commercial	Services	Total*
Units	12	74	57	146
Number of Employees	31	226	141	429
Total Income**	0	6	2	10
Total Fixed Assets**	2	43	13	63
Gross Value Added**	1	18	8	31

Note: Based on 2009 Economic Census

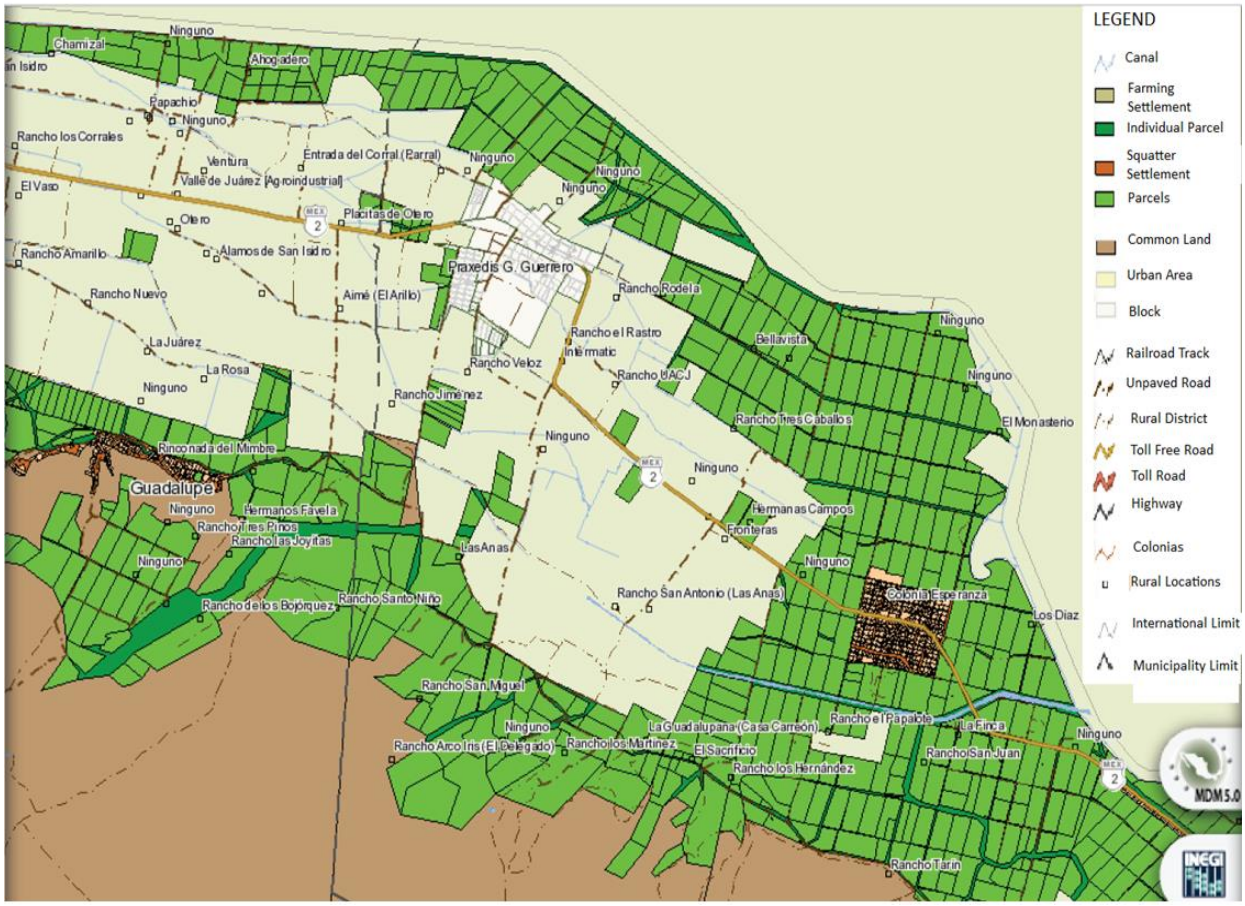
* Total includes other activities that were excluded for confidentiality reasons

** Millions of pesos

Source: INEGI[22]

The services sector is also a major contributor to the municipality's economy. In 2009, the services sector accounted for 57 establishments, employed 141 people, generated MXN $2 million in total income, and accounted for MXN $8 million in GVA. The manufacturing sector accounted for 12 establishments, employed 31 people, and generated MXN $1 million in GVA.

Figure 3.14 provides land use information for the Municipality of Práxedis G. Guerrero.



Source: UTEP[24]

Figure 3.14: Municipality of Práxedis G. Guerrero Land Use Map (2009)

Table 3.17 provides economic statistics for the manufacturing, commercial, and services sectors of the Municipality of Práxedis G. Guerrero. Table 3.17 shows that the commercial sector employs more people (302 as opposed to 238) and has more establishments (109 as opposed to 14) than the manufacturing sector, but the manufacturing sector generates more income (MXN $9 million as opposed to MXN $3 million) and GVA (MXN $14 million as opposed to MXN $11 million) than the commercial sector.

The services sector is also an important contributor to the municipality's economy. In 2009, the services sector accounted for 62 establishments, employed 162 people, generated MXN $2 million in total income, and accounted for MXN $4 million in GVA.

Table 3.17: Municipality of Práxedis G. Guerrero Economic Statistics

Measure	Economic Activity			
	Manufacturing	Commercial	Services	Total*
Units	14	109	62	188
Number of Employees	238	302	162	733
Total Income**	9	3	2	16
Total Fixed Assets**	26	20	8	57
Gross Value Added**	14	11	4	35

Note: Based on 2009 Economic Census

* Total includes other activities that were excluded for confidentiality reasons

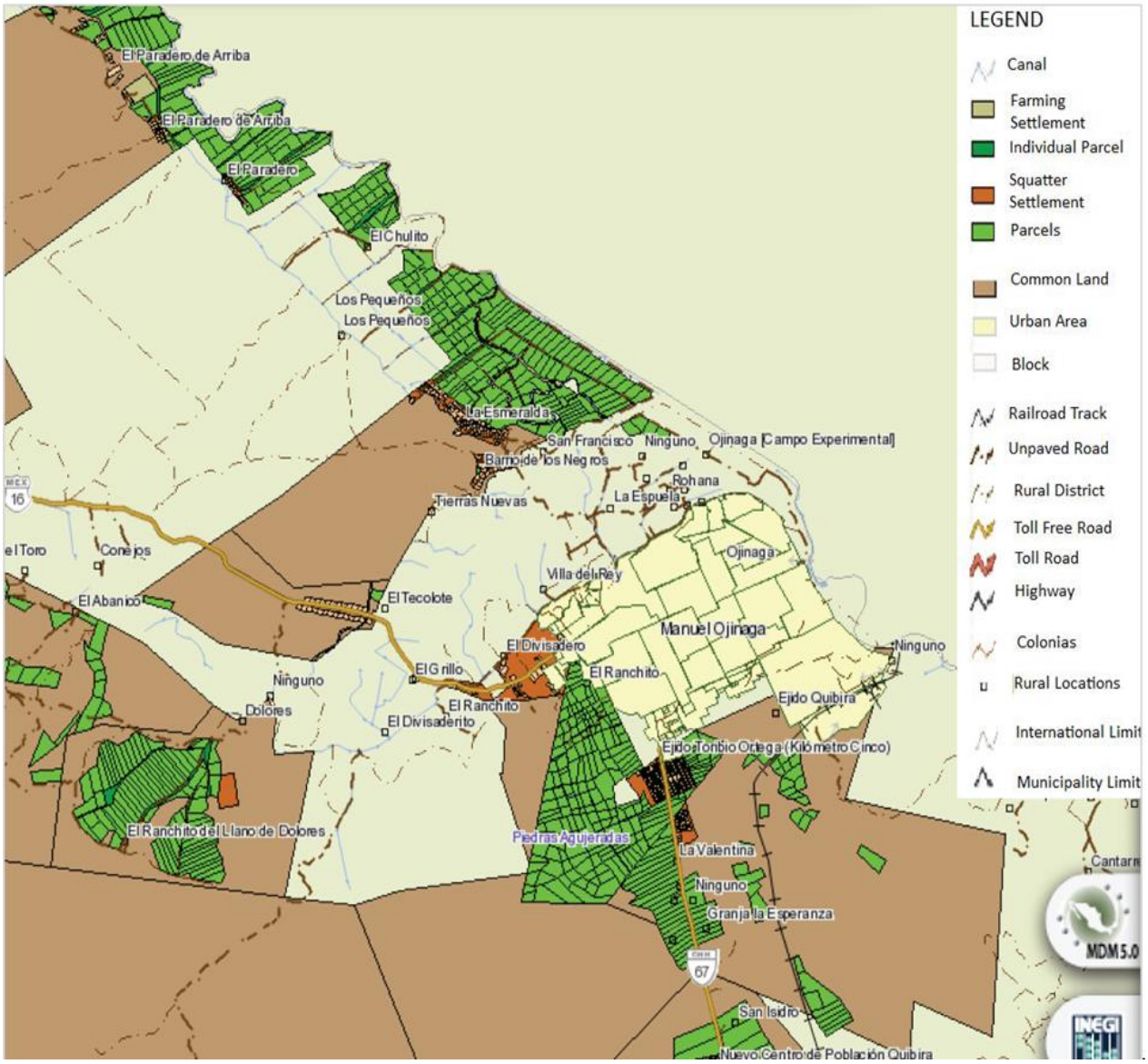
** Millions of pesos

Source: INEGI[22]

Figure 3.15 provides land use information for the Municipality of Ojinaga.

Table 3.18 provides economic statistics for the manufacturing, commercial, and services sectors of the Municipality of Ojinaga. Table 3.18 shows that the commercial and services sectors dominate the Municipality of Ojinaga's economy in terms of employment and the number of establishments, accounting for 72.41 percent of total employment and 87.45 percent of the number of establishments in the municipality. In 2009, the commercial sector employed 1,461 people, accounted for 445 establishments in the municipality, and generated MXN $43 million in total income and MXN $186 million in GVA.

In the same year, the services sector accounted for 440 establishments, employed 1,353 people, generated MXN $27 million in total income, and accounted for MXN $75 million in GVA. The manufacturing sector accounted for 112 establishments, employed 833 people, and generated MXN $34 million in total income and MXN $74 million in GVA.



Source: UTEP[24]

Figure 3.15: Municipality of Ojinaga Land Use Map (2009)

Table 3.18: Municipality of Ojinaga Economic Statistics

Measure	Economic Activity			
	Manufacturing	Commercial	Services	Total*
Units	112	445	440	1,012
Number of Employees	833	1,461	1,353	3,886
Total Income**	34	43	27	124
Total Fixed Assets**	78	204	138	520
Gross Value Added**	74	186	75	388

Note: Based on 2009 Economic Census

* Total includes other activities that were excluded for confidentiality reasons

** Millions of pesos

Source: INEGI[22]

3.4 Mexico's Trade Corridors

This section uses information from Mexico's Multimodal Corridor Master Plan (MCMP), which was concluded in 2010 for SCT.[25] The study was funded by the U.S. Trade Development Agency (USTDA) and conducted by Wilbur Smith Associates, with TTI; IHS Global Insight; Felipe Ochoa y Asociados, S.C.; and Romero Hicks and Galindo Abogados (RHG). The goal of the MCMP is to provide SCT with a tool to plan and promote investments in infrastructure and logistics systems that would serve the needs of Mexico's domestic market and enhance international trade with NAFTA partners and other countries.[26]

The study included several tasks that are relevant to the development of this Border Master Plan. One of the tasks involved performing a detailed analysis of current and future freight demand and supply. A lack of data required development of a freight demand model that was used to estimate:

- Freight flows through Mexico's major seaports.
- Cross-border traffic with the United States.
- Domestic freight flows with origins and destinations in Mexico.

The report stated that by 2020, Chihuahua would be one of the 10 Mexican States[27] with the highest economic growth (a 70.7 percent increase in gross domestic product (GDP) and an AAGR of 3.9 percent) and that cross-border trade with the United States would grow at an average annual rate of 4.9 percent. These estimates translate into an increase of approximately 110 million tons in cross-border trade between 2010 and 2020.

The study team performed a detailed analysis of 18 multimodal corridors in Mexico. These corridors were identified considering the spatial concentration of population and employment, as well as the existing freight transportation network and facilities. Two of the 18 corridors are located within the State of Chihuahua:

- The corridor from Manzanillo to Gómez Palacio to Monterrey to the City of Juárez.
- The corridor from Topolobampo to Chihuahua to Ojinaga.

The corridor from Manzanillo to Gómez Palacio to Monterrey to the City of Juárez traverses nine Mexican States: Colima, Jalisco, Guanajuato, Aguascalientes, Zacatecas, Durango, Nuevo León, Chihuahua, and Coahuila (see Figure 3.16). The corridor from Topolobampo to Chihuahua to Ojinaga traverses two Mexican States: Chihuahua and Sinaloa (see Figure 3.17). Cross-border rail trade with the United States along the corridor from Topolobampo to Chihuahua to Ojinaga is expected to increase at an average annual rate of 2.1 percent.

The 18 corridors were prioritized qualitatively and quantitatively using multi-attribute criteria. Tables 3.19 and 3.20 provide summaries of the results of the qualitative assessment that was done for the corridor from Manzanillo to Gómez Palacio to Monterrey to the City of Juárez and for the corridor from Topolobampo to Chihuahua to Ojinaga, respectively.

Table 3.19 shows that the Manzanillo–Gómez Palacio–Monterrey–City of Juárez corridor was rated high in terms of demand (freight volumes) for multimodal development and long-haul movements, but low for international traffic. This corridor was also rated important as a multimodal corridor for facilitating domestic and international trade, and stimulating regional growth. Concerns related to freight infrastructure included delays due to at-grade railroad crossings in urban areas, insufficient terminals for freight handling at the origin, and insufficient terminals for freight handling at the destination.

Source: SCT[25]

Figure 3.16: Manzanillo–Gómez Palacio–Monterrey–City of Juárez Corridor

Source: SCT[25]

Figure 3.17: Topolobampo–Chihuahua–Ojinaga Corridor

Table 3.19: Summary of Qualitative Evaluation for Manzanillo–Gómez Palacio–Monterrey–City of Juárez Corridor

Criteria		Qualitative Grade
Demand (freight volume)	For multimodal development	High
	For international traffic	Low
	For long-haul movements	High
Value of the multimodal corridor	Domestic trade	High
	International trade	High
	Transshipment trade	Low
	Stimulate regional growth	High
Shortages in current service levels compared to transport users' requirement that increases goods' delivery time	Interlinear railway problems for freight during long hauls	Not problematic
	Railroad equipment	Insufficient
	Railroad infrastructure	Some specific deficiencies
	Delays due to at-grade railroad crossings in urban areas	Problematic
	Delays due to at-grade highway crossings in urban areas	Partially problematic
	Enough logistics companies operating in the corridor	Sufficient
	Customs procedures	Partially problematic
Excessive logistical costs for shippers, affecting the competitiveness of industries in Mexico, and increased prices for consumers	Railway	Competitive
	Highway and automotive transportation	Competitive
	Port terminals (origin/destination)	Not competitive
	Domestic terminals	Competitive
	Land terminals (origin/destination)	Not competitive
Inadequate infrastructure capacity, resulting in bottlenecks	Terminals for freight handling at the origin	Insufficient
	Terminals for freight handling at the destination	Insufficient
	Domestic terminals	Sufficient
	Highway network	Sufficient
Deficits in safety that limit exports by not being able to satisfy new requirements or safety standards	Security deficiencies in the railroad network	Problematic
	Security deficiencies in the highway network	Problematic

Source: SCT[25]

As shown in Table 3.20, the Topolobampo–Chihuahua–Ojinaga corridor was rated low in terms of demand (freight volumes) for multimodal development, international traffic, and long-haul movements. This corridor was rated an important multimodal corridor for facilitating international and transshipment trade. Concerns related to freight infrastructure included inadequate railroad infrastructure, some delays due to at-grade highway crossings in urban areas, and an insufficient highway network.

The qualitative assessment was supplemented with a quantitative assessment of the 18 corridors. Table 3.21 summarizes the outcome of the quantitative assessment. In this assessment, the metric used to score each criterion ranged from 8 to 24. Based on this scale and the use of six criteria, total scores ranged from 48 to 144. Corridors that scored higher than 120 were prioritized for investments in the short term, those that scored between 100 and 120 were prioritized for investments in the medium term, and those that scored below 100 were prioritized for investment in the long term. The Manzanillo–Gómez Palacio–Monterrey–City of Juárez corridor was thus prioritized for investments in the medium term, and the Topolobampo–Chihuahua–Ojinaga corridor was prioritized for investments in the long term.

Each member of the SCT committee[28] assigned a weight to each criterion. The assigned weights were subsequently averaged and used to calculate the average weight attributed to each criterion (see Table 3.22). These weights were applied to the results in Table 3.21 to calculate a score based on the importance of each criterion (see Table 3.23).

Table 3.23 shows that the Manzanillo–Gómez Palacio–Monterrey–City of Juárez corridor scored relatively high on future demand, potential for increased rail, potential for increased container usage, connectivity, and infrastructure service/quality. This corridor scored relatively low on the potential for national economic development. The needs analysis revealed concerns about insufficient equipment, lack of rail bypasses, lack of terminal capacity, and security deficiencies.

The Topolobampo–Chihuahua–Ojinaga corridor ranked average on most of the criteria. The needs analysis revealed concerns about insufficient railway equipment, security deficiencies in the railroad network, and an inadequate highway network between the Port of Topolobampo and Ojinaga. The inadequate highway network between the Port of Topolobampo and Ojinaga results from the Sierra Madre Occidental—a mountain range characterized by high elevations and a complex topography that includes numerous mountain peaks and ridges—that extends south of the southwestern U.S. border into central Mexico. Over the long term, addressing these concerns will facilitate movement of freight between the Port of Topolobampo and the border crossings at Ojinaga.

Table 3.20: Summary of Qualitative Evaluation for Topolobampo–Chihuahua–Ojinaga Corridor

Criterion		Qualitative Grade
Demand (Freight Volume)	For multimodal development	Low
	For international traffic	Low
	For long-haul movements	Low
Value of the multimodal corridor	Domestic trade	Average
	International trade	High
	Transshipment trade	High
	Stimulate regional growth	Average
Shortages in current service levels compared to transport users' requirement that increases goods' delivery time	Interlinear railway problems for freight during long hauls	Not problematic
	Railroad equipment	Insufficient
	Railroad infrastructure	Problematic
	Delays due to at-grade railroad crossings in urban areas	With some deficiencies
	Delays due to at-grade highway crossings in urban areas	Not problematic
	Enough logistics companies operating in the corridor	Sufficient
	Customs procedures	Problematic
Excessive logistical costs for shippers, affecting the competitiveness of industries in Mexico, and increased prices for consumers	Railway	Not competitive
	Highway and automotive transportation	Not competitive
	Port terminals (origin/destination)	Competitive
	Domestic terminals	Competitive
	Land terminals (origin/destination)	Competitive
Inadequate infrastructure capacity, resulting in bottlenecks	Terminals for freight handling at the origin	Sufficient
	Terminals for freight handling at the destination	Sufficient
	Domestic terminals	Sufficient
	Highway network	Insufficient
Deficits in safety that limit exports by not being able to satisfy new requirements or safety standards	Security deficiencies in the railroad network	Problematic
	Security deficiencies in the highway network	Not problematic

Source: SCT[25]

Table 3.21: Summary of Quantitative Evaluation of the Corridors

Corridors	Criteria to Identify the Priority Corridors						
	Future demand	Potential increase for rail to participate	Potential increase in container usage	Potential for national economic development	Connectivity	Infrastructure/ service quality	Total
Mexicali–Guadalajara–México City	22	22	21	17	20	19	121
Manzanillo–Guadalajara–México City	23	22	22	19	20	18	124
Lázaro Cárdenas–México City	23	20	20	18	20	22	123
Manzanillo–Gómez Palacio–Monterrey–City of Juárez	***16***	***19***	***19***	***15***	***19***	***18***	***106***
Monterrey–Altamira/Tampico	16	18	19	16	16	17	102
Lázaro Cárdenas–Querétaro–San Luis Potosí–Monterrey–Nuevo Laredo	22	22	23	22	21	22	132
Veracruz–Querétaro	15	17	20	15	17	21	105
Veracruz–México City	21	16	19	17	21	21	115
Salina Cruz–Coatzacoalcos	15	15	15	20	14	15	94
Topolobampo–Chihuahua–Ojinaga	***13***	***16***	***14***	***17***	***13***	***15***	***88***
Guaymas–Nogales	19	17	18	19	17	17	107
Ensenada–Tijuana	13	9	12	17	12	16	79
Lázaro Cárdenas–México City–Veracruz	11	11	11	13	16	16	77
México City–Salina Cruz–Hidalgo	11	11	8	19	11	8	67

Corridors	Criteria to Identify the Priority Corridors						
	Future demand	Potential increase for rail to participate	Potential increase in container usage	Potential for national economic development	Connectivity	Infrastructure/ service quality	Total
Veracruz–Coatzacoalcos–Mérida	8	8	8	16	11	11	61
Altamira–San Luis Potosí–Manzanillo	13	11	11	11	13	13	72
Mazatlán–Matamoros	8	8	11	11	11	11	59
Salina Cruz–Mérida	8	8	8	16	8	8	56

Source: SCT[25]

Table 3.22: Criterion Weights to Evaluate the Corridors

Corridors	Criteria to Identify the Priority Corridors						
	Future demand	Potential increase for rail to participate	Potential increase in container usage	Potential for national economic development	Connectivity	Infrastructure/ service quality	Total
Average of the Committee	22%	17%	14%	16%	18%	14%	100%

Source: SCT[25]

Table 3.23: Summary of Quantitative Evaluation for the Corridors (Weighted)

Corridors	Criteria to Identify the Priority Corridors						
	Future demand	Potential increase for rail to participate	Potential increase in container usage	Potential for national economic development	Connectivity	Infrastructure/ service quality	Total
Mexicali–Guadalajara–México City	4.80	3.70	2.95	2.55	3.55	2.75	20.30
Manzanillo–Guadalajara–México City	4.95	3.80	2.95	3.00	3.60	2.65	20.95
Lázaro Cárdenas–México City	4.95	3.45	2.75	2.85	3.60	3.20	20.80
Manzanillo–Gómez Palacio–Monterrey–City of Juárez	***3.25***	***3.30***	***2.60***	***2.40***	***3.35***	***2.55***	***17.45***
Monterrey–Altamira/Tampico	3.65	2.85	2.65	2.50	2.85	2.50	17.00
Lázaro Cárdenas–Querétaro–San Luis Potosí–Monterrey–Nuevo Laredo	4.85	3.70	3.20	3.50	3.60	3.20	22.05
Veracruz–Querétaro	3.25	2.95	2.65	2.40	3.10	3.05	17.40
Veracruz–México City	4.70	2.75	2.50	2.60	3.75	3.05	19.35
Salina Cruz–Coatzacoalcos	3.25	2.50	2.10	3.15	2.60	2.30	15.90
Topolobampo–Chihuahua–Ojinaga	***2.90***	***2.75***	***2.00***	***2.65***	***2.35***	***2.30***	***14.95***
Guaymas–Nogales	4.05	2.75	2.50	3.10	3.10	2.45	17.95
Ensenada–Tijuana	2.75	1.50	1.55	2.70	2.20	2.30	13.00
Lázaro Cárdenas–México City–Veracruz	2.13	1.60	1.60	2.67	2.40	2.40	12.80
México City–Salina Cruz–Hidalgo	2.13	1.60	1.20	3.73	1.60	1.20	11.47

Corridors	Criteria to Identify the Priority Corridors						
	Future demand	Potential increase for rail to participate	Potential increase in container usage	Potential for national economic development	Connectivity	Infrastructure/ service quality	Total
Veracruz–Coatzacoalcos–Mérida	1.60	1.20	1.20	3.20	1.60	1.60	10.40
Altamira–San Luis Potosí–Manzanillo	2.67	1.60	1.60	2.13	2.00	2.00	12.00
Mazatlán–Matamoros	1.60	1.20	1.60	2.13	1.60	1.60	9.73
Salina Cruz–Mérida	1.60	1.20	1.20	3.20	1.20	1.20	9.60

Source: SCT[25]

3.5 Binational North-South Trade Corridors

The study team identified two binational north-south trade corridors in the Area of Influence. The first corridor includes US 54 on the U.S. side and MEX 45 on the Mexican side (see Figure 3.18). Both of these facilities are controlled-access highways with divided lanes. Both highways also have two or more lanes in either direction near the U.S.-Mexico border to facilitate high-traffic flows across the border. This corridor also connects via US 54 to IH 10, an important trade corridor that connects the Pacific Ocean at State Route 1 (Pacific Coast Highway) in Santa Monica, California, to IH 95 in Jacksonville, Florida (see Figure 3.18). IH 10 is a controlled-access highway with four or more lanes near the U.S.-Mexico border and at least two lanes in each direction outside the El Paso city limits.

The second corridor includes US 67 on the U.S. side and MEX 16 on the Mexican side (see Figure 3.19). Both highways are rural, two-lane undivided facilities. US 67 connects to IH 10 near Fort Stockton (not shown) on the U.S. side, and MEX 16 is a direct connector to Chihuahua (not shown) in Mexico.

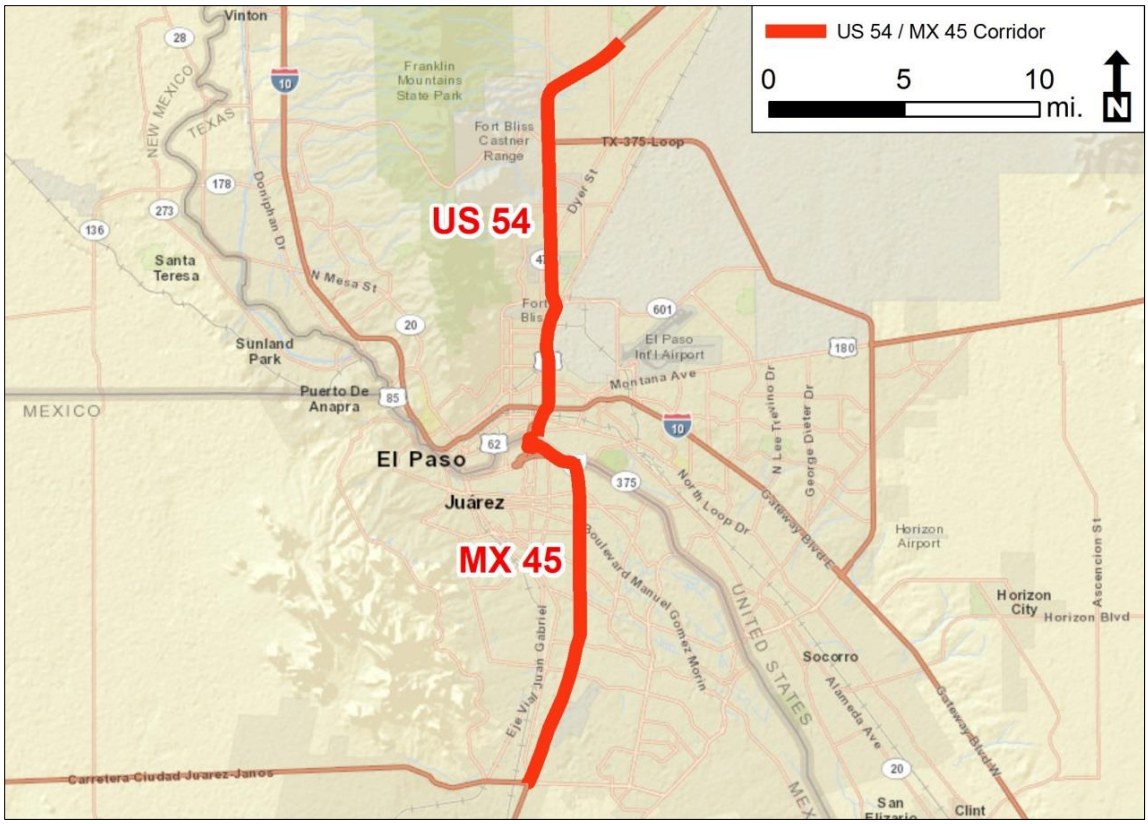


Figure 3.18: US 54 and MEX 45 Corridor

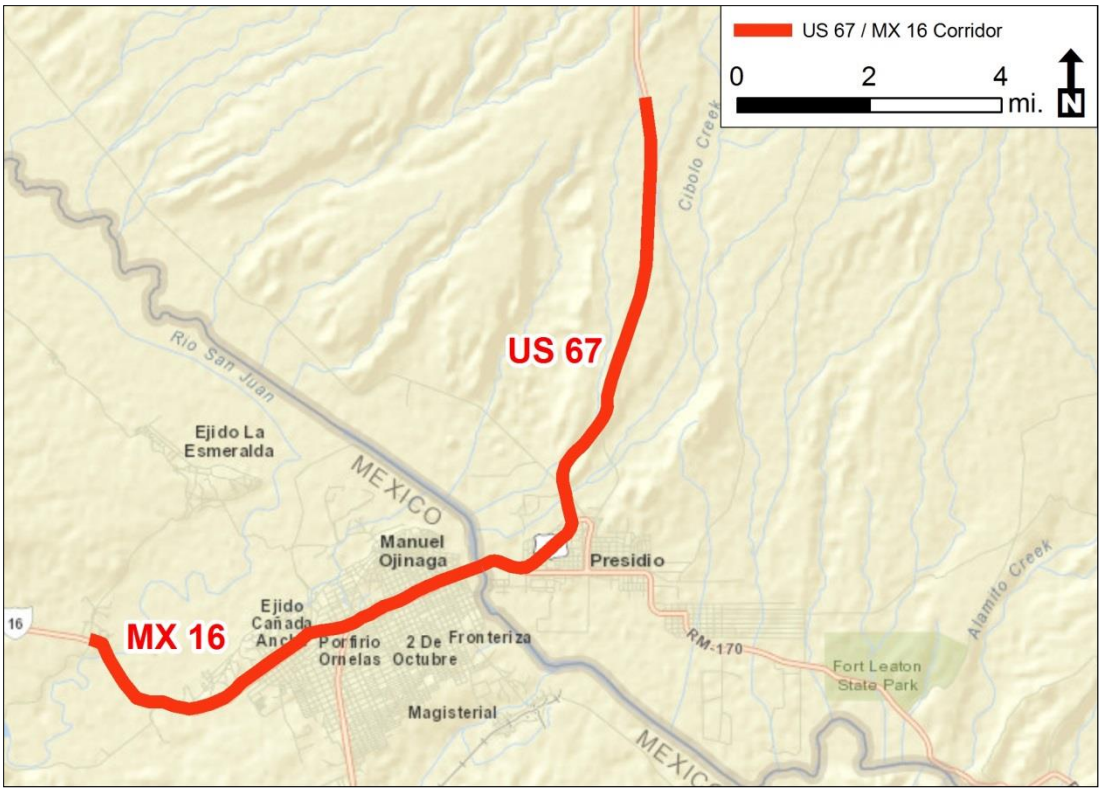


Figure 3.19: US 67 and MEX 16 Corridor

3.6 Concluding Remarks

Between 2010 and 2030, the total population and total employment in the Area of Influence are anticipated to increase by approximately 50 percent and 52 percent, respectively. Total population is expected to increase from 2,393,208 in 2010 to 3,595,608 in 2030—an increase of 1,202,400 people. Total employment is expected to increase from 977,027 in 2010 to 1,481,624 in 2030—an increase of 504,597 employment opportunities.

Given the major trade corridors traversing the study area and the anticipated increase in population and employment in the Area of Influence, the current capacity of existing POEs and the transportation facilities serving these POEs might be strained in the future, given no additional capacity improvements. Chapter 4 provides an overview of the current POEs and the transportation facilities serving those POEs.

[1] "The annual average growth rate, abbreviated as AAGR and more accurately known as the compound annual growth rate, shows an average value for the annual rate of change over a period of time (typically several years) allowing for the compound effect of growth. This rate facilitates comparisons of rates of change for periods of different lengths, for example, comparing annual, five-yearly and ten-yearly rates of change. This rate is calculated by taking the nth root of the rate of change (as a percentage) between the value at the beginning and end of the period, where n is the number of years between the beginning the two values." From European Commission, Glossary: Annual Average Growth Rate (AAGR), Statistics Explained, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Compound_annual_growth_rate (accessed June 2013).

[2] Texas Department of State Health Services, Texas Population, 2005, http://www.dshs.state.tx.us/chs/popdat/ST2005.shtm (accessed June 2013).

[3] Texas State Data Center, Texas Population Projections Program, http://txsdc.utsa.edu/Data/TPEPP/Projections/Index.aspx (accessed February 2011).

[4] New Mexico Department of Workforce Solutions, New Mexico Workforce Connection—Historical Data Analysis, https://www.jobs.state.nm.us/analyzer/default.asp (accessed June 2013).

[5] University of New Mexico Geospatial and Population Studies Group, Population Projections for New Mexico, http://bber.unm.edu/demo/PopProjTable1.htm (accessed December 2012).

[6] Texas Workforce Commission, TRACER, http://www.tracer2.com/ (accessed June 2013).

[7] U.S. Department of Commerce Bureau of Economic Analysis, BEARFACTS, http://www.bea.gov/regional/bearfacts/action.cfm (accessed June 2013).

[8] Farm land (square miles) as a percentage of the total land area (square miles).

[9] City of El Paso Comprehensive Plan, 2012, Plan El Paso, http://planelpaso.org/comprehensive-plan-elements/ (accessed June 2013).

[10] U.S. Department of Agriculture, Census of Agriculture, 2007, http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Texas/ (accessed September 2012).

[11] U.S. Census Bureau, State and County QuickFacts, http://quickfacts.census.gov/ (accessed September 2012).

[12] UTEP, Regional Geospatial Service Center, http://gis.utep.edu/index.html (accessed June 2013).

[13] City of El Paso Comprehensive Plan, 2012, Plan El Paso, http://planelpaso.org/comprehensive-plan-elements/ (accessed June 2013).

[14] Doña Ana County New Mexico Regional Plan, One Valley, One Vision 2040, http://www.las-cruces.org/code/vision_2040/documents/plan.pdf (accessed Jun 2013).

[15] Under Texas law, a comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries.

[16] U.S. Census Bureau, State and County QuickFacts, Las Cruces, New Mexico http://quickfacts.census.gov/qfd/states/35/3539380.html (accessed June 2013).

[17] R. Harrison, N. Hutson, D. Seedah, J. Kruse, and C. Morgan, Emerging Trade Corridors and Texas Transportation Planning, Project Summary Report 0-5973-S, 2010, http://ftp.dot.state.tx.us/pub/txdot-info/rti/psr/5973.pdf (accessed June 2013).

[18] Texas Department of Transportation, Personal Communication with TxDOT El Paso District (August 2013).

[19] Texas Department of Transportation, I-10 Collector-Distributor Lanes, http://www.txdot.gov/inside-txdot/projects/studies/el-paso/i10-cd.html (accessed June 2013).

[20] Texas Department of Transportation, Northeast Parkway, http://www.dot.state.tx.us/project_information/projects/el_paso/northeast_parkway.htm (accessed June 2013).

[21] CONAPO, http://www.conapo.gob.mx/ (accessed June 2013).

[22] INEGI, Anuario de Estadísticas por Entidad Federativa 2011, http://www.inegi.org.mx/ (accessed June 2013).

[23] CONASAMI, www.conasami.gob.mx (accessed June 2013).

[24] TxDOT, 2013 Unified Transportation Program (UTP), 2013, http://ftp.dot.state.tx.us/pub/txdot-info/tpp/utp/2013/final_2013.pdf (accessed October 2013).

[25] SCT, 2010, www.sct.gob.mx/ (accessed June 2013).

[26] "The methodology developed during the study provides the SCT with a tool that can be used to prioritize multimodal corridors for future development based on pre-defined criteria and guide investments and actions needed to make the multimodal transportation system in Mexico more efficient." SCT, 2010, www.sct.gob.mx/ (accessed June 2013).

[27] Mexico has 31 States and one Federal district.

[28] The SCT committee was made up of officials from the following SCT divisions: Rail (three officials), Planning (one official), Ports (two officials), Freight (one official), and the Mexican Transportation Institute (one official).