EL PASO METROPOLITAN PLANNING ORGANIZATION
2011 DEMOGRAPHIC UPDATE
TECHNICAL MEMORANDUM

PREPARED FOR

EL PASO METROPOLITAN PLANNING ORGANIZATION
TEXAS DEPARTMENT OF TRANSPORTATION

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INTRODUCTION

This technical memorandum provides a summary of the assumptions and methodology used to prepare the 2011 socioeconomic data update for the El Paso MPO. The revised forecasts were prepared as a synthesis of public outreach, qualitative data gathering, and the analysis of quantitative data. By drawing on multiple data sources, the project consultants sought to gain a more complete understanding of local development patterns that would be used to guide the forecasts and make them as accurate as possible. This memorandum will begin with a physical description of the El Paso MPO study area followed by a discussion of recent population and employment characteristics and trends in the region, particularly at the county level. The next section will provide an overview of the regional real estate market and some summary data on new construction trends. The narrative will then discuss notable trends or activities that will or could have a long-term influence on the region's population growth and economy. The last part of the memorandum will provide a detailed explanation of the processes used to prepare the 2007 baseline population and employment estimates and the population and employment forecasts for 2010, 2012, 2014, 2017, 2020, 2030, and 2040.

PHYSICAL DESCRIPTION OF THE EL PASO MPO STUDY AREA

The El Paso MPO study area consists of the entire jurisdiction of El Paso County, which is located at the far western tip of the state of Texas, along with the southern extremes of Doña Ana and Otero Counties, both of which are located in southern New Mexico. The region is located in the northern part of the Chihuahuan Desert, which has an arid climate (averages less than 10 inches of rain per year) with high summer temperatures and mild winters. The study area's terrain is mountainous, crossed by the Franklin Mountain range on the west side of El Paso County and the Hueco Mountain range on its east side. The Franklin Mountains bisect the city of El Paso, while the Hueco Mountains are located in an area of El Paso that is thinly populated. The area between the two mountain ranges is generally flat but, in places, is cut by arroyos and the historic floodplain of the Rio Grande River. The Rio Grande River traverses El Paso and Doña Ana Counties and provides their only meaningful source of surface water. It is heavily drawn upon to support agriculture within its historic floodplain in both El Paso and Doña Ana Counties.

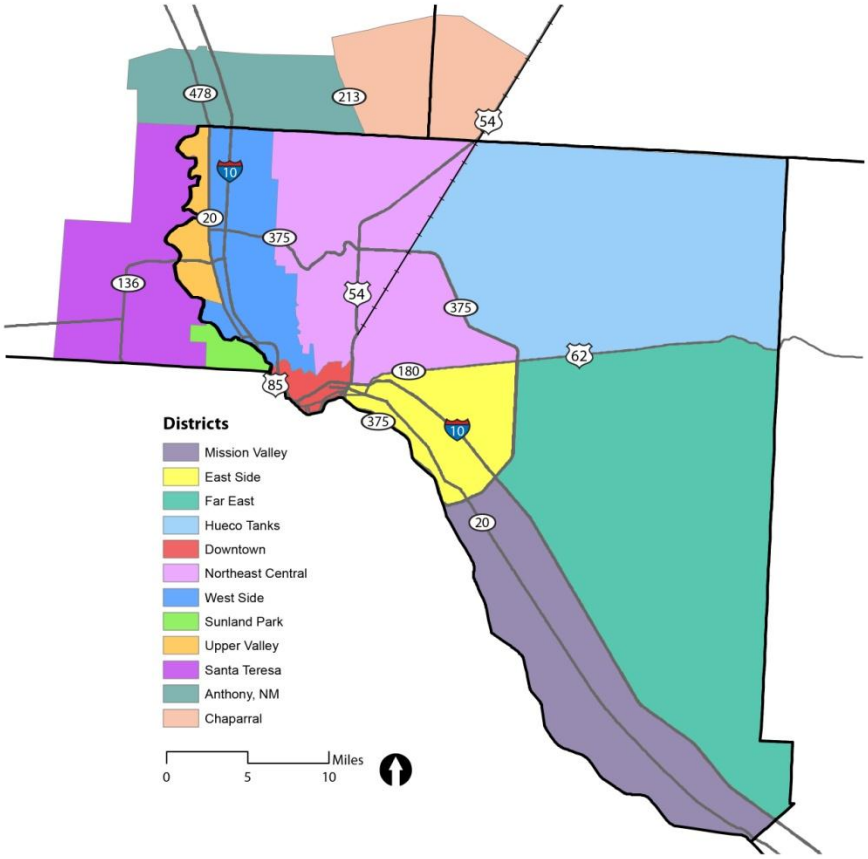
Most of the population within the El Paso MPO study area is concentrated in the City of El Paso. However, there are seven other smaller, incorporated cities in the region, which are: Socorro, TX; Horizon City, TX; Sunland Park, NM; Anthony, TX; Anthony, NM; Vinton, TX; and Clint, TX. There are also three other unincorporated communities that have distinct identities, which are: Fabens, TX; Santa Teresa, NM; and Chaparral, NM.

Although, El Paso County has an area of 1,057 square miles, there are sizeable portions that are either off-limits or impracticable for private development. Most of the Franklin Mountains range is protected within the 24,000-acre Franklin Mountains State Park or lies within the contiguous 7,000-acre Castner Range at Fort Bliss. Fort Bliss is a 1,700 square mile U.S. Army base located in Texas and New Mexico, with its main post located contiguous with the city of El Paso. A large area of north central El Paso County is not available for private development because it lies within Fort Bliss' boundaries. On the eastern side of El Paso County, water

availability is limited or non-existent, which severely limits land development opportunities. Development opportunities are further constrained by the tens of thousands of acres of land that were subdivided and sold by the Horizon Development Corporation, Ltd. during the late 1960s and early 1970s. Billed as an up-and-coming suburban community by its developers, water service and other infrastructure was never provided and the land was essentially uninhabitable. However, by fracturing its ownership among literally thousands of landowners, it is now almost impossible to assemble a large tract of land among the parcels that would suitable for redevelopment. This is primarily due to the expense and difficulty of identifying and finding owners or their heirs and the transaction costs of purchases. Additionally, there are still likely many owners or their heirs who hold unrealistic expectations of the land's true value. Another complicating factor is the Texas Colonias Fair Land Sales Act of 1995, which forbids the sale of subdivided land parcels less than five acres, if the seller does not provide access to water, wastewater, and drainage service. This effectively prevents the owners of parcels from selling their subdivided lots to another person or entity who could assemble them for resale or development.[1] To a lesser extent, there is also undevelopable land in Doña Ana County, east of IH 35 and north of the Texas-New Mexico border. This public land is owned by the U.S. Department of the interior's Bureau of Land Management (BLM).

For study purposes, the MPO study area was split into 12 districts that are shown in Figure 1. These 12 districts were developed according to the localized delineation of the region and were used for the forecasting method that will be described later in this memorandum.

[1] The Horizon Communities Improvement Association, a non-profit homeowners association for the Horizon development, is trying to assemble parcels into developable tracts by asking owners to gift them to the organization. To date, they have had modest success with this effort.



Map 1: Designated Districts for the FWD El Paso Demographic Study

HISTORIC AND RECENT REGIONAL POPULATION AND EMPLOYMENT TRENDS

Population

Population counts from the 2010 U.S. Census show that the counties of the MPO study area have grown substantially since the 2000 U.S. Census (see Table 2). The U.S. Census Bureau's 2010 population count for El Paso County was 800,647 residents. This growth represents an increase of 121,025 residents or a compounded annual growth rate (CAGR) of 1.65 percent, since 2000. The city of El Paso grew to 649,121 residents in 2010 and at a slightly slower CAGR of 1.42 percent. The Texas State Data Center's 2007 population estimate for El Paso County was 747,477 residents, which, if accurate, would show that most of the population growth in El Paso County occurred during the latter part of the decade. This trend would be compatible with the population growth that occurred as result of Fort Bliss' expansion. The rate of population growth in Doña Ana County between 2000 and 2010 was even greater than El Paso County at a CAGR of 1.82 percent. The total population during the 2010 U.S. Census was 209,233 persons or an increase of 34,551 residents. Otero County, on the other hand experienced very modest population growth between 2000 and 2010. The total number of new

residents added during this period was 1,498 persons or a CAGR of 0.24 percent. Population estimates for 2007, produced by the New Mexico Bureau of Business and Economic Research (NM BBER), were 205,247 residents for Doña Ana County and 66,906 residents for Otero County. Given that the NM BBER's 2007 population estimates were higher than the 2010 U.S. Census population count for Otero County and near the 2010 population count for Doña Ana County, their 2007 population estimates appear to have been too aggressive.

Table 1: 2008 and 2009 Population Estimates for Counties in the El Paso MPO Study Area

	El Paso County	Doña Ana County	Otero County	City of El Paso
April 1, 2000 Census Count	679,622	174,682	62,299	563,662
TxSDC/NM BBER Estimate – Jul. 1, 2007	747,477	205,247	66,906	609,007
April 1, 2010 Census Count	800,647	209,233	63,797	649,121
Difference 2000 Census - 2007 TxSDC/NM BBER	67,855	30,565	4,607	45,345
Annual Change 2000 Census – 2007 TxSDC/NM BBER	9,359	4,216	635	6,254
Compounded Annual Growth Rate	1.32%	2.25%	0.99%	1.07%
Difference U.S. Census 2000-2009	53,170	3,986	-3,109	40,114
Annual Change U.S. Census 2000-2009	19,335	1,449	-1,131	14,587
Compounded Annual Growth Rate	2.53%	0.70%	-1.72%	2.35%
Difference U.S. Census 2000-2010	121,025	34,551	1,498	85,459
Annual Change U.S. Census 2000-2010	12,103	3,455	150	8,546
Compounded Annual Growth Rate	1.65%	1.82%	0.24%	1.42%

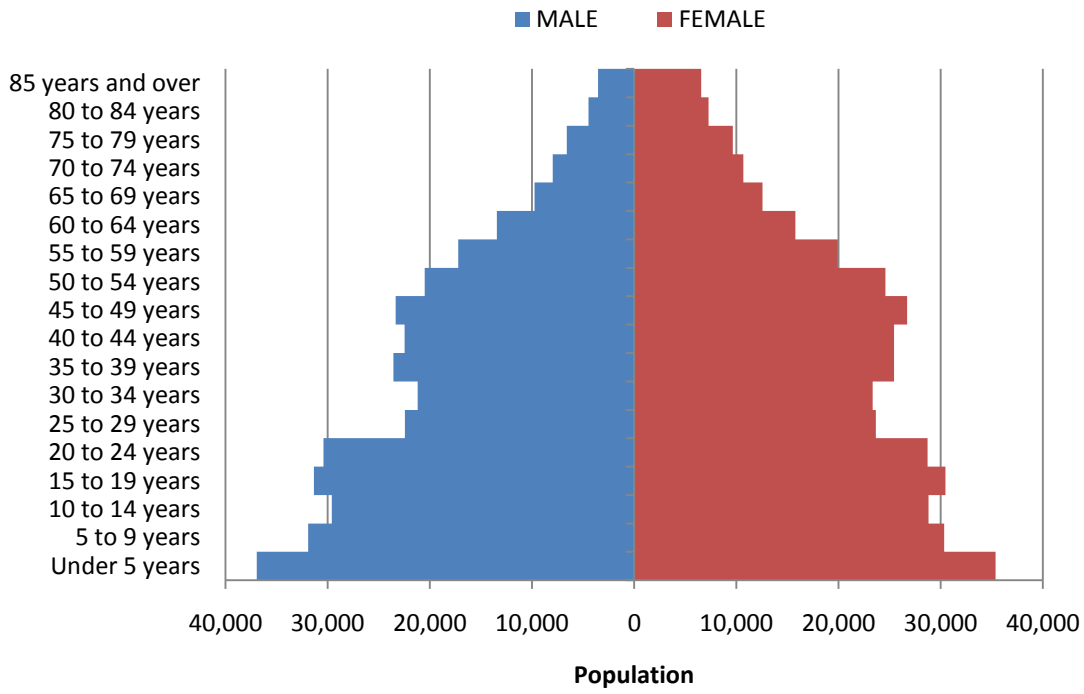
Note: All growth rates are calculated based upon the specific date of the figures. For example, the period between the April 1, 2000 Census and the July 1, 2007 U.S. Census estimate is 7.25 years rather than 7.0 years.

Source: Texas State Data Center, 2009 and 2010, New Mexico Bureau of Business and Economic Research (NM BBER) 2010, and U.S. Census Bureau, 2010.

Age and Sex

Figure 1 shows a population pyramid prepared for El Paso County, using data from the 2010 U.S. Census. The data show a healthy distribution of population in the region. This is because a significant portion of the population is within their working years and there is a large cohort of residents 25 years and younger set to follow them. Additionally, El Paso County's population is not skewed heavily towards the elderly, as in many regions of the nation. Interesting, males seem to make up a slightly larger share of cohorts less than 25 years of age, but the distribution reverses in favor of females when 25 year old or older.

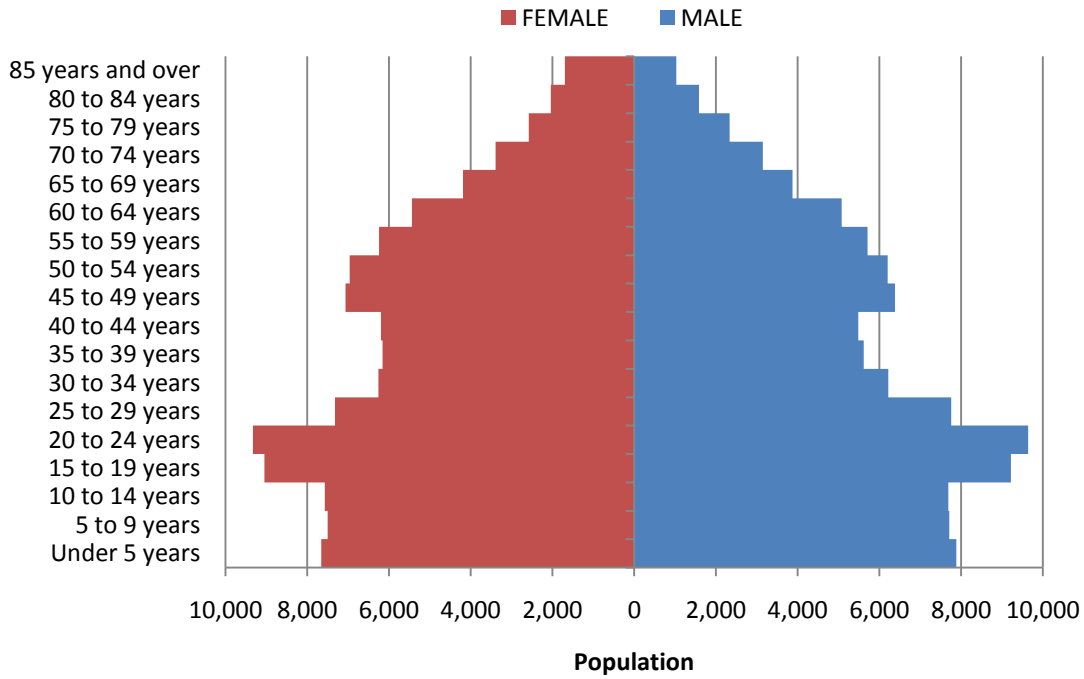
Figure 1: Population Pyramid for El Paso County, 2010



Source: U.S. Census Bureau, 2010.

Figure 2 shows a population pyramid for Doña Ana County during 2010. With a more narrow distribution than El Paso County, the Doña Ana County population pyramid is more typical of population characteristics in the United States. It should be noted that the age distribution protrudes in the cohorts containing traditional college age adults. This feature likely reflects New Mexico State University students who primarily reside in Doña Ana County.

Figure 2: Population Pyramid for Doña Ana County, 2010



Source: U.S. Census Bureau, 2010.

Educational Attainment

The level of educational attainment in the El Paso MPO study area generally lags educational achievement at the state and national level (See Table 2). A larger percentage of El Paso County's residents lacks a high school diploma than in Texas or the nation overall. Doña Ana County's residents also lag behind the national level. Likewise, the proportion of Texas and U.S. residents who have earned a high school diploma is greater than the proportion of residents living in either county. The share of the population in Doña Ana County that earned a high school diploma is also lower than El Paso County. Doña Ana County's population lags the U.S. population overall in earning an Associate's, Bachelor's, and graduate or professional degrees but its population has a higher rate of achievement than El Paso County's. Doña Ana County's advantage is likely due, in part, to the faculty and student body of New Mexico State University and a smaller overall population.

Table 2: Educational Attainment for Population 25 Years and Older

Highest Level Achieved Population 25 years and older	United States	Texas	El Paso County	Doña Ana County
Less than 9th grade	6.4%	10.3%	18.6%	13.9%
9th to 12th grade, no diploma	9.1%	10.4%	11.5%	11.1%
High school graduate (includes equivalency)	29.3%	26.2%	24.0%	21.5%
Some college, no degree	20.3%	21.5%	20.8%	22.4%
Associate's degree	7.4%	6.2%	6.2%	5.8%
Bachelor's degree	17.4%	17.0%	12.5%	15.6%
Graduate or professional degree	10.1%	8.3%	6.3%	9.8%

Source: U.S. Census Bureau, 2005-2009.

Table 3 shows two measures of educational attainment (the high school diploma and a Bachelor's degree) for the population in El Paso County that is 25 years or older by age cohort. The share of the population with a high school diploma is highest for the younger age cohorts, but declines to slightly more than half of the male population 65 years or older. Only 43.4 percent of El Paso County's women 65 years or older have earned a high school diploma. This is a consistent pattern in El Paso County, where females have earned fewer high school diplomas, proportionally, than males across all age-cohorts. The distribution of Bachelor's degrees in El Paso County's population is less consistent. For males, the highest rate of degree attainment is found in the age cohort between 45 and 64 years. Males in younger age cohorts have substantially lower rates of achievement, which is a reason for concernment. Similar to trends that are occurring nationally, the percentage of females with a Bachelor's degree is higher than males between the ages of 25 and 44 years old. However, starting at age 45 years and older, this pattern reverses and among females 65 years and older age, only 8.7 percent of the population has earned a Bachelor's degree.

Table 3: Educational Attainment by Age Cohort in El Paso County for Population 25 years and Older

High School Diploma or Higher Population 25 years and older	Male	Female
Population 25 to 34 years	84.1%	82.45
Population 35 to 44 years	79.0%	78.6%
Population 45 to 64 years	75.5%	67.7%
Population 65 years and older	52.1%	43.4%

Bachelor's Degree or Higher Population 25 years and older	Male	Female
Population 25 to 34 years	17.7%	22.0%
Population 35 to 44 years	22.0%	22.4%
Population 45 to 64 years	25.4%	19.0%
Population 65 years and older	16.5%	8.7%

Source: U.S. Census Bureau, 2005-2009.

Doña Ana County's population shows some differences with El Paso County in the levels of educational achievement. Like El Paso County, generally the younger age cohorts are more likely have a larger share of their population with a high school diploma. This pattern is true for both males and females. The proportion of the population in Doña Ana County that has earned a Bachelor's degree grew as age increased. Again, this is likely due to the influence of New Mexico State University faculty and its student body. Females in Doña Ana County were more likely to have earned a high school diploma or a Bachelor's degree than males between the ages of 25 and 44 years old. However, the discrepancies between older males and older females, in earning a Bachelor's degree, were not as severe as they were in El Paso County.

Table 4: Educational Attainment by Age Cohort in Doña Ana County for Population 25 years and Older

High School Diploma or Higher Population 25 years and older	**Male**	**Female**
Population 25 to 34 years	78.0%	81.7%
Population 35 to 44 years	76.2%	79.9%
Population 45 to 64 years	76.5%	75.6%
Population 65 years and older	65.8%	62.9%
Bachelor's Degree or Higher Population 25 years and older	**Male**	**Female**
Population 25 to 34 years	22.8%	30.6%
Population 35 to 44 years	25.4%	26.6%
Population 45 to 64 years	26.8%	25.3%
Population 65 years and older	27.1%	17.9%

Source: U.S. Census Bureau, 2005-2009.

Median Household Income

Table 5 provides an overview of estimated median household incomes in the El Paso MPO study area from the U.S. Census Bureau's American Community Survey. Rather than providing estimates for a particular year, the values in Table 5 are based upon survey data collected between 2005 and 2009, but reported in 2009 dollars. These data show that median household incomes in Texas and New Mexico were lower than the United States overall. El Paso County had the lowest median household income in the MPO study area at $35,249. Doña Ana County's median household income was only slightly higher at $35,544, while Otero County's median household income was noticeably higher at $38,262.

Table 5: Median Household Incomes in the El Pas MPO Study Area (2005-2009)

Location	Median Household Income (2009 $)
United States	$51,425
Texas	$42,742
New Mexico	$48,199
El Paso County	$35,249
Doña Ana County	$35,544
Otero County	$38,262

Source: U.S. Census Bureau, 2011.

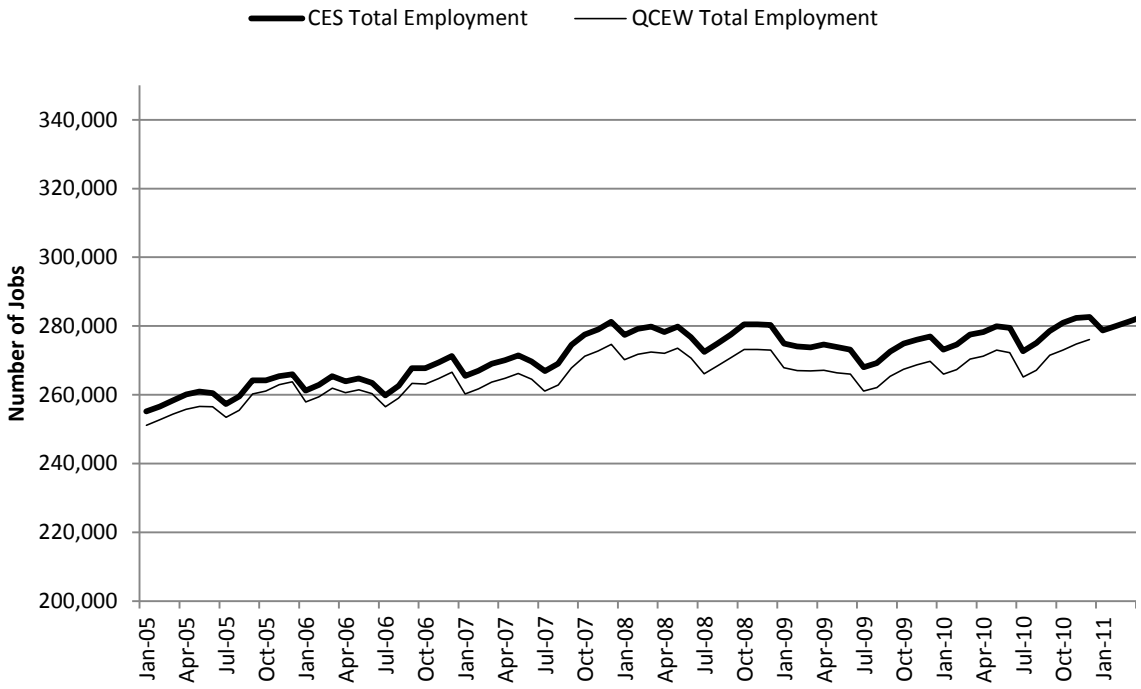
Employment

Figure 3 graphs two different sets of employment statistics for the El Paso, TX MSA. The Current Employment Statistics (CES) report the results of a monthly survey of non-farm business establishments conducted by state and federal agencies. The Texas Workforce Commission, through the Quarterly Census of Employment and Wages Program (QCEW), collects and compiles employment data on the number of workers with unemployment insurance. The public is most familiar with the CES data because it is produced with a short lag time (usually less than one month) and it gives a reasonably accurate snapshot of local, state and national labor market. It is commonly used by various news media to report the condition of national and regional economies. However, the QCEW data are the more accurate of the two, in terms of comprehensively accounting for workers. While the QCEW data do have some shortcomings, for example some employees (like railroad workers or military) are not covered by unemployment insurance and therefore are not counted; they are probably the most reasonable dataset for transportation modeling purposes because these data reflect individuals in traditional employment arrangements. The two drawbacks to the QCEW data are a six-month lag before they are released and they are now only available from January 2005 forward. Despite their differences, this discussion will make use of both datasets to provide a more comprehensive picture of the regional job markets in the El Paso, TX MSA.

According to these two data sets, total employment in the El Paso, TX MSA grew between 2005 and 2010, although the growth was not always consistent. During 2005, the total average, annual QCEW employment for the El Paso MSA was 257,014 workers.[2] Total employment rose consistently from this point to a peak in 2008, when it reached 271,284 workers or an increase of approximately 14,270 new jobs. However, as the national recession began to take its toll on the local economy, job losses occurred during 2009 and the total average, annual employment fell to 266,310 workers (a loss of 5,343 jobs). During 2010, the general trend was again upward and the total employment during 2010 was 270,646 workers or an increase of 4,335 new jobs. It should be noted that the CES employment estimate for 2010 was 277,933 jobs.

[2] Note, this figure does not include military and some civilian employment at Fort Bliss.

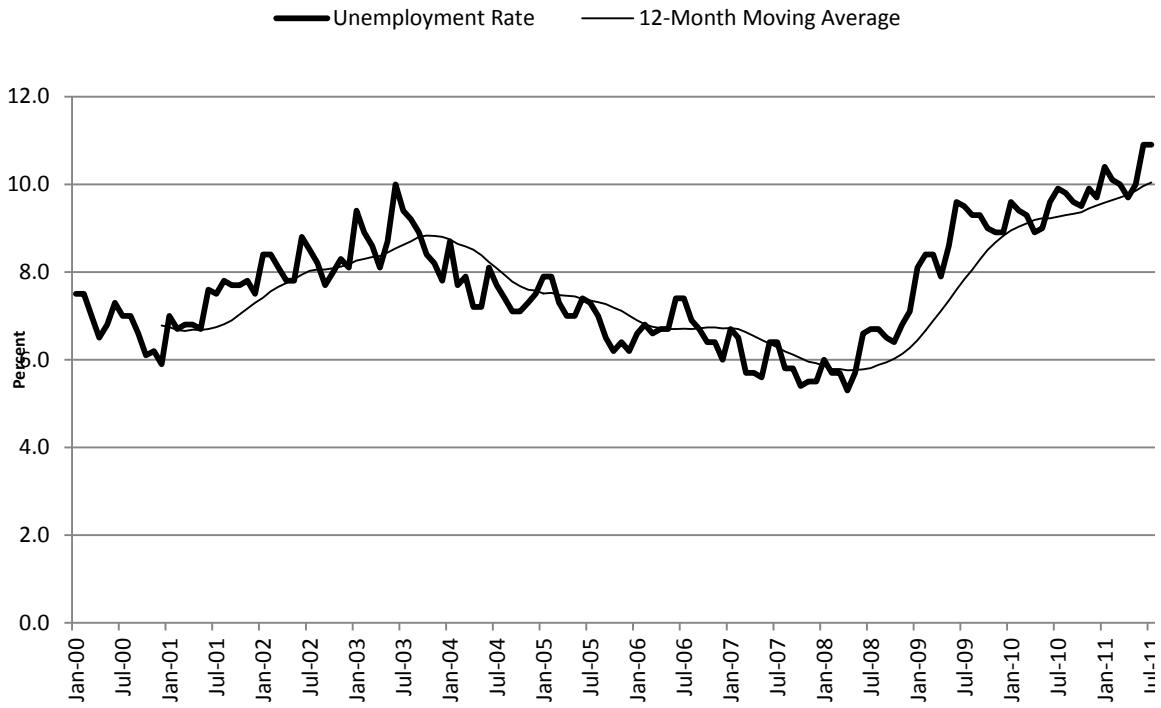
Figure 3: Total Employment in the El Paso, TX MSA – January 2005 to July 2011



Source: Texas Workforce Commission, 2011.

Figure 4 shows that during the El Paso region's previous economic expansion, local unemployment rates fell to less than 6.0 percent during late 2000. As the national economy began to deteriorate, due to the decline of the tech industry and the aftermath of the September 11, 2001 terrorists attacks, unemployment in the region grew and it reached a peak rate of 10.0 percent during June 2003. After that, unemployment rates in the El Paso MSA began to fall and local unemployment stood at 5.4 percent during April 2008. The unemployment rate then began to rise again under the current recession, and was its highest rate during the July 2011 at 10.9 percent. Another means of viewing these data is to produce a smoothed trend line by averaging values over a 12-month period and then graphing these points on the chart. The unemployment rate's 12-month moving average showed signs that the region's unemployment rate worsened between 2008 and 2011, but the rate of worsening between 2010 and 2011 was slower than the period between 2008 and 2009. Compared to the national unemployment rate of 9.3 percent and Texas's rate of 8.7 percent (July 2011), the El Paso region's unemployment rate, at 10.9 percent, represented a substantially weaker economic environment.

Figure 4: Unadjusted Unemployment Rate – El Paso, Texas MSA - January 2000 - July 2011

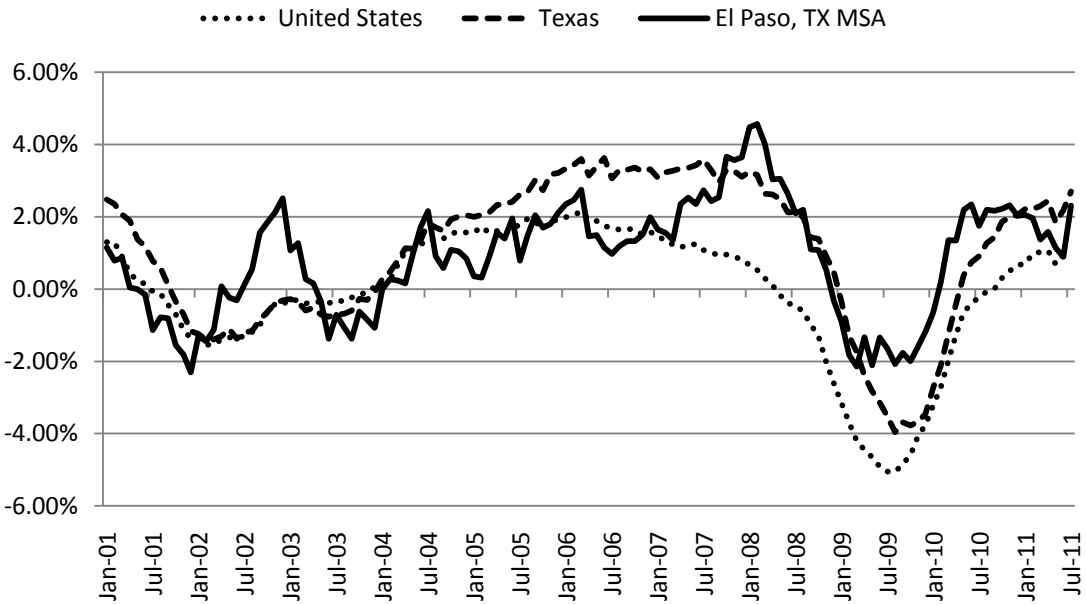


Source: Local Area Unemployment Statistics. Texas Workforce Commission, 2011.

Until recently, the State of Texas and the El Paso, TX MSA's economies had been surprisingly resilient during the current economic downturn. While the state and the region were not untouched by the nation's economic troubles, they had avoided some of the job losses that affected other fast growing areas of the country. However, by early 2009, the El Paso, TX MSA began to experience employment loss, as national economic conditions finally began taking a toll.

Figure 5 provides a year-on-year comparison of monthly employment data for the United States, Texas, and the El Paso, TX MSA. These data show that the Texas economy has outperformed the national economy through most of the previous decade through present. The El Paso, TX MSA, has also strongly outperformed the national economy since 2007, primarily due to the expansion at Fort Bliss, which provided a significant stimulus to the regional economy to counter the negative influences from the national economy.

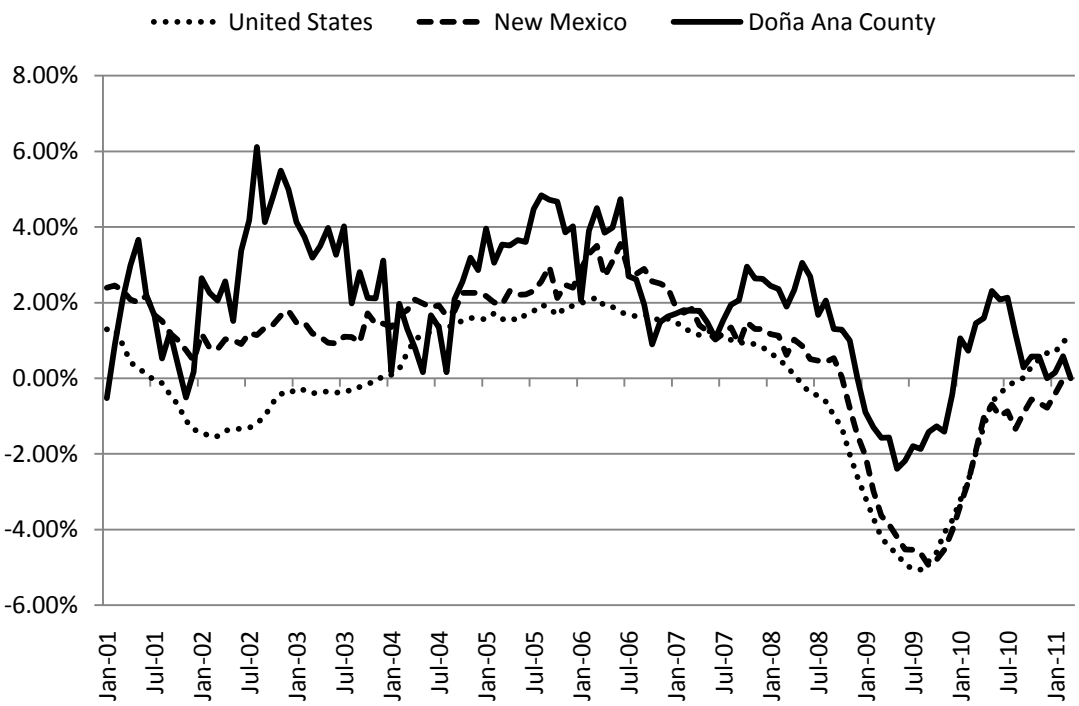
Figure 5: Year-on-Year CES Monthly Employment Change in the El Paso, TX MSA, January 2001-April 2011



Source: Current Employment Estimates. Texas Workforce Commission, 2011.

During most of the last decade, Doña Ana County's job growth has outperformed the national and New Mexico state economy (See Figure 6). Unlike the Texas economy, the New Mexico economy suffered at a level that was similar to the nation overall. During the past year, however, it appears that Doña Ana's employment growth, along with New Mexico's, has trailed even the nation's sluggish improvement.

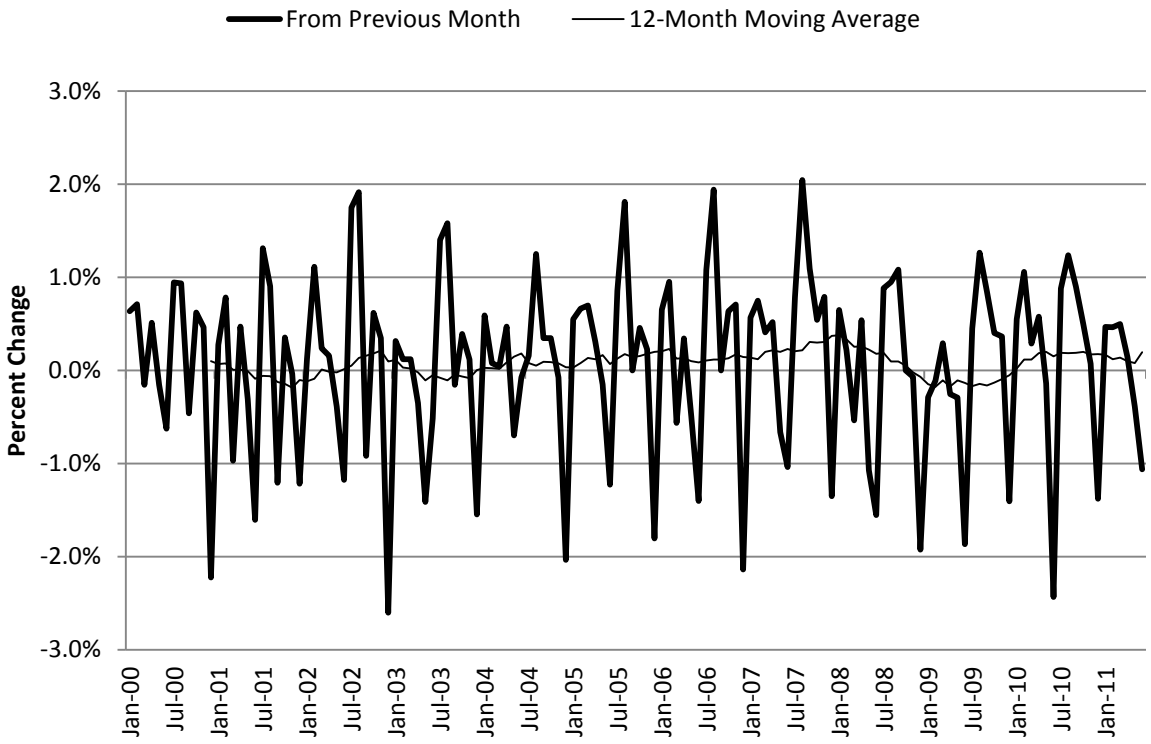
Figure 6: Year-on-Year CES Monthly Employment Change in Doña Ana County, NM, January 2001-April 2011



Source: Current Employment Estimates. Texas Workforce Commission, 2011.

Figure 7 shows the percent change of employment in the El Paso MSA between each month from January 2000 through April 2011. The 12-month moving average of monthly employment change produces a more discernible trend and clearly shows that employment growth in the El Paso, TX MSA slowed throughout 2008 and was negative during much of 2009. However, during late-2009, the trend turned positive in early 2010 before weakening again during the second half of the year.

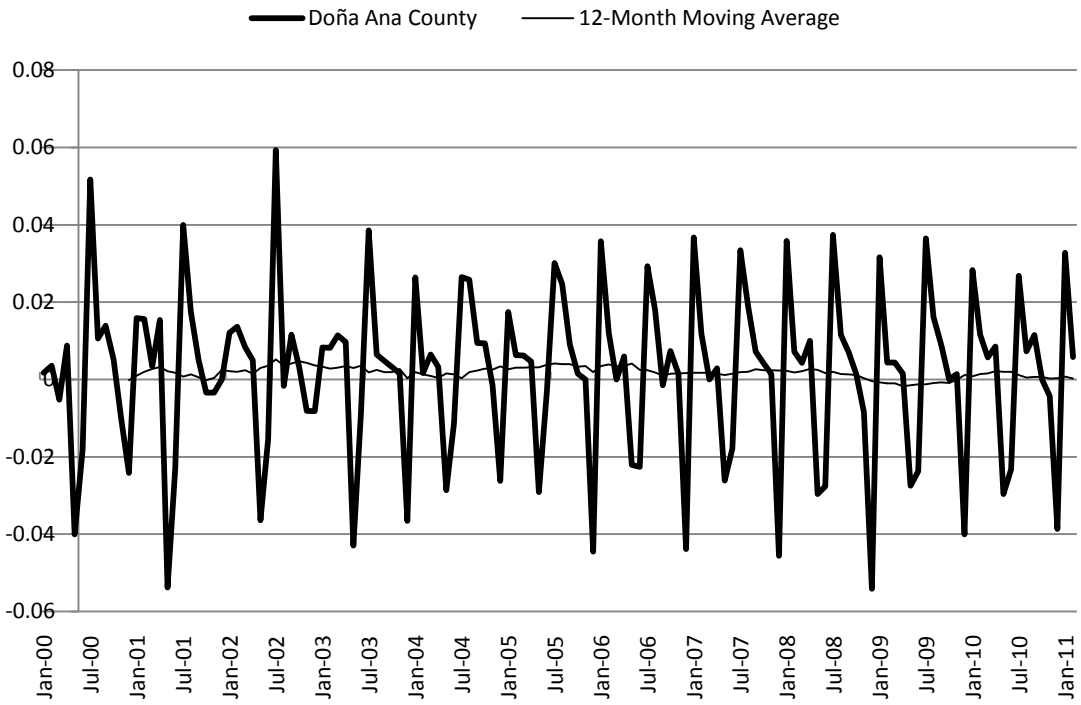
Figure 7: El Paso, TX MSA CES Percent Monthly Employment Change, January 2000 - April 2011



Source: Current Employment Estimates. Texas Workforce Commission, 2011.

Figure 8 provides data on Doña Ana's month-on-month employment change between January 2000 and January 2011. The 12-month moving average of monthly employment change shows that employment growth was essentially flat over the past year.

Figure 8: Doña Ana County, NM CES Percent Monthly Employment Change, January 2000 - January 2011



Source: U.S. Bureau of Labor Statistics, 2011.

Employment Trends by Sector

Examining employment change by industry reveals that certain sectors have played an important role in the region's economic growth during the past seven years. Table 6 provides data showing total employment change in each employment sector between 2005 and 2010, as well as between 2007 and 2010 (the current economic downturn). The data in Table 6 show that more than 13,600 net jobs were created in the El Paso, TX MSA between 2005 and 2010. However, Table 3 also shows that the region only created 4,700 jobs in the period between 2007 and 2010.

While job growth occurred in most of the El Paso, TX MSA's employment sectors between 2005 and 2010, the education and health services sector led the region with almost 6,400 new jobs, which essentially occurred between 2007 and 2010. Employment in the education component grew steadily because the region's rapid population growth required the construction of new elementary and secondary schools. Public administration was also another major growth sector, adding almost 2,700 jobs between 2005 and 2010 with almost 1,900 jobs between 2007 and 2010. The professional and business services sector added 4,500 jobs between 2005 and 2010, although only 1,000 jobs were gained between 2007 and 2010. Another local

employment growth sector has been the hospitality and leisure industry, which increased by almost 2,800 jobs between 2005 and 2010 (including more than 1,700 jobs since 2007).

Unlike most other regions in the nation, El Paso's construction sector has grown (albeit modestly) between 2007 and 2010 with 650 new jobs. Total employment growth between 2005 and 2010 in this sector was 3,200 jobs. It is likely, however, that El Paso's fortunes will begin to mirror the rest of the nation, as major construction projects at Fort Bliss reach completion and as the pace of new soldiers being stationed at Fort Bliss slows and eventually ends in 2012. The construction of the new Beaumont Army Medical Center should provide a cushion to the job loss, but it is likely that overall employment in the construction sector will decline in the near term and that its recovery will follow national trends.

The data in Table 6 also show that employment in the manufacturing sector experienced the steepest decline in the El Paso, TX MSA between 2005 and 2010, with more than 6,300 jobs lost. In addition to reduced demand from the national recession and a significant decline in maqauiladora manufacturing, job losses were also the result of some local manufacturing following a global trend and shifting to offshore locations. The trade, transportation, and utilities sector added fewer than 300 jobs between 2005 and 2010, but more than 3,000 jobs were lost between 2007 and 2010, as manufacturing activity in maquiladoras declined in response to the weak U.S. economy. The retail industry accounted for the majority of the employment in this sector (about 59 percent) and actually grew by almost 1,000 jobs between 2005 and 2010 (although it also declined by 770 jobs between 2007 and 2010). Other industries in the El Paso MPO have lost jobs, but the overall impacts on total employment have been modest.

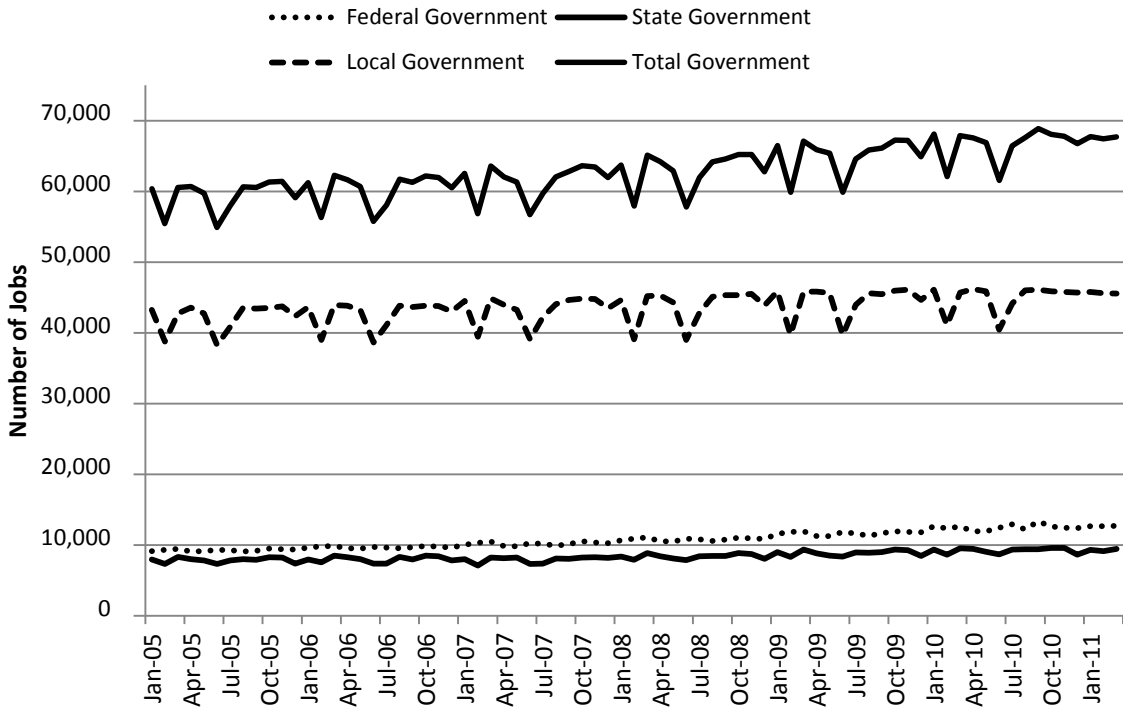
Table 6: QCEW Employment Change in the El Paso, TX MSA by Sector – 2005-2010

	Change 2005-2010		Change 2007-2010	
Employment Sector	**Employment**	**CAGR**	**Employment**	**CAGR**
Education and Health Services	6,376	1.75%	6,622	3.05%
Public Administration	2,685	3.50%	1,883	3.99%
Leisure and Hospitality	2,805	2.04%	1,678	1.99%
Professional and Business Services	4,576	3.18%	990	1.07%
Construction	3,220	4.63%	657	1.42%
Financial Activities	107	0.18%	250	0.71%
Natural Resources and Mining	-53	-1.02%	-39	-1.25%
Unclassified	-182	-14.94%	-79	-13.38%
Information	436	1.74%	-106	-0.66%
Other Services	-278	-0.84%	-271	-1.35%
Trade, Transportation, and Utilities	266	0.09%	-3,008	-1.65%
Manufacturing	-6,326	-6.26%	-3,873	-6.76%
TOTAL	13,632	1.03%	4,704	0.58%

Source: Texas Workforce Commission, 2011.

Finally, Figure 9 presents regional employment in the local, state, and federal government sectors between January 2003 and March 2011. It should be noted that these data are also a component of the figures shown in Table 5 (for example, a large share of local government employment is in primary and secondary education, which is part of the education and health services sector). During March 2011, the number of federal, state, and local government employees in the El Paso MSA totaled 67,677 workers. Between January 2005 and March 2011, combined government employment grew by more than 7,300 workers. Local government had the largest number of employees at 45,533, increasing by approximately 2,700 workers between January 2005 and March 2011. State government increased its payroll by nearly 1,500 employees during this same period, for a total of 9,446 workers during March 2011, and federal employment increased by more than 3,500, workers to a total of 12,698. The figures for federal employment do include federal employees, such as those who work U.S. Customs and Border Protection, but they do not include military personnel at Fort Bliss, which totaled approximately 26,000 soldiers in 2011.

Figure 9: Total Employment in the El Paso, Texas MSA Local, State, and Federal Government Sector – January 2003 to December 2010



Source: Quarterly Covered Employment and Wages. Texas Workforce Commission, 2011.

REGIONAL REAL ESTATE TRENDS

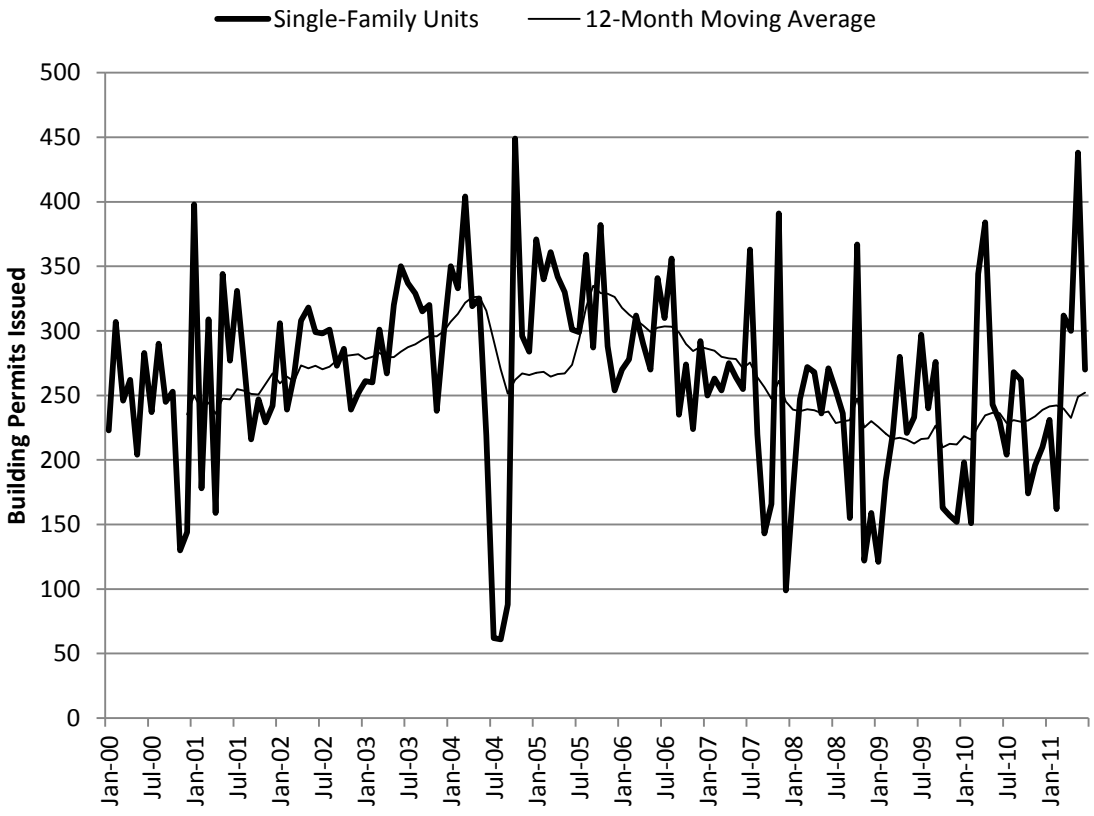
The expansion of Fort Bliss' mission has had a significant and positive impact on the local real estate industry, which has allowed it to avoid, at least during the past few years, the strongly

negative pressures of the national housing crisis and problems in the commercial lending industry. The sections below will briefly review the El Paso, TX MSA's recent trends for single-family residential building permits, home inventory, and the commercial rental market.

Single-family Residential

The number of single-family residential building permits issued within the El Paso MSA has declined steadily between 2005 and 2010. Figure 10 shows that the number of permits issued fell from an average of approximately 325 per month (12-month moving average) during 2005 to approximately 225 per month during early-2010. Since reaching this most recent nadir in building permit activity, there has been a modest uptick in the number of permits issued, starting in early 2010 to about 250 permits per month during June 2011.

Figure 10: Single-Family Residential Building Permits Issued in the El Paso, TX MSA, January 2000 through June 2011

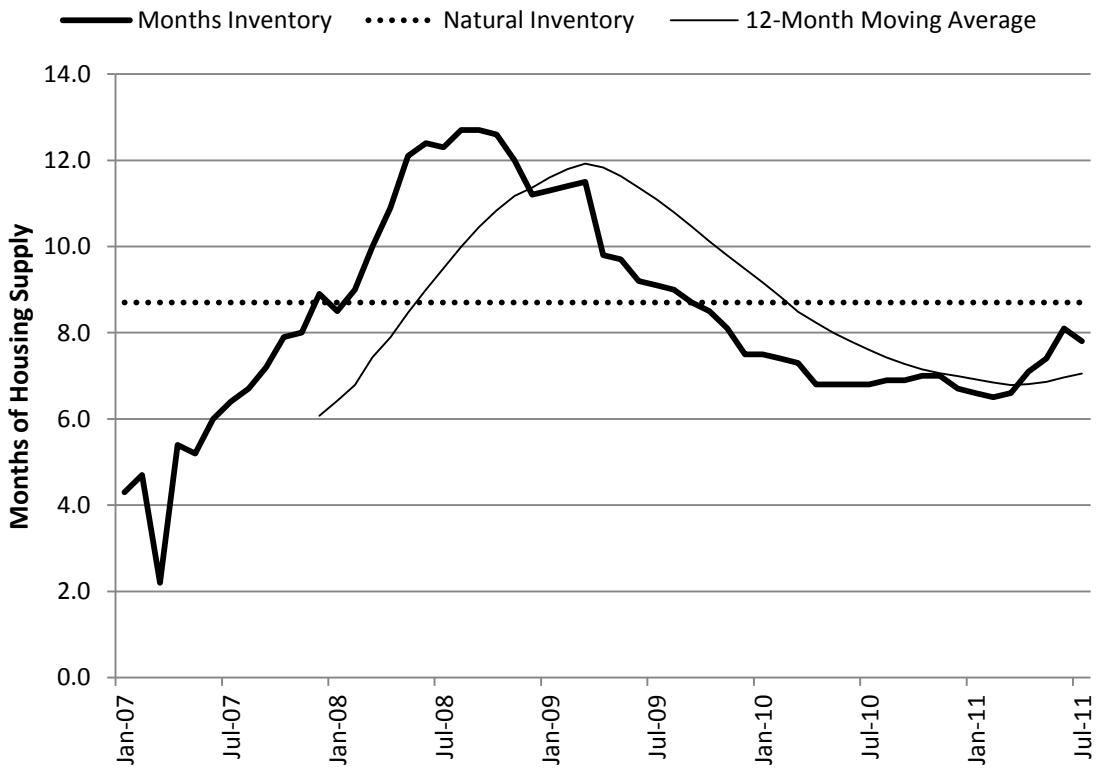


Source: Texas A&M University Real Estate Center, 2011.

Another gauge of the housing crisis' effect on the local economy is the inventory of unsold homes. According to a 2008 study by researchers at the Real Estate Center at Texas A&M University, the state of Texas has a "natural" homes-for-sale inventory of 8.7 months. This value is said to show that when there is fewer than 8.7 months of housing inventory on the

market, home prices appreciate, and when there is more than 8.7 months inventory in an area, home prices fall. Figure 7 shows the El Paso MSA had a modestly healthy 7.8 months of housing inventory during June 2011. This level of inventory was a substantial increase over the March 2007 level, when there was only a 2.2-month supply.

Figure 11: Months of Housing Supply in the El Paso, TX MSA Market, January 2000 through June 2011



Source: Texas A&M University Real Estate Center, 2011.

Multifamily

Apartment vacancy rates in the El Paso region have trended downward since Fort Bliss began its expansion. Data acquired by the Texas Real Estate Center at Texas A&M University show the market's overall occupancy rate at 96.8 percent and for new apartments, which are generally considered more desirable, the market occupancy rate is 98.6 percent (See Table 7). These occupancy rates, which would be considered very high by the industry, represent a level which often encourages new construction. The overall inventory of apartments in the El Paso, TX MSA market is also relatively low and new building since 2000 has lagged Texas' overall rate of new apartment construction. (Texas Real Estate Center, 2011).

Table 7: Overview of Apartment Market Conditions in El Paso, TX MSA, 2010

	El Paso County	Texas Metro Average
Average rent per square foot	$0.77	$0.85
Average rent for units built since 2000	$0.73	$0.94
Average occupancy	96.8%	92.3%
Average occupancy for units built since 2000	98.6%	94.5%
Total units	29,284	1,538,182
Total units built since 2000	2,874	306,374

Source: Reproduced from Texas A&M Real Estate Center, 2011 citing data from Apartment MarketData Research, 2011.

A review of multifamily submarket conditions shows that demand is especially strong in the Central submarket (which would serve the University of Texas at El Paso) and the East/Southeast submarket, which is popular with Fort Bliss soldiers and families (See Table 8). The Northwest submarket also did well at 2.6 percent vacancy followed by (somewhat surprisingly, given its proximity to Fort Bliss) the Northeast submarket at 5.5 percent vacancy. Rental rates for apartments in the El Paso market tended to lag the state of Texas overall, as shown in Table 6.

Table 8: El Paso, TX MSA Apartment Vacancy and Rental Rates by Submarket

	2009			2010		
Submarket (40+ units)	Vacancy	Avg. Rent	Avg. Rent Change	Vacancy	Avg. Rent	Avg. Rent Change
Central	2.3%	$614	0.5%	1.9%	$641	4.4%
East/Southeast	3.6%	$578	2.5%	2.1%	$612	5.9%
Northeast	3.1%	$572	5.1%	5.5%	$599	4.8%
Northwest	3.8%	$637	2.6%	2.6%	$683	7.1%
Total	**3.5%**	**$599**	**2.7%**	**2.7%**	**$635**	**6.0%**

Source: Reproduced from Texas A&M Real Estate Center, 2011 citing data from Hendericks & Partners, 2011.

Office

There is a limited amount of information available on El Paso's office rental market, which is provided below in Table 9. These data show that office vacancy rates are very high in El Paso's downtown office market. Class A office space, which tends to be more updated and secure than Class B space had a 2010 downtown vacancy rate of 25.0 percent and average rental rate of $19.00 per square foot. Class B office space in downtown El Paso rented for $16.00 per square foot and had a vacancy rate of 40 percent. In the suburban office market, there was some new construction of office space, which was renting for $23 per square foot and had a vacancy rate of only 10.0 percent. Likewise, Class A suburban office space also had a low vacancy rate at 12.0 percent, with a rental rate averaging $17.00 per square foot. Class B office

space rented for $15.00 per square foot during 2010 and its vacancy rate was 27.0 percent.

Table 9: El Paso, TX MSA's Retail Vacancy and Rental Rates by Submarket

	2010 DOWNTOWN OFFICE			
Office Market	**Low**	**High**	**Effective Avg.**	**Vacancy**
New Construction (AAA)	N/A	N/A	N/A	N/A
Class A	$18.00	$25.00	$19.00	25.0%
Class B	$14.00	$18.00	$16.00	40.0%
	2010 SUBURBAN OFFICE			
Office Market	**Low**	**High**	**Effective Avg.**	**Vacancy**
New Construction (AAA)	$21.00	$25.00	$23.00	10.0%
Class A	$16.00	$20.00	$17.00	12.0%
Class B	$14.00	$16.00	$15.00	27.0%

Source: Reproduced from Texas A&M Real Estate Center, 2011 citing data from Hendericks & Partners, 2011.

Retail

The data in Table 10 show that the vacancy rates for retail space were relatively healthy in the El Paso, TX MSA. "Community power centers", which are defined by the International Council of Shopping Centers as a shopping center with dominant anchors and relatively few small tenants, had the lowest retail vacancy rate in the region at 6.0 percent during 2009. Neighborhood service centers, which are usually anchored by a supermarket and with a variety of small retailers, had a vacancy rate of 12.0 percent (2009). Downtown retail had a 10.0 percent (2009) vacancy rate and no data were available on the vacancy rate for regional malls. Monthly rental rates were highest in regional malls at $18.00 a square foot on average, followed by downtown retail at $16.50. Neighborhood service centers had a rate of $13.50 and community power centers had a rate of $11.00 per square foot. In each of these categories, the price range was fairly significant.

Table 10: El Paso, TX MSA's Retail Vacancy and Rental Rates by Submarket

	2009			
Retail	**Low**	**High**	**Effective Avg.**	**Vacancy**
Downtown	$10.00	$20.00	$16.50	10.0%
Neighborhood Service Centers	$10.00	$18.00	$13.50	12.0%
Community Power Center	$4.50	$17.00	$11.00	6.0%
Regional Malls	N/A	N/A	N/A	N/A
	2010			
Retail	**Low**	**High**	**Effective Avg.**	**Vacancy**
Downtown	$10.00	$20.00	$16.50	N/A
Neighborhood Service Centers	$10.00	$18.00	$13.50	N/A
Community Power Center	$4.50	$20.00	$11.00	N/A
Regional Malls	$10.00	$25.00	$18.00	N/A

Source: Reproduced from Texas A&M Real Estate Center, 2011 - citing data from NAI El Paso, 2011.

Industrial

Table 11 provides an overview of the industrial real estate market in the El Paso region during the second quarter of 2011. These data show that the total amount of industrial space in the El Paso, TX MSA was 56.8 million feet, with 26.7 million square feet (47.0 percent of the total) located on the east side of the county and 14.0 million square feet (24.6 percent) located in central El Paso. The western portion of the county had 7.6 million square feet (13.4 percent) and the southern portion had 6.0 million square feet (10.6 percent). The northern part of the county had the smallest share of industrial space at 2.4 million square feet or 4.3 percent of the total inventory. The data show that the overall vacancy rate for industrial real estate in the region was 14.5 percent or 8.2 million square feet. The data also show that no new industrial space was under construction. During the past quarter, a modest amount of industrial space has been absorbed (475,471 square feet) and rents in the region have ranged from $2.75 to $3.40 per square foot per month.

Table 11: Industrial Rental Market Conditions in the El Paso, TX MSA – Second Quarter 2011

Submarket	Total SF	Vacant SF	Vacancy Rate	YTD	Under Construction (SF)	Asking Rent
East	26,702,879	4,740,603	17.8%	178,176	--	$3.40
Central	14,007,653	2,401,875	17.1%	63,585	--	$3.25
West	7,590,827	341,237	4.5%	209,731	--	$3.40
Southern	6,066,113	474,356	7.8%	(79,478)	--	$2.75
North	2,462,081	291,590	11.8%	103,457	--	$2.85
Total	**56,829,553**	**8,249,661**	**14.5%**	**475,471**	**--**	**--**

Source: Grubb Ellis | Best + White, 2011.

EXISTING AND FUTURE INFLUENCES ON GROWTH IN THE EL PASO REGION

Redevelopment of Central El Paso

Over the past few years, there has been a considerable push by the El Paso City Council to spur redevelopment in the central city. More specifically, the Council has encouraged redevelopment in the image of New Urbanism, which (in simplified terms) could be described as an urban design movement which promotes denser, mixed use development and a more pedestrian and transit-oriented urban form than exists at present. While downtown El Paso already has many of these elements, along with a great deal of aesthetic appeal, it also has a considerable degree of building vacancy and underutilization of urban land. Additionally, much of El Paso's downtown street life is geared towards day shoppers from Mexico and commuting workers. With a few exceptions, it does not encourage the average city resident to regularly venture into the area after daytime business hours for shopping, dining, or entertainment.

In addition to the downtown region, the City of El Paso is pursuing New Urbanism ideals in several other areas of central El Paso. One area that appears to have some promise is along Oregon Boulevard from downtown to the University of Texas at El Paso campus. The City

Council has approved zoning changes that will allow higher density and mixed use developments. The corridor is also being planned for Bus Rapid Transit (BRT) service. Given this corridor's connectivity between two pedestrian-oriented areas (i.e. downtown El Paso and UTEP), high employment density (there is also a major hospital near UTEP), and nearby affluent neighborhoods, it would appear that property values and tenant demand could be sufficiently high to encourage some densification of the corridor. A second corridor at "Five Points" appears to have fewer of the positive attributes of the Oregon corridor and might be a greater challenge to redevelop. There are also several large parcels of land near central El Paso that could be developed into new commercial and residential areas, although some of these sites offer their own challenges. The Aldea mixed use (commercial/residential) site is planned for a parcel of land between IH-10 and Mesa Boulevard and north of Executive Center. The project is proposed to have 1.0 million square feet of retail space, 250,000 square feet of office space, two hotels, and more than 1,200 apartments. The first tenant that has been identified is a Wal-Mart store. One of the most visible available sites is the former Asarco copper smelter, which is located west of downtown and between IH-10 and the Rio Grande River. The smelter has been closed and the site is currently undergoing demolition and remediation. It has been proposed that it could be redeveloped for new residential and commercial construction. While commercial activity at the remediated site may be feasible over the medium to long term, real or perceived soil contamination will likely make future homebuyers hesitant. A less disturbed parcel of the Asarco property is located on the north side of IH 35 near UTEP. While this parcel has topography issues that will determine the feasible scale of development, it may have a higher probability of attracting future residential growth. Slightly further north is the Cemex property, which is said to be for sale. While this site likely has fewer contamination issues than the Asarco property, it is highly disturbed due to long-term quarrying activity. As a result, the scarred terrain would require a significant amount of site preparation to make it practical for development, which would reduce the economic viability of the site, in a market with fairly modest land values.

In general, El Paso's developer community is skeptical, although not entirely dismissive, that New Urbanism strategies in the urban core will lead El Pasoans to make new lifestyle choices. Many developers are waiting to see if a project like the Mills Plaza redevelopment is successful, before committing their own money. The current difficulties of obtaining financing for real estate projects, the region's untested market, and lower household incomes add to the difficulty of redeveloping an urban core that will attract young professionals and more affluent residents needed to support it. On the other hand, as the price of commuting rises over the long-term and as new amenities in the downtown area are slowly added, it would be reasonable to assume that more residents will consider living in or near the central city.

Border Trade

Cross-border trade holds a very significant role in the economy of El Paso County and increasingly in Doña Ana County. The manufacturing sector in the United States and Mexico, along with the transportation industries that serve it, has suffered significantly, due to the economic downturn between 2008 and 2009. At present (mid-2011), border trade volumes are

improving and this is having a positive effect on the local economy. There also appears to be signs that Ciudad Juárez is regaining some of the manufacturing that it lost to offshore locations. In some industries, manufacturers have found that the added transportation costs and greater unreliability of producing and transporting goods from Asia (particularly China) do not outweigh the lower labor costs. Additionally, China's cost advantage has diminished, due to rising wages and inflation. As a result, some producers have found that there is an overall cost advantage to remaining along the U.S.–Mexico border. There is also an expectation among some of El Paso's community leaders that U.S. manufacturers currently using Canadian labor will begin to shift some of those activities to Mexico to reduce their overall labor costs.

The 24,000 acre Santa Teresa Industrial Park and master planned community, which is located in southern Doña Ana County along the New Mexico-Mexico border, is in a strong position to become a major growth area for the region by exploiting these trends. The relocation of the Union Pacific refueling yard with an intermodal ramp and intermodal yard will create a unique opportunity to develop manufacturing facilities in the United States and Mexico and distribution facilities for the United States, just a few miles from the border in a large urban center. Additionally, the location of the Foxconn manufacturing facility, just outside of the Santa Teresa border crossing facility, demonstrates that this area's vast tracts of vacant land offers similar opportunities for new facilities in Mexico with essentially no transportation delays and minimal opportunities for security concerns. Once the Union Pacific intermodal terminal is complete, containers arriving from or bound to marine ports along either U.S. coast will be just a few miles from an experienced, skilled, and inexpensive labor force, as well as a market of more than 100 million people. Tenants in the Santa Teresa Industrial park will also have easy access to the national interstate system through IH-10 and to air cargo via the Doña Ana County at Santa Teresa Airport nearby or the El Paso International Airport.

Another bright prospect for the region is the new Tornillo border crossing in Texas that will replace the existing Fabens-Caseta crossing with a six-lane facility in 2013. It is expected that the new bridge crossing will spur the construction of new warehousing and other industrial facilities near I-10 in the Lower Valley (or Mission Valley, as it is referred to in this memorandum) area of El Paso County. There are also reports that Mexican real estate interests have been purchasing properties along the Mexican side of the border to take advantage of new industry as well.

Fort Bliss

Fort Bliss was established in 1849 and has grown to become the U.S. Army's second largest installation, playing a major role in the training and the deployment of troops for U.S. wars and military exercises around the globe. In 2005, Fort Bliss began transitioning into a heavy armor training post, which resulted in approximately 15,000 additional military personnel being assigned to the base between 2005 and 2011. With the addition of civilian employment, Fort Bliss' total workforce has grown from approximately 22,000 soldiers and employees in 2007 to approximately 41,000 in 2011.

Table 12 shows numbers of people living and working on Fort Bliss for 2007 and 2011. As the number of troops stationed at the base has increased, additional housing units have been constructed to keep pace with the growth. Between 2007 and 2011, Fort Bliss added more than 400 family units on base, which are typically 2 or 3 bedroom homes. Almost 8,000 soldier billets have also been constructed on-base during this same period. Soldier billets are rooms within the base's enlisted barracks, which generally house one soldier per room.

Table 12: Fort Bliss' Changing Profile between 2007 and 2011

	LIVE		WORK		
	Family Housing Units	Soldier Billets	Total Workforce	Military	Civilians/ Contractors
2007	2,972	4,700	22,250	64.4%	35.6%
2011	3,403	12,860	41,118	72.0%	28.0%

Source: U.S. Army – Fort Bliss, 2011.

For this demographic update, it was assumed that there would be no significant increases or decreases in troop levels, employment, or demographics on the base. Therefore, it was assumed that 2011 conditions remain constant throughout the forecast horizon. In reality, Fort Bliss' population and employment forecasts may change from their current figures. However, future troop levels will largely depend on decisions by the Defense Base Closure and Realignment Commission (BRAC), as well as future troop deployments to conflict areas. The 2005 BRAC recommended a second BRAC for 2015, so additional decisions about the stationing of military personnel will most likely be made at that time.

One significant upcoming development will be the replacement of the William Beaumont Army Medical Center. Construction is scheduled begin in August 2011 and the facility is expected to open in 2016. Although major upgrades and innovations are expected in the new hospital, it will retain the same capacity as the current hospital: 136 beds. Beaumont Army Medical Center currently has approximately 3,300 employees and this figure is expected to remain stable in its new facility. The existing Veteran's Administration Clinic, which is presently located at Beaumont Army Medical Center, is expected to stay at its current location after the Army hospital moves.

Ciudad Juárez Immigrants

One of the primary questions that arose during this demographic update was what effect were immigrants from Ciudad Juárez, fleeing the city's deteriorating security situation, having on the MPO's current population and what effect they would have on the region's future population trends. During the past few years, it has been estimated that Ciudad Juárez has lost approximately one-quarter of its population due residents fleeing crime due to drug cartels, which regularly include extortion, assaults, kidnappings for ransom, and murder. However,

after only a cursory review of information on this topic, it quickly became apparent that there are no reliable, publicly available data sources that would directly answer this question. There is also a lack of a consensus about the trend, among the residents and city leaders of El Paso. While many people provide anecdotal evidence to argue that a large migration has occurred, officials in city government with access to data that might demonstrate a trend do not see one occurring or cannot distinguish it from the large population increase produced by Fort Bliss' expansion. Some other possible explanations for why perceived immigration from Ciudad Juárez to El Paso has been difficult to measure include:

- Cross-border migration is occurring, however, because most migrants are staying in the United State illegally, they make a concerted effort to blend in or otherwise be non-distinguishable from legal residents;
- Cross-border migration is occurring, but only some migrants are staying in the El Paso region. Many or most of the other immigrants are moving on to regions where there are more employment prospects or they have a support network;
- Members of Ciudad Juárez's entrepreneurial class are more likely to move to El Paso and to become visible in the community once they arrive. Members of this group have the financial resources to make the considerable investment in the United States required to obtain legal residency. However, the visibility of this group and its perceived size likely outweighs its actual numbers;
- There are a number of Ciudad Juárez residents who either have citizenship in both countries, are U.S. citizens living in Ciudad Juárez, or who are border residents that split their time between a residence in Ciudad Juárez and another in El Paso. These residents are now more likely to live full-time in El Paso. Because they already have citizenship or a residence in the United States, they are not perceived as a new arrival.

Unfortunately, despite the extensive record-keeping on border crossings by the federal government, there are very little publicly available data that would provide clear insight into how many people have moved from Ciudad Juárez to El Paso. Federal immigration data does provide some clues about the trends, but are more useful for ruling out explanations than providing them, due to the aggregation of the reported data. Table 13 shows the number of Non-immigrant admissions (I-94 visa) into the United States from Mexico between the fiscal years of 2001 and 2010. An I-94 visa is what many Mexican citizens regularly use to enter the United States to shop, purchase services, visit family and friends, etc. The data show a substantial increase in crossings using the I-94 visa during 2006 and another more significant increase during 2010. The large increase between 2009 and 2010 can be explained by changes in recordkeeping. During 2009, individuals admitted on I-94 visas were often only recorded in the system during their first crossing. In 2010, the Department of Homeland Security began to record every crossing made by I-94 users. The other increase between 2005 and 2006 could be due to stricter record keeping following the implementation of new homeland security laws and regulations inspired by the September 11, 2001 terrorist attacks. The change could also simply be the result of growing economic activity that was occurring in both countries during that period.

Table 13: Non-immigrant Admissions (I-94 Only) into the United States from Mexico, 2001-2010

Fiscal Year	I-94 Non-Immigrant Admissions
2001	4,334,330
2002	4,183,991
2003	4,307,144
2004	4,454,061
2005	4,774,169
2006	6,146,126
2007	7,405,191
2008	7,273,511
2009	6,601,059
2010	12,917,788

Source: U.S. Department of Homeland Security, 2011.

Table 14 shows the number of persons obtaining permanent resident status in the El Paso region between 2001 and 2010. The data show that, while the numbers fluctuate from year to year, there is nothing to imply that an atypically high number of foreign El Paso residents are receiving permanent residency status, which would be expected if a large numbers of Mexican migrants were moving to El Paso from Ciudad Juárez.

Table 14: Persons Obtaining Legal Permanent Resident Status in the El Paso, TX Core-Based Statistical Area, 2001-2010

Fiscal Year	I-94 Non-Immigrant Admissions
2001	6,297
2002	4,057
2003	2,490
2004	4,157
2005	3,736
2006	4,295
2007	4,004
2008	4,746
2009	4,593
2010	4,646

Source: U.S. Department of Homeland Security, 2011.

A review of migration data for the Mexican state of Chihuahua, where Ciudad Juárez is located, shows that net migration to the state slowed significantly during the first half of the previous decade and then, ultimately, reversed during the second half (See Table 13). Between 2005 and 2010, Mexico's statistical agency, Instituto Nacional de Estadística y Geografía (INEGI), estimated that more than 85,000 residents left the state of Chihuahua, while only 58,000 new residents moved in. While there are not specific data available for Ciudad Juárez, this table

shows that migration patterns have reversed significantly and Mexicans are leaving the state of Chihuahua and moving to other locations in Mexico.

Table 13: Chihuahua's Domestic Migration Patterns of Residents Five Years and Older for the Previous Five-Year Period– 2000, 2005, and 2010

	2000	2005	2010
In-migration	138,616	67,483	58,334
Out-migration	49,694	44,518	85,408
Net Migration	**88,922**	**22,965**	**-27,074**

Source: Instituto Nacional de Estadística y Geografía (INEGI), 2011.

School Enrollments

If a large number of Mexican nationals were migrating to the El Paso region from Ciudad Juárez, then it would be expected that school enrollments would jump significantly, especially enrollments in programs for students who do not speak English fluently. Since public schools do not collect information or keep records about a student's nationality, there is no direct method of identifying the number of student who might be attending due to the violence in Ciudad Juárez. Table 14 shows the total number of El Paso County students enrolled in Limited English Proficiency (LEP) programs. LEP programs are for students whose primary language is a language other than English and who have difficulty performing school work in English. The total number of students in this program actually declined between the 2007-2008 school year and the 2010-2011 school year, even though there were 7,500 more students. School enrollments did substantially increase in bilingual program during this four year period, both in the total number of students and its share of the total number of students enrolled. This trend could reflect an increase in the number of students in El Paso County schools from Mexico. However, there is no way of proving this is the case (remember schools do not ask for or maintain information on a student's nationality). As a result, it is also possible that a portion of this increase represents students who attend school in the United States for safety reasons, but continue to reside permanently in Mexico. Enrollment in English as a Second Language (ESL) program has risen slightly during the past four years, but fallen slightly as a percent of the total student enrollment.

Table 14: Total Number and Percentage Share of Limited English Proficient Students Enrolled

	TOTAL NUMBER OF STUDENTS			
	Enrolled	**LEP**	**Bilingual**	**ESL**
2007-2008	170,548	48,092	29,755	9,863
2008-2009	171,769	48,151	31,153	10,338
2009-2010	175,197	47,900	32,325	10,409
2010-2011	178,076	46,763	33,420	10,079
	PERCENTAGE SHARE OF TOTAL STUDENTS			
	Enrolled	**LEP**	**Bilingual**	**ESL**
2007-2008	--	28.2%	17.4%	5.8%
2008-2009	--	28.0%	18.1%	6.0%
2009-2010	--	27.3%	18.5%	5.9%
2010-2011	--	26.3%	18.8%	5.7%

Source: Texas Education Agency, 2011.

The upshot of this discussion is that there are neither specific data nor trends based upon primary or secondary sources that provide any meaningful insight into the actual number immigrants who have fled Ciudad Juárez to live in the El Paso region. As a result, no special adjustments were made to the baseline figures or the forecasts to account for this special population group.

DEVEOLOPING THE POPULATION AND EMPLOYMENT CONTROL TOTALS

The first step in preparing the population and employment forecasts was to establish control totals at the county or partial county level. The input from the study's Delphi Method was directly incorporated into the development of the population control totals for El Paso, Doña Ana, and Otero Counties. Tables 15 and 16 provide a summary of the population and employment control totals for each county during each forecast year. These new figures are also compared against the control totals from the 2010 El Paso MPO demographic update for El Paso County. No comparison was provided for Doña Ana County, because the MPO study area was enlarged and, as a result, the two sets of control totals are not comparable. A comparison of the Otero County control totals was not included because Otero County was not part of the previous MPO study area. While the new control totals anticipate reasonably strong growth for the El Paso MPO study area through the year 2040, they also account for more conservative population growth during the earlier forecasts years. Growth occurs at a faster rate, later in the forecast horizon, as the current economic malaise diminishes. Still, the population and employment forecast control totals for El Paso County generally reflect higher values than the previous forecast.

Table 15: El Paso MPO County Population Control Totals

EL PASO COUNTY

	2010 SED UPDATE		2011 MTP UPDATE		
Year	Population Forecast	Compounded Annual Growth Rate	Population Forecast	Compounded Annual Growth Rate	Total Population Change
2007	N/A	N/A	747,478	--	N/A
2010	781,913	--	788,145	1.78%	6,232
2012	804,929	1.46%	801,675	0.85%	-3,254
2014	828,622	1.46%	822,683	1.30%	-5,939
2017	865,476	1.46%	854,820	1.29%	-10,656
2020	903,969	1.46%	887,943	1.28%	-16,026
2030	971,845	0.73%	986,931	1.06%	15,086
2040	1,031,572	0.60%	1,072,562	0.84%	40,990

DOÑA ANA COUNTY (PART)

	2010 SED UPDATE		2011 MTP UPDATE		
Year	Population Forecast	Compounded Annual Growth Rate	Population Forecast	Compounded Annual Growth Rate	Total Population Change
2007	N/A	N/A	43,467	--	N/A
2010	23,747	--	45,058	1.21%	N/A
2012	24,503	1.58%	46,998	2.13%	N/A
2014	25,282	1.58%	49,071	2.18%	N/A
2017	26,498	1.58%	52,106	2.02%	N/A
2020	27,773	1.58%	55,102	1.88%	N/A
2030	30,104	0.81%	65,355	1.72%	N/A
2040	32,088	0.64%	76,878	1.64%	N/A

OTERO COUNTY (PART)

	2010 SED UPDATE		2011 MTP UPDATE		
Year	Population Forecast	Compounded Annual Growth Rate	Population Forecast	Compounded Annual Growth Rate	Total Population Change
2007	N/A	N/A	8,310	--	N/A
2010	N/A	N/A	8,792	1.90%	N/A
2012	N/A	N/A	8,936	0.82%	N/A
2014	N/A	N/A	9,107	0.95%	N/A
2017	N/A	N/A	9,350	0.88%	N/A
2020	N/A	N/A	9,587	0.84%	N/A
2030	N/A	N/A	10,106	0.53%	N/A
2040	N/A	N/A	10,541	0.42%	N/A

Table 16: El Paso MPO County Employment Control Totals

EL PASO COUNTY					
	2010 SED UPDATE		2011 MTP UPDATE		
Year	Employment Forecast	Compounded Annual Growth Rate	Employment Forecast	Compounded Annual Growth Rate	Total Employment Change
2007	N/A	N/A	288,118	--	N/A
2010	299,795	--	301,429	1.52%	1,634
2012	306,934	1.18%	308,282	1.13%	1,348
2014	314,243	1.18%	315,361	1.14%	1,118
2017	325,534	1.18%	322,520	0.75%	-3,014
2020	337,231	1.18%	333,352	1.11%	-3,879
2030	350,927	0.40%	371,725	1.10%	20,798
2040	363,923	0.36%	415,581	1.12%	51,658

DOÑA ANA COUNTY (PART)					
	2010 SED UPDATE		2011 MTP UPDATE		
Year	Employment Forecast	Compounded Annual Growth Rate	Employment Forecast	Compounded Annual Growth Rate	Total Employment Change
2007	N/A	N/A	4,849	--	N/A
2010	2,797	--	5,816	6.25%	N/A
2012	2,919	2.16%	5,980	1.40%	N/A
2014	3,047	2.17%	6,294	2.59%	N/A
2017	3,249	2.16%	6,900	3.11%	N/A
2020	3,464	2.16%	7,561	3.10%	N/A
2030	3,703	0.67%	10,216	3.06%	N/A
2040	3,938	0.62%	13,802	3.05%	N/A

OTERO COUNTY (PART)					
	2010 SED UPDATE		2011 MTP UPDATE		
Year	Employment Forecast	Compounded Annual Growth Rate	Employment Forecast	Compounded Annual Growth Rate	Total Employment Change
2007	N/A	N/A	117	--	N/A
2010	N/A	N/A	219	23.24%	N/A
2012	N/A	N/A	224	1.14%	N/A
2014	N/A	N/A	226	0.45%	N/A
2017	N/A	N/A	228	0.29%	N/A
2020	N/A	N/A	229	0.15%	N/A
2030	N/A	N/A	236	0.30%	N/A
2040	N/A	N/A	245	0.37%	N/A

2007 BASELINE ZONAL POPULATION ESTIMATES AND 2010 ZONAL POPULATION FORECASTS

The baseline year for this study, as required by TxDOT's Transportation Planning and Programming (TPP) Division, was 2007. The requirement that 2007 be used as the model's base year precluded the possibility of using 2010 U.S. Census data to establish more precise population counts at the Traffic Analysis Zone (TAZ) level. Instead, population estimation

techniques were used, at all levels of geography, to develop the baseline population at the zonal level for 2007. Since the first forecast year, which is 2010, has already passed and because there was a decennial U.S. Census during that year, Census numbers were used to establish zonal population counts for 2010. The 2007 zonal, base-year population estimates were based upon either: interpolating between the zonal population counts by TAZ from the 2000 and 2010 Censuses; using the 2010 U.S. Census Bureau's population counts reduced by an estimate of new residents between 2007 and 2010; or modifying either technique, based upon professional judgment.

The development of the population estimates by TAZ was a relatively complicated effort that required a combination of GIS analysis, an extensive manual review of the data, and a substantial amount of aerial photography interpretation.

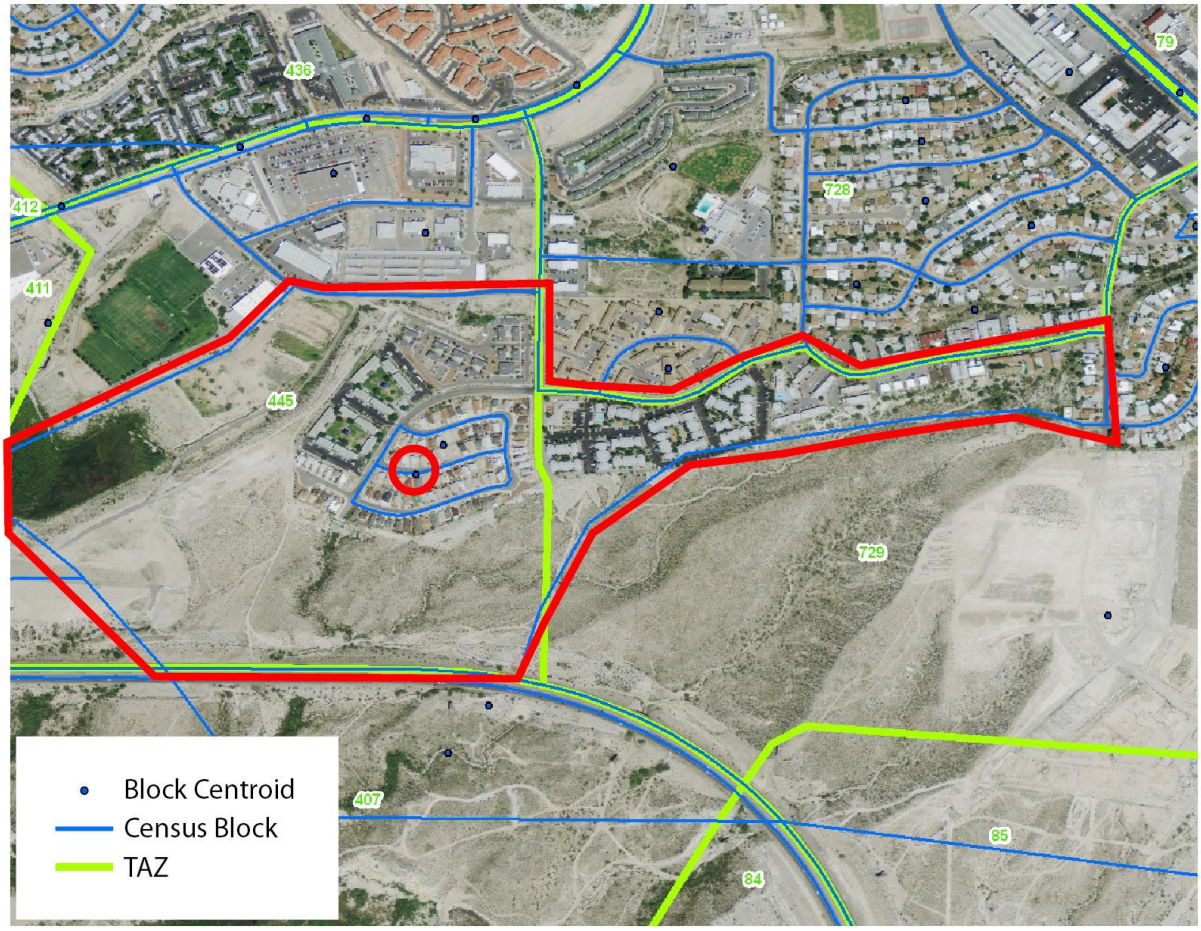
When preparing 2000 and 2010 population counts for each TAZ, the project consultants used GIS software to overlay the boundaries of the El Paso MPO's TAZs with the U.S. Census block geography. Each Census block was assigned a centroid (which is the geographic center of the polygon) and the population of the Census block was attached to it. Then, using GIS, all the centroids located within the boundaries of a TAZ were assigned to that zone. This produced a database file that was exported into Microsoft Excel and which allowed the population of all the centroids in the TAZ to be summed to produce a zonal population count. The 2007 estimates of population for a TAZ, using population counts from the 2000 and 2010 Censuses, were then interpolated using the compounded annual growth rate during this period. This technique was only used for TAZs where no new housing units were identified between 2007 and 2010 and there were no observed discrepancies with 2000 U.S. Census data.

The estimates of population growth between 2007 and 2010 were based upon a count of dwelling units using digital aerial photography from the El Paso MPO and the Texas Natural Resource Information Service (circa 2007 and 2010, respectively). Setting the two sets of photography side by side on computer monitors and overlaying the new TAZ boundaries provided by the MPO, new dwelling units were identified and counted. In the case of multifamily units, where it was not possible to distinguish the total number of units, the facilities were identified and phone calls were placed to obtain the information. The total number of dwelling units in each TSZ was summed and then multiplied by an assumed persons per household figure (based upon the 2010 U.S. Census data for the census tract in which the TSZ is located) and an assumed vacancy rate. Multifamily residences were multiplied by an assumed 1.5 persons per household, regardless of the TAZ. In those TAZs with new residential construction between 2007 and 2010, this figure was subtracted from the 2010 TAZ population count to produce the 2007 population estimate.

Unfortunately, when estimating the 2010 (or 2000) population for a TAZ using the Census block data, there were instances when the boundary of the Census geography did not align with the boundaries of the TAZs. To identify these issues, several poster-size maps were printed of the study area which showed the outlines of the TAZs overlaid with the Census block boundaries (the outlines were plotted with different line widths and colors). Each of the several maps

received multiple iterations of visual inspection to identify locations where the TAZ boundaries did not align with the Census geography. Once all the discrepancies were identified, the affected TAZs were examined with an aerial base, to determine if population existed on both sides of the partitioned Census block. Map 2, shown below, provides an example of a TAZ (outlined in red) that splits the Census block geography (outlined in blue). The blue dot encircled with red is the Census block's centroid. The figure clearly shows that two apartment complexes in the eastern side of the Census block are located in TAZ 725, yet the Census block's population has been counted among the population of TAZ 445, where the centroid is located. To correct these situations, the number of housing units on the missing side were counted and then converted into a population estimate by multiplying by the persons per household and any assumed vacancy rate. The figure was then subtracted from the TAZ with the centroid and added to the TAZ without the centroid.

In total, 56 population adjustments were made to align the 2000 U.S Census geography with the El Paso MPO's TAZ geography and 80 population adjustments were made to align the 2010 Census geography. Images of all discrepancies were printed for the analysis and, if more than 10 persons were moved, reviewed by one or more of the project consultant staff for accuracy. Likewise, all spreadsheet changes updating the zonal population counts were reviewed by one or more staff members for accuracy.



Map 2: Example of a TAZ Splitting a Census Block

DEVELOPING 2007 BASELINE EMPLOYMENT ESTIMATES AND 2010 EMPLOYMENT FORECASTS

To prepare the 2007 baseline estimates and 2010 employment forecasts at the zonal level, data were obtained from TxDOT's TPP Division. The employment data received from TxDOT were QCEW data (previously known as ES-202 data) for the Third Quarter of 2007 and 2010. These data contained detailed information about each employer in the region as well as latitude and longitude coordinates for the location of the firm. The original source of the geocoded, coordinate information that came with the files is not known.

Upon receiving the files an extensive effort was undertaken to minimize any errors in the data. First, the master file was separated into several components: records with addresses that had been successfully geocoded; records that were geocoded to a nearby city or county, but outside of El Paso County; records that were geocoded to locations far outside of El Paso County (e.g. Houston or Dallas); and records that had no geographic coordinates. The properly geocoded records were initially set aside. Records that were geocoded slightly outside of the study area were eliminated from the database, since it was assumed they were likely misallocated from a

nearby county. Records that were geocoded far from El Paso County, in locations such as Houston or Dallas, were investigated (through Internet searches) to determine if they had facilities with employees in the El Paso region. Likewise, records without a listed address were investigated using Internet searches, to determine if one or more establishment addresses could be identified and the employment allocated appropriately. The project team also used a geocoding tool provided by Google to locate records that did not have coordinates or that did not accurately geocode during the first attempt. Many of the orphaned records from this first round were accurately geocoded using these tools during the second pass.

An exhaustive effort was also undertaken to identify all the public schools in the MPO study area and to insure each one was identified in the appropriate TAZ. After the initial allocation, each allocated school in the dataset was compared to a comprehensive list of schools from each school district's website. The school locations were also manually geocoded (to verify their accuracy) by entering the address from the school district webpage into Google Maps or Bing Maps. Once identified, the school's location was compared to an ArcGIS file with 2010 aerial photography for the region and an overlaid TAZ boundary file. Using this method, each school was visually checked to insure that it was recorded in the correct TAZ.

The project consultants also undertook a number of additional steps to insure the accuracy of the employment data or to address discrepancies. These efforts included:

- Sorting records by employment size. An Internet search was performed for each of these firms (up to 300 employees) to verify that it had adequate facilities or activities to justify the reported employment. In some cases, it was determined that the record represented a franchise headquarters. To the extent it was possible, the employment for these records were split among each of the locations in the region.
- Sorting records by address to check for redundancies. Few redundancies were found in the dataset. This technique did help find several establishments that were located in shopping malls that had been geocoded unintentionally to other locations due to very minor differences in the address record.
- Sorting records by latitude and longitude to determine if they were geocoded to the centroid of a Zip code. This discrepancy frequently occurs when the software is unable to geocode a record to a street address but has Zip code information.
- Identified home health care agencies, temporary worker agencies, public social service agencies, janitorial firms, and security firms. Some of these establishments are among the largest employers in El Paso County. However, because their employees do not work or report to the company headquarters on a daily basis; it would be inaccurate to maintain the firm's entire employment at one location. Therefore, a fixed amount of employment for each industry was assigned to the headquarters location and the remainder allocated proportionately across the region. For home health care agencies and public social service agencies, this proportionality was based upon a TAZs population size. For temporary worker agencies, janitorial firms, and security firms, the employment was distributed proportionally according to a TSZs total employment (excluding Fort Bliss TAZs).

- Reassigned employment for U.S. Customs and Border Protection from a single location to each border crossing in the MPO study area, based upon professional judgment.
- Compared the discrepancies between the 2007 baseline estimates and the 2010 employment forecasts up to 200± employees. If needed, adjustments were made between the estimates and forecasts to insure that employers were accurately accounted for in both datasets.

Finally, employment data for Fort Bliss was obtained through an official representative of the base who worked directly with the consultant team. Using a map of the TAZs provided by the project consultants, along with unclassified information from the U.S. Army and his extensive professional knowledge of base facilities and operations, the representative provided the project team with a detailed employment counts for each TAZ in Fort Bliss for the years 2007 and 2011. The 2010 zonal employment count for Fort Bliss TAZs was interpolated between the 2007 and 2011 values.

Employment data for the portion of the El Paso MPO study area in New Mexico was obtained from a proprietary data source named InfoUSA. InfoUSA maintains a continuously updated list of employers through periodically calling them and revising descriptive information. According to previous conversations with InfoUSA staff, their business data are updated for an entire region approximately every three years. New employers are added when they are identified through state registrations, new phone service, etc. Because the person answering the phone is typically the respondent to InfoUSA's representatives, their knowledge or willingness and ability to provide accurate information affects the accuracy of the data. One significant advantage of InfoUSA data is that it can be acquired very quickly and it does not require confidentiality agreements for its use. Since neither the El Paso MPO nor TxDOT had ready access to firm-level QCEW data for Doña Ana and Otero Counties and because it was not clearly understood if the data could be obtained within the time constraints of the project, the project consultants ordered data from InfoUSA for the seven zip codes in the New Mexico portion of the study area. The data were reviewed for obvious errors or omissions and geocoded to TAZs. Since InfoUSA data are continuously updated, they are not sold on a yearly basis (e.g. vintage-2007, 2010, etc.) and because they constitute a snapshot of a region over several years, they were incorporated, without adjustments between years, for the 2007 and 2010 employment at the TAZ level.

DEVELOPING THE 2014-2040 POPULATION AND EMPLOYMENT FORECASTS

THE FWD El PASO DELPHI METHOD

The FWD El Paso Delphi Method was a consensus building process that relied upon the wisdom and expertise of community leaders to identify patterns in the growth and development of the community. The Delphi Method elicits opinions from participants, with the goal of obtaining a group response from a panel of community experts. This method of building community

consensus has three distinguishing features, which are: anonymity for all respondents; iteration with controlled feedback; and statistically interpretable group responses.

Although this process is typically referred to as the "Delphi Method" the project's sponsors were concerned that the invited participants might confuse the effort with the automobile parts manufacturer Delphi, which has facilities in the region. Therefore, to avoid the confusion, the Delphi Method was branded "FWD [Forward] El Paso". Specifically, the purpose of FWD El Paso was to gather information from knowledgeable area leaders to obtain verification of the reasonableness of the MPO study area's control totals, to obtain a thorough understanding of high and low growth areas, and to identify areas with high and low growth potential. From this information, FWD El Paso assisted with developing short and long range population and employment forecasts that will be used in the MPO's regional transportation plans.

The flowchart below provides a graphical representation of how the FWD El Paso's Delphi Method worked.

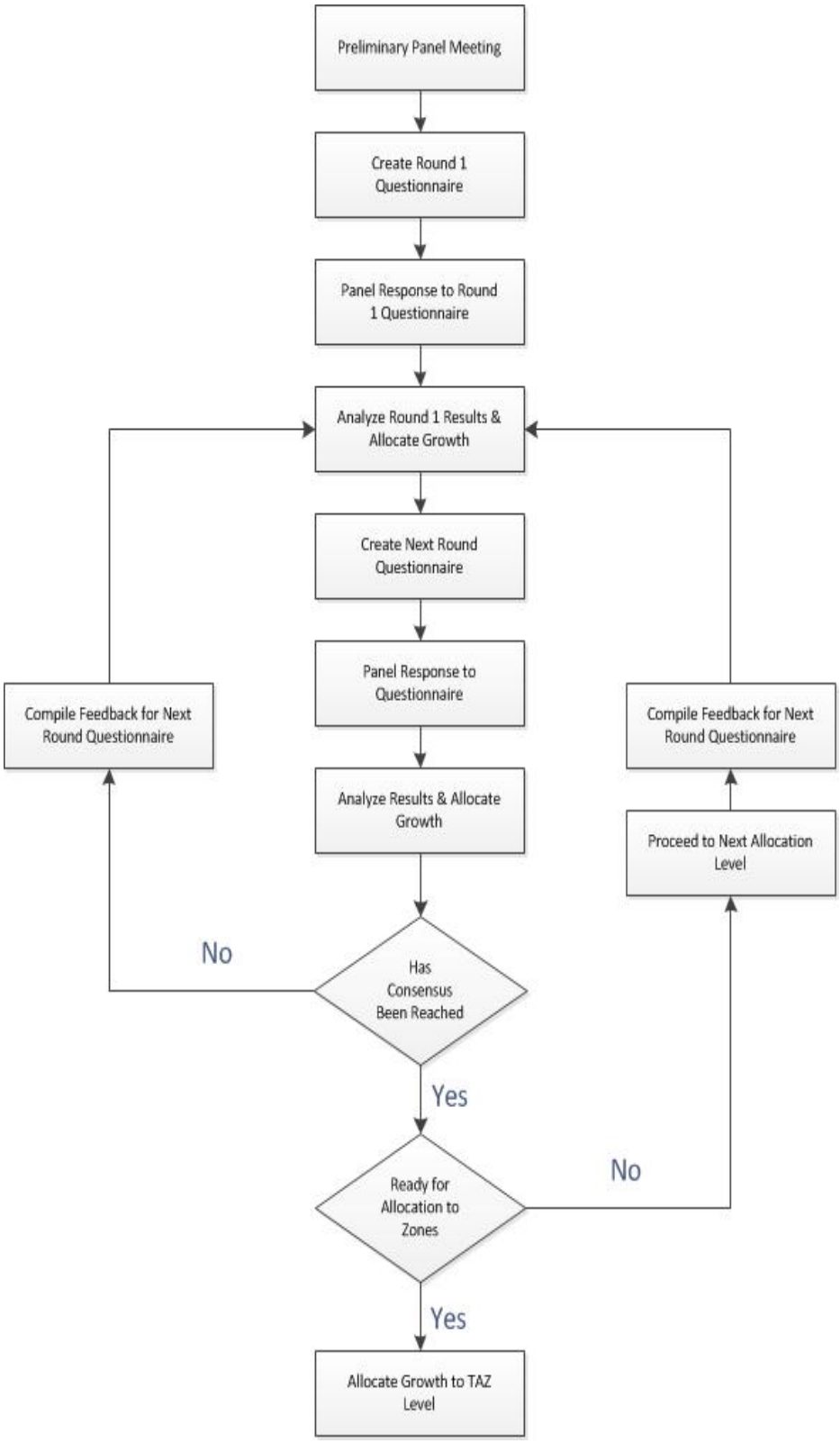


Figure 12: Overview of the FWD El Paso Delphi Method

THE STAKEHOLDER KICK-OFF MEETING

The Stakeholder Kick-Off meeting was designed to provide background information on the Delphi Method, establish control totals for future years, and to provide instructions on the use of the web page for future Internet sessions. The Stakeholder Kick-Off Meeting was held at the El Paso International Airport's Board Room on May 20th from 8:00 am to 12:00 pm. Among the approximately 40 community leaders invited to the meeting, 24 these attended (including one representative each from the El Paso MPO and TxDOT) plus other TxDOT staff, El Paso MPO staff, and project consultants. Table 17 provides a list of the Stakeholder Meeting participants and their affiliations.

Table 17: Attendees of the Stakeholder Kick-Off Meeting

NAME	AFFILIATION
Ralph Adame	Camino Real Regional Mobility Authority
Chris Brown	New Mexico State University
Eduardo Calvo	Texas Department of Transportation
Mary Lou Camerena	Paso Del Norte Group
Ernest Carrizal	El Paso County Road and Bridge Department
Robert Coleman	Horizon City
Gabriel Crespo	Socorro Independent School District
Richard Dayoub	Greater El Paso Chamber of Commerce
Thomas Fullerton	University of Texas at El Paso
Rafael Gallegos	Gadsden Independent School District
Salvador Gonzalez-Ayala	El Paso Metropolitan Planning Organization
Duane Hoskins	Las Cruces Metropolitan Planning Organization
Sam Leony	City of Socorro
Gilbert Mesa	Verde Realty
Kathleen Neal	Border Trade Alliance
Sandra Odenborg	Clint Independent School District
Rose Romero	El Paso Regional Economic Development Corporation
Doug Schwartz	Southwest Land Development
Marybeth Stevens	El Paso Electric
Alexandra Swann	El Paso Hispanic Chamber of Commerce
Robert Tinajero	The Institute for Policy and Economic Development – UTEP
Rudy Valdez	El Paso Water Utilities – Public Service Board
Rob Weatherly	U.S. Army – Fort Bliss

After being welcomed by the meeting moderator, the participants were given an overview of the meeting's objectives and the importance of their contributions. The participants were then given a presentation summarizing population and employment trends in the El Paso region to help create the proper context for the activities that would follow. The narrative below provides a brief description of the three primary activities during the meeting:

I. *Factors that Affect Growth Group Exercise* - Participants were given a generic, incomplete set of factors that influence growth in the El Paso region. Local factors that were left off list (e.g., future status of border trade and maquiladoras, and Base

Realignment and Closure (BRAC) issues, etc.) were filled in during the exercise. Another goal of this activity was to give participants a common definition of vocabulary needed for future exercises, such as "jobs" vs. "employment". This activity was introduced by the moderator and led by the facilitators at each table.

II. *Opportunities and Constraints Group Exercise* - The facilitator led the participants in a discussion on the following topics
    a. What development activity is taking place in the study area?
    b. Where is growth occurring?
    c. Where are opportunities for additional growth?
    d. In which areas are opportunities constrained (e.g. by geographic features)

    The participants were provided aerial maps of the MPO study area with the 12 districts outlined (shown in Map 1), major highways, political boundaries, etc. The table facilitator recorded the locations of ongoing or anticipated development, as well as constraints to growth, on these maps and in written notes.

III. *Allocation Exercise* - Using earlier input regarding development activity and constraints, the participants at each table were asked to allocate, among the 12 districts, the next 100,000 residents to the MPO study area. During the exercise, the participants were provided 20 dots, each representing 5,000 future residents, and asked to place them on the rows of the districts where they believed future growth would occur.

At the end of the meeting, participants were briefly introduced to the FWD El Paso website for the online activities and offered the opportunity to practice on the website using several computers positioned around the room.

Online Internet Sessions

During the Stakeholder Kick-Off meeting, the participants were provided with login information for the FWD El Paso website (www.fwdelpaso.com). With this website, the FWD El Paso Delphi Method could be continued without requiring the participants to attend time consuming meetings in person. This permitted an iterative process with the participating community leaders to develop a consensus on the emerging growth patterns of the community. There were two subsequent Internet sessions and each one required about 30 minutes to complete. In addition to the 24 participants at the Stakeholder Kick-Off meeting, an additional 10 individuals who did not attend the meeting agreed to participate in the Online Session. The names and affiliations of these individuals are provided below in Table 18. In practice, 22 of these 34 individuals participated in Online Session 1 and 24 participated during Online Session 2. A detailed discussion of the content and findings of the two Online Sessions can be found in Appendices A and B of this memorandum.

Table 18: Additional FWD El Paso Delphi Method Participants

NAME	AFFILIATION
Justin Chapman	Hunt Companies, Inc.
Russell Hanson	Hanson Asset Management
David Osborn	Bank of the West
Yvette Lugo	Area Agency on Aging
Jim Creek	New Mexico Border Authority
Luis Marmolejo	Doña Ana County
Dan Olivas	Dan Olivas and Associates
Teresa Quezada	City of El Paso – Department of Transportation
Dale Reinhardt	City of Clint
Matthew McElroy	City of El Paso

INTERVIEWS

To supplement the information gathered during the FWD El Paso meetings, 27 interviews were conducted with selected FWD El Paso invitees so that additional information could be gathered, including information that the meeting participants may have been hesitant to discuss in an open forum. The interviewees represented municipalities, counties, school districts, Fort Bliss, development companies, utilities, non-profit organizations (e.g. chamber of commerce organizations), and others. The interviews were conducted by three members of the project team (either individually or in a team of two), typically at the office of the interviewee, between May 2011 and July 2011. The interviewer(s) typically asked 6 to 10 open-ended questions about regional growth patterns, along with follow-up questions. Responses were recorded in written notes and/or on maps of the MPO study area. Table 19 below provides a list of each interviewee, their position, their affiliation, and the date of the interview.

Table 19: Interviews Conducted for the El Paso MPO Demographic Update

Name	Position	Affiliation	Date Interviewed
Mr. Russell Hanson	President	Hanson Asset Management, LP	May 18, 2011
Mr. Gilbert Mesa	Vice-President	Verde Realty	May 19, 2011
Mr. Jim Booher	Executive Director – Construction Division,	Ysleta Independent School District	June 29, 2011
Ms. Rose Romero	Vice-President	REDCo	June 30, 2011
Mr. Raymond Palacios	Owner	Bravo Cadillac	July 11, 2011
Mr. Jose Luis Mauricio Esparza/Mr. Jose Yanar/Mr, Carlos DeLeon/Mr. Alfredo Trabulsi	President/Board Member/Board Member/Board Member	La RED	July 12, 2011
Mr. Bob Coleman	Director of Planning	City of Horizon City	June 14, 2011
Mr. Sam Leony	Director of Planning	City of Socorro	June 14, 2011
Mr. Chris Readfearn	City Planner	City of Sunland Park	June 15, 2011

Mr. Art Franco	Mayor	City of Anthony, TX	June 15, 2011
Richard Fleagar	Director – Customer Care and External Affairs	El Paso Electric Company	June 16, 2011
Mr. Matthew McElroy	Deputy Director of Planning	City of El Paso	June 16, 2011
Mr. Rob Weatherly		Fort Bliss	June 16, 2011
Mr. Luis Marmolejo	Senior Planner	Doña Ana County	June 16, 2011
Mr. David Osborn	Chief Lending Officer	Bank of the West	June 30, 2011
Mr. Robert Gilmer/Dr. Roberto Coronado	Vice-President-in-Charge/Economist	Federal Reserve Bnk of Dallas (El Paso Branch)	June 30, 2011
Mr. Dan Olivas	Realtor/Broker	Dan Olivas & Associates	July 14, 2011
Dr. Damon Murphy/Gustavo Reveles	Superintendent/Public Information Officer	Canutillo Independent School District	July 14, 2011
Yvette Lugo	Director, Area Agency on Aging	Rio Grande Council of Governments	July 18, 2011
Doug Schwartz	Chief Executive Officer	Southwest Land Development Services, Inc.	July 18, 2011
Jim Creek	Project Manager	New Mexico Border Authority	July 18, 2011
Justin Chapman	Senior Vice-President	Hunt Companies, Inc.	July 19, 2011
Ernesto Carrizal	Assistant Bridge Administrator	Road and Bridge Department, El Paso County	July 19, 2011
Ramon S. Gonzales	Mayor	City of Anthony, NM	July 19, 2011
Mr. Nicolas Corona	Director, District Facilities	El Paso Independent School District	July 19,2011
Ms. Robin Montoya	Marketing Director	Sierra Provident East Medical Center - Tenet Healthcare	July 20, 2011
Thomas A. Eyeington/ Gabriel J. Crespo	Assistant Superintendent for District Operations/ Director of Facilities/Construction	Socorro Independent School District	July 27, 2011

Data Collection and Analysis

In addition to the data collected during the Delphi method and the interviews, the qualitative and quantitative data sources below were also heavily referenced to broaden the project consultants understanding of the MPO study area and to prepare the forecasts:

- Limited field surveys - Field surveys were carried out in various locations in the El Paso MPO study area to help familiarize the project consultant team with current development patterns.
- Maps and plans – Various maps (e.g. zoning, future land use, etc.) and plans (e.g. comprehensive plans, conceptual, redevelopment, rezoning, etc.) from municipalities, counties, public utilities, and developers were collected to help identify the locations, scale, and timing of future growth in the El Paso region.

- News articles – Information was gathered from local newspapers and other media outlets that described completed, current, or planned development projects or provided a historic or current context to development patterns in the region.
- Estimates of developable land – The project consultants prepared rough approximations of the acreage of developable land in each TAZ to provide guidance on the maximum amount of development possible within a given TAZ.
- GIS data – Digital aerial photography – base year and most recently available, parcel maps, zoning layers, etc.
- Databases – Building permit data, Texas Workforce Commission employment data, 2010 U.S. Census data, etc.

Forecasting Population and Employment at the TSZ level

The process of preparing the zonal population forecasts began by developing population control totals for each of the 12 districts for each forecast year based upon input from the FWD El Paso Delphi Method. An initial population projection for each TAZ was created by increasing the population proportionally, so the sum of all TAZs in a subarea equaled the control total. All known development projects were accounted for in the analysis. If the district, historically, had very little development and was not expected to grow significantly, the default assumption was that each TSZ would experience a proportionally modest level of growth. However, in most subareas, development patterns were more active and it was necessary to assess the zonal forecasts in a zone-by-zone manner to insure that they were neither too high nor too low, after accessing all the materials described above. After all draft adjustments were made at the zonal level and the raw values entered, the draft forecasts were adjusted to equal the control totals using a weighted proportion equation so that the sum of the zonal population forecasts was equal to the subarea control totals. After completing the initial forecasts, the subarea control totals (and TAZs) were further adjusted to account for the most likely growth scenario. The zonal employment forecasts were prepared in a similar manner although subarea control totals were not utilized.

Employment by Sector

As individual TAZ and county employment control totals were adjusted, a weighted proportional adjustment was made to the total zonal employment. Employment by sector was adjusted proportionately to the changes made to the total zonal employment based upon the employment by sector ratios that existed during 2010.

Median Household Income

Since detailed household income data are not yet available from the 2010 U.S. Census, the median household incomes by TAZ were derived from the U.S. Census Bureau's 2005-2009 estimates from the American Community Survey at the census tract level. Values were assigned to TAZs based upon the correspondence of the TAZ's centroid with the 2000 U.S. Census tract geography. In a few instances, the adjusted population forecasts placed new households in TSZs that were previously assumed vacant. When this occurred, the median household income for an adjacent TSZ with similar housing characteristics was used. Median

household incomes were increased at a modest annual rate, in real terms, throughout the forecast horizon.

Households

The number of households by TAZ was derived from persons per household data from the 2010 U.S. Census data. Using its centroid, each TAZ was associated with the persons per household figure for the census tract in which the TAZ's centroid was located. These figures were applied to each TAZ's baseline population and all forecast year population.

Special Generators

Special generators in the study area were incorporated from the 2010 socioeconomic data study prepared for the El Paso MPO and TxDOT and updated with new employment data. Because the number of TAZs had increased since the previous model and because some TAZs had been renumbered, the location of each special generator and its TAZ number were verified using GIS. As discussed in the employment section, an especially painstaking effort was undertaken to insure that all public schools were accounted for and located in the appropriate TAZ.

CONCLUSIONS

The El Paso region's young population, along with Texas's business-friendly climate and culture of entrepreneurship, will place it in a strong competitive advantage over many other regions in the United States. Also to its advantage are the region's strong linkages with Mexico (economy, society, and culture), the region's historical resources, central city architecture, and the beauty of the surrounding natural environment. Each of these factors (especially if they are further enhanced) is a strong plus, as the region competes with the rest of the nation and the rest of the world for talented and innovative residents. Until very recently, the El Paso MSA avoided the severe downturn that has affected the national economy. However, the region has likely entered into a period of modest economic growth with higher than average unemployment that will probably exist for the next 12 to 36 months. This is because the economic stimulus which helped the region move through the recession relatively unscathed, namely the expansion of Fort Bliss, is coming to an end. The region's longer-term economic growth trends will be tied to military activity and the competitiveness of the U.S.-Mexico border region in global manufacturing. From the current perspective and until the next update of the MPO's socioeconomic data, both of these industries appear to have a stable outlook over the near and medium-term.

During the preparation of the population and employment forecasts for the El Paso MPO, the project consultants attempted to take these "big picture" trends into account while simultaneously focusing on more localized issues, such as the number homes planned for a particular subdivision or where a new shopping center is being proposed. Using this holistic approach, the current effort is expected to provide the El Paso MPO with necessary level of accuracy need to plan transportation improvements in the region over the next 25 to 30 years.

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APPENDIX A
RESULTS FROM FWD EL PASO ONLINE SESSION 1

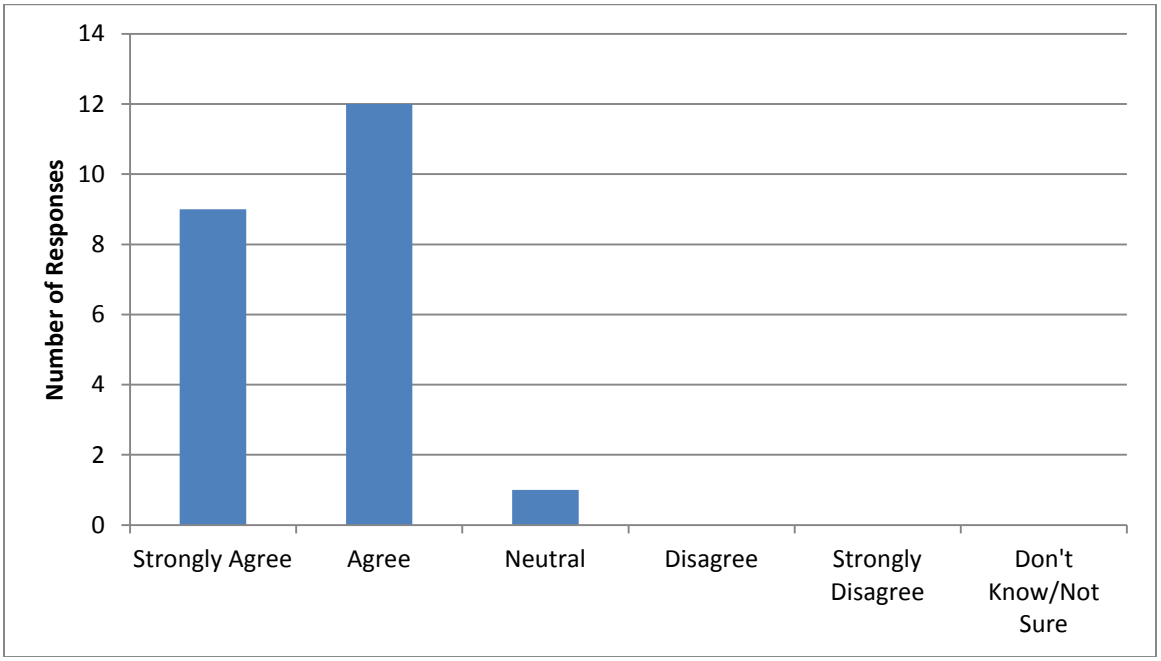
ONLINE SESSION 1
FWD EL PASO DELPHI METHOD

In addition to the May 20, 2011 FWD El Paso Stakeholder Meeting, the participants were asked to participate in a short series of online exercises, which were used to gather data while limiting the demands on their time. The first online session consisted of three parts: responding to a questionnaire; providing feedback on population projection scenarios for El Paso County; and assessing the results of the population allocation exercise that occurred during the stakeholder meeting. The sections below summarize the content and the results from Online Session 1.

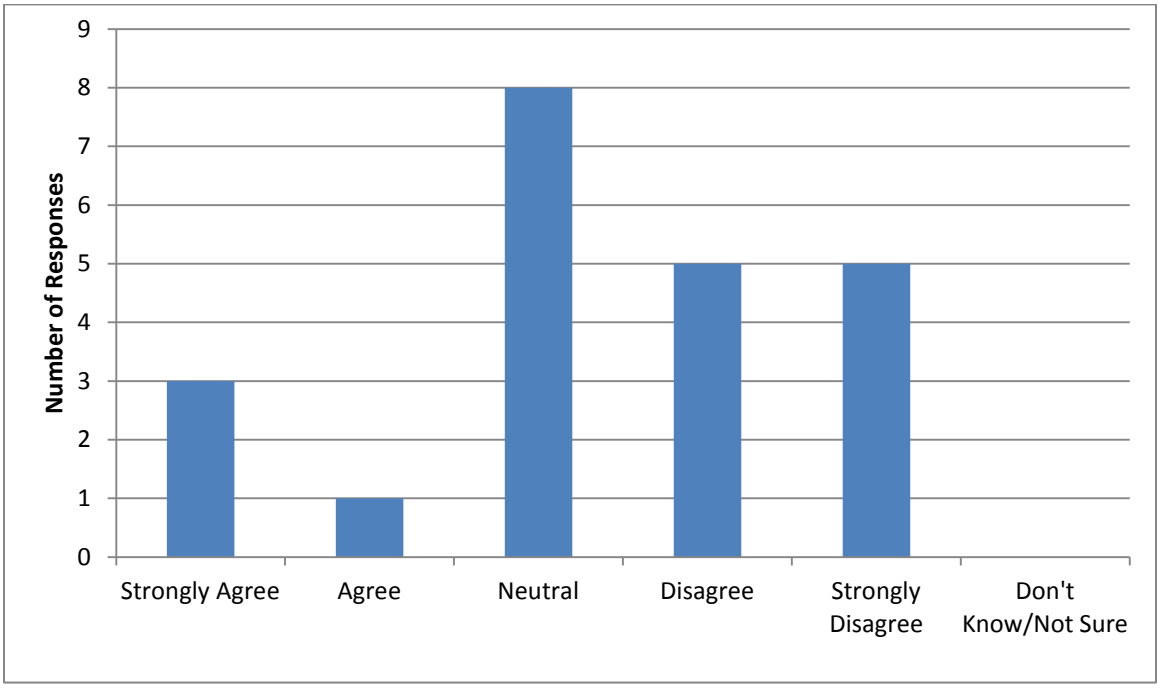
Part 1 - Questionnaire

During the first online session, participants were asked to respond to a series of statements about the region that focused on: workforce attraction and retention; the strengths and weaknesses of the regional economy; the Fort Bliss expansion and its impact on the local economy; the region's attractiveness to retirees; and regional water availability. Using a Likert scale, participants were asked to provide their opinion about each statement with one of the following responses: "Strongly Agree"; "Agree", "Neutral", "Disagree", "Strongly Disagree"; or "Not sure/No opinion". The sections below provide each of the 23 statements presented to the respondents and a summary of their responses.

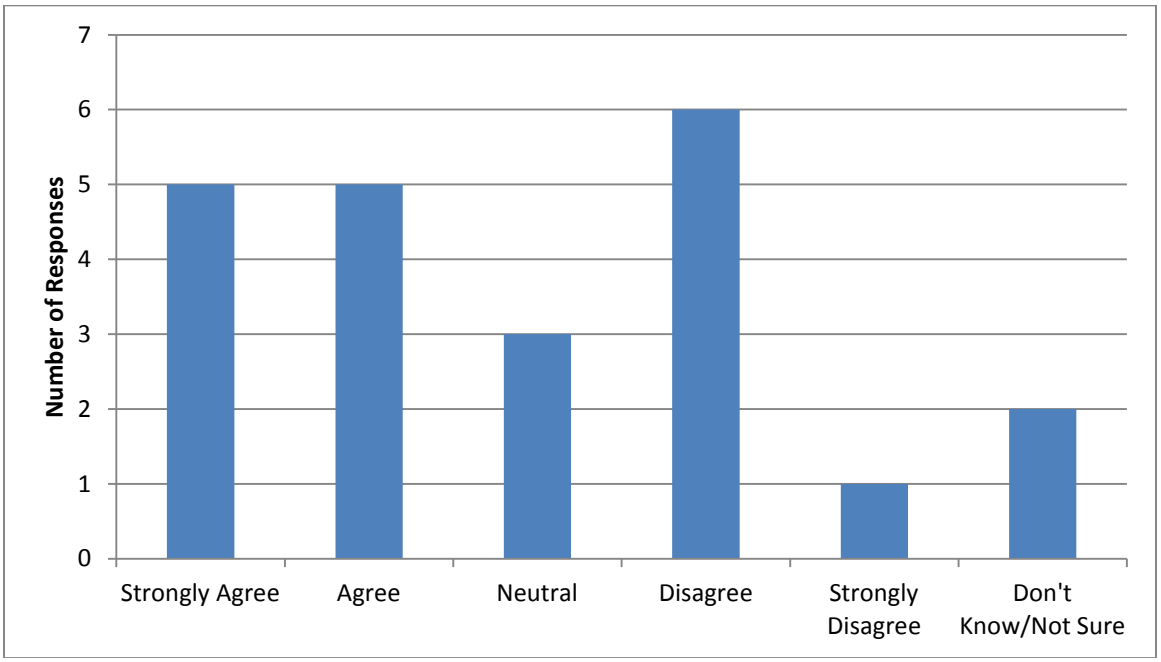
STATEMENT #1 - The El Paso region has historically suffered a brain drain (i.e. educated or talented residents, especially the young, moving away to find employment opportunities elsewhere).



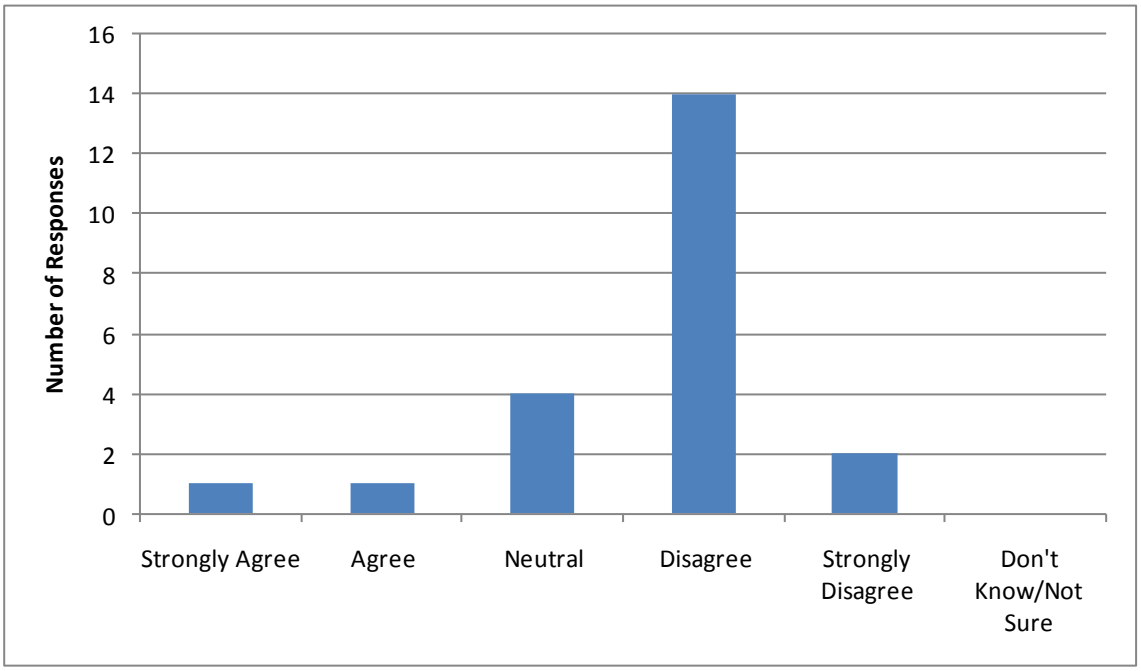
STATEMENT #2 – During the current recession, the El Paso region's brain drain has slowed or reversed.



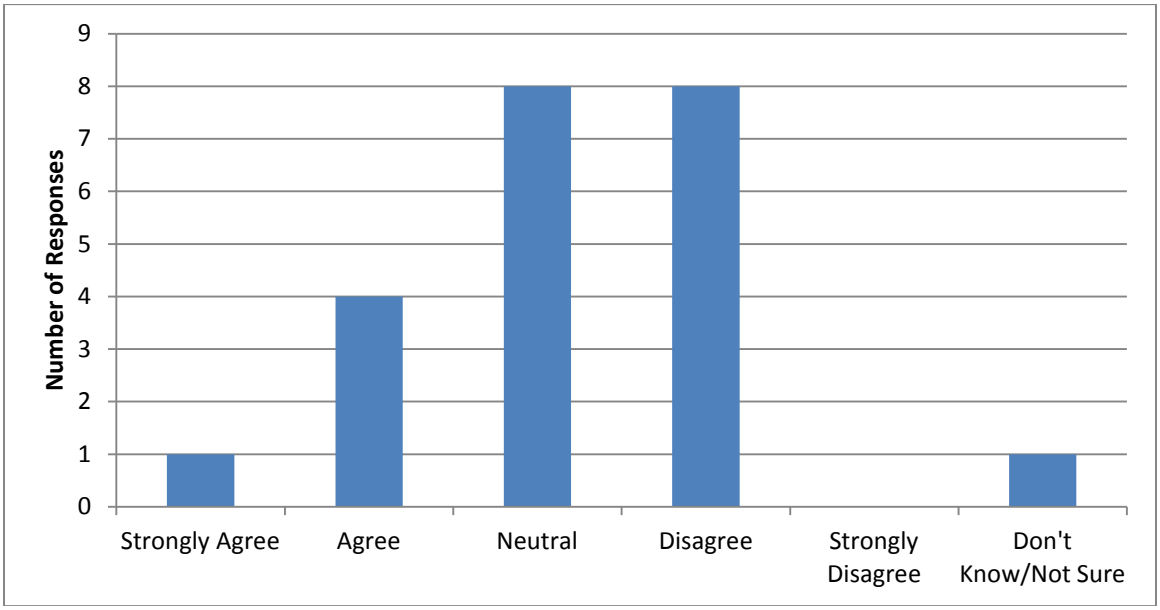
STATEMENT #3 – I can name a young person (not a family member) who grew up in the El Paso region, completed a college degree at a university in another region, and then returned to the El Paso region to take a professional job within the last two years.



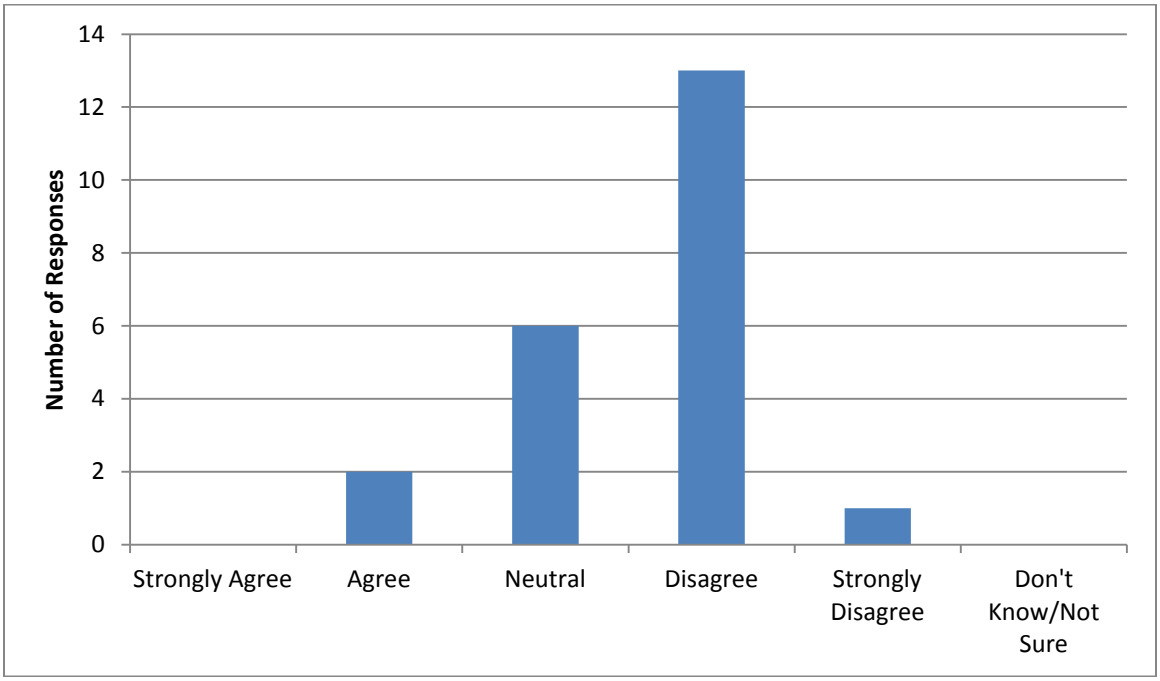
STATEMENT #4 – The El Paso region is able to attract the educated workforce it needs to attract major employers.



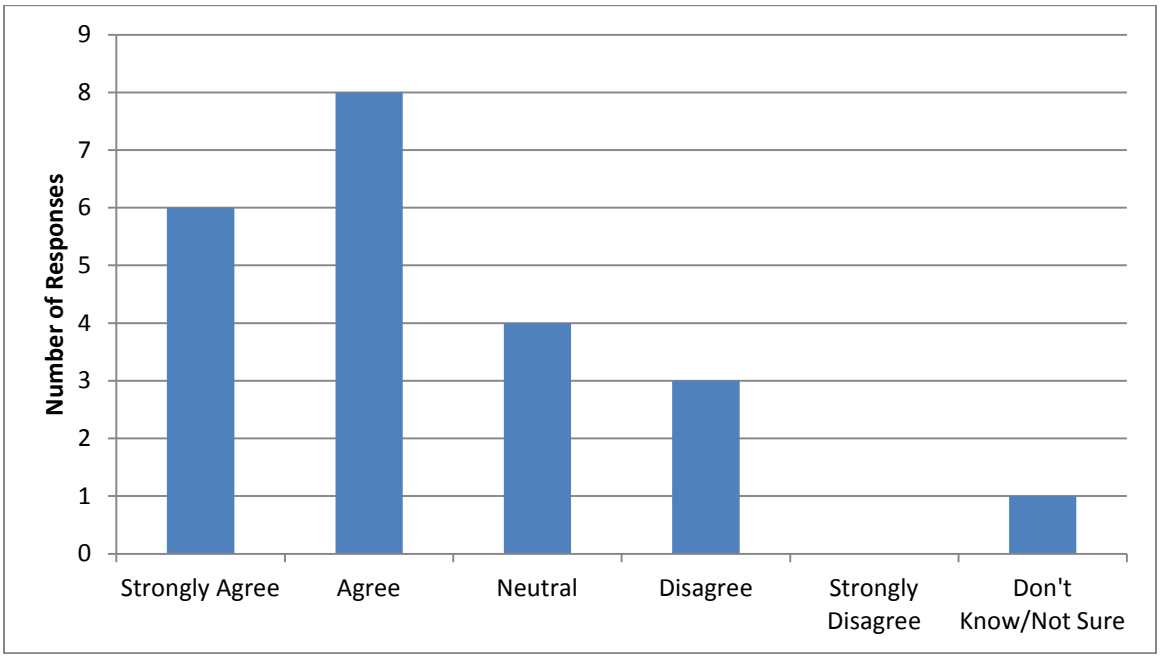
STATEMENT #5 – Job recruits are usually willing to move to the El Paso region.



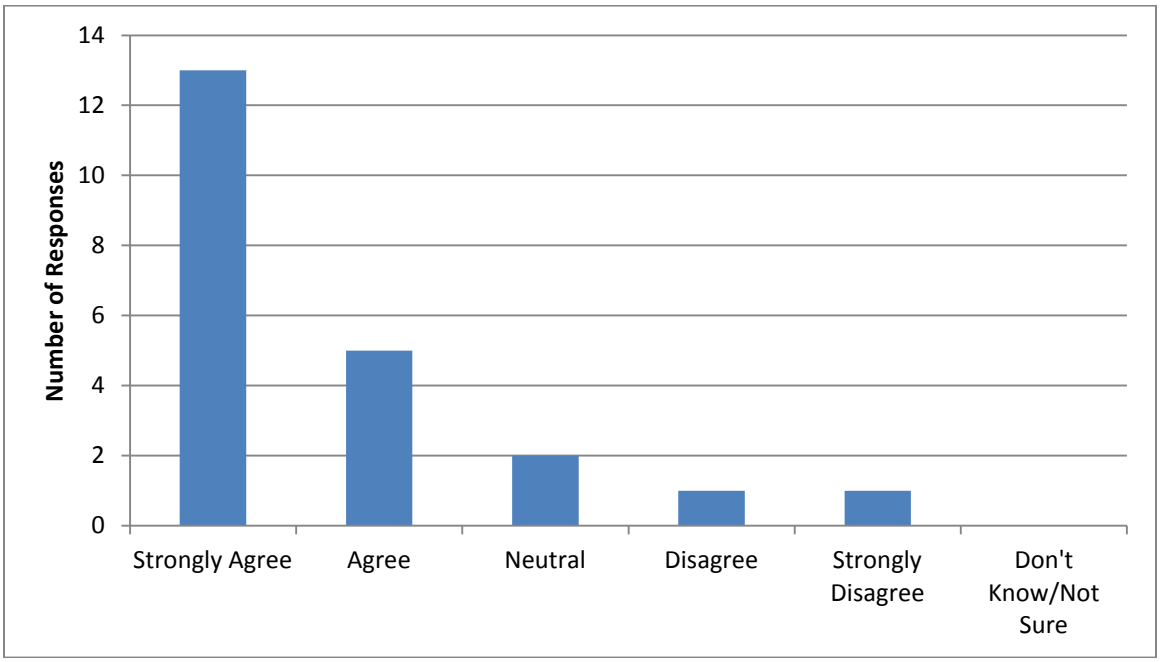
STATEMENT #6 – The El Paso region's isolation from other major cities is not a detriment to attracting new workers.



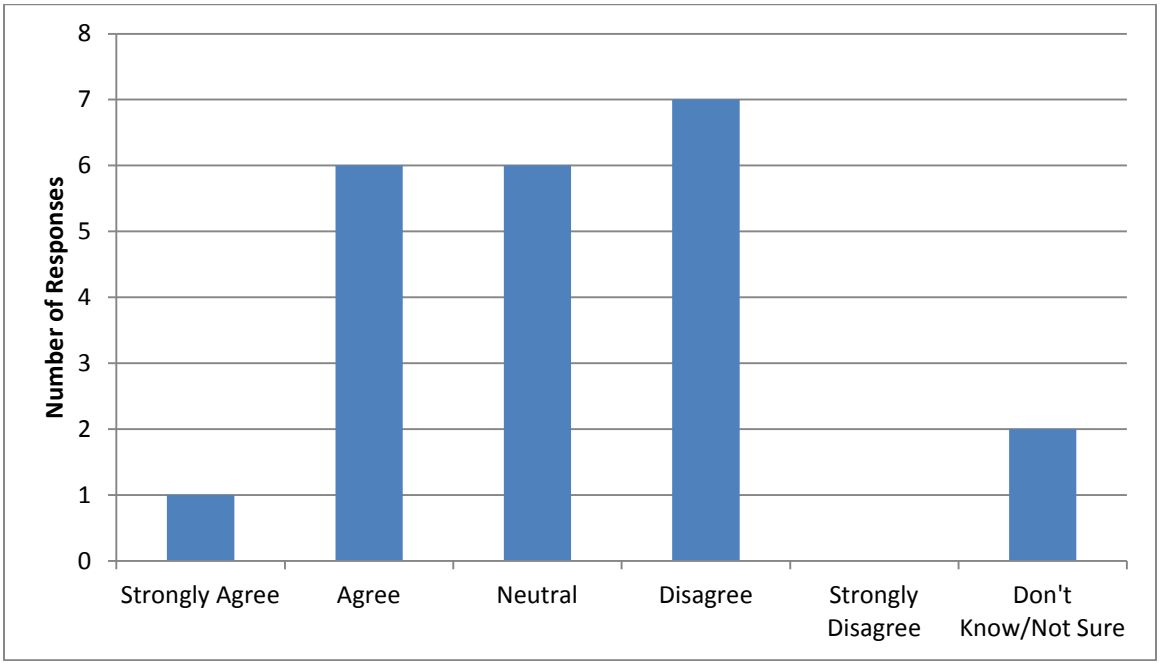
STATEMENT #7 – Maquiladoras are moving back to Ciudad Juárez. This is having a positive impact on the economy of the El Paso Region.



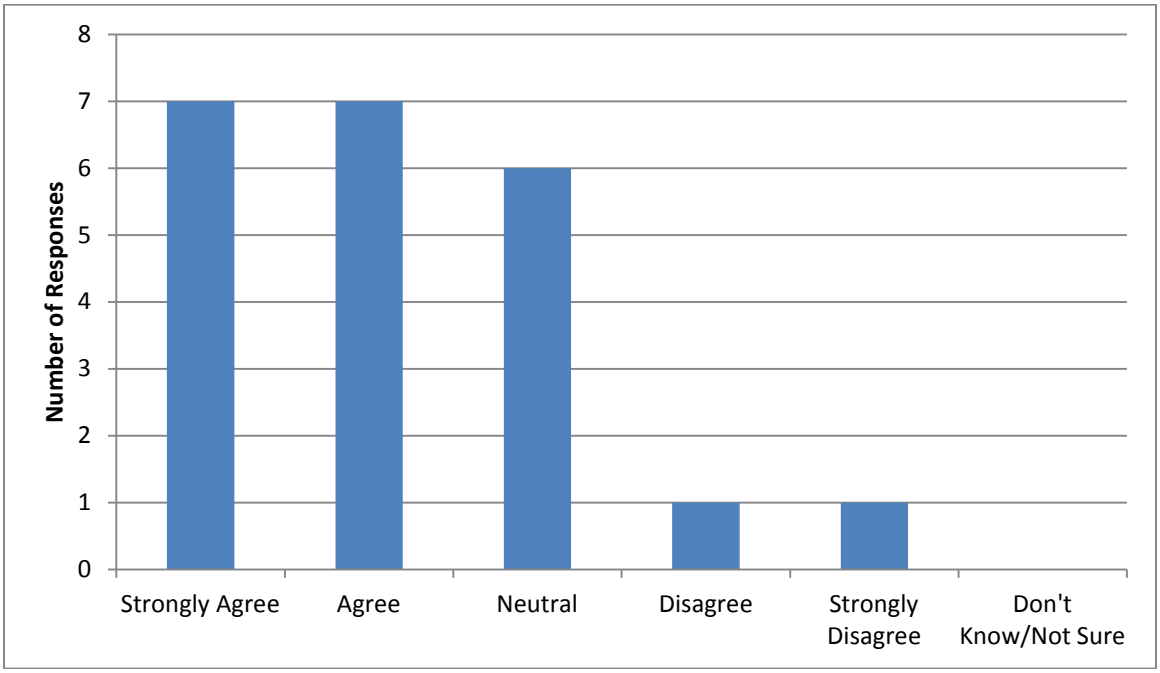
STATEMENT #8 – Thousands of Mexican citizens have moved from Ciudad Juárez to the El Paso region, due to insecurity in Mexico.



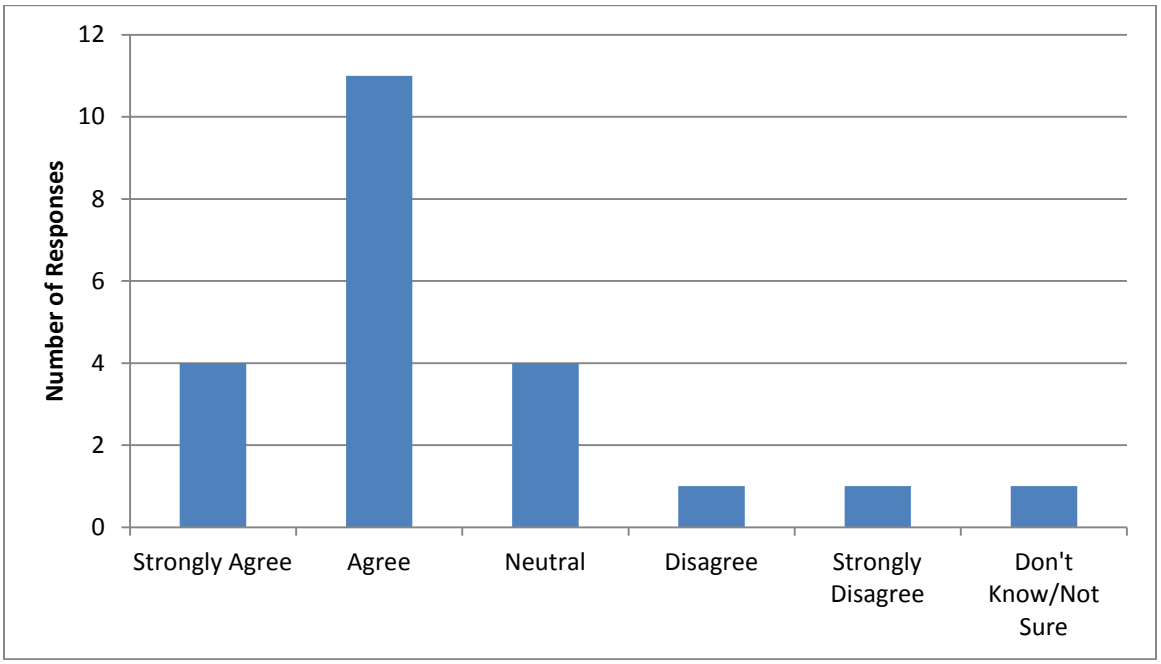
STATEMENT #9 – Among those Mexican citizens who have relocated to the El Paso region, due to insecurity in Mexico, most will return to Mexico when the violence declines and the environment becomes safer.



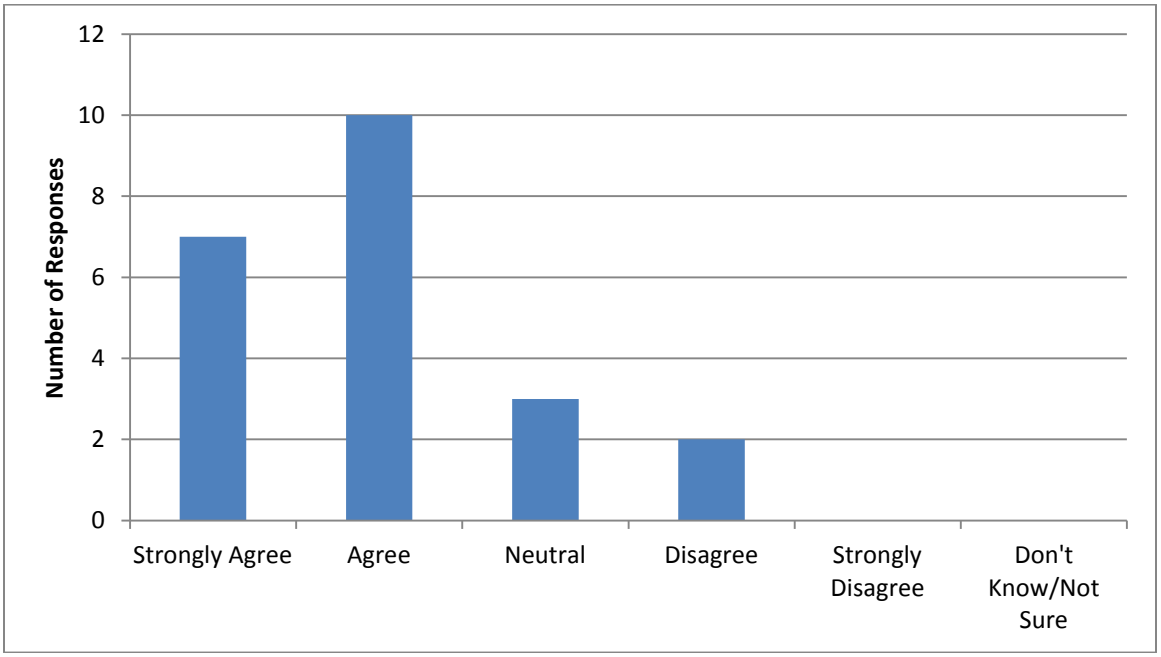
STATEMENT #10 – The 2010 Census population counts for the region are probably a significant undercount.



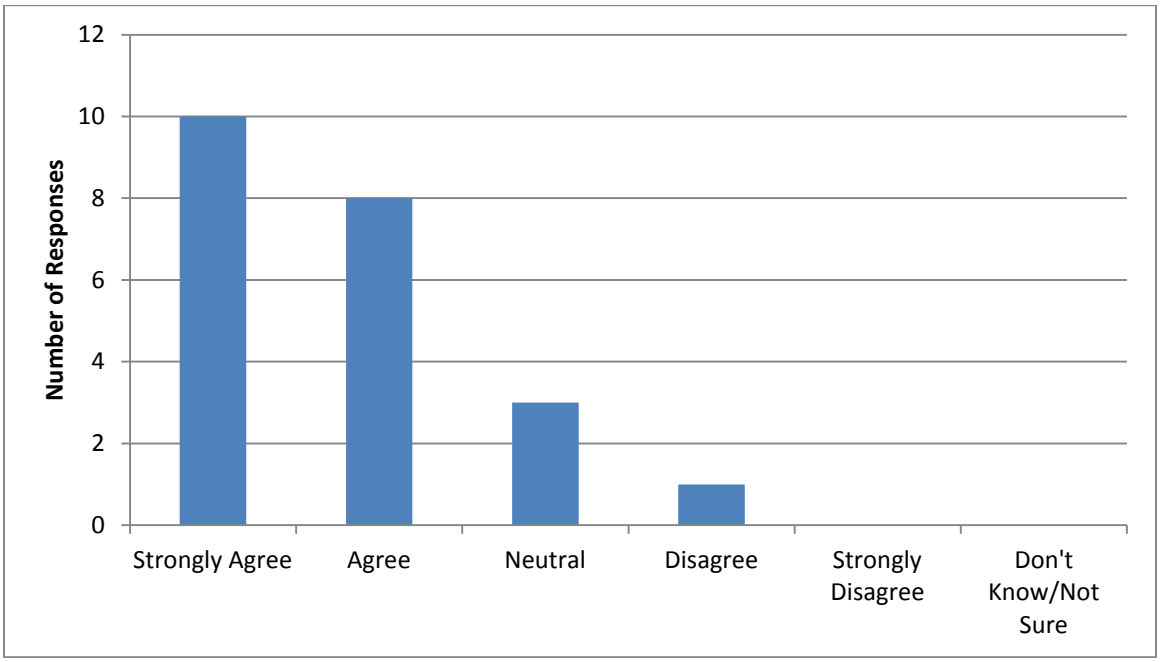
STATEMENT #11 – Local businesses have helped the El Paso region maintain its employment during the recession.



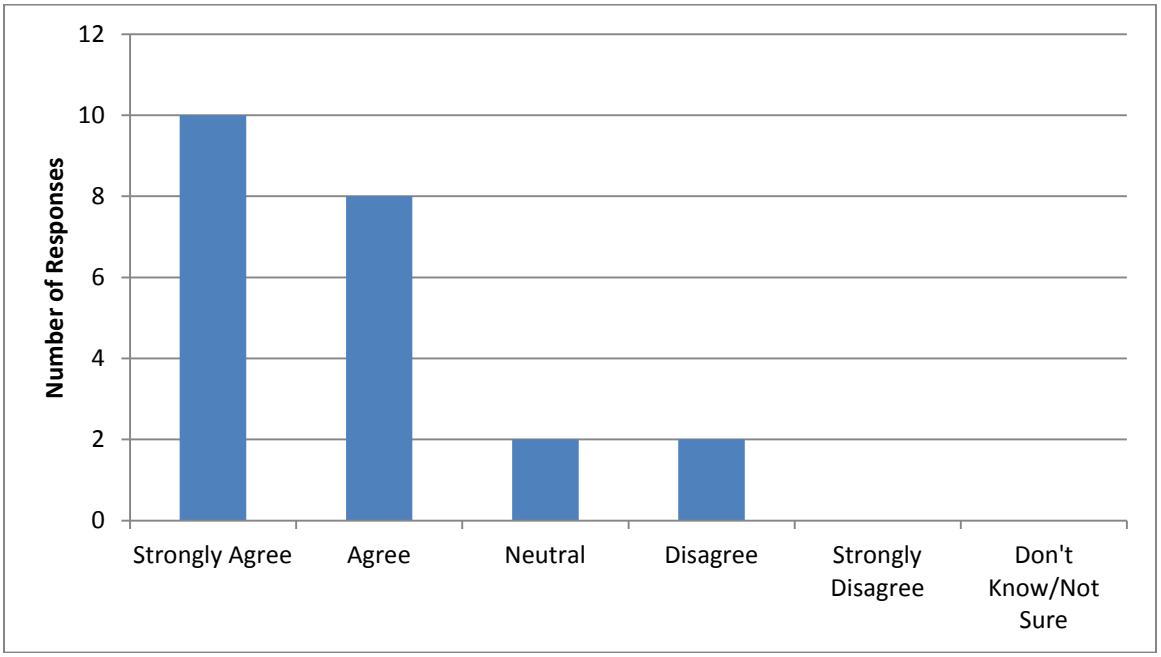
STATEMENT #12 – There are few major corporations with large operations in the El Paso region. This has been and continues to be a detriment to regional employment growth.



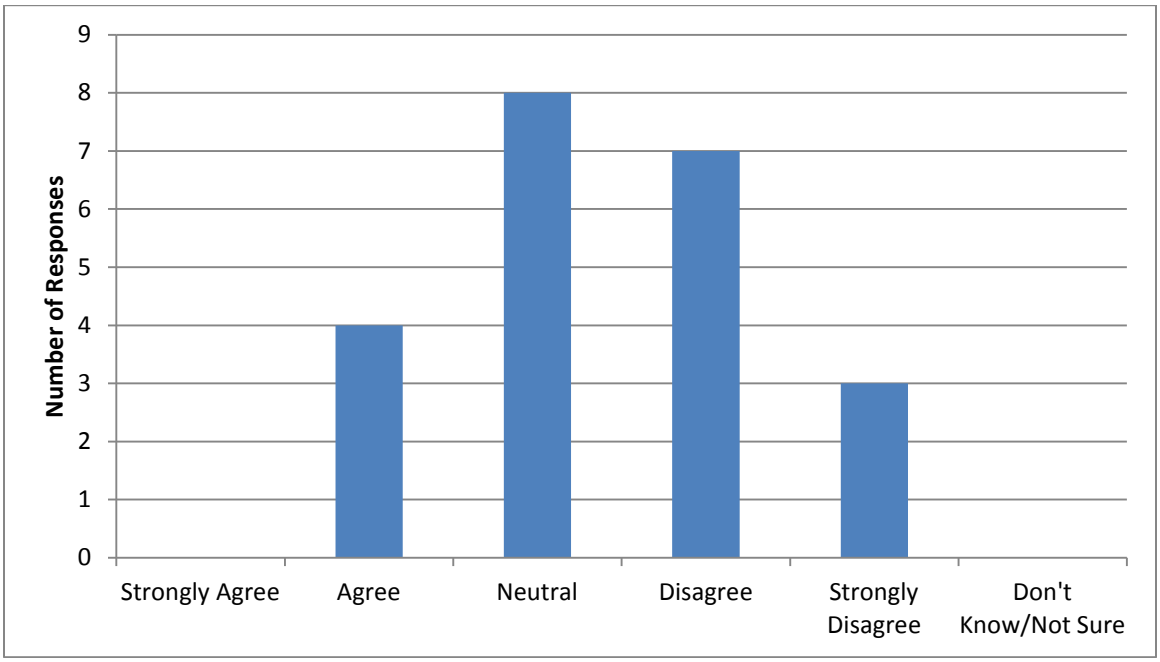
STATEMENT #13 – The El Paso region's weather is a plus for attracting new employers and residents.



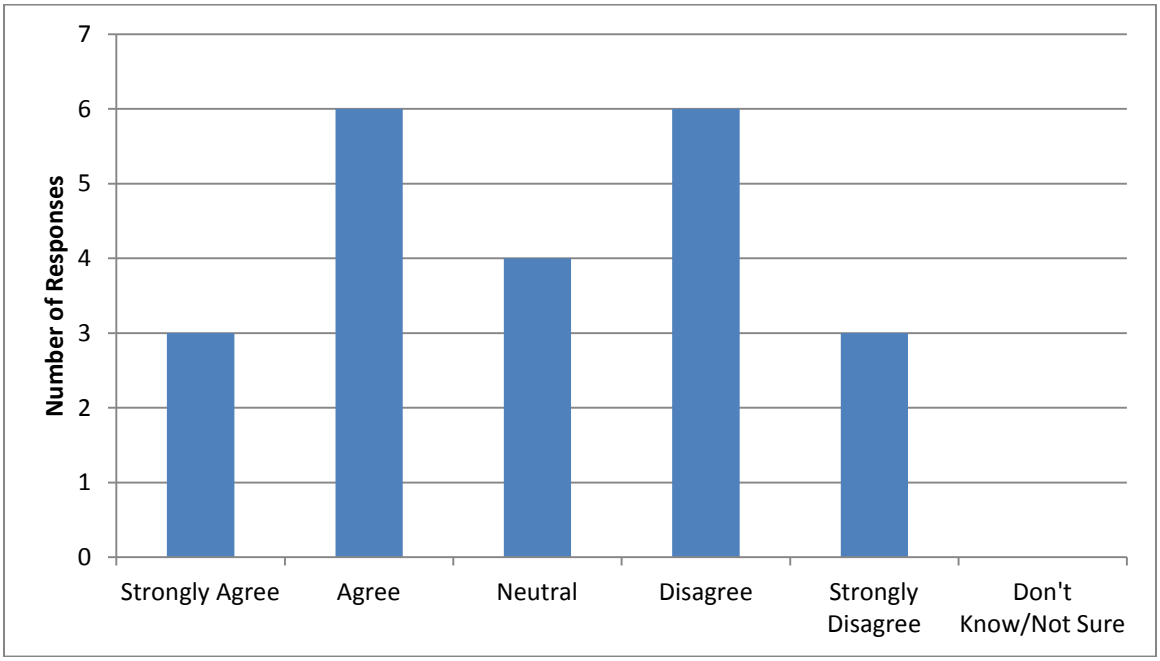
STATEMENT #14 – Good housing is affordable in El Paso.



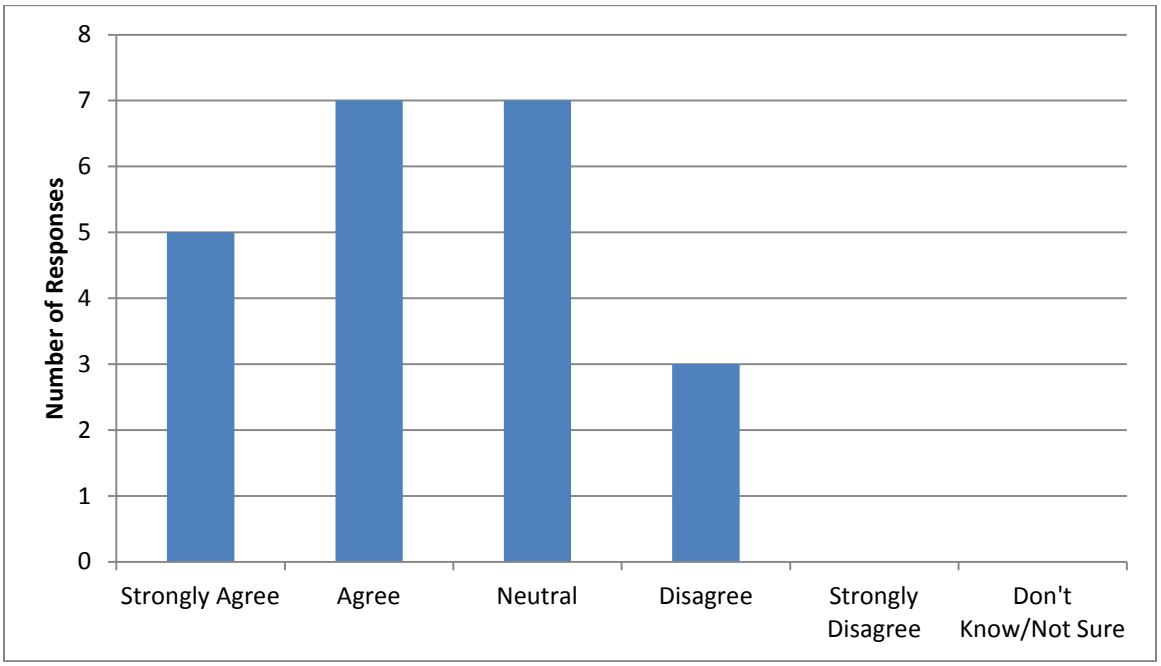
STATEMENT #15 – Local governments in the El Paso region generally take a pro-business attitude.



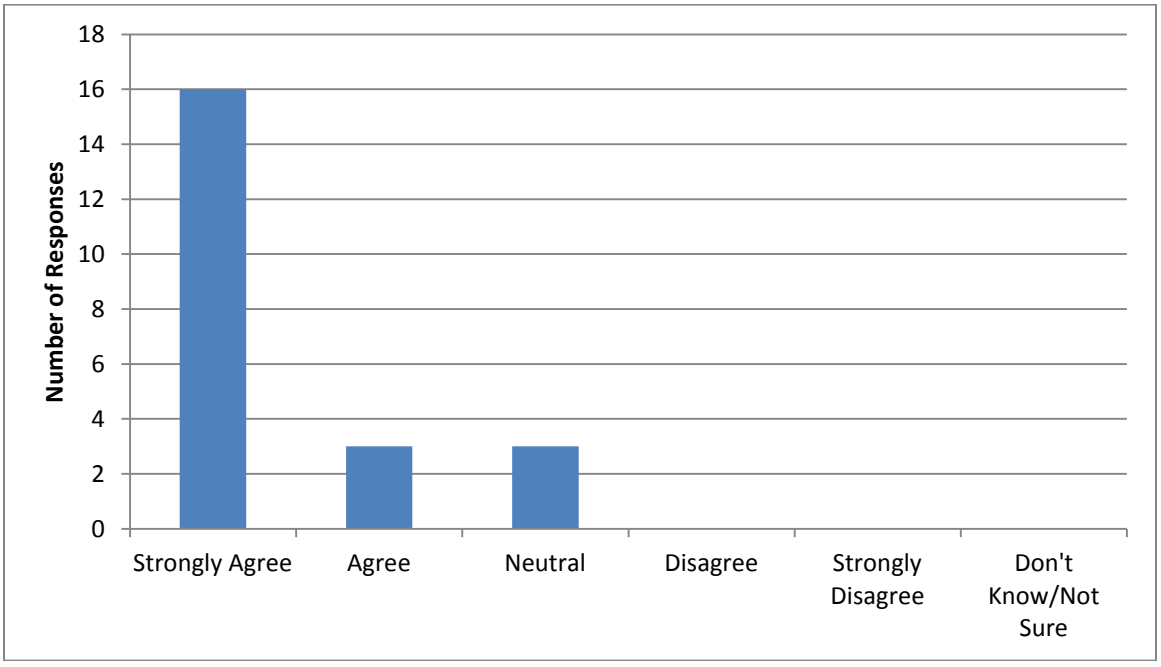
STATEMENT #16 – Local governments in the El Paso region are generally accommodating to developers.



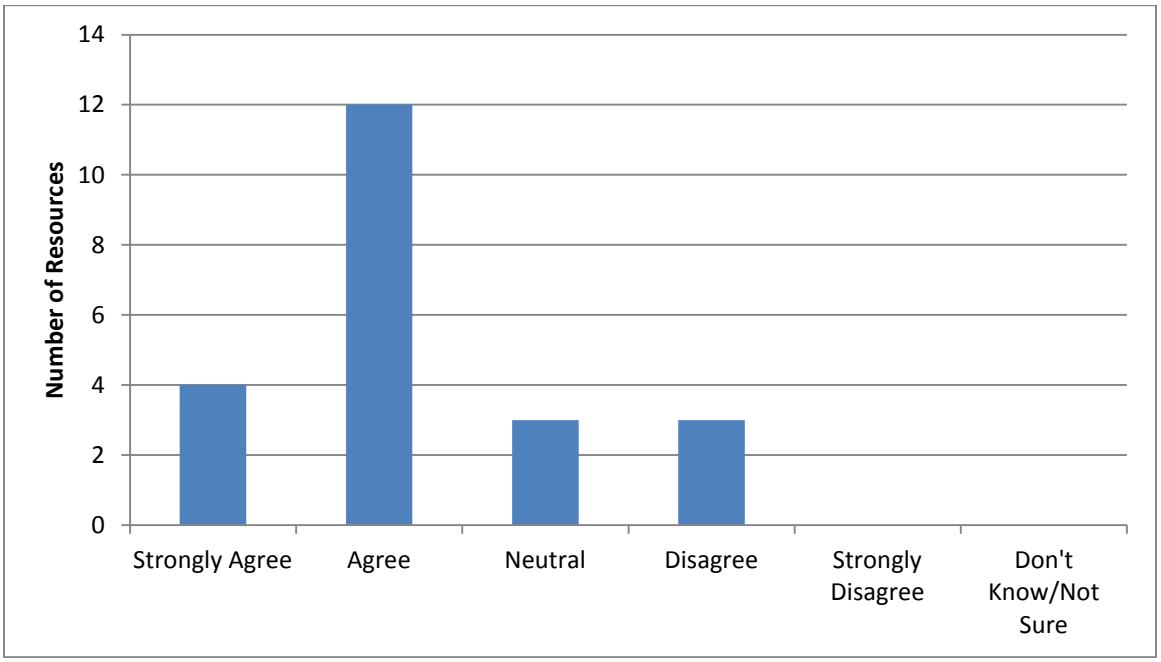
STATEMENT #17 –The El Paso region's isolation from other major cities is a detriment when attracting new businesses.



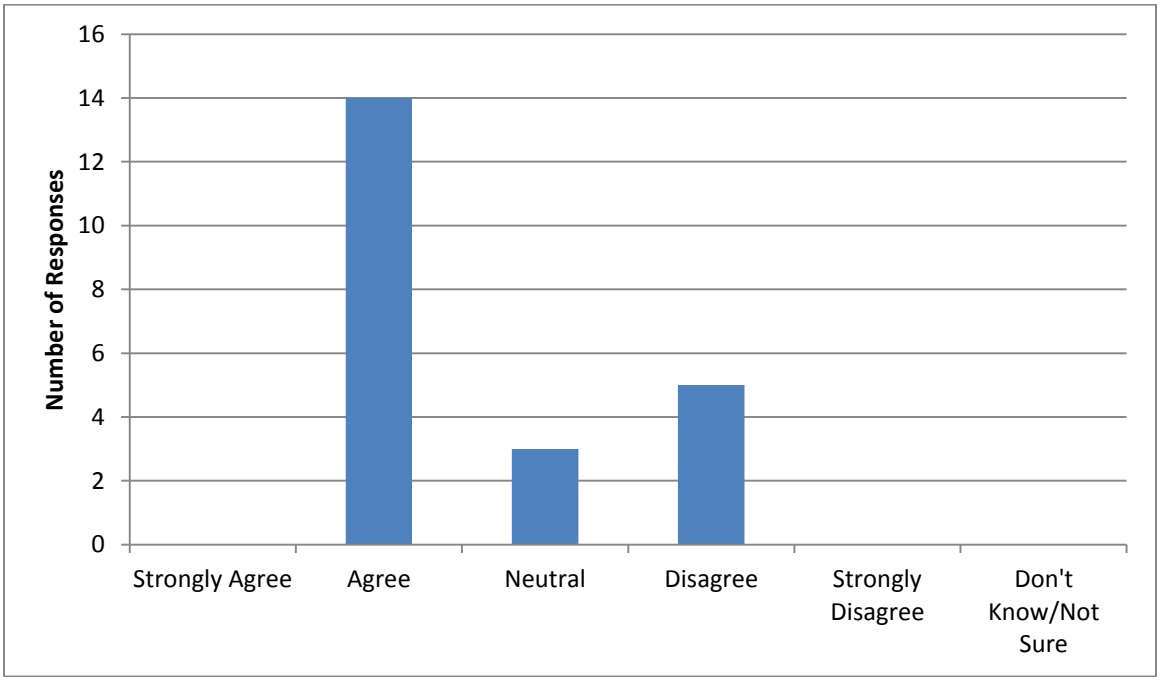
STATEMENT #18 – The expansion of Ft. Bliss' mission and the subsequent stationing of troops and new construction are the primary reason why the El Paso region has experienced fewer effects from the current recession.



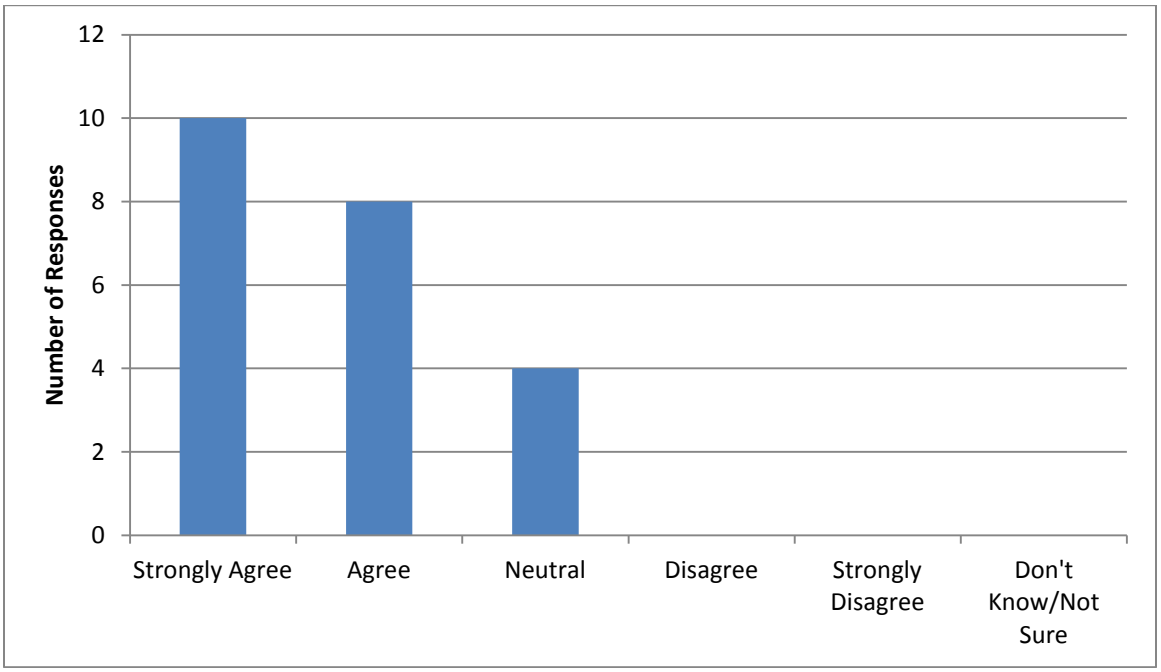
QUESTION #19 – The El Paso region has become dependent upon the expansion of Fort Bliss to grow its population and economy.



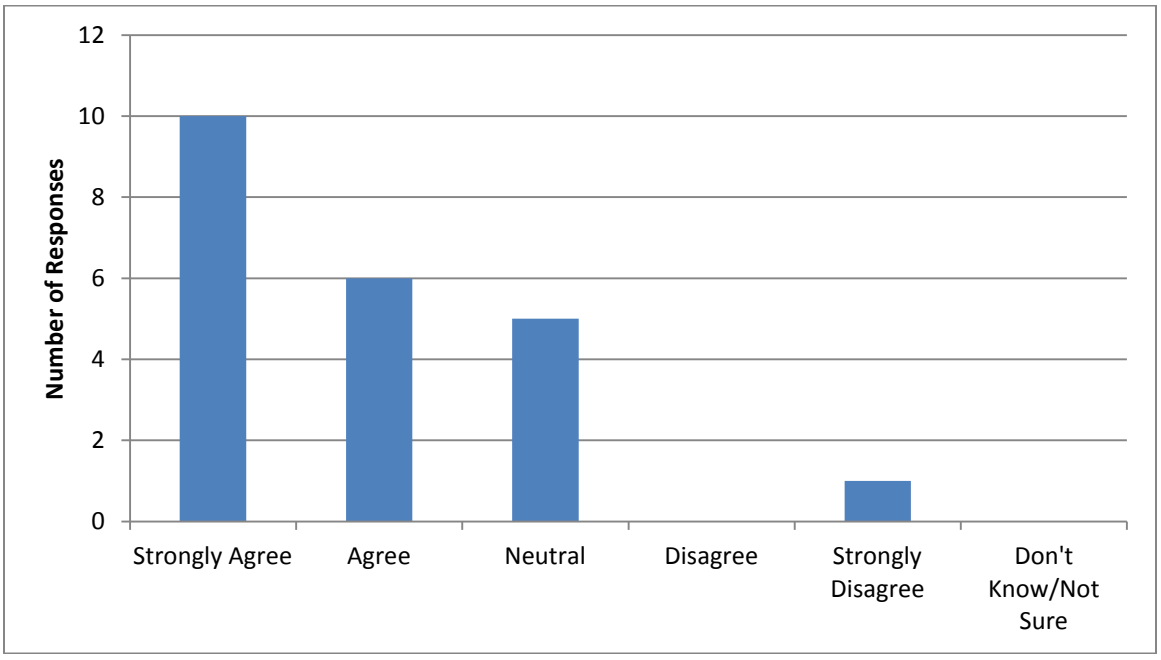
STATEMENT #20 – As Fort Bliss' expansion comes to an end, the El Paso region will see its economy and population growth slow substantially.



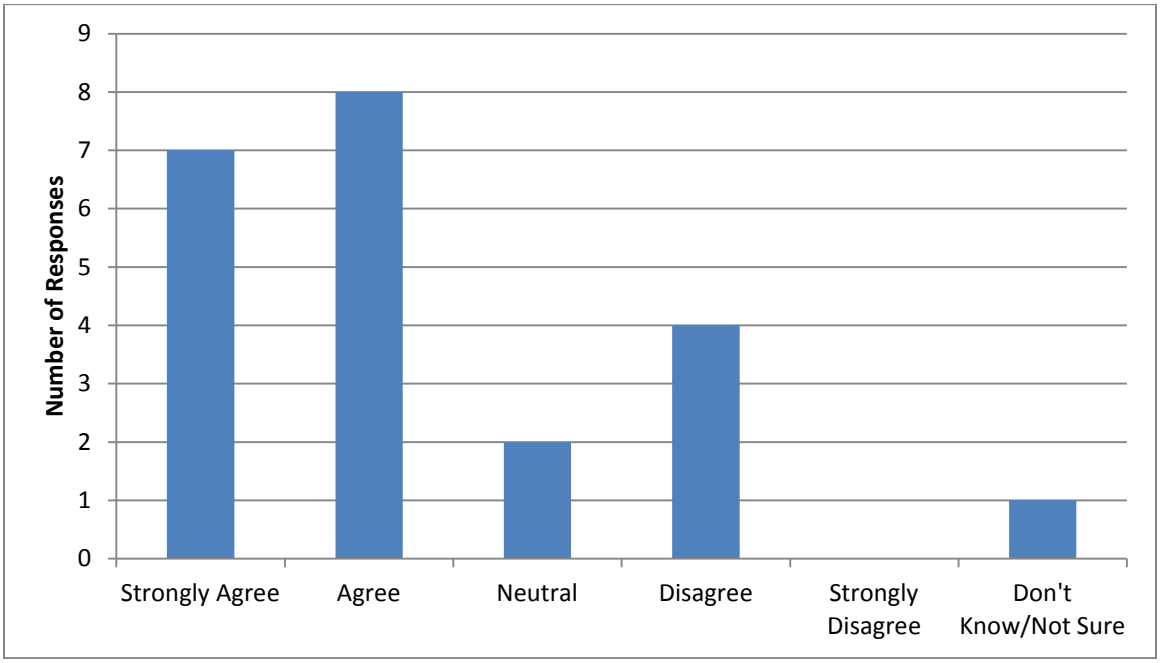
STATEMENT #21 – Corporations that serve the military, especially in the high-tech industries, are good prospects for the El Paso region's future economic growth.



STATEMENT #22 – The El Paso region would be attractive to retirees.



STATEMENT #23 – The El Paso region has sufficient water resources for long-term growth.



Part 2: Assessing Control Total Scenarios

During the second exercise of Online Session 1, participants considered four different population projection scenarios produced by the Texas State Data Center for El Paso County (See Figure A.1). These scenarios were as follows:

- 1.0 Migration Scenario – El Paso County will have the same rate of migration in the future that it experienced between 1995 and 2000;
- 0.5 Migration Scenario – El Paso County will have a future migration rate that is equal to one-half of the migration rate experienced between 1995 and 2000;
- 0.0 Migration Scenario – El Paso County will have no net migration in the future (positive population growth would be the result of the birth rate exceeding the death rate);
- 2000-2007 Migration Scenario – El Paso will have the same rate of migration in the future that was estimated to have occurred between 2000 and 2007.

The participants were asked the following question: "Which of these population projection scenarios would you say is most likely to happen?" If, for example, the respondent did not approve of any of the choices and believed that an answer such as "between the 0.0 and 0.5

Migration Scenario" or "Higher than the 1.0 Migration Scenario", was more accurate, then they could select a button for "More Choices". If the "More Choices" option was selected, the respondent was shown a sliding scale with the population projection scenarios ordered according to their total growth. Respondents could choose points between scenarios or could say the population projections should be higher or lower than any of the scenarios presented.

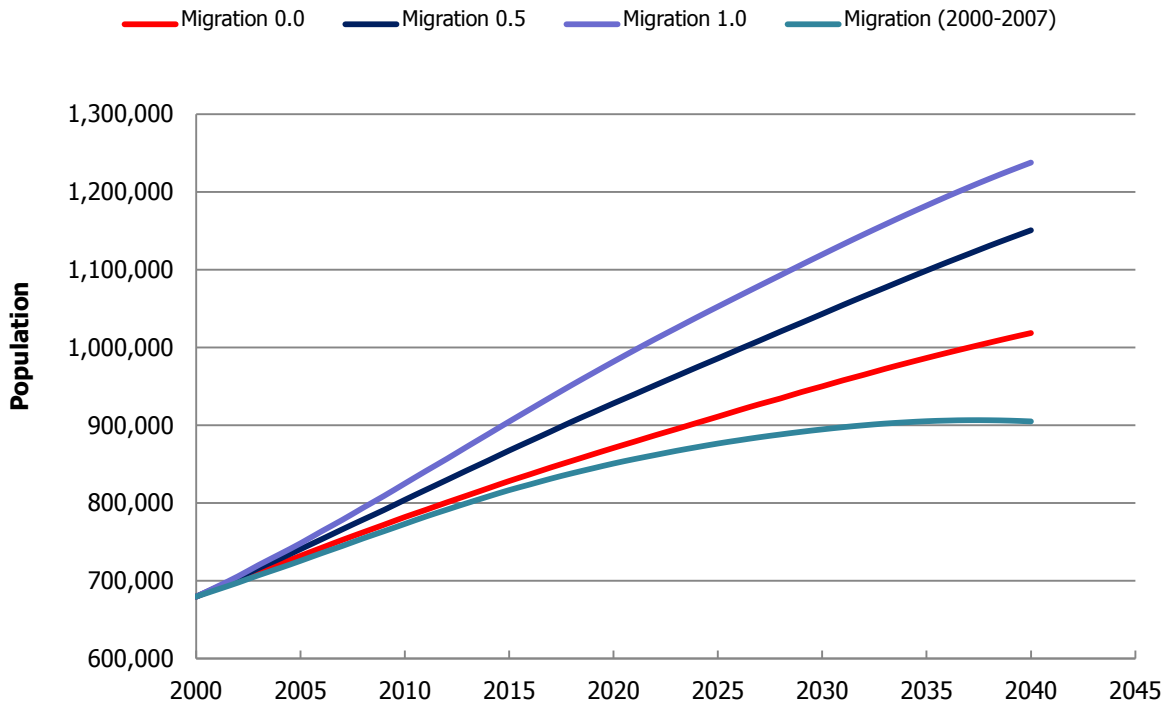


Figure A.1: El Paso County Population Trends for Alternate Migration Scenarios – Texas State Data Center

Table A.1 shows the responses from the FWD El Paso participants, when asked which scenario they believed best represented the most likely future growth scenario for El Paso County. The most commonly chosen scenario was the 0.5 Migration Scenario with 9 responses, followed by the 0.0 Migration Scenario with 4 responses. The 1.0 Migration Scenario and the 2000-2007 Migration Scenario each received 3 responses, as did the "Other Migration Scenario" option. Selecting the "Other Migration Scenario" meant that the participant believed none of the existing population projection scenarios was satisfactory.

Table A.1: FWD El Paso Participant Responses to Most Likely Growth Scenario for El Paso County

Scenario	Number of Responses
1.0 Migration	3
0.5 Migration	9
0.0 Migration	4
2000-2007 Migration	3
Other	3

Part 3 – Assessing Initial Allocation of Future Population to Districts

The third and final exercise asked the participants to review the results from the population allocation exercise conducted during the FWD El Paso Stakeholder Meeting. During this exercise, the participants allocated the next 100,000 residents in El Paso MPO study area to the 12 districts by placing dots on a page, with each dot representing 5,000 residents. The online exercise showed the participants a table with the first three columns of Table A.2. The participants were asked to review the amount of population allocated to each district and assess whether it was "Too Low", "OK", "Too High", or "Not Sure". Table A.2 also summarizes the results of this activity and shows the number of responses for each category. The responses to this exercise were used to adjust the district control totals for the regional population allocation.

Table A.2: Assessment of Population Allocation Exercise Results during Delphi Meeting

District	Average Population Allocated	Share of Total	Too Low	OK	Too High	Not Sure
Mission Valley	5,800	6%	3	16	2	1
East Side	15,000	15%	1	17	4	0
Far East	24,900	25%	3	12	7	0
Hueco Tanks	1,800	2%	1	16	2	3
Downtown	3,800	4%	4	12	6	0
Northeast Central	11,300	11%	7	11	2	2
Westside	12,300	12%	7	14	1	0
Sunland Park	6,300	6%	2	15	5	0
Upper Valley	5,200	5%	3	17	2	0
Santa Teresa	7,700	8%	3	12	5	2
Anthony, NM	3,400	3%	4	13	5	1
Chaparral	2,500	3%	3	11	6	2
Total	**100,000**	**100%**				

APPENDIX B
RESULTS FROM FWD EL PASO ONLINE SESSION 2

ONLINE SESSION 2
FWD EL PASO DELPHI METHOD

The second session of the FWD El Paso Delphi Method also had three sections and sought to: clarify previous answers from the participants during Online Session 1; explore discussions from the stakeholder meeting in more detail; and reach consensus on previously allocated population forecasts at the district level. The paragraphs below provide a brief description of the data collection effort and its results.

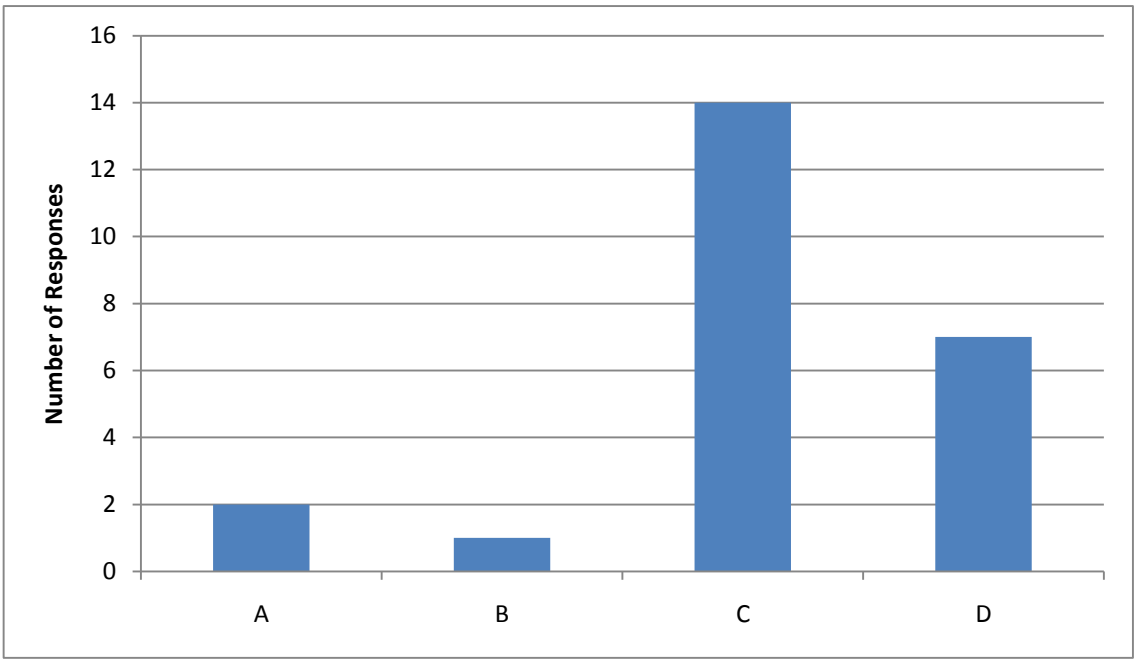
Part 1 - Clarification of a Previous Response

During Online Session 1, participants were asked several questions about El Paso's perceived "brain drain" or the relocation of many of its educated or talented residents, especially younger residents, out of the region to seek opportunities elsewhere. When asked if a brain drain was occurring, the respondents were in almost unanimous agreement that it was. When asked if they believed the brain drain had slowed or reversed during the current recession, the majority of respondents said "No". However, many respondents said they were "Unsure" and a few said "Yes", the trend has reversed. The respondents were then asked if they personally knew a young person who had grown up in El Paso, completed college outside of the region, and then returned to take a professional job. Ten of the respondents replied in the affirmative, seven in the negative, and five were unsure. When reviewing the responses, the answers to Statement #2 and Statement #3 from the Online Session 1 appeared to contradict each other. Only a few respondents said the brain drain had slowed or reversed, but a significant number said they personally know someone who had moved away from El Paso for an education and then moved back to work. To clarify their view on El Paso's perceived brain drain, the participants were asked to choose one of four statements that best reflected their opinion on this matter. The conclusion was that a majority of the respondents believed that the region's brain drain was continuing, more or less unabated, despite the recession.

STATEMENT #1 - Choose the statement that you agree with the MOST:

A. The region's brain drain has reversed during the recession and this represents a new, long-term trend for the region's economy;
B. The region's brain drain has slowed, but the brain drain will resume when the national economy improves;

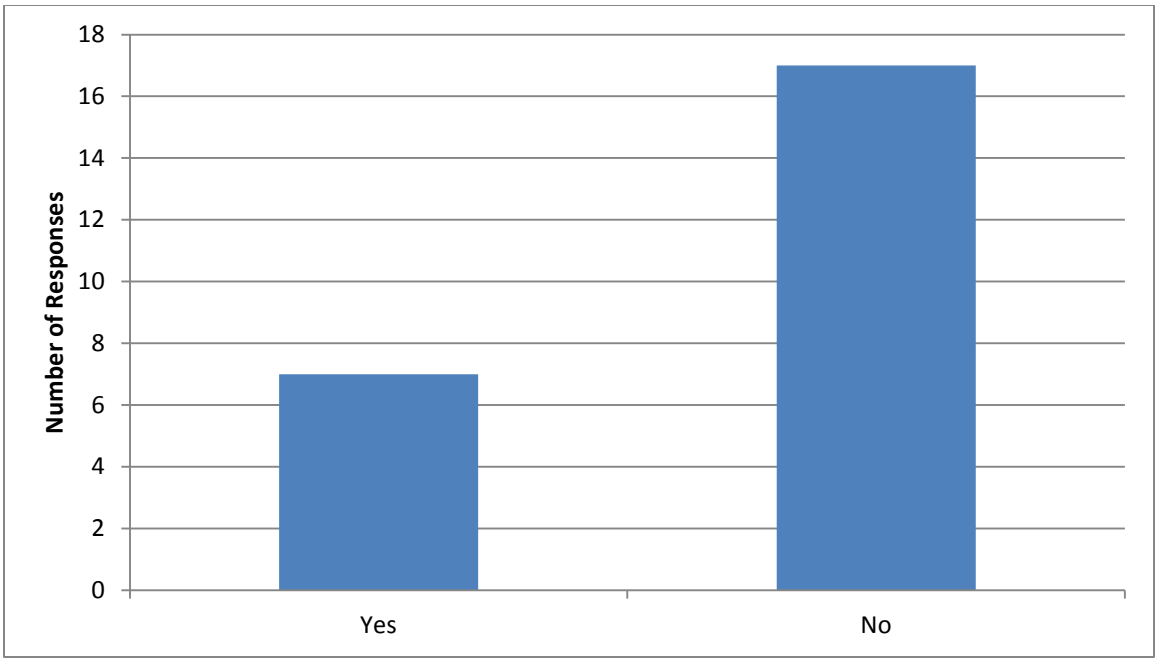
C. The region's brain drain has not changed significantly during the recession;
D. None of the above.



PART 2 – EXPLORING ISSUES IDENTIFIED DURING THE STAKEHOLDER MEETING

One theme that was raised by several participants during the FWD El Paso Stakeholder Meeting was the concern that policies, decisions, and other actions by local governments were making it more difficult for developers and businesses to operate profitably in the El Paso region. To better understand the prevalence of these incidents and how they might manifest themselves, the respondents were asked two questions, with an opportunity to elaborate.

QUESTION 2A - Do you have direct experience with a jurisdiction in the El Paso region which has regulations or policies which are pro-business or developer friendly?

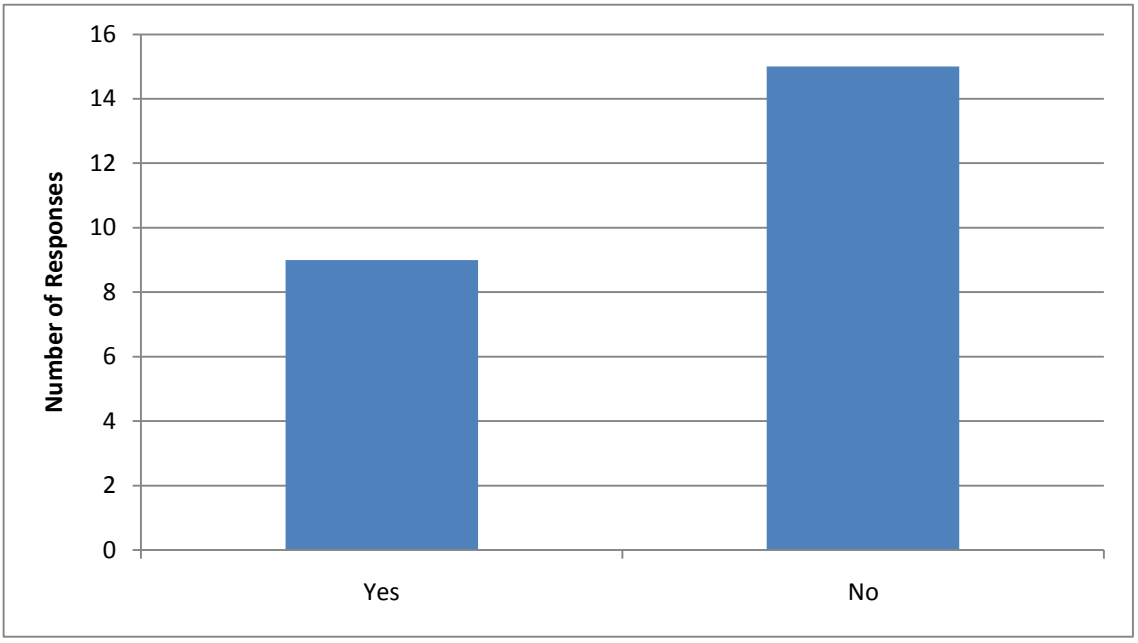


The question was accompanied with a list of all the municipal and county jurisdictions in the El Paso MPO study area.

QUESTION 2B - If you answered "Yes," can you give an example?

Summary of Responses	Number of Responses
Proactively work with developers to meet development rules and restrictions	1
TxDOT helpful and accommodating when getting approvals	1
Municipal annexation policies make cheap land available to developers	1
Development of a long-range plan to provide guidance on future land use	1
Establishment of development frameworks that ease the land development process	1
Promotion of business and development in their jurisdiction	1

QUESTION 3A - Do you have direct experience with a jurisdiction in the El Paso region which has regulations or policies which make it difficult for businesses or developers to achieve their objectives or remain profitable?



QUESTION 3B - If you answered "Yes," can you give an example?

Summary of Responses	Number of Responses
Excessive or unreasonable restrictions and burdens from regulations and special ordinances	4
Elected officials and city staff can be obstructionist or resistant to compromise with the private sector	1
City staff do not provide consistent advice for compliance with regulations or do not have adequate training	1
Unreasonable subdivision regulations are significantly increasing the cost of development	1
Excessive and complicated permitting requirements	1
Lack of public investment in infrastructure	1

Part 3 – REACHING CONSENSUS ON POPULATION ALLOCATION TO DISTRICTS

The third component of Online Session 2 was reaching a consensus on the allocation of population by district. During the stakeholder meeting, participants were asked to allocate the next 100,000 persons in the El Paso MPO study area to the 12 districts, using dots that represented 5,000 residents each. The results were tabulated and shown to the participants of Online Session 1. During that session, the participants were able to assess the original allocation as being "Too High", "OK', "Too Low", or "Unsure". Using this feedback, the project

consultants made additional adjustments to the population allocation by district. These revised district population forecasts were shown to the participants during Online Session 2 with the ability to adjust the numbers up or down (in increments of 100 residents) using an adjustment tool. The results from this exercise were averaged and they are shown below in Table B.1. Since the revised population forecasts for the districts were very close to the results from Online Session 1, it was decided that these figures would represent the consensus allocation.

Table B.1: FWD El Paso Participants' Final Adjustments to the District Level Population Allocation – Second Online Meeting

District	Existing	Workshop	Session 1	Session 2
Mission Valley	70,429	76,229	OK	76,211
East Side	282,337	295,437	High	294,425
Far East	91,636	117,136	High	119,728
Hueco Tanks	11,170	12,970	OK	12,736
Downtown	50,462	53,862	OK	53,552
Northeast Central	160,570	174,170	Low	174,056
Westside	117,641	133,641	Low	133,657
Sunland Park	12,505	17,405	High	17,250
Upper Valley	16,402	21,002	OK	20,836
Santa Teresa	9,119	15,519	High	15,295
Anthony, NM	16,098	19,498	OK	19,187
Chaparral	15,646	17,146	High	17,081