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MEMORANDUM

DATE: August 28, 2020
TO: Andrew Canon
CC: Luis Diaz
FROM: JD Allen
RE: RGVMPO 2045 MTP – Demographic Analysis

Introduction

Land use and growth patterns directly impact how people travel, which in turn affects transportation system needs within the community. Therefore, it is critical to understand and visualize where growth is occurring within the region to guide the Metropolitan Transportation Plan (MTP) planning process. The Rio Grande Valley Metropolitan Area Boundary (RGVMAB) is a dynamic, growing area in terms of both population and employment, presented in Figure 1. The following analysis details demographic growth trends at a regional and sub-regional level and serves as a driving force behind the Rio Grande Valley Metropolitan Planning Organization (RGVMPO) 2045 MTP update.

Figure 1: Projected RGVMAB Population and Employment Growth
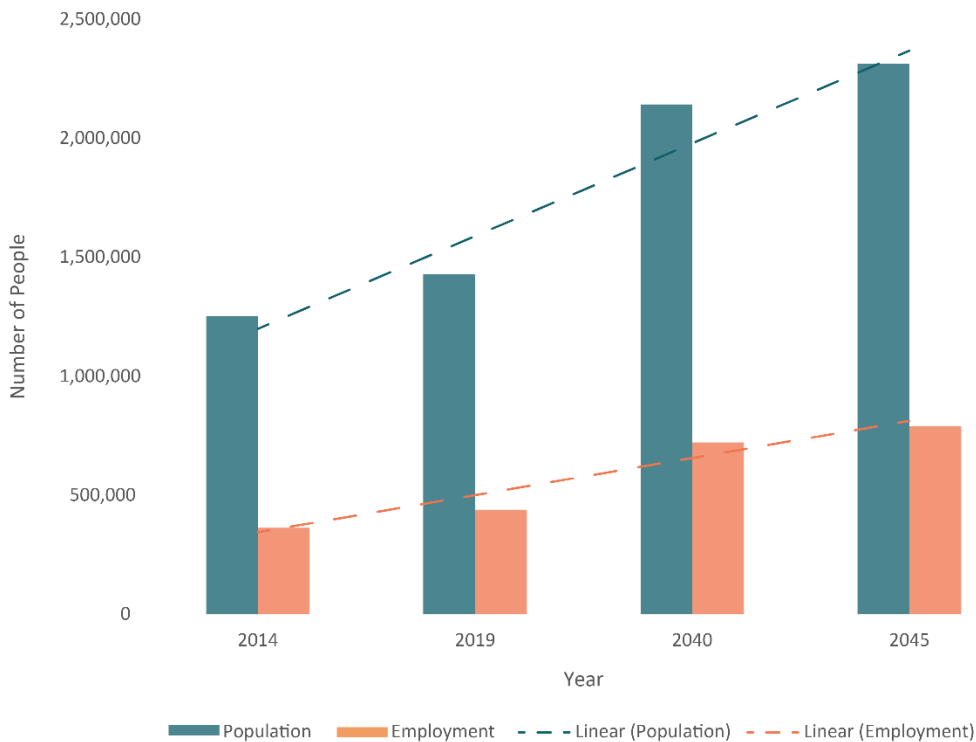
Methods

Using the Rio Grande Valley's (RGV) Travel Demand Model (TDM), the existing and future population and employment values were analyzed in terms of spatial distribution by density and projected change (%) from 2019 to 2045. The RGV Metropolitan Area Boundary (RGVMAB) data was projected from the TDM's base year of 2014. The socio-economic data needed to run the model was gathered from a mixture of sources. The datasets included public domain data sources, published commercial datasets, stakeholder input via Delphi Process, table-top GIS analysis, and limited field review of the study area. Special generators (i.e. establishments that generate high production/attraction trip counts such as a shopping center, prison, or a college campus) from the RGV TDM were utilized to bolster the project team's understanding of where citizens are traveling. These points are referred to as "key destinations" throughout the RGVMPO 2045 MTP.

The TDM utilizes zones known as Traffic Analysis Zones (TAZ) which are based on several factors to better analyze travel patterns. These TAZs contain demographic information including population, employment, median income, and key destinations. Analyzing this data at the TAZ and point levels separately, as well as conducting an overlay analysis, allowed the project team to create a regional image of areas most likely to affect the transportation system within the RGVMAB. This two-pronged approach to demographic analysis also helped generate a better understanding of regional land uses, to better assist in planning regional transportation investments to meet the needs of the diverse communities.

The following sections discuss findings from the population and employment spatial analyses and provide the foundation for the RGVMPO 2045 MTP Needs Assessment.

Population

Figure 2 through **Figure 9** show the RGVMAB population density distribution for 2019 and 2045, respectively, which was projected from 2014 validated data. **Figure 10** through **Figure 13** display population growth in the region between 2019 and 2045, based on estimates provided by the TDM. Based on TDM outputs, the region's population is anticipated to grow by nearly 884,871 citizens by 2045. This translates to roughly 62% over the 26-year period. Spatially, the TDM growth outputs display that the largest population increases are expected to occur around major urban areas in the region, suggesting growth extending from already developed areas.
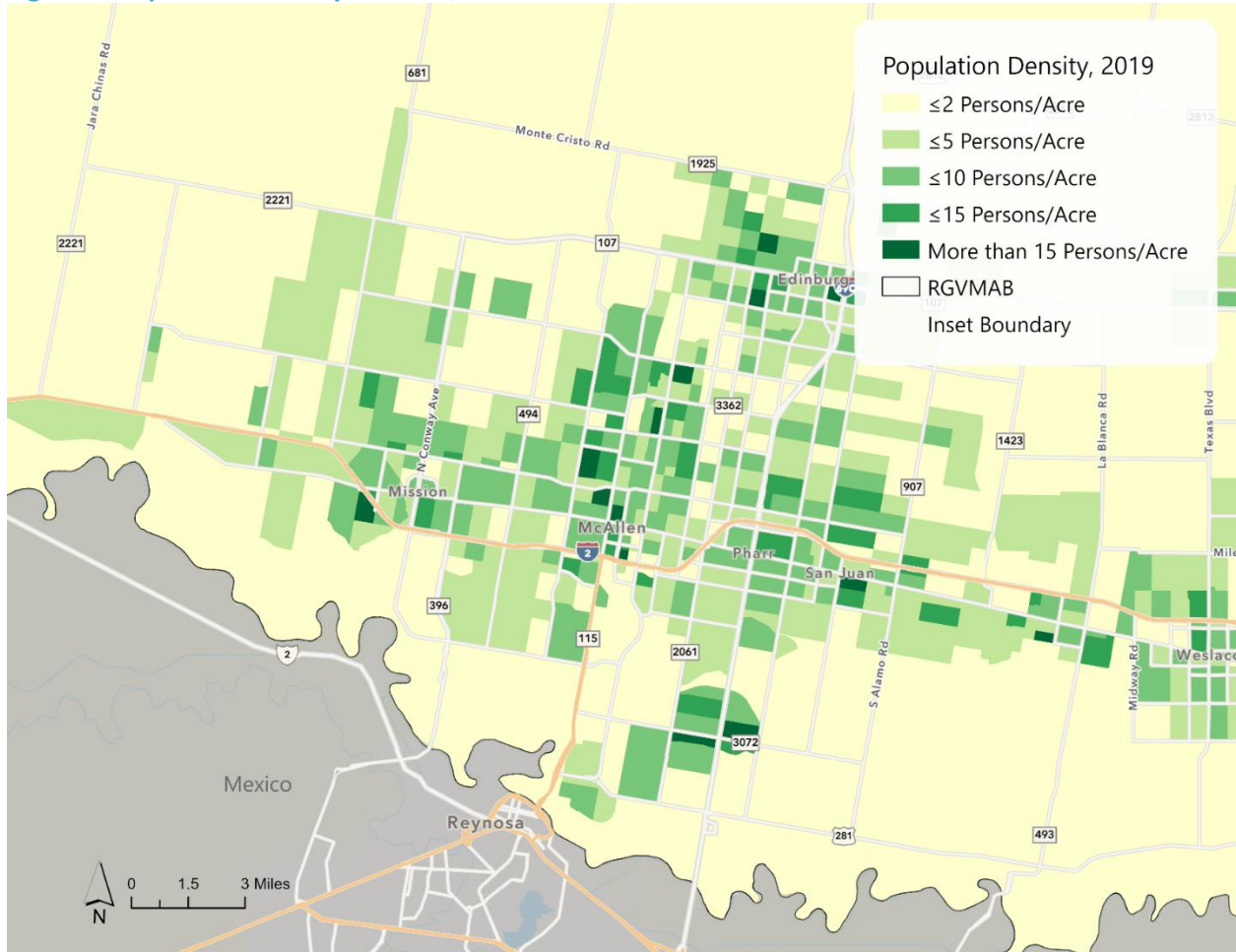
Figure 2: Population Density, 2019
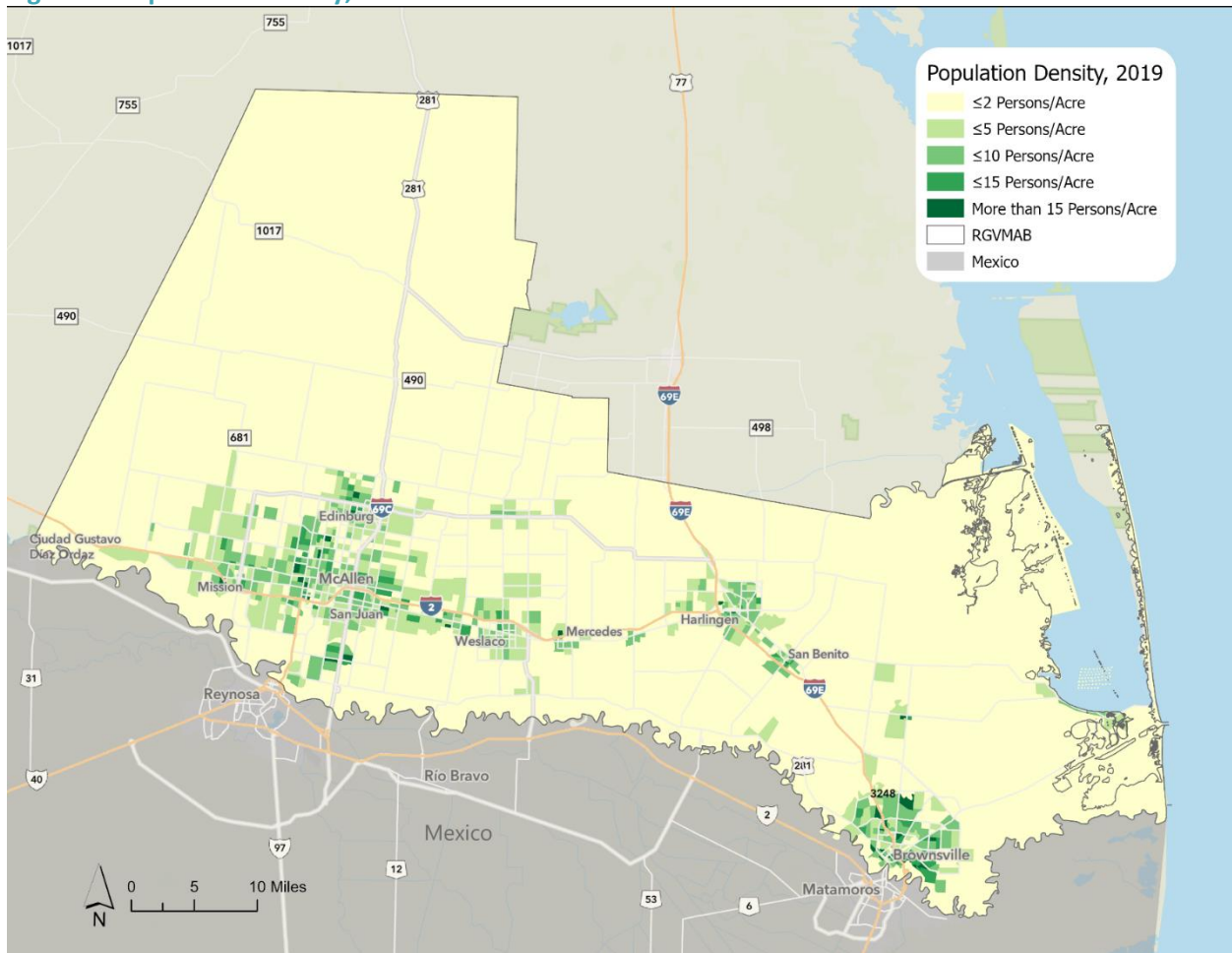
Block groups with the highest amount of population density in the McAllen-Edinburg metropolitan area include (see **Figure 3**):

- The block group containing Alamo Middle School and Austin Middle School (limits S. Stewart Rd., Sam Houston Blvd., E. Business Hwy 83., and Cesar Chavez Rd.)
- The block group south of Cesar Chavez Elementary School (limits are W. Thomas Dr., E. Dicker Dr. S. Veterans Blvd., and S. Cage Blvd.)
- The block group containing Jones Box Park (limits are W. Dicker Rd., S. Cage Blvd., FM 2061, and the park boundary)
- The block group east of South Texas College-Pecan Campus (limits are Pecan Blvd., N. 23rd St., Gumwood Ave., and N. 29th St.)
- The block group containing Ruben's Grocery Store (limits are N. Bicentennial Blvd., N., 23rd St. W. Hackberry Ave., W. U.S. Business 83)
- The block group adjacent to Rowe High School, Seguin Elementary School, and Abraham Lincoln Middle School (limits are N. Ware Rd. N. 29th St., Daffodil Ave., and Quince Ave.)
- The block group in Mission containing Leal Elementary School (limits are I-2, S. Mile Rd., Inspiration Rd., and S. Los Ebanos Rd.)
- The block group in Edinburg north of the University of Texas Rio Grande Valley (limits are W. Chapin St., W. Schunior St., N. Sugar Rd., and N. Jackson Rd.)
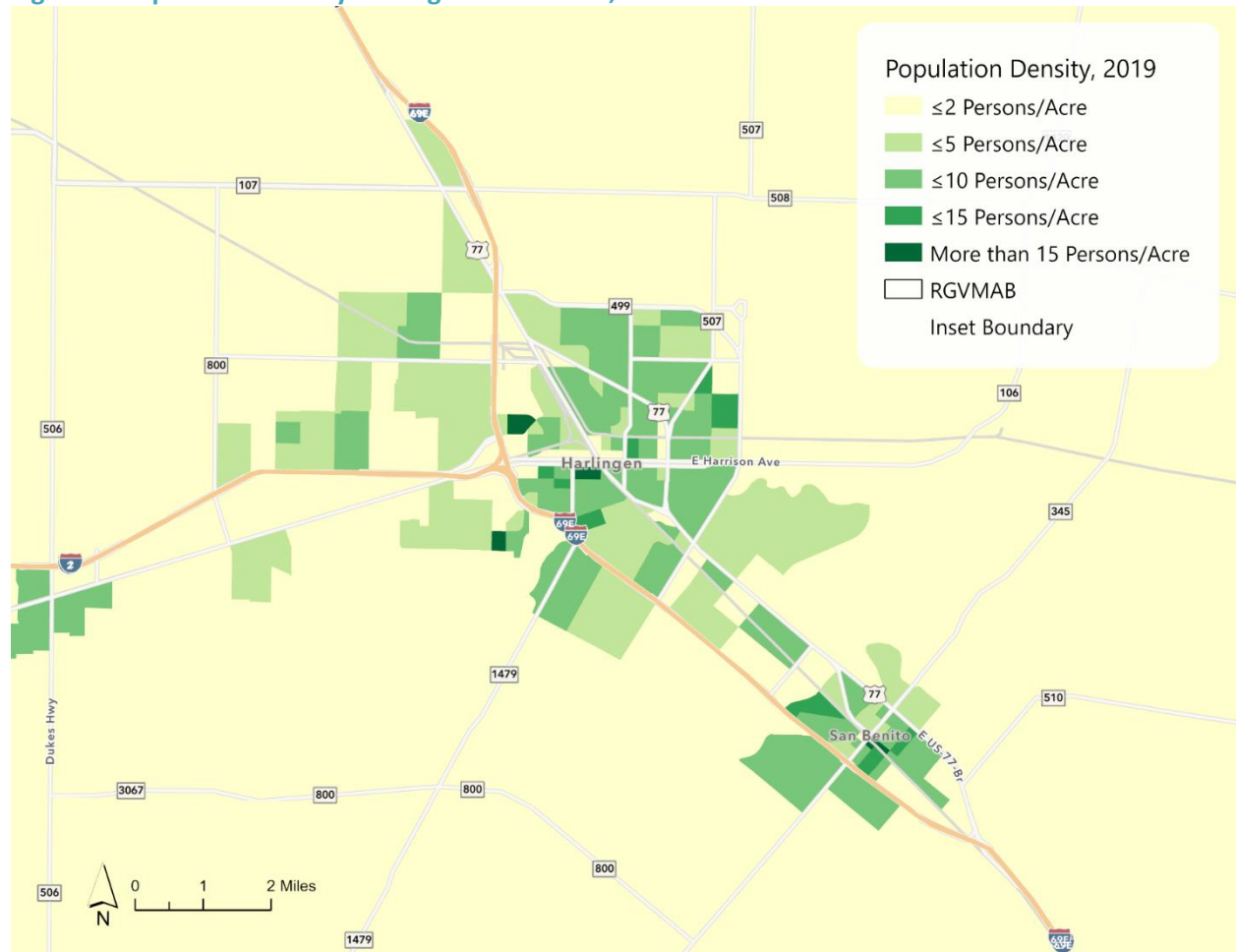
Figure 3: Population Density McAllen, 2019

Block groups with the highest amount of population density in the Harlingen-San Benito area include (see **Figure 4**):

- The block group containing Robin Hood Apartments (limits are S. Commerce St., W. Tyler Ave. S. F St. W. Filmore Ave., and S. 1st St.)
- The block group adjacent to the south of Harlingen High School South (limits are Haverford Blvd., Dixieland Rd., S. Midland St., and Garret Rd.)
- The block group directly west of the Naval Reserve Center (limits are W. Teege Ave., N. T St., and Fair Park Blvd.)

Figure 4: Population Density Harlingen-San Benito, 2019

Block groups with the highest amount of population density in the Brownsville metropolitan area include (see **Figure 5**):

- The block group adjacent to Chavez Grocery (limits are Calle Milpa Verde, Southmost Blvd. Manzano St.)
- The block group on the north and south side of I-69E and International Blvd near Faulk Middle School (limits are I-69E, Avenida de la Plata, Roosevelt St., and E. 13th St.)
- The block groups containing Perkins Middle School (limits are N. Central Ave., Austin Rd., McKenzie Rd., and N. Iowa Ave.)
- The block groups containing Cameron Park (limits are the Paredes Line Rd., Dr. Hugh Emerson Rd., Dana Ave., and Ruben M. Torres Blvd.)
- The block groups containing the Lowes Home Improvement Center (limits are Ruben M. Torres Blvd., I-69E, McAllen Rd., and Morrison Rd.)

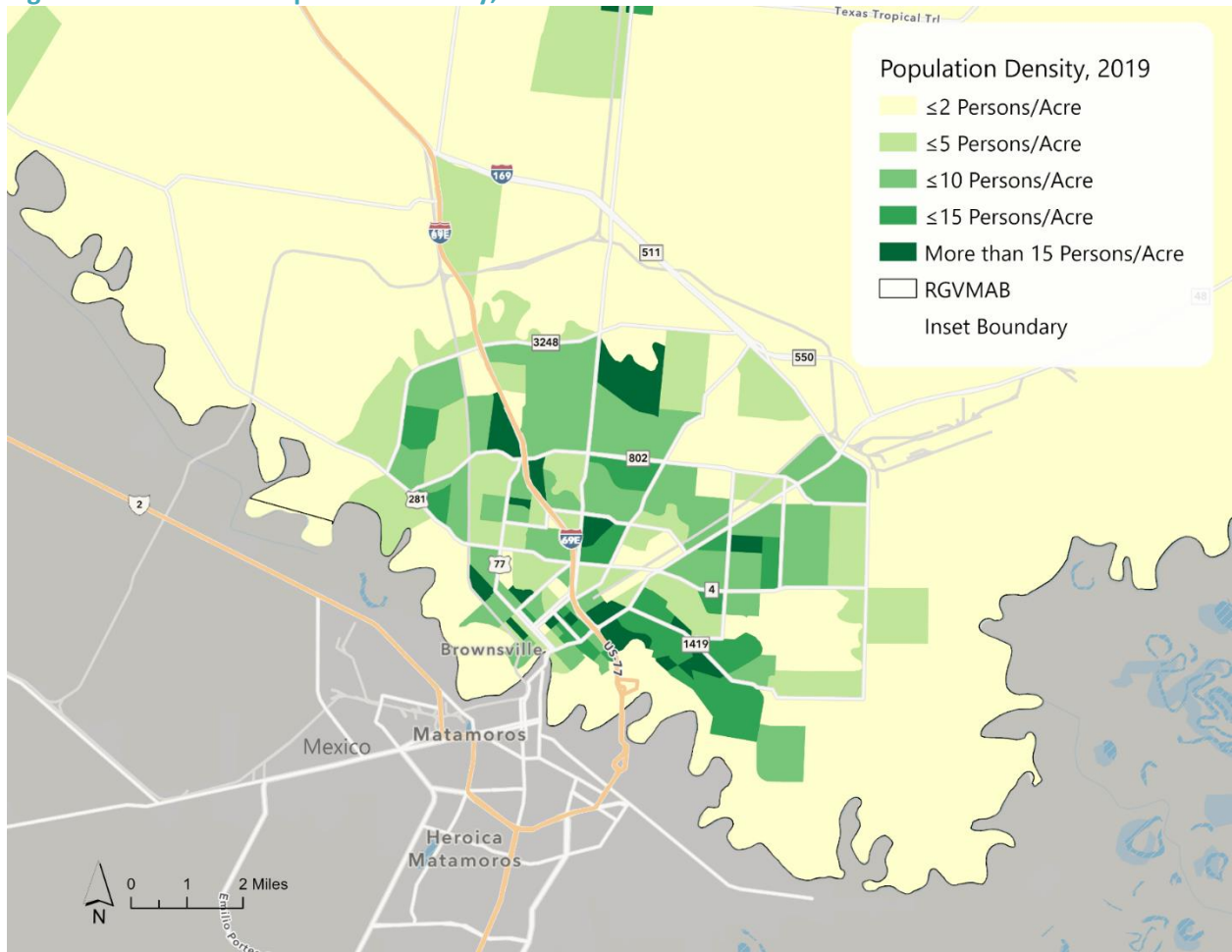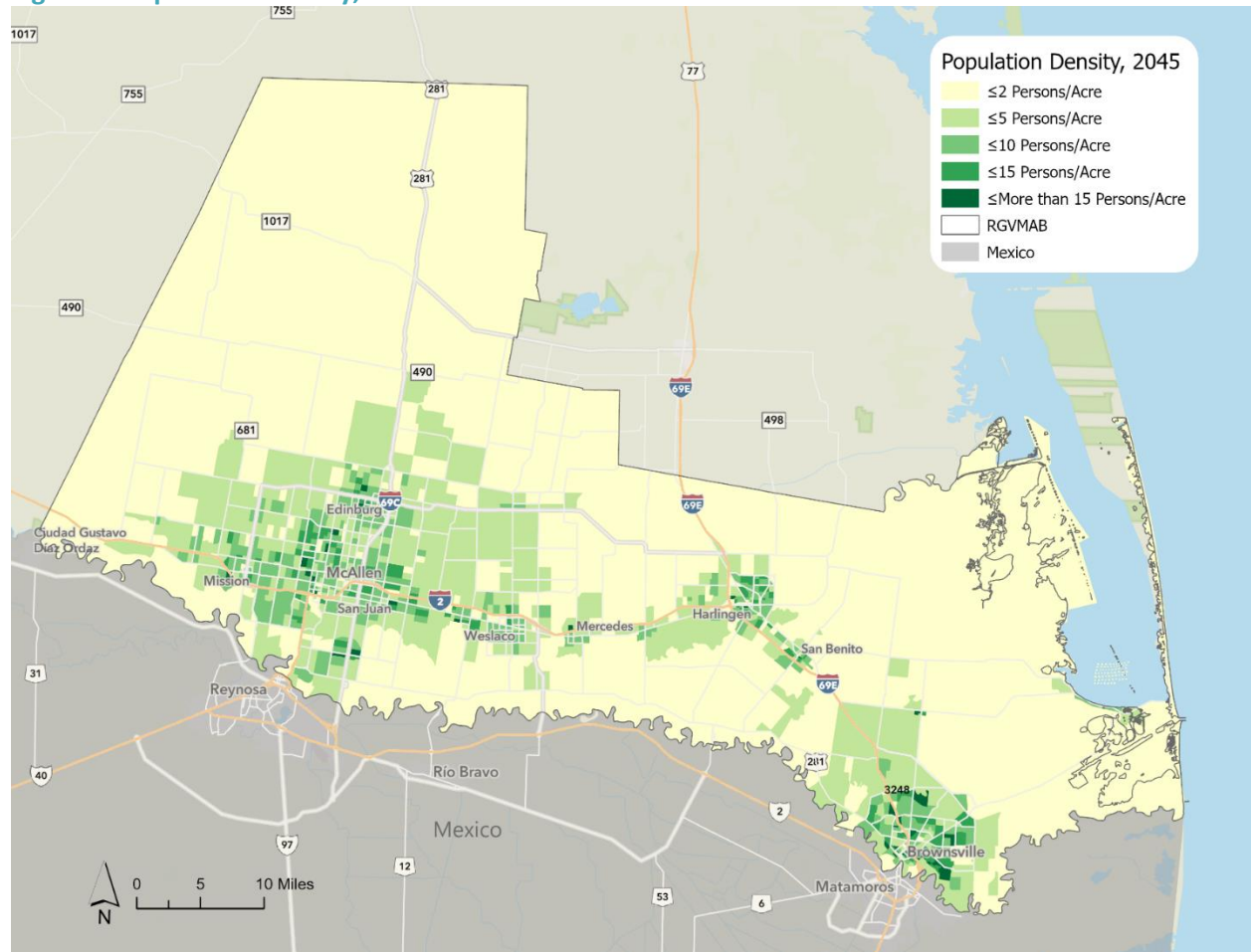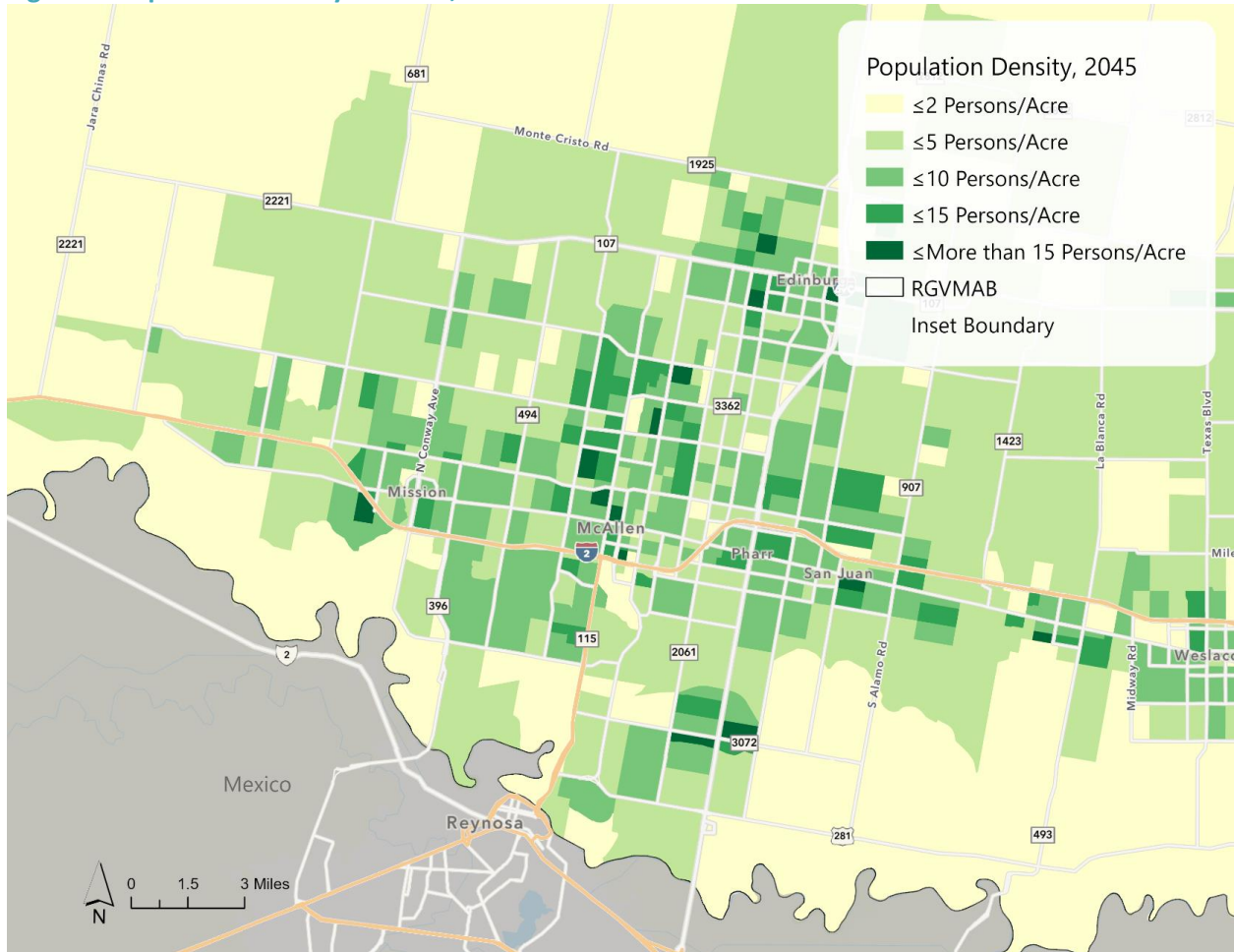**Figure 5: Brownsville Population Density, 2019**

Figure 6: Population Density, 2045

Block groups with the highest amount of projected population density in the McAllen-Edinburg metropolitan area include (see **Figure 7**):

- The block group containing Alamo Middle School and Austin Middle School (limits S. Stewart Rd., Sam Houston Blvd., E. Business 83., and Cesar Chavez Rd.)
- The block group south of Cesar Chavez Elementary School (limits are W. Thomas Dr., E. Dicker Dr., S. Veterans Blvd., and S. Cage Blvd.)
- The block group containing Jones Box Park (limits are W. Dicker Rd., S. Cage Blvd., FM 2061, and the park boundary)
- The block group east of the South Texas College-Pecan Campus (limits are Pecan Blvd., N. 23rd St., Gumwood Ave., and N. 29th St.)
- The block group containing Ruben's Grocery Store (limits are N. Bicentennial Blvd., N., 23rd St. W. Hackberry Ave., and W. Business 83)
- The block group adjacent to Rowe High School, Seguin Elementary School, and Abraham Lincoln Middle School (limits are N. Ware Rd. N. 29th St., Daffodil Ave., and Quince Ave.)
- The block group in Mission containing Leal Elementary School (limits are I-2, S. Mile Rd., Inspiration Rd., and S. Los Ebanos Rd.)
- The block group in Edinburg north of the University of Texas Rio Grande Valley (limits are W. Chapin St., W. Schunior St., N. Sugar Rd. and N Jackson Rd.)
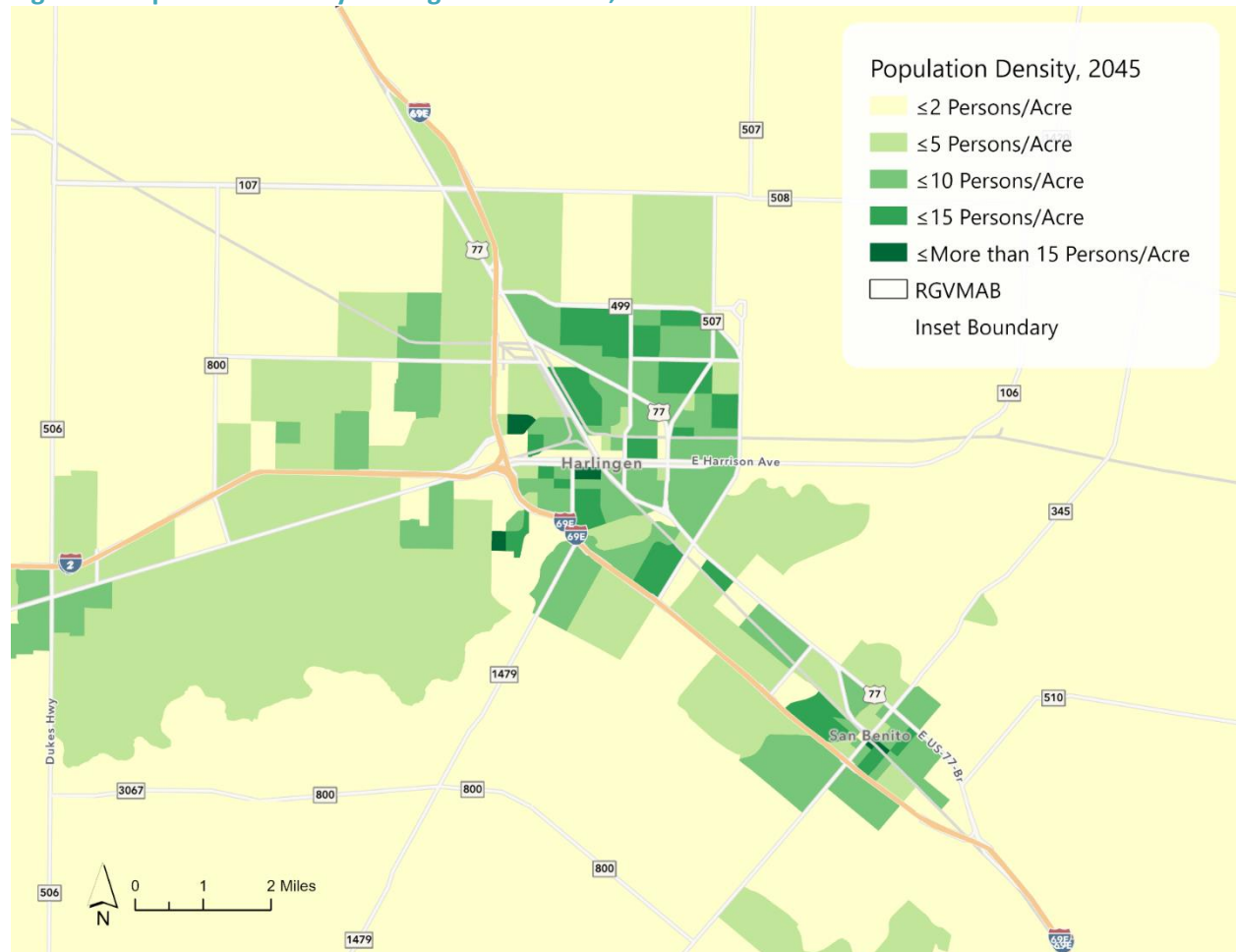
Figure 7: Population Density McAllen, 2045

Block groups with the highest projected population density in the Harlingen-San Benito area include (see **Figure 8**):

- The block group containing Robin Hood Apartments (limits are S. Commerce St., W. Tyler Ave., S. F St. W. Filmore Ave., and S. 1st St.)
- The block group adjacent to the south of Harlingen High School South (limits are Haverford Blvd., Dixieland Rd., S. Midland St., and Garret Rd.)
- The block group directly west of the Naval Reserve Center (limits are W. Teege Ave., N. T St., and Fair Park Blvd.)

Figure 8: Population Density Harlingen-San Benito, 2045

Block groups with the highest amount of projected population density in the Brownsville metropolitan area include (see **Figure 9**):

- The block group containing Chavez Grocery (limits are Monsees Rd., Southmost Blvd. Calle Milpa Verde, and Esperanza Rd.)
- The block group on the north and south side of the I-69E and International Blvd. near Faulk Middle School (limits are I-69E, Avenida de la Plata, Roosevelt St., and E. 13th St.)
- The block groups containing Perkins Middle School (limits are N. Central Ave., Austin Rd., Boca Chica Blvd., and FM 313)
- The block groups containing Cameron Park (limits are the Paredes Line Rd., Dr. Hugh Emerson Rd., Dana Ave., and Ruben M. Torres Blvd.)
- The block groups containing Lowes Home Improvement Center (limits are Ruben M. Torres Blvd., I-69E, McAllen Rd., and Morrison Rd.)

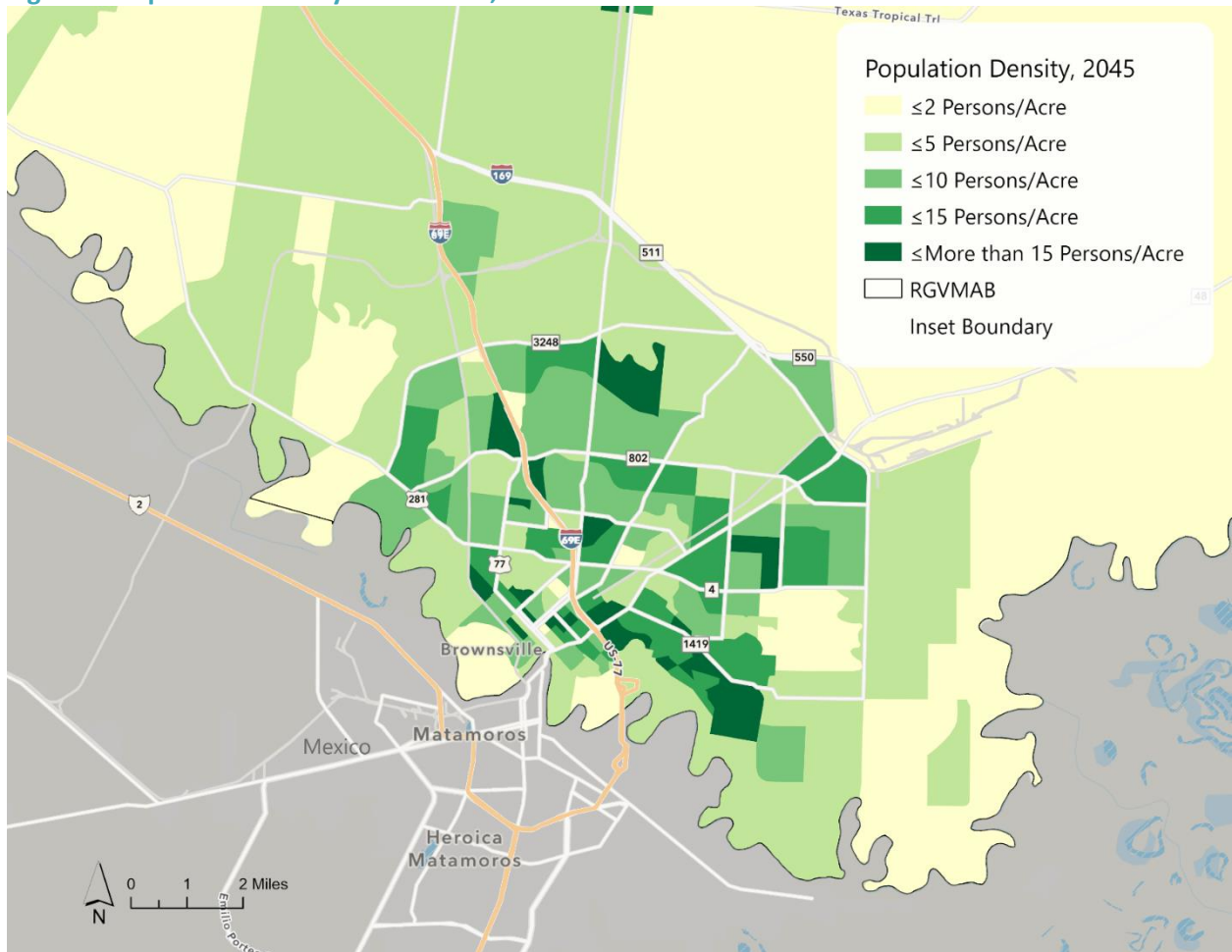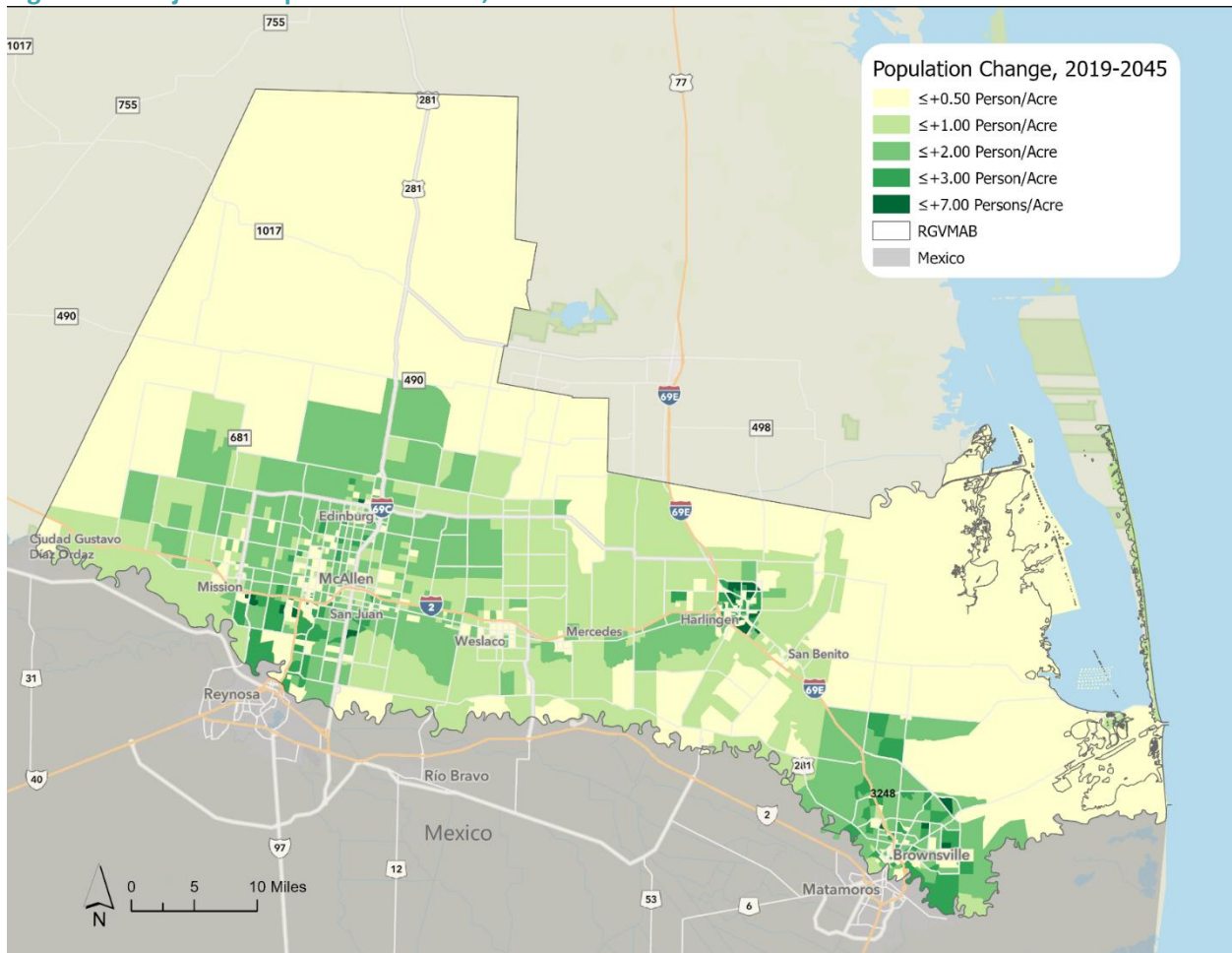**Figure 9: Population Density Brownsville, 2045**

Figure 10: Projected Population Growth, 2019-2045

Block groups with the highest amount of expected growth in the McAllen-Edinburg metropolitan area include (see **Figure 11**):

- The block group surrounding the Mission Regional Medical Center (I-2 & SH 396)
- The block group including the Victoria Square neighborhood (Jordan Rd. W & S. Wave Rd.)
- The block group including the Bonham Elementary School and several retail locations along S. 23rd St.
- The block group that includes PSJA Southwest Early College High School (S. Cage Blvd. & E. Javelina Dr.)

Figure 11: McAllen-Edinburg Population Change, 2019-2045
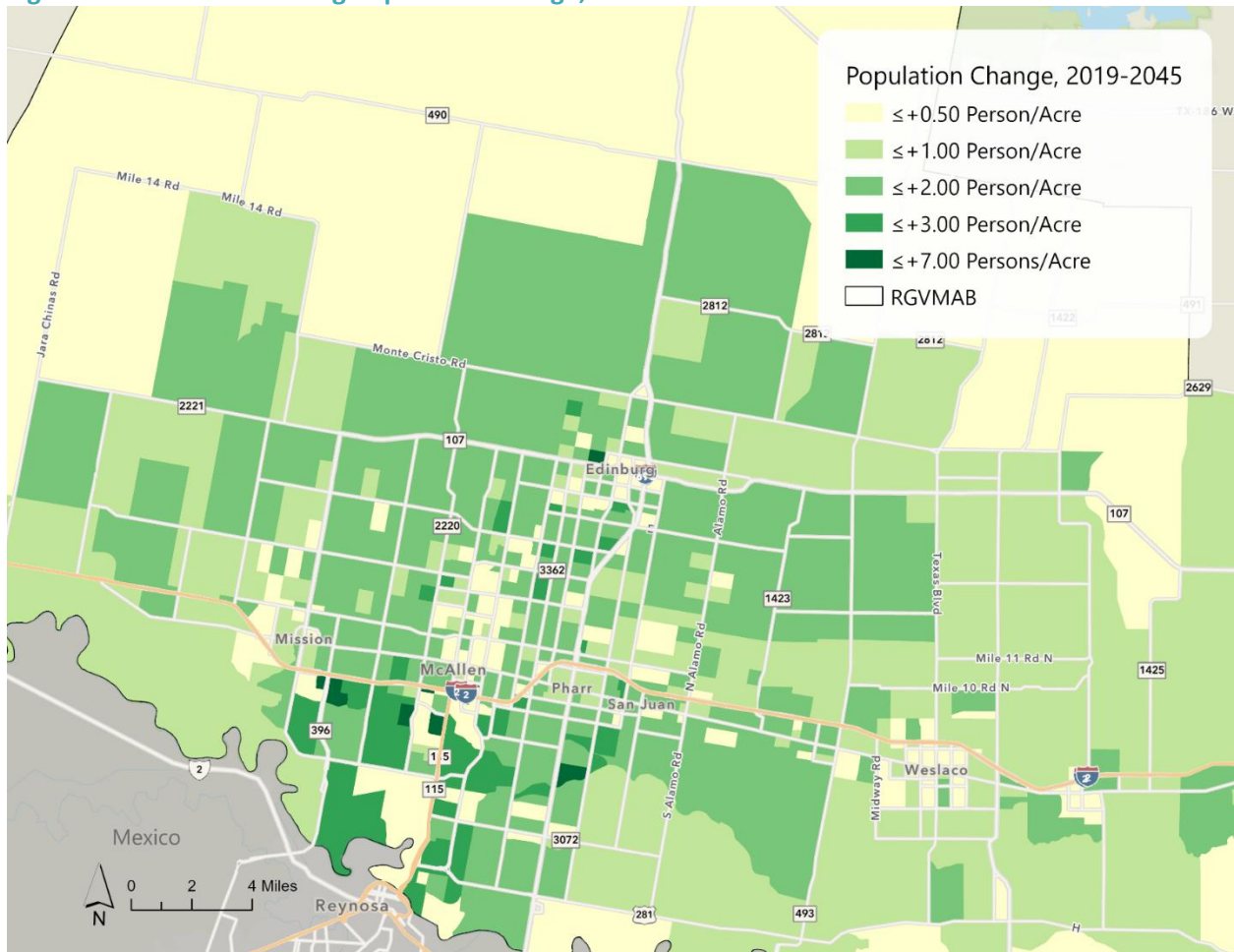
Block groups with the highest amount of expected growth in the Harlingen-San Benito area include (see **Figure 12)**:

- The block group that includes the Palm Gardens Home & RV Park (south of Business 83 between Paloma Ln. & S. Palm Court Dr.)
- The block group that includes both Horizon Montessori and Sundance Apartments (southwest of S. 77 Sunshine Strip between Camelot Dr. and N. Whalen Dr.)
- The block group that includes Sam Houston Park, the Harlingen Thicket, and Arroyo Park (between US-83 & S. Commerce St.)
- The two block groups between E. Harrison Ave., S. 77 Sunshine Strip, and S. Ed Carey Dr.
- The block group that includes the Zavala Elementary School, Vestal Park, and many retail locations along N. Commerce St. (east of N. Commerce St. between BUS 77, W. Washington Ave., and Markowsky Ave.)
- Several block groups between the bounds of N. Loop 499, N. 25th St., and Business 77, just southwest of Valley International Airport
- Additionally, there are many block groups that are expected to experience moderate growth both along the north and south sides of US-83 between Dixieland Rd. and FM 1245 (or the Hidalgo-Cameron County Border)

Figure 12: Harlingen-San Benito Population Change, 2019-2045
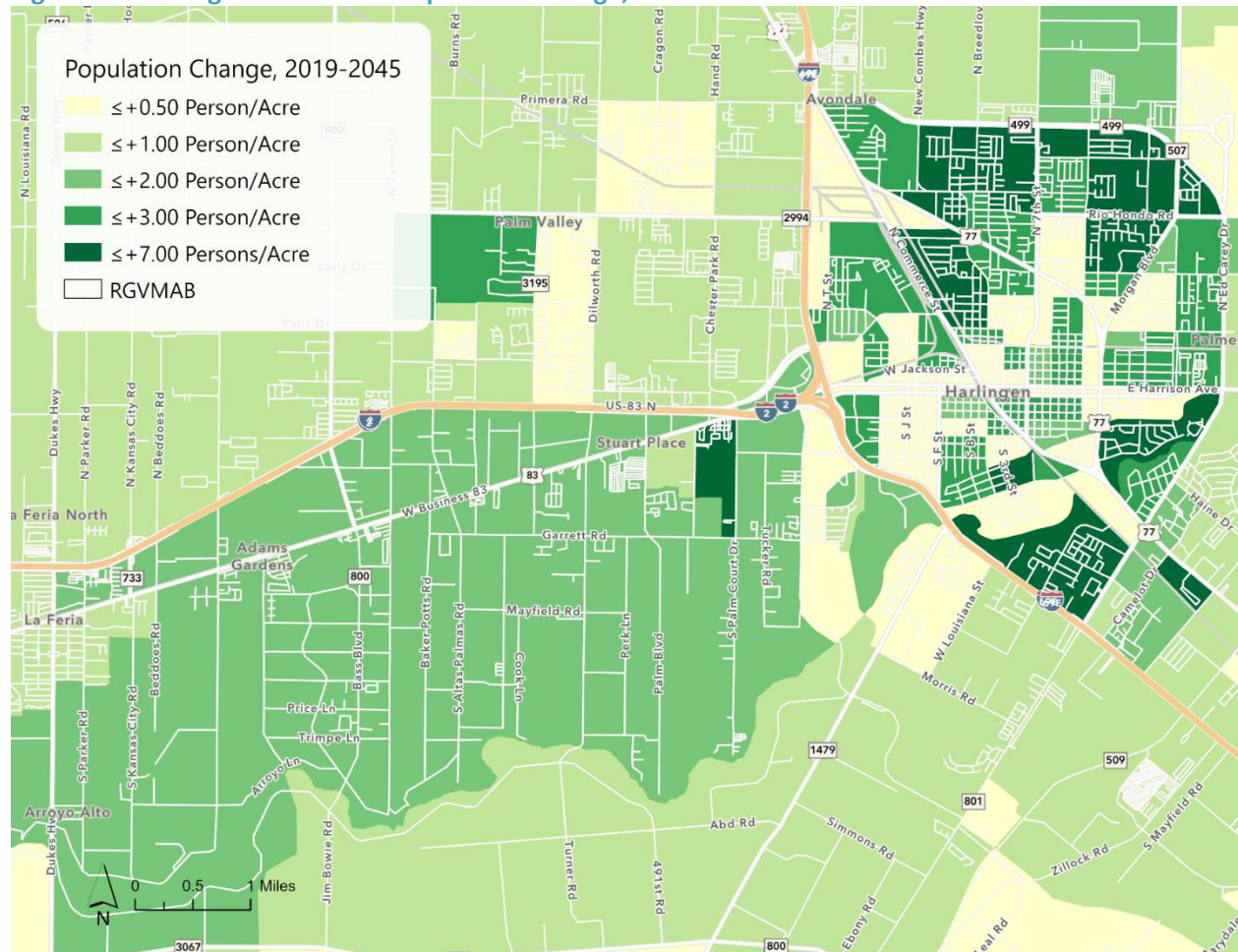
Block groups with the highest amount of expected growth in the Brownsville metropolitan area include (see **Figure 13**):

- The block group just northeast of the Mitte Cultural District (between Palm Blvd., I-69E, and E. Ebony Ave.)
- The block group that includes the Cameron County Detention Center, just north of downtown (limits include 10th St., 13th St., E. Tyler St., and E. Jackson St.)
- The block group that includes the mobile home park along Houston Rd. (limits include N. Vermillion Ave., Houston Rd., N. Minnesota Ave., and Boca Chica Blvd.)
- The block group just south of Ruben M. Torres Blvd that contains several manufacturing/distribution companies such as Baker Distributing Company, SATA USA, and Sigosa Steel (limited by Ruben M. Torres Blvd., N. Central Ave., Jaime J. Zapata Ave., and Robindale Rd.)
- The block group that is between SH 550, SH 48, and SH 511 (mostly undeveloped open space)

Figure 13: Brownsville Population Change, 2019-2045
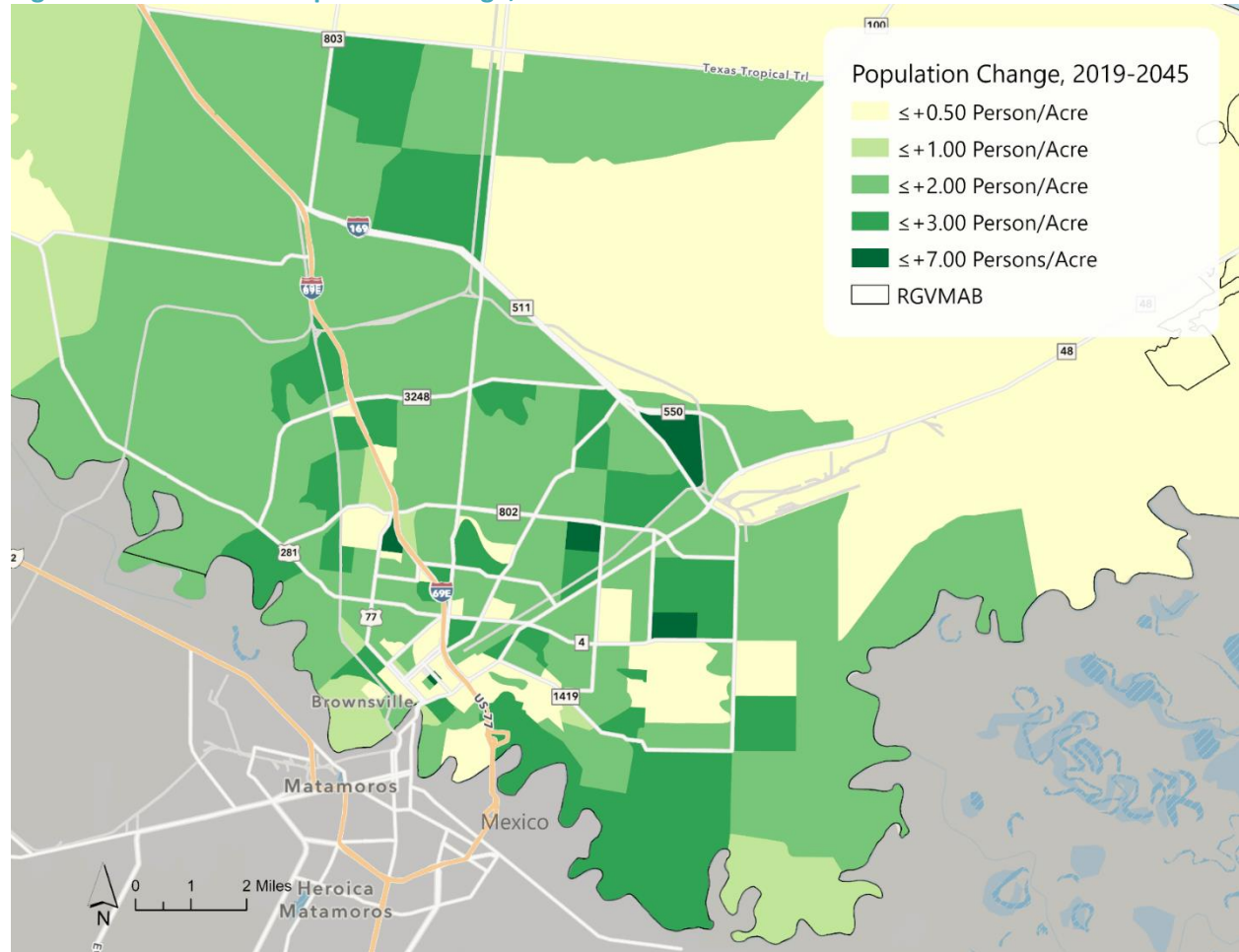
Employment

The 2014 milestone year employment data was allocated to the TAZ level using the InfoUSA business directory provided by TxDOT. Since InfoUSA data contains latitude and longitude attributes, it can be directly aggregated to the TAZ level. To ensure accuracy, an extensive review of the InfoUSA data was conducted. This review focused on the accuracy of the locational information in the directory and on the coverage of employers in the area. Once reviewed, employment was attributed to the appropriate TAZ level. When this process was complete, a thorough quality assurance review of each TAZ was undertaken. **Figure 14** through **Figure 21** show the employment density distribution as projected for 2019 and 2045 within the RGVMAB, respectively, based on the validated 2014 data. **Figure 22** through **Figure 25** show employment growth in the region between 2019 and 2045 based on estimates provided by the TDM. Based on those projections, the region's employment is anticipated to gain 350,000 jobs by 2045, or roughly an 80% increase. Spatially, these new jobs are distributed around the urban cores in the region.

Figure 14: Employment Density, 2019
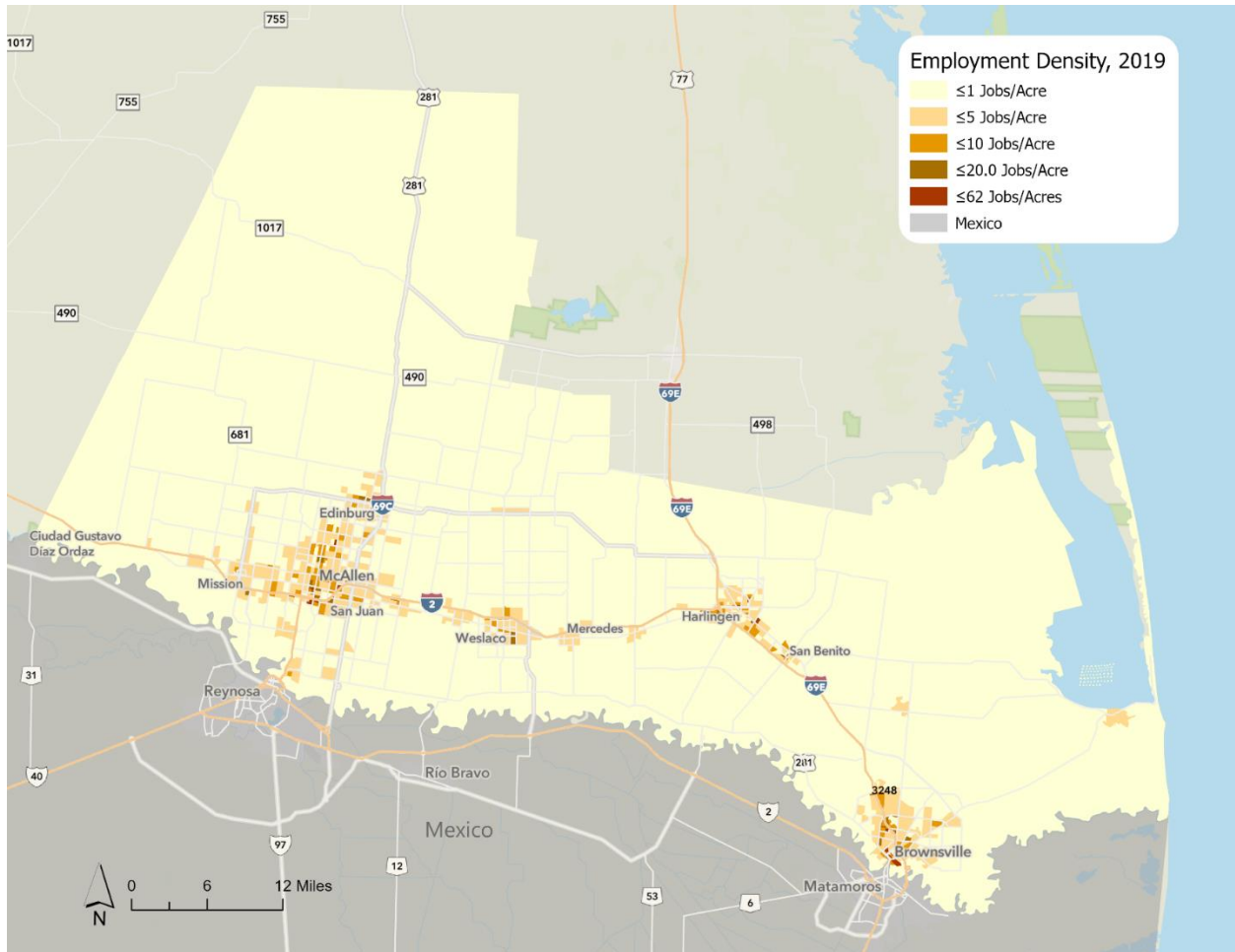
Block groups with the highest employment density in the McAllen-Edinburg metropolitan area include (see **Figure 15**):

- The block groups along the S. 10th St. Corridor (limits are N. Bicentennial Blvd., S. 2nd St., I-2, and Trenton Rd.)
- The block groups south of I-2 east of the McAllen Medical Center (limits are I-2, E. El Rancho, and US-281)
- The six block groups adjacent to the University of Texas Rio Grande Valley in Edinburg (limits are W. Sprague St., W. Schunior St., S. Closner Blvd., and N. McColl Rd.)

Figure 15: Employment Density McAllen, 2019
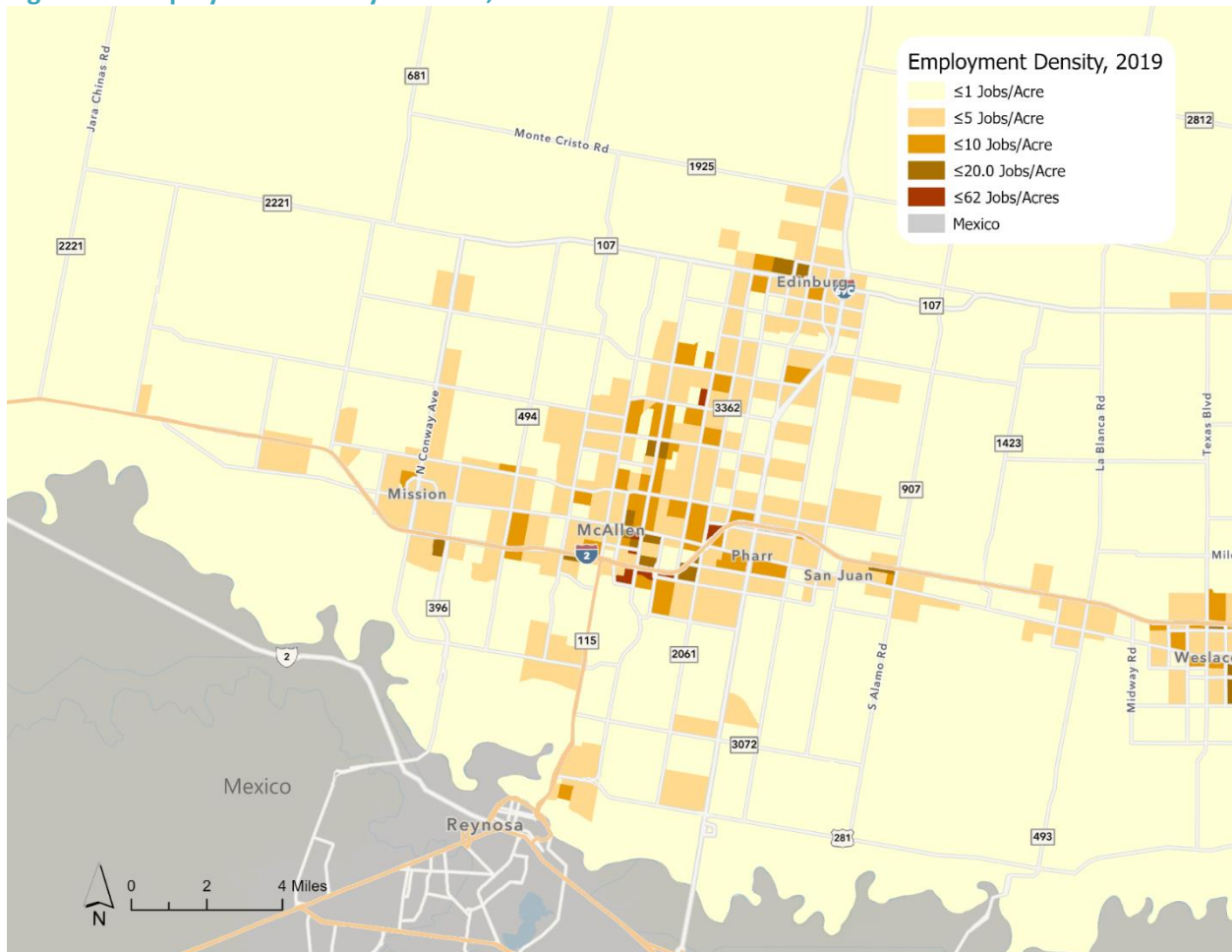
Block groups with the highest employment density in the Harlingen-San Benito area include (see **Figure 16**):

- The block groups in San Benito at the intersection of Combes St. and W. Stenger St. to the south (limits are W. Robertson St., S. Sam Houston Blvd., Combes St.)
- The block groups in San Benito at the San Benito City Municipal Building (limits are W. Stenger St., N. Sam Houston Blvd., N. Bowie St., and W. Frances St.)
- The block group with the Sun Valley Plaza and the intersection of FM 507 and N. 77 Sunshine Strip (limits are N. 11th St., E. Washington St., E. Austin Ave., and FM 507)
- The block group with the Valley Baptist Medical Center Harlingen (limits are S. Ed Carey Dr., Treasure Hills Blvd., S. 77 Sunshine Strip, and S. Haine Dr.)

Figure 16: Employment Density Harlingen-San Benito, 2019

Block groups with the highest employment density in the Brownsville metropolitan area include (see **Figure 17**):

- The block groups that are associated with Texas Southmost College, The University of Texas Rio Grande Valley (limits are W. University Blvd., International Blvd., and Ridgely Rd.)
- The block groups near the Historic Brownsville Museum (limits are Palm Blvd., E. 6th St., E. Jefferson St., and Old Alice Rd.)
- The block groups with the City of Brownsville Public Works Department (limits are Ruben M. Torres Blvd., N. Central Ave., Jaime J. Zapata Ave., and S. Padre Island Highway/E./ 14th St.)
- The block group with United States Postal Service (limits are E. Los Ebanos Blvd., Barnard Rd., I-69E, and FM 802)
- The block group adjacent to the west of the Brownsville South Padre Island International Airport (limits are FM 2519, Les Mauldin Rd., and Minnesota Ave.)

Figure 17: Employment Density Brownsville, 2019
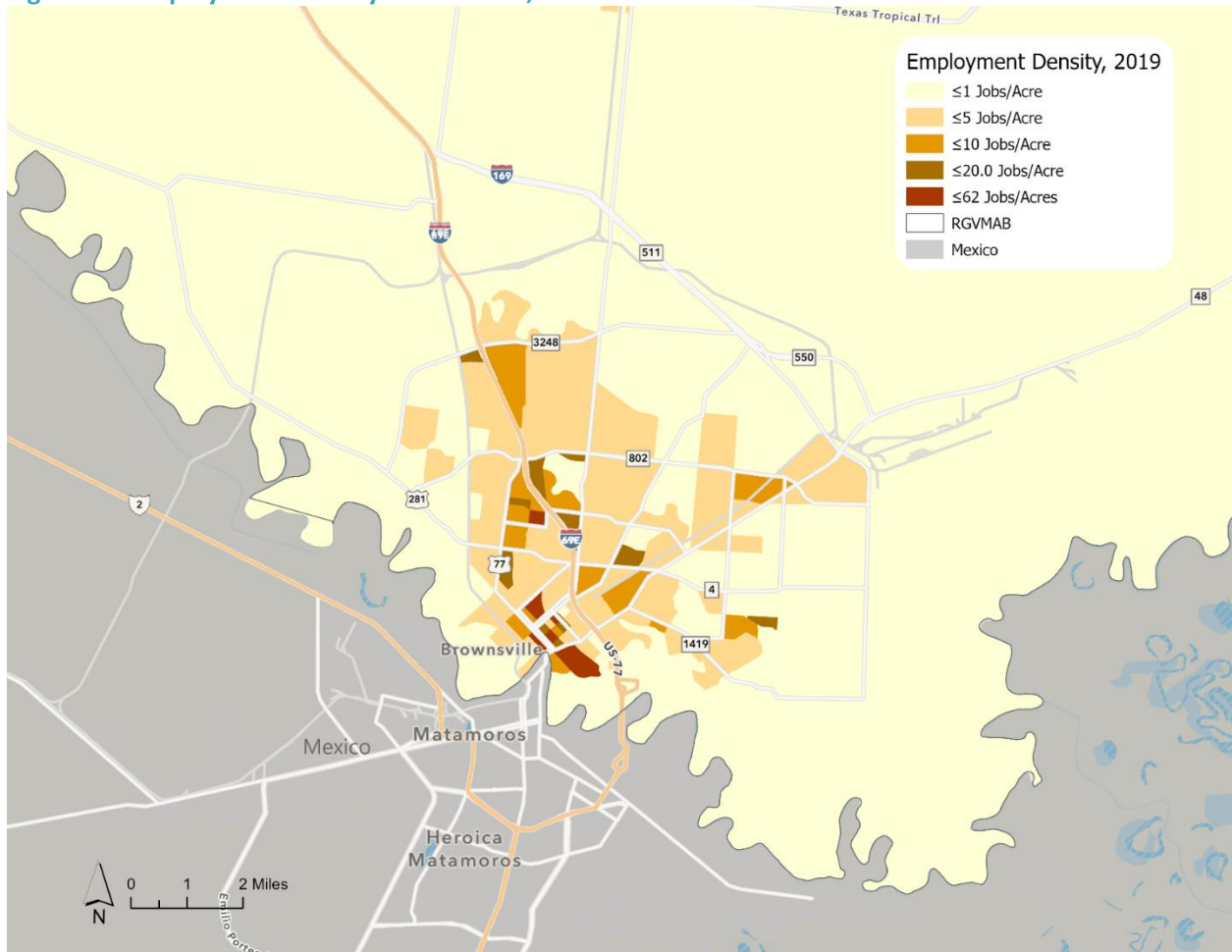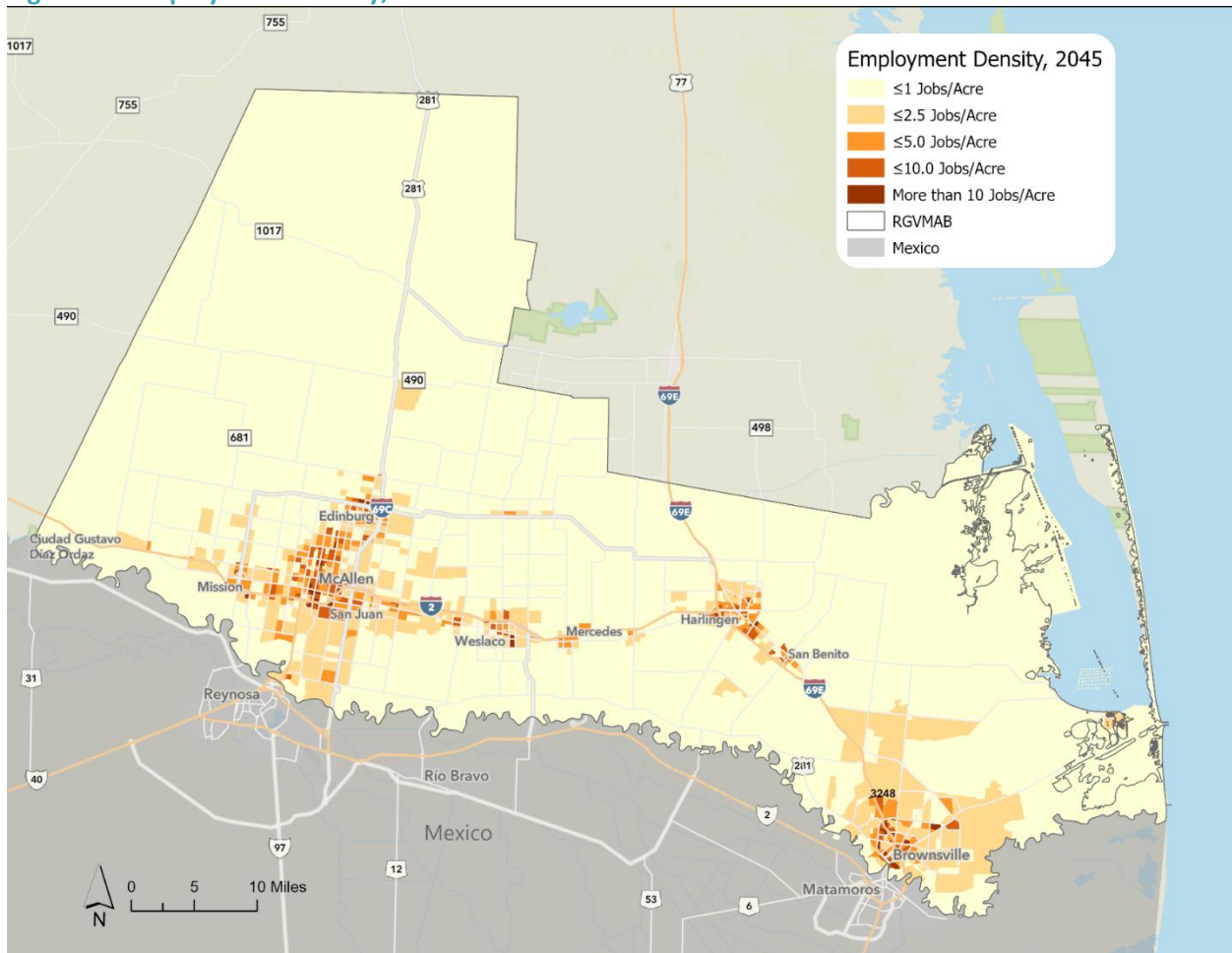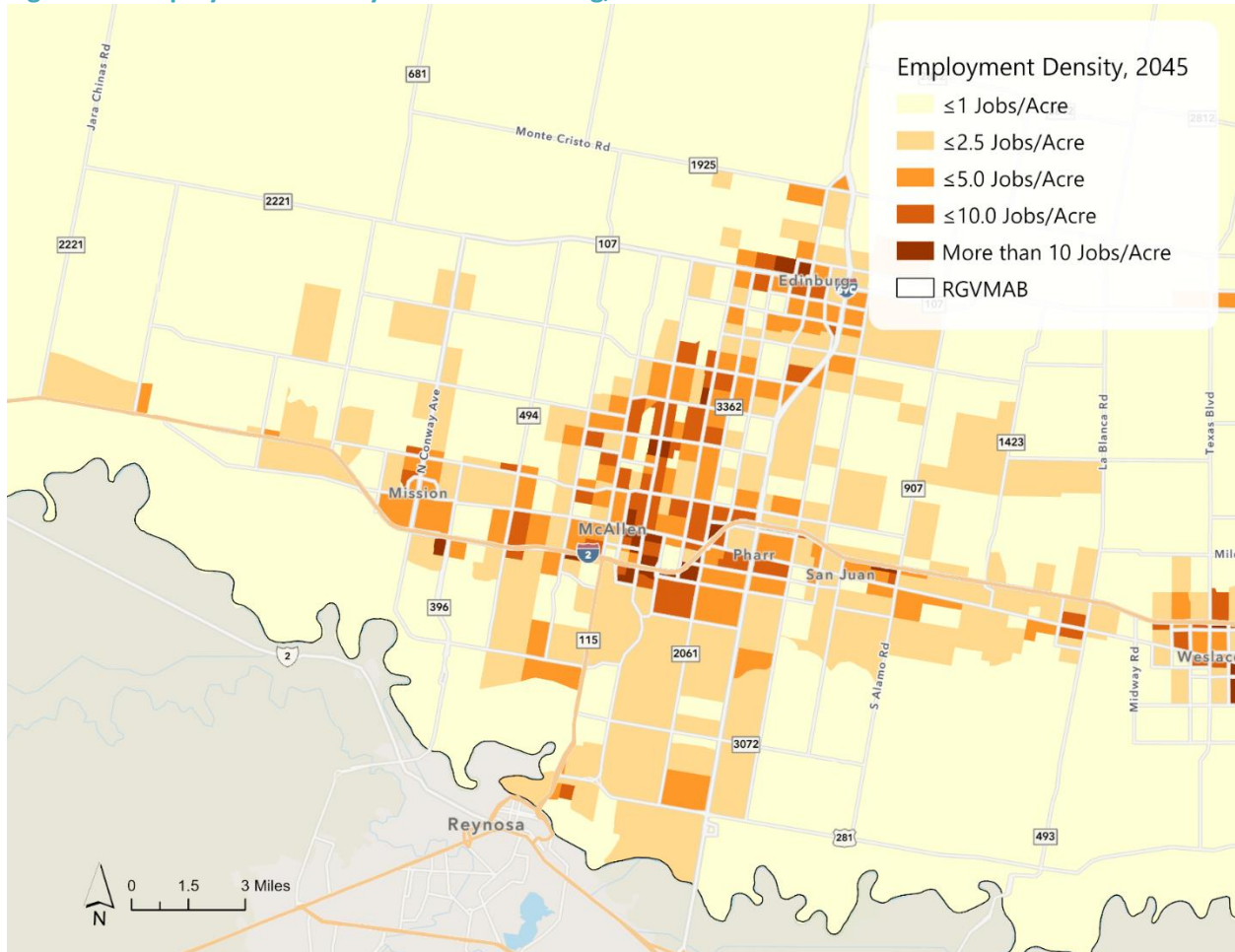
Figure 18: Employment Density, 2045

Block groups with the highest projected employment density in the McAllen-Edinburg metropolitan area include (see **Figure 19**):

- The block groups along the S. 10th St. Corridor (limits are S. McColl St., Bicentennial Blvd., I-2, and Trenton Rd.)
- The block groups south of I-2 east of the McAllen Medical Center (limits are I-2, E. El Rancho, and US-281)
- The six block groups adjacent to the University of Texas Rio Grande Valley (limits are W. Sprague St., W. Schunior St., S. Closner Blvd., and N. McColl Rd.)

Figure 19: Employment Density McAllen-Edinburg, 2045

Block groups with the highest projected employment density in the Harlingen-San Benito area include (see **Figure 20**):

- The block groups in San Benito at the intersection of Combes St. and W. Stenger St. to the south (limits are W. Robertson St., S. Sam Houston Blvd., and Combes St.)
- The block groups in San Benito at the San Benito City Municipal Building (limits are W. Stenger St., N. Sam Houston Blvd., N. Bowie St., and W. Frances St.)
- The block groups with the Sun Valley Plaza and the intersection of FM 507 and N. 77 Sunshine Strip (limits are N. 11th St., E. Washington St., E. Austin Ave., and FM 507)
- The block groups east of Harlingen City Hall (limits are S. Commerce St., E. Jackson St., and S. 6th St.)
- The block groups with the Valle Vista Mall (limits are I-69E, W. Lincoln Ave., Dixieland Rd., and I-2)
- The block group with the Valley Baptist Medical Center Harlingen (limits are S. Ed Carey Dr., Treasure Hills Blvd., S. 77 Sunshine Strip, and S. Haine Dr.)

Figure 20: Employment Density Harlingen-San Benito, 2045

Block groups with the highest projected employment density in the Brownsville metropolitan area include (see **Figure 21**):

- The block groups that are associated with Texas Southmost College, The University of Texas Rio Grande Valley (limits are W. University Blvd., International Blvd., and Ridgely Rd.)
- The block groups near the Historic Brownsville Museum (limits are Palm Blvd., E. 6th St., E. Jefferson St., and Old Alice Rd.)
- The block groups with the City of Brownsville Public Works Department (limits are Ruben M. Torres Blvd., N. Central Ave., Jaime J. Zapata Ave., and S. Padre Island Highway/E./ 14th St.)
- The block group with United States Postal Service (limits are E. Los Ebanos Blvd., Barnard Rd., I-69E, and FM 802)
- The block group adjacent to the west of the Brownsville South Padre Island International Airport (limits are FM 2519, Les Mauldin Rd., and Minnesota Ave.)

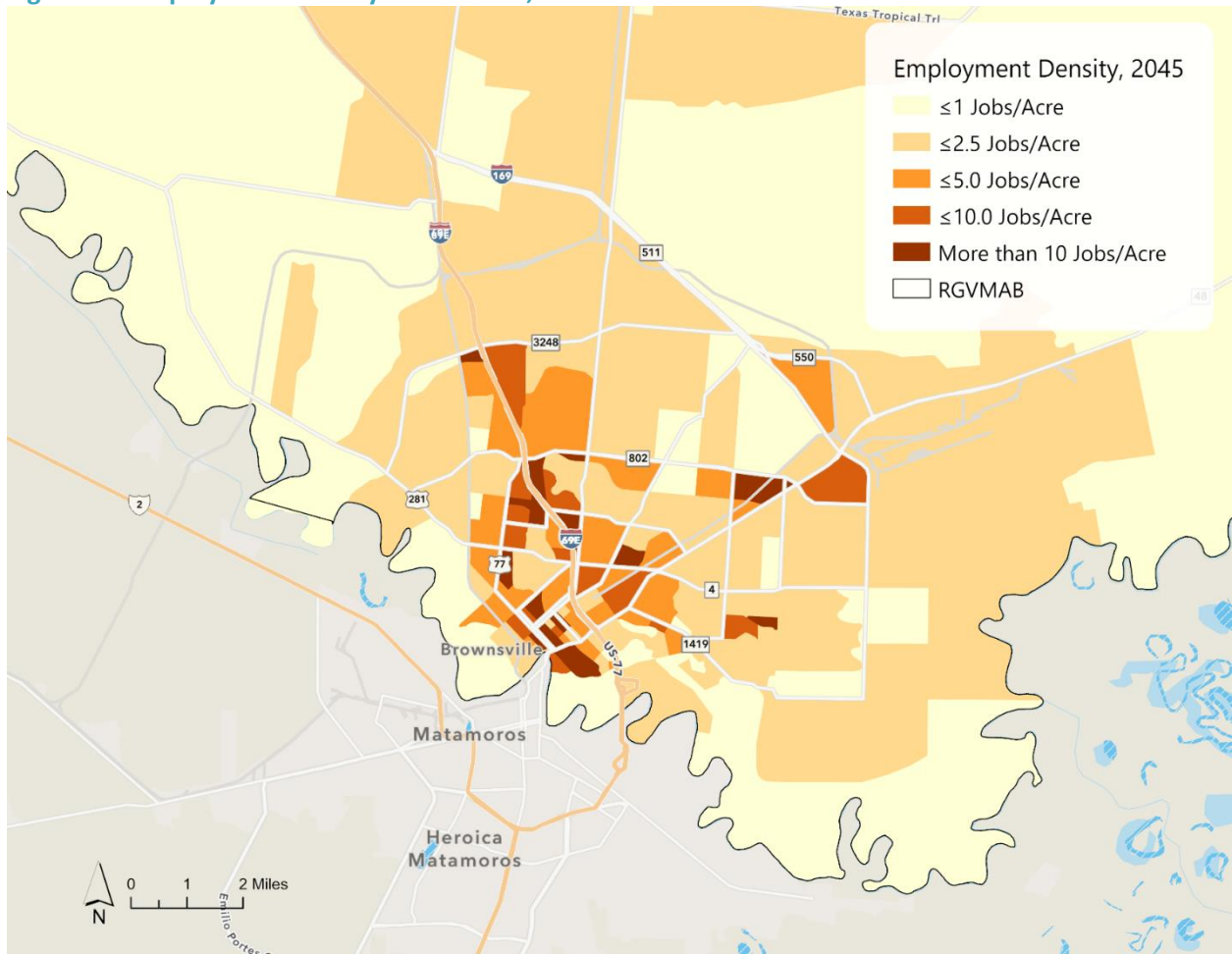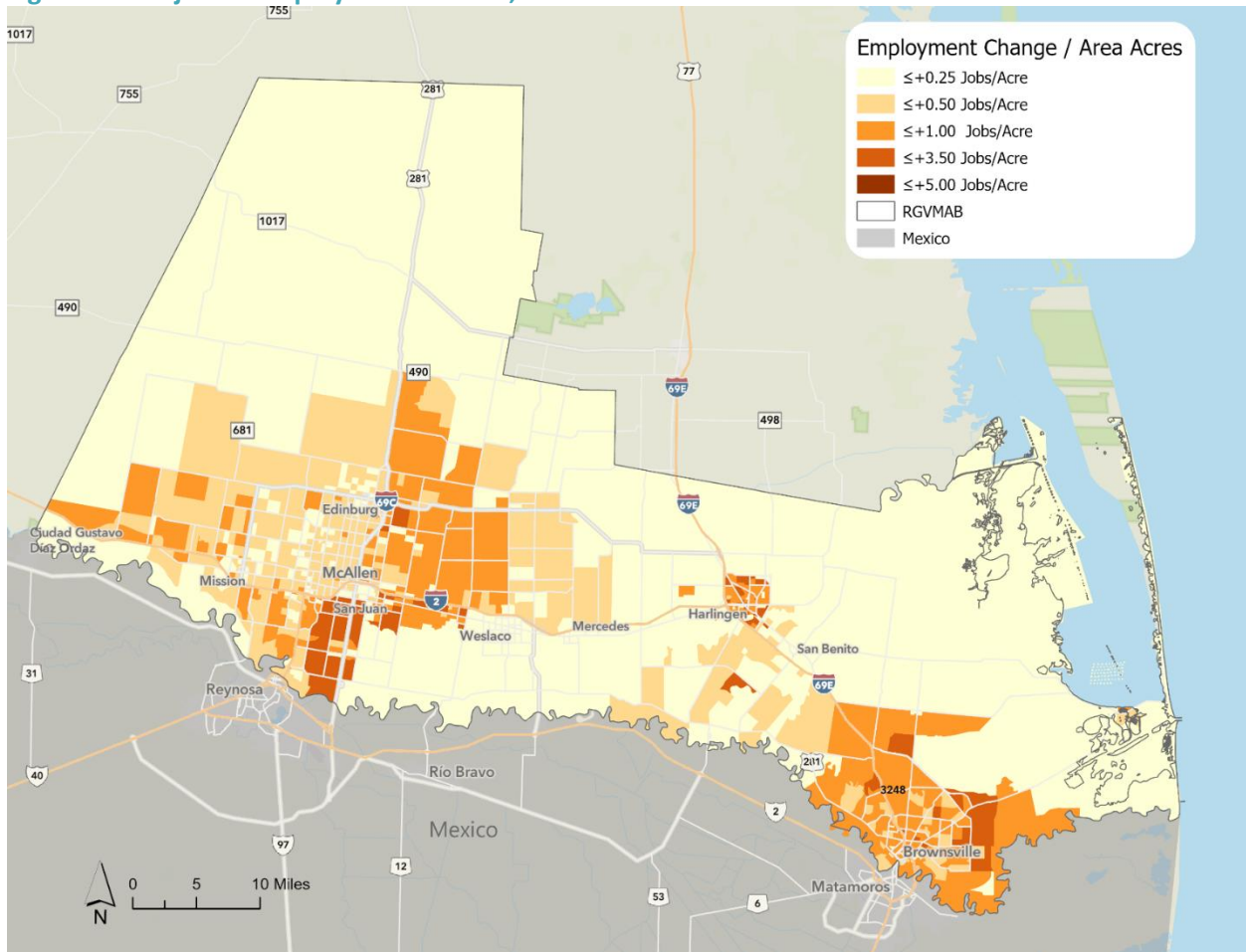**Figure 21: Employment Density Brownsville, 2045**

Figure 22: Projected Employment Growth, 2019-2045

Block groups with the highest amount of expected growth in the McAllen-Edinburg metropolitan area include (see **Figure 23**):

- The block groups near the Hidalgo, Shepherd, and Ed Vela Gas Fields (limits are E. Sam Houston Blvd, S. Veterans Blvd, the US-Mexico border, and N. 10th St.)
- The block groups along the south side of US-83 from San Juan to Donna (limits are S. Nebraska Ave., US-83, S. FM 493, and South Alamo/Alamo Gas Field)
- Two block groups, that are adjacent to and contain the Los Lagos Golf Club (limits are E. University Dr., S. Cesar Chavez Rd, E. Wisconsin Rd, and Expressway 281S)
- The block group that exceeds an increase of 5 jobs per acre is associated with the University of Texas Rio Grande Valley (limits are W. University Dr., W. Schunior St., S. Sugar Rd., and N. 5th Ave.)
-

Figure 23: McAllen-Edinburg Employment Change, 2019-2045
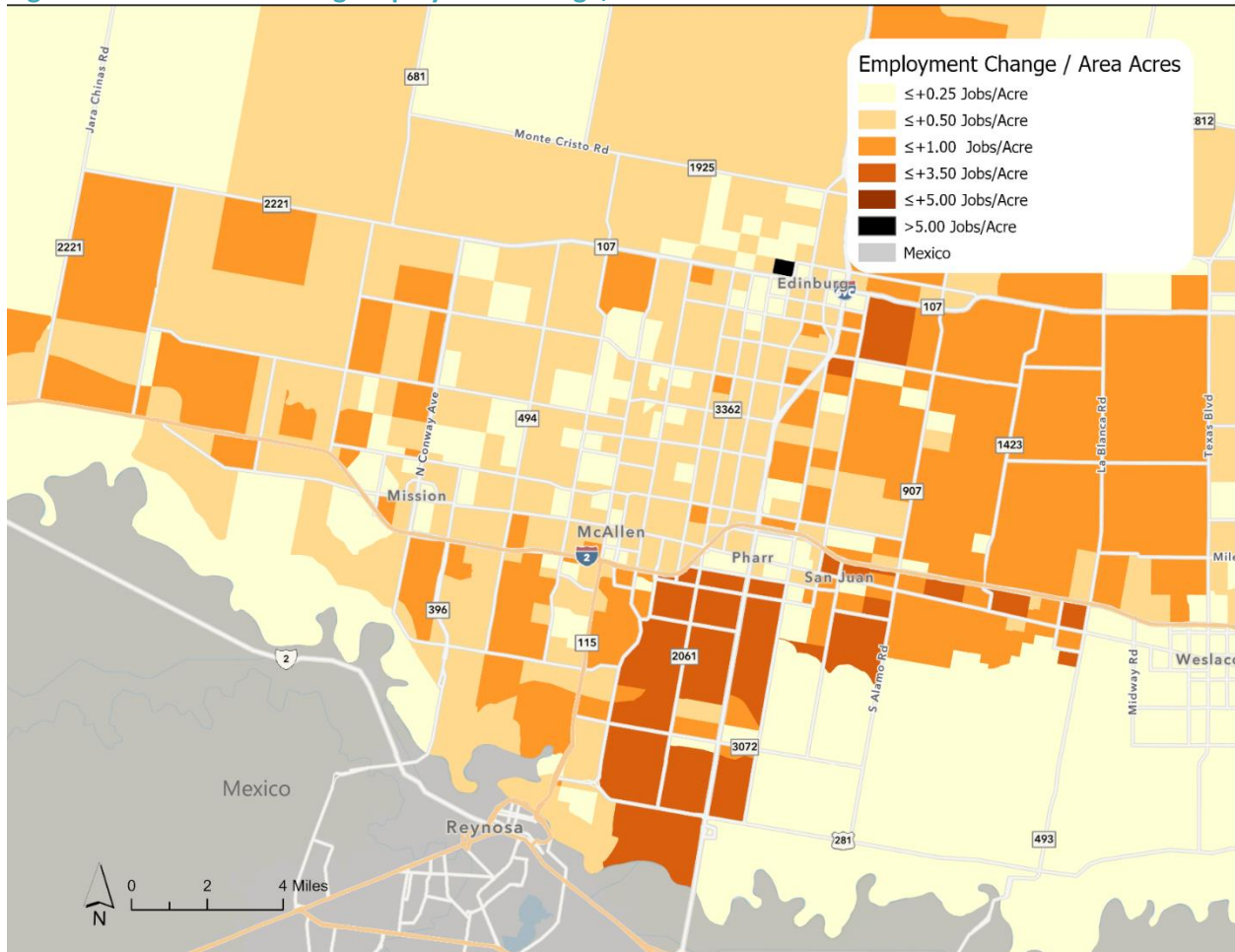
Block groups with the highest amount of expected growth in the Harlingen-San Benito area include (see **Figure 24**):

- The block group that includes the Palm Gardens Home & RV Park (south of Business 83 between Paloma Ln. & S. Palm Court Dr.)
- The block group that includes both Horizon Montessori and Sundance Apartments (southwest of S. 77 Sunshine Strip between Camelot Dr. and N. Whalen Dr.)
- The block group that includes Sam Houston Park, the Harlingen Thicket, and Arroyo Park (between US-83 & S. Commerce St.)
- The two block groups between E. Harrison Ave., S. 77 Sunshine Strip, and S. Ed Carey Dr.
- The block group that includes the Zavala Elementary School, Vestal Park, and many retail locations along N. Commerce St. (east of N. Commerce St. between Business 77, W. Washington Ave., and Markowsky Ave.)
- Several block groups between the bounds of N. Loop 499, N. 25th St., and Business 77, just southwest of Valley International Airport
- Additionally, there are many block groups that are expected to experience moderate growth both along the north and south sides of US-83 between Dixieland Rd. and FM 1245 (or the Hidalgo-Cameron County Border)
- The block groups that run along E. Harrison Ave from S. Eye St. to S. 15th St.

**Figure 24: Harlingen-San Benito Employment Change, 2019-2045**
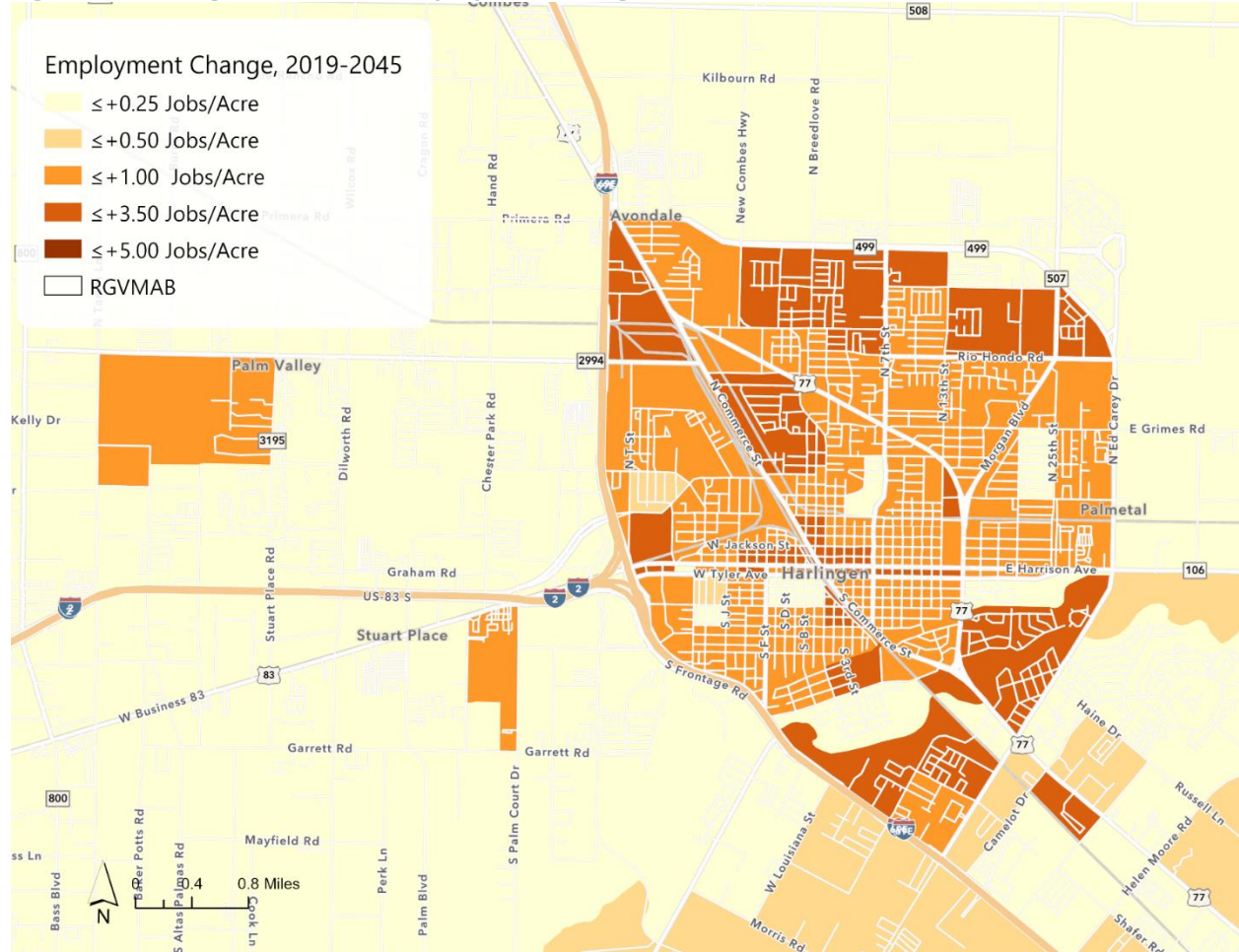
Block groups with the highest amount of expected growth in the Brownsville metropolitan area include (see **Figure 25**):

- The block group just northeast of the Mitte Cultural District (between Palm Blvd, I-69E, and E. Ebony Ave.)
- The block group just west of Palo Alto Battlefield National Historical Park (limits of SH 511, Paredes Line Rd., Lemon Dr., and Old Alice Rd.)
- The block group just east of the Resaca de La Palma Reservoir (limits of E. Tandy Rd., US-83, and the Resaca de La Palma Reservoir)
- Two block groups between the Homer Hanna High School and West Brownsville Little League Park split by US-77/I-69E (limits of E. Price Rd., Parades Line Rd., E. Los Ebanos Blvd., and Old Alice Rd.)
- Two block groups adjacent to the Strawberry Square Shopping Center and the Porter High School
- The block group that contains both the Brownsville Academic Center and Learning Academy (limits are Ruben M. Torres Blvd., N. Central Ave., Morrison Rd., and Robindale Rd.)
- Several block groups just northeast of the Brownsville-South Padre Island International Airport (limits of Dockberry Rd., Boca Chica Blvd., Loma Alta Lake, and SH 511)

- The block group that exceeds an increase of 5 jobs per acre is associated with the Texas Southmost University (limits are W. University Blvd., International Blvd., and Ridgely Rd.)

Figure 25: Brownsville Employment Change, 2019-2045
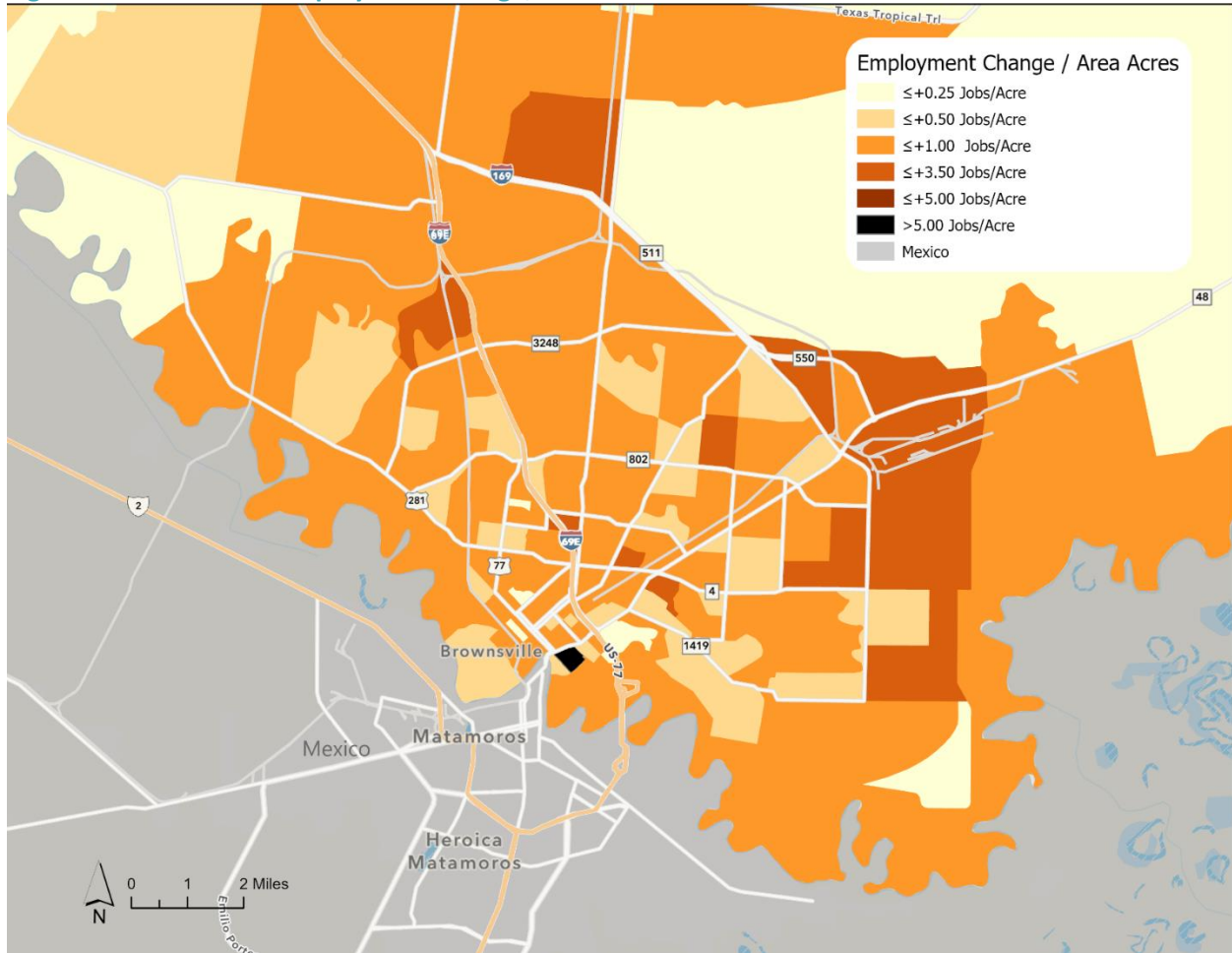
Population & Employment Generators

TDM outputs limit the understanding of where population and employment is distributed within a geographic area, spreading the total population or employment across an entire TAZ. The TDM also identified key destinations that generate high amounts of employment or population, known as special generators. Geolocating these special generators creates a more precise visualization of where both population and employment is distributed within the region and within each TAZ.

Special generators are activity centers that exhibit travel characteristics that are not in line with normal travel patterns in the study area. Typically, this means that a special generator attracts more trips than can be predicted using the normalized trip attraction rates from the study area data. There are several reasons for this phenomenon. The special generator may be classified as:

- A site for special events or periodic activity such as a stadium or convention facility
- A site that operates 24/7 with multiple shifts of employees such as hospitals and border patrols
- A site with high trip attraction rates and employment numbers, such as shopping malls and other retail centers
- A site of unique character in comparison to other activity centers, such as regional airports and shipping ports
- A site with a special population of trip makers such as the students at a university or college

The use of special generators in the model should be exercised judiciously and to the minimum degree possible. This conservative approach is necessary because special generators require additional data, additional steps, and call for a level of subjectivity that has the potential to bias model performance.

Except under very unusual circumstances, special generators do not include areas that are primarily the home-based production end of the trip such as residential areas. These areas are normally embraced within the limits of travel surveys, and the variations among types are typically accounted for during calibration of the model. Home-based trip attractions, trip productions, and trip attractions for non-home-based travel play a larger role in special generator markets.

The special generators for the RGV TDM were identified during the development of the demographic and employment data, and were aggregated into education, basic, service, and retail employment categories. The final set of special generators was limited to locations that ensured consistency with the 2009 TDM for each MPO.

Figure 26 pinpoints businesses that are associated with high amounts of population in the RGVMAB. Most special generators are heavily based around generating employment, which is why the only destination that produced an extremely high level of population was the Hidalgo County Jail.

Table 1 lists the top ten employers according to the TDM. **Figure 27** indicates the location of key destinations in the RGVMAB and the level of employment each key destination produces. There are five areas of high employment, three of which are located in the Edinburg-McAllen area and two in the Brownsville area.

Table 1: Top 10 Regional Employers, 2019

| Employer	# of Employees
Doctor's Hospital at Renaissance	3,400
La Plaza Shopping Mall	3,000
The University of Texas Rio Grande Valley	2,600
Texas Southmost College	2,300
Sunrise Mall	2,000
The University of Texas Rio Grande Valley - Brownsville	1,800
Rio Grande Premium Outlets	1,700
Las Palmas Health Center	1,500
McAllen Medical Center	1,500
Brownsville Shopping Center/Healthcare Center	1,250

Figure 26: Population Generated by Key Destinations, 2045
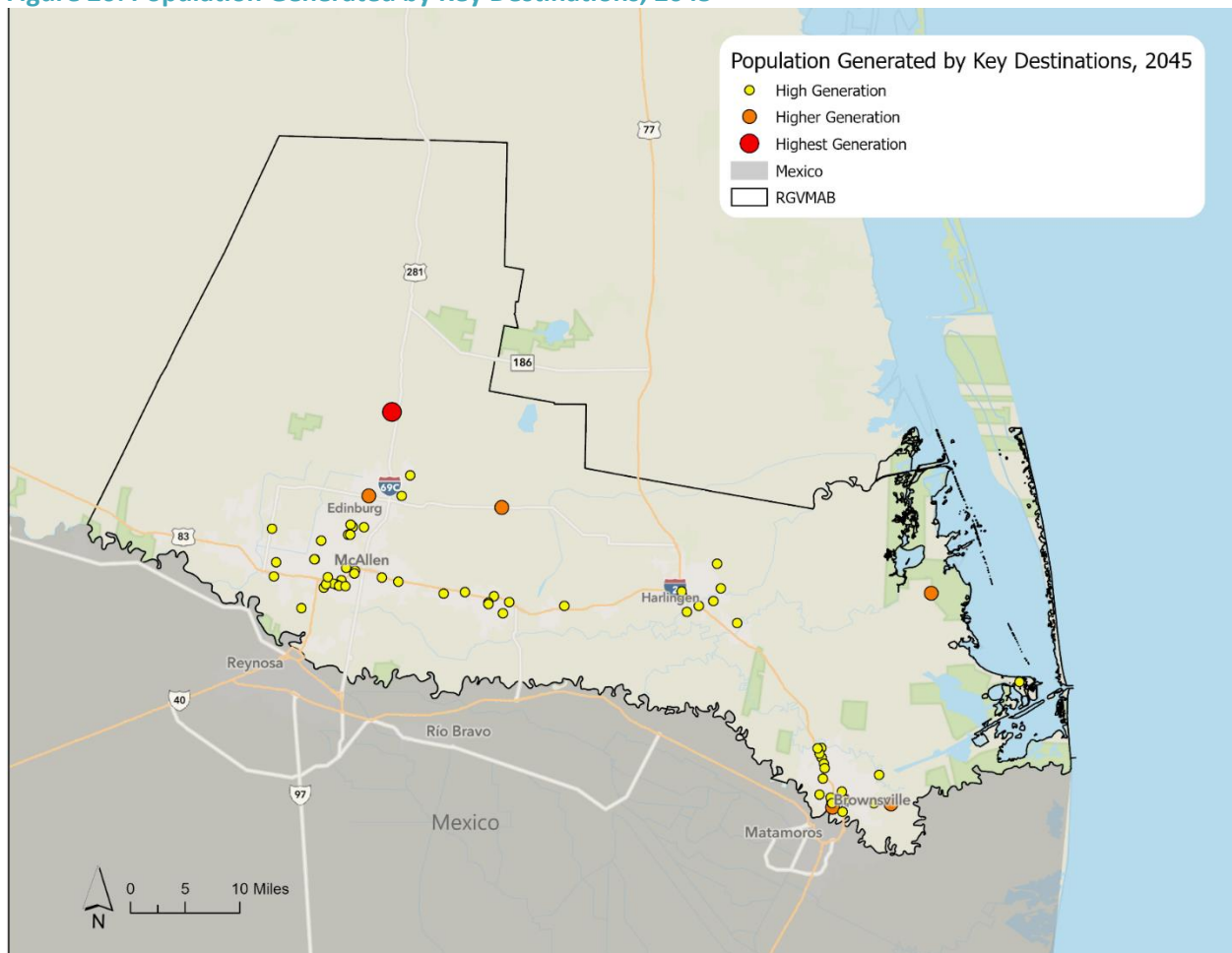
Figure 27: Jobs Generated by Key Destinations, 2045