



Sun City Solutions

"Brightening Futures"

DATE: December 15, 2019

TO: Economic and International Development Department, City of El Paso

FROM: Regional Research Team- El Paso, Sun City Solutions

SUBJECT: Economic Development Assessment and Recommendations for El Paso, TX

Summary

Headline

El Paso enjoys a unique set of locational endowments and faces a series of economic challenges. Given these conditions, we recommend El Paso focus its economic development efforts towards three strategies: enabling the growth of its transportation and cross-border manufacturing sectors, building and retaining a workforce tied to El Paso's growth sectors, and preparing El Paso for alternative energy leadership.

Overview

The following memo presents a comprehensive economic development assessment and strategy for El Paso, TX. First, the memorandum assesses conditions in the region. Next, it outlines the framework employed to assess El Paso and develop our recommendations. Following this, we apply the framework to identify and describe the advantages and challenges that distinguish El Paso. Finally, we outline the three strategy recommendations for El Paso, describing each strategy's objectives, key features, and successful case studies.

El Paso: General Characteristics

To place our assessment and recommendations in context, one must first understand the general characteristics of El Paso. The region's defining feature is its geographic location along the US-Mexican border, across the Rio Grande River from Ciudad Juarez. This geography has indisputably shaped the economy, people, and culture of the region.

The El Paso metropolitan statistical area (MSA) is home to almost 840,000 residents, making it the 68th largest MSA in the U.S. and the sixth largest in Texas.¹ Its population is growing at a 2.7% rate, which is slightly less than the U.S. average of 3.0%.² El Paso population is predominantly hispanic (see Figure 1) and includes 214,000 foreign born residents.³ El Paso's foreign born location quotient is 1.9 compared to the overall US population.⁴

Economically, El Paso's characteristics suggests it is underperforming compared to the rest of the U.S. Its median household income was \$43,170 and grew at a 7.8% growth rate in 2017.⁵

This compares to a U.S. household median income of \$57,652 and 8.7% growth.⁶ El Paso's low household income is accompanied by a large portion of residents who live below the poverty line, 21.8% compared to 14.6% of the general US population.⁷

Finally, El Paso is home to considerable defense and aerospace sectors. Its large defense presence stretches back to the end of the Mexican-American War and the location's strategic importance (the name El Paso refers to its position in a pass in the Franklin mountains) for east to west transit.⁸ Its aerospace sector rose in the early days of the Cold War, when the defense department and NASA selected the El Paso area based on its geography to serve as a weapons and aeronautical proving ground.⁹

Benchmarks

In addition to considering El Paso, we reference six benchmark regions when a comparison is appropriate. These regions are San Diego, CA, Tucson, AZ, Buffalo, NY, McAllen, TX, Laredo, TX, and Odessa, TX. The benchmark regions were selected based on the fact that they share one or more key characteristics with El Paso, including its position on an international border, southwestern U.S. geography, similar population or demographics, and comparable anchor institutions. In some instances, we refer to El Paso's aspirational benchmarks or peers. In these cases, we are referring to the compilation of San Diego, Tucson, and Buffalo. These regions enjoy economic conditions to which El Paso should strive in the long-run.

Economic Assessment

Economic Development Framework

Before we can further assess the El Paso region and provide recommendations for growth, we must understand how economies grow in general. This report considers an economic development framework that assesses current conditions and navigates a region onto a path toward economic prosperity. The framework assesses growth based on three factors: enterprises, people, and place. "Enterprises" refers to the business and industry environment in a city. This includes questions of what industries are present, who owns them, and how easy is it for entrepreneurs to start and expand their businesses. "People" refers to how well the talents and skills of the region's population match the needs of its current and future enterprises. "Place" refers to the concept of "stickiness." This concept acknowledges that people decide where to live and work primarily based on non-financial determinants. They want to live in places that reflect their interests, values, and desires. Altogether, how well a location meets people's criteria in these areas is referred to as its quality of place.

While we consider each of these features important to an economic development strategy, we conclude that they are hierarchical in priority - see Figure 2 for this report's framework diagram. The base of an economy lies in its enterprises, for without these all of the region's talent and quality efforts are unsustainable. Building on its enterprises, a region should next focus on ensuring it has the right people or talent pipelines. Third in priority is quality of place. Finally,

we consider the importance of inclusion at every step of the process. Inclusion and the promotion of equity in an economy certainly have their roots in morality, but even to strictly utilitarian developers, inclusion holds benefits. Inclusive growth is more sustainable than exclusive growth because it promotes worker stability and performance, provides opportunity for upward social mobility creating homegrown Creative Class¹⁰ talent, and reinforces quality of place initiatives, further promoting the region's stickiness.¹¹ The assessment and recommendations that follow stem from this framework as a means to provide structure to our analysis and a sense of prioritization to help empower decision-makers.

El Paso's Advantages

Comprehensive research of El Paso through the lens of this report's economic development framework has led us to identify several opportunities which the region can leverage to promote economic prosperity.

Geography

El Paso enjoys a geographic situation unique in the United States in terms of its opportunity for both domestic and international transportation and distribution. Domestically, El Paso is situated in the most geographically constrained portion of the US for east to west ground transportation. Figure 3 shows an overlay of the US Interstate highway system. Interstate 10 runs through El Paso and provides one of only five east to west interstate highway corridors through the eastern portion of the Rocky Mountains. The green dots in the figure demonstrate the regions for which east to west ground transit is most efficient through El Paso. The 14 MSAs included are among the top 50 in the US in terms of gross regional product.¹² This geography positions El Paso for potential leadership in domestic transportation and distribution in the US.

In addition to its domestic advantage, El Paso's location along the US-Mexican border makes it well suited to lead in cross-border manufacturing and distribution. In 2018, El Paso's port of entry accounted for 20.1% of land-based trade.¹³ Furthermore, El Paso enjoys two infrastructure features that support a focus on distribution and manufacturing. First, El Paso is home to three of only nine US-Mexican railroad border crossings.¹⁴ Second, El Paso hosts Foreign Trade Zone 68, providing a rapid and efficient means for cross-border commerce.¹⁵

Anchor Institutions- "Eds and Meds"

In addition to its geography, El Paso enjoys the presence of a large number and diversity of anchor institutions. Traditionally, urban developers think of universities and hospitals, or "eds and meds" as the most prominent anchors because their success is inherently tied to the success of their community. El Paso's eds and meds consist of the University of Texas at El Paso (UTEP), Texas Tech University Health Sciences Center, El Paso Community College

(EPCC), and several healthcare institutions including the University Medical Center of El Paso and the Medical Center of the Americas- a bi-national initiative with Ciudad Juarez.

Beyond its “eds and meds,” El Paso is home to a large and expanding multimodal air transportation hub. This hub includes a large presence from leading carriers such as DHL, FedEx, and UPS.¹⁶ These firms and the firms which support their operations are pivotal to the success of El Paso’s emerging transportation and distribution sector.

Finally, the presence of a large defense and aerospace sector affords El Paso a unique mix of high tech anchor partners with whom it can seek to promote the growth of its manufacturing enterprises and talent pool. This sector has already demonstrated a commitment to community partnership. Fort Bliss works with El Paso schools through its partners in education program to encourage and promote student outcomes.¹⁷ Additionally, Lockheed Martin has recently established a program with UTEP to promote native El Pasoans to study engineering and to attract the firm’s current employees from the region to take up its positions in El Paso.¹⁸

In total, El Paso hosts a diverse and robust array of anchor institutions with whom it can partner. Furthermore, these anchors have already demonstrated commitment to the community as well as a willingness to partner with the government and other anchors to promote mutually beneficial outcomes. These institutions will prove pivotal in the implementation of the strategies we recommend in this report.

Quality of Place Assets

The final advantage that we will consider is El Paso’s considerable effort in improving its quality of place. In the past decade, El Paso has undertaken an aggressive campaign to promote its arts initiatives, attracting an estimated 325 thousand “out of town” guests, \$91.5 million in economic activity, and \$10 million in state and local tax revenues annually.¹⁹ Furthermore, El Paso offers a significant number of entertainment options and attractions for residents of all ages and interests. This includes a theater, arts, and museum district, minor league and NCAA sports, family entertainment such as zoos and water parks.²⁰ It is also within driving distance to several outdoor destinations, including skiing resorts and parks, both state and national.²¹ Accounting for its diverse array of attractions, El Paso offers high quality of place for a wide range of individuals particularly when one considers the size of the region. This quality of place is essential to establishing El Paso as a place where talented individuals want to live and work.

El Paso’s Challenges

Despite its clear advantages, El Paso also faces several challenges that any economic development plan must consider and address. The key challenges that our strategy identifies for El Paso are described below.

Educational Attainment

In order to grow, El Paso must address its high school and community college attainment rate. As demonstrated in Figure 4, El Paso's population without a high school degree is almost twice as high as its aspirational benchmarks. Additionally, El Paso's share of residents that have completed some college, an associate's degree, or a bachelor's degree is 14.4 percent less than its aspirational benchmarks.

Ability to Attract and Retain Creative Class

El Paso struggles to attract and retain Creative Class professionals. One study, cited by the El Paso Times, found that El Paso ranked 9th in the US for emigration between 2010 to 2017 with a significant proportion of young, college-educated professionals seeking opportunities in other cities.²² Moreover, the region has cited challenges with attracting skilled creative workers for sectors such as healthcare. El Paso has 50% fewer healthcare providers than similar cities in Texas, according to the local chamber of commerce.²³ Medical professionals who choose to relocate invoke quality of life concerns and difficulties finding employment for their spouses.

High school performance

In addition to poor graduation rates and its difficulties in attracting and retaining the Creative Class, El Paso's schools are also underperforming. According to the US News and World Report, no El Paso high school ranked among the top 50 in Texas²⁴ nor the top 300 in the US. As a point of reference, our aspirational benchmarks, San Diego, Tucson, and Buffalo had three, two, and one, respectively.²⁵ Furthermore, according to the 2019 Texas Education Agency Ratings, three El Paso high schools received failing grades, seven received a D, and 53% of the students are not the grade level on the STAAR test.²⁶

Economic Inclusion Challenges

El Paso is consistently ranked as one of the most affordable cities to live in the United States, particularly because of its housing market. Realtor.com, MSNBC, Sperling's Best Places, and others often laud the region's affordability in articles nearly every year, and home price figures reaffirm that accolade. Using Zillow's Home Value Index, El Paso's average home value is a mere \$132,000 compared to the U.S. average at \$239,000.²⁷ This data is consistent when looking at the median list home prices of \$188,000 vs. \$285,000²⁸ and rental costs are \$879 vs. \$1,046 in the respective markets.²⁹

While El Paso enjoys an affordable cost of living, we have previously noted its large population living below the poverty line. Regarding inclusion, we identify three areas requiring El Paso's

attention: housing, transportation, and electricity. A review of the first two measures demonstrates some of the great strides El Paso has taken to assist its more vulnerable sections of the population. El Paso's housing authority holds the second largest portfolio in Texas and serves over 40 thousand residents.³⁰ Furthermore, El Paso's public transportation provider, Sun Metro, continues to expand, prioritizes lower-income residents, and consistently enjoys increased ridership.³¹

One area where El Paso can make immediate improvements is in its electricity sector, which we will provide solutions for later in this memo. Over 22,000 residents are energy-challenged, meaning they spend more than 30 percent of their monthly income on electricity.³² This is an even more significant cost burden when considering that these same residents are frequently those who are housing and transportation burdened as well.

El Paso Policy Recommendations

Based on the assessment of El Paso's unique economic, demographic, and geographic conditions and identification of its primary strengths and challenges, this report offers three recommendations. These strategies present a set of actions that El Paso can implement for each of the three elements in our economic development framework: enterprises, people, and places. First, El Paso should focus on its high potential industries by enabling the growth of the transportation and manufacturing sectors. Second, El Paso should focus on its people by building talent pipelines to build a workforce tied to its growth sectors. Finally, El Paso should renovate its infrastructure and policies to promote alternative energy leadership

Enterprise Strategy: Enable the Growth of Transportation and Manufacturing Sectors

The first key to sustainable and inclusive economic prosperity for El Paso is investing in its most competitive, traded sectors. Therefore, this report recommends that El Paso invest in the growth of its transportation and manufacturing sectors.

Review of Conditions

While local industries such as the service industry are a source of jobs, those jobs come and go with population and economic fluctuations and are not typically high-wage nor family-sustaining.³³ In contrast, traded sector jobs have wages high enough to support families, and will, therefore, help support El Paso's economic growth. These are the jobs that El Paso must grow to provide inclusive prosperity.

Furthermore, to ensure that those jobs prosper, El Paso should focus on growing sectors in which El Paso already has a comparative advantage relative to the rest of the United States, the transportation and manufacturing sectors.

Indeed, as explored in the beginning of this memorandum, El Paso has a number of features that set it apart as a potential transportation and manufacturing hub. Its location on the border

means that businesses can use the over 300 maquiladoras for their simple and complex manufacturing needs.³⁴ Goods manufactured in Mexico can then be transported into the United States via the border crossing and stored in the El Paso Free Trade Zone No. 68, which provides customs duties incentives to businesses.³⁵ The high volumes of traded goods and the geographic advantages associated with El Paso for both domestic and international commerce uniquely qualify it as a potential transportation and manufacturing hub.

The comparative advantages from El Paso's locational and infrastructural assets are further confirmed by the occupational and industry sector data for the region. As shown in Figure 5, a significant number of El Paso's transportation occupations have LQ greater than one and are growing in number when compared to the rest of the United States.³⁶ El Paso's industry and cluster data tell the same story; El Paso is above the 90th percentile for transport industries, and above the 75th percentile for distribution and e-commerce.³⁷ With the proximity of Ciudad Juarez's maquiladoras, El Paso has the resources and infrastructure to lead in transportation and manufacturing.

All of these factors mean that the cornerstone of El Paso's inclusive growth must be its manufacturing and transportation sectors. The following strategic objectives and recommendations will detail the steps that El Paso must take to ensure it is reaching its potential as a transportation and manufacturing hub.

Strategy Objectives and Recommendations

Objective 1: Build Organizational and Physical Infrastructure for cross-border partnership

El Paso can promote inclusive prosperity by capitalizing upon its potential in the transportation and manufacturing sectors. Improving the region's organizational and physical infrastructure for cross-border partnerships is a critical first step. El Paso must have the organizational infrastructure to coordinate efforts and sustain growth in the manufacturing and transportation sectors so that new and existing businesses understand how El Paso's assets will benefit them. El Paso also needs to improve its physical infrastructure to expedite and facilitate the manufacturing and transport of commercial goods. While El Paso has taken some initial steps towards this with the Borderplex Alliance and making use of federal programs to expedite border crossings, these efforts must be scaled up if El Paso is to become a regional hub for manufacturing and transportation.

This firm recommends the following actions:

- **Organizational Infrastructure:** Build on the initial success of Borderplex Alliance by working with stakeholders to develop a five-year strategy identifying key goals, concrete action steps, deliverables, and metrics.

- **Physical Infrastructure:** Invest in expedited cross-border infrastructure through investigating options such as reviewing zoning policing, expanding warehouse capacity, reviewing zoning policy to allow easy business establishment, capitalizing on the Free Trade Zone no. 68, increasing lanes for commercial traffic as well as personnel to check commercial cargo.

Case Study:

The Cali-Baja Bi-National Mega Region serves as a prime model for El Paso of regional economic integration in the Southern border. Established in 2008, the Cali-Baja Bi-National Mega-Region is a partnership between six regional economic development organizations (EDO) encompassing the whole of California's border with Mexico including San Diego and Imperial Counties on the U.S. side of the border, and six municipalities in Baja California on the Mexican side of the border.³⁸

Together, the group works to coordinate the region's economic development strategy with a focus on leveraging labor and manufacturing assets on the Mexican side of the border and supporting industries such as design and research on the United States side of the border.³⁹ As detailed in a 2018 study by San Diego's World Trade Center, these efforts have been largely successful with over six billion in trade passing through the mega-region's border crossings, and with the economic worth of the border region itself estimated to be around 205 billion.⁴⁰

The region's organizational structure contributed to this success. In 2011, the region's various EDO signed a Memorandum of Understanding committing to work together in marketing their unified economic region with concrete actions such as updating the website and attending marketing and trade shows.⁴¹ The stakeholders continue to meet regularly and produce an annual report detailing their efforts and next steps.⁴²

These efforts have yielded gains in terms of physical infrastructure at the region's border crossings, where resources are focused on facilitating and expediting the crossing of commercial goods, many of which have been manufactured in Tijuana and then cross into San Diego. The region has invested in increased lanes and personnel to check cargo, a joint inspection program, and a bi-national airport in which a traveler may land in Tijuana and cross into San Diego via U.S. Customs at the airport.⁴³ All of these efforts have resulted in a seamless co-production supply chain in the region where a product may cross a port of entry multiple times in a day when in production to have one part manufactured in Tijuana with support from design teams in San Diego for more complex manufacturing needs.⁴⁴

Takeaways for El Paso

El Paso has the beginnings of the organizational and physical infrastructure it needs to transform into a transportation and manufacturing hub like the Baja-Cali Bi-National Mega Region. The Borderplex Alliance represents regional stakeholders from El Paso and Ciudad Juarez, including small businesses, government, and educational anchors.⁴⁵ Currently, the Alliance focuses on general economic development by promoting policies and advertising general business incentives.⁴⁶ The Borderplex Alliance can use the Baja-Cali regional model to craft a more targeted approach, and both scale-up and focus its efforts on manufacturing and transportation.

Objective 2: Partner with anchors to develop the transportation and manufacturing sectors

In addition to building up its organizational infrastructure for regional planning and physical infrastructure for manufacturing and transportation, El Paso should invest in partnerships with regional universities, aerospace, transportation, and military anchors to create pipelines for talent and innovation in its target sectors.

Anchors in El Paso such as UTEP are economic hubs in the region and produce talent and invest money in research and design. Currently, many of UTEP's graduates do not stay in El Paso, and their investments in R&D are directed towards sectors that are not advantaged in El Paso, such as Life Science.⁴⁷ El Paso should direct its regional planning efforts towards aligning anchors towards creating a talent pipeline so that graduates stay in the region, and research serves the region.

This firm recommends the following actions:

- Promote cross-border partnerships between El Paso universities, Ciudad Juarez universities, especially their engineering departments, and maquiladoras to create a talent and innovation cluster for simple and advanced manufacturing.
- Work with university, industry, and military anchors to promote workforce development and creating pipelines for talent in the manufacturing and transportation sectors

Case Study:

The Cali-Baja Bi-National Mega Region also serves as a model in terms of anchor partnerships that target the manufacturing and transportation sectors, creating pipelines for talent and innovation. The region also is home to several centers dedicated to Research and Design in the manufacturing sectors such as the Monterrey and Chihuahua Centers for Research on Advanced Materials and the CaliBaja Center for Resilient Materials and Systems.⁴⁸ This same effort has created the CaliBaja Education consortium in which San Diego and Tijuana students may take classes at any of the region's universities, enabling networking the innovation that

comes with it. These assets and level of coordination between anchors reinforces the region's economic development efforts and should be followed in El Paso.

Takeaways for El Paso:

While El Paso's anchors have made efforts towards research and workforce development, targeting those efforts towards sectors that are advantaged in El Paso is imperative. Investing in innovation in manufacturing and transportation will help create more opportunities so that El Paso's talent stays in El Paso and El Paso grow its advantaged sectors into a transportation and manufacturing hub. The Cali Baja model will be key to study and provide best practices towards those efforts.

Objective 3: Focus on business retention and expansion

Finally, El Paso should focus on cross-border business retention and expansion in the manufacturing and transportation sectors. El Paso's current advantage shows that business clusters for manufacturing and transportation already exist in the region. Therefore, El Paso must look to what incentives and supports it can provide to support and grow existing businesses in these fields and attract new ones.

This firm recommends the following actions:

- Plan business incentives and partnerships with incubators in the manufacturing and transportation sectors to attract new businesses and grow existing ones.
- Invest in regional marketing efforts to advertise incentives and make sure that existing businesses know how to take advantage of economic development opportunities.

Case Study:

Here, too, the Cali-Baja Bi-National Mega Region presents a model for a unified marketing strategy that El Paso should look to as it works on this step. The Cali Baja region's website clearly presents the advantages for businesses that might want to make use of the manufacturing and transportation assets and offers free consultation services.⁴⁹ In addition, the region has invested heavily in quality of place and security on both sides of the border crossing so that businesses and tourists alike are greeted by inviting plazas and cafes. Secure and modern condominiums have been built in Tijuana, and cost a fraction of what it costs to live in San Diego, resulting in over 60,000 U.S. citizens living in Tijuana's urban core.⁵⁰

Takeaways for El Paso:

Although El Paso has begun to invest in the organizational infrastructure for regional economic integration, it still needs to look towards how that organization can plan and communicate

clear incentives to retain existing businesses and attract new ones. El Paso should look to the Cali-Baja region as a model for how clear marketing of business incentives and quality of place investment has lead to regional economic integration.

People Strategy: Build and Retain a Workforce Tied to El Paso's Growth Sectors

In order to ensure that it hosts a population capable of meeting the needs of its growth sectors, El Paso should seek a seamless workforce development and retention strategy. This strategy should provide high-quality education, employees with industry demanded skill sets, and pathways to opportunities all along the educational continuum. We recommend El Paso focus its efforts on four comprehensive areas.

First, El Paso should develop high school Career and Technical Education (CTE) in El Paso's strategic sectors: advanced manufacturing, logistics, and transportation. The goal of this program would be to improve high school graduation rates and to connect students with pathways for professional opportunities.

Second, El Paso should leverage El Paso Community College and UTEP to create incubators and accelerators that will enable the creation of innovative startups and local firms. It can use these hubs as opportunities to connect students with emerging enterprises.

Third, El Paso should partner with educational, cultural, and business anchors to develop a positive experience in the region for college students as a means to boost college-educated population retention rates.

Finally, automation and emerging technologies have the potential to displace and outpace workers who face more obstacles to participating in educational opportunities. El Paso should leverage its diverse array of anchors, including those in the aerospace and defense sectors, to provide mid-career training programs for less-educated workers with a mismatch in skills.

Review of Conditions

As addressed previously, El Paso does not have the talent pool to fully leverage its locational advantages. The region is underperforming in educational attainment, especially for high school education, it has difficulty retaining its Creative Class, and its high schools are underperforming. For the region to attract a transportation and manufacturing cluster, it must adopt a strategy to ensure the right mix of human capital is available for hire. If successful, these policies can reverse negative trends by improving educational outcomes, enabling upward mobility, and improving El Paso's attractiveness to enterprises and creatives.

Strategy Objectives and Recommendations

Objective 1: Implement High School Career and Technical Education

El Paso must increase its population's education attainment rate and develop pathways into its competitive sectors. A program like the Pathways in Technology Early College High School (P-Tech) program, supports these objectives. P-Tech has a proven track record in several cities as well as curriculums that support entry into the transportation and manufacturing sectors.

El Paso should adopt the P-Tech program or develop a similar CTE. The program should be structured as a public/private partnership (PPP) to equip high school students with technical and professional skills. Successful programs generally enable students to earn a high school diploma as well as earn an associate's degree, a two-year postsecondary certificate or industry certification. One of the key features of this program would be that it allows students to gain work experience through an internship, apprenticeship, or other job training programs.⁵¹

Case Study:

P-Tech is a relatively new program, but it has already delivered promising results. IBM is currently conducting an impact evaluation of a series of schools it opened in New York. Though still ongoing, the study's initial results are promising.

After finishing the first 6 year cycle in Brooklyn, the report finds the following results:⁵²

- 112 students graduated within 6 years or less (as few as 3.5 years) with both their high school and associate STEM degrees.
- The first class achieved a graduation rate that is over four times the national on-time average for all community college students, which stands at 13%.
- 100% of the first cohort completed high school.
- More than 176 students from the first and second cohorts completed paid internships.

In New York State, results from 16 P-TECH schools include⁵³:

- 95% of the students completed high school requirements in 4 years. Higher than the statewide average of 82.1% for 2016-17.
- Students earned an average of 25 college credits by the end of 4 years.

Takeaways for El Paso:

The P-Tech program already partners with Texas Institutions of Higher Education (IHEs) as well as regional businesses and industries. In fact, an advanced manufacturing program has already been implemented in three Dallas high schools simplifying the process of replicating it in El Paso.⁵⁴ Furthermore, the Texas Education Agency (TEA) has approved a statewide

Transportation, Distribution, and Logistics program.⁵⁵ El Paso has the potential to be among the first to implement this program through a P-TECH partnership.

Objective 2: Revitalize Community College and Job Training

In addition to addressing high school pathways, we recommend revitalizing the role of El Paso Community College (EPCC) in providing opportunity to its students. El Paso should promote partnerships between UTEP, EPCC, and local firms to develop an advanced manufacturing incubator located at EPCC. The incubator will provide students with opportunities to gain knowledge and experience through applied learning and real-life technical and managerial challenges by helping local startups and innovative companies perfect. This program also provides an interface for businesses and education institutions to ensure that students are prepared to enter the workforce.

Case Study:

Austin Community College (ACC) developed a manufacturing incubator that provides the space and resources required for emerging manufacturing companies to grow and the opportunities for students to gain hands-on experience. The incubator provides specialized facilities for manufacturing start-up companies to develop prototypes and products and will eventually provide students with paid internships in key areas, including engineering technology, logistics, and global supply chain management. The incubator has gone even further and developed a Manufacturing Academy that allows high school students to complete college courses while finishing their high school education.⁵⁶

Takeaways for El Paso:

This case study emphasizes the importance of partnerships for these programs. ACC's incubator has partnered with another technology-oriented incubator (Austin Technology Incubator) to connect entrepreneurs and innovators. El Paso, too, has several incubators with whom EPCC could partner. Additionally, industry-oriented partnerships such as Austin's Manufacturing Academy partnered with Austin Regional Manufacturers Association (ARMA) to offer high school students professional certifications. Programs such as these can lead to an industry certificate while gaining valuable practical experience. Finally, the incubator partnered with universities to provide educational opportunities for students seeking to continue beyond associate degrees. UTEP provides a similar opportunity in El Paso.

Objective 3: Establish a University, City, and Cluster Partnership Program

To address its college-education population, El Paso needs to improve its "stickiness" by promoting the educational, cultural, and professional opportunities available in the city. To

build this comprehensive offering, El Paso should establish a partnership program that includes EPCC, UTEP, businesses, and cultural anchors to develop memorable experiences and connect students with opportunities. By connecting students to high-quality internships and providing other services like access to cultural events, service opportunities, and housing services, El Paso can promote all it has to offer and assist young professionals in making the personal and professional connections that influence their location decisions.

Case Study:

CampusPhilly provides an excellent example of these types of programs. CampusPhilly is a non-profit organization that encourages college students to study, explore, live, and work in Philadelphia. The nonprofit works in partnership with 31 colleges and universities, numerous corporate partners, arts and culture organizations, and various community organizations to bring off-campus experiences to college students⁵⁷.

The program had a tremendous growth impact on the city of Philadelphia⁵⁸:

- 54% retention rate for students remaining in Philadelphia
- \$6.4 Billion in additional earnings to the region annually
- \$394 million in city and state tax revenue generated annually
- 35,600 additional jobs supported in the region annually

Takeaways for El Paso:

The key idea behind the CampusPhilly model is that good internship experiences are “sticky.” It connects students with future work opportunities and increases the likelihood of students staying in the region after graduation.⁵⁹ The program is presenting all of the opportunities, experiences, and connections that the region has to offer students. As identified previously, El Paso already hosts a diverse array of cultural assets, business, and educational anchors. A program like CampusPhilly provides a means to coordinate these efforts to provide access to the experiences, internships, and relationships that can inspire a new generation to choose to make El Paso their home.

Objective 4: Provide Career Retraining for Adults with a Skills Mismatch

The final form of human capital development that El Paso must address is to provide opportunities for its significant undereducated working population. Providing career retraining programs for adults can be complicated to implement and sustain, especially because this population faces higher opportunity costs for dedicating time and resources towards further education. We recommend the development of apprenticeship programs that leverage local anchors, especially those in our growth sectors and in the defense and aerospace sectors, to retrain workers with skill mismatches.

Case Study:

To address a shortage of cybersecurity talent, business, government, and military leaders in St. Louis established a paid cyber apprenticeship program. Scott Air Force Base and private sector partners created a non-profit (CyberUp) that helps job seekers obtain apprenticeships in cybersecurity.⁶⁰ The program is in its early stages but Cyber up reports that many apprentices including retirees, veterans, and former teachers have found jobs in local business.⁶¹

Takeaways for El Paso:

St. Louis' program provides an example framework for empowering working professionals who are seeking to modernize their skillset. It also presents an exemplar for partnering with a large military anchor to improve community outcomes. El Paso's defense and aerospace sector are heavily reliant on transportation and manufacturing infrastructure. Partnering with Fort Bliss and the other defense and aerospace anchors in its region provides an incredible opportunity to promote the growth of El Paso's target clusters, benefiting the region's residents and enterprises.

Place Strategy: Rebuild El Paso for Alternative Energy Leadership

With strategies established to address El Paso's enterprises and people, a final feature of the development framework remains for consideration, place. By capitalizing on new financing mechanisms through Green Bonds, and retrofitting energy-inefficient housing to net-zero energy use, El Paso will become more affordable, resilient, and renowned as a leader when it comes to alternative energy efforts.

Review of Conditions

El Paso is the "Sun City." With an average of 302 sunny days per year⁶² and high satisfaction for quality of life,⁶³ "Sun City" isn't just a tagline or brand, it is a reality.

For some residents, it is not always sunny in El Paso. Over 22,000 El Pasoans are energy-challenged.⁶⁴ As a city in the high Chihuahuan desert, El Paso has unique energy challenges. High power consumption is required in homes during the hottest summer months of the year because of the need for air conditioning and likewise for heating in the winter months⁶⁵. With only one electric provider for the region, residents do not have a choice in their provider⁶⁶ and since the provider is investor-owned, rather than municipally owned, there is less flexibility for residents to express their voice in how to lower their electricity costs besides reducing usage.

We view directly addressing this community challenge as an opportunity. By rebuilding El Paso for alternative energy leadership, not only will energy-challenged El Pasoans benefit, so will the

greater community through improved climate resiliency, middle-class career opportunities, reliable energy rates, and programs to reduce consumption and improve energy efficiency.

Strategy Objectives and Recommendations

Objective 1: Leverage Green Bonds to Build a Sustainable El Paso

Through Green Bonds, the El Paso Electric utility will invest in large-scale renewable power generation projects and local distributed generation to support the region's transition away from high-cost legacy generation to lower-cost renewable generation. The goal of this strategy is to make electricity affordable for users and to build capacity to respond sustainably to the challenges of El Paso's climate. El Paso Electric has experience retiring legacy power-generation assets, being the first electric utility in Texas to eliminate coal from its portfolio⁶⁷. By adding Green Bonds to the city's financial portfolio, new investment can augment that experience and enable faster and more innovative projects to be built to residents' benefit.

Case Study:

Duke Energy Carolinas issued \$1bn in Green Bonds in 2018 to finance eligible green energy projects – including zero-carbon solar and energy storage – in North and South Carolina.⁶⁸ Xcel Energy has financed four wind energy projects since 2018 in Colorado, Minnesota, New Mexico and Texas which have attracted incremental investors specifically interested in sustainability-focused projects including some that will only invest in renewable-focused investments⁶⁹. This increasing demand, when combined with improving interest rates, is helping accelerate the transition to renewable power sources.

Takeaways for El Paso:

This works in El Paso because El Paso Electric is in a geographically-strategic place for the renewable market with an average of 302 days of sunshine and ample wind. By enabling sustainability-minded investors to direct funds to renewables, El Paso gets infrastructure improvements and investors get assurances they have climate-conscious portfolios.

Objective 2: Foster Alternative Energy Leadership, Manufacturing, and Innovation

The objective to create scalable solutions and processes to reduce residential energy use in El Paso both meets an immediate demand in El Paso to reduce residential energy use and improve affordability for residents and also supports manufacturing and the potential development of an alternative energy cluster. By first completing an audit of energy-challenged residences, El Paso can analyze the data and aggregate demand on the types of residences that need retrofit to reduce their energy consumption. Once the needs are

assessed, El Paso can then mobilize industry to provide innovative solutions to address the specific issues. By creating a market for these solutions, El Paso can analyze how much potential solutions will cost and provide an estimate for funding, which will benefit from cost compression from a competitive bid process. El Paso can then use the findings from this process to create more efficient energy regulations for home builders and industry, which will drive further industry solutions by creating the conditions necessary for success.

Case Study:

The State of New York created the RetrofitNY program to address energy challenges residences throughout the state.⁷⁰ This program is largely based on a similar program in Europe called Energiesprong which, through creating a standards- and process-based approach, retrofit 4,500 homes from being energy inefficient to having net-zero energy use.⁷¹

Takeaways for El Paso:

This program is well suited for El Paso because there is a large market of energy inefficient residential housing, which will both provide potential vendors a market for their solutions and solve one of the largest affordability problems in the region. El Paso is also located in a unique climate that largely benefits from low residential energy use with hot summers and cold winters requiring extensive climate control systems for buildings. The number of residences facing energy-inefficiency challenges is also an achievable number. Retrofitting 22,000 homes is not an insurmountable challenge, and there is also a larger, adjacent market in Juarez for whom businesses can provide solutions.

Conclusion

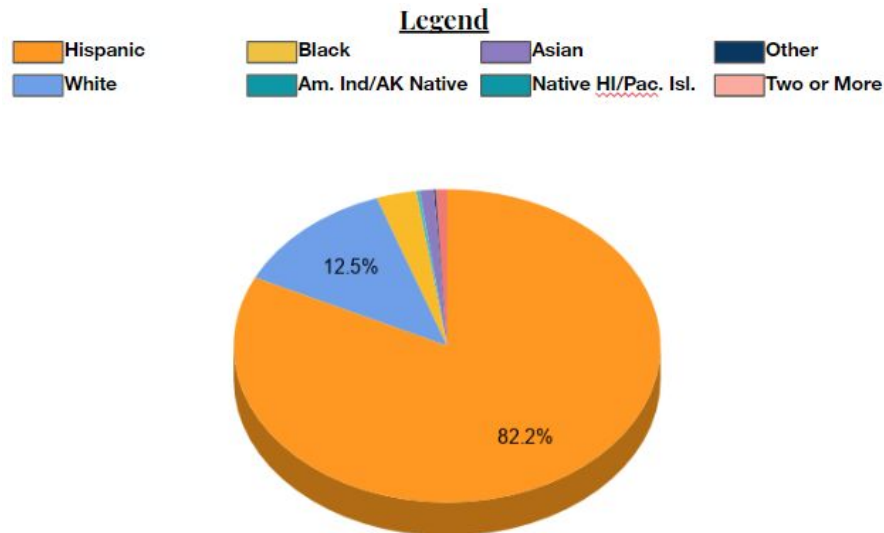
El Paso is a community with spectacular assets and advantages. Its location on the border and along key transportation routes, cultural diversity, climate, livability and established anchor institutions provide a solid base from which to implement an economic development plan. Its location across the Rio Grande from Ciudad Juarez, a city recognized for its factories and manufacturing sector is an asset. The region now must build structures and linkages to take advantage of all its assets for it to remove barriers and provide new pathways and opportunities for its residents to succeed.

There are key challenges for the city to address like low educational attainment, poor quality schools, a lack of high paying creative class jobs for residents to aspire towards, an exodus of highly educated residents, a high poverty rate, and a large energy-inefficient housing stock that compounds affordability issues for low-income El Pasoans. We are optimistic that sound economic development strategies can address each of these issues and promote an El Paso in which all can prosper.

El Paso's roots are in its storied past as a frontier outpost at a critical crossroads for a growing nation and a bi-national community. We at Sun City Solutions believe that El Paso's future success is inherently tied to this legacy. By improving key assets and promoting the region's strategic potential as a transportation and manufacturing hub, building a talent pipeline tailored to these industries, and transitioning its electric infrastructure into a sustainability hub, El Paso will add Creative Class jobs, raise living standards, and reduce barriers for residents to achieve a bright future in the "Sun City."

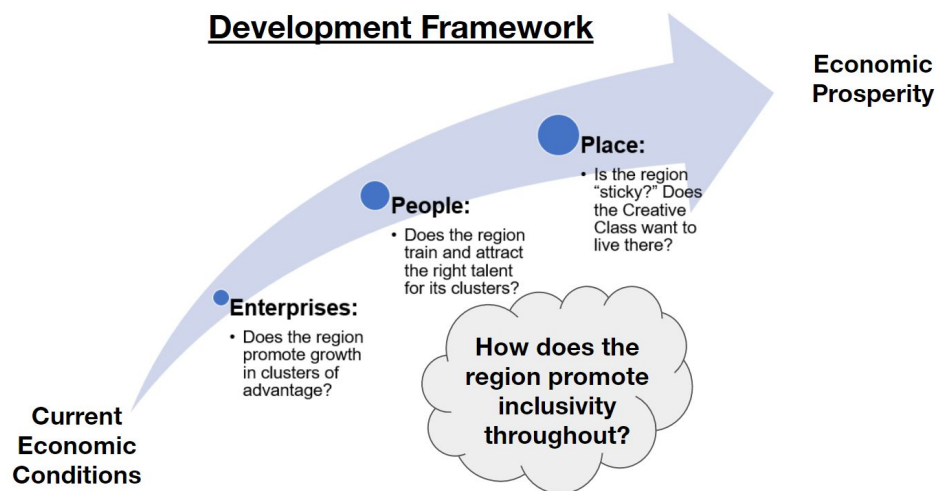
Appendix

Figure 1: El Paso Ethnic Composition



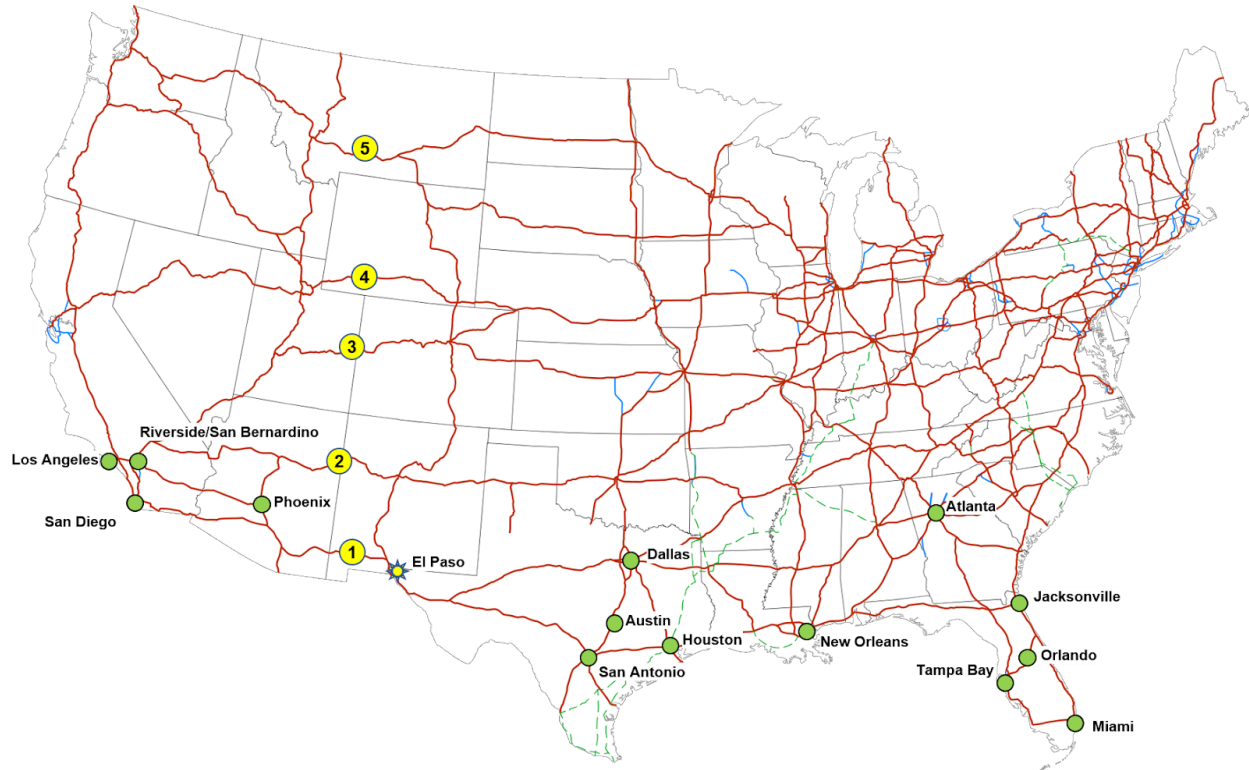
Source: “2013-2017 American Community Survey 5-Year Estimates” (U.S. Census Bureau, 2018), <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.

Figure 2: Economic Development Framework



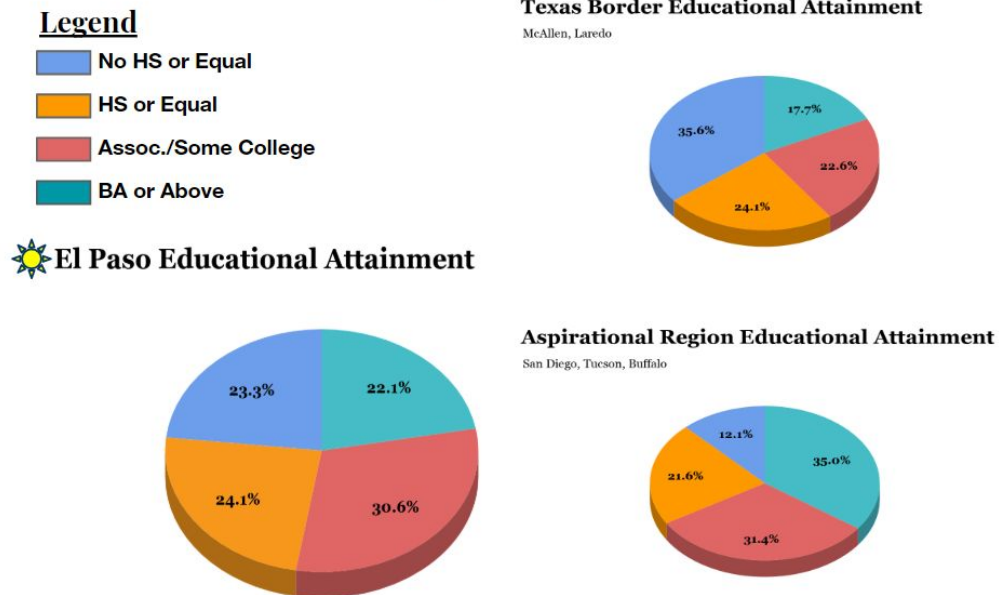
Source: Researcher Created Framework

Figure 3: El Paso Domestic Transportation Advantage



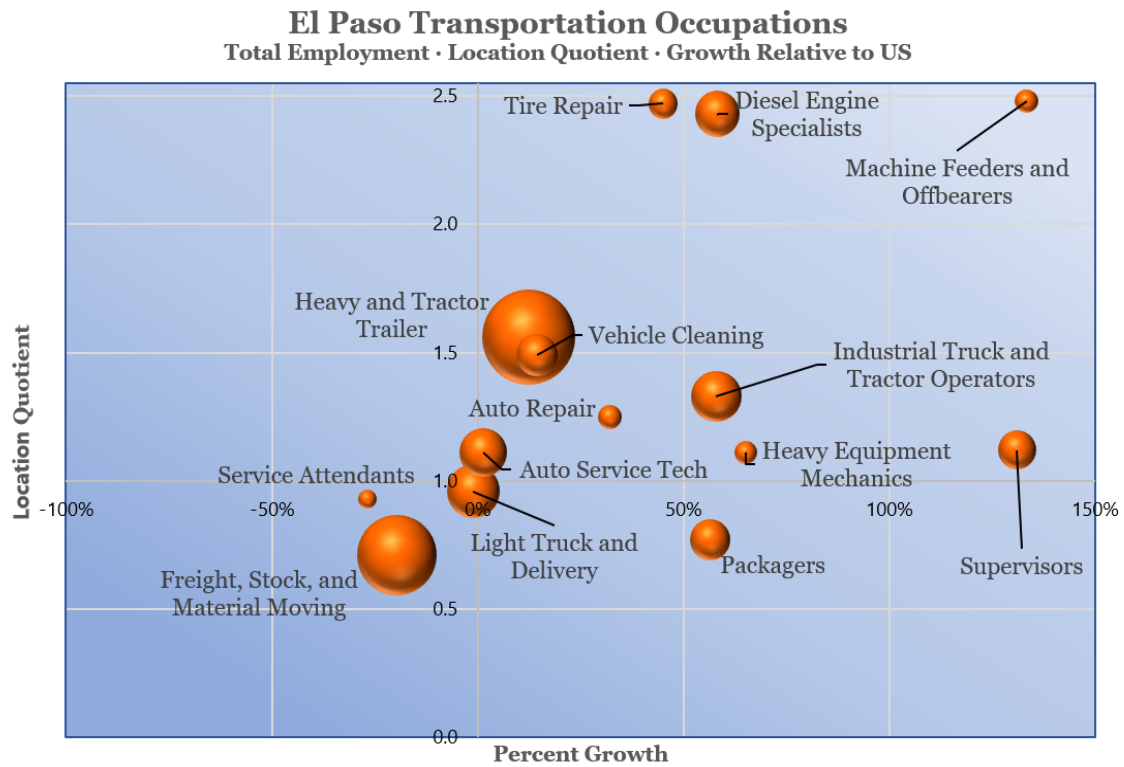
Source: Own Construction. Map from “Nationalatlas.Gov - National Atlas of the United States.” Accessed October 12, 2019. <https://www2.usgs.gov/science/cite-view.php?cite=244>.
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Figure 4: Educational attainment benchmark



Source: “2013-2017 American Community Survey 5-Year Estimates” (U.S. Census Bureau, 2018), <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.

Figure 5: El Paso Transportation Occupations Assessment



Source: Own Construction from data provided by Professor Steven Pedigo, LBJ School, UT at Austin

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