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Assessing Urban Tree Coverage Along The U.S.-Mexico Border: A GIS Analysis Of Paso Del Norte

Melanie Escobar
University of Texas at El Paso

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MELANIE ESCOBAR

Master's Program in Latin American Border Studies

APPROVED:

Josiah Heyman, Ph.D., Chair

Alex S. Mayer, Ph.D.

Deana Pennington, Ph.D.

Stephen L. Crites, Jr., Ph.D.
Dean of the Graduate School

DEDICATION

Este es para mis padres y familia, gracias por todo. Y también gracias Domingo, sin tu presencia todo habría sido diferente. Como ellas dicen “Échale ganas."

This thesis is for the Paso Del Norte community, which has become another home.

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by

MELANIE ESCOBAR, B.S.

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ABSTRACT

In recent years, researchers have extensively studied the spatial distribution of social demographics and urban tree canopy (UTC) in urban cities, but very few, to this date, address U.S.-Mexico border cities. To date, there is no research that assesses the distribution of urban tree canopy (UTC) in the city of El Paso, Texas, and Ciudad Juarez, Chihuahua, along the U.S.-Mexico border. Leveraging advanced mapping techniques and GIS tools, the study performs comparisons between countries (Juárez vs. El Paso urbanized areas and intra-country (within each country). It compares land cover classifications, assesses variations in UTC distribution across census tracts and Área GeoEstadística Básica (AGEBs), and explores potential spatial clusters. Drawing on landcover data with a resolution of 0.6m and 8.5m, the research contributes to the global understanding of urban green infrastructure (UGI) distribution, such as UTC. Also, using census data, the study addresses the distribution of vulnerability through the construction of the Binational Social Vulnerability Index (BSVI) for Paso Del Norte. The analysis confirms previous studies' assessment of urban morphology in Paso Del Norte, identifying clustering along the international boundary and city centers. Results reveal inequitable access to UTC across Paso Del Norte, with higher social vulnerability in Ciudad Juarez and census units closer to the border in El Paso. By employing GIS, this study advances knowledge on UTC distribution, addresses environmental injustices, and sheds light on trends in U.S.-Mexico border cities' UTC distribution.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND:

A major challenge facing urbanized areas in the United States is how to ensure land-use sustainability and equitable distribution of green spaces, particularly urban tree canopy (UTC). Mexico, which we understand less about, may also have to face these challenges. It is essential to understand and sustain UTC along the U.S.-Mexico border, where "two traditional settlements have gradually fused into a transnational settlement space that is functionally unified by … environmental features (air, water, flora, fauna, etc.), which is coupled by the rapid pace of urbanization" (Herzog, 1991, p. 523). In regions along the U.S.-Mexico border, specifically Paso del Norte (Figure 1.1.), the focus of this study, the environment is marked by elevated evapotranspiration rates attributed to their arid climate and high temperatures (Garfin et al., 2013, p. 369). Paso Del Norte is a region characterized by significant geographical, environmental, and multicultural dimensions, wherein inequalities may amplify the vulnerability to urbanization's consequences. Contrasting and comparing urban tree canopy (UTC) within the transnational space of Paso del Norte, encompassing El Paso City and Ciudad Juarez, is an effective measure to address tree inequity.

In regions such as Paso Del Norte and surrounding areas (e.g., Las Cruces, New Mexico), where urban development is expanding outward rather than upward, green spaces are at risk (Mubako et al., 2018). Research regarding the Paso Del Norte region land use land cover (LULC) confirms that urban development contributes to the loss of agriculture as well as the desert landscape (Mubako et al., 2018). The potential mitigation aspects of urban green infrastructure (UGI), such as the vegetation, parks, and UTC, make UGI a subject of interest due to its economic, health, and environmental benefits for community members. Despite this, most

UTC studies focus on cities outside of border regions. The border cities of El Paso, Texas, and Ciudad, Juarez, and Chihuahua form a transnational region where risks to hazards are uneven; therefore, an assessment of landcover distribution, specifically urban tree canopies (UTC), could contribute to reducing uneven risk.

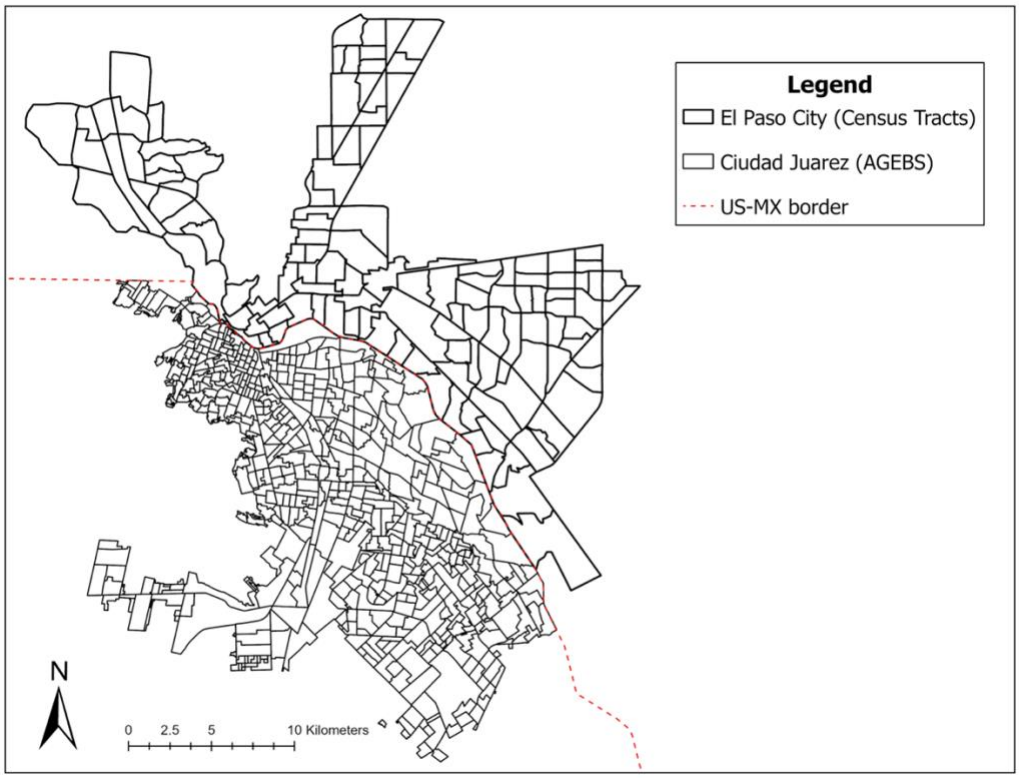


Figure 1.1 Study Area: Paso Del Norte

As a highly urban environment, Paso Del Norte's central area population faces exposure to heat and flood hazards (Collins et al., 2013. p. 328), which are hazards that tree canopies may mitigate. According to the U.S. Census, the urban population of El Paso City is primarily Hispanic or Latino, with a population of 81.6%, making it a minority-majority city (U.S. Census Bureau, 2022). As for Ciudad Juarez, the demographic composition is predominantly "mestizos," similar to the Hispanic population in El Paso City, although there are also acknowledged populations of Afro-descent, indigenous, and individuals with a mix of European ancestry. Due

to the expansion and dependence on maquiladoras, Ciudad Juarez faces challenges in maintaining stable economic development and environmental regulations, contributing to complexities in its urban structure. Interdisciplinary studies indicate that social correlates such as educational attainment, household median income, and race/ethnicity are related to the distribution of urban green infrastructure (UGI), such as UTC, which serves as an ecological component. Furthermore, research shows that minorities, those with lower levels of education, and those with lower household median income have less equitable access to UTC; however, these relationships are not always consistent across research studies. This study contributes to existing research by gathering comparable social variables that measure vulnerability through social variables such as wealth, household size, age, education, employment, and disability within U.S.-Mexico border cities, El Paso and Ciudad Juarez (Rosa et al., 2023).

Given the environmental shifts occurring in the Paso Del Norte area due to its cross-border connections, as described by Leichenko and O'Brien's concept of "double exposure," and recognizing the advantages of tree canopies, it is evident that examining the distribution of tree cover can further the studies of the disparities in environmental injustices along the border (2008). Currently, there are no studies that assess UTC within the study areas along the U.S.-Mexico border using high-resolution landcover data. Therefore, this study contributes to furthering research on spatially analyzing tree canopy cover distribution in an urbanizing environment with a high concentration of minorities in an arid environment. Furthermore, the study contributes to border studies by constructing a binational social vulnerability index (BSVI) for Paso Del Norte at the census unit level, similar to the tool developed previously for the San Diego-Tijuana region, to assess the spatial distribution of vulnerable populations (Rosa et al.,

2023). Through this approach, the study will contribute to the literature on UTC and the understanding of BSVI through an environmental justice framework.

CHAPTER 2: LITERATURE REVIEW

2.1. Literature Review Introduction

It is becoming increasingly evident that urban tree canopy (UTC) is an emerging component of urban green infrastructure (UGI), for which social scientists, environmentalists, urban developers, and other third parties are assessing its distribution in cities due to its underlying regulatory capacity for cooling and energy in an urbanizing environment (Wang et al., 2016). Considering the growing concern of climate change, which is related to various climatic intensities such as heat waves, droughts, and flooding, researchers are identifying areas of vulnerability in the U.S.-Mexico border regions to inform the public so that these data may be integrated into urban planning or environmental management (Muñoz-Pizza et al., 2023). In order to mitigate the impact of the aforementioned factors, researchers are assessing the effects of tree canopies in urban and arid settings. In arid and semi-arid regions such as Phoenix, Arizona, Wang et al. (2016) conducted simulations to evaluate the performance of tree coverage compared with lawns for cooling and energy potentials. The results show that tree cover outperforms lawn cover in the region. These results are promising for arid or semi-arid regions, such as the border region between the United States and Mexico.

Additionally, the literature discusses a variety of socioeconomic factors, such as population density, education, racial/ethnic identity, and education in relation to canopy distribution level (see Table 2.1). Based on the literature, when determining the spatial distribution of tree canopies, there seems to be a positive relationship between tree canopies and communities having houses with higher property values, better mental health, better physical health, and more efficient cooling (see Table 2.1). The relationship can go in both directions; more prosperous communities plant more trees or move into areas with them, and in turn, such

better-off communities have better health and social outcomes. Taking into account such research, the literature review aims to examine the prevailing patterns and contradictions alongside the methodology of using GIS to identify the spatial distribution of socioeconomic characteristics. It also intends to demonstrate the significance of assessing the distribution of green spaces and trees in highly urbanized communities. Given the possible approaches to understanding communities with inequitable access to tree canopies, the literature will also assess the urban form of the U.S.-Mexico border region.

Table 2.1 Literature of Social Variables

Socio-Economic Variables	Positive Correlation to GI or UTC distributions	Contradictions	UTC Specific
Population Density [1], Proportion of the Population above 65 [2]	(Foster et al., 2022 [1] & [2]), (Aditya & Nigam, 2021), (Riley & Gardiner, 2020 [1]),		(Foster et al., 2022), (Aditya & Nigam, 2021), (Riley & Gardiner, 2020)
Median Household Incomes [1], Median Housing Age [2], Average Household Size [3], % of Vacant Housing Units [4]	(Greene et al., 2018), (Foster et al., 2022 [2][3][4]), (Landry and Chakraborty, 2009 [1][2][3]), (Schwarz et al., 2015 [1]), (Riley & Gardiner, 2020 [1]), (Heynen, et al., 2006)	(Baró et al., 2019)	(Greene et al., 2018), (Foster et al. 2022), (Landry and Chakraborty, 2009), (Riley & Gardiner, 2020), Schwarz et al., 2015)
Race/Ethnic Populations [1], Percentage of Minorities [2], Global South Residents [3]	(Zhou & Kim, 2013), (Kiani et al., 2023 [2]), (Foster et al., 2022), (Kolosna & Spurlock, 2019), (Landry & Chakraborty, 2009), (Riley & Gardiner, 2020 [2]), (Comber et al., 2008), (Li, 2021), (Heynen, et al., 2006), (Wen., 2013 [1])	(Schwarz et al., 2015), especially in arid cities. (Baró et al., 2019 [3])	(Li, 2021), (Zhou & Kim, 2013), (Foster et al. 2022), (Kolosna & Spurlock, 2019), (Landry & Chakraborty, 2009), (Riley & Gardiner, 2020)
Education Level	(Foster et al., 2022), (Riley & Gardiner, 2020 [1]), (Schwarz et al., 2015), (Baruc Blas-Miranda et al., 2022)		(Foster et al. 2022), (Riley & Gardiner, 2020), (Schwarz et al., 2015)
Material Deprivation	(Kiani et al., 2023)		

Note: Numbers in square brackets within the "Socio-economic variable" column indicate variables tested in the literature for the "Positive Correlation to GI or UTC distributions" and "Contradictions" columns.

Table 2.2 Literature Review on UTC Benefits

UTC and GI benefits	Supporting Literature	Tree Canopy Specific	No Support
Cooling, Reducing Electricity	(Wang et al., 2016), (Isaifan & Baldauf, 2022), (Seo, 2020), (Zhou et al., 2021)	(Seo, 2020), (Zhou et al., 2021), (Isaifan et al., 2022)	
Property Values Increase	(Isaifan & Baldauf, 2022), (Biao et al., 2012)	(Isaifan & Baldauf 2022),	
Mental Health, Well-being	(Ma et al., 2019), (Lee et al., 2023)	(Helbich et al., 2021), (Lee et al., 2023)	(Helbich et al., 2021), (Akpinar et al., 2016)
Biophysical Health	(Ulmer et al., 2016)		
Storm Water Runoff	(Isaifan & Baldauf, 2022), (Berland et al., 2017). (Selbig et al., 2022), (Carlyle-Moses et al.,2020)	(Berland et al., 2017), (Selbig et al., 2022). (Carlyle-Moses et al.,2020), (Isaifan & Baldauf, 2022),	
Urban Heat Island Cooling	(Isaifan & Baldauf, 2022), (Xi et al., 2023), (Tieskens et al., 2022), (Tan et al., 2016), (Greene & Milward, 2017)	(Tan et al., 2016), (Greene & Milward, 2017), (Isaifan & Baldauf, 2022),	
Pollution	(Isaifan & Baldauf, 2022), (Diener & Mudu, 2021)	(Isaifan & Baldauf, 2022),	

2.2 Background: Environmental Justice Along the U.S.-Mexico Border

According to the Environmental Protection Agency (US EPA), environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (2023). With the use of geospatial technology, environmental justice researchers have begun assessing injustices at the U.S.-Mexico border by analyzing hazard exposure in "twin cities," which refers to neighboring U.S.-Mexico border cities

(Finco & Hepner, 1999; Grineski & Collins, 2008 & 2010; Collins et al., 2013; Freimund et al., 2022). Using GIS, Collins et al. (2010) demonstrate social vulnerability between El Paso City and Ciudad Juarez by using nine comparable social correlates such as population, housing units, and socioeconomic status (SES) variables to flood hazards. Such vulnerabilities are often exacerbated by an urban city's infrastructure and weak stormwater management.

Developing an understanding of tree canopy distribution within communities with unequal access along the U.S.-Mexico border is critical for cities in semi-arid or arid regions, such as El Paso City and Ciudad Juarez, for urbanization is known to decline the area of upland mixed vegetation, a category of UGI, such a grassland, shrubs, and forests (Mubako et al., 2018). For Paso Del Norte, the presence of unequal development has produced significant adverse impacts, such as destroying dwellings of distinct populations because of flooding or the risk of flooding (Collins, 2010), which may leave vulnerable populations at risk for mental and physical disparities (Collins et al., 2013). As a means of mitigating stormwater runoff, Giner et al. (2019) demonstrate that green infrastructure rather than grey infrastructure is an increasingly important part of stormwater management at the U.S.-Mexico border, a region characterized by drought and intense rainfall. Moreover, it has been shown that tree canopy distribution, known as “street canyon,” a “U-shaped space surrounded by buildings on both sides of the streets,” has the potential to reduce urban heat islands (Xi et al., 2023, p.1), a phenomenon that occurs when "cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat" (US EPA, 2023). Thus, urban tree canopy (UTC), a component of GI, is a critical infrastructure for assessing its distribution along the border.

In light of the interconnectivity of services, culture, and geography between binational cities, a region distinguished by uneven development and risk, it is imperative to identify green

spaces in El Paso and Ciudad Juarez in order to enhance resilience in areas such as the US-Mexico border. Therefore, the assessment of injustices across borders is shifting toward other variables as environmentalists are assessing the implications of climate change in urban cities, particularly along the U.S. and Mexico border regions, and its unequal impact on the environment (Grineski et al., 2012; Muñoz-Pizza et al.,2023).

2.3 Assessing Distribution of Tree Canopies in Urban Population

In terms of land cover assessment, geospatial technology has been an influential element for environmentalists, urban foresters, and other disciplines since its inception. The U.S. Department of Agriculture's National Agriculture Imagery Program (NAIP) has served as an essential tool for the aforementioned parties to analyze green space distribution to socioeconomic variables by using aerial imagery at a resolution of one meter (Ulmer et al., 2016; Kolosna & Spurlock, 2019; EROS, 2018). As part of the landcover analysis, PlanIT Geo developed a classification method using NAIP to generate the landcover dataset for this study, which covers a portion of Ciudad Juarez in Mexico and the city of El Paso in the United States.

Furthermore, other tools, such as the i-Tree landscape database, which uses US Census social variables, are another tool that other studies use to analyze tree canopy occurrences within United States cities (Riley & Gardiner, 2020; Volin et al., 2020). However, this poses a limitation when assessing neighboring border cities. Nonetheless, other studies have begun analyzing green spaces or tree canopies across the US-Mexico border through the use of an online mapping service by the government called "Guadalajara Map" (Cruz-Sandoval et al., 2020) or data from the U.S. Geographical Survey normalized difference vegetation index (USGS NDVI) (Rosa et al., 2023).

Although the physical distribution of tree canopies is informative, more is needed to understand which disadvantaged groups are not benefiting from this green infrastructure (GI). Given the significance of the distribution of tree canopies, identifying the geographical units in which distinct populations reside is crucial to ensuring distributive justice, a concept in which the benefits of resources are distributed equitably. Utilizing socioeconomic factors is crucial for achieving environmental justice, particularly in the context of intra-urban distributive justice. This involves evaluating the availability of green spaces and how they intersect with areas inhabited by disadvantaged populations (Kato-Huerta & Geneletti, 2023). To assess such populations, the American Community Survey (ACS) and the National Institute of Statistics and Geography (INEGI) continue to serve as essential tools for researchers assessing their relation to land cover and tree canopy distribution (Locke et al., 2016; Foster et al., 2022). These social data are resources with the social variables that this study will rely on to construct a comparable social dataset between El Paso City and Ciudad Juarez.

To further analyze who is benefiting from urban tree canopies or green spaces, researchers have begun incorporating social variables such as household median income, which is a variable shown to have a positive relationship with tree canopy distribution in the United States (Schwartz et al., 2015). However, this social variable is not available in Mexico, but higher incomes are found to have higher-quality tree coverage in Minerva, Mexico (Cruz-Sandoval al., 2020). As a result, several studies that have analyzed the distribution of trees in conjunction with socioeconomic data have reported consistent results where less affluent communities negatively correlate with the distribution of trees (Landry & Chakraborty, 2009; Schwarz et al., 2015; Greene et al., 2018). Nevertheless, these findings do not explain why such social variables are associated with higher distributions of tree canopy or green spaces. In a study examining

distributional equity across cities such as Sacramento, Los Angeles, and others, Schwarz et al. (2015) discovered findings that contradict the prevailing trend suggesting that ethnic populations typically have limited access to urban tree canopy. Instead, a notable positive correlation between the Hispanic population and the distribution of tree canopy is observable in Los Angeles, Philadelphia, and Washington, D.C. (Schwarz et al., 2015). Due to aridity, some cities may require irrigation to maintain their trees, amplifying socioeconomic differences in neighborhood tree cover more than in humid cities (Schwarz et al., 2015). Thus, there is a need to understand the general historical context, geography, and urban morphology of such communities, which may further provide a greater understanding of populations experiencing inequity from these factors.

To ensure sustainability in an urbanizing environment**,** researchers have shown that spatial distribution of tree canopy vegetation has the potential to positively affect the population by improving mental health (Lee et al., 2023), increasing property values (Sachs et al., 2023), increasing cooling efficiency (Zhou et al., 2021), and improving biophysical health (asthma, high blood pressure, and type 2 diabetes) (Ulmer et al., 2016), as well as reducing stormwater runoff (Livesley et al., 2014). Although tree canopy distribution can offset inequities, studies show that trade-offs may occur, such as the gentrification of areas in proximity to green infrastructure projects due to "urban greening" (Gould & Lewis, 2017). Nonetheless, ensuring equitable distribution of tree canopies is crucial, for communities that are less likely to have access to tree canopies are ones with a greater concentration of people of color, lower income, and fewer educational qualifications as they tend to live in hotter regions with fewer tree canopy coverage (Zhou et al., 2021). Considering these circumstances, research continues to analyze green spaces in relation to various socioeconomic variables such as median household income (Greene et al.,

2018), racial/ethnic background, educational background (Zhou & Kim, 2013), and population density (Bille et al., 2023).

In light of the emerging literature analyzing the distribution of tree canopy among social variables, very few have analyzed tree canopy in binational regions along the U.S.-Mexico border. However, a few have begun to incorporate social variables to analyze vulnerability to climate change (Rosa et al., 2023). Very few studies quantify the distribution of tree canopy coverage among "twin cities" at a high resolution, which is critical to obtaining a comprehensive understanding of inequalities. Furthermore, studies evaluating the landcover distribution along the U.S.-Mexico border rarely denote the implications of urban form to such distributions. An analysis of urban form may provide insight into the potential relationship between social demographics and tree canopy.

2.4 Urban Morphology of Mexican and American Cities

As rapid urbanization undergoes across the globe, concerns emerge regarding the reduction of green spaces due to urban morphology. Li et al. (2019) address the unique spatial structure of Beijing to assess spatial fragmentation following rapid urbanization and its policies, which may connect to unequal access to the benefits of tree canopies. As seen in highly urbanized cities such as Mexico City and New York City, urban green infrastructure (UGI), such as urban tree canopies (UTC), is a vital infrastructure that the United States and Mexico strive to address. However, it is important to note that the United States and Mexico's characteristics consist of uneven development following the rapid pace of urbanization, a development in which the use of the natural environment is critical for economic development. For the United States, the idea that distinct communities are “urban dwellers” is a characteristic that began transforming following the evolution of transportation or industrialization in four distinct periods (Muller, 1986).

According to Muller (1986), the recreational automobile era (1920-1945) transformed the urban social geography in which the suburbs have shifted to resemble clusters of residents with similar income levels, leading to an increasing degree of isolation among residents from different economic backgrounds.

It should be noted, however, that border cities along the U.S.-Mexico border represent distinct regions due to the rich cultural, economic, and historical events such as the North American Free Trade Agreement (NAFTA), National Border Program (PRONAF), and various work programs. In comparison to American border cities, Mexican border cities exhibit somewhat unusual geometric designs in their central cores due to their early and rapid growth stages (Young et al., 1986). It was during the decades following the 1960s that Ciudad Juarez underwent an urbanization process that quadrupled its population (Acosta, 2009). Fuentes (2000) assessed Ciudad Juarez's urban morphology and found that low-income populations are commonly found in "peripheral slums" because they are unable to compete for urban spaces and are dependent on the maquiladora industry.

A significant concentration of maquiladoras dominates the peripheral areas of Mexican border cities, which are characterized by an urban morphology that favors historic downtown spaces close to the international boundary line (Herzog, 2021). According to Fuentes (2000), Ciudad Juarez's spatial organization is characterized by competition between the commerce sector and the service sector for access to the international bridge. During the period of development and urban formation of Ciudad Juarez, irregular housing proliferated following mass migration, lack of orderly systems, and periods of rapid development (López & Peña Medina, 2017). The rapid urbanization of the Mexican border city, Ciudad Juarez, is thus linked to a wide variety of economic processes, including those that affect residential construction and green spaces.

2.5 Urban Morphology and Its Influence on Tree Coverage

In the context of Mexican border cities, such as Ciudad Juárez, urbanization has been particularly intense, driven by factors such as industrialization, migration, and trade. Despite their proximity and shared socio-economic dynamics, there may be notable differences in their urban tree coverage and impervious surface distribution due to variations in urban planning, land use policies, and socio-environmental factors. This thesis aims to assess and compare urban tree coverage and impervious surfaces in these two border cities to understand the impact of urbanization on green infrastructure.

Ciudad Juarez's urban morphology is characterized by its distinctive spatial distribution that shares similarities with other Mexican border cities. Despite being different by area size, every Mexican city is larger than its American neighbor. However, Ciudad Juarez's morphology is influenced by its role as a port of entry, its accommodation to the decentralization of sectors, and a space where the maquiladoras operate (Fuentes, 2000). These socioeconomic activities are a characteristic that influences the distribution of tree coverage in Ciudad Juarez, a Mexican border city that was founded in 1659 but only recognized as a city in 1888 (Arreola and Curtis, 1993). As Ciudad Juarez began to grow through its interdependent relationship with El Paso, the city's development pattern, historical land use practices, population growth, and economic activities began to compete for space. This competition left residential areas to create squatter settlements along the hills of its terrain, a population that is often reflective of lower-income communities (Arreola and Curtis, 1993). In light of these transformations, Ciudad Juarez saw a proliferation of impervious surfaces due to the growth of residential, commercial, and industries, as well as roads (Pena & Fuentes, 2007). As a result, urban tree coverage in Ciudad Juarez faces challenges, especially with the suitability of trees within a desert biome.

In Ciudad Juarez, residential areas and roads are a dominant type of land use, occupying three-quarters of the urban land (Pena & Fuentes, 2007). This unique characteristic, coupled with the presence of maquiladoras and the concentration of lower-income residents in the hilly, west areas of the city due to work accessibility (Staudt et al., 2010), sets Ciudad Juarez apart in terms of its urban landscape. Despite the city's population growth reaching over 1.5 million, its density declines as the urban area expands faster than its population (Pena & Fuentes, 2007). Informal residential areas, which contribute to the fragmentation of urban space and marginalization of populations, can increase reliance on roads over green spaces. With a mix of land uses, regions apart from Europe have experienced a decline in tree coverage, a phenomenon that further reduces the health of the city (Nowak & Greenfield, 2020).

In Ciudad Juarez, the urban morphology diverges from traditional models such as the "concentric ring" model popularized by Burgess or the "Sector" model proposed by Hoyt, which are more typical of American cities. Instead, the city's layout reflects a unique blend of influences, particularly due to its status as a border city. While these models provide useful frameworks, they still need to fully capture the complexity of urban development in international contexts, such as Ciudad Juarez. Thus, Arreola and Curtis (1993) reconceptualize the Griffon-Ford Model of Latin American cities, a structure that offers a more relevant framework. This model, characterized by concentric rings and radial sectors, aligns with the historical development patterns observed in many Latin American cities. In the case of Ciudad Juarez, this model has evolved over time, notably influenced by Hoffman's border metropolis model introduced in 1983. Hoffman's model accounts for the unique features of border cities, with their urban cores often truncated along their northern edges by international boundaries. Additionally, tourist districts near ports of entry further shape the urban landscape. These morphological

characteristics have implications for urban tree coverage, as the layout and density of residential, commercial, and industrial areas influence the availability of green spaces and opportunities for tree planting. Understanding these dynamics is essential to understanding land use patterns in Ciudad Juarez and sustainable urban planning efforts aimed at enhancing tree coverage and promoting a healthier urban environment.

El Paso City's urban morphology shapes itself by its geological foundation and its border with Ciudad Juarez, which influences its physical layout and development. These boundaries, at times restrictive, often guide and shape the city's growth into distinct regions. The concept of border/boundaries' influence on urban form is transformative and evolving, as seen in the 'privatized border space' that reconfigures the use of open space for tourist corridors (Herzog, 2021). Nevertheless, there are key environmental phenomena that facilitate the urban expansion of El Paso, including the Franklin Mountains, Fort Bliss, the international border, and residential and commercial development patterns.

As part of El Paso's geologic foundation, the Franklin Mountains rise 7,192 feet North of the mountain and enclose 40 square miles within the city limits (TPWD, 2024). Its geographical location lies within the Westside and Northeast region of El Paso city, which is a nationally protected site for recreational and park uses. Due to Franklin Mountain's position, the city is unable to continue expansion within the domains of this geologic feature. Additionally, the growth of El Paso city is constrained by the presence of the military installation Fort Bliss, established initially to oversee the international boundary, a result of the 1848 Treaty of Guadalupe, which formally defined the boundaries of the twin cities (Metz, 2024). In total, Fort Bliss consists of 1,120,000 acres of land with the potential for future expansion, which is

approximately larger than the size of Rhode Island (El Paso City, 2012). As Aguirre (1993) describes in his analysis of urban form in Paso Del Norte, these distinct elements are influential to El Paso's urban expansion.

Lastly, I also want to introduce another factor: the distributional pattern of commercial and residential areas in El Paso. As Muller (1986) points out, the electric streetcar era (1890-1920) grew cities outward, allowing middle-class and ethnic groups to live in quality housing. It is important to note that in El Paso's case, the historic electric streetcar system began in 1902, crossing the border to Ciudad Juarez, a service that was one of six that ended in 1974 (City of El Paso, 2012). In El Paso, streetcars had a significant impact, but the automobile revolutionized the pattern of residential development. A city study published in 2012 indicates that there was a distinct distribution of neighborhoods before World War II, after World War II, and after the 1980s. In pre-World War II neighborhoods, there were more paths for walking, and most of them were rectangular, with the exception of two distinct neighborhoods on the hillsides of El Paso (City of El Paso). It is also important to note that Paso Del Norte's elevation influences the shape of its commercial and residential districts. After World War II, curvilinear pathways were developed to accommodate street traffic rather than urban parks. In light of these urban patterns, we may have a better understanding of why some areas are less likely to have green spaces or parks due to the nature of their urban design.

2.6 Methods of Spatial Analysis

Currently, there is relatively new literature that spatially analyzes the distribution or relationship between urban tree canopies (UTCs) and socioeconomic variables as environmental studies have increasingly integrated geospatial technologies. However, from an environmentalist

perspective, it is essential to note that framing unequal access to green spaces as an injustice was not a dominating topic. Traditionally, the concept of injustice in the environmental context was predominantly linked to issues of vulnerability, risk, and disasters, particularly concerning hazardous waste (Cutter, 2006). This perspective gained prominence following the emergence of the environmental justice movement in Warren County, North Carolina, in 1982, which is widely recognized as the foundational moment of the environmental justice movement (McGurty, 2000). Given the swift urban expansion and escalating climate change threats in Paso Del Norte along the U.S.-Mexico border (Grineski et al., 2012), it remains crucial to acknowledge and examine the allocation of green areas to uphold distributional justice and communicate these findings to establish procedural justice.

A method for assessing communities that do not benefit from GI is to use socioeconomic data to overlay census boundaries and find emerging trends or patterns among groups that are not positively correlated with the distribution of tree canopy cover (Riley & Gardiner, 2020). Foster et al. (2022), among other scholars, demonstrate the use of the American Community Survey (ACS), a socioeconomic tool that provides information on household demographics, finances, employment, migration, ancestry, and more. Often, to spatially analyze the information, the data are overlaid over the boundaries of a US Census Block Group (Landry & Chakraborty, 2009; Schwarz et al.,2015; Locke et al., 2016; Volin et al., 2020) or Census Tract (Greene et al., 2018; Rosa et al., 2023). Through the use of select boundaries, researchers have analyzed tree canopies concerning the entirety of the city (Foster et al., 2022; Landry & Chakraborty, 2009) or multiple in-nation cities (Volin et al., 2020; Riley et al., 2020; Schwarz et al.,2015). This process is one this study seeks to replicate through 2020 census data and spatial units in El Paso city and Ciudad Juarez.

To analyze the distribution of tree canopies, Foster (2022) and Martinuzzi et al. (2021) look at parcel zones with single-family residential (SFR), which was 26 percent of the Philadelphia area. For calculating the Percentage of SFR Area Covered by Tree Canopy, the following formula was used: (Area of SFR Tree Canopy / Area of SFR Parcels) * 100 (Foster, 2022) (Locke et al., 2016). However, some have also analyzed the temporal distribution of tree canopies (Li, 2021; Foster, 2022). While others analyze UTC or potential canopy cover (PCC) statically, which are areas of "ground level pervious surface (bare soil, open space) that could be utilized as plantable space" (Greene et al., 2017. Pg. 26). The analysis of the tree distribution in cities in terms of time is pertinent; however, for territories outside the United States and the U.S.-Mexico region, a static analysis is crucial due to the differences in environment. For example, Martinuzzi et al. (2021) demonstrate how other environments, such as subtropical areas within the U.S., may yield contradicting patterns.

As part of a study to determine who benefits more from tree canopies within a community, researchers are utilizing geographic information systems (GIS) against social variables that are from public sources such as the American Community Survey (ACS) (Rosa et al., 2023) and an original survey (Clark, 1998), to examine the spatial distribution of tree canopies within a community. Using GIS to assess the spatial relation of green space to socio-economic status (SES) has grown, which is a method of great importance for a binational community where exposure to environmental change is doubled (Leichenko & O'Brien, 2008). To date, very few studies have assessed urban tree canopies with the concept of green space equality from a binational perspective due to the social variables available in Mexico (Rosa et al., 2023). Therefore, the purpose of this study is to construct comparable social data along the U.S.-Mexico border, specifically the twin cities of El Paso and Ciudad Juarez.

In light of the health, economic, and environmental benefits of urban tree canopy to an urbanizing environment, there is a need to continue assessing UTC distribution in different environments. Communities with higher distributions of urban tree canopies are shown to have a higher positive correlation to the aforementioned benefits (See Table 2.2). Furthermore, research has shown that the distribution of urban tree canopies (UTC) benefits higher-income populations (See Table 2.1). The relationship of UTC to social-economic and demographics tends to be that UTC is not well distributed among vulnerable populations. For U.S.-Mexico border cities, the rapid pace of urbanization can lead to the loss of green spaces. Assessing UTC is crucial, for patterns of relationship are not consistent. Also, there are studies assessing urban tree canopies within the study area of the United States; the U.S.-Mexico border is an area with different social, historical, environmental, and cultural contexts. Therefore, it is best to analyze such distributions across unique domains, such as the U.S.-Mexico, where environmental conservation is crucial due to the arid environment that exists.

CHAPTER 3: RESEARCH QUESTIONS & METHODOLOGY

3.1 Research Questions

The objective of this research is to answer three key questions. Prior to delving into tree cover analysis, my objective is to analyze two distinct land cover datasets. One originates from the European Space Agency, referred to as Worldcover, with an 8.6m resolution, and the other is from PlanIT Geo, with a resolution of 0.6m. Worldcover covers El Paso City and Ciudad Juarez, while PlanIT Geo covers El Paso City and a portion of Ciudad Juarez. The objective of this research is to analyze and distinguish between the different landcover classes that exist on both sides of the border and then to understand the distribution of tree canopies and social data.

The focus is on the distribution of tree canopy land cover. In order to establish the foundation, the following question between cities needs to be answered: How do El Paso, Texas, and Ciudad Juarez, Chihuahua, compare in terms of land cover? For this research question, the landcover data from PlanITGeo will overlay the city boundaries of El Paso, Texas, and a portion of Ciudad Juarez. Spatial units (tracts, AGEBs) that are not covered by the PlanITGeo data and units split between available/missing landcover data are discussed further below. A second landcover data called WorldCover will be employed to cover El Paso City and all of Ciudad Juarez AGEBs. The second question aims to understand the distribution of tree canopy within cities, which is the landcover category the research seeks to focus on in order to analyze the distributions across census tracts and AGEBs. Therefore, the question, “In what ways does tree canopy distribution differ according to census tracts or AGEBs?” will address a relevant topic of this study.

Furthermore, to analyze social patterns, the research aims to answer the question: “How does UTC in El Paso and Ciudad Juarez vary by social variables or not?” This will identify the

distribution of populations, which is addressed further below. Lastly, to understand whether social patterns vary, the research aims to answer the following questions: Do we see similar or different patterns in this social-biophysical intersection between the two sides of the border? This question will shed light on whether Paso Del Norte illustrates similar patterns across borders. Thus, the research objective is to expand the assessment of urban tree canopies by analyzing such distribution in a border city, a vulnerable city. The study will further an understanding of UTC in a highly urbanizing environment.

Table 3.1 Research Questions

Research Questions	
Q.1	• How do El Paso, Texas, and Ciudad Juarez, Chihuahua compare?
Q.2	• In what ways does tree canopy distribution differ within cities according to census tracts or AGEBs?
Q.3	• How does UTC in El Paso and Ciudad Juarez vary by social variables, or not? Do we see similar or different patterns in this social-biophysical intersection between the two sides of the border?

3.2 Data Acquisition

The data for this study were collected from multiple databases, some from the governments of the United States and Mexico. The types of data utilized are listed below:

1. PlanITGeo compiled a landcover tiff file covering El Paso city and a portion of Ciudad Juarez. It uses nearest neighboring methods to classify landcover to a resolution of 0.6 meters. PlanIT Geo uses imagery from the National Agricultural Imagery Program to generate the landcover raster with seven classes (i.e., Tree canopy, tree canopy over

impervious surfaces, impervious surfaces, water, shrubs, and sparse vegetation). The overall accuracy of El Paso, Texas, is 95.0% (See Appendix Q).

2. The 2020 World Landcover tiff file has 11 classifications, with six landcover classes at an 8.6m resolution utilizing Sentinel-1 and -2 imagery. The land cover types include tree cover, shrubland, grassland, cropland, built-up, and bare or sparse vegetation. The data covers El Paso city and all of Ciudad Juarez (AGEBs). The overall global accuracy is 74.4 % (See Appendix P).
3. The US ACS supplies social variables for El Paso City, which were obtained from the United States Census Bureau for the year 2020.
4. The CDC SVI was obtained from the site of the Agency for Toxic Substances and Disease Registry, which uses 16 U.S. census variables to identify communities that may need assistance prior to, during, or following a disaster. For the purposes of this study, 2020 data is used to correspond with other data, such as the landcover raster.
5. Social data from the Mexican 2020 Census for Ciudad Juárez AGEBs was compiled by Dr. Heyman from the website https://www.inegi.org.mx/programas/ccpv/2020/ . The specific selection of variables is discussed later.

Table 3.2 Data Information

Data	Year	Original Scale/ Resolution	Source
Landcover Data			
1. Landcover Shapefile	2020	0.6m	Plant Geo
2. Landcover Shapefile	2020	8.6m	ESA World Cover Viewer
Boundaries & Imagery			

3. Boundary for the City of El Paso	2020	Projected	City of El Paso Open Data
7. AGEBs of Ciudad Juarez	2020	Projected	Instituto Nacional de Estadistica y Geografia (INEGI)
8. High resolution imagery tiffs	2020	Projected	USGS EarthExplorer
Social Data			
9. CDC SVI	2020	Projected	Agency for Toxic Substances and Disease Registry (ATSDR)
10. ACS	2016-2020	Projected	Data Census
11. Mexican Census	2020	Projected	INEGI

3.3 Landcover Data

The Copernicus European Space Agency (ESA) Hub was employed for image collection and processing land use land cover (LULC) for the areas of El Paso City and Ciudad Juarez AGEBs. ESA WorldCover developed a global land cover product at 10m resolution (for the Paso Del Norte region, spatial resolution was finer), which was validated nearly in real-time (Kerchove et al., 2021). The source site prioritizes rapid generation and validation of land cover data using Sentinel-2 and Sentinel-1. It encompasses 10 land cover classes with an overall 74.4 % global accuracy. WorldCover includes 11 generic classes detailing various land surface types at 10m resolution. However, once downloaded, there were seven classes for El Paso City and six for Ciudad Juarez at an 8.6 spatial resolution, which is discussed in chapter 4. A 2020 tiff file of the area was downloaded and classified based on the European Space Agency color code manual, which provides the definition of each landcover type and its map code to label the landcover accurately once imported into ArcGIS Pro (See Appendix K).

As mentioned earlier, the PlanITGeo land cover has seven land cover classes for each study area on a finer scale. To assess whether the datasets are comparable, an analysis of each land cover coverage for each AGEB in Ciudad Juarez was conducted to compare the relation of distribution of tree coverages (See Appendix M). The process began by using a spatial analyst tool to aggregate pixel counts for each land cover category within each AGEB. The preliminary assessment was to find a correlation between WorldCover Tree Cover and PlanITGeo Tree Cover, as well as other land cover types. If the two datasets present a 45-degree line, symbolizing a positive correlation, it would validate WorldCover's dependability in evaluating tree coverage throughout Ciudad Juarez. However, this expectation fell short since the Tree Cover data fell short of 45 degrees, indicating its inadequacy for an accurate evaluation of tree coverage in Paso Del Norte. According to WolrdCover, its tree cover class has a higher accuracy than other classes, such as shrubs, but it reports fewer trees than PlanIT Geo (Kerchove et al., 2021). Thus, while PlanITGeo suggests reliability in delivering accurate tree coverage data, visualization/mapping of each land cover type in both datasets is present.

As mentioned, PlanITGeo landcover raster provides sufficient spatial resolution to analyze trends in urban canopy cover in El Paso City and Ciudad Juarez. For the purposes of quantifying the abundance of UTC in El Paso and Juarez, the landcover raster was extracted to cover the city of El Paso and its census tracts and then reclassified so that only tree coverage could be analyzed. The “tree canopy” and “tree canopy over impervious” landcover categories were reclassified in order to unify UTC to assess the distribution across tracts. For WorldCover, this step was unnecessary due to one category for urban trees.

3.4 Tools and Units for the Analysis

Not all areas inside the Municipio boundary for Ciudad Juarez were selected due to the Municipio including rural/unsettled zones, which involve different spatial units of social data in the Mexican census as well as presenting non-urban patterns of landcover (GeoAnalitica, 2021). Instead, the designations of Juarez urban AGEBs were identified by CONEVAL (n.d.) in its data download for the state of Chihuahua, Municipio de Ciudad Juarez. Unconnected urban AGEB outliers in the farming valley to the south (Valle de Juarez) were removed as not being directly part of the city but rather comparable to small towns outside El Paso. The specific AGEB shapefiles for Ciudad Juarez were shared with Prof. Heyman (files of Heyman) by Diego Valle-Jones, a programmer who acquired the file from the INEGI SINCE 2020 database and distributed it through a code executed on Linux (2023). In turn, within El Paso County, only census tracts entirely or partly inside the boundaries of El Paso city were chosen to avoid mixing landcover data from farms (with large areas of pecan trees) with residential areas (a pattern that occurs outside the city limits. Thus, the boundary of El Paso City was imported from the El Paso City Open GIS Portal to identify census tracts within the study area. Areas of Franklin Mountains State Park inside the city were clipped out to avoid counting large zones of non-urban land cover as part of the city. Through careful selection, 126 census tracts within El Paso were selected, all falling within the city limits and covered by the PlanITGeo land cover dataset.

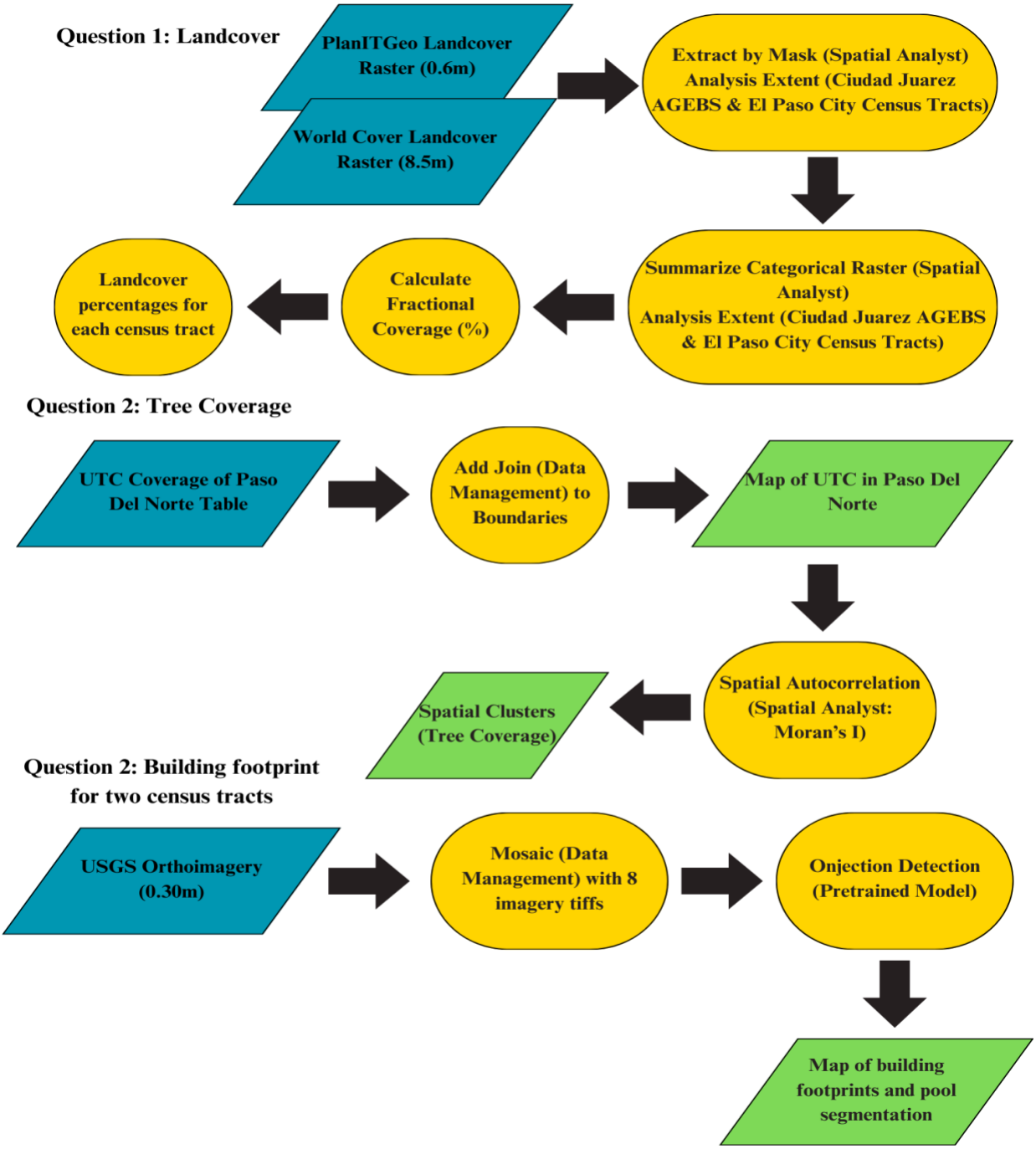
A number of software tools are utilized to process the data, as well as perform spatial analysis. ArcGIS Pro was employed to spatially analyze the distribution of the tree canopy along with the selected socio-demographics. Each data projection was reflective of the Universal Transverse Mercator (UTM) Zone 13 to conduct spatial analysis. To ensure comparability and compatibility among geographic boundaries, U.S. Census Tracts and Area GeoEstadistica Basica

(AGEBs) were utilized, which aligns with literature analyzing a U.S-Mexico border region (Rosa et al., 2023). Furthermore, the social data employed reflects the spatial boundaries of U.S. Census Tracts and Mexico's AGEBs.

Social variables that are limited to only one country are joined to their study area for mapping purposes. However, the Border Social Vulnerability Index discussed below (BSVI; Rosa et al. 2023) required merging shape files of the two countries. To facilitate merging and joining the BSVI table with each city's tract to the boundary shapefile in ArcGIS Pro, an extra column named "BSVI ID" is included, which uniquely identifies each tract. Attribute fields within the shapefiles of each boundary were removed, except for Object ID, Tracts, and shape area and length. Following the deletion of former attribute fields, the 11 comparable variables were joined to the merged boundary known as Paso Del Norte. The field map within the merge tool's properties was adjusted to ensure that each added field column became numeric and that the merge rule remained at its default. Additionally, to prevent the fields from being converted to text, the asterisks in each field containing data were removed, enabling them to be displayed as "null" or "out of range" for mapping purposes while maintaining accuracy.

To evaluate the land cover distribution within each tract, the Spatial Analyst tool was applied to the census units for the area of interest. This tool generated a table presenting pixel counts for each land cover class, which created the output data that was exported to quantify the distribution of land cover within each tract (See Figure 3.1). The process was duplicated for the AGEBs in Ciudad Juarez, incorporating each land cover dataset. Following the spatial analysis, each land cover type percentage from both datasets was calculated, followed by exporting the table to an Excel spreadsheet for further processing. Once the land cover percentages were

calculated, the Excel data was merged with the spatial boundaries of the study area for mapping purposes (See Figure 3.1 for data preparation).



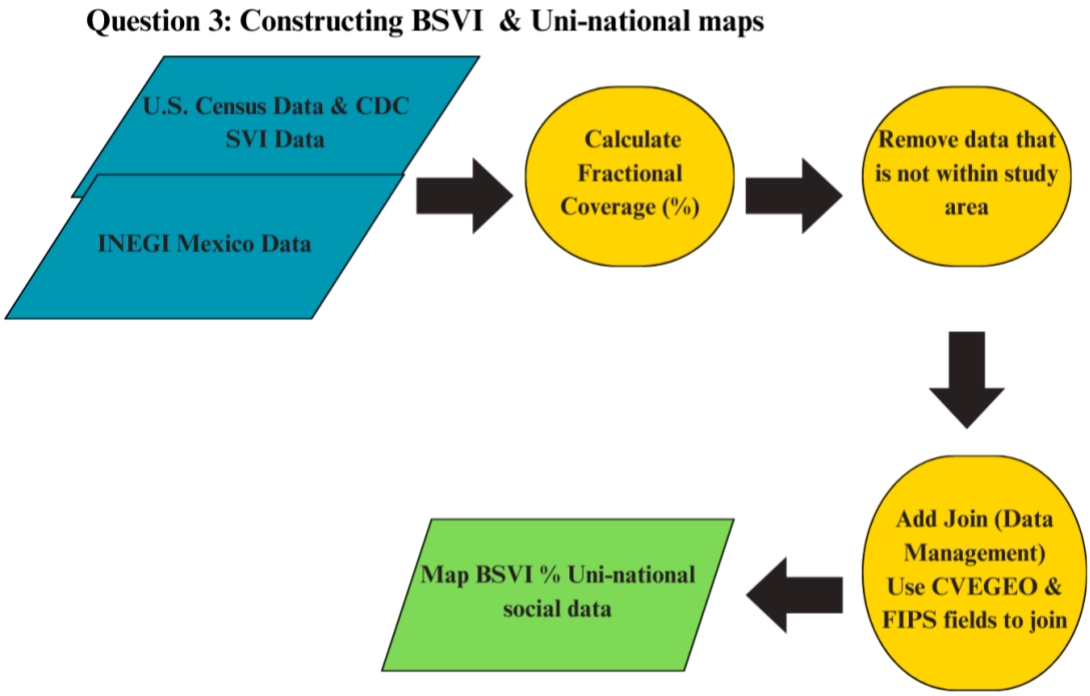


Figure 3.1 Overview Of Methodology

3.5 Social Data

For the two sides of the border, I will use the following matched variables (found in both the US ACS and the Mexican Census General), both for 2020. These variables are taken from the Border Social Vulnerability Index reported in Rosa et al. (2023), and the specific variables were provided to Prof. Heyman by University of California San Diego Research Scientist Kyle Haines, an author of that study, which is listed in Appendix H. A few arithmetic transformations are performed to match variables from the two countries (see Appendix O). Dr. Heyman also selected a limited set of variables and indices that were only found in one nation but were of social significance. In the United States, data is reported by census tracts, and in Mexico, data is reported by AGEB. Each US ACS variable was downloaded from the US Census Data for El Paso County. To ensure that the American Community Survey (ACS) 2016-2020 data aligns with the shapefile of El Paso's census tracts within city limits, a process of removing data for 61

census tracts is performed, which are areas composing the outskirts of the city, which are within El Paso County. Moreover, social data for AGEBs that were not within Ciudad Juarez's boundary shapefile were excluded to ensure the Excel dataset's accurate alignment with its proper study area. For this reason, the social data for 12 AGEBs were not included, as they represented data for "Total of the Locality Urban Area," "Total of the Municipality," or a selection of "Total AGEB Urbana," which did not fall within the overall urban boundary of Ciudad Juarez.

3.6 Spatial Analysis

To assess spatial autocorrelation, Moran's I will be employed to measure the overall correlation of the UTC data within the study area, with five spatial distribution patterns: high-high cluster, high-low outlier, low-high outlier, low-low cluster, and not significant cluster. In the context of Moran's I, a value of -1 implies a perfect clustering of dissimilar values, resembling ideal dispersion in spatial autocorrelation analysis. A value of 0 indicates no spatial autocorrelation, reflecting a state of perfect randomness. Conversely, Moran's I coefficient of +1 signifies the clustering of similar values, representing the opposite of dispersion in the spatial distribution of the studied variable.

3.8 Machine Learning for Detection

To evaluate the urban design of a specific area characterized by both high and low tree distribution, deep learning models were utilized. These models were imported as packages and then processed using a high-resolution orthoimage obtained from USGS. The orthoimage was initially merged through the mosaic tool and then clipped to cover two census tracts. This imagery, which has four bands (e.g., Red, Green, Blue, and Near-Infrared) and a high resolution (0.30m), was processed using deep learning programs titled "building footprint" and "pool

segmentation." Using these packages, buildings and pools were detected from the imagery, resulting in outputs that represented the identified structures through vector data, such as polygons.

CHAPTER 4: RESULTS

4.1 Introduction

This study focuses exclusively on El Paso, Texas, and its adjacent city, Ciudad Juarez, Chihuahua, to examine the spatial distribution of land cover (Refer to Table 4.1), tree canopy, and social vulnerability. Data for this study will reflect two landcover tiffs files, which are from PlanIT Geo and WorldCover, covering the census units of Paso Del Norte. The raster data was processed for analysis, and both datasets were displayed using category maps, which allowed for spatial visualization and assessment of landcover density. As part of this chapter, the results of the landcover distribution are presented, and a comparison of the two areas is made. With the landcover data, the study identifies areas with inequitable access to the benefits of urban tree canopy (UTC), particularly in arid environments, focusing on communities like Paso Del Norte. In the case of the use of Worldcover, a lower accuracy for landcover affects the results (See Appendix P for accuracy assessment). Using Moran's I, the study also examines the distribution of impervious surfaces and tree canopy across the selected spatial units and how they differ across boundaries. Lastly, the study will address the binational social vulnerability index (BSVI), a collection of select social variables from the 2020 U.S. Census and INEGI, which are then presented with a map, along with social data found in one nation only (uni-national).

Table 4.1 Comparable Landcover Classifications

Comparable Landcover Classifications						
PlanITGeo Landcover Types	Impervious	Non-Canopy Vegetation	Soil & Dry Vegetation	Shrub	Water	Tree Canopy + Tree Canopy over Impervious
World Cover Landcover Types	Built-up	Grassland	Bare/Sparse Vegetation	Shrubland	Water Bodies	Tree Canopy

4.2 Landcover Distribution (Research Question 1)

4.2.1 Landcover Distribution for El Paso City

The landcover distribution results for the city of El Paso, a Geotiff provided by PlanIT Geo, are depicted in Figure 4.1 and detailed in Table 4.2. Upon mapping the data across El Paso City, it is evident that seven distinct landcover classes are present (Figure 4.1). impervious surfaces are prominently concentrated in the central areas, constituting approximately 57.4% of the total land cover (see Table 4.2). The spatial distribution of impervious surfaces is further emphasized by a cluster and outlier analysis, highlighting high clusters in the central and east sides of El Paso City (Figure 4.2). Despite impervious surfaces dominating the landcover, potential canopy coverage (PCC), including Non-Canopy, Soil and Dry Vegetation, & Shrub categories, collectively occupy 35.1% of El Paso's landcover surface area.

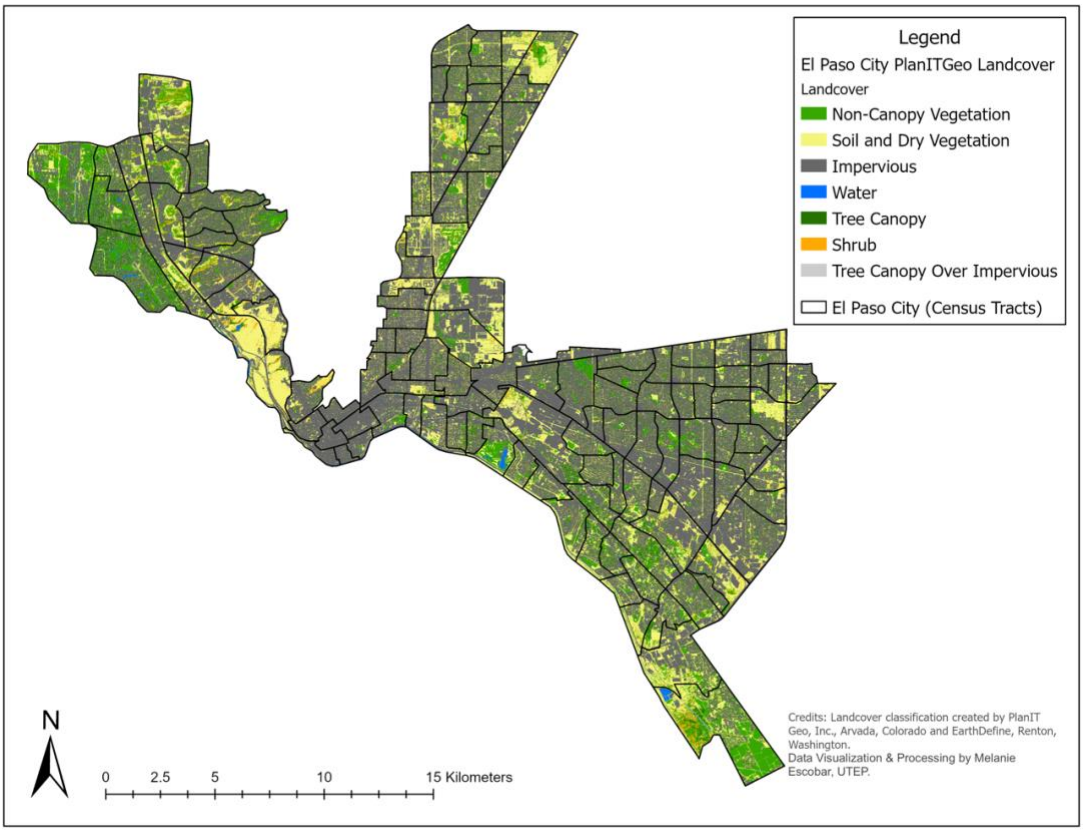


Figure 4.1 El Paso City Planit Geo Landcover

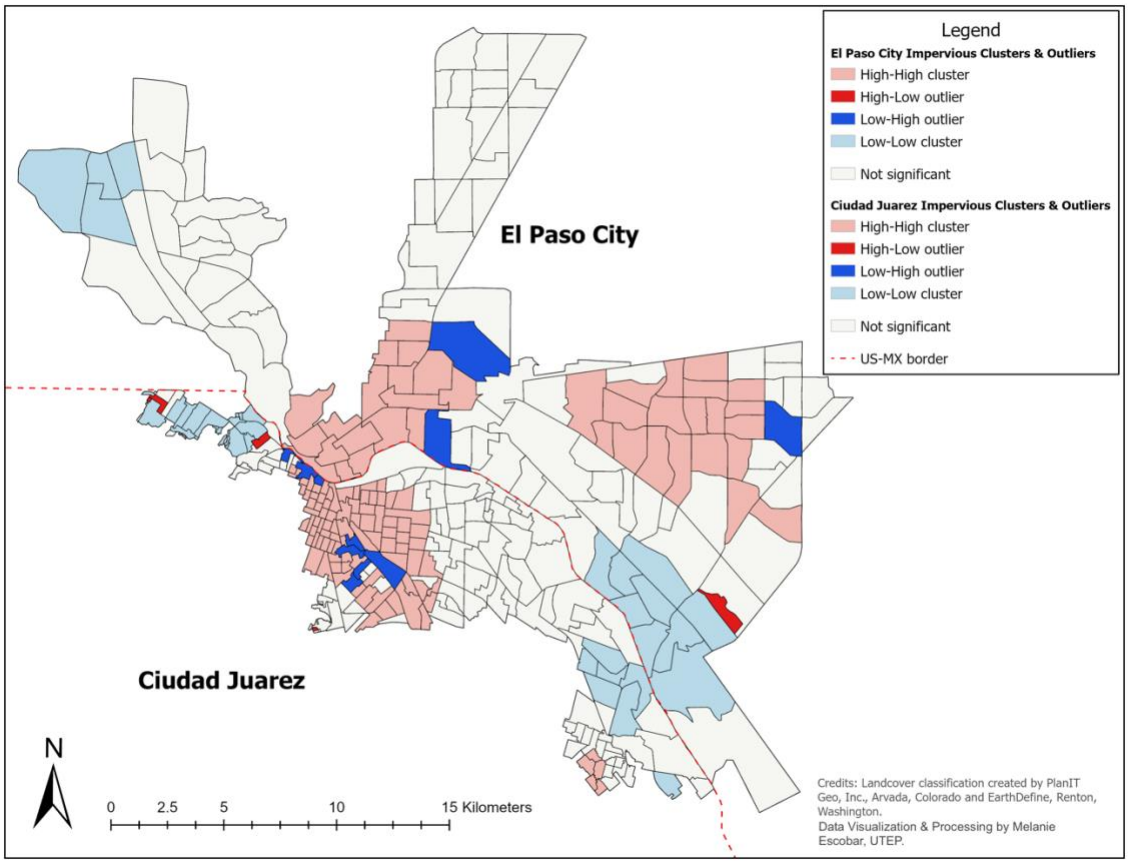


Figure 4.2 Paso Del Norte Impervious Cluster & Outliers Using Planit Geo

Additionally, through a spatial analysis evaluating the density of each land cover category, it was found that Tree Canopy covers approximately 6.3% of the city's area. Moreover, 0.68% consists of Tree Canopy Over Impervious surfaces. Collectively, these findings reveal that the total urban tree coverage in El Paso stands at 6.9%, notably lower than the distribution of Non-Canopy Vegetation, which encompasses 11.9% of the city. Green spaces, including both tree canopy and non-canopy vegetation, account for a total of 18.9% across El Paso City, primarily occupying areas at the fringes or in the Westside and Mission Valley region. The total area covered by green spaces measures approximately 24.6 square miles, observable through regions depicted in a green hue.

Table 4.2 The Percentage Of El Paso City Landcover Using PlanIT Geo

Landcover Class Percentage of El Paso City						
Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy Over Impervious
11.9%	20.4%	57.4%	0.45%	6.3%	2.8%	0.68%
41,085,702.46 sqm	70,654,061.08 sqm	198,197,811.4 sqm	1,568,316.505 sqm	21,582,301.32 sqm	9,606,669.722 sqm	2,344,398.508 sqm

To visualize the spatial clusters of urban surfaces, Moran's I was calculated, which gave an output that provides the Local Moran's I Index, z-score, and p-value. The Moran's I index result of 0.55 indicates a moderate positive spatial autocorrelation (See Figure 4.3). This value suggests that neighboring areas tend to have similar values, with a higher Moran's I indicating stronger spatial clustering or dispersion. Furthermore, in Figure 4.4, the mean of Impervious surfaces yields 63.5 % with a median of 66.5 % and a standard deviation of 14.8. The median results suggest that the variation of impervious surface values across census tracts can be high, showing variability. This is further notable through Figure 4.5, which visualizes the distribution of impervious surfaces in El Paso city, a surface where outliers exist, which is further confirmed by the previous cluster analysis.

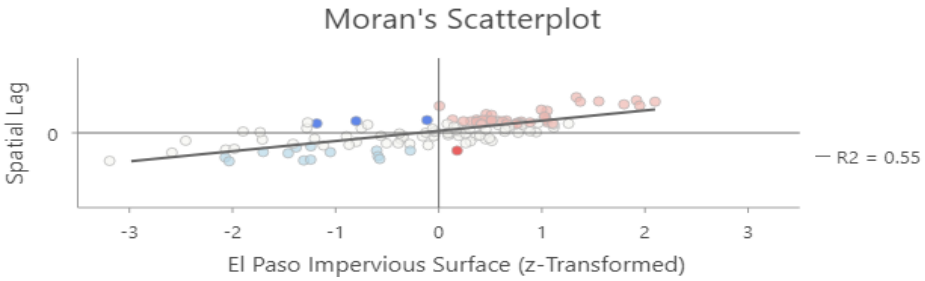


Figure 4.3 El Paso City Impervious Surfaces Moran's I Scatterplot Using PlanIT Geo

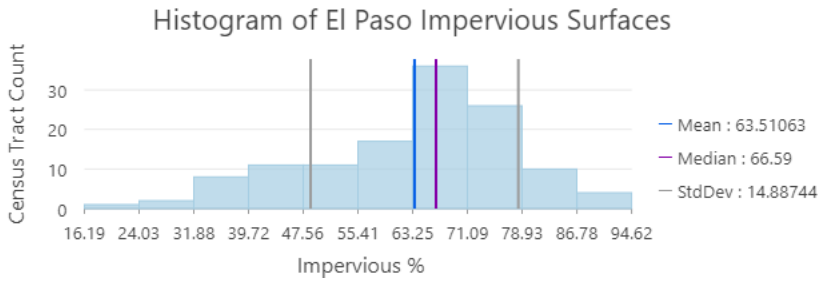


Figure 4.4 Histogram Of El Paso City Impervious Surfaces Using PlanIT Geo

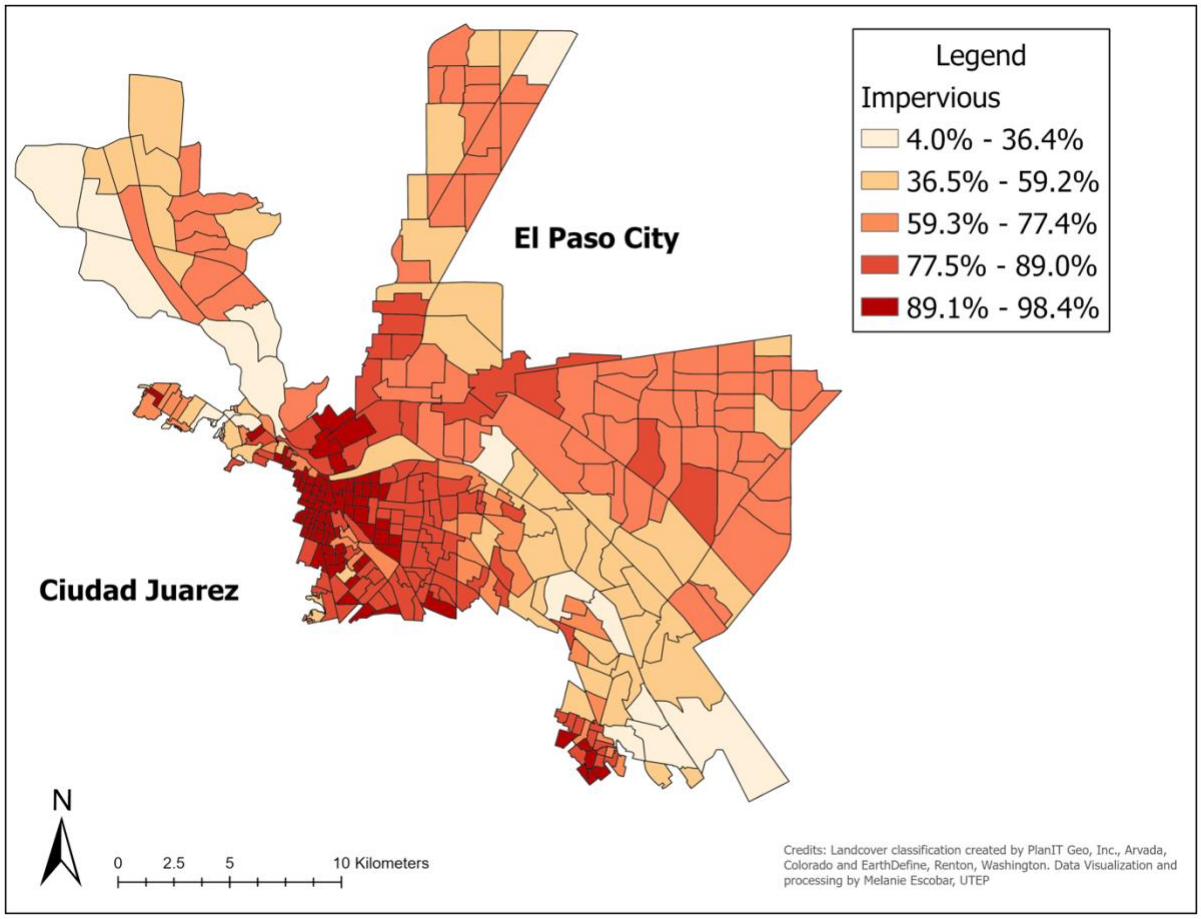


Figure 4.5 Paso Del Norte Impervious Surfaces Using PlanIT Geo

The population density in Ciudad Juarez varies, with some areas reaching as high as approximately 2,000 people per square mile. However, Ciudad Juarez's overall population density is higher than the study area of El Paso City (See Table 4.3). This density is concentrated

in areas a bit farther from the border, otherwise known as the periphery. Furthermore, Figure 4.5 illustrates a high impervious density in areas where Ciudad Juarez has a higher population density, which indicates the high level of urbanization in the region. In contrast, El Paso has a lower population density in areas characterized by fewer impervious surfaces. This pattern is evident in Figures 4.5 and 4.6, which further confirms a relationship between impervious surfaces and population density.

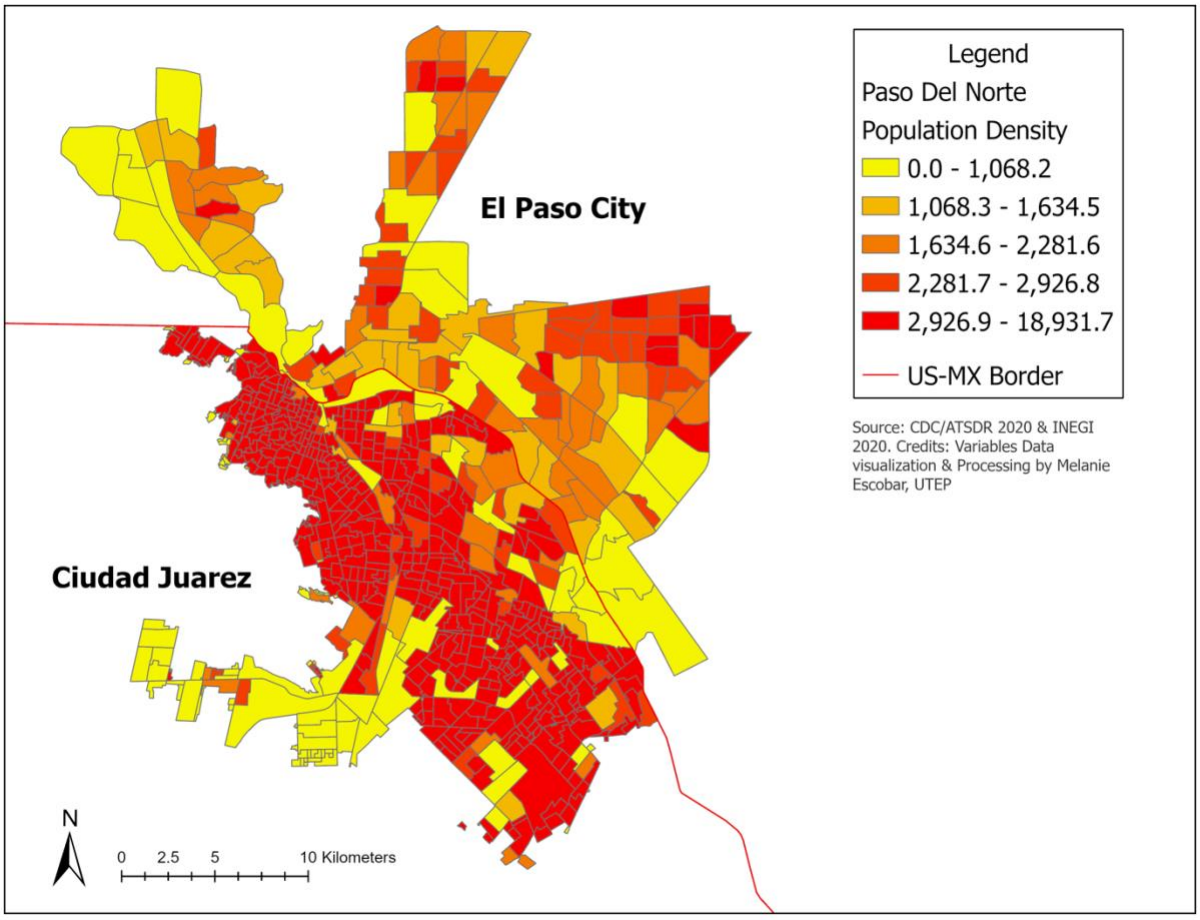


Figure 4.6 Population Density in Paso Del Norte

Table 4.3 Paso Del Norte Population Density

Population Density of Paso Del Norte			
City Name	**Area**	**Population**	**Population Density**
El Paso City	345.039 sqkm	367,394	≈1,064.73people/sqkm
Ciudad Juarez	353.907 sqkm	1,053,732	≈2,974.83people/sqkm

Moreover, Figure 4.7 features a visualization of landcover distribution utilizing WorldCover, which offers a broader classification of landcover categories. A categorical map also represents this distribution. In contrast to PlanIT Geo, WorldCover classifies two additional categories: cropland and herbaceous wetlands. The herbaceous wetlands category is identifiable within two census tract areas, specifically in Mission Valley, constituting one percent of the overall landcover distribution (See Appendix B). Furthermore, cropland is prevalent on the edges of El Paso, which is within Mission Valley (See Figure 4.7). According to WorldCover manual classification, annual cropland often produces herbaceous wetlands, which is a category found within Mission Valley that often combines trees or woody areas (See Appendix K).

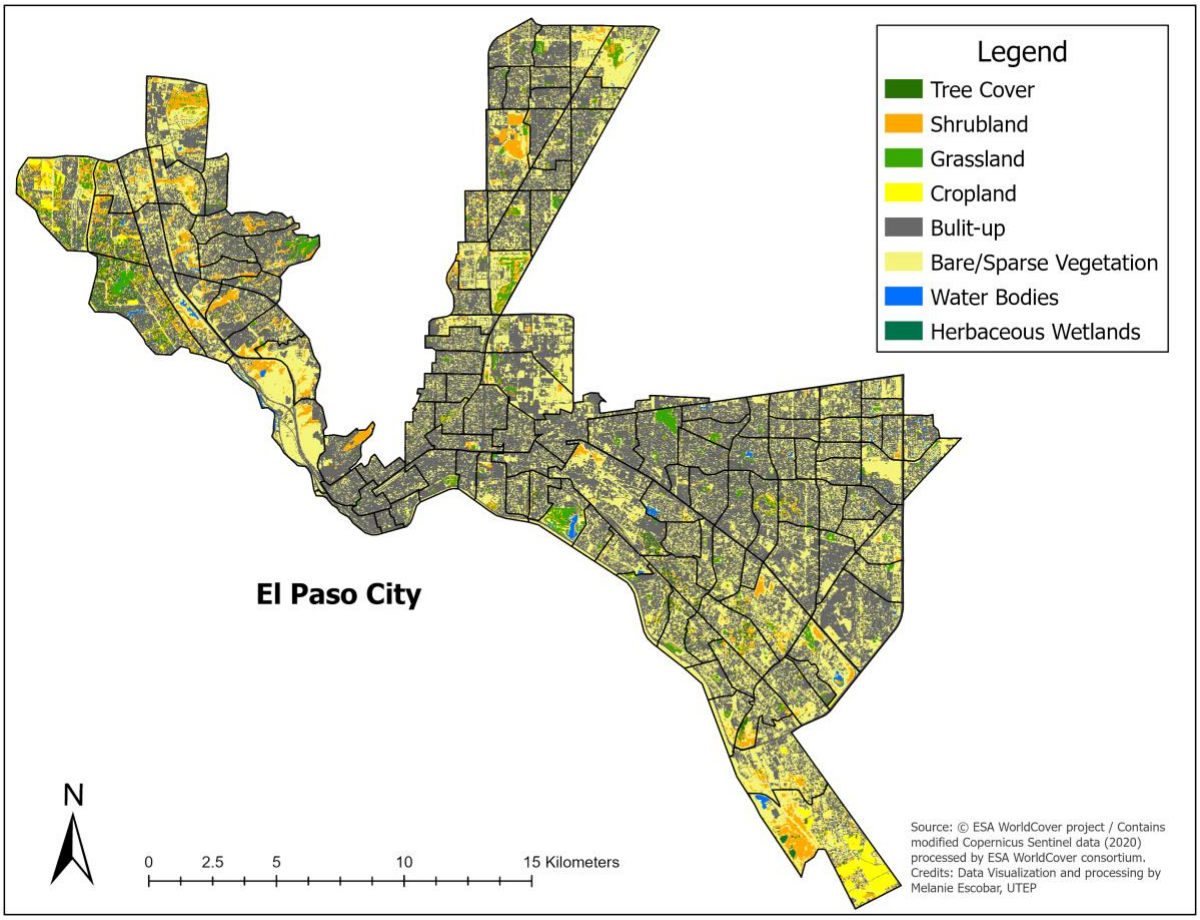


Figure 4.7 El Paso City Landcover Using Worldcover

Table 4.4 shows that the density of built-up surfaces in WorldCover is lower than that assessed by PlanIT Geo. Built-up surfaces, a category similar to PlanIT Geo's impervious surface, cover 53.2% of the area. Moreover, the distribution of tree cover from WorldCover is notably lower, at 1.30%. The result is about six times less than the distribution of tree coverage in PlanIT Geo, indicating WorldCover's classification methods do not capture green spaces as well as PlanIT Geo, with a majority of open space characterized by bare/sparse vegetation. Nonetheless, WorldCover acknowledges that its assessment of tree cover is higher in comparison to other categories, where shrubland has the lowest (see appendix M).

Table 4.4 The Percentage Of El Paso City Landcover Using Worldcover

Landcover Class Percentage of El Paso City (Worldcover)							
Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare/Sparse Vegetation	Water Bodies	Herbaceous Wetland
1.3%	5.4%	2.4%	1.2%	53.2%	36.0%	0.45%	0.04%
4,485,470.3893 square meters	18,700,461.5462 square meters	8,280,943.4264 square meters	4,100,780.0159 square meters	183,660,766.2964 square meters	124,036,162.4456 square meters	1,552,671.6747 square meters	138,015.7044 square meters

4.2.2 Landcover Distribution for Ciudad Juarez

An analysis of Ciudad Juarez's PlanIT Geo categories is presented in Figure 4.8 using a methodology similar to that used for its sister city. As outlined in the methodology, a section of the city results is presented in Figure 4.8, Table 4.5, and Appendix C. After mapping the land coverage from PlanIT Geo, a distribution resembling the categories found in El Paso City was observed. Interestingly, impervious surfaces are exceptionally high and noticeable at the center of Ciudad Juarez, a finding reinforced by an assessment of high-high spatial clusters of impervious surfaces, as depicted in Figure 4.2.

As illustrated in Table 4.4, Ciudad Juarez's surface area is noticeably smaller. The results reveal that 76.5% of urban surfaces consist of impervious land cover, a significantly higher proportion than in El Paso. Because the study area for Ciudad Juarez urban municipio is not complete with PlanIT Geo, it is difficult to evaluate the complete landscape at such a large scale with high-resolution land cover. Additionally, potential canopy cover (PCC/open spaces) accounts for 18.2% of the surface area, predominantly situated along the center across the city's international boundary. Lastly, the distribution of tree canopies amounts to 5.3%, which is slightly lower than El Paso by 1.6%.

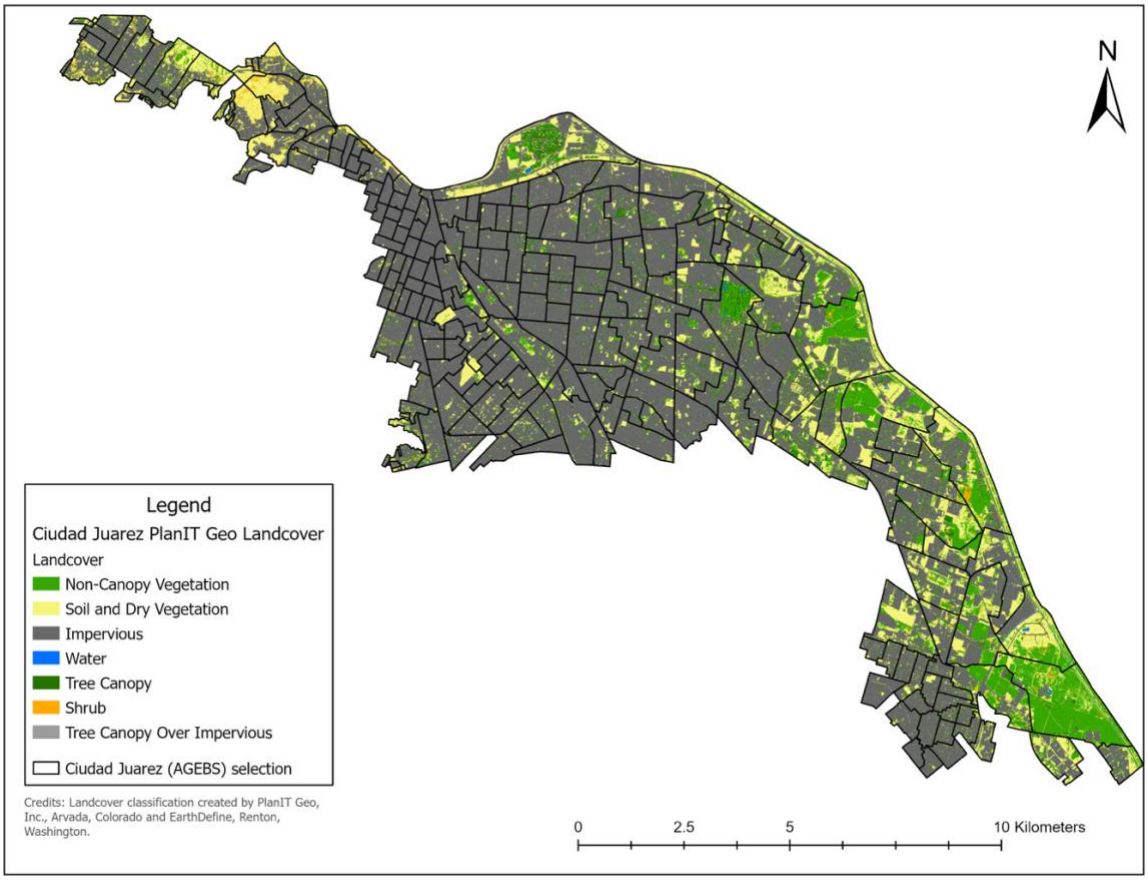


Figure 4.8 Landcover Of Ciudad Juarez Using PlanIT Geo

Table 4.5 The Percentage of Ciudad Juarez Landcover Using PlanIT Geo

Landcover Class Percentage of Ciudad Juarez (PlanIT Geo)						
Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy Over Impervious
4.6%	12.2%	76.5%	0.16%	3.4%	1.4%	1.9%
12558330.86 sqm	17843961.48 sqm	78204119.64 sqm	246196.7915 sqm	5150411.548 sqm	1634142.65 sqm	1721601.888 sqm

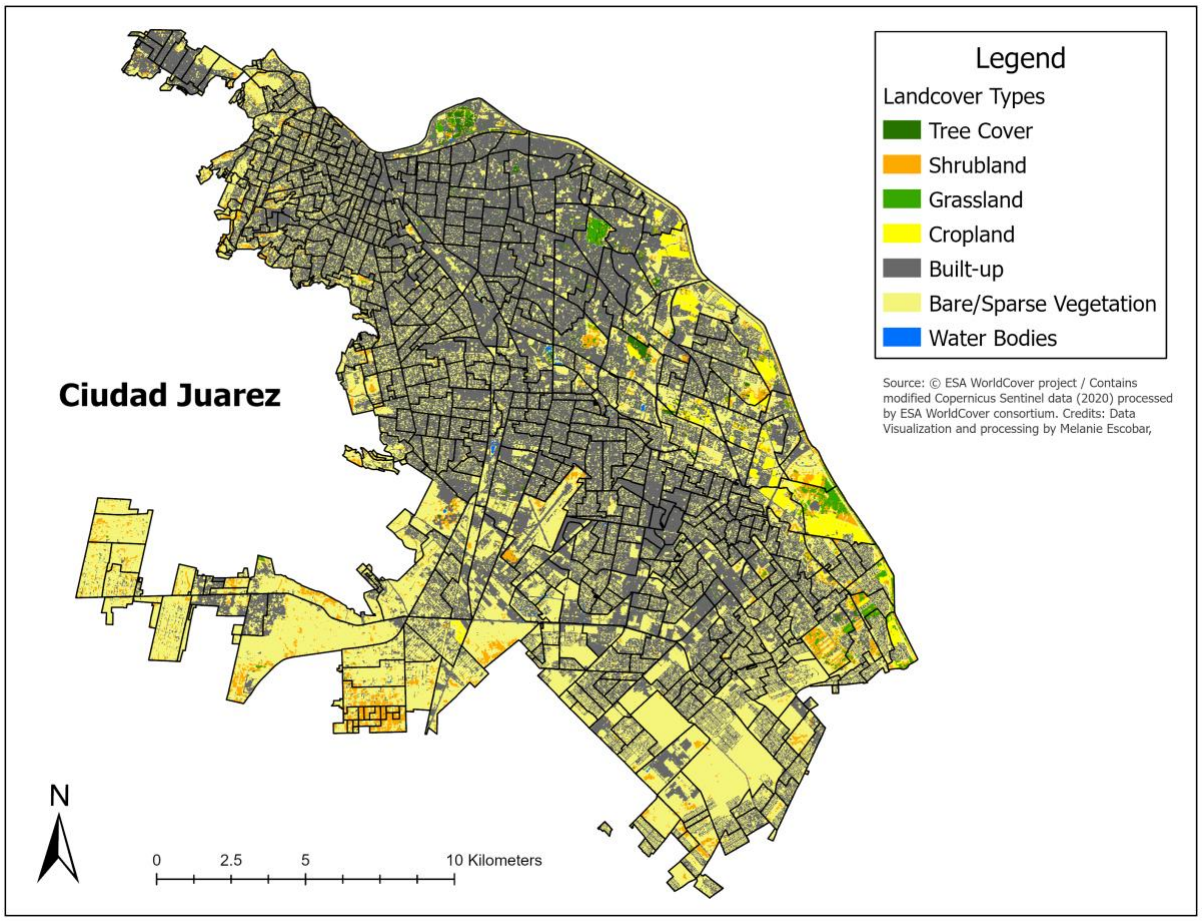


Figure 4.9 Landcover of Ciudad Juarez Using Worldcover

Finally, the mapping of the land cover area, using Worldcover, was conducted across the entire set of census units of Ciudad Juarez. This categorization varies from El Paso, as Ciudad Juarez does not include any herbaceous wetlands. However, it does feature cropland, which is predominantly situated along the international boundary. Additionally, a significant portion of Ciudad Juarez is covered by barren/sparse vegetation (See Appendix D). The outskirts of the city are characterized by barren/sparse vegetation, with limited distribution of built-up surfaces in this area.

Table 4.6 The Percentage of Ciudad Juarez Landcover Using Worldcover

Landcover Class Percentage of Ciudad Juarez (WorldCover)

Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare/Sparse Vegetation	Water Bodies	Herbaceous Wetland
0.63%	3.5%	0.79%	1.5%	52.3%	41.2%	0.09%	Not detected
2,222,981.147 sqm	12,374,993.31 sqm	2,784,907.017 sqm	5,349,492.204 sqm	184,932,298.7 sqm	145,906,329.1 sqm	336,794.8315 sqm	0

Table 4.6 shows the distribution of built-up areas within the entirety of Ciudad Juarez census units, which covers 52.3% of the area. This result is quite similar to El Paso City's distribution using WorldCover. However, potential canopy cover (PCC/open spaces), such as shrubland, grassland, cropland, and bare/sparse vegetation, account for 47%, a distribution not significantly different from that of built-up surfaces. Apart from open spaces, Tree coverage occupies 0.63% of the city, roughly half of what is observed in El Paso city.

The analysis of landcover patterns in Paso Del Norte (See Figure 4.10) does have similarities and differences, especially close to the U.S.-Mexico border. First, both cities have a significant concentration of impervious surfaces in their central areas, indicating high levels of urbanization and development. In Ciudad Juarez, as observed in Table 4.7, impervious surfaces account for a substantial portion of the urban landscape, comprising 76.5% of the surface area. The high percentage of impervious surfaces is reflective of the densely populated nature of the city center, where urban infrastructure is prominent. Open spaces, including tree canopies, occupy a smaller proportion of the surface area compared to impervious surfaces, indicating limited green spaces.

El Paso's impervious surfaces appear to cluster not so far away from regions that have impervious clusters in Ciudad Juarez (See Figure 4.2). However, El Paso has a larger percentage of open spaces relative to Ciudad Juarez, encompassing land cover types such as non-canopy, soil and dry vegetation, and shrubs. In general, although both cities demonstrate similar trends of

urbanization and impervious surface expansion in their central areas, El Paso displays a more balanced distribution of land cover types, with a greater distribution of green spaces, such as non-canopy vegetation and tree canopies.

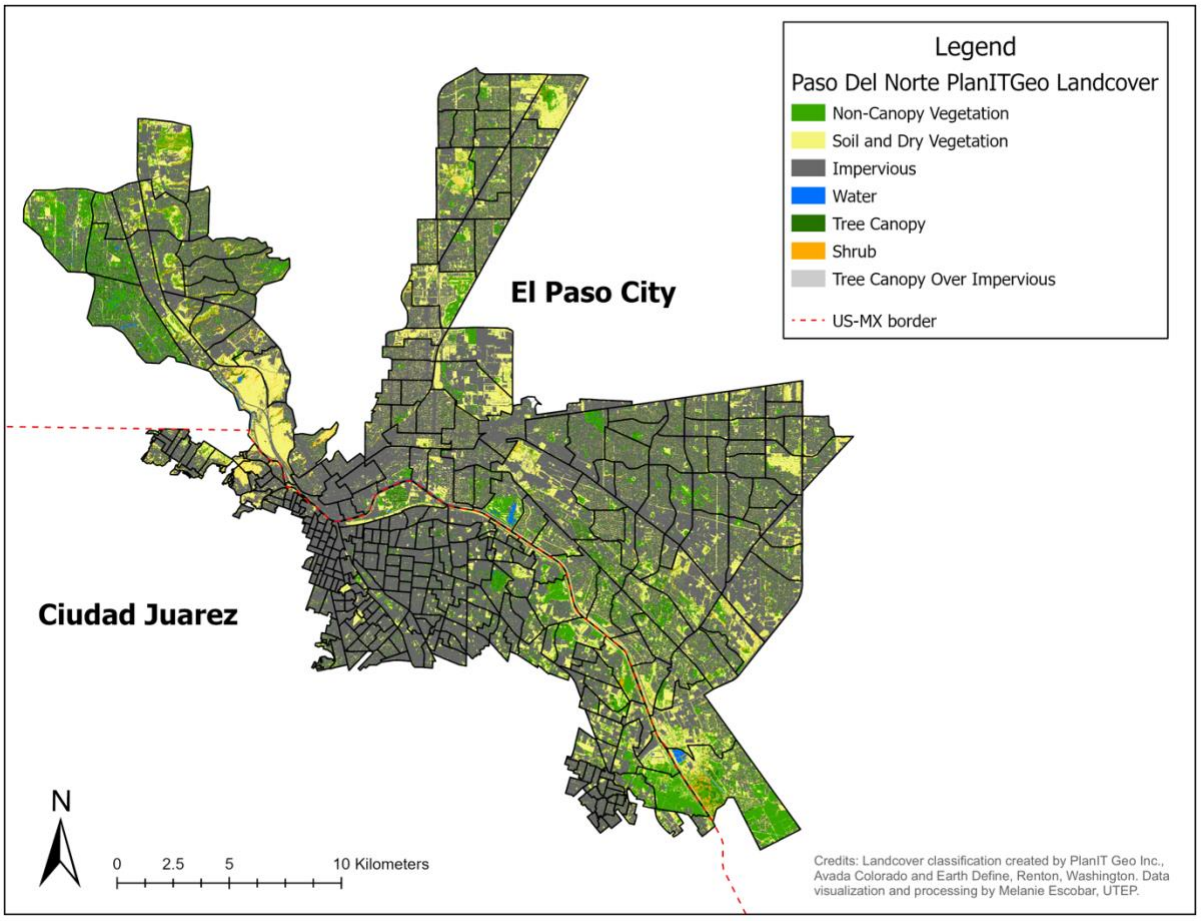


Figure 4.10 Paso Del Norte Landcover Using PlanIT Geo

Table 4.7 Paso Del Norte Landcover Percentage Using PlanIT Geo

Landcover Class Percentage of El Paso City (PlanIT Geo)						
Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy Over Impervious
12.0%	20.5%	57.4%	0.45%	6.3%	2.8%	0.68%
41,085,702.46 sqm	70,654,061.08 sqm	198,197,811.4 sqm	1,568,316.505 sqm	21,582,301.32 sqm	9,606,669.722 sqm	2,344,398.508 sqm
Landcover Class Percentage of Ciudad Juarez (PlanIT Geo)						

Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy Over Impervious
4.6%	12.2%	76.5%	0.16%	3.4%	1.4%	1.9%
12558330.86 sqm	17843961.48 sqm	78204119.64 sqm	246196.7915 sqm	5150411.548 sqm	1634142.65 sqm	1721601.888 sqm

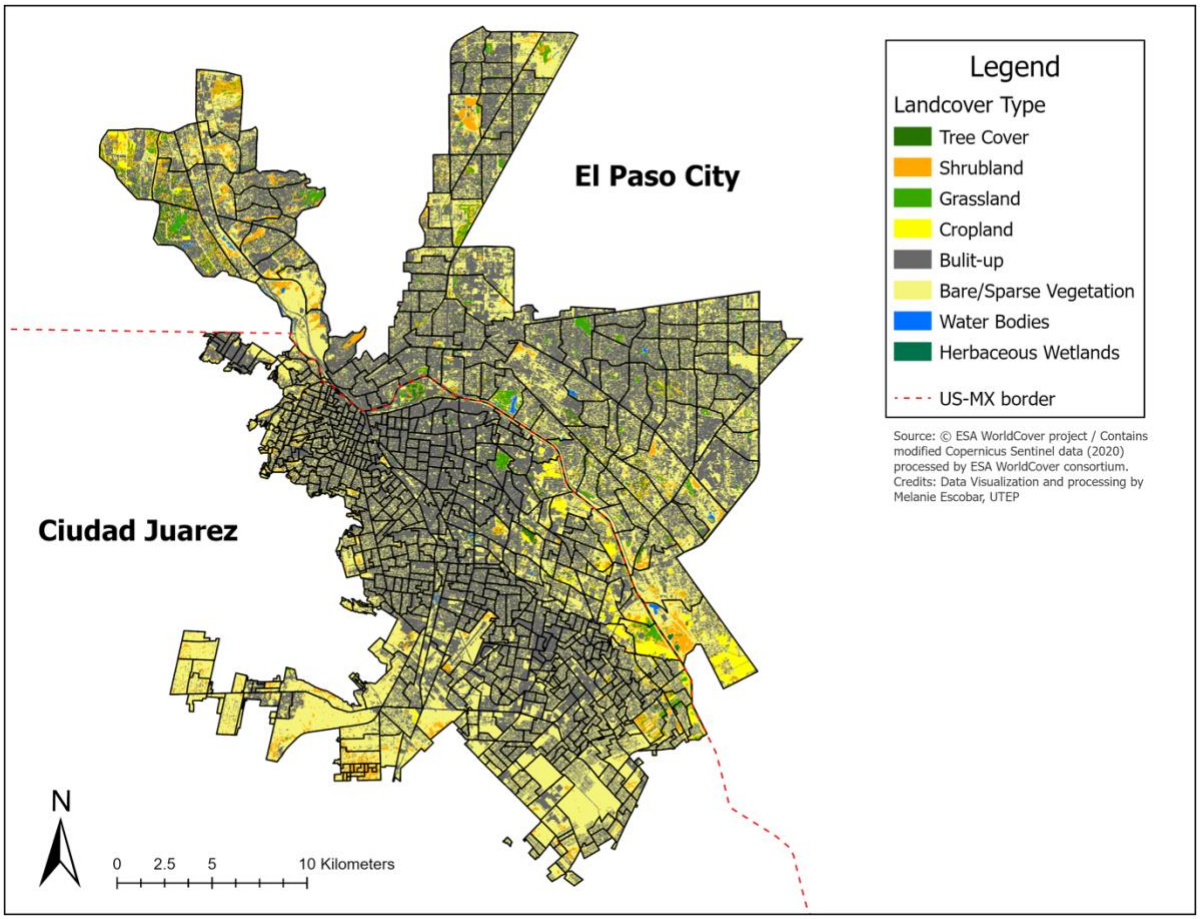


Figure 4.11 Paso Del Norte Landcover Using Worldcover

Table 4.8 Paso Del Norte Landcover Percentages Using Worldcover

Landcover Class Percentage of El Paso City							
Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare/Sparse Vegetation	Water Bodies	Herbaceous Wetland
1.3%	5.4%	2.4%	1.2%	53.3%	36.0%	0.45%	0.04%

4,485,470.3893 square meters	18,700,461.5462 square meters	8,280,943.4264 square meters	4,100,780.0159 square meters	183,660,766.2964 square meters	124,036,162.4456 square meters	1,552,671.6747 square meters	138,015.7044 square meters
Landcover Class Percentage of Ciudad Juarez							
Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare/Sparse Vegetation	Water Bodies	Herbaceous Wetland
0.63%	3.49%	0.79%	1.51%	52.27%	41.21%	0.09%	Not detected
2,222,981.147 sqm	12,374,993.31 sqm	2,784,907.017 sqm	5,349,492.204 sqm	184,932,298.7 sqm	145,906,329.1 sqm	336,794.8315 sqm	0

In Table 4.8, a comparison of the built-up surfaces of Paso del Norte is shown. This provides a comprehensive assessment of Paso del Norte's land cover through the data WorldCover. There is, however, a substantial difference in the distribution of tree coverage between El Paso and Ciudad Juarez. Tree cover distribution from WorldCover is significantly less than PlanIT Geo's assessment, which may be the result of the use of lower imagery resolution for classification processes since WorldCover uses 10m imagery from Sentinel-1 & 2 data. Differences in methodologies become evident as WorldCover's categorization differs from PlanITGeo. Figure 4.8 shows herbaceous wetlands, which are not included in Paso Del Norte using PlanIT Geo (See Figure 4.10) or Ciudad Juarez (Figure 4.9) but are included in El Paso City in WorldCover.

4.3 Urban Tree Canopy Distribution (Research Question 2)

The findings from an assessment of urban tree canopies (UTC) in the cities of El Paso and Ciudad Juarez are depicted in Figures 4.12-4.22. The selection of the study area was based on PlanIT Geo's coverage of census tracts within El Paso City, which can be observed in Figure 4.12, which is a categorical map of two UGI landcover, UTC and other green spaces, such as non-canopy vegetation. These landcover types are presented as vector data or polygons at a 0.3

outline scale for mapping purposes. However, for this result section, an analysis of one category is assessed, which is UTC.

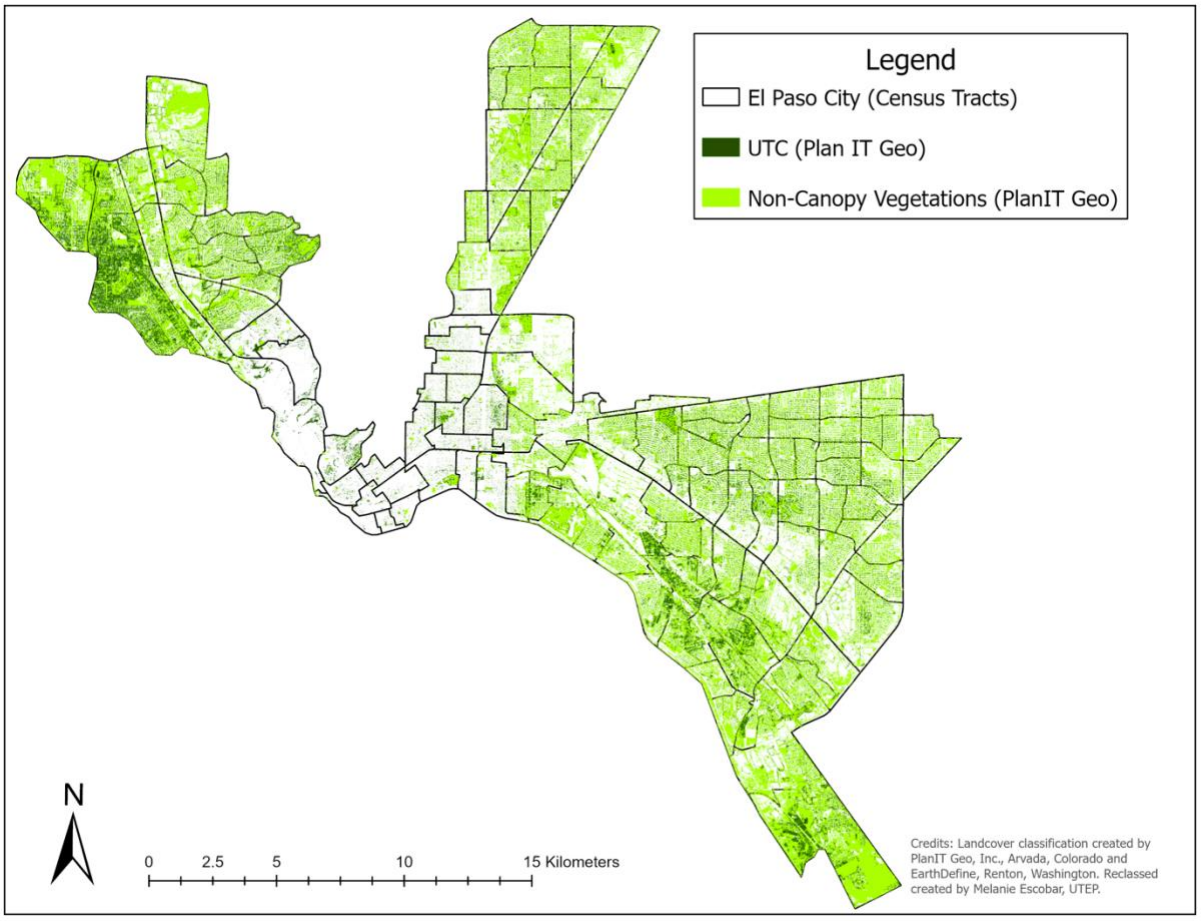


Figure 4.12 El Paso City UGI Using PlanIT Geo

The spatial distribution of urban tree canopies in El Paso is mapped through graduated color maps in Figure 4.13. To ensure comparability with Ciudad Juarez, the values are categorized into five groups based on data from PlanIT Geo's landcover analysis, combining tree canopy and tree canopy over impervious surfaces to calculate the total urban tree canopy for each census tract. Visual examination of El Paso reveals that the lowest category indicates that three census tracts have less than 2.0 % tree canopy coverage. These tracts are dispersed across

various regions of the city, with a majority located in the central and northeast areas.

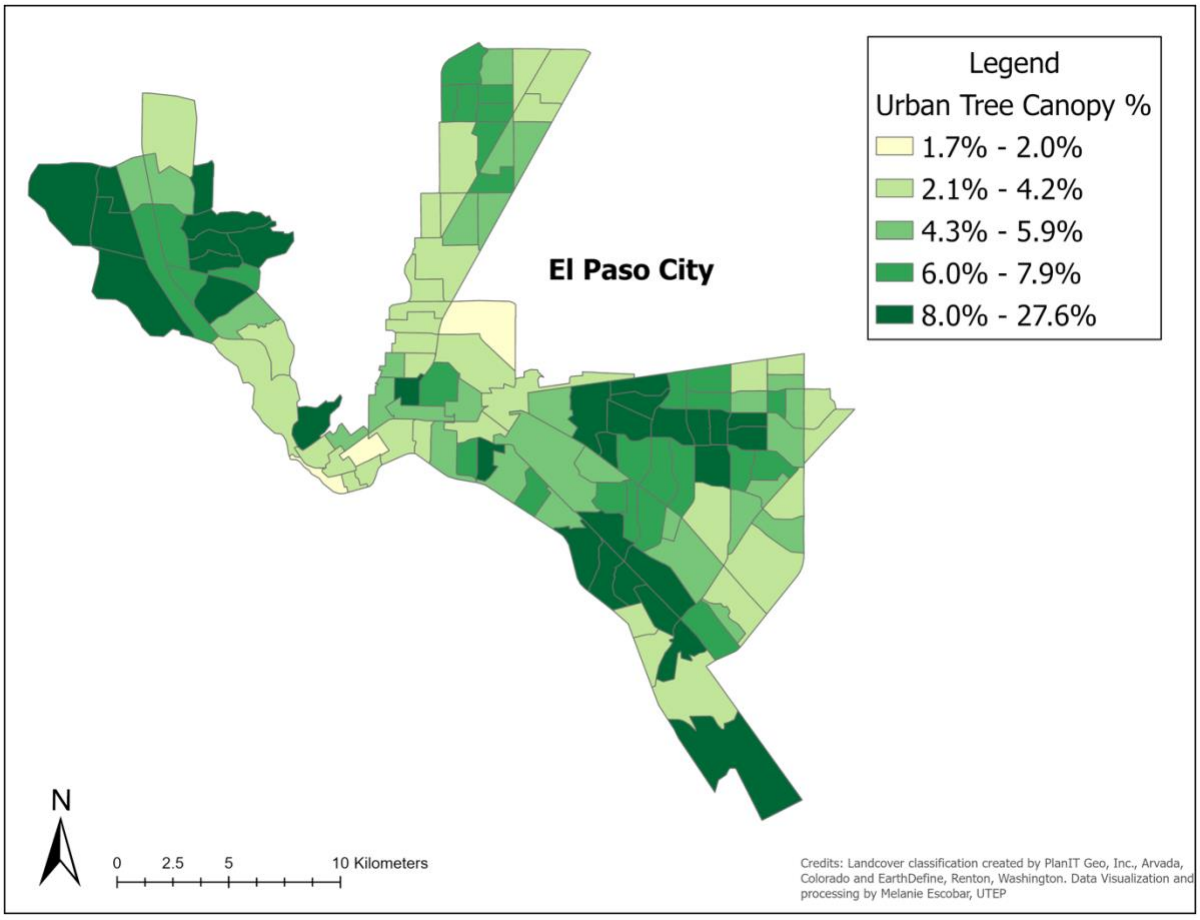


Figure 4.13 El Paso City UTC Using PlanIT Geo

Additionally, the distribution of moderately high tree density is visually represented through a distinct dark green hue on the maps. Following the analysis, 15 census tracts within El Paso demonstrate a tree coverage ranging between 10.0% and 27.6%, highlighting a substantial presence of trees in these specific regions. The geographical distribution of these tracts varies, with a predominant concentration observed along the western areas of El Paso and one in Mission Valley. Census Tract 13.02 stands out with the highest tree density recorded at 27.6%, emphasizing the significance of this particular tract in terms of tree coverage within the city.

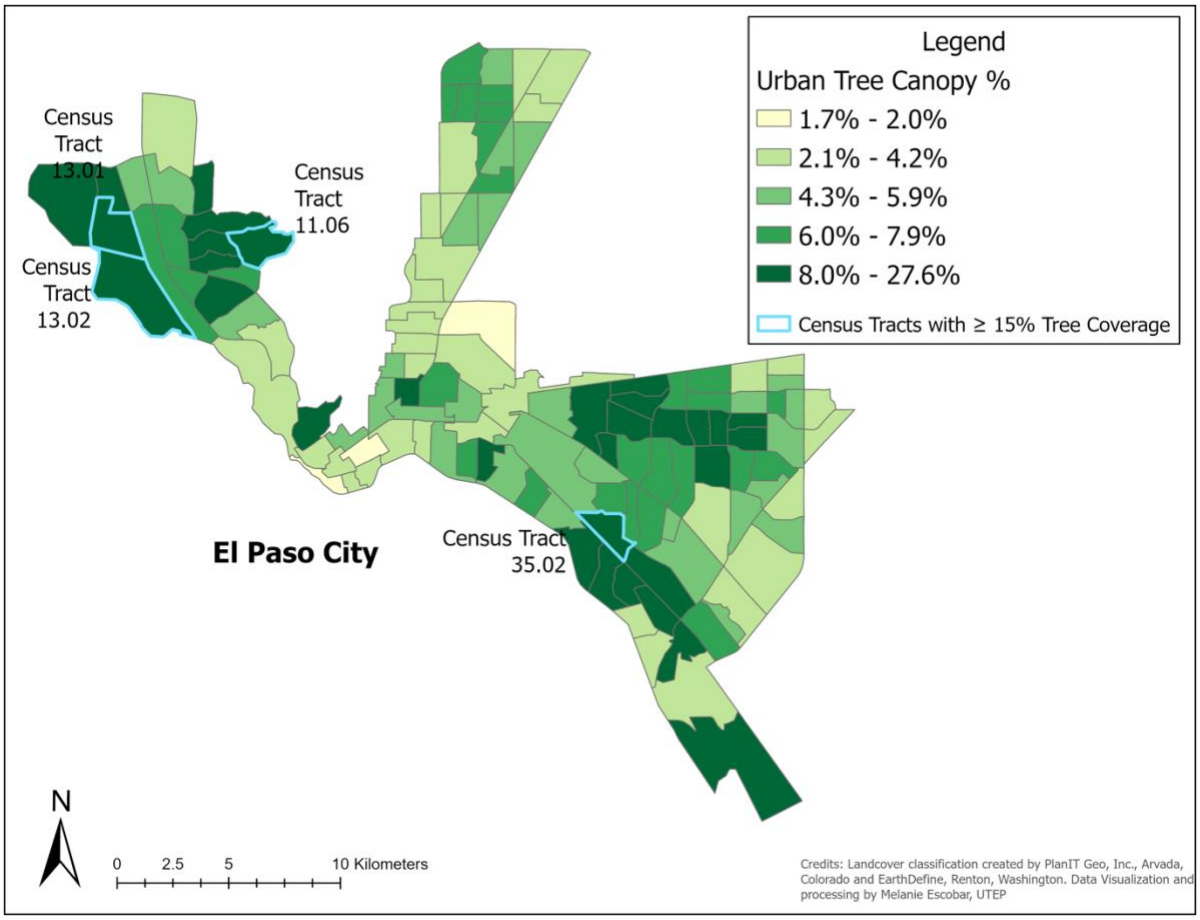


Figure 4.14 El Paso City Census Tracts With At Least 15 % UTC Using PlanIT Geo

As illustrated in Figure 4.14, it is observed that four census tracts exhibit tree coverage equal to or exceeding the recommended UTC distribution of 15% within desert cities (Leahy, 2017). However, a significant portion of census tracts in El Paso City fall short of this recommended goal, indicating a gap in achieving an equitable distribution of tree coverage across the region. This shortfall illustrates the need for ongoing efforts of El Paso City to establish and implement standards for tree coverage, particularly in downtown areas. Additionally, areas characterized by minimal tree coverage, amounting to less than 5%, emerge as high-priority zones or tracts for the city's intervention and strategic planning initiatives.

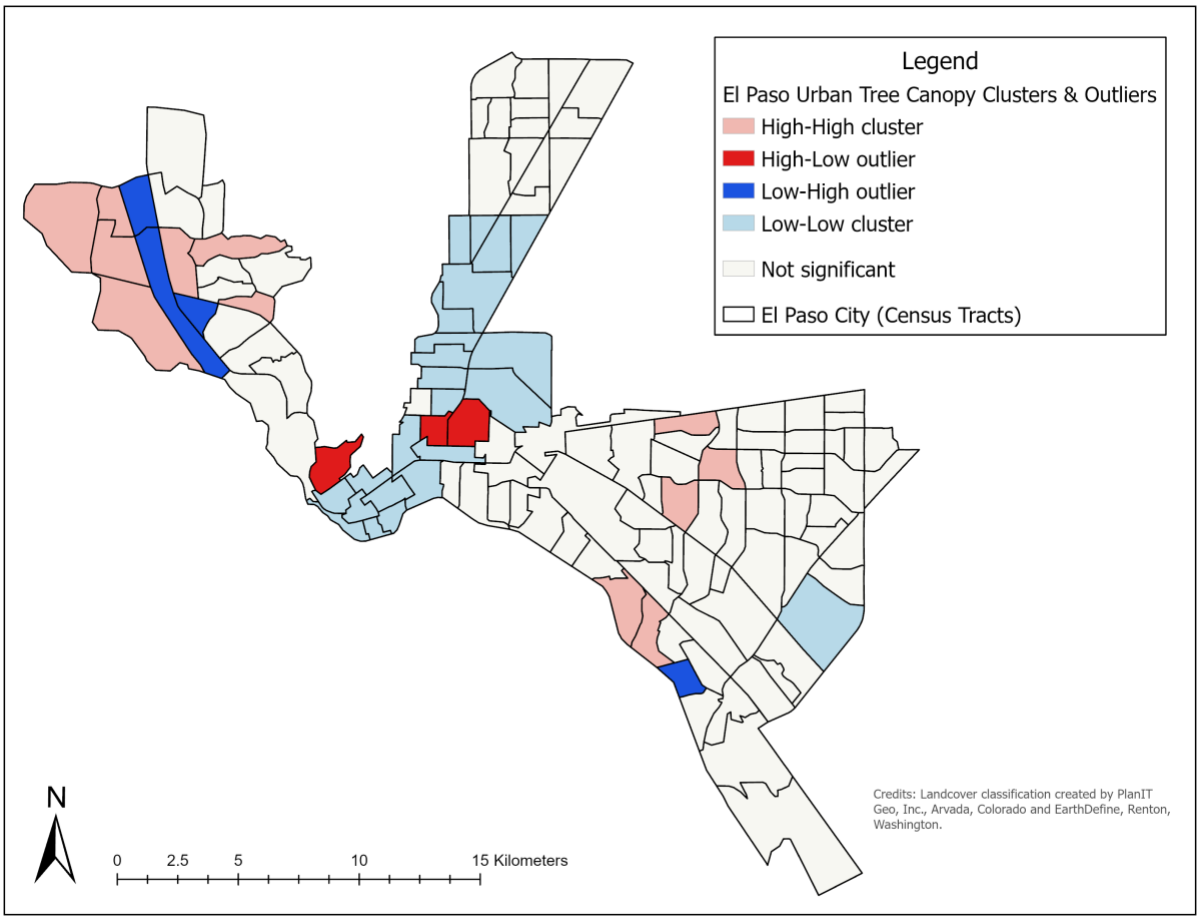


Figure 4.15 El Paso City UTC Clusters and Outliers Using PlanIT Geo

To address the locations of clusters of urban tree canopies, an analysis using Moran's I cluster and outlier test reveals the presence of high-high clusters predominantly on the west side, alongside a low-high outlier. These findings suggest the existence of clusters with a stronger spatial relationship, corroborating the earlier assessment of low clustering of tree canopies in the central and northeast regions. This map shows the potential significance of these areas as low-priority sites for further analysis. Furthermore, this assessment reaffirms the need to address low-low cluster regions' inequitable access to UTC.

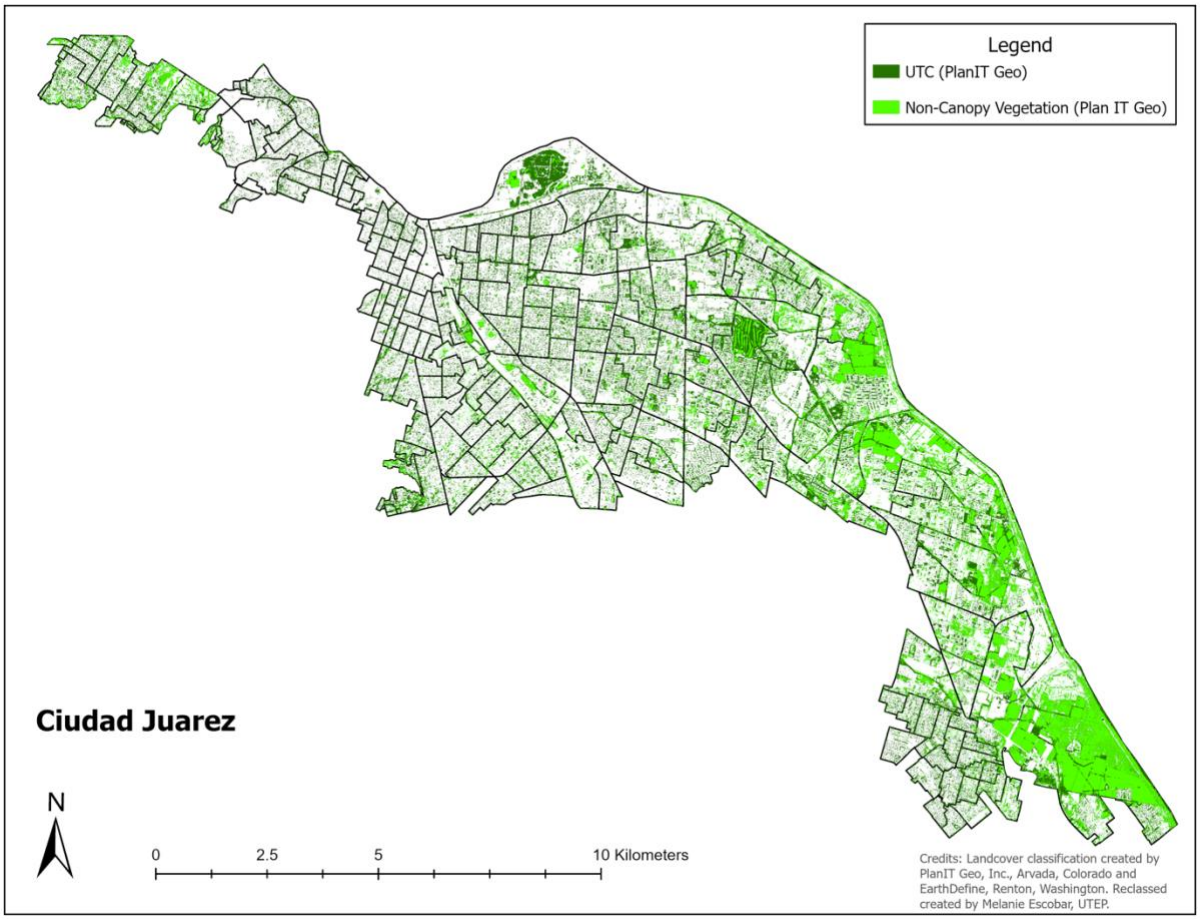


Figure 4.16 Ciudad Juarez UGI Using PlanIT Geo

The tree cover distribution results for Ciudad Juarez may seem abundant when observing the map layout closely within the census units' selection; however, this does not necessarily indicate significantly more tree coverage compared to El Paso (Figure 4.16). Additionally, UTC and Non-Canopy land cover data from PlanIT Geo share a symbol outline similar to that of El Paso city and were converted into polygons for mapping purposes. After reclassifying the PlanIT Geo landcover raster, an output followed, which is an output of UTC within a specific area of Ciudad Juarez. This allowed for an examination of all tree canopies for each census unit (See Figure 4.17).

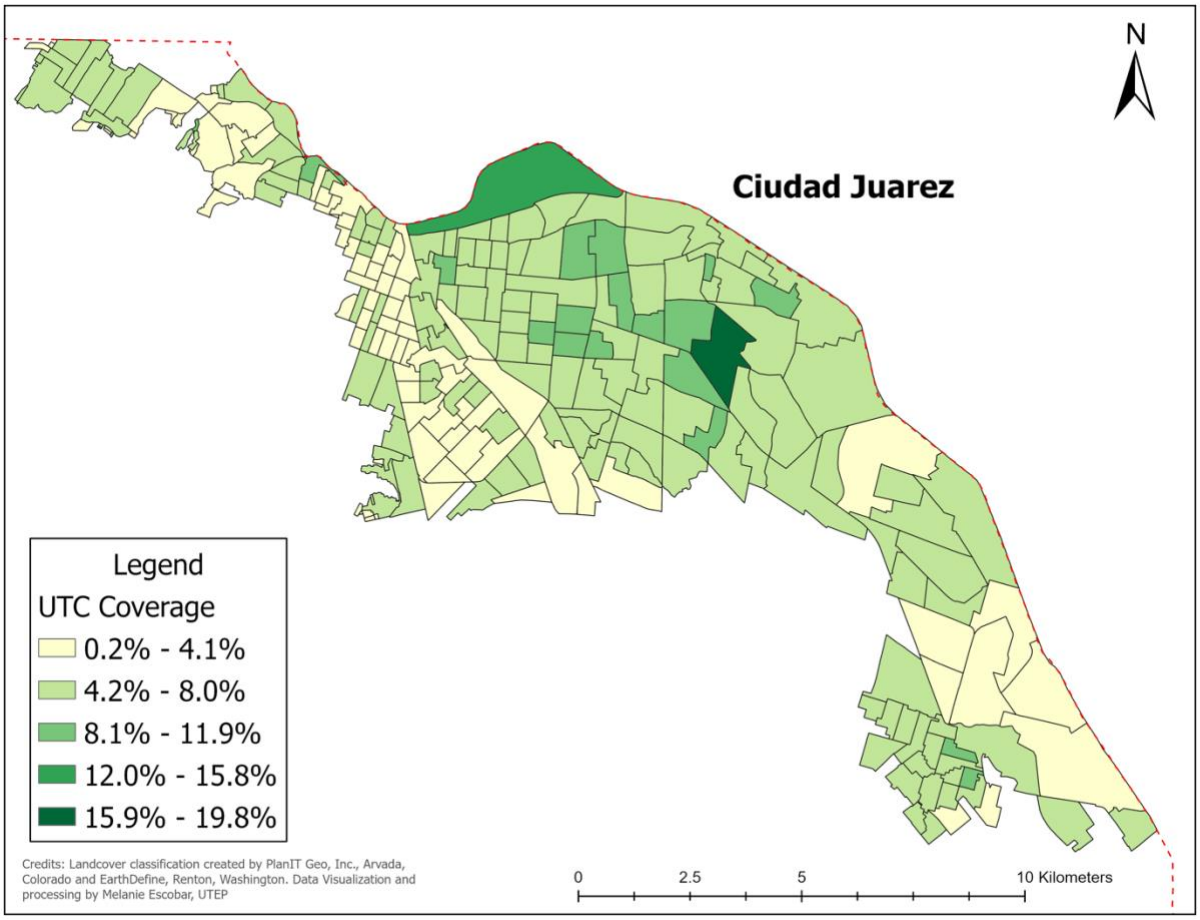


Figure 4.17 Ciudad Juarez Urban Tree Canopy Coverage Using PlanIT Geo

As part of the assessment, a similar process and data visualization was carried out for the part of Ciudad Juarez covered by PlanITGeo, though not for all of Ciudad Juarez AGEBs, as detailed earlier in the methods section. Using graduated colors, Ciudad Juarez's map illustrates the UTC distribution across the AGEBs with distinct intervals of value, similar to El Paso City's map. These observations reflect five categories, as seen in Figure 4.17. In the case of Ciudad Juarez, the values present a significant pattern, as there are two census units with a tree distribution reaching the recommended 15%. Thus, no further analysis was conducted to identify such areas, for they are displayed by the darker green hue and an area that the Chamizal occupies. Instead, the values were very low, with some areas exhibiting a coverage percentage of

0.2%, a circumstance not observed in El Paso. These specific census tracts represent potential sites for further assessment of classification methods that may have overlooked UTC distribution.

Moreover, one of the greatest concentrations of tree coverage is situated directly along the international border, particularly within the census tract containing "Parque El Chamizal," a park that has been a subject of long-standing disputes over land use. Additionally, another census unit positioned a bit further to the center has approximately 17.3% tree coverage. It is important to note that although these figures (See Figures 4.16 and 4.17) indicate a relatively low density of trees, PlanIT Geo may not have utilized pixels across the border for training samples as part of its landcover classification process for Ciudad Juarez, which is a supervised classification method, while an unsupervised classification method does not require training samples.

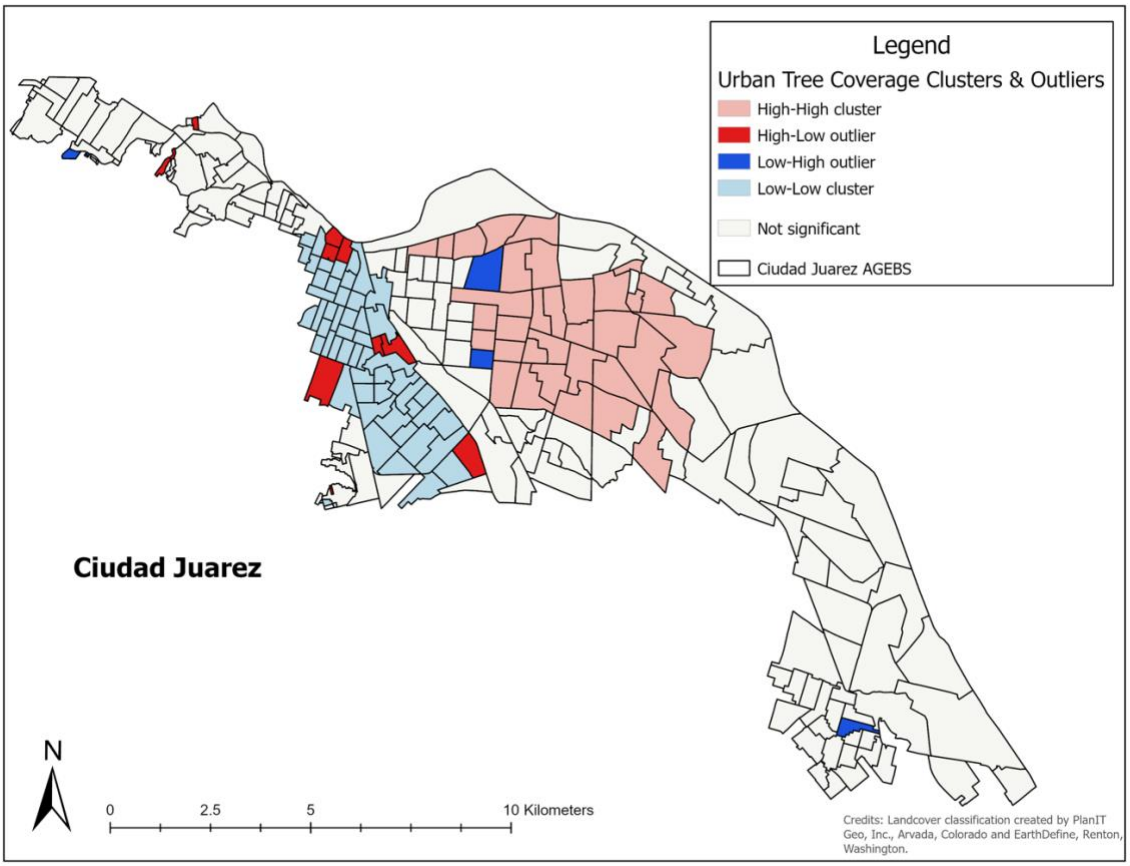


Figure 4.18 Ciudad Juarez UTC Clusters and Outliers Using PlanIT Geo

In the context of Ciudad Juarez, the results from Moran's cluster and outlier analysis show a unique spatial pattern. Specifically, a concentration of high-high tree clusters is present in the northeast portion of the city. This clustering phenomenon is not only significant for urban planning but also reflects the interplay between tree cover distribution and the surrounding landscape. Furthermore, high-high and low-low clusters emerge to the west. These areas are characterized by a comparatively sparse presence of trees. This spatial analysis not only reaffirms the earlier assessments regarding urban form but adds to the broader narrative of how tree cover distribution is intricately intertwined with the surrounding geography and land use patterns of neighboring AGEBs.

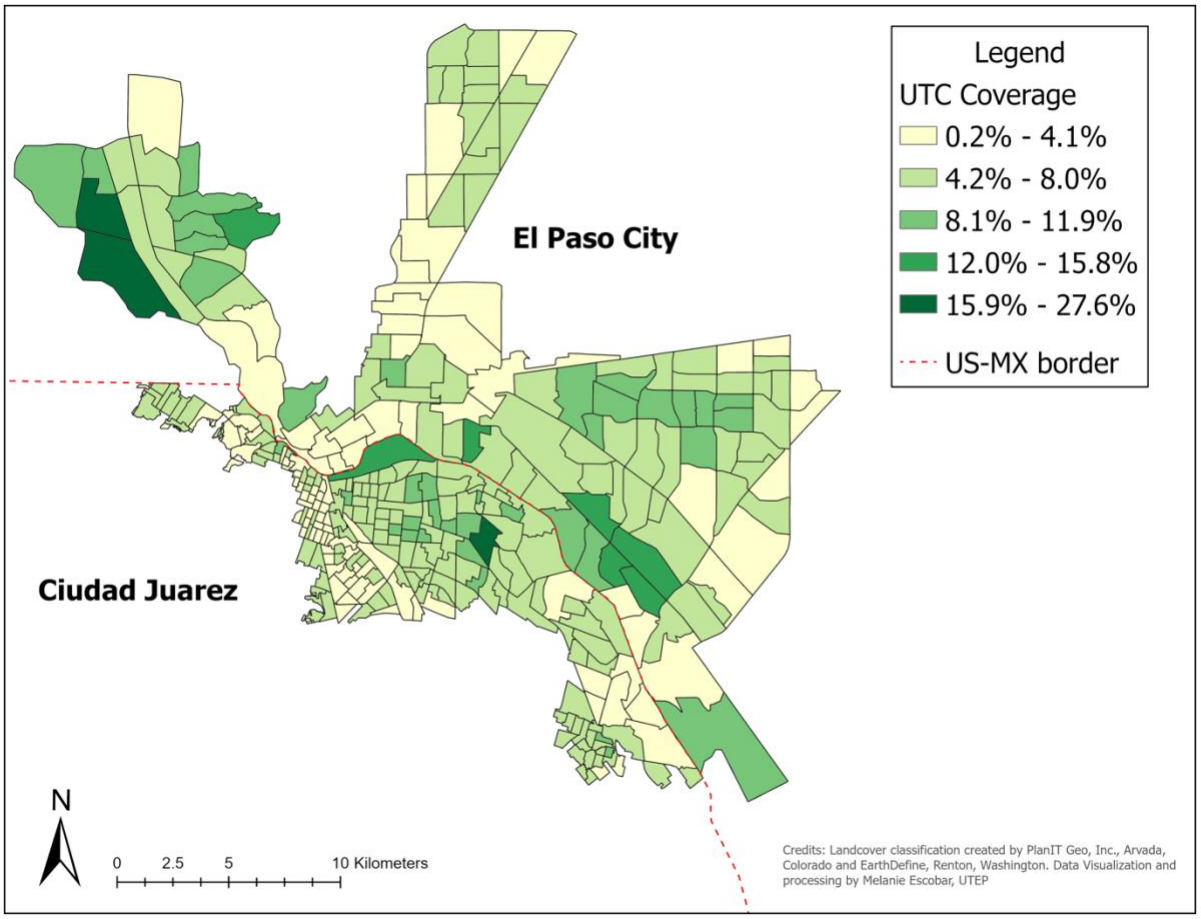


Figure 4.19 Paso Del Norte Geo UTC Using PlanIT Geo

The comparative analysis of tree distribution in El Paso City and Ciudad Juarez, an assessment with the data provided by PlanITGeo (Figure 4.19), shows differing patterns between these neighboring urban areas. While El Paso City exhibits a wide range of UTC distribution with high-high clusters along its outer northwest region, Ciudad Juarez demonstrates a significant concentration of high-high tree clusters near its center-east region. Additionally, while certain areas in El Paso City fall short of the recommended 15% tree coverage, highlighting a need for further intervention and equitable distribution efforts, Ciudad Juarez faces more severe challenges, with several areas reaching minimal to no tree coverage. Despite these inequities, both cities share commonalities in the presence of low clustering in specific regions, indicating potential priority sites for additional assessments and urban greening initiatives. Thus, these findings highlight the importance of urban planning, geographical factors, and socio-economic considerations in shaping tree distribution patterns within these borderland communities. An assessment of socioeconomic conditions is further addressed in this chapter.

While PlanITGeo has finer resolution and categorizes an abundance of trees, an assessment using World Cover data was also conducted (See Figure 4.20). Although the study area remained consistent, the entire set of census units within the study area of Ciudad Juarez was evaluated. Following this evaluation, it became apparent that the distribution of Urban Tree Canopies (UTC) in Ciudad Juarez is low for areas further away from the international border. Again, WorldCover cites its accuracy as being at its highest with tree cover, but its overall accuracy for North America is at 72.2±0.2 (Kerchove et al., 2021). To ensure comparability, the map values were adjusted to align with the five categorical values, facilitating a comprehensive comparison of results. According to WorldCover data, El Paso City has the highest tree

distribution, which is consistent with the results from the assessment of UTC in Paso Del Norte using PlanIT Geo landcover data (Figure 4.19), which indicates an abundance of trees in similar regions that WorldCover detects.

Furthermore, the distribution of UTC in Paso Del Norte does not exhibit significant disproportionality, as evidenced by closely matched values of UTC across both regions (See Figure 4.20). According to the landcover data set from WorldCover, the coverage of trees is almost nonexistent at the outskirts of Ciudad Juarez and in the Northeast region of El Paso, which illustrates how classification methods using 10-meter imagery from Sentinel-1 or 2 may not be able to capture trees in a highly urbanized environment. Nonetheless, at least a couple of census tracts across Paso Del Norte fall within a similar range of high UTC to census tracts in Figure 4.19, further highlighting some consistency in tree distribution assessment between the two datasets.

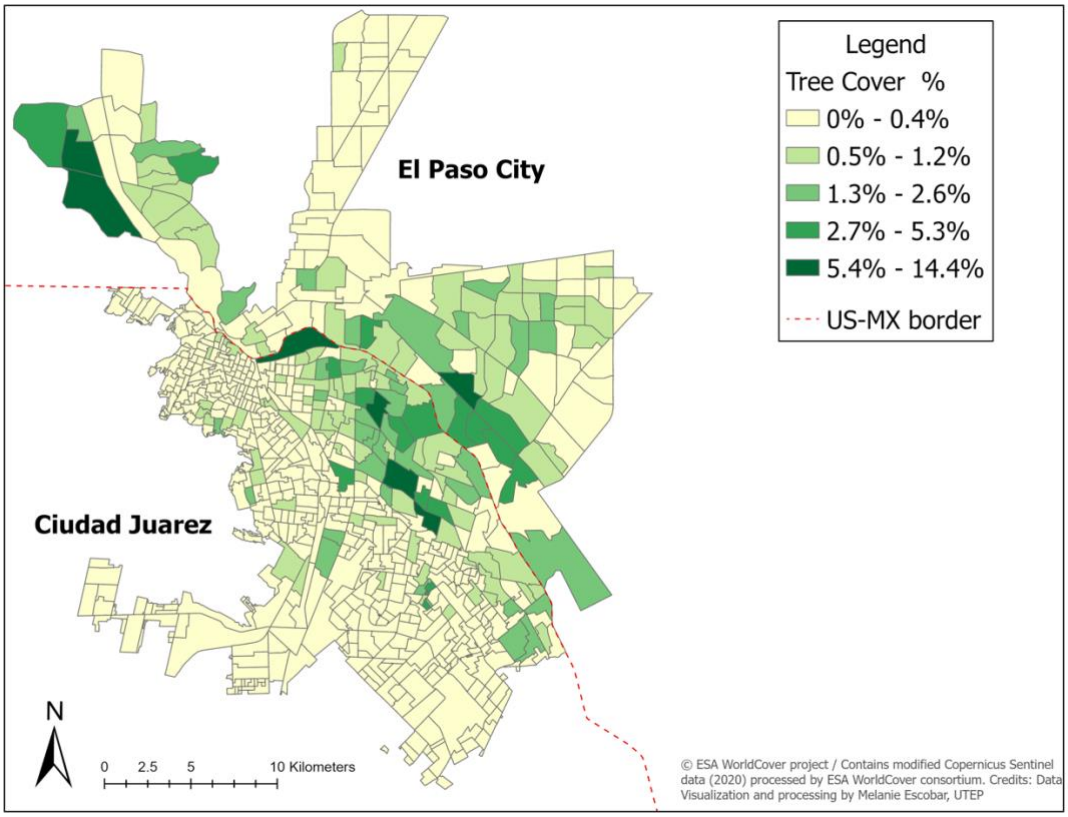


Figure 4.20 Paso Del Norte UTC Using Worldcover

Thus, the sparse distribution of tree coverage identified in El Paso City through World Cover data reveals areas of little to no trees, in contrast to the results obtained from PlanITGeo, where no census tract lacked Urban Tree Canopy (UTC). As depicted in Figure 4.20, the regions with the lowest tree distribution in El Paso City are predominantly located in the Northeast, while in Ciudad Juarez, they extend mainly across the west and south outskirts, a region characterized by open spaces featuring bare/sparse vegetation. These findings imply minimal impervious surfaces in these census units, indicating a low residential development.

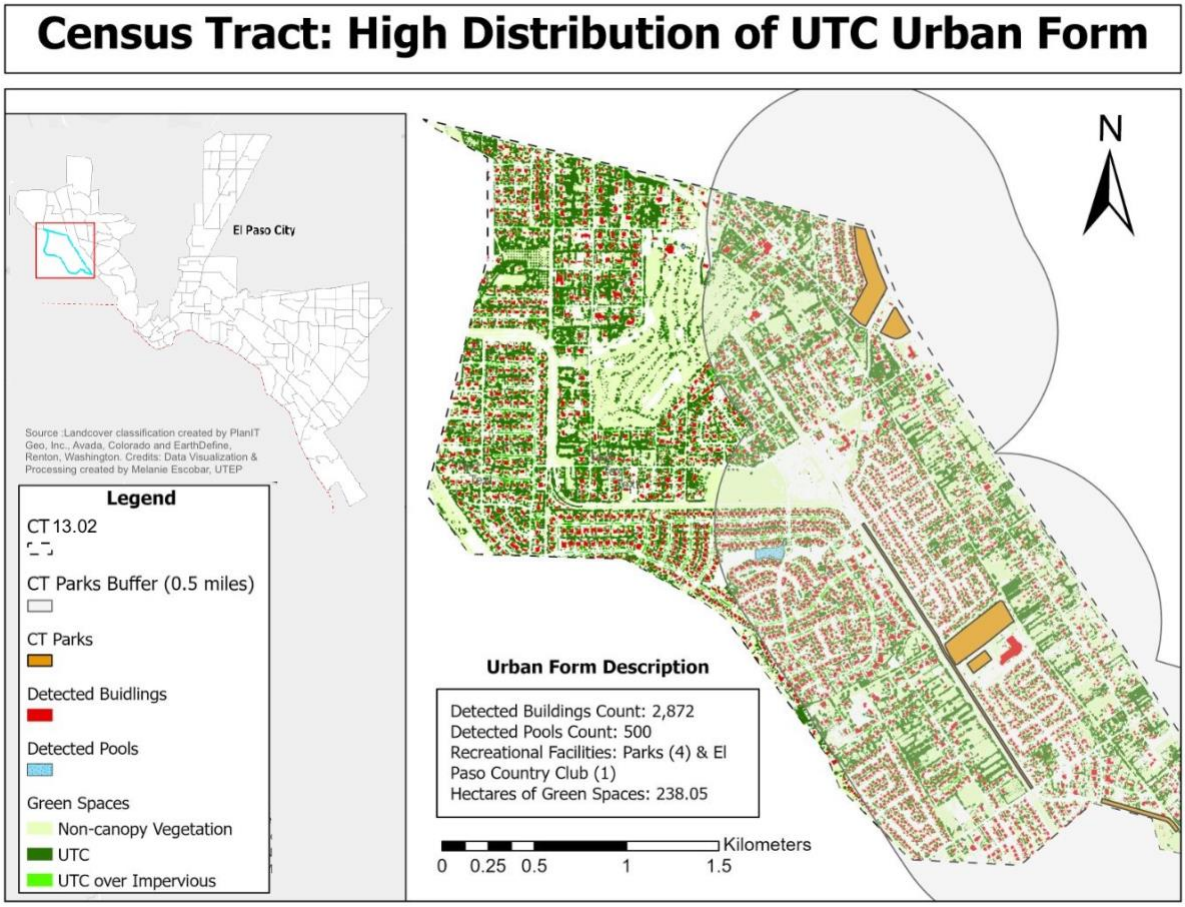


Figure 4.21 High Distribution of UTC & Urban Form in El Paso City (13.02 CT)

Residential and commercial buildings, shown in Figure 4.21, present a set of urban characteristics or patterns within various census tracts due to the era of the neighborhood's creation. The distribution of non-canopy vegetation and urban tree canopies is at its highest at this location. This census tract is situated on the western side and stands out for its high tree coverage, measuring 27.6% (See Figure 4.19 or Appendix A). Additionally, this area accommodates spaces for four parks, with most residents conveniently located within walking distance of these recreational areas, as indicated by the orange, rectangular polygon. The buffer serves to show the proximity of surrounding areas to the parks, which are detected building footprints seen in a red, rectangular polygon.

Additionally, by using deep learning models along with high-resolution ortho-imagery from USGS, a pool segmentation model was able to identify swimming pools (See Figure 4.21). The presence of these pools often indicates affluent neighborhoods, where residents have or create access to amenities and prioritize maintaining their properties. The output from the analysis reveals 500 swimming pools, shedding light on the urban landscape of this area and its ability to upkeep greenery or aesthetic infrastructure.

In a less affluent urban area (see Figure 4.22), the distribution of urban trees and green spaces is very low. Buildings, generated by a deep learning model called building footprint, are occupying spaces in a curvilinear fashion. However, the low distribution of green spaces is recognizable in the surrounding areas of residential and commercial buildings. While the detection of the model identified the contours of each building, it does not identify 100% of buildings. Instead, 2,872 buildings were found through the detection model. While urban design from a specific period determines a neighborhood's structure, it is important to recognize UGI, such as parks, that contribute to the neighborhood. After importing park polygons, a total of parks in this area shows to have one rather than four (See Figure 4.37), which illustrates the difference in how spaces vary between this neighborhood and its wealthier counterparts. It is at this location that residents have inequitable access to UTC and recreational amenities enjoyed by their more affluent neighbors, illustrating how urban living is shaped by socioeconomic demographics.

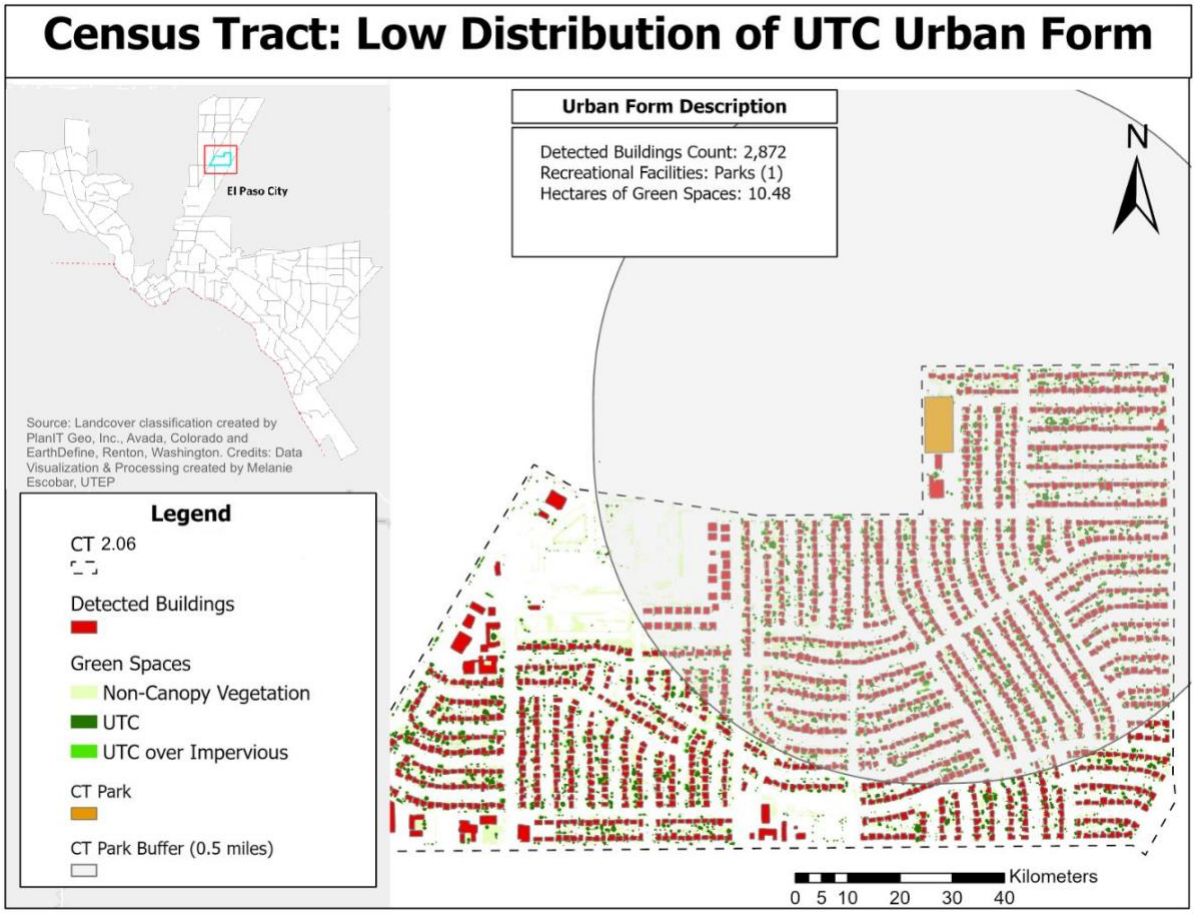


Figure 4.22 Low Distribution of UTC & CT 2.06 Urban Form in El Paso City

In conclusion, the assessment of urban tree canopies across El Paso City and Ciudad Juarez utilizing both PlanITGeo and World Cover datasets reveals inequities. While PlanITGeo offers finer resolution and detects no census tract lacking Urban Tree Canopy (UTC), World Cover data identifies areas with a complete absence of tree coverage in El Paso City and Ciudad Juarez. Interestingly, both datasets indicate a concentration of high tree distribution in El Paso's Northwest region and along Ciudad Juarez's international border. Furthermore, the discrepancies in tree distribution demonstrate the importance of utilizing two or multiple datasets for a comprehensive assessment of UTC, facilitating sustainability initiatives in an urbanizing environment such as Paso Del Norte.

4.4 Social demographics and UTC distribution in Paso Del Norte (Research Question 3)

4.41 Binational Social Vulnerability Index (BSVI) of Paso Del Norte

The Binational Social Vulnerability Index (BSVI) visualizes the vulnerability of regions that are ecologically and economically interconnected but which have census data that are not initially comparable. The BSVI is a tool that allows comparisons of cities across the U.S.-Mexico border to measure their social vulnerability through the construction of an index using 11 comparable variables that are processed and merged (See Table 4.9 & Appendix O). Figure 4.23 presents the BSVI on a map covering the entire Paso Del Norte region. Data where census tracts were null, or 0 were not accounted for, which is presented as "No Data" to ensure the index is not distorted strongly downward by lack of data for some census tracts. Figure 4.4 offers a visualization of social vulnerability across the region, categorized into five levels of vulnerability ranging from High to Low. Notably, the arithmetic adjustments to variables were made deliberately so that a higher score indicates lower vulnerability (See Appendix O).

Table 4.9 Demographic and Socioeconomic Variables and Factors Included in the BSVI

Factor	Mexico 2020 Census	U.S. 2020 ACS (2016-2020)
Wealth	% Households with a car	% Households without a car
	% With piped water	% Lack plumbing facilities
Households	Average Household size	Average household size
	% Female head of household	Percent female head of household
Age	% Population over age 65	% Population over age 65
	% Population older than 5	% Population underage 5
Education	% Population 15 with incomplete basic education	% High school graduate
Employment	% Active in labor force	% Population labor force
	% Women in active in labor force	% Females in labor force

	% Unemployed	% Unemployed
Disabled	% Disabled	% Disabled

As seen in Table 4.9, BSVI reflects a set of factors such as wealth, households, age, education, employment, and disability. These populations with lower scores are more vulnerable to socio-environmental risks (Rosa et al., 2023; e.g., heat waves). These factors tend to reflect social demographics that shape urban patterns or accessibility to green spaces, which in turn may address areas that are vulnerable due to their status and access to UTC. Each variable was arithmetically converted to a percentage of the spatial unit population, resulting in a 0-100% scale. The value of 1,100% is the total of 11 social variables across each census tract. To ensure consistency of components across the index, all 0-100% scales were arithmetically transformed to have the least vulnerable endpoint of the variables always oriented toward 100%. Hence, in Figure 4.23, tracts with higher vulnerability are represented as a value that is further from 1,100%. The dark purple hue indicates tracts with the highest vulnerability, whereas the lowest vulnerability is represented in a pink hue, which is closer to 1,100%. In the key, a high vulnerability is a low total across the eleven 0-100% components (See Appendix E).

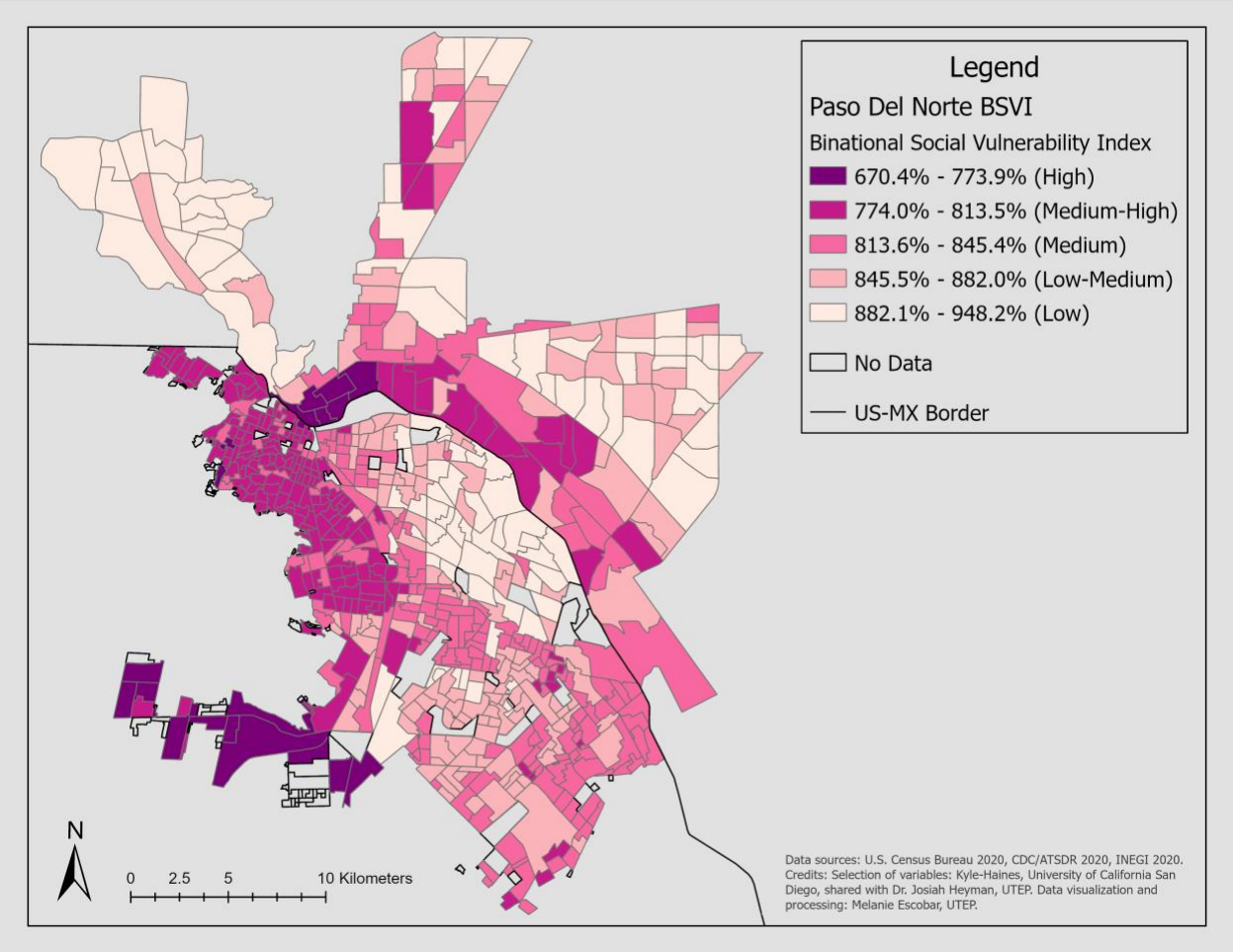
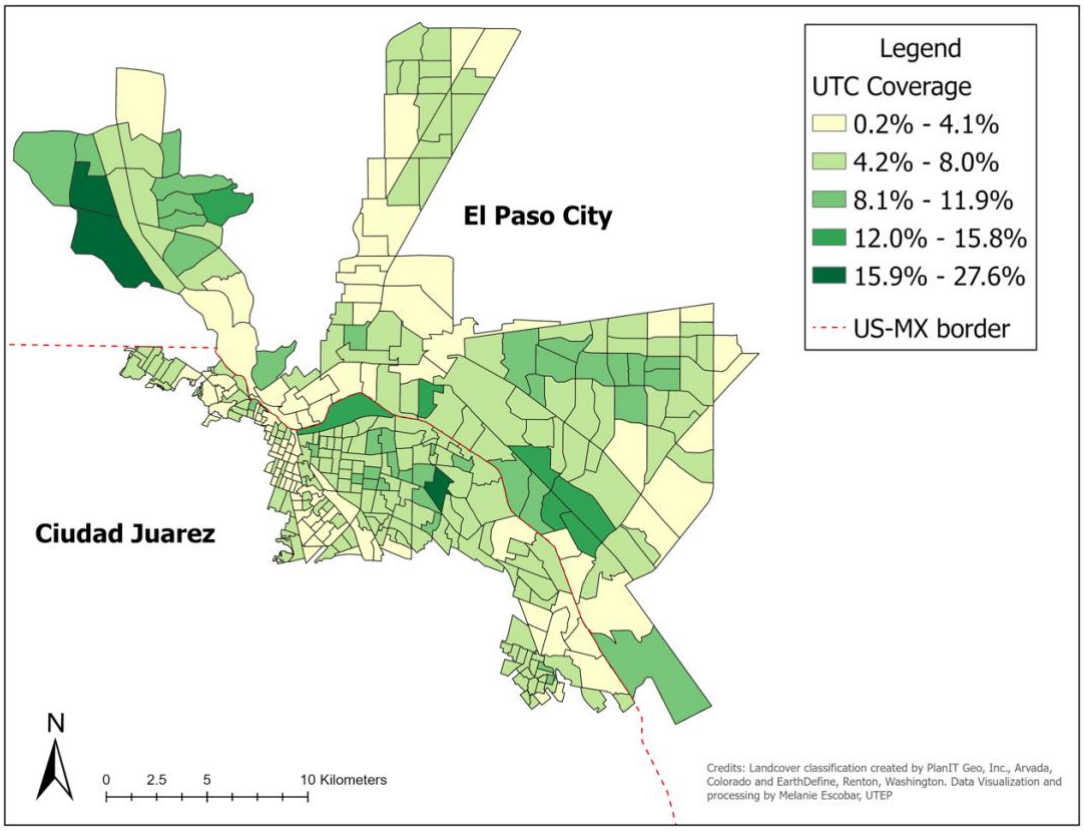


Figure 4.23 Paso Del Norte BSVI

According to Figure 4.23, the Border Social Vulnerability Index (BSVI) exhibits moderately high levels along the west side of Ciudad Juarez, particularly along the hillsides known for their lack of affluence. However, as one approaches the eastern (flatter) side of the international border, the BSVI decreases, reaching the least vulnerable levels near the east-central areas of Ciudad Juarez, presented by the light pink hue. Interestingly, the BSVI of Ciudad Juarez exhibits a pattern where the outskirts have a high vulnerability, with the exception of very few AGEBs. In the case of El Paso's BSVI, the lowest vulnerability is along multiple areas, such as parts of the northeast, most of the west side, and the east side away from the border. The highest vulnerability (lowest index) is along the border, from the central to Mission Valley areas.

It is important to note that most development is found towards the border in Ciudad Juarez. Still, areas further along the mountain fringes are where the less affluent communities reside, where populations with higher vulnerability reside in Ciudad Juarez. In contrast, the highest is found in the downtown areas of El Paso city. This highlights how census tracts across the international border do not necessarily equate to higher or lower vulnerability on both sides. This suggests associations such as socioeconomic status being higher in the central areas of Ciudad Juarez.



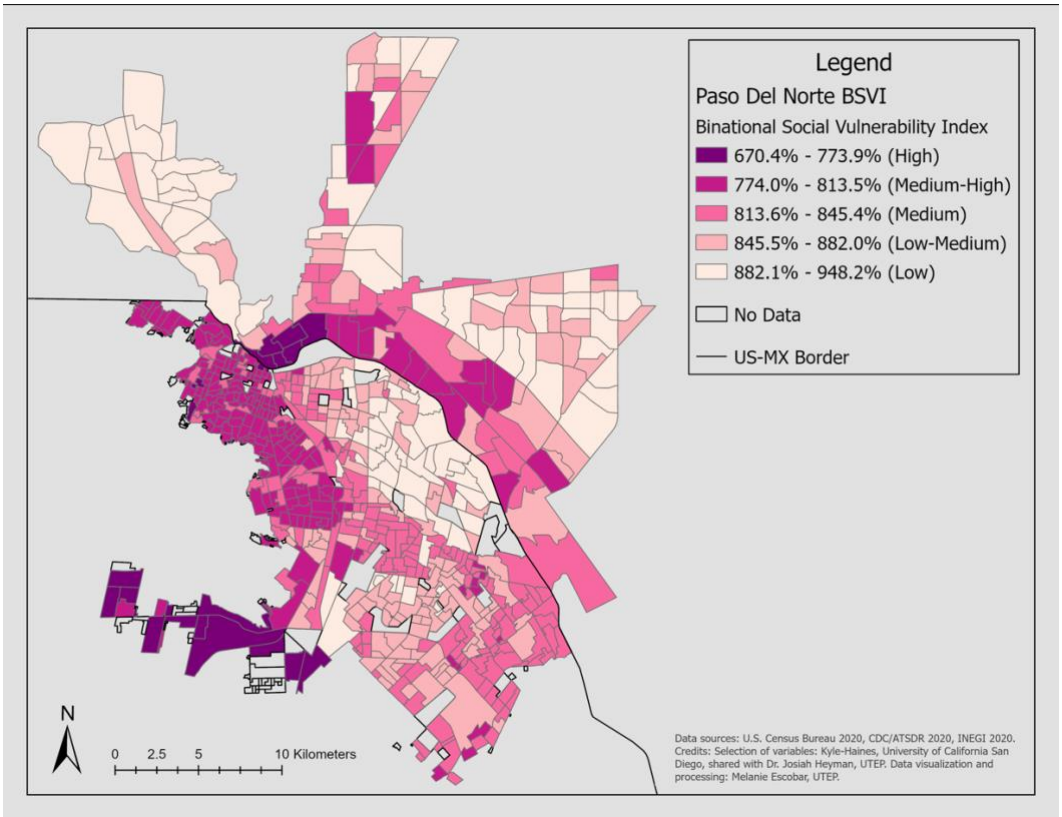
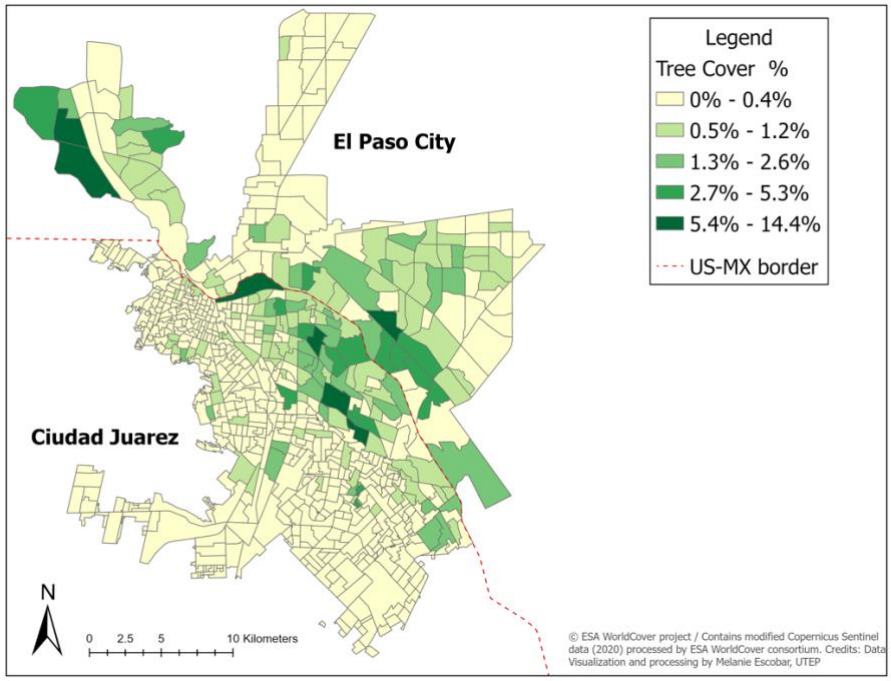


Figure 4.24 Paso Del Norte BSVI & UTC (PlanIT Geo)

Reflecting back to a figure of UTC coverage at Paso Del Norte allows for a comparative assessment of whether lower vulnerable populations within certain census tracts are associated with high tree coverage (Figure 4.24). According to the assessment of vulnerability in El Paso city, a lower vulnerability of populations lives in the northwest regions, which are areas within access to higher tree coverage (See Figure 4.5). UTC coverage on the map is indicated by a dark green hue, which indicates areas that are not necessarily experiencing higher levels of inequities, whereas census tracts close to the international border, and based on the UTC map, tend to have a lower proportion of UTC coverage, indicating that the site is of higher priority due to inequities relating to social and environmental factors as a whole. In Juarez, the UTC and BSVI match relatively well: fewer trees on the whole on the western fringes and most vulnerable populations. However, the UTC is not entirely consistent with BSVI in El Paso; for example, the northwest

has high UTC and low vulnerability, while Mission Valley is relatively high in UTC but also moderately to highly vulnerable.



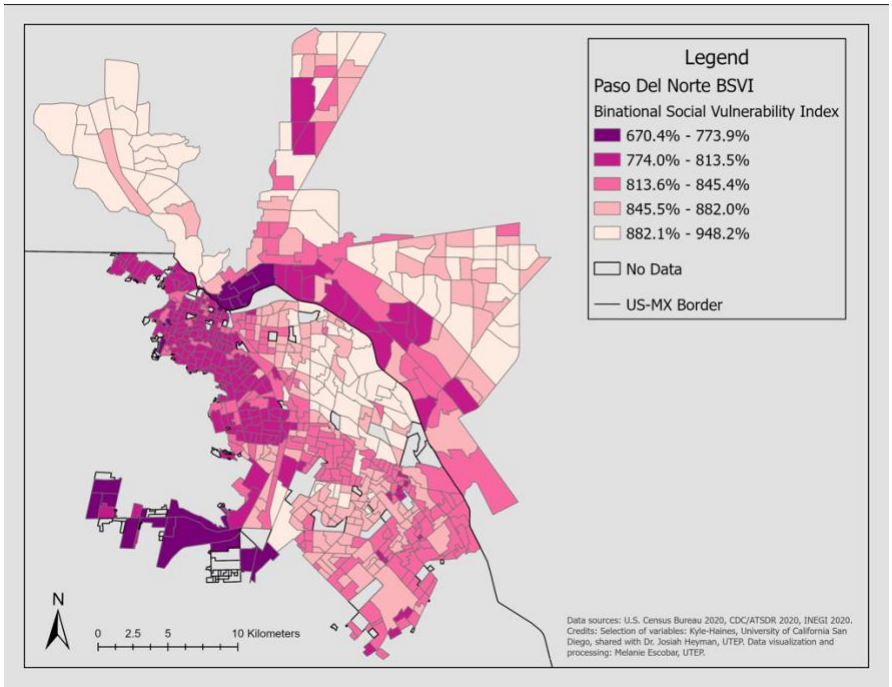


Figure 4.25 Paso Del Norte BSVI & UTC (WorldCover)

The social vulnerability of Ciudad Juarez is at its lowest at the east center across multiple census units near international ports, which is an area that has higher coverage of urban trees, which is reflected from both PlanIT Geo and WolrdCover maps of UTC. As shown in Figure 4.25, WorldCover does not have much tree coverage on its outer skirts, which is likely to be related to WorldCover's accuracy in North America; however, tree cover is the most accurate category compared to grassland (Kerchove et al., 2021). Being that it does not have a higher resolution to allow a better assessment of tree coverage, this still reflects how the outskirts of Ciudad Juarez have higher vulnerability. Thus, the outer census units reflect a double exposure to inequities due to the social status of the population and their relationship to urban form and UGI, such as UTC. However, areas with medium-high vulnerability do have higher-than-average access to tree coverage along the area that is closer to the border and northeast region of El Paso, which may indicate other urban or environmental factors that may be attributed to higher-than-average access to tree coverage in this region.

4.42 Uni-national Social Data

While the BSVI offers a visual representation of the population that should be prioritized for future tree-planting initiatives or climate resilience efforts, assessing a selection of uni-national social variables in relation to UTC is as important (See Appendix F for El Paso City & G for Ciudad Juarez). BSVI does not include many important variables because certain variables are only reported for one country; for instance, income characteristics that are measured in the United States do not exist for Ciudad Juarez (or anywhere in Mexico below the state level). Thus, Figures. 4.26 and others will allow an additional assessment of social variables to UTC across El Paso City and Ciudad Juarez. For El Paso City, an assessment of the CDC SVI, Income, Hispanic and Latino population, and themes of the CDC vulnerability index is

performed. For Mexico, an assessment of social lag and average education attainment allows us to consider distinct populations in UTC further.

Figure 4.26 is a bivariate map illustrating the relationship between the Hispanic or Latino Population and Urban Tree Canopy (UTC), which allows a visual examination of their correlation. In the map, areas with higher UTC are depicted in a range of light blue to green hues, while a range of light to dark blue hues represents the Hispanic or Latino population. According to the results, the Latino community has higher access to UTC in Mission Valley, which is depicted with a dark green hue. This finding contradicts the notion that minorities typically have limited access to UTC. However, it is important to consider that El Paso's population is predominantly minority, which influences the results, as there is a higher likelihood of UTC being present in these populated areas.

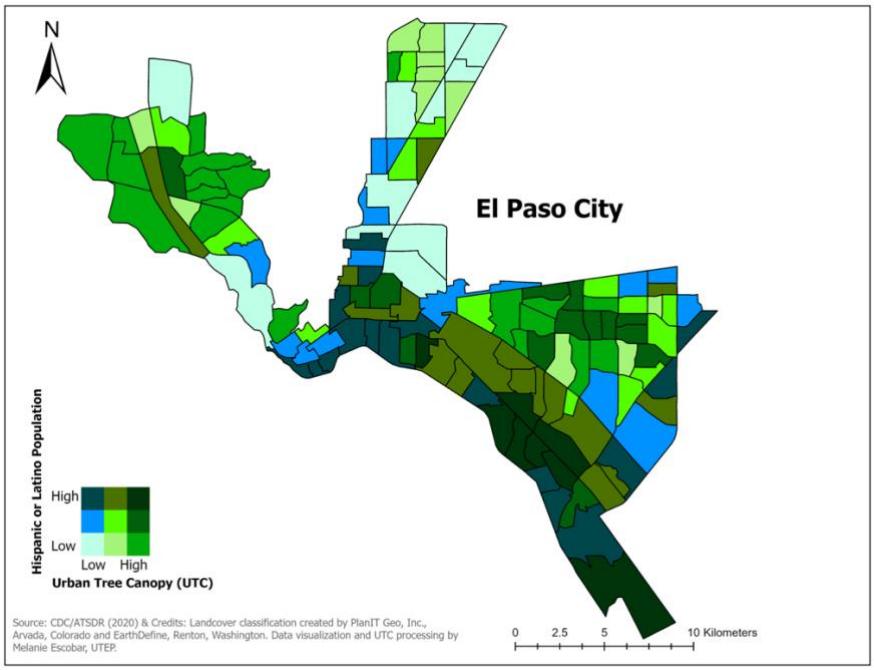


Figure 4.26 Bivariate Map of Hispanic or Latino Population Combined with UTC Using PlanIT Geo by Census Tracts in El Paso City

Figure 4.27 is a bivariate map of the distribution of individuals with speak English “well” or better alongside Urban Tree Canopy (UTC). UTC will range from low to high, where low is represented by a light orange to a dark green, and those who speak English “well” or better as light orange from light to a maroon. The northeast is an area that presents itself as a place where higher populations who speak English “well” reside, with a higher concentration of UTC as depicted in a dark green hue. At the same time, the central region within El Paso has higher minority populations (See Figure 2.6) and higher individuals with limited English proficiency. This observation further highlights populations with less ability to speak English well to lack trees.

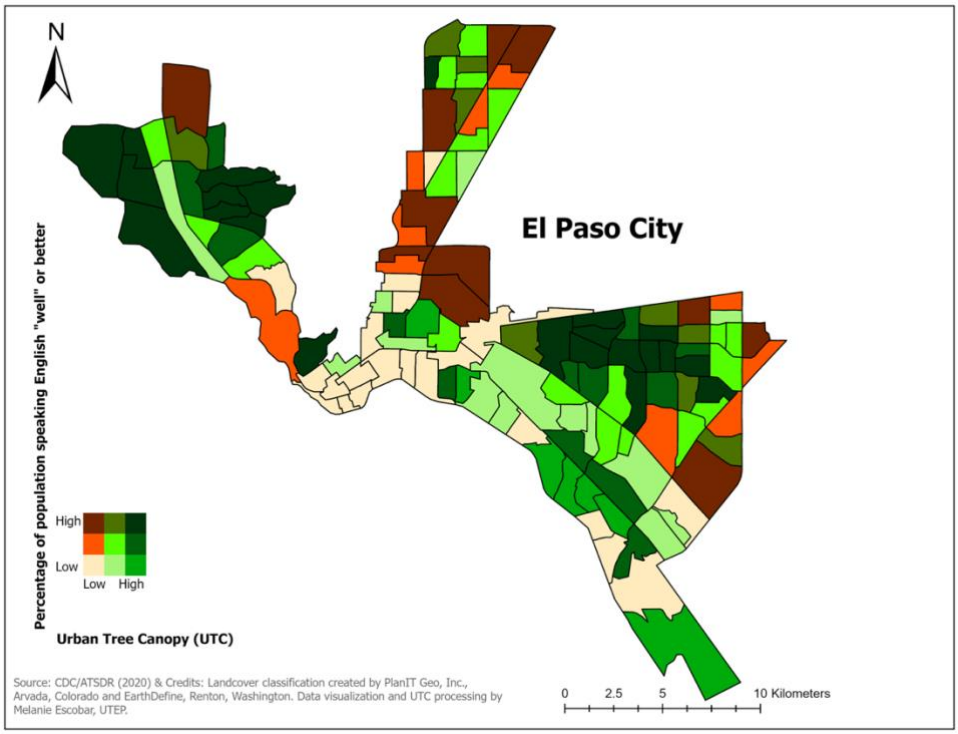


Figure 4.27 Bivariate Map of Persons Who Speak English “Less Than Well” Combined With UTC Using PlanIT Geo By Census Tracts In El Paso City

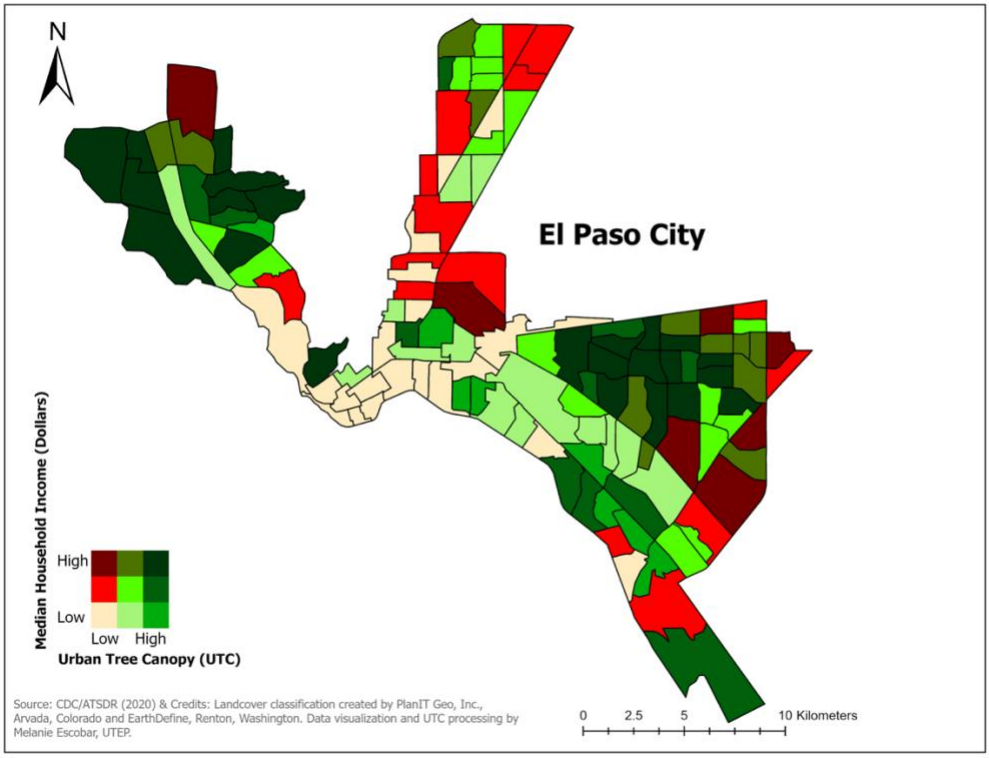


Figure 4.28 Bivariate Map of Household Incomes Combined with UTC Using Planit Geo By Census Tracts In El Paso

Figure 4.28 is a bivariate map of median household income (dollars) combined with UTC by census tracts in El Paso, an output created by using the landcover raster from PlanIT Geo. According to the figure, a substantial of higher-income areas are in the northwest region of El Paso and the east side. These areas also have higher access to tree coverage, which are areas that are not necessarily high-priority sites. However, compared to the downtown/ central areas of El Paso, a significantly low proportion of UTC and houses with a lower income is present, which is a relationship that is quite scattered throughout the city of El Paso.

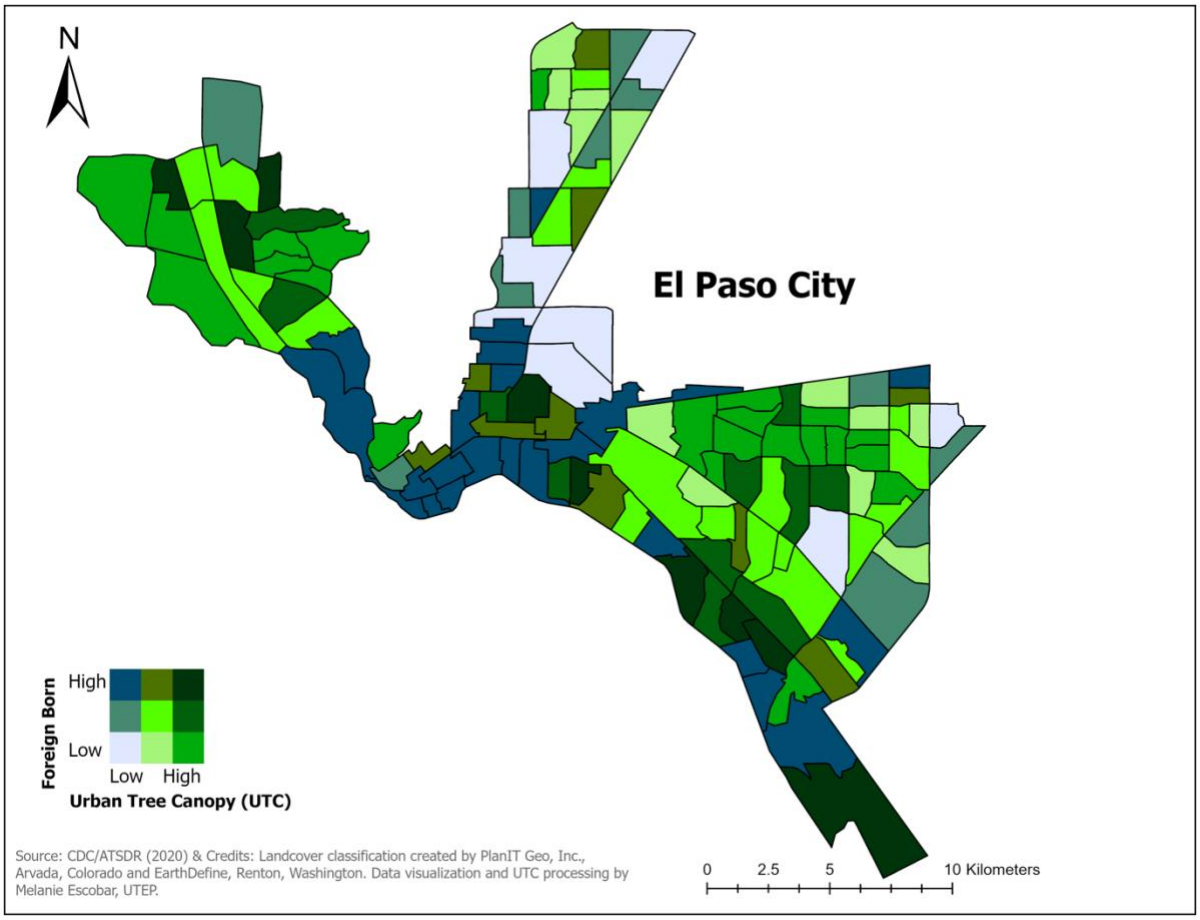


Figure 4.29 Bivariate Map of Foreign-Born and UTC Using PlanIT Geo By Census Tracts In El Paso City

Moreover, Figure 4.29 assesses the foreign-born population to UTC by each census tract in El Paso City. The figure presents a relationship that is quite similar to the relationship between Latino populations and UTC, which shows a low-high relationship between a foreign-born population and UTC. The northwest region of El Paso displays a pattern of higher income, lower populations of Latinos and foreign-born people, and a high distribution of tree canopies. However, census tracts that are further away from the central areas of El Paso, such as tracts closer to Fort Bliss, have a scattered relationship to foreign-born populations and UTC. These areas have very low populations of foreign-born residents and low UTC.

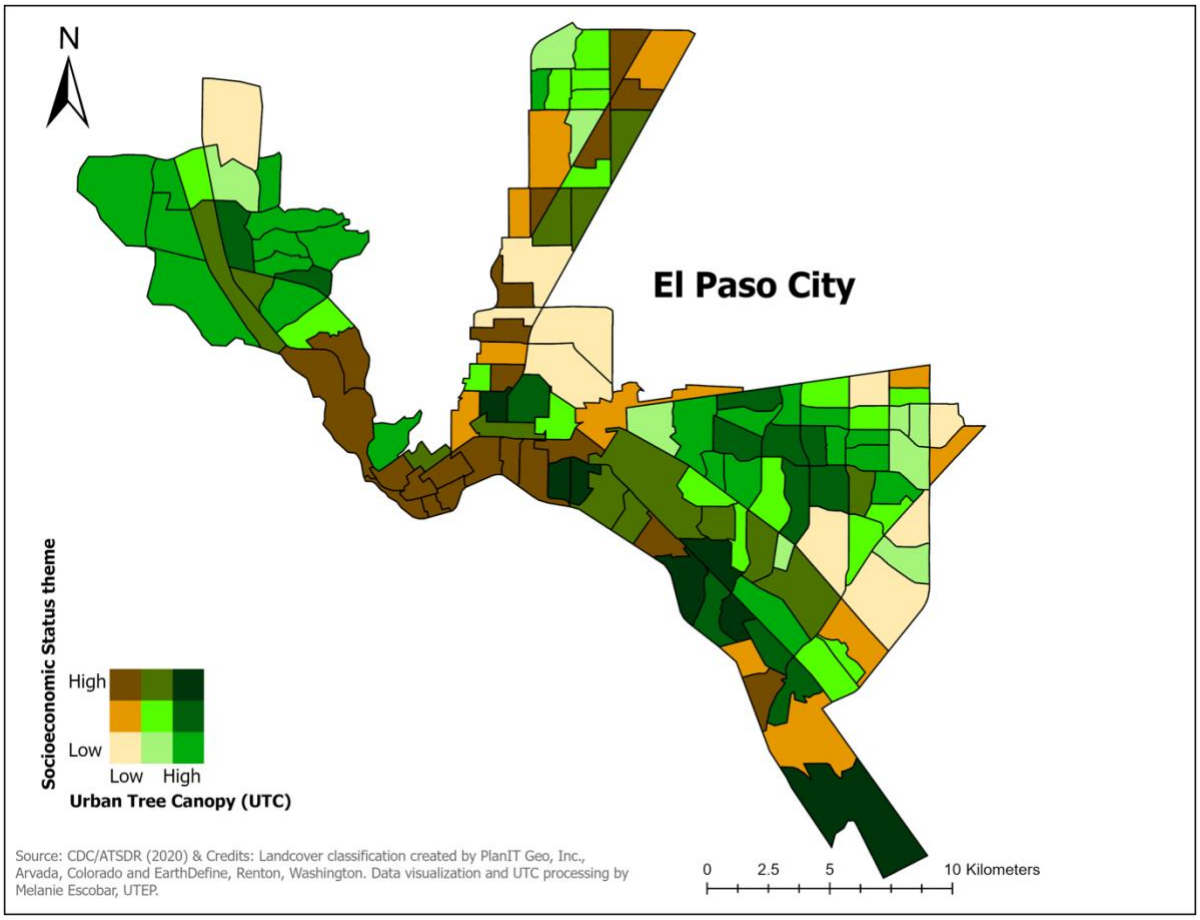


Figure 4.30 Bivariate Map of CDC's Socio-Economic Status Vulnerability Index Combined With UTC Using Planit Geo By Census Tracts In El Paso City

A selection of five social variables, interpreted through four themes, which are combined into an overall vulnerability index, is used to identify vulnerable populations between UTC and El Paso City. Figure 4.30 maps theme 1 of the CDC's social vulnerability index using socioeconomic status characteristics. The higher the score, the higher the vulnerability, and these populations are close to the U.S.-Mexico border. However, according to the relationship, a higher coverage of UTC and vulnerable populations due to socioeconomic status is in the Mission Valley area, which contradicts the notion that vulnerable populations have lower access to UTC. This pattern mirrors the patterns of Figure 4.31, which is a map of theme two from the

CDC SVI. Figure 4.31 combines housing characteristics to display an index of vulnerability and its relationship to UTC, which further confirms that one census tract at Mission Valley is a vulnerable residence due to its housing and socio-economic characteristics. However, there is one census tract above this region that has very low vulnerability and low access to UTC, which illustrates the complex dimensions of populations and their environment in El Paso City.

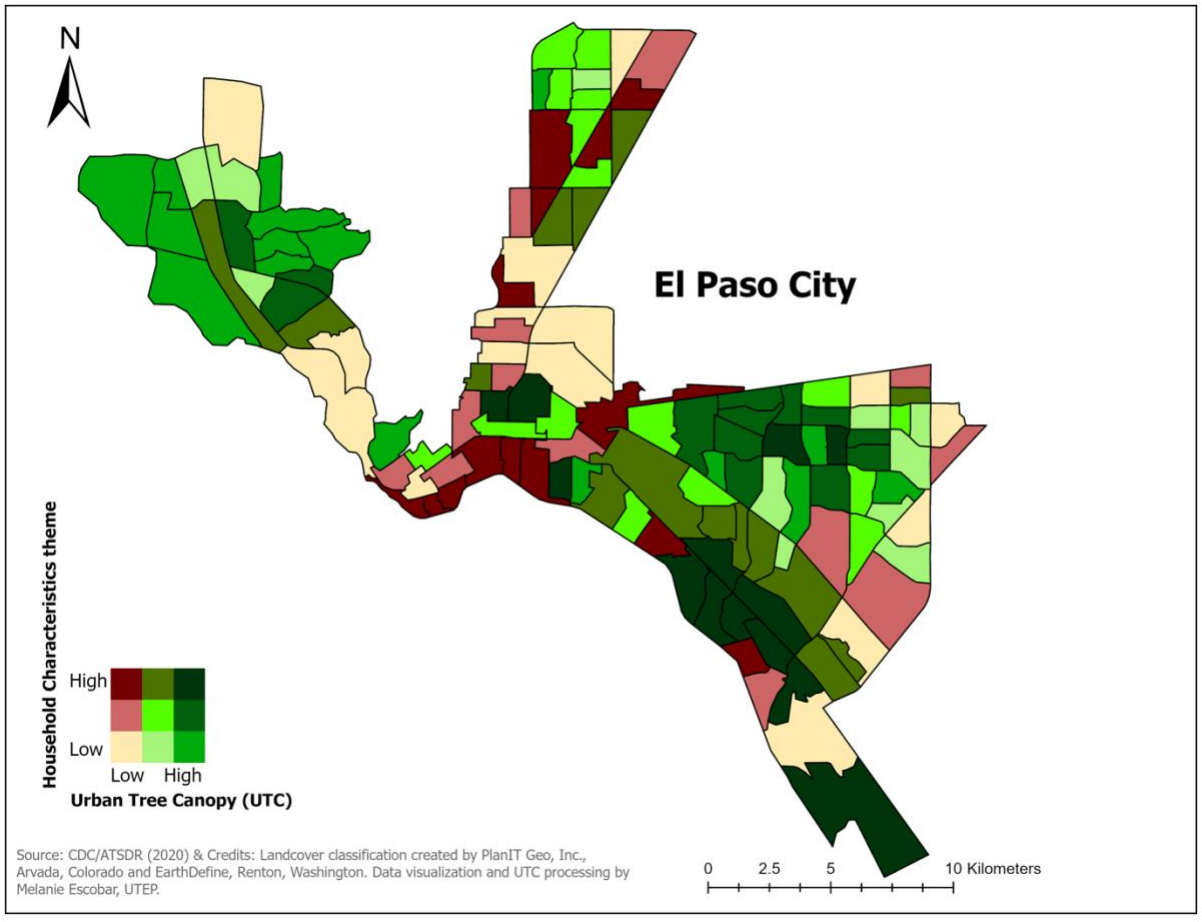


Figure 4.31 Bivariate Map of Housing Characteristics Vulnerability Index Combined with UTC Using PlanIT Geo by Census Tracts In El Paso City

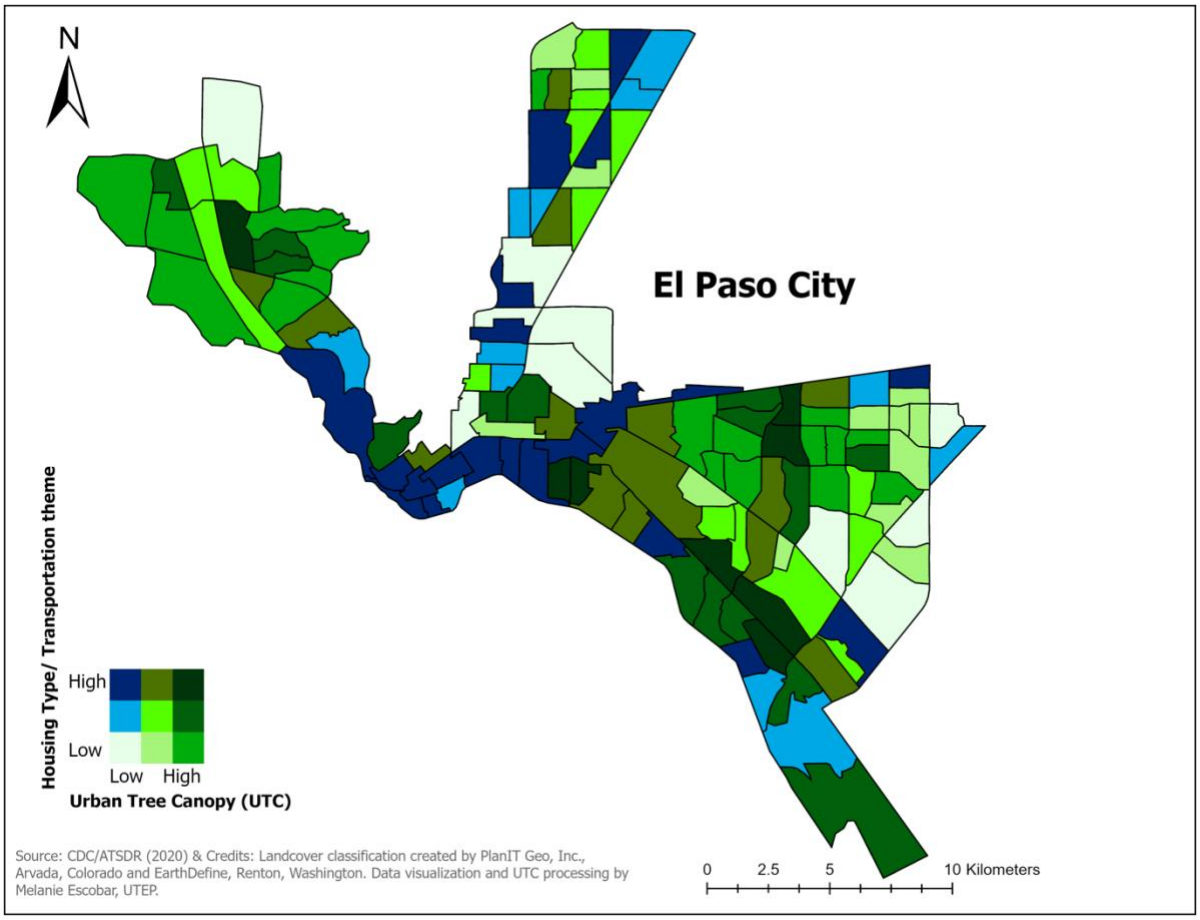
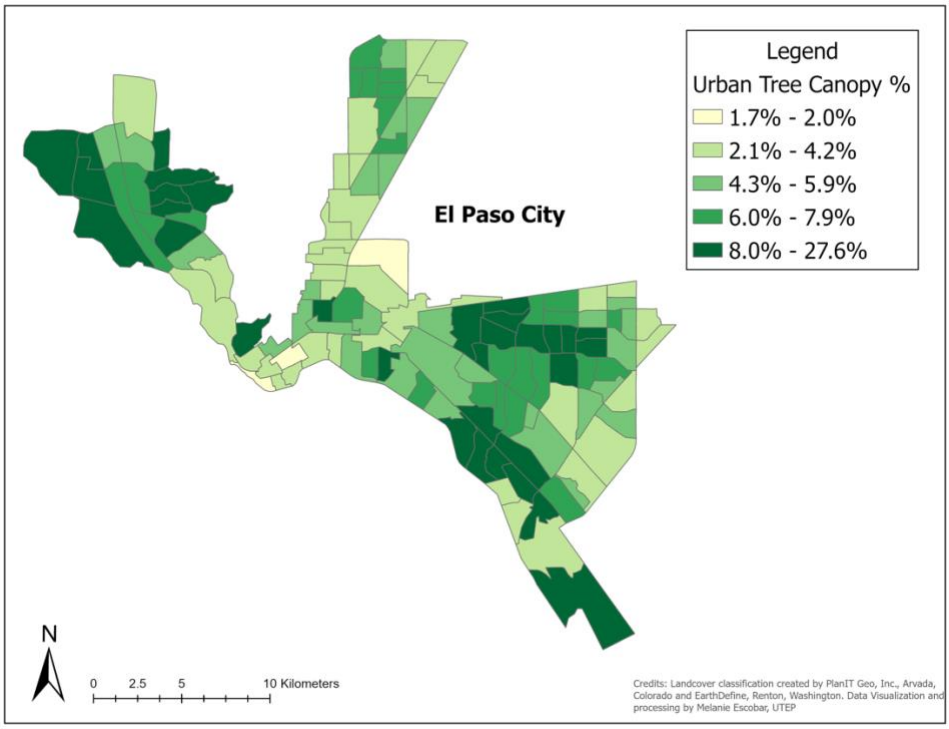


Figure 4.32 Bivariate Map of Vulnerability Due to Housing Types and Transportation Characteristics Combined With UTC Using PlanIT Geo At El Paso

Another theme of the CDC SVI is the characteristics of housing types and transportation, which is combined with UTC to create a bivariate map (See Figure 4.32). The relationship between the two variables is not as uniform as the previous themes. However, it is evident that low access to trees and lower vulnerability populations are scattered through El Paso city, which is represented by a very light hue of blue. This further allows for the assessment of vulnerable populations to UTC, which allows for further assessment of locations that are in need of additional assistance to address inequities.


El Paso City
Legend
Urban Tree Canopy %
1.7% - 2.0%
2.1% - 4.2%
4.3% - 5.9%
6.0% - 7.9%
8.0% - 27.6%
N
0 2.5 5 10 Kilometers
Credits: Landcover classification created by PlanIT Geo, Inc., Arvada, Colorado and EarthDefine, Renton, Washington. Data Visualization and processing by Melanie Escobar, UTEP

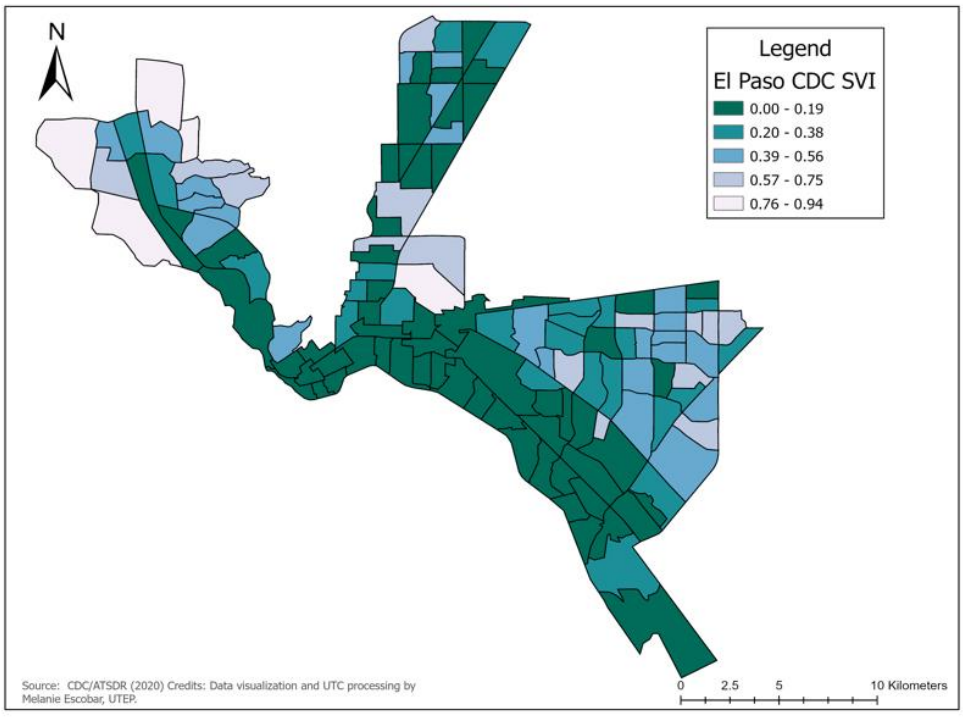
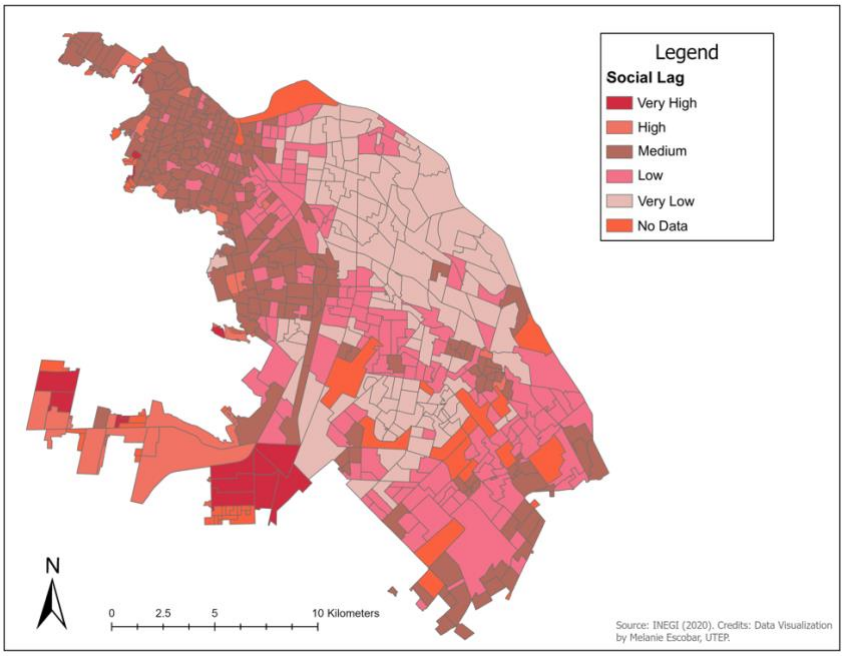

N
Legend
El Paso CDC SVI
0.00 - 0.19
0.20 - 0.38
0.39 - 0.56
0.57 - 0.75
0.76 - 0.94
Source: CDC/ATSDR (2020) Credits: Data visualization and UTC processing by Melanie Escobar, UTEP.
0 2.5 5 10 Kilometers

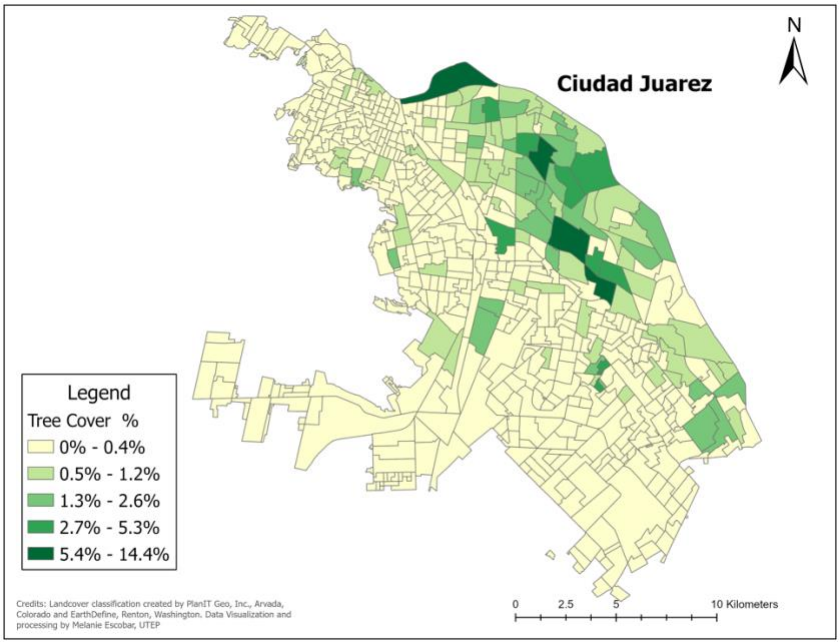
Figure 4.33 Overall CSV SVI Combined with UTV Using Planit Geo by Census Tracts In El Paso City

Figure 4.33 presents the CDC SVI, which combines all four themes of vulnerability to assess overall vulnerability due to various social, economic, or housing factors. The values were inverted, as shown in Figure 4.33. The lower the value, the higher the vulnerability, and the higher the value, the lower the vulnerability. Areas with higher vulnerability, which are areas with a dark green-blue hue, are areas that correspond to the lower distribution of UTC, aside from the census tract near Mission Valley. There are very low vulnerabilities in areas in the northwest and two census tracts that are close to Fort Bliss. Moreover, this assessment further reaffirms patterns of populations' social background and their relationship to trees. The results highlight a few contradictions to the notion that lower vulnerable populations have access to trees or higher populations of vulnerabilities have lower access to trees.

Figure 4.34 addresses a comparative assessment of the relationship between UTC and a selection of Ciudad Juarez populations. A bivariate map was not created due to a comprehensive assessment of all Ciudad Juarez populations. Figure 4.34 depicts the spatial distribution of social lag, a measure encompassing indicators related to access to social rights and household assets at various geographical levels. Higher concentrations of social lag are at the outskirts, while lower levels are closer to the border. The index of marginalization is a very similar but not identical measure, but it is not considered in this study due to the similarities and importance of the social lag in this research. Nonetheless, visualization shows the concentration of areas with the highest social lag are in the central regions running along the border (See Figure 4.34). These are basically the better-off areas of the city (given that Mexico does not directly measure income). This spatial pattern suggests populations with low access to basic house amenities on the west side are, in most cases, with fewer trees, and better-off areas that have low social lag are with

higher access to trees, which further emphasizes the idea that less vulnerable populations have higher access to benefits of tree canopies.





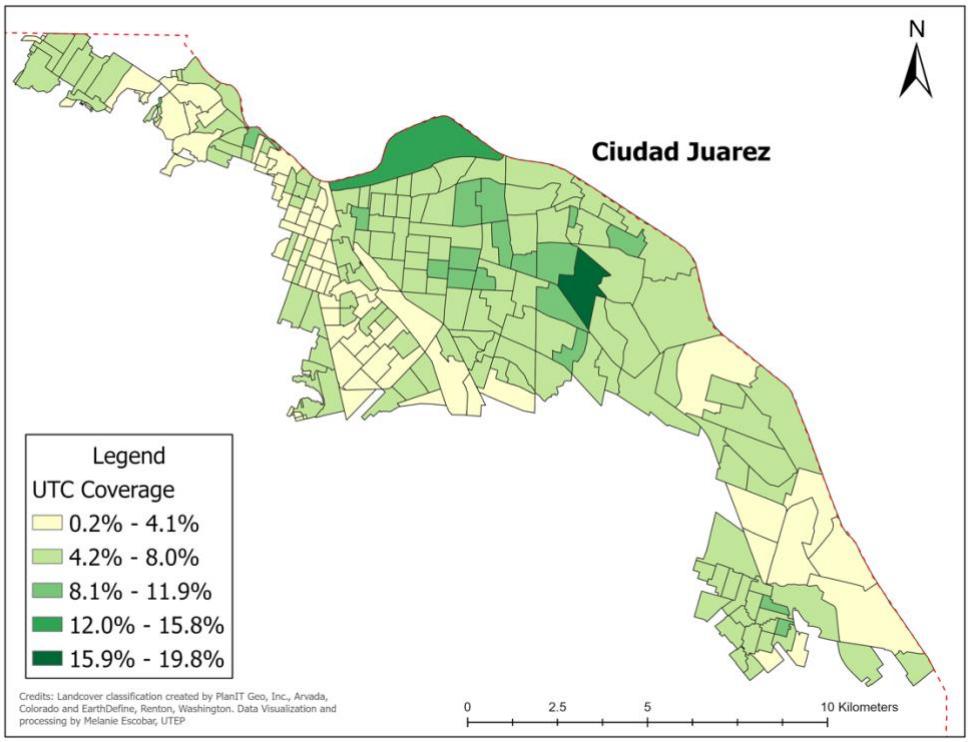
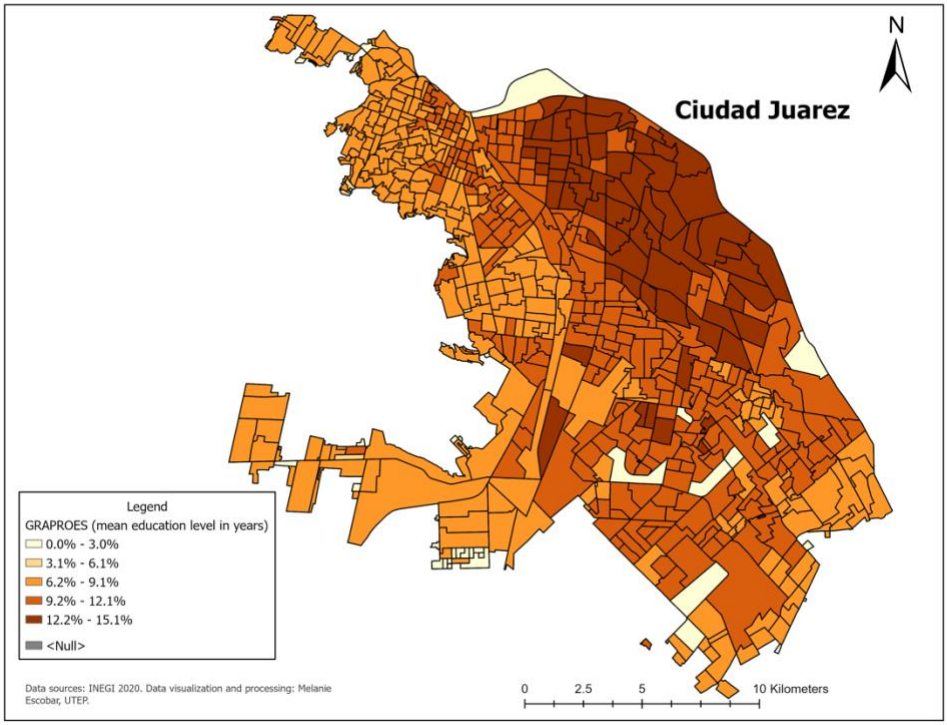
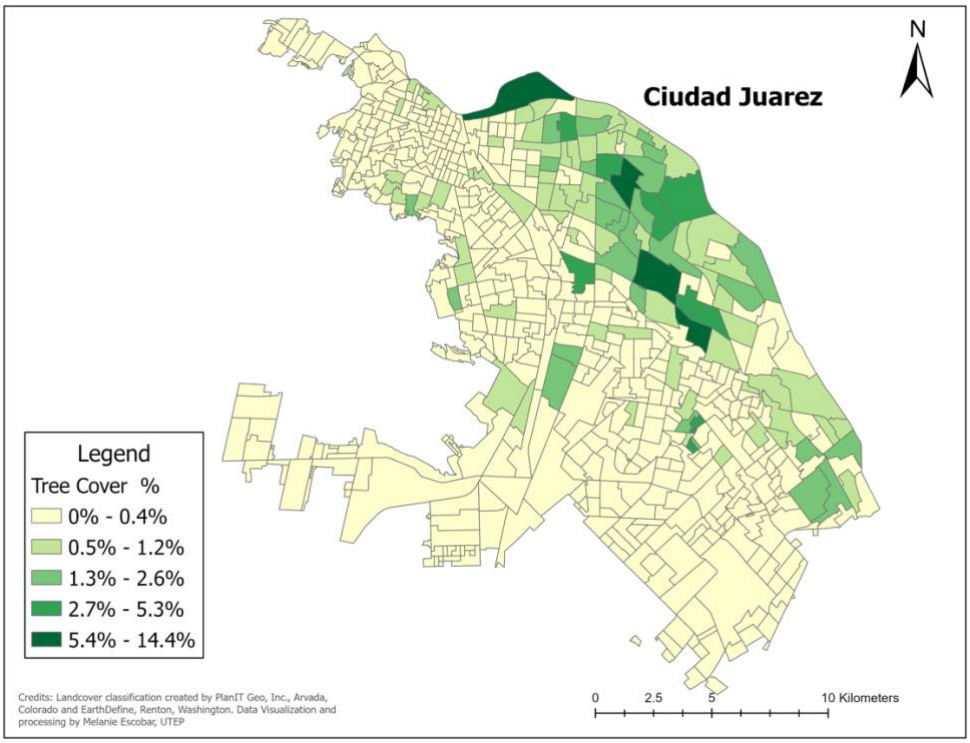


Figure 4.34 Social Lag & UTC Using PlanIT Geo in Ciudad Juarez

In Appendix N 17, a comparison between indigenous populations in Ciudad Juarez and tree canopies visualizes indigenous populations as very low throughout the city, comprising less than 7% of the total population. This observation suggests that indigenous communities are sparsely distributed across Ciudad Juarez, according to the Mexico census. The relationship between indigenous populations and tree canopies could be more precise. This assessment needs further assessment into the factors influencing the records of the distribution of indigenous communities and their access to green spaces within urban environments.


N
Ciudad Juarez
Legend
GRAPROES (mean education level in years)
0.0% - 3.0%
3.1% - 6.1%
6.2% - 9.1%
9.2% - 12.1%
12.2% - 15.1%
<Null>
Data sources: INEGI 2020. Data visualization and processing: Melanie Escobar, UTEP.
0 2.5 5 10 Kilometers


N
Ciudad Juarez
Legend
Tree Cover %
0% - 0.4%
0.5% - 1.2%
1.3% - 2.6%
2.7% - 5.3%
5.4% - 14.4%
Credits: Landcover classification created by PlanIT Geo, Inc., Arvada, Colorado and EarthDefine, Renton, Washington. Data Visualization and processing by Melanie Escobar, UTEP
0 2.5 5 10 Kilometers

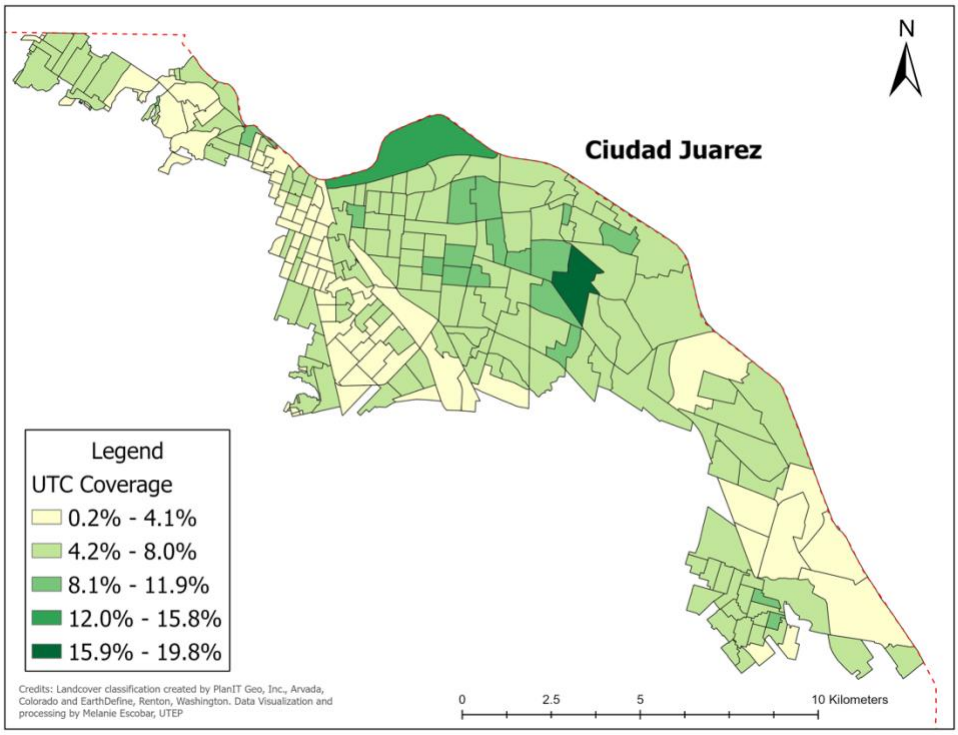


Figure 4.35 GRAPROES And UTC Using Planit Geo and World Cover In Ciudad Juarez

GRAPROES is the average number of years of schooling completed. The map reveals that areas near the city center or along the border tend to have higher levels of educational attainment (See Figure 4.35). These clearly overlap with higher UTC. Interestingly, one census tract on the GRAPROES map has a low mean education level in years, which is an area that has a lower distribution of tree coverage just across the border of Ciudad Juarez. This area requires further assessment to understand why it has a very low distribution despite its proximity to areas with moderate-higher than average UTC than the rest of Ciudad Juarez.

CHAPTER 5: DISCUSSION

5.1 Urban Morphologies Implications to Paso Del Norte Tree Cover

Understanding the urban morphologies of cities and U.S.-Mexico border cities holds significant importance in determining the relationship of urban form to the influences of distribution of tree coverage and available spaces for potential tree planting, especially in arid regions such as Paso Del Norte. By delving into urban form, we can gain a better understanding of how urban green infrastructure (UGI), including the UTC, is distributed or reduced within urban environments. Border scholars assert that the U.S.-Mexico border region is unique due to its rapid urban expansion and the presence of physical barriers to planning (Aguirre, 1993; Mubako et al., 2018), with urban foresters acknowledging its impact on tree distribution (Lin & Güneralp, 2024).

In light of this assessment, the utilization of landcover data offers insights into the distribution of impervious surfaces, which predominantly comprise residential and commercial properties. Given the shared ecological spaces in the Paso Del Norte study area, it becomes essential to assess urban spaces across boundaries and identify existing clusters. Thus, Geographic Information System (GIS) technology plays a pivotal role in visualizing these dynamics, contributing valuable insights for urban planners and researchers focused on tree equity (Schwartz et al., 2015; Riley & Gardiner, 2020; Locke et al., 2016; Greene et al., 2018).

To fill in the gaps identified in existing literature, the primary objective was to analyze the distribution of land cover across the Paso Del Norte region using two raster tiff files from the year 2020. This study aims to explore research related to land cover in cities beyond those within national borders, shifting the focus to cities situated adjacent to the U.S.-Mexico border. By

evaluating the distribution of land cover within the region, urban planners can assess the potential suitability for future tree coverage, thereby aiding in making informed decisions toward achieving an equitable distribution of tree canopies in an arid environment. The findings reveal a significant presence of open spaces in both regions, with Ciudad Juarez displaying multiple census units with bare or sparsely vegetated areas towards the outskirts of the city, encompassing approximately 56.3 square miles.

The integration of GIS data, particularly PlanITGeo landcover data, provides a comprehensive visualization of impervious surface density across various geographic units, shedding light on patterns of urban land cover and spatial relationships consistent with Tobler's law of geography. By assessing land coverage using categorical raster data, valuable insights into the distribution of impervious surfaces, non-canopy areas, and tree coverage within the Paso Del Norte region are gained. The findings concerning impervious surfaces across El Paso city illustrate how specific geographical features, such as Fort Bliss in the northeast and the Franklin Mountains to its left, shape the city's land cover and urban layout. While these features exert influence on urban surfaces, the distribution of impervious surfaces is complex, resulting in ambiguous outcomes, with several areas clustering towards the downtown region.

The findings regarding impervious surface clusters reaffirm Pena & Fuentes's (2007) observations on the extensive presence of impervious surfaces in Ciudad Juarez. Specifically, the results indicate high-high clusters along the international boundary and extend towards the southern border, with multiple census unit areas displaying impervious surface clustering. Additionally, Ciudad Juarez has a dominance of urban spaces over tree canopies, which further supports the idea that it is primarily an area where commercial and residential areas make up the

majority of the land cover (Peña & Fuentes, 2007). This clustering pattern closely parallels the distribution of impervious surfaces observed in El Paso city, suggesting similar trends across the border. The findings provide an understanding of the unique environmental landscape and urban design that influence sustainable tree-planting practices.

Additionally, the observation of impervious surface clusters in both cities highlights the need for strategic urban planning to mitigate the reduction of additional land cover categories and promote urban green infrastructure (UGI) development. Thus, these results support the notion that urban expansion patterns are influenced by geographical features and borders, with implications for land cover transformation along the U.S.-Mexico border region. As highlighted by Mubako et al. (2018), the evolution of land cover along the border zone illustrates the dynamic nature of urban development and the importance of adaptive planning strategies to address environmental challenges in rapidly growing urban areas.

5.2 Urban Tree Coverage Inequities

Border scholars assert that the international boundary between an ecologically tied community fosters asymmetrical relationships (Munoz-Melendez & Martinez-Pellegrini, 2022; Martinez, 2016). Furthermore, as indicated by Mubako et al. (2018), the ongoing urban expansion in the sister cities raises concerns regarding the preservation of open spaces. This poses challenges for urban planners and foresters seeking suitable areas for tree planting in a desert environment characterized by sedimentary soil, urban heat islands, and stormwater runoff issues. This thesis aims to assert further the importance of environmental governance across borders with regard to the aforementioned phenomenon. In the case of El Paso and Ciudad Juarez, an interesting binational comparison occurs; the two cities are placed within very similar

ecological settings but have different histories, economies, and social systems. It focuses on pushing for sustainable ecological considerations and urban design along the U.S.-Mexico border, especially concerning tree distribution and land cover.

The findings reveal a dense coverage of impervious surfaces in landcover distribution, posing challenges for environmental mitigation efforts such as stormwater management and urban heat islands. The urban morphology of the City of El Paso (2012), particularly its residential areas, is influenced by its historical connection to designs serving the automobile era rather than prioritizing pedestrian accessibility to recreational spaces. Therefore, the spatial distance to transportation infrastructure such as roads and highways influences access to green spaces and recreational areas, alongside factors like historical districts and annexation history. The relationship between UTC distribution and urban planning strategies highlights the importance of thinking about community spaces, especially by moving beyond distributional justice and instead focusing on social and institutional mechanisms that scholars such as Boone et al. (2009) suggest through their assessment of African American and white populations access to parks. Assessing tree canopies plays a crucial role in addressing these challenges and how urban design in border spaces leads to inequitable access.

Furthermore, Moran's I analysis gave an output of patterns such as urban morphology, especially in Ciudad Juarez, where urbanization is centered around the city core. Contrary to Peña & Fuentes' (2007) estimation of impervious surfaces in Ciudad Juarez being three-quarters, the land cover analysis using WorldCover results estimates a different density. The results indicate that approximately 52% of the area is covered by various infrastructures that are associated with built-up surfaces, which is a significantly lower estimation than Peña & Fuentes's

analysis of urban spaces. These spaces disrupt the distribution of green spaces and UTC, which are quite low within the high population density.

In arid cities like Paso Del Norte, tree inequities may exacerbate community prosperity under the challenges of urban heat, a phenomenon highlighted in Morales' thesis on the Intersection of Urban Heat Islands & Social Vulnerability Index (SVI) at border cities (Morales, 2023). However, strategically planting trees along residential properties, following further analysis of whether they are rented or owned, can offer numerous benefits. Not only can trees mitigate urban heat by providing shade and cooling effects, but they also enhance air quality, reduce energy costs, and contribute to overall well-being (Tieskens et al., 2022). Planning ahead as urbanization expands outward by prioritizing tree-planting initiatives in neighborhoods, an initiative already underway in El Paso, with higher social vulnerability, plays a vital role in establishing a resilient and sustainable urban environment for the future.

5.3 Binational Social Vulnerability Index

Addressing social vulnerability at a geographic scale has allowed researchers, communities, and urban planners to address vulnerable populations and their access to green spaces to build climate resiliency (Rosa et al., 2023) or preparedness for natural disasters. These approaches are beneficial to the U.S.-Mexico border region due to its complex relationship, which often conflicts with a sustainable approach to address hazards, a phenomenon that leaves a lack of a uniform perception of risk among border cities (Freimund et al., 2022). The lack of a comprehensive approach to understanding vulnerability in Paso Del Norte limits the region's ability to address environmental challenges that persist in the region.

An understanding of the region's social vulnerability from a binational perspective is necessary because it is a biophysical area where a large proportion of foreign-born or Latino populations reside, work, and study. Furthermore, given that the environmental landscape of U.S.-Mexico border cities is closely intertwined, an approach to creating a collaborative exchange of research, environmental assistance, and border operations is pertinent to enhance resiliency. Thus, integrating environmental frameworks and the concept of distributive justice furthers this discipline in regions such as the U.S.-Mexico border. Due to its hilly terrain, international border, and presence of maquiladoras, Ciudad Juarez's urban morphology is influenced by these factors. As a result of the presence of maquiladoras, a greater proportion of the landscape was devoted to residential areas to ensure workers were within proximity of their work (Peña & Fuentes, 2007). These areas are found to have a greater proportion of vulnerable populations, according to the construction of the BSVI in Paso Del Norte, which further agrees on the social makeup of Ciudad Juarez and its populations with lower access to resources.

Furthermore, in the city of El Paso, the BSVI demonstrates that areas that tend to be affluent or characterized to have higher access to tree canopies are less vulnerable. Among the most vulnerable populations of El Paso are those located directly across its sister city, Ciudad Juarez, where the international boundary divides, thus dividing access to trees due to their socioeconomic makeup and urban design. The overall highest vulnerability in Paso Del Norte is concentrated in Ciudad Juárez, a population located further from the border. The results further emphasize Fuentes' (2000) notion that there are low-income populations at the periphery, suggesting that those living closer to the border may benefit from access to employment, education, and other resources. Furthermore, the results reintroduce the impact of urban growth, which develops close to the international boundary, a notion that Herzog (2021) assesses through

the perspective of San Diego and Tijuana's relationship to urban development. Moreover, accessibility to the border for residents in Ciudad Juarez also allows them to have greater access to urban tree canopies.

To continue building a resilient region, Paso Del Norte will benefit from incorporating indexes such as the BSVI. This index exists in the San Diego–Tijuana region (Rosa et al., 2023), but because Paso Del Norte is one with arid conditions and has been expanding outward continuously, it serves to contribute to future urban planning efforts that create equitable access to resources. As a result of the concern for maintaining a greener environment, the BSVI may support resilient efforts that address climatology, urban heat islands, and UTC, which is the focus of the thesis.

5.4 Uni-national Vulnerability Variables

The results of this study visualize the socio-demographic landscape of El Paso City and its potential relationship with urban tree canopies (UTC). A pattern emerges when examining specific socio-demographic variables, for the Northwest region tends to have a lower social vulnerability due to its characteristic of being affluent. For instance, areas with high concentrations of crowded occupied homes, particularly near military installations, highlight the socio-economic dynamics shaping housing arrangements and community resilience (See Appendix N). Moreover, the prevalence of mobile homes in regions like Mission Valley, despite having higher than the average UTC coverage, introduces the complex relationship between housing and UGI (see Appendix N and Figure 4.31).

Demographic factors also play a significant role in shaping the distribution of UTC and vulnerability within El Paso City. Spatial variations in age, gender, and labor force participation

intersect with UTC coverage (See Appendix N), highlighting areas where certain demographic groups may have limited access to green spaces. Additionally, populations with distinct income levels may have a positive relationship with the availability of UTC, with higher-income areas exhibiting greater tree coverage (See Figure 4.28).

To further understand spatial distributions of demographics, Figures 4.34 through 4.35 provide a visualization of the socio-economic landscape of Ciudad Juarez. As shown in Appendix N17 and Figure 4.24, household size and social lag differ significantly between areas, with larger households and higher levels of social lag found along the outskirts. In comparison, smaller households and low levels of social lag are observed in areas closer to the border. Appendix N 15 illustrates the distribution of age groups with notable patterns emerging when considering proximity to the border and the outskirts.

The spatial distribution of these socio-economic variables has implications for urban planning and community development efforts. Areas with lower marginalization scores and higher social lag scores are areas the city should recognize when addressing inequities. Moreover, considering the demographic distribution of age groups and labor force activity can help prioritize areas for UTC implementation, ensuring equitable access to the environmental and health benefits provided by trees. Integrating socio-economic variables allows for future approaches to refine urban greening strategies, which will allow policymakers and planners to work towards creating a resilient and sustainable community in a binational region. A region that experiences an uneven risk of hazards (Grineski et al., 2012) or access to green spaces (Eldeb, 2013) will benefit from future research assessing the implications of urban form to equitable access to UGI.

5.5 Limitations

The study encountered limitations regarding the availability of data sources. While the PlanITGeo data source covered only a portion of Ciudad Juarez and El Paso City, the WorldCover land cover data source covers the entirety of the two regions and the world. The imagery available under NAIP does not capture all of Ciudad Juarez, for it only captures a portion across the international boundary. The lack of access to high orthoimage poses a limitation to having a finer and more comprehensive analysis of tree coverage across all AGEBs. The PlanITGeo data had a resolution of 0.6 meters, while the WorldCover data had a much coarser resolution of 8.6 meters. An assessment of the relationship between the two data sources was conducted by examining the percentage of land cover for each of the AGEBs. This analysis included an evaluation of various land cover types, as illustrated in Appendix M. The landcover data sources cannot be substituted for each other due to important differences, particularly for tree cover.

Furthermore, a limitation of the study is the inability to conduct regression analysis between Urban Tree Canopy (UTC) and select social variables due to the nature of time and appropriate skills to address spatially adjusted regressions. Moreover, a challenge arises from the census practices in Ciudad Juarez (AGEBs with zero or missing data) and the lack of mutual social data that corresponds across the border, which hinders the matching of additional census variables. The best-matched variables were used in the BSVI, and even here, there are limitations. Variables that do have rough BSVI comparability do not necessarily present a 100% comparability, such as education attainment. Ciudad Juarez measures education attainment after 15, while the United States measures education 18-25, or 25 and over. Although these variables

compliment the regions understanding of vulnerability, it does have its limitation to convey mutual understanding of a select age of the population at times.

CHAPTER 6: CONCLUSION

This study utilizes two landcover raster datasets obtained from different sources to analyze Paso Del Norte: one with a higher resolution obtained from PlanIT Geo and another with a coarser resolution imported from the European Space Agency called the "World Cover" open-source dataset, both from 2020. These datasets allowed an assessment of landcover distribution, specifically urban tree canopies across Paso Del Norte. Socio-demographic characteristics of Paso Del Norte came from the National Institute of Statistics and Geography (INEGI) for 2020 in Ciudad Juarez, focusing on the Basico Geo-Statistical Areas (AGEBs). For El Paso City, social data spanning from 2016 to 2020 were gathered from the U.S. Census Bureau's American Community Survey at the census tract level, alongside a similar process applied to the CDC's social vulnerability index. These datasets were processed to form the Binational Social Vulnerability Index, providing socio-demographic comparability across the border.

Using Geospatial Information Technology, which facilitates spatial analysis, this study was able to visualize the result of its objective, which was to assess inequitable access to tree coverage and evaluate vulnerable populations across Paso Del Norte statistically in 2020 using a set of social variables. The study first objective began with assessing land cover across the region using two datasets, shedding light on the density of various categories such as impervious surfaces, open areas, and, particularly, tree coverage. This initial analysis served as the foundation for understanding the distribution of land cover within the arid environment of Paso Del Norte. Furthermore, the study reaffirmed the observed urban morphology, which is prominently concentrated along the border, while also providing contradictions regarding the density of urban spaces in Ciudad Juarez (Peña & Fuentes, 2007).

The second objective focused on examining tree coverage using the landcover datasets and analyzing its distribution across census tracts. As demonstrated earlier in the literature review, tree coverage is influenced by various factors, which in turn impact its distribution. Additionally, the numerous benefits associated with tree canopies, as outlined in Table 3.1, emphasize their importance to communities and arid regions, such as Paso Del Norte. Studies indicate how urban tree canopy (UTC) can mitigate Urban Heat Islands, a phenomenon in El Paso City (Morales, 2023). By performing an assessment of UTC, this study expands the geographic scope of UTC research to the border communities, particularly along the U.S.-Mexico border, a region characterized by asymmetrical relationships (Munoz-Melendez, & Martinez-Pellegrini,2022). According to the analysis, UTC varies across the border, with El Paso having higher coverage, particularly in residential areas. At the same time, Ciudad Juarez registers one of its highest coverage near the international boundary, particularly around the Chamizal area. Thus, the study identifies potential priority sites for future consideration due to their access to UTC, which often falls below the recommended average of 15% advised by urban foresters in arid environments (Leahy, 2017).

Moreover, the study addresses the spatial distribution of residential or commercial areas exhibiting varying levels of Urban Tree Canopy (UTC) within El Paso City. The spatial distribution of buildings, streets, or access to amenities due to the period of their construction may influence the spatial distribution of UTC. Paso Del Norte's urban morphology is intertwined with its transportation systems, which are integral to border mobility and require further analysis to assess the impact on greenery and urban green infrastructure. Based on the findings, areas with a high concentration of trees, particularly those in the northeast, have greater access to amenities and resources for beautification, a sign of their ability to prioritize UGI, such as parks,

trees, pools, and recreational facilities like golf courses. However, Mission Valley does contradict many studies, for a heavily Latino populated area has an abundant of trees in comparison to other regions with high minorities. Nonetheless, census tracts with a lower UTC may require additional funds to implement beautification initiatives that may result in tree distribution or planting.

In contrast to studies focusing on a bivariate analysis of Urban Tree Canopy (UTC) and social data, this research visualizes the spatial distribution of vulnerability across Paso Del Norte. A recurring observation is that the northwest region of El Paso City exhibits higher median income levels, a larger labor force, and a lower proportion of foreign-born populations, indicating lower vulnerability. However, areas in proximity to the airport or Fort Bliss display low access to tree canopies alongside lower vulnerability, with the exception of a few census units. For Ciudad Juarez, the population with lower vulnerability is the ones residing across the border, which is directly across the highest vulnerable population of El Paso City. Thus, this spatial assessment lays the groundwork for future research to conduct regressions that facilitate a nuanced analysis of the relationship between UTC and vulnerable populations. As a result, the BSVI will enable third parties to further collaborate towards addressing how urban form, social demographics, urban tree canopy, and the period of urban design have contributed to vulnerability, as well as strategies for addressing such concerns.

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APPENDIX

A. El Paso City Census Tracts Percentages of Landcover Using PlanIT Geo

FIPS	Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy Over Impervious	Urban Tree Canopy
48141000106	9.29	16.04	65.38	0.00	5.84	2.80	0.66	6.50
48141000107	14.86	19.03	58.06	0.00	5.23	2.26	0.56	5.79
48141000108	8.52	46.72	38.16	0.00	2.70	3.62	0.28	2.98
48141000109	12.82	15.19	62.83	0.00	5.97	2.62	0.57	6.53
48141000110	8.78	12.52	69.38	0.00	6.07	2.14	1.11	7.18
48141000111	7.13	8.27	74.92	0.00	6.93	2.00	0.74	7.67
48141000112	11.58	12.13	66.50	0.00	6.49	2.68	0.61	7.10
48141000113	10.91	12.99	66.68	0.00	5.45	3.29	0.68	6.13
48141000114	15.76	30.19	44.54	0.17	3.54	5.49	0.31	3.84
48141000204	8.25	16.19	68.88	0.00	4.32	1.79	0.56	4.88
48141000205	9.40	17.92	67.03	0.00	3.73	1.16	0.76	4.50
48141000206	8.86	17.59	65.32	0.00	5.48	2.15	0.61	6.08
48141000207	8.40	18.02	68.07	0.00	3.67	1.40	0.44	4.11
48141000208	15.59	51.01	27.13	0.00	2.49	3.67	0.10	2.60
48141000301	11.96	18.64	62.76	0.00	4.40	1.67	0.56	4.96
48141000302	10.33	15.67	66.37	0.00	5.39	1.82	0.42	5.80
48141000403	10.92	24.12	58.33	0.00	3.01	3.42	0.21	3.21
48141000404	4.88	20.46	70.29	0.00	3.24	0.58	0.55	3.79
48141000600	3.02	18.51	71.15	0.00	3.02	4.08	0.23	3.25
48141000800	2.30	15.20	77.51	0.00	3.44	1.07	0.48	3.92
48141000901	2.53	13.36	79.14	0.00	3.27	1.37	0.32	3.60
48141001001	1.68	13.18	78.79	0.00	4.15	1.84	0.36	4.51
48141001002	1.58	13.98	79.01	0.16	3.60	1.39	0.29	3.88
48141001107	11.36	7.26	64.88	0.00	9.77	5.92	0.81	10.58
48141001109	20.57	7.23	52.40	0.00	13.89	4.56	1.36	15.25
48141001112	8.91	6.97	69.44	0.00	9.94	3.70	1.03	10.98
48141001114	3.43	24.49	61.98	0.00	5.10	4.32	0.68	5.78
48141001115	0.53	57.97	32.88	0.00	3.52	4.64	0.45	3.97
48141001116	5.05	25.31	58.36	0.00	5.70	5.04	0.53	6.23
48141001117	9.58	13.87	61.20	0.00	7.48	7.11	0.75	8.24
48141001118	8.58	9.46	70.80	0.00	6.75	3.42	1.00	7.74
48141001119	8.87	8.69	67.34	0.00	8.22	5.94	0.93	9.15
48141001202	15.68	18.94	51.65	0.00	7.26	5.91	0.56	7.82

48141001204	9.76	20.79	59.34	0.12	5.94	3.57	0.48	6.43
48141001301	29.22	7.40	32.82	2.72	23.34	2.13	2.36	25.71
48141001302	28.61	5.75	34.11	1.52	24.46	2.37	3.19	27.64
48141001400	0.63	61.81	25.16	2.46	3.72	6.07	0.15	3.87
48141001502	1.90	18.72	63.62	0.00	7.76	6.58	1.43	9.19
48141001600	0.70	7.89	86.52	0.00	2.63	1.22	1.03	3.66
48141001700	0.51	0.98	94.62	0.00	1.43	0.04	2.41	3.85
48141001800	0.60	11.83	83.30	0.95	1.36	1.41	0.54	1.90
48141001900	0.68	2.08	91.95	1.79	1.61	0.03	1.85	3.47
48141002000	2.28	9.42	83.84	1.30	1.77	0.59	0.79	2.57
48141002100	0.28	5.03	92.40	0.15	1.32	0.29	0.54	1.86
48141002202	0.68	3.96	90.14	0.00	3.06	0.56	1.59	4.65
48141002300	1.68	12.84	79.10	0.00	3.77	1.98	0.63	4.40
48141002400	5.64	13.00	70.34	0.00	8.32	1.97	0.73	9.05
48141002500	2.02	13.31	75.35	0.00	6.60	1.86	0.86	7.46
48141002600	1.21	20.71	71.11	0.11	4.76	1.64	0.46	5.22
48141002800	6.31	9.49	78.27	1.67	3.34	0.40	0.51	3.86
48141002900	0.38	16.74	78.71	1.17	2.21	0.39	0.39	2.60
48141003000	3.77	27.72	61.83	1.37	3.77	1.09	0.45	4.22
48141003100	7.90	14.44	67.96	0.20	6.82	2.05	0.63	7.45
48141003200	4.23	11.28	80.05	0.38	2.82	0.81	0.43	3.25
48141003300	4.63	13.59	73.25	0.00	5.35	2.70	0.48	5.82
48141003402	3.06	10.71	82.18	0.00	2.62	0.80	0.63	3.24
48141003403	7.21	9.01	77.76	0.00	4.29	1.11	0.61	4.90
48141003404	14.06	5.41	68.96	0.20	8.69	1.70	0.98	9.67
48141003501	6.36	24.44	61.66	0.37	4.59	2.14	0.46	5.05
48141003502	16.08	15.56	50.25	0.25	14.38	2.41	1.07	15.45
48141003601	12.83	8.84	62.87	0.25	11.50	2.70	1.00	12.50
48141003602	30.05	20.63	35.38	7.42	4.88	1.23	0.41	5.29
48141003701	11.85	22.85	56.00	0.51	5.96	2.33	0.50	6.46
48141003702	10.60	24.77	57.68	0.66	3.90	1.93	0.46	4.36
48141003801	12.10	26.19	50.62	0.99	7.49	1.86	0.75	8.24
48141003803	17.57	26.84	43.00	0.80	8.87	2.12	0.80	9.67
48141003804	15.04	15.05	54.58	0.41	11.55	2.22	1.16	12.71
48141003901	14.18	22.86	47.92	0.77	11.16	2.33	0.79	11.95
48141003902	18.15	29.31	41.87	0.34	7.44	2.36	0.54	7.97
48141003904	11.29	27.65	54.77	0.82	3.03	2.14	0.31	3.34
48141003905	12.78	40.14	38.27	0.84	3.47	4.09	0.40	3.88
48141004004	12.88	17.84	59.43	0.13	6.50	2.77	0.44	6.94
48141004005	13.83	35.03	44.09	0.44	3.66	2.71	0.23	3.89
48141004007	11.70	15.10	66.15	0.24	4.95	1.31	0.55	5.50

48141004008	12.07	34.50	45.67	0.01	2.87	4.64	0.23	3.11
48141004103	10.46	25.23	55.20	0.00	5.40	3.31	0.40	5.81
48141004104	18.56	21.34	45.13	0.24	11.35	2.73	0.65	12.00
48141004105	10.89	15.08	64.86	0.00	6.12	2.34	0.70	6.82
48141004106	9.53	18.93	63.00	0.00	6.11	1.79	0.65	6.76
48141004107	4.26	12.06	76.61	0.00	4.72	1.64	0.71	5.44
48141004201	7.08	16.54	66.00	0.00	6.81	2.99	0.58	7.39
48141004202	10.49	16.15	66.20	0.00	4.84	1.80	0.53	5.37
48141004303	7.91	7.80	72.11	0.00	8.50	2.68	1.00	9.50
48141004307	13.46	8.55	65.50	0.12	9.39	2.07	0.91	10.30
48141004309	3.36	12.11	80.04	0.07	2.86	1.04	0.51	3.37
48141004310	6.89	11.13	71.96	0.00	6.88	2.05	1.09	7.97
48141004311	11.42	5.58	69.44	0.00	9.76	2.33	1.46	11.23
48141004312	5.38	6.66	79.87	0.00	5.78	1.36	0.95	6.73
48141004313	12.39	8.38	70.39	0.00	6.63	1.23	0.98	7.61
48141004314	5.45	10.89	74.78	0.05	6.46	1.59	0.77	7.24
48141004316	6.88	18.67	68.14	0.03	4.13	1.56	0.60	4.72
48141004317	4.19	9.51	75.24	0.00	7.54	2.08	1.45	8.99
48141004318	7.05	7.87	74.87	0.10	6.94	2.24	0.93	7.87
48141004319	8.54	9.62	72.09	0.00	7.18	1.94	0.64	7.82
48141004320	5.80	11.66	75.49	0.00	4.58	1.86	0.61	5.20
48141010102	7.28	32.74	57.87	0.12	1.55	0.25	0.19	1.74
48141010103	7.64	37.26	51.63	0.00	2.37	0.73	0.36	2.74
48141010217	12.36	9.22	67.40	0.00	7.44	2.78	0.79	8.24
48141010225	21.31	20.56	46.93	0.01	5.26	5.48	0.45	5.71
48141010226	20.40	26.78	42.56	0.00	2.66	7.26	0.33	2.99
48141010227	13.33	21.32	55.02	0.00	4.91	4.91	0.51	5.42
48141010229	37.73	14.48	33.38	1.37	9.62	1.87	1.54	11.16
48141010230	24.48	13.71	45.10	2.65	10.35	2.77	0.94	11.29
48141010303	8.01	10.91	70.98	0.00	7.03	2.28	0.78	7.81
48141010307	8.29	11.64	69.77	0.00	7.18	2.21	0.92	8.09
48141010311	6.94	15.45	68.95	0.00	5.97	2.05	0.64	6.62
48141010312	6.69	11.04	72.66	0.00	6.82	2.17	0.62	7.44
48141010316	7.46	10.47	71.13	0.00	7.48	2.74	0.73	8.21
48141010317	5.53	7.32	76.64	0.00	7.44	2.13	0.95	8.39
48141010322	5.08	20.64	69.62	0.00	3.10	1.11	0.45	3.55
48141010323	8.50	14.51	69.70	0.00	5.07	1.80	0.43	5.50
48141010326	6.26	9.12	73.30	0.00	8.57	1.86	0.90	9.47
48141010327	5.84	9.60	74.71	0.00	7.49	1.63	0.73	8.22
48141010328	8.24	38.22	45.96	0.00	4.96	2.17	0.44	5.40
48141010329	7.75	23.75	62.61	0.00	3.50	1.93	0.46	3.96

48141010336	7.25	22.26	64.74	0.03	2.89	2.49	0.34	3.22
48141010337	8.70	16.64	67.06	0.05	4.94	2.13	0.48	5.42
48141010338	5.22	15.80	72.99	0.03	3.53	2.01	0.42	3.95
48141010348	8.42	18.11	65.71	0.00	5.22	2.10	0.44	5.66
48141010349	6.82	9.75	73.59	0.00	6.83	2.47	0.54	7.37
48141010350	7.69	12.50	73.09	0.00	4.79	1.44	0.49	5.28
48141010351	5.12	34.87	53.29	0.00	2.85	3.73	0.14	2.99
48141010352	7.44	17.69	70.29	0.00	3.04	1.32	0.22	3.26
48141010401	39.73	25.73	16.19	2.27	9.72	6.08	0.28	10.00
48141010601	1.33	48.58	44.66	0.00	2.25	3.05	0.14	2.38
48141010602	18.93	37.85	37.83	0.21	2.83	2.20	0.15	2.98

B. El Paso City Census Tracts Landcover Percentages Using Worldcover

FIPS	Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare / Sparse Vegetation	Water Bodies	Herbaceous Wetlands
48141000106	0.25	1.85	0.61	0.00	65.31	31.98	0.00	0.00
48141000107	0.05	1.65	5.37	0.00	62.59	30.34	0.00	0.00
48141000108	0.02	7.48	0.29	0.01	31.45	60.60	0.13	0.00
48141000109	0.16	1.29	1.46	0.00	69.12	27.97	0.00	0.00
48141000110	0.24	1.15	0.17	0.00	75.09	23.36	0.00	0.00
48141000111	0.91	0.52	2.36	0.00	73.27	22.95	0.00	0.00
48141000112	0.16	2.17	1.01	0.00	71.23	25.43	0.00	0.00
48141000113	0.18	2.81	0.64	0.00	74.57	21.80	0.00	0.00
48141000114	0.08	21.52	2.68	0.00	38.12	37.49	0.11	0.00
48141000204	0.11	0.41	1.34	0.00	66.06	32.08	0.00	0.00
48141000205	0.33	1.82	1.51	0.00	63.96	32.38	0.00	0.00
48141000206	0.05	0.22	0.41	0.00	69.00	30.32	0.00	0.00
48141000207	0.06	1.73	2.37	0.06	60.52	35.26	0.00	0.00
48141000208	0.01	7.49	6.82	0.29	20.76	63.40	1.23	0.00
48141000301	0.10	3.42	4.15	0.02	60.17	32.14	0.00	0.00
48141000302	0.12	0.60	4.54	0.00	62.30	32.44	0.00	0.00
48141000403	0.02	6.64	1.42	0.00	58.47	33.45	0.00	0.00
48141000404	0.40	1.07	0.34	0.00	58.23	39.96	0.00	0.00
48141000600	0.16	6.96	0.52	0.00	62.62	29.75	0.00	0.00
48141000800	0.02	0.77	1.01	0.00	69.41	28.48	0.31	0.00
48141000901	0.01	0.36	1.72	0.00	69.59	28.32	0.00	0.00
48141001001	0.01	0.73	0.83	0.00	70.72	27.72	0.00	0.00
48141001002	0.00	0.31	0.43	0.02	68.35	30.89	0.00	0.00

48141001107	1.33	7.30	0.50	0.00	66.72	24.15	0.00	0.00
48141001109	3.95	8.35	11.94	0.00	57.64	18.13	0.00	0.00
48141001112	0.77	1.89	0.02	0.02	71.02	26.26	0.03	0.00
48141001114	0.67	9.69	1.84	0.01	57.56	30.23	0.00	0.00
48141001115	0.56	9.64	0.30	0.00	28.42	61.08	0.00	0.00
48141001116	0.55	8.17	0.08	0.00	55.91	35.29	0.00	0.00
48141001117	0.55	11.86	1.08	0.00	59.93	26.60	0.00	0.00
48141001118	1.03	6.03	1.80	0.00	68.17	22.98	0.00	0.00
48141001119	0.51	9.15	0.01	0.00	63.64	26.24	0.44	0.00
48141001202	0.23	13.76	0.81	0.07	44.25	38.78	2.11	0.00
48141001204	0.19	5.53	0.22	0.00	52.58	39.34	2.13	0.01
48141001301	13.30	17.72	3.46	3.09	40.56	21.49	0.38	0.00
48141001302	14.37	12.06	8.84	1.00	40.58	22.29	0.86	0.00
48141001400	0.15	8.97	0.23	0.01	27.81	60.17	2.66	0.00
48141001502	1.77	14.19	0.64	0.00	68.33	15.07	0.00	0.00
48141001600	0.13	0.98	0.20	0.00	81.33	17.01	0.36	0.00
48141001700	0.77	0.28	0.85	0.00	83.97	14.13	0.00	0.00
48141001800	0.11	2.42	0.05	0.00	77.38	19.60	0.45	0.00
48141001900	0.50	0.43	0.01	0.00	83.64	15.42	0.00	0.00
48141002000	0.10	0.61	1.10	0.11	68.93	29.15	0.00	0.00
48141002100	0.03	0.15	0.00	0.00	75.78	24.03	0.00	0.00
48141002202	0.04	0.43	0.07	0.00	81.02	18.45	0.00	0.00
48141002300	0.10	1.35	0.65	0.04	71.29	26.42	0.15	0.00
48141002400	1.20	4.36	3.43	0.00	64.30	26.70	0.00	0.00
48141002500	0.78	0.82	0.54	0.00	74.41	23.45	0.00	0.00
48141002600	0.19	3.36	1.20	0.00	72.70	21.90	0.65	0.00
48141002800	0.08	1.68	4.49	0.00	72.57	21.13	0.04	0.00
48141002900	0.01	0.01	0.00	0.00	78.68	21.30	0.00	0.00
48141003000	0.56	4.05	2.05	0.04	58.22	35.09	0.00	0.00
48141003100	1.39	1.64	1.06	0.01	64.17	31.73	0.00	0.00
48141003200	0.20	0.17	1.04	0.02	72.86	25.31	0.40	0.00
48141003300	0.07	0.34	0.03	0.00	73.17	26.39	0.00	0.00
48141003402	0.10	0.11	0.34	0.01	72.17	27.27	0.00	0.00
48141003403	0.25	0.75	2.00	0.01	73.45	23.54	0.00	0.00
48141003404	1.16	1.01	11.65	0.00	68.17	17.94	0.06	0.00
48141003501	2.21	3.23	0.31	0.00	54.93	39.31	0.00	0.00
48141003502	7.06	5.25	0.34	0.00	54.97	32.37	0.00	0.00
48141003601	3.94	3.09	0.18	0.00	66.08	26.67	0.04	0.00

48141003602	0.47	4.80	20.85	0.04	34.67	32.73	6.44	0.00
48141003701	0.80	1.31	0.93	0.12	54.65	42.18	0.00	0.00
48141003702	0.24	1.92	0.40	0.17	50.26	45.97	1.05	0.00
48141003801	2.25	2.85	2.46	0.38	52.11	39.95	0.00	0.00
48141003803	2.89	3.27	4.56	0.38	42.17	46.73	0.00	0.00
48141003804	4.28	2.50	0.61	0.14	53.93	38.54	0.00	0.00
48141003901	3.03	3.90	0.91	0.15	48.39	43.62	0.00	0.00
48141003902	3.11	12.46	3.92	0.50	40.98	39.04	0.00	0.00
48141003904	0.05	1.02	2.71	0.06	44.22	51.95	0.00	0.00
48141003905	0.02	4.05	2.19	1.47	37.80	54.47	0.00	0.00
48141004004	0.63	2.34	0.64	0.02	51.45	44.92	0.00	0.00
48141004005	0.26	6.05	0.42	1.89	35.17	56.21	0.00	0.00
48141004007	0.48	0.80	3.52	0.00	59.61	35.59	0.00	0.00
48141004008	0.03	8.42	4.87	1.25	33.64	49.22	2.56	0.00
48141004103	0.87	8.23	1.64	0.48	40.16	48.62	0.00	0.00
48141004104	3.79	8.37	2.83	0.33	41.21	43.47	0.00	0.00
48141004105	0.78	1.77	1.23	0.37	59.34	36.52	0.00	0.00
48141004106	0.90	1.75	2.37	0.09	56.16	38.73	0.00	0.00
48141004107	0.11	0.25	0.02	0.16	61.62	37.84	0.00	0.00
48141004201	0.16	0.25	0.38	0.07	62.46	36.68	0.00	0.00
48141004202	0.44	2.35	1.08	0.14	60.88	30.21	4.91	0.00
48141004303	0.62	0.49	0.83	0.00	76.21	21.85	0.00	0.00
48141004307	1.72	5.37	3.04	0.00	63.03	26.44	0.40	0.00
48141004309	0.24	0.33	0.09	0.00	63.89	35.45	0.00	0.00
48141004310	0.31	0.63	0.05	0.00	73.42	24.29	1.30	0.00
48141004311	1.34	1.97	5.44	0.00	71.84	19.40	0.01	0.00
48141004312	0.82	0.50	1.51	0.00	72.72	24.45	0.00	0.00
48141004313	1.86	5.28	4.10	0.01	62.92	25.83	0.00	0.00
48141004314	0.42	0.32	0.49	0.00	57.83	40.93	0.00	0.00
48141004316	0.28	0.53	2.84	0.02	64.88	31.24	0.21	0.00
48141004317	1.31	1.12	0.01	0.00	74.55	23.00	0.00	0.00
48141004318	0.91	1.02	1.33	0.00	74.63	22.10	0.00	0.00
48141004319	0.91	1.10	1.66	0.00	67.43	28.01	0.88	0.00
48141004320	0.20	0.15	0.77	0.21	45.43	53.24	0.00	0.00
48141010102	0.04	1.39	0.80	0.19	52.09	45.35	0.13	0.00
48141010103	0.39	2.58	2.80	0.39	51.33	42.46	0.05	0.00
48141010217	1.07	1.60	2.28	0.00	62.85	32.20	0.00	0.00
48141010225	0.31	12.24	1.38	0.04	40.76	45.27	0.00	0.00

48141010226	0.11	16.03	4.23	0.00	40.28	39.12	0.22	0.00
48141010227	0.24	7.03	0.59	0.04	42.05	50.01	0.04	0.00
48141010229	3.22	14.99	7.87	9.29	35.83	28.79	0.01	0.00
48141010230	1.68	10.65	4.50	0.53	43.96	38.69	0.00	0.00
48141010303	0.50	0.53	1.51	0.27	66.70	30.49	0.00	0.00
48141010307	0.85	0.35	2.55	0.00	74.37	20.02	1.86	0.00
48141010311	0.36	1.04	0.55	0.00	62.45	35.60	0.00	0.00
48141010312	0.43	0.83	0.16	0.00	70.43	28.15	0.00	0.00
48141010316	0.62	0.72	0.04	0.00	65.83	31.63	1.18	0.00
48141010317	1.24	0.11	0.00	0.00	65.42	33.14	0.08	0.00
48141010322	0.11	0.72	0.44	0.00	57.68	40.63	0.42	0.00
48141010323	0.30	0.95	1.47	0.00	58.37	38.41	0.50	0.00
48141010326	0.92	0.43	0.00	0.00	66.09	31.98	0.57	0.00
48141010327	0.71	0.08	0.00	0.00	62.19	37.02	0.00	0.00
48141010328	0.76	1.33	1.66	0.00	43.25	52.40	0.59	0.00
48141010329	0.06	1.08	2.33	0.09	45.33	50.23	0.89	0.00
48141010336	0.18	1.68	1.62	0.00	46.62	49.90	0.00	0.00
48141010337	0.35	0.49	1.87	0.02	56.08	41.18	0.00	0.00
48141010338	0.26	0.67	0.51	0.00	66.67	31.65	0.24	0.00
48141010348	0.21	3.87	0.19	0.00	59.29	34.79	1.66	0.00
48141010349	0.21	0.07	0.00	0.00	56.28	40.55	2.89	0.00
48141010350	0.56	0.41	2.45	0.11	52.99	42.17	1.31	0.00
48141010351	0.01	1.09	0.13	0.00	40.97	56.33	1.48	0.00
48141010352	0.03	0.85	0.81	0.00	58.47	37.47	2.36	0.00
48141010401	1.24	16.35	0.76	21.85	15.47	42.21	1.10	1.03
48141010601	0.07	4.76	0.22	0.21	42.74	52.00	0.00	0.00
48141010602	0.05	11.41	11.61	0.00	27.11	49.54	0.28	0.00

C. Ciudad Juarez Census Tracts Landcover Percentage Using PlanIT Geo

CVEGEO	Non-Canopy Vegetation	Soil and Dry Vegetation	Impervious	Water	Tree Canopy	Shrub	Tree Canopy over Impervious	UTC
0803700016434	1.05	6.46	87.93	0.00	3.03	0.16	1.36	4.40
0803700010401	8.53	33.37	42.49	0.59	13.90	0.59	0.54	14.44
0803700015686	7.10	73.05	9.35	0.00	0.18	10.32	0.00	0.18
0803700018159	6.54	63.63	3.97	19.81	2.15	3.91	0.00	2.15
0803700010789	0.27	17.66	75.45	0.11	2.13	3.24	1.14	3.27

0803700010810	0.20	1.79	90.75	0.00	2.22	0.10	4.93	7.15
080370001083A	0.05	1.13	97.10	0.00	0.63	0.01	1.08	1.72
0803700015991	4.37	14.80	71.63	0.00	5.24	1.73	2.22	7.46
0803700012982	0.74	31.23	52.40	2.07	6.59	5.84	1.13	7.72
0803700013548	1.13	25.63	58.81	0.44	6.90	5.89	1.20	8.10
0803700015169	10.56	32.39	48.64	0.69	5.06	1.71	0.96	6.02
0803700015949	0.47	11.43	82.30	0.06	3.89	0.22	1.62	5.52
0803700015953	4.43	17.67	71.91	0.13	3.69	1.36	0.79	4.49
0803700016025	3.20	16.59	69.17	0.00	5.78	3.46	1.80	7.58
0803700016612	0.01	75.17	17.48	0.00	0.56	6.78	0.00	0.56
0803700017428	1.35	23.99	69.96	0.00	1.30	1.53	1.86	3.16
0803700017502	3.79	7.99	68.85	0.00	13.96	2.11	3.30	17.26
0803700018055	2.37	14.36	71.38	0.00	9.31	1.68	0.89	10.20
0803700010613	0.08	0.83	93.90	0.00	1.63	0.05	3.50	5.13
0803700010670	2.62	1.90	86.89	0.00	4.54	0.13	3.92	8.46
080370001133A	0.92	1.33	93.81	0.00	1.53	0.02	2.39	3.92
0803700010581	5.21	1.82	84.05	0.00	5.69	0.20	3.02	8.72
0803700010416	1.00	6.23	84.70	0.00	4.58	0.45	3.03	7.61
0803700010647	2.23	2.38	88.80	0.00	3.53	0.26	2.80	6.32
0803700010435	3.84	8.12	82.02	0.00	4.50	0.24	1.28	5.78
0803700010454	0.31	4.44	88.41	0.00	3.60	0.12	3.11	6.71
0803700010469	2.91	6.27	85.74	0.00	2.70	0.15	2.24	4.93
0803700010473	3.53	3.36	87.04	0.08	3.59	0.35	2.06	5.65
0803700010492	2.30	2.64	88.95	0.09	3.71	0.18	2.12	5.84
0803700010505	5.46	5.16	77.29	0.13	7.47	1.60	2.89	10.36
0803700010524	1.57	1.28	90.13	0.00	2.92	0.11	4.00	6.92
0803700010539	1.13	1.61	91.20	0.00	2.78	0.14	3.14	5.92
0803700010543	0.04	0.75	92.18	0.00	1.84	0.02	5.18	7.01
0803700010558	1.36	2.12	90.09	0.01	3.09	0.28	3.05	6.14
0803700010632	0.96	0.58	91.05	0.00	2.88	0.14	4.39	7.27
0803700010651	2.34	2.58	88.71	0.00	3.92	0.18	2.28	6.19
0803700010666	1.35	0.65	91.06	0.00	2.98	0.05	3.92	6.90
0803700013660	5.87	2.78	88.55	0.00	1.15	0.19	1.46	2.61
0803700013675	8.25	11.67	75.98	0.00	2.80	0.44	0.86	3.66
0803700010859	1.74	2.30	90.71	0.00	1.83	0.11	3.30	5.13
0803700011077	0.04	0.03	97.78	0.00	0.16	0.00	1.98	2.14
0803700011081	0.09	0.41	96.77	0.00	0.30	0.02	2.42	2.73
0803700011096	0.05	0.11	97.78	0.00	0.25	0.00	1.81	2.05
0803700011306	0.03	0.08	97.02	0.00	0.13	0.00	2.73	2.86
0803700012588	3.17	7.65	82.61	0.00	4.70	0.53	1.34	6.04
0803700012592	2.95	5.18	85.18	0.00	4.72	0.48	1.50	6.22

0803700013637	0.00	1.69	96.31	0.00	0.46	0.11	1.43	1.89
080370001788A	0.08	53.47	33.40	0.00	2.56	10.44	0.05	2.61
0803700015741	2.48	7.19	86.19	0.00	2.34	0.98	0.83	3.17
0803700015690	13.61	55.01	22.76	0.00	2.30	6.32	0.01	2.31
0803700010736	2.12	3.03	88.81	0.00	3.20	0.07	2.76	5.97
0803700010740	0.33	12.90	76.26	0.33	5.75	2.44	1.98	7.73
0803700010793	0.01	0.44	94.95	0.00	0.53	0.01	4.05	4.58
0803700010806	0.15	16.48	76.33	0.32	1.72	1.21	3.81	5.53
0803700010825	0.12	2.81	93.32	0.00	1.05	0.13	2.56	3.62
0803700010844	1.31	4.32	89.79	0.00	2.50	0.02	2.07	4.57
0803700010878	1.11	0.92	93.32	0.00	2.09	0.06	2.50	4.59
0803700010897	0.25	10.99	80.70	0.00	4.51	2.01	1.53	6.04
080370001090A	0.25	10.00	79.34	0.00	5.45	2.61	2.37	7.81
0803700010967	0.00	0.32	95.96	0.00	0.96	0.03	2.74	3.69
0803700010971	0.01	0.46	92.48	0.00	1.06	0.02	5.97	7.03
0803700010986	0.00	0.29	95.38	0.00	0.34	0.00	3.98	4.32
0803700010990	0.00	1.00	95.36	0.00	0.20	0.00	3.44	3.64
0803700011005	0.00	0.00	98.37	0.00	0.03	0.00	1.59	1.63
0803700011202	1.65	3.24	90.66	0.00	1.25	0.33	2.86	4.12
0803700011109	0.20	0.04	97.31	0.00	0.48	0.00	1.98	2.45
0803700011113	3.54	7.48	84.48	0.00	1.93	0.04	2.52	4.45
0803700011378	0.25	0.45	96.75	0.00	0.27	0.01	2.27	2.54
0803700011185	0.24	1.72	95.55	0.00	0.49	0.01	2.00	2.48
0803700011344	1.34	3.95	89.83	0.00	2.41	0.29	2.19	4.59
0803700011359	0.62	2.07	93.68	0.00	0.57	0.17	2.90	3.47
0803700011363	0.12	0.03	97.57	0.00	0.33	0.03	1.92	2.25
0803700011414	1.23	2.51	91.88	0.00	2.29	0.07	2.01	4.30
0803700011429	4.64	5.49	86.34	0.00	1.93	0.23	1.37	3.30
0803700011433	2.22	6.46	86.56	0.00	2.96	0.21	1.59	4.55
0803700011467	3.58	4.95	83.31	0.00	4.91	0.62	2.63	7.54
0803700011471	2.31	3.66	89.35	0.00	2.14	0.22	2.33	4.47
0803700011518	0.78	0.65	94.62	0.00	1.91	0.15	1.89	3.80
0803700011611	2.20	5.35	88.95	0.00	2.02	0.18	1.31	3.33
0803700011626	1.97	4.38	90.30	0.00	2.03	0.09	1.22	3.25
0803700012003	8.00	22.15	61.12	0.00	6.09	1.60	1.03	7.11
0803700012041	6.73	8.48	75.63	0.00	5.58	0.50	3.07	8.66
0803700012056	4.52	8.17	80.55	0.00	4.29	0.22	2.24	6.53
080370001208A	2.85	8.40	84.52	0.00	2.44	0.07	1.72	4.16
0803700012094	1.81	4.01	86.67	0.00	2.85	0.12	4.55	7.40
0803700012126	14.44	27.26	49.32	0.12	6.56	1.64	0.65	7.22
0803700012200	2.93	5.55	85.69	0.00	4.26	0.41	1.17	5.42

0803700012338	10.99	30.48	51.06	0.22	4.79	1.82	0.63	5.42
0803700012605	4.16	13.35	75.81	0.00	5.04	0.46	1.19	6.22
0803700012836	1.55	1.13	90.87	0.00	4.09	0.06	2.30	6.39
0803700012573	2.30	6.40	86.04	0.00	3.24	0.56	1.46	4.70
0803700012840	3.18	3.34	88.01	0.00	3.98	0.39	1.10	5.08
0803700012696	4.09	3.02	84.32	0.24	5.46	1.18	1.68	7.15
0803700012732	4.34	6.31	82.66	0.00	4.10	0.16	2.42	6.52
0803700012747	4.04	6.45	81.68	0.00	4.98	0.27	2.57	7.56
0803700012751	4.84	7.87	79.98	0.00	4.79	0.22	2.30	7.09
0803700012766	2.35	1.62	88.41	0.00	4.50	0.17	2.96	7.46
0803700012770	2.90	3.09	87.94	0.00	2.66	0.34	3.07	5.72
0803700012821	1.71	1.61	90.55	0.00	3.97	0.16	2.00	5.96
0803700013514	3.67	1.14	86.77	0.00	5.44	0.14	2.85	8.29
080370001368A	0.15	0.15	93.71	0.00	0.77	0.01	5.21	5.98
0803700013622	0.00	1.23	95.65	0.00	0.93	0.03	2.17	3.09
0803700013463	2.96	4.95	81.91	0.00	6.74	0.27	3.16	9.90
0803700013482	4.69	8.50	80.19	0.00	4.06	0.74	1.82	5.88
080370001350A	2.82	1.64	87.75	0.00	4.54	0.10	3.15	7.69
0803700013533	3.39	3.75	86.20	0.00	4.47	0.14	2.06	6.52
0803700013694	17.58	15.04	59.84	0.00	4.57	0.76	2.20	6.76
0803700013726	1.77	12.00	82.25	0.00	1.74	0.12	2.12	3.86
0803700013730	1.87	24.89	68.86	0.00	1.99	0.12	2.28	4.26
0803700013745	0.56	1.81	94.85	0.00	0.74	0.03	2.01	2.76
080370001375A	0.73	2.25	94.16	0.00	0.67	0.02	2.17	2.84
0803700013779	0.63	0.50	94.10	0.00	1.02	0.02	3.73	4.75
0803700013783	2.52	35.20	59.22	0.00	1.59	0.22	1.25	2.84
0803700013798	0.65	1.03	95.62	0.00	1.37	0.06	1.27	2.64
0803700013800	3.29	8.21	85.14	0.00	2.44	0.29	0.62	3.07
0803700013815	2.75	5.75	88.33	0.00	2.35	0.10	0.72	3.06
0803700013849	2.31	6.11	85.64	0.89	2.28	0.19	2.58	4.87
0803700013853	3.16	6.19	87.67	0.00	1.86	0.10	1.03	2.89
0803700013868	2.80	3.30	87.77	0.00	3.13	0.48	2.52	5.65
0803700013887	3.20	5.55	87.08	0.00	2.60	0.37	1.21	3.80
0803700013919	1.99	2.56	91.11	0.00	2.87	0.06	1.40	4.28
0803700015120	3.64	7.04	85.53	0.00	2.48	0.12	1.20	3.68
0803700014298	1.95	1.76	88.93	0.00	4.50	0.02	2.83	7.33
0803700014300	4.98	8.56	79.35	0.00	4.24	0.33	2.55	6.78
0803700014264	7.59	14.23	70.99	0.00	5.01	0.62	1.56	6.57
0803700014283	3.77	9.91	79.18	0.04	4.59	0.70	1.80	6.40
0803700014315	1.92	4.45	89.51	0.00	2.49	0.07	1.55	4.04
0803700014654	1.91	3.44	88.59	0.00	3.09	0.26	2.72	5.81

0803700014669	1.73	7.81	86.30	0.00	2.16	0.04	1.96	4.12
0803700014692	5.67	9.85	78.69	0.00	3.76	1.19	0.84	4.60
0803700014705	6.80	24.72	64.19	0.00	2.77	1.02	0.50	3.27
0803700014940	1.65	4.49	88.97	0.00	3.48	0.02	1.39	4.87
0803700014955	0.96	0.22	93.22	0.00	2.94	0.04	2.63	5.56
080370001496A	1.33	3.87	89.52	0.00	3.03	0.15	2.10	5.13
0803700014974	2.41	2.65	91.53	0.00	2.30	0.28	0.82	3.12
0803700015050	4.13	10.45	74.77	0.00	5.05	3.47	2.13	7.18
0803700015065	3.57	13.71	75.94	0.00	3.53	1.30	1.95	5.47
0803700015084	13.19	33.84	44.19	0.00	3.90	4.04	0.84	4.74
0803700015099	10.94	47.26	32.01	0.00	2.92	6.63	0.25	3.17
080370001514A	11.49	27.95	55.11	0.08	2.92	1.78	0.67	3.60
0803700015154	6.29	20.19	67.08	0.34	3.12	2.22	0.76	3.88
0803700015173	5.29	8.96	76.68	0.00	6.51	1.12	1.43	7.94
080370001521A	0.81	2.98	90.97	0.00	2.35	0.02	2.89	5.23
0803700015243	6.53	2.96	81.31	0.00	6.50	0.44	2.26	8.76
0803700015258	7.02	12.09	73.68	0.00	4.88	1.23	1.10	5.98
0803700015648	5.05	7.52	79.09	0.00	4.25	0.85	3.23	7.48
0803700016078	4.39	5.68	80.41	0.50	6.25	0.31	2.47	8.72
0803700017019	10.32	59.02	20.75	0.00	2.29	7.61	0.01	2.31
0803700017362	4.45	2.96	87.76	0.00	3.39	0.11	1.34	4.73
0803700011217	0.40	3.44	92.62	0.00	0.88	0.03	2.63	3.52
0803700011221	0.83	1.12	92.95	0.00	2.34	0.08	2.68	5.02
0803700011236	0.02	0.02	97.87	0.00	0.10	0.00	1.98	2.08
0803700011240	0.08	0.15	97.32	0.00	0.15	0.00	2.30	2.45
0803700011274	1.10	6.22	89.39	0.00	1.02	0.40	1.88	2.90
0803700011289	0.91	2.01	93.77	0.00	0.94	0.31	2.07	3.01
0803700011293	0.06	0.12	96.71	0.00	0.17	0.04	2.91	3.07
0803700013764	0.71	0.74	93.50	0.00	1.08	0.02	3.95	5.03
0803700016186	6.59	33.31	33.59	0.00	9.22	17.23	0.06	9.28
0803700010721	1.35	0.54	92.99	0.00	2.58	0.06	2.47	5.06
0803700010628	0.68	3.35	89.87	0.00	2.12	0.22	3.76	5.88
0803700010562	1.08	1.35	92.10	0.00	2.37	0.10	3.00	5.37
0803700010685	0.16	2.81	91.65	0.00	1.86	0.10	3.42	5.29
080370001069A	1.04	0.84	90.01	0.00	3.00	0.04	5.07	8.07
0803700010702	0.69	1.01	93.13	0.00	1.85	0.04	3.28	5.13
0803700010774	0.05	7.19	83.26	0.00	5.00	2.07	2.42	7.43
0803700011503	0.35	1.32	95.06	0.00	0.53	0.02	2.72	3.26
0803700013529	2.39	0.94	87.13	0.00	5.65	0.04	3.85	9.50
0803700013478	3.71	5.17	81.73	0.00	7.43	0.33	1.62	9.06
0803700016970	4.29	53.38	40.72	0.00	0.45	1.16	0.00	0.45

0803700015366	0.06	22.56	62.04	0.00	6.42	8.36	0.55	6.97
080370001507A	4.23	9.69	76.38	0.00	5.03	2.92	1.76	6.78
0803700017447	1.77	58.83	36.42	0.00	0.60	2.33	0.06	0.65
0803700015347	3.95	1.49	85.83	0.00	5.59	0.15	2.99	8.58
0803700015351	6.64	7.91	78.87	0.00	2.76	0.12	3.70	6.46
0803700016063	2.80	1.37	88.28	0.31	5.25	0.18	1.81	7.06
0803700017517	4.27	57.77	29.63	0.00	2.71	5.18	0.45	3.16
0803700017540	3.95	69.06	24.27	0.00	1.04	1.68	0.00	1.04
0803700016449	21.64	28.68	40.93	0.00	2.99	5.62	0.14	3.13
0803700015987	2.24	8.52	81.01	0.00	3.39	3.16	1.68	5.07
0803700012075	8.54	14.27	67.50	0.33	6.39	1.94	1.03	7.42
0803700014211	28.06	23.71	39.52	0.02	6.18	1.72	0.78	6.96
0803700016006	1.34	1.70	90.22	0.00	3.60	0.52	2.62	6.22
0803700014993	0.31	44.03	44.34	0.00	1.70	9.07	0.54	2.25
080370001546A	6.67	46.33	42.59	0.00	3.60	0.49	0.32	3.92
0803700011382	0.32	0.58	96.25	0.00	0.21	0.04	2.60	2.81
0803700011397	1.95	31.01	64.35	0.00	0.82	0.23	1.65	2.47
0803700017555	18.72	32.52	41.27	0.00	4.62	2.43	0.43	5.05
0803700017574	8.42	16.34	70.12	0.00	3.48	0.94	0.69	4.17
080370001400A	0.10	38.72	53.52	0.00	2.68	4.30	0.68	3.36
0803700013872	5.12	8.92	78.22	0.00	4.72	0.70	2.31	7.03
0803700013957	4.02	5.63	82.64	0.00	4.66	0.85	2.20	6.86
0803700012342	24.64	21.81	48.38	0.07	2.76	1.90	0.44	3.20
080370001261A	3.29	5.24	83.45	0.00	5.05	0.91	2.06	7.11
0803700012624	2.61	12.45	79.23	0.00	3.97	0.36	1.38	5.35
0803700012643	2.70	4.04	87.40	0.00	3.72	0.59	1.56	5.27
0803700012658	5.59	6.57	80.83	0.00	5.31	0.67	1.04	6.35
0803700012662	6.49	7.55	77.00	0.00	6.02	0.82	2.14	8.15
0803700016665	13.31	34.26	43.82	0.73	4.66	2.60	0.62	5.27
0803700012357	30.50	41.18	20.51	2.20	2.14	3.39	0.08	2.22
0803700013406	73.32	14.38	4.59	1.14	3.29	3.20	0.08	3.37
0803700016631	14.85	22.26	52.44	0.92	5.58	2.51	1.44	7.02
0803700014743	0.38	9.76	84.28	0.00	2.69	1.78	1.12	3.81
0803700012959	1.18	18.81	65.60	1.91	5.54	5.79	1.18	6.72
0803700012963	0.10	9.91	83.50	0.00	3.50	1.80	1.19	4.69
0803700018089	3.90	19.25	65.92	0.00	3.08	7.44	0.42	3.50
0803700015370	4.18	24.50	58.40	0.00	3.59	8.16	1.16	4.76
0803700012639	4.20	6.94	77.44	0.00	7.98	1.42	2.03	10.00
0803700012484	41.10	16.21	33.28	0.31	6.17	2.52	0.42	6.59
0803700017413	1.78	38.34	49.90	0.00	3.91	5.82	0.25	4.16
080370001222A	27.75	31.11	30.34	0.64	5.23	4.54	0.39	5.61

0803700017589	11.22	12.93	68.31	0.04	4.91	2.16	0.44	5.35
0803700013459	10.00	27.77	57.99	0.38	1.82	1.61	0.43	2.25
0803700017061	10.35	12.28	71.26	0.00	4.82	0.55	0.72	5.55
0803700017076	22.14	28.68	40.25	0.00	6.78	1.83	0.32	7.10
0803700013942	8.61	24.30	57.38	0.00	5.91	1.99	1.81	7.72
0803700016010	5.46	19.82	61.25	0.00	5.44	6.65	1.37	6.81
0803700013834	0.78	1.05	95.65	0.00	1.25	0.18	1.09	2.34
080370001382A	4.14	5.31	84.45	0.00	4.84	0.27	0.99	5.83
0803700010717	1.00	0.80	92.40	0.00	2.35	0.05	3.39	5.75
0803700010863	1.58	2.70	89.79	0.00	2.81	0.11	3.01	5.82
0803700013552	0.02	2.67	91.81	0.00	2.52	1.01	1.96	4.48
0803700013567	0.00	1.49	95.48	0.00	0.91	0.09	2.04	2.94
0803700013586	0.00	1.15	96.08	0.00	0.48	0.29	1.99	2.47
0803700013980	6.76	21.59	64.30	0.00	4.42	1.10	1.83	6.25
0803700013995	4.99	4.10	81.85	0.00	6.39	0.54	2.12	8.51
0803700014207	18.83	26.09	48.50	0.42	4.12	1.22	0.83	4.95
0803700012677	5.29	9.29	76.55	0.00	6.37	0.62	1.89	8.25
0803700012681	25.98	6.42	44.92	1.41	18.24	1.53	1.50	19.75
0803700012978	0.11	3.31	92.12	0.00	2.76	0.45	1.25	4.01
0803700015188	0.19	20.63	73.19	0.00	3.26	2.07	0.65	3.91
0803700015192	0.12	50.46	34.43	0.00	2.93	11.51	0.56	3.49
080370001756A	27.64	31.86	34.63	0.51	3.72	1.38	0.25	3.97
0803700013444	18.74	29.84	45.70	0.01	3.36	1.48	0.86	4.23
0803700013571	0.00	0.07	97.03	0.00	0.24	0.00	2.66	2.90
0803700013904	4.18	7.83	83.56	0.00	3.39	0.22	0.81	4.21
0803700017358	1.58	29.91	63.89	0.00	1.81	1.48	1.33	3.13
0803700017521	15.69	38.38	26.74	0.00	7.44	11.42	0.33	7.77

D. Ciudad Juarez Census Tracts Landcover Percentages Using Worldcover

CVEGEO	Tree Cover	Shrubland	Grassland	Cropland	Built-up	Bare/sparse	Water Bodies
0803700016434	0.00%	0.00%	0.00%	0.00%	95.71%	4.29%	0.00%
080370001770A	1.52%	9.40%	10.83%	14.60%	29.00%	34.65%	0.00%
0803700018464	0.00%	14.45%	0.00%	0.00%	17.34%	68.21%	0.00%
0803700010401	12.15%	5.99%	5.52%	0.19%	48.92%	26.91%	0.32%
0803700018360	0.00%	5.52%	0.00%	0.00%	11.46%	83.02%	0.00%
0803700018106	0.00%	0.24%	0.00%	0.00%	33.46%	66.30%	0.00%
0803700018500	0.00%	5.73%	0.00%	0.00%	9.90%	84.38%	0.00%
080370001845A	0.00%	50.00%	0.00%	0.00%	9.15%	40.85%	0.00%
0803700015775	0.00%	2.48%	0.00%	0.00%	45.76%	51.76%	0.00%

0803700015686	0.00%	32.52%	0.00%	0.00%	14.72%	52.76%	0.00%
0803700017907	0.00%	0.35%	0.00%	0.00%	51.81%	47.85%	0.00%
0803700018040	0.00%	9.45%	0.21%	0.00%	11.90%	78.44%	0.00%
0803700018125	0.00%	6.52%	0.00%	0.10%	6.54%	86.85%	0.00%
0803700018144	0.00%	0.46%	0.00%	0.00%	45.75%	53.79%	0.00%
0803700018159	0.00%	0.00%	0.00%	0.00%	14.23%	83.00%	2.77%
0803700018341	0.00%	4.77%	0.00%	0.00%	0.64%	94.59%	0.00%
0803700018178	0.00%	9.71%	0.16%	0.00%	1.71%	88.42%	0.00%
0803700018182	0.00%	3.47%	0.00%	0.00%	8.87%	87.66%	0.00%
0803700018286	0.00%	3.60%	0.00%	0.00%	10.30%	86.10%	0.00%
0803700010789	0.44%	6.78%	0.00%	0.00%	71.18%	21.02%	0.58%
0803700010810	0.09%	0.00%	0.00%	0.00%	77.07%	22.58%	0.26%
080370001083A	0.20%	0.00%	0.00%	0.00%	88.04%	11.75%	0.00%
080370001158A	1.42%	3.88%	0.02%	0.00%	68.44%	26.24%	0.00%
0803700015991	0.05%	1.93%	0.00%	0.00%	82.35%	15.67%	0.00%
0803700012982	0.18%	5.09%	0.00%	0.00%	46.75%	45.30%	2.68%
0803700013266	0.00%	11.71%	1.11%	0.00%	16.04%	71.14%	0.00%
0803700013548	0.95%	12.45%	0.00%	0.00%	54.81%	31.04%	0.75%
0803700018411	0.00%	0.00%	0.00%	0.00%	49.69%	50.31%	0.00%
080370001471A	0.00%	4.02%	0.29%	0.00%	11.05%	84.64%	0.00%
0803700014828	0.00%	7.72%	0.25%	0.01%	10.83%	81.19%	0.00%
0803700015008	0.00%	3.82%	0.14%	0.00%	21.22%	74.82%	0.00%
080370001553A	0.00%	12.81%	0.00%	0.00%	1.39%	85.79%	0.00%
0803700015169	0.59%	2.27%	0.01%	0.03%	55.66%	41.45%	0.00%
0803700015493	0.00%	0.00%	0.00%	0.00%	50.57%	49.43%	0.00%
0803700015949	0.21%	0.03%	0.00%	0.00%	88.89%	10.87%	0.00%
0803700015953	0.74%	0.49%	0.09%	0.38%	79.08%	19.21%	0.00%
0803700016025	0.00%	0.06%	0.00%	0.00%	81.66%	18.28%	0.00%
0803700016059	0.01%	8.22%	0.00%	0.00%	26.73%	64.97%	0.07%
0803700016612	0.00%	8.61%	0.91%	0.00%	24.01%	66.47%	0.00%
0803700016985	0.00%	41.80%	0.00%	0.00%	10.27%	47.93%	0.00%
0803700017428	0.00%	8.90%	0.00%	0.00%	69.18%	21.92%	0.00%
0803700017502	0.00%	0.00%	0.00%	0.00%	98.00%	2.00%	0.00%
0803700018055	0.00%	0.00%	0.00%	0.00%	98.57%	1.43%	0.00%
0803700018394	0.00%	1.18%	0.00%	0.00%	3.83%	94.99%	0.00%
0803700018002	0.00%	1.09%	0.00%	0.00%	45.92%	52.99%	0.00%
0803700010613	0.04%	0.00%	0.00%	0.00%	87.15%	12.80%	0.00%
0803700010670	0.68%	0.02%	0.00%	0.00%	88.82%	10.48%	0.00%
0803700015826	0.42%	0.04%	0.00%	0.00%	65.38%	34.15%	0.00%
0803700015830	1.53%	0.09%	0.00%	0.00%	75.87%	22.51%	0.00%
0803700015845	0.00%	0.00%	0.00%	0.00%	70.97%	29.03%	0.00%

080370001585A	0.01%	0.27%	0.00%	0.00%	66.82%	32.90%	0.00%
0803700015879	0.63%	6.96%	2.55%	0.15%	55.55%	34.16%	0.00%
0803700015883	0.00%	0.00%	0.00%	0.00%	64.68%	35.32%	0.00%
080370001763A	0.09%	0.29%	0.00%	0.00%	62.01%	37.61%	0.00%
0803700017644	0.00%	0.31%	0.00%	0.00%	36.88%	62.05%	0.77%
0803700017659	0.00%	0.45%	0.00%	0.00%	19.40%	79.32%	0.83%
0803700017663	0.00%	0.00%	0.00%	0.00%	57.28%	42.72%	0.00%
0803700017748	0.00%	0.00%	0.00%	0.00%	47.71%	52.29%	0.00%
0803700012713	0.00%	3.26%	0.00%	0.00%	68.79%	27.95%	0.00%
0803700015012	0.00%	0.00%	0.00%	0.00%	99.53%	0.47%	0.00%
080370001133A	0.00%	1.32%	0.00%	0.00%	76.81%	21.87%	0.00%
0803700010581	1.32%	0.18%	0.89%	0.00%	91.14%	6.46%	0.00%
0803700010416	0.48%	0.14%	0.00%	0.00%	86.26%	13.11%	0.00%
0803700010647	0.16%	0.00%	0.00%	0.00%	88.95%	10.88%	0.00%
0803700010435	1.89%	0.27%	0.09%	0.03%	87.05%	10.67%	0.00%
0803700010454	0.82%	0.07%	0.00%	0.00%	88.82%	10.29%	0.00%
0803700010469	0.67%	0.11%	0.01%	0.00%	79.66%	19.49%	0.06%
0803700010473	1.00%	0.34%	0.61%	0.00%	85.54%	12.48%	0.03%
0803700010492	0.45%	0.21%	0.01%	0.00%	87.49%	11.85%	0.00%
0803700010505	1.30%	0.68%	0.00%	0.00%	82.53%	15.48%	0.00%
0803700010524	0.00%	0.85%	0.68%	0.00%	82.33%	16.13%	0.00%
0803700010539	0.05%	0.00%	0.00%	0.00%	90.51%	9.44%	0.00%
0803700010543	0.00%	0.00%	0.00%	0.00%	86.35%	13.65%	0.00%
0803700010558	0.07%	0.00%	0.00%	0.00%	84.70%	15.23%	0.00%
0803700010632	0.83%	0.05%	0.00%	0.00%	89.49%	9.62%	0.00%
0803700010651	0.00%	0.00%	0.00%	0.00%	83.72%	16.28%	0.00%
0803700010666	0.02%	0.00%	0.00%	0.00%	86.10%	13.87%	0.00%
0803700017625	0.00%	5.74%	0.02%	0.01%	8.48%	85.75%	0.00%
0803700018534	0.00%	0.81%	0.00%	0.00%	10.57%	88.62%	0.00%
0803700013660	0.00%	0.47%	2.81%	0.00%	84.25%	12.46%	0.00%
0803700013675	0.63%	0.13%	0.00%	0.00%	74.40%	24.85%	0.00%
0803700014438	0.35%	0.86%	0.00%	0.00%	65.03%	33.56%	0.19%
0803700014885	1.32%	15.05%	0.28%	0.00%	23.99%	57.48%	1.87%
080370001838A	0.00%	0.00%	0.00%	0.00%	1.62%	98.38%	0.00%
0803700010859	0.10%	0.00%	0.00%	0.00%	82.55%	17.34%	0.00%
0803700011077	0.00%	0.00%	0.00%	0.00%	70.89%	29.11%	0.00%
0803700011081	0.00%	0.00%	0.00%	0.00%	77.41%	22.59%	0.00%
0803700011096	0.00%	0.00%	0.00%	0.00%	83.25%	16.75%	0.00%
0803700014616	0.00%	0.00%	0.00%	0.00%	75.10%	24.90%	0.00%
0803700011306	0.00%	0.00%	0.00%	0.00%	78.96%	21.04%	0.00%
0803700011772	0.20%	0.00%	0.00%	0.00%	84.18%	15.62%	0.00%

0803700012588	0.03%	0.18%	0.00%	0.00%	80.87%	18.92%	0.00%
0803700012592	0.02%	0.00%	0.00%	0.00%	75.96%	24.02%	0.00%
0803700013637	0.00%	0.00%	0.00%	0.00%	72.05%	27.95%	0.00%
0803700013641	0.27%	2.75%	0.00%	0.00%	64.97%	32.01%	0.00%
0803700013656	0.00%	1.42%	0.00%	0.00%	67.79%	30.79%	0.00%
080370001788A	0.00%	0.00%	0.00%	0.00%	43.71%	56.29%	0.00%
0803700018553	0.00%	0.00%	0.00%	0.00%	3.75%	96.25%	0.00%
0803700017235	0.00%	6.35%	0.00%	0.00%	26.19%	67.46%	0.00%
0803700014476	0.03%	0.00%	0.00%	0.00%	79.79%	20.18%	0.00%
0803700015864	0.69%	0.83%	2.08%	0.00%	85.82%	10.56%	0.00%
0803700014480	0.00%	0.00%	0.00%	0.00%	79.92%	20.08%	0.00%
0803700014495	0.00%	0.00%	0.00%	0.00%	75.79%	24.21%	0.00%
0803700014508	0.00%	0.00%	0.00%	0.00%	76.01%	23.99%	0.00%
0803700014512	0.00%	0.00%	0.00%	0.00%	75.47%	24.53%	0.00%
0803700015741	0.00%	0.00%	0.00%	0.00%	51.42%	48.58%	0.00%
0803700014565	0.00%	0.00%	0.00%	0.00%	93.33%	6.67%	0.00%
080370001457A	0.15%	1.58%	0.00%	0.00%	56.87%	41.40%	0.00%
0803700015671	0.00%	12.80%	0.03%	0.00%	27.95%	59.22%	0.00%
0803700015690	0.00%	15.51%	0.00%	0.00%	38.66%	45.82%	0.00%
0803700015737	1.07%	26.20%	0.00%	0.00%	43.85%	28.88%	0.00%
0803700017860	0.00%	0.00%	0.00%	0.00%	39.71%	60.29%	0.00%
0803700017911	0.00%	0.45%	0.00%	0.00%	49.94%	49.61%	0.00%
0803700017926	0.03%	0.00%	0.00%	0.00%	49.22%	50.75%	0.00%
0803700017930	0.02%	0.22%	0.00%	0.00%	41.40%	58.36%	0.00%
0803700017983	0.00%	0.40%	0.00%	0.26%	38.78%	60.57%	0.00%
0803700017998	0.12%	0.00%	0.00%	0.00%	59.28%	40.60%	0.00%
0803700018248	0.00%	1.99%	0.00%	0.00%	30.28%	67.73%	0.00%
0803700018252	0.00%	15.92%	0.00%	0.00%	14.93%	69.15%	0.00%
0803700018267	0.00%	6.99%	0.00%	0.00%	3.87%	89.13%	0.00%
0803700018271	0.00%	0.07%	0.00%	0.00%	41.07%	58.86%	0.00%
0803700010736	0.68%	0.15%	0.00%	0.00%	86.78%	12.39%	0.00%
0803700010740	0.03%	2.38%	0.00%	0.00%	59.08%	38.11%	0.39%
0803700010793	0.14%	0.00%	0.00%	0.00%	74.28%	25.58%	0.00%
0803700010806	0.00%	2.07%	0.00%	0.00%	69.78%	26.27%	1.88%
0803700010825	0.15%	0.00%	0.00%	0.00%	82.43%	16.96%	0.45%
0803700010844	0.00%	0.00%	0.00%	0.00%	85.20%	14.80%	0.00%
0803700015811	0.00%	0.69%	1.40%	0.04%	76.92%	20.94%	0.00%
0803700010878	0.05%	0.00%	0.00%	0.00%	85.78%	14.17%	0.00%
0803700010897	0.15%	4.45%	0.00%	0.00%	59.60%	35.80%	0.00%
080370001090A	0.36%	4.89%	0.00%	0.00%	61.90%	32.86%	0.00%
0803700010914	0.65%	8.97%	0.00%	0.00%	60.24%	30.14%	0.00%

0803700010967	0.00%	0.00%	0.00%	0.00%	77.18%	22.82%	0.00%
0803700010971	0.00%	0.00%	0.00%	0.00%	82.88%	17.12%	0.00%
0803700010986	0.00%	0.00%	0.00%	0.00%	76.82%	23.18%	0.00%
0803700010990	0.00%	0.00%	0.00%	0.00%	78.42%	21.58%	0.00%
0803700017803	0.00%	55.29%	0.48%	0.00%	1.71%	42.52%	0.00%
0803700011005	0.00%	0.00%	0.00%	0.00%	92.50%	7.50%	0.00%
0803700011202	0.00%	1.18%	0.00%	0.00%	67.86%	30.96%	0.00%
080370001101A	0.06%	0.32%	0.00%	0.00%	72.46%	27.16%	0.00%
0803700011058	0.00%	0.00%	0.00%	0.00%	74.97%	25.03%	0.00%
0803700011062	0.00%	0.00%	0.00%	0.00%	73.53%	26.47%	0.00%
0803700011109	0.04%	0.00%	0.00%	0.00%	87.39%	12.57%	0.00%
0803700011113	0.02%	0.00%	0.00%	0.00%	78.84%	21.14%	0.00%
0803700011147	0.03%	0.00%	0.00%	0.00%	67.59%	32.39%	0.00%
0803700011170	0.00%	0.00%	0.00%	0.00%	77.20%	22.80%	0.00%
0803700011378	0.00%	0.00%	0.00%	0.00%	76.72%	23.28%	0.00%
0803700011185	0.00%	0.00%	0.00%	0.00%	71.59%	28.41%	0.00%
080370001119A	0.00%	0.00%	0.00%	0.00%	76.17%	23.83%	0.00%
0803700011325	0.15%	0.00%	0.00%	0.00%	79.17%	20.68%	0.00%
0803700011344	0.00%	2.47%	0.00%	0.00%	69.77%	27.76%	0.00%
0803700011359	0.00%	0.11%	0.00%	0.00%	70.55%	29.34%	0.00%
0803700011363	0.00%	0.00%	0.00%	0.00%	76.77%	23.23%	0.00%
0803700011414	0.42%	0.00%	0.00%	0.00%	74.68%	24.89%	0.00%
0803700011429	0.00%	0.11%	0.00%	0.00%	64.73%	35.16%	0.00%
0803700011433	0.23%	0.00%	0.00%	0.00%	68.98%	30.79%	0.00%
0803700011448	0.00%	0.26%	0.00%	0.00%	70.08%	29.65%	0.00%
0803700011452	0.22%	0.04%	0.00%	0.00%	74.25%	25.49%	0.00%
0803700011467	0.75%	0.05%	0.00%	0.00%	67.19%	32.01%	0.00%
0803700011471	0.03%	0.35%	0.39%	0.00%	74.12%	25.11%	0.00%
0803700011518	0.00%	0.00%	0.00%	0.00%	82.48%	17.52%	0.00%
0803700011575	0.26%	2.92%	0.00%	0.00%	68.96%	27.86%	0.00%
0803700012234	0.33%	0.00%	0.00%	0.00%	66.90%	32.77%	0.00%
0803700011594	0.77%	0.56%	0.00%	0.00%	73.77%	24.90%	0.00%
0803700011611	0.14%	0.04%	0.00%	0.00%	68.83%	30.99%	0.00%
0803700011626	0.00%	0.00%	0.00%	0.00%	71.02%	28.98%	0.00%
0803700011683	0.94%	0.24%	0.00%	0.00%	63.96%	34.87%	0.00%
0803700011698	0.07%	0.00%	0.00%	0.00%	66.45%	33.48%	0.00%
0803700011700	0.00%	0.00%	0.00%	0.00%	65.65%	34.35%	0.00%
0803700012817	0.00%	0.00%	0.00%	0.00%	80.90%	19.10%	0.00%
0803700011734	0.00%	0.00%	0.00%	0.00%	81.65%	18.35%	0.00%
0803700011749	0.00%	0.00%	0.00%	0.00%	82.97%	17.03%	0.00%
0803700011753	0.00%	0.00%	0.00%	0.00%	83.89%	16.11%	0.00%

0803700011787	0.50%	0.00%	0.00%	0.00%	85.34%	14.15%	0.00%
0803700012253	0.08%	0.00%	0.00%	0.00%	66.22%	33.70%	0.00%
0803700011791	0.47%	0.00%	0.00%	0.00%	81.90%	17.64%	0.00%
0803700011804	0.00%	0.00%	0.00%	0.00%	79.05%	20.95%	0.00%
0803700011819	0.00%	0.00%	0.00%	0.00%	81.38%	18.62%	0.00%
0803700011823	0.24%	0.00%	0.00%	0.00%	82.07%	17.69%	0.00%
0803700011838	0.07%	0.00%	0.00%	0.00%	79.56%	20.37%	0.00%
0803700011842	0.04%	0.00%	0.00%	0.00%	77.37%	22.60%	0.00%
0803700011857	0.00%	0.00%	0.00%	0.00%	83.47%	16.53%	0.00%
0803700011876	0.00%	0.14%	0.00%	0.00%	64.13%	35.73%	0.00%
0803700011880	0.05%	0.53%	0.00%	0.00%	68.29%	31.12%	0.00%
0803700012003	2.05%	1.52%	0.36%	0.02%	81.01%	15.03%	0.00%
0803700012041	1.85%	0.52%	1.27%	0.15%	83.29%	12.93%	0.00%
0803700012249	0.00%	0.00%	0.00%	0.00%	68.02%	31.98%	0.00%
0803700012056	0.83%	0.28%	0.52%	0.00%	82.84%	15.53%	0.00%
0803700012268	0.00%	0.00%	0.00%	0.00%	67.84%	32.16%	0.00%
080370001208A	0.08%	0.00%	0.00%	0.00%	82.54%	17.38%	0.00%
0803700012094	0.44%	0.00%	0.00%	0.00%	86.57%	12.98%	0.00%
0803700012111	2.25%	12.15%	3.10%	1.40%	57.33%	23.76%	0.00%
0803700012126	1.81%	4.53%	0.61%	0.47%	55.94%	36.64%	0.00%
0803700012164	3.33%	1.73%	0.62%	0.00%	65.95%	25.96%	2.41%
0803700012200	0.60%	0.51%	0.00%	0.00%	78.08%	20.81%	0.00%
0803700012272	0.00%	0.00%	0.00%	0.00%	79.63%	20.37%	0.00%
0803700012291	3.36%	5.75%	0.47%	14.06%	32.30%	44.06%	0.00%
0803700012319	0.53%	0.76%	0.00%	0.01%	66.37%	31.32%	1.01%
0803700012338	0.54%	1.93%	0.01%	0.10%	44.63%	52.79%	0.00%
0803700012395	0.02%	0.00%	0.00%	0.00%	77.42%	22.56%	0.00%
0803700012605	0.06%	0.00%	0.00%	0.00%	70.12%	29.81%	0.00%
0803700012450	0.00%	0.88%	0.00%	0.00%	56.27%	38.78%	4.07%
0803700012465	1.22%	0.16%	0.05%	0.00%	70.42%	28.15%	0.00%
0803700012836	0.04%	0.00%	0.00%	0.00%	75.36%	24.59%	0.00%
0803700012516	0.04%	0.54%	0.01%	0.01%	52.19%	47.21%	0.00%
0803700012520	0.00%	8.91%	0.12%	0.00%	38.02%	52.96%	0.00%
080370001254A	0.00%	1.25%	0.06%	7.93%	40.71%	50.05%	0.00%
0803700012573	0.00%	0.00%	0.00%	0.00%	76.91%	23.09%	0.00%
0803700012840	0.00%	0.00%	0.00%	0.00%	79.75%	20.25%	0.00%
0803700012696	1.24%	0.25%	0.18%	0.09%	91.14%	7.10%	0.00%
0803700012728	0.00%	1.97%	0.00%	0.00%	62.61%	35.41%	0.00%
0803700012732	0.54%	0.33%	0.39%	0.00%	80.19%	18.55%	0.00%
0803700012747	0.83%	0.08%	0.20%	0.00%	86.65%	12.24%	0.00%
0803700012751	0.79%	0.76%	0.00%	0.00%	89.08%	9.38%	0.00%

0803700012766	0.69%	0.00%	0.00%	0.04%	81.57%	17.70%	0.00%
0803700012770	0.22%	0.02%	0.00%	0.00%	81.16%	18.61%	0.00%
0803700012821	0.00%	0.00%	0.00%	0.00%	82.20%	17.80%	0.00%
0803700013514	1.16%	0.00%	0.00%	0.00%	88.77%	10.07%	0.00%
0803700013302	8.90%	3.93%	0.36%	4.16%	50.19%	32.43%	0.03%
0803700013321	5.26%	1.78%	0.27%	1.23%	50.10%	41.36%	0.00%
080370001368A	0.44%	0.00%	0.00%	0.00%	81.52%	18.04%	0.00%
080370001336A	0.16%	0.00%	0.00%	0.00%	80.85%	18.99%	0.00%
0803700013622	0.00%	0.00%	0.00%	0.00%	77.90%	22.10%	0.00%
0803700013463	1.71%	0.17%	0.01%	0.00%	85.87%	12.24%	0.00%
0803700013482	1.06%	0.06%	0.00%	0.02%	80.53%	18.33%	0.00%
080370001350A	0.24%	0.06%	0.00%	0.00%	89.26%	10.44%	0.00%
0803700013533	0.19%	0.09%	0.00%	0.00%	88.63%	11.08%	0.00%
0803700013590	0.00%	0.00%	0.00%	0.00%	73.50%	26.50%	0.00%
0803700013603	0.00%	0.00%	0.00%	0.00%	72.44%	27.56%	0.00%
0803700013618	0.00%	0.00%	0.00%	0.00%	73.02%	26.98%	0.00%
0803700013694	0.70%	8.33%	0.00%	0.00%	55.36%	35.62%	0.00%
0803700013707	0.00%	1.29%	0.05%	0.00%	65.15%	32.31%	1.19%
0803700013976	0.02%	0.00%	0.00%	0.00%	83.98%	16.00%	0.00%
0803700013726	0.03%	0.00%	0.00%	0.00%	61.17%	38.80%	0.00%
0803700013730	0.00%	0.00%	0.00%	0.00%	74.15%	25.85%	0.00%
0803700013745	0.00%	0.00%	0.00%	0.00%	73.16%	26.84%	0.00%
0803700014033	0.00%	3.39%	0.00%	0.00%	63.81%	32.79%	0.00%
080370001375A	0.00%	0.00%	0.00%	0.00%	71.20%	28.80%	0.00%
0803700013779	0.00%	0.00%	0.00%	0.00%	75.83%	24.17%	0.00%
0803700013783	0.00%	0.75%	0.00%	0.00%	77.39%	21.85%	0.00%
0803700013798	0.00%	0.00%	0.00%	0.00%	73.84%	26.16%	0.00%
0803700013800	0.01%	0.11%	0.00%	0.00%	63.59%	36.28%	0.00%
0803700013815	0.10%	0.00%	0.00%	0.00%	73.83%	26.06%	0.00%
0803700013849	0.02%	0.71%	0.00%	0.00%	68.11%	29.35%	1.81%
0803700013853	0.40%	0.02%	0.00%	0.02%	85.77%	13.80%	0.00%
0803700013868	0.00%	1.46%	0.00%	0.00%	70.13%	28.03%	0.38%
0803700013887	0.00%	0.17%	0.00%	0.00%	60.09%	39.74%	0.00%
0803700013891	0.02%	0.00%	0.00%	0.00%	75.43%	24.55%	0.00%
0803700013919	0.24%	0.05%	0.00%	0.00%	69.46%	30.25%	0.00%
0803700013938	0.00%	0.00%	0.00%	0.00%	82.21%	17.79%	0.00%
0803700013961	0.00%	0.00%	0.00%	0.00%	85.04%	14.96%	0.00%
0803700015120	0.21%	0.51%	0.19%	0.00%	78.82%	20.26%	0.00%
0803700014014	0.00%	1.68%	0.00%	0.00%	52.83%	45.49%	0.00%
0803700014029	0.00%	3.52%	0.04%	0.00%	58.21%	38.23%	0.00%
0803700014048	0.11%	3.63%	0.00%	0.00%	58.07%	38.19%	0.00%

0803700014052	0.00%	4.40%	0.00%	0.00%	58.14%	37.47%	0.00%
0803700014071	0.16%	5.41%	0.00%	0.00%	55.01%	39.43%	0.00%
0803700014298	0.54%	0.06%	0.00%	0.00%	79.60%	19.80%	0.00%
0803700014086	0.07%	4.85%	0.00%	0.00%	52.71%	42.38%	0.00%
0803700015510	0.00%	3.48%	0.00%	0.00%	50.44%	46.08%	0.00%
0803700014300	0.31%	0.00%	0.00%	0.00%	75.32%	24.37%	0.00%
0803700014264	2.10%	0.47%	0.01%	0.00%	78.96%	18.45%	0.00%
0803700014283	0.53%	0.37%	0.00%	0.00%	81.70%	17.41%	0.00%
0803700014315	0.39%	0.41%	0.00%	0.00%	84.51%	14.68%	0.00%
080370001432A	0.09%	1.73%	0.00%	0.00%	61.39%	36.79%	0.00%
0803700014334	0.08%	0.05%	0.13%	0.00%	77.73%	22.00%	0.00%
0803700014349	0.03%	0.05%	0.00%	0.00%	72.53%	27.38%	0.00%
0803700014353	0.00%	0.00%	0.00%	0.00%	60.48%	39.52%	0.00%
0803700014368	0.26%	0.02%	0.00%	0.00%	66.00%	33.72%	0.00%
0803700014372	0.66%	0.33%	0.00%	0.00%	61.66%	32.37%	4.99%
0803700014387	0.28%	4.11%	0.31%	0.64%	54.76%	39.89%	0.00%
0803700014419	0.16%	0.14%	0.00%	0.00%	64.38%	35.32%	0.00%
0803700014423	3.46%	0.66%	0.08%	4.59%	41.89%	49.32%	0.00%
0803700014584	0.02%	1.25%	0.00%	0.00%	72.23%	26.51%	0.00%
0803700014847	0.03%	0.00%	0.00%	0.00%	99.79%	0.18%	0.00%
0803700014620	1.01%	9.81%	0.02%	0.00%	32.06%	56.67%	0.42%
0803700014635	0.06%	0.00%	0.00%	0.00%	84.91%	15.03%	0.00%
080370001464A	0.00%	0.00%	0.00%	0.00%	75.65%	24.35%	0.00%
0803700014654	0.03%	0.00%	0.00%	0.00%	81.30%	18.67%	0.00%
0803700014669	0.04%	0.30%	0.00%	0.00%	75.76%	23.90%	0.00%
0803700014673	0.01%	0.00%	0.00%	0.00%	58.12%	41.87%	0.00%
0803700014692	0.00%	0.57%	0.00%	0.00%	67.33%	32.10%	0.00%
0803700014705	0.00%	0.11%	0.00%	0.32%	70.35%	29.23%	0.00%
0803700014724	0.00%	7.49%	0.25%	0.00%	6.81%	84.66%	0.79%
0803700014813	0.00%	0.93%	0.00%	0.00%	70.35%	28.71%	0.00%
0803700014832	0.00%	0.00%	0.00%	0.00%	85.04%	14.96%	0.00%
0803700014940	0.00%	0.00%	0.00%	0.00%	74.15%	25.85%	0.00%
0803700014955	0.00%	0.00%	0.00%	0.00%	73.55%	26.45%	0.00%
080370001496A	0.00%	0.00%	0.00%	0.00%	76.42%	23.58%	0.00%
0803700014974	0.00%	0.96%	0.00%	0.00%	83.12%	15.92%	0.00%
0803700015027	0.20%	0.00%	0.00%	0.00%	72.87%	26.93%	0.00%
0803700015031	0.14%	0.04%	0.00%	0.00%	75.04%	24.78%	0.00%
0803700015050	0.06%	0.32%	0.00%	0.00%	82.95%	16.68%	0.00%
0803700015065	0.01%	1.43%	0.00%	0.00%	79.81%	18.75%	0.00%
0803700015084	0.00%	0.76%	0.00%	0.00%	53.24%	45.99%	0.00%
0803700015099	0.00%	4.58%	0.00%	0.00%	39.81%	55.60%	0.00%

0803700015135	0.12%	0.00%	0.00%	0.00%	65.86%	34.02%	0.00%
080370001514A	0.71%	3.01%	1.24%	3.25%	44.80%	46.99%	0.00%
0803700015154	0.36%	0.00%	0.00%	0.00%	62.78%	36.86%	0.00%
0803700015173	1.36%	0.18%	0.49%	0.00%	85.33%	12.64%	0.00%
0803700015205	0.21%	0.00%	0.00%	0.00%	94.10%	5.69%	0.00%
080370001521A	0.02%	0.00%	0.00%	0.00%	73.85%	26.14%	0.00%
0803700015239	0.93%	0.26%	0.02%	0.00%	71.81%	26.99%	0.00%
0803700015243	2.37%	1.39%	2.19%	0.00%	84.96%	9.09%	0.00%
0803700015258	1.57%	0.47%	0.07%	0.00%	83.14%	14.75%	0.00%
0803700015262	0.11%	0.07%	0.00%	0.00%	62.17%	37.65%	0.00%
0803700015277	0.31%	6.38%	0.59%	0.00%	54.80%	37.93%	0.00%
0803700015281	0.00%	0.53%	0.00%	0.00%	72.65%	26.82%	0.00%
0803700015309	0.16%	0.00%	0.00%	0.00%	75.23%	24.61%	0.00%
0803700015328	0.18%	0.07%	0.00%	0.00%	53.91%	45.84%	0.00%
0803700015559	0.63%	0.17%	0.00%	0.00%	94.82%	4.38%	0.00%
0803700015563	0.00%	20.38%	0.00%	0.00%	31.81%	47.81%	0.00%
0803700015582	0.00%	31.33%	0.04%	0.00%	8.36%	60.27%	0.00%
0803700015597	0.00%	50.06%	0.06%	0.00%	7.35%	42.53%	0.00%
080370001560A	0.00%	36.53%	0.00%	0.00%	6.11%	57.35%	0.00%
080370001578A	0.00%	51.99%	0.00%	0.00%	0.83%	47.18%	0.00%
0803700015648	0.00%	0.00%	0.00%	0.00%	81.37%	18.63%	0.00%
0803700017146	0.00%	51.97%	0.00%	0.00%	4.68%	43.35%	0.00%
080370001592A	0.00%	0.00%	0.00%	0.00%	83.97%	16.03%	0.00%
0803700015934	0.00%	1.10%	0.00%	0.00%	78.95%	19.95%	0.00%
0803700015968	0.00%	0.00%	0.00%	0.00%	74.76%	25.24%	0.00%
0803700015972	0.00%	0.00%	0.00%	0.00%	68.15%	31.85%	0.00%
0803700015915	0.00%	0.00%	0.00%	0.00%	62.27%	37.73%	0.00%
0803700016805	0.03%	0.08%	0.15%	0.00%	83.49%	16.26%	0.00%
0803700016078	1.17%	0.20%	0.00%	0.01%	83.56%	15.05%	0.00%
0803700016082	0.00%	0.10%	0.00%	0.00%	63.64%	36.26%	0.00%
0803700016097	0.00%	3.87%	0.00%	0.00%	67.44%	28.69%	0.00%
080370001610A	0.00%	0.00%	0.00%	0.00%	79.22%	20.78%	0.00%
0803700016114	0.00%	0.00%	0.00%	0.00%	76.36%	23.64%	0.00%
0803700016129	0.81%	0.00%	0.00%	0.00%	61.79%	37.41%	0.00%
0803700016190	0.25%	0.00%	0.00%	0.00%	57.05%	42.70%	0.00%
0803700016222	0.04%	0.92%	0.45%	0.09%	67.55%	30.95%	0.00%
0803700016237	0.02%	0.09%	0.00%	0.00%	66.55%	33.34%	0.00%
0803700016580	0.00%	2.31%	0.00%	0.00%	62.49%	35.19%	0.00%
0803700016307	0.22%	0.00%	0.00%	0.00%	88.19%	11.59%	0.00%
0803700016330	0.00%	36.60%	0.00%	0.00%	0.74%	62.66%	0.00%
0803700016364	2.90%	0.03%	0.00%	0.00%	60.80%	36.27%	0.00%

0803700016383	1.44%	0.00%	0.00%	0.00%	57.53%	41.04%	0.00%
0803700016400	0.23%	0.00%	0.00%	0.00%	63.80%	35.92%	0.05%
0803700016415	0.00%	0.00%	0.00%	0.00%	65.06%	34.83%	0.11%
0803700016326	0.00%	62.36%	0.00%	0.00%	3.36%	34.27%	0.00%
080370001642A	0.00%	0.00%	0.00%	0.00%	77.11%	22.89%	0.00%
0803700016542	0.06%	1.23%	0.00%	0.00%	69.75%	28.96%	0.00%
0803700016650	0.37%	2.77%	0.00%	0.00%	52.95%	43.91%	0.00%
0803700016701	0.00%	2.18%	0.03%	0.00%	65.32%	32.47%	0.00%
0803700016716	0.00%	0.05%	0.01%	0.33%	66.15%	33.46%	0.00%
080370001674A	0.00%	0.00%	0.00%	0.00%	64.08%	35.92%	0.00%
0803700016824	0.00%	0.00%	0.00%	0.00%	95.72%	4.28%	0.00%
0803700016792	0.00%	0.15%	0.33%	0.06%	60.69%	38.77%	0.00%
080370001681A	0.00%	0.94%	0.03%	0.33%	56.14%	42.25%	0.32%
0803700016839	0.08%	0.00%	0.00%	0.12%	63.13%	36.63%	0.04%
0803700016843	0.70%	0.70%	0.00%	0.00%	76.14%	21.17%	1.29%
0803700016858	0.02%	0.86%	0.07%	0.22%	73.91%	24.42%	0.51%
0803700016862	0.06%	0.20%	0.00%	0.00%	76.17%	23.55%	0.02%
0803700016877	0.00%	0.00%	0.00%	0.03%	71.44%	28.35%	0.18%
0803700016881	0.00%	0.00%	0.00%	0.00%	65.71%	34.19%	0.10%
0803700016896	0.00%	0.10%	0.00%	0.00%	64.37%	34.69%	0.85%
0803700016909	0.00%	0.02%	0.00%	0.00%	73.57%	26.42%	0.00%
0803700016913	0.12%	0.26%	0.00%	0.00%	49.17%	47.22%	3.22%
0803700016947	0.00%	0.41%	0.00%	0.00%	78.37%	21.21%	0.00%
0803700016966	0.00%	0.06%	0.07%	0.00%	79.37%	20.50%	0.00%
0803700017004	0.00%	0.29%	0.00%	0.00%	49.28%	50.43%	0.00%
0803700017019	0.00%	23.76%	0.00%	0.00%	32.29%	43.95%	0.00%
0803700017023	0.21%	0.06%	0.00%	0.00%	67.28%	32.43%	0.03%
0803700017042	0.00%	0.37%	0.00%	0.00%	53.46%	46.17%	0.00%
0803700017057	0.08%	0.31%	0.00%	0.00%	38.68%	60.92%	0.00%
0803700017080	0.66%	0.20%	0.05%	0.73%	44.11%	54.27%	0.00%
0803700017095	0.00%	0.53%	0.00%	0.00%	55.64%	43.83%	0.00%
0803700017112	0.07%	1.46%	0.01%	0.16%	57.32%	40.98%	0.00%
0803700017127	0.09%	0.00%	0.00%	0.00%	73.15%	26.76%	0.00%
0803700017150	0.00%	0.00%	0.00%	0.00%	65.10%	34.90%	0.00%
080370001717A	0.00%	0.00%	0.00%	0.00%	60.42%	39.58%	0.00%
0803700017288	0.01%	0.63%	0.00%	0.01%	33.53%	65.82%	0.00%
0803700017362	0.00%	0.00%	0.00%	0.00%	65.57%	34.43%	0.00%
0803700017377	0.00%	16.79%	7.04%	0.00%	1.44%	74.73%	0.00%
0803700017381	0.00%	35.35%	0.00%	0.00%	4.81%	59.83%	0.00%
0803700018445	0.00%	36.18%	0.00%	0.00%	0.00%	63.82%	0.00%
0803700017485	0.00%	4.52%	0.00%	0.34%	35.86%	58.91%	0.37%

0803700017610	0.00%	12.12%	0.00%	0.00%	3.07%	84.81%	0.00%
0803700015296	0.03%	3.75%	0.00%	0.00%	75.90%	15.56%	4.76%
080370001667A	2.22%	15.82%	3.45%	1.36%	34.85%	42.31%	0.00%
0803700018430	0.00%	14.29%	0.00%	0.00%	0.00%	85.71%	0.00%
0803700017733	0.00%	10.60%	12.37%	28.44%	16.87%	31.71%	0.00%
0803700017767	0.00%	0.14%	0.00%	0.00%	41.11%	58.75%	0.00%
0803700011217	0.00%	0.00%	0.00%	0.00%	72.68%	27.32%	0.00%
0803700011221	0.00%	0.76%	0.00%	0.00%	80.20%	19.04%	0.00%
0803700011236	0.00%	0.00%	0.00%	0.00%	80.06%	19.94%	0.00%
0803700011240	0.00%	0.00%	0.00%	0.00%	76.59%	23.41%	0.00%
0803700011274	0.00%	0.10%	0.00%	0.00%	67.81%	32.09%	0.00%
0803700011289	0.00%	0.12%	0.00%	0.00%	71.90%	27.98%	0.00%
0803700011293	0.00%	0.00%	0.00%	0.00%	72.71%	27.29%	0.00%
0803700011310	0.00%	0.00%	0.00%	0.00%	73.66%	26.34%	0.00%
0803700016773	0.00%	0.00%	0.00%	0.00%	71.55%	28.45%	0.00%
0803700018303	0.00%	0.00%	0.00%	0.00%	34.60%	65.40%	0.00%
0803700018318	0.00%	0.13%	0.00%	0.00%	39.24%	60.63%	0.00%
0803700018322	0.00%	5.04%	0.00%	0.00%	0.00%	94.96%	0.00%
0803700018483	0.00%	0.00%	0.00%	0.00%	7.18%	92.82%	0.00%
0803700017894	0.00%	1.30%	0.00%	0.00%	55.94%	42.77%	0.00%
0803700015807	0.00%	68.64%	0.00%	0.00%	0.91%	30.45%	0.00%
0803700013764	0.00%	0.00%	0.00%	0.00%	74.76%	25.24%	0.00%
0803700016186	0.72%	23.19%	0.00%	0.00%	0.00%	76.09%	0.00%
0803700016932	0.00%	0.00%	0.00%	0.00%	5.67%	94.33%	0.00%
0803700015794	0.00%	66.49%	0.00%	0.00%	4.88%	28.64%	0.00%
0803700010721	0.00%	0.00%	0.00%	0.00%	83.55%	16.45%	0.00%
0803700016928	0.00%	9.59%	0.00%	0.00%	4.48%	85.93%	0.00%
0803700010628	0.00%	0.00%	0.00%	0.00%	83.46%	16.54%	0.00%
0803700010562	0.06%	0.00%	0.00%	0.00%	84.35%	15.59%	0.00%
0803700014461	0.03%	0.00%	0.00%	0.00%	72.50%	27.46%	0.00%
0803700018356	0.00%	0.00%	0.00%	0.00%	46.00%	54.00%	0.00%
0803700015667	0.00%	0.00%	0.00%	0.00%	98.53%	1.47%	0.00%
0803700017837	0.00%	4.29%	0.00%	0.01%	26.10%	69.60%	0.00%
0803700017964	0.00%	0.04%	0.00%	0.02%	59.78%	40.17%	0.00%
0803700017979	0.00%	5.42%	0.00%	0.00%	35.90%	58.68%	0.00%
080370001813A	0.00%	7.54%	0.02%	0.00%	2.41%	90.04%	0.00%
0803700010685	0.00%	0.00%	0.00%	0.00%	86.30%	13.60%	0.10%
080370001069A	0.37%	0.00%	0.00%	0.00%	91.39%	8.24%	0.00%
0803700010702	0.02%	0.00%	0.00%	0.00%	84.87%	15.11%	0.00%
0803700010774	0.68%	0.30%	0.00%	0.00%	73.48%	25.53%	0.00%
0803700011503	0.00%	0.00%	0.00%	0.00%	69.47%	30.53%	0.00%

0803700012198	0.19%	0.15%	0.00%	0.00%	76.15%	23.51%	0.00%
0803700012361	0.02%	0.00%	0.00%	0.00%	77.72%	22.27%	0.00%
0803700012376	0.09%	0.00%	0.00%	0.00%	82.83%	17.08%	0.00%
0803700012499	1.28%	1.58%	0.49%	0.00%	63.59%	33.06%	0.00%
0803700012709	0.00%	0.09%	0.00%	0.00%	65.98%	33.94%	0.00%
0803700012874	0.00%	1.45%	0.00%	0.00%	34.08%	64.47%	0.00%
0803700012906	0.16%	0.20%	0.00%	0.00%	80.65%	18.99%	0.00%
0803700012925	0.00%	0.00%	0.00%	0.00%	75.89%	24.11%	0.00%
080370001293A	0.09%	0.00%	0.00%	0.00%	75.12%	24.80%	0.00%
0803700013270	0.00%	3.20%	0.00%	0.05%	22.80%	73.95%	0.00%
0803700013529	0.42%	0.00%	0.00%	0.00%	86.84%	12.74%	0.00%
0803700013478	5.11%	0.09%	0.29%	0.00%	79.76%	14.75%	0.00%
0803700016970	0.00%	0.00%	0.00%	0.00%	34.16%	65.84%	0.00%
0803700014442	0.00%	0.00%	0.00%	0.00%	75.36%	24.64%	0.00%
0803700014758	0.00%	0.27%	0.00%	0.00%	60.07%	39.66%	0.00%
0803700014762	0.00%	0.29%	0.00%	0.00%	64.63%	35.08%	0.00%
0803700014777	0.00%	0.00%	0.00%	0.00%	73.35%	26.65%	0.00%
0803700014781	0.08%	1.13%	0.00%	0.00%	63.24%	35.56%	0.00%
0803700015366	0.00%	0.00%	0.00%	0.00%	58.77%	41.23%	0.00%
080370001507A	0.00%	0.51%	0.00%	0.00%	84.39%	15.11%	0.00%
0803700017447	0.00%	0.00%	0.00%	0.00%	18.22%	81.78%	0.00%
0803700015347	0.74%	0.49%	0.18%	0.00%	76.84%	21.75%	0.00%
0803700015351	0.00%	0.21%	0.00%	0.00%	81.75%	18.04%	0.00%
0803700015436	0.00%	40.00%	0.00%	0.00%	10.00%	50.00%	0.00%
0803700015455	0.00%	22.22%	0.00%	0.00%	0.00%	77.78%	0.00%
0803700015614	0.00%	0.17%	0.00%	0.00%	64.10%	35.72%	0.00%
0803700015629	0.03%	0.00%	0.00%	0.00%	72.38%	27.59%	0.00%
0803700016063	0.68%	0.27%	0.00%	0.00%	93.79%	5.27%	0.00%
0803700016951	0.00%	0.00%	0.00%	0.00%	67.98%	32.02%	0.00%
0803700017108	0.08%	0.00%	0.00%	0.00%	58.40%	41.52%	0.00%
0803700017517	0.00%	7.86%	0.00%	0.00%	42.86%	49.29%	0.00%
0803700017540	0.00%	0.00%	0.00%	0.00%	5.22%	94.78%	0.00%
0803700017790	0.00%	21.98%	0.13%	0.00%	1.25%	76.63%	0.00%
0803700015116	0.00%	7.93%	0.00%	0.21%	29.78%	61.73%	0.34%
0803700017470	0.00%	0.48%	0.00%	0.00%	4.05%	95.48%	0.00%
0803700018233	0.00%	1.25%	0.00%	0.00%	25.09%	73.66%	0.00%
0803700016699	0.00%	0.43%	0.00%	0.00%	52.96%	46.61%	0.00%
0803700017752	0.00%	0.12%	0.00%	0.00%	43.85%	56.02%	0.00%
0803700018568	0.00%	0.00%	0.00%	0.00%	40.61%	59.39%	0.00%
0803700016449	0.00%	9.85%	8.10%	0.00%	47.92%	34.14%	0.00%
0803700017822	0.00%	1.60%	0.29%	0.00%	32.19%	65.92%	0.00%

0803700018229	0.00%	2.27%	0.00%	0.00%	24.20%	73.53%	0.00%
0803700017818	0.00%	0.89%	0.00%	0.00%	44.14%	54.98%	0.00%
0803700015987	0.00%	0.55%	0.00%	0.00%	86.07%	13.39%	0.00%
080370001749A	0.00%	1.88%	0.11%	0.22%	44.88%	52.65%	0.25%
0803700018290	0.00%	0.00%	0.00%	0.00%	19.45%	80.55%	0.00%
0803700018407	0.00%	1.05%	0.00%	0.00%	9.85%	89.11%	0.00%
0803700017606	0.00%	0.03%	0.00%	0.00%	40.47%	59.50%	0.00%
0803700012075	2.60%	1.02%	0.23%	0.09%	72.57%	23.49%	0.00%
0803700014211	2.75%	3.47%	0.44%	13.95%	46.34%	33.05%	0.00%
0803700014457	0.05%	0.00%	0.00%	0.00%	81.15%	18.80%	0.00%
0803700016006	0.06%	0.59%	0.00%	0.00%	92.47%	6.88%	0.00%
0803700014993	0.00%	5.86%	0.13%	0.00%	27.79%	66.22%	0.00%
080370001852A	0.00%	11.28%	0.35%	0.04%	12.77%	75.56%	0.00%
0803700017199	0.00%	26.32%	0.00%	0.00%	31.58%	42.11%	0.00%
0803700018515	0.00%	8.94%	0.00%	0.00%	0.43%	90.63%	0.00%
080370001418A	0.28%	9.12%	0.00%	0.00%	51.87%	38.72%	0.00%
080370001603A	0.18%	10.63%	0.00%	0.00%	47.57%	41.47%	0.15%
0803700015722	0.00%	48.26%	0.00%	0.00%	12.53%	39.21%	0.00%
0803700015421	0.24%	21.08%	0.00%	0.00%	36.29%	42.40%	0.00%
080370001546A	0.00%	10.07%	0.00%	0.00%	42.62%	47.32%	0.00%
0803700011382	0.00%	0.00%	0.00%	0.00%	75.60%	24.40%	0.00%
0803700011397	0.05%	0.30%	0.00%	0.00%	86.55%	13.09%	0.00%
0803700016044	0.06%	6.45%	0.00%	0.00%	54.35%	38.89%	0.25%
0803700017555	0.59%	3.02%	0.91%	3.17%	45.09%	47.22%	0.00%
0803700017574	0.10%	0.74%	0.25%	0.02%	70.16%	28.73%	0.00%
080370001400A	0.02%	4.44%	0.00%	0.00%	40.32%	55.22%	0.00%
0803700014122	0.00%	0.05%	0.00%	0.00%	66.20%	33.75%	0.00%
0803700014156	0.00%	0.20%	0.00%	0.00%	87.01%	12.78%	0.00%
0803700014137	0.00%	0.13%	0.00%	0.00%	67.71%	32.16%	0.00%
0803700014160	0.00%	0.00%	0.00%	0.00%	85.97%	14.03%	0.00%
0803700014175	0.49%	1.26%	0.00%	0.00%	65.14%	32.83%	0.28%
0803700014194	1.11%	2.34%	0.00%	0.00%	61.66%	34.27%	0.61%
0803700014226	1.10%	4.33%	0.00%	0.00%	65.13%	29.33%	0.11%
0803700013872	0.00%	0.16%	0.00%	0.00%	67.88%	31.96%	0.00%
0803700013957	0.53%	1.55%	0.00%	0.00%	70.26%	27.65%	0.00%
0803700015313	0.13%	0.03%	0.00%	0.00%	71.34%	28.51%	0.00%
0803700014796	0.00%	0.00%	0.00%	0.00%	73.32%	26.68%	0.00%
0803700012412	0.00%	0.07%	0.00%	0.00%	66.49%	33.45%	0.00%
0803700013923	0.14%	0.00%	0.00%	0.00%	81.48%	18.37%	0.00%
0803700011715	0.02%	0.39%	0.00%	0.00%	73.22%	26.38%	0.00%
080370001172A	0.00%	0.00%	0.00%	0.00%	79.69%	20.31%	0.00%

0803700011768	0.00%	0.00%	0.00%	0.00%	80.31%	19.69%	0.00%
0803700017856	1.33%	0.60%	0.06%	0.04%	60.09%	37.90%	0.00%
0803700017841	0.60%	2.17%	0.14%	0.36%	53.38%	42.07%	1.28%
0803700012342	0.22%	3.25%	0.69%	18.50%	42.57%	34.76%	0.00%
080370001261A	0.00%	0.75%	0.00%	0.00%	77.47%	21.78%	0.00%
0803700012624	0.11%	0.00%	0.00%	0.00%	74.56%	25.33%	0.00%
0803700012643	0.00%	0.00%	0.00%	0.00%	80.06%	19.94%	0.00%
0803700012658	0.06%	0.00%	0.00%	0.00%	77.61%	22.34%	0.00%
0803700012662	0.00%	0.14%	0.00%	0.00%	73.45%	26.41%	0.00%
0803700016665	0.31%	3.87%	1.03%	1.47%	40.66%	52.67%	0.00%
0803700016646	0.66%	5.16%	0.19%	1.34%	56.35%	36.29%	0.00%
0803700012357	0.22%	18.22%	7.77%	10.18%	18.55%	44.91%	0.16%
0803700013406	0.90%	17.49%	19.61%	35.78%	5.83%	20.39%	0.00%
0803700016631	0.64%	6.07%	2.26%	3.14%	47.32%	40.57%	0.00%
0803700015506	0.00%	0.93%	0.00%	0.00%	73.46%	25.60%	0.00%
0803700015652	0.00%	2.42%	0.00%	0.00%	81.93%	15.65%	0.00%
0803700018197	0.00%	31.65%	0.00%	0.00%	2.41%	65.94%	0.00%
0803700017201	0.00%	0.39%	0.00%	0.07%	35.64%	63.57%	0.34%
0803700017254	0.00%	0.00%	0.00%	0.05%	60.02%	37.31%	2.63%
0803700017216	0.00%	0.00%	0.00%	0.00%	33.71%	65.47%	0.82%
0803700017324	0.00%	0.00%	0.00%	0.00%	37.34%	62.66%	0.00%
0803700017451	0.00%	0.72%	0.00%	0.00%	30.19%	69.09%	0.00%
0803700016608	0.00%	0.21%	0.00%	0.00%	71.39%	28.39%	0.00%
0803700016595	0.00%	0.09%	0.00%	0.00%	64.03%	35.88%	0.00%
0803700017305	0.37%	0.05%	0.00%	0.00%	63.20%	36.38%	0.00%
0803700016754	0.00%	0.00%	0.00%	0.00%	65.15%	34.85%	0.00%
0803700017697	0.00%	0.00%	0.00%	0.00%	42.23%	57.77%	0.00%
0803700017945	0.00%	0.00%	0.00%	0.00%	45.19%	54.81%	0.00%
0803700018093	0.00%	0.00%	0.00%	0.00%	52.18%	47.82%	0.00%
0803700018036	0.00%	0.00%	0.00%	0.00%	45.18%	54.82%	0.00%
0803700018214	0.00%	0.33%	0.00%	0.00%	29.86%	69.81%	0.00%
0803700015474	0.00%	6.72%	0.00%	0.00%	23.91%	69.37%	0.00%
0803700015760	0.00%	5.99%	0.00%	0.00%	26.95%	67.07%	0.00%
0803700017220	0.00%	27.70%	0.07%	0.00%	3.48%	68.75%	0.00%
0803700015756	0.00%	23.38%	0.00%	0.00%	18.63%	58.00%	0.00%
0803700014531	0.44%	0.11%	0.01%	0.00%	83.89%	15.55%	0.00%
0803700014688	0.14%	0.00%	0.05%	0.00%	75.91%	23.90%	0.00%
0803700014743	0.00%	5.84%	0.00%	0.00%	61.80%	32.37%	0.00%
0803700012959	0.09%	4.82%	0.09%	0.44%	52.27%	39.10%	3.19%
0803700012963	0.00%	3.15%	0.00%	0.00%	59.36%	37.49%	0.00%
0803700017771	0.00%	0.00%	0.00%	0.00%	51.86%	48.14%	0.00%

0803700018089	0.00%	0.88%	0.00%	0.00%	34.22%	64.90%	0.00%
0803700015370	0.00%	5.63%	0.00%	0.00%	29.64%	64.74%	0.00%
080370001724A	0.00%	7.33%	0.00%	0.00%	34.56%	58.10%	0.00%
0803700014118	0.00%	0.71%	0.00%	0.00%	75.10%	24.19%	0.00%
0803700014103	0.00%	7.66%	0.02%	0.00%	52.37%	39.95%	0.00%
0803700017536	0.00%	28.97%	1.38%	0.00%	8.78%	59.95%	0.92%
0803700012639	0.90%	0.52%	0.00%	0.00%	72.13%	26.45%	0.00%
0803700014067	0.00%	2.02%	0.00%	0.00%	61.54%	36.45%	0.00%
0803700018110	0.00%	8.29%	0.00%	0.00%	34.65%	57.05%	0.00%
0803700017593	0.00%	31.33%	0.00%	0.00%	2.80%	65.87%	0.00%
0803700018337	0.00%	1.52%	0.00%	0.00%	22.73%	75.76%	0.00%
0803700011166	0.00%	0.00%	0.00%	0.00%	70.92%	29.08%	0.00%
0803700013711	0.07%	0.95%	0.02%	0.00%	63.75%	34.60%	0.60%
080370001795A	0.00%	0.38%	0.00%	0.01%	30.97%	68.65%	0.00%
0803700015900	0.15%	0.22%	0.00%	0.00%	55.65%	43.58%	0.40%
0803700014090	0.00%	3.88%	0.00%	0.00%	68.15%	27.96%	0.00%
0803700014141	0.26%	0.89%	0.00%	0.00%	74.56%	24.03%	0.26%
0803700012484	0.94%	7.27%	0.88%	24.91%	29.28%	36.72%	0.00%
0803700016735	0.00%	0.00%	0.00%	0.00%	70.44%	29.56%	0.00%
0803700013355	0.24%	9.45%	0.02%	0.00%	48.75%	41.19%	0.34%
0803700014902	0.33%	10.05%	0.86%	1.76%	53.08%	33.48%	0.43%
0803700017714	0.35%	12.22%	16.08%	7.55%	32.87%	30.92%	0.00%
0803700017729	0.49%	2.35%	6.24%	1.60%	43.85%	45.46%	0.00%
0803700016491	0.00%	0.00%	0.00%	0.00%	68.62%	31.38%	0.00%
0803700015578	0.00%	10.39%	0.00%	0.00%	1.61%	87.99%	0.00%
0803700014739	0.00%	29.76%	0.05%	0.00%	6.54%	63.65%	0.00%
0803700015525	0.00%	3.78%	0.00%	0.00%	57.91%	38.31%	0.00%
080370001820A	0.00%	0.00%	0.00%	0.00%	2.06%	97.94%	0.00%
0803700018375	0.00%	3.11%	0.00%	0.00%	9.47%	87.42%	0.00%
0803700015898	0.00%	5.80%	0.06%	0.21%	29.46%	64.47%	0.00%
0803700017413	0.00%	1.37%	0.00%	0.00%	22.68%	75.96%	0.00%
080370001222A	1.32%	7.72%	1.80%	15.41%	32.42%	41.32%	0.00%
0803700017589	1.03%	0.97%	0.20%	1.88%	60.87%	35.05%	0.00%
0803700013459	0.25%	5.12%	2.65%	0.10%	56.09%	35.79%	0.00%
0803700017061	0.78%	2.17%	2.07%	0.14%	62.23%	32.61%	0.00%
0803700017076	2.37%	12.97%	0.47%	6.06%	36.46%	41.67%	0.00%
080370001699A	0.00%	2.09%	0.00%	0.00%	44.48%	53.42%	0.00%
0803700017165	0.00%	6.53%	0.01%	0.00%	26.38%	67.07%	0.00%
0803700018074	0.00%	2.01%	0.00%	0.00%	17.44%	80.55%	0.00%
0803700017409	0.00%	0.24%	0.00%	0.00%	20.91%	78.85%	0.00%
0803700014599	0.19%	2.21%	0.00%	0.00%	48.94%	48.66%	0.00%

0803700018479	0.00%	18.79%	0.28%	0.00%	26.12%	54.81%	0.00%
0803700018021	0.00%	13.01%	0.15%	0.00%	26.00%	60.85%	0.00%
0803700013942	0.27%	8.18%	0.77%	0.00%	47.78%	43.00%	0.00%
0803700014989	0.00%	9.09%	0.10%	0.00%	42.93%	47.88%	0.00%
0803700016010	0.04%	5.07%	0.00%	0.00%	63.29%	31.59%	0.00%
0803700016275	0.14%	0.03%	0.01%	0.07%	70.55%	29.20%	0.00%
0803700014230	0.00%	3.90%	0.00%	0.00%	65.94%	30.16%	0.00%
0803700015417	0.00%	34.41%	3.23%	0.00%	17.20%	45.16%	0.00%
0803700014245	0.05%	11.51%	1.82%	0.00%	43.49%	43.13%	0.00%
080370001425A	0.09%	3.08%	0.00%	0.00%	51.11%	45.72%	0.00%
0803700013834	0.00%	0.00%	0.00%	0.00%	62.53%	37.47%	0.00%
080370001382A	0.15%	0.00%	0.00%	0.00%	67.83%	32.01%	0.00%
0803700016379	0.00%	0.00%	0.00%	0.00%	77.56%	22.44%	0.00%
0803700016241	4.03%	0.05%	0.00%	0.00%	67.28%	28.65%	0.00%
0803700016788	0.00%	0.28%	0.00%	0.08%	56.14%	43.50%	0.00%
0803700010717	0.00%	0.00%	0.00%	0.00%	82.50%	17.50%	0.00%
0803700010863	0.02%	0.00%	0.00%	0.00%	81.76%	18.22%	0.00%
0803700011043	0.00%	0.00%	0.00%	0.00%	73.71%	26.29%	0.00%
0803700011151	0.22%	0.04%	0.00%	0.00%	69.09%	30.65%	0.00%
0803700013552	0.00%	0.13%	0.00%	0.00%	72.15%	27.73%	0.00%
0803700013567	0.00%	0.00%	0.00%	0.00%	76.74%	23.26%	0.00%
0803700013586	0.00%	0.00%	0.00%	0.00%	68.70%	31.30%	0.00%
0803700013980	1.08%	0.30%	0.07%	0.17%	66.83%	31.56%	0.00%
0803700013995	1.67%	0.19%	0.00%	0.00%	80.06%	18.08%	0.00%
0803700014550	0.00%	0.00%	0.00%	0.00%	73.47%	26.53%	0.00%
0803700014527	0.00%	0.00%	0.00%	0.00%	81.64%	18.36%	0.00%
0803700014546	0.06%	0.00%	0.00%	0.00%	76.36%	23.58%	0.00%
0803700014207	0.56%	2.88%	1.13%	4.53%	53.08%	37.82%	0.00%
0803700014866	0.04%	0.98%	0.00%	0.00%	62.62%	36.37%	0.00%
0803700016684	1.76%	28.02%	10.06%	0.56%	21.11%	38.43%	0.04%
0803700015385	0.00%	2.97%	0.00%	0.00%	28.95%	68.08%	0.00%
0803700012677	3.17%	0.65%	0.11%	0.00%	79.02%	17.04%	0.00%
0803700012681	7.88%	4.15%	24.66%	0.10%	51.57%	11.46%	0.17%
0803700016576	0.00%	0.37%	0.01%	0.00%	60.14%	39.48%	0.00%
0803700017466	0.00%	0.00%	0.00%	0.00%	56.97%	43.03%	0.00%
0803700017875	0.00%	0.00%	0.00%	0.00%	19.53%	80.34%	0.13%
0803700015224	0.85%	5.43%	1.37%	2.27%	52.45%	37.63%	0.00%
0803700017292	0.00%	0.00%	0.00%	0.00%	63.78%	36.22%	0.00%
0803700018017	0.00%	0.54%	0.00%	0.06%	16.80%	82.59%	0.00%
0803700012978	0.00%	0.68%	0.00%	0.00%	70.21%	29.11%	0.00%
0803700015188	0.00%	0.37%	0.00%	0.00%	53.32%	46.31%	0.00%

0803700015192	0.29%	5.18%	0.06%	0.00%	28.99%	65.48%	0.00%
080370001756A	0.67%	2.42%	0.04%	16.28%	36.37%	44.21%	0.00%
0803700016504	0.00%	0.02%	0.00%	0.01%	69.15%	30.82%	0.00%
0803700016720	0.00%	0.00%	0.00%	0.00%	70.39%	29.61%	0.00%
0803700017786	0.00%	2.44%	0.00%	0.00%	42.49%	55.07%	0.00%
080370001489A	0.00%	0.83%	0.00%	0.00%	43.75%	55.42%	0.00%
0803700012889	0.00%	8.02%	0.01%	0.00%	6.70%	85.27%	0.00%
0803700018498	0.00%	11.24%	0.00%	0.48%	0.45%	87.83%	0.00%
0803700016561	0.13%	0.15%	0.13%	0.02%	66.50%	33.07%	0.00%
0803700010929	0.00%	2.11%	0.00%	0.00%	65.81%	32.08%	0.00%
0803700013444	0.41%	5.40%	0.32%	13.45%	40.22%	40.21%	0.00%
0803700013571	0.00%	0.00%	0.00%	0.00%	72.08%	27.92%	0.00%
0803700013904	0.00%	0.00%	0.00%	0.00%	64.29%	35.71%	0.00%
0803700014917	0.00%	13.52%	0.00%	0.00%	39.91%	46.57%	0.00%
0803700015489	0.00%	3.33%	0.00%	0.00%	44.03%	52.64%	0.00%
0803700015718	0.00%	0.00%	0.00%	0.00%	39.02%	60.98%	0.00%
0803700015703	0.00%	60.67%	0.00%	0.00%	13.48%	25.84%	0.00%
0803700016398	0.02%	0.02%	0.00%	0.00%	52.29%	47.41%	0.26%
0803700016557	0.00%	1.20%	0.00%	0.00%	45.22%	53.58%	0.00%
0803700016769	0.00%	0.20%	0.00%	0.00%	61.00%	38.80%	0.00%
0803700017131	1.55%	10.25%	0.73%	3.01%	47.37%	37.08%	0.00%
0803700017269	0.00%	0.00%	0.00%	0.00%	52.82%	47.18%	0.00%
0803700017273	0.00%	0.23%	0.00%	0.00%	24.34%	75.43%	0.00%
0803700017184	0.00%	0.55%	0.00%	0.00%	60.08%	39.37%	0.00%
0803700017358	0.00%	6.74%	0.00%	0.00%	52.53%	40.73%	0.00%
0803700017343	0.00%	1.25%	0.00%	0.00%	7.50%	91.25%	0.00%
0803700017396	0.00%	2.15%	0.00%	0.00%	53.95%	43.90%	0.00%
080370001731A	0.02%	0.00%	0.00%	0.00%	47.46%	52.52%	0.00%
0803700017521	0.68%	21.58%	0.00%	0.00%	13.58%	64.16%	0.00%
0803700017682	0.00%	0.07%	0.00%	0.00%	49.93%	50.00%	0.00%
0803700017678	0.00%	0.00%	0.00%	0.00%	51.62%	48.38%	0.00%
0803700018163	0.00%	25.00%	0.00%	0.00%	5.26%	69.74%	0.00%
0803700018426	0.00%	13.84%	2.29%	0.00%	27.79%	56.08%	0.00%

E. Paso Del Norte BSVI

Note: Census units that start with "08037000" are units within Ciudad Juarez, and those beginning with "48141000" are within El Paso city

Disabled	Null	96.92768	Null	Null	Null	98.04688	Null	Null	97.53425
Unemployed	100	98.94481	Null	Null	Null	97.90576	100	Null	100
Females in labor force	41.17647	69.75465	Null	Null	Null	50.74627	Null	Null	39.37008
Labor Force	71.05263	76.83992	Null	Null	Null	66.66667	40	Null	59.92509
HS Graduate	Null	71.45463	Null	Null	Null	65.66604	Null	Null	61.63265
Over 5	84.61538	90.9406	Null	Null	Null	89.45313	86.95652	Null	89.86301
Over 65	Null	98.72381	Null	Null	Null	98.69792	100	Null	98.08219
Female Head Household	78.57143	58.62971	Null	Null	Null	79.91803	Null	Null	34.34343
Average Household Size	25.71429	33.60879	Null	Null	Null	37.04918	8	Null	26.26263
Household with piped water	100	99.79079	Null	Null	Null	99.59016	100	Null	96.9697
Household with Car	28.57143	44.45607	Null	Null	Null	38.52459	100	Null	57.57576
BSVI	Null	840.0714	Null	Null	Null	822.2646	Null	Null	761.5588
ID	803700016434	080370001770A	803700018464	803700010401	803700018360	803700018106	803700018500	080370001845A	803700015775

Null	96.45324	90.96386	91.96787	97.98851	Null	100	95.43726	95	96.16549	95.10978
Null	97.02502	96.91877	99.33333	100	Null	100	100	Null	96.95238	97.38318
Null	61.87654	42.95082	45.87912	41.98473	Null	40	40.65934	34.78261	59.06593	54.09836
Null	72.46448	58.42881	57.32484	55.06073	Null	65.78947	60.40609	59.09091	71.13821	63.69048
Null	73.40653	58.41035	51.59501	49.33333	Null	55.55556	53.03867	53.33333	61.41384	68.86912
Null	89.95707	89.39759	93.37349	87.64368	Null	86.53846	87.8327	92.85714	91.3219	94.71058
Null	98.5813	96.14458	92.36948	96.83908	Null	92.30769	92.77567	92.14286	99.19273	91.21756
Null	70.76626	76.81159	62.96296	40.2439	Null	Null	71.42857	79.06977	69.71609	58.88158
Null	31.01095	21.25604	35.11111	15.12195	Null	38.82353	31.68831	34.88372	37.47634	34.80263
Null	99.87122	89.42308	83.08824	100	Null	23.52941	55.84416	97.67442	100	99.67213
Null	37.02511	56.73077	59.19118	37.80488	Null	58.82353	55.84416	46.51163	30.59937	50.81967
Null	828.4377	777.4362	772.1966	722.0208	Null	Null	744.9549	Null	813.0423	809.2551
803700015686	803700017907	803700018040	803700018125	803700018144	803700018159	803700018341	803700018178	803700018182	803700018286	803700010789

94.18255	95.71429	93.48261	95.88501	94.18605	97.91512	97.93439	Null	89.66942	95.46649	96.29161
99.182	Null	98.58569	97.77531	98.89447	99.17492	Null	Null	97.34513	97.82904	99.4186
48.90511	68.75	43.68836	52.68657	45.79327	47.47475	43.93064	Null	38.66667	42.98094	67.49193
59.41677	76.92308	59.12445	66.29794	61.23077	61.96319	55.50528	Null	62.77778	61.16183	75.68757
66.53747	66.66667	60.04251	61.75523	63.83121	57.06402	63.12399	Null	42.01183	58.67393	71.0119
95.08526	98.57143	93.16273	90.19166	90.7907	89.05436	91.37303	Null	86.36364	92.31275	91.06616
87.16148	91.42857	92.28309	96.84329	94.88372	95.83023	91.25152	Null	90.49587	94.28384	96.88158
59.88858	78.94737	62.19686	62.35828	56.57238	65.39589	68.66953	Null	58.44156	64.7191	48.99846
45.23677	55.78947	28.64479	19.54649	28.45258	22.81525	29.35622	Null	37.14286	31.59551	26.87211
99.72222	80	99.71469	98.86621	99.50083	67.83626	97.85408	Null	9.090909	76.62921	98.92142
45.55556	20	58.05991	54.42177	57.23794	61.40351	58.79828	Null	58.44156	52.13483	67.18028
800.8738	Null	788.9857	796.6277	791.3739	765.9275	Null	Null	670.4472	767.7875	839.8216
803700010810	080370001083A	080370001158A	803700015991	803700012982	803700013266	803700013548	803700018411	080370001471A	803700014828	803700015008

Null	97.57403	97.22222	93.72	97.20373	94.29994	97.10744	Null	94.92754	89.65517	Null
Null	98.25905	98.34254	98.12171	98.53301	97.62188	98.71795	Null	100	100	100
Null	48.5259	47.05882	52.70851	51.90259	47.29927	66.09881	Null	34.04255	54.83871	40
Null	58.87659	64.87455	60.55505	62.53823	61.70213	70.38556	Null	54.28571	64.0625	60.60606
Null	81.16688	58.55513	89.81308	94.33962	59.82143	88.64028	Null	Null	Null	Null
Null	95.39779	92.77778	95.28	95.00666	90.5368	94.28375	Null	94.2029	87.35632	95.2381
Null	89.61827	95.55556	84.04	89.54727	96.95628	94.69697	Null	97.82609	Null	Null
Null	66.23236	43.26923	55.74289	64.20233	56.29139	63.69863	Null	70.96774	45	66.66667
Null	39.13138	30.76923	47.31296	42.06226	20.22075	36.66667	Null	10.96774	13	30
Null	99.89142	87.5	100	99.80583	98.6755	99.31663	Null	90.32258	100	100
Null	81.32465	66.34615	78.92518	94.75728	53.64238	83.82688	Null	54.83871	50	58.33333
Null	855.9983	782.2712	856.2194	889.8988	777.0678	893.4396	Null	Null	Null	Null
080370001553A	803700015169	803700015493	803700015949	803700015953	803700016025	803700016059	803700016612	803700016985	803700017428	803700017502

Null	Null	95.85024	96.84487	93.97516	95.11719	96.47059	97.31658	98.06816	Null	97.13701
100	Null	98.43025	97.39414	99.642	98.56086	98.91786	98.49162	99.26695	Null	99.24338
27.77778	Null	57.52475	54.33404	45.79439	52.09397	50.89561	57.83087	50.18854	Null	55.55556
52.94118	Null	68.38253	63.36429	56.92935	63.89911	63.47175	67.82872	62.48092	Null	67.00465
Null	Null	68.54536	78.0303	93.72385	86.61041	86.63119	85.98829	88.7574	Null	77.96686
85.71429	Null	90.46477	95.17967	96.95652	93.22917	93.45269	93.36125	93.78043	Null	92.26312
100	Null	98.63519	86.76599	74.47205	97.04861	97.57033	97.81294	97.34569	Null	96.38718
76.92308	Null	65.34954	57.27924	63.65132	71.21439	68.35902	67.60638	58.80759	Null	73.93868
13.84615	Null	34.07903	45.53699	48.75	30.91454	29.10245	31.41489	30.98103	Null	30.80189
100	Null	99.87842	100	99.509	99.77511	99.72801	99.78723	99.9458	Null	99.29245
61.53846	Null	34.22492	60.85919	93.78069	74.81259	79.96374	79.46809	81.51762	Null	69.2217
Null	Null	811.365	835.5887	867.1843	863.276	864.5632	876.9069	861.1401	Null	858.8125
803700018055	803700018394	803700018002	803700010613	803700010670	803700015826	803700015830	803700015845	080370001585A	803700015879	803700015883

97.36664	96.28085	98.03669	95.62044	96.6046	94.8556	95.85745	96.18321	95.51904	97.51209	94.4855
98.99812	98.43444	99.40156	98.52217	98.17073	99.42252	98.13289	95.91002	99.2785	97.82609	98.26884
61.42222	57.85124	58.7511	51.72414	53.14402	43.38747	55.30358	42.26328	46.47436	48.59316	51.78808
69.34433	69.36652	71.04592	62.8483	65.50175	59.60987	66.7033	57.25995	57.3201	59.74026	65.11936
74.13384	80.5214	71.68675	66.11296	80.04386	60	80.53302	66.41698	93.76068	87.3946	86.01108
91.6948	90.54571	90.82716	93.43066	90.43447	92.05776	93.78617	94.75191	96.78865	94.43677	95.11086
97.43417	97.77546	98.51947	96.59367	98.94122	93.63718	94.57813	90.17176	79.08887	84.89979	87.834
73.24614	75.84204	64.99478	49.58678	75.03338	67.65625	68.64407	65.9306	70.02012	62.97503	65.83851
29.56005	33.17073	35.06792	32.06612	26.86248	30.75	30.44492	33.88013	46.35815	45.51574	46.14907
99.88109	99.76771	99.79101	97.52066	100	99.84375	99.25847	100	99.5992	99.56663	97.67802
61.95006	65.85366	47.54441	42.14876	58.47797	51.71875	77.75424	59.93691	92.98597	88.94908	72.29102
855.0315	865.4098	835.6668	786.1746	843.2145	792.9392	860.9962	802.7047	877.1936	867.4092	860.5743
080370001763A	803700017644	803700017659	803700017663	803700017748	803700012713	803700015012	080370001133A	803700010581	803700010416	803700010647

Null	93.98907	94.57917	95.51375	97.74951	95.86895	95.2223	95.02646	92.89836	93.4413	93.76026
98.97959	98.09663	98.49624	98.83527	99.16766	98.95833	99.15865	98.93993	98.92116	98.67061	98.25835
70.17544	55.71566	52.71084	40.43546	52.74804	49.09639	54.03727	56.16114	48.85892	52.84091	55.4731
78.60963	66.82975	62.83465	48.42869	61.65689	61.63724	64.79751	66.43192	62.0814	64.2925	65.55661
Null	83.62899	91.49278	89.54849	90.40576	85.96346	78.68186	90.61372	75.65076	81.50346	84.64606
95.39952	93.98907	95.57775	96.38205	95.6621	96.50997	94.7578	95.97884	94.31869	94.17004	94.17077
81.59806	86.71711	75.03566	81.83792	81.93085	81.33903	87.12674	80.31746	86.1518	84.93927	88.17734
71.14428	63.00448	55.09434	59.61872	62.05734	56.96429	65.82734	65.33333	52.74725	55.35354	51.32743
58.90547	47.01794	49.50943	52.09705	48.2968	49.85714	45.79137	49.6	44.98168	50.54545	47.07965
100	99.44009	99.25094	99.48007	99.91568	99.64286	99.28058	99.2	99.7558	99.19679	98.90351
97.01493	73.1243	86.51685	78.68284	85.58179	80.71429	65.82734	84.26667	57.14286	66.46586	65.35088
Null	861.5531	861.0987	840.8603	875.1724	856.5519	850.5087	881.8695	813.5087	841.4197	842.704
803700010435	803700010454	803700010469	803700010473	803700010492	803700010505	803700010524	803700010539	803700010543	803700010558	803700010632

94.03794	94.67102	96.54071	Null	95.95745	95.40918	92.64323	93.21192	Null	95.04219	94.75921
98.8024	98.81466	98.88476	Null	97.75967	99.25926	98.35076	98.96907	Null	97.35915	98.18436
40.82474	45.34161	43.7014	Null	46.51741	49.24078	54.78395	50	Null	59.45946	47.19472
50.86294	58.18182	58.94814	Null	59.65978	61.64384	64.60499	63.46783	Null	69.60784	60.62659
85.353	85.39909	56.85646	Null	74.84117	75.62724	79.19648	57.32861	Null	78.27763	66.33484
95.84463	94.72539	89.5157	Null	94.68085	95.30938	93.7066	88.32781	Null	95.35865	94.90085
77.77778	84.12181	94.46514	Null	81.48936	87.72455	93.44618	96.77152	Null	85.54852	89.16431
65.47619	65	46.57534	Null	60.29851	64.08046	66.81097	70.72368	Null	60.77844	62.5523
49	45.91176	27.51468	Null	45.43284	42.41379	33.50649	20.52632	Null	45.20958	40.9205
99.05213	100	94.73684	Null	98.80952	99.42529	99.8557	98.68421	Null	99.10448	99.58159
76.77725	72.94118	55.75049	Null	64.28571	73.27586	76.91198	50.98684	Null	63.28358	45.39749
833.809	845.1083	763.4897	Null	819.7323	843.4096	853.8173	788.9978	Null	849.0295	799.6168
803700010651	803700010666	803700017625	803700018534	803700013660	803700013675	803700014438	803700014885	080370001838A	803700010859	803700011077

96.51163	96.59864	93.63092	93.85172	93.36801	95.78475	95.3534	95.31034	94.08482	96.49123	Null
99.11817	98.65471	99.43503	98.69403	98.64532	99.45055	99.19246	96.36872	98.26303	99.09091	100
54.98783	59.80066	79.40781	48.19533	49.69419	44.11135	48.19672	43.09764	46.15385	47.3262	52.5
67.33967	70.68146	83.3782	60.29246	61.51515	57.90032	60.35743	59.27152	59.97024	59.13978	66.27907
65.56544	67.06081	64.15641	69.11058	79.65024	62.4297	65.80977	66.66667	67.03822	61.37339	Null
95.98309	94.96599	92.32444	92.67631	94.9935	94.79821	93.19372	93.65517	88.39286	93.5307	93.04348
90.16913	87.89116	93.3043	89.33092	88.55657	87.62332	89.5288	88.13793	93.30357	89.91228	Null
62.70718	64.23358	53.15488	59.40054	72.00811	68.01075	64.05229	64.13502	71.36929	69.92754	58.62069
47.73481	46.35036	30.0956	39.72752	37.60649	40.05376	33.42048	38.81857	25.64315	33.91304	20.68966
100	100	99.23664	100	100	99.46237	99.78214	100	95.43568	98.91304	100
36.46409	40.87591	61.45038	49.3188	79.91886	69.08602	71.02397	56.54008	53.94191	55.43478	65.51724
816.581	827.1133	849.5746	800.5982	855.9564	818.7111	819.9112	802.0017	793.5966	805.0529	Null
803700011081	803700011096	803700014616	803700011306	803700011772	803700012588	803700012592	803700013637	803700013641	803700013656	080370001788A

Null	Null	96.79245	Null	95.99263	95.13359	95.69279	94.9115	96.31336	95.96951	94.03372
Null	Null	99.2278	Null	99.11661	97.68563	98.71795	98.80299	Null	98.33716	99.52446
Null	Null	47.35062	Null	53.83693	45.2581	41.08911	46.37764	47.67442	53.30739	43.8843
Null	Null	60.51402	Null	66.31517	60.46647	58.24518	58.98794	65.31792	63.63802	60.45175
Null	Null	67.89969	Null	65.97222	63.48315	63.22751	78.13275	67.5	75.19455	58.58275
Null	Null	93.82075	Null	90.28098	93.65458	94.18786	94.10029	93.08756	92.71581	91.43969
Null	Null	93.20755	Null	92.538	91.79389	90.97042	91.93707	96.77419	94.07885	93.45006
Null	Null	45.3202	Null	58.52535	64.60768	56.27178	59.67347	76.27119	59.93724	71.2963
Null	Null	30.37767	Null	33.30261	30.01669	32.85714	33.58367	26.44068	28.62971	28.61111
Null	Null	99.67159	Null	96.9278	99.66611	99.65157	99.91837	100	99.79079	99.30556
Null	Null	62.88998	Null	59.29339	65.77629	66.72474	73.71429	57.62712	60.14644	57.52315
Null	Null	797.0723	Null	812.1017	807.5422	797.636	830.14	Null	821.7455	798.1028
80370001 8553	80370001 7235	80370001 4476	80370001 5864	80370001 4480	80370001 4495	80370001 4508	80370001 4512	80370001 5741	80370001 4565	08037000 1457A

Null		Null	93.49593	95.8544	94.79609	96.31537	96.46112	96.87335	95.05763	94.50549	92.90503
	100	Null	Null	96.56453	98.42486	97.90265	98.00363	98.20194	98.67725	Null	97.38277
Null		Null	34.14634	62.23479	55.11811	57.15795	58.64979	56.36277	59.56897	59.78261	56.35793
Null		Null	58.13953	73.16576	66.69506	68.09485	69.49758	67.98307	71.9391	77.20207	71.36187
Null		Null	31.70732	72.68786	71.70747	73.85389	74.07493	70.55199	70.57064	74.03315	71.55963
	100	Null	89.43089	89.93933	90.78165	89.77813	89.09478	90.37414	89.29417	89.74359	86.53631
Null		Null	95.93496	99.29221	98.51317	98.53407	98.92163	97.82189	98.57887	Null	99.27374
Null		Null	80.76923	61.38934	67.61833	68.08943	63.80066	63.37423	66.05166	70.2381	70.16575
73.33333		Null	5.384615	36.09047	29.2562	31.59892	27.88609	30.34356	33.23142	35	34.06998
	100	Null	100	99.6769	99.92487	99.93225	99.78094	99.81606	99.73643	98.80952	99.63168
Null		Null	23.07692	34.89499	46.0556	43.56369	48.08324	40.40466	36.21508	52.38095	39.22652
Null		Null	Null	821.7906	818.8914	824.8212	824.2544	812.1077	818.9212	Null	818.4712
803700015671		803700015690	803700015737	803700017860	803700017911	803700017926	803700017930	803700017983	803700017998	803700018248	803700018252

Null	95.77105	94.7027	93.31075	93.36207	89.88095	96.01386	93.87483	97.86756	96.52605	92.02279
Null	99.0392	98.63014	Null	98.6014	98.01136	100	99.13043	98.71051	98.95969	Null
Null	57.87998	48.46093	51.56576	46.71968	39.47368	45.98214	58.5034	60.94891	53.70823	42.58824
Null	70.99591	58.87097	63.21353	58.96907	53.01205	63.36634	69.69697	70.59627	63.6326	57.93184
Null	74.76077	90.12088	60.78212	64.90066	66.17406	62.0332	67.64253	83.49515	79.64255	52.67176
Null	88.51298	96.10811	92.80271	94.31034	91.90476	94.80069	96.40479	92.89188	94.89543	92.87749
Null	98.89851	79.63964	92.54869	87.75862	88.80952	87.00173	83.62184	97.71792	85.21801	91.26306
Null	72.75862	65.14563	67.98867	55.61358	56.04396	57.67442	64.0411	69.72477	61.50671	67.33333
Null	29.87586	46.54369	33.08782	39.94778	38.46154	48.27907	52.87671	29.93447	41.77503	29.8
Null	99.93103	99.70902	99.15014	99.47917	97.4359	99.53704	97.62712	100	99.8968	99.33333
Null	40	86.51794	60.33994	50	49.45055	36.11111	50.84746	71.69069	72.85862	61
Null	828.4239	864.4497	Null	789.6624	768.6583	790.7996	834.2672	873.5781	848.6197	Null
803700018267	803700018271	803700010736	803700010740	803700010793	803700010806	803700010825	803700010844	803700015811	803700010878	803700010897

95.30792	92.7619	96.73055	96.18959	96.26168	92.702	Null	94.85531	93.81348	89.04443	94.83667
98.91135	96.99399	98.53301	98.85932	98.91008	97.53086	Null	Null	97.21707	94.83627	98.96694
43.25843	46.0199	42.37288	45.08929	45.17134	56.47558	Null	51.9084	46.875	45.94181	47.343
59.42699	61.37761	55.64626	59.03479	58.6262	67.64092	Null	63.04348	61.0419	60.38023	61.26582
59.68379	60.36745	65.88921	68.42105	71.08844	69.75446	Null	63.25758	64.19162	64.56311	66.22517
92.88856	92.09524	93.4611	94.23792	93.05741	93.39705	Null	95.17685	93.72114	92.3311	93.8883
91.71554	91.80952	88.38782	88.3829	90.25367	88.70547	Null	83.92283	91.22807	92.39197	90.62171
66.99267	61.83746	70.1107	64.6438	61.35458	54.12621	Null	62.5	65.64417	68.09422	55.12821
33.30073	25.79505	34.53875	43.219	40.31873	44.61165	Null	48.5	33.55828	29.63597	39.16667
99.022	98.93993	99.631	100	99.60159	99.03382	Null	100	99.3865	99.78587	98.39744
56.96822	57.95053	56.82657	46.43799	50.59761	43.23671	Null	34.16667	54.60123	56.74518	47.4359
797.4762	785.9486	802.1279	804.5156	805.2413	807.2147	Null	Null	801.2785	793.7502	793.2758
080370001090A	803700010914	803700010967	803700010971	803700010986	803700010990	803700017803	803700011005	803700011202	080370001101A	803700011058

97.88584	96.36364	90.14529	94.58155	94.62963	90.36585	92.43959	91.84228	95.51534	97.10921	95.189
Null	98.19495	97.86096	99.33775	Null	99.2891	98.19549	99.01235	97.54098	97.73243	97.85331
44.27083	61.58192	44.19714	56.1008	44.56763	47.36842	48.53801	53.73832	40.22556	42.47312	43.72385
57.01416	72.13542	58.75884	67.93059	57.43017	62.33383	62.38274	65.64019	56.95612	59.51417	58.53403
63.92318	64.69003	63.40852	57.43381	65.94724	66.40625	64.10516	58.26235	68.08511	60.37464	63.71882
93.86892	96.36364	92.22994	93.45494	94.44444	93.29268	93.3749	94.35758	94.09913	90.89936	93.72852
89.21776	83.63636	88.18699	90.93348	88.88889	87.92683	89.63367	92.04623	89.37844	89.29336	89.5189
64.30976	62.10526	64.24474	56.51491	59.59302	61.1336	60	63.39468	59.73333	68.40278	65.20468
36.2963	53.68421	39.46463	41.47567	37.2093	33.60324	40.32558	39.8364	32.21333	35.13889	31.92982
98.9899	99.47368	98.85277	99.84301	100	99.19028	100	100	100	99.65278	99.4152
49.83165	34.73684	42.06501	59.49765	58.72093	53.84615	45.5814	52.55624	65.06667	52.77778	53.80117
Null	822.9659	779.4148	817.1041	Null	794.7562	794.5765	810.6866	798.814	793.3685	792.6173
80370001 1062	80370001 1109	80370001 1113	80370001 1147	80370001 1170	80370001 1378	80370001 1185	08037000 1119A	80370001 1325	80370001 1344	80370001 1359

91.58576	93.645	94.99561	91.97216	93.39947	87.78135	92.91243	91.29181	91.69708	96.85401	94.81697
98.56584	98.59353	99.0689	98.69432	98.16819	99.56971	99.03661	98.35234	99.18367	98.61338	99.48947
50.66445	52.07957	42.52874	64.78555	40.28708	50.66372	48.6191	42.54296	40.97996	40.90909	49.04153
61.805	64.16968	57.03664	72.09302	55.73086	64.55556	60.98707	54.67775	55.80866	56.52374	62.80561
59.86219	64.41659	68.49858	77	62.41311	66.17647	63.19925	63.6971	65.69697	64.86752	60.07735
93.07443	92.40321	93.32748	94.01392	93.97177	93.43133	93.44461	93.28143	92.88321	91.23365	93.0677
89.57929	89.62747	88.1475	91.09049	90.88134	90.39963	89.91292	89.18685	89.5073	91.23365	91.54519
61.75214	55.9322	57.59234	59.60366	68.17594	63.14152	59.61692	56.06996	61.90476	67.06667	68.24859
33.97436	34.23729	37.67442	34.29878	32.18629	32.28616	34.26975	30.82305	34.7619	25.84	30.23729
98.71795	99.03382	99.04241	99.69512	99.6119	100	99.12281	99.48665	99.40476	97.07057	99.77401
52.77778	56.03865	64.43228	73.47561	57.43855	62.2084	53.74801	60.16427	67.55952	60.05326	60.79096
792.3592	800.177	802.3449	856.7226	792.2645	810.2138	794.8695	779.5742	799.3878	790.2655	809.8947
80370001 1363	80370001 1414	80370001 1429	80370001 1433	80370001 1448	80370001 1452	80370001 1467	80370001 1471	80370001 1518	80370001 1575	80370001 2234

93.05112	93.53502	96.15669	95.72044	96.56453	95.74775	94.84778	90.27027	94.13919	92.5468	91.51119
97.43802	98.07531	97.2561	99.06706	98.29384	98.84309	98.83212	98.40491	98.56631	98.94459	97.68946
46.64778	45.37488	40.83485	52.72867	43.79157	47.15302	50.65177	54.43038	46.2203	49.36306	48.98876
58.85214	59.39364	58.15603	64.96212	59.50367	61.24889	62.95956	65.46185	60.78431	61.52597	61.1991
61.85567	66.68405	64.55224	63.5404	64.95522	64.91897	64.13793	72.12276	75.98152	73.85144	68.84453
92.29233	93.908	94.0133	92.61084	93.36119	92.54054	95.55035	95.06757	93.77289	95.65525	93.37687
90.21565	89.05926	89.06135	93.07266	90.76137	92.07207	91.95941	87.7027	88.18681	86.78912	90.15858
67.31034	56.3172	58.05687	65.51724	63.0303	63.89245	65	62.26013	64.40217	56.54565	64.50079
30.92414	35.16129	35.87678	32.41379	34.72727	29.09091	35.95	36.88699	40.65217	38.32783	32.04437
98.89655	99.46309	100	99.26931	100	99.87212	98.75	99.78678	99.45652	99.56044	99.68304
57.37931	66.97987	65.40284	60.43841	65.90909	62.65985	68	66.09808	76.08696	77.8022	70.20602
794.8631	803.9516	799.367	819.3409	810.8981	808.0397	826.6389	828.4924	838.2492	830.9124	818.2027
80370001 1594	80370001 1611	80370001 1626	80370001 1683	80370001 1698	80370001 1700	80370001 2817	80370001 1734	80370001 1749	80370001 1753	80370001 1787

94.13366	93.80915	92.67384	90.34127	92.08589	93.59279	90.73712	95.32325	95.40474	97.7767	95.91985
98.69347	98.5191	98.58602	98.95969	98.13814	98.23009	98.79725	97.71529	99.24295	99.1573	98.45948
48.82767	47.77251	48.30918	46.60767	48.19103	48.05492	47.06463	53.89474	52.85585	51.4218	52.48062
61.24962	60.71936	61.31985	58.52359	60.63365	61.58921	59.86115	63.64653	65.83598	63.15789	60.81466
64.01327	70.64403	69.47689	70.44177	70.02324	70.86254	68.69235	83.9881	58.29641	64.00515	93.22459
92.59901	93.96688	94.41225	94.26916	93.40491	93.56906	93.71603	93.44337	91.79922	93.37844	95.99271
91.38614	89.11672	88.78311	87.70122	90.70552	91.17228	86.10568	93.53508	94.41499	91.88014	82.18579
65.84537	56.3871	60.4712	63.95112	64.39628	66.48523	65.08361	69.97041	64.12316	70.08696	63.85417
31.35089	34.8129	36.75393	36.74134	33.0031	34.46345	38.47492	35.47337	24.25703	28.03478	44.375
99.74511	99.87113	99.47644	100	99.07312	99.68896	99.59866	100	99.06292	100	99.7921
61.3424	69.3299	69.7644	72.70876	70.7518	71.22862	70.63545	79.28994	60.24096	63.47826	94.38669
809.1866	814.9488	820.0271	820.2456	820.4067	828.9371	818.7668	866.2801	805.5342	822.3774	881.4857
80370001 2253	80370001 1791	80370001 1804	80370001 1819	80370001 1823	80370001 1838	80370001 1842	80370001 1857	80370001 1876	80370001 1880	80370001 2003

96.09864	92.406	97.31318	88.88051	95.18122	95.50731	97.87375	98.21709	95.17386	95.75071	93.1641
98.95901	98.59496	98.63636	97.26815	99.58746	98.88247	98.60606	99.3705	98.28808	99.58763	99.23696
54.30969	50.20504	53.20687	53.49682	49.82111	54.08306	57.18105	58.06075	48.46626	54.01975	44.44444
63.5124	62.83105	63.00716	64.24942	58.1295	63.43192	65.3336	67.10923	60.71685	65.71816	55.41461
92.94269	61.45765	93.90364	63.41704	85.32064	92.75107	96.22105	95.01916	80.85671	71.53025	76.88318
96.06183	92.75006	95.71788	93.32831	94.56343	95.22786	94.46844	96.74882	93.94484	94.50425	94.36338
80.67722	90.48906	87.9513	91.06672	86.86161	86.47893	94.56811	94.07446	92.98561	89.8017	84.22946
64.69388	66.84303	66.90224	50.86849	61.13117	66.76942	71.25689	71.79878	51.57895	68.49817	60.03729
44.55102	28.23633	43.88693	34.16873	41.56438	42.63872	40.03005	41.85976	36.44019	35.34799	37.81231
99.38776	99.91182	99.76443	99.50372	99.75933	99.63009	99.8999	99.39024	99.9044	98.1685	99.5028
92.34694	60.22928	91.99058	57.44417	80.26474	94.32799	96.54655	95.73171	78.87189	71.79487	75.32629
883.5411	803.9543	892.2806	793.6921	852.1846	889.7288	911.9854	917.3805	837.2276	844.722	820.4148
803700012041	803700012249	803700012056	803700012268	080370001208A	803700012094	803700012111	803700012126	803700012164	803700012200	803700012272

98.84763	94.83233	97.61388	95.14535	94.30993	93.94781	94.99431	93.43482	96.83288	91.37931	93.78531
99.28058	99.34565	97.52705	99.09961	98.62672	97.70241	98.78234	98.40668	99.24812	Null	Null
53.06122	47.00272	56.88564	49.52446	49.20405	53.14286	52.71739	68.30357	53.26797	33.33333	48.96552
64.2527	60.33442	64.2343	62.72503	59.24556	64.59364	61.51685	74.80136	65.51724	55.31915	68.77076
Null	62.48746	88.33245	63.42558	73.83178	66.2069	89.61694	66.56805	90.14952	Null	46.52015
93.85403	92.04691	92.66417	93.48837	93.22034	91.44919	94.46341	93.14938	93.73315	94.82759	95.76271
97.05506	93.80612	96.13488	91.74419	90.07264	93.61466	96.66287	91.43673	96.36119	91.37931	92.37288
79.39914	58.58586	70.54569	43.09241	64.0404	68.125	61.93634	54.7486	66.53061	38.46154	79.64602
32.96137	26.57239	33.9908	37.12717	33.25253	25.08333	30.05305	41.28492	39.42857	10.76923	37.34513
100	99.73082	99.73753	99.63437	99.39394	98.54167	99.60212	97.6257	100	100	44.24779
98.28326	61.44011	89.56693	61.60878	76.36364	65	91.37931	52.93296	87.34694	76.92308	67.25664
Null	796.1848	887.2333	796.6153	831.5615	817.4075	871.7249	832.6928	888.4162	Null	Null
803700012291	803700012319	803700012338	803700012395	803700012605	803700012450	803700012465	803700012836	803700012516	803700012520	080370001254A

94.94585	95.10791	97.26993	95.50654	95.28689	96.86872	96.36438	93.21913	92.96178	92.30236	93.77076
99.27007	99.52077	98.70759	96.88474	98.7526	99.21919	98.89625	98.81031	98.87006	98.84467	99.23195
48.56512	41.50613	51.3308	53.61702	44.61371	47.91537	54.66786	53.21593	46.83544	51.28205	51.92661
61.29754	55.4473	62.65182	68.15287	54.69016	57.83871	63.23872	61.27987	58.30893	63.69583	62.53602
61.85319	61.42719	91.1811	64.95434	91.34785	93.70675	92.137	84.0592	72.30946	65.27778	88.4
92.77978	93.23741	95.59665	91.66667	96.51639	96.15053	95.26144	95.61028	96.1465	95.07628	94.18605
89.62094	92.3741	88.06693	94.03595	77.2541	83.9414	83.98693	79.47894	83.34395	92.99584	83.05648
64.32749	64.58853	65.66186	66.56535	59.8916	66.69237	64.98353	59.42173	54.41907	54.72527	65.97701
35.20468	30.67332	42.17562	25.59271	47.10027	46.53817	46.25686	44.12762	37.63654	37.18681	44.64368
99.7076	99.75062	99.60836	98.17629	99.5935	99.76888	99.78046	99.8006	100	99.5614	99.54023
68.12865	55.61097	88.25065	56.83891	89.9729	92.75809	90.23052	78.86341	72.98908	68.20175	82.52874
815.7009	789.2443	880.5013	811.9914	855.02	881.3982	885.8039	847.887	813.8208	819.1501	865.7975
8037000125573	8037000128840	8037000126696	8037000127728	8037000127732	8037000127747	8037000127751	8037000127766	8037000127770	8037000128821	8037000133514

98.71414	98.8215	96.86411	94.71477	94.58564	96.11249	94.49715	96.06657	95.45455	96.07116	90.4439
99.50513	99.389	98.57143	98.41772	Null	99.2343	99.45246	98.75173	99	99.13545	98.53138
56.15672	57.58065	43.88186	50	44.71545	49.45055	54.10798	48.33597	48.95359	51.03806	43.90977
65.39528	65.81769	60.08584	64.16244	57.35294	58.93502	62.12121	60.13344	59.91013	63.26345	57.9273
92.97899	96.5294	66.28959	63.43284	67.52504	93.19853	81.20373	Null	92.55429	65.89147	60.56338
95.82591	92.75689	92.68293	93.70805	94.36464	97.27047	95.20195	97.04992	95.54367	94.21794	93.2799
95.70722	97.81515	85.54007	92.36577	86.18785	75.68238	83.24749	81.54312	80.61497	90.58562	91.06042
74.72527	76.80525	60.42781	74.77745	69.67509	63.63636	61.39818	60.99815	63.25088	63.5	61.74636
34.64771	33.89934	39.25134	29.25816	34.65704	54.31818	43.93617	51.27542	47.27915	32.55	32.55717
99.87072	99.95624	99.46809	99.70326	100	99.62193	99.84802	99.631	99.76471	99.5	99.7921
95.6044	97.94311	56.38298	70.32641	59.9278	87.33459	78.79939	79.5203	90.58824	60.75	55.71726
909.1315	917.3142	799.446	830.8669	Null	874.7948	853.8138	Null	872.9142	816.5031	785.5289
803700013302	803700013321	080370001368A	080370001336A	803700013622	803700013463	803700013482	080370001350A	803700013533	803700013590	803700013603

96.06792	97.52577	94.93208	93.8801	90.44049	90.57592	97.05882	91.47982	95.5677	95.42974	93.53632
99.32998	Null	99.15074	97.48428	99.22481	98.98403	99.50577	98.37997	97.93689	97.78393	99.05325
51.08225	49.47917	49.67658	53.21285	42	51.49813	44.00786	51.91147	44.31655	50.16779	45.1087
64.75054	62.43523	61.16883	63.72745	58.23928	63.73728	59.21951	65.66731	59.84023	60.92827	57.79754
70.93822	72.28261	63.81487	71.48914	69.53405	62.58638	69.11917	56.9089	66.40807	67.56514	68.6217
93.11886	91.34021	93.10345	93.38052	94.18932	91.39865	93.79085	91.92825	94.04979	92.08731	92.84188
90.88472	88.65979	91.06583	89.92506	89.31584	89.67838	88.23529	94.24514	89.61749	88.54025	91.13248
58.11209	60	69.98224	59.9455	62.79762	56.90867	66.66667	52.15054	63.8	62.10762	48.8764
33.9823	35.33333	32.0071	34.55041	36.4881	38.07963	36.25	28.06452	34.12	34.26009	32.77154
100	98.66667	99.82238	99.59128	99.70238	98.36449	100	99.73118	99.8	99.77578	99.81308
56.63717	50	57.19361	67.71117	57.44048	53.97196	61.71875	51.6129	59.2	58.52018	64.6729
814.904	Null	811.9177	824.8978	799.3723	795.7835	815.5727	782.08	804.6567	807.1661	794.2258
80370001 3618	80370001 3694	80370001 3707	80370001 3976	80370001 3726	80370001 3730	80370001 3745	80370001 4033	08037000 1375A	80370001 3779	80370001 3783

95.5157	93.8175	93.83403	94.81511	93.76274	96.85287	93.27044	88.93307	92.07547	95.70597	93.05211
98.92761	99.33921	98.63139	96.99605	98.36957	98.91304	98.22485	98.79227	98.77102	98.61304	98.9228
45.19084	49.41389	48.57768	49.06954	51.42315	42.87109	53.48837	53.8835	51.7301	47.87776	51.5259
58.60173	61.35135	62.48575	61.58715	62.82927	58.7715	65.25097	66.50602	65.03997	61.3617	61.47903
65.94142	54.44976	69.42099	66.80541	70.1232	60.89212	62.24737	68.3277	66.63685	76.79856	77.66654
93.46573	93.74302	92.16504	93.32797	93.59967	91.26672	93.01887	94.56594	92.07547	94.39592	94.38586
89.23767	89.72067	90.72786	90.87621	88.66694	91.58143	90.69182	89.52949	90.56604	88.79185	87.65509
59.95763	58.44636	58.30671	56.63842	58.7202	60.40268	61.25	61.1691	72.36239	69.71047	59.10448
33.85593	33.78545	31.08626	29.71751	38.44417	31.75839	33.75	38.91441	33.55505	38.79733	35.9403
100	99.50678	98.88179	99.29379	99.87453	96.91275	98.75	99.3763	97.82609	99.77728	99.9006
67.79661	72.74969	69.32907	61.01695	65.49561	55.03356	55.20833	62.57796	58.00915	69.93318	75.84493
808.4909	806.3237	813.4466	800.1441	821.309	785.2562	805.151	822.5758	818.6476	841.7631	835.4776
803700013798	803700013800	803700013815	803700013849	803700013853	803700013868	803700013887	803700013891	803700013919	803700013938	803700013961

96.71302	96.31902	95.2934	93.39286	95.78947	95.80325	93.91664	97.12389	93.27902	95.47872	97.81116
99.25293	99.09605	97.25131	97.76021	98.3165	99.03007	98.36415	97.27669	97.04433	98.94598	99.24585
58.76437	54.50382	43.96285	46.48118	52.43004	43.539	50.90909	47.38255	41.47727	59.03516	56.57036
69.20236	66.8429	59.04173	61.85819	64.65893	58.94797	60.44712	62.44898	53.56201	66.14379	62.48822
85.10802	63.12347	62.74018	57.67524	64.62264	57.37101	79.72247	56.44574	56.43275	89.5664	94.95146
94.311	93.49693	90.89242	86.0119	90.41551	92.23827	95.15584	93.58407	91.85336	95.44073	96.7382
93.48925	93.55828	94.43765	94.58333	94.62604	92.55415	82.7638	93.14159	94.50102	90.50152	89.91416
68.01619	64.43966	59.26773	59.7254	64.71774	60.71942	58.45666	65.01767	66.17647	58.86752	73.34138
35.95142	29.74138	25.12586	23.75286	27.21774	36.23022	43.69979	36.11307	27.79412	43.76068	45.95899
99.79757	100	97.02517	93.379	96.77419	99.71223	100	99.11661	92.64706	99.89316	99.75904
84.41296	56.68103	56.75057	49.08676	48.58871	47.48201	79.17548	52.29682	55.14706	85.89744	95.90361
885.0191	817.8025	781.7889	763.7069	798.1575	783.6276	842.611	799.9477	769.9145	883.5311	912.6824
803700015120	803700014014	803700014029	803700014048	803700014052	803700014071	803700014298	803700014086	803700015510	803700014300	803700014264

97.44745	94.20693	94.74857	97.55453	97.29809	99.45055	93.43913	95.97844	96.77266	95.02654	97.18876
98.51965	99.1866	98.4672	99.26945	99.70828	Null	98.10202	97.1937	98.5342	99.35484	98.37692
60.6718	51.8372	52.32467	55.21191	52.46026	48.18182	48.35329	58.93358	57.82748	77.44253	53.69928
70.51836	62.05463	64.54294	65.53084	64.3635	56.2212	62.9261	69.40618	66.66667	81.60758	66.32775
91.94139	85.31125	66.33748	65.67617	61.55411	65.80311	67.22982	89.23152	95.61707	67.39788	85.42839
95.13514	95.09233	92.74348	91.27561	91.60059	17.44505	91.38765	94.15423	94.44708	92.37217	93.9759
94.47447	89.95699	93.25271	95.13109	95.03671	99.31319	94.94871	95.56385	96.15567	93.37804	94.57831
67.38754	62.06647	53.20585	67.78965	55.49199	55.39568	68.29085	66.87192	66.51515	61.06195	56.01783
42.38754	42.87572	29.31384	25.40674	22.08238	30.16787	22.53373	40.59113	36.15152	21.79204	40.80238
99.65398	99.92775	99.2126	99.01397	98.74142	14.6283	98.95052	99.63054	100	98.23204	99.85141
82.69896	82.08092	62.31721	56.12161	51.02975	8.153477	60.7946	85.22167	95.30303	59.44751	79.34621
900.8363	864.5968	806.4665	817.9816	789.3671	Null	806.9564	892.7768	903.9905	847.1131	865.5931
803700014283	803700014315	080370001432A	803700014334	803700014349	803700014353	803700014368	803700014372	803700014387	803700014419	803700014423

94.98583	94.72566	98.90385	94.1206	93.81163	90.86107	94.12015	93.72609	93.22709	96.51952	94.77612
99.03498	98.95616	98.1352	98.61839	98.70836	97.87664	99.40171	97.96215	100	97.39414	Null
58.72501	47.71186	56.19243	52.85215	49.26829	49.53596	45.19038	47.56335	45.99542	52.09581	42.85714
67.98797	61.54176	27.65363	62.9763	61.72891	58.52071	57.49386	63.96648	65.0463	63.75909	64.95726
69.1652	70.3386	65.67742	77.38854	71.65461	79.77873	75.36611	68.80553	56.79012	66.66667	Null
92.71855	94.23009	96.96154	94.74874	93.19959	95.7739	94.07755	93.26702	95.71713	92.6146	96.26866
95.13843	92.0708	97.71154	91.80905	92.17953	80.40148	87.04729	93.72609	92.82869	93.97284	93.28358
60.90105	64.23174	72.22222	61.45161	67.51208	56.30499	60.84184	75.71059	62.31454	72.38372	58
26.19469	28.84131	33.23232	36.29032	28.96135	44.4868	40.12755	32.45478	40.41543	31.51163	46.4
99.91955	100	98.4975	99.83897	99.87923	99.56012	98.97959	99.22481	99.70326	97.67442	36
64.92357	63.72796	62.4374	73.10789	73.06763	74.92669	73.21429	65.89147	69.13947	65.11628	62
829.6948	816.3759	807.625	843.2026	829.9712	828.0271	825.8603	832.2984	821.1775	829.7087	Null
803700014584	803700014847	803700014620	803700014635	080370001464A	803700014654	803700014669	803700014673	803700014692	803700014705	803700014724

94.61106	95.05882	94.10784	96.42857	95.37318	93.76155	96.44872	95.57389	94.29783	96.10754	96.01796
97.78226	98.66771	98.37662	98.84824	97.4042	98.74776	99.13793	98.62385	99.09008	98.96825	98.39208
44.27284	47.38372	51.24827	50.04212	57.60209	51.03211	54.37547	53.38175	55.78406	53.2973	53.12747
61.76837	60.70409	63.28767	62.96928	68.18373	63.81279	64.24051	64.91067	68.26087	66.24606	63.81215
60.3022	69.52573	78.5558	67.96875	74.59091	64.29895	82.03418	82.6993	65.72959	65.10565	63.69594
89.45642	93.56863	92.44024	90.78231	91.96217	92.88355	93.62761	92.96699	89.72667	89.36597	90.38922
95.31396	92.31373	95.96998	95.20408	96.0824	94.31608	93.72718	96.73668	96.88973	95.06421	95.65868
50.70423	71.50997	77.3057	67.68212	69.73684	61.69065	65.91376	68.44502	58.96488	60	69.20375
25.45775	27.35043	25.43005	22.11921	22.07895	22.15827	38.13142	30.61809	21.55268	25.05263	21.77986
59.22671	100	99.58549	98.4106	99.73684	99.46043	99.69199	99.41444	99.81516	98.94737	98.94614
63.44464	68.66097	73.57513	63.04636	66.44737	63.48921	77.82341	77.22837	56.00739	52.4812	52.57611
742.3404	824.7438	849.8828	813.5016	839.1987	805.6514	865.1522	860.5991	806.1189	800.6362	803.5994
803700014813	803700014832	803700014940	803700014955	080370001496A	803700014974	803700015027	803700015031	803700015050	803700015065	803700015084

96.54528	95.93443	98.57002	95.67233	94.81724	95.88868	96.90007	96.21622	97.39027	98.17146	93.67872
98.80716	98.91452	99.35632	99.12791	97.64344	99.41589	99.00069	98.88098	99.18782	98.99364	96.9825
50.57179	42.15976	57.8202	50.34247	50.30675	53.87509	53.52054	57.31874	54.75578	54.93992	55.49318
61.90769	56.34557	67.17109	60.56338	61.38365	64.89765	63.30716	68.74126	65.62292	64.5029	65.44234
61.31883	72.13247	95.7124	83.94834	86.4084	84.77137	85.41236	70.72987	94.54043	95.43509	79.94977
90.61625	95.93443	91.88856	96.75425	95.90835	93.23213	94.51131	91.40541	95.49229	95.6235	93.05963
97.33894	88.13115	97.55917	86.2442	89.47081	96.17331	95.49599	96.37838	88.6121	93.91487	94.39557
63.92157	68.29268	71.70953	64.9789	66.71827	68.81497	60.84592	71.26214	63.72549	73.48624	72.09821
22.47059	38.00813	38.63843	45.40084	43.25077	34.26195	33.7281	28.15534	44.90196	38.78899	31.49554
98.43444	100	98.78971	99.57806	100	100	99.93958	99.41748	99.01961	99.72477	99.88839
51.46771	77.23577	94.62935	82.70042	87.4613	76.92308	79.93958	64.27184	94.11765	95.59633	73.77232
793.4002	833.0889	911.8448	865.3111	873.369	868.2541	862.6013	842.7776	897.3663	909.1777	856.2562
803700015099	803700015135	080370001514A	803700015154	803700015173	803700015205	080370001521A	803700015239	803700015243	803700015258	803700015262

97.10005	97.11207	94.98387	96.17766	97.93388	Null	100	Null	Null	Null	Null
98.51138	98.52713	98.41186	98.7605	98.31378	Null	100	Null	Null	Null	100
54.50292	54.91968	56.45514	55.63599	55.73972	Null	Null	Null	Null	Null	51.35135
66.94021	65.11863	68.12117	66.04172	64.75708	Null	Null	Null	Null	Null	67.07317
80.27211	87.84997	77.14395	85.47057	82.92146	Null	Null	Null	Null	Null	Null
93.9101	93.96552	92.78381	93.18813	93.15599	Null	85.71429	Null	Null	Null	95.78947
94.24843	96.46552	96.71458	96.3912	96.26808	Null	100	Null	Null	Null	96.84211
62.76423	66.43741	68.16239	68.5879	66.80887	Null	20	Null	Null	Null	81.48148
32.71545	36.17607	27.15812	32.52161	33.92491	Null	44	Null	Null	Null	29.62963
99.6748	100	99.78632	100	99.82935	Null	Null	Null	Null	Null	100
79.8374	82.80605	69.97863	79.89914	70.52048	Null	100	Null	Null	Null	77.77778
860.4771	879.378	849.6998	872.6744	860.1736	Null	Null	Null	Null	Null	Null
803700015277	803700015281	803700015309	803700015328	803700015559	803700015563	803700015582	803700015597	080370001560A	080370001578A	803700015648

Null	94.2029	94.71172	94.70405	96.48821	92.22874	93.44141	97.15808	94.67085	94.58631	93.53551
Null	98.4127	98.77079	96.83761	98.87805	98.05556	99.34641	99.15579	96.94323	Null	99.26591
Null	47.34748	48.57143	50.32967	48.70871	60.15038	52.69631	53.59477	42.58242	45.59194	46.36542
Null	60.2459	59.92201	64.67662	62.71031	67.60563	64.16589	63.37549	60.58201	59.65131	60.12751
Null	76.4539	83.19024	69.51651	72.05931	69.73415	84.65823	91.23246	63.76404	62.417	66.9145
Null	94.95652	93.90378	92.16733	92.77996	91.56891	91.2675	97.06927	92.89446	94.38202	92.4581
Null	88.57971	88.72567	94.48153	94.84283	95.38123	97.82609	79.84014	90.8046	90.39837	91.06145
Null	58.669	65.91422	70.29221	64.32432	69.61326	70.31662	65.22702	58.59649	73.02158	68.32117
Null	39.57968	39.05192	27.04545	26.63063	26.24309	28.3905	50.12182	32.84211	29.56835	26.83212
Null	99.64974	99.77452	100	99.18919	99.45055	99.73615	100	100	99.64029	99.41606
Null	72.67951	77.00113	62.01299	67.2973	57.41758	71.76781	87.04319	57.19298	55.7554	65.40146
Null	830.777	849.5374	822.064	823.9088	827.4491	853.6129	883.818	790.8732	Null	809.6992
803700017146	080370001592A	803700015934	803700015968	803700015972	803700015915	803700016805	803700016078	803700016082	803700016097	080370001610A

94.04268	97.04936	97.49762	Null	96.4217	95.98566	98.02944	Null	96.07615	98.04124	97.61132
99.29036	98.39357	99.68494	Null	99.21005	99.11141	98.59526	Null	98.81703	98.78049	98.10933
51.16981	54.96774	56.38655	Null	52.67618	55.59633	57.00456	Null	47.90909	52.12766	58.6944
63.93195	66.48865	66.62469	Null	64.2149	66.13924	67.37652	Null	59.00419	64.22977	69.67354
69.15022	87.77858	79.43753	Null	88.72033	78.20764	91.47237	Null	93.18296	Null	85.71866
92.29401	91.95279	91.38423	Null	93.61293	92.61649	92.07028	Null	94.09479	91.03093	92.74119
94.30943	97.47854	98.51124	Null	96.94113	95.73477	97.95821	Null	97.4359	98.04124	97.72727
60.60936	68.78307	76.96759	Null	71.59609	70.98381	71.73377	Null	74.79893	79.21147	66.82731
26.57236	34.25044	26.9213	Null	32.27362	30.51059	30.78061	Null	30.99196	30.46595	30.73092
100	100	99.65278	Null	99.73941	99.75093	99.83566	Null	100	100	100
63.43852	74.77954	59.375	Null	81.30293	67.37235	87.67461	Null	93.69973	82.43728	75.98394
814.8087	871.9223	852.4435	Null	876.7093	852.0092	892.5313	Null	886.0107	Null	873.8179
803700016114	803700016129	803700016190	803700016222	803700016237	803700016580	803700016307	803700016330	803700016364	803700016383	803700016400

94.6545	Null	97.80776	94.0618	95.62773	97.0339	94.93218	96.30648	Null	96.18047	Null
98.64105	Null	98.33466	98.78514	98.69334	97.89864	97.96275	98.4127	Null	98.18805	Null
57.8534	Null	58.23466	56.03095	55.07405	52.82258	51.13764	65.76577	Null	54.16141	Null
67.91852	Null	68.64453	66.07798	67.11428	65.32095	63.6768	73.96631	Null	65.03185	Null
85.66553	Null	87.06023	77.60827	76.14624	86.33759	73.40726	72.94713	Null	86.05769	Null
93.11604	Null	91.73693	92.31199	90.58922	92.53585	92.33865	91.04126	Null	92.66855	Null
97.28814	Null	98.35582	96.42591	98.54258	97.97914	96.6463	96.85658	Null	97.35965	Null
75.25299	Null	71.79856	66.20879	66.22419	71.44522	71.67991	64.68927	Null	68.62745	Null
29.43882	Null	31.74101	26.20879	29.15929	28.48485	24.10897	28.10734	Null	30.46346	Null
100	Null	99.56835	99.93132	99.41003	99.88345	99.88656	99.71751	Null	100	Null
82.15271	Null	80.71942	71.15385	54.71976	74.70862	66.64776	52.9661	Null	72.63815	Null
881.9817	Null	884.0019	844.8048	831.3007	864.4508	832.4248	840.7765	Null	861.3767	Null
80370001 6415	80370001 6326	08037000 1642A	80370001 6542	80370001 6650	80370001 6701	80370001 6716	08037000 1674A	80370001 6824	80370001 6792	08037000 1681A

96.30929	98.28611	98.03019	97.39609	96.77844	96.56999	96.94269	96.40553	95.90624	96.22302	96.84777
98.78483	99.09747	98.30196	98.78543	98.86411	98.52352	98.62166	98.71795	99.12536	98.9573	98.99926
55.54697	54.40764	51.15044	57.17155	53.82078	59.1325	58.4	57.8354	61.46712	53.44495	52.52002
66.00156	63.35049	62.10454	66.138	65.08762	68.55378	68.53673	67.08716	71.86256	64.55128	64.00949
87.55098	93.25271	91.97593	92.55678	85.39058	87.12192	85.07744	88.04954	73.69501	88.5337	83.54756
92.1153	93.19013	93.77761	93.72392	92.76792	92.02454	92.27224	93.66359	90.84925	91.98356	91.80419
97.91063	98.2404	98.50884	97.84677	97.91804	97.81093	97.8645	97.76498	97.92904	97.25077	97.94178
71.91443	75.24116	75	74.89784	74.76636	70.4671	67.99569	69.15966	68.87988	69.68864	76.24387
28.54635	29.6463	27.57333	30.05254	28.92523	27.9558	29.85991	27.05882	36.85758	28.71795	24.79327
99.50658	100	100	99.94162	99.84424	99.94977	99.83836	100	99.13837	99.6337	99.57983
77.85088	90.3537	89.4	90.54291	75.54517	77.24761	72.68319	78.7395	53.57324	82.50916	77.80112
872.0378	895.0661	885.8228	899.0535	869.7085	875.3575	868.0924	874.4821	849.2837	871.494	864.0882
803700016839	803700016843	803700016858	803700016862	803700016877	803700016881	803700016896	803700016909	803700016913	803700016947	803700016966

100	Null	95.56583	96.35317	96.47259	97.47338	95.86482	94.5322	96.18252	95.54056	94.66667
100	Null	98.5565	98.79711	98.69084	98.80096	99.50536	98.76445	97.44463	99.05363	98.67257
61.29032	Null	57.05214	55.90296	62.60417	54.76923	54.04372	52.25974	52.82465	56.5051	54.38596
64.0625	Null	67.25812	67.02499	70.35069	65.72104	65.42611	65.37259	64.90969	66.5128	66.27566
57.69231	Null	88.12309	81.06996	81.65727	84.3794	78.95044	64.94904	74.08439	79.87132	Null
88.65979	Null	92.9951	92.81297	91.9252	92.25308	92.40134	92.50709	93.34924	91.59125	91.33333
93.81443	Null	97.59249	98.01663	97.98838	97.38985	97.81696	95.78777	96.1527	98.17344	97.77778
52.38095	Null	70.7457	67.92313	63.46535	67.63908	68.0916	66.91843	73.70095	71.58501	72.86822
7.619048	Null	29.71319	30.68736	30.10891	35.02035	27.26718	25.40785	28.88653	29.94813	30.23256
90.47619	Null	99.9522	99.85218	99.65347	99.86431	99.92366	99.39577	99.89396	100	100
47.61905	Null	79.0153	64.44937	62.22772	71.91316	73.74046	64.65257	64.68717	57.52161	63.56589
763.6146	Null	876.5697	852.8898	855.1446	865.2238	853.0316	820.5475	842.1164	846.3029	Null
803700017004	803700017019	803700017023	803700017042	803700017057	803700017080	803700017095	803700017112	803700017127	803700017150	080370001717A

95.99282	100	Null	Null	Null	Null	94	95.64439	97.55338	Null	96.85754
98.03922	Null	Null	100	Null	Null	100	98.51538	99.40703	100	98.83193
61.5748	64.70588	Null	50	Null	Null	66.66667	54.81283	56.89066	Null	58.3779
70.39877	78.94737	Null	67.74194	Null	Null	70.66667	66.36172	66.71376	58.33333	69.16517
80.87616	Null	Null	Null	Null	Null	46.9697	84.13284	68.74421	Null	70.39024
91.08852	91.52542	Null	94.59459	Null	Null	92	94.57041	92.17082	90	90.78212
98.92344	Null	Null	91.89189	Null	Null	93	94.33174	96.68594	Null	98.67318
49.27536	76.47059	Null	10	Null	Null	55.17241	63.51607	60.01535	100	66.55212
30.76605	30.58824	Null	26	Null	Null	31.03448	36.63516	31.52724	33.33333	34.38717
99.37888	100	Null	Null	Null	Null	89.65517	100	99.53988	100	99.65636
57.14286	29.41176	Null	70	Null	Null	65.51724	79.39509	57.82209	100	43.52806
833.4569	Null	Null	Null	Null	Null	804.6823	867.9156	827.0704	Null	827.2018
803700017288	803700017362	803700017377	803700017381	803700018445	803700017485	803700017610	803700015296	080370001667A	803700018430	803700017733

99.16435	92.58475	93.3177	94	93.03571	91.82084	94.75806	95.52482	96.75472	94.49703	97.81553
99.60887	98.74477	97.21578	99.40741	98.57904	97.08333	98.91775	98.30508	99.10581	98.78543	98.21429
59.58254	43.00792	45.91029	47.09091	49.46921	44.67593	45.06024	49.8998	47.95737	59.66197	61.22449
70.75646	60.20151	60.36415	62.09752	59.89362	58.18182	58.33333	64.51292	60.83409	69.24586	75.42088
63.2427	66.89281	67.31928	71.2047	70.68771	61.45967	65.80733	69.16579	70.15504	82.13959	Null
90.8078	94.38559	94.3728	94.30769	93.30357	92.01558	91.93548	93.32791	94.64151	91.89963	87.37864
98.60724	88.55932	90.8558	88	86.875	88.51022	93.24597	91.21237	91.09434	98.30508	Null
71.42857	73.20261	57.77778	61.08597	62.59542	61.53846	64.21405	56.99208	61.25	69.96855	74.80916
35.89286	38.30065	36.81481	41.17647	43.66412	34.16667	33.64548	35.14512	33.75	28.56918	37.09924
100	100	98.88889	99.77376	98.22785	100	99.66555	99.20844	99.5	99.92138	100
36.16071	48.69281	53.33333	53.84615	47.34177	53.84615	48.16054	53.56201	62.75	71.30503	64.12214
825.2521	804.5727	796.1706	811.9906	803.673	783.2987	793.7438	806.8563	817.7929	864.2987	Null
803700017767	803700011217	803700011221	803700011236	803700011240	803700011274	803700011289	803700011293	803700011310	803700016773	803700018303

98.81517	Null	88.46154	96.88889	Null	94.40906	Null	Null	Null	96.67674	Null
Null	Null	Null	98.85344	Null	98.08482	100	Null	Null	99.26579	Null
63.57616	Null	37.5	53.37382	Null	54.51327	63.63636	Null	Null	49.82639	Null
70.86093	Null	58.82353	66.35792	Null	64.292	82.14286	Null	Null	59.94718	Null
63.63636	Null	Null	69.71882	Null	65.07042	Null	Null	Null	78.1279	Null
87.91469	Null	88.46154	89.1358	Null	92.85209	97.22222	Null	Null	95.01511	Null
99.05213	Null	Null	98.59259	Null	87.89809	Null	Null	Null	87.91541	Null
76.78571	Null	66.66667	69.42623	Null	63.21839	75	Null	Null	59.90991	Null
24.64286	Null	42.22222	33.60656	Null	35.03448	40	Null	Null	40.36036	Null
99.10714	Null	Null	99.09836	Null	99.31034	91.66667	Null	Null	99.54955	Null
48.21429	Null	44.44444	40.7377	Null	51.95402	58.33333	Null	Null	72.97297	Null
Null	Null	Null	815.7901	Null	806.637	Null	Null	Null	839.5673	Null
80370001 8318	80370001 8322	80370001 8483	80370001 7894	80370001 5807	80370001 3764	80370001 6186	80370001 6932	80370001 5794	80370001 0721	80370001 6928

96.33782	92.3001	95.2094		85	Null	95.99614	99.12695	96.09746	93.17073	93.2341	95.76923
99.57687	97.94521	99.20683	Null		Null	97.19711	97.97055	96.65091	100	98.70283	96.67774
48.05654	58.78525	46.18868	Null		Null	56.11038	68.75792	60.83238	43.20988	54.57516	57.57576
60.18676	65.61798	61.61654		25	Null	70.35623	77.41836	70.6177	55.35714	66.35368	68.40909
78.79053	85.88098	63.17063	Null		Null	71.23474	72.81846	72.72453	52.66667	77.41408	80.28846
95.88939	96.15005	91.71437		85	Null	89.38736	91.52902	89.51063	91.70732	95.26387	94.51923
83.48281	83.81046	94.12474		100	Null	97.97395	98.98537	98.86434	90.2439	85.11502	86.44231
51.7179	53.25581	55.11482		25	Null	62.7566	65	66.16595	67.21311	59.51134	60.82192
52.4774	52.88372	30.70981	Null		Null	39.20821	35.78788	30.71531	32.78689	48.51658	45.9726
99.27928	100	98.85177		100	Null	99.56012	99.92424	99.64235	67.21311	99.30314	98.6413
60	67.67442	60.02088	Null		Null	35.19062	44.77273	42.77539	47.54098	52.96167	58.15217
825.7953	854.304	795.9285	Null		Null	814.9715	852.0915	824.597	741.1097	830.9515	843.2698
803700010628	803700010562	803700014461	803700018356		803700015667	803700017837	803700017964	803700017979	080370001813A	803700010685	080370001069A

95.02627	94.3128	93.50766	94.04613	94.94519	94.17637	93.15322	94.7496	96.00998	96.7459	95.70568
98.61432	98.4127	98.52262	99.03743	97.41897	98.56459	97.65808	99.17763	Null	98.86686	99.30348
62.51039	50	48.32962	59.06183	49.8873	43.87464	45.16423	51.59915	58.66667	49.50635	49.16718
71.71843	62.37624	60.33426	68.14869	63.58779	58.0959	58.28025	64.74973	72.52396	61.95156	62.07536
74.36459	71.88161	66.50718	77.7439	64.90939	64.41308	64.4226	62.92005	53.53535	86.65673	70.22047
94.57093	93.04897	92.56087	95.35536	93.2704	93.39989	93.8564	89.82229	93.76559	92.41653	92.81768
87.95096	92.10111	89.67538	86.68953	91.68697	91.51414	90.30348	93.13409	95.51122	95.24618	93.42039
56.2184	81.08108	56.34218	64.67931	64.31818	70.20873	64.76323	66.46526	76.78571	67.98077	68.80734
43.45804	31.56757	34.57227	42.04155	25.36364	31.57495	24.73538	25.19637	28.39286	32.03846	27.02752
99.39455	97.83784	99.55752	99.81933	99.77273	99.81025	98.46797	95.77039	43.75	100	99.63336
56.71039	64.86486	59.29204	77.0551	61.59091	65.27514	62.81337	53.17221	62.5	81.34615	64.98625
840.5373	837.4848	799.2016	863.6782	806.7515	810.9077	793.6182	796.7568	Null	862.7555	823.1647
80370001 0702	80370001 0774	80370001 1503	80370001 2198	80370001 2361	80370001 2376	80370001 2499	80370001 2709	80370001 2874	80370001 2906	80370001 2925

96.75439	95.6477	94.34315	98.46678	95.2381	91.31623	97.9684	96.93849	95.23507	94.61157	93.79845
98.22695	97.69959	98.51163	99.72299	100	98.18768	98.77112	98.13632	98.34008	98.63813	92.0354
45.9695	53.59019	45.61753	60.99744	51.85185	52.1215	48.15498	50.70028	51.54047	48.75302	43.26923
60	65.0242	55.90224	68.4144	68.51852	62.70202	62.29665	65.00519	64.08926	62.37864	55.39216
70.03405	66.15385	90.27927	89.52505	Null	79.94667	65.90909	67.79536	67.08195	69.09012	63.15789
93.59649	91.91227	96.25993	96.53606	92.85714	93.83936	91.87359	91.98441	92.6726	92.79339	91.08527
92.58772	96.26456	76.9986	84.21352	Null	91.02187	94.73288	94.54495	92.33376	93.58678	94.96124
69.46688	46.87898	58.39506	61.7931	75	49.22559	65.01377	67.19682	70.66463	66.70588	57.33333
27.65751	25.65605	47.18519	51.42069	16	35.94613	26.77686	28.56859	28.06723	28.82353	31.2
99.35484	92.61146	100	100	60	100	98.89807	99.30417	99.77099	99.64706	97.33333
74.19355	68.28025	89.75309	82.06897	50	75.69024	57.85124	69.3837	69.00763	67.29412	53.33333
827.8419	799.7191	853.2457	893.159	Null	829.9973	808.2467	829.5583	828.8037	822.3222	772.8996
080370001293A	803700013270	803700013529	803700013478	803700016970	803700014442	803700014758	803700014762	803700014777	803700014781	803700015366

96.40719	Null	93.90537	95.54974	Null	Null	97.79277	96.33554	97.40484	98.0472	94.44655
98.31303	Null	99.41349	98.44961	100	Null	97.65363	99.15326	98.61963	98.7972	99.37996
44.0044	Null	52.00698	52.35405	40	Null	57.9347	49.68815	51.44928	52.42583	56.20462
59.54241	Null	61.77536	62.80428	63.63636	Null	68.19048	63.39238	62.51198	63.04003	66.60059
63.87879	Null	87.54717	75.1269	Null	Null	85.26316	84.20455	Null	87.25698	79.24834
90.63302	Null	95.18845	95.11344	90	Null	92.58124	92.98013	95.84775	92.61028	90.96774
96.40719	Null	88.05132	79.84293	Null	Null	96.50521	95.32009	77.76817	98.24389	98.24162
57.51748	Null	63.90658	60.28708	100	Null	74.89362	76.06838	62.97787	75.14038	72.56881
18.25175	Null	47.04883	45.16746	25	Null	30.59574	35.47009	53.48089	27.33027	27.47706
99.65035	Null	100	100	100	Null	99.14894	99.85755	100	99.79581	99.77064
53.84615	Null	80.89172	74.88038	62.5	Null	71.48936	76.49573	86.92153	84.63502	71.14679
778.4518	Null	869.7353	839.5759	Null	Null	872.0488	868.9658	Null	877.3229	856.0527
080370001507A	803700017447	803700015347	803700015351	803700015436	803700015455	803700015614	803700015629	803700016063	803700016951	803700017108

Null	Null	Null	96.41244	97.3545	93.91286	96.92331	94.65154	97.79736	91.04478	96.80459
100	Null	Null	98.28602	98.8342	98.17101	98.9905	98.7451	96.45161	100	98.55769
Null	Null	Null	52.25718	58.59375	50.17986	56.97438	58.14196	69.94949	62.5	58.40562
57.14286	Null	Null	64.75893	71.68059	65.32258	68.09543	69.36888	77.5	70.83333	70.56476
73.91304	Null	Null	67.10875	82.39921	69.73116	67.86112	74.06514	74.08907	Null	74.46121
89.18919	Null	Null	89.34361	87.36772	89.6839	90.84725	89.54619	87.04846	88.0597	89.67751
Null	Null	Null	96.67818	99.4709	98.22725	97.9128	99.06807	99.29515	Null	98.67472
Null	Null	Null	67.1414	70.82405	75.53354	66.78657	60.62323	66.27566	62.5	71.31342
17.77778	Null	Null	23.43845	32.65033	28.62805	23.11751	30.08499	33.43109	16.25	35.59981
100	Null	Null	98.06714	100	89.63415	99.58084	99.71671	100	93.75	99.57326
77.77778	Null	Null	59.5117	51.00223	56.17378	57.54491	46.17564	35.48387	50	47.74775
Null	Null	Null	813.0038	850.1775	815.1981	824.6346	820.1874	837.3218	Null	841.3803
803700017517	803700017540	803700017790	803700015116	803700017470	803700018233	803700016699	803700017752	803700018568	803700016449	803700017822

95.22464	96.816	93.23843	95.80277	97.78802	93.92971	97.28327	98.25084	98.78576	96.48011	95.77851
98.20174	99.04571	96.21212	99.21814	98.23322	98.3871	98.57187	99.71711	98.60478	98.67647	99.43182
58.54232	64.47468	52.04082	54.89978	58.69018	64.43203	57.24138	50.65253	55.50382	45.48673	51.87761
70.46129	73.13131	66	68.21333	70.22333	72.94118	69.5981	60.58269	64.18116	59.31095	63.08244
77.79709	78.00403	71.12299	71.16494	76.22951	79.34045	81.26624	97.85619	97.13069	59.53868	64.79313
89.47443	91.25106	89.67972	90.6683	90.87558	88.4345	89.13309	96.20394	93.27285	92.57304	91.17325
99.0534	98.5348	98.93238	98.32926	98.98618	98.84984	99.05372	93.56159	97.08304	92.67863	95.66886
70.2439	71.88241	80.88235	67.38035	64.48598	67.97386	67.32456	71.25891	73.82033	51.71958	63.76812
30.94634	32.68848	17.35294	38.1864	32.39875	31.80828	28.15789	36.17577	34.98185	24.84127	24.47205
99.80488	99.38359	98.52941	99.74811	100	100	99.89035	99.76247	99.81851	100	98.34369
54.19512	50.54528	54.41176	36.64987	54.82866	54.0305	62.55482	99.04988	98.50272	60.18519	50.31056
843.9452	855.7574	818.4029	820.2612	842.7394	850.1274	850.0753	903.0719	911.6855	781.4906	798.7
80370001 8229	80370001 7818	80370001 5987	08037000 1749A	80370001 8290	80370001 8407	80370001 7606	80370001 2075	80370001 4211	80370001 4457	80370001 6006

95.87596	90.2439	100	81.25	94.37182	97.33106	Null	92.95775	96.71053	95.50141	97.23032
98.76141	100	Null	100	96.99854	98.42233	100	97.05882	Null	98.69646	98.31697
51.5807	31.25	50	Null	51.55807	44.34907	43.75	40.35088	51.5625	48.9842	50.54152
63.57232	60.60606	60.78431	53.33333	63.83178	59.66691	66.66667	57.87234	66.38655	61.44165	62.43433
61.59122	37.93103	Null	Null	59.48144	59.24171	Null	62.7907	Null	67.67922	71.81648
91.46419	92.68293	91.80328	100	91.68482	92.27712	89.13043	94.01408	90.13158	93.62699	93.80466
96.22762	Null	Null	81.25	94.73493	96.19534	100	94.3662	Null	86.78538	90.52478
55.08475	73.33333	64.28571	Null	65.625	66.73684	Null	59.45946	73.80952	62.39316	66.12529
24.2615	45.33333	12.85714	60	25.16304	25.85263	34.28571	23.24324	27.61905	39.20228	36.33411
98.30508	93.33333	100	Null	98.77717	98.52632	100	100	100	99.7151	99.07193
49.39467	60	50	37.5	53.94022	58.52632	57.14286	37.83784	61.90476	54.41595	58.00464
786.1194	Null	Null	Null	796.1668	797.1256	Null	759.9513	Null	808.4418	824.205
803700014993	080370001852A	803700017199	803700018515	080370001418A	080370001603A	803700015722	803700015421	080370001546A	803700011382	803700011397

97.32327	98.63774	98.99037	96.75507	94.5025	95.42576	92.30769	96.36459	95.57119	95.17177	95.53885
98.2906	98.95238	99.51652	99.06133	98.98897	98.03371	99.02235	98.3454	98.59895	97.15736	96.7265
48.40336	52.70426	63.01212	50.92967	46.45309	55.01792	49.2674	51.02302	46.3843	46.65043	43.41085
62.56684	62.64916	72.23516	64.09948	61.60815	65.68266	62.9174	62.75146	59.97899	60.13431	60.51118
56.09756	97.49679	97.51707	64.56625	60.19417	63.64542	68.73239	64.59497	59.69474	59.98686	55.11864
90.73439	95.20686	93.49613	91.82527	93.00318	90.07741	93.3432	92.57113	91.22517	88.11513	92.4812
95.74468	96.41776	97.44071	95.44462	92.04907	93.94792	92.01183	92.14963	93.08775	94.15042	93.08271
53.67647	65.39075	70.70201	67.12963	69.92126	59.43152	66.74058	57.42754	57.08556	67.69481	65.26656
28.57843	36.77831	38.98281	25.81019	30.96063	26.56331	40.88692	31.23188	35.40107	30.06494	35.60582
99.01961	100	99.85673	99.18981	99.84277	98.70801	99.77876	100	98.52941	95.94156	99.51613
52.94118	96.49123	98.0659	62.5	53.45912	57.88114	58.18584	57.42754	57.48663	45.77922	47.25806
783.3764	900.7252	929.8155	817.3113	800.9829	804.4148	823.1944	803.8872	793.0438	780.8468	784.5165
803700016044	803700017555	803700017574	080370001400A	803700014122	803700014156	803700014137	803700014160	803700014175	803700014194	803700014226

94.22188	92.56278	95.04927	94.54637	95.35193	96.18931	94.41014	95.4602	95.76023	98.83285	98.33003
98.32317	99.10941	98.01237	98.85941	98.05825	98.50746	97.99742	98.74372	99.58735	98.86823	99.03537
52.07921	47.84314	58.16918	53.7066	49.39759	53.31325	48.70993	46.62841	51.81518	50.63663	56.8118
63.81323	61.40625	67.30083	64.32217	63.43785	64.47076	61.8705	59.31446	62.99827	61.38958	66.07649
55.83596	62.37458	74.11915	84.17415	62.36623	68.98982	62.30004	71.40588	82.20803	Null	96.7853
91.52542	92.78815	92.02252	92.67367	91.76627	94.09957	93.63016	94.02985	93.93275	94.12255	93.03708
90.90909	90.27688	96.1755	97.48197	94.11244	91.33374	90.18525	89.30348	88.15789	96.20675	97.70733
62.0603	63.64562	56.78793	64.38679	66.13757	71.11111	64.7587	55.08637	69.53642	79.41176	69.04995
34.77387	36.74134	24.36557	25.4434	20.31746	34.26263	30.93154	38.73321	39.60265	35.85561	30.79334
99.74874	99.79633	100	99.85849	99.4709	99.39394	99.3266	98.659	100	100	99.90206
58.0402	55.19348	64.86247	79.29245	56.96649	64.24242	60.83053	65.51724	81.01545	99.46524	98.92262
801.3311	801.738	826.8648	854.7455	797.383	835.914	804.9508	812.8818	864.6142	Null	906.4514
803700013872	803700013957	803700015313	803700014796	803700012412	803700013923	803700011715	080370001172A	803700011768	803700017856	803700017841

99.31601	94.54297	96.04811	94.82612	96.28975	94.47592	93.53308	95.49932	Null	97.23644	92.72727
100	99.03148	96.84909	97.83694	98.3165	99.03226	98.72581	98.13017	Null	96.75456	98.5275
55.48387	49.22601	48.36735	50.20921	51.32743	42.90429	58.09836	57.88433	Null	52.66106	56.92398
68.58553	64.63224	63.0094	63.73277	61.74636	54.57746	68.6872	69.07601	Null	65.47145	67.8918
Null	67.53247	70.12128	59.45946	60.35635	59.92439	76.49558	76.72344	Null	77.81022	75.01612
93.02326	94.40655	93.21306	92.28159	96.11307	93.90935	91.61049	91.4236	Null	89.04811	91.11623
96.99042	87.17599	89.77663	89.9067	88.86926	91.50142	98.57678	98.20359	Null	98.77175	98.36594
39.82301	60.94891	65.6338	70.71823	72.92818	54.80769	69.16141	67.22074	Null	78.05755	74.29245
35.30973	46.49635	34.42254	34.86188	37.45856	32.11538	27.77277	31.15691	Null	29.71223	31.68239
98.67257	100	99.71831	100	99.44751	99.51923	99.09829	99.73404	Null	99.64029	99.68553
82.74336	63.86861	65.91549	62.1547	62.43094	69.71154	53.20108	54.32181	Null	45.68345	51.25786
Null	827.8616	823.0751	815.9876	825.2839	792.4789	834.9608	839.374	Null	830.8471	837.4871
803700012342	080370001261A	803700012624	803700012643	803700012658	803700012662	803700016665	803700016646	803700012357	803700013406	803700016631

84.69945	89.28571	100	98.47043	89.9177	96.70833	95.28986	96.44891	96.75516	95.43466	96.33799
Null	Null	Null	99.08425	98.76894	99.49385	96.99248	97.44795	97.12163	99.07859	98.67978
43.66197	41.17647	Null	61.44689	61.70501	66.92825	51.96078	57.42754	55.02451	50.36208	59.86079
59.67366	58.11966	Null	72.19039	71.98364	76.19835	62.44131	66.92135	65.27273	62.66984	68.58024
60	60	Null	73.17189	75	67.33455	74.47917	75.42205	78.78387	77.98438	81.9104
91.98543	92.85714	85.71429	91.19646	90.38066	89.95833	93.84058	91.25628	93.60865	92.31821	92.5409
95.08197	92.85714	100	97.82461	98.76543	97.79167	98.18841	98.42546	96.50934	95.8994	98.57422
33.12102	40	Null	65.7732	63.97942	47.97297	53.40909	58.19975	65.78947	61.66667	67.20085
30.06369	37.77778	53.33333	39.34021	33.31046	35.13514	37.27273	26.38718	23.53383	28.58824	28.8141
54.14013	51.11111	Null	99.58763	99.65695	99.45946	98.86364	99.50678	100	99.60823	99.89316
64.33121	62.22222	Null	43.71134	54.03087	45.27027	55.68182	52.77435	75.37594	66.8952	63.88889
Null	Null	Null	841.7973	837.4991	822.2512	818.4199	820.2176	847.7751	830.5055	856.2813
803700015506	803700015652	803700018197	803700017201	803700017254	803700017216	803700017324	803700017451	803700016608	803700016595	803700017305

96.8815	97.87369	95.82215	96.46226	89.23293	92.41931	94.20103	Null	93.52941	95.16129	96.84649
96.30643	99.53353	98.38881	98.84793	99.53271	96.12903	94.23077	Null	Null	Null	99.39535
48.05654	62.01022	60.14256	54.57317	54.66377	60.28708	51.9084	42.85714	58.20896	54.54545	56.92308
63.84279	71.42857	70.06833	66.36086	64.71774	70.0493	71.35506	56.25	69.35484	72.34043	66.37851
66.73077	75.28552	75.90302	69.61603	71.19021	71.49321	53.41959	Null	Null	Null	88.82028
91.89189	91.49476	89.36741	91.15566	88.59958	88.92508	88.2732	80	89.41176	95.16129	93.79724
96.535	98.54015	98.90452	98.34906	98.66291	98.7859	95.48969	86.66667	97.64706	Null	94.42273
72.63682	58.86214	69.50272	64.70588	73.24324	64.0257	68.84422	Null	74.5098	82.35294	64.41103
28.20896	31.05033	27.65346	28.7395	23.18919	27.68737	22.01005	25	33.33333	27.05882	35.88972
100	100	99.72805	100	100	99.57173	93.46734	100	7.843137	88.23529	99.74937
50.49751	53.93873	55.51671	48.7395	48.64865	47.10921	66.33166	37.5	64.70588	76.47059	88.88889
811.5882	840.0176	840.9977	817.5498	811.6809	816.4829	799.531	Null	Null	Null	885.5227
803700016754	803700017697	803700017945	803700018093	803700018036	803700018214	803700015474	803700015760	803700017220	803700015756	803700014531

95.21411	98.32436	93.45842	96.89119	98.54241	Null	98.07692	98.47087	92.96254	96.794	100
100	99.28571	98.10924	99.42071	98.42954	Null	97.72727	99.15533	99.21348	99.12152	100
50.42553	47.58308	46.91047	46.33508	64.46541	38.33333	52.32558	58.12777	48.64092	45.51111	Null
63.9428	64.71495	60.06309	60.89065	73.94852	58.82353	67.69231	67.39405	62.94201	60.30905	66.66667
67.21672	61.7893	60.34014	63.0958	72.07052	Null	61.04651	80.39562	62.04268	62.35632	58.82353
94.12259	90.66427	92.54564	91.08808	90.29869	87.80488	91.92308	91.60194	91.60045	90.00682	80.76923
92.2754	95.87074	91.58215	93.92055	98.6141	Null	97.30769	99.12621	92.90579	94.91814	100
73.42466	60.44944	56.30252	62.3942	73.26565	56.09756	77.27273	68.13187	66.60194	66.07818	Null
34.73973	24.89888	33.71429	30.15719	29.18782	20	21.21212	17.68232	33.5534	26.05296	35
98.63014	99.55056	99.4958	99.51749	99.9154	95.12195	90.90909	100	99.6124	98.10845	100
73.69863	55.2809	53.44538	54.16164	41.87817	43.90244	43.93939	65.33467	50.3876	46.15385	50
843.6903	798.4122	785.9671	797.8726	840.6162	Null	799.4327	845.4206	800.4632	785.4104	Null
803700014688	803700014743	803700012959	803700012963	803700017771	803700018089	803700015370	0803700001724A	803700014118	803700014103	803700017536

94.06953	95.65513	Null	100	Null	94.40452	95.68123	94.50137	95.1053	93.97715	96.97581
97.9798	99.02235	100	100	Null	97.27823	97.59916	98.65269	98.15562	98.95522	97.36098
52.71739	45.84041	Null	Null	Null	50.79755	47.27503	57.57988	50.9855	48.12165	55.10719
63.62468	60.21867	50	62.5	Null	62.7451	60.8254	68.43094	64.54613	59.84815	68.10013
62.26158	62.24029	Null	50	Null	56.91888	61.75272	76.28481	73.56669	66.40777	65.20833
90.0818	94.43313	100	91.66667	Null	92.24846	92.03085	89.2027	91.96805	91.51956	91.02823
88.13906	92.87169	Null	100	Null	91.4271	91.15681	98.53787	96.90632	95.5694	94.85887
64.14474	64.92891	25	100	Null	60.84656	62.84779	72.39399	66.54354	66.75291	71.45455
35.65789	30.18957	30	40	Null	31.28748	36.33388	29.31095	27.76781	25.61449	27.85455
95.06579	99.76303	75	Null	Null	100	98.527	99.77915	99.42075	99.6129	99.63636
59.86842	61.13744	Null	75	Null	54.32099	50.40917	53.53357	60.0316	42.96774	56
803.6107	806.3006	Null	Null	Null	792.2749	794.439	838.2079	824.9973	789.3469	823.585
80370001 2639	80370001 4067	80370001 8110	80370001 7593	80370001 8337	80370001 1166	80370001 3711	08037000 1795A	80370001 5900	80370001 4090	80370001 4141

89.09189	94.37737	97.37609	94.09414	94.57315	96.65682	96.73333	Null	90.41096	92.71889	94.68085
98.86481	96.40479	99.31319	96.96395	98.71314	98.77158	98.39605	Null	100	98.84817	100
50.84525	57.98764	53.57834	46.73784	64.82372	60.59863	53.78221	Null	48.3871	43.57054	42.02899
62.71845	66.43078	66.60567	62.03649	74.00794	71.42518	66.68038	Null	61.29032	59.16976	55.62914
85.83162	70.98826	64.25073	62.11259	68.66242	72.14992	70.8	Null	Null	61.78862	55.31915
93.39065	91.30735	92.20117	87.30018	90.7331	91.11563	92.1	Null	95.89041	90.41475	92.02128
95.6475	96.51604	94.53353	94.80462	98.15931	98.17141	95.63333	Null	90.41096	94.79263	95.21277
73.29749	70.94682	70.99237	56.94683	61.9132	62.5	77.30061	Null	45.45455	47.70798	74.07407
33.29749	24.79896	30.17812	22.74443	44.18069	33.32512	26.38037	Null	33.63636	27.60611	30.37037
99.64158	99.8703	100	95.19726	99.91143	99.56897	99.7546	Null	45.45455	78.98305	96.2963
73.65591	48.24903	57.76081	54.88851	44.907	45.3202	62.82209	Null	68.18182	61.52542	51.85185
856.2826	817.8773	826.79	773.8268	840.5851	829.6034	840.383	Null	Null	757.1259	787.4848
803700012484	803700016735	803700013355	803700014902	803700017714	803700017729	803700016491	803700015578	803700014739	803700015525	080370001820A

100	94.59459	96.69421	98.14964	98.11636	95.88551	98.70441	98.42857	Null	98	91.66667
100	100	94.91525	99.5051	99.20043	97.51381	98.54265	99.27468	97.0297	98.75458	100
43.75	62	45.83333	59.2685	63.66378	60.23166	60.04553	61.60978	42.85714	49.81203	33.33333
58.62069	69.9115	62.10526	68.48125	70.89947	68.17326	67.46674	68.41424	59.76331	63.13599	59.25926
Null	50	Null	97.30409	96.48947	Null	96.59126	95.52066	49.6732	64.34827	Null
88.63636	91.21622	91.73554	90.92518	93.20978	98.0322	93.4261	93.55357	90.59829	90.68966	91.66667
93.18182	92.56757	97.52066	97.92438	97.41759	85.86762	96.76104	96.39286	Null	97.62069	91.66667
46.15385	85.71429	86.84211	78.4744	73.6715	67.37288	73.88003	68.97913	60.56338	61.68639	72.72727
32.30769	25.14286	36.31579	35.05747	36.52174	52.62712	36.70463	36.83023	34.08451	14.20118	34.54545
84.61538	40.54054	94.73684	99.94775	99.71028	99.57627	100	99.8308	91.5493	96.74556	90.90909
53.84615	62.16216	31.57895	98.48485	97.77885	86.44068	98.55733	97.40553	43.66197	54.43787	72.72727
Null	773.8497	Null	923.5226	926.6792	Null	920.6797	916.24	Null	789.4322	Null
803700018375	803700015898	803700017413	080370001222A	803700017589	803700013459	803700017061	803700017076	080370001699A	803700017165	803700018074

82.35294	94.52603	96.20991	94.61799	95.66385	94.7191	96.17105	96.94129	96.47177	100	94.75437
100	98.40256	98.6631	96.45987	98.33611	99.05956	97.72096	98.39006	98.92125	100	99.38434
Null	62.09588	64.1129	58.89764	41.22807	50.86294	55.12048	55.98802	44.81434	37.5	45.41485
41.17647	70.10078	74.50199	71.80972	58.29292	63.9599	66.77803	65.67976	59.72938	64.70588	60.09514
Null	60.65476	68.61472	72.39297	60.71429	62.28603	62.18763	89.01846	62.43017	Null	59.77208
100	92.16733	91.39942	90.13925	91.74981	89.62547	90.52543	93.95659	91.43145	86.95652	92.88093
100	92.21184	98.97959	98.85209	94.16731	96.51685	96.75797	97.28663	93.24597	100	93.13072
Null	69.50355	72.8972	72.27841	72.41848	59.72435	69.50495	70.57357	63.1016	100	59.59752
43.33333	23.90071	35.88785	36.77573	29.18478	18.22358	30.71287	32.60183	29.26916	34.28571	25.63467
Null	98.23322	99.53271	99.52409	98.91304	98.31547	99.30898	100	99.28699	100	98.91641
Null	55.83039	38.78505	40.98751	57.06522	57.42726	46.69299	79.8005	60.42781	57.14286	57.12074
Null	817.627	839.5844	832.7353	797.7339	790.7205	811.4813	880.2367	799.1299	Null	786.7018
803700017409	803700014599	803700018479	803700018021	803700013942	803700014989	803700016010	803700016275	803700014230	803700015417	803700014245

95.85531	97.40224	93.65559	95.65647	97.62457	96.2892	91.88634	94.21129	96.80851	94.0806	90.71518
99.21053	97.65991	98.66036	98.07692	98.50587	98.40158	98.01536	98.98336	99.63986	98.74582	98.89503
45.21144	51.26404	45.57196	55.60748	56.43564	59.55022	51.96787	49.12088	40.68692	46.45833	43.71069
59.86137	65.40816	58.45233	67.37338	65.3417	68.4913	63.21327	61.33787	55.71906	61.14519	57.73525
57.27956	64.67174	65.36174	89.0566	91.94631	86.5008	73.11281	81.12183	66.76116	66.17325	56.94444
91.9367	92.15204	92.78701	93.28727	93.10545	92.15944	94.52242	95.32079	91.75532	93.61881	92.72271
94.49887	91.55045	91.3142	96.05133	96.69757	97.96505	84.8682	85.19055	90.85106	92.31738	91.71895
67.72947	71.46739	50.97087	74.91409	72.6257	63.50515	62.25352	58.35655	56.83837	64.67236	68.42105
23.07246	33.75	35.72816	30.37801	35.71695	31.10103	45.6338	42.25627	33.21492	32.96296	30.08772
98.64734	99.36594	100	100	100	100	98.78049	99.72145	97.69094	99.14651	100
58.06763	54.07609	55.09709	85.56701	88.45438	79.21649	58.81801	74.65181	56.48313	61.45092	55.70175
791.3707	818.768	787.5993	885.9686	896.4541	873.1803	823.0721	840.2726	786.4493	810.7722	786.6528
080370001425A	803700013834	080370001382A	803700016379	803700016241	803700016788	803700010717	803700010863	803700011043	803700011151	803700013552

90.46538	94.5593	97.49006	96.54477	95.11892	95.65868	95.01071	98.18883	97.92764	97.79189	98.08307
99.33628	99.18864	99.02804	98.47465	98.21735	98.17308	98.02591	98.65098	98.75467	99.39333	96.91358
52.03252	54.78723	55.12943	55.63576	50.52589	51.95853	47.01937	60.63174	57.59386	64.78555	54.62185
64.38746	66.80217	65.54766	64.34758	62.02424	62.72618	61.30862	69.31954	68.92704	73.72344	67.5
65.21739	66.04046	88.13255	93.11171	79.49922	77.32484	71.06969	94.97183	74.06897	72.0339	70.53571
89.10329	92.92709	94.37356	95.7377	94.12496	93.91218	92.59259	94.26463	93.50193	92.74047	91.69329
90.6924	91.83896	91.67538	90.03783	93.11324	92.41517	92.50077	95.03606	95.67966	97.54991	98.72204
61.61972	57.39437	68.62974	68.36077	64.68136	48.95572	63.95089	66.78717	66.86461	70.73423	60
37.95775	35.28169	44.93294	43.2355	32.88862	33.03258	27.07589	46.10935	33.6342	31.62358	16.53333
95.07042	99.64789	99.65055	99.92842	99.94044	99.66583	99.77679	99.95481	99.16963	99.48294	97.33333
58.09859	58.4507	83.63425	93.91553	72.84098	71.17794	68.30357	91.09806	62.63345	70.11375	58.66667
803.9812	816.9185	888.2242	899.3302	842.9752	825.0007	816.6348	915.013	848.7557	869.973	810.6029
803700013567	803700013586	803700013980	803700013995	803700014550	803700014527	803700014546	803700014207	803700014866	803700016684	803700015385

96.23188	96.82663	96.63584	97.26828	96.02294	97.60938	98.07246	97.64011	95.52846	95.61871	97.47899
99.26702	99.55157	98.31824	98.31435	98.93211	98.88635	99.32461	98.82059	99.57173	97.82871	97.4122
49.62594	47.79051	57.88551	60.24406	58.29741	56.81544	62.61454	61.26004	46.50259	49.53988	45.31422
61.69251	59.46667	67.94609	69.78223	69.43856	68.03963	70.52694	73.41807	60.29697	63.86749	61.40749
95.68966	96.04779	83.60708	85.87739	83.10185	80.95939	84.17575	78.79783	64.82903	60.71726	63.80779
96.57971	96.20743	92	91.11297	89.67495	90.61795	92.12726	87.9348	91.92073	89.93487	91.24281
80.86957	77.78638	98.36994	99.05762	98.92925	97.47406	98.58337	99.20676	92.9878	95.61871	94.73684
64.27432	74.51923	74.36423	72.95189	70.76537	76.89512	71.21212	70.08399	67.55793	66.51584	67.0229
44.97608	37.88462	29.0402	27.32553	34.37892	30.93458	27.50842	32.7743	29.83957	23.57466	30.96183
100	99.51923	99.87695	99.86996	99.37265	99.74039	99.74747	99.70671	99.64349	98.64253	99.23664
96.01276	97.59615	68.74487	73.08192	69.13425	74.66251	60.26936	51.56646	56.14973	48.86878	52.9771
885.2194	883.1962	866.789	874.8862	868.0483	872.6348	864.1623	851.2096	804.828	790.7274	801.5988
803700012677	803700012681	803700016576	803700017466	803700017875	803700015224	803700017292	803700018017	803700012978	803700015188	803700015192

97.95627	94.37133	96.04563	97.85254	97.65603	96.32353	89.47368	95.30379	92.69036	94.68462	93.41801
99.06223	98.26303	96.56602	98.58966	98.72253	95.12195	100	97.91209	96.8254	96.56593	98.85057
60.4023	51.83267	55.22901	57.30337	63.62952	53.33333	20	53.38617	46.36015	52.05479	49.15254
68.5564	63.82894	65.5795	69.51447	72.99515	76.63551	48.3871	65.25636	59.81013	61.4346	59.83494
97.47112	69.21915	71.91345	70.14849	63.17719	41.17647	Null	86.14786	62.05267	79.40379	68
93.96388	92.53211	91.46768	90.76593	89.38153	94.11765	89.47368	93.13179	93.04569	94.75549	94.3418
97.48099	96.05201	97.24715	98.49678	96.244	96.32353	100	98.32697	92.18274	91.84975	88.33718
71.83099	73.5532	70.47101	69.51364	65.37181	79.06977	Null	75.35642	65.52316	65.70156	56.4
40.73239	21.77971	20.59179	33.71293	21.39845	36.74419	41.53846	30.611	32.9331	37.14922	30.72
100	99.68905	99.63768	99.88138	97.89123	20.93023	92.30769	100	98.63014	99.77728	97.2
98.59155	64.30348	62.5	43.53499	51.72031	60.46512	38.46154	71.79226	52.05479	81.29176	58.4
926.0481	825.4247	827.2489	829.3142	818.1877	750.2413	Null	867.2247	792.1083	854.6688	794.6551
080370001756A	803700016504	803700016720	803700017786	080370001489A	803700012889	803700018498	803700016561	803700010929	803700013444	803700013571

96.21212	95.43818	Null	98.72881	100	95.35452	96.45537	97.175	97.01923	95.26805	97.33629
97.95764	97.54011	Null	97.2973	Null	99.05851	97.57683	98.23143	98.86792	97.56729	99.11151
48.67173	57.07071	Null	53.65854	50	56.26643	57.48408	50.5814	49.10608	60.76046	53.90898
61.80458	71.42857	Null	68.9441	55.55556	65.27656	67.99277	63.81812	63.51108	70.43383	65.72263
64.30708	62.53102	Null	58.9404	Null	87.51174	85.38191	68	74.42159	81.93344	82.26744
92.87879	91.17647	Null	88.98305	92.59259	92.63011	92.65528	91.275	91.92308	91.54814	90.8768
90.90909	96.15846	Null	98.30508	100	97.83444	98.11592	96.975	96.20192	98.7965	98.66815
68.53333	76.37131	Null	45.61404	Null	72.88344	72.51044	63.54067	69.47195	79.17505	72.13855
29.6	31.39241	Null	17.19298	10	29.74233	25.3071	23.44498	31.35314	26.43863	32.15361
99.6	98.73684	Null	98.24561	100	99.8773	99.94037	99.61722	99.0099	99.8994	99.8494
60	40	Null	59.64912	66.66667	82.08589	74.4186	51.19617	62.37624	61.0664	72.74096
810.4744	817.8441	Null	785.559	Null	878.5213	867.8387	803.855	833.2621	862.8872	864.7743
803700013904	803700014917	803700015489	803700015718	803700015703	803700016398	803700016557	803700016769	803700017131	803700017269	803700017273

98.21999	Null	100	97.10483	97.28649	Null	98.55727	96.584	100	98.14666	84.2
97.90026	Null	100	97.61168	98.15195	Null	99.0991	99.49215	100	Null	97.7
56.71296	62.61682	44.44444	58.20896	62.69316	47.76119	58.62206	57.28612	Null	63.21586	48.3
66.64723	74.11168	61.76471	67.85714	72.04142	61.74497	68.86132	66.76942	100	73.58079	53.9
80.00644	71.42857	Null	80.16611	80.15612	45.80153	83.02177	80.23396	Null	74.88152	87.2
93.15381	90.68826	89.13043	91.66472	91.63096	91.70984	89.50743	90.88676	77.77778	89.68574	96.3
97.69512	97.97571	Null	98.34228	98.42902	98.4456	98.83416	98.60786	100	99.27478	81.9
74.39934	75.38462	75	73.23358	67.51269	72.72727	66.82028	72.80776	Null	64.21569	82.7
27.39022	24	23.33333	28.79468	28.91371	29.81818	29.72862	27.9258	40	39.16667	43.4
100	100	100	100	100	94.54545	100	99.91568	100	99.7549	100
66.19718	72.30769	41.66667	61.84539	60.30457	29.09091	70.66052	57.04047	Null	41.42157	100
858.3226	Null	Null	854.8294	857.1201	Null	863.7125	847.55	Null	Null	875.6
803700017184	803700017358	803700017343	803700017396	080370001731A	803700017521	803700017682	803700017678	803700018163	803700018426	481410000106

87.3	80.7	87.7	84.9	89.4	84	86	83.1	83.3	78	82.5
98.1	91.8	93.6	91.4	97.8	96.9	91.9	95	96.7	96.9	98
50.9	51.9	59.9	54.5	52.8	54.6	59.7	29.8	51.1	43.5	59.6
64.2	64.2	62.8	56.3	62.2	63.6	66.1	46.1	51.3	45.5	64.2
78	86.1	76.3	76.4	90.6	69.7	80.8	82.7	79.6	71.4	75
92.3	95.4	94.8	95.1	90.6	95.6	96.3	91.9	90.9	90.3	94.4
86.7	90.9	85	82.5	87.7	87.9	85.8	78.4	85.5	88.2	84.9
84.8	78.2	81.1	79.1	89	75.8	80	78.9	76.8	79.6	78.2
43.8	49.4	34.4	37.2	48.4	39.6	46.6	44.2	39.6	43.2	40.6
99.97565	100	99.99413	99.98729	100	100	100	100	100	100	100
97.2	95.7	86.4	84.3	94.6	98.9	96.9	80.5	91.2	85.8	97.1
883.2756	884.3	861.9941	841.6873	903.1	866.6	890.1	810.6	846	822.4	874.5
48141000107	48141000108	48141000109	48141000110	48141000111	48141000112	48141000113	48141000114	48141000204	48141000205	48141000206

84.2	88.6	77	82.5	89.3	79.1	81.3	88.3	87.1	87	86.6
94.5	97.1	92.1	96.2	91.7	91	90.2	98	95.6	98.4	91.4
56.6	65.2	37	52.2	55.3	53	54.4	52	66.8	41.4	54.7
60.4	71.4	49.2	56.2	66.1	54.6	56.9	61.9	67.4	51.7	62.6
74.7	82.4	69.8	65.7	85.7	61.9	64.7	65.3	61.8	68.1	60.1
92.3	88.6	94.1	91.8	94.1	89.5	87.6	93.3	95.4	91.2	95
87.3	94.3	84.3	84.8	84.6	89.1	85.1	87.6	80.8	76.2	85.3
75.9	87.4	81.8	78.3	78.6	64.2	72.7	80.5	67.9	79.1	71.5
40.2	31.4	47.2	35.4	47.4	44.6	41	50.6	46.4	49	40.2
100	100	99.98543	99.9894	100	99.93265	99.97081	100	100	99.97855	100
94.8	97.8	73.4	91.1	94.2	71.8	81.3	81.3	91	92.7	87.4
860.9	904.2	805.8854	834.1894	887	798.7326	815.1708	858.8	860.2	834.7786	834.8
48141000207	48141000208	48141000301	48141000302	48141000403	48141000404	48141000600	48141000800	48141000901	48141001001	48141001002

93.4	93.2	89.9	86.4	92.8	95.9	91.1	79.9	91.5	89.3	85.3
97.4	94.3	97.6	95.4	98.7	90.3	98.7	96	97.7	98.9	95.9
59.2	47.7	65.3	61	50.2	65.4	66.4	59.4	67.8	65.8	48.6
61.2	57.5	70	63.7	63.9	69.2	69.9	68.7	71.7	66.1	56.7
97.3	96	93.6	86.1	66.2	83.2	93.4	94.1	92	88.6	75.6
94.5	89.2	96.7	93.6	86.7	99	95.4	94.3	88.4	95.4	92.1
84	75.6	85.6	86	93.7	88	82.8	77.1	85.9	87.5	84.7
90	92.1	65.3	78.3	84.7	76	87.6	87.9	81.8	77.5	71
46.6	43.4	46.4	44.6	45.6	43.2	50.6	60	44.2	45.6	46.8
99.99329	100	99.98229	100	100	100	99.99185	100	99.99373	100	99.97639
97.7	98.9	90.2	89.6	93.5	95	94.8	92.8	98.2	89.5	93.1
921.2933	887.9	900.5823	884.7	876	905.2	930.6918	910.2	919.1937	904.2	849.7764
48141001107	48141001109	48141001112	48141001114	48141001115	48141001116	48141001117	48141001118	48141001119	48141001202	48141001204

91.5	91.5	86.2	93.8	87	82	81.9	67.1	79.5	64	79.7
95.7	98.3	90	98.7	94.9	98.2	97.2	92.7	88.1	93.3	95.8
44.7	57.2	61.4	40.6	63.4	24	27.9	36.7	42.1	27.7	45.3
62.7	66.7	66.4	51.3	65.1	20.1	37.8	36.1	48.1	42.1	52.6
91.8	94.7	83.7	94.6	74.1	45.7	37.6	41	38.7	50.2	65.7
94.6	94.9	95.8	94.7	97	95.8	94.2	95.1	96.5	98.3	93.9
84.1	81.1	93.5	79	77.9	93.7	79.5	74.3	80.3	81.8	78.4
88.4	92.8	88.4	94.2	90.5	87.9	87.6	80.4	70.2	88.1	85.1
40	43.8	59.8	59.6	61.8	60.6	46	54.4	47.8	59.8	55
99.9963	99.96713	100	99.97903	99.95919	99.90778	99.97273	100	99.97092	99.92374	99.9769
100	98.3	79.4	92.5	68.4	66	41.5	50.8	60.8	57.5	70.5
893.4963	919.2671	904.6	898.979	880.0592	773.9078	731.1727	728.6	752.0709	762.7237	821.9769
48141001301	48141001302	48141001400	48141001502	48141001600	48141001700	48141001800	48141001900	48141002000	48141002100	48141002202

85.2	78.5	73	86.9	81.9	79.1	76.1	78	81.1	78.8	77.5
98.3	97.1	99.1	91	97.4	95.8	95.9	95.8	96.1	97	97.3
52.6	43.2	53.1	51.4	26	49.6	44.5	40	41.3	46.8	54.6
56.3	51	54.4	64.5	37.8	53.2	46	42.2	51.1	53.4	55.5
72.6	66.9	75.9	67.7	41.2	46.5	55.4	70.1	49.9	73.6	66.1
97	89.6	99.6	92.9	90.5	93.1	92.7	95.8	96	89.6	95.6
84.6	87.2	72.9	83.3	83.1	79	81.7	78.5	79.3	77.7	79.9
78.4	78.1	85.6	64.9	74.8	80.4	74.2	71.9	84.7	87	79.7
46	48.2	53.2	34.6	46	47.4	37.6	36.2	48.8	45.2	46.6
99.95797	100	100	99.93551	99.95085	99.95772	99.95497	99.94867	99.96328	100	99.98344
94	88.9	87.7	88.9	69.7	86.8	75.2	87.7	82.9	82.9	82.1
864.958	828.7	854.5	826.0355	748.3508	810.8577	779.255	796.1487	811.1633	832	834.8834
48141002300	48141002400	48141002500	48141002600	48141002800	48141002900	48141003000	48141003100	48141003200	48141003300	48141003402

88.2	87.6	81.1	67.4	85.8	83.2	76.9	79.5	76.3	76.6	86.2
99.3	98	96.9	94.8	91.6	96.5	96.6	98.7	96.2	96.4	95.7
64.2	61.8	50.1	44.2	66.5	34.4	36.8	40.9	45.7	56.7	58.1
71.7	66	56.7	54.6	67.1	46.8	44.7	48.1	51.4	62.1	57.8
88.1	92.1	72.5	62.4	64.2	39.8	64.1	51.9	63.5	71.6	64.7
84.9	92.5	91.2	90.6	93.2	87.7	91.7	96.9	94.8	93	88.1
85.7	83.8	85.4	89.7	80.5	83.3	75.6	78.3	73.1	83.1	86.1
79	87	78.5	69.8	85.1	81.8	79.3	76.7	76.6	78.4	67.2
46.4	44.4	37.8	41.6	39.2	41.8	40	50.6	44	37.6	30.4
99.96653	100	100	99.97337	99.96671	99.99116	99.95866	99.95016	99.98847	100	100
91.4	95.8	92.5	84.2	84.5	96	89.2	81.5	88	93.9	95.6
898.8665	909	842.7	799.2734	857.6667	791.2912	794.8587	803.0502	809.5885	849.4	829.9
48141003403	48141003404	48141003501	48141003502	48141003601	48141003602	48141003701	48141003702	48141003801	48141003803	48141003804

78.6	79.3	78.5	81.5	74.1	84.8	76.5	89.5	82.7	81.1	73.9
99.3	96.8	100	94.3	94.7	98.5	96.3	97.9	94	99.2	99.1
56.2	39.9	52.5	51	42.6	51.7	53.6	62.9	51	49.6	46.1
57.3	47.2	57.8	53	51.7	64.7	62.6	70.6	59.2	53.1	53.2
68.8	64.6	64.7	59.4	60.8	68.8	78.9	71.7	76.1	72.9	63.2
95.3	96.4	97.2	94.8	94.8	92.2	99.4	89.7	92.2	90.6	94.2
82.2	83.3	84.7	84.4	68.7	90.3	86.4	91.5	87.2	79.8	74.4
66.6	80.5	75.7	77.3	81.4	80.7	72.6	73.8	73.7	76.9	77.6
40.8	39	35.2	35.2	40.8	26	39.6	31.8	38.6	35	44.6
99.97291	99.84848	100	100	99.99529	100	100	100	99.99516	99.96898	100
84.4	95.5	94.9	77.8	89.2	97.8	95.2	92.9	96.1	92.8	83.7
829.4729	822.3485	841.2	808.7	798.7953	855.5	861.1	872.3	850.7952	830.969	810
48141003901	48141003902	48141003904	48141003905	48141004004	48141004005	48141004007	48141004008	48141004103	48141004104	48141004105

80.4	76.3	72.5	78.5	89.8	83.7	85.3	85.7	81	87.2	82.4
93.2	95.9	97.9	97.1	94.2	96.9	98.2	94.9	97.9	93.3	96.9
49.8	57.3	38.2	53.7	51.7	36.9	59.4	44.5	50.1	57.6	53.3
52.4	63.7	42.7	58.1	59.4	56.4	65.9	56.7	61.5	61.4	66.7
70.1	82.6	64.6	76.6	83.3	85.9	95.3	92	90.7	77.8	88.5
92.3	97.1	92.8	94.3	89.8	96.5	93.4	96.1	95.7	96.7	90.6
82.1	83.2	79.7	83.3	82	77.5	82.8	87	82.4	83.7	86
59.8	77.5	69.1	75.2	82.7	85.4	83.8	79.3	85.9	84.6	82.9
37.2	32.2	39.6	45.4	38	44.4	52.2	44.2	50.2	46.4	46.2
100	99.99143	99.98771	99.99372	100	100	100	100	99.99616	100	99.99233
94.3	95.7	88.7	96.1	98.7	99.4	97.2	93.9	93.1	96.4	94
811.6	861.4914	785.7877	858.2937	869.6	863	913.5	874.3	888.4962	885.1	887.4923
48141004106	48141004107	48141004201	48141004202	48141004303	48141004307	48141004309	48141004310	48141004311	48141004312	48141004313

85.9	87.6	87.3	84.3	91.8	90.8	93.6	92.2	94.9	93.2	94.7
96.2	96.4	96.9	99.4	98	94.8	99.3	98.5	98.8	96.7	98.3
46.1	63	68.3	54.8	60.9	53.2	62.7	54.2	62.7	58.4	50.1
60.9	66.6	77.6	59.8	67.7	58.3	88.7	80.2	71.3	69.1	70.9
88.1	80.2	87.6	79.5	87.8	87.1	100	99.5	92.5	84.9	99.2
95.6	94.9	88.5	97	91.9	96.5	90.9	88.7	92.7	89.2	93.1
86.5	87.8	94.5	77.7	91.2	91.8	100	99.9	90.6	91.6	96.2
80.8	67.1	83.3	85.5	70.4	69.1	75.2	96.5	92.7	83.9	93.7
49.4	45.2	52.4	46.4	26.6	27.8	40.2	31	40	34.4	48
100	100	100	100	100	100	99.91622	100	100	100	100
92.5	92	98.7	100	98.7	95.9	97.7	97.3	97.9	100	100
882	880.8	935.1	884.4	885	865.3	948.2162	938	934.1	901.4	944.2
48141004314	48141004316	48141004317	48141004318	48141004319	48141004320	48141010102	48141010103	48141010217	48141010225	48141010226

95.6	93.1	87	86	85	87.7	86.6	86.5	85.3	91	91.1
96.3	98	96.8	98.6	94.5	92.5	97.9	91.1	95.2	98.9	93.9
41.1	57	59.1	43.8	60.9	53.2	62.7	67.5	57.9	57.6	69.6
61.7	66	67	55.4	67.6	58.1	67.2	68.3	59.8	68.2	74.6
83.9	95.5	89.4	84.7	85.3	75.7	87.1	86.3	83.9	87.5	84.5
91.6	95.7	92.9	95.3	95.1	91.2	96.8	94.2	93	94.5	90.2
94.3	89.5	89.7	78.5	84.9	87.2	83.3	83.7	85.2	93.6	94.8
79.8	92.4	96.8	83.1	78.8	85.4	79.8	80.1	75.3	78.2	87.3
51	28.2	38.4	45	39	34.8	42.6	38.8	37.2	32.6	35
100	99.99504	100	99.98402	100	100	100	100	99.99134	100	100
94	98.9	88.5	96.3	90.3	92.2	97.5	97.6	94.8	96.9	96.5
889.3	914.295	905.6	866.684	881.4	858	901.5	894.1	867.5913	899	917.5
48141010227	48141010229	48141010230	48141010303	48141010307	48141010311	48141010312	48141010316	48141010317	48141010322	48141010323

87.6	87.3	92	88.3	94	93.3	83.9	84.3	90	82.5	83.5
95.9	96.3	97.7	95	98	94.2	97.5	100	96.4	95.4	95.7
48.6	55.1	64.4	57.1	61.7	75.7	61.9	60	60.3	45.1	33.4
57.2	66.4	72.3	66.2	68.2	67.9	69.9	69.2	66.7	58.7	51.9
87.4	87.1	89.6	83.7	83.4	90.6	89.4	86.3	88.9	63.9	76.5
95.6	91.9	91.6	92.8	94.3	90.3	96.7	95	95.9	94.8	84
83.4	92.7	93.1	95.4	92.5	92.9	91.3	89.3	91.6	85.4	92
86.2	89.5	79.4	70.9	78.9	76.1	75.8	81.7	83.6	88.5	84.5
40.6	32.4	35.2	23.6	32	22.8	40.6	35.6	38.8	39	23.8
100	99.99215	100	99.98895	99.9866	100	100	99.99085	100	100	100
85	98.1	100	96.6	94.5	98.8	98.2	94.4	99.8	97	97.5
867.5	896.7921	915.3	869.589	897.4866	902.6	905.2	895.7908	912	850.3	822.8
48141010326	48141010327	48141010328	48141010329	48141010336	48141010337	48141010338	48141010348	48141010349	48141010350	48141010351

48141010352	915.6757	98	99.97573	26	87.6	98.5	91.9	82.8	74.4	68	94.8	93.7
48141010401	824.187	99.4	99.98703	32	71.5	88.2	90	55.9	55.9	49.8	97.7	83.8
48141010601	895.6	96.2	100	40.4	96.5	100	80.6	100	62.5	31.3	97.9	90.2
48141010602	911.8	96.5	100	33.8	90	99.4	78.1	98.7	72.9	53.8	92.5	96.1

F. El Paso City Uni-National Social Variables

El Paso City FIPS	Hispanic or Latino Population (ACS)	EP LIMENG (ACS)	Median household income dollars	Foreign born	RPL THEME 1: Socioeconomic Status (ACS)	RPL THEME 2: Household Characteristics (ACS)	RPL THEME3: Racial & Ethnic Minority Status (ACS)	RPL THEME 4: Housing Type & Transportation (ACS)	RPL THEMES: Overall summary ranking variables (ACS)
48141000106	56	2.9	68094	769	0.413	0.7161	0.6847	0.082	0.3532
48141000107	75.4	13.7	37584	1314	0.7353	0.7252	0.7358	0.6681	0.7508
48141000108	53.7	6.7	36809	718	0.9103	0.5227	0.6847	0.8163	0.8389
48141000109	78.7	7.7	43510	855	0.7586	0.473	0.7699	0.3079	0.5909
48141000110	71.2	11.1	43977	629	0.8079	0.8793	0.7919	0.6344	0.8318
48141000111	55.1	3.2	46384	577	0.4477	0.5113	0.7031	0.2859	0.4381
48141000112	83.9	14.1	46658	960	0.7838	0.8461	0.8312	0.7869	0.8617
48141000113	58.7	4.6	62207	476	0.5012	0.7439	0.6143	0.4585	0.5705
48141000114	61.3	7.7	48750	635	0.764	0.9444	0.672	0.9243	0.9205
48141000204	69.3	10.6	40984	948	0.8537	0.9741	0.7268	0.4453	0.8503
48141000205	72.1	11.1	30536	976	0.9143	0.9765	0.6925	0.976	0.9886
48141000206	88.8	14.8	44297	1145	0.6048	0.8943	0.8648	0.1995	0.608
48141000207	81	13.3	40724	992	0.8454	0.956	0.796	0.5579	0.8666
48141000208	76.1	9.1	46176	800	0.6467	0.8027	0.7865	0.4657	0.6738
48141000301	87.2	12.9	23092	1338	0.9933	0.9683	0.8116	0.8272	0.9848
48141000302	96.8	21.9	26616	1687	0.9441	0.9955	0.9544	0.484	0.9493
48141000403	86.6	12.5	40000	765	0.7877	0.857	0.8438	0.7384	0.8525
48141000404	84.9	21.5	18804	1063	0.9985	0.9914	0.8992	0.724	0.9928

48141000600	87.8	16.1	31295	1132	0.9751	0.9908	0.8896	0.8449	0.9911
48141000800	96	16.9	24260	1628	0.9045	0.8532	0.9274	0.8606	0.9392
48141000901	90.4	22.7	42206	1705	0.763	0.4356	0.8497	0.516	0.6609
48141001001	92.8	19.4	32088	1040	0.7232	0.933	0.8623	0.4531	0.7747
48141001002	94.2	27.2	28080	1194	0.986	0.7948	0.8963	0.4406	0.8708
48141001107	62.4	4.6	84342	1489	0.1713	0.1995	0.6143	0.4238	0.2559
48141001109	68.9	3.3	101298	931	0.4549	0.3658	0.638	0.2073	0.3597
48141001112	65.2	3.8	75333	776	0.3754	0.5636	0.5958	0.474	0.4743
48141001114	83.4	15.2	35938	1081	0.7475	0.9589	0.8116	0.89	0.9241
48141001115	88.4	32	34217	1756	0.8922	0.5378	0.8876	0.6624	0.8064
48141001116	74.8	15.3	45792	605	0.8993	0.3415	0.704	0.9033	0.8296
48141001117	70.4	16.4	72012	1451	0.2846	0.7277	0.6954	0.4245	0.4684
48141001118	61.4	4.5	31773	415	0.6955	0.6851	0.561	0.2199	0.5515
48141001119	70.9	3	47790	826	0.5721	0.6294	0.7344	0.4841	0.597
48141001202	86.5	11.6	46795	1587	0.6284	0.7866	0.8179	0.7803	0.7712
48141001204	93	17.7	29012	1335	0.8758	0.9554	0.9182	0.4284	0.8606
48141001301	56.1	5	100938	393	0.3315	0.5336	0.5546	0.149	0.3064
48141001302	61.2	1.1	103159	1102	0.1372	0.5242	0.605	0.1674	0.2287
48141001400	72.7	11.1	24966	878	0.9691	0.3218	0.8312	0.9055	0.8805
48141001502	57.4	6.8	73194	370	0.4031	0.284	0.5875	0.5902	0.4415
48141001600	89.8	17	21429	1093	0.8986	0.6732	0.9182	0.8206	0.8888
48141001700	83.6	44.1	25161	546	0.9958	0.3306	0.8312	0.9999	0.9813
48141001800	93.1	53.5	16957	499	0.9867	0.9628	0.9182	0.9849	0.9979
48141001900	92.9	52.4	10865	822	0.9999	0.9829	0.9477	0.8821	0.9981
48141002000	98.7	38.5	15321	963	0.9974	0.9965	0.9669	0.5339	0.9833
48141002100	90.4	38.7	12219	979	0.9994	0.8325	0.9049	0.8866	0.9846
48141002202	86	25	18900	1238	0.9721	0.8814	0.7818	0.7904	0.947
48141002300	92.8	18.4	32340	1210	0.8198	0.82	0.8648	0.3521	0.7403
48141002400	90.2	15.6	40903	831	0.891	0.9744	0.8464	0.6852	0.9332
48141002500	85.4	19.9	30991	1672	0.7573	0.9415	0.84	0.5188	0.8109
48141002600	97.4	25.2	28638	900	0.9592	0.7392	0.9572	0.3559	0.8125
48141002800	99	31.5	15062	1794	0.992	0.9977	0.9733	0.9974	0.9999
48141002900	98.6	34.3	15167	587	0.9804	0.9931	0.9892	0.9919	0.9997
48141003000	97	20.3	21250	1030	0.9767	0.9971	0.9544	0.8882	0.9969
48141003100	87.2	14.3	31232	856	0.8364	0.9804	0.9622	0.7721	0.9471
48141003200	99.3	30.5	25200	933	0.9444	0.895	0.9779	0.9701	0.9862
48141003300	93.6	15.7	26056	1510	0.8195	0.8928	0.8779	0.7807	0.8926
48141003402	90.8	17.6	28789	1855	0.8167	0.9361	0.8718	0.9375	0.9536
48141003403	83.7	6.9	40969	837	0.4903	0.6797	0.7799	0.9287	0.7451
48141003404	78.9	4.4	67729	849	0.3801	0.7067	0.739	0.2913	0.4684
48141003501	93.3	21.3	25956	848	0.8489	0.9958	0.8687	0.8122	0.9685
48141003502	94.9	15.4	25417	1011	0.9669	0.9883	0.9118	0.993	0.999
48141003601	94	28.6	32553	1372	0.8952	0.6354	0.9477	0.8203	0.8812
48141003602	95.6	39	16779	1184	0.9906	0.9901	0.9644	0.9788	0.9996
48141003701	92.2	17.5	29809	1334	0.8863	0.8973	0.8608	0.9851	0.9766
48141003702	97	25.7	21461	1399	0.889	0.9741	0.9397	0.8289	0.9644
48141003801	99.2	24.1	33465	1461	0.8312	0.9384	0.9769	0.7321	0.9111

48141003803	92.6	19.2	34167	654	0.7508	0.9479	0.8592	0.5593	0.8247
48141003804	98.3	20.1	31933	1177	0.9729	0.9867	0.9572	0.7363	0.9802
48141003901	95.8	21.2	24578	1110	0.7744	0.9503	0.9284	0.9468	0.9543
48141003902	91.6	12.2	31277	558	0.7764	0.9054	0.9669	0.5844	0.8342
48141003904	94.3	27.1	32738	1217	0.6594	0.9766	0.9356	0.8447	0.906
48141003905	97.8	28.8	23831	907	0.9762	0.8992	0.9705	0.496	0.9099
48141004004	95.1	27.2	41567	1930	0.8056	0.9462	0.8963	0.9449	0.9574
48141004005	95.5	25.5	37228	2973	0.7428	0.6458	0.9261	0.6256	0.746
48141004007	98.6	19.7	46250	741	0.7141	0.9791	0.9644	0.51	0.8443
48141004008	99.7	29.5	41230	1594	0.7017	0.5938	0.9857	0.8415	0.8025
48141004103	94.8	20.1	30533	1637	0.9507	0.9776	0.8928	0.741	0.9667
48141004104	97.3	14.4	40111	1828	0.5643	0.9807	0.9438	0.9584	0.9276
48141004105	98.9	23.4	28866	914	0.8174	0.9949	0.9705	0.7249	0.9505
48141004106	95.5	14.1	31643	1286	0.8301	0.9953	0.9241	0.8069	0.9656
48141004107	91.6	10.6	56477	338	0.4846	0.6326	0.8446	0.1421	0.4301
48141004201	93.6	19.2	27103	1501	0.8635	0.9728	0.9274	0.7239	0.9361
48141004202	95.3	10	37455	1061	0.7908	0.7693	0.9622	0.3846	0.7337
48141004303	72.7	7.5	56818	918	0.6591	0.7791	0.7358	0.3622	0.6386
48141004307	74.3	10.5	64709	1407	0.6682	0.7135	0.7519	0.1885	0.5541
48141004309	89.1	9.9	60339	1062	0.4042	0.823	0.8811	0.2433	0.5135
48141004310	82.1	7.6	49694	793	0.7061	0.8669	0.7596	0.6041	0.7656
48141004311	75	5	52355	757	0.4954	0.7293	0.7268	0.6732	0.6452
48141004312	81.5	14.7	57815	1251	0.8059	0.6291	0.8135	0.7667	0.8077
48141004313	80.1	9.7	52083	921	0.6271	0.6162	0.7725	0.6726	0.6788
48141004314	78.7	9.2	35423	950	0.8663	0.7193	0.8179	0.6502	0.8188
48141004316	91.9	12.9	41596	1373	0.7232	0.8606	0.848	0.5912	0.7816
48141004317	77.3	10	42891	729	0.5883	0.6286	0.7827	0.3671	0.5726
48141004318	83.2	11	62264	710	0.3598	0.7122	0.7684	0.0914	0.3507
48141004319	86.1	7.4	70357	974	0.3334	0.1306	0.8055	0.2547	0.2724
48141004320	87.9	10.2	45278	689	0.8178	0.6207	0.9284	0.2692	0.6621
48141010102	24.9	0.7	37500	223	0.602	0.0746	0.4506	0.3464	0.3455
48141010103	21.3	0.8	66706	277	0.3089	0.1185	0.4658	0.3094	0.2348
48141010217	69.9	10.8	90000	1405	0.29	0.2609	0.6787	0.1337	0.2234
48141010225	83.5	7.2	90380	1197	0.4531	0.5229	0.8378	0.5329	0.5471
48141010226	68.9	2.5	75066	1154	0.3827	0.2444	0.6437	0.0621	0.2048
48141010227	80	11.2	58528	907	0.6846	0.3756	0.7303	0.6647	0.6416
48141010229	76.7	3.5	114022	1071	0.0619	0.1467	0.7059	0.0431	0.059
48141010230	79.1	9.5	88047	575	0.3539	0.4192	0.704	0.6296	0.4944
48141010303	87	10.9	75080	804	0.4268	0.7511	0.8179	0.8818	0.7126
48141010307	88.4	5.3	56037	851	0.7108	0.9099	0.828	0.8352	0.8699
48141010311	90.4	8.2	53288	1383	0.7723	0.8267	0.8522	0.7702	0.8478
48141010312	80	7.7	71452	697	0.345	0.726	0.7326	0.0359	0.2871
48141010316	84.1	4.5	55149	562	0.7503	0.6199	0.8464	0.3933	0.6613
48141010317	88.5	8.4	51282	526	0.5438	0.9027	0.8367	0.2812	0.6154
48141010322	87.2	6.6	53258	1046	0.3867	0.6355	0.8191	0.4342	0.5133
48141010323	89.3	7	76136	615	0.6184	0.4721	0.8833	0.2673	0.527
48141010326	84.9	4	75000	831	0.4819	0.6893	0.781	0.5449	0.5948

48141010327	84.7	13.2	62188	756	0.4835	0.7808	0.7938	0.279	0.5357
48141010328	90	10.9	61223	1029	0.5889	0.5508	0.8648	0.2276	0.5137
48141010329	94	9.9	50127	1453	0.7876	0.7756	0.9336	0.5068	0.7678
48141010336	93.6	10.2	57185	1259	0.4945	0.5094	0.9086	0.4151	0.5351
48141010337	92.4	5.8	85265	1411	0.4853	0.142	0.8912	0.3397	0.3854
48141010338	89.1	8.7	80523	1462	0.3851	0.839	0.8982	0.2474	0.5149
48141010348	88.8	12.4	57646	797	0.2483	0.5421	0.8912	0.3315	0.3931
48141010349	80.7	10.4	76875	641	0.3283	0.8274	0.8928	0.0313	0.3192
48141010350	94.6	21.8	44435	1749	0.8253	0.9266	0.8928	0.1588	0.7051
48141010351	82.1	14.7	45619	1396	0.8042	0.8219	0.9209	0.77	0.8683
48141010352	88.8	6.9	79638	1117	0.5735	0.4155	0.8267	0.1135	0.3948
48141010401	99	23.8	35910	2232	0.8619	0.9678	0.9769	0.6599	0.9212
48141010601	13.9	3.3	45789	61	0.5127	0.2428	0.2052	0.1873	0.285
48141010602	21.5	0.2	49095	365	0.5745	0.2248	0.3902	0.3808	0.4063

G. Ciudad Juarez Uni-National Social Variables

CVEGEO	% Indigenous	GRAPROES
803700010401	#DIV/0!	0.00
803700010416	0.10%	13.09
803700010435	0.73%	14.53
803700010454	0.55%	11.88
803700010469	1.28%	13.25
803700010473	0.80%	12.74
803700010492	0.46%	13.09
803700010505	0.36%	12.05
803700010524	0.86%	11.04
803700010539	2.54%	12.8
803700010543	#VALUE!	10.31
803700010558	0.32%	11.06
803700010562	0.30%	11.71
803700010581	0.82%	14.32
803700010613	0.35%	10.84
803700010628	1.57%	11.02

803700010632	1.48%	11.3
803700010647	0.80%	12.02
803700010651	0.63%	12.46
803700010666	1.25%	11.74
803700010670	0.00%	14.13
803700010685	0.20%	10.74
080370001069A	0.00%	10.98
803700010702	0.98%	10.46
803700010717	0.27%	10.27
803700010721	0.60%	10.85
803700010736	0.29%	13.23
803700010740	0.59%	8.48
803700010774	0.63%	9.62
803700010789	1.90%	9.18
803700010793	0.00%	9.06
803700010806	0.48%	8.87
803700010810	0.60%	9.45
803700010825	0.69%	8.89
080370001083A	0.00%	7.71
803700010844	0.53%	9.71
803700010859	#VALUE!	10.58
803700010863	0.77%	11.11
803700010878	0.39%	11.01
803700010897	0.00%	7.85
080370001090A	#VALUE!	8.57
803700010914	0.29%	8.64
803700010929	0.00%	8.56
803700010967	0.00%	9.2
803700010971	0.46%	9.37

803700010986	0.00%	9.57
803700010990	#VALUE!	9.4
803700011005	0.00%	8.78
080370001101A	0.00%	9.07
803700011043	0.00%	9.1
803700011058	0.00%	8.92
803700011062	0.00%	8.91
803700011077	0.71%	9.38
803700011081	0.63%	8.95
803700011096	3.13%	9.47
803700011109	2.27%	9.4
803700011113	#VALUE!	8.98
803700011147	0.00%	8.49
803700011151	0.00%	9.03
803700011166	0.00%	8.6
803700011170	0.56%	9.03
803700011185	0.00%	8.82
080370001119A	0.00%	8.34
803700011202	#VALUE!	8.98
803700011217	2.33%	9.22
803700011221	#VALUE!	9.39
803700011236	1.15%	9.62
803700011240	0.54%	9.97
803700011274	0.88%	8.81
803700011289	0.50%	9.16
803700011293	0.81%	9.5
803700011306	0.27%	9.45
803700011310	0.00%	9.5
803700011325	0.00%	9.3

080370001133A	0.00%	9.29
803700011344	0.64%	8.62
803700011359	#VALUE!	8.9
803700011363	0.39%	8.73
803700011378	1.83%	9.12
803700011382	0.00%	9.53
803700011397	0.00%	9.68
803700011414	1.17%	9.06
803700011429	0.40%	9.57
803700011433	0.32%	10.68
803700011448	0.00%	8.78
803700011452	0.87%	9.23
803700011467	0.39%	8.83
803700011471	0.20%	8.95
803700011503	0.32%	9.04
803700011518	0.00%	9.12
803700011575	0.21%	8.92
080370001158A	0.00%	8.46
803700011594	0.36%	8.57
803700011611	0.33%	9.4
803700011626	0.00%	9.2
803700011683	0.89%	8.74
803700011698	0.28%	9.01
803700011700	0.32%	8.86
803700011715	#VALUE!	8.78
080370001172A	0.75%	9.88
803700011734	0.54%	10.1
803700011749	0.73%	10.59
803700011753	0.42%	10.6

803700011768	0.00%	11.25
803700011772	0.52%	11.32
803700011787	0.37%	9.75
803700011791	0.43%	9.92
803700011804	1.16%	9.6
803700011819	0.71%	9.89
803700011823	0.40%	9.66
803700011838	0.64%	9.86
803700011842	0.22%	9.7
803700011857	0.18%	11.45
803700011876	0.14%	8.17
803700011880	0.19%	8.64
803700012003	0.11%	14.07
803700012041	0.33%	14.22
803700012056	0.63%	13.97
803700012075	0.52%	14.96
080370001208A	0.41%	11.87
803700012094	0.34%	13.72
803700012111	0.40%	14.58
803700012126	1.47%	14.4
803700012164	0.69%	11.3
803700012198	0.41%	10.93
803700012200	0.74%	10.19
080370001222A	0.31%	15.1
803700012234	3.53%	8.49
803700012249	3.10%	8.42
803700012253	1.41%	8.6
803700012268	0.57%	8.5
803700012272	0.38%	10.76

803700012291	0.64%	14.32
803700012319	5.83%	8.63
803700012338	0.35%	12.69
803700012342	0.00%	9.91
803700012357	#DIV/0!	0.00
803700012361	1.00%	8.85
803700012376	0.83%	8.98
803700012395	0.52%	8.56
803700012412	0.35%	8.42
803700012450	0.39%	8.88
803700012465	0.80%	13.02
803700012484	0.70%	10.62
803700012499	1.92%	8.79
803700012516	0.34%	12.64
803700012520	18.97%	8.35
080370001254A	5.65%	7.62
803700012573	0.90%	8.99
803700012588	0.54%	9.05
803700012592	0.92%	9.25
803700012605	1.15%	10.69
080370001261A	0.00%	9.18
803700012624	0.77%	9.4
803700012639	0.51%	8.92
803700012643	0.93%	8.68
803700012658	2.12%	8.71
803700012662	0.71%	8.32
803700012677	0.41%	14.14
803700012681	0.23%	14.52
803700012696	0.70%	13.57

803700012709	1.53%	8.83
803700012713	0.32%	8.39
803700012728	0.41%	8.78
803700012732	0.31%	13.47
803700012747	0.43%	13.83
803700012751	0.90%	13.6
803700012766	0.21%	11.9
803700012770	0.25%	10.26
803700012817	0.78%	9.19
803700012821	#VALUE!	8.97
803700012836	1.38%	8.49
803700012840	0.36%	8.52
803700012874	2.00%	8.1
803700012889	0.00%	6.64
803700012906	0.54%	11.58
803700012925	0.80%	9.26
080370001293A	0.22%	9.53
803700012959	1.12%	8.53
803700012963	0.66%	8.51
803700012978	0.25%	8.84
803700012982	0.00%	8.65
803700013266	0.22%	7.91
803700013270	1.47%	8.95
803700013302	0.18%	14.24
803700013321	#VALUE!	14.58
803700013355	0.36%	8.5
080370001336A	0.76%	8.66
803700013406	0.82%	9.55
803700013444	0.00%	11.19

803700013459	0.00%	10.73
803700013463	0.00%	13.78
803700013478	0.17%	13.46
803700013482	0.41%	11.27
080370001350A	1.29%	13.04
803700013514	#VALUE!	12.74
803700013529	0.70%	13.06
803700013533	0.13%	13.61
803700013548	1.09%	8.59
803700013552	0.00%	8
803700013567	0.68%	8.92
803700013571	0.58%	9.26
803700013586	0.33%	9.19
803700013590	3.26%	9
803700013603	0.31%	8.55
803700013618	1.16%	9.59
803700013622	0.00%	9.35
803700013637	0.00%	9.53
803700013641	0.00%	8.84
803700013656	0.00%	8.94
803700013660	0.00%	10.78
803700013675	0.00%	10.4
080370001368A	0.00%	9.29
803700013694	1.44%	9.07
803700013707	0.42%	8.79
803700013711	0.00%	8.62
803700013726	0.56%	9.44
803700013730	0.45%	9.37
803700013745	1.14%	9.43

080370001375A	1.28%	9.01
803700013764	0.00%	9.08
803700013779	0.48%	9.38
803700013783	0.43%	9.39
803700013798	0.19%	9.3
803700013800	0.41%	9.14
803700013815	1.16%	9.73
080370001382A	1.17%	8.9
803700013834	6.21%	8.68
803700013849	0.24%	9.24
803700013853	1.30%	9.72
803700013868	0.55%	8.35
803700013872	#VALUE!	8.05
803700013887	#VALUE!	8.87
803700013891	2.98%	9.52
803700013904	1.25%	8.71
803700013919	5.73%	9.03
803700013923	1.48%	9.69
803700013938	0.80%	10.6
803700013942	1.19%	8.46
803700013957	0.26%	8.65
803700013961	0.31%	10.53
803700013976	0.71%	9.84
803700013980	0.08%	12.27
803700013995	0.18%	13.83
080370001400A	1.44%	8.75
803700014014	1.04%	8.54
803700014029	0.00%	8.33
803700014033	2.02%	8.2

803700014048	0.65%	8.15
803700014052	0.89%	8.59
803700014067	0.34%	8.46
803700014071	0.14%	8
803700014086	0.00%	8.1
803700014090	1.14%	8.53
803700014103	1.33%	8.46
803700014118	1.31%	8.36
803700014122	0.36%	8.5
803700014137	0.44%	8.97
803700014141	8.06%	8.47
803700014156	1.69%	8.49
803700014160	0.37%	8.61
803700014175	0.25%	8.3
080370001418A	1.02%	8.24
803700014194	1.07%	8.26
803700014207	0.50%	13.9
803700014211	0.40%	14.99
803700014226	0.15%	8.13
803700014230	0.76%	8.57
803700014245	0.54%	8.39
080370001425A	0.08%	7.96
803700014264	0.17%	14.36
803700014283	0.30%	13.18
803700014298	0.00%	11.16
803700014300	0.76%	12.92
803700014315	0.23%	11.97
080370001432A	0.76%	8.92
803700014334	2.25%	8.57

803700014349	0.53%	8.18
803700014353	#VALUE!	8.69
803700014368	1.22%	8.82
803700014372	1.16%	12.22
803700014387	1.00%	13.74
803700014419	1.87%	9.18
803700014423	0.30%	11.73
803700014438	0.43%	10.71
803700014442	0.13%	10.76
803700014457	1.09%	8.29
803700014461	1.45%	8.42
803700014476	0.00%	9.35
803700014480	0.69%	8.92
803700014495	1.00%	8.97
803700014508	0.47%	8.86
803700014512	0.64%	10.47
803700014527	0.50%	10.25
803700014531	0.52%	12.35
803700014546	0.34%	9.74
803700014550	0.28%	10.56
803700014565	0.66%	9.79
080370001457A	0.65%	8.26
803700014584	0.61%	9.17
803700014599	0.22%	8.23
803700014616	1.31%	8.83
803700014620	0.40%	8.71
803700014635	0.65%	10.56
080370001464A	0.65%	9.47
803700014654	0.63%	10.84

803700014669	0.00%	10.36
803700014673	1.68%	9.15
803700014688	0.00%	9.67
803700014692	0.50%	8.22
803700014705	2.12%	9.05
080370001471A	1.65%	7.17
803700014724	0.00%	6.48
803700014739	0.00%	7.96
803700014743	0.30%	8.52
803700014758	0.00%	8.57
803700014762	0.58%	8.88
803700014777	1.00%	8.96
803700014781	0.10%	9.23
803700014796	1.43%	10.77
803700014813	0.89%	8.11
803700014828	1.18%	8.07
803700014832	2.04%	9.36
803700014847	1.03%	9.47
803700014866	0.00%	9.15
803700014885	2.07%	8.17
080370001489A	1.07%	8.33
803700014902	0.00%	8.42
803700014917	1.08%	8.17
803700014940	1.22%	10.3
803700014955	2.18%	8.84
080370001496A	2.06%	9.65
803700014974	1.29%	8.77
803700014989	1.39%	8.11
803700014993	0.80%	8.27

803700015008	0.42%	8.98
803700015012	1.61%	10.75
803700015027	0.53%	11.15
803700015031	0.73%	10.67
803700015050	2.07%	8.66
803700015065	1.73%	8.74
080370001507A	1.03%	8.51
803700015084	2.46%	8.5
803700015099	1.54%	8.35
803700015116	1.49%	8.63
803700015120	0.63%	11.36
803700015135	0.39%	9.62
080370001514A	0.49%	14.06
803700015154	0.00%	11.64
803700015169	0.00%	11.44
803700015173	0.00%	12.73
803700015188	0.00%	8.24
803700015192	0.35%	8.6
803700015205	0.09%	11.19
080370001521A	0.35%	11.41
803700015224	1.64%	10.62
803700015239	2.54%	9.24
803700015243	0.24%	14.11
803700015258	0.57%	14.25
803700015262	0.49%	10.43
803700015277	0.87%	10.68
803700015281	0.43%	11.21
803700015296	0.36%	11.17
803700015309	0.88%	9.94

803700015313	0.94%	9.66
803700015328	1.11%	11.04
803700015347	0.00%	12.26
803700015351	#VALUE!	10.61
803700015366	#VALUE!	8.37
803700015370	3.08%	8.02
803700015385	1.60%	8.67
803700015417	0.00%	8.2
803700015421	2.46%	8.49
803700015436	0.00%	10.11
803700015455	#DIV/0!	0.00
080370001546A	0.00%	8.53
803700015474	0.00%	7.78
803700015489	#VALUE!	*
803700015493	2.78%	8.22
803700015506	1.09%	7.85
803700015510	1.43%	7.83
803700015525	1.06%	8.18
080370001553A	#VALUE!	*
803700015559	1.54%	11.08
803700015563	#VALUE!	*
803700015578	#DIV/0!	0.00
803700015582	0.00%	6.5
803700015597	#DIV/0!	0.00
080370001560A	#VALUE!	*
803700015614	1.50%	10.89
803700015629	0.18%	10.56
803700015648	0.00%	9.97
803700015652	2.14%	7.73

803700015667	#DIV/0!	0.00
803700015671	0.00%	6
803700015686	#DIV/0!	0.00
803700015690	#VALUE!	*
803700015703	0.00%	8.38
803700015718	4.66%	8.18
803700015722	0.00%	6.88
803700015737	10.57%	6.23
803700015741	10.60%	8.92
803700015756	0.00%	7.72
803700015760	0.00%	8.5
803700015775	3.56%	7.96
080370001578A	#DIV/0!	0.00
803700015794	#VALUE!	*
803700015807	#DIV/0!	0.00
803700015811	1.53%	10.53
803700015826	0.56%	11.18
803700015830	0.59%	11.27
803700015845	0.57%	10.84
080370001585A	0.44%	11.12
803700015864	#DIV/0!	0.00
803700015879	#VALUE!	*
803700015883	0.55%	9.91
803700015898	14.86%	7.28
803700015900	1.06%	9.17
803700015915	1.69%	9.06
080370001592A	0.75%	10.78
803700015934	0.29%	11.27
803700015949	1.52%	12.86

803700015953	0.20%	13.75
803700015968	1.42%	9.11
803700015972	1.65%	9.5
803700015987	2.49%	8.8
803700015991	4.34%	8.45
803700016006	8.55%	8.51
803700016010	1.98%	8.31
803700016025	3.10%	8.28
080370001603A	1.14%	8.26
803700016044	11.74%	7.83
803700016059	1.31%	11.78
803700016063	#VALUE!	13.75
803700016078	1.02%	13.18
803700016082	0.00%	8.97
803700016097	0.00%	8.8
080370001610A	1.20%	9.16
803700016114	0.68%	9.22
803700016129	0.21%	11.59
803700016186	0.00%	7.14
803700016190	1.74%	9.55
803700016222	#DIV/0!	0.00
803700016237	0.46%	11.25
803700016241	0.23%	12.24
803700016275	0.57%	11.56
803700016307	0.64%	11.92
803700016326	#DIV/0!	0.00
803700016330	#DIV/0!	0.00
803700016364	0.74%	12.62
803700016379	0.79%	11.42

803700016383	#VALUE!	11.56
803700016398	0.35%	11.31
803700016400	0.67%	10.76
803700016415	1.23%	10.71
080370001642A	#VALUE!	11.34
803700016434	7.69%	9.43
803700016449	0.00%	9.46
803700016491	0.33%	9.09
803700016504	1.14%	8.91
803700016542	7.24%	9.82
803700016557	2.36%	10.61
803700016561	1.82%	10.9
803700016576	1.53%	10.32
803700016580	1.29%	9.63
803700016595	1.45%	9.51
803700016608	2.56%	9.43
803700016612	#VALUE!	*
803700016631	1.63%	9.25
803700016646	0.83%	9.39
803700016650	2.60%	9.36
803700016665	3.32%	9.31
080370001667A	1.56%	8.67
803700016684	1.21%	9.01
803700016699	1.27%	8.64
803700016701	0.98%	10.77
803700016716	1.62%	9.15
803700016720	1.66%	9.1
803700016735	2.66%	8.96
080370001674A	2.44%	8.9

803700016754	1.32%	8.77
803700016769	2.73%	8.65
803700016773	1.25%	10.22
803700016788	0.44%	11.07
803700016792	0.33%	11.1
803700016805	#VALUE!	10.76
080370001681A	#DIV/0!	0.00
803700016824	#DIV/0!	0.00
803700016839	0.75%	11.11
803700016843	1.67%	12.48
803700016858	1.20%	12.46
803700016862	0.67%	12.82
803700016877	0.33%	10.57
803700016881	1.05%	10.78
803700016896	0.92%	10.65
803700016909	2.05%	11.1
803700016913	1.97%	9.09
803700016928	#DIV/0!	0.00
803700016932	#DIV/0!	0.00
803700016947	0.28%	11.28
803700016951	0.46%	11.06
803700016966	1.06%	10.26
803700016970	16.67%	7.72
803700016985	0.00%	6.73
080370001699A	0.00%	7.61
803700017004	0.00%	7.37
803700017019	#VALUE!	*
803700017023	0.76%	11.15
803700017042	1.47%	9.84

803700017057	1.91%	9.84
803700017061	0.12%	14.56
803700017076	0.30%	14.37
803700017080	0.29%	10.88
803700017095	1.24%	9.71
803700017108	0.95%	10.06
803700017112	0.87%	8.65
803700017127	0.92%	9.59
803700017131	1.59%	9.48
803700017146	#VALUE!	*
803700017150	3.62%	9.52
803700017165	1.00%	8.41
080370001717A	1.33%	9.35
803700017184	1.10%	9.78
803700017199	13.11%	8.62
803700017201	0.75%	8.86
803700017216	1.71%	8.59
803700017220	0.00%	7.84
803700017235	#VALUE!	*
080370001724A	2.43%	9.53
803700017254	2.98%	9.42
803700017269	3.77%	9.79
803700017273	1.44%	10.34
803700017288	1.38%	9.51
803700017292	0.16%	9.99
803700017305	2.97%	9.8
080370001731A	2.51%	9.64
803700017324	2.90%	8.82
803700017343	0.00%	7.24

803700017358	7.69%	8.96
803700017362	16.95%	8.81
803700017377	#DIV/0!	0.00
803700017381	0.00%	6.79
803700017396	1.77%	9.7
803700017409	23.53%	6.64
803700017413	#VALUE!	8.33
803700017428	0.00%	8.33
803700017447	#DIV/0!	0.00
803700017451	1.14%	9.27
803700017466	0.76%	10.63
803700017470	3.04%	9.75
803700017485	#DIV/0!	0.00
080370001749A	1.51%	8.69
803700017502	#VALUE!	8.93
803700017517	13.51%	9.48
803700017521	0.00%	6.91
803700017536	0.00%	8.24
803700017540	#VALUE!	*
803700017555	0.20%	15.14
080370001756A	0.21%	14.95
803700017574	0.99%	14.49
803700017589	0.77%	14.87
803700017593	0.00%	8.63
803700017606	2.08%	9.78
803700017610	0.00%	6.94
803700017625	0.27%	7.77
080370001763A	1.65%	9.24
803700017644	1.22%	10.6

803700017659	2.45%	8.87
803700017663	3.16%	8.5
803700017678	3.23%	9.57
803700017682	1.18%	10.76
803700017697	1.52%	9.11
080370001770A	1.81%	8.69
803700017714	3.36%	8.56
803700017729	3.77%	8.94
803700017733	1.85%	8.56
803700017748	1.10%	9.49
803700017752	1.86%	9.04
803700017767	0.91%	8.31
803700017771	3.58%	8.76
803700017786	1.75%	8.64
803700017790	#DIV/0!	0.00
803700017803	#VALUE!	*
803700017818	1.86%	9.33
803700017822	2.75%	9.14
803700017837	5.21%	8.74
803700017841	0.59%	14.71
803700017856	0.58%	15.08
803700017860	2.88%	8.85
803700017875	3.40%	10.75
080370001788A	0.00%	8.56
803700017894	3.09%	8.66
803700017907	2.74%	8.94
803700017911	2.61%	8.8
803700017926	1.92%	9
803700017930	2.58%	9.05

803700017945	2.37%	9.23
080370001795A	2.21%	9.35
803700017964	0.85%	8.88
803700017979	2.97%	8.86
803700017983	3.18%	8.67
803700017998	3.46%	8.62
803700018002	2.78%	8.6
803700018017	1.97%	9.42
803700018021	2.26%	8.87
803700018036	2.18%	8.77
803700018040	4.22%	8.04
803700018055	26.79%	8.64
803700018074	0.00%	6.88
803700018089	3.05%	7.7
803700018093	3.89%	8.62
803700018106	4.69%	8.71
803700018110	0.00%	5.18
803700018125	3.61%	7.01
080370001813A	1.46%	7.53
803700018144	35.06%	7.01
803700018159	#DIV/0!	0.00
803700018163	0.00%	6.6
803700018178	1.52%	7.38
803700018182	0.00%	8.13
803700018197	0.00%	9.4
080370001820A	#VALUE!	7.58
803700018214	1.48%	8.79
803700018229	2.98%	9.24
803700018233	1.79%	8.52

803700018248	#VALUE!	9.1
803700018252	2.35%	8.92
803700018267	#DIV/0!	0.00
803700018271	4.50%	9.05
803700018286	1.51%	8.1
803700018290	1.20%	9.3
803700018303	0.00%	9.72
803700018318	0.00%	8.17
803700018322	#DIV/0!	0.00
803700018337	#DIV/0!	0.00
803700018341	9.62%	6.86
803700018356	0.00%	7.8
803700018360	#VALUE!	*
803700018375	0.00%	7.19
080370001838A	#DIV/0!	0.00
803700018394	#VALUE!	*
803700018407	1.28%	9.29
803700018411	#DIV/0!	0.00
803700018426	4.67%	8.78
803700018430	0.00%	6.75
803700018445	#VALUE!	*
080370001845A	#DIV/0!	0.00
803700018464	#DIV/0!	0.00
803700018479	5.39%	8.71
803700018483	0.00%	7.06
803700018498	0.00%	6.1
803700018500	0.00%	6.75
803700018515	#VALUE!	4.92
080370001852A	0.00%	6.1

803700018534	#DIV/0!	0.00
803700018553	#DIV/0!	0.00
803700018568	2.56%	8.96
803706133092	0.62%	8.23
803706356453	#VALUE!	9.1
803706356468	#VALUE!	9.34
803706356472	1.21%	8.87
803706356519	0.00%	6.77
803706356523	0.00%	8.97
803706356538	0.00%	10.85
803706358549	#VALUE!	*

H. Cross Border Variables Are Drawn from Rosas Et Al. (2023)

2020 five-year ACS estimates (2016-2020)					
Age 65 and older as % population	Age 5 and younger as % population	Percent not graduated in Mexico from secundaria/in US from high school	% Active in labor force	% women labor force	% Unemployed
% Disabled	Average household size	% Female head households	% Without piped water (Mexico)/without piped water and wastewater (US)	% Without auto or truck	_____

***Note: one element of the Border Social Vulnerability Index reported in Rosas et al., (2023) was dropped, foreign born, because this data is no longer reported in the Mexican 2020 Census.*

I. U.S. Variables That Are Not Binationally Shared: CDC SVI

U.S. Variables from the CDC SVI				
Below 150% Poverty	% Unemployed [same as BSVI]	Housing Cost Burden [this may take additional calculations—ERSI may provide them]	No High School Diploma [same as BSVI]	No Health Insurance

Aged 65 & Older [same as BSVI]	Aged 17 & Younger	% Civilian with a Disability (turn total into % of tract population) (same as BSVI)	% Single-Parent Households (turn total into % of tract population)	English Language Proficiency (% speak other than English at home and speak English less than very well)
% Hispanic or Latino (of any race); Black and African American, Not Hispanic or Latino; American Indian and Alaska Native, Not Hispanic or Latino; Asian, Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander, Not Hispanic or Latino; Two or More Races, Not Hispanic or Latino; Other Races, Not Hispanic or Latino (turn to totals into % of tract population)	Mobile Homes (% total dwellings or total population)	Crowding [this may take additional calculations—ERSI may provide them]	% No Vehicle [same as BSVI]	Group Quarters (% total dwellings or total population)

J. Variables Added by Prof. Heyman

U.S. Variables from the CDC SVI			
a. Median Household Income	b. Lowest Quintile Mean Annual Income	c. Second Quintile Mean Annual Income	d. Highest Quintile Mean Annual Income
e. Percentage Foreign Born	f. Country of Birth (Non-US) [% of Foreign Born]	g. Percentage Non-US Citizens	_____

K.Worldcover Classifications For Paso Del Norte

El Paso City Landcover Types	**Ciudad Juarez Landcover Types**	**Definition**
Tree Cover [Map Code 10]	Tree Cover [Map Code 10]	This class includes any geographic area dominated by trees with a cover of 10% or more. Other land cover classes (shrubs and/or herbs in the understorey, built-up, permanent water bodies, …) can be present below the canopy, even with a density higher than trees. Areas planted with trees for afforestation purposes and plantations (e.g. oil palm, olive trees) are included in this class. This class also includes tree covered areas seasonally or permanently flooded with fresh water except for mangroves
Shrubland [Map Code 20]	Shrubland [Map Code 20]	This class includes any geographic area dominated by natural shrubs having a cover of 10% or more. Shrubs are defined as woody perennial plants with persistent and woody stems and without any defined main stem being less than 5 m tall. Trees can be present in scattered form if their cover is less than 10%. Herbaceous plants can also be present at any density. The shrub foliage can be either evergreen or deciduous
Grassland [Map Code 30]	Grassland [Map Code 30]	This class includes any geographic area dominated by natural herbaceous plants (Plants without persistent stem or shoots above ground and lacking definite firm structure): (grasslands, prairies, steppes, savannahs, pastures) with a cover of 10% or more, irrespective of different human and/or animal activities, such as: grazing, selective fire management etc. Woody plants (trees and/or shrubs) can be present assuming their cover is less than 10%. It may also contain uncultivated cropland areas (without harvest/ bare soil period) in the reference year
Cropland [Map Code 40]	Cropland [Map Code 40]	Land covered with annual cropland that is sowed/planted and harvestable at least once within the 12 months after the sowing/planting date. The annual cropland produces an herbaceous cover and is sometimes combined with some tree or woody vegetation. Note that perennial woody crops will be classified as the appropriate tree cover or shrub land cover type. Greenhouses are considered as built-up
Built-up [Map Code 50]	Built-up [Map Code 50]	Land covered by buildings, roads and other man-made structures such as railroads. Buildings include both residential and industrial building. Urban green (parks, sport facilities) is not included in this class. Waste dump deposits and extraction sites are considered as bare.

Bare/Sparse Vegetation [Map Code 60]	Bare/Sparse Vegetation [Map Code 60]	Lands with exposed soil, sand, or rocks and never has more than 10 % vegetated cover during any time of the year
Herbaceous Wetlands [Map Code 90]	---------- -	Land dominated by natural herbaceous vegetation (cover of 10% or more) that is permanently or regularly flooded by fresh, brackish or salt water. It excludes unvegetated sediment (see 60), swamp forests (classified as tree cover) and mangroves see 95)

Source: World Cover Product User Manual

L. Paso Del Norte Data & Calculations

El Paso City		**Ciudad Juarez**	
2020 five-year ACS estimates (2016-2020): Social Variable	**U.S. Census Bureau Data ACS Estimate & Calculations**	**INEGI 2020: Social Variable**	**Calculations**
% Households without a vehicle	Estimate!!Percent occupied housing units!!Occupied housing units!!VEHICLES AVAILABLE!!No vehicle available **[S2504_C02_027E] -% of Households without vehicle**	% Without auto or truck (created column)	Calculations: 1 minus (VPH_AUTOM divided by TVIVHAB) (do calculation inside parenthesis first, then subtraction)
% Lack complete plumbing facilities	Estimate!!Total: **[B25047_001E]** Estimate!!Total: !!Lacking complete plumbing facilities **[B25047_003E]** **Calculations: [B25047_003E] / [B25047_001E] x 100**	% Without piped water (created column)	Calculations: 1 minus (VPH_AUTOM divided by TVIVHAB) (do calculation inside parenthesis first, then subtraction)
Average household size	Estimate!!HOUSING TENURE!!Occupied housing units!!Average household size of owner-occupied unit **[DP04_0048E] OR**	Average household size (created column)	Calculations: POBHOG divided by TOTHOG

	Estimate!!HOUSING TENURE!!Occupied housing units!!Average household size of renter-occupied unit **[DP04_0049E]**		
Percent female head of household	Estimate!!Percent occupied housing units!!Occupied housing units!!HOUSEHOLD TYPE (INCLUDING LIVING ALONE) AND AGE OF HOUSEHOLDER!!Family households!!Other family!!Female householder, no spouse present **[S2501_C02_019E]**	% Female head households (created column	Calculations: HOGJEF_F divided by TOTHOG
% Population 65 & older	Estimate!!Percent!!Total population!!SELECTED AGE CATEGORIES!!65 years and over **[S0101_C02_030E]**	Calculated column % Proportion 65 years+	CalculationsPOB65_MAS divided by POBTOT
% Population under age 5	Estimate!!Percent!!Total population!!AGE!!Under 5 years **[S0101_C02_002E]**	Calculated column % Population underage 5	Calculations: age 5 POBTOT minus P_5YMAS, divided by POBTOT
(One minus) % High school graduate	Estimate!!Percent!!AGE BY EDUCATIONAL ATTAINMENT!!Population 25 years and over!!High school graduate (includes equivalency) **[S1501_C02_009E]**	% Secundaria not graduate over 15:	Calculations: Created column by dividing previous column (PSECI) by P15YMAS (If US data is HS Graduate or more, then equivalent would be one minus this calculated column)
(one minus) % Population in labor force	Percent!!EMPLOYMENT STATUS!!Population 16 years and over!!In labor force **[DP03_0002PE]**	% Labor Force: created column	Calculations: column PEA_F divided by PEA_F plus PE_INAC_F
% Females in labor force	Percent!!EMPLOYMENT STATUS!!Females 16 years and over!!In labor force **[DP03_0011PE]**	% Women in labor force: created column	Calculations: PEA_F divided by PEA_F plus PE_INAC_F
% Unemployed	Percent!!EMPLOYMENT STATUS!!Population 16 years and over!!In labor force!!Civilian labor	% Unemployed: created column	Calculations: PDESOCUP divided by PEA

	force!!Unemployed **[DP03_0005PE]**		
% Disabled	Estimate!!Percent with a disability!!Total civilian noninstitutionalized population **[S1810_C03_001E]**	% Disabled: created column	Calculations: PCON_DISC divided by POBTOT
Median household income	Estimate!!INCOME AND BENEFITS (IN 2020 INFLATION-ADJUSTED DOLLARS)!!Total households!!Median household income (dollars) **[DP03_0062E]**	% Indigenous created column	Calculations: PHOG_IND divided by POBTOT
Lowest quintile mean annual income	Estimate!!Quintile Means: !!Lowest Quintile **[B19081_001E]**	Population Density	by dividing POBTOT by AGEB area
Second quintile mean annual income	Estimate!!Quintile Means: !!Second Quintile **[B19081_002E]**	_____	_____
Highest quintile mean annual income	Estimate!!Quintile Means: !!Highest Quintile **[B19081_005E]**	_____	_____
% Foreign born	Estimate!!Total **[B05002_001E]** Estimate!!Total: !!Foreign born: **[B05002_013E]** **Calculations: [B05002_013E] / [B05002_001E] x 100**	_____	_____
Country of birth (non-US) [% of foreign born]	Estimate!!Total: **[B05006_001E]** Estimate!!Total:!!Europe:!!Northern Europe:!!Denmark **[B05006_004E]** **Calculations: [B05006_004E] / [B05006_001E] x 100** And so forth for reach country of birth	_____	_____
% non-US citizens	Estimate!!Total **[B05002_001E]** Estimate!!Total: !!Foreign born: !!Not a U.S. citizen **[B05002_021E]**	_____	_____

	Calculations: [B05002_021E] / [B05002_001E] x 100		
Population Density	by dividing POBTOT by Census Units area	_____	_____

M. Scatter Plots of Ciudad Juarez Landcover: A Comparison of PlanIT Geo and Worldcover

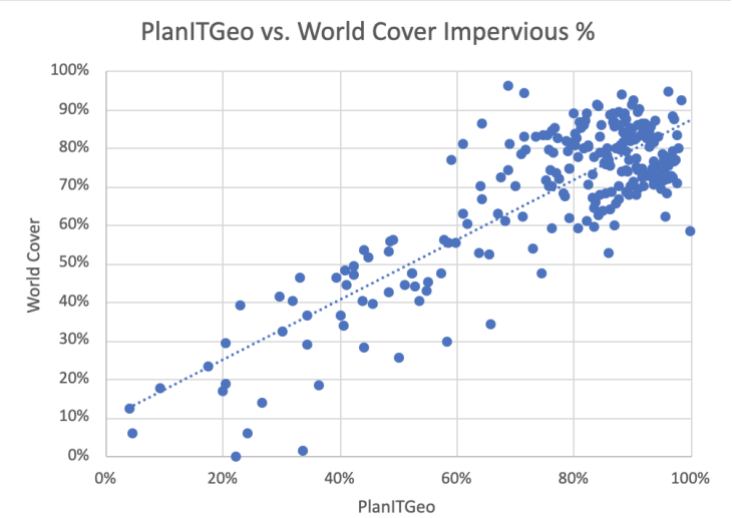


Figure M1. PlanIT Geo Vs. World Cover (AGEBs Impervious %)

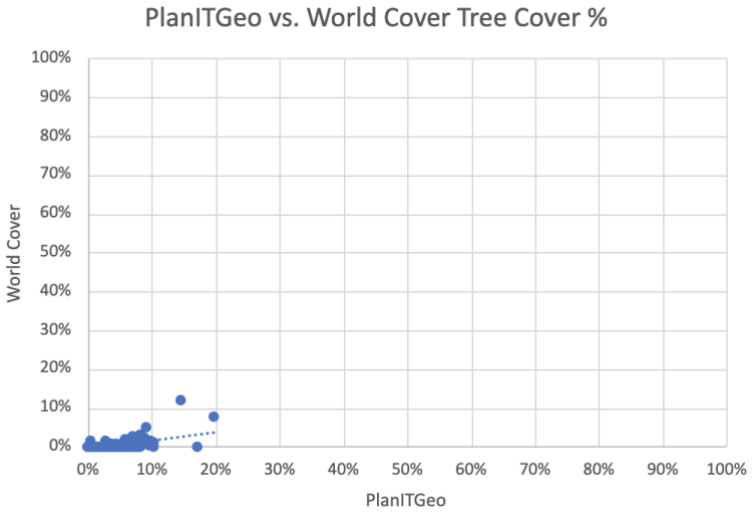


Figure M2. PlanIT Geo Vs. World Cover (AGEBs Tree Cover %)

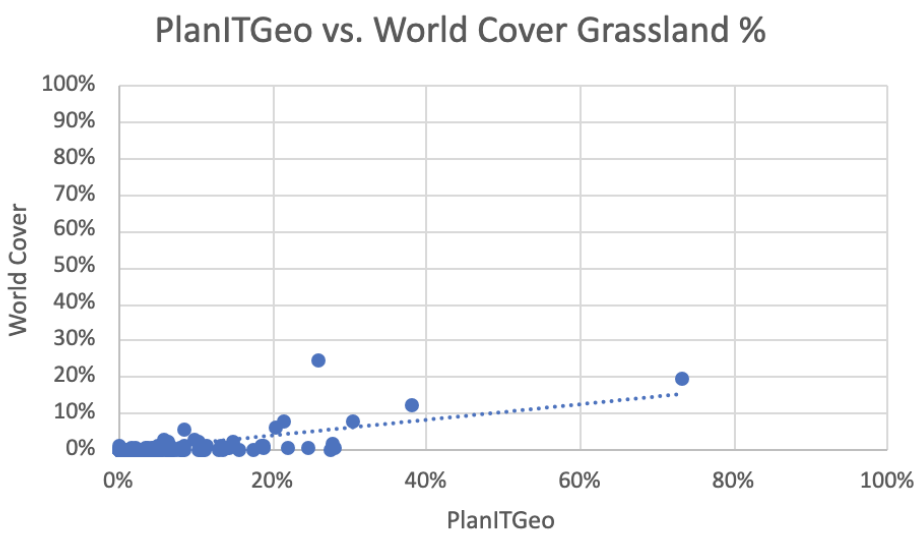


Figure M3. PlanIT Geo Vs. World Cover (AGEBs Grassland %)

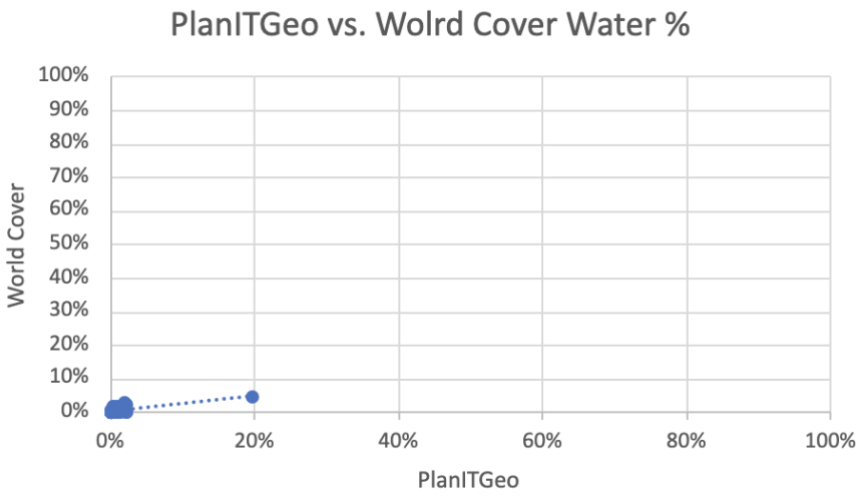


Figure M4. PlanIT Geo Vs. World Cover (AGEBs Water %)

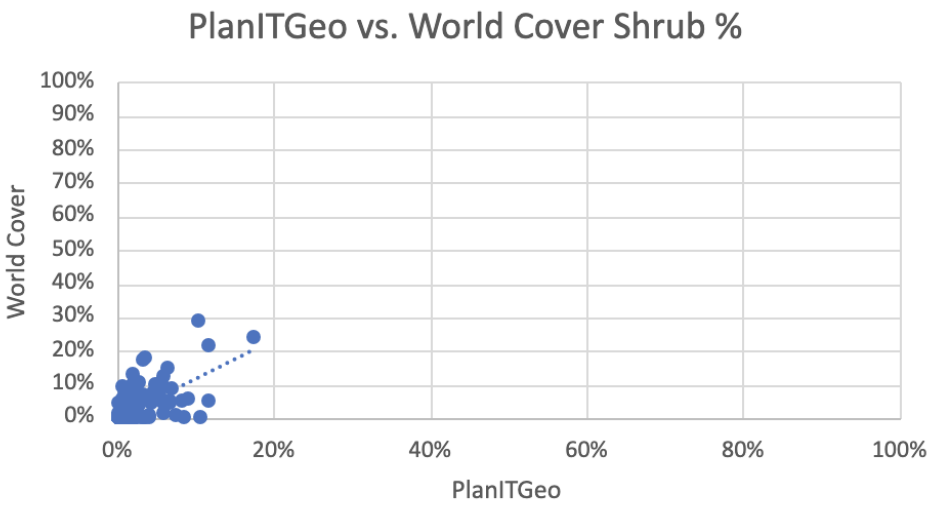


Figure M5. PlanIT Geo Vs. World Cover (AGEBs Shrub %)

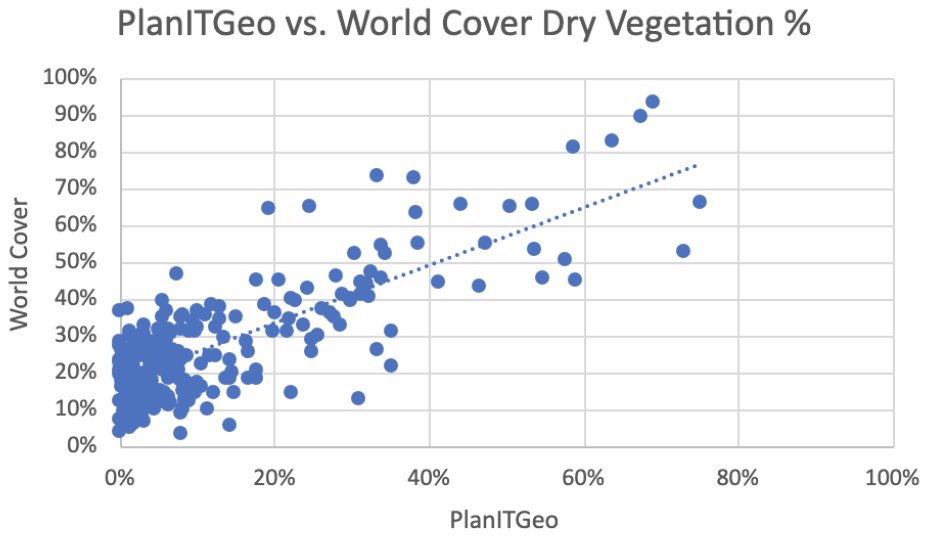
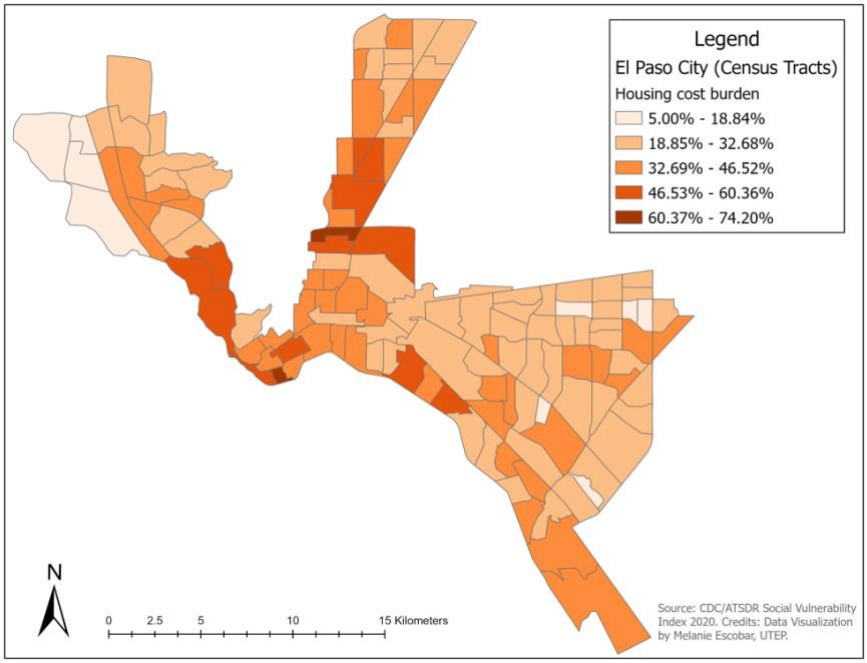
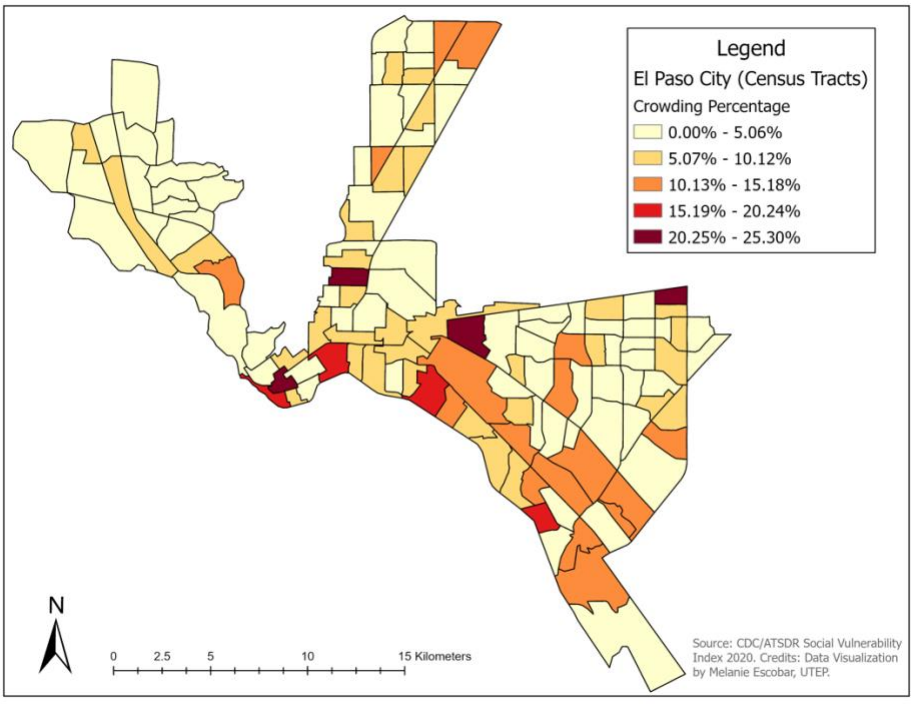


Figure M6. PlanIT Geo Vs. World Cover (AGEBs Dry Vegetation %)

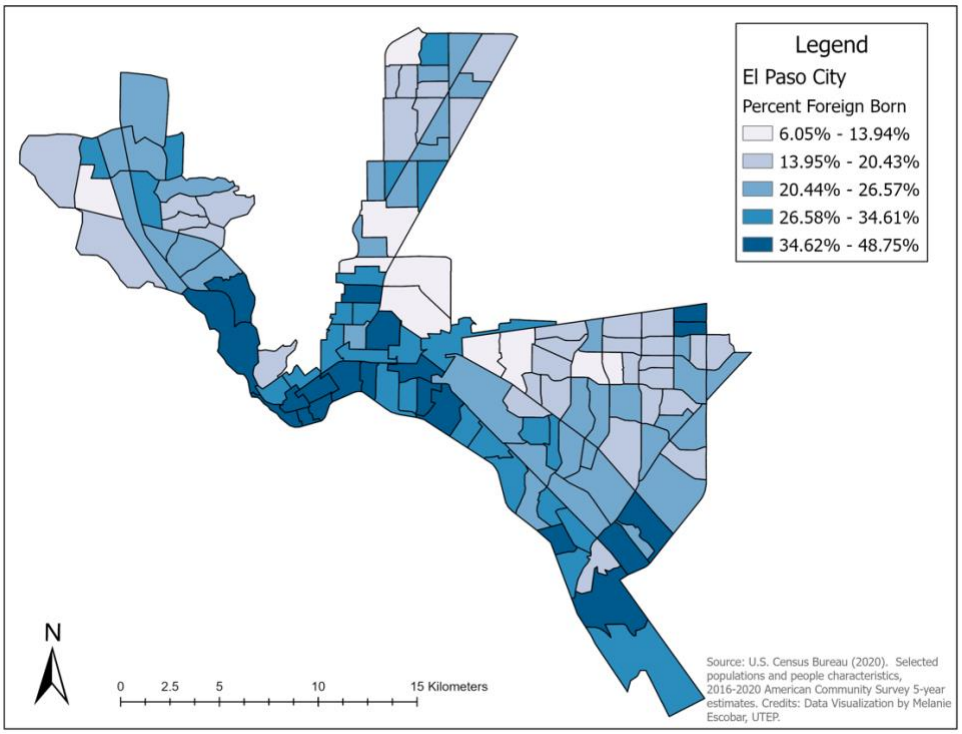
N. Additional Uni-National Maps



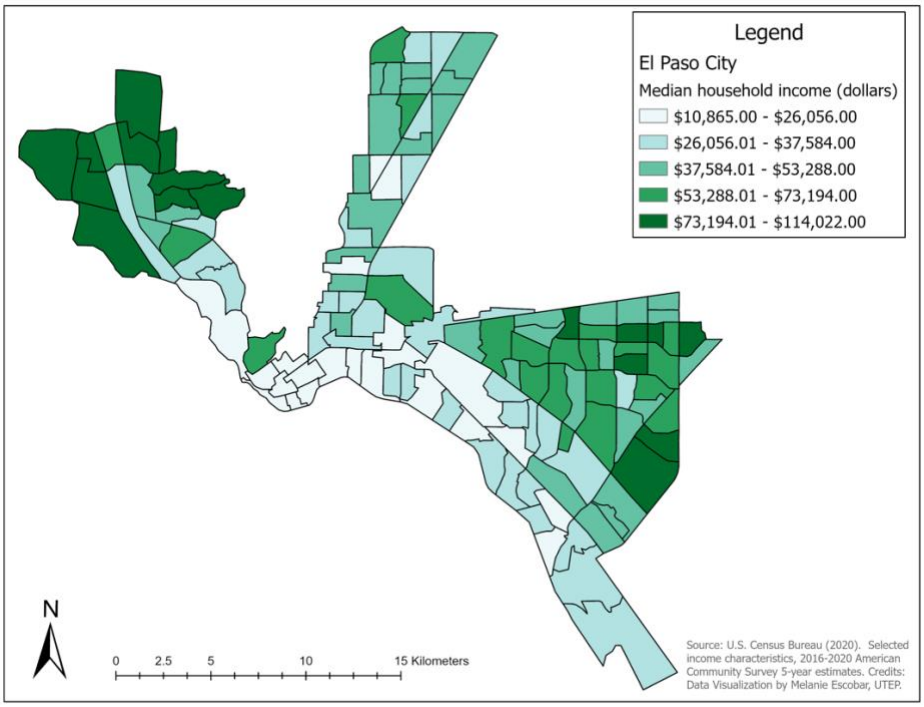
N1. El Paso City Housing Cost Burden



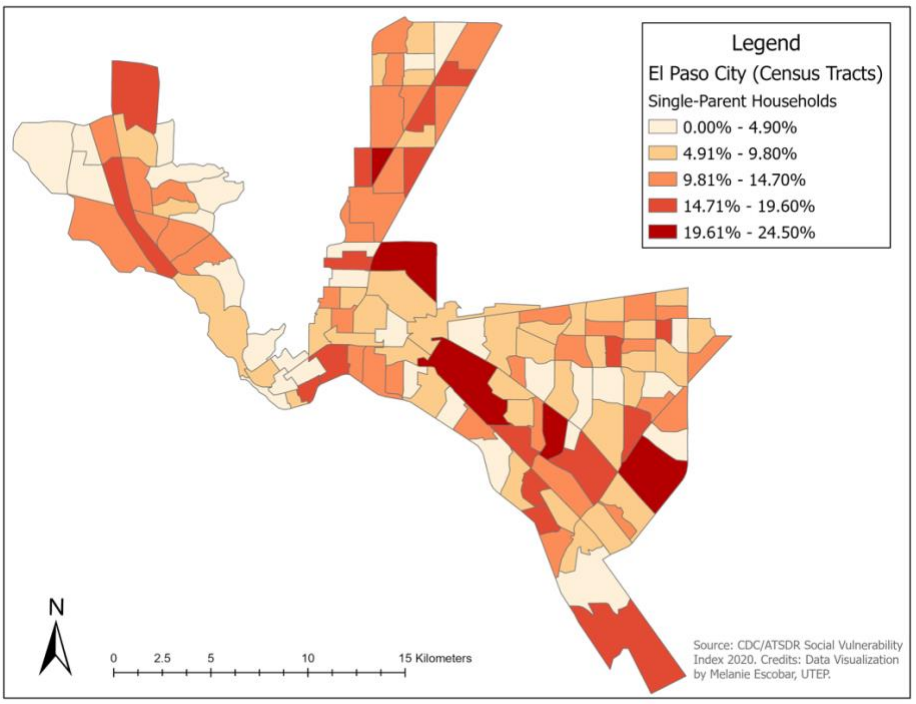
N2. Crowding In El Paso City



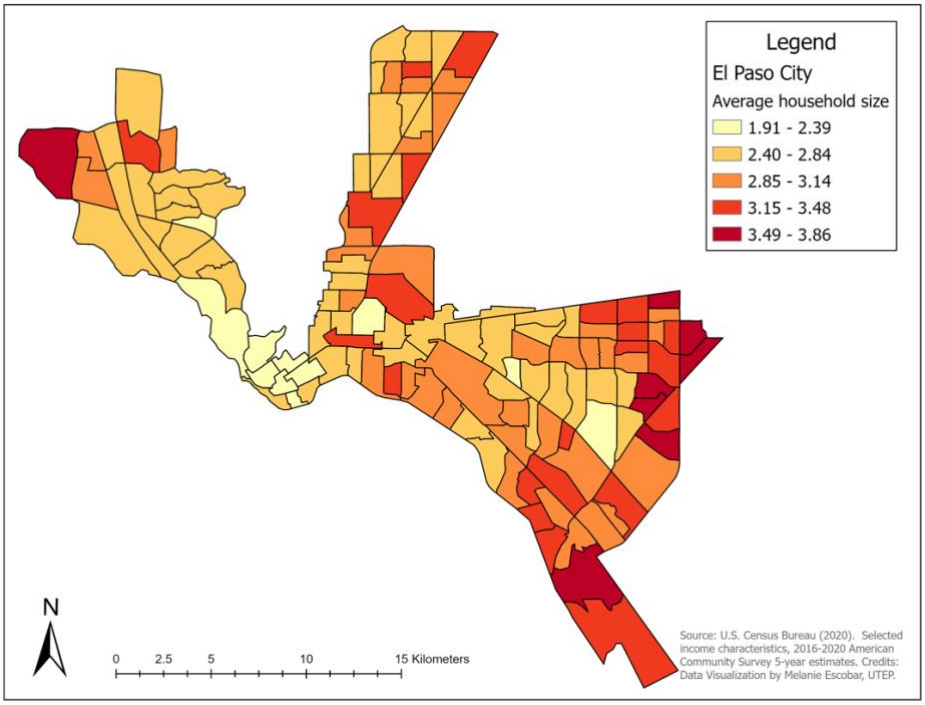
N3. Percent Foreign Born In El Paso City



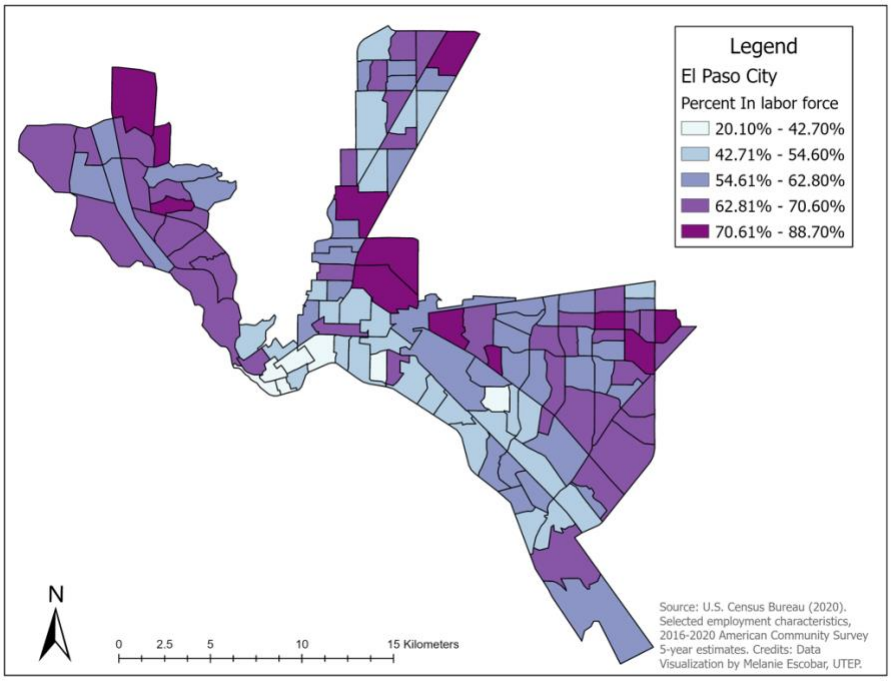
N4. Median Household Income (Dollars) In El Paso City



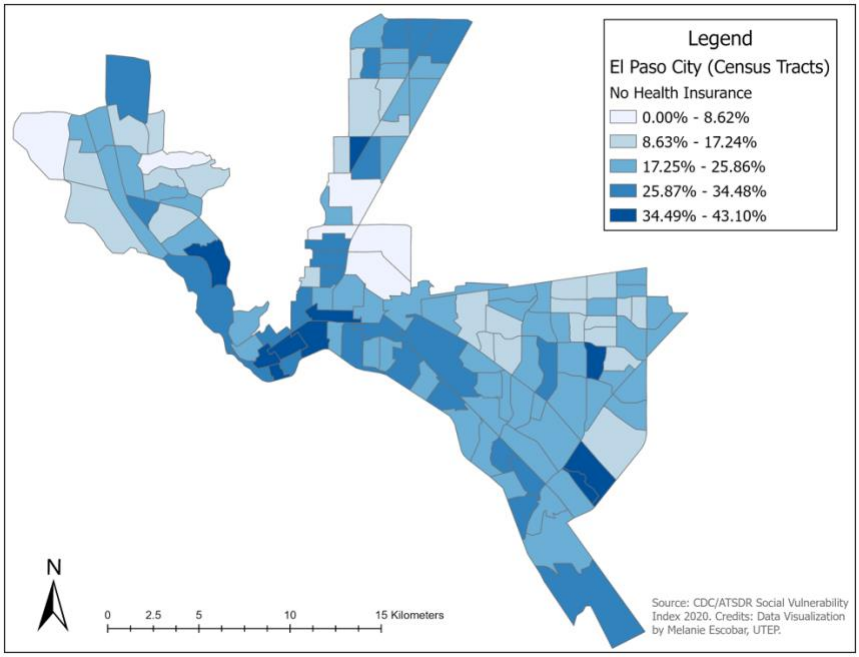
N5. Single-Parent Households In El Paso City



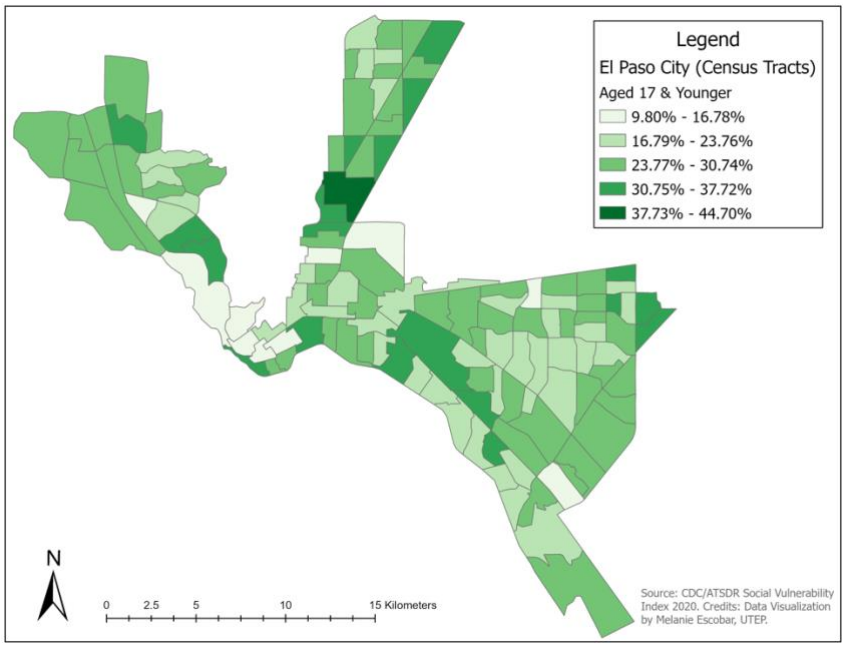
N6. Average Household Size In El Paso City



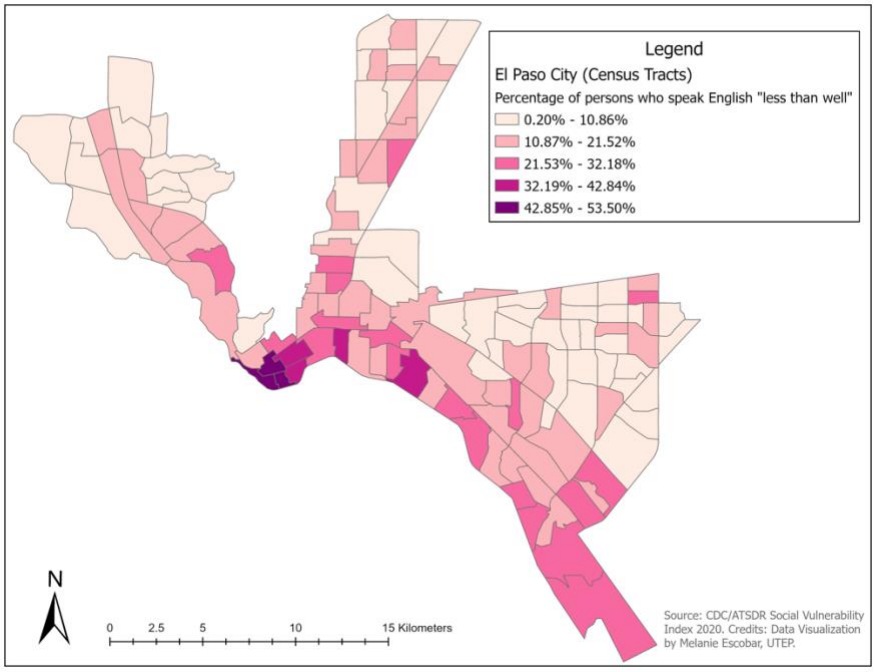
N7. Percent Labor Force In El Paso City



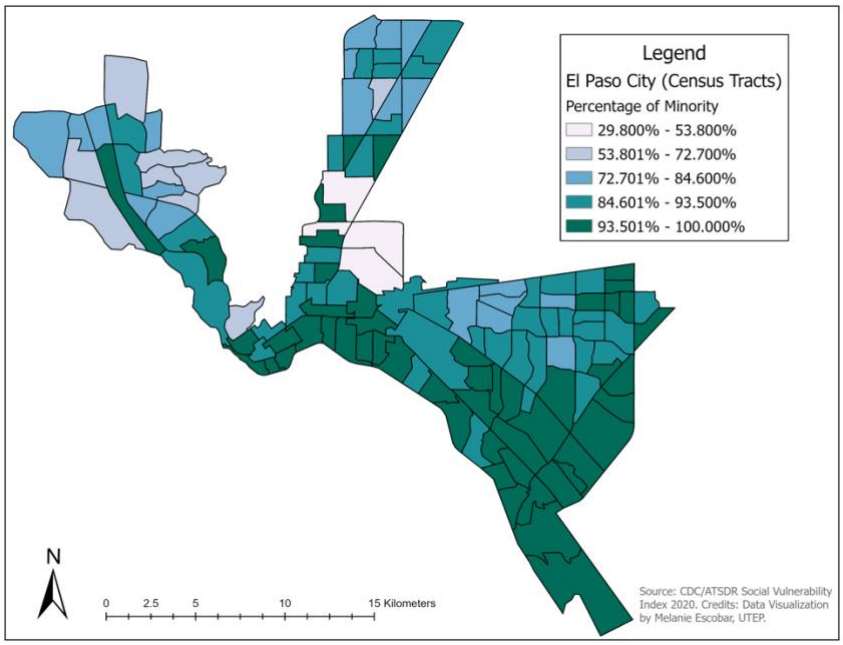
N8. No Health Insurance In El Paso City



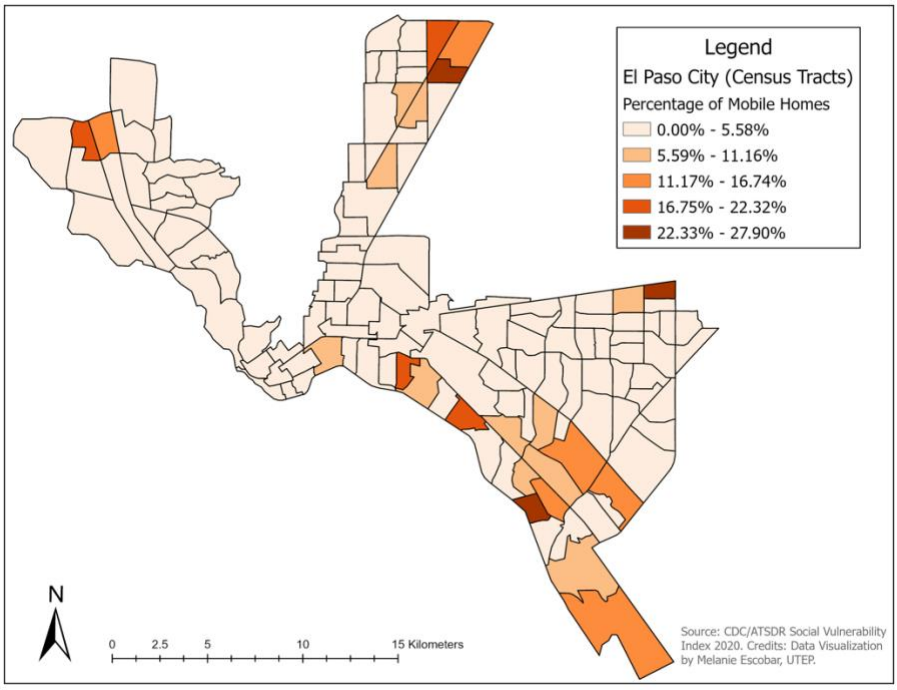
N9. Aged 17 & Younger El Paso City



N10. Percentage Of Persons Who Speak English “Less Than Well” In El Paso City



N11. Percentage Of Minority In El Paso City



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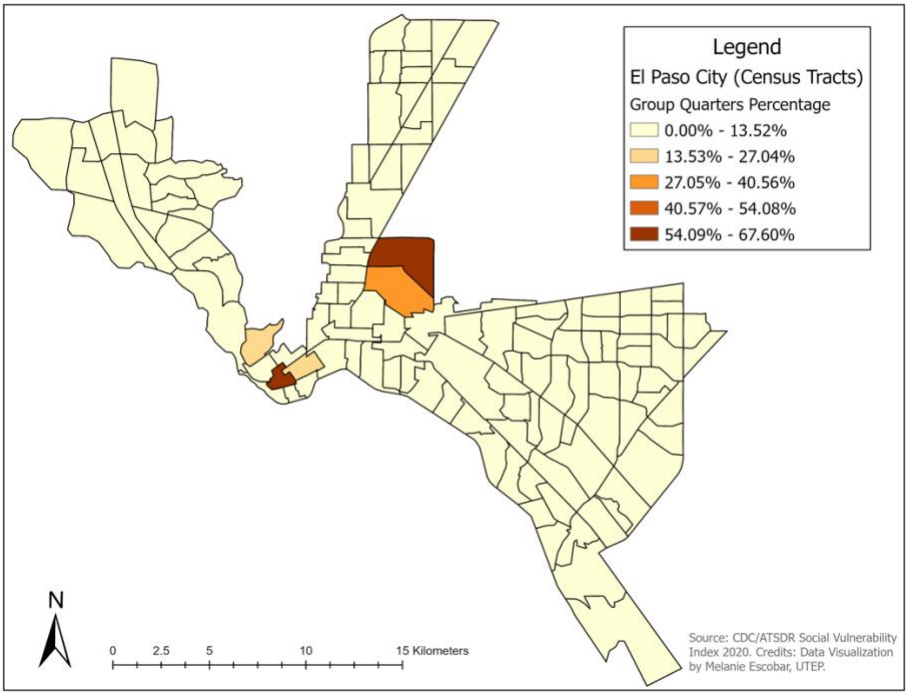
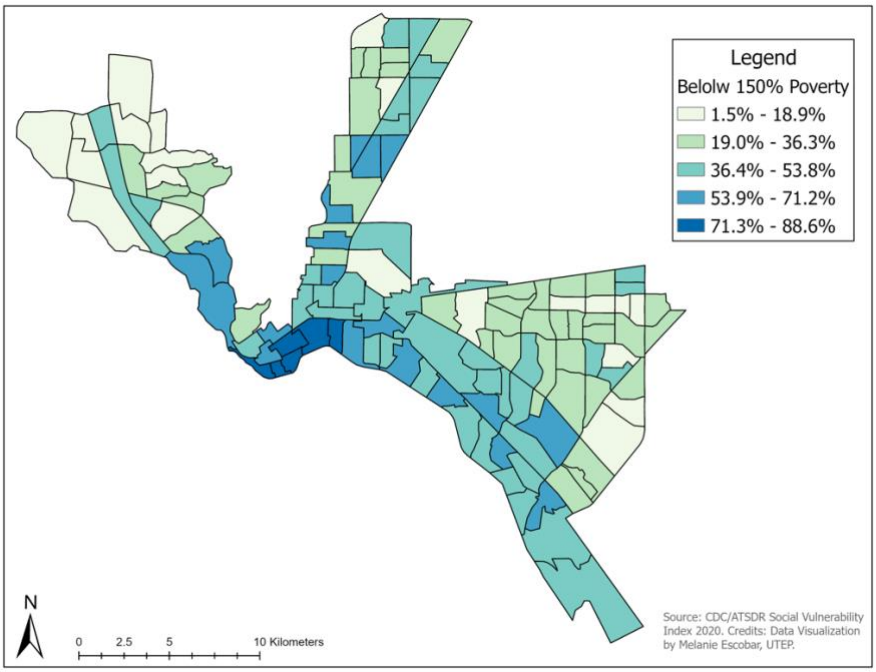
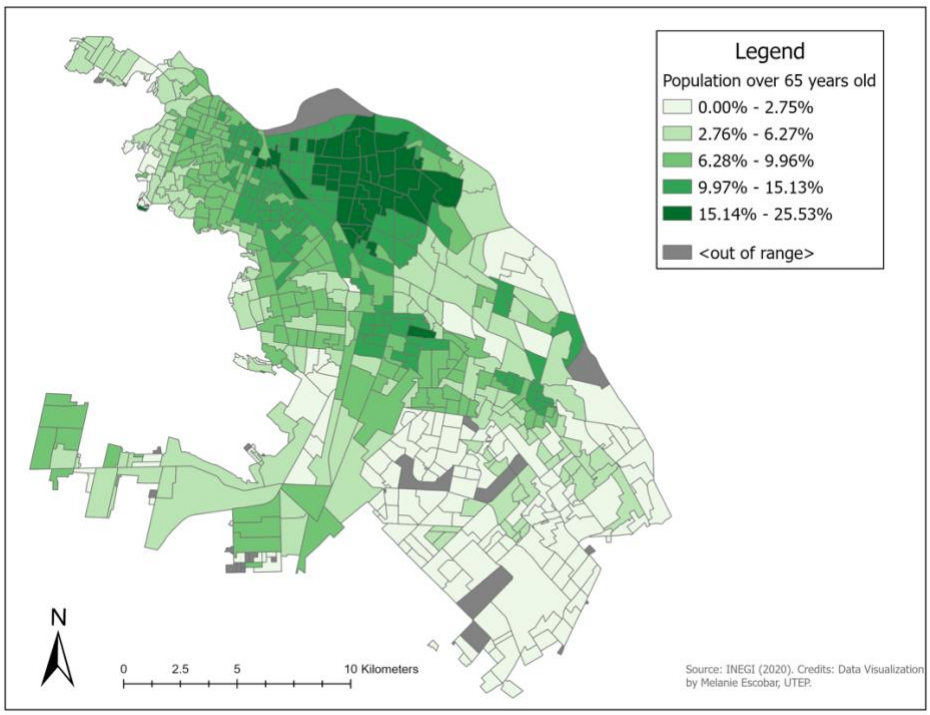
N12. Percentage Of Mobile Homes In El Paso City



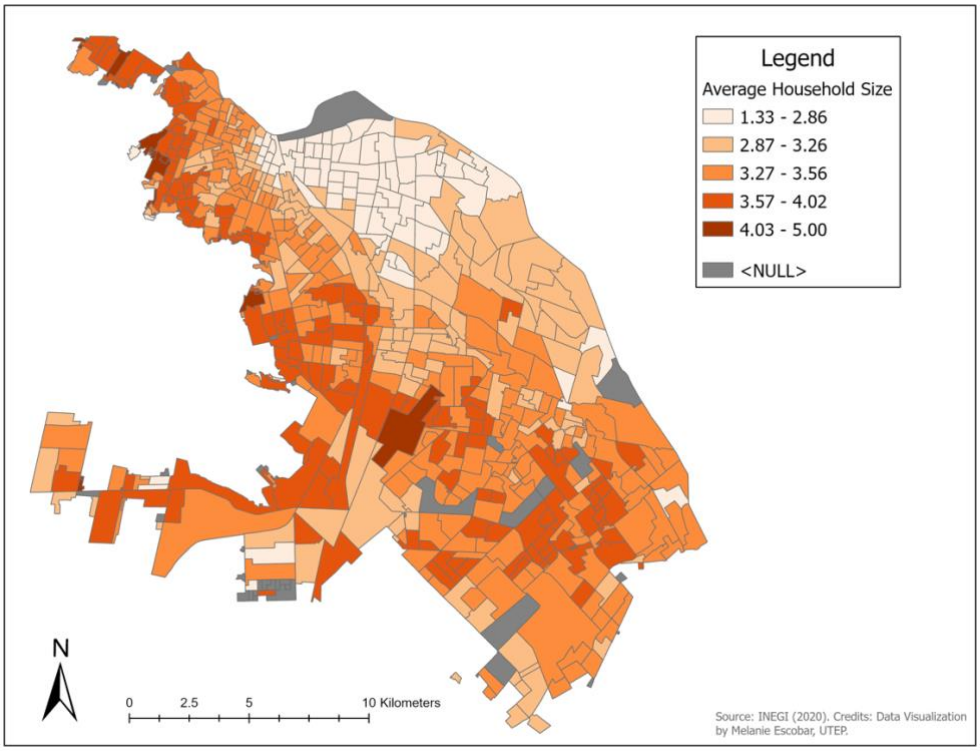
N13. Percentage Of Group Quarters In El Paso City



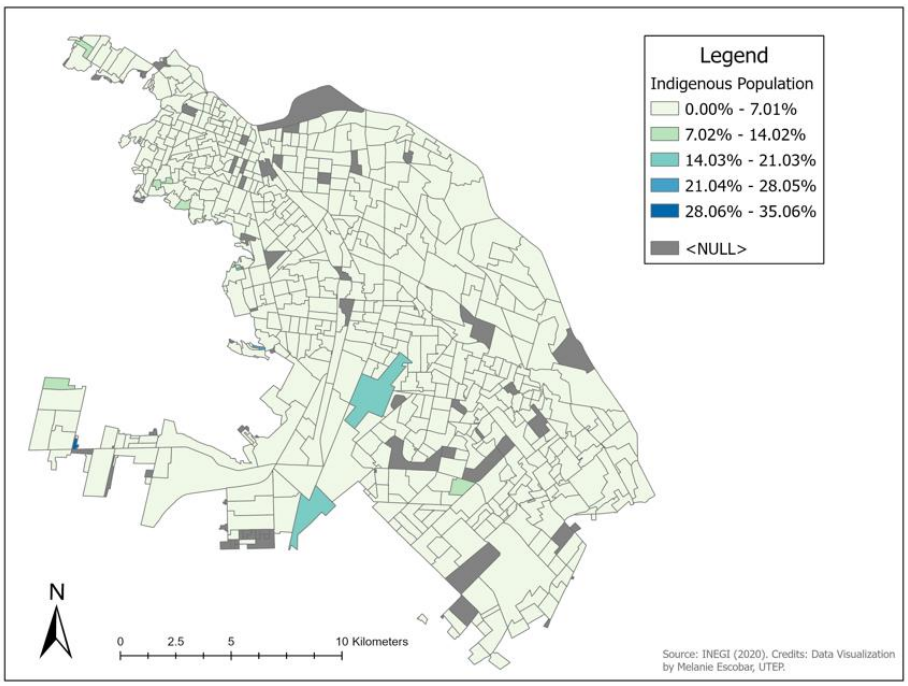
N14. Below 150% Poverty In El Paso City



N15. Population Over 65 Years Old in Ciudad Juarez



N16. Average Household Size in Ciudad Juarez



N17. Indigenous Populations in Ciudad Juarez

O. Demographic and Socioeconomic Variables And Factors That Were Included In The BSVI.

Factor	Mexico 2020 Census	U.S. 2020 ACS (2016-202)
Wealth	% Households a car [(VPH_AUTOM divided by TVIVHAB) x 100 (do calculation inside parenthesis first, then multiplication)]	100% minus % Households without a vehicle
	% With piped water [(VPH_AGUADV divided by TVIVHAB) x 100 (do calculation inside parenthesis first, then multiplication)]	100% minus % Lack complete plumbing facilities
Households	Invert of Average household size [POBHOG divided by TOTHOG] Divide this number by the largest number in both countries, then times 100 (converts to percent of max), then subtract from one hundred	One minus Average household size Divide this number by the largest number in both countries, then times 100 (converts to percent of max), then subtract from one
	Invert of Percent female head of household [One minus (HOGJEF_F divided by TOTHOG)] x 100] [do the multiplication last]	One minus Percent female head of household
Age	Invert of % Population over age 65 [One minus POB65_MAS divided by POBTOT) x 100] [do the multiplication last]	One minus % Population over age 65

	% Population older than 5 [(P_5YMAS divided by POBTOT), times 100] [do the division first, and then the multiplication]	One minus % Population under age 5
Education	Invert of % Population 15+ with incomplete basic education [Created column by adding P15YM_SE, P15PRI_IN, P15PRI_CO, and P15SEC_IN (call this column PSECI); then divide previous column (PSECI) by P15YMAS; then subtract from one; then x 100]	% High school graduate
Employment	% Active in labor force [(PEA divided by PEA plus PE_INAC) x100] [do division first then multiplication	% Population in labor force
	% Women active in labor force [(PEA_F divided by PEA_F plus PE_INAC_F) x100] [do division first then multiplication	% Females in labor force
	Invert of % Unemployed [One minus (PDESOCUP divided by PEA) x100] [do the division first, then subtract from one, and then the multiplication]	One minus % Unemployed
Disabled	One minus % disabled [One minus (PCON_DISC divided by POBTOT) x 100] [do the division first, then subtract from one, and then the multiplication]	One minus % Disabled

All the numbers for each spatial unit are added up. The max is 1100.

	Tree cover	Shrubland	Grassland	Cropland	Built-up	Bare / sparse veg	Snow and ice	Permanent water bodies	Herbaceous wetland	Mangroves	Moss and Lichen	Correct	Total	User's accuracy	Confidence interval ±
Tree cover	**24.07**	2.02	2.65	0.1	0.1	0.11		0.12	0.11		0.18	24.07	29.45	**81.7**	0.3
Shrubland	1.39	**3.11**	1.87	0.02	0.01	0.58		0	0.05	0.01	0.11	3.11	7.15	**43.6**	0.7
Grassland	1.13	2.4	**12.12**	0.94	0.06	0.56		0.15	0.3		3.19	12.12	20.85	**58.1**	0.4
Cropland	0.04	0.01	0.7	**6.75**	0	0.03		0.01	0.02			6.75	7.56	**89.2**	0.4
Built-up	0.03	0	0.08	0.01	**0.44**	0.05						0.44	0.61	**72.7**	2
Bare / sparse veg	0.06	0.32	0.68	0.11	0.07	**4.14**	0.09	0.08	0		1.37	4.14	6.93	**59.8**	0.7
Snow and ice						0.66	**11.76**				0.05	11.76	12.47	**94.3**	0.2
Permanent water bodies	0.02	0	0.06			0.2	0.03	**4.59**	0.06		0.32	4.59	5.28	**87.0**	0.6
Herbaceous wetland	0.03	0.05	0.39	0.06	0	0.04		0.14	**0.44**		0.89	0.44	2.03	**21.5**	0.9
Mangroves								0		**0.02**		0.02	0.02	**77.4**	4.5
Moss and Lichen	0.1	0.16	0.98	0.01		1.44	0.01	0.14	0.04		**4.76**	4.76	7.65	**62.3**	0.7
Correct	24.07	3.11	12.12	6.75	0.44	4.14	11.76	4.59	0.44	0.02	4.76				
Total	26.87	8.09	19.54	7.99	0.68	7.81	11.89	5.23	1.01	0.03	10.87				
Producer's accuracy	**89.6**	**38.5**	**62.1**	**84.5**	**65.3**	**53.1**	**98.9**	**87.7**	**43.2**	**55.6**	**43.8**			**72.21**	
Confidence interval ±	0.2	0.7	0.4	0.5	1.9	0.7	0.1	0.6	1.6	6.1	0.6				0.2

P. Confusion Matrix (%) For The Worldcover 2020 Product For North America, Corrected By Sample Inclusion Probabilities. Source: Kerchove Et Al., 2020

Q. Accuracy Assessment:2020 PlanIT Geo Landcover Geotiff

Accuracy Assessment: 2020 El Paso, TX Land Cover								
Classified			**Reference**					
	herbaceous	bare	impervious	water	trees	shrubs	Total	User's
herbaceous	28	1	0	0	0	0	29	96.6%
bare	1	207	2	0	0	1	211	98.1%
impervious	0	13	173	0	0	0	186	93.0%
water	0	0	0	5	0	0	5	100.0%
trees	0	0	0	0	24	0	24	100.0%
shrubs	0	5	0	0	1	20	26	76.9%
Total	29	226	175	5	25	21	481	
Producer's	96.6%	91.6%	98.9%	100.0%	96.0%	95.2%		
No. Correct	457							
Overall	**95.0%**							

CURRICULUM VITA

Melanie (Mel) Escobar moved to West Texas following the completion of her Bachelor of Science in History at the University of Texas at Tyler. During her undergraduate program, she obtained a fellowship with the Archer Center to intern in Washington, D.C. After earning her Bachelor of Science in History and Minor in Psychology and Political Science, she became interested in learning more about GIS for works in preservation, conservation, or urban planning, especially through the focus of Latin America, borders, or Latino heritage. During her graduate studies at the University of Texas at El Paso, she worked as a Graduate Research Assistant and Teaching Assistant and later received a fellowship with Latino Heritage Conservation (LHC) to work on preserving Latinx heritage in Texas to create Story Maps as a GIS Fellow. She later interned with Homeland Security as an Earth Science Intern the summer after her first year of the Latin American & Border Studies Program. Towards her final year, she returned as a fellow for LHC as the GIS Lead to create another Story Map and is currently a finalist for the Brazil ETA Fulbright Award. She also acquired her Geographical Information System (GIS) certificate. With the many opportunities and projects Mel has acquired, she hopes to continue her interest in preservation work.