

ENVISIONING TRANSBOUNDARY COOPERATION ZONES
en la Frontera de Cd. Juárez-El Paso

by Yesica Guerra

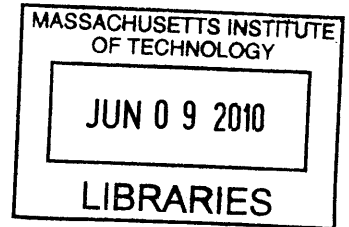
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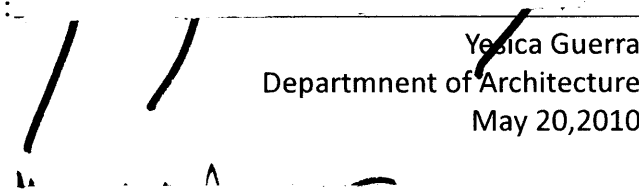
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Signature Author : _____


Yesica Guerra
Department of Architecture
May 20, 2010

Certified by: _____


Adèle Naudé Santos
Dean of the School of Architecture and Planning
Thesis Advisor

Certified by: _____


Alan Berger
Associate Professor of Urban Design and Landscape Architecture
Thesis Advisor

Accepted by : _____


Julian Beinart
Professor of Architecture
Chair of the Department Committee on Graduate Students

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Thesis Advisor
Adèle Naudé Santos
Dean of the School of Architecture and Planning
MIT

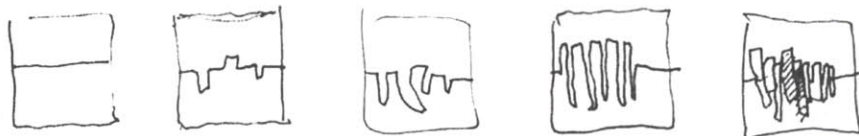
Thesis Advisor
Alan Berger
Associate Professor of Urban Design and Landscape Architecture
MIT

Thesis Reader
Diane Davis
Professor of Political Sociology Department of Urban Studies and Planning
Head, International Development Group
MIT

Thesis Reader
Norman Millar
Dean of the School of Architecture
Woodbury University

ENVISIONING TRANSBOUNDARY COOPERATION ZONES *en la Frontera de Cd. Juárez-El Paso*

How can border territories be reconfigured as mutually positive dynamic formations?



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ABSTRACT

The largest binational urban area in the world with a combined population of 2.1 million¹ is formed by the pair cities of El Paso, TX and Cd. Juárez. This borderland lays on the 2,000 mile long international boundary that divides the United States and Mexico, a borderland filled with ironies: individually demarcated yet synthesized, secured yet transgressed, fetishized yet denigrated. As result of these paradoxes this borderland suffers of problems of economic disparities, political tensions, social and cultural alienation, and ecological threats.

From an aerial photograph these two metropolises read as one, but on the ground their differences translate into daily contradictions, where the multiple layers that encompass these two cities overlap while at the same time are dislocated. El Paso and Ciudad Juarez stretch along the Grand River/*Rio Bravo*, which mainly through history has delineated the border or *la linea* between these pair cities. This element stands for a political and militarized boundary that inconsistently also represents a symbolic barrier because of the daily transgression of multiple elements through this territory.

This thesis investigates these pair cities as one territory, which challenges the notion of these places as separate entities. The diverse historical and existing layers in Cd. Juarez and El Paso will be analyzed as one interconnected system that feeds and responds to different complexities. By looking through this unilateral lens, I hope to identify solutions –policies and physical reconfigurations- in order to minimize the conflict in this borderland, manifested in the opposing relations between needs, values, interests, and concerns of the two different entities.

Despite the conflict between the multiple layers present in borderlands, there is also the opportunity to construct special areas, where the relationship between the sister cities and the multiple conflicting factors could be reconciled. Consequently, the concept of special area suggests a *Transboundary Cooperation Zone* that allows for new flows and negotiations in the political, social, economic, cultural, and environmental realms.

1 Chamberlain, Lisa. 2 Cities and 4 Bridges Where Commerce Flows, The New York Times, <http://www.nytimes.com/2007/03/28/realestate/commercial/28juarez.html> (accessed March 5, 2009).

Thesis Advisers

Prof. Adèle Naudé Santos, Dean of the School of Architecture and Planning

Prof. Alan Berger, Associate Professor of Urban Design and Landscape Architecture

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INTRODUCTION

The largest binational urban area in the world with a combined population of 2.1 million¹ is formed by the pair cities of El Paso, TX and Cd. Juárez. This borderland lays on the 2,000 mile long international boundary that divides the United States and Mexico, a borderland filled with ironies: individually demarcated yet synthesized, secured yet transgressed, fetishized yet denigrated. As result of these paradoxes this borderland suffers of problems of economic disparities, political tensions, social and cultural alienation, and ecological threats.

From an aerial photograph these two metropolises read as one, but on the ground their differences translate into daily contradictions, where the multiple layers that encompass these two cities overlap while at the same time are dislocated. El Paso and Ciudad Juárez stretch along the Grand River/*Rio Bravo*, which mainly through history has delineated the border or *la linea* between these pair cities. This element stands for a political and militarized boundary that inconsistently also represents a symbolic barrier because of the daily transgression of multiple elements through this territory.

This thesis investigates these pair cities as one territory, which challenges the notion of these places as separate entities. The diverse historical and existing layers in Cd. Juárez and El Paso will be analyzed as one interconnected system that feeds and responds to different complexities. By looking through this unilateral lens, I hope to identify solutions –policies and physical reconfigurations- in order to minimize the conflict in this borderland, manifested in the opposing relations between needs, values, interests, and concerns of the two different entities.

Framing El Paso-Cd. Juárez Territory

Every week, approximately forty new families migrate to Juárez.² One of the main reasons for this flow of migration is in response to the vision of social mobility that northern Mexican cities symbolize. Juárez in particular, is one of the most important economic powers in Mexico, this characteristic is intricately related to the presence of the *Maquiladora* industry. To date, there around 500 *Maquiladoras*, or assembly factories, established in the city.³ On the other hand El Paso, is considered one of the ten poorest cities in the United States. This fact does not stop the vision that individuals have for the northern American city as a place yet with better opportunities. High numbers of migration of individuals

2 Herzog, Lawrence, Ed. Shared Space: Rethinking the U.S. Mexico Border Environment. San Diego: Center for U.S.-Mexican Studies. (2000, p.133).

3 Ortiz, Victor. Undermining Reality, El Paso, Local Frontiers at a Global Crossroads. Minneapolis: University of Minnesota Press. (2004, p.42).

to Cd. Juárez or other northern cities not only relied on the presence of employment opportunities in the *Maquiladora* industry. Juárez represents in a sense a *trampoline field* where Mexicans can reside until they make their way to the United States, a vision or goal that is accomplished by many. Among those who have moved to Cd. Juárez with this intention, some will choose to immigrate even further north, illegally, and others legally.

Juárez gives to the newcomers job opportunities that help them establish an identity and economic stability. This permanent status assists them when dealing with Immigration and Naturalization Services, or INS procedures. Applications for border crossing cards, commonly known as "*la mica*," and visitors' permit are the best "legal way" to step into the United States, in this case El Paso, which may be only the start of a long journey. Once individuals acquire one of these two visas, the possibilities of getting employment on the other side are increased, even though this is illegal. Both visas are intended to fulfill only a visitor status, but thousands of individuals use the crossing card to go back and forth everyday to reach their jobs. For "*la mica*," the main restriction is that individuals crossing the border cannot stay in the United States for more than 72 hours at one time or travel further north more than 25 miles from the border. This is not a problem since most individuals work right across the border.

On the other hand, the visitor permits allow individuals to travel within the United States for up to six months. Thousands of immigrants have used this visa to enter the country and never return. In contrast, the other percentage of individuals who immigrate to Juárez without wanting to move to the United States, usually find themselves living in precarious conditions due to Juárez's lack of capacity to respond to fast transformation, which becomes problematic in terms of housing, infrastructure, etc. Socially and culturally speaking, the migration of these individuals to a new foreign context creates another layer of complexity. The mixture of values, education, traditions, visions, and ideas are in constant negotiation, which is translated into hybridization, one that can have positive and negative effects.

4 Ortiz, Victor. *Undermining Reality, El Paso, Local Frontiers at a Global Crossroads*. Minneapolis: University of Minnesota Press. (2004, p.39).

It is estimated that another 55,000 individuals ⁴ cross this border everyday, mostly for employment reasons. Even though El Paso is not an economic power within the United States, thousands of Mexicans wait every morning in their cars for an average of 45 minutes to an hour in

one of the four ports of entry to the city. Most of these individuals work in the service sector on “*el otro lado*” or the “other side,” as usually Mexicans living in border territories refer to the United States. Smaller percentages of these crossers are Americans going to Cd. Juárez. These other individuals are usually educated and typically hold high positions in the *Maquiladora* industry or own their own business in the city. The number of crossings demonstrates the strong labor interdependency between these urban centers while at the same time proving the disparity.

Security is another factor that demonstrates the differences and contradictions that exist between these two cities. El Paso, ranks as the second safest city in the United States, in contrast, Cd. Juárez is currently the most dangerous city in Mexico. During 2008, drug cartel violence accounted for 6,000 murders throughout this city;⁵ even though the internal violence in Juárez does not signify a risk for El Paso, a correlation exists here. It has been reported that 65 percent of the narcotics that are sold in the U.S market enter across the south border.⁶ In the context of these two metropolises, a sixty-meters-wide, variable in depth (depending on the season) river exists as a barrier, but throughout time other barriers have been added to it, such is the case of a chain link fence, along with technological devices. This reinforcement and militarization of the wall for security and protection was part of a 1996 national agenda known as the US Illegal Immigration Reform and Responsibility Act. The strengthening of the wall definitely has made the passage of drugs more difficult; however plans that deal with and benefit the regional scale should be implemented. In the case of Juárez and El Paso this could mean drug rehabilitation programs and new binational policies that deal jointly with security agendas.

Ecological issues are another major problem between Ciudad Juárez and El Paso. These two cities share the waters of el Rio Grande/Bravo, polluted to a great extent by the *Maquiladora* industry on the Mexican side and by other industries such ASARCO, a smelting and refining company in El Paso. The river provides irrigation water to the farmers of the region, as well as 40 to 50 % of El Paso’s drinking water.⁷ Problems related to the river have been presents since 1906, when an agreement established its allocation. Presently, one of the major concerns about the river, is based on the weakening of water supply. The sister cities lie on a common underground aquifer that is projected to run dry by

5 November Was Mexico’s Bloodiest Month of Calderon Presidency. Latin America Herald Tribune. <http://laht.com/article.asp?CategoryId=14091&ArticleId=322059> (accessed March 7, 2009)

6 Gangster, Paul and David Lorey. The U.S.-Mexican Border into the Twenty-First Century. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p. 176).

7 Collins, Timothy, Sara E. Grineski, and Martha Flores. Environmental Injustice in The Paso del Norte. Projections volume 8 MIT Journal of Planning. Justice, Equity + Sustainability.MIT press: Cambridge. (2008, p. 167).

the year 2025[...]This threat has sparked conflict between the two cities due the complications that accompany the sharing of vital resource under distinct government and management.⁸ Other issue in this region is the poor air quality resulting from toxic substances to the atmosphere expelled by the manufacture industry, as well as by the overflow of automobiles.

Figure i and ii illustrate panoramic views of Cd. Juárez and El Paso.



Figure i



Figure ii

Borderlands as Third Spaces

Borderlands cannot be treated as areas that are composed by two completely alienated cities separated by a barrier, but instead as a one territory with interconnected entities, which feed and transform each other, creating then a new amalgamation. Because of the distinctive characteristics they present, borderlands can be identified as third spaces. As defined by Prof. Edward Soja “third spaces have a different meaning and significance of space and those related concepts that compose and comprise the inherent spatiality of human life: place, location, locality, landscape, environment, home, city, region, territory, and geography”⁹ of these, the most important is a controlled political border.

8 Romero, Fernando. Hyper Border: The Contemporary U.S-Mexico Border and Its Future. Princeton Architectural Press: New York.(2007, p. 96).

9 Soja, Edward. Third Space. Blackwell Publishers. Oxford. (1996, Introduction p.1).

Fourteen sister cities exist along the border between Mexico and the United States, Figure iii indicates the placement of this cities with regards their physical position within their national territory. Geographically speaking, these cities belong each to a different nation and should function independently from each other, but in fact border cities are places where interdependency exists. The political boundary, which

is estimated to be transgressed by nearly half million undocumented Mexicans every year,¹⁰ is the demarcation that allows and promotes constant negotiand polarization.

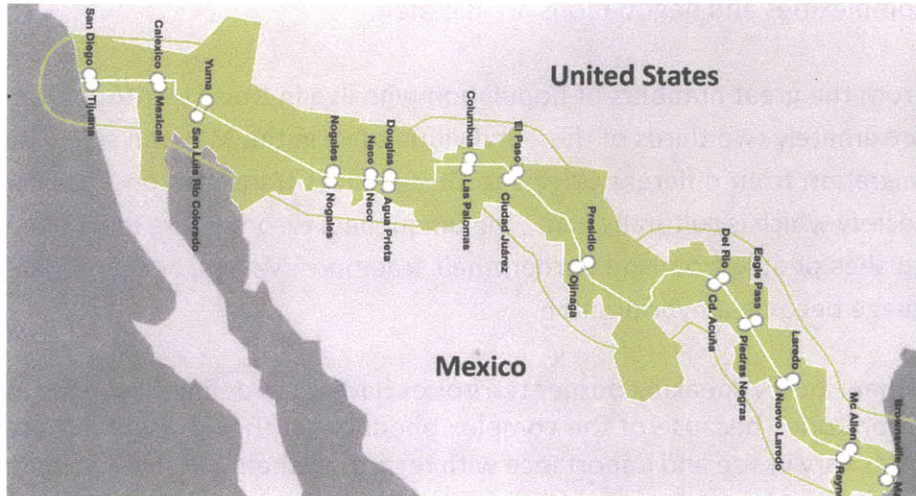


Figure iii

The Mexican-American border has been defined throughout history by different issues, such is the case of intensive levels of migration, labor exchange, free trade, flow of goods and investment, trafficking of illegal drugs, cultural hybridization, tourism, and political disagreements, just to mention some. Professor Oscar Martinez defines in his book, *Border People* four types of borderlands interactions, Alienated borderlands, Coexistent borderlands, Interdependent Borderlands, and Integrated borderlands. Figure iv shows these models.

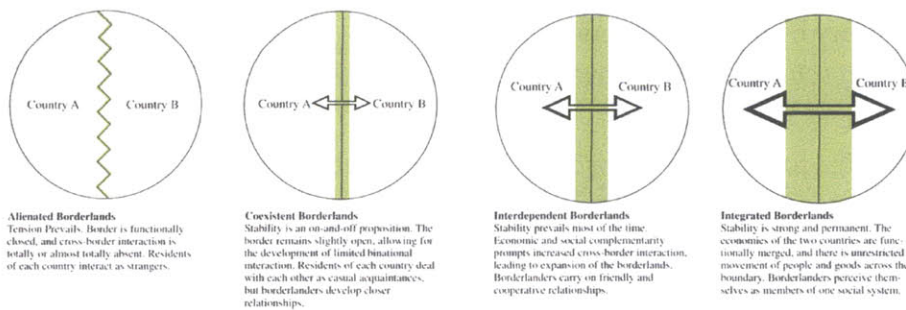


Figure iv

Mexico and the United States can be categorized mainly as Interdependent Borderlands, but certain characteristics from the other three models also can be applicable, such is the case of the stability of border relations at different times, its resident's reactions, and changes of flow depending on political agendas that open or tight the border.

10 Romero, Fernando. *Hyper Border: The Contemporary U.S.-Mexico Border and Its Future*. Princeton Architectural Press: New York. (2007, p. 169).

The model presented by the adjacency of these two nations is an intricate one, this is one of the only cases around the world where a super power and a developing nation collide.¹¹ The economic disparity between these countries creates in great extent the framework by which complexities and negotiations are dictated.

From the great numbers of population who live in these territories, approximately two thirds of these individuals live in the Mexican side. The migration from different origins to these places translates on a border society which is culturally rich. The uniqueness is something that distinguishes people from the border, their traditions, values, and even language become a hybridization.

Urbanistically speaking border territories have been defined by many as laboratories because of the complex phenomena they present. These cities vary in size and importance with regards to their national territory. Contradictions of formality and informality, fluctuation of population, issues of infrastructure, etc., in other words rapid growth and constant change are some of the main characteristics found in these territories.

Methodology and Intentions

Despite the conflict between the multiple layers present in borderlands, there is also the opportunity to construct special areas, where the relationship between the sister cities and the multiple conflicting factors could be reconciled. Consequently, the concept of special areas suggests *transboundary cooperation zones* that allow for new flows and negotiations in the political, social, economic, cultural, and environmental realms. Subsequently, this thesis attempts to reconfigure areas of this territory by proposing new binational policies, as well as an interrelated design scheme which strive to minimize the existing conflict.

In order to propose *Transboundary Cooperation Zones*, I will analyze a borderland between Cd. Juárez, Chihuahua and El Paso, Texas. As starting method of investigation I will filter through archival records, photographs, maps and drawings from these specific sister cities in order to identify certain connections and important data which will be essential at the time of proposing an intervention.

11 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p. 1).

CHAPTER I continues investigating issues on the Cd. Juárez and El Paso territory mentioned in the introduction; however a deeper analysis which searches for crucial and specific issues within the economical,

political, social, ecological, and cultural realms will be the focus at this point. From this section patterns and correlations resulting from the different layers would start informing where the conflict emerges. A precise review of the current literature will be indispensable in order to understand how the border territory and the political boundary have changed over time.

CHAPTER 2 In addition to historical evidence from Chapter 1, physical characteristics of Cd. Juarez and El Paso also demonstrate the complexities of this border land region. This chapter is a visual representation of the region (maps and supporting material) in order to underscope the complexities of this borderland territory. I will overlap the existing separate elements from Cd Juárez and El Paso to uncover where disconnection and disparity between these cities exist .

CHAPTER 3 I will analyze certain case studies with the purpose to understand the various negotiations that can exist between different countries in relation to transboundary issues and the formation of special geographical zones. The Chamizal area is an important case study to investigate as national example, situated in the border between Mexico and the United States; this area dealt with bilateral negotiations and matters of adjacencies. Other models to look into will be Transboundary Conservation Areas and Peace Parks, as well as Special Zones for Economic Development in order to get familiar with laws and issues that are involve in the creation of these special zones. This investigation will play an integral role during the establishment and management of my proposal.

CHAPTER 4 will contain a deeper physical study of areas adjacent to the border/ *la linea*. Mapping will be necessary in order to understand the growth and transformation of this territory. Specific attention would be essential to overlapping characteristics found in different layers during the research. The maps will follow a matrix derived from the research and will start informing the kind of program that may be necessary in this new formation.

CHAPTER 5. I will suggest a binational schemes for the *Transboundary Cooperation Zones*, which it will respond directly to issues found throughout the investigation. The purpose in this section is to establish urban/landscape opportunities that will respond to what is needed and

applicable to the area with the intention to reverse conflict. In addition, suggestions of new policies that allow for the negotiation and the settlement of these special geographic zones I am proposing will be described in this chapter too.

The closing section will contain conclusions as well as possible future research.

I HISTORICAL OVERVIEW

- 1 National Political Agendas
- 2 Economic, Sociocultural and Ecologic realms in the Cd. Juárez-El Paso territory.

I Historical Overview: The Impact of Critical Events in the Mexican American Border Region on the Cd. Juárez-El Paso Territory.

Summary

The investigation in this section is derived from the Introduction; however, a deeper analysis that searches for crucial issues within the political, economic, social-cultural, and ecological realms will be the focus. From this discussion patterns and correlations related to Industry, employment, migration, demographics, crime, and pollution will be revealed in order to better understand the complexity of the Cd. Juárez-el Paso territory.

1 National Political Agendas

Throughout history, multiple treaties, acts, agreements, programs, and initiatives have changed the physical and the political definition of the border between Mexico and the United States. Economic, sociocultural, and ecological landscapes have been significantly influenced by these changes; the evolution and mixture of all these different layers have determinate how these border territories function.

The origins of the physical designation of the border between Mexico and the United States, which is credited to the Treaty of Guadalupe Hidalgo, ending the Mexican-American war, dates from 1848. This treaty was intended as one of peace, friendship, limits, and rights. However, the relationship between these two states has been characterized as tentative and unstable relations. Close to 50 percent of the Mexican territory was ceded by the Treaty of Guadalupe Hidalgo, as Figure 1 and 2 illustrate. This episode, which brought 150 years of severe consequences to Mexico and its people, set the tone for the trajectory of historical events related to both Mexico and the United States. Individuals living in the ceded territory –California, New Mexico, Arizona, Texas, Nevada, Utah, and part of Colorado- were forced to deal with struggles of race, religion, customs, and unknown political practices.

Although, there was a new political division between these countries, the flow of individuals was not actually restricted. As stated in the book *The U.S –Mexican border into the Twenty-First Century*:

People who were not legally permitted to cross the border were beggars, the physically and mentally disabled, paupers, criminals, anarchists, those deemed incapable of earning a living, and prostitutes. In 1917 the United States passed an Immigration Act, which established several test for migrants (among them literacy test) as well as head tax of eight dollars.¹

The negative effects for Mexicans and Mexico resulting from the treaty and the Immigrant Act, intensified even more when the physical boundary between Mexico and the United States was officially enforced in 1924. Since then, The Border Patrol is the agents who established those limits, has been in charge with the assignment of preventing the flow of illegal migrants to the American soil. Nevertheless, all through history,

1 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom.(2008, p. 67).



Figure 1

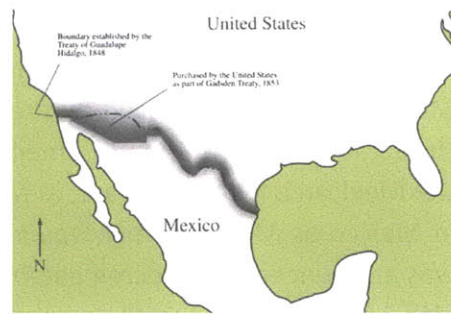


Figure 2

and at the present time documented migrants are allowed to enter the country under certain conditions. In 1942, a major plan, The Bracero Program, changed the legal flood of individuals entering the country. During World War II there was a shortage of labor in the United States, and one of the main economic forces of the time, agriculture, was affected by the lack of individuals working in the fields. As a result, The Bracero Program, which consisted of a labor contract arrangement that permitted Mexicans to work temporarily in the United States, was established. These individuals represented for the United States a supply of accessible and cheap labor. But for the Mexican border region, the program represented an accelerated growth and increased numbers of population. Many of the individuals, who migrated to these regions for job opportunities offered by their northern neighbor brought with them their entire families. Some of the members of the family stayed on one side of the border; others crossed back and forth; and still others traveled within the border territory depending on seasonal conditions. However, when World War II ended, the need for Mexican labor was not in demand anymore. As a result, the Operation Wetback Program, which consisted of a massive deportation, was created. It is calculated that this new program deported around 3.8 million Mexicans.² The returned soldiers, who became the new labor force, and the newly formed American labor unions, helped to bring to an end to the Bracero Program in 1964. The millions of Braceros who were deported, settled in the border region, where they found themselves unemployed and competing for opportunities against locals and other migrant populations arriving in these borderlands.

The massive growth of the northern regions after the Wetback Operation deportation, and the increasing migration flow, forced the Mexican government to play a role in the economic growth of the area. The response was the 1965 establishment of a Border Industrialization Program (BIP),

2 Romero, Fernando. *Hyper Border: The Contemporary U.S.-Mexico Border and Its Future*. Princeton Architectural Press: New York. (2007, p.68).

with the twin goals of stimulating the manufacturing sector of the depressed economies in the northern states and providing employment for Mexican workers displaced by the end of the Bracero Program.³ With the establishment of the BIP, American factories started appearing along the Mexican border. They are, in fact, low-wage assembly plants known in Mexico as *Maquilas* or *Maquiladoras*. In 1989, The Maquila Decree was announced; this decree established the legal requirements for foreign companies to run their operations in Mexico. The decree added flexibility to the Border Industrialization Program, because allowed not only American companies, but also other foreign companies to operate factories in Mexico. Ever since the 1960's, when the creation of the BIP took place with the addition of the Maquila Decree, a steady growth has been distinctly characteristic in the development of the Maquiladora Industry. However, the devaluation of the Mexican peso in 1994, which decreased labor cost, accelerated the industry's expansion.

In 1994, an agreement known as the Northern American Free Trade Agreement (NAFTA), was signed by Mexico, the United States and Canada. This program has changed and intensified multiple relations between these countries, but mainly for Mexico and the United States. The agreement could be described as one of the breaking points in global trade policy because it not only deals with the flow of goods but also with issues related to environmental policies, investment, and the labor market. One of NAFTA's main agendas was to erase most of the existing trade barriers between these three countries. This consequently called into question the significance of national limits where limits can be considered more as a symbolic barrier. This NAFTA's "open flow" attitude has caused multiple effects, with the most evidently being the growth and outcome of the Maquiladora Industry in border regions. For Mexico, these factories represent a source of employment as well as income because of the taxes paid by the industrial parks. For the United States, the ability to locate these factories close to their country limits enables smooth trade procedures, in addition to cheap labor. Nevertheless, the agreement has stimulated massive flows of migration from central and southern Mexican states and other Latin American counties to the border region. This overflow of population has become an issue for both countries from different stand points –transgression vs. survival.

In the early 1990's through The Border Patrol agency, the United States introduced operational enforcement initiatives in different areas of the

3 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p.101).

border region and in major cities with the intention of stopping illegal immigration. Operation Hold the Line (1993) in El Paso, TX, Operation Gatekeeper (1994) in San Diego, and Operation Safeguard (1994) in Nogales, AZ were among those initiatives. However, none of these programs truly lowered illegal migration statistics.⁴ When these operations came into practice individuals simply were pushed to find different and farther routes to cross. Consequently, in 1996 the US Illegal Immigration Reform and Responsibility Act authorized the construction of a triple wall fence between the border region of Tijuana and San Diego, which intended to stop individuals. Since that year, high levels of monetary investment have been channeled to this project and other initiatives; especially after the 911 attacks, the plan of protecting the American border and the security of the country have intensified. The Patriotic Act was another of those initiatives, which authorizes national law enforcement agencies to conduct secret searches, tap into telephones lines, internet accounts, look into personal information such as medical and financial records, and to exchange data between different agencies. According to the American Civil Liberties Union (ACLU), this new legislation has resulted in the deportation and detention of more than one thousand immigrants, often without due process.⁵ In 2001, the Department of Homeland Security was created, under this agency another important initiative was passed, Homeland Security Act 2002, which is an anti-terrorist plan that increases the surveillance at borders. The reinforcement of the wall represents the vision of a safer America from the intrusion of “dangerous” individuals or terrorists, as well as from drug trafficking. During the spring of 2006, President Bush announced plans for the implementation of Operation Jump Start, a maneuver placing 6,000 National Guard troops along the Mexican border.⁶

At present, a 700 mile long double barrier is being built along certain areas of the border under the Secure Fence Act, which was also established in 2006. The space created between these two barriers is a militarized zone, where devices such as stadium lights and seismic and infrared sensors have been placed at strategic points in order to stop illegal flow. Figure 3,4 illustrate the layout for this wall and its implementation.

However, in addition to the above secure plans and programs that mainly act to secure the country, other initiatives have been created, that welcome into the country particular individuals. As mentioned before the Bracero Program was one of those plans. More recently another welcoming plan created a special status for professionals to participate

4 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p.186).

5 Murphy, Laura W. and Timothy H. Edgar. “Immigration Enforcement Since September 11 2001” Before the House Judiciary Subcommittee on Immigration, Border Security and Claims.” 8 May 2003. <http://www.aclu.org/national-security/aclu-testimony-immigration-enforcement-september-11-2001-house-judiciary-subcommit> (accessed January 12, 2010)

6 Romero, Fernando. *Hyper Border: The Contemporary U.S-Mexico Border and Its Future*. Princeton Architectural Press: New York. (2007, p.73).

in the NAFTA agreement. The type of Visa for Professionals or TN (Trade NAFTA) is granted by the INS, which allow individuals, who hold certain professional degrees to work temporarily in the United States. The visa can be approved for Canadians or Mexicans. According to the office of Immigration Statistics, in 2006 an estimated 60,000 Canadian and 5,000 Mexicans were granted this type of visa.⁷

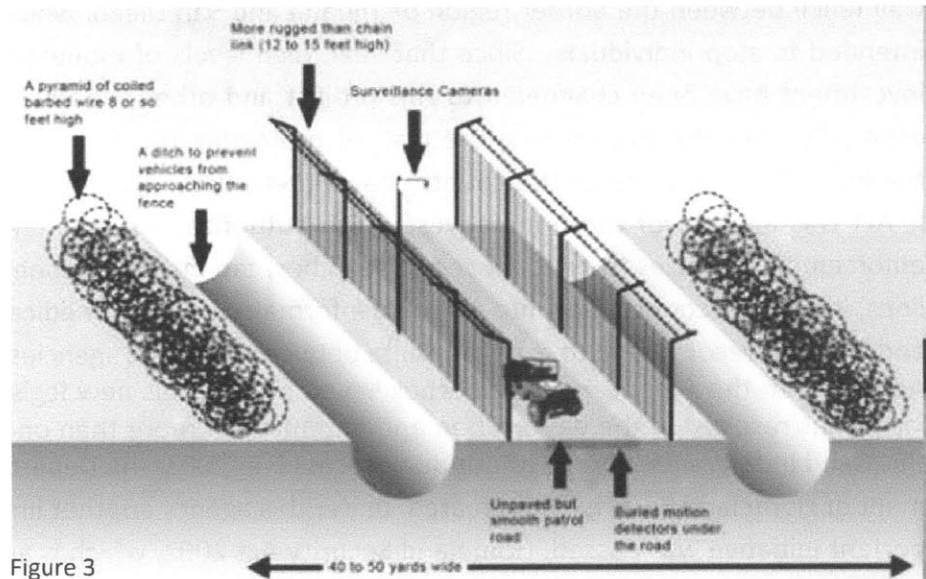


Figure 3

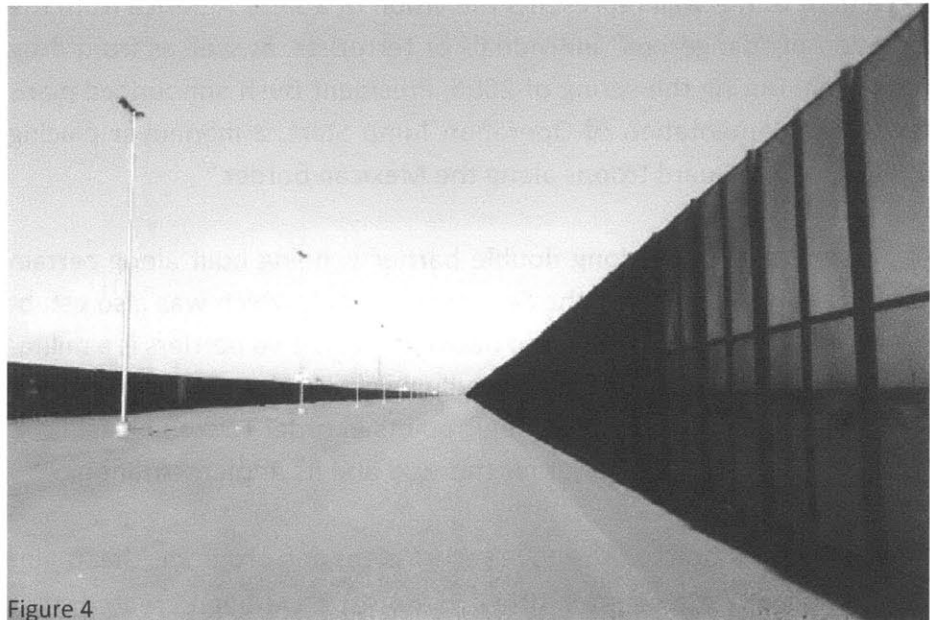


Figure 4

7 Orrenius, Pia and Daniel Streitfeld. "TN Visas: A Stepping Stone Toward a NAFTA Labor Market." 1 November 2006. Federal Reserve Bank of Dallas <http://www.dallasfed.org/research/swe/2006/swe0606c.html> (accessed February 15, 2010).

While the United States has been securing its borders, Mexico and its government have been fighting drug cartels for the last decade. North-

ern Mexican states and border regions have been greatly affected by this drug war because they are key zones for smuggling corridors. According to an article from the Washington Post, Secretary of State Hillary Clinton declared “Our [America’s] insatiable demand for illegal drugs fuels the drug trade”, and that “the United States bears shared responsibility for the drug-fueled violence sweeping Mexico.”⁸ Drug cartels in Mexico have been fighting each other in order to establish routes that allow them traffic drugs to the United States. Previously the government didn’t get involved. However, with the new president, the government’s attitude has changed: one of the President’s Calderon main agendas is an anti drug campaign. Since 2006, Mexico has experienced a greater wave of violence. The government through the military, as well as federal and state police has began fighting the drug cartels. Therefore, has become even more critical for the U.S. and the Mexico to collaborate on issues of this magnitude, treating them as separate agendas is not solving the problem.

The timeline on the following page illustrates the relationship of National Political American and Mexican agendas to economic, sociocultural, and ecological realms in Cd. Juárez-El Paso border region. The purpose here is to identify patterns and correlations that demonstrate the way conflicts emerge from the Juárez-El Paso territory.

8 Robinson, Eugene. “Drugs, Guns and a Reality Check”. 27 March 2009. The Washington Post. <http://www.washingtonpost.com/wpdyn/content/article/2009/03/26/AR2009032603115.html> (accessed December 21, 2009).

Timeline

Impact of Critical Events in the Mexican-American Border Region on the Cd. Juarez-El Paso territory.

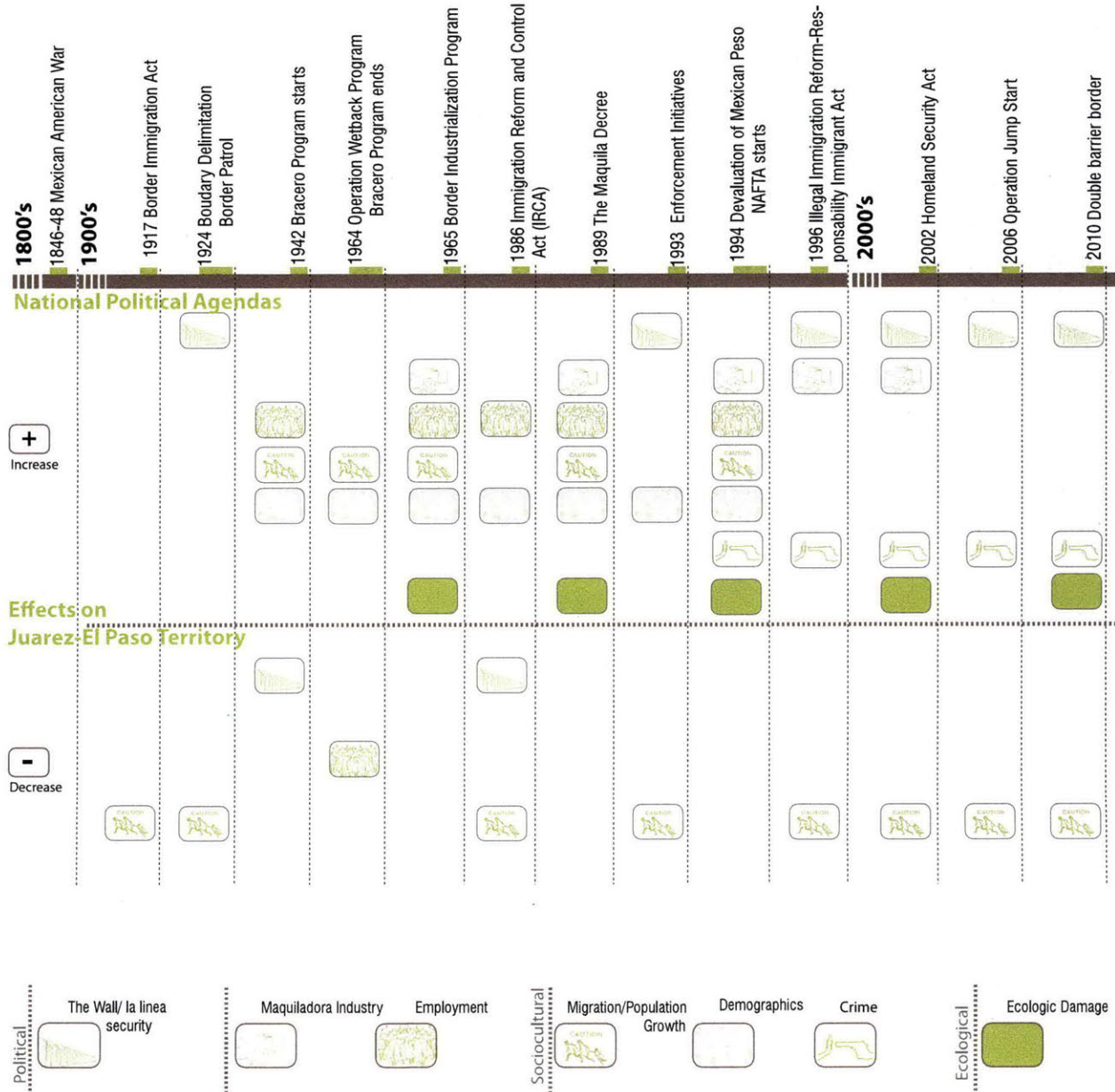


Figure 5

2 Economic, Socio-cultural and Ecologic realms in the Juárez-El Paso territory

Economic

The chronological summary to present, in addition to the timeline illustrate the interdependence between Mexico and the United States. As previously noted, multiple national agendas have influenced the economic structure of Mexican- American borderland regions; the Cd. Juárez-El Paso territory hasn't been the exception to this. Employment and the Maquiladora Industry can demonstrate the effects derived from agendas such as the Border Industrialization Plan (BIP) the Maquiladora Decree, and the Northern American Free Trade Agreement (NAFTA). A deeper analysis of these impacts is necessary in order to understand how the negotiations of different forces have created current conditions.

El Paso was once a thriving city, known as "the jeans capital of the world,"⁹ but its economy started slowing down in the middle of the 1960's when some assembly plants relocated to Cd. Juárez under the Border Industrialization Program. The main feature of the BIP was the establishment of Maquilas or *Maquiladoras*, assembly plants that imported components and raw goods from the United States, assembled them into finished products, and then exported them back across the border for sale.¹⁰ The garment industry was a major economic force in this American city, with most of this industry's personnel dominated by women. These individuals were financially exploited because of their condition; the majority were immigrants, who didn't speak fluent English, if any, and had little education. According to data from the U.S. Bureau of Census, 1990, Mexican Immigrants and Mexican Americans comprised 65 percent of El Paso's workforce.¹¹

In the early 1980's, El Paso's unemployment rate began to increase, for example, one of the main garment companies, La Farah, in the city of El Paso which employed great numbers of women lost a major battle against its workers' union. After this loss, the factory and other local manufacturers transferred their production across the border and became part of the already growing Maquiladora Industry. By the 1990's with the implementation of NAFTA the relocation of other companies intensified even more, it is known that many of the companies which closed their production line in El Paso, eventually transferred their busi-

9 Gereffi, Gary, David Spencer, and Jennifer Bair eds. *Free Trade and Uneven Development*. Temple University Press: Philadelphia. (2003, p. 139).

10 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p.101).

11 Gereffi, Gary, David Spencer, and Jennifer Bair eds. *Free Trade and Uneven Development*. Temple University Press: Philadelphia. (2003, p. 141).

ness to Cd. Juárez. As previously mentioned the same year that NAFTA was launched, the Mexican Peso was devalued, consequently this lowered immensely the cost of Mexican labor. According to the U.S Department of Labor, in 1995, the average hourly wage in the U.S apparel company was \$7.48 USD, in comparison to Mexico where an individual made \$1.39 USD per hour.¹² This difference on labor payment made it impossible for El Paso and other border American cities to compete with the low salaries paid in Mexico; as a result, the closure of many plants became the standard in El Paso. The same data provided by the U.S department of labor indicates that the percentage of unemployment in El Paso was 11.8 and only 20.9 percent of its population was employed by the manufacture industry. The opposite, Cd. Juárez data indicates that only 1.8 percent of the population was unemployed, and 66 percent of the working force labored in manufacture. For instance, in 1999 Levi Strauss Company, who employed around 4,600 individuals in El Paso, closed eleven of its U.S facilities, three of those plants were located in this city.¹³ Data compiled by the Texas Workforce Commission illustrates that in El Paso 23,581 individuals worked in the apparel industry in 1993, by the year 2000 the number of employees in this industry had dropped around 50 percent.¹⁴

According to Prof. David Spencer “in 1997, El Paso accounted for 60 percent of Texas claims for retraining and job-hunting assistance made by NAFTA-displaced workers, and most of these were garment workers.”¹⁵ The repositioning of these companies to the other side of the border obviously brought even more unemployment and disadvantages to a large number of individuals in El Paso. However, for those who had advanced skills and higher education this move represented an opportunity: they became, and continue to become, the managers or hold high positions in the *Maquiladora* industry in Juárez.

In the middle of the 1970's, *Maquiladoras* employed around twenty thousand individuals. According to a more recent study by the Institute for Policy and Economic Development (IPED), in 2007, the *Maquiladora* industry in Cd. Juárez employed 250,000 workers,¹⁶ this represented twenty percent of the total maquiladora jobs held in Mexico during that year. The same study points that the city was the home of 500 plants,¹⁷ that specialized in manufacturing products related to motor vehicles, vehicle parts, industrial machinery, electronic and communication equipment. Figure 6 illustrates the historical development and the location of this industry in the city from the 1960's to the year 2005.

12 Gereffi, Gary, David Spencer, and Jennifer Bair eds. *Free Trade and Uneven Development*. Temple University Press: Philadelphia. 2003

13 Ibid. (p.150).

14 Ibid. (p.148).

15 Ibid. (p.147).

16 Olemdo, CarlosRoberto Tinajero, and Mario E. Caire. “Cd. Juarez Manufacturing and El Paso Industry Linkages.” Institute for Policy and Economic Development (IPED). University of Texas at El Paso. (2008, p.4).

17 Ibid. (p.4).

It is significant to note from the map the relation between the chronological growth of the *Maquiladora* industry in Juárez to those specific national political agendas mentioned at the beginning of the chapter.

Maquiladora Development

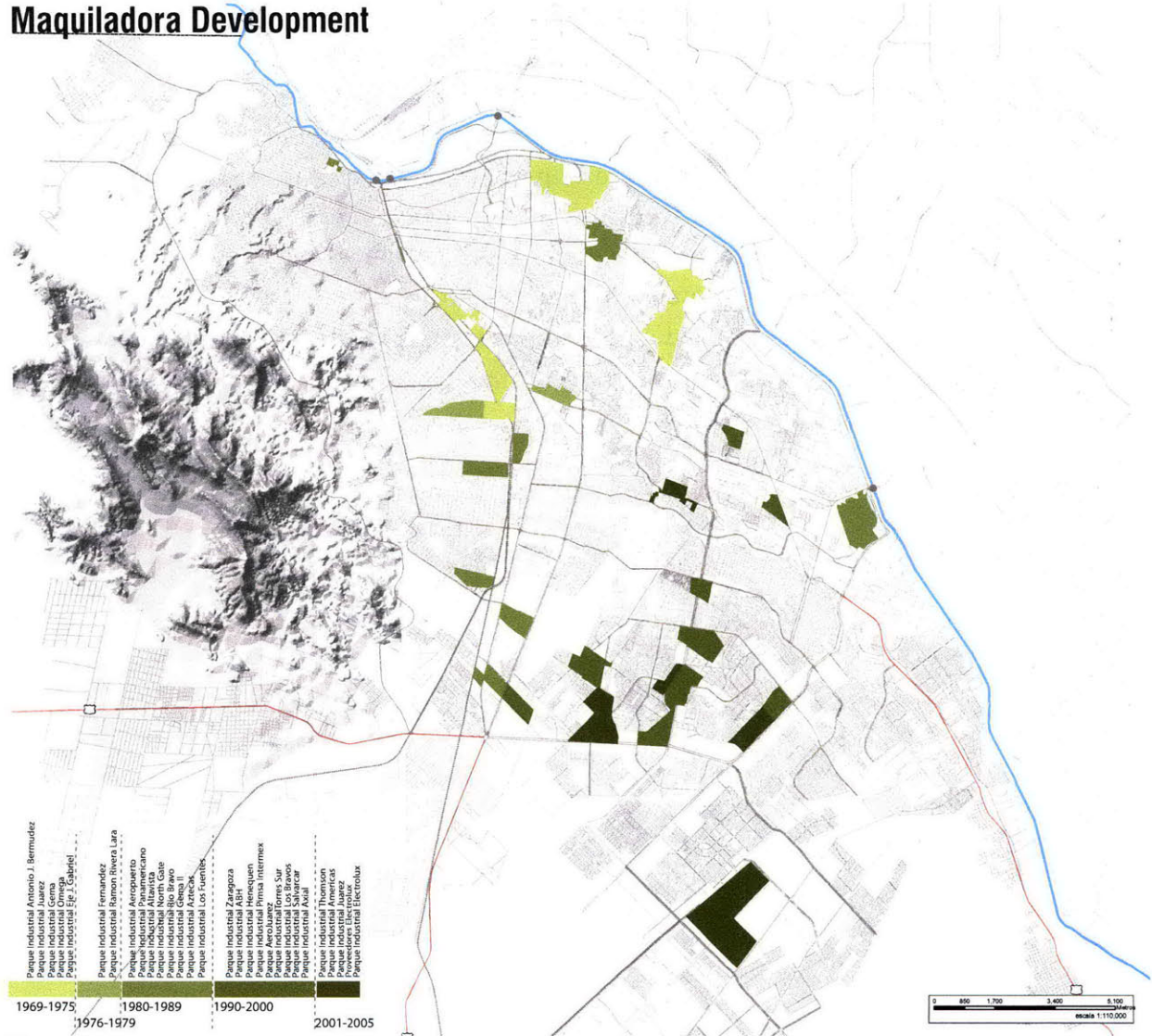


Figure 6

The oldest Maquilas in Juárez are located in the downtown area or Zona Centro, close to the border. This first wave of factories executed hand labor intensive activities, such as assembling clothes, probable derived from those garment factories that moved to Juárez after the BIP became in practice. Furthermore, a second group of Paques Industriales was established from the mid 1970's to the late 1980's, which grew on the west side of the city, close to a major train route that stops at two of the entry ports to El Paso. This second wave of *Maquiladoras* uses computerized machines in order to manufacture products, similarly to

assembly lines.

The more advanced technology used in these plants can be related to competition brought by other investors that came from Asia and Europe after the *Maquiladora* Decree took place.

The last established group of Maquilas had been developing from the early 1990's to the present. These *Parques Industriales* had been settling in the southern-east part of the city, for the reason that the Rocky Mountains on the western side, which didn't allow the city to keep growing towards that area. This last generation of manufacturing plants has been devoted mostly to research and design, employing skilled and educated individuals. Figure 7 illustrates the number of Maquilas incorporated in each *Parque Industrial*, as well as the number of employees working in them.

Industrial Parks

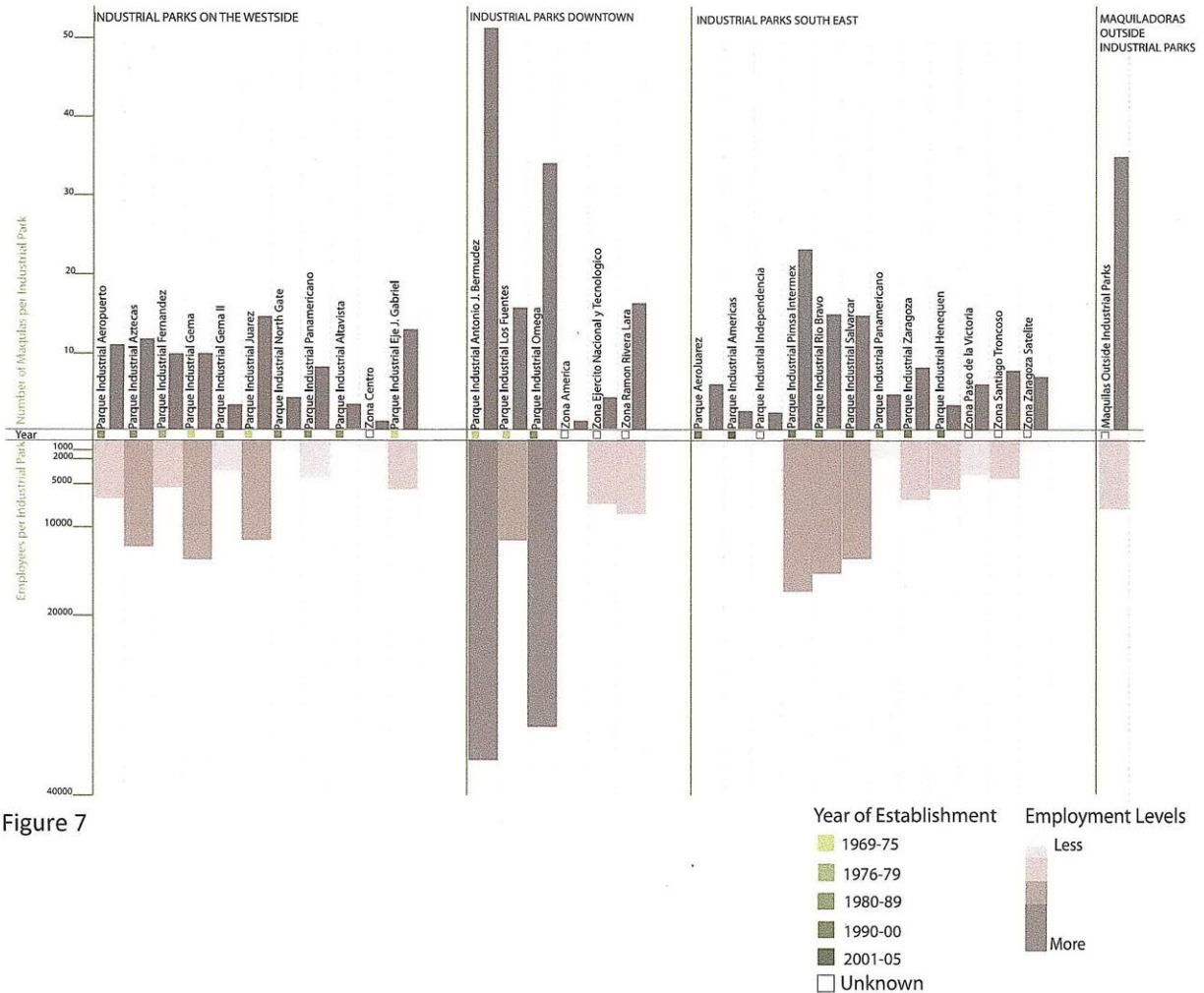


Figure 7

According to a study conducted by the Instituto Municipal de Investigación y Planeación (IMIP), the majority of the established *Maquiladoras* in Juárez are from the United States, only 20% is owned by investor from different parts of the world, and another 10% are from Mexico.¹⁸ This industry is using Border territories and their people as opportunities, but these companies are spending much less as if they were established in their country of origin.

The industry in Juárez created an enormous number of jobs, also it set the standards for employment patterns and its wages. The first wave of *Maquiladoras* mostly hired women, because they were easier to direct and manipulate; also they were more efficient in manual assembly tasks as well as more patient and able to concentrate for longer periods. As mentioned previously the earliest factories were doing more labor intensive work. When NAFTA came institutionalized a boost in the industry became visible, this created competition among the different manufactures trying to attract workers. This competition created new choices for its female employees, who could move from one Maquila to another depending on what opportunities they were offered. When the second wave of plants arrived, the work force demand was greater, and the female force couldn't supply the need for that demand. In addition This second wave used heavier machinery to create products. Women were still employed, but the industry preferred young women. Consequently, men became more valuable to the industry because of their physical strength. At present, even though employment between women and men is more balanced, demographically, men hold higher positions and have more power in the industry, with some of them being technicians. Nevertheless, the majority of the employees are low paid line workers; studies performed by the IMIP in 2007, showed that 76.2 percent of the employees in the *Maquiladoras* are assembly line workers, and only 10.7 percent are professionals.¹⁹ This majority is made by young individuals with low levels of education and lack of skills.

In terms of benefits, when *Maquiladoras* are hiring they announce multiple benefits and bonuses in order to attract individuals, such social security and health insurance. In reality these two previous benefits are required and employees paid a monthly quote for it. These services are provided by the Instituto Mexicano del Seguro Social (IMSS), which is the public medical system in Mexico for business and employed individuals. Even though wages paid by the *Maquiladoras* tend to be higher than the minimum Mexican wage, living expenses in border regions are

18 Instituto Municipal de Investigación y Planeación (IMIP). "Resumen Ejecutivo del Análisis Estructural del Empleo en Ciudad Juárez."(2006, p.17).

19 Ibid. (p. 23).

more expensive. Figure 8 illustrates an ad placed by a Maquiladora on one of the newspapers in Juárez, *El Diario de Ciudad Juárez*.

FOSTER
Foster Electric México, S.A. de C.V.
SOLICITA

Operadores de Producción
(Para primer y segundo turno)
- Acta de nacimiento
- Certificado de estudios
- Hoja rosa del IMSS (si ya trabajaste)
- Identificación con foto

Recepcionista
(Para segundo turno)
- Sexo femenino
- Excelente presentación
- Manejo de computadora, fax
- Estudios mínimos de preparatoria o carrera comercial
- Disponibilidad de horario

Inspectoras (es) de Calidad
(Para primer y segundo turno)
- Secundaria terminada
- 18 años en adelante
- Experiencia no indispensable

TE OFRECEMOS:
Bono de despensa de \$55.00 por semana
Bono de asistencia de \$35.00 por semana
Bono de puntualidad de \$35.00 por semana
Subsidio de cafetería
Fondo de ahorro desde el primer día
Seguro de vida
Transporte gratuito
Al cumplir tres meses un bono de \$250.00 primer turno y \$300.00 segundo turno
Pago y trámite de visa (visa al cumplir un año)

INTERESADOS PRESENTARSE EN NUESTRAS OFICINAS UBICADAS EN HENRY DUNANT #349 P. INDUSTRIAL OMEGA EN EL DEPARTAMENTO DE PERSONAL. TEL. 627-01-70.

Bonus
Payment for the process and negotiation fees for crossing border card.

Figure 6.5. In this ad, note the bonuses offered to the workers if hired: bonus for groceries (to be exchanged in local market places), \$55.00 pesos (59 pesos to a dollar at that time); bonus for being at work every day, \$35.00 pesos a week; bonus for being punctual, \$35.00 pesos a week. . . . If after three months there are no tardies or absences, the workers on the first shift get a bonus of \$250.00 pesos, and the workers on the second shift get a bonus of \$300.00 pesos. Ultimately, however, all these bonuses are conditional: the workers must be at the factory every day and on time. Source: "Aviso Clasificado," *El Diario de Ciudad Juárez*.

Figure 8

The ad offers different types of bonus to the hired employee, such as 55 pesos for groceries, which must be spent in certain local markets, a 35 peso bonus a week for coming to work every day, another 35 peso bonus per week for being on time. Also as mentioned before *Maquiladoras* provide health insurance, life insurance, in addition free transportation and savings accounts. After working for the company for three months, personnel could receive a 250 to 300 peso bonus, depending on what shift they work on. Furthermore if employees work for the same company for a year, the Maquiladora will pay for their process and negotiation fees required for a crossing card or *la mica*.

In this add, two very important factors should be distinguished from the bonuses and benefits offered by the Maquiladora. Firstly, free transportation for employees to get to their jobs daily has never been enough. Nevertheless, the inadequate number of buses or ruterias or ruta, as they are commonly known, have created to large extent damage to

the already insufficient infrastructure, in addition to traffic congestion as well as environmental degradation, and tension in the city. These ruterias appeared since the 1960's; with the growth of the industry, the medium of transportation grew too. The vehicles used to be vans, then mini buses, and currently are full size buses. By enlarging the dimension and the amount of this mode of transportation, pollution in addition to a lack of planning time devoted for prepare Cd. Juárez for fast growth has resulted in a chaotic city. These buses push the limits of narrow roads and negotiate at high speeds to get the employees to the Maquilas; this has resulted into more frequently automobile collisions.²⁰ Also, it is important to note that the trucks used by the *Maquiladoras* for import and export create a strain in the infrastructure, which it gets worn out by this strain. In addition is important to note that when Maquilas do not pay much to the city's taxes, to the contrary the city grants tax breaks in order to attract them. According to Prof. Samuel Schmidt, "In 1992, almost 300,000 trucks crossed throughout El Paso [...] putting a tremendous pressure on the limited existing infrastructure."²¹ However, this figure is outdated because the augmentation of the industry after NAFTA.

The second problem noted on the ad is the *Maquiladoras* payment for the process and negotiation fees for *la mica*²² which stimulates individuals to migrate to this city. The identity and economic stability that Maquiladora offers can be perceived by individuals as a trampoline point or a temporal stage, which enables them to migrate to the United States; once they apply for this permit or the Visitor visa the opportunities for them to move to the northern neighbor territory increase.

Sociocultural

Migration and demographics changes have been highly influenced by national political agendas and economic factors in the Cd. Juárez-El Paso territory. With the growth of the Maquiladora Industry in Juárez, an enormous boost of employment opportunities took place; As stated previously, the total population in the Cd. Juárez-El Paso territory is 2.1 million; the great majority of these individuals reside on the Mexican side. It is important to analyze the flux of migration numbers throughout time in order to correlate them with the economic trajectories discussed in the previous section.

20 Lugo, Alejandro. *Fragmented lives, assembled parts : culture, capitalism, and conquest at the U.S.-Mexico border*. Austin: University of Texas Press. (2008, pp. 127-29).

21 Karl, Kresl, Gary Gappert eds. *North American cities and the global economy: challenges and opportunities*. Thousand Oaks : SAGE Publications. (1995, p.193).

22 As mentioned in the Introduction of this thesis *la mica* is an identification that individuals use to cross legally to the United States, but once they are in the other side they work illegally.

El Paso & Cd. Juárez Population Growth

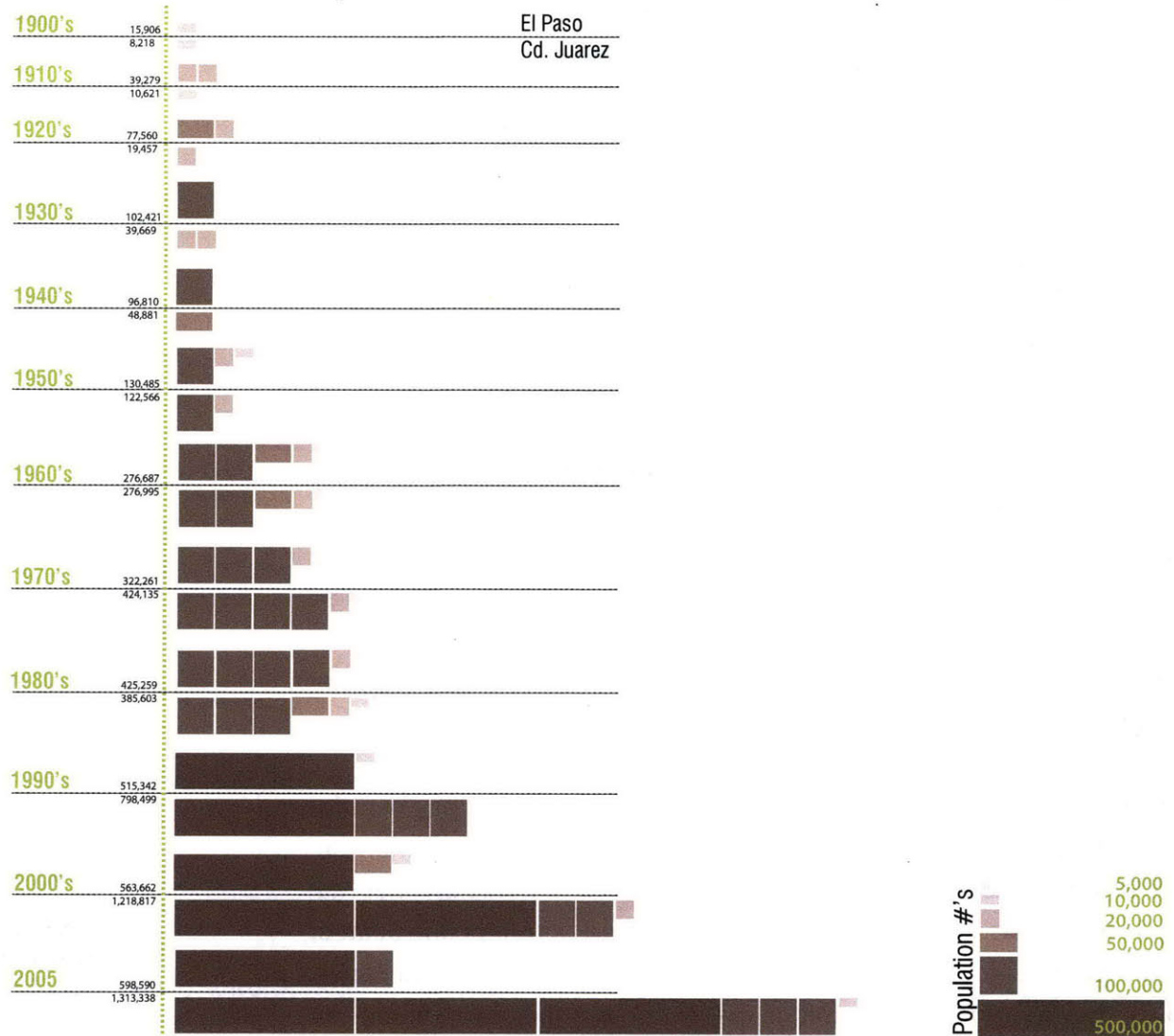


Figure 9

Figure 9 looks at population data starting from the 1900's until the 2000's, the period indicated on the timeline in the Introduction. As the figure illustrates by the 1940's the population in EL Paso was greater than Cd. Juárez but in the 1950's the population in Juárez had almost tripled; this phenomenon may be related to the Bracero Program, established in the United States in the early 1940's. This period was the first big wave of migration to Mexican cities adjacent to the border. As previously mentioned, in the Bracero Program Mexicans were temporary working in agricultural jobs depending on seasonal conditions for crops in American cities; as a consequence these Mexicans were moving back and forth between border areas. By the 1960's, Juárez and El

Paso show a similar size populations. However, a decade later Juárez had already 100,000 more individuals residing in the city. During this time, the BIP was created and Maquilas started showing up in Juárez, a magnet for migration. In the 1980's, a decreased population is noted in Juárez; The Immigration Reform and Control Act (IRCA) was passed by the American Congress in 1986. The Act gave amnesty to thousands of illegal immigrants in the United States, as long as they had lived in this country continuously since 1982 and were able to prove it. By the 1990's the population of Juárez had doubled in contrast to El Paso which had increased only by 100,000, (possibly a great number of these individuals added to El Paso's population as a result from the IRCA implementation). Afterwards, from 2000 to 2005 there was an enormous difference between the populations of these cities, as can be observed in the graphic Juárez had twice the amount of residents as El Paso did.

It is important to remember that in the middle of the 1990's the Mexican peso devaluated and NAFTA was launched. As a result of this agreement the Maquiladora Industry played a great role in attracting migration and setting up the standards for the individuals moving to these cities (age, sex, income, etc). For instance, the Maquilas employ individuals from the age of 15 years of age and up and have minimum requirements for education. According to data collected by the IMIP, from the 1.3 million individuals who live in Juárez, around 7.1 percent of the employed population in the city is from the ages of 14 to 19, another 26 percent are from the ages 20 to 29, 31 percent are between the ages of 30 and 39 years.²³

However, not all the population that migrated to Juárez was looking for employment opportunities in the Maquiladora Industry, thousands of individuals moved to northern Mexican cities, including Juárez with the intention of migrating further to the United States. It is estimated that a single individual tries illegally to cross the American border an average five times in life time.²⁴ If he gets caught by the INS and the Border Patrol, he is send back to Mexico. Generally, these individuals decide to stay in cities close to the American border, under the believe that this will be only temporary until they make it to the United States. Nevertheless, thousands of them never achieve this and find themselves in unfamiliar territories under harsh conditions: no money to return to their place of origin or a job. As a consequence and in order to survive, they settle in the northern Mexican territory, where they add to its pan-demonium. Cd. Juárez is no exception to this phenomenon. In the bor-

23 Instituto Municipal de Investigación y Planeación (IMIP). "Resumen Ejecutivo del Análisis Estructural del Empleo en Ciudad Juárez."(2006, p.45).

der Mexican cities, these individuals work the service, construction and manufacturing sectors. As corroborated in the book *Hyper Border, The Contemporary U.S. –Mexico Border and Its Future*:

“The United States is the world’s leading immigration country. Today, 12 million Mexican born people live on the Northern side of their nation’s border. By 2050, Hispanics will represent 25 % of the U.S. population, and 11% of all Mexicans will be living in the United States”.²⁵

In order to understand the social landscape of El Paso and Cd. Juárez, it is important to take into consideration a scheme created by Prof. Oscar Martinez in his book *Border People*, where he categorizes and describes individuals who inhabit the Mexican-American border regions in terms of temporal, ideological and economic criteria. Each of the groups have different characteristics and can be placed in one or in multiple typologies:

Newcomers -Individuals newly arrived to the region

Uniculturalist -Those individuals that are monocultural and monolingual

Nationalist -Uniculturalist who passionately assert the interest of their own nation and are opposed to influences from abroad.

Biculturalist -People whose lifestyles and mind-sets reflect two cultures

Binationalis -Biculturalists who lives are deeply enmeshed in the societies of two nations and who consequently have a strong international outlook.

Commuters—people who cross the border in daily basis to work in the neighboring nation.

Binational consumers -People who do a substantial amount of shopping and/or consume numerous services in the neighboring nation.²⁶

24 Karl, Kresl, Gary Gappert eds. *North American cities and the global economy: challenges and opportunities*. Thousand Oaks : SAGE Publications. (1995, p.196).

25 Romero, Fernando. *Hyper Border: The Contemporary U.S.-Mexico Border and Its Future*. Princeton Architectural Press: New York. (2007, p.106).

26 Martínez, Oscar J. *Border people: life and society in the U.S.-Mexico borderlands*. Tucson: The University of Arizona Press. (1994, pp. 59-65)

Figure 10 on the following page shows Prof. Martinez’s model According to Professors’ Martinez his studies there are three major population groups in borderlands, Mexicans, Mexican Americans or Chicanos, and Anglo Americans.

Border People

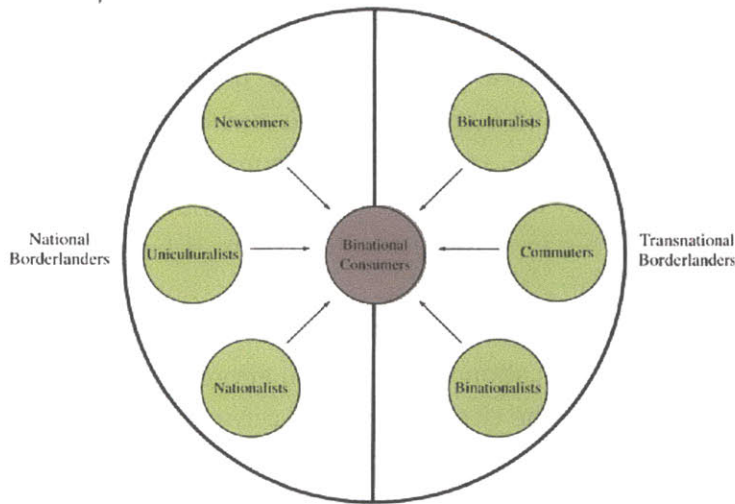


FIGURE II.1 Standard border "types." The category of binational consumers includes individuals from all the subgroups.

Figure 10

In the case of Juárez and El Paso there is a great racial- spatial and social-spatial demarcation between the different groups of individuals who reside in these cities, as described in relation to El Paso by Prof. Ortiz Gonzales the distribution of the population in El Paso is:

The city's affluent areas are in the north, away from Ciudad Juárez. Wealthy Anglos, an increasing number of Mexican Americans, and well off Mexican immigrants, live in the hills of downtown [...] Less affluent Anglos are scattered throughout the northern part of the city, which the northeast section occupied by the military personnel of Fort Bliss. The northwest has a concentration of Euro-American professionals, prosperous businesspeople from Ciudad Juárez, and successful Latino Professionals and entrepreneurs. Recent urbanization has expanded primarily toward the eastern side of the city, where middle-class Europeans and Mexican Americans reside at convenience distance from the airport and Industrial Parks [...] Poor Mexican Americans and recent Mexican arrivals are concentrated in the downtown area and in a wide southern strip bordering the river from the east to the west corners of the city. In general, the poorest segments of this population live closest to the river...²⁷

27 Ortiz, Victor. *Undermining Reality, El Paso, Local Frontiers at a Global Crossroads*. Minneapolis: University of Minnesota Press. (2004, p.37).

As noted in the above description from the different groups of individuals residing in El Paso, racial and social terms described spatial segregation. However, Juárez's population is spatially divided mostly by class -poor, middle, and rich- rather by ethnicity. In Mexico the class terms are not only established by income levels but by levels of education, access to health services, transportation, commercial centers, etc. For instance, Juárez's city center is considered an affluent area; this fact to the proximity of this zone to two International entry ports to El Paso. This implies good infrastructure, as well as educational and commercial facilities. Because of its convenience, individuals with higher levels of income, access, and education want and can afford to live in these areas. The northeast area of the city also includes prosperous as well as middle class individuals. On the other hand, the west area of Juárez which has a high concentration of poor people; who came from the 1960's to the early 1990's after the *Maquiladoras* established in that area attracting new migrants because of the concentration of possible jobs. However, the physical conditions of this area are considered dangerous because of the steep, rocky mountains, and the multiple creeks on that side of the city. These characteristics made this area an undesirable place to build formal housing, infrastructure, etc marginalizing then the individuals living there.

For both cities, the increase in population brought new settlement patterns, it is important to note a critical issue resulting from the high levels of immigration: it caused the raise of informal settlements to be located these two cities. The formations of these informal settlements are known in Juárez as Colonias Populares, and in El Paso as Colonias, and even though they present different characteristics, both entail living under precarious conditions. In Juárez the demand of housing required by the constant migrant population overpasses the supply, as a result the prices tend to be elevated on what is existing or even about to be build. Social housing is insufficient too; these distinctive patterns have push individuals to come up with housing ideas in order to have a place to live. Thus, many of them built their houses out of what can be considered waste material in El Paso, such as old wood panels, wood crates, garage doors, metal sheets, cardboard, tires, etc. In El Paso, individuals with few resources live in groups in one dwelling, or buy inexpensive land where they park a rundown mobile home. In both cities this results in disorganized urban growth; most of the time these settlements develop on the outskirts of these cities or in risky hill areas, or along creeks and near the *Rio Bravo/Rio Grande*. They are frequently considered illegal

and usually lack basic infrastructure services such as potable/piped water, sewage, waste facilities, electricity and planned roads.

In general, there is a lack of basic city services . This deficiency translates into enormous health problems. According to the Pan American Health Organization, the mortality rate of children, ages 1-4 in El Paso in the year 2000, accounted for 4.4 percent in deaths, in comparison to Cd. Juárez where children accounted 20.7 percent.²⁸ Water is considered one of the major elements related to this mortality rates. The following section of this chapter will look at ecologic issues in this territory, with a major overview on the subject of water as one of the main problems in these cities. Figures 11,12, illustrate Colonias from Juárez and El Paso.



Figure 11



Figure 12

28 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom.(2008, p.134).

Ecologic

Rapid urbanization and the lax enforcement of environmental laws are the main factors that contribute to ecologic issues in borderlands. As mentioned right from the start in this chapter the Maquiladora Industry stimulated the rapid urbanization in Cd. Juárez; this has translated into an overflow of people, goods and resources resulting in environmental degradation, health risks and lack of sufficient infrastructure. In addition, the Maquiladora Industry itself has created ecological impacts such as the pollution of air, water, and soil. In the mid 1980's along the border territories, it was estimated that forty-four tons of hazardous maquila waste per day went unaccounted for,²⁹ this was prior to NAFTA when great absence of control and regulation was the norm. Fortunately, NAFTA established some bilateral programs in order to address environmental problems in border territories, such as the creation of Integrated Border Environmental Plan (IBEP), and Border XXI Program, and the Border 2012 Plan. However, these and other plans haven't been able to mitigate the issues coming out of the explosive growth of these territories.

These pair cities increasingly have experienced air quality and soil degradation in the last couple decades. Most of this damage has resulted from the constant industrialization of the territory, where the placement of toxic waste dumps and the emission of lethal gases have become normal procedure. The entire population settled in Cd. Juárez-El Paso territory is affected by the environmental damage; however the poorest individuals inhabiting these cities are the ones affected the most. Frequently, because of the lack of access, this group settles around industrial zones, where soil and air contamination is especially prevalent. In the case of El Paso, the American Smelting and Refining Company, ASARCO which operated between 1887 and 1999 caused great damage to the population living within proximity to it, particularly children. Lead was one of the elements emitted into the air by the stack of ASARCO, which damages child development and pregnant women. In 2008, this plant was granted a permit to reopen its operations. The permit entitles the multinational corporation to emit 7,000 tons of pollution annually – including 4.7 tons of lead (more than any other facility in the U.S.) – into and airshed shared by Texas, New Mexico, and Chihuahua, Mexico³⁰. The facility is located on the east side of El Paso, close to the border, and a couple meters away from the Grand River/Rio Grande; The river location also damages the quality of water, not only for the area surrounding the site, but for the entire region. Several *colonias* are

29 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom.(2008, p.155).

30 Collins, Timothy, Sara E. Grineski, and Martha Flores. "Environmental Injustice in The Paso del Norte." *Projections* volume 8 MIT Journal of Planning. Justice, Equity + Sustainability. MIT Press: Cambridge. (2008, p.158)

established around this plant on both sides of the border. Figure 13 illustrates the position of the ASARCO facility in relation to the Cd. Juárez-El Paso territory.

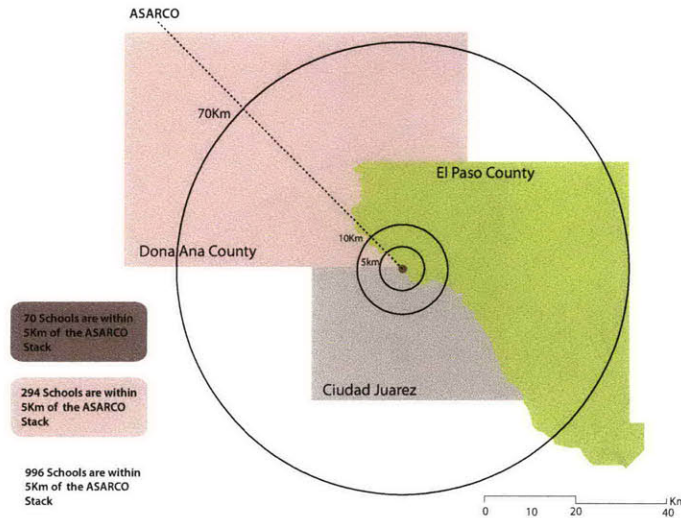


Figure 13

The data provided regarding educational institutions located close to ASARCO are an indicator of the major negative effects this plant may cause on children’s health.

In addition to ASARCO, the hundreds of *Maquiladoras* established in Juárez create an immense negative impact on the environment from the combination of different toxic substances. For instance, numerous *Maquiladoras* in Juárez are dedicated to the manufacture of plastic and electronics, these two industries require intensive chemically involvement, however the highest level of metal found in the soil of Cd. Juárez-El Paso’s territory is lead. Additionally, a major source of pollution in the region is the brick kilns. According to a study conducted by the Resources for the Future (RFF), a nonprofit organization based in Washington DC, there are around 350 of these chambers around the city; they are small family owned business grouped in seven different *colonias* in Juárez. The brick kilns which are fired a couple times a month, sometimes use scrap tires as material for ignition.³¹

Figure 14 on the following page illustrates the location of the brick kilns, as well as the amount of fires around the city involving scrap tires. Juárez houses one of the major scrap tire yards around the Mexican-American border. It is estimated that approximately 4.5 million tires are

31 Blackman, Allan and Alejandra Palma. “Scrap Tires in Cd. Juárez and El Paso: Ranking the Risk”. September 2002. Resources for the Future. <http://www.rff.org/documents/RFF-DP-02-46.pdf> (accessed March 8, 2010, p.8).

resting in this field or Centro de Acopio as it is known; a great number of these tires come from El Paso. Also, this city has a small scrap tire site, Tres Pesetas.

Air Pollution/ Brick Kilns & Scrap Tire Fires

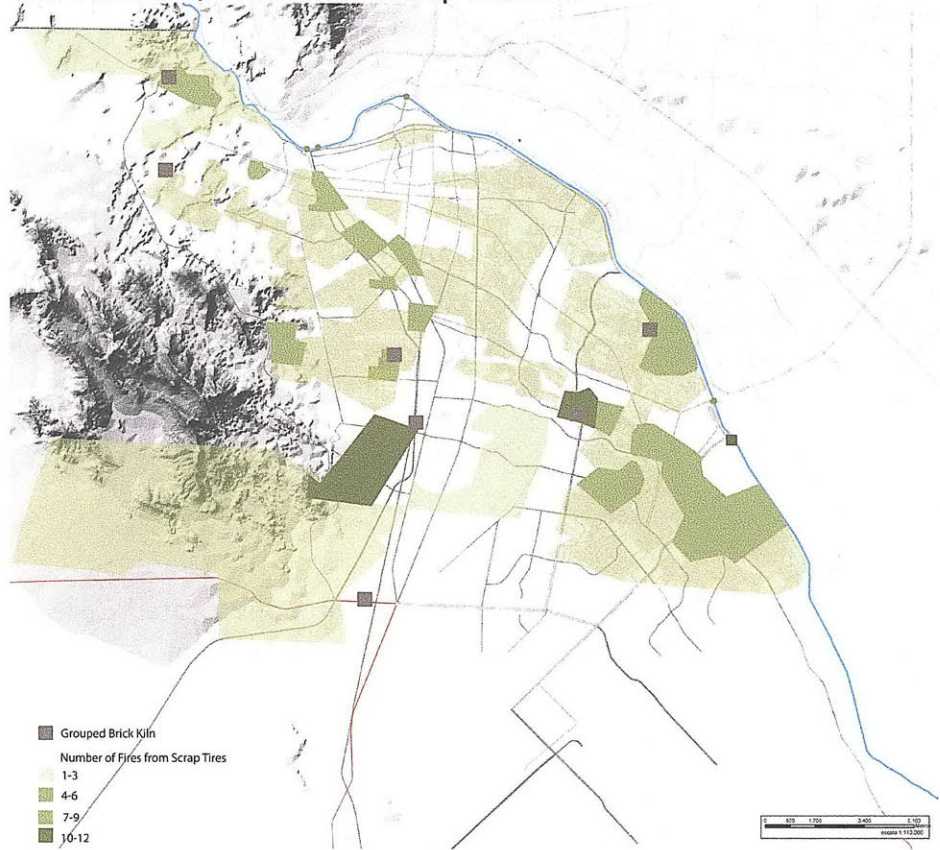


Figure 14

The tires represent an enormous environmental and health hazard. The effect of burning tires in the open has huge effects on air pollution. Another study done by the RRF reveals that from August 2000 to July 2001 there were 310 tires fires in Juárez; this is an average of 26 fires a month.³² Tires are extremely difficult to extinguish if they ignite or catch on fire, in fact it is a better option to let the tires burn that try to extinguish them with water. The mixture of the melted material (oil) and water worsens the issues because the potential infiltration of toxic matter in the soil. In addition, while tires are sitting in these yards they trap heat, rain water, and gasses increasing the possibility of mosquito-borne diseases, as well as the penetration of polluted substances to the soil.

In addition to the pollution created in the air and the soil by ASARCO, the Maquiladora Industry, and the scrap tire yards, Juárez has four hun-

32 Blackman, Allan and Alejandra Palma. "Maquiladoras, Air Pollution and Human Health in Cd. Juárez and El Paso". September 2002. Resources for the Future. <<http://www.rff.org/documents/RRF-DP-02-46.pdf>>.

(accessed 8 March, 2010, p.18)

proximately seven hundred fifty thousand automobiles. This number is equivalent to half of the entire population. Thousands of these vehicles are imported to Juárez from El Paso, this is possible through a program between Mexico and the United States in border regions, with other requirements for automobiles able to circulate in the rest of the country. In order to be imported, the vehicles must be at least from 5 to 9 years old; the value and condition of the car is not specified. Border cities frequently do not have testing programs for motor vehicle that guarantee the proper usable conditions of the cars with regards to pollution. In Juárez there are a great number of used cars circulating on the streets, usually old and in poor condition, adding to the air pollution of the region. Nevertheless, when they get to be in an unusable state, these automobiles end up in one of those hundreds of junkyards. Soil and water is contaminated by the multiple fluids coming from these cars, such is the case of motor oil, antifreeze liquid, hydraulic oil, transmission fluid, brake fluid. As mentioned before Mexican Environmental regulations in general are not that rigorous, in addition the control of problems of this magnitude has not been a priority for authorities.

Conversely, the most important ecologic concern in the Cd. Juárez-El Paso territory is water. Its availability, quantity, and quality are major issues affecting these cities. The Grand River/*Rio Bravo* is the river that divides these two pair cities as well as other cities along the border between Mexico and the United States, it sustain around 12 million people settled in these borderlands. The river is born in the mountains of southern Colorado, its flow travels south New Mexico, then to Texas where changes direction ending its lead in the Gulf of Mexico, Figure 15 illustrates this condition.

Throughout history, the allocation and control of the river has created disputes and negotiations between the different American states –Colorado, New Mexico, Texas- and Mexico. As stated before in this chapter, those three states previously belonging to Mexico were ceded at the end of the Mexican American War. In the late 1800's the growth of agriculture in Colorado and New Mexico required a great amount of diversion from the river for those industries; this affected the flow of water in Texas and Mexico, mainly influencing the Cd. Juárez- El Paso territory.

In 1906, an agreement was signed between the two countries for the water distribution of the river. By 1916, The Elephant Butte dam and reservoir was built three miles north of El Paso, this is an international

Areas of International Basins

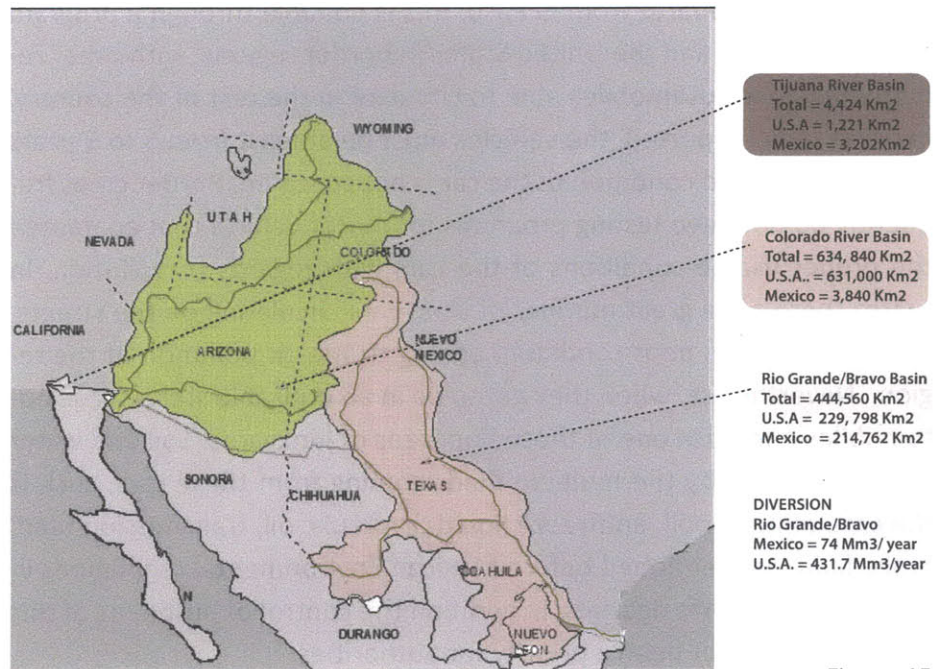


Figure 15

dam which guaranteed 74 million m³ of water annually to the Juárez Valley. The moderation and distribution of this water was established in 1938 by the International Boundary Commission (IBC), the Valley of Juárez would receive 60,000 acre-feet of water per month.³³ However, this allotment which possibly was sufficient for agriculture, municipal services, and industrial use in that period of time didn't take in consideration possible population growth and the flux of other factors, such as industry and even agricultural practices.

With the explosion of population in this border territory, the above and underground water from the river has become a major concern. It was estimated that the aquifer underlying Ciudad Juárez-El Paso was being drained unsustainably at twenty times the rate of recharge; at that peace, the water supply would be exhausted by 2025.³⁴ However, the difference between water use for agricultural practices and population consumption between these two cities is uneven. The population of Ciudad Juárez, Mexico is 50 percent greater than that neighboring El Paso County, Texas, but water consumption in Juárez is only two-thirds that of El Paso.³⁵ By 1999, roughly forty new families migrated to Juárez per week, which mostly settled in *colonias*. The following passage from the book *Shared Space: Rethinking the U.S. Mexico Border Environment* il-

33 Salas-Plata, Jorge. "Water challenges arising out of the historical allocation of the water of the Rio Grande/Rio Bravo in El Paso-Cd. Juárez región". Diss. U of Texas at El Paso. (2005, pp. 3-9)

34 Gangster, Paul and David Lorey. *The U.S.-Mexican Border into the Twenty-First Century*. Rowman and Littlefield Publishers, Inc. United Kingdom. (2008, p.159)

35 Zartman, William, Ed. *Understanding Life In The Borderlands: Boundaries In Depth And In Motion*. The University of Georgia Press. Athens: Georgia. (2010, p.114).

illustrates the extent of this issue:

In the early 1990s, are ported 60,000 residents of El Paso County, Texas, living in “colonias” [...] lacked direct access to potable water or sewerage services. At the same time, in Ciudad Juárez an estimated 460,000 people lived without water or sanitation services.”³⁶

The deficiency of piped water and sewage treatment, as well as other sanitary infrastructure represent one of the most significant environmental challenges in this region. Because of the continuous growth in population of the region infrastructure is always short. Individuals from these two cities who lack these primary services receive their drinking water through different methods. Juarences relied on municipal tanker trucks or pipas as they are known by locals to supply them with chlorinated water once a week. On the other hand individuals from El Paso receive this service through commercial and public distributors, in addition to side hose connections. The resident of both cities store the water in plastic containers or recycled industrial drums, which frequently do not have tight-fitting lids that can assist in avoiding contamination.³⁷ In addition, the chemical added to this delivered water, chlorine, evaporates within a couple days, therefore the water loses its sanitary conditions. Moreover, it is supposed that individuals that settle around the Grand River/*Rio Bravo* pump and drink straight from wells accessing the river. All these factors contribute to the increase of diseases.

Different data indicates that the Grand River/Rio Grande is not a clean source of water, this river travels thousands of kilometers before getting to Cd. Juárez-El Paso territory passes through numerous condition, such as pumping pipes, animal feed lots, contaminated urban, industrial and agricultural runoff, etc.

According to Dr. Porfirio Peinado Coronado, the geographic condition of this territory with its arid characteristics “forced this urban region to carry out the practice of injecting treated municipal water sewage back into its groundwater aquifers. Groundwater in the region is the main drinking water source of the water treatment plants [...] 80% of the two cities’ municipal waters needs are covered by groundwater sources. The surface water is mostly designated to agricultural uses.”³⁸

This chapter pointed out several of the multiple political, economical,

36 Herzog, Lawrence, Ed. Shared Space: Rethinking the U.S. Mexico Border Environment. Center for U.S.-Mexican Studies. San Diego. (2000, p.133).

37 Ibid. (p. 134).

38 Peinado, Porfirio. “Water quality factors affecting the restoration of the Rio Grande: El Paso/ Juárez region. Diss. U of Texas at El Paso.(2007, p.36).

sociocultural, and ecologic conditions affecting the Cd. Juárez-El Paso territory. This section proved the complexity of the area, which sets the ground for possible multiple correlated interventions derived from these challenges. The following chapter will focus on physical conditions that prove the disconnection and disparity between these cities.

**II Cd. JUAREZ-EL PASO TERRITORY
PHYSICAL CATALOG**

- 1 Regional Maps
- 2 Data

II Cd. Juárez-El Paso Territory Physical Catalog

Summary

In addition to historical evidence, physical characteristics also demonstrate the complexities of this border land region. By overlapping the existing separate information from Cd Juárez and El Paso multiple issues surface, the most obvious being disparity. This chapter is a visual representation of the region in order to underscore the complexities of this borderland territory. It presents the disconnection and disparity between these cities in maps and supporting material.

Land use

The land coverage between these two metropolises is approximately 322sq mi; 77% of this territory comprises El Paso. Cd. Juárez and El Paso have grown in different directions throughout time, responding to natural conditions as well as economic and political factors. In the case of Cd. Juárez, the Sierra of Juárez mountains became a barrier on the west side of the city; in El Paso, the Franklin Mountains also became a barrier on the northwest side. Also in this American city, the presence of the International Airport and the Military Reserve on the northeastern side has been a constrain keeping the city from growing towards that side. In addition, the *Rio Bravo*/Grand River-political border (north for Cd. Juarez and to the south for EL Paso) is a strong delimitation.

Both cities have different types of growth and cultural influences; Cd. Juárez has grown more organically and faster than El Paso. The presence of the *Maquiladoras* stimulated this phenomenon; high numbers of newcomers to the city established themselves spontaneously and around these new centers of employment. One main effect from this rapid growth in Cd. Juárez is its residential patterns where highly dense areas are formed by compact communities and informal/temporary housing. On the contrary, El Paso is a sprawling city where detached homes with big lawns form different residential patterns.

Industrial zones are dispersed throughout both cities, mainly located close or along the principal avenues; commercial zones are also established along main avenues. However, in Cd. Juárez these zones are mostly found close to the downtown area.

Agricultural land for these two cities exist close to the *Rio Bravo*/Grand River (in El Paso on its southwest side, and in Juárez on the northeast side). Although, the agricultural land in the American city represents a bigger percentage, nevertheless both cities throughout time have had urban encroachment on this type of land. Currently, both cities have the capacity to grow further towards the east side where no limits or barriers exist.

Land use Map

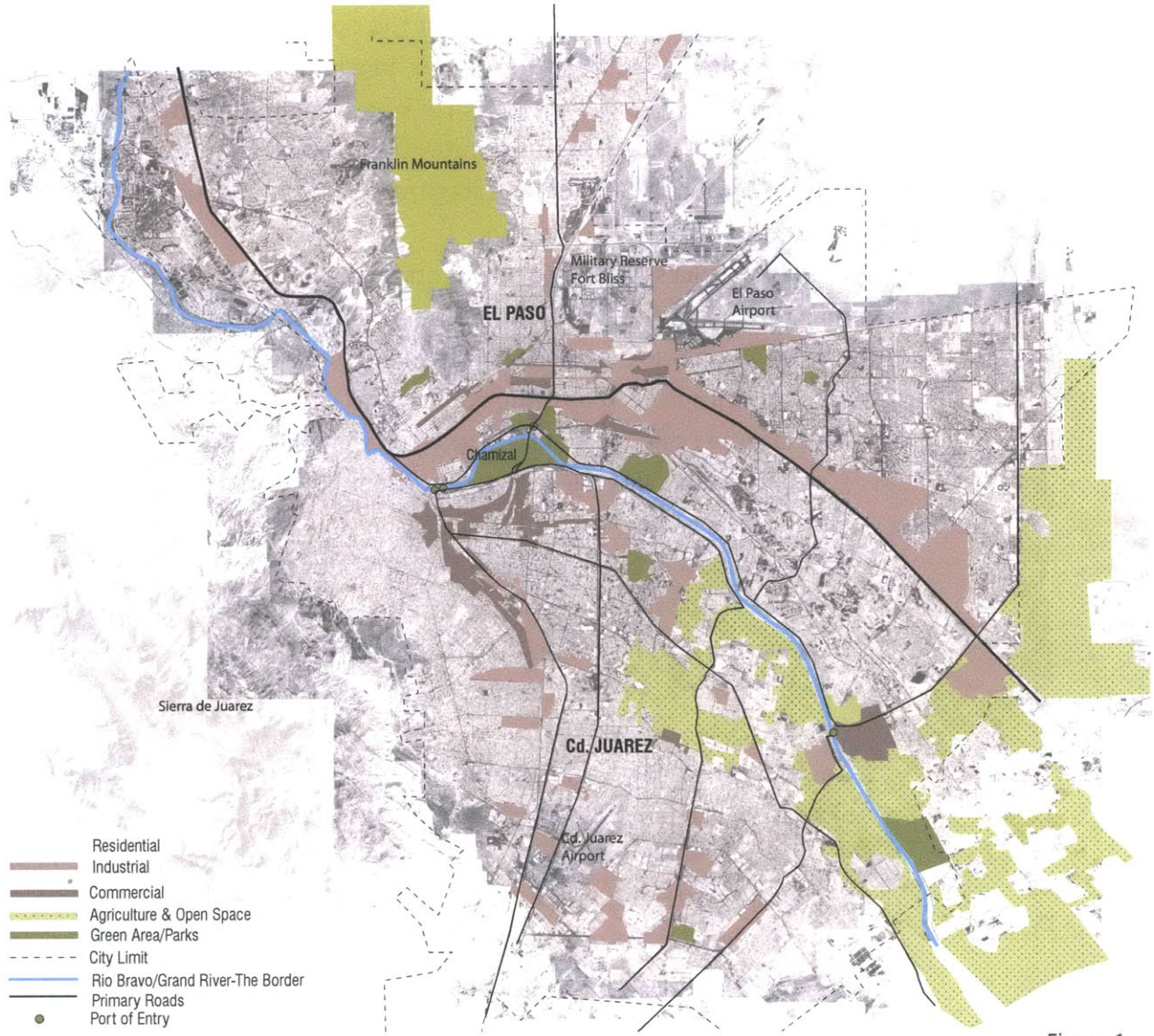


Figure 1

Transportation Links

The main transportation arteries in Cd. Juárez connect the city from north to south; however all of these avenues stop at the border where check points/ports of entry are located. El Paso has a major artery, Interstate 10 which runs from west to east. Primary and secondary roads connect the city to this highway, but the opposite direction from these main arteries throughout these cities, in addition to the entry ports, do not allow for a true transportation link between them. One place where where a more direct connection is established is on the furthest west entry point, the International Zaragoza Bridge.

Roads for trucks in El Paso are at strategic points in order to connect with the interstate and the entry ports. In both cities commercial and industrial zones are located close to main arteries, but since these roads are not well connected to the counterpart city there is not an efficient flow for trade of goods, etc. The map on the following page resents evidence for both cities needing new corridor links.

Transportation in Cd. Juárez and El Paso is done mainly by automobile; however public transportation does exist, unfortunately it is in both inefficient and insufficient. In the 1920's there was a joined street car system in this territory, but it ended in early 1940's.

There are four international entry ports with different modes and levels of crossing, depending on checkpoint restrictions and physical conditions in the neighboring city. Most of these passage points have high percentages of vehicle crossing; however, the Paso del Norte International Bridge shows great levels of pedestrian crossing, possibly because the downtown areas of these cities are located on the opposite other side of this particular entry port. Conversely, the Stanton Street Bridge only allows automobiles to cross (carpooling). Two of the other entry ports permit trucks to cross; special lines have been designated for these commercial vehicles.

Transportation Links Map

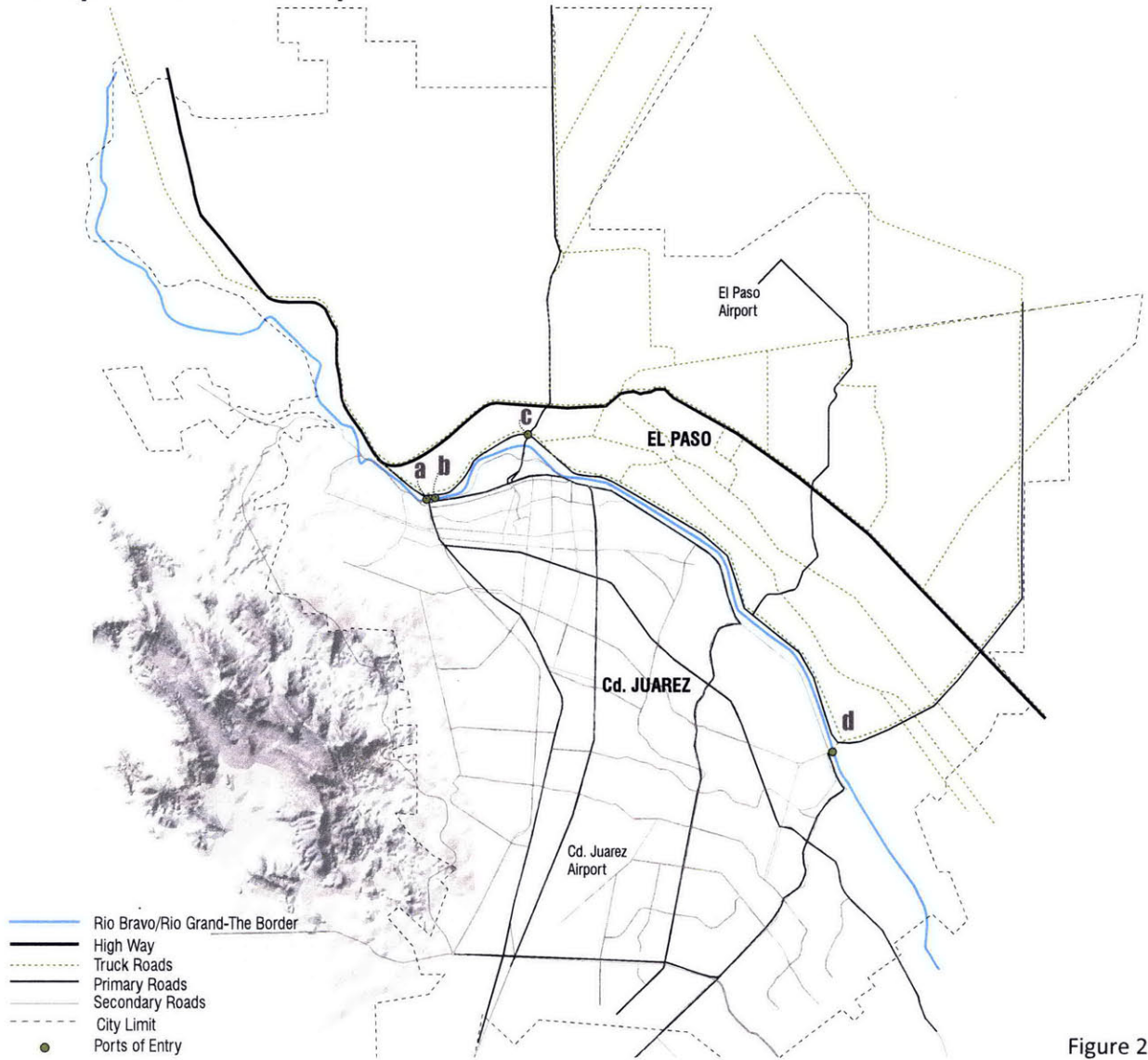


Figure 2

International Ports of Entry

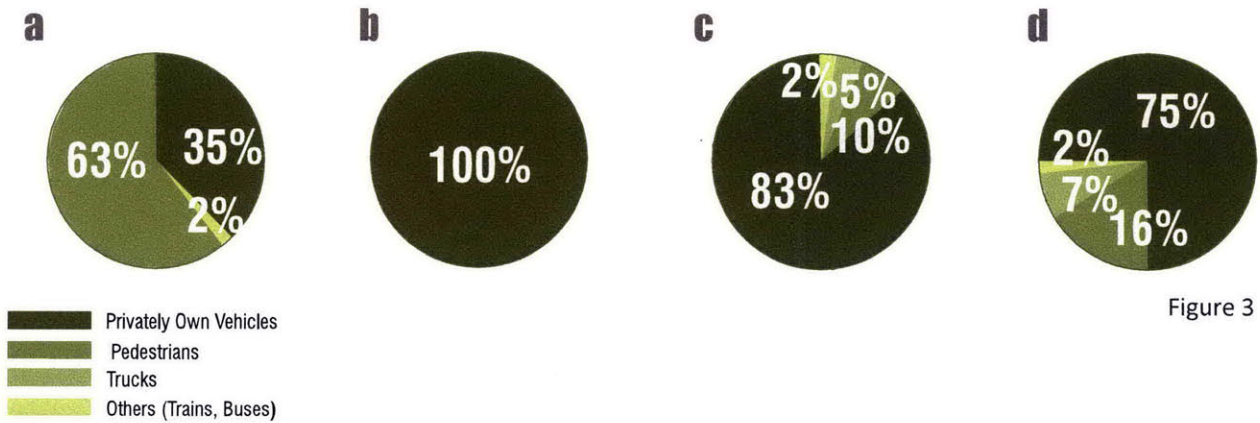


Figure 3

a + b Paso del Norte International Bridge and Stanton Street Bridge

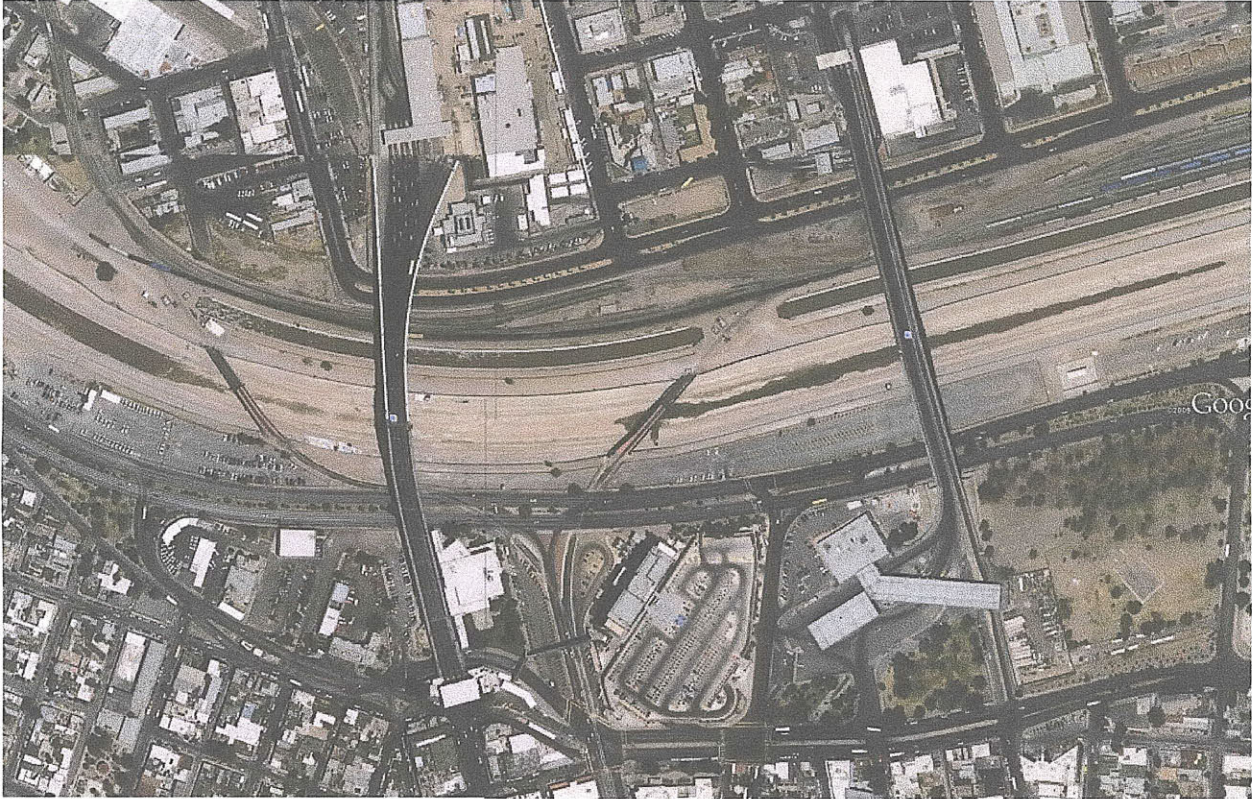
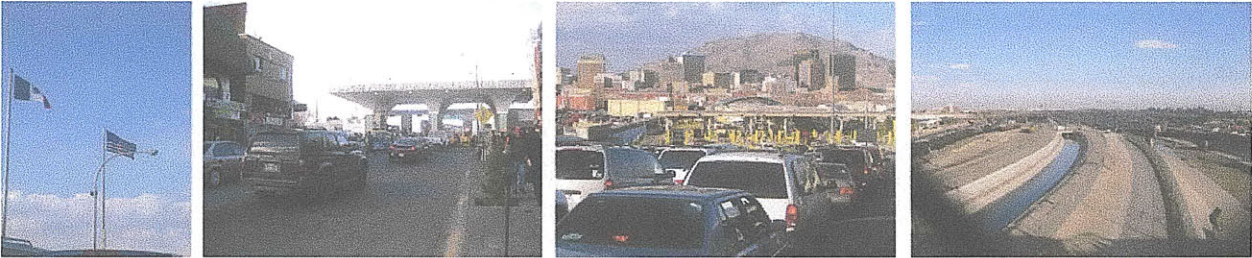


Figure 4



C Cordova de Las Americas International Bridge



Figure 5



d International Zaragoza Bridge

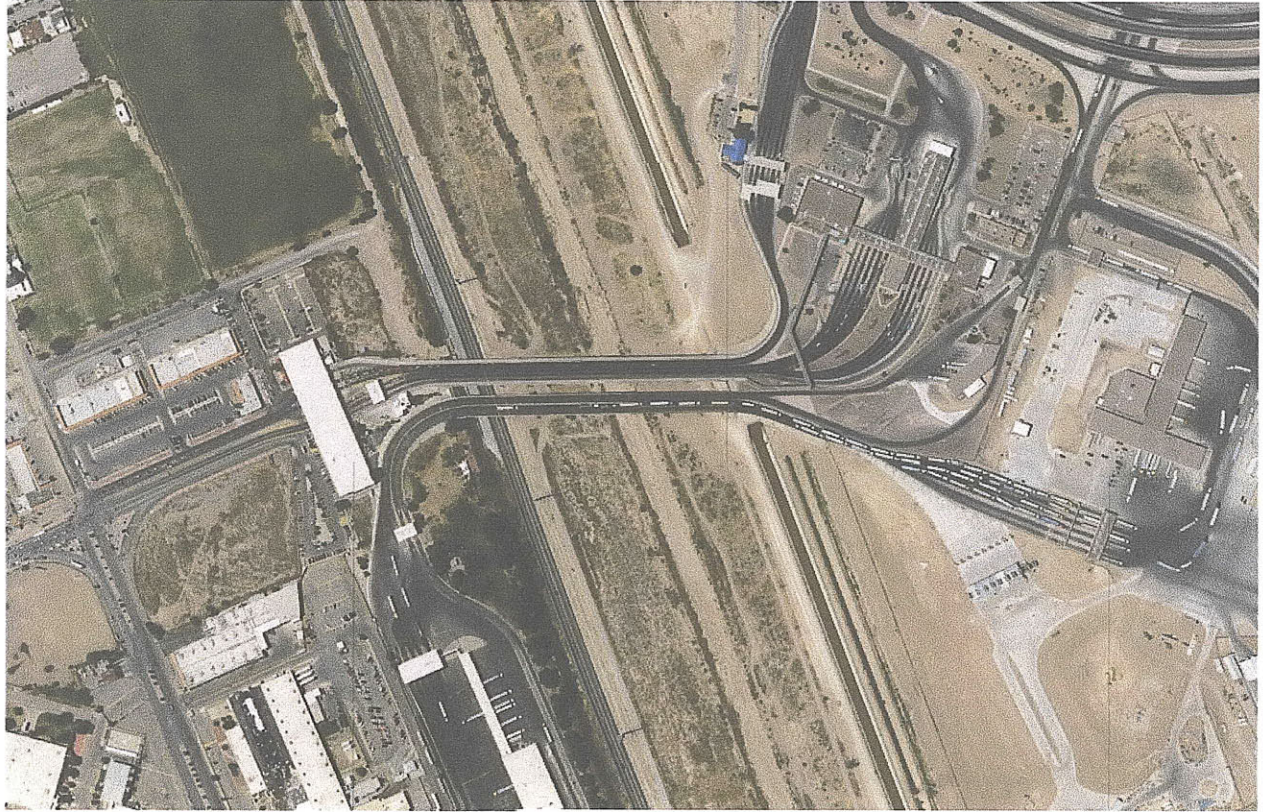


Figure 6



Population Density and Demographics

Cd. Juárez and El Paso region represent the largest urban binational border area between Mexico and the United States. However these cities' population densities are particularly different from one another. As shown in the land use map, the space occupied by El Paso takes up for the majority of this territory. Conversely, from the 2.1 million individuals who reside in the region, a greater number: 63% live on the Mexican side. The denser areas in Cd. Juárez are close to Industrial Parks and the urban. On the contrary, the population of El Paso is more evenly dispersed throughout the city, with the exception of individuals living in *colonias*, (described in Chapter I). These settlements are overcrowded dwellings where individuals live in "social solidarity", sharing low rent.

With regards to the average age of the inhabitants of these cities, it is important to note that Cd. Juárez has great numbers of individuals between the ages of 15 and 34 years old,¹ suggesting that migrants who arrived to the city from other parts of Mexico were young individuals looking for employment opportunities.

A significant characteristic of the people living in the Cd. Juárez- El Paso territory is their ability to speak two languages, 40% of the employed population in Cd. Juárez can speak English, which is around 16% of the total population of the city.² This quality is even greater in El Paso where close to two thirds of the population can speak Spanish, the main reason behind this is because 76% of the population residing in this American city are of Hispanic lineage.³

In addition, it is important to note that in Cd. Juárez 32% of the population residing in the city are nonnative, most of these individuals are from the states of Durango, Veracruz, Coahuila, Zacatecas, Oaxaca, Chiapas, etc.⁴

1 Instituto Municipal de Investigación y Planeación (IMIP). "Radiografía Socioeconómica." (2008, p.16).

2 Instituto Municipal de Investigación y Planeación (IMIP). "Resumen Ejecutivo del Análisis Estructural del Empleo en Ciudad Juárez."(2006, p.39).

3 <http://www.city-data.com/city/El-Paso-Texas.html> . (accessed January 12, 2010).

4 Instituto Municipal de Investigación y Planeación (IMIP). "Resumen Ejecutivo del Análisis Estructural del Empleo en Ciudad Juárez."(2006, p.13).

Population Density Map

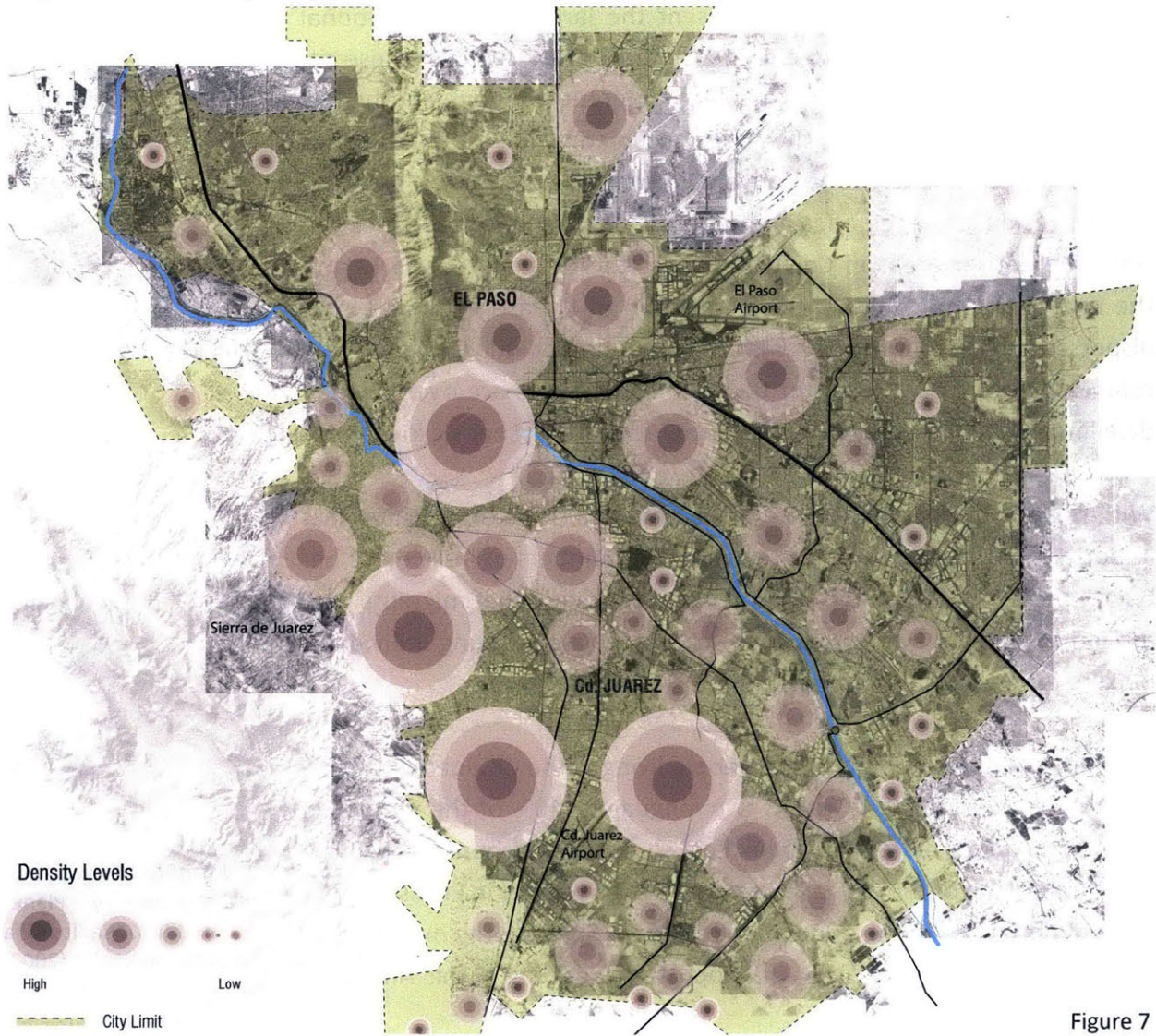


Figure 7

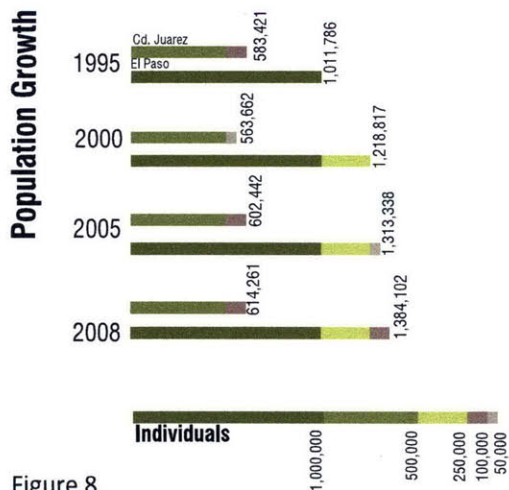


Figure 8
62

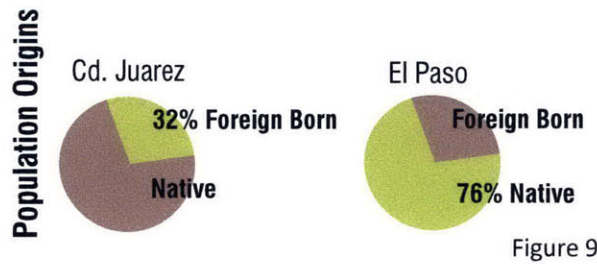


Figure 9

Income and Residential Structure

The cities of Cd. Juárez and El Paso represent asymmetrical societies in many different levels, nonetheless both cities need to elevate the quality of life for its inhabitants; the percentages of poverty in the region are high. For instance in 2007, 27.4 % of the residents of El Paso lived below poverty levels,⁵ the cities' high levels of unemployment possibly is the primary cause. Juárez on the contrary has high levels of employment in compared to other cities in Mexico, as well as better paid jobs.

Individuals working in Cd. Juárez often make 3 to 5 times what is considered a minimum salary in Mexico, which is around 50 pesos per day.⁶ However, Mexican border cities tend to be more expensive to live due to the lack of housing and other important infrastructural need –difference between supply and demand- thousands of individuals in Cd. Juárez hold two jobs in order to survive.

In El Paso, the medium income per family is around 32,000 USD per year, this is quite low in comparison to the 52,000 USD median income level from the state of Texas.⁷ High poverty levels mostly affect El Paso's Hispanic and Latino communities, as well as single women with or without children. Similar characteristic can be found regarding poverty levels in Juárez, the most affected are single woman and new migrants who live mostly in very poor conditions until they can establish themselves.

In addition, it is important to note that poverty levels also relate to the lack of basic services such as water, drainage, electricity, etc in the Cd. Juárez- El Paso territory. As mentioned in Chapter I, individuals in these cities have settled in different areas of each city depending on economical access; in El Paso racial affinity is another fact that places a role.

5 <http://www.city-data.com/city/El-Paso-Texas.html> . (accessed January 12, 2010).

6 Instituto Municipal de Investigación y Planeación (IMIP). "Resumen Ejecutivo del Análisis Estructural del Empleo en Ciudad Juárez."(2006, pp.48-50).

7 <http://www.city-data.com/city/El-Paso-Texas.html> . (accessed January 12, 2010).

Income and Residential Structure Map

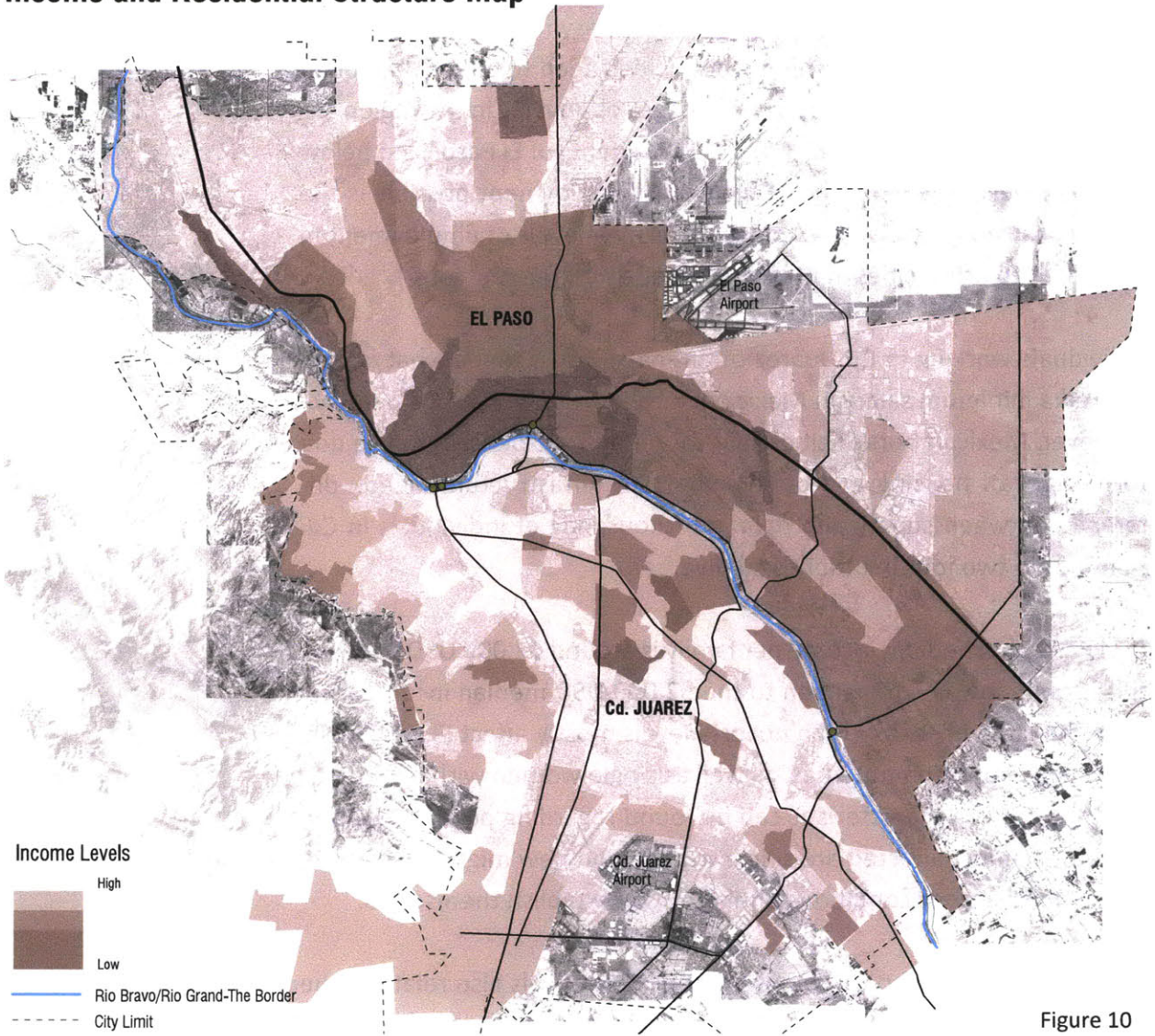


Figure 10

Unemployment Levels

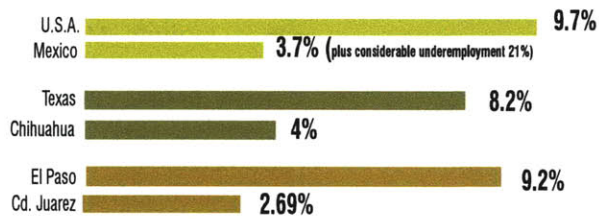


Figure 11

El Paso's Poverty Levels

27.4% of the entire population

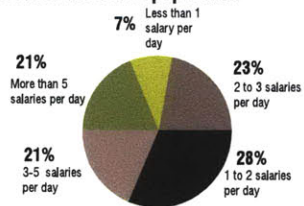


Figure 12

Juarez's Employment Levels of Income

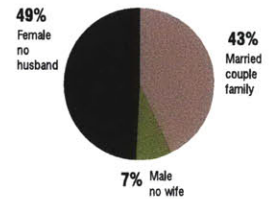


Figure 13

Industries

As previously stated in Chapter I the *Maquiladora* industry in Cd. Juárez and El Paso have changed the urban landscapes of these cities, however other types of industry are also economic forces in this territory. The previous map shows the location of the different types of Industry in Cd. Juárez and El Paso, as well as levels of pollution depending on industry type and amount of establishments by area. (Refer to Chapter I for ecologic issues related to industry levels in these cities).

The the following charts illustrate the different categories of industries employing individuals in the region. It is important to note that El Paso during the last couple decades has become a service- oriented economy. This transformation has translated into new specialization, different employment rates, and wage levels, this in order to create a better economy after the loss of thousands of jobs in the 1990's.

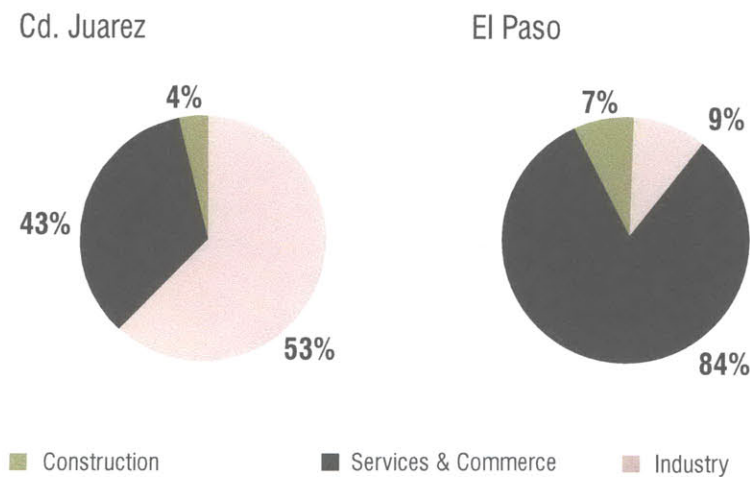


Figure 14

However, the transition from manufacture to services has been slow and multiple opportunities for creating a regional economy have been dismissed. A special section on the charts demonstrates the disparity in manufacturing employment levels between these two cities. Nevertheless, potential for certain connections of demand and supply between these cities is present.

Industries Map

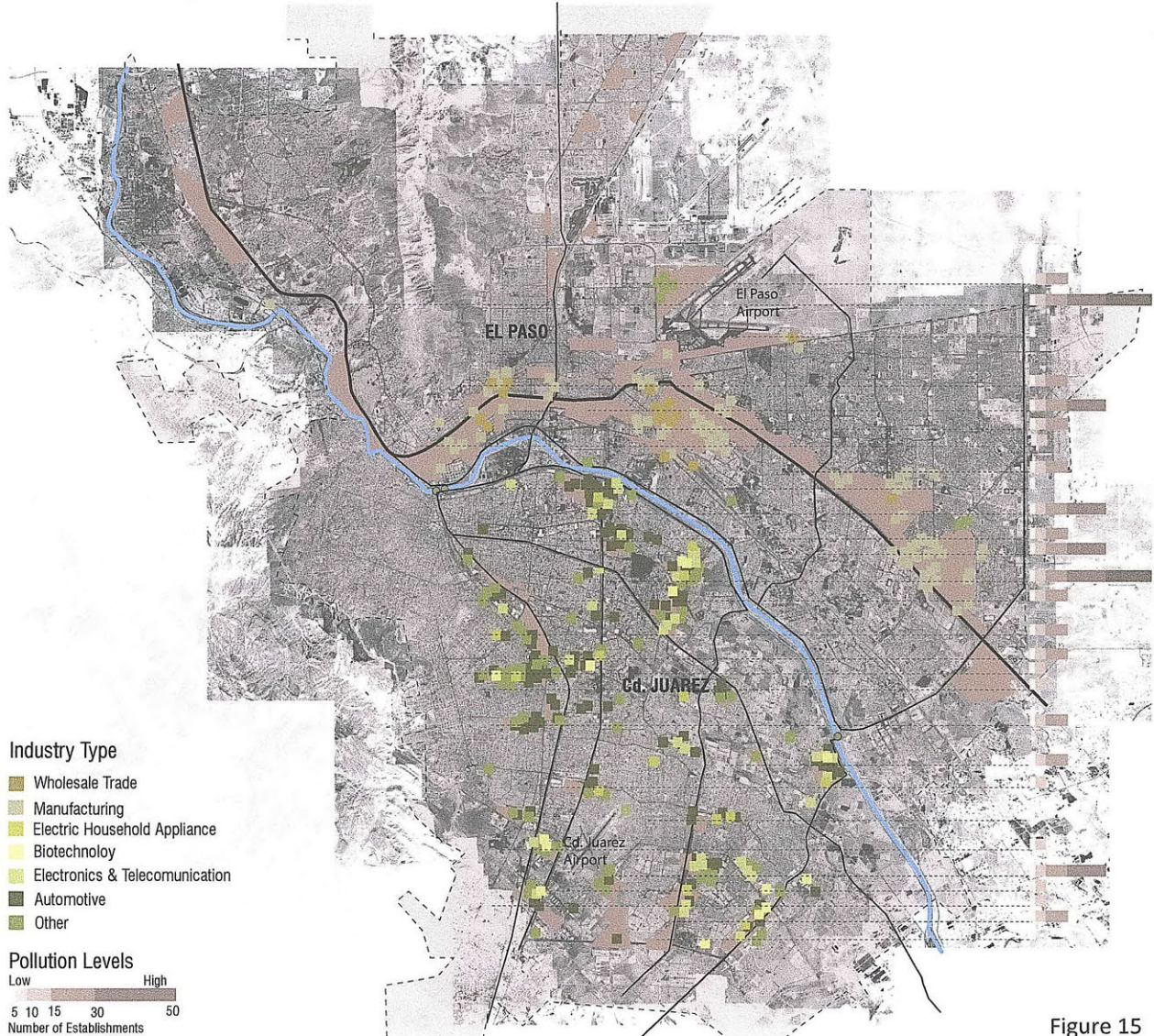


Figure 15

It should be noted that in the last couple years Cd. Juárez has been losing manufacturing jobs for two reasons: one, the recession in the United States, many of the *Maquiladoras* in the city are owned by American investors, but with the decline of the economy individuals working in the plants were laid off. Second, the decrease in the demand for auto-related goods from the automobile industry have also influenced employment levels in Juárez since hundreds of factories in the city specialize in this industry.⁸

8 Instituto Municipal de Investigación y Planeación (IMIP). "Radiografía Socioeconómica." (2008, p.36).

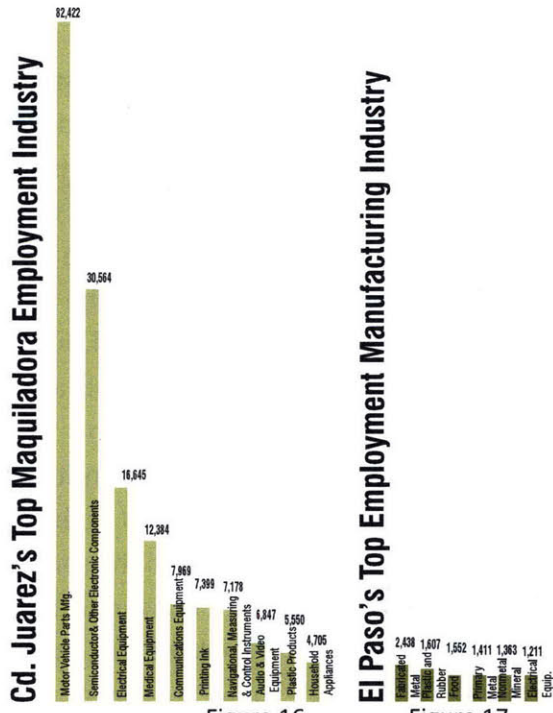


Figure 16



Figure 17

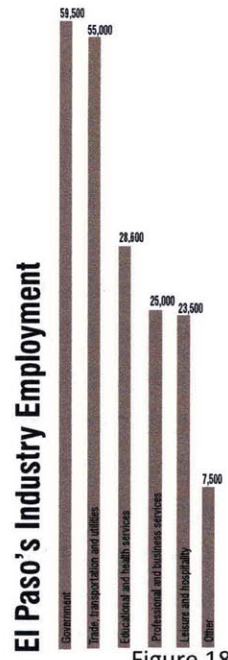


Figure 18

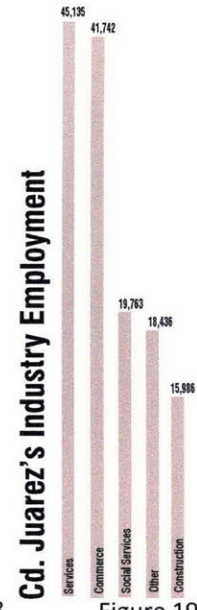


Figure 19

The following diagram illustrates some of the Manufacturing industries that can work together from these two cities; El Paso has specializations and capacities in certain industries that are not fully utilized. There are subsectors in the manufacturing industry that are only meeting local demand, but production can be enlarged for exports.⁹

9 Olemdo, CarlosRoberto Tinajero, and Mario E. Caire. "Cd. Juárez Manufacturing and El Paso Industry Linkages." Institute for Policy and Economic Development (IPED). University of Texas at El Paso (2008, pp.6-9).

Potential Industry Supply From El Paso to Cd. Juarez's Demand

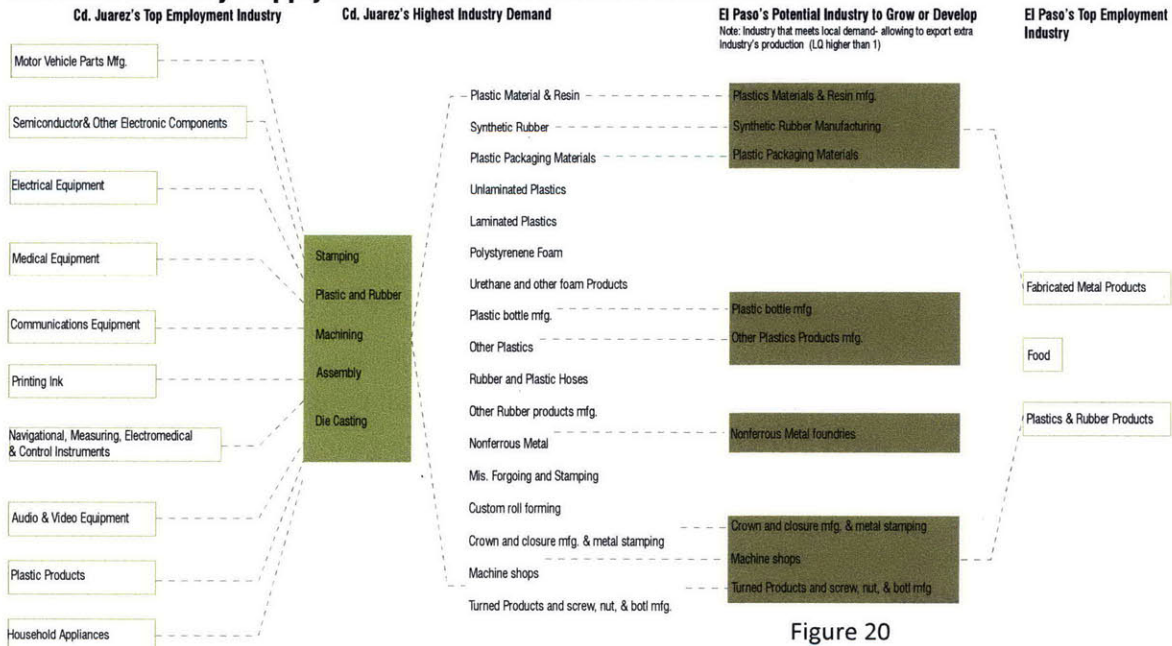


Figure 20

Educational Insitutions

Juárez and El Paso have public and private educational systems. It is important to note from the map on the following page the distribution of schools around these cities; in Cd. Juárez most of these institutions are located in the center of the city, while not many of them can be found in the peripheries, on the contrary in El Paso schools are more evenly distributed. The amount, distribution, and location of the schools have a large impact on educational levels; for instance in Cd. Juárez the demand for education is greater than the supply or schools available, this can be attributed to the high influx of migration to this Mexican city (requiring more infrastructure, personnel, etc.).The quantity of students in pre-school and primary levels per institution in Cd. Juárez are much higher than other schools in different entities within the same state, this contributes to lower levels of personal attention given to the students. However, in high schools, levels of demand are lower, attendance at this stage of education drops radically since many students after reaching 15 years old leave their schooling in order to go to work, mostly in the *Maquiladora* industry.

It is important to note that according to the Census from 2000 in Cd. Juárez different levels of illiteracy were found in the population depending on their ages and where they dwell in the city. For instance, the highest levels of illiteracy exist in the southwest and northwest areas of the city; as observed on the map not many educational institutions are established on those areas. In general Cd. Juárez has 8.7% of illiteracy rate in individuals from the ages 6 to 14 years, nevertheless within the north and southwest regions the numbers reaches as high as 10 to 15%.¹⁰

El Paso, like many other American border cities does not have all the educational resources commonly found in most US cities. As a result, illiteracy is high, only 35% of the eligible population are enrolled in school.¹¹ According to data presented by the US Census Bureau (2006 Academic Community Survey) an evenly distribution can be found between 1st and 12 grade, where the medium enrollment for these grades is 7.2%, a slight increase can be noted at the college levels where 8% of the population attends to higher educational institutions.¹²

10 Instituto Municipal de Investigación y Planeación (IMIP). "Radiografía Socioeconómica." (2008, p.85).

11 <http://www.city-data.com/city/El-Paso-Texas.html> . (accessed January 12, 2010).

12 Ibid.

Educational Institutions Map

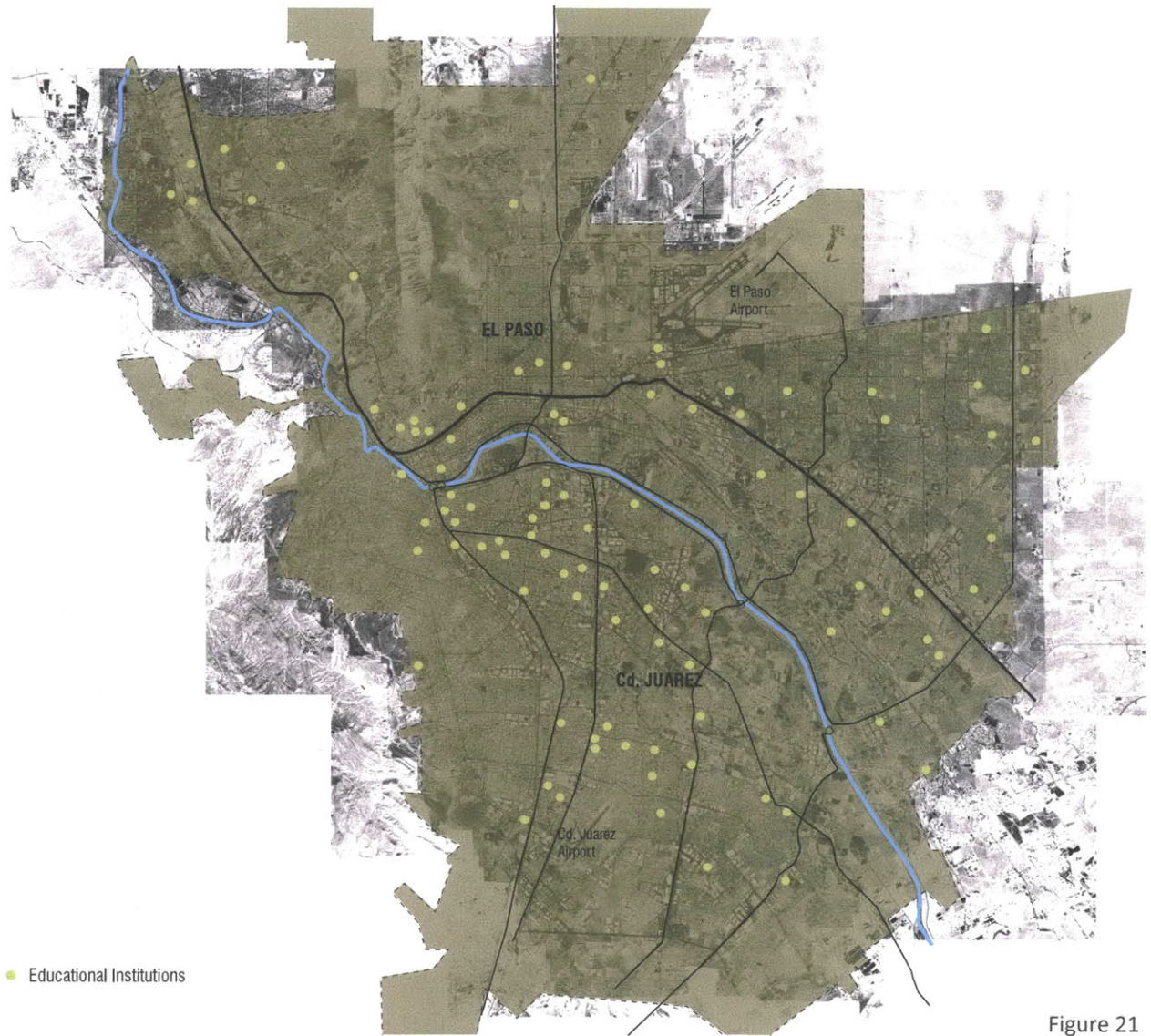
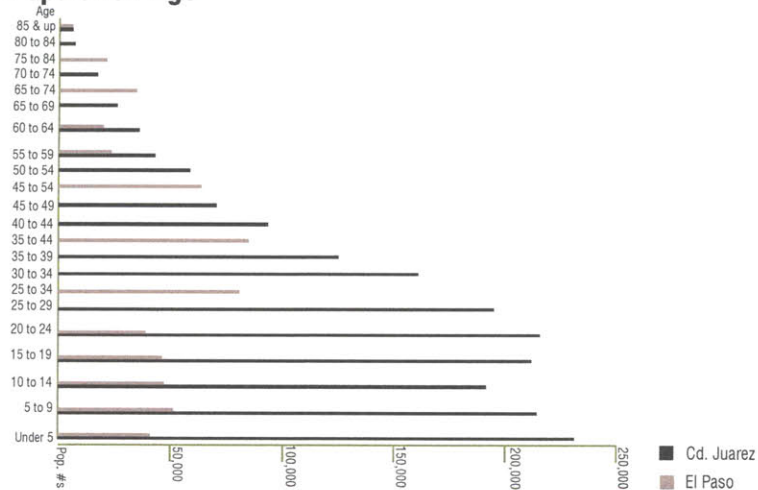


Figure 21

Population Age



Population Spoken Language



Figure 22

Figure 23

Water Treatment

Water conditions in the Cd. Juárez-El Paso territory have become a great concern; the desert climate, the scarcity of rain, the fast growth population, the inappropriate sewage treatment, the industrial discharges, as well as agricultural and mining waste water have had an enormous effect on the quality and quantity of this resource.

There are 17 wastewater treatment plants in Cd. Juárez, the two major facilities are located one on the north and the other one to the south side of the city. These two primary plants began operating in the year 2000, both do advanced primary treatment; only 70% of the generated wastewater of the city gets treated by these facilities. After this process gets completed, the affluent discharges go into an agricultural ditch.¹³ The remaining facilities in Cd. Juárez do secondary treatment. Conversely, El Paso has four waste water plants and several sample sites.

However, the separate wastewater treatment infrastructure of the region does not necessarily equate to better quality. According to multiple studies by different research organizations the water quality of the Gran River/*Rio Bravo* has been and is polluted. Overtime this river has tested positive for different biological pollutants such as arsenic, cooper, nickel, unionized ammonia, etc.¹⁴

In order to reverse the negative conditions of the water an effective bi-national system must be implemented where effective processes deliver the quality and quantity of water that individuals residing in the region need.

13 Peinado, Porfirio. "Water quality factors affecting the restoration of the Rio Grande: El Paso/Juárez region. Diss. U of Texas at El Paso. (2007, p.4).

14 Ibid. (p.91).

Water Treatment Map

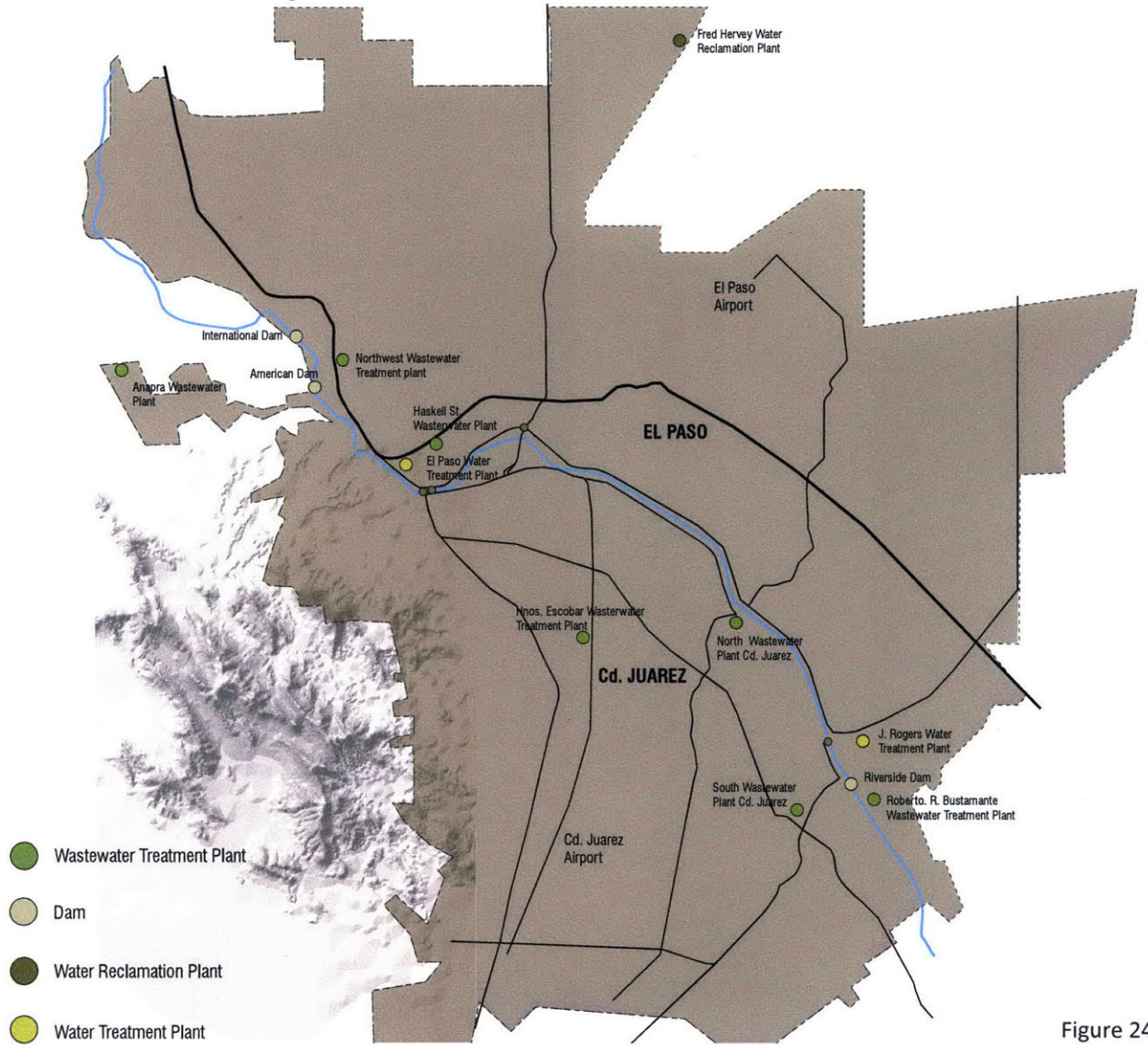


Figure 24

Cd. Juarez's Water Treatment Plants

Government Investment	Norht Plant	70%	Private and Maquiladora Contribution	Country club
	South Plant			Coca Cola
	Chamizal Park			Maquiladora Coclisa
	Central Park			Maquiladora Epson
	East Park			Maquiladora ADC
	Airport			UACJ
				Cinemark
				Ansell Perry
				Comercial Metal Mexico
				Eiffel Construction
				Technological University

El Paso's Water Treatment Plants

WWTP	Northwest	Sample Sites	Sunlabd Park Bridge
	Haskell R. Street		Courchesne Bridge
	Roberto R. Bustamante		Haskell St. outfall
			Haskell St. WWTP
	Fred Harvey Plant		Riverside Diversion Dam
			Alamo Grande control

III CASE STUDIES

- 1 El Chamizal: A Historical Territorial Model Negotiation between Mexico and the United States
- 2 Transboundary Conservation Areas and Peace Parks
- 3 Special Zones for Economic Development

III Case Studies as Methodology of Investigation

Summary

As a method of investigation in this chapter, I will explore certain case studies which will allow me to get familiar with various negotiations that can exist between different countries in relation to transboundary issues. By looking at different characteristics of specific examples such as El Chamizal Settlement between Mexico and the United States, which particularly concerns the Cd. Juárez-El Paso territory, Transboundary Conservation Areas, Peace Parks, and Special Economic zones, I will be able to evaluate different methods and laws used when dealing with special geographical regions. The models chosen are existing scenarios that can facilitate and support the *Transboundary Cooperation Zone* I am suggesting.

1 El Chamizal: A Historical Territorial Model of a Negotiation between Mexico and the United States

The Chamizal refers to 630 acres of land adjacent to the *Rio Bravo/Grand River*. Currently, this area is incorporated in Cd. Juárez's property; however throughout the 1800's to mid 1900's it was part of a great controversy between Mexico and the United States ending with a resolution in 1963. As previously stated, The *Rio Bravo/Grand River* is the political boundary that divides these two countries; the middle of the river dictates the boundary regardless any variation in its channels or banks. In 1948, this previous clause was established in the Treaty of Guadalupe Hidalgo. Nevertheless, the river has gone through natural changes throughout time. It is recorder that between 1853 and 1863 the river banks changed as a result of severe floods; in addition, a more serious inundation occurred in 1864. As a consequence of the moving banks, these two nations were pushed for a new agreement; the Treaty of 1884. This agreement attempted to create more specific regulations with regarding the river's position; Articles I and II established the following:

The dividing line shall forever be that described in the aforesaid Treaty and follow the center of the normal channels of the rivers named, provided that such alterations be affected by natural causes through the slow and gradual erosion and deposit of alluvium and not by the abandonment of the existing river bed and the opening of a new one. Any other change wrought by the forces of the current...shall produce no change in the dividing line as fixed by the survey of the International Boundary Commission of 1852.¹

But even though the general rules established in the treaty mentioned changes on the river can be caused by accretion "the increase of land by the action of natural forces"² or by avulsion "a sudden cutting off of land by flood, currents, or change in course of a body of water; especially : one separating land from one person's property and joining it to another."³ However, the treaty did not specify how to deal with these changes. By the late 1870's, the river had shifted approximately 630 acres to the north, this affected El Paso and Cd. Juárez region. An area that was once integrated on the American side, north to the *Rio Bravo/Grand River* became incorporated in the Mexican side, south of

1 Gregory Gladys. *The Chamizal Settlement: A View From El Paso*. Texas Western College Press, El Paso. (1963, p. 11).

2 <http://www.merriam-webster.com/dictionary/alluvium>

3 Ibid. Avulsion.

the river. Figure 1 illustrates the river's change of course as well as the area affected which came to be known as the Chamizal which included Cordova Island, a piece of land located in both sides of the river's channel.



Figure 1

By 1895 the Mexican government expressed concern regarding the Chamizal area, it was claimed that even though the river had shifted the territory still belonged to Mexico. As a result, in 1899 the International Boundary Commission (IBC), was formed; its purpose was to settle the reclamation of the land. The commission was integrated by a representative of each country and a third party, in this case Eugene Lafleur from Canada. A decision was made and according to Lafleur the territory indeed was part of Mexico, but the United States did not agree with this decision. According to different sources the argument behind the denial was a result of the words "slow" and "gradual" mentioned in the 1884 agreement. "The problem of the Chamizal is of a particular interest in the field of international law because it represents an instance in which a nation rejected an arbitral award."⁴

4 Gregory Gladys. *The Chamizal Settlement: A View From El Paso*. Texas Western College Press, El Paso. (1963, pp. 11-12).

Several incidents happened the following years, such as the attempt of placing a Railway, and a Waste disposal plant by the United States in this area to which Mexico completely declined. By 1910, both countries agreed to arbitrate, the decision this time favored the United States,

Mexico refused it. During the following fifty years various efforts were made in order to settle this case, but failed. Finally in 1962, President John F. Kennedy visited Mexico with the intention of reaching some form of reconciliation, the Mexican President at the time, Lic. Adolfo Lopez Mateos agreed to this inquire. In 1963 these presidents signed a treaty, the following terms summarize the agreement:

FOR MEXICO: - 630 acres of South El Paso in Chamizal and to East of Cordova Island.

FOR U.S.A.: -193 acres of Mexico's Cordova Island.

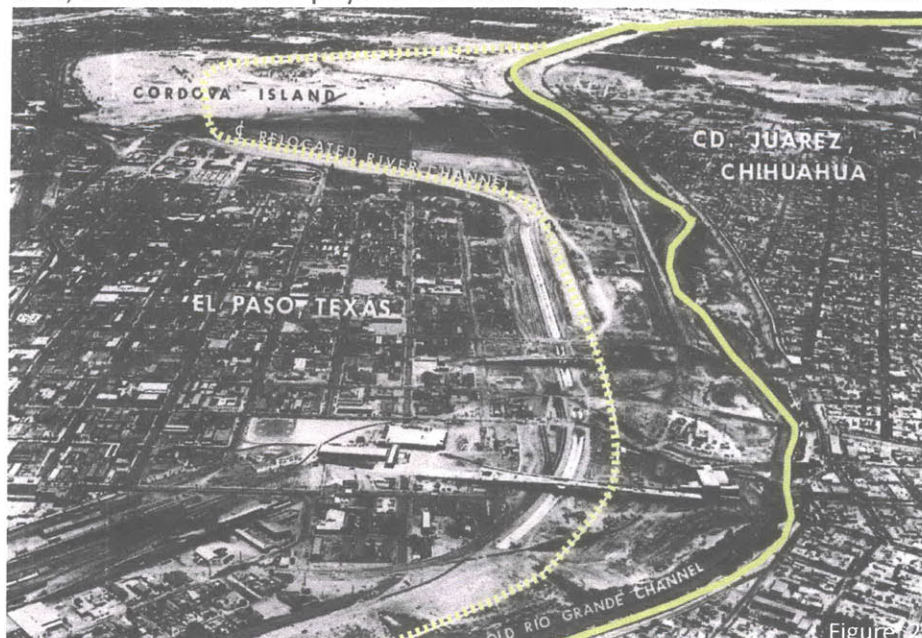
MEXICO'S NET GAIN:- 437 acres

BORDER CHANGE:- Rio Grande channel to be moved north to form new boundary and to enclose Mexican gains. New channel to be 4.3 miles long.

COST:- For U.S, \$ 44.9 million authorized, \$ 30 million of which was authorized for the first year. Mexico to share equally in cost of digging new channel, building new bridges. Mexico to pay for Chamizal improvements it receives intact.⁵

Figure 2, illustrates the relocation of the river's channel as the new boundary between these two countries in the Cd. Juárez-El Paso territory.

It is estimated that a couple thousand individuals lived in this piece of land, as well as several physical structures such commercial and indus



5 Carreño de Delgadillo, Alma. The Chamizal Solution A Moral Victory For Democracy. (1967, pp. 5-6)

trial buildings, dwellings and schools, etc. were positioned there. According to different records people were relocated depending of their nationality and compensation for properties were paid for those structures that became integrated to the Mexican territory.⁶

After the settlement design plans were proposed for this area which included the construction of new highways, a new international bridge with new ports of entry facilities/border inspection station, railroad bridges, a memorial park with recreational facilities such as cultural center, and an international trade zone. Figure 3, corresponds to the design proposal shows cooperation, connection, and responding interaction between these two countries.

The importance of this case study relies on the attitude of these two countries to collaborate and negotiate, even though the settlement on this piece of land took over one hundred years, this case demonstrates the possibility of land negotiation, cooperation in ecological issues as well as the adjustment of citizens rights and properties between two nations. In addition, the Chamizal settlement marked in history the ground tions of the final agreement. This is significant because it identifies the type of law that can be employed at the time of proposing a Transboundary Cooperation Zone, where relations and performance between the two separate nations need to be regulated.

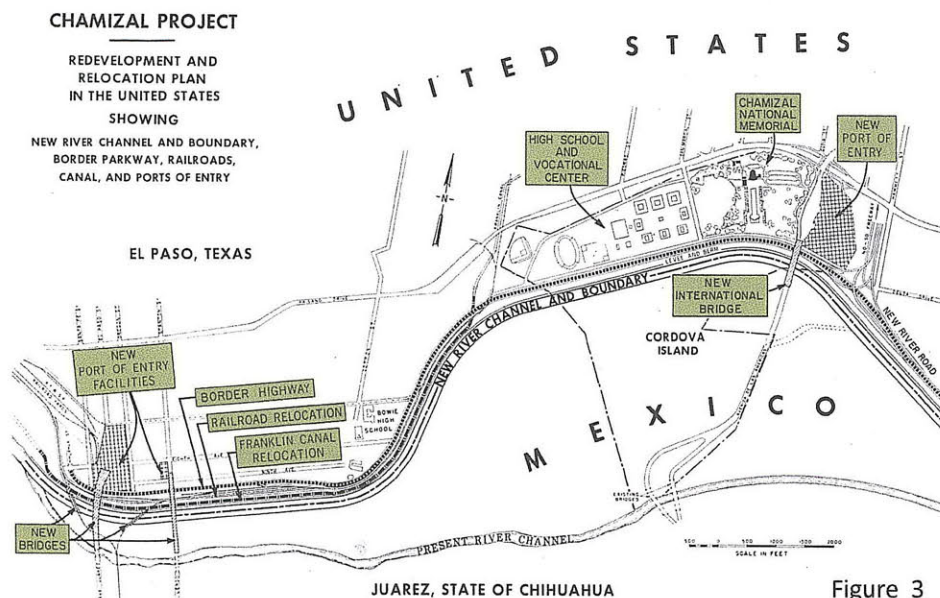


Figure 3

6 Gregory Gladys. The Chamizal Settlement: A View From El Paso. Texas Western College Press, El Paso. (1963, p. 6)

Currently El Chamizal is an area highly utilized by the citizens of Cd. Juárez. Some of the originals elements proposed remain intact, but other aspects have been re-developed, Figures 4, 5, 6 and 7 illustrate its current stage.



Figure 4



Figure 5



Figure 6



Figure 7

The example of the El Chamizal previously discussed gave an overview of previous cooperation between Mexico and the United States. Similar examples that demonstrate the possibility for bilateral negotiations around the world are Transboundary Conservation Areas and Peace Parks; The World Conservation Union, IUCN defines these two geographic special zones as follow:

Transboundary Conservation Area

An area of land and/or sea that straddles one or more borders between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means.⁷

Peace Parks

Conservation zones in which the sharing of physical space can build and sustain peace. Such zones that can play an instrumental role in peacemaking or sustaining amity between communities are termed Peace Parks.⁸

The first International Peace Park, Waterton-Glacier was created in 1932 in the border between the United States and Canada; it “was formally created as symbol of peace and goodwill between two nations rather than as a mechanism for conflict resolution.”⁹

The meaning and intention of these special geographical zones have been evolving. The first generation of parks focused primarily on ecological/environmental issues while the second generation, beginning in the 1990’s, has taken a broader approach and developed -a cooperation system- in the political, social-cultural and economical arenas. Currently there are 188 transboundary areas worldwide, which involve 818 countries.¹⁰ Figure 8 on the following page illustrates where these special areas are located around the world.

These special geographical zones present diverse physical conditions, for that reason in 2003 five different kinds of Peace Parks or Transboundary Conservation Areas were established by the World Park Congress, these are as follow:

7 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press .(2007, p. 24)

8 Ibid. (p.1).

9 Ibid .(p.183).

10 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press .(2007, Introduction p.1).

Transboundary Conservation Areas and Peace Parks



Figure 8

- Two or more contiguous protected areas across a national boundary. An example is Park “W” which is shared by Benin, Burkina Faso and Niger and managed cooperatively by the three governments.
- A cluster of protected areas and the intervening land.
- A cluster of separated protected areas without intervening land.
- A trans-border area including proposed protected areas.
- A protected area in one country aided by sympathetic land use over the border.¹¹

In the case of the *Transboundary Cooperation Zone* I am proposing, the first typology is the most applicable scenario, due to my case dealing with national boundaries, however the the laid out and program for this new geographical zone will result from the program needs from the Cd. Juarez-El Paso territory.

According to the IUCN, Transboundary Conservation areas and Peace Parks have contributed for cooperation and peace; the base for this collaboration is attributed to five different principles stated by this International organization:

- Through acting as a symbol of ongoing cooperation between nations...
- By creating an entry point for discussion between neighboring countries that may be deeply divided over economic, social, environmental, or other interest.

11 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press. (2007. p.7).

- By increasing security and control over resources in border areas so that their rightful owners can benefit from them.
- By creating shared opportunities for ecotourism and sustainable development...
- By developing a rich and resilient web of relationships among protected area managers from the countries involved...¹²

Several of these principles should be kept in mind as supporting points when proposing a *Transboundary Cooperation Zone* in the Cd. Juárez-El Paso territory. It is important to note how the boundaries between ecology spill over other political, economical, and sociocultural circumstances. Figure 9, illustrates how environmental issues can have a great impact in the process of cooperation; this diagram shows the different factors involved in the analysis of environmental security discourse. The model includes components that are essential when looking at negotiation and can be applicable to borderland regions.

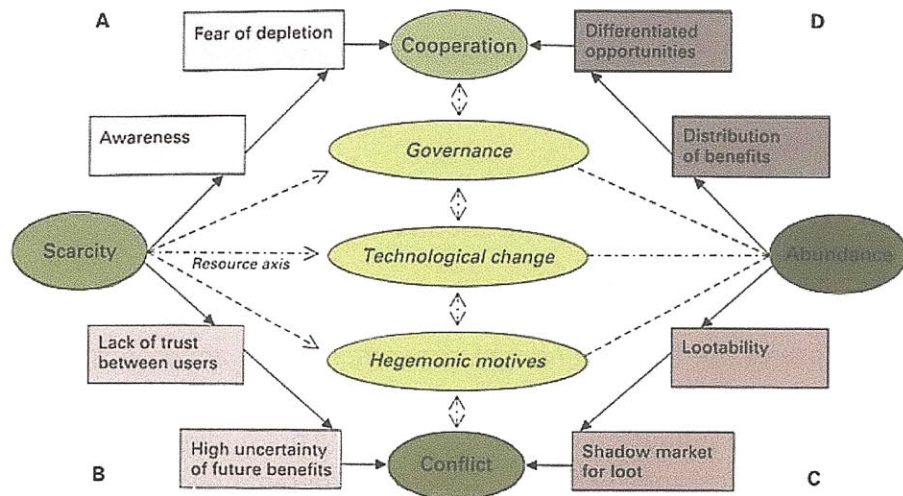


Figure 9

However, when dealing with international boundaries at the time of proposing these special geographical zones issues of immigration and security can create tension between the different nations. For instance, a Peace Park that has been dealing with issues of security is the one mentioned before, Glacier National Park. After the 911 attacks the United States established multiple security initiatives, these have challenged the negotiation with the park's border. In order to maintain this special geographical zone with its northern neighbor, several changes and negotiations have been implemented "Glacier National Park's staff,

12 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press. (2007, p. 24)
82

for instance, has been forced to re-allocate funds to train park rangers as border patrol officers [...] One area of cooperation where these collaborative efforts are most apparent is the management of cross-border visitor access [...] allowing visitors to travel across the border with minimum restrictions has facilitated border tourism, raised awareness of conservation efforts at an ecosystem level, and fortified the cooperation relationship...”¹³

Conversely, the border situation between Mexico and the United States is a more complex than the Canadian-American case. The migration flow in these areas is enormous, which is already an issue when proposing a special zone, but the high levels of crime and the problems related to narcotics represent a larger challenge. Nevertheless it is important to take into consideration the cooperation established after 911 in the Glacier National Park as a model to follow. It demonstrates that in order to secure borders it is possible to adjust procedures while maintaining the principles of a transboundary zone cooperation.

As noted on the previous paragraphs multiple difficulties present themselves when proposing, establishing and maintaining these special geographical zones. However, in the 1990's Ken Bush and Luc Reychler generated a model which attempts to monitor and manage the conflict which can arouse in from these zones; Peace and Conflict Impact Assessment, PCIA involve the following steps:

1. *Conflict Mapping* Analysis of the causes, actors, and dynamics of a conflict affecting a project/program site.
2. *Project/program mapping* Overview of the intervention's purpose, objectives, location, timing, beneficiaries, personnel, operational partners, and physical and financial resources.
3. *Assessing impact of conflict* of project Examination of how the conflict has affected the design, implementation and management of the intervention, as well as any measures that have been taken to address these impacts.
4. *Assessing impact of project on conflict* Examination of how different aspects of the intervention can or has contributed to conflict and/or peace-building in the area- that is, do they address the root causes of conflict, such as poor governance and corruption, lack of socioeconomic opportunities, inequitable access to natural resources, and lack of participation?
5. *Recommendations* Based on the above, how can the inter-

13 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press .(2007, p. 192).

vention be modified so that I meets its objectives while simultaneously strengthening the structures for peace-building?¹⁴

The importance of this methodology relies on the creation of an analytical framework that can be applicable to a project, policy or a program. In the case of this thesis the intervention –physical reconfiguration and policies- the above steps can support or be employ in the Transboundary Cooperation Zone I am suggesting. Chapter 1 already mapped causes and actors creating conflict in the Cd. Juárez-El Paso territory as step on proposes. Chapter 4 address project mapping from the site and a proposal therefore to follow this methodology as a tool can only enrich my process.

With regards to conflict, it is important to point out that Transboudnary Conservation Areas and Peace Park representatives argue that after the end of the cold war, politics have shifted, “globalization has changed the previous system from nation-state to a multicentre and networked international system...”¹⁵ The magnitude of this shift translates into the new form of politics –global governance- which “refers to forms of control, regulation, and management that are different or encompass more than bureaucratic forms of state government.”¹⁶ Throughout this lens participation and cooperation appear to be more flexible. Control is shared; the role and power of national governments still needs to be present, but the distribution of it with other actors such as international organizations, local and global NGO’s, local communities all working by a unified interest becomes essential. However, it is obvious that struggles of power and access can be a great barrier when dealing with the formation of these special geographic zones. It has been argued and proved by the World Bank and the Peace Parks foundation these zones are possible even in extremely difficult conditions such is the one currently being proposed between North and South Korea as a demilitarized zone.

14 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press.(2007, p. 31)

15 Ali, Saleem, ed. Peace Parks: Conservation and Conflict Resolutions. Cambridge, MA: MIT Press.(2007, p. 55)

16 Ibid. (p.56).

In addition to the PCIA methodology and the global perspective of governance, Transboundary Conservation Areas and Peace Parks employ different laws that facilitate their establishment and the collaboration between the diverse participants. The following list exemplifies the most important laws pertaining to the formation and management of these special geographical zones:

- International Law

Binding agreements [...] treaties, and “international customary

law” (accepted practices recognized by international tribunals), plus voluntary agreements.

- Negotiated Law

Bilateral and multilateral agreements [...] are like contracts-parties agree to provisions which become enforceable.

- National Policy, Law and Regulations

Integrates different national legal, administrative and judicial structures...

- Sub-national Law and Regulations

Responsibilities are often decentralized so that negotiations are undertaken by provinces or states, particularly in federated systems.

- Local law and custom -Traditional law.¹⁷

Transboundary Conservation areas and Peace Park illustrate multiple elements that can be the foundation for the Transboundary Cooperation Zone en la frontera de Cd. Juárez-El Paso. It is evident from these case studies as well as the Chamizal settlement that ecological negotiations can be the bridge or the catalyst in order to solve conflict. In the case of Cd. Juárez- El Paso territory as already described in Chapter 1 there are multiple ecological issues; employing the environment as a base for cooperation could possibly be one of the angles that my proposal can take. On the other hand the principles utilized in special zones for economic development also could contribute to the development for the Transboundary Cooperation Zone I am suggesting. The following pages will analyze this other case study.

3 Special Zones for Economic Development

Throughout this thesis I have discussed different effects of the North American Free Trade Agreement, NAFTA in the Cd. Juárez- El Paso territory. As previously stated NAFTA is an intergovernmental agreement between Mexico, Canada and the United States: “a trade bloc where regional barriers to trade (tariffs and non-tariff barriers) are reduced or eliminated among the participating states.”¹⁸ The main characteristics of Free Trade Agreements, FTA is to allow trade, money and investments to flow between international boundaries. However, national Special Zones for Economic Development have also been developed around the world; similar to FTA’s, one of its main positions is the promotion of foreign investment to encourage economic progress. There are several types of Special Zones for Economic Development, but the most used

17 Young, Tomme. “Using the Law to Help Transboundary Conservation”. January 2007. Global Transboundary Protected Areas Network. http://www.tbpa.net/issues_01.htm (accessed February 18, 2010).

18 Schott, Jeffrey J. “Trading blocs and the world trading system”. 1991. World Economy. <http://www3.interscience.wiley.com/journal/119356401/abstract>. (accessed February 12, 2010).

terms and models to identify them are:

1. Export Processing Zone (EPZ)
2. Free Trade Zone (FTZ) or Logistic Park (LP)
3. Special Economic Zone (SPZ) or Free Economic Zone (FEZ)
4. Industrial Zone

Other less common but still important Special Zones for Economic Development are Exclusive Research Areas, Tourism zones, Urban Enterprise Zones. The definition of these different zones depends mostly on the activities executed in that particular area and their physical traits. The following paragraphs describe the main characteristics of these Special Zones:

- Fenced-in industrial estates specializing in manufacturing for export and offering their resident firms free-trade conditions and a liberal regulatory environment (World Bank, 1992).
- Industrial zones with special incentives set up to attract foreign investors, in which imported materials undergo some degree of processing before being re-exported (ILO, 1998).
- Clearly delimited and enclosed areas of a national customs territory, often at an advantageous geographical location (Madani, 1999) with an infrastructure suited to the conduct of trade and industrial operations and subject to the principle of customs and fiscal segregation.
- A clearly delineated industrial estate which constitutes a free trade enclave in the customs and trade regime of a country, and where foreign manufacturing firms, mainly producing for exports, benefit from a certain number of fiscal and financial incentives (Kusago and Tzannatos, 1998).¹⁹

The main objective for these Special Zones for Economic Development is to create a positive effect on a national economy; the results must be translated into the creation of jobs and income, the generation of foreign exchange, the attraction of foreign investment and technological transfers. As previously stated, NAFTA allowed for the formation of industrial complexes in Cd. Juárez, which its main characteristics fit within the Industrial Zone model, and with the objectives described by these Special Zones for Economic development as a goal. However, the Parques Industriales formed by several *Maquiladoras* also have proved

19 Free Trade Zone and Port Hinterland Development. United Nations Publication. Thailand. (2005, pp.5-6).

that the particularities and specialization of a model sometimes can actually create uneven conditions such as in the cases of fluctuating migration levels, access and demand, employment opportunities, wages and working conditions, environmental degradation, etc. The Transboundary Zone I am suggesting aims for a combined model that can manage and assess for well rounded outcomes, a formation that is mutually fed producing positive dynamic effects.

For the purpose of this thesis, I want to revise more in depth some of those particularities that explain each zone, in doing so, I aim to find opportunities that if combined they can be applicable for the Transboundary Zone en la frontera.

Export Processing Zone (EPZ)

- Export Processing Zone can be seen as a traditional zone acting as a manufacturing/processing works for exports, and considered as outside of custom territory.
- Industry sectors within this type of zone are usually labour intensive and low skill industries such as producing garments, textiles, shoes, timber, plastic and electronic components using low cost labour.
- In general, domestic sales of products manufactured within this zone are limited. Some percentage of products can be sold in the domestic market.
- The area covered is relatively small in size, up to two or three square kilometers.

Free Trade Zone (FTZ) or logistic park (LP)

- A free trade zone is focused on international trade, especially value-added logistic activities involving light manufacturing and processing.
- The zone is outside of custom territory, and is very similar to an EPZ.

Special Economic Zone (SPZ) or free economic zone (FEZ)

- A special or free economic zone covers a large area, including residential and hospitals, schools and other business and supporting facilities and infrastructure. It promotes FDI by providing a good business environment with several incentives, such as global standard level of labour regulation, allowance of re

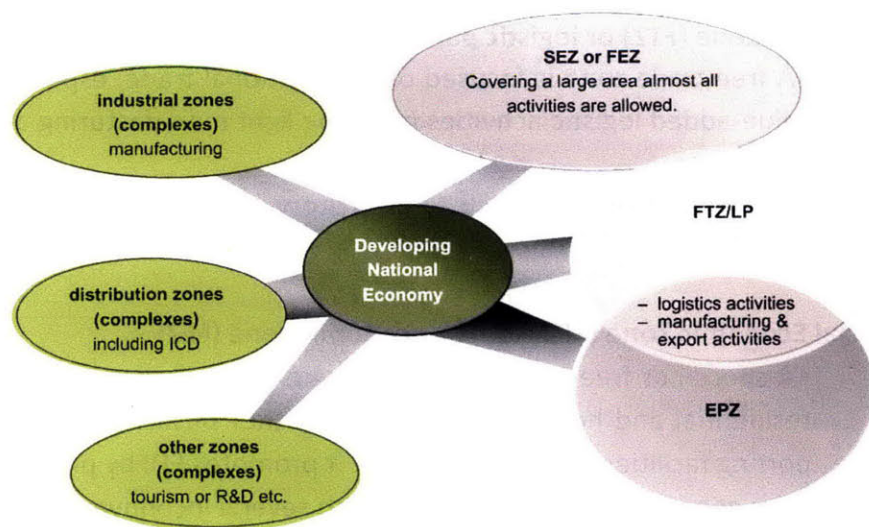
patriation and reduction of taxation for foreign investment, all of which might not be controlled under domestic regulation but under especially designated regulation appropriate to the nature of the facility.

- Within this type of zone almost all economic activities are allowed and the zone is not outside of the custom territory.
- Sometimes other special zones, such as FTZ, can be established within this zone.
- This type of zone is like a microcosm of a country.

Industrial Zone

- An industrial zone is a platform for a manufacturing industry and provides industrial clusters.
- Domestic manufactures and a few foreign investors establish their factories to take advantage of relatively good supporting facilities for manufacturing. For FDI, this type of zone often is transformed into an exclusive foreign investment zone for manufacturing.
- In general this type of zone is not outside of custom territory.²⁰

Figure 10 is an example offered by United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), illustrates the concept of several combined Special Zones for Economic Development as a tool that can develop and improve a National economy.



20 Free Trade Zone and Port Hinterland Development. United Nations Publication. Thailand. (2005, p.65).

Figure 10

Several of the above descriptions and characteristics for these special zones are quite important for the Transboundary Cooperation Zone I am suggesting, such is the case in which areas like this can function and act as outside or inside of customs territory; in the model that I will be proposing this property must be kept in mind given that the purpose of it is to create a balanced mutual negotiation between two separate systems, in separate nations but that translate into equally beneficial outcomes. It is important to note how the model for Special Economic Zones covers different types of physical program and activities; these distinctive attributes should be implemented in the *Transboundary Cooperation Zone en la frontera*. The different elements that are involved and that need to be considered for the solution of a multilayered conflict as the one found in the Cd. Juárez-El Paso territory, as proved in Chapter 1, can only attempt to be solved by the combination of different specialized factors and areas in order to work as a complete system. In addition, the different sizes mentioned regarding these areas can allow flexibility at the time of the proposal. Also, it is important to note a quality found in one of the other Special Zones for Economic Development, Tourism zones which is “visa exemption may be applied to all visitors entering into specially designated tourism zones.”²¹

The values found in this Chapter allow me to visualize a Transboundary Cooperation Zone in la frontera that is formed by multiple features and modified factors found in the different case scenarios described, the combination of those different qualities can help me to address political, economical, sociocultural, ecologic issues. The Chamizal provided insight into how a political border can shift depending on political circumstances. Moreover, Transboundary Conservation Areas and Peace Parks represent a precedent where the possibility of eliminating the political border in order to benefit different layers in a specific region is possible; additionally the concentration in the environment as catalyst for negotiation is an extremely important feature since a great part of the conflict in the Cd. Juárez-El Paso territory is derived from environmental degradation. Alternatively, Special Zones for Economic Development demonstrate the potential for regional economical negotiation; this can have a great effect in these pair cities if they work as a unified system where the aim could be the balance of supply and demand.

21 Free Trade Zone and Port Hinterland Development. United Nations Publication. Thailand. (2005, p.26).

IV IN SEARCH OF OPPORTUNITIES

- 1 Micro Analysis
- 2 Matrixes

IV In Search of Opportunities

Summary

The following maps and diagrams overlap existing elements previously analyzed in the Cd. Juárez-El Paso territory. This is an indispensable step in the process of discovering possible sites and solutions when proposing the formation of a *Transboundary Cooperation Zone*. The maps are followed by a final matrix which adds all the different elements along the border. This matrix shows the disparity between these different elements. In addition to the map analysis, the diagrams and matrix informs us of the kind of program that may be necessary in this new formation.

Cd. Juárez-El Paso Territory Analysis of Specific Zones

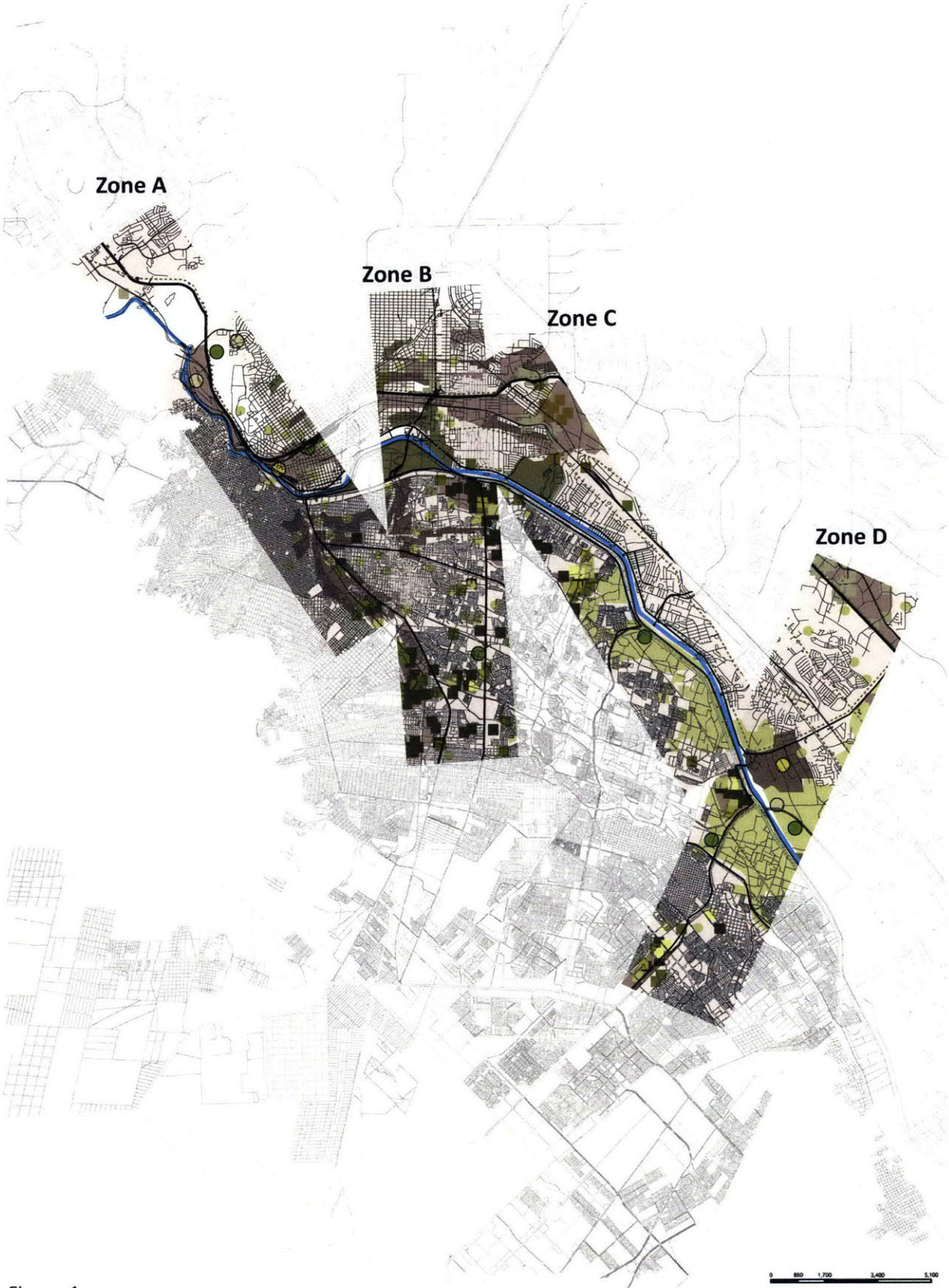


Figure 1

Zone A

General Description

Zone A represents a mixture of multiple elements where different characteristics can be found. The furthest area of this zone, where Cd. Juárez's and El Paso's limits start is predominantly composed of open areas and scattered residential settlements; the lack of density in housing and/or any other program in this region is the outcome of a complex terrain, where the Sierra de Juárez and the Franklin mountains are located. In El Paso, multiple water treatment plants and dams are located between the furthest northwest edge of this zone and El Paso's downtown. In addition a major artery passes through this area, Interstate 10, which is the main connector from the east to west side of El Paso.

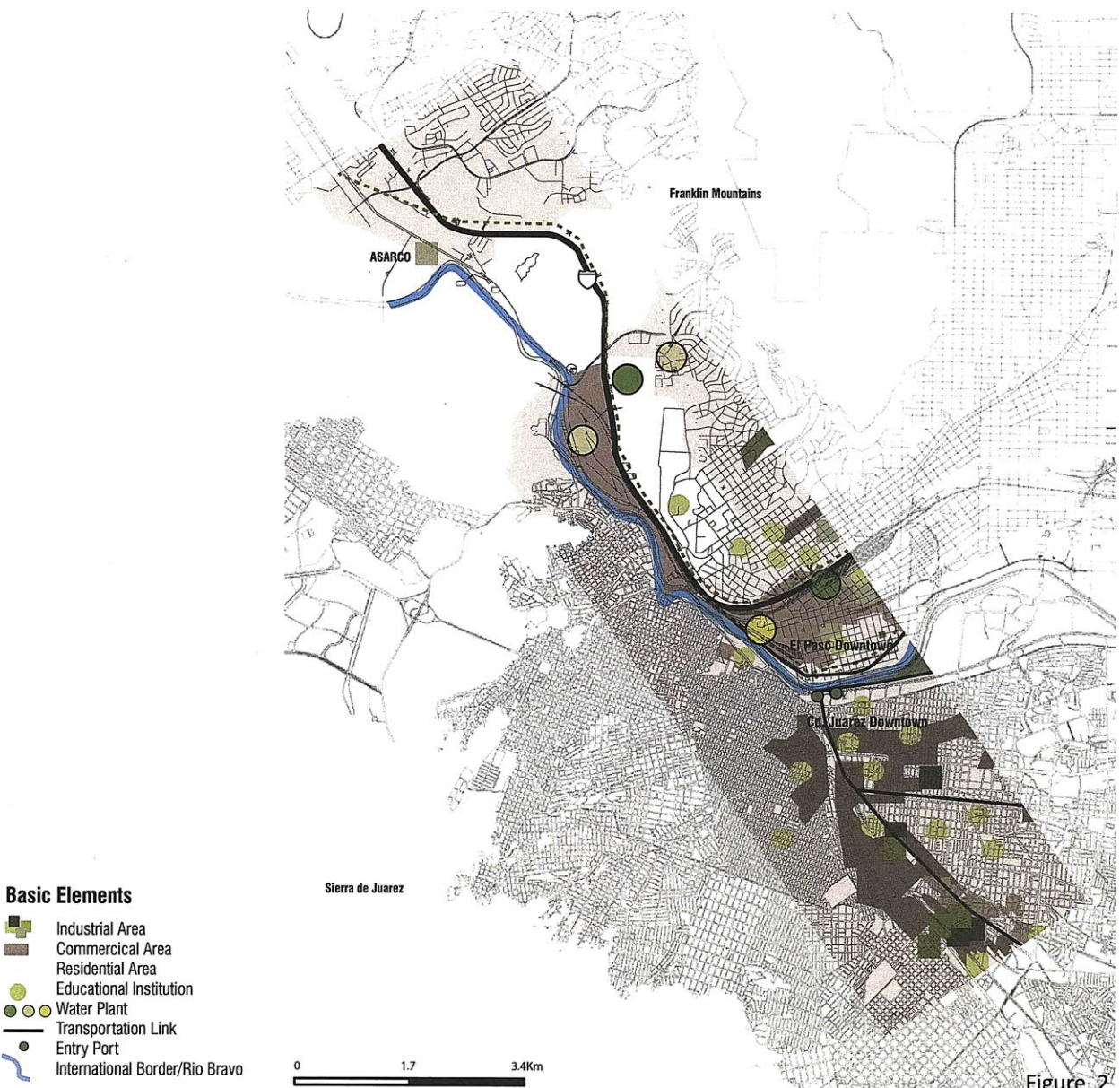


Figure 2

Zone A Variables in Elements

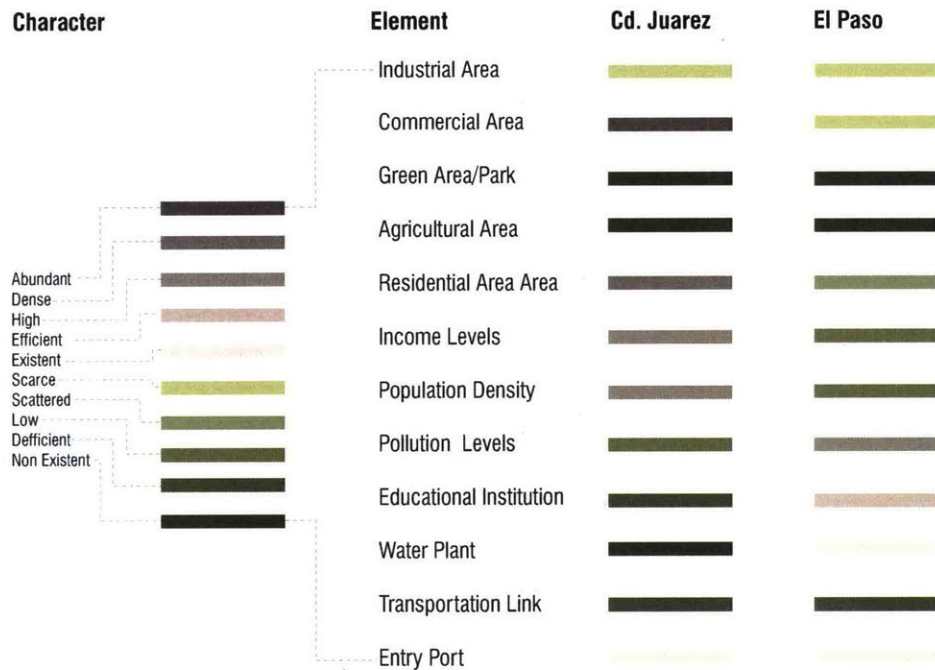


Figure 3

As mentioned before multiple elements can be observed in zone A, and it is significant to discuss the differences found among them. Regarding the amount of manufacturers and other industries in this particular zone, the matrix of variables illustrates that there are no major differences between them in these cities. However it is essential to note that the American Smelting and Refining Company (ASARCO), one of the major pollutant industries in the region is established in Zone A, on the southwest area of El Paso.

Commercial and Residential areas within this zone are denser in Cd. Juárez than in El Paso. A deficiency in educational institutions is also observed on the northwest area of Cd. Juárez where high levels of density exist. Contradictory, the downtown area accounts for numerous schools; right across the border the same characteristic is found. Also, it is important to point out the disparity of income levels from these two adjacent areas and their population; more affluent individuals tend to live in Cd. Juárez close to the border, where as underprivileged people in El Paso tend to reside in these areas.

Additional deficiencies and differences to note in this zone are the amount of water treatment plants and the disconnection on transportation links. Both cities share the water of El Rio Bravo/ Grand River; two dams, one water treatment plant and one wastewater plant are present in El Paso while Cd. Juárez does not account for any in this zone or even to close proximities. Regarding transportation links, one of Cd. Juárez major arteries meets one of the international entry ports in this zone while on the other side a secondary road connects to a major artery from El Paso, interstate 10. This lack of straight connection limits the amount of trucks that can make a clear flow for industrial and commercial purposes between these two cities.

Zone B

General Description

Zone B combines residential and industrial areas on both sides of the border. The Chamizal Park which was previously mentioned in Chapter III as a historical precedent for international cooperation is located in this zone. An international port of entry can be found at the edge of the park where it meets another green area from El Paso. Major arteries are present in this zone, which connect Cd. Juárez from north to south and El Paso from east to west. Many educational institutions exist on both sides of the border. Commercial areas also are present but are scarce. Fort Bliss, an Army Station is located near to this zone on the northern area of El Paso, close to the city's international airport

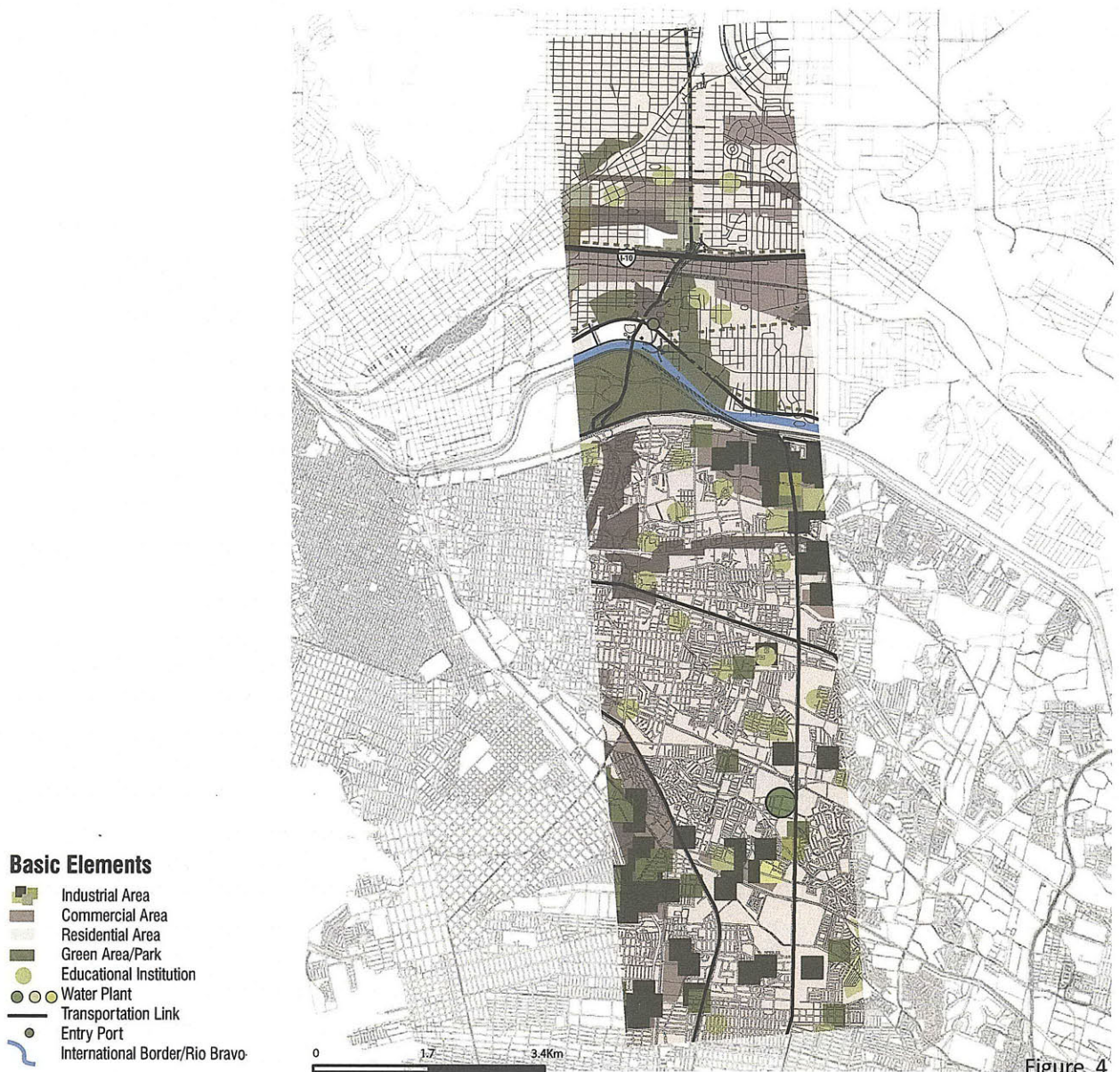


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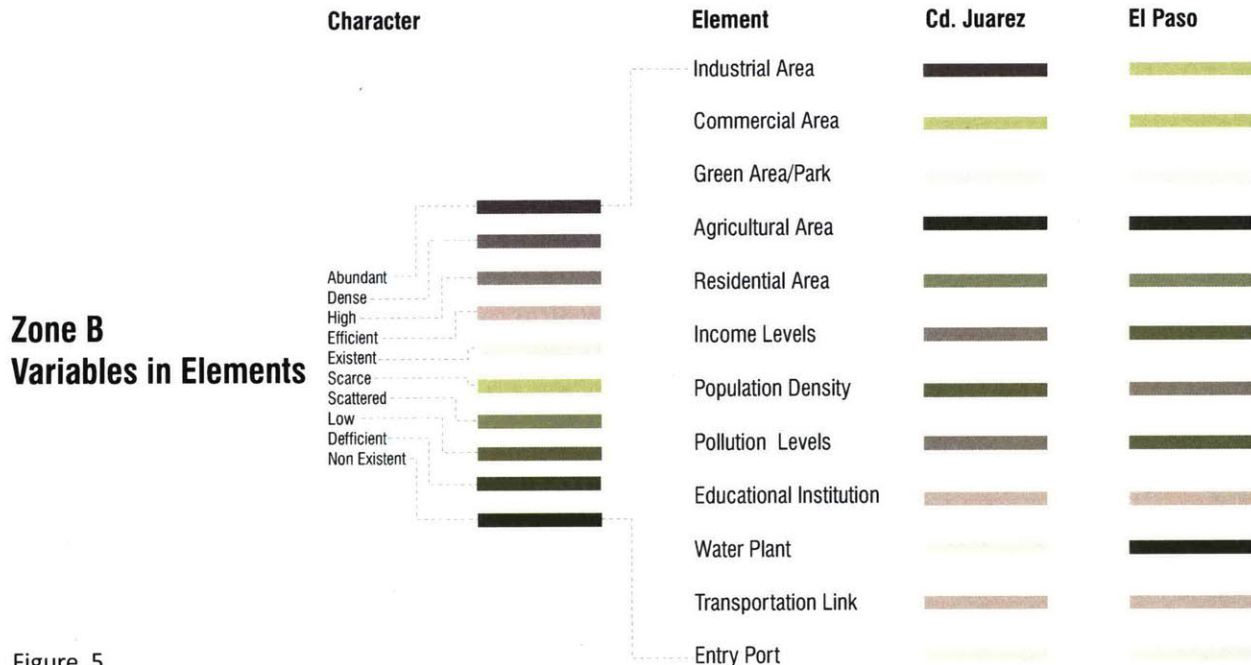


Figure 5

The presence of industry in Zone B is more abundant in Cd. Juárez than in El Paso, which generally would signify higher levels of pollution on the Mexican side, however in this case because of the proximities of these two cities contamination is an inevitable issue that affects both sides of the border.

As previously mentioned the Chamizal Park is located in Cd. Juárez, other green areas are adjacent to it in El Paso, but unfortunately the border between these two countries divides these recreational areas.

Residential patterns in this zone are less dense in general and more balanced by comparison with the neighboring city, unlike Zone A where the Mexican side has higher levels of density. However, this zone presents a disparity between population density and levels of income, both higher in Cd. Juárez, fortunately educational institutions appear to be sufficient for both cities.

The same deficiency observed in Zone A regarding water treatment can be found in this zone, but this time a Water treatment plant exist in Cd. Juárez and not in El Paso; the lack of an interconnected water treatment system is a disadvantage that should be taken into consideration. A more direct and efficient transportation link is observed between these two cities in this zone. As noted in the elements presented in Chapter II, high numbers of private automobiles use the entry port connected by two major arteries from each side of the border, greater numbers of trucks also use this port, but regrettably, only a small amount of foot traffic utilize this crossing which is an issue that must be addressed when taking into consideration that two major parks exist adjacent to this portion of border.

Zone C

General Description

Zone C presents similar characteristics as the previous zones, however, the appearance of Agricultural plots and more scattered open areas are observed here., and unlike Zones A and B, Zone C does not contain an entry port. Important arteries are located in both Cd. Juárez and El Paso in this region, they both connect these cities from north to south, but unfortunately stop right at the border. Within Cd. Juárez there is a primary road that links the north south connection previously mentioned with the west side of the city. In addition, it is significant to note that water treatment plant is located in this zone on the Mexican side.

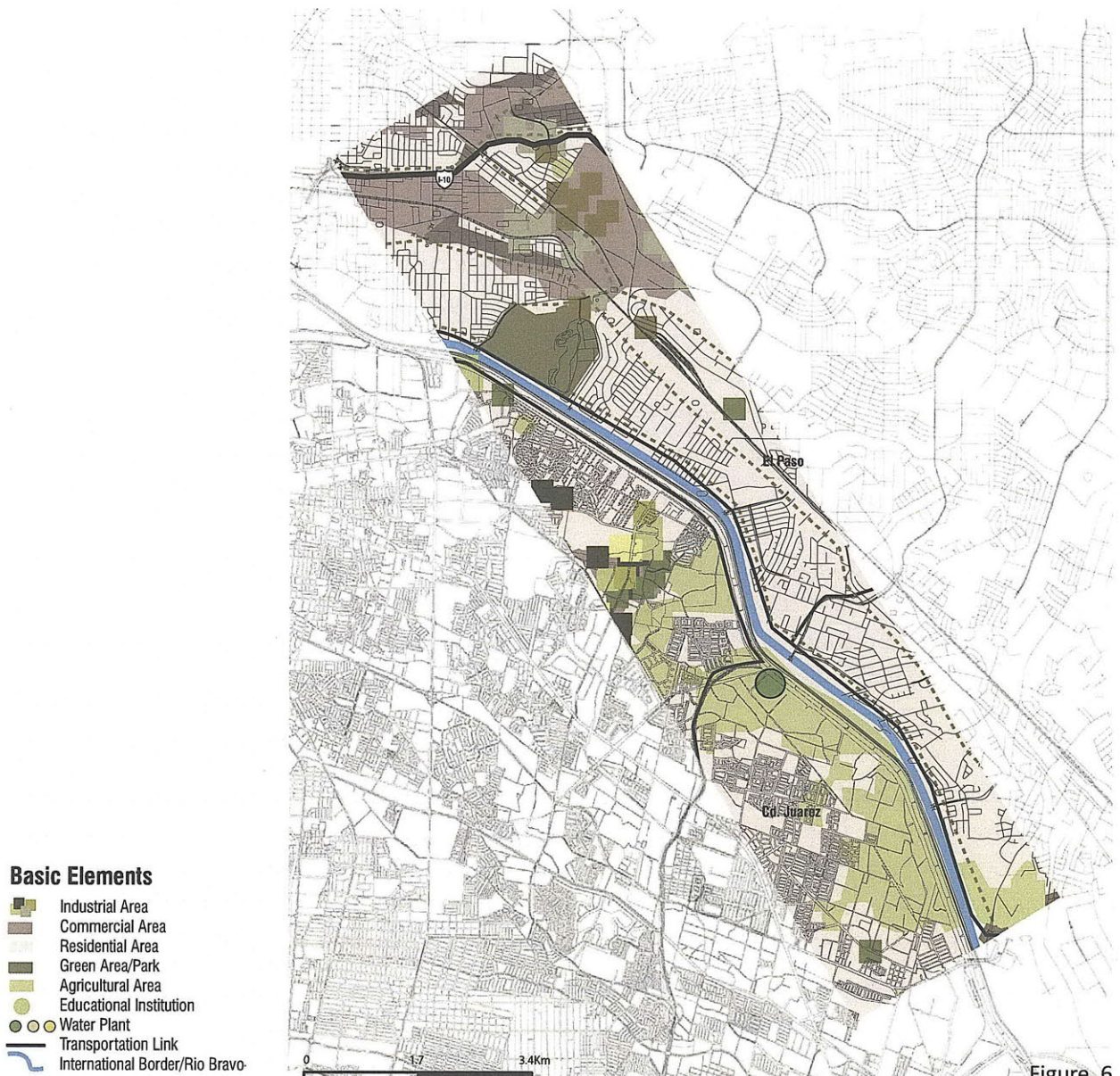


Figure 6

Zone C Variables in Elements

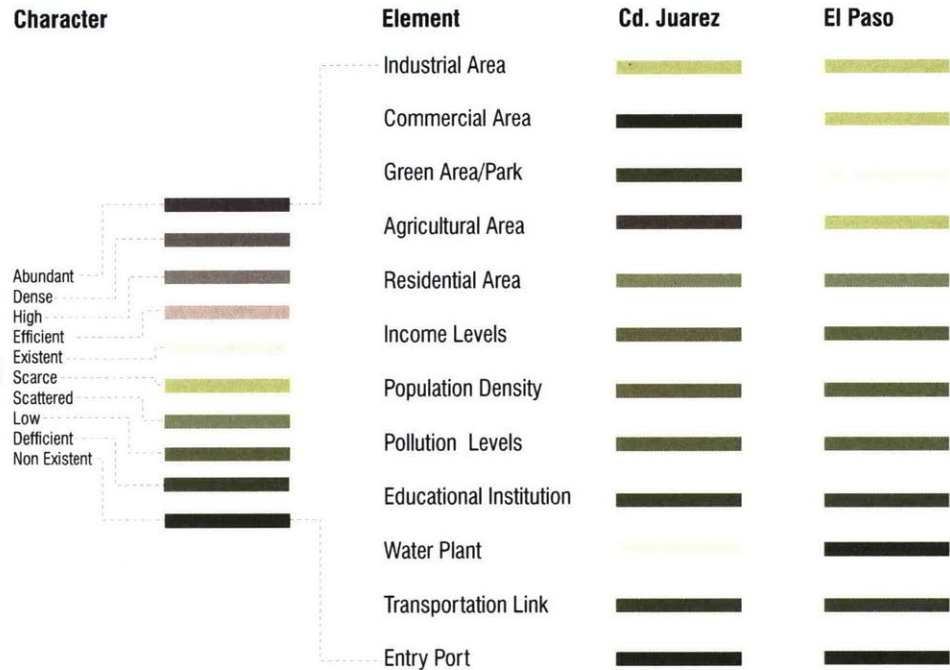


Figure 7

Zone C residential patterns and industrial areas have similar characteristics on both sides of the border, where low levels of density and scattered structures can be found. However, commercial areas are different in this zone, in fact, in Cd. Juárez this type of area does not exist. Conversely in El Paso a major commercial area that accounts for malls and big box stores is present in this zone. An additional distinction that can be noted in Zone C is the lack of green areas in the Cd. Juárez, while a big park is located in El Paso adjacent to the border. As previously mentioned this is the first zone where Agricultural plots appear close to the border, but this only happens on the Mexican side.

It is important to note that income levels are low in both sides of the border in this zone, this contrasts the income levels from previous zones. Most of the inhabitants in zone C work in the adjacent fields for the agricultural industry, this may be the possible reason why this zone shows lower income structure as compared to the other zones where individuals work on services or other type of industry..

In zone C air pollution levels are relatively, however it is close to other areas that prove to have high levels of contamination.

Regarding educational institutions, regrettably both cities are deficient.

An extra visible deficient element is the complete lack of a transportation link joining both cities. This is very unfortunate due to the possibilities that rest within existing infrastructure. Both cities have major roads that are relatively in line with one another, but terminate at the border. Certainly, one could imagine these roads being connected as one system that could mutually benefit both cities on many levels.

Zone D

General Description

The last entry port between these two cities is located in Zone D, this is the furthest area to the east before one comes to these cities' limits. Great expanses of agriculture plots are observed here and also as a result less dense housing. It is significant to mention that since the early 2000's manufacture industry from Cd. Juárez has been establishing along a main artery found in this zone; this important avenue connects the city from north to south stopping at an entry port that has direct connection to a major road in El Paso. Several water treatment plants are found in this zone on both sides of the border.



Figure 8

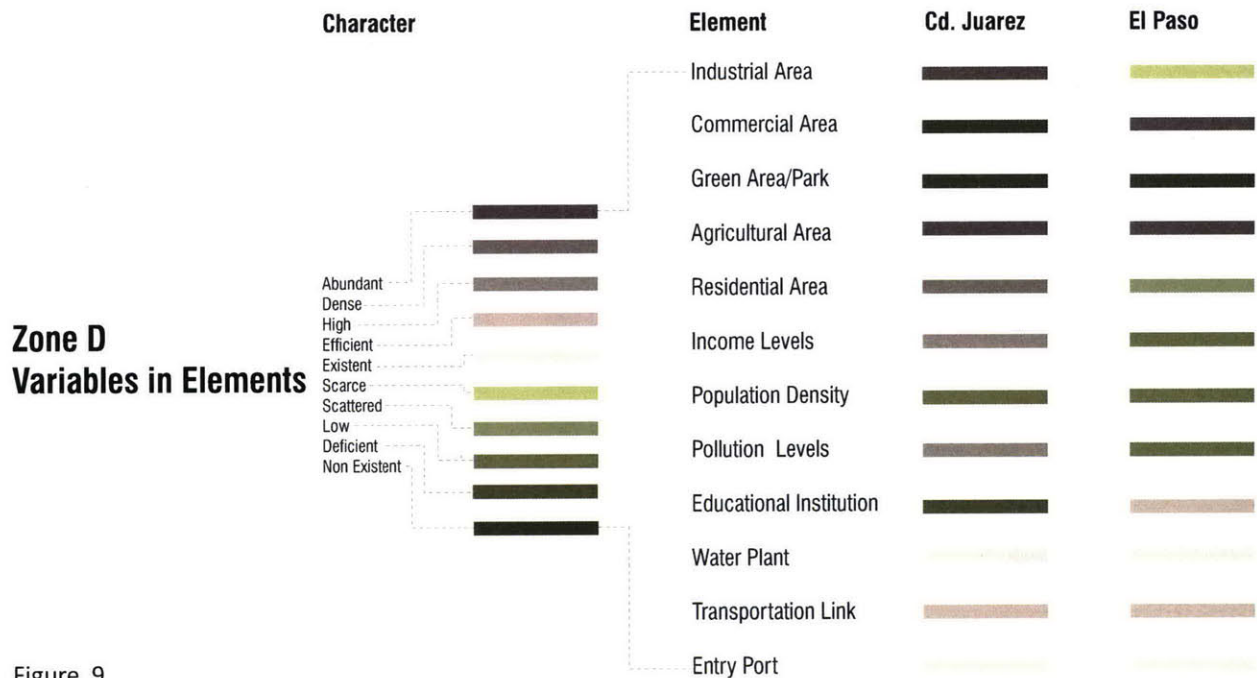


Figure 9

Zone D provides new patterns in its elements when compared to the others zones. For instance this is the first case where there is the presence of water treatment plants on both sides of the border. In addition, there is a clear transportation link established between these two cities; even though there is an entry port separating the roads a more direct connection and flow can be observed towards El Paso's major artery. It is been established that higher levels of trucks traffic pass through the port in this zone.

Industry within this zone is more abundant in Cd. Juárez; as previously mentioned new patterns of establishment started shifting towards this area in the early 2000's. As a result higher pollution levels are recorded on this side on the border.

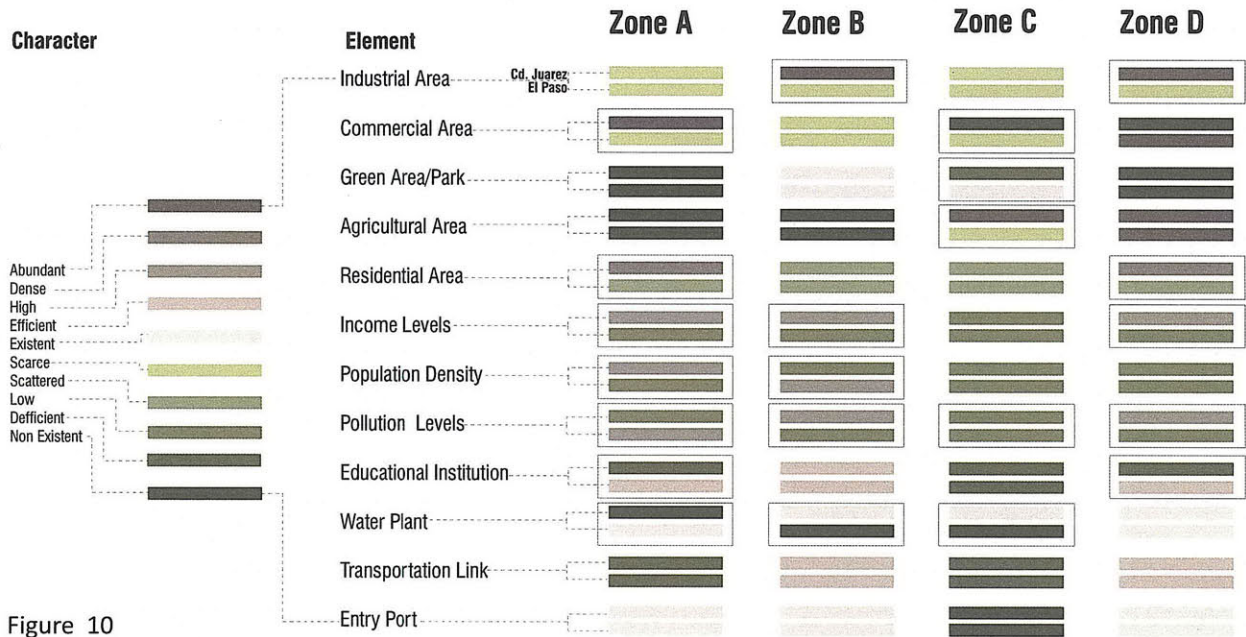
No green areas exist in this zone or near to it, however great plots of agriculture are observed in both sides of the border mixed with scattered residential areas.

Population density is low on both sides of the border, but similarly than to zone A and B income levels are different, higher in the Mexican side. Alike Zone A, an insufficient amount of educational institutions are observed in Cd. Juárez, but sufficient in El Paso.

As stated in the general description of this zone, water treatment processes happen in both cities in this zone. Juárez accounts for one waste water treatment plant, while El Paso accounts for one water treatment plant and a dam.

In general this zone is a more balanced regarding the different elements observed in each side of the border.

Matrix



Categorization of Elements for Opportunities

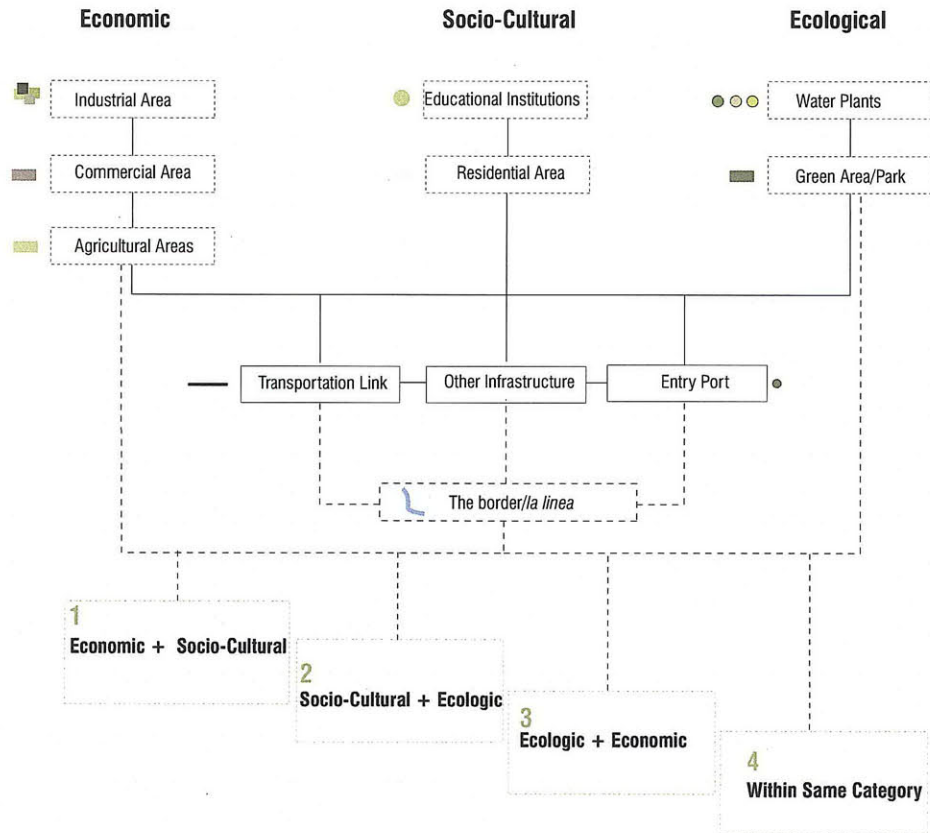


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V IDENTIFYING SCHEMATIC OPPORTUNITIES

- 1 Industry Loop
- 2 Commercial Landscape Link
- 3 Environmental Ally

V Identifying Schematic Opportunities

Summary

This thesis has had as a main objective the investigation and treatment of Cd. Juárez and El Paso as one territory. This vision is essential to solving the existent conflict in these border lands. The following opportunity schemes address this goal. These schemes combine existing elements from the cities of Cd. Juárez and El Paso in order to create opportunities that will catalyze the current conflicting system, which translates into solutions for addressing opposing needs, values, interests and concerns.

Industries and Transportation Links 2010

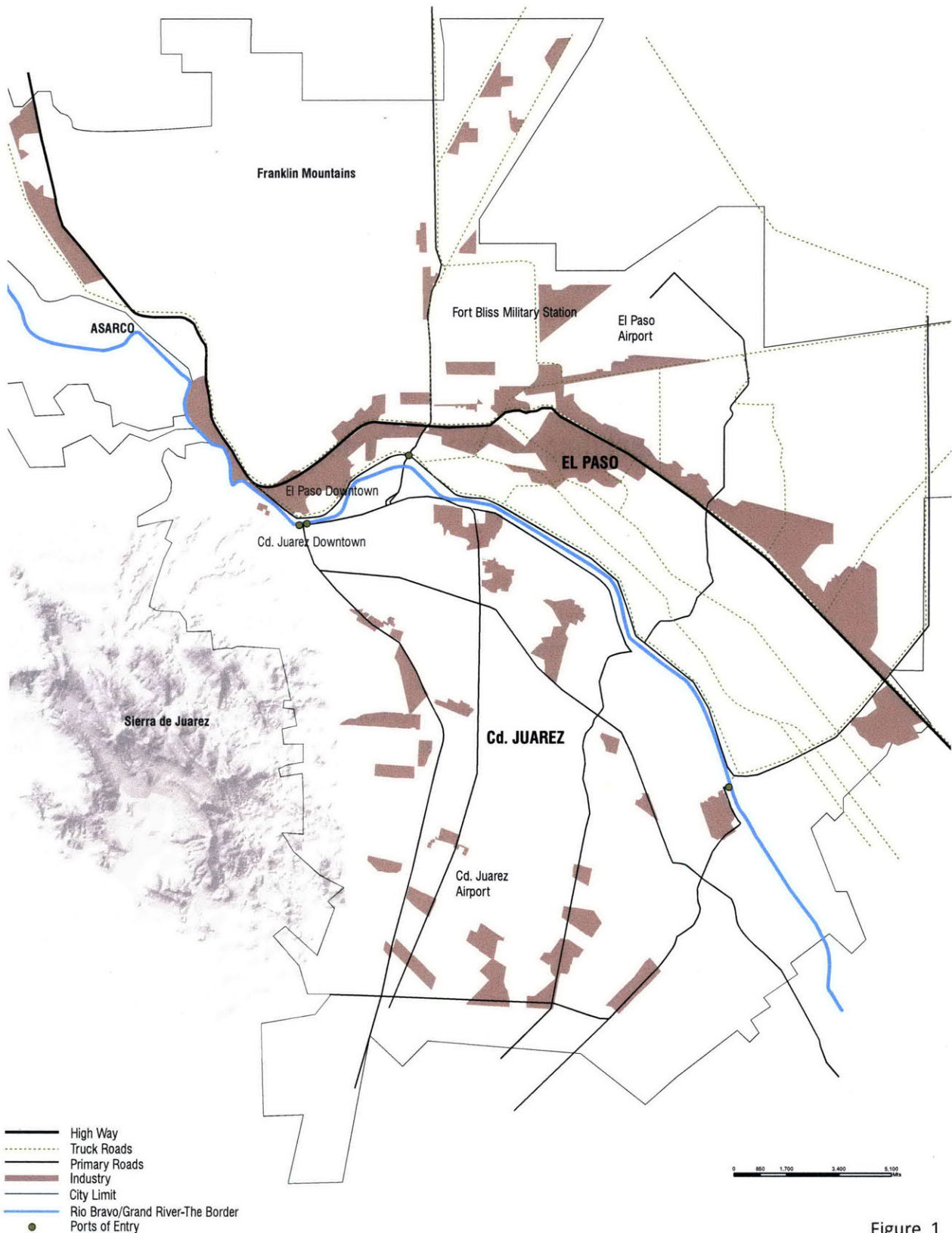


Figure 1

Industry Loop 2015

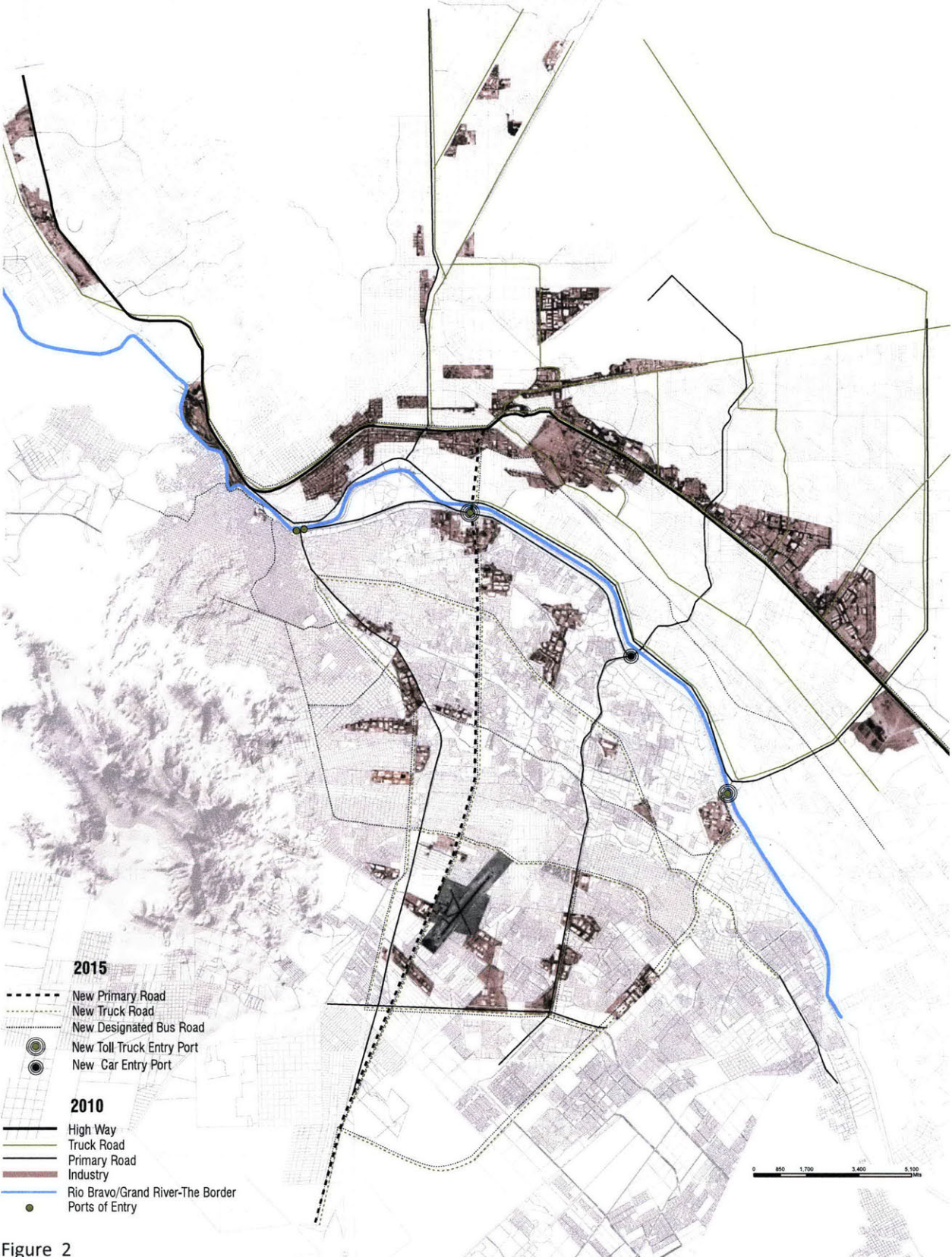


Figure 2

1 Industry Loop

The scheme envisions a *Transboundary Cooperation Zone* that merges the manufacturing industry and its employment force, as well as transportation links of Cd. Juárez and El Paso to create a united single territory. The ideas behind this scheme derived from the analysis compiled throughout this thesis which revealed how these major economic elements are uneven and dislocated; by treating them as a part of one territory, opportunities and benefits can be created.

The information and data analyzed in the previous chapters suggest that the employment force and the underutilized infrastructure of the manufacturing industry in El Paso can collaborate and assist with the demands of the manufacturing industry in Cd. Juárez. In addition, the regional analysis shows a disconnected transportation system between these cities; however if reconfigured, the new transportation organization not only will contribute to a better exchange of goods and services, but also become a significant economic and environmental force that promotes equanimity within the Cd. Juárez-El Paso territory.

The manufacturing industry *-Maquiladoras-* in this scheme becomes a positive engine between the two metropolises, which generates relationships, development, interchange and mobility between the two cities. This more sensitive trade model with a cross-border transportation system will benefit and incorporate the local economy.

This scheme proposes the allocation of specific roads for trucks and buses around the territory; this will create a more efficient system for the flow of materials, goods and the employment force participating in this cooperative system. In addition, the scheme proposes two new toll entry ports that will allow for security and control; their economic contribution will be an incentive for urban infrastructural development, as well as a provider for the maintenance and the creation of this system. These infrastructural elements are some of the main tools that will weave together both cities manufacturing industries.

Moreover, the scheme proposes the creation of a guest worker program and Identification cards to allow for an interchange of labor forces; a new set of labor laws must be created to govern employment regulation and restrictions such as salaries, permits, economic incentives, trainee conditions, medical and pensions plans, etc., will need to be created too. Also, other types of laws that deal with environmental issues from this industry will need to be implemented.

This model presented is a positive generator along the border that interacts with other systems promoting a unity that sustains the region and its inhabitants. In order for this scheme to function it requires the integrated participation of local, federal, and state agencies as well as national and international governing bodies.

This thesis reveals multiple conflicting elements between these cities; this scheme specifically

aims to solve some of those issues:

In the economic realm, this model will decrease the high unemployment levels of El Paso, caused by the shift of the manufacturing industry to Cd. Juárez since the 1960's. In addition the cooperative program between the industries will help to reduce the numbers of El Paso's unskilled laborers. Alternatively, the employment force of this industry in Cd. Juárez will benefit from the creation and regulation of new employment standards and wages, which could change the idea of Cd. Juárez as a trampoline field for many migrating to this northern Mexican city.

In the sociocultural realm, this scheme gives individuals the opportunity to achieve a better quality life, where employment and a reasonable income (for individuals in Juárez) lead to better access to housing, medical, education, and infrastructure services. Additionally there will be an improvement in their health derived from the implementation of new environmental laws. This model of collaboration offers better standards of living for the unprivileged individuals of these societies as well as leveraging the disparity between the different groups inhabiting these cities.

In the ecological realm, this scheme enforces new environmental laws for both cities, helping to alleviate the current ecologic degradation caused by the present lax laws in these cities, mostly in Cd. Juárez. In addition by creating an efficient employee transportation system fewer individual will drive, lessening the congestion of the streets and the air pollutants from automobiles; the buses and their specific routes will create a much more organized territory controlled by environmental laws that will help the air quality. The ports of entry designated for this industry will minimize the waiting time at the international crossing bridges, translating into less combustion coming from thousands of cars waiting every day to cross back and forth between these cities.



Figure 3

Commercial and Green Areas/Parks 2010

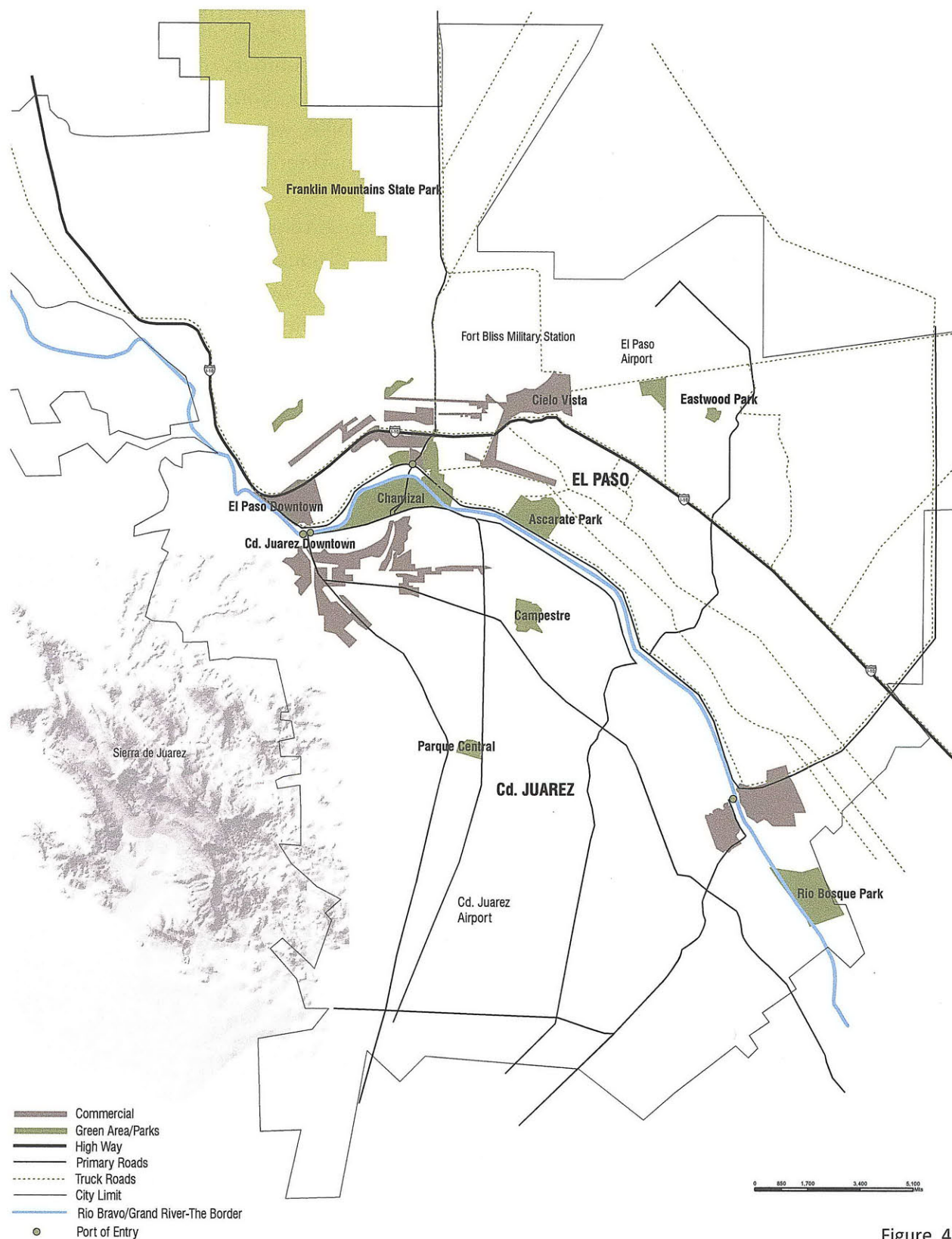


Figure 4

Commercial Landscape Link 2016



Figure 5

2 Commercial Landscape Link

This scheme proposes a binational area where ecology and economy unite to create a new active landscape for the Cd. Juárez-El Paso region. This model has been developed from observations collected through the analysis of this thesis. These observations exposed a disconnection between major green areas and commercial zones within these cities – currently blocked by major roads, entry ports, and a multilayered physical boundary.

Investigations from the regional and local analyses from previous chapters show an inherent physical opportunity where social, cultural, commercial and ecological interactions between inhabitants of these two cities can exist, a -new *Transboundary Cooperation Zone*- that offers urban livable activities that promote unity while preserving diversity.

The creation of an urban binational space where new policies for peace, freedom, justice and equality take place for common interest is vital in this region. This new cooperative site will help to redefine the negative image and reality of the border, where the physicality of the wall in recent years has impeded humanity.

This scheme proposes a more porous border where the combination of programs provides customers and tourists with a variety of activities while promoting a pedestrian friendly zone. In order to do so, a section of the multilayered wall must come down; the open space after the wall is removed will be replaced by platforms and new pedestrian checkpoints, thus, creating a physical spatial network that integrates the landscape of the Chamizal Park and the adjacent green areas on the other side of the border in El Paso. This physical network will not only be linked by pedestrian bridges but also by a shuttle line that will transport individuals throughout the green spaces and the different existing programs that already surround this area (libraries, commercial establishments, restaurants, museums, schools, etc.)

The new pedestrian customs facilities will be shared and used by new trained officers from both countries in order to maintain security and control while promoting equality. Subsequently, a new cost-free visitor identification card must be created. This will allow individuals to enjoy what is on the other side. Less paperwork and restrictions will be required for this eight hour permit. The goal is to create an open zone where every individual has the right to visit.

Also, the scheme proposes a space for street vendors who faced dangerous negotiation in-between automobiles along international bridges.

This model attempts to unite the inhabitants of these cities in a livable shared space while creating positive influences on economic, sociocultural and ecologic elements.

In the sociocultural realm, this model responds to public needs and desires. But moreover it aims

to change the negative and alienated vision that some inhabitants from these cities may have had in relation to those living in other side. In addition, this *Transboundary Cooperation Zone* has the potential to re-unite families separated for years because of immigration conditions.

Furthermore, this scheme can establish bilingual educational programs that have a joint curriculum. Educational institutions around this new *Transboundary Cooperation Zone* will provide classes that instruct and train individuals about environmental, business, and law subjects. The new job opportunities created by this area (park rangers, new immigration officers, service jobs, etc) can be filled by individuals who participate in the new joint educational program. Other classes that promote and teach cultural traditions from each border city will be integrated too.

In the economic realm, this scheme enhances the possibility of attracting different kinds of investors by converting an area surrounded by major industrial infrastructural such as bridges, highways and a trade zone into a human scaled urban space. This will add to the value of adjacent neighborhoods, such as is the case of El Paso's downtown, currently seen as a poor area.

In addition, the integration of vendors working in the informal sector can create new negotiations with the already established businesses around the area such as restaurants, retail, etc. This "market strip" replaces static walls with an active human border zone.

In the ecological realm, there is an opportunity to exchange information and resources in order to create sustainable landscapes as well as research programs that address existing ecological degradation in the region.



Figure 6

Water Treatment, Industries and Agricultural Land 2010

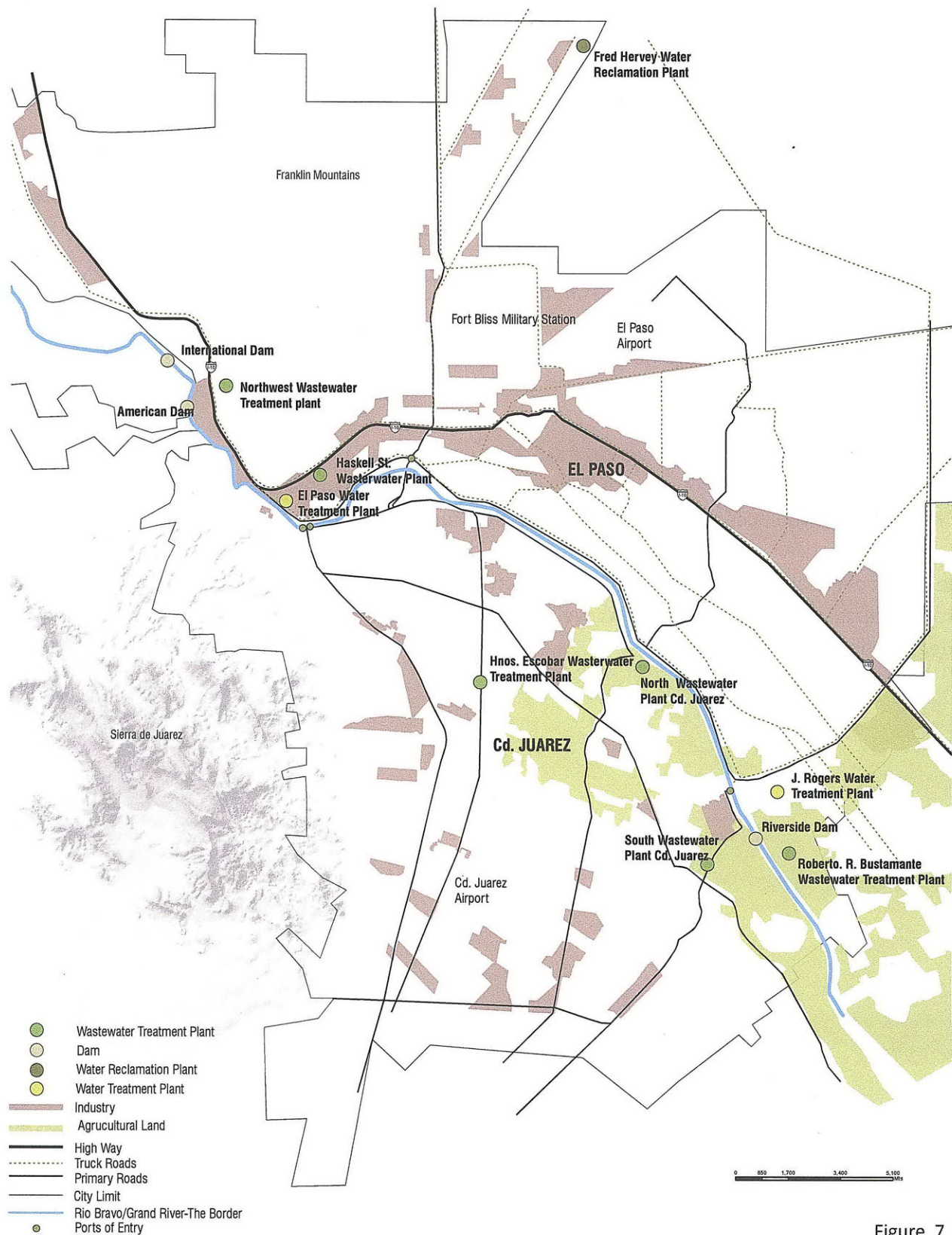


Figure 7

Environmental Ally 2017

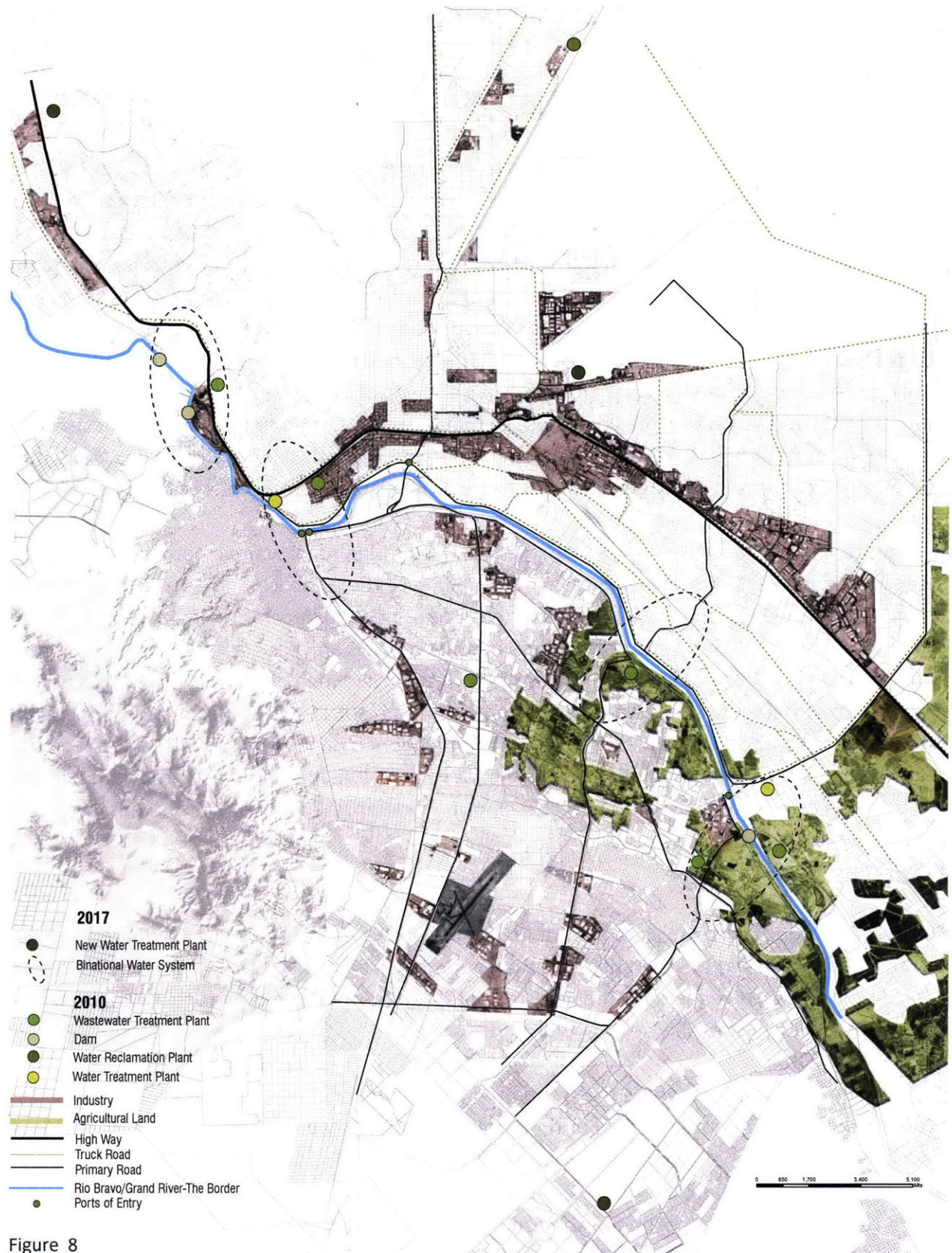


Figure 8

3 Environmental Ally

This scheme creates a shared water treatment system between the cities of Cd. Juárez and El Paso. Previous analyses suggest that opportunities like this are necessary and can be possible. By combining the resources and using shared technology, the individuals living in this territory could benefit in multiple ways.

Chapter I stated several of the current concerns with regards to availability, quantity, and quality of water in the region. A treaty between these two countries mandated the allocation of this natural resource in 1916; however historically it has not been honored. At present, Cd. Juárez and El Paso, treat their water separately; this translates into different levels of quality and quantity for their inhabitants, Juárez's population being the most negatively affected. The position and distribution of the water treatment plants in these cities is uneven and sometimes insufficient. For instance, the farthest north-west area of Cd. Juárez, where multiple *colonias* are settled lacks on water treatment infrastructure. Then in other districts of both cities there is a complete lack of treatment plants such as is the areas close to their centers. Contradictory, close to these cities' limits in the eastern region, several treatment plants exist on both sides of the border. Nevertheless, some of these plants have the capacity to treat the water on both sides of the border.

In order to address these issues, this scheme proposes a binational water treatment plant to be settled by an international agreement. In order to finance the establishment and construction of this new combined system, the industries of these cities need to become an important allies. Actually, a model that shows collaboration between city officials and private investment is one that had happened in Cd. Juárez. In this Mexican city, private investment, manufacturing industry, and city officials has already taken place in Cd. Juárez. As a result, this is an example of successful model that should be followed. Plus, since the *Maquiladora* industry has put severe strain on the region it should be somewhat held responsible for it, therefore its economic participation in the creation of a new binational water program helps to compensate for the environmental damage they have caused to this territory.

This scheme proposes to replicate the Cd. Juárez model in other areas of the Cd. Juárez -El Paso territory. A possible way to accomplish the transboundary water treatment system is by allocating a fraction of the tax revenue from the industries of these cities for the construction, implementation, and sustainability of this new mutual plan.

In addition this scheme proposes the creation of a mutual fund. The use of this fund can be distributed into different projects. One of them can aim to solve the inappropriate and insufficient sewage system from the *colonias* of the region. Also, a part of this fund can be used in the implementation of a binational plan that educates residents of Cd. Juárez and EL Paso regarding this scarce resource. Another portion of the fund can sponsor a program for the exchange of infor-

mation from biological sample sites; this flow of communication can improve the monitoring of water quality, which ultimately can translate in decreasing numbers of serious health issues.

Other benefits that can emerge from the use of diplomacy in mutual water treatment system is the possibility to foresee the needs of industry as well as population growth, which is something that was not taken into account in the treaty of 1916.



CONCLUSION

Conclusion

In borderland territories our participation and contribution as designers, architects, and urban planners must not only be design focused, but it should strive to collaborate and exchange with different disciplines. This alliance would aid us in thinking, understanding, and planning with a different vision, one that helps to organize the city not only as a built form but primarily as a living structure.

From an aerial photograph these two metropolises read as one, but on the ground their differences translate into daily contradictions, where the multiple layers that encompass these two cities overlap while at the same time are dislocated.

The current conflict between Cd. Juárez and El Paso, as well as other U.S.-Mexican border regions, is a subject that cannot be ignored.

The Mexican-American border has been defined throughout history by different issues, such is the case of intensive levels of migration, labor exchange, free trade, flow of goods and investment, trafficking of illegal drugs, cultural hybridization, tourism, and political disagreements, just to mention some.

El Paso, TX and Cd. Juárez is a borderland filled with ironies: individually demarcated yet synthesized, secured yet transgressed, fetishized yet denigrated. As result of these paradoxes this borderland suffers of problems of economic disparities, political tensions, social and cultural alienation, and ecological threats.

Tremendous contradictions exist within the complexities of borderland regions; however, this thesis proves that conflict can become the tool that redefines cities and the operative device used to intervene in the metropolis.

This thesis has had as a main objective the investigation and treatment of Cd. Juárez and El Paso as one territory. This vision is essential to solving the existent conflict in these border lands. The research and proposals from this thesis addressed this goal.

In addition, history can be another device that can assist to positively reconfigure these territories. By deeply learning and understanding the pass we can make more educated interventions for the future.

Throughout history, multiple treaties, acts, agreements, programs, and initiatives such as the Border Industrialization Plan, (BIP) the Maquilado-

ra Decree, and the Northern American Free Trade Agreement (NAFTA), have changed the physical and the political definition of the border between Mexico and the United States. Economic, sociocultural, and ecological landscapes have been significantly influenced by these changes; the evolution and mixture of all these different layers have determinate how these border territories function.

Conventional solutions have proved throughout history that treating pair cities as separate entities is not ultimately successful in terms of problem solving.

Schemes that combine existing elements from the cities of Cd. Juárez and El Paso in order to create opportunities that will catalyze the current conflicting system, which translates into solutions for addressing opposing needs, values, interests and concerns.

New urban planning design reconfigurations that take into consideration what exists on the other side of the border are necessary. A new way of thinking must take place where integrated relations attempt to resolve the negative situations affecting these territories and the quality of life of their inhabitants. Consequently, the vision of one territory is the most suitable way to address economic, sociocultural and ecologic issues. This unilateral lens allows for mutual progress. Binational planning is key in this context.

Cd. Juárez and El Paso are one interconnected territory that feeds and responds to different complexities. By looking through this unilateral lens, solutions –policies and physical reconfigurations- can minimize the conflict in this borderland, manifested in the opposing relations between needs, values, interests, and concerns of the two different entities.

ENVISIONING TRANSBOUNDARY COOPERATION ZONES

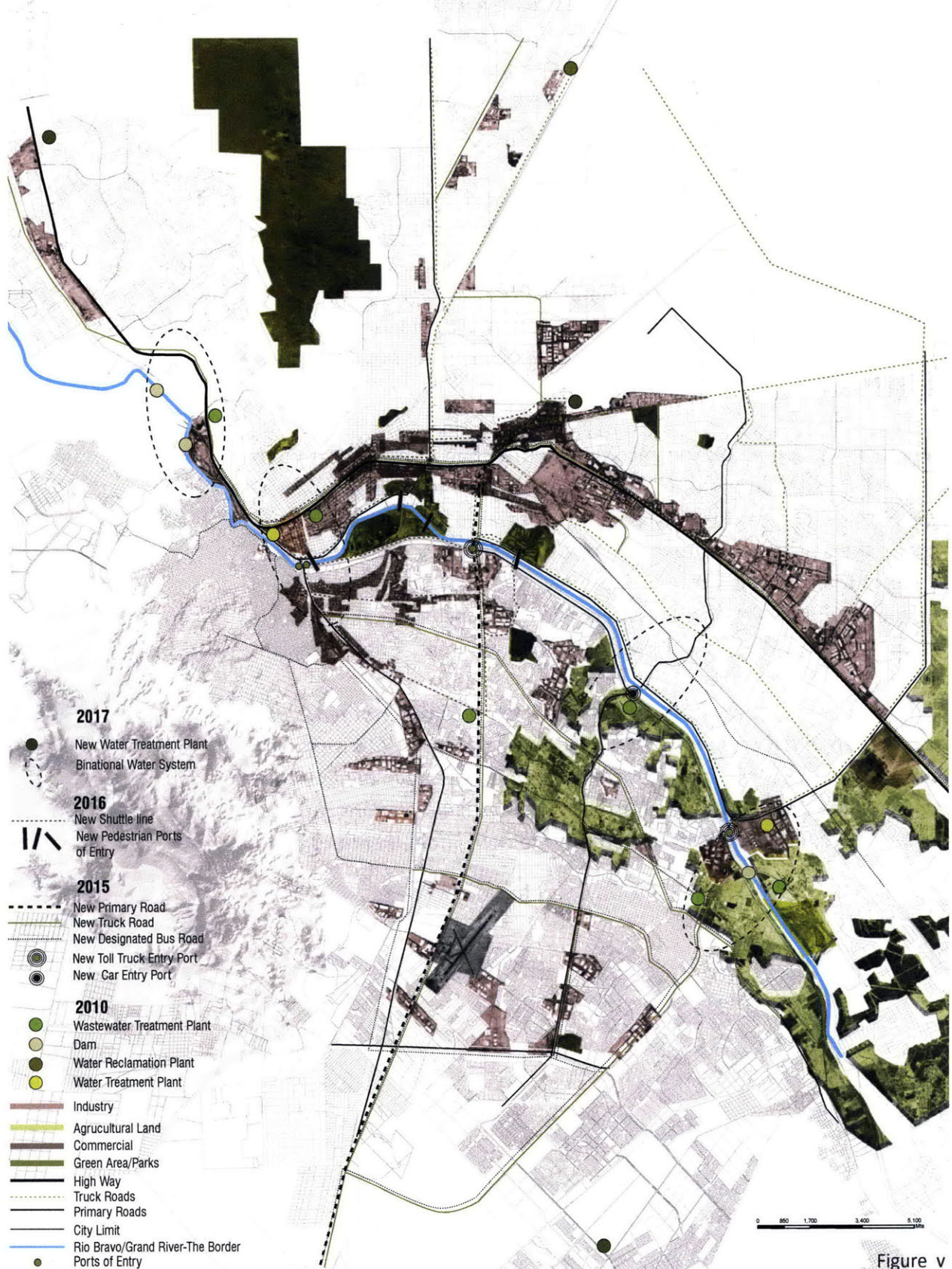


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APPENDIX

Appendix

English-Spanish terms

the border - *la linea*

Grand River - *Rio Bravo*

crossing card - *la mica*

downtown - *zona centro*

low-wage assembly plants - *Maquiladoras*

informal settlements - *colonias*

industrial parks - *parques industriales*

Mexican-American - *Chicanos*

List of Abbreviations

ASARCO American Smelting and Refining Company

BIP Border Industrialization Program

EPZ Export Processing Zone

ESCAP Economic and Social Commission for Asia and the Pacific

FEZ Free Economic Zone

FTZ Free Trade Zone

IBC International Boundary Commission

IBEP Integrated Border Environmental Plan

IMIP Instituto Municipal de Investigación y Planeación

IMSS Instituto Mexicano del Seguro Social

INS Immigration and Naturalization Services

IPED Institute for Policy and Economic Development

IRCA The Immigration Reform and Control Act

IUCN The World Conservation Union

LP Logistics Park

NAFTA Northern American Free Trade Agreement

NGO Non-governmental Organization

PCIA Peace and Conflict Impact Assessment,

RFF Resources for the Future

SPZ Special Economic Zone

TN Trade NAFTA visa