

The Infrastructure of International Trade, and the Political and Economic Landscapes of Cameron County, Texas and Matamoros, Tamaulipas

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Introduction.

In the era of the North American Free Trade Agreement (NAFTA), the public and private sectors are increasingly committed to the growth of transport-oriented infrastructure, including ports, highways, bridges, and rail facilities. In particular there has been much interest in international bridges spanning the Rio Grande, the roads and rail lines leading to these bridges, and the port facilities that support the traffic. What is needed is an overview of the geography of ports (both inland and maritime) that are conduits of international trade between NAFTA-member countries. This would involve descriptions of the spatial evolution of port cities as trade increases. International bridges are key to the geographies of inland ports of the Texas-Mexico border. They come about from lengthy and often arduous bi-national and inter-governmental planning. Thus, what are also needed are examinations of the particularities of the planning process for each international bridge. This study aims to address both issues by examining the transportation and related infrastructure of the port cities of Brownsville, Texas, Harlingen, Texas, and Matamoros, Tamaulipas. It will examine two recently opened vehicular international bridges and corresponding roads and highways. Additional facets of the region's transportation, including rail lines and the Port of Brownsville, are briefly considered.

The intent of the project is to provide an historical overview of the two most recently constructed international bridges linking Cameron County, Texas and the *municipio* of Matamoros, Tamaulipas, Mexico. The four primary emphases of this overview are 1. the planning process; 2. the nature of the financing of the bridges; 3. the disbursement of the revenues that the bridges generate; and 4. the resulting land use changes that the bridges have brought about. In addition, brief mention is made of efforts to market and promote one of the bridges and its corresponding transportation corridor. The hope is that the study will enable policy makers, academicians, and interested members of the private sector to better understand the complexities associated with the planning and financing of international bridges, the importance of revenue generation that each contributes, and the degree to which each one spurs development or expansion of the economic landscape in the region it serves.

Statement of the Research Problem.

The primary emphasis of the research is an historical overview of the most recently constructed international bridges in the Harlingen-Brownsville-Matamoros

metropolitan area, particularly their impacts on the region's evolving economic landscapes, and their administrative and financial particularities. Thus, a secondary emphasis is a broader consideration of the "port geography" of the twin cities, or the impact of port activities on urban growth patterns and the connectivity of the region to points throughout the NAFTA countries and beyond. Following from the first two emphases, a third focus is on the ways these bridges are promoted in order to draw ever increasing amounts of traffic, predominately freight.

The construction of inland port facilities, particularly international bridges, requires a host of complex events that include planning, engineering, impact assessments, and the arrangement of financing. All of these events involve bi-national coordination, especially the site selection and the land use planning associated with international bridges. The highways, streets, or rail lines that link these bridges to their ultimate destinations necessitate an immense amount of planning and expense of public funds. Given this fact, the bi-national planning processes become that much more important, and ultimately quite lengthy. A case study method will be employed to illuminate in some detail the history of this planning process for two of the operational international bridges linking Matamoros to Cameron County: the Veterans International Bridge at Los Tomates, and the Free Trade Bridge at Los Indios, immediately west of Brownsville. I gathered information on a proposed bridge intended primarily to link Matamoros with Brownsville's maritime port, and a proposed rail bridge that has yet to materialize, insofar as they shed light on the planning process, though they are not part of the primary focus of this study.

The research also seeks to highlight the differences in the federal political systems of Mexico and the U.S. insofar as land use planning is concerned. In both countries, such planning involves not only coordination between governmental entities across the border, but between entities within each country. Hence the nature of federalism in the U.S. and Mexico respectively becomes a strong determinant of the way that planning and the various stages of approval of a bridge and its related infrastructure are carried out. Furthermore, the land use requirements of the shipment of cargo and the crossing of passenger vehicles are immense. Warehousing is necessary for the storage of goods, particularly on the U.S. side, until they can pass inspection and all duties are paid. Planners and other governmental officials on both sides of the border could benefit from in-depth analyses of the unique spatial forms of port cities, and the unique planning processes related to bridges and other infrastructure as the port cities face the challenges of accommodating the physical requirements of international trade. The case study method will shed light on these differences from bridge to bridge and to highlight the uniqueness of Brownsville-Matamoros, and Harlingen/los Indios as ports.

I have already carried out a study of three bridges in the Mid-Rio Grande region (the World Trade Bridge linking Laredo and Nuevo Laredo, the Colombia Solidarity Bridge linking far west Laredo and the state of Nuevo León, and Eagle Pass-Piedras Negras Bridge II.) To broaden this into a meaningful comparative study, it will be fruitful to consider some of the international bridges and inland ports in the Lower Rio Grande Valley, in this case Brownsville-Matamoros and Harlingen/Los Indios. The latter

are unique for three reasons. First, on the U.S. side, the bridges are operated by Cameron County and jointly owned by the county and municipality each bridge serves, rather than owned and operated exclusively by municipalities, as is the case in Laredo and Eagle Pass. Second, the maritime port complicates the “port geography” of Brownsville-Matamoros. Third, maquiladora-related shipments are relatively more important than in Laredo-Nuevo Laredo, where international shipments in general are far more important. Combined with my earlier findings from the Mid-Rio Grande region whose bridge histories are all unique, I will have the basis for a fairly comprehensive yet detailed overview of this important aspect of US-Mexico relations, and how the two countries’ respective federal systems come into play.

The nature of the planning of international bridges and related port infrastructure has changed dramatically since Mexico has undergone political decentralization (otherwise known as “el Nuevo Federalismo”), beginning in the latter 1980s. My focus, therefore, is on the most recently constructed bridges, and how decentralization affects the planning process as well as the arrangements that each Mexican border city works out with the federal government in terms of the disbursement of the revenues that the bridges generate. Correspondingly, on the U.S. side, to bring about the planning and construction of international bridges requires considerable coordination between county, city, state, and federal government entities.

Importance of the Study.

The proposed research was designed to enhance the understanding of the planning processes involved in the creation of bridges and related infrastructure, their geographical settings, the land use characteristics of inland ports in the Lower Rio Grande Valley, and the flows of revenues generated by bridges. Additionally, the study was intended to shed light on the changing nature of federalism in the era of NAFTA by virtue of the infrastructure constructed to facilitate such trade. The results ought to be of interest to policy-makers, members of the media and academe trying to make sense of the logistics of international trade, and investors in transportation-related commercial real estate. It will likely be of interest to researchers and practitioners interested in reading case studies of the workings of federalism in the two countries as it relates to land use planning. My experience thus far has been that local officials and candidates for local, state, and federal offices each understand parts of the process related to the establishment of (and revenue generation from) the most recently constructed international bridges and related infrastructure up and down the border, but no one has a comprehensive knowledge. This study is an attempt to rectify this problem. Most significantly, I have expanded the basis for describing the geography of inland ports along the Texas-Mexico border, a topic yet to be studied within the sub-discipline of transportation geography.

Methodology/research procedures.

The first step involved the gathering of background information from the literature, web sites, and the popular and business press in the US and Mexico on the administration of, and planning procedures related to, international bridges and

infrastructure in general, and the case-study bridges in particular. The bulk of information, however, was obtained through interviews conducted in the Summer of 2006 of seventeen key officials involved in (or otherwise knowledgeable about) the planning process, the nature of economic promotion of the bridges and their corresponding communities, the expansion of commercial real estate development resulting from the bridges, and the overall impact on the region's economic development. Indeed, such experts each know key features of the transportation infrastructure, its planning, and its economic and geographic impacts, but none knows the entire picture. The strategy of the researcher in this case is to piece together their stories into a cohesive whole. The general time frame and sequence of events of the planning and construction of the two bridges, including the official signing off of key parts of the bridge planning process and relevant bi-national meetings, were identified through interviews of elected officials, and urban and transportation planning officials of Cameron County. Interviews of economic promotion officials and officials associated with each city's maritime ports provided additional insights into the evolving economic geography of the lower Rio Grande Valley emanating from free trade and these bridges in particular. These interviews and archival research reveal provide a window unto the nature of federalism at work in each of the two countries, the nature of the bi-national planning, and by extension, the making of inland (or perhaps better said "overland") ports.

An Overview of the Literature on The Geography of Ports: Implications for Border Studies

The geography of ports and shipping is an important area of the sub-disciplines of transportation geography and economic geography that traditionally has focused on maritime ports. However, the functioning of inland ports, including those of the U.S.-Mexico border are sorely underrepresented in the literature. Many of the principles of the geography of ports, however, apply to inland ports. Several themes emphasized in the ports geography literature are relevant to this study, including a description of port morphology (spatial form) and how this evolves through time, the linkage of port morphology to the overall political economy of particular phases of the international and global economies, the linkages of ports to their hinterlands, or places near a given port that are served by that port, and the linkages of ports to distant locales.

In a classic study of port geography, Weigand (1958) identified forelands and hinterlands of maritime ports. Forelands are the places overseas that a port connects to by means of the cargo it handles. Hinterlands are the immediate inland areas that a given port serves, linked to that port by trucks and rail. Hilling and Hoyle (1984:1) argued that the degree of efficiency of a port's connection with its hinterland will determine as strongly as anything else the prospects for the overall region to develop. As Hayuth (1982:13) notes, hinterlands are the land-based "backyards" of ports, yet such hinterlands of two or more maritime ports often overlap. A given hinterland will often have access to two or more ports, which means ports often compete with one another for traffic. Such dynamism is spurred by contemporary transportation modes, including trucking and containerization. As was discovered in the course of carrying out this case study in the

Lower Rio Grande Valley, such competition for cargo is very much present, indicating that hinterlands overlap considerably up and down the river.

Nigel Harris (1994) explains how cities increasingly are viewed by economic geographers as connection points for the global economy's flows of goods, capital, and information. As such, a city's connections with other places, and not just endogenous factors, are a major determinant of changing urban form. Furthermore, containerization, a key ingredient of efficiency in transportation and the success of just-in-time (JIT) delivery, is a technology that leads to urban decentralization. Traditional old wharf areas, for example, deteriorate as sprawling storage lots and dozens of warehouses spring up around the peripheral areas of cities in tandem with the growth of trucking and containers (Harris 1994). Given that inland transportation, including trucking and rail, account for an increasing percentage of global shipping in cost, distance, and weight, such modes shape cities to a greater extent. (Harris 1994). This has obvious implications for the evolving morphologies of cities that handle containers shipped by trucks and rail, such as the inland port twin cities of the U.S.-Mexico border.

Christopher Airriess (1991) wrote a seminal study in the sub-discipline of transportation geography that focused on the different stages of development of the port city of Belawan, Sumatra. He traced four stages of evolution of the port that corresponded to different political-economic circumstances of Indonesia, and correspondingly, different phases of connectivity of the island of Sumatra with the international economy. The dominant development paradigm of a particular period of time (neo-colonialism, protectionism/nationalism, neoliberalism, etc.) impacts port development. In sum, external workings of the international economy, in addition to local political orientations, (re)work the three dimensional configurations of ports.

Hall (2005) explains that an understanding of the development of ports and their corresponding urban areas requires a departure from the conventional wisdom that private capital drives all such development. Instead, public agencies, and public-private entities funded in large part with public monies, are major contributors to the success of ports, and important players in the competition between ports. Public and quasi-public agencies must appease shippers, forwarders, and other members of the logistics industry, all of which seek to maximize efficiency and profits, to ensure that their locality wins the competition for shipping business by constantly upgrading infrastructure and port technology. These public-private relationships are not well elaborated in economic geography in general, and transportation geography in particular (Hall 2005).

Witters and Ivy (2002) similarly focus on the competitiveness of ports, by examining thirty maritime ports of the American South. They argue that shippers typically enjoy quite a bit of latitude in choosing ports, so ports have to keep up with technological and other requirements of the players within the logistics industry. Port officials, in effect, have to know and understand their clients' needs for improving timing and reducing costs of transportation. One issue they note is the rise of the land bridge concept, whereby Pacific ports of North America receive cargo that is transported overland to Atlantic ports. This concept has applicability to the Texas-Mexico border

insofar as plans are in the works to expand Mexican Pacific port capacity and ship goods from Asia through Mexico to such transfer points as the Port of Houston (Villarreal 2006).

Ross Robinson (2002) examines ports as key locations for important activities in the global supply chain. Thus, a port is viewed more than simply a point in space through which cargo passes and examined for changes in land use through time. Rather, he argues, ports are more correctly viewed in terms of the evolving roles they play as crucial links in the supply chain by facilitating the necessary logistics, and as sources of capital accumulation. In a special issue of *The Economist*, June 17, 2006, it is argued that logistics, including but limited to the transport of cargo, are specialized and often client-specific, and port cities play an important role in accommodating needs of particular industries. Some companies may require “leaner” or less expensive logistics, but others may require more important timing of deliveries. Precision of information is paramount, and port infrastructure can enhance or hamper the accuracy of information, especially delivery times. The cost of logistics ranges from eight percent of GDP in the U.S. today to about 21 percent in China (Economist 2006). With the rise of containerization, these costs are decreasing, but transportation is no less important to the supply chain. The containerization revolution has engendered considerable decentralization of urban landscapes of port cities, as today’s shipment technologies are more footloose than in the past when warehousing and storage were clustered at the traditional waterfront.

All of these examinations of maritime ports have clear relevance for inland ports along the Rio Grande. The public sector is crucial to accommodating the needs of increased profitability of shippers, forwarders, and others in the logistics business, including manufacturers. Their actions in bringing about new and expanded infrastructure change the morphologies of the border cities. Furthermore, such localities along the border compete fiercely with each other for such traffic, and spend considerable effort marketing particular transportation corridors linking the U.S. and Mexico. It is essential that inland ports be inserted into the literature.

The Movement of Cargo at the Texas-Mexico Border: A General Background.

Of the 23 vehicular (non-rail) bridges spanning the Rio Grande linking Texas and Mexico, thirteen generally accommodate cargo shipments. Of those thirteen, eight are regularly designated as primary cargo bridges. In addition, there are four rail bridges, located at El Paso-Juárez, Eagle Pass-Piedras Negras, Laredo-Nuevo Laredo, and Brownsville-Matamoros. All cargo bridges exhibit quite different ownership arrangements, which reflects not only the different nature of the two federalist systems, but the dynamics of inter- and intra-governmental planning and financing of transport infrastructure of each of the two countries. The typical ownership patterns for the U.S. portions is municipal, and on the Mexican side, the federal government typically owns bridges and derives the bulk of revenues. There are certainly exceptions to this norm, and this study illustrates some of these possibilities.

As I have described in detail elsewhere (Yoder 2005), the process of crossing cargo between the U.S. and Mexico by truck is very complex and forms the heart of the port functions along the border and its corresponding land-extensive infrastructure. Most of the activity and infrastructure related to north- and southbound traffic occurs on the U.S. side. Mexico-bound cargo must clear Mexican customs before it crosses into the country. Customs brokers, therefore, have physical operations in the Texas border cities. Freight forwarders provide support services to shippers, to arrange for shipments to be inspected by a customs broker, transported across, and in most cases picked up by a Mexican carrier for shipment into the country. The corresponding infrastructure in the Texas border cities is dominated by warehouses of various sizes, to facilitate inspection and in some cases re-loading of cargo. Northbound cargo generally is inspected on the U.S. side of the bridge once it has cleared Mexican customs at each bridge on the Mexican side, and then crossed the bridge. Such cargo is often reloaded into trailers of US-based carriers (Yoder 2005). Cargo carried by rail is handled differently, as the same rail cars that bring cargo to the border in either direction are the same cars that cross the border for delivery in either country (Villarreal 2006). Thus, with the exception of parts or finished goods involved in the maquiladora industry, virtually no rail cargo requires the same warehousing as cargo that is carried by truck.

Clearly Laredo dominates cargo crossings in both directions between Texas and Mexico. The Rio Grande Valley collectively ranks a distant second, and El Paso ranks a close third (Tables I and II). Nonetheless, truck crossings and related cargo processing are important to the Valley's economy, and an important source of revenues for local government in the form of bridge tolls.

Table I: Northbound Truck Crossings, 2004-2005

<u>Location</u>	<u>2004 Crossings, no. of trucks</u>	<u>Percent of Texas total</u>	<u>2005 Crossings no. of trucks</u>	<u>Percent of Texas Total</u>
Brownsville	186,947	6.17	192,060	6.08
Harlingen*	39,342	1.30	42,580	1.35
McAllen**	454,351	15.00	483,889	15.31
Laredo	1,380,414	45.58	1,455,607	46.05
El Paso	723,669	23.89	740,654	23.43
Texas	3,028,706	100.00	3,160,818	100.00

* Los Indios Bridge

**Pharr Bridge

Source: Texas Center for Border Economic and Enterprise Development, Texas A&M International University. <http://www.texascenter.tamui.edu>

Table II: Southbound Truck Crossings, 2004-2005

<u>Location</u>	<u>2004 Crossings, no. of trucks</u>	<u>Percent of Texas total</u>	<u>2005 Crossings no. of trucks</u>	<u>Percent of Texas Total</u>
Brownsville	201,447	7.71	208,953	7.57
Harlingen*	37,026	1.30	43,238	1.57
McAllen**	392,306	15.02	411,980	14.95
Laredo	1,464,908	56.08	1,543,379	56.02
El Paso	292,288	11.19	306,406	11.12
Texas	2,612,214	100.00	2,755,043	100.00

* Free Trade Bridge, Los Indios

** Pharr and Hidalgo Bridges

Source: Texas Center for Border Economic and Enterprise Development, Texas A&M International University. <http://www.texascenter.tamiu.edu>

Overview of the Research and Findings

I made three trips to Brownsville and Harlingen during the summer of 2006 and conducted seventeen lengthy interviews of past and present officials in local government (municipal and county), the Mexican federal government, port administration, and economic promotion to determine the unique historical and economic circumstances of the two case study bridges. In addition, I document through observation and photographs the various land uses that the two bridges have spawned. The latter involved acquisition of maps and data related to international trade and its associated infrastructure in the region, including warehousing, factories, feeder roads, rail lines, and maritime port facilities. Most of the interviews have centered on the histories of the planning and the financial arrangements of each of the two bridges and their related transportation infrastructure, the expansion of commercial real estate resulting from the functioning of the two bridges, and the future plans for the development of industrial corridors along the highways linking each bridge.

In general, the bridges of Cameron County differ from the Texas norm because they are county-operated and either County-owned or jointly owned between the county and the appropriate municipalities. One exception, the old B&M Bridge downtown, which has both vehicular (passenger only) and rail portions, is privately owned but operated by the County Transportation Department. The Gateway International Bridge, also a downtown bridge for passenger vehicles, is County-operated and County-owned.

Both of the case study bridges, the two newest of Cameron County, are county-operated and jointly owned by the county and appropriate municipalities. On the Mexican side, the federal government played a more central role in the planning and financing of these bridges than has typically been the case since the mid-1980s, but the State of Tamaulipas was awarded thirty-year concessions for both bridges and receives the bulk of the revenues for the duration of the concession (González 2006).

The Veterans International Bridge at Los Tomates (El Puente Internacional General Ignacio Zaragoza) that links southeast Brownsville to east Matamoros, and the Free Trade Bridge at Los Indios (Puente de Libre Comercio) that links the far west end of the *municipio* of Matamoros to Harlingen via Highway 509 are each dramatically different bridges, despite the relative temporal coincidence of their construction, and despite the fact that both are administered by Cameron County's Department of Transportation. Both are NAFTA-era bridges designed to enhance commercial and vehicular crossings of goods and consumers/tourists between the two countries. The Veterans Bridge links relatively densely developed areas of Brownsville and Matamoros (especially Matamoros), while the Free Trade Bridge is only beginning to spur development along the expanse of farmland between western Matamoros and southwestern Harlingen. Each is financed differently and produces a distinct revenue stream on the U.S. side, which reflects the sometimes-fierce competition between Brownsville and Harlingen. On the other hand, the financial arrangements on the Mexican side are similar to each other, but quite different from arrangements of bridges of the same era in states such as Coahuila. Arguably, the history of the planning and financing of the bridge reflects the seemingly contradictory trends of interest versus indifference on the part of public officials and the business community of Matamoros.

Brownsville and Matamoros: An Overland Port With Maritime Access.

The Veterans International Bridge at Los Tomates, referred to in Mexico as el Puente Internacional Ignacio Zaragoza, has been in service since 1999, shortly after the implementation of the North American Free Trade Agreement in 1995. "Los Tomates" is the name of a former agricultural colony (ejido) once located at the site of the bridge in Matamoros (Garcia 2006; Zárate 2006). Prior to the opening of the bridge, the downtown areas of both Brownsville and Matamoros were clogged with passenger and cargo traffic. The County of Cameron, the City of Brownsville, and the State of Tamaulipas worked to rectify the problem by moving all vehicular cargo traffic and much passenger vehicle traffic east of the respective downtowns. Significant planning considerations regarding hydrology, other aspects of the environment, and even a park in Brownsville had to be overcome.

Cameron County and the City of Brownsville both financed the construction of the U.S. portion of the bridge, along with federal monies for the actual bridge and the road infrastructure leading to it. Both entities share the revenues equally, though the county administers the bridge. While the Mexican federal government played an essential role in the planning and financing of the bridge, the state of Tamaulipas has benefited handsomely from the revenues generated. The Municipio of Matamoros, in

accordance with Tamaulipas state law, had to provide significant input into the planning process and various environmental and social impact assessments (CAPUFE 2006).

The City of Brownsville had to purchase approximately 175 acres of land in the river's floodway to build the bridge and its infrastructure. It was decided that the interstate (U.S. Highway 77 and 83) would be extended to lead to the bridge. This major re-working of transportation infrastructure reinforced the need for the inter-local agreement between the county and city. The city had to acquire the land to overcome legal obstacles that kept the county from doing so. The Bridge System, however, which is county-run, pays the debt. The county had to float \$44 million in bonds to construct the US side of the bridge and the associated infrastructure for the GSA (General Services Administration), \$20 million for the Texas State border station, and \$20 million for a highway overpass to extend the freeway to the bridge. Thus, the county sold some \$84 million in bonds for the whole project (Hudson 2006). Presumably once the debt is paid, the city will realize its full 50 percent share of the revenues.

Several obstacles had to be overcome, including the relocation of a park disrupted by the feeder road to the bridge, the required reconstruction of the levy system to accommodate the fact that the bridge was built in the floodway, and the donation of land for wildlife purposes, given that the bridge destroyed 17 acres of endangered species habitat. Furthermore, Congressman Solomon Ortiz allegedly did not support the bridge, but supported instead an alternative plan that would lead directly to the Port of Brownsville. The reason for this is that port officials since the early 1970s had sought a bridge to be able to bring goods in bond directly from Mexico. Mexican officials at the state and federal levels, however, never supported the port bridge plan, because of their desire to boost their own port of Altamira (Hudson 2006; Hiltz 2006).

On the Mexican side, the CNA (Comisión Nacional del Agua, or National Water Commission) required that the Matamoros levy be relocated for the same reason as the Brownsville side, even though the levy had largely been removed illegally by people requiring dirt for construction (Hudson 2006). Despite all of the environmental problems, the ribbon cutting occurred in 1999. The construction of the bridge and feeder road on the Mexican road was problematic because of financing. Cameron County and Brownsville had to work hard to convince the State of Tamaulipas, in consultation with the Municipio of Matamoros, that the selected location was the right one. Furthermore, credit was scarce and interest rates were high at the time in Mexico. The federal government, below the direction of the SCT (Secretary of Commerce and Transport), came up with the funding because Tamaulipas was unable to do so (Hudson 2006). To be able to receive the funds, Tamaulipas had to establish under federal authority a public fiduciary trust, the Fideicomiso del Rescate Carretero (FARAC). Interestingly, Tamaulipas receives ninety percent of the revenues and the federal government receives ten percent for the first thirty years of the bridge's operation, after which time the federal government receives all of it, according to the concession granted to the trust (González Káram 2006; CAPUFE 2006). The municipio of Matamoros and the state of Tamaulipas had to provide the land and build the approach road (Hudson 2006).

The Veterans Bridge has recently spawned plans for one new industrial park on the east side of Matamoros, which is currently being developed by a U.S.-based apparel manufacturing firm desiring to diversify its investment portfolio into the development of industrial parks in Mexico (Hilts 2006). Liberalization of Mexico's foreign investment laws that previously hampered foreign investment in the border zone has enabled this globalizing facet of the suburban development of Matamoros (Lazcano 2006). The bridge additionally has contributed to the growth of the already existing CIMA, Finsa Oriente, and CYLSA Industrial parks, also on the east side of Matamoros (Hilts 2006). Traffic problems mount as automobiles and trucks compete for space on the existing boulevards of the city's east side.

On the Brownsville side, the bridge has resulted in the creation of a new "industrial park" (more accurately, warehouse park), the Veterans Trade Center, adjacent to the federal and state inspection facilities on the north side of the bridge. Its three buildings and a large trailer storage lot are occupied by three logistics companies and a "twin plant" to service the Matamoros operations of Tyco Electronics. Land parcels available for sale and construction of additional warehouse space are plentiful. Officials expect this industrial park to experience significant development in the medium term (Hilts 2006; Sepulveda 2006).

The sizeable industrial corridors east of Brownsville, along the highway to Port Isabel and parallel roads, have visibly expanded since the opening of the bridge in the mid-1990s. Foremost among these is the NAFTA Industrial Park, located at the intersection of Texas Highway 48 (Port Isabel Highway) and Loop 511 at the entrance to the Port of Brownsville. Most development, however, is decentralized along several east-west trending boulevards parallel to Highway 48 in the form of standalone warehouses and several small warehouse parks with six or fewer buildings. Not surprisingly, the Port of Brownsville, designated as a foreign trade zone, has experienced an increase in both imports and exports transported by truck since the establishment of the bridge. The port handles the cargo for some 300-500 truck trailers a day (Torres 2006). It is worth noting that rail traffic also has increased, which has led to aggressive rail relocation in the Brownsville area, including the movement by Union Pacific of its rail yards to Olmito, north of the city. Intermodal shipping is clearly a defining characteristic of Brownsville's transportation geography, given that such goods as grains, steel, and construction materials utilize a combination of truck, rail, and maritime vessels, both for domestic and international trade (Torres 2006).

Clearly the Veterans International Bridge has led to an industrial suburban expansion of Brownsville's east side and an intensification of land use in the built-up portions of the east side of Matamoros. Several officials complain that it was constructed too far west of the areas of the future or potential growth areas of the east side of each city, and too close to each city's downtown section. In part because of this reality, coupled with the increasing level of truck traffic between Matamoros and the port, a new vehicular bridge is currently proposed to link the east side of Matamoros with the Port of Brownsville (Torres 2006, Hilts 2006, Lozcano 2006). As reported widely in the local media, however, this is a contentious issue because some businessmen and officials

prefer that rail relocation be included in the bridge project linking Matamoros to the Port of Brownsville (Negrete Laras and Perez-Treviño 2004).

Harlingen/Los Indios and Western Matamoros Municipio: An Inland Port in the Making.

Harlingen is not universally regarded as a border city, given that it is some 26 miles from Brownsville along U.S. Highway 77 and 83. Furthermore its economy is somewhat more oriented toward servicing the agricultural activities of the Lower Rio Grande Valley, and its manufacturing and service economies are more U.S.-focused than Mexico-oriented. However, its access to Mexico was greatly enhanced in 1991 when the Free Trade Bridge opened at Los Indios, a small riverside hamlet some 15 miles from Harlingen's downtown. The business-political community of Harlingen and neighboring San Benito worked for more than three decades to secure the necessary permits, funding, and bi-national cooperation necessary to effectively make Harlingen a border city and a player in international trade. Several companies in Harlingen have strong if not exclusive ties to manufacturing and logistics operations located in Mexico (López 2006).

The Free Trade Bridge has in many ways produced an even more interesting series of outcomes than the Veterans Bridge. Once termed "the bridge to nowhere" by its detractors, the bridge was conceived in the early 1950s but not completed and opened until 1991, largely in anticipation of the signing of NAFTA. It is a rare example of a bridge that does not directly link two metropolitan areas, but connects two rural areas some distance from the urban areas it serves. Both the business and political communities of Harlingen and adjoining San Benito regarded the project as a source of new business and public revenues. These actors spent more than three decades trying to convince officials in Ciudad Victoria and Mexico City of the merits of the bridge.

A group of businessmen formed the San Benito Bridge Company in the 1950s in an attempt to gain a presidential permit from the US, a *título de asignación* (the Mexican equivalent of a presidential permit) from the Mexican government, and financing on both sides. The group acquired the presidential permit from the US State Department in the 1970s, but failed on all other counts to accomplish building the bridge for some three decades. One of the problems was the difficulty in obtaining the federal permit from the SRE (Secretariat of External Relations) and the SCT (Secretariat of Communications and Transportation) on the Mexican side. Many believe that Brownsville played a role in delaying the acquisition of the permit, because the city wanted to maintain its monopoly on bridges within the county (Fincher 2006). Finally in the latter 1980s, officials of the State of Tamaulipas agreed to secure a federal concession and then build the bridge, which opened in 1991 (Card 2006). The State of Tamaulipas established a public fiduciary trust, the Fideicomiso del Puente Libre Comercio, to receive and disburse the incomes earned from the bridge. According to the concession, the state receives ninety percent of the revenues that the bridge generates for the first thirty years of its life, and the federal government receives the other ten percent. After the thirty years are up, the

concession is over, and all revenues go to the federal government (González Káram 2006; CAPUFE 2006).

An “urblet” consisting of an industrial park with a significant square footage of warehousing, trucking facilities, and a convenience store has emerged on a huge expanse of former farmland adjacent to the bridge. No such development has occurred yet on the Mexican side, owing in large part to the continued ownership of adjacent land by the federal government in the form of *ejidos*, or small farm parcels whose users enjoy usufruct rights. The lands have not yet been “regularized” or fully titled to its users, even though a change in the Mexican constitution passed in the mid-1990s has allowed such privatization (De la Garza 2006).

The impact of the bridge on Harlingen’s own industrial and warehouse landscape is noteworthy, by virtue of the continuing evolution of the Highway 509 industrial corridor that extends from the bridge to the southwestern side of the city, to the east side of the city, to a point adjacent to the entrance to the Port of Harlingen, and northward to the planned industrial zone on the east side of Valley International Airport. Eventually the highway will be completed all the way to the north side of the airport, where it will connect with U.S. Highway 77, thus forming a huge loop around the northern, eastern, southern, and southwestern sides of Harlingen on its way to the Rio Grande and the bridge (Card 2006, Leftwich 2006, López 2006). The city has aggressively annexed land on its southwest side in anticipation of the growth of the Highway 509 corridor, and has worked to extend the growth of its extra-territorial jurisdiction (ETJ) towards the bridge to plan for future commercial and residential real estate development,. A county-initiated plan of the FM Highway 509 corridor designates that significant stretches of land flanking the corridor, both in the city and in the ETJ, be for “industrial” use, including warehousing (Leftwich 2006).

Within Harlingen itself, several warehouses and manufacturing plants have been established along the corridor, many of which are economically tied to Mexico. Several suppliers that undertake such tasks as plastic injection molding, metal fabrication, and die casting directly supply maquiladoras, primarily in Matamoros and Reynosa (Borchardt 2006, López 2006). Valley Cold Storage handles a lot of perishable agricultural produce imported from Mexico. Two Mexican-owned plants manufacture snack foods (López 2006). As of June 2006, negotiations were almost finalized for an unnamed automobile parts manufacturer to acquire and use the old Fruit of the Loom facility as a “twin plant” to its Mexican operation (Card 2006). In addition, a considerable amount of fertilizers and grains are transported from Harlingen’s barge port to Mexico by truck, and a portion of this passes over the bridge at Los Indios (Palmer 2006).

The Harlingen business-political community is seeking to attract committed users of the bridge, including freight forwarders and other warehouse operations, to the open lands of Los Indios. This would ensure a steady revenue stream for local government, and would enhance the locality’s stature as an inland port for attracting additional businesses in the future. Thus far, the only logistics companies of this type to locate at Los Indios are Penske (a major logistics company) and one customs broker, Loera

Agencias Aduanales. In addition, Panasonic, and Universal Lighting round out the users of the half dozen warehouses at Los Indios. Penske, which occupies three of them, moves some 90 percent of its traffic between the US and Mexico, much of it for Delphi Automotive, over the bridge (De la Garza 2006; Borchardt 2006). The Hispanic Chamber of Commerce of Harlingen is among the private-public entities that is seeking to expand not only traffic over the bridge, but commercial real estate development there (Vindell 2006). Abundant incentives were provided to the logistics and manufacturing companies that have set up their operations at Los Indios. The county offered tax abatements, paid to install road infrastructure and provide training of the companies' work forces, and subsidized land acquisition in some cases (Card 2006, Fincher 2006). Officials of both Brownsville and Harlingen have discussed the tensions that developed between the two cities as this bridge has drawn development and bridge-crossings away from Brownsville.

Ground has been broken for an industrial park, "El Parque Industrial Ventana," ten kilometers from the bridge. The first manufacturing plant, built for speculation, is scheduled for completion in December 2006. The development is intended to be expanded into a "planned community" to include not only maquiladoras, but office space, residential units, and retail shopping. The 100-hectare development in effect will become a far western suburban nucleus of Matamoros. The current government of Tamaulipas is purportedly a major instigator of this project, along with key Matamoros real estate investors, Andrés Garcia and Ramiro González Garza (López 2006).

Valle Hermoso, Tamaulipas: (pop. 58,573 in 2000) is the closest equivalent that exists to a Mexican "twin city" to Harlingen. As early as 1993 it was touted as a "sister city" to Harlingen, by virtue of the Fruit of the Loom Plant in Valle Hermoso, whose twin plant was in Harlingen (Rowe 1993). The plants have subsequently closed. It is located approximately 30 kilometers from the Los Indios Bridge along Mexican Highway 99 and 120, the highway that ultimately links the bridge with Ciudad Victoria. The Parque Industrial Valle Hermoso has some thirteen manufacturing plants that produce among other things automobile components, apparel, metal products, and bottled beverages (López 2006, Valle Hermoso 2006).

The Harlingen business-political community is looking to the Ventana project, the industrial park at Valle Hermoso, additional industrial developments in western Matamoros and eastern Reynosa, and enhanced transportation access to the maritime port of Altamira as multiple sources of expansion of the FM Highway 509 Corridor and the usage of the Free Trade Bridge. The bridge is touted as providing the closest distance between South Texas and Mexico City, given the recent opening of a highway linking Ciudad Victoria with San Luís Potosí and Mexico City more directly through the Sierra Madre Oriental range (López 2006). The bridge apparently has turned a profit for the county and the cities of Harlingen and San Benito since 2000, its tenth year of operation (Card 2006), and increases in revenue are expected because of the new Mexican highway. It also is regarded as the primary route linking Monterrey and South Padre Island (Sepulveda 2006; Borchardt 2006). Under the arrangements established in the latter 1980s for the financing of the bridge and the distribution of the tolls collected,

Cameron County paid 75 percent of the cost of the U.S. side, and the City of Harlingen financed 25 percent. Fifty percent of the revenues go to the county, twenty five percent go to Harlingen, and the remainder goes to the City of San Benito (Card 2006, Sepulveda 2006).

The Free Trade Bridge is designated as the sole bridge for in-bond shipments to Central America that pass through Mexico (Zárate 2006, Borchardt 2006, López 2006). Thus far such cargo involves primarily used automobiles that would otherwise require hefty import taxes (Borchardt 2006). It is speculated at this point by this author that there may be ramifications for CAFTA, given that Congressman Solomon Ortiz, one of only a small number of Democrats of the U.S. House of Representatives, voted for the controversial trade agreement. Furthermore, CAFTA would come into play as the port of Altamira, Tamaulipas, easily accessible to the Harlingen-Ciudad Victoria transportation corridor, would undoubtedly handle some of the container, agricultural, and other maritime shipments between North America and Central America. Finally, Harlingen's business-political community sees the city becoming an intermodal shipping point, given that the close proximity of the barge port, the rail access to McAllen and Brownsville (and by extension, Mexico), the bridge at Los Indios, US Highway 77 and 83, FM Highway 509, and the large cargo terminal at the Valley International Airport (López 2006). The bridge serves maquiladoras in both Matamoros and Reynosa, given the relatively good highway access to both cities (Borchardt 2006). Clearly, actors of the business and political communities view transportation and its infrastructure as crucial components of the global supply chain. One problem that remains, however, is the relative shortage of freight forwarders and customs brokers committed to the bridge. Matamoros brokers can use the bridge with ease, but not Reynosa's brokers, due to the nature of licensing and related jurisdiction issues related to Mexican brokers. As a result, Harlingen is trying to attract Mexican customs brokers (Borchardt 2006).

Conclusions: Federalism and the Economic Geography of Border Development.

The planning of international bridges is complex and lengthy. Environmental, social, economic, and security-related impact studies must be carried out on both sides of the border in accordance with federal and state laws, and such studies are not only expensive, but time consuming. Politicians and businessmen seeking to boost a given city's economy through the handling of cargo must develop allies from the neighboring country who will undertake the work to navigate through these complex political processes. The State Department and specifically the GSA (General Services Administration) oversee this process on behalf of the federal government of the U.S. Texas senators and governors must be advocates of a bridge, and a given border city's representative to the House of Representatives generally should be an advocate, with very few exceptions. The Secretaria de Relaciones Exteriores (SRE) and the Secretaria de Comunicaciones y Transporte (SCT) are the two main federal entities in Mexico that determine whether or not a proposed project will succeed. State governments must work with municipios and with the federal government to ensure their success. Finally, cross-border, bi-national planning must take place, to coordinate the location of a given bridge and its related infrastructure.

The results of two bridges constructed at roughly the same time in Cameron County illustrate the inter-municipal rivalries that can occur within one county over access to commercial and passenger traffic, and the bridge tolls that such traffic generates. Furthermore, each bridge has contributed in its own way to the urban growth of the two cities. Harlingen has become, in effect, a border city by virtue of having its own bridge. The city is gearing up for further location of manufacturing and cargo storage facilities in the city, and is planning accordingly with its Highway FM509 “industrial corridor.” Brownsville’s warehousing has expanded eastward toward the port, which is facilitated by not only the relocation of the Union Pacific rail yards to its Olmito facilities on the north side of the city, away from the current central location of the existing rail bridge and west side location of a proposed new rail bridge, but also through new industrial parks that offer ready access for trucks to both the Port of Brownsville and the Veterans Bridge.

The two case studies underscore the important theme that transportation geographers emphasize: the importance to the overall global supply chain of the transportation of goods and their processing in ports. Value is added as goods pass through and/or are processed by a particular port. The inland ports of the Texas-Mexico border carry out complicated customs brokerage and freight forwarding activities that add value within the supply chain. They must compete with one another in order to pay off the bonds issued to finance such infrastructure as the international bridges and the access roads leading to them, and as time goes on, the overall transportation corridors of which they are a part. Efficiency and time savings are important components of this competitive process. Ports that can carry out intermodal shipping functions the best are those that have the advantage in the competition for cargo. As these case studies illustrate, the business-political communities of a particular set of border twin cities must be united in their promotion of the sister city relationship and its corresponding transportation corridor, to enhance through bridge tolls the returns on the significant investment in these major features of the contemporary built environment of global free trade.

International trade between the U.S. and Mexico, including the movement of goods for manufacturing increasingly involves, or better said, requires, transportation technologies that are flexible. This allows decentralization of transportation to multiple competing corridors across the Texas-Mexico border. Likewise, this flexibility of moving cargo, whether containers or general cargo in trailers, enables the infrastructure for its storage and processing to be decentralized to warehousing located in various parts of the urban zone of each border city. This phenomenon forms the basis for urban geographic decentralization in the form of suburban sprawl in the case study cities of Brownsville and Harlingen.

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