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16. Abstract

The objective of this research was to examine the rules, regulations, and decision-making methods of government agencies determining transportation policy for international movements between Texas and Mexico. In pursuing this objective, and examination was made of past infrastructure investment decisions that failed and an assessment was made regarding why plans deviated from reality. Additionally, the logistics associated with cross-border freight transportation are described, documenting the institutional and governmental practices impeding efficient cross-border operations.

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AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN TRANSPORTATION INFRASTRUCTURE AND INTERNATIONAL IMPORT RULES AND REGULATIONS: UNDERSTANDING HOW TO AVOID BUILDING BRIDGES TO NOWHERE

A Research Study

by

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and
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February 1997

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ABSTRACT

The objective of this research was to examine the rules, regulations, and decision-making methods of government agencies determining transportation policy for international movements between Texas and Mexico. In pursuing this objective, an examination was made of past infrastructure investment decisions that failed and an assessment was made regarding why plans deviated from reality. Additionally, the logistics associated with cross-border freight transportation are described, documenting the institutional and governmental practices impeding efficient cross-border operations.

EXECUTIVE SUMMARY

The newly constructed Laredo-Colombia Solidarity Bridge was supposed to become the busiest bridge on the border. The new bridge was also supposed to become a major factor in reducing the backlog of traffic at the two existing international bridges in downtown Laredo. However, the long waits at Laredo's two downtown bridges continue and the Colombia Bridge remains vastly under-utilized. Built at a cost of over $100 million, the Colombia Bridge represents resources that might have been better spent to alleviate the crushing congestion and delay that characterizes cross-border operations at Laredo. Recognizing this, research was sponsored to examine the decision-making methods used by those government agencies determining transportation policy.

The events preceding the building of the Colombia Solidarity Bridge were hailed as a time of very welcome international cooperation between Mexico, Texas, and the United States. The proposal to build the bridge represented the first time Mexico had ever sought help from the U.S. in building an international crossing port. The fact that the proposal was so well received by the U.S., coupled with an eagerness to foster a spirit of cooperation between the two countries, led to a series of informal agreements that, were the agreements not honored, would jeopardize the utility of the bridge. One such example was the expectation that Mexico would build the necessary roads connecting the bridge to the toll highway from Nuevo Laredo to Monterrey.

Probably the single biggest problem interfering with the potential success of the bridge (and which could adversely impact future infrastructure investment decisions) was the lack of coordinated planning. The poor utilization of the Colombia Bridge suggests that international bridge projects should take into account multiple factors such as: connecting roads, Mexican customs broker rules, trade restrictions, practices, and government commitment.

Lack of coordinated planning is often exacerbated by the current organization of the Department of Transportation. DOT's organization fosters duplication of effort and sows confusion by disbursing policy making and funding decisions among agencies often having conflicting national goals.

Unfortunately, this orientation finds itself replicated at many State DOTs. Compounding the problem is the fact that international infrastructure projects are inherently complicated.

Transportation planning, in both the public and private sectors, is becoming increasingly international. The recognition of the many benefits increased international trade has to offer, and the realization that the future competitiveness of the U.S. in the global economy is strongly linked to seamless transportation, has sounded the call for policy makers to coordinate resources in the local, State, Federal, and private sectors.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1. INTRODUCTION

The volume of trade with Mexico is increasing and with the North American Free Trade Agreement it appears that there will be a continuing increase. The material moving between Mexico and the U.S. has resulted in calls from many quarters to build more infrastructure to support these increases. Trade flow numbers, truck volume, and other contingent measures are cited to support claims for new construction. It is not well understood, however, what decisions by what agencies drive the course and volume of trade flow between the countries. There have been cases where infrastructure has been put in place only to lie fallow. Policy decisions, sometimes appearing arbitrary in nature, have the capacity to negate huge investments in infrastructure with the flick of a pen.

In these times of limited resources it is important for Texas to better understand the sensitivity of transportation patterns to rules and regulations. In recognition of this, research was sponsored to examine the rules, regulations, and decision-making methods of those governmental agencies determining transportation policy for international movements between Texas and Mexico.

Chapter 2 will examine the existing cross-border infrastructure at Laredo, Texas. Particular attention will be paid to the Colombia Solidarity Bridge. Cross-border traffic volumes will be discussed as well as capacity utilization of the currently in-place infrastructure.

Chapter 3 will discuss the events that led to the construction of the Colombia Solidarity Bridge. Additionally, an examination will be made to discern the reasons for the bridge's current under-utilization.

Chapter 4 will analyze the lessons that have been learned from the Colombia Solidarity Bridge experience. The agencies involved in international bridge projects will be described in terms of the role they play in policy decision-making.

U.S. - Mexico trade issues are examined in chapter 5, particularly as they relate to cross-border

logistics and customs. Although much improvement has been made in speeding cross-border shipments, the process is still enormously involved. Chapter 5 discusses this process, and, along with chapter 6, examines the institutional practices that serve to foster inefficient use of existing infrastructure and the impediments to rational international transportation policy.

CHAPTER 2. CROSS-BORDER INFRASTRUCTURE

INTRODUCTION

International roadway crossings exist at Bridge No. 1 (Gateway to the Americas); Bridge No. 2 (Lincoln Juarez); and the Colombia Solidarity Bridge. A fourth bridge has been proposed and a future fifth bridge is planned for south Laredo. The proposed fourth bridge is designed to expedite the movement of freight, relieving truck congestion at the two downtown bridges. All bridges are owned and operated by the City of Laredo. Bridge system revenues finance the operation and maintenance of the bridges and off-system arterial and collector roadways serving international commerce (Laredo Metropolitan Transportation Plan 1995-2015).

Congestion at the bridges occurs both on the Mexican and American sides of the Rio Grande, and represents a significant impediment to the free movement of goods and people between the two nations. The congestion in Laredo, Texas are the result of southbound traffic into Mexico which experiences delay in processing into Mexico at Bridge No. 2, where traffic backs up on I-35 interfering with cross-town traffic. At Bridge No. 1, the limited number of lanes on the bridge, inadequate turning radii for commercial traffic, and conflicting traffic movements (there are three entry points at the bridge), result in back-ups of commercial traffic that often creates gridlock in the central business district. The CBD is an historic area where expansion of the roadway is not possible.

The proposed Bridge No. 4 is designed specifically for commercial cargo movements with adequate queuing, ample turning radii, a limited number of conflicting traffic movements, and signalized intersections. When built, Bridge No. 4 may be used exclusively for commercial traffic. Because of the existence of warehouses in the area, it is not possible to exclude trucks from the downtown entirely, although trucks are required to use designated truck routes.

LAREDO-COLOMBIA SOLIDARITY BRIDGE

The Laredo-Colombia Solidarity Bridge is a state-of-the-art bridge in all respects. Completed in 1991, the bridge has state-of-the-art customs and administrative complexes, eight vehicle lanes, two walkways, and a 1,216-foot span over the Rio Grande. The Laredo-Colombia Solidarity Bridge also referred to as the Solidarity Bridge, Colombia Bridge, and Laredo Bridge No. 3 was built at a total cost to both countries of approximately $100 million (Dillion, 1996). The Colombia Bridge stands approximately 20 miles west of Laredo, Texas, the busiest trade crossing on the United States-Mexico border. For this reason the bridge was designed to allow at least 8,000 tractor-trailers and tens of thousands of cars to cross each day. The Colombia Bridge can be seen in the upper left corner of Figure 1(Laredo Economic Profile, 1996). Also shown in this Figure are Bridge No. 1 (The Gateway to America International Bridge), Bridge No. 2 (Juarez-Lincoln International Bridge),

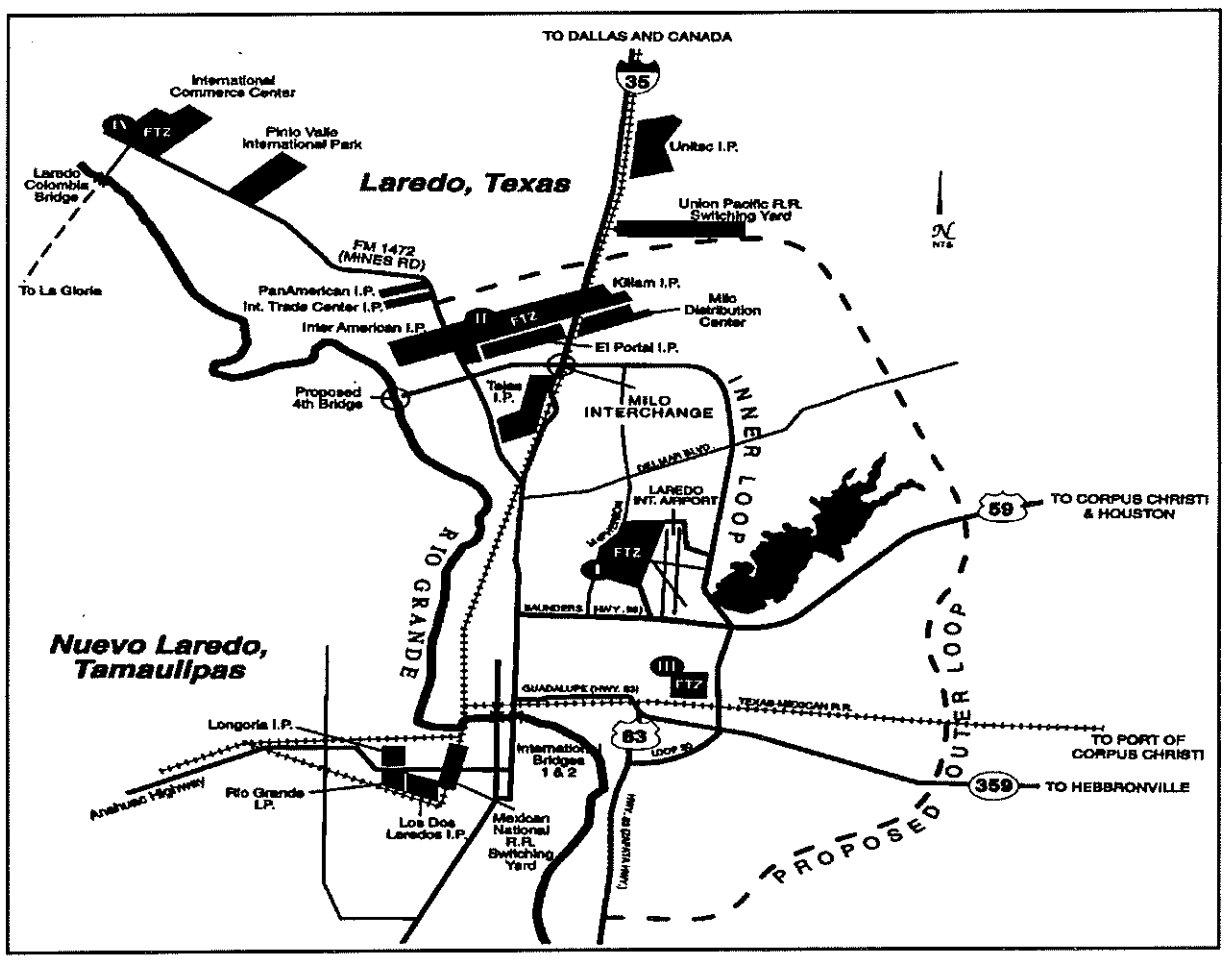

Figure 1. Columbia Bridge and Major Road Projects

and the major road projects planned for Laredo and Nuevo Laredo, Tamaulipas.

With $107 billion worth of goods passing through the two cities (Hayward, 1996) and Laredo's location along highways to major U.S. and Mexican markets, the newly constructed Laredo-Colombia Solidarity Bridge was supposed to become the busiest bridge on the border. The new bridge was also supposed to become a major factor in reducing the backlog of traffic at the two existing international bridges in downtown Laredo caused by the increase in commercial traffic and population. Population forecasts to the year 2015 for the Laredo Metropolitan Area which includes Nuevo Laredo are indicated on Table 1.

Table 1. Population Forecast.

	1990 Census	1995	2000	2005	2015
Laredo, Texas	133,239	156,002	189,021	219,700	276,560
Nuevo Laredo, Tamaulipas	217,468	241,124	264,424	291,060	348,504
Total	350,707	397,126	453,145	510,760	625,064

Laredo Metropolitan Transportation Plan 1995-2015

However, since Colombia's 1991 inauguration, the long waits at Laredo's two downtown bridges continue and the Colombia Bridge remains vastly under-utilized. The daily traffic on the Colombia Bridge has been, on average, less than 500 vehicles (Dillion, 1996). In Nuevo Laredo it still takes hours to cross the Juarez-Lincoln International Bridge, with 3,000 northbound trailers forming lines stretching as long as seven miles (Beachy, 1996). The primary reason truckers routinely by-pass the relatively new and uncongested bridge is roads. Truckers must first travel 20 miles away from Laredo on the U.S. side of the border. After crossing the bridge, the only roads on the Mexican side lead back to Nuevo Laredo, 20 miles away. Truckers must, therefore, make a 40-mile round trip to end up back where they started. In addition to the bridge's remote location, customs brokers estimate the extra cost of using the Colombia Bridge anywhere from 30 dollars to 150 dollars per truck (Lazaroff, 1993).

Using the Laredo Bridge System's projected 1995-1996 fiscal year bridge revenues from all tolls,

Figure 2 shows that the Colombia Bridges is projected to only collect $60,922 (Garcia, 1996). All three bridges combined are expected to collect tolls totaling $17,332,177 (Garcia, 1996). Figure 3 shows the percentage representation of the revenues collected by Colombia, and Bridges I and II during FY 95-96. In approximately 6 years of operation, the Colombia bridge has collected revenues totaling $190,258. The City of Laredo alone financed $12 million through revenue bonds to build the bridge (Garcia, 1996).

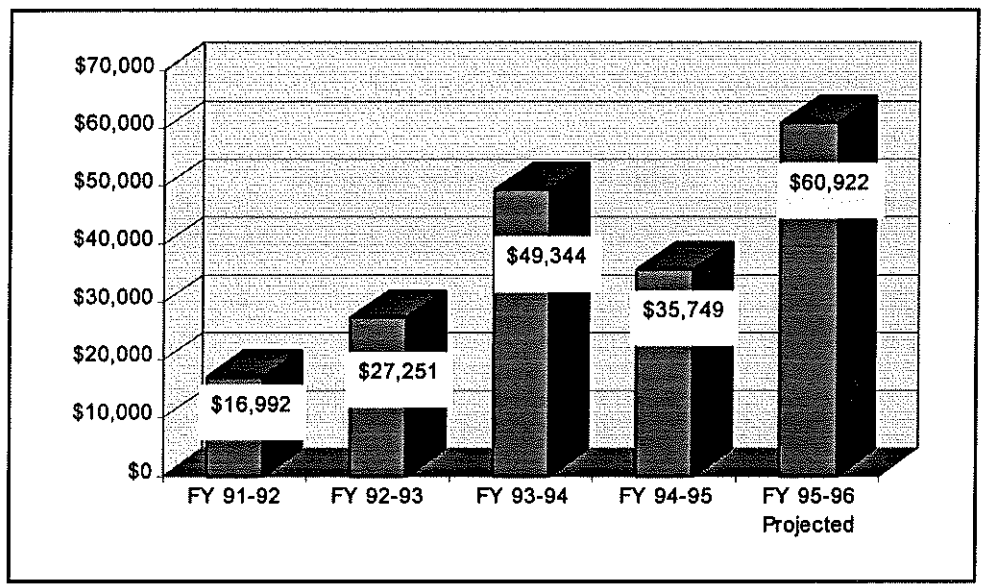

Figure 2. Columbia Bridge Revenue Comparison

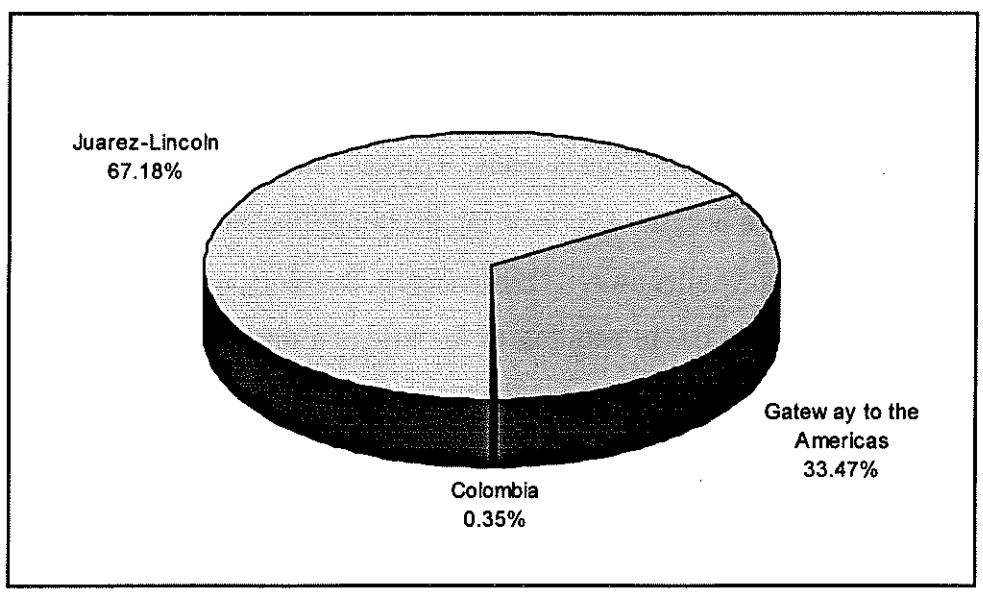

Figure 3. Projected FY 95-96 Revenues - All Tolls

EXISTING TRANSPORTATION INFRASTRUCTURE

Laredo is now the second largest inland port in the United States behind Detroit. Likewise, Nuevo Laredo is the most active customs port in Mexico and all of Latin America. This prosperity can in

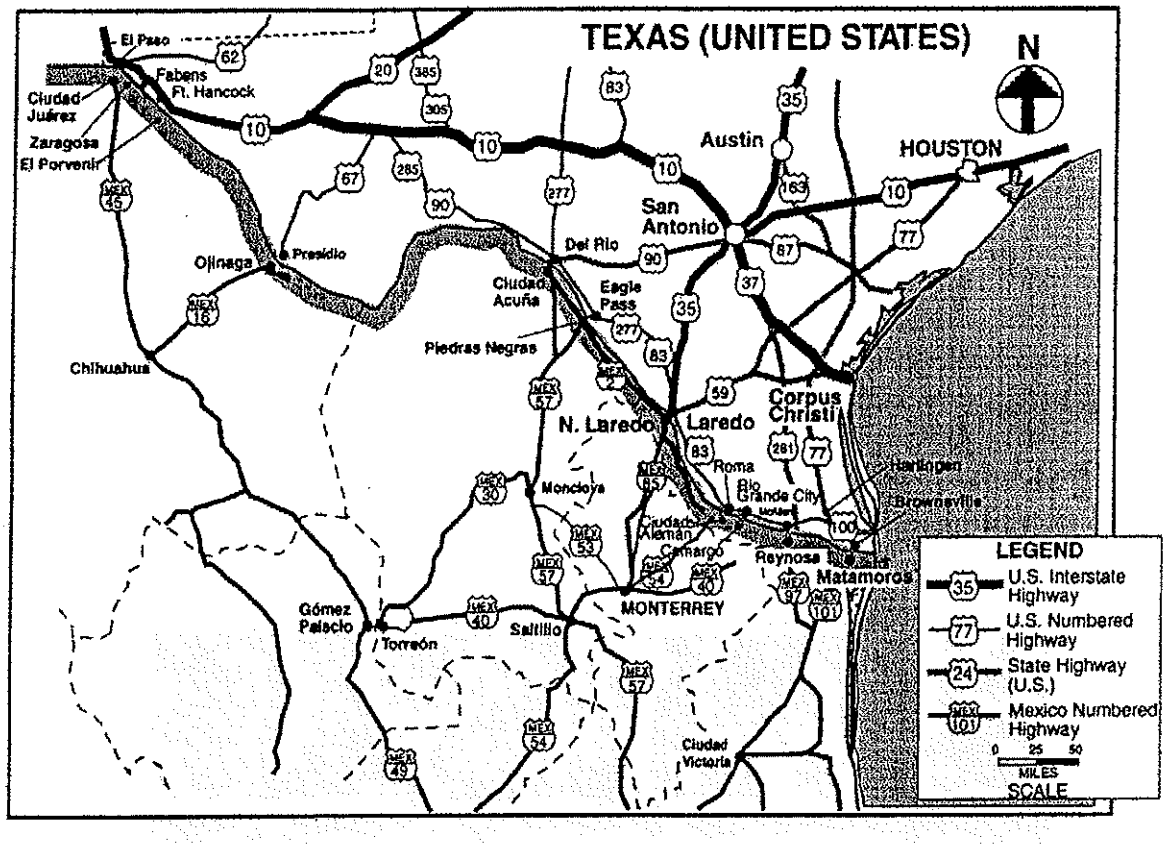

Figure 4. Texas-Mexico Border Highway Infrastructure

part be contributed to the transportation infrastructure that supports the two cities. As shown in Figure 4 (Harrison, 1993) on the Mexican side, the principal highway and railroad leading from Saltillo and Monterrey converge on Nuevo Laredo. On the U.S. side, two major rail lines and several U.S. highways fan outwards from Laredo to the urban centers and seaports of Texas.

The highways serving Laredo, Texas are the following: Interstate 35 (I-35), which runs north to San Antonio; U.S. 59, which runs northeast to Houston and intersects State Highway 44 to Corpus Christi; State Highway 359 to the east; U.S. 83, which runs southeast from Laredo along the border and northwest from I-35; and F.M. 1472 (Mines Road), which runs to the west and leads to the Colombia Bridge. Laredo is also served by two major railroad companies: the Texas-Mexico

Railroad, which runs to the deep water Port of Corpus Christi, and the Union Pacific Railroad, which provides freight services to the U.S. and Canada.

Nuevo Laredo is served by the following highways: Mexico 2, which runs southeast along the border to Reynosa and northwest to the Colombia Bridge and Piedras Negras; Mexico 85, which runs south to Monterrey; Nuevo Leon 1, which runs southwest to Lampazos and then south to Monterrey. Nuevo Laredo is served by the government-owned railroad company, Ferrocarriles Nacionales de Mexico (FNM), which provides service to Monterrey, Saltillo, and Central Mexico.

The Laredo-Nuevo Laredo area is currently served by one international railroad bridge and by three international bridges. The railroad bridge and two of the three international bridges are located in the downtown area. The two downtown bridges are the Gateway to the Americas Bridge (Bridge No. 1) and the Juarez-Lincoln Bridge (Bridge No. 2).

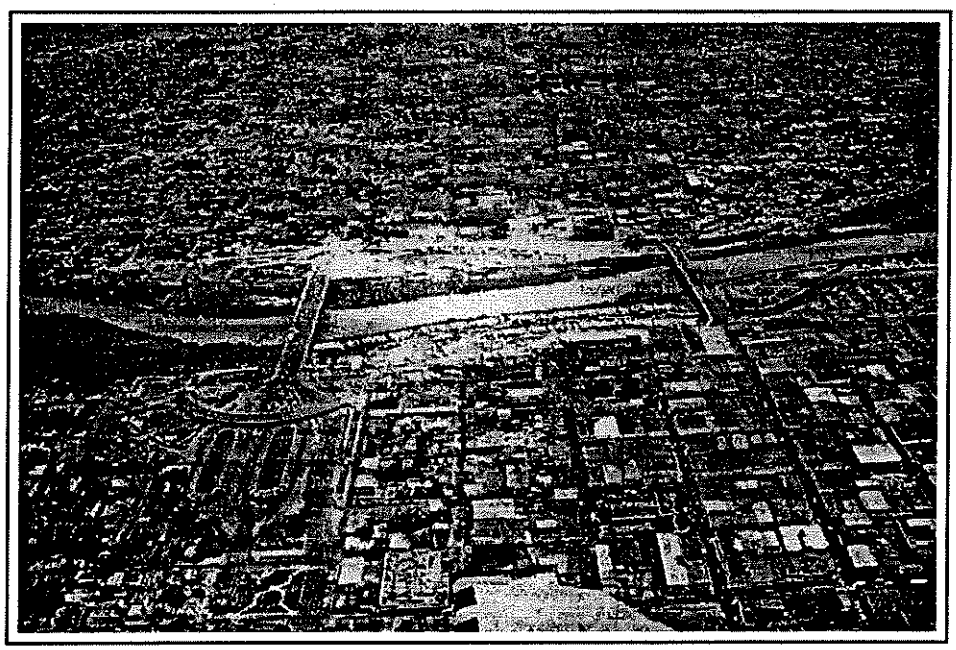

Figure 5. Juarez-Lincoln Bridge (Left) and Gateway to the Americas Bridge (Right). U.S. at Bottom. (TxDOT, 1995)

The third international bridge, displayed in Figure 6, and located 20 miles northwest of Laredo, is the Laredo-Colombia Solidarity Bridge.

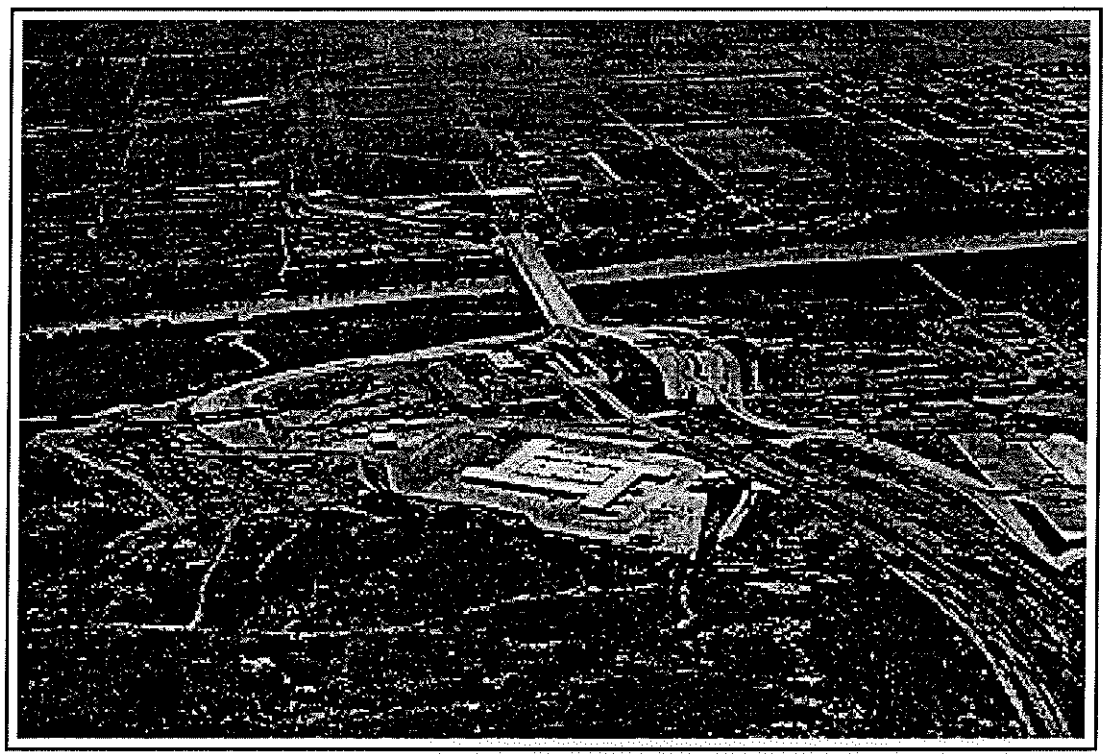

Figure 6. Laredo-Colombia Solidarity Bridge. U.S. at Bottom. (TxDOT, 1995)

All three international bridges operate as toll facilities, and are jointly owned and operated by the City of Laredo through the Laredo Bridge System (LBS) and by the Mexican government through the Caminos Y Puentes Federales de Ingresos y Conexos (CAPUFE). The railroad bridge is owned by the Texas Mexican Railway Company.

The Gateway to the Americas Bridge is a four-lane bridge completed in 1956 with a span of 1,050 feet. This bridge is the only pedestrian bridge in Laredo's downtown area. The Juarez-Lincoln Bridge is a six-lane bridge completed in 1976 with a span of 990 feet. Even though this bridge is wider and also very close to downtown, pedestrians are not allowed on this bridge due to the lack of appropriate pedestrian facilities on the Mexican side. Both the Gateway to the Americas bridge and the Juarez-Lincoln bridge operate 24 hours a day. As stated before, the Laredo-Colombia

Solidarity Bridge is an eight-lane bridge completed in 1991 with a span of 1,216 feet. Pedestrians are permitted on this bridge, however pedestrian traffic is extremely low. Unlike the two downtown bridges, the traffic volumes at the Colombia Bridge do not warrant operation 24 hours a day. The Colombia bridge is only open from 8 am to midnight. A fourth bridge, the Laredo Northwest International Bridge is pending construction. Like the Colombia bridge, Bridge IV will also have eight lanes.

LAREDO BRIDGE SYSTEM COMMERCIAL TRAFFIC

In 1991 the U.S. General Accounting Office reported that the Laredo U.S. Customs District had the largest workload in commercial traffic among all U.S. Customs District (Espinosa, et al, 1993). Figure 7 below shows the major routes used to ship products from the U.S. and Canada to Mexico and vice versa.

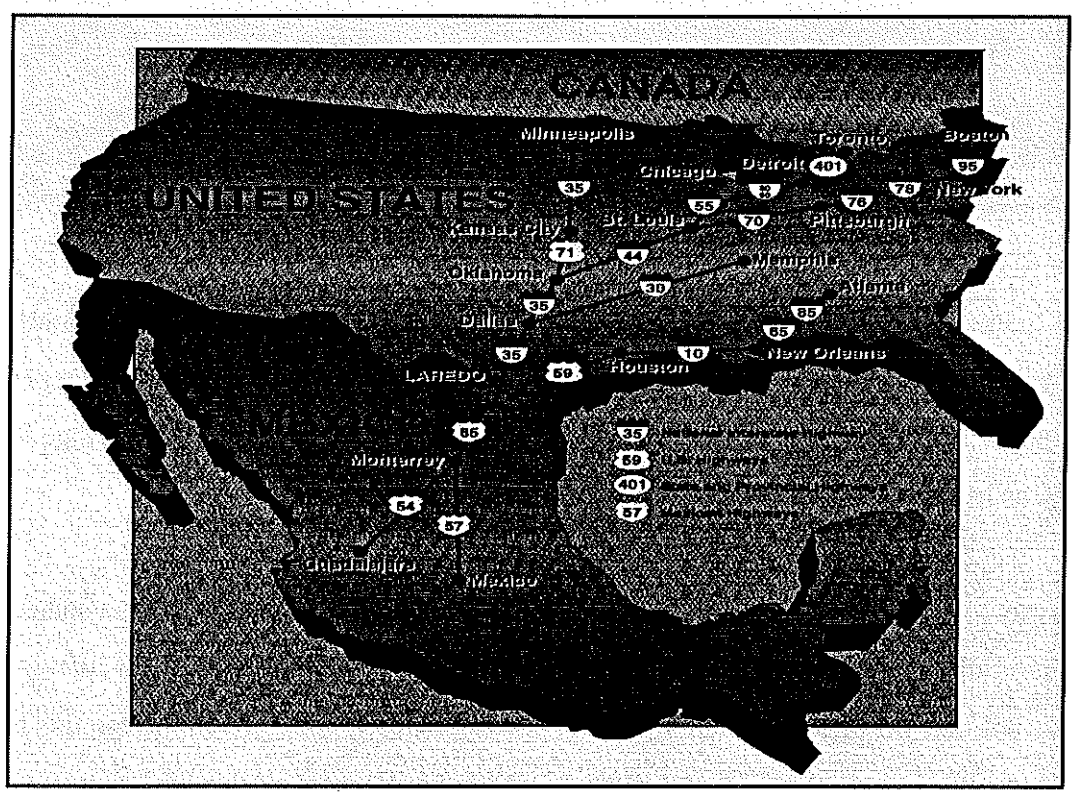

Figure 7. Port of Laredo - International Trade Routes (Laredo Economic Profile, 1996)

Figure 8 below shows the cross-border loaded truck shipments for the Port of Laredo, the largest port of entry in the Laredo U.S. Customs District. Figure 8 also shows that Nuevo Laredo plays just as important a role as Laredo in Mexico's export trade with the United States (Laredo Economic Profile, 1996).

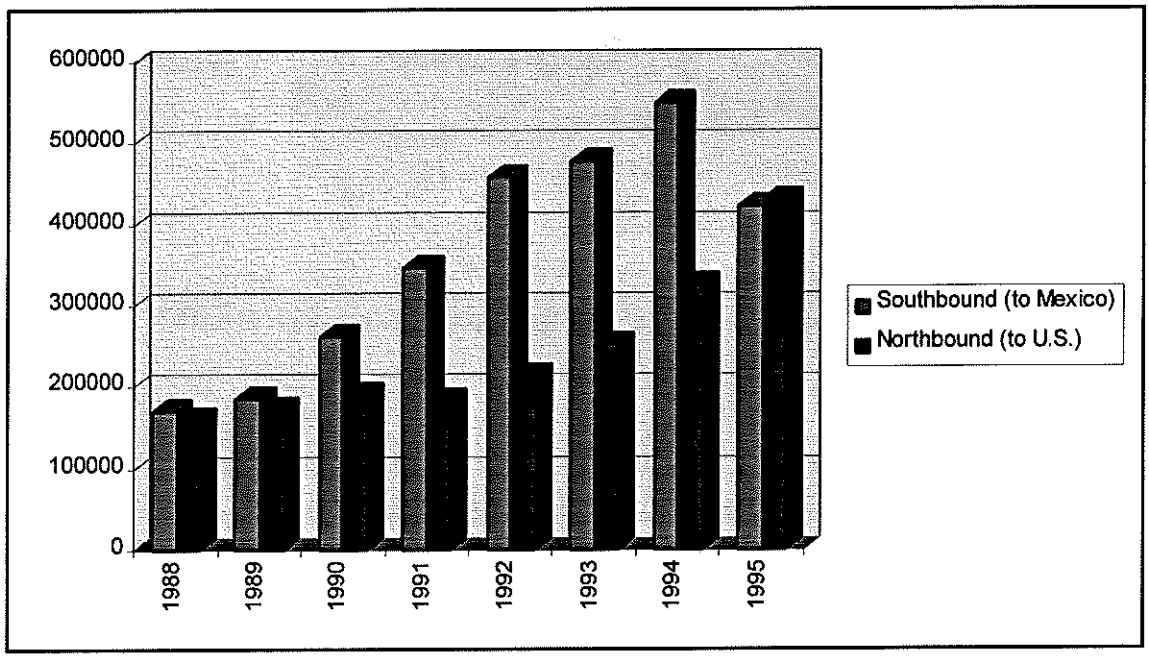

Figure 8. Laredo Cross-Border Truck Shipments (Loaded)

In addition to Laredo, other major ports on the Texas-Mexico border include El Paso, Brownsville, and McAllen. The importance of these ports stems from the fact that the cities lie on or are in close proximity to one of Mexico's three main north/south ground corridors. The western corridor passes through Nogales, Arizona. The central and eastern corridors pass through Texas. The central corridor passes through El Paso-Ciudad Juarez. The eastern corridor passes through Laredo-Nuevo Laredo. A branch of the eastern corridor also reaches Brownsville-Matamoros. McAllen, while not directly located on one of Mexico's main trade corridors, does have a large number of international bridge crossings. The number of southbound and northbound vehicle bridge crossings at the four major ports along the Texas-Mexico border can be seen below in Figures 9 and 10 (Crisp, 1996).

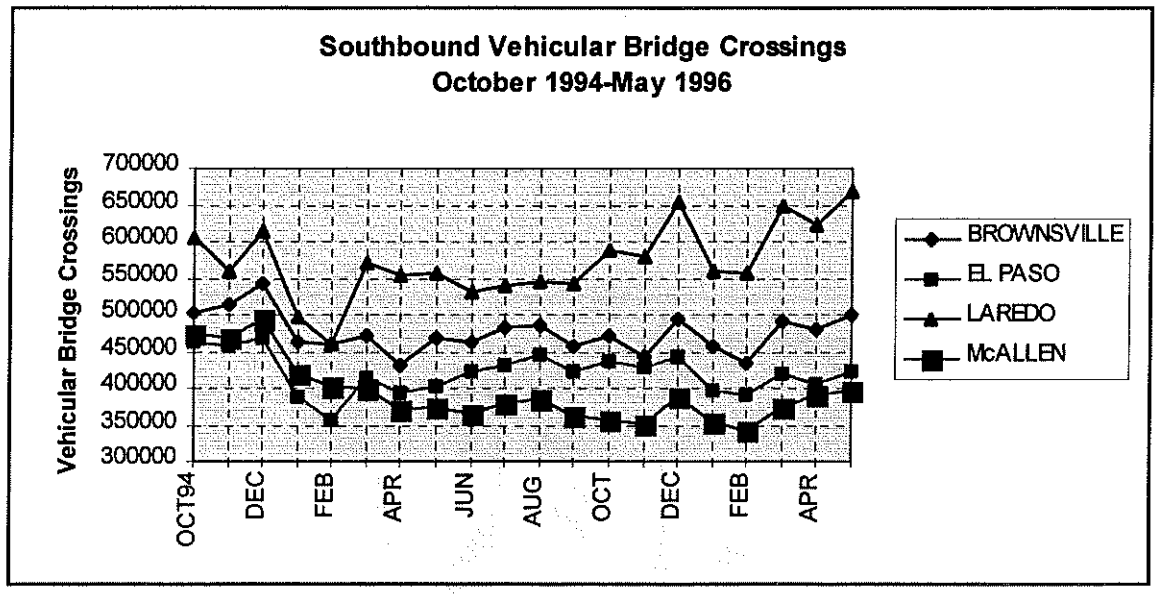

Figure 9. Southbound Vehicle Bridge Crossings Per Month

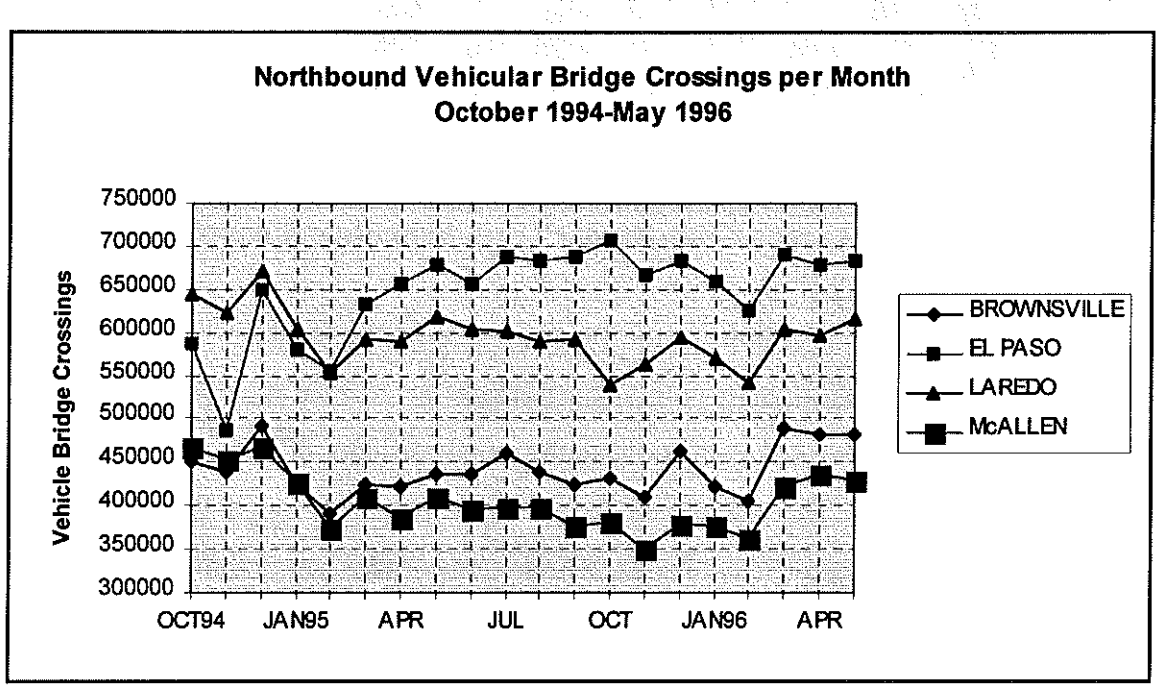

Figure 10. Northbound Vehicle Bridge Crossings Per Month

LAREDO-COLOMBIA SOLIDARITY BRIDGE TRAFFIC

During August 1991, 430 northbound and 352 southbound vehicles used the bridge during the first month of operation. On a daily basis the bridge averaged less than 26 vehicles per day, approximately 14 northbound and 12 southbound. The total traffic in both directions for 1991 averaged 165 vehicles per day. In 1992, that same figure rose to 465 per day. In 1993 the average rose to 706 vehicles per day and increased slightly again to 717 vehicles per day in 1994 (TxDOT, 1995). In 1994, the Texas Department of Transportation reported that the Colombia Bridge handled an average of 252 automobiles, 400 commercial vehicles, and 4 pedestrians per day. All of these rates are far below what was expected. Consequently the bridge is operating far below its capacity.

Utilization of the Colombia Bridge increased significantly, for a period, when truck traffic was restricted on the Juarez-Lincoln and Gateway to the Americas bridges for several months in 1993. The highest traffic month during this period was in December 1993 when the Colombia Bridge accommodated 10,505 trucks for the entire month.

In December 1994, a monthly record was set when a total of 38,303 vehicles for an average of 1,235 vehicles per day crossed the Colombia Bridge . The following month, however, utilization fell by 50 percent to 19,495 vehicles for an average of 628 vehicles per day. This dramatic drop in traffic was attributed to seasonal fluctuations, government orders, and economic problems. Another reason for the fluctuations is the bridge's role as a "safety valve." When traffic is low, drivers find the extra driving time needed to use the Colombia Bridge unacceptable. On the other hand, when there is long backlog of traffic, the extra driving time to the bridge is not a barrier (Fatemi, 1995).

During 1995, the Laredo Bridge System reported that 428,809 loaded trucks used Laredo bridges to cross into Mexico. Of these trucks, 236,095 (55.06%) used the Juarez-Lincoln Bridge, 164,158 (38.28%) used the Gateway to the Americas Bridge, and only 28,556 (6.66%) used the Colombia Bridge (Laredo Economic Profile, 1996; and Garcia, 1996). A bar graph comparing all southbound loaded truck traffic at several international bridges on the Texas-Mexico border is shown in Figure 11.

Even with the bridge's role as a "safety valve" and all of the proposed improvements to the Laredo and Nuevo Laredo transportation infrastructure in the *Laredo Metropolitan Transportation Plan 1995-2015* it is forecasted that the utilization of the Laredo-Colombia Solidarity Bridge will increase slightly through the year 2015. According to the Laredo Metropolitan Transportation Plan 1995-2015, a possible explanation for this is the fact that the Colombia Bridge has been designated as the route for "ultra hazardous and DOT hazardous cargo." The annual southbound international vehicular bridge crossings from 1981 to 2015 are summarized on Table 2. The Laredo Metropolitan Planning Organization's projected northbound and southbound vehicular crossings from 1995 to 2015 are shown in Figures 12 and 13.

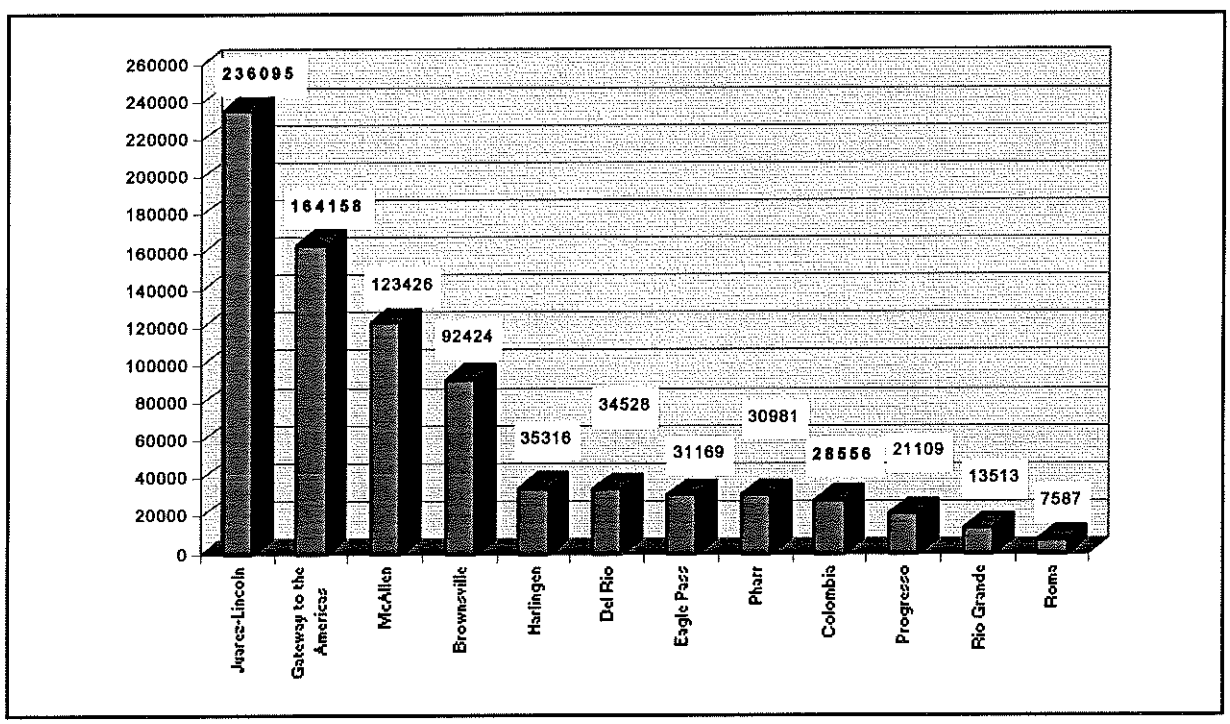

Figure 11. 1995 Bridge Comparison of Southbound Loaded Trucks

As can be seen in Figure 11, the number of southbound trucks crossing the Colombia bridge are dwarfed by the number of crossings at McAllen, Brownsville, and the other Laredo bridges. On the other hand, the number of southbound crossing of the Columbia bridge compares similarly with the crossings at the other Texas ports of entry.

As displayed in Table 2, the rates of increase of the different bridges are similar. Unfortunately for the Colombia bridge, the low numbers of crossings renders rate comparisons with the other Laredo bridges spurious.

Table 2. Annual Southbound International Vehicular Bridge Crossings

	1981	1992	1995	2000	2005	2015
Gateway to the Americas	1,910,682	2,339,214	2,486,807	2,775,403	3,063,999	3,641,192
Juarez-Lincoln	3,821,640	4,678,766	4,973,972	5,551,206	6,128,440	7,282,908
Laredo-Colombia Solidarity	N/A	N/A	125,633	140,212	154,792	183,952
Bridge No. 4	N/A	N/A	N/A	2,432,000	2,983,000	4,200,000
Total	5,732,322	7,017,980	7,586,412	10,898,821	12,330,631	15,308,052

Table 2 is displayed graphically in Figure 12. For all intents and purposes, the projected southbound crossings at the Colombia bridge are essentially flat.

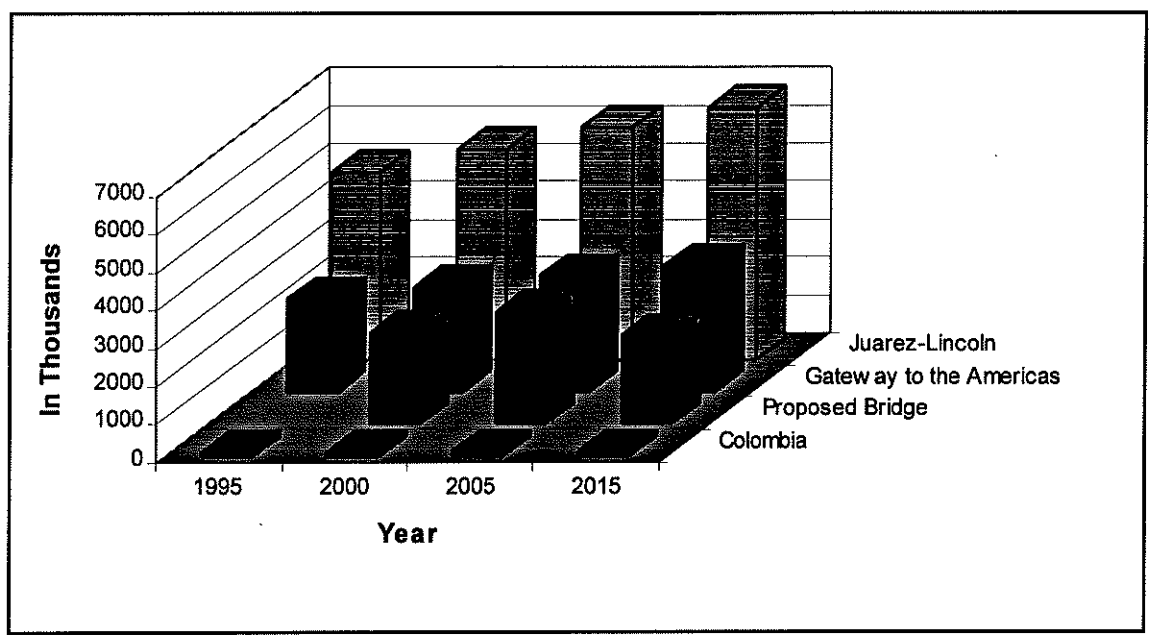

Figure 12. Projected Southbound Vehicular Crossings

The information displayed in Figure 12 is, for the Colombia bridge, basically repeated for northbound crossings. As displayed in Figure 13, projected northbound crossings at the Colombia bridge through 2015 are expected to remain small, although increasing.

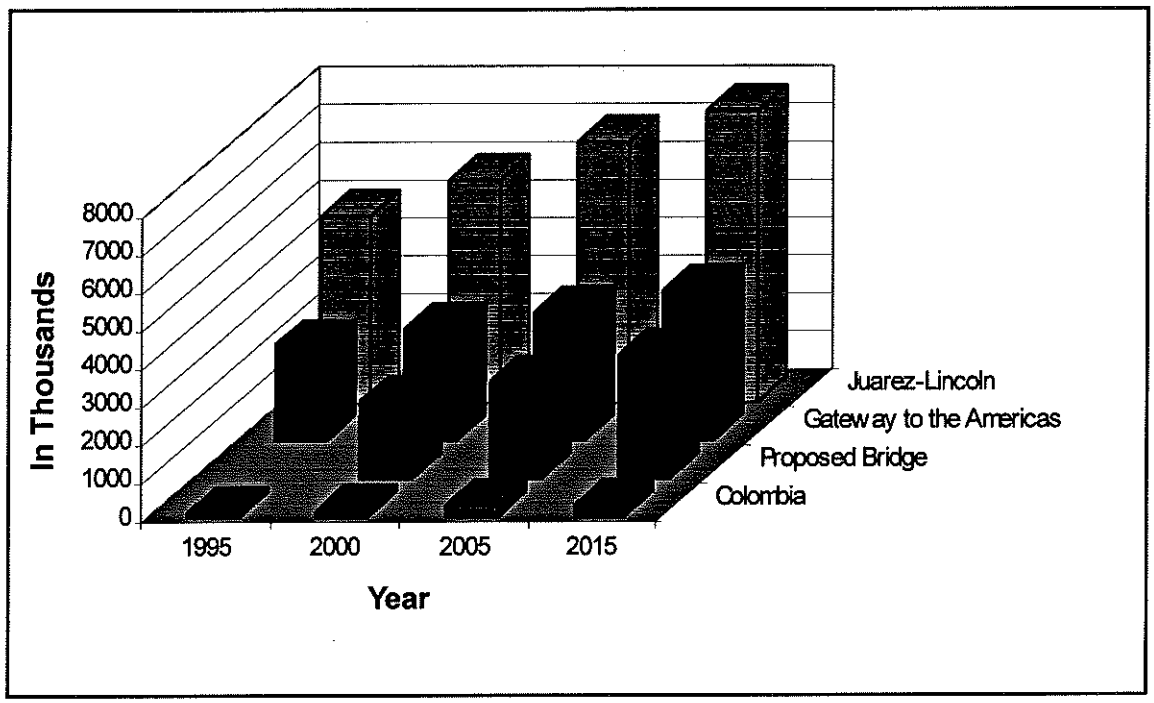

Figure 13. Projected Northbound Vehicular Crossings

CONCLUSION

There is little doubt that were the Columbia bridge to be better utilized congestion at the other two Laredo bridges would, to a certain extent, be alleviated. Unfortunately, even optimistic projections for the Columbia bridge foresee little to inspire confidence that the number of crossings will significantly increase. Arguments pointing to the fact that the Columbia bridge compares favorably (in terms of number of crossings) with other ports of entry on the Texas-Mexico border (such as Eagle Pass or Pharr) provide small consolation to those experiencing the crushing congestion that characterizes the situation at the Juarez-Lincoln and Gateway to the Americas bridges. This state of affairs is particularly unfortunate given that the Columbia bridge has such a large potential capacity (8,000 tractor trailers and tens of thousands of passenger vehicles a day), the most modern customs and administrative facilities, eight vehicle lanes, and two walkways allowing a huge number

of pedestrians to cross. Built with such high hopes (the Columbia bridge was supposed to become the busiest bridge on the Texas-Mexico border), few, if any, of the planning projections that justified the need for the bridge have obtained.

CHAPTER 3. EVENTS LEADING TO THE CONSTRUCTION OF THE SOLIDARITY BRIDGE

INTRODUCTION

Over the last century, politicians in the Mexican state of Nuevo Leon (see Figure 14), have watched enviously as the Mexican state of Tamaulipas became Mexico's busiest overland link to the United States. Tamaulipas grew rich from customs revenues, while Nuevo Leon, which produced much of the material being exported, still had no bridge. "It became the dream of Monterrey's industrialists to have not only their own border but their own bridge," said Octavio Herrera, a historian at the University of Tamaulipas (Dillion, 1996).

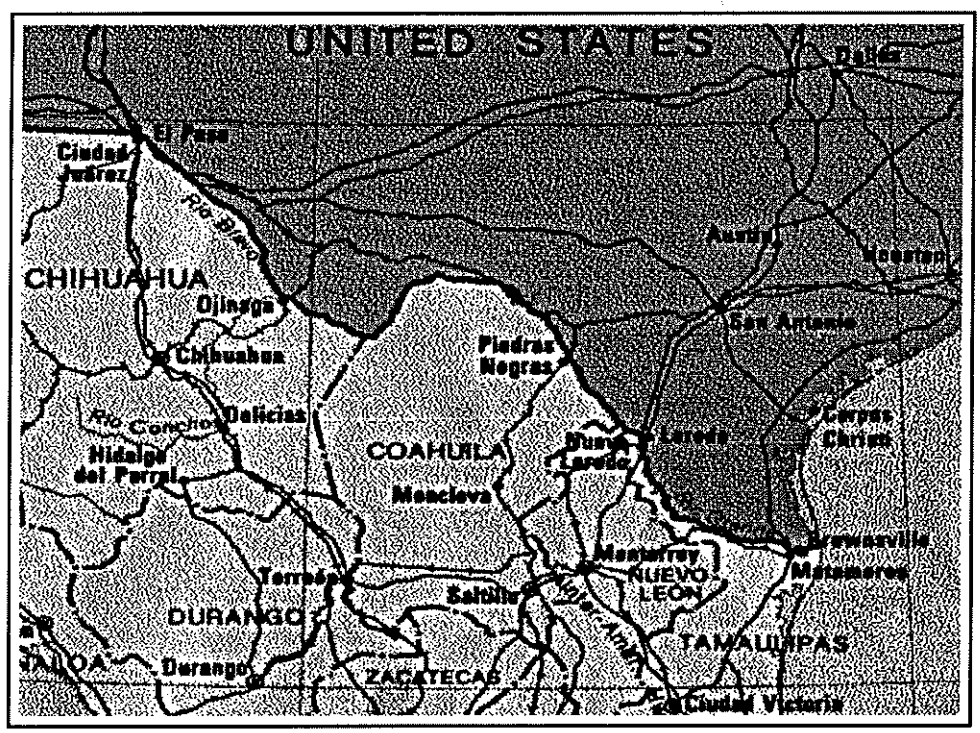

Figure 14. Map of Mexican States Bordering Texas

The bridge was born in the late 1980s as a pet project of the then-governor of Nuevo Leon, Jorge Trevino. At the time, Nuevo Leon was the only Mexican state without a port of entry. Trevino saw the bridge as a way to have the northern Mexican state capture a large portion of toll revenues that traditionally have gone to the state of Tamaulipas, where Nuevo Laredo is located (Nagel, 1995).

Tamaulipas, Mexico's northeastern most state, has 225 miles of river frontage spanned by several international bridges, including two that connect Laredo and Nuevo Laredo. In contrast, neighboring Nuevo Leon, whose capital is Monterrey, Mexico's second-largest city, has only a twelve-mile stretch of Texas border beginning west of Nuevo Laredo. Customs Broker Hector Bolaflos explains, "Tamaulipas was gerrymandered in the 19th century after Nuevo Leon leaders, upset by decisions made in Mexico City, threatened to annex themselves to the United States. Unwilling to let the state go gringo, Mexican leaders took away Nuevo Leons' border with the United States and gave it to Tamaulipas" (Lazaroff, 1993).

In August 1988, Jorge Trevino, Governor of Nuevo Leon and Dr. Pedro Aspe Armella, Budgeting and Programming Secretary established CODENOR, a commission that would study opportunities for developing the northern portion of Nuevo Leon . The commission called their strategy the 14-XXI plan because the goals were to be achieved over 14 years and, hence, in the 21st century. The 14-XXI plan established two major objectives regarding Nuevo Leon (Espinosa, et al, 1993):

1. Develop northern Mexico (central) along the 372.6-mile U.S. - Mexico border.
2. Reverse the population growth of the Monterrey metropolitan area by creating alternative locations for the state's industrial development--more specifically, reduce the 4 percent annual population growth rate to a 2 percent annual population growth rate, in order to control industrial growth and to improve the standard of living for Nuevo Leon's population.

It was as a part of the 14-XXI plan that Nuevo Leon officials first introduced the proposal for the construction of the Laredo-Colombia Solidarity Bridge at Colombia, Nuevo Leon to Texas and U.S. officials. The proposal was well-received by U.S. officials and represented the first-ever request by Mexico for U.S. assistance in building an international crossing port (Espinosa, et al, 1993). In addition to the Colombia Bridge, CODENOR identified several important interrelated investment elements necessary for the successful implementation of the 14-XXI plan. The six investment elements of the 14-XXI plan included:

1. The construction of the International Solidarity Bridge.
2. The construction of a new highway accessing the city of Monterrey, Nuevo Leon.
3. The construction of the Anahuac-China industrial highway and the strengthening of the local infrastructure in order to bring about urban development in four medium-sized cities in Mexico.
4. Intense agricultural and cattle breeding development on 5,060,000 acres in northern Nuevo Leon.
5. Land development oriented toward improving the industry and agriculture of Lampazos and Sabinas Hidalgo, Nuevo Leon.
6. A regional strategy that includes the states of Coahuila and Tamaulipas.

The state realized its dream in December 1988 when the bridge project caught the eye of newly elected Mexican president Carlos Salinas de Gortari, who was born in Monterrey, Nuevo Leon (Dillion, 1996). Almost immediately, Salinas began pushing for construction of Nuevo Leon's Bridge. In the United States, Former President George Bush and Former Governor Bill Clements of Texas went along with the proposal despite complaints from South Texas and Mexican officials that the Colombia Bridge site was too far from both Laredo and Nuevo Laredo and would see little use (Rangel, 1995).

By 1989, Laredo planners had identified a need for additional bridge capacity, and therefore Laredo officials initially argued for the construction of the new bridge within the city limits (Harrison, 1993). The city of Laredo eventually approved the plan after an ultimatum was sent to the city--either the city would build the bridge, or else the state of Texas would build it as a free bridge, and Laredo would lose out on all future tolls (Nagel, 1995). After approving the plan, the city of Laredo issued bonds and expanded the city borders to include the site of the new bridge with the expectation that Mexico would build the necessary roads connecting the bridge to the toll highway from Nuevo Laredo to Monterrey.

Bridge construction was undertaken, despite the fact that the interfacing highway infrastructure was

only marginally adequate on the U.S. side and totally inadequate on the Mexico side, particularly where it linked with the federal highways from Nuevo Laredo to Monterrey (Harrison, 1993). Even though the construction of service facilities, such as U.S. Customs and the Immigrations and Nationalization Service, was not complete, the bridge was inaugurated on July 31, 1991 on the last day of Nuevo Leon Governor Trevino's term of office. August 1991 was the bridge's first full month of operation.

WHAT WENT WRONG

Nicknamed the "Bridge to Nowhere," The Solidarity Bridge remains mostly unused for a variety of reasons. Sam Dillion, a writer for the New York Times New Services, writes "Neither Mexico nor the United States ever built planned approach roads that would have made it a major crossing on a 300-mile superhighway from Monterrey to San Antonio" (Dillion, 1996).

In Mexico this was partially due to a change in leadership in the state of Nuevo Leon. In 1991, Trevino, one of the strongest backers of the Colombia Bridge, was replaced as governor by Socrates Rizzo Garcia. Garcia's priorities lay not in constructing roads from the Colombia Bridge to the Monterrey toll highway, but constructing a Monterrey subway system (Dillion, 1996).

In the United States the problem is slightly different yet similar. Although the bridge is currently linked to Interstate 35 through F.M. 1472, a more direct link to Interstate 35 would reduce travel time and shorten trip distances. The current proposal is to construct a 22-mile limited access private toll road, the Camino Columbia, between the Colombia Bridge and Interstate 35. The proposal is being pursued by a Texas private toll road corporation comprised of Laredo landowners and businessmen. The proposal argues that the road will encourage use of the bridge, increase the city's bridge toll revenue, alleviate traffic congestion in downtown Laredo, and allow commercial traffic to access a direct, high-speed corridor between Monterrey, Laredo, Corpus Christi, Houston, San Antonio, Austin, Dallas, and points beyond. Even though the plan calls for the project to be privately funded, the city of Laredo has opposed and stalled the proposal because it will divert traffic and development away from Laredo (Dillion, 1996).

As a result, reaching the bridge currently involves a 40-mile detour beginning and ending in the twin Laredos. On the Mexican side, truckers must use Mexico Route 2, a long and narrow two-lane federal highway. "It's not very wide at all. In reality, it is dangerous," said truck driver Guillermo Ramirez (Lazaroff, 1993). On the U.S. side, the Colombia Bridge connects with F.M. 1472 (Mines Road). In late 1992, the first contract for upgrading Mines Road from a two-lane highway to a four-lane divided highway was awarded. The three-phase improvement to Mines Road is now complete. Thus, the U.S. has taken the initiative in improving the linkage from the bridge to Laredo, and to its planned inner loop. However, things remain unchanged on the Mexican side. There is still no sign of the 63-mile link between the Colombia Bridge and the Monterrey-Nuevo Laredo Toll Road. Laredo had an informal pledge that roads connecting the bridge to Monterrey highway would be built. "It seemed so obvious that the roads would have to be built that we never thought to make it part of the agreement,"said Laredo city manager Peter Vargas. (Nagel, 1995).

The highway extension between the Colombia Bridge and the Monterrey-Nuevo Laredo Toll Road has still not been built because the state has not been able to raise money for the project. Forced to borrow at very high interest rates, the state government of Nuevo Leon has had to set toll fees among the highest in the world in an attempt to pay off over $200 million in loans taken on to build the 103-mile Monterrey-Nuevo Laredo super highway, as well as the Colombia Bridge. "It's been a vicious cycle. High tolls mean no money, and no money means no new roads," said Gerry Schwebel, president of the Border Trade Alliance, an association of business and commercial groups. Ridership on the highway has been extremely low. More than 80 percent of the trucks heading south to Monterrey still take the federal "free" highways rather than using the new toll roads at a price of 50 cents per miles (Lazaroff, 1993).

Another problem has been the lack of value-added services truckers depend on at the Colombia Bridge, such as freight forwarders and customs brokers. This is primarily due to the resolve of the municipal powers-that-be in Nuevo Laredo, Tamaulipas. If truck traffic was diverted to the Colombia Bridge, the state of Tamaulipas would lose tens, perhaps hundreds, of millions of dollars in annual bridge tolls and customs duties. For the most part, truck traffic is controlled by Nuevo

Laredo's 400 customs brokers, who process the paperwork and route most of the freight that moves between the two cities. Provider of these services remain in Nuevo Laredo, Tamaulipas and charge high premiums for processing cargo 20-miles outside of town. The Mexican brokers, who are licensed by the state of Tamaulipas, loathe the Colombia bridge and refuse to use it. "The bridge's remote location adds an additional $90 in fuel, wage, and other costs to each freight shipment sent across it. We're not going to use that bridge," said Enrique Buendia, director of Nuevo Laredo's Association of Customs Brokers (Dillion, 1996).

CONCLUSION

The events preceding the building of the Columbia Solidarity bridge were hailed as a time of very welcome international cooperation between Mexico, Texas, and the United States. The proposal to build the bridge represented the first time Mexico had ever sought help from the U.S. in building an international crossing port. The fact that the proposal was so well received by the U.S., coupled with an eagerness to foster a spirit of cooperation between the two countries, led to a series of informal agreements that, were the agreements not honored, would jeopardize the utility of the bridge. Building appropriate highway access to the bridge was just such an informal agreement.

CHAPTER 4. LESSONS LEARNED

INTRODUCTION

Probably the single biggest problem interfering with the potential success of the bridge was a lack of coordinated planning. The lack of utilization of the Colombia Bridge suggests that international bridge projects should take into account multiple factors such as: connecting roads, Mexican customs brokers rules, trade restrictions, practices, and government commitment (Giermanski, 1994). This did not occur in the case of the Colombia Bridge. It was simply the dream of Monterrey's industrialists to have their own bridge, and the vision of hundreds of freight trucks leaving Monterrey, staying within Nuevo Leon and then entering the United States by way of the Colombia Bridge (Lazaroff, 1993).

AGENCIES INVOLVED IN INTERNATIONAL BRIDGE PROJECTS

The U.S. State Department, as the liaison between the U.S. and Mexico, issues bridge permits and coordinates the Intergovernmental Committee on Bridges and Border Crossings. The committee meets four times a year with its Mexican counterparts to discuss issues on specific border projects. The U.S. Department of Transportation is also involved if federal funding is requested . For instance, the U.S. DOT told Former Texas Governor Ann Richards that it could not approve funding for a fourth international bridge for the City of Laredo until the last one built in the area reached a saturation point. The DOT eventually gave Richards a reluctant OK (El Financiero Weekly International, 1994).

State and local governments are responsible for the transportation infrastructure leading to an international bridge. International bridge projects are normally undertaken by border communities. For instance, in the case of the Colombia Bridge, TxDOT was responsible for improvements on F.M. 1472. According to Robert Ramirez, City of Laredo project manager for the Colombia Bridge and upcoming Bridge No. 4, the City of Laredo constructed the toll plaza, toll booths, offices, export lot, parking areas, truck scales, and the utilities (Ramirez, 1996). It was also necessary for the city to

construct a water and sewer plant due to the Colombia Bridge's remote location. Ramirez also stated that the design (size , width, etc.) for the Colombia Bridge and Bridge No. 4 was developed by Mexican engineers. Nuevo Leon officials also carried out an extensive feasibility study of the site. Details of the feasibility study indicate that Mexican officials were essentially driven by the desire for a more direct link with the U.S. that bypassed the state of Tamaulipas (Harrison, 1993).

SIGNIFICANT EVENTS SINCE CONSTRUCTION OF THE COLOMBIA BRIDGE

In 1991, the Intermodal Surface Transportation Efficiency Act of 1991(ISTEA) was passed. The act states, "It is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the nation to compete in the global economy, and will move people and goods in an energy efficient manner" (Espinosa, 1993). ISTEA requires a statewide transportation planning process that coordinates the various metropolitan plans in the state. Under ISTEA, Laredo was required to establish a Metropolitan Planning Organization (MPO) responsible for preparing and updating a long-range plan (20-year forecast). The City of Laredo and the MPO must develop a long-range thoroughfare plan that includes all projects funded by Laredo itself, Capital Improvement Projects, and state and federally funded projects that fall under the ISTEA umbrella (Espinosa, 1993). Also in 1991, the City of Laredo submitted a Presidential Permit application to build the city's fourth international bridge, an eight-lane bridge to be located northwest of the city's central business district.

In February 1992, Governor Ann Richards opened a U.S.-Mexico Cuatro Caminos business conference by urging both countries to build crucial roads and bridges to deal with the effects of a free-trade agreement (Dallas Morning News, 1992). The Cuatro Caminos conference is aimed at boosting trade between Texas and Mexico. In terms of international trade, Richards said that in Texas, among the most crucial road improvements were on Mines Road. Cuatro Caminos, Spanish for "four roads," originated in 1989 as the Conference of the Camino Real between the cities of Monterrey, Saltillo, Austin, and San Antonio.

On January 1, 1994 the North American Free Trade Agreement (NAFTA) was ratified. The ratification of NAFTA elevated traditional local and state-level transportation planning efforts to the level of national and international planning and transportation policy (Lindquist, 1995). NAFTA has also forced transportation planners to closely follow institutional and political issues.

In April 1994, Mexican, Canadian, and U.S. transportation officials pledged better cooperation and agreed to test that promise on planning for a proposed fourth bridge in Laredo (LaGesse, 1994). This first trinational meeting included U.S. Transportation Secretary Federico Pena, Mexican Transportation Secretary Emilio Gamboa Patron, and Canadian Transport Minister Douglas Young. With Laredo's proposed bridge serving as a "pilot project," the secretaries wanted to avoid past mistakes by better involving all levels of government. This was extremely important consideration for them due to the differences between the two governments. In Mexico, for example, the federal government handles most of the highway responsibilities, whereas in the United States many of those responsibilities lie with the city government.

On October 7, 1994, the City of Laredo received a Presidential Permit for the construction of a fourth international bridge, the Laredo Northwest Bridge. The U.S. will spend $11.3 million for the bridge and $41.6 million for roadways, toll booths, holding areas and other facilities (TxDOT, 1995).

In December 1994, the *Laredo Metropolitan Transportation Plan 1995-2015* which provides continuous, cooperative, and comprehensive transportation planning for the Laredo metropolitan area was submitted to the Texas Department of Transportation and United States Department of Transportation. The plan is significant because the plan addresses the issue of international border crossings. In the plan, the Colombia Bridge will be designated as the route for ultra hazardous and DOT hazardous cargo. In reference to proposed Bridge No. 4, the plan also states that "it is feasible to require commercial traffic to use such a facility exclusively." By relieving truck congestion at the two downtown bridges, the city hopes to improve tourism. The Gateway to the Americas Bridge and Juarez-Lincoln Bridge will be reserved for pedestrian, bicycle, and non-commercial traffic. Laredo bridge manager Rafael Garcia said that Laredo will not begin construction of Bridge No. 4

until an infrastructure commitment is made by Mexico . As mentioned previously, this is a major problem affecting the utilization of the Colombia Bridge. Lastly, the plan also mentions a proposed international railroad bridge by Union Pacific to be located in North Laredo, and a future fifth international bridge in South Laredo, which will connect Mangana-Hein Road with the *Bulevar Luis Donaldo Colosio Murrieta* and the Airport Road in Nuevo Laredo.

Lastly, the Texas Department of Transportation estimated that the three-phase project upgrading F.M. 1472 would be complete by February 1996 (TxDOT, 1995). During an August 1996 site visit, it was noted that construction on F.M. 1472 had in fact been completed.

CONCLUSION

The lack of coordinated planning between Mexico and the U.S. was the single biggest reason the Colombia bridge has not fulfilled its promise. Recent events have occurred that should result in closer cooperation between transportation planning agencies. The passage of NAFTA has elevated local and state transportation planning to the national level forcing planners to more closely follow institutional and political issues. Additionally, Mexican and U.S. transportation officials have pledged better cooperation and agreed to test that promise on planning for a proposed fourth bridge in Laredo. Most importantly, Laredo will not begin construction of this fourth bridge without an infrastructure commitment from Mexico.

CHAPTER 5. U.S. - MEXICO TRADE. POLICIES AND PRACTICES RESULTING IN INEFFICIENT USE OF EXISTING INFRASTRUCTURE

INTRODUCTION

Historically, Mexico has been a closed economy with high tariff barriers and little dependence on foreign trade. This was due in part to an abundance of oil which was exported to create the necessary foreign exchange and protect the Mexican economy. When the world price of oil dropped dramatically in 1981 and 1982, Mexico's oil could not be sold for enough dollars to buy the same amount of U.S. products that had been previously purchased. As a result of the oil crisis, Mexico was forced to devalue the currency (peso). During this time U.S. exports fell from $17.79 billion in 1981 to $9.08 in 1983 (see Table 3).

Table 3. 1977 - 1994 U.S.-Mexico Trade and Average Yearly Export and Import Trade Growth (Billions of U.S. Dollars).

Year	U.S. Exports to Mexico	Export Growth	U.S. Imports from Mexico	Import Growth
1977	4.82		4.77	
1978	6.68	1.86	6.20	1.43
1979	9.86	3.18	9.0	2.80
1980	15.15	5.29	12.84	3.84
1981	17.79	2.64	14.01	1.18
1982	11.82	-5.97	15.77	1.76
1983	9.08	-2.74	17.02	1.25
1984	11.99	2.91	18.27	1.25
1985	13.64	1.64	19.39	1.13
1986	12.39	-1.24	17.56	-1.83
1987	14.58	2.19	20.52	2.96
1988	20.47	5.89	23.53	3.01
1989	24.97	4.50	27.59	4.06
1990	28.38	3.41	30.80	3.21
1991	33.28	4.90	31.89	1.09
1992	40.60	7.32	35.19	3.30
1993	41.58	0.98	39.92	4.73
1994	50.84	9.26	49.94	9.58
TOTAL	367.92	46.02	388.97	44.72
AVERAGE YEARLY GROWTH		2.71		2.63

After the oil crises in 1981 and 1982, Mexico changed its national policy to that of becoming an

international competitive country. Actions were taken which stimulated the growth of U.S.-Mexico trade. In 1986 Mexico joined the General Agreement of Tariffs and Trade (GATT). Under the GATT, Mexico removed many of its required trade permits and reduced tariffs. This resulted in a substantial growth of U.S.-Mexico trade from $12.39 billion of U.S. exports and $17.56 billion of U.S. imports in 1986 to $33.28 billion of exports and $31.89 billion of imports in 1991. Trade growth has been further stimulated since 1991, first by the negotiations for the North American Free Trade Agreement (NAFTA), and then by its implementation, which further reduced tariffs and other trade restrictions when it was implemented on January 1, 1994. Table 4 Presents an estimate of trade volumes (in billions of dollars) for the year 2000.

Table 4. U.S.-Mexico Trade Estimates for the Year 2000

Trade Direction	1994	2000	Change
Southbound - U.S. Exports	50.84	71.74	41%
Northbound - U.S. Imports	49.94	73.37	48%

The volume of trade with Mexico is increasing and with the North American Free Trade Agreement, it appears that there will be a continuing increase. The material moving between Mexico and the U.S. has resulted in calls from many quarters to build more infrastructure to support these increases. The bottlenecks of large numbers of trucks waiting to cross the border are cited as vivid examples of the inadequate transportation infrastructure along the border. However, the U.S. Department of Transportation takes issue with this view, stating:

> "The facilities immediately at the border crossings, principally bridges... plus facilities housing Federal inspections agencies (the U.S. Customs Service, the U.S. Immigration and Naturalization Service, the U.S. Department of Agriculture and their Mexican... counterparts), are adequate and will remain so for the foreseeable future, even [with] the anticipated increases in trade." (USDOT, 1994)

Such diametrically opposed viewpoints emphasize the complicated nature of the problem and indicate that cross-border processes and procedures are not well understood.

CROSS-BORDER ISSUES

Growth in trade necessarily leads to growth in traffic. Since most of the movement of goods across the border is accomplished by surface transportation (i.e., trucks and railroads), concern has been generated about transportation problems that could result from significant increases in trade between the U.S. and Mexico. This apprehension was expressed by government officials and private sector groups in a 1991 U.S. General Accounting Office study that identified the following major concerns:

- The existing U.S. border inspection facilities cannot adequately accommodate the current flow of commercial traffic. Additionally, current capital improvement programs did not anticipate increased traffic that could result from NAFTA, and no long-range planning process exists for designing, constructing, or renovating border inspection facilities.

- Traffic across the border remains congested, even after U.S. and Mexican Customs have introduced new automated and simplified procedures to speed the flow of commercial traffic.

- U.S. inspection agency staffing along the border has not kept pace with the increase in traffic. Staffing cannot adequately handle existing traffic.

- Adequate transportation infrastructure is required is required on both sides of the border in order to facilitate the flow of commerce between the countries.

- Most border cities were not designed to handle the existing and expected commercial traffic. The commercial traffic uses city streets that were never intended to handle such traffic, resulting in congestion, accidents, and accelerated pavement deterioration.

Getting rail traffic from one country to another has improved greatly since the passage of NAFTA. Despacho Previo, essentially a means of process improvement, was implemented first at Laredo and has since been put in place at a number of other crossings. Under the program, the U.S. railroad notifies the customshouse brokers in advance that a shipment is en route. The broker then has 72 hours to pre-file for customs clearance. The pre-filing includes payment of import duties, receipt of Mexican customs authority, and notice to Ferrocarriles Nacionales de México (the national railroad of Mexico, or FNM) of authority to cross. Union Pacific has seen a reduction of a full day

on traffic moving south from Laredo from the time a car is received until the time it is delivered to the FNM.

Unfortunately, traffic delays are still a common experience owing to the multiplicity of government agencies operating on both sides of the border. Delay is exacerbated by shipments being physically unloaded and inspected as many as four times, paperwork duplication, inconsistent procedures among various ports of entry, and abrupt implementation of new rules.

An example of an abrupt implementation of a new rule was related by a U.S. customs official in Laredo about the administrator on the Mexican side of the border (the second one in a month, demonstrating another problem--high turnover of personnel) arbitrarily instituting a tier system for truck crossings. Designated trucks had to cross into Mexico at a specific time of day, or face a delay in being reassigned to another time window. The effect of this new rule has been heightened congestion due to truckers, fearful of missing their time window, lining up to cross hours earlier than necessary. The interviewed customs official could see no rationale for the implementation of the tier system.

The National Railroad of Mexico (FNM)

FNM's 12,706 route-miles reach Texas at El Paso, Presidio, Eagle Pass, and Brownsville. The busiest rail interchange is Laredo, Texas, where FNM connects with Union Pacific and TMM's Tex Mex. FNM's line south from Laredo, running through the industrial city of Monterrey on its way to Mexico City, accounts for as much as 70 percent of all its traffic.

Any discussion of increasing rail's share of the south Texas freight transportation market (and thus potentially relieving cross-border vehicle infrastructure) must include the current state of FNM's operations and infrastructure. Despite a modernization program that began in 1992, FNM remains a railroad in need of vast amounts of capital, requiring upgrades in power, track, and facilities. FNM estimates that an investment of as much as $2.3 billion over five years will be needed to modernize its rail network. Operationally, FNM needs to improve its efficiency by responding to market needs,

set rates that would allow it to compete with the trucking industry, and, in general, become more customer-oriented. In a survey of Mexican transportation service users (Rivera, 1992) in which respondents were asked to rate different transportation modes in five categories (transit time, capacity, equipment quality, cargo damage, and cargo control), rail ranked the lowest in user confidence in all categories. In all cases, fewer than five percent of the transportation service users sampled rated rail as adequate.

U.S. railroad companies have long complained of difficulty tracking the location of their rail cars once they have been passed to FNM in Mexico. Currently, railroads must rely on visual confirmation for determining location. Given even conservative estimates of projected growth in rail traffic into Mexico, a desperate need exists for computerized tracking systems. The lack of such systems effectively acts as a non-tariff barrier to efficient intermodal operations.

U.S. carriers serving the Mexican market are continuing to incorporate intermodal linkages in their operations. Cargo is shipped in either containers or in trailers. Containers can easily be removed from a chassis pulled by a truck tractor and placed on a flat rail car. Truck railers can be lifted at intermodal yards and ramps onto special rolling stock designated trailers-on-flat-car (TOFC). Container operations are preferred in the U.S. while the Mexican rail system almost exclusively uses TOFC. Mexico's preference for TOFC operations is a hindrance to more efficient intermodal movement of cargo from the U.S. Until the Mexican national railway (FNM) provides more infrastructure to handle container operations, this state of affairs will continue.

The Mexican rail system has been experiencing a steady decline in market share with respect to the volume of freight it hauls. The reasons for this are generally assumed to be due to poor service quality, noncompetitive pricing, and poorly maintained track and equipment. In response to this, the Mexican government is planning to privatize parts of FNM and allow investment by the private sector. The privatization of FNM will grant up to 50-year concessions to private investors, but will hold the percentage of foreign ownership below 50 percent.

CROSS-BORDER LOGISTICS

Border activities involving truck and rail crossings are very complicated because of the policies and practices of both nations. Clearance processes involving U.S. and Mexican customs, customs inspections, U.S. and Mexican customs brokers, the declarations associated with commodity descriptions, import duty assessment, government tax identification, and a hoard of other special documentation all impede the smooth movement of freight transportation between the U.S. and Mexico.

Nevertheless, the number of freight crossings every year is staggering, and continues to grow. Figure 15 displays the number of southbound and northbound railcars that crossed the border from 1991 to 1994. The numbers represent Southern Pacific (since merged with Union Pacific) and Union Pacific railcars only (which constitute the vast majority of railcar crossings in Texas) and average double digit growth over the four years.

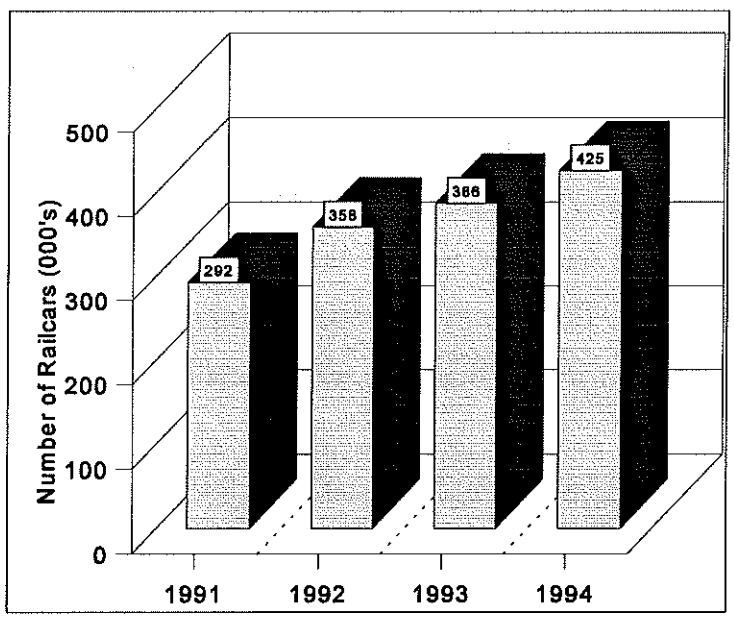

Figure 15. Railcars Conveyed To and From Mexico

The following discussion will detail the logistics process involved in northbound and southbound trade for both rail and truck transportation. The discussion of rail logistics in cross-border operations will be concentrated on the practices of the Southern Pacific (now Union Pacific) railroad. The

practices of the other rail players (primarily Union Pacific) involved in cross-border freight transportation are essentially the same.

Logistics Process for Southbound Mexico Shipments - Rail

The process of shipping a commodity to Mexico begins when the customer orders a rail car (or cars) from the originating railroad for loading. The customer then generates a Bill of Lading which consists of the following information:

- Origin and border destination, indicating "for export,"
- Mexico destination,
- Consignee name, address and phone number,
- Mexican broker,
- Quote or contract number,
- Weight of shipment, and
- Seal number(s).

At this point, the customer faxes a copy of the Bill of Lading to the originating railroad for waybill purposes. Additionally, the customer faxes a copy of the Bill of Lading, the commercial invoice, packing list, and any other required certificates to a designated Mexican broker and to the affiliated U.S. freight forwarder or U.S. Customs to begin the clearance process. It is also customary for the customer to send all document originals via overnight express service to the U.S. freight forwarder or customs broker. Failure to supply all proper documents could result in border demurrage and late document charges.

All monies for FNM freight charges are rendered by the Mexican customs broker to FNM along with the Bill of Lading as well as shipping instructions. The Mexican customs broker then renders per diem charges to the U.S. railroad serving at the border point at the time the car is cleared. Per diem charges do not apply on private equipment or northbound shipments and are ordinarily paid by the Mexican consignee, depending on the agreement that was in effect at the time of sale. The origin

railroad is responsible for giving a waybill to the Mexican broker to complete the documentation.

Southbound Documentation

The redtape associated with southbound freight transportation is, at best, complicated. The following discussion will enumerate the many transactions necessary to accomplish cross-border freight transport by rail.

U.S. Customs Broker (Freight Forwarder). The U.S. customs broker represents the exporter or importer, depending on the terms of sale. Exportation does not require a licensed U.S. customs broker. Typically, the U.S. customs broker:

- Prepares and files a "shipper's export declaration" (SED) which will accompany the crossing list given to the U.S. railroad,
- Receives authority (clearance) from U.S. Customs,
- Gathers the U.S. certificates required by the importer into a contract to be given to the Mexican customs broker for documentation purposes, and
- Gives the U.S. railroad a crossing list which is accompanied by the SED, a copy of the FNM waybill, and a copy of the paid per diem form. In-bond shipments do not require a shipper's export declaration.

Mexican Customs Broker. The Mexican customs broker represents the Mexican importer and is the only legal facilitator authorized. The Mexican customs broker is required by law. Mexican law holds the broker responsible for all declarations, including the description of the commodity, its value, import duty assessment, the commodity's government tax ID number, and special documentation required for certain commodities. Typically, the Mexican customs broker:

- Presents documentation (Pedimento) and duties to the Mexican Customs office,
- Prepares FNM shipping instructions and the Bill of Lading,

- Pays applicable per diem charges to the U.S. railroad making the interchange with FNM,

- Pays any accrued border demurrage on behalf of the shipper or consignee, depending on the terms of sale, and

- Gives a copy of the FNM waybill and certified paid per diem form to the U.S. customs broker (or freight forwarder), who will then attach it to the crossing list to be given to the U.S. railroad.

The Southbound Crossing. The U.S. railroad gives the list of proposed cars to interchange to FNM. FNM checks the list against the documentation list and accepts the interchange of cars if they are properly documented. Each car goes through a green light-red light process, and if red, must be inspected. The entire southbound traffic process is shown schematically in Figure 16.

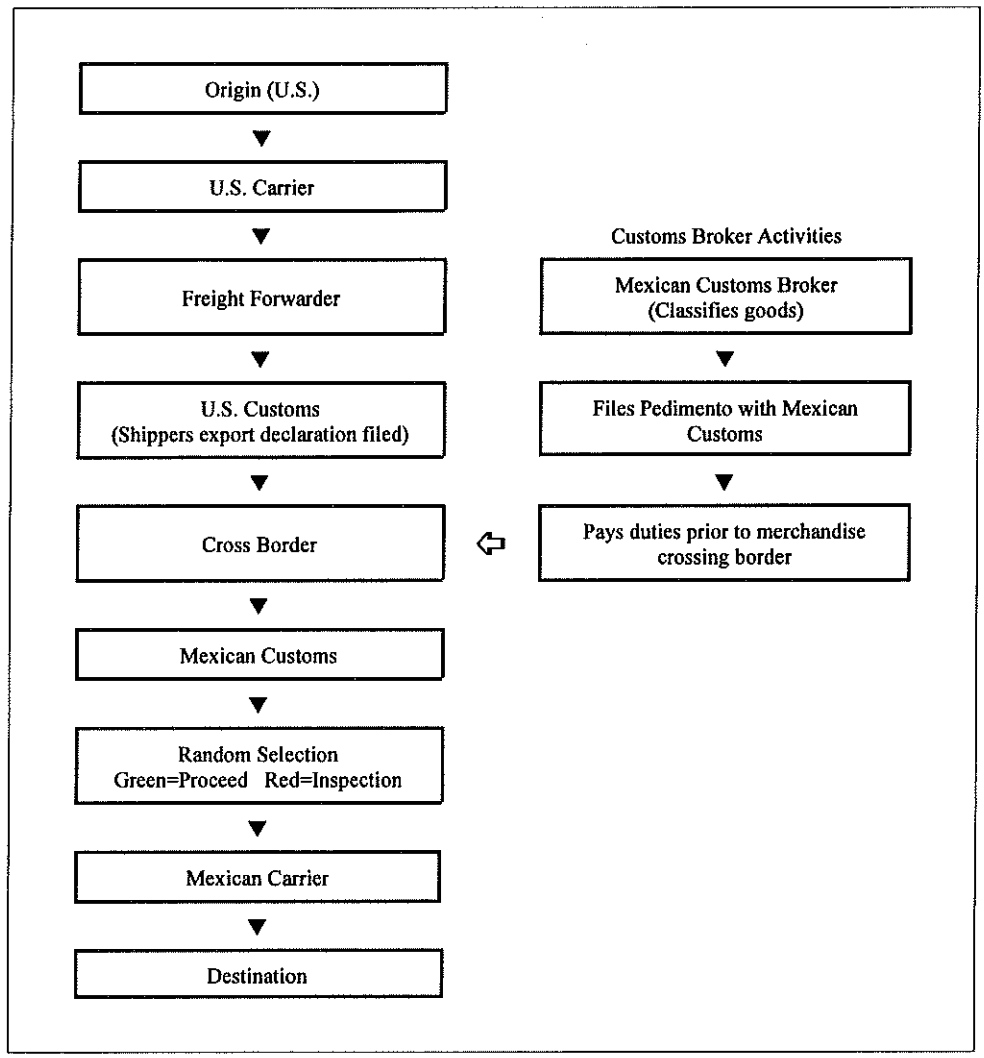

Figure 16. Southbound Traffic Process (Mexican Customs)

Logistics Process for Northbound Shipments - Rail

The process of shipping a commodity north of Mexico begins when the customer orders a rail car (or cars) from FMN for loading. The customer then generates a Bill of Lading which consists of the following information:

- Origin and border destination, indicating "for export,"
- U.S. destination,
- Consignee name, address and phone number,

- U.S. customs broker, name, phone, and fax number,
- Quote or contract number, and
- Seal number(s).

At this point, the customer faxes a copy of the Bill of Lading, commercial invoice, packing list, and any other required certificates to the Mexican broker and also to the U.S. customs broker to begin the clearance process. It is usually customary for the customer to send all originals via overnight service to the U.S. customs broker or freight forwarder. Failure to supply all proper documents could result in border demurrage and late document charges. The Mexican broker then forwards all documentation to the U.S. customs broker or freight forwarder for U.S. clearances.

Northbound Documentation

The following discussion will detail the many transactions required to accomplish northbound cross-border freight transport by rail.

Mexican Customs Broker. The Mexican customs broker represents the Mexican exporter and is the only legal facilitator authorized. The Mexican customs broker is required by Mexican law. Typically, the Mexican customs broker:

- Gathers Mexican certificates required by the U.S. importer and forwards them to the U.S. customs broker or freight forwarder,
- Prepares and submits an export declaration to Mexican Customs,
- Receives and acknowledges authorization to exit merchandise, and
- Notifies FNM of clearance.

U.S. Customs Broker. The U.S. customs broker represents the importer and, for northbound shipments, is the only legal facilitator authorized by law. The U.S. customs broker protects against U.S. Customs fines by arranging inspections of merchandise, preparing commercial invoices and packing lists, collecting duties from the importer and paying them to U.S. Customs, preparing all

required forms, and gathering all required certifications. Typically, the U.S. customs broker:

- Presents documentation to U.S. Customs,
- Prepares the Bill of Lading and shipping instructions,
- Prepares the documentation for shipments entering "inbond" to the U.S., both for shipments that are destined to cross the U.S. for export or are moving to an interior port of entry,
- Prepares the crossing list of cleared rail cars, and
- Delivers U.S. Customs documentation signifying authority to cross to all interested participants.

The Northbound Crossing. FNM gives the list of proposed cars to interchange to the U.S. railroad. The U.S. railroad checks the list against the documentation list and accepts the interchange of cars if they are properly documented.

U.S. Customs selects approximately 15 percent of import shipments for inspection. Approximately one half of the 15 percent are inspected in order to insure the products comply with trademark, copyright, labeling, and commercial invoice description regulations. The other half of the 15 percent are inspected for enforcement of smuggling and other interdictive reasons. All shipments are subject to selection for U.S. Customs inspection. Some enforcement inspections require complete off-loading of lading. The cost of this is borne by the importer of record. The entire northbound traffic process is displayed schematically in Figure 17.

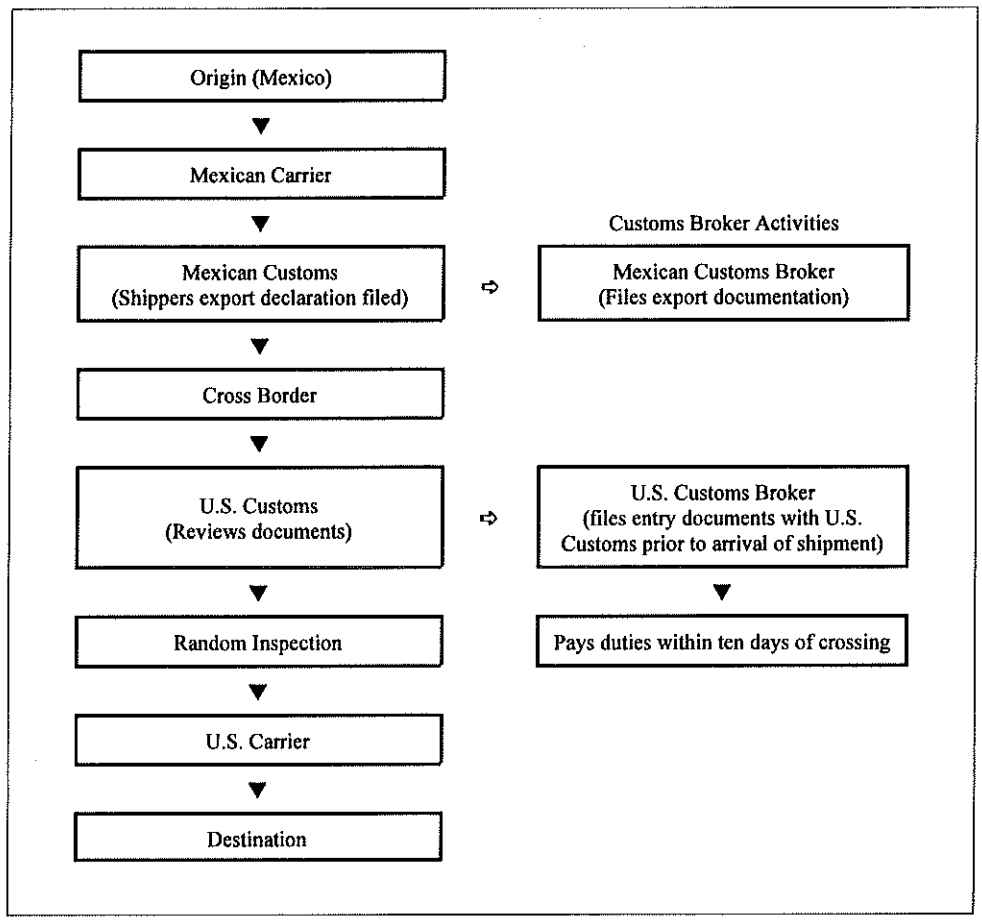

Figure 17. Northbound Traffic Process (U.S. Customs)

Cross-Border Truck Logistics

Years of increased trade with Mexico have brought a tremendous number of trucks to the border. In 1993, almost 1.7 million northbound and southbound trucks crossed the border between Texas and Mexico. In the first three quarters of 1994 commercial truck crossings in Laredo were up 40 percent. In 1993, the Laredo customs district, by itself, accounted for 54 percent (22.5 billion dollars) of all exports to Mexico from the United States.

The logistics associated with northbound and southbound truck traffic are, at least from the standpoint of customs and paperwork, essentially the same as that for rail. A major difference has to do simply with the number of entities involved. For rail, you are dealing primarily with the Union

Pacific railroad and FNM. For trucks, you are dealing with hundreds of companies. The other major difference between the cross-border logistics associated with rail and truck has to do with the institutional practice of drayage.

Drayage

As described by Molina and Giermanski (1994) the drayage system as practiced in Laredo is as follows. A truck carrying freight destined for Mexico City drops off the trailer on the U.S. side of the border. After the cargo is cleared by customs, a U.S. drayage company picks up the trailer and transfers it to a designated location on the Mexican side of the border where a Mexican carrier takes the trailer on to its final destination in Mexico City. The U.S. drayage truck driver than returns to the U.S. without any cargo. The same drayage activity is practiced for northbound shipments coming from Mexico.

CONCLUSION

Streamlining and rationalizing border operations is one of the largest challenges to improving cross-border transit times. In the past few years formal mechanisms to simplify customs procedures have been put in place and require only that they be enforced. Current practices involving Mexican brokers are also being examined. Other relatively simple solutions to the border bottleneck are being considered such as increasing operating times at the border, coordinating border patrol work schedules in both countries, and shifting commercial traffic to non-peak times.

Rail's potential for relieving cross-border infrastructure requirements is significant. This potential will be difficult to realize given the current state of FNM. In order for FNM to continue to function as a strategic transport system within the Mexican economy and be able to fill the role required as a valued partner in the North American freight transportation scheme, it will be necessary to make significant modifications in the way it does business. In recognition of this, FNM has embarked on a series of strategic plans to increase productivity, ease implementation of improved techniques, foster private company participation, and provide investment in information systems for cargo tracking and infrastructure management.

One area in particular that would realize relatively quick productivity returns would be for FNM to accelerate reduction of redundant personnel. The FNM has 2.38 employees per kilometer. This is over twice the average for the U.S. railroad industry of one worker per track kilometer. A step in the direction of employee reduction was a voluntary retirement program initiated by FNM in 1992. As a result of this action, the total number of field personnel related to engineering services was reduced from 17,500 to 11,000.

With total staff reduced by a third and traffic rising, FNM has increased its labor productivity by close to 50 percent in the last two years. Additionally, FNM has begun to move toward its goal of financial self-sufficiency, achieving a 1993 operating deficit almost 64 percent below that of 1992. Even with these improvements, FNM has much to do in order to provide the service necessary to support the expected increases in freight movement demand between the U.S. and Mexico.

As very well stated by Molina and Giermanski (1994):

> "... if customs performance and efficiency were increased, if facilities were better utilized, and if current practices that delay border crossings were streamlined, strain on the infrastructure facilities--which is currently faulted for bottlenecks at the border--should be reduced significantly."

CHAPTER 6. INSTITUTIONAL IMPEDIMENTS TO RATIONAL INTERNATIONAL TRANSPORTATION POLICY

INTRODUCTION

Even as the estimates of international growth in trade remain positive, there exists a growing awareness that fundamental change is required to ensure continued progress toward seamless transportation between countries. The discussion that follows will illustrate some of the barriers to improving the international transportation policy-making apparatus, and will address some of the proposed solutions for removing them.

DOT's ORGANIZATION

The current organization of the Department of Transportation can be seen in Figure 18.

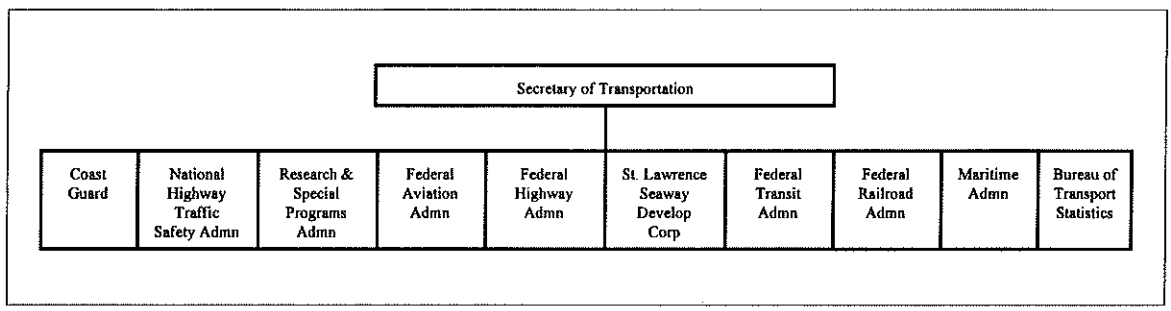

Figure 18. Department of Transportation Organizational Structure

DOT's organization fosters duplication of effort and sows confusion by disbursing policy making and funding decisions among agencies often having conflicting national goals. Unfortunately, this orientation finds itself replicated at many State DOTs. Compounding the problem is the fact that international infrastructure projects are often, by their very nature, extremely complicated. International projects, because they involve different modes of transportation, tend to be governed by the regulations of more than one agency. All too often, the regulations are incompatible. Figure 19 displays the many federal agencies having a say in transportation policy.

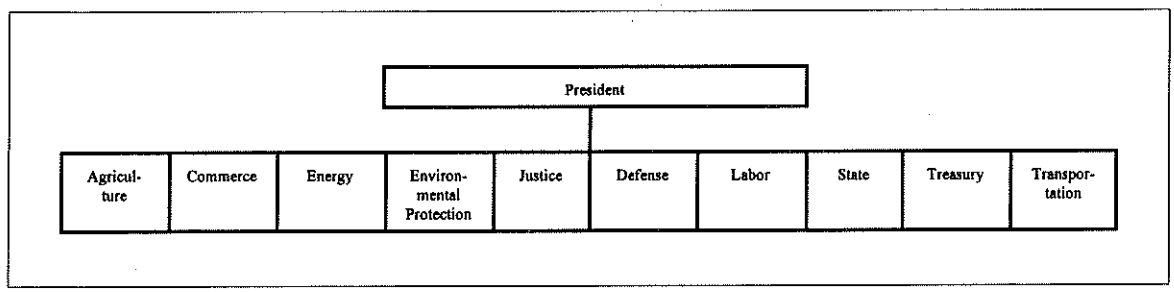

Figure 19. Federal Agencies Affecting Transportation Policy

RECOMMENDATIONS

In its 1994 final report, *Toward a National Intermodal Transportation System*, the National Commission on Intermodal Transport made a series of recommendations for fostering intermodal transportation. Many of these recommendations would serve equally well to help foster a more rational decision-making process in the international transportation arena. In recognition that seamless international transportation is essential to the United States maintaining its competitive position in a dynamic global economy, the following are a series of recommendations to help facilitate this goal:

- Incorporate all modes of transport into a National Intermodal Transportation System. This will allow for better coordination in the allocation of scarce infrastructure resources,
- Foster development of the private sector freight intermodal system through a Federal policy of eliminating barriers to freight movement at borders,
- Encourage innovative public and private financing methods for transportation projects, and allow greater flexibility and eligibility in use of funds for international projects,
- Expand research, education, and technology development in international issues,
- Restructure the U.S. DOT to better support international transportation, and
- Streamline the transportation planning and project delivery process, and require DOT concurrence on other Federal agency actions that affect international transportation.

CONCLUSION

Transportation planning, in both the public and private sectors, is becoming increasingly international. The recognition of the many benefits increased international trade has to offer, and the realization that the future competitiveness of the U.S. in the global economy is strongly linked to seamless transportation, has sounded the call for policy makers to coordinate resources in the local, State, Federal, and private sectors.

CHAPTER 7. CONCLUSION

The purpose of this research was to examine the rules, regulations, and decision-making methods of those governmental agencies determining transportation policy for international movements between Texas and Mexico. Additionally, the research investigated past infrastructure investment decisions to determine why the infrastructure investment was unsuccessful and why the plan deviated from reality.

The Colombia Solidarity bridge was built to help relieve congestion at the two existing bridges in downtown Laredo. It was envisioned that the Colombia bridge would become the busiest bridge on the Texas-Mexico border. In fact, the bridge is woefully under-utilized and estimates portend this situation to remain. The lack of coordinated planning between Mexico, Texas, and the U.S. was the single biggest reason the Colombia bridge has not met expectations. International bridge projects should take into account multiple factors such as connecting roads, Mexican customs brokers' rules, trade restrictions and practices, and governmental commitment. Few of these factors were addressed in the case of the Colombia bridge. There is evidence that closer cooperation between international transportation planning agencies will occur in the future. The passage of NAFTA has elevated local and state transportation planning to the national level, forcing planners to more closely follow institutional, political, and international issues.

The policies and practices followed in cross-border transportation of freight are implicated in much of the inefficient use of existing border infrastructure. Streamlining and rationalizing border operations is one of the largest challenges to improving cross-border transit times and reducing congestion. In the past few years formal mechanisms to simplify customs procedures have been put in place and require only that they be enforced. Current practices involving Mexican brokers are also being examined. Other relatively simple solutions to the border bottleneck are being considered such as increasing operating time at the border, coordinating border patrol work schedules in both countries, and shifting commercial traffic to non-peak times.

Fundamental change will be necessary in the institutional and governmental culture that is concerned with making transportation policy. Transportation planners, faced with ever increasing highway utilization in an era of fiscal constraint, are justifiably concerned with the ability of existing infrastructure to absorb current and projected transportation demand. Rational decision-making requires that policy makers coordinate resources in the local, state, federal, and private sectors.

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