BINATIONAL BORDER TRANSPORTATION PLANNING AND PROGRAMMING STUDY

TASK 6:

ANALYSIS OF PUBLIC AND PRIVATE INVESTMENT PROGRAMS IN MEXICO AND THE UNITED STATES

Prepared for

The Joint Working Committee

Prepared by

Barton-Aschman Associates, Inc.

La Empresa, S. de R.L.

March 20, 1998

FINAL REPORT

Preface

U.S./Mexico Binational Border Transportation Planning and Programming Study implements a significant binational policy making document entitled “Memorandum of Understanding of the Planning Process for Land Transport on Each Side of the Border” signed by the federal governments of Mexico and the United States at the first “NAFTA Transportation Summit” held in Washington, D.C., April 29, 1994.

The purpose of this study is to provide policymakers with information needed to establish a continuous, joint, binational, transportation planning and programming process. A goal of this study is to improve the efficiency of the existing binational policy making, planning procedures and funding criteria affecting our Border Land Transportation Systems (BLTS). The BLTS should be seen as a binational transportation system made of international bridges and border crossings and its land connections to major urban and/or economic centers, principal seaports, airports, and multimodal/transfer stations and, ultimately, to its connections to national transportation facilities.

Disclaimer

The purposes of the Binational Planning and Programming Study and all of its reports were: to investigate current state and national transportation planning processes in both the United States and Mexico, to review available data on border transportation infrastructure and goods movement, and to recommend an ongoing, binational planning and programming process. The information contained in these reports was not developed to serve as the basis for making funding allocation or distribution decisions at either the federal or state level in the United States.

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BINATIONAL BORDER TRANSPORTATION PLANNING AND PROGRAMMING STUDY TASK 6 REPORT: ANALYSIS OF PUBLIC AND PRIVATE INVESTMENT PROGRAMS IN MEXICO AND THE UNITED STATES

This task includes an analysis of both public and private investment programs in infrastructure and facilities for cross-border transportation or in other related activities, such as customs inspections, plant and animal health control, law enforcement, and immigration control, among others. The purpose of this analysis is to ascertain the consistency of the extent, opportunity, and location of such investments or investment programs. An analysis is done of current and scheduled investments, as well as those included in any given plan for both sides of the border, in order to determine whether there is consistency in the capacity, location, and timing of the projects in both countries. Traditional and innovative financing mechanisms, applicable in Mexico and the S.O., are discussed with the purpose of comparing opportunities based on the differences between the financial markets of both countries. Finally, a discussion is presented on the effect of the new national transportation policies and the changes of the legal framework regulating the transportation sector on investment requirements in infrastructure and equipment for cross-border transportation, and, in particular, the likelihood of attracting private capital.

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Key Words: Mexico-U.S. commerce/trade, national, customs, ports of entry, trends, products, origin and destination, funding, finance, binational planning, programming

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6.1 Introduction

This task includes an analysis of both public and private investment programs in infrastructure and facilities for cross-border transportation or investments in other related activities, such as customs inspections, plant and animal health control, law enforcement, and immigration control, among others.

The purpose of this analysis is to ascertain the consistency of the extent, opportunity, and location of such investments or investment programs.

To this end, an analysis is presented of ongoing investments, those scheduled for the future and those which are included in a plan. This inventory provides an overview of the trends in the efforts to expand transportation infrastructure and facilities by mode of transportation and region or border crossing; it also states whether the projects are new, an expansion of existing projects, or maintenance projects. The study was conducted on both sides of the border, in order to determine whether there is any consistency in the capacity, location and timing of the projects in both countries. As a result, strategies followed by public and private promoters in both countries—whether or not in coordination—were deduced.

Traditional and innovative financing mechanisms applicable in Mexico and the United States were also discussed, in order to compare the diversity of opportunities based on the differences existing between the financial markets in both countries. Some of the ideas presented in this chapter aimed at building the necessary financial bridges for promoting binational projects or achieving the right timing in the allocation of financial resources in projects of binational interest.

The final chapter of this task discusses the effect of new national transportation policies and changes in the legal framework regulating the transportation sector. These changes are based on the need to invest in infrastructure and equipment for cross-border transportation and, in particular, on the likelihood of attracting private capital, either to supplement public investment or to develop new projects. Given that in the last six years Mexico has made significant changes in the transportation sector (privatization in all modes of transportation, deregulation of the motor transport sector, and constitutional changes regarding the concession contract awarding process and foreign investment, inter alia), the effects of these changes on binational transportation are emphasized.

6.2 Inventory of Investment Strategies

This section of the report is divided into two parts. The first part discusses the transportation investment projects on both sides of the border and includes an inventory of such projects classified so that they could be included in a geographic information system database. The second part discusses the inventory of investment projects and identifies existing strategies.

6.2.1 Investment Projects for Cross-Border Transportation in Mexico

A first inventory of investment projects for cross-border transportation was developed using the information contained in border transportation investment programs obtained during completion of Task 4; the list of borderland investment projects presented in Texas at the Conference of "Building Tomorrow's Borderland Infrastructure" held in August 1996; and new transportation projects included in the Task 2 report. All proposed projects, scheduled projects, and those underway by the end of 1996 were included.

For each project in this inventory data regarding its characteristics, location, objective, term of development, current status, amount of investment, and financing and investor characteristics were investigated.

The initial inventory was completed—to the extent possible given the information available—using the information stated above as well as updated information from border states, related federal agencies and institutions, and private developers. While screening and consolidating projects for the inventory, it became evident that the process of proposing and executing/deferring investment projects is a very dynamic one, as new projects are being proposed on a continuing basis while other projects are coming to completion and moving into different stages, while still others are eliminated.

It was also determined that, in most of the projects identified, no information on either the type of financing or the investor is available. In addition, for some projects, there is no information on the time frame given for the development. Furthermore, there are a large number of projects in the conceptual stage where most data are still to be defined.

Additionally, in looking for data to complete the inventory, a lack of communication was perceived among the different parties who had information on any given project–a problem often aggravated by the variability of the projects' development process. As a result, it was difficult to ensure complete accuracy for all final data included in this report's inventory. A summary list of all projects in the final inventory and location maps are included as appendices to this report.

In order to integrate the information collected on investment projects into the study's Geographic Information System, a proposal was made to classify such data. This classification took into account data availability both in Mexico and the United States; for this reason, the structure of this database varies somewhat between the two countries, although in general the information is similar. For Mexico, the classification includes: mode of transportation, investment objective, geographic scope of the investment, location, amount of investment, and current stage of the project. Furthermore, this classification seeks to facilitate identification of the corresponding investment strategies.

The following sections describe in more detail the data classifications:

Mode of transportation. In addition to highway, railroad, seaport, and airport transportation, a category was created for ports of entry, including bridges, crossings, and ancillary facilities, as well as another category for intermodal terminals.

Investment objective. This group includes three project categories: maintenance and conservation, expansion and/or modernization, and new projects.

Geographic scope of investment. Scope can be nationwide when it goes beyond the borders of several states; regional, when it goes beyond a state; urban when it involves only an urban area; and local, when it does not go beyond the port-of-entry area.

Location. Projects were located according to their size; hence, they may be located within one or several municipalities; within a state; within a region (the Northwest region encompasses Baja California and Sonora, the North Central region encompasses Chihuahua and Coahuila, and the Northeast region encompasses Nuevo Leon and Tamaulipas); or they can be nationwide.

Amount of Investment. The amount was included when it was known, either from the source of information or estimated by the consultant; when the amount was not available, it was considered to be not estimated.

Current stage of the project. A project is considered to be in proposal stage when its execution period is not yet known; budgeted when it is scheduled for execution; and in execution when the design or the project is already under way. Projects are also included that were under way when this data was collected.

The inventory includes 188 investment projects classified as shown on Table 6.1 below.

The inventory of transportation investment projects compiled in this study will shortly be outdated, as mentioned earlier, underlying the need of completing inventory updates on a continuous basis. This would be very useful for purposes of the process discussed here. To this end, mechanisms to update the database on investment projects for cross-border transportation will have to be established.

6.2.2 Investment Strategies in Mexico

The current investment strategies were identified analyzing data collected from transportation investment projects for the northern Mexican border. Only the projects whose investment amounts were available or could be estimated by the consultant were included.

The analysis was based on understanding four characteristics:

- The mode of transportation, port of entry, or border region benefited by the project;
- The orientation, whether toward expanding the infrastructure or modernizing the operation;
- The short-, medium-, or long-term projections; and
- The type of policy that is being encouraged:
  - Competition/complementarity among modes
  - Competition/complementarity among ports of entry
  - Private investment
  - Public/private association.

The total funding for the investments studied is close to 27 billion pesos (about 3.4 billion dollars), of which a little under half (47%) has not yet been scheduled.

Investment Objectives

Virtually all (98%) the investment projects identified are aimed at expanding, improving, or conserving the transportation infrastructure; only three projects were found to be directly related to transport operation, two of which are still in the conceptual stage.

Table 6.1
Classification of Investment Projects in Mexico

Characteristic	%	Number of Projects		
Mode of Transportation		Total	Infrastructure	Operation
Highway	42	80	79	1
Railroad	9	17	15	2
Marine Port	5	9	9	0
Airport	12	22	22	0
Port of entry	29	55	55	0
Intermodal terminal	2	4	4	0
Other studies	1	1	1	0
Total	100	188	185	3
Investment Objective		Total	Infrastructure	Operation
Maintenance and conservation	39	73	73	0
Expansion and/or modernization	34	65	65	0
New projects	26	49	46	3
Data not available	1	1	1	0
Total	100	188	185	3
Geographic Scope of Investment		Total	Infrastructure	Operation
National	5	9	8	1
Regional	38	72	70	2
Urban	18	35	35	0
Local	38	72	72	0
Total	100	188	185	3
Location		Total	Infrastructure	Operation
National	1	1	0	1
Northwest region	36	68	68	0
North central region	26	50	49	1
Northeast region	37	69	68	1
Total	100	188	185	3
Amount of Investment[1]		Total	Infrastructure	Operation
Estimated	87	164	163	1
Not estimated	13	24	22	2
Total	100	188	185	3
Current Stage of Project		Total	Infrastructure	Operation
Proposal	47	89	89	0
Budgeted	17	33	33	0
Under Construction	13	25	24	1
Completed	12	22	22	0
Suspended project	1	1	1	0
Data not available	10	18	16	2
Total	100	188	185	3

Source: Investment project files, 1997.

According to the investment amounts obtained, the trend is toward expansion and modernization of infrastructure rather than to new projects or maintenance and conservation of existing ones. More than twice the resources being allocated to new projects are to be allocated to expansion and modernization of infrastructure (both in scheduled and nonscheduled resources); while only slightly over 3% of the overall resources are assigned to conservation and maintenance projects.

[1] The amount of investment for some projects for which the actual amount was not available in the consulted sources was estimated using whatever data were available on units and quantities, as well as unit amounts for similar projects of the same inventory.

Investment Orientation and Policy

Highway transport is the mode having the most investments (approximately 65% of the total amount, both scheduled and nonscheduled); second in magnitude are railroad investments (18%), where practically all resources available are yet to be allocated.

Out of the total investments identified, about 5% of this amount is to be allocated to ports of entry, that is, bridges and crossings along the northern border.

As far as the borderland areas are concerned, more than half of both the scheduled and nonscheduled resources are allocated to the Northeast region (states of Tamaulipas and Nuevo Leon); followed by the Northwest (states of Baja California and Sonora); and finally the North Central region (states of Chihuahua and Coahuila). These numbers show a clear advantage for the Northeast region over the other two.

Investments in projects for the six case-study cities, including ports of entry and their access roads, as well as other projects in airports and urban roadways in these cities total nearly 13% of the amount of both scheduled and nonscheduled investment projects. Nuevo Laredo, Ciudad Juarez, and Nogales account for three fourths of said amount.

Data obtained for the investment project inventory show a trend toward private investment promotion as well as public-private associations, usually through concession contracts. This kind of promotion is mainly for projects requiring large investments. For instance, cases were found where a project for modernizing a highway system includes some stretches developed by the private sector on a concession contract basis, while other stretches are funded with public resources (from one or various government levels).

On the other hand, as was stated above, there is a much more significant allocation of resources for highway transportation, thus leaving all other modes behind. It is true that openness to private investments in the transportation sector started with highway projects, and only recently have other modes of transportation been included. However, public funds have even been allocated more significantly in highway-related projects, and this situation continues to the present date.

Investment Projections

Taking the proposed criteria of a five-year scheduling window as our baseline for purposes of this analysis, investment projects scheduled for execution between 1995 and 1998 were considered as short-to-medium-term projects. Investments scheduled for execution in 1999 and beyond were considered long-term projects. Approximately half of the projects analyzed did not include a term of execution. Of the remaining half, 35% are short-term or medium-term projects which are either under way or scheduled, and 13% are long-term investments.

Results of the foregoing analyses are presented in Tables 6.2 to 6.5.

6.2.3 Investment Projects and Strategies for Cross-Border Transportation in the United States

The United States border project list was compiled from numerous source documents including the U.S. border states' Transportation Improvement Plans, metropolitan planning organization (MPO) plans, and documents prepared by other border organizations such as the Border Transportation Alliance. In addition to these source documents, some Joint Working Committee members provided additional information as it became available. The list contains a total of 474 projects which are at varying stages of development. A summary list of all projects in the final inventory is included as an appendix to this report.

Table 6.6 summarizes these projects by various parameters such as mode, type of investment, geographic area served, state, and development status. Just over ninety percent (91%) of the projects are related to highways. Four percent (4%) are related to railroad improvements and three percent (3%) are related to the ports of entries. The remaining projects are related to airports, intermodal facilities, and marine ports.

Investment Objectives

Sixty-five percent of the projects can be categorized as projects designed to expand/modernize (48%) or maintain/rehabilitate (17%) existing facilities. Twenty-three percent of the projects are new construction--primarily new roadways, interchanges or bridges. Three percent of the projects are related to operational activities such as signalization, transportation demand management, or surveillance. Nine percent of the projects are related to other objectives such as right-of-way acquisition or preservation, environmental studies, feasibility studies, or preliminary engineering.

Investment Orientation

Geographically, seventy-eight percent of the projects are related to state, regional and local needs. An additional thirteen percent of the projects are related to the Interstate system which serves regional, state and national needs. Four percent of the projects are designed to improve or expand border crossing facilities. The remaining projects are related to rail, transit or waterways whose geographic impacts are less clearly defined.

Among the four U.S. border states, Texas has the greatest number of projects (303) which represents sixty-four percent of all projects. California accounts for sixteen percent of the total number of projects while New Mexico accounts for fourteen percent. Arizona accounts for remaining six percent of the projects compiled.

In terms of the cost of these projects, Texas and California account for 90 percent of the total cost of projects compiled. The breakdown between Texas and California is sixty-one and twenty-nine percent, respectively. Arizona and New Mexico each account for five percent of the total cost. Table 6.7 summarizes the estimated project costs by state and project development status.

Investment Projections

Based on the project development status, approximately one-third of the projects (by cost) are either under construction or programmed for construction. Another one-third of the projects are planned or planning is underway. The remaining projects are at the proposal stage.

The distribution of projects by state varies depending on the development status. For projects under construction or programmed, New Mexico accounts for eleven percent of the total cost of projects. For projects that are planned or planning is underway, California and Texas account for ninety-eight percent of the costs. For proposed projects, Texas alone accounts for seventy-seven percent of the costs.

Table 6.2
Investments by Mode of Transportation According to Case Study Locations (Pesos)

Authorized Investments (scheduled)

Mode	Case Study Cities						Total
	Tijuana	Nogales	Ciudad Juarez	Piedras Negras	Nuevo Laredo	Matamoros	
Highways	$60,000,000	$0	$0	$0	$150,000,000	$0	$210,000,000
Railroad	$0	$0	$0	$0	$0	$0	$0
Seaports	$0	$0	$0	$0	$0	$0	$0
Airports	$177,660,000	$123,973,200	$74,443,200	$0	$49,920,000	$0	$425,996,400
Multimodal	$0	$0	$0	$0	$0	$0	$0
Ports of entry	$5,500,000	$4,700,000	$41,170,000	$61,800,000	$160,200,000	$183,000,000	$456,370,000
Total	$243,160,000	$128,673,200	$115,613,200	$61,800,000	$360,120,000	$183,000,000	$1,092,366,400

Identified Investments (not scheduled)

Mode	Case Study Cities						Total
	Tijuana	Nogales	Ciudad Juarez	Piedras Negras	Nuevo Laredo	Matamoros	
Highways	$0	$248,000,000	$0	$29,700,000	$40,000,000	$0	$317,700,000
Railroad	$0	$303,420,000	$695,760,000	$0	$0	$97,500,000	$1,096,680,000
Seaports	$0	$0	$0	$0	$0	$0	$0
Airports	$0	$0	$0	$0	$0	$0	$0
Multimodal	$0	$0	$0	$0	$0	$0	$0
Ports of entry	$0	$0	$0	$0	$585,000,000	$240,000,000	$825,000,000
Total	$0	$551,420,000	$695,760,000	$29,700,000	$625,000,000	$337,500,000	$2,239,380,000

Source: investment project files, 1997.

Table 6.3
Investments by Investment Objective According to Case Study Locations (Pesos)

Authorized Investments (scheduled)

Investment Objective	Case Study Cities						Total
	Tijuana	Nogales	Ciudad Juarez	Piedras Negras	Nuevo Laredo	Matamoros	
New projects	$109,920,000	$0	$90,090,000	$60,000,000	$345,920,000	$119,000,000	$724,930,000
Expansion and modernization	$127,740,000	$123,973,200	$24,523,200	$0	$700,000	$62,400,000	$339,336,400
Maintenance and conservation	$5,500,000	$4,700,000	$1,000,000	$1,800,000	$13,500,000	$1,600,000	$28,100,000
Total	$243,160,000	$128,673,200	$115,613,200	$61,800,000	$360,120,000	$183,000,000	$1,092,366,400

Identified Investments (not scheduled)

Investment Objective	Case Study Cities						Total
	Tijuana	Nogales	Ciudad Juarez	Piedras Negras	Nuevo Laredo	Matamoros	
New projects	$0	$551,420,000	$695,760,000	$6,000,000	$625,000,000	$337,500,000	$2,215,680,000
Expansion and modernization	$0	$0	$0	$23,700,000	$0	$0	$23,700,000
Maintenance and conservation	$0	$0	$0	$0	$0	$0	$0
Total	$0	$551,420,000	$695,760,000	$29,700,000	$625,000,000	$337,500,000	$2,239,380,000

Source: Investment project files, 1997.

Table 6.4
Investments by Type of Transportation Per Region (Pesos)

Authorized Investments (scheduled)

Mode of Transportation	Region			Total
	Northwest	North Central	Northeast	
Highways	$3,830,646,600	$981,009,600	$5,411,160,600	$10,222,816,800
Railroad	$62,018,700	$18,645,900	$24,758,200	$105,422,800
Seaports	$0	$0	$0	$0
Airports	$360,133,200	$330,519,150	$61,220,000	$751,872,350
Multimodal	$0	$0	$234,000,000	$234,000,000
Port of entry	$50,994,735	$126,820,000	$354,450,000	$532,264,735
Total	$4,303,793,235	$1,456,994,650	$6,085,588,800	$11,846,376,685

Identified Investments (not scheduled)

Mode of Transportation	Region			Total
	Northwest	North Central	Northeast	
Highways	$1,882,000,000	$29,700,000	$5,074,070,000	$6,985,770,000
Railroad	$1,551,420,000	$3,035,760,000	$97,500,000	$4,684,680,000
Seaports	$0	$0	$1,950,000,000	$1,950,000,000
Airports	$0	$87,750,000	$0	$87,750,000
Multimodal	$0	$0	$0	$0
Port of entry	$0	$0	$880,526,700	$880,526,700
Total	$3,433,420,000	$3,153,210,000	$8,002,096,700	$14,588,726,700

Source: Investment project files, 1997.

Table 6.5
Investments by Investment Objective Per Region (Pesos)

Authorized Investments (scheduled)

Investment Objective	Region			Total
	Northwest	North Central	Northeast	
New projects	$276,590,335	$407,872,479	$950,225,600	$1,634,688,414
Expansion and modernization	$3,385,698,200	$887,943,271	$5,071,996,000	$9,345,637,471
Maintenance and conservation	$641,504,700	$161,178,900	$63,367,200	$866,050,800
Total	$4,303,793,235	$1,456,994,650	$6,085,588,800	$11,846,376,685

Identified investments (not scheduled)

Investment objective	Region			Total
	Northwest	North Central	Northeast	
New projects	$2,333,420,000	$789,510,000	$3,046,326,700	$6,169,256,700
Expansion and modernization	$1,100,000,000	$2,363,700,000	$4,855,770,000	$8,319,470,000
Maintenance and conservation	$0	$0	$100,000,000	$100,000,000
Total	$3,433,420,000	$3,153,210,000	$8,002,096,700	$14,588,726,700

Source: Investment project files, 1997.

Table 6.6
Summary of U.S. Border Transportation Projects

Characteristic	Percent by Row	Total	Infrastructure	Operational	Other
Mode of Transportation					
Highways	91%	430	397	13	20
Railroads	4%	18	16	1	1
Marine Ports	0%	1	1	0	0
Airports	1%	5	5	0	0
Port of Entry	3%	13	13	0	0
Intermodal	1%	3	3	0	0
Transit	1%	4	4	0	0
Total	100%	474	439	14	21
Investment Objective					
Maintenance/Rehabilitation	17%	79	79	0	0
Expansion/Modernization	48%	227	227	0	0
New Construction	23%	109	109	0	0
Operational/Management	3%	14	0	14	0
Other	9%	45	24	0	21
Total	100%	474	439	14	21
Geographic Level					
Interstate	13%	61	54	5	2
State	45%	215	196	3	16
Local	33%	155	149	5	1
Border Crossing/POE	4%	18	18	0	0
Other	5%	25	22	1	2
Total	100%	474	439	14	21
States					
Arizona	6%	28	28	0	0
California	16%	77	73	2	2
New Mexico	14%	66	46	2	18
Texas	64%	303	292	10	1
Total	100%	474	439	14	21
Status					
Under Construction	10%	52	51	1	0
Programmed	58%	291	261	12	18
Planned	2%	10	10	0	0
Planning underway	19%	93	90	1	2
Under Study	10%	25	25	0	0
Proposed	1%	3	2	0	1
Total	100%	474	439	14	21

Source: Barton-Aschman, 1997.

Table 6.7
Summary of Project Costs by State and Development Status (in thousands U.S. $)

State	Under Construction	Programmed	Percent	Planned	Planning Underway	Under Study	Percent	Proposed	Percent	Total	Percent
AZ	$9,500	$84,531	6%	$0	$0	$0	0%	$124,000	8%	$218,031	5%
CA	$48,081	$373,260	25%	$342,512	$101,700	$352,000	46%	$177,000	12%	$1,394,553	29%
NM	$0	$167,237	11%	$0	$31,500	$0	2%	$50,300	3%	$249,037	5%
TX	$274,340	$567,772	55%	$4,000	$899,603	$1,600	52%	$1,168,500	77%	$2,915,815	61%
Total	$331,921	$1,192,800	100%	$346,512	$1,032,803	$353,600	100%	$1,519,800	100%	$4,777,436	100%
%	7%	25%		7%	22%	7%		32%		100%	

Source: Barton-Aschman, 1997.

6.3 Financing Cross-Border Transportation Projects

6.3.1 Financing Mechanisms Applied in Mexico

The capital and debt market in Mexico exhibits traits of a developing economy. These include the perception that long term is no more than five to six years, the volatility in the cost of money, and the uncertainty of the rate of exchange of the Mexican peso vis-à-vis strong currencies, in particular the U.S. dollar, given the importance of trade with the United States.

Under these circumstances, investments in infrastructure projects for the transportation sector, whose maturity terms are longer than 20 years and require large capital commitments, are not very attractive to financial markets.

Hence, bridges have to be built between investment restrictions and investment needs, either through currently existing mechanisms or new instruments–new, at least as far as the Mexican market is concerned.

Furthermore, different infrastructure projects should not be rated using the same criteria, since maturity terms, investment risks, and ranges of investment may vary considerably from project to project (for example, from a highway to an intermodal terminal).

Table 6.8 includes a proposed classification for typical transportation projects, according to their financial eligibility:

Table 6.8
Financial Characteristics of Transportation Projects

Market Factor	Roadways	Railroads	Terminals	Warehouses
Market	General	Specific	Specific	Specific
Recovery	Tolls/taxes	Fees	Fees	Fees
Term	over 20 years	over 20 years	10 years	10 years
Investment	Very high	Very high	Medium to low	Low

Source: La Empresa, 1997.

Urban transportation projects have other characteristics. These are shown in Table 6.9.

Table 6.9
Financial Characteristics of Urban Transportation Projects

Market Factor	Roadways	Parking lots	Bridges
Market	General	General	General
Recovery	Land and other taxes	Fees	Tolls/taxes
Term	over 20 years	20 years	over 20 years
Investment	Low	Low	Medium

Source: La Empresa, 1997.

A market is considered to be general when any individual in the population has interest in and access to the infrastructure, whereas a specific market is one where users utilize the project as part of their economic activity.

Tax recovery means that the government builds the infrastructure with resources from taxes. The reference to land-tax refers to recovering the investment at a later date by reappraising those

properties benefited by the project–a common practice in Mexico—which nonetheless has not been used by most municipal governments, usually for lack of updated real estate ownership records.

Project maturity terms vary according to the demand; however, the terms shown are used in the financial evaluations. A constant in transportation infrastructure investments is the long-term nature of projects, this fact, given Mexico's recent history, discourages investment. Although the country's economic policy provides for strategies to fund financial markets with longer than usual terms, immediate results are not to be expected since such strategies call for structural changes in the economy.

Under such circumstances, it is necessary to devise instruments to encourage investment in infrastructure. These instruments should have three basic characteristics:

- Directing promotion to projects with specific markets–local or regional–without associating them to national infrastructure policies
- Offering some kind of guaranteed protection from foreign exchange and cost of money instabilities
- Devising guaranteed protection from market uncertainties, especially when dealing with a general-use project (roads or bridges)

One such instrument is the BANOBRAS infrastructure fund.

BANOBRAS Infrastructure Fund (FINFRA)

The Bank for Services and Public Works (BANOBRAS) of Mexico, an intermediary bank for investment in public works and services projects (roads, bridges, highway systems, drinking water, sanitation, marketplaces, and urban transportation), in 1993 created an Infrastructure Fund (FINFRA), with the following goals:

- Supplying venture capital
- Supplying subordinated capital and future (not-yet-defined) capital
- Offering guarantees

Projects that may be funded by FINFRA are:

- Roadways
- Seaports
- Airports
- Urban transportation
- Public utilities buildings
- Water supply, sewerage, and sanitation
- Other projects authorized in special cases

Funding for FINFRA comes from two basic sources:

- A-series capital: initially subscribed by the federal government but may be subscribed by private capital, either national or foreign, or by international financial agencies. It will be used exclusively as venture capital.
- B-series capital: always provided by the federal government for investments where no financial recovery is expected.

Projects eligible to receive FINFRA funds are rated according to the following priority guidelines:

- Projects rendering high social benefits
- Technology development, transfer, and innovation
- Promotion of regional development
- Contribution to the diversification, expansion, and modernization of production facilities
- Promotion of chains of production

The fund will be revolved in two ways:

- A-series capital stock will be sold through distributions and leverage.
- B-series capital stock will be sold to other public administration agencies.

The following are the selection criteria for eligible projects:

- Social benefits deriving from the subordinated capital
- Financial profitability and social benefits of the venture capital
- Encouragement of private investment
- Investment recovery period for both kinds of capital (risk and subordinated)
- Level of leverage of the project
- Public resources' requirements (equity and debt)
- Mechanisms for investment recovery

FINFRA's capital contribution limits are shown in Table 6.10.:

FINFRA's contributions in venture capital will be:

a) Temporary: according to each project's maturity.

b) Recoverable: in all cases, with clear rules for leaving the Fund.

c) Priority: in no case will the venture capital contributed by the Fund be at a level below that of the equity contributed by private investors.

FINFRA offers financial support for a project´s technical and financial studies through a 100-million-peso (12-million-dollar) revolving fund.

Table 6.10
Limits to FINFRA's Participation

Type of Contribution	Authorized Limit
Venture Capital	Up to 35% of equity
Subordinated Capital	Up to 40% of total investment
Venture and Subordinated Capital	Up to 49% of total investment
Aggregate public share of capital	Up to 49% of total investment
Total aggregate public share	Up to 2/3 of total investment
Commitment in one single project	Up to 12.5% of the Fund's equity

Notes:

1. Equity is the project's total investment less the debts owed.
2. A project's total investment includes all the resources necessary to execute it, excluding debt-related interest and financial charges.
3. Aggregate public share encompasses the federal , state, and municipal government levels, as well as development banks and semi-state agencies.

Source: FINFRA, published by BANOBRAS.

FINFRA's Limitations and Proposals

FINFRA has three serious limitations:

a) Its initial source of funding is the government.

b) It mainly contributes venture and subordinated capital.

c) Its high administrative costs.

These limitations are a result of the dearth of government-generated investment resources after the 1994 Mexican peso crisis, and of FINFRA's reduced scope, as its operation is limited to capital contributions for a limited amount until the time when its capital revolves or the projects in which it invests reach maturity.

Problems resulting from the former limitation became evident when it was made public knowledge that FINFRA could not initiate operations until government-owned petrochemical by-product companies were sold.[2]

With respect to the second limitation, the Fund may have to participate at a very slow rate, as compared to the generation of needs of borderland projects and the fast pace of the transportation sector. In addition, the process to replace the Fund's participation in the market is yet to be solved in terms of the guarantees necessary given the projects' risks.

Proposal to Modify FINFRA's Objectives

These limitations could be eliminated by rethinking FINFRA's objectives so that they could follow these basic operational guidelines:

- The Fund's main objective would be to offer guarantees to infrastructure projects, in particular covering those variables beyond the investor's control (mainly, sovereign risk and commercial risk).
- The Fund could participate in certain cases with subordinated capital, in order to facilitate funding of projects with a significant social component.
- The Fund would offer counter guarantees to insurance companies that would insure the project against certain types of risks (natural disasters, user accidents, etc.).
- In cases where guarantees and counter guarantees are granted, the Fund would charge a premium to the investor.
- The Fund's resources for guarantees and counter guarantees would be contingent in nature and would come initially from government contributions which, in turn, would be obtained from considerations received from existing concession contracts, from the securitization of operational flows from projects owned by the federal government, and resources from selling public assets (ports, railroads, and airports); on a second stage, the Bonds and Insurance sector could be invited to participate in the Fund.
- The Fund manager would set the commitment level for the Fund's resources, taking into account the fact that some risks decrease as the project develops.

[2] "Aplazar inversiones y descredito internacional, costo de postergar la venta de petroquimica secundaria". Sauri, Gustavo. El Financiero, 23 de junio de 1996. ("Deferred investments and international disrepute: The cost of postponing the sale of petrochemical derivative companies").

- The Fund could use guarantees offered by international credit agencies (World Bank/IFC and Inter-American Development Bank).[3]
- As far as subordinated capital is concerned, the Fund could use a mechanism that has been utilized in Mexico for several decades, that of "cooperative projects" where contributions come from three sources, including state governments and the community.

Proposal to Create a Rating Agency for Infrastructure Projects

Moreover, a consistent instrument for project evaluation is necessary to provide professional and unbiased information to the private capital markets. An essential requirement to attract private capital, either through the Fund or independently, is to rate projects in the same way as other instruments that are placed on the market. However, there is currently no specialized rating agency for infrastructure projects in Mexico. Securities from other sector companies (industry, business, financial services) are rated by a private firm, Securities Rating Company (Calificadora de Valores-CAVAL), authorized by the Department of Finance and Public Credit (Secretaria de Hacienda y Credito Publico-SHCP). However, its willingness and competence to rate infrastructure projects is yet to be defined.

Some of the rating factors for projects seeking financing to be analyzed by a specialized rating agency–which could be an offshoot of the one already existing in Mexico—are listed in Table 6.11.

The absence of a professional and impartial agency specializing in rating the risks of infrastructure investment projects has been one factor precluding the North American Development Bank (NADBank) from efficiently placing already available resources, even though it has received a large number of credit applications for environmental infrastructure projects.[4] A specialized rating agency could help channel viable credits toward environmental and transportation infrastructure projects in the borderland.

Measures to Attract Private Investors

As has been discussed in this report, there are two limitations to attracting private capital: first is the risk of infrastructure investment, and second is the interest of investors in other business related to the projects themselves.

Risk management is discussed in detail in another section of this chapter. At this point, it is necessary to emphasize the importance of adding the benefits from other related businesses to the profitability of the project itself.

[3] The World Bank's guarantee facility, the Multilateral Investment Guarantee Agency (MIGA), is discussed in detail in the chapter on "Bridges for Binational Financing".

[4] See "El Financiero" 5 August 1996, p.11 y 7 August 1996, p.18. Both references by Lourdes Gonzalez Perez.

Table 6.11
Factors to Rate Transportation Infrastructure Investment Projects

Factors to be Rated	Rating Criteria
1. DESIGN	
- Basic studies	- Details and extent of studies
- Design	- Details, degree of completion and technical competence of design
- Ownership of site	- Proof of acquisition of the land where project is to be located
2. BUDGET AND SCHEDULE	
- Costs used	- Costs applicable to the project
- Details	- Cost reliability
- Construction procedure	- Reliability of building terms
3. PROJECT IMPACT	
- Third-party encumbrances	- Progress of negotiations
- Environmental impact	- Studies conducted and permits obtained
- Regional impact	- Mitigation measures
4. SOCIOPOLITICAL FACTORS	
- Acceptance by the community	- Polls
- Approval by other authorities	- Permits
5. MARKET	
- Market studies	- Validity and reliability
- Market characteristics	- Market stability
6. CAPITAL STRUCTURE	
- Equity	- Origin and proportion
- Debt	- Leverage ability

Source: La Empresa, 1997.

There is a case in point related to financing environmental projects that promote sustainable development. As a result of the Rio summit (1991), a large group of entrepreneurs agreed to create an agency aimed at promoting investment projects for improving the environment. This is how the World Business Council for Sustainable Development (WBCSD) (Geneva, Switzerland) was established with the following mission:

- To provide business leadership in order to encourage change toward sustainable development
- To promote in the business sector the concept of eco-efficiency by establishing high standards of resource and environment management

With these objectives, the WBCSD invites businesses to join, on a case-by-case basis, projects with the common characteristic of contributing to sustainable development while at the same time being financially self-sufficient for investors. In most cases, investors want to sell equipment, technology, or services to the project, and thus, the WBCSD helps create or identify a market. When some factor renders an investment nonprofitable, the WBCSD invites local governments to participate directly or through multinational agencies. In any event, the strategy that the WBCSD uses to attract investors and encourage public-private associations to find room in every project for the participants' original businesses.

Success is impressive considering that the WBCSD is a young agency (6 years old): More than 25 projects are under study and 12 more are in the investment phase, amounting overall to over 100 million dollars.

In the case of the transportation sector, it is necessary to increase the participants' interest by means of investment projects. This group includes:

- Builders (under totally new conditions)
- Real estate developers
- Warehouses and customs compounds
- Freighters
- Maquiladoras
- Transportation service providers

Capital Investment Companies (SINCAS, acronym in Spanish)

Capital investment companies[5] have only existed since 1950. If the experience in other countries is used as a basis for comparison, it can be seen that only in recent years have investment companies become major instruments for long-term financing.[6]

Investment companies have several advantages such as:

- Reduced risk as mutual funds have diversified portfolios made up of financial instruments from different companies.
- Portfolios are usually managed by experts, thereby adding expertise and added value and promoting institutionalization[7] of the companies.
- By enabling the small and medium-size investors to buy a large range of securities through the mutual fund, the breadth of the financial market increases, thus decreasing the financing charges for companies in need of capital.

SINCAS,[8] which are variable capital corporations, are one of three different types of investment corporations existing in Mexico; the other two are common investment companies and debt instrument companies.[9]

Common investment companies invest most of the capital in shares of companies listed in the stock exchange. Mutual funds investing in debt instruments invest in financial instruments issued by companies or the federal government and usually offer guaranteed interest rates. Contrary to the SINCAS, common investment companies and debt mutual funds are public companies[10] with

[5] Known in the USA as mutual funds.

[6] In 1980 there were only four SINCAS in operation; ten years later there were 313 authorized SINCAS, of which 234 were actually operating.

[7] This type of institutionalization also promotes the application of administrative, accounting, and tax controls in the companies according to the demands of a global economy.

[8] Also called venture capital companies; they were incorportated for the first time in Mexico in 1985. This financing mechanism through venture capital is barely starting its rapid development state in Mexico, taking into consideration that as late as 1987 there was only one SINCA in Mexico. By way of reference, in 1991 there were nearly 700 venture capital mutual funds in the U.S., with an accrued amount of 33 billion dollars.

[9] Also known as fixed-income investment companies

[10] A pulbic company is one which is open to all the investing public; it is not to be mistaken for a government-sector company.

immediate recovery as a result of their high liquidity, since they can buy their own shares when a shareholder wishes to recover his/her investment.[11]

Contrary to the other two types of mutual funds, SINCAS do not have to be public companies, nor do the companies that they promote have to be public. A basic purpose of SINCAS is to provide long-term financing to companies that may so require. Resources are channeled through capital contributions, mainly with funds obtained by placing the SINCA's shares among the investing public. SINCAS are temporary in nature; once their objective is achieved, SINCAS transfer their equity from the companies they were promoting by placing their shares in the stock market or selling them to the shareholders of the promoted company, or selling them to third parties.

SINCAS are usually managed by an operator company authorized by the National Banking and Securities Commission (CNBV, for its acronym in Spanish). However, these services may also be provided by brokerage firms or credit institutions. In case of a capital increase, the shares will be put in circulation without enforcing preferential or preemptive rights,[12] according to the General Act on Corporations.[13] This cancellation of the SINCA shareholders' preemptive right also applies to the sale by public offering of the shares of the promoted company.

As far as funding is concerned, SINCAS are subject to certain major limitations, such as not being allowed to issue obligations or to obtain loans, except those authorized by the CNBV for liquidity purposes, or to mortgage their properties, if they own any.

As far as investing is concerned, SINCAS are subject to certain limitations including being able to buy up to 49 percent of equity shares of a promoted company Likewise, SINCAS can invest only up to 20 percent of their own equity in shares issued by one single promoted company, and only up to 25 percent of said equity in obligations issued by one or several promoted companies.

Financial Leasing

There are two basic types of leasing: financial leasing and operational leasing. Operational leasing is not a mechanism to finance asset acquisition, as the lessee only leases the right to use the asset for a relatively short period of time. Financial leasing, on the other hand, does represent an interesting alternative to bank loans for financing the purchase of assets. Under this system, the lessor buys the asset chosen by the lessee and which the lessee will use for a long period of time during the asset's lifetime; therefore, the lease payments made are such that they usually may cover the overall initial investment made by the lessor. At the end of the lease period, the lessee has the option of buying the leased asset for a given residual cost. Under this system, and unlike the operational leases, obsolescence risk and the cost of maintaining and insuring the asset are the responsibility of the lessee.

According to estimates by the International Finance Corporation (IFC), one eighth of the world's private investment is financed through financial leasing. Leasing has been increasing as a percentage of investment as shown in Table 6.12. In developed countries, financial leasing can account for up to one third of private investment. At present, the largest growth of this system is

Table 6.12
Private Investment Financed Through Leasing

[11] Private SINCAS cannot buy their own shares; however, public SINCAS have been authorized to buy their own shares.

[12] Known in the U.S. as preemptive rights

[13] In principle, no one corporation or individual can own either directly or indirectly ten percent or more of a SINCA's paid-in capital, except when the National Banking and Securities Commission so authorizes, on a temporary basis.

	1988 %	1990 %	1992 %	1994 %
North America	21.3	20.6	21.5	22.1
Latin America	3.5	5.4	8.8	13.4
Europe	11.7	12.1	13.5	13.4
Asia	4.4	4.9	5.9	8.2
WORLD	9.0	9.6	10.9	12.5

Source: World Leasing Yearbook, IFC.

seen in low-to-medium income countries; the IFC estimates that market penetration by financial leasing has tripled during this decade.[14] The first American independent leasing company was established in 1952. This industry is now fully mature, and the U.S. continues to be its world leader, both in volume,[15] and market penetration (30 percent of all plant, machinery, and equipment purchases). In Latin America in general as well as in Mexico in particular, this financing method is evolving quickly as a substitute for bank loans, especially to finance vehicles, machinery, and equipment.[16]

In developing countries such as Mexico, financial leasing has become very attractive, because as the legal ownership of the asset remains with the lessor, the collateral requirements are simpler to comply with and less strict (in some cases, no collateral is required other than the leased asset) than a traditional bank loan, since the key factor is the lessee's ability to generate cash flows to make the payments due under the lease, rather than his credit record, assets, or capital base. Hence, transaction charges and processing times are usually reduced. Consequently, this system is very attractive in countries with weak or nonexistent provisions dealing with collaterals, as well as for newly established companies without a sound credit history, as the transaction's guarantee is the leased asset itself.

An additional advantage of financial leasing is that it affords the ability to finance a larger capital base than a bank loan, since a very small down payment is usually required. In many countries, including Mexico, tax advantages are also available, since the total lease payments can be deducted from the income before taxes, as compared to bank loans, where only interest paid but no principal payments can be deducted. Likewise, lessors can transfer part or all of the tax benefits of the asset's depreciation to the lessee, thus reducing the lessee's financial costs.

Another benefit of financial leasing is eliminating the risk assumed by the offerer of a traditional bank credit, since the money loaned by the bank could be used by the beneficiary for purposes other than those originally agreed. Since the asset to be leased is only chosen (but not purchased) by the lessee and purchased directly by the lessor, such risk is nonexistent.

An additional benefit for leasing companies is that they are usually less heavily regulated than banks[17] (leasing companies are usually less vulnerable to default than banks), and hence they can be more

[14] Going from four to twelve percent of private investment

[15] The IFC estimates that 40 percent of the financial leasing global market is located in the U.S.; in 1994 alone, US$140 billion was subscribed in leasing contracts in the U.S.

[16] Latin America's participation in the world market of financial leasing increased five-fold in only five years, going from 0.8 percent in 1989 to 4.2 percent in 1994.

[17] Because leasing companies do not seize deposits

financially innovative (for example, funding themselves by issuing bonds or common stocks or through the pledging of their accounts receivable).[18]

Thus, the financial leasing option gives way to a broader competitive base of the country's financial system, encouraging financial innovation by other participants which results in larger local capital markets, more liquidity, and lower financing charges.

6.3.2 Financing Mechanisms Applied in the United States

Cross-border transportation projects aimed at facilitating the flow of commercial cargo between Mexico and the United States require some analysis in order to identify new sources of financing. These projects consist both of goods originating or arriving in the border area and those originating or destined to locations in the interior of both countries. These projects typically include widening of roads and highway systems connecting with points of entry, border-crossing bridges, and building of new inspection facilities.

Therefore, the principal beneficiaries of these projects will be the carriers and not the owners of borderland real property. It is hence reasonable to expect carriers to contribute to the facilities they use by means of tolls or fees. However, if it is possible to convince property owners and local authorities that the properties will benefit from the higher value as a result of the projects, they may be willing to help finance them. A major factor to be considered, however, is that the most significant promotion for these projects will come from those companies involved in binational commerce and not necessarily located in the border region. This is a significant consideration when seeking public/private financing mechanisms, in particular those based on benefits obtained from collecting charges from local real estate owners.

Innovative Financing Mechanisms

There is extensive bibliography concerning innovative financing mechanisms in general, and by public/private associations, in particular, going back to the mid-80's. Types of financing that have been documented may be summarized as follows:

1. Public/private cost distribution options
   a) Contributions by private real estate owners
   b) Institutionalized cost distribution
      - Agreements negotiated with developers
      - Fees for environmental impacts
      - Special contributions
      - Financing through tax increases
2. Privatization of highways
   a) Leasing easements and space to private developers
   b) Leasing facilities to private developers
   c) General access fees
3. Private toll roads

These types of financing are further described below.

[18] Securitization of accounts receivable has become a major source of financing for leasing companies in countries with the most developed financial markets, especially in the case of the U.S.

Contributions by Private Real Estate Owners

These contributions consist of agreements through which private owners give the easement land to the state or agency in charge of the project or make cash contributions to the new project. Contributions are made usually to accelerate a project's completion by reducing public investment, because there is interest in developing new land projects or in giving access to already existing private facilities. In this financing mechanism, the most significant element is the private investors' initiative. Normally the private promoter comes to the authorities with some development project and with their highway infrastructure needs.

There are many documented examples of this type of financing mechanism. Houston-based Friendswood Development Company, for example, was willing to contribute one million dollars to complete one stretch of a highway if the Texas Department of Transportation agreed to accelerate completion of the work. The agency agreed right away. The Woodlands Development Corporation from The Woodlands, Texas, makes, on a continuous basis, contributions of up to 15 to 20 percent of project costs to accelerate their completion. In Pittsburgh, a private nonprofit company promoted improvements of the downtown roadways with contributions equal to 25 percent of the $13- to $14-million investment amount.

The State of Tennessee has entered into associations with private developers of shopping malls in the region in order to build new feeder roads to facilitate access and improve traffic. Construction of these feeder roads was financed 100 percent by the private developer and transferred to the state on a later date for purposes of operation and maintenance. In Arizona, several feeder roads have been built with public/private contributions. A provisional road, which will be widened and upgraded in the future (Estrella Highway), was built on an easement donated by the owners of the land. In Arkansas, the Department of Transportation is working with a developer to build a connecting feeder road which is included in the local plan for long-term transportation infrastructure. In Nebraska, a private museum has been promoting the construction of a feeder road to an interstate route. The museum promoter would pay for the construction costs.

In some states, agreements where private companies or individuals make contributions have become institutionalized in the form of Transportation Corporations and Highway District Companies. These transportation corporations are nonprofit companies and are sponsored by the states with the aim of further improving the highway systems. These corporations were created at the initiative of the private sector with the purpose of developing a given project; they are in charge of planning, engineering, and easements. These projects are usually built by the state with state funds but at a lower cost, thanks to the donation of easements and engineering services.

The Highway District Companies were also created by the state as semi-autonomous agencies following a private initiative. They were designed to accelerate improvements to the feeder road system at the county level. In addition to the regular conditions and characteristics of a transportation corporation, these companies can obtain funds from the revaluation of the properties in the project districts.

In 1984, the Texas legislature approved the creation of the Texas Transportation Corporation and the Highway District Companies. The Texas Transportation Corporations can work directly with private owners to conduct the preliminary and final studies for highways and roadways, to receive donations in land or in cash, to maintain technical staff, to hire engineering consulting and services, to establish formulas to distribute costs among owners and to request loans to cover their expenses.

The Highway District Companies operate in a manner similar to that of Municipal Water Districts, and they can issue bonds guaranteed by increases in property taxes when property taxes vary to finance the construction of improvements to feeder roads and highways. To create a district company, the owners of a district must request unanimous approval from the Texas Transportation Commission

and then be approved by the district's voters. Once the company has been approved, it can issue bonds for an amount not exceeding 25 percent of the value of the property in the district. The use of property taxes requires a 2/3 majority approval among district resident voters, but bonds can be issued without the voters' approval, if guaranteed by increases in property taxes.

Institutionalized Cost Distribution

Some states have established legal procedures to regulate cost distribution with those private owners that may receive benefits from improvements in the transportation infrastructure. Four cost distribution methods are used in the United States: (1) agreements negotiated with developers, (2) fees for environmental impacts, (3) areas of special contributions, and (4) financing through tax increases in certain areas.

Agreements Negotiated with Developers

This financing mechanism is an option where private developers agree to contribute resources to transportation projects in exchange for the approval of land use changes and building permits. As a result of legal restrictions on project development and environmental impact fees, these kinds of agreements between the public sector and private developers have become widespread.

There are many examples illustrating such agreements with private developers. In Orange County, California, the Irvine Company contributed 60 million dollars for improvements to the local transportation system as part of the Irvine Center development, a 480-acre compound located within the triangle formed by the Santa Ana, San Diego, and Laguna Freeways. Improvements included three exit ramps, two parking lots, and 14 projects related to traffic control.

In Fairfax County, Virginia, another developer contributed more than 80 million dollars for highway improvements, including a $20-million contribution from Hazel Peterson, a Fair Lakes developer. In north San Diego county, Shapell Industries, developers of Rancho Carmel (a mixed-use 1,500-acre development) agreed to contribute 33 infrastructure investment projects for a total cost of 57.5 million dollars, including main roadways, overpasses and underpasses, feeder roads, parking facilities, and traffic control systems. The developers of the Howard Hughes compound in west Los Angeles contributed $20 million in transportation improvements including road widening, intersection improvements, signage upgrading, and construction of a new freeway on-ramp. Developers of the Hacienda Business Park in Alameda county, California donated 80 million dollars for improvements to local transportation, in order to facilitate traffic flow around the development. Funds were used to build three new feeder roads, widen two freeways (two more lanes on each one), install a computerized system for traffic-signal control, put up noise barriers, and contract landscaping.

A group of developers in New York City gave 31.5 million dollars to the railroad system of the City. This amount was part of the $100-million package that the developers contributed to support their business and housing projects. These contributions were made after negotiating with the Planning Commission in order to change the zoning classification of the project site from industrial to residential.

Fees for Environmental Impacts

Environmental impact fees are charges levied on new developments as a condition to approve projects to ensure compliance with certain regulations. This alternate way of channeling funds for transportation projects is enforced by the local government as a means to regulate urban development. Regulating new developments is one of the political powers delegated to local governments by the states. Given that this kind of regulation is an almost exclusive function of the local government, any enforcement of such power is executed by the local authority. This power is in contrast with the reduced power delegated on it to levy taxes. For this reason , local governments have tried to compensate for their limited ability to impose "innovative" contributions, by exercising

such faculties as those of protecting the health, safety, security, and well-being of the population. Hence, these measures may be enforced if it can be proved that the population will be protected from hazards caused by new developments. Other fees which cannot satisfactorily be proved to be related to an environmental hazard run the risk of being considered taxes and are therefore illegal in most states. Given that the excessive numbers of roads and highways represent a threat to public health, safety, and well-being of the population, new developments can be banned if they do not include safety measures.

Initially, impact contributions were imposed as a means to ensure that the contractors provided for public safety inside their projects. Later on impact fees evolved to include the overall actual constructed area. As more understanding was acquired, it became clear that developments called for improvements and safety considerations outside the bounds of the project itself, and the courts determined that developers had to do all necessary improvements to the common infrastructure, such as highway systems or trunk roads. Payments related to these improvements extended the scope of impact fees. Local governments enforce impact fees on any new development and not only on new roads. Issuance of a building license or permit for a new building is typically dependent on payment of this fee.

The initial advantage of this type of fees is that no tax increases are required. Given that only new developments have to pay impact fees, the community may receive the benefits of suitable transportation without any cost to the residents and the taxpayers.

An example where impact fees helped finance a highway project is the San Joaquin Hills Corridor in Orange County, California where the 1.2-billion-dollar cost was financed with $111 million in state funds, one billion dollars in bonds guaranteed by the revenue from the road's tolls, $97 million from investment profits, $39 million in debt subordinated by the private builder, and $31 million from impact fees collected from private developers.

Although impact fees have been used in some cases only to finance large-scale highway improvements, they are definitely used by local authorities to finance minor improvements in the road system. Even when legal and political difficulties related to impact fees are overcome, this measure does not seem to be a potential source of financing for large-scale projects. For example, the office space along the I-285 freeway in north Atlanta, increased by 15.3 million square feet within the five-year period from 1984 and 1989. Assuming an average price of $125 dollar per square foot, the total cost of these constructions would be 1.9 billion dollars. The upper limit for impact fees is three percent of the construction value, and assuming that this rate had been applied for the five-year period of rapid growth, the total amount collected on impact fees would have been only 60 million dollars. This amount is equal to only six percent of the one billion dollars needed to reconstruct I-285.

Special Contributions (Assessments)

Special contributions are charges imposed on property owners in compensation for government programs that will benefit them, such as construction of access roads to previously undeveloped areas or widening roads connecting to areas of rapid growth. Special contributions are used to pay for infrastructure designed to benefit a specific group of real estate owners, while impact fees are assessed to allow the government to build the infrastructure required for the development of a particular owner. Special contributions can be assessed in a wider range of situations than impact fees. Moreover, impact fees depend on the government's regulation power, while special contributions depend on its ability to create taxes. In theory, special contributions should be distributed among owners proportionately to the benefits obtained from the project in question. In practice, a simple formula is typically used (for example, a specific percentage of the property's appraisal).

Special contributions should be proportional to and not greater than the benefits obtained by the property. These contributions, which in a way differ from a tax contribution, have several special characteristics: first, contributions are levied on the land only; second, special contributions cannot become personal debts for the owners: third, contributions are based only on the benefits that the plot of land will receive and not on its value; fourth, these kinds of contributions are to be exceptional in time and place. Charges are typically calculated based on lot frontage dimensions or other physical measures. Special contributions are most appropriate when the benefits of an infrastructure improvement do not generate general benefits warranting that its cost be levied on all taxpayers.

The greatest advantage of special contributions is that they can be imposed on a given area, assuming that it will receive the benefits, without having to assess a general tax increase. Another advantage is that in certain cases, future contributions may help support debt issues. In contrast with impact fees, special contributions represent a stable flow of revenue, they do not need as much backing with legislation, and require less managerial efforts.

An example of the assessment of this type of contribution is the transportation improvement projects in the “Platinum Triangle” northwest of Atlanta. This district , created in 1988 thanks to the initiative of certain business owners in an unincorporated area of Cobb County, encompasses nearly 1,200 acres and 33 land parcels. It includes two shopping malls and other business centers, but it excludes all residential properties. The initial tax rate was 0.5 percent. Contributions generated during the first year were in the vicinity of 1.5 million dollars with expectations to generate 10 million dollars in the five-year lifetime of the district.

Virginia is a state where it has been proven that special contribution districts can be used successfully to finance big highway projects. The special contribution district in the counties of Fairfax and Loudoun, along Route 28, is assessing a special tax to finance the widening of 14 miles of highways. Phase I of the project had an approximate cost of 160 million dollars and included increasing several stretches of the highway from two to six lanes, plus building three feeder roads. The Phase-II proposal would widen the roadway to include eight lanes and would add nine feeder roads to turn the highway into a controlled-access freeway. Route 28 has enormous commercial potential, but it has been underutilized for lack of road capacity. Route 28 requires substantial improvements, but neither the Department of Transportation of the State of Virginia nor the two counties have enough resources to tackle the project. The state responded by creating a special-contribution district encompassing approximately 11,000 acres and assessing a 0.2-percent tax on the 1.8-billion-dollar value of the industrial and commercial properties located within the district. Bonds have been issued to finance the project, with an annual cost for debt servicing amounting to 11 million dollars. Taxes collected initially were not enough to pay for debt service, but it is expected that with the increasing value of the properties, sufficient funds will accrue within an eight-year period. It is estimated that the funds thus obtained will finance approximately 80 percent of the project, with the state’s Department of Transportation contributing the remaining 20 percent.

In the case of I-285, there is approximately 33.7 million square feet of office space in the area immediately adjacent to the project. Estimating a price of 125 dollars per square foot, the district’s revenue basis would be 4.2 billion dollars. Since Georgia appraises its properties at 40 percent of their commercial value for tax purposes, a 0.5-percent tax on 1.7 billion dollars would contribute an annual flow of 8.5 million dollars. By widening the district one mile on either end of the freeway, 25 to 30 million dollars could be generated on an annual basis. Although the figure falls short of the 100 million needed to finance the one-billion dollar project over a ten-year period, it could become the source of income required to cover debt servicing of a bond issue to pay for a significant portion of the project.

Financing Through Tax Increases

Financing through tax increases is warranted when improvements necessary for community development will result in an increase in the future flow of collected taxes because of an increase in property value. This source of financing has been developed for urban areas, and it allows the community to obtain in the present the benefits from future tax increases by issuing bonds. Normally, property taxes are used as guarantee for these bonds, but the issuing agency is not obligated to maintain the guarantee. As there is no obligation, no referendum is necessary, even though ad valorem taxes are used to pay both principal and interest. The feature of not holding a referendum has been under continuous legal scrutiny.

Although increased property taxes are the most common basis for tax-generated financing, other tax revenues, such as sales taxes, are also employed.

Tax-increase (tax increment finance) bonds have been used basically for urban renewal projects. Since renewal projects increase the community's tax base, more property taxes will be collected. Given that it will occur on a yearly basis, this "increase" will enable the issuing of bonds. Bonds issued based on this increase constitute tax-increase financing. Nearly half of the states are authorized to use this mechanism. California was the first state to use this mechanism in 1952; other pioneers were Ohio and Minnesota, which combine general obligation bonds with tax-increase issues. The major advantage of tax-increase financing is that money is obtained to finance infrastructure improvement projects without assessing general taxes or increasing fees.

The use of tax-increase financing is limited as a result of the difficulty to structure this kind of debt issues to satisfy the investors purchasing them.

Privatization of Highways

Highway privatization involves three different types of agreements between transportation agencies and the private sector: leasing of easements and unused air space, leasing of transportation facilities by private developers, and payment of general access fees to transportation facilities financed by private investors.

Leasing of Easements and Unused Air Space

In places where a transportation agency owns land normally used for transportation, there is an opportunity to generate revenue. By leasing the unused land–both surface and subsurface–and the surrounding space to the developers of transportation infrastructure, the government agencies can generate a stable cash flow. For instance, a Boston developer negotiated the long-term lease of the air space on a stretch of the Massachusetts Turnpike. The revenue from the lease was used to make improvements in the highway. Likewise, Denver's Regional Transit District leased the rights to the air space over the Civic Center's roadways. This lease will yield 55 million dollars over a 15-year period. In Miami, a lease was signed with a private developer to build 650,000 square feet of office and business space and a 300-room hotel adjacent to the Dadeland South Station in exchange for paying four percent of the annual gross revenues.

The FHWA promotes the identification and capitalization of potential commercial income by the states. With this in mind, the FHWA is studying possible restrictions to commercializing the National Highway System (NHS). Several kinds of income-generating activities can be carried out without jeopardizing road safety. States could generate revenue through the aforementioned methods, and hence funds would be released to finance other transportation projects. Some of the options include leasing the easements' underground space for communication lines; financing traffic-control electronic systems including room in them for commercial purposes; and designing, financing, building, and leasing and/or operating transport-related facilities, such as rest areas alongside interstate highways.

Leasing of Transportation Facilities by Private Developers

This financing mechanism refers to lease agreements entered into between the government and private developers. In Pittsburgh, the city government negotiated a lease with the U.S. Steel Company for the construction of a bridge. Thanks to this lease agreement, the company was able to depreciate the asset, thus obtaining a significant tax benefit.

General Access Fees

Under this financing mechanism, the private sector builds and maintains facilities such as a free-access road, and it receives payment from the government based on the road's usage level.

Private Toll Roads

Road construction by private developers is feasible when a project has enough potential to generate revenues offering an attractive yield to investors or when a public agency is willing to subsidize part of the investment to make it attractive to investors. In the case of roadways, the major source of revenue is the tolls paid. If this source of income is insufficient but there is clear public interest in the project, the government may contribute part of the investment, either during the initial phase or for a fixed term.

States with legislation authorizing the construction, operation, and administration of transportation infrastructure by private investors are Arizona (whose legislation authorizes four pilot projects), California, Florida, Minnesota, Missouri, New Mexico (specifically the Santa Teresa intermodal terminal with private participation), Texas (whose legislation authorizes the Texas Turnpike Authority to enter agreements with private investors to operate highway projects and provides for the creation of a toll-road authority, with the prior approval by the Texas Transportation Commission), and Virginia.

Nationwide, revenues from toll roads is a small proportion (less than 5 percent) of the total highway revenues, although they are significant in some states. Authority to develop private toll roads is granted by the state's legislature, and it typically involves the issue of tax-free bonds with various state or federal guarantees. The use of tolls to develop highway projects dropped in the 60's and 70's during the construction of the Interstate system. The low number of toll-road projects can be explained partly by the competition from freeways. At the same time, the strict financial conditions to award these kinds of projects and the public's resistance to pay tolls–especially when they are already paying gasoline and vehicular taxes for state and federal funds—prevented the generalized development of toll roads.

However, more recently, toll roads have reemerged in the United States, especially in urban settings. The advent of electronic vehicular identification systems and of electronic mechanisms of toll collection increased the practicability of these types of projects. These high-tech systems not only do away with delays at the toll booths in city roadways, but they also reduce users' reluctance to pay the tolls, since they can be charged directly to the user's account. Progress in the financial area has also influenced these projects' viability. The availability of new financial products, together with lower interest rates, tax exemptions, and government guarantees have favored the toll-backed bond market. At the same time, the possibility of combining the toll-endorsed debt with other types of revenues has increased the portfolio of toll-road projects.

Even though toll roads provide an opportunity for public-private investment, since the mid-80's it has been apparent that toll roads cannot be entirely financed in a "nonrecourse" system (where the only guarantee offered is the project's cash flow and/or some collateral from the debtors).

Current conditions in the economy and in bond financing indicate that there are very few opportunities to successfully finance new toll roads without some support from the public sector. A possible solution would be to have federal funds paying for 25 percent of the projects, and the remaining 75 percent would be financed with the tolls. This would allow certain marginally feasible projects to be executed.

The idea that toll roads must always be self-financing could be discarded, and official agencies could encourage the search for alternate sources of revenue to guarantee repayment of the debt. Some states have followed this practice for several years, and they have been able to add significant revenues to their highway fund.

More recent studies have arrived at the same conclusions: Toll roads just cannot be financed on a nonrecourse basis, except in select cases.

This fact is clearly evidenced in the financial structure of recently completed projects. Nonrecourse bonds have been supplemented with a variety of sources including private capital, local grants, state and federal contributions, and credit facilities.

Public roads recently built in the United States, such as the first stretch of I-470 in Denver and the Hardy Toll Road in northern Houston, as well as others currently under construction (like the San Joaquin Hills Corridor in Orange County, California) have required alternate sources of financing (for example, easement grants, developer fees, special assessment areas, or government guarantees for bonds) to make them viable.

Between 1988 and 1989, California and Virginia launched the modern era of contracted toll roads for public use designed, financed, and developed by private profit-making companies, with the government's participation limited to granting easements, restricted protection of accountability and jurisdiction, and regulation of toll and profit levels. These projects have combined developer capital, contributions from adjacent property owners, and various forms of revenue-guaranteed debt.

The Harris County Toll Road Authority (HCTRA) and the Texas Department of Transportation (TxDOT) have joined efforts to build the south and east stretches of Houston's outer toll roads. Although none of the financing mechanisms is innovative, to the extent that they have to be approved by FHWA under initiative TE-045, it was necessary to join a diversity of resources to ensure success of the package, thus: (1) TxDOT will grant HCTRA the easement free of charge; its estimated value is approximately 83 million dollars; (2) TxDOT will finance access roads, ramps, and feeder roads using state and federal funds for up to 236 million dollars; (3) HCTRA will issue bonds for an amount equal to half the cost of the road's main structure, backed by toll collections; and (4) TxDOT will provide at least 50 percent of the 90-million cost of the road, from state and federal funds.

The City of Laredo and the TxDOT are planning to build a stretch of 2.5 miles of highway and an eight-lane international bridge from I-35 in Laredo toward the Rio Grande border crossing. The bridge and the complementary facilities will have an estimated cost of 52.5 million dollars. The bridge structure, the toll booths, and the export and import areas of the border inspection station will be financed by the City of Laredo with a Section-1012 credit for 411.3 million dollars. TxDOT will grant the Section-1012 loan to the City of Laredo through the Texas Turnpike Authority (TTA) and will also take upon itself the responsibility for building connecting roads for 15.4 million dollars. The local contribution to match the federal share will be obtained from private easement grants, valued at 18.2 million dollars. In addition, the Mexican government will ensure construction of the corresponding accesses and facilities on the Mexican side of the border. Under Section 1012 of ISTEA, a state is authorized to grant a credit from its federal assistance highway fund to a public or private promoter who is planning to build an income-generating infrastructure. For this project, Section 1012 will cover the cost of the bridge structure, the import-export areas, and the toll booths. This credit has run into complications as a result of a constitutional restriction which forbids TxDOT to grant loans directly to a city. For this reason, the TTA will be used as the vehicle for channeling the loan. Laredo will use the revenue from tolls (and possibly the revenues from renting the border crossing facilities to GSA) to repay the TTA, who will, in turn, repay TxDOT.

The George Bush Highway is a joint project between the TxDOT and the TTA. This highway connects the Dallas metropolitan area with the rapidly-growing northern communities, in order to solve traffic

congestion problems and endorse the area's future economic development. The following innovative mechanisms were used in the project: TxDOT will transfer a 139-million dollar credit from Section 129 of STP funds to the TTA. TTA's obligation to repay the Section 129 credit will be subordinated to repayment of toll-guaranteed bond servicing. Furthermore, Dallas, Collin, and Denton counties contributed 40 million dollars in easements. In short, the project comprises 135 million dollars in TxDOT's Section 129 credits, 308 million dollars in bonds issued by the TTA, and 20 million dollars of TTA's contributions from its Improvement Investment Fund, for a total cash investment of 463 million dollars, plus easement donations which, as was mentioned above, are worth 40 million dollars.

The need for toll roads to obtain sources of financing other than nonrecourse sources has led many states to initiate financial aid programs for publicly owned highways.

The City of Richmond, Virginia issued general obligations to partially finance the acquisition of easements from the Richmond Highway System. The Virginia Department of Transportation (VDOT) maintains the system, and the Richmond Metropolitan Authority issued bonds for the construction and operation of the toll-collection equipment.

The Oklahoma Highway System funded itself by issuing a series of toll-guaranteed bonds. However, each placed issue was entitled to take funds from a special trust made up of annual contributions of funds from a gasoline tax levied by type of vehicle and based on a formula using miles per gallon and tagged on the VMT.

Florida has a program through which the Department of Transportation guarantees payment of the operation and maintenance of toll roads built by local authorities. This provision enables the local authorities to pledge the bondholders total payment of the debt service, regardless of the toll revenues.

Alabama is considering to pledge the taxes paid by highway users as a secondary guarantee so that bonds may be issued to finance the U.S. 280 project.

Of particular interest for financing binational projects is Section 361.307 of the Texas Transportation Code authorizing the TTA to "...enter into agreements with other government agencies, including federal agencies, agencies from the same or other state, with the Mexican Republic, or with a state of the Mexican Republic, or a political subdivision, to either independently or jointly provide services to study the feasibility of highway projects or to finance, build, operate, or maintain highway projects."

6.3.3 Bridges for Binational Financial Coordination

In implementing an on-going process of binational planning and scheduling, the success of identifying and building joint projects will depend on a greater degree of financial coordination. To maximize the use of financing sources necessary to successfully build borderland transportation projects, the coming together of three sources of financial coordination is required.

First, to the extent that these projects are developed by private sector companies, the market's incentive system will provide momentum so that investors/owners devise appropriate financial "packages", with a view to attracting the capital required for investing in border area projects. It is a sure fact that financially viable projects generating attractive yields with acceptable risk levels will materialize from private financing sources in both countries. Current trends both in Mexico and the United States show that decision-makers in the transportation sector rely increasingly on the private sector to evaluate and build projects which are desirable for the transportation infrastructure in both countries. A similar degree of success may be expected from private-sector entrepreneurs involved in some projects related to both sides of the border, as well as certain borderland projects conducted jointly by both countries.

It must be borne in mind that any effort toward financial coordination will be faced with serious public financial restrictions in Mexico–which by no means is a problem exclusive of Mexico–since from the early 80's, Latin America has been affected by an underinvestment situation. The World Bank estimates that this region requires an average annual investment in infrastructure equal to 60 billion dollars, equivalent to 4.5 percent of the region's GDP during the entire coming decade, in order to compensate for infrastructure deficiencies emerging from said underinvestment. In addition, it is estimated that another seven billion dollars is needed just for infrastructure maintenance in the region. Given the size of the investment amounts required, the Latin American public sector by itself is unable to finance infrastructure projects. Therefore, financing by the private sector is increasingly becoming the main engine available to meet these needs.

The second source that may lead to a higher degree of financial coordination between both countries is the ever increasing number of innovative financing options (described above) that give way to possible associations between the public and the private sector and enable the efforts of the private sector and the responsibility of the public sector to concentrate on mutually beneficial programs and projects. The binational nature of the planning and programming of cross-border transportation complicates the public-private approach. However, for public-sector agencies–in the border cities, states, and municipalities–to successfully survive into the future, these agencies must make sure that an increasing number of joint financial cooperation opportunities are available between the public and private sectors, in order to implement approved transportation plans and projects. Financial cooperation between American and Mexican institutions is an area of opportunity that has to be formalized in such a way that the projects being executed on both sides of the border can be developed as integrated enterprises.

As was emphasized in the section on innovative financing mechanisms, the mode of transportation that requires new financing facilities is the highway system; other modes (as well as intermodal facilities) are usually financed by the private sector, either with or without government subsidies or other types of support from the public sector. Likewise, highway projects may include new border crossings or improvements to existing ones, as well as construction of new connections to said crossings or improvements thereto. In the past, it has been common practice to consider the American roadway connections, the border crossings, and the Mexican roadway connections as three separate projects. In an evaluation conducted on the feasibility of a private toll road in the United States (the Camino Colombia Toll Road) designed to connect the Colombia Solidarity Bridge with an interstate highway, it was found that the project could not succeed without the corresponding improvements on the Mexican roadway connections. In other words, the three portions (the American roadway connections, the bridge itself, and the Mexican roadway connections) were mutually dependent on each other if each one of these parts was to be financially viable under a toll-collection financing approach. This case in point suggests that border crossings and roadway connections on either side of the border should be considered as a single project which would be financed by issuing one single bond and where the revenues generated by the three parts would be considered one single revenue for repayment of such debt.

It is almost impossible to finance projects through bond issues where the issuer commits the project's revenues to repay the debt acquired (revenue bonds), unless such bonds are covered by adequate credit guarantees by state or federal governments. Again, these guarantees by the governments of the two countries should back the bond issue as a whole, and not simply servicing of the debt acquired by the portion of the project located within the jurisdiction of the country in question. Furthermore, by granting guarantees, interest rates can be reduced or terms for repayment of the debt can be extended.

In addition to bilateral guarantees, guarantees provided by multilateral development institutions can also be used, especially from agencies such as the Multilateral Investment Guarantee Agency (MIGA), which is part of the World Bank Group. MIGA promotes flows of direct foreign private

investment toward developing countries and it supplements the activities of private investment risk insurance companies.

MIGA could represent an interesting alternative for granting guarantees for noncommercial risks, thus reducing the investors' uncertainty. These risks include: restrictions in the transfer of foreign exchange; nationalizations and expropriations by the government; interference with the operations, and even riots, acts of sabotage, and terrorism; as well as breach of contract by the government. Given that they offer protection for up to 15 years (and sometimes for up to 20 years), MIGA guarantees are particularly advantageous for three kinds of projects: (i) projects with large initial investments and long recovery periods; (ii) projects whose profitability depend on quantities and prices (including exchange rates) fixed by an authority; and (iii) projects involving private participation in infrastructure works. Guarantees offered by MIGA may be applied not only to new investments, but also to new contributions that enable the expansion, privatization, or financial restructuring of existing projects. Likewise, MIGA may be used to protect different types of financing schemes, especially investments in equity capital, loans granted or guaranteed by foreign shareholders, commercial bank loans, as well as aid and administration contracts.

The third identified source that can be used to improve financing coordination in the planning and scheduling of transportation infrastructure projects between both countries is made up of a set of specific possibilities that are part of an overall binational strategy. These are some of the possibilities:

a) Existing or planned programs offering cooperative financing, such as the power granted to the Texas Turnpike Authority to finance and build toll roads in Mexico.

   Section 361.307 of the Texas Transportation Code provides a model that could be used by the ten states along the United States/Mexico border. This section authorizes the Texas Turnpike Authority to "participate in an agreement with some other government agency or institution, including a federal agency, an agency from this state or another state of the United States of America, the Mexican Republic, or a state of the Mexican Republic, or a political subdivision in order to provide services to study the feasibility of a toll road project or to finance, build, operate, and maintain such project, either independently or jointly with another agency or company."

   Granting of the aforementioned authorization could be limited to the public turnpike authorities (provided that each one of the ten states created such an agency), or it could fall under the jurisdiction of the Department of Transportation of each state or a division thereof (for example, on September 1, 1997, the Texas Turnpike Authority became a division of the Texas Department of Transportation). Given the growing resistance by financial markets to issue non-recourse revenue bonds, it may well be that regardless of which specific agency is granted such authorization, all border states and their respective national governments should be prepared to cover, with all their credit power and capacity, at least a portion of every revenue bond issue that is placed on the primary market to finance a unified project.

   The combination of the border crossing itself and the connections on both sides of the border within a single debt issue will facilitate the granting of financing as compared with an independent financing scheme for each one of the three components. On the one hand, considering the three components as a single project would allay the investors' fears that a part of the project necessary to make a component financially viable might not be built in the end. On the other hand, the mutual commitment of pledging the revenues of each of the three components (border crossing and both roadway connections) to repay the project's debt as a whole, without separating it into components, as well as the mutual commitment to act in good faith and with the full credit power of the respective states and national governments for issuing a unified bond, will reduce the level of risk perceived by potential investors.

The foregoing idea(s) are more or less limited to toll roads. Given the nature of border crossings and their connections (in other words, that usually there are no alternate routes available within short distances), and the fact that the trucks that use such crossings and their connections are not local traffic, it would seem reasonable to assume that most of these projects can and will become toll systems.

Beyond the border area, both the United States and Mexico face the need for improved transportation systems, as a result of the significant increase in truck traffic related to NAFTA. A possible source of financing for these projects would be an ad valorem charge on the goods crossing the border (to substitute for the tariffs eliminated by NAFTA) that could be used to pay for road improvements beyond the immediate border area benefited by the NAFTA-related truck traffic.

b) Developing specific borderland programs in each one of the countries to finance joint projects.

Given the characteristic aspects of cross-border transportation in both countries, an ongoing program should be devised to deal with the borderland infrastructure in the two countries, as well as individually in each one of the border states. In the United States this idea has already materialized in the proposed National Economic Crossroads Transportation Efficiency Act, NXTEA (which would replace the Intermodal Surface Transportation Efficiency Act, ISTEA) introduced by the Clinton Administration and currently under study by the Congress of the United States. Once this legislation is approved, it will become the organic law in the United States to implement the federal transportation policy for the next five-year period starting in October 1997. Although it is difficult to predict the legislative process with respect to specific elements of the NXTEA, the Administration strongly supports the inclusion of a funded program to support implementation of NAFTA and its transportation needs.

On the Mexican side, the Department of Communications and Transportation (SCT) could devise a similar program to give special treatment to border-related transportation needs. A program of this nature would guarantee a certain amount of annual project financing which would grant stability and continuity to plans and schedules and would meet priority needs at the border.

c) Using financial facilities offered by the World Bank and the International Finance Corporation (IFC) to finance eligible projects in Mexico.

Special attention should be given to seeking opportunities with existing programs, as well as developing new opportunities with the World Bank, the IFC, and the NADBank, and the Inter-American Development Bank (IDB) to build transportation infrastructure in Mexico to meet binational transportation needs. At present, Mexico receives little or no financing from the above-mentioned institutions for infrastructure projects. Perhaps if some joint projects between the United States and Mexico were submitted to these institutions, they would be eligible to receive partial funding from those international finance organizations.

d) Including specific project descriptions, within the planning and scheduling process, with an assessment of financial feasibility and potential sources of financing.

At present, most borderland projects, either planned or scheduled, do not include an evaluation of their financial feasibility as part of the project plans and documentation. Such feasibility studies should to be considered as part of the data inventory developed for prospective projects to be shared with the counterparts on both sides of the border. Such a feasibility study would include an assessment of potential sources of funding.

e) Periodic review of the inventory of planned and scheduled projects to identify mismatches and inconsistencies with respect to financial scheduling and feasibility.

Analysis of a combined map of the current inventory of borderland projects does not always reveal the most important information required by transportation decision makers. It is particularly critical to determine the timeline of borderland projects, so that an overall project (the U.S. side, the Mexican side, and the border crossing facilities) may be viewed as one single entity. If one of the sides has planned to complete its project during year one and the other side is planning to complete its project by year ten, then the project's effectiveness as a whole has a several-year gap. Disparities in timing, financial feasibility, and other crucial variables should be identified and included in the cross-border project inventory's database.

f) Assessing the implications of financial coordination among border states, considering the trend toward decentralizing the transportation authority in Mexico.

For long-term coordination and cooperation to exist, the binational transportation planning and scheduling process should consider the decentralizing trend by Mexico's transportation authority. In particular, this means that in the future each one of the Mexican states will probably have more autonomy in order to structure and implement transportation programs. Insofar as this is the case, border states (on both sides) will have unique opportunities to coordinate and even consolidate their planning, scheduling, and financing needs in the transportation sector with their neighboring border states.

6.4
Institutional Changes and Legal Framework Influencing Funding Needs for Cross-Border Transportation

6.4.1 Effect of Mexico's Transportation Policies on the Need for Investing in Borderland Infrastructure

Major Changes in Mexico's Transportation Policies

Between 1990 and 1996, operational and investment policies were implemented in the transportation sector which significantly changed the mode of operation that had prevailed until then. First and foremost among these changes was the deregulation of public transportation which changed this sector from a cartel operation to a free-market activity. Also, as far as surface transportation is concerned, during the same period nearly 6,000 kilometers of toll roads were concessioned and built.

During 1996, the concessioned highway construction program was not expanded, and financial efforts and resources were used to address the financial problem caused by the 1994 peso devaluation crisis and the original overestimation of the toll road market. The legislation authorizes the government to award concession contracts to operate the transportation infrastructure for up to 30 years, with the possibility of extending the contracts to 50 years.

During this time frame, the country's seaport and railroad privatization process was also being developed. Starting in 1996, shares of the ports of Veracruz and Manzanillo were sold, and in February of 1997, Ensenada's shares were sold. Between 1996 and 1997 bidders were invited for the concessions for the northeast (Nuevo Laredo-Mexico City) and northwest (Nogales-Guadalajara) railroads. Bidders were invited to bid for the concessions for the Chihuahua-Pacifico railroad, but no contracts were awarded. Airport privatization has shown some progress as far as designing a strategy is concerned, but the bidding and concession process is not yet known.

Implementation of the North American Free Trade Agreement (NAFTA) resulted in an initial mismatch between the agreements included in the legislation and their execution. A case in point is the inability to start binational operations of motor transportation projects because of the differences in mechanical condition and age of the vehicular fleet between Mexico and the United States. According to American carriers, the condition of Mexican commercial motor vehicles represents a safety hazard for American roads.

On the other hand, NAFTA has had effects which are in agreement with the projections and are seen in the increase of goods crossing the border. Time is needed to evaluate the behavior of this flow, especially once Mexico's domestic market is reactivated. Undoubtedly commercial flows across the border will continue to grow, but it is necessary to understand the dynamics and structure of this flow and to be able to associate it to the economic cycles of the two countries, cycles which are particularly dramatic in Mexico in order to foresee the extent, location, and characteristics of the transportation infrastructure, facilities, and technology and be able to respond to the new demand. This understanding will help determine the amount of financial resources necessary to improve the cross-border transportation system.

Privatization of Seaports: The Case of Ensenada

Privatization of the Mexican seaport system was conducted in two stages:

- Creation of the Integral Port Administrations (API, Spanish acronym) with 100-percent publicly owned capital.
- Sale of the API share package to private individuals and/or sale of independent businesses (e.g., fuel supply, towing services, etc.).

In November 1996 a bidder was invited to purchase the Ensenada Multipurpose Terminal (TUM, is its Spanish acronym). There is no information yet about the date when the API will be sold, which means that the TUM will begin operating as a private company under the guidance of a publicly owned API. Only one bid had been received by March 1996, and it will most likely be accepted.

The port of Ensenada is strategically located not only with respect to the U.S.-Mexican border, but for the North Pacific region, as a connecting point between the Far East and South America. Moreover, the Los Angeles/San Diego-Baja California region is considered a geopolitical center of global importance, both because of the rapid pace of its population and cultural changes, and its strategic location on the Pacific Rim.

Asian Pacific investors' interest in Ensenada was evident during the pre-bidding stage, as well as during the bidding process, since the only bid tendered was from a Filipino shipping consortium. This interest is based on the perception that Ensenada may become an alternate gateway to Los Angeles and Long Beach, with the advantage of tagging added value to the products in the consolidated maquiladora region extending between Tijuana and Mexicali, and eventually using NAFTA's rules of origin.

The effects on the border of major developments in the Port of Ensenada may be extremely significant, if certain favorable conditions occur that enable the use of American railroads to carry goods. Table 6.13 shows some possible investment scenarios to increase the port's activity.

Table 6.13
Possible Scenarios for the Port of Ensenada

TUM's Development Scenario	Major Investments	Road/Railroad Connections	Movement (TEU's/year)	Additional Conditions
Low	Raising protection barriers, repairing the equipment, and expanding the dock yard	Currently no railroad connection	80,000-120,000	Presence of the Maquiladora Industry in Mexico.
Medium	Two piers, raising the protection barrier, and dredging to widen the dock.	Intermodal terminal and outer road in Tijuana. Repairs to the Tijuana-Tecate and Tecate-Plaster City railroad.	150,000-200,000	Tijuana-Plaster City railroad cars, customs at the border. Agreements with the San Diego Port Authority to use their railroad system.
High	One pier and raising the protection barrier.	Ensenada-Tijuana Railroad.	300,000	U.S. Customs in Ensenada and Ensenada-Plaster City railroad cars.

Note: Port infrastructure investments among scenarios are marginal.
Source: La Empresa, 1997.

The estimated investment needed for each development scenario is shown in Table 6.14.

Table 6.14
Investments for the Port of Ensenada

TUM Development	Estimated investment (U.S. dollars)
Low	10 million
Medium	160 million
High	300 million

Source: La Empresa, 1997.

Which scenario will be most likely chosen depends on the plans and intentions of the concessionaire (Intermodal Container Facilities). The foreseeable effect on cross-border transportation based on the different scenarios are described in Table 6.15.

Table 6.15
Effects on Cross-Border Transportation of Developing the Port of Ensenada

TUM Development	Effects on Cross-Border Transportation
Low	Domestic flows between Ensenada and the Tijuana-Mexicali maquiladora region could preempt cargo movements currently coming to Los Angeles-Long Beach.
Medium	The effect of the low scenario would increase and northbound cargo traffic could be generated between Tecate and Plaster City.
High	Northbound traffic will become increasingly significant giving justification by itself to expansion of the port of Ensenada; train cars would clear customs at the port.

Source: La Empresa, 1997.

Railroad Privatization

The process to privatize the railroads was officially initiated in 1995, when the Mexican Government decided to divide the system into five regions:

- The North Pacific Railroad
- The Northeast Railroad
- The Southeast Railroad
- The Chihuahua-Pacific Short Line
- The Mexico City Terminal

The privatization program started in June 1996; bidders were invited for the purchase of the Chihuahua-Pacific Short Line. However, no bids were submitted. In August 1996, bidders were invited to bid for the purchase of the Northeast Railroad. The contract was officially awarded early in 1997 to the Transportacion Maritima Mexicana-Kansas City Southern Industries (TMM-KCS) Consortium. It is significant that Mexico's main domestic shipping company will be a co-operator of the railway with the highest current traffic volumes.

This fact should be analyzed within the context of TMM's importance in the movement of Mexican seaports, since three of the major ports are connected by this railway (Tampico, Veracruz, and Lazaro Cardenas), which suggests that a multimodal transportation system will be developed for domestic movements, while Kansas City Southern will probably maintain its activities of cargo transportation across the border, north- and southbound.

While Laredo/Nuevo Laredo has been a strategic core of railroad traffic for Union Pacific which has invested in infrastructure at that crossing and has plans for even further development, there is question as to what will happen with cargo traffic to the interior of Mexico. Thus far, the operation relied on motor transportation (trucks) for inland traffic in Mexico, but TMM/KCS expects to offer "door-to-door" railroad transportation. How this market develops will depend on the origin of cargo from the United States and on penetration by other major railroad companies that operate all the way to the border (Southern Pacific, Union Pacific, and Burlington Northern Railway), as well as on the willingness of these companies or the cargo operators to take their trains into Mexican territory using the TMM/KCS railway, instead of trans-shipping to a truck. Possible agreements between UP or SP and TMM/KCS to extend existing agreements with Ferrocarriles Nacionales de Mexico (FNM), the Mexican railroad authority, would help consolidate the current state of train systems operated by either UP or SP.

The Northeast Railroad is considered to be "NAFTA's railway". The Kansas City Southern (KCS) is planning to operate from Chicago to Laredo, based on its railway use and hauling agreements with Union Pacific (UP) and the possibility of purchasing Gateway Western (GW) (operating between Kansas City and Springfield, IL). This would connect KCS with Chicago, thanks to the hauling agreement between GW and UP. It is of great significance that Kansas City Southern also has connections between the ports of New Orleans and Houston and Laredo, thus outlining the possibility of a binational port/railroad system similar to the high operation scenario of the port of Ensenada.

The structure of the Mexican railroad cargo traffic can be changed according to the efficiency offered by the two north-south connection lines (North Pacific and Northeast). This would mainly affect the cargo operators using Los Angeles/Long Beach as their port of entry for cargo bound for Bajio and the Valle de Mexico, and hence the importance of railroad crossings. For example, El Paso/Ciudad Juarez could attract part of Laredo/Nuevo Laredo's traffic depending on the cargo's destination.

Trucking companies now operating between Nuevo Laredo and Valle de Mexico may be dramatically affected by changes in railroad operation policies (and, certainly by their expected level of greater efficiency). They could be eliminated if cargo is hauled by railroad to the interior of Mexico or is sent by railroad all the way from its Mexican point of origin. If these carriers do not reorganize themselves by joining multimodal or piggyback systems, or redesign their market to shorter-distance deliveries, they stand to lose business and may even cease to exist.

The new private railroad companies in Mexico will be competing for market share. Companies will be vying for a share of the market especially in the high plains area of Mexico (Aguascalientes, Leon, Irapuato, Queretaro and Valle de Mexico, which includes the industrial areas of Toluca and Cuernavaca). Agreements will be required between TMM, (Northeast railroad's principal partner) and the North Pacific Railroad that will operate the most important commercial ports on the Pacific coast (Manzanillo, Mazatlan, and Guaymas). In contrast, TMM is not only the operator, but also the owner of the Manzanillo container terminal.

The current pattern of railroad traffic in the borderland (see Table 6.16) shows that Nuevo Laredo/Laredo is the busiest railroad port of entry, especially for industrial cargo transportation.

Table 6.16
Movement of Traditional Industry Cargo by Railroad in Selected Ports of Entry at the U.S.-Mexican Border (thousands of US dollars)

	1993		1994		1995	
Port of Entry	NB	SB	NB	SB	NB	SB
Nogales-Nogales	49,271	42,386	12,946	36,215	74,419	35,464
El Paso-Cuidad Juarez	29,099	90,811	33,304	102,637	49,147	92,767
Laredo-Nuevo Laredo	165,168	1,699,958	236,356	2,037,966	366,515	1,632,143

Source: Cases analyzed in this Study (see Task 9).

These three ports of entry are served by the two main railroad lines privatized by FNM; namely, the North Pacific railway through Nogales, and Ciudad Juarez and the Northeast through Nuevo Laredo. By way of comparison, the Table 6.17 below shows that motor transportation (trucks), at least based on cargo value, continue to be the most important mode of transportation.

As long as the relative efficiency between railroads and trucks in Mexico is maintained, it is to be expected that the current pattern of distribution of cargo by mode of transportation and port of entry will continue, with some minor adjustments resulting from changes in the regulations.

However, railroad infrastructure investment needs for the border area cannot be foreseen with any degree of certainty. On the one hand, it is necessary to wait for eventual mode adjustments to take place. On the other, if the foreseen competition between the two Mexican railroads actually does take place, this will also entail competition between the ports of entry, in particular, El Paso-Ciudad Juarez and Laredo-Nuevo Laredo.

Some probable scenarios are presented in Table 6.18 based on key milestones occurring in the railroad sector and the reaction provoked in other modes of transportation. These scenarios are not to be construed as forecasts, given that there are many more financial, political, and business factors that are not taken into account. However, they do help to form a picture of the system–enough to conclude that, at least in the short term, it is not possible to anticipate the infrastructure and equipment requirements for the transportation sector in the borderland. In order to draw firmer conclusions and evaluate the effects of NAFTA's implementation, it is necessary to learn about the development plans proposed by the buyers of the railroad companies.

Nevertheless, these scenarios should help to initiate an ongoing process of analysis and assessment, as part of the planning and programming process to be implemented.

The key factor in railroad cargo transportation is to increase efficiency on the Northeast railway. TMM/KCS is planning to make investments and implement operational policies to this end. The following are the most important actions to be taken initially:

Table 6.17
Movement of Traditional Industry Cargo by Motor Carriers (Trucks) Through Selected Ports of Entry at the U.S.-Mexican Border (thousands of US dollars)

	1993		1994		1995	
Port of entry	NB	SB	NB	SB	NB	SB
Nogales-Nogales	49,271	42,386	12,946	36,215	74,419	35,464
El Paso-Cuidad Juarez	113,778	1,306,528	120,200	1,405,200	325,824	1,124,592
Laredo-Nuevo Laredo	1,565,691	10,950,182	2,096,345	12,867,969	2,735,457	8,335,343

Source: Cases analyzed in this Study (see Task 9).

Table 6.18
Development Scenarios of Railroad Traffic in the Northern Border

Event Occurring in Transportation Infrastructure and Operation	KCS Buys GW Railway	The North Pacific Railroad is Competitive in the Mexican High Plains Destinations	NAFTA's Commercial Deregulation Progresses
The efficiency in the Northeast railroad increases.	There may be a change in mode share of transportation in Nuevo Laredo from truck to railroad. Intermodal facilities could be eliminated in Nuevo Laredo/Laredo	There may be changes in railroad traffic at the ports of entry.	There would be an increase in cargo volume on trains with no customs inspection at the border.
Mexican trucking companies do not modernize their equipment and operation systems.	Trucking companies would be in serious danger of going out of business.	Ciudad Juarez- High Plains logistics chains would be established. New intermodal terminals are developed.	
The Tampico-Altamira system postpones modernization.	A Houston-Nuevo Laredo port/railroad system may be established.		

Source: La Empresa.

- Building and expansion of sidings.
- Repairing locomotives (371 units, average age 13.5 years old).
- Modernizing the hauling equipment (at present, grains are carried in crates and containers are often carried on platforms).
- Establishing a marketing program and high-quality operational procedures.

Increasing personnel productivity (fewer but better paid and better trained staff).

These measures have very concrete objectives:

- Increasing the speed to 65 mph in trains and to 55 mph in other services.
- Increasing sales from 351 million to 941 million dollars within five years, by increasing the market, since the business plan does not provide for rate changes.
- Increasing the railroad's current share of the cargo market by 20 percent, assuming (based on 1995 data) that 10.8 million tons of truck-carried cargo and three million tons of maritime cargo can be trans-shipped to trains.

Table 6.19 shows the level of investment anticipated in the Northeast Railroad over the first three years of modernization. Other major assumptions of the business plan are:

- Growth of foreign trade (in particular with the United States) by 14% per annum.
- A 25-to 30-percent increase in motor transportation rates.

Table 6.19
Investments Foreseen for the Northeast Railroad

Year	Capital investment (millions of U.S. $)
1	227
2	178
3	160

Source: Railway Age, January 1997.

Progress of the North American Free Trade Agreement

During the first year of execution of the North American Free Trade Agreement (NAFTA), the Mexican peso crisis created a less-than-favorable environment to assess the long-term effects of the agreement and show its effect in a typical setting. There are two views regarding trade evolution during the 1994-1995 period:

- NAFTA was an additional factor affecting the financial crisis.
- NAFTA did not contribute to the crisis, but it did change the trends and direction of trade flows between Mexico and the United States.

Most analysts agree with the latter, basing their opinion on foreign trade figures during that period. Mexican exports to the United States grew 20 percent in 1994, while its imports grew 17 percent which helped reduce Mexico's trade deficit (trade deficit was indeed one of the trigger factors for the crisis). A significant portion of the Mexican industry made adjustments in their markets and production systems switching to more outward bound activities. This is evidenced in the trade balance adjustments, where 73 percent was attributed to exports and only 27 percent was explained by decreased imports. The United States and Canada absorbed 82 percent of the 1995 Mexican exports. However, only 17 percent of import reductions came from North America, compared to 32 and 36 percent from Asia and Europe, respectively. Tables 6.20 and 6.21 show the changes in Mexican trade balance.

Table 6.20
Mexico's Trade Balance with North America

Adjustments	Billions of U.S. $	%
Offsets in the balance of trade	25.6	100
Increased exports	18.7	73
Decreased imports	6.9	27

Source: CEESP estimates with BANXICO's data.

In conclusion, the severe adjustment of the Mexican economy in 1995 was not a negative factor to trade, but it influenced the characteristics of merchandise flows and, therefore, of chains of transportation. This fact should be seriously considered in anticipating new investments in transportation infrastructure.

Table 6.21
Commerce Between Mexico and the United States and Canada (billions of dollars)

Bilateral Trade	1993	1994	1995
Mexico-United States	89.6	106.5	120.2
Mexico-Canada	2.7	3.1	3.4

Source: CEESP's etimates with BANXICO's data.

In the case of the maquiladora industry, the number of plants grew from 2,143 in 1993 to 2,500 by the end of 1996. The industry's accrued export value increased 69 percent. The number of workers increased by 46 percent. Even though these increases were likely due to the dollar decrease in Mexican labor wages and in other local inputs, it should be kept in mind that NAFTA will allow maquiladoras to place their products on the Mexican market for the first time by the year 2001. This constitutes an incentive. This agreement is of major importance to anticipate the flow of goods from the border maquiladora region toward the center of the country.

6.4.2 Legal Framework for Transportation Investment in Mexico and the United States

Legal Framework in Mexico

The Constitution of the United States of Mexico is a form of Magna Carta for the Mexican Republic, laying the bases of the organization and government of the Mexican Federation. The federal legal regulations and the political constitutions of the states of the Republic, which form the basis for state-level legal provisions and regulate municipal institutions, are all established according to the principles of this organic law.

Cross-border transportation of goods and persons between Mexico and the United States is conducted on general roads and highways which are subject to federal legal regulations and, in some cases, on urban roadways that are subject to local legislation. Nevertheless, funding of infrastructure projects for these roads and highways and funding for provision of services on such roads and highways may come from public and/or private funds, subject to legal regulations at one or more government levels (federal, state, and local). By the same token, all these regulations are consistent with the North American Free Trade Agreement.

Hence, the legal framework regulating (public and/or private) investment for cross-border transportation between Mexico and the U.S. is made up of provisions at the three levels of government.

Federal Regulations in Mexico

The aforementioned public federal investment is regulated by federal laws related to revenues, expenditures, and national debt, as well as laws related to the organization and operation of the centralized and semi-state Federal Public Administration (APF). In turn, participation of the private sector in the funding of infrastructure projects for general highways and the investment for transportation services on those highways is subject to federal laws related to all modes of transportation, transport operators, foreign investment and the entry of foreign business people to Mexico.

<u>Federal Regulations Governing Public Investment in the Transportation Sector</u>

This group includes the following laws and regulations:

- Organic Law of the Public Federal Administration and its provisions
- By-laws of the Secretariat of Communications and Transportation
- Federal Semi-state Agencies Act and its provisions
- Budget, Accounting, and Public Expenditure Act and its provisions
- Federal National Debt Act
- Expense Budget of the Federation

This group of laws and regulations establishes, among others, those provisions governing the organization and operation of federal public agencies and institutions in charge of :

- collecting, administering, and expending public funds,

- regulating the participation of the private sector in federal transportation investments (through the Secretariat of Communications and Transportation, SCT), and
- establishing provisions for expending such public funds and those related to national debt (through the Secretariat of the Treasury and Public Credit, SHCP).

In keeping with these provisions, federal public expenditure must proceed according to an annual budget prepared on the basis of programs that, in turn, follow the guidelines of national plans for economic and social development. Every agency or institution of the APF prepares a draft budget of expenses; based on these drafts, the SHCP develops the draft Expense Budget, which once approved by the Federal Congress, becomes the Federation's Expense Budget (PEF). The PEF assigns annual allotments for each one of the agencies and institutions of the APF, and for states and municipalities. Each agency or institution has administrative units in charge of managing the assigned annual budget following the procedures established by the respective regulations.

Other Regulations Related to Federal Public Investment

As provided for in the Budget, Accounting, and Public Expenditure Act, the Federation's Public Budget or PEF is contained in a decree approved by the House of Representatives every year. This PEF is based on the draft Expense Budget prepared taking into account projected federal revenues for each year. Legal regulations governing federal public revenue are the Value Added Tax Act and its provisions; the Income Tax Act and its regulations and complementary provisions; the Property Tax Act and its provisions; the Federation's Tax Code and its complementary provisions; the Federal Charges Act enacted for every fiscal year; and the Revenue Act, also enacted for every fiscal year. These enactments establish all federal-level taxes, charges, duties, contributions, fees, etc., that make up the Federal Revenue Service (Hacienda Publica). Another law is the Federal Tax Coordination Act, governing the procedures to be followed by states and municipalities in order to obtain a share of the federal revenue.

Federal Regulations Governing Private Investment in the Transportation Sector

As part of the process of privatization and encouragement of private-sector participation in the transportation sector started in Mexico several years ago, the General Communication Modes Act (LVGC, for its Spanish acronym), enacted on February 19, 1940, has been amended as a result of other legislation and regulations promoting private investment. These regulations include:

> The Federal Roads, Bridges, and Motor Transportation Act (Dec. 23 1993); the Federal Motor Transport and Related Services Regulations (Nov. 23 1994); the Regulations on weights, dimensions, and capacity of motor vehicles transiting on federal roads and bridges (Jan. 26 1994); the Regulations on cargo terminals (Jan. 5 1993); the Railroad Service Regulations Act and its provisions (May. 12 1995 and Sep. 30 1996); the Ports Act and its provisions (Dec. 22 1995); the Navigation Act (Jan. 4 1994); the Civil Aviation Act (May. 12 1995); the Airports Act (Dec. 22 1995); and the Federal Telecommunications Act (Jun. 7 1995).

As a whole, these enactments repeal the provisions of the LVGC Act in the area of competency. These regulations establish the provisions governing private investments in transportation, and in some cases even public investment, e.g., concession contracts awarded to state and/or municipal governments. Conditions for awarding concession contracts and permits and for setting fees are established; similarly, concession contract and permit terms, as well as restrictions to foreign investment are also provided for.

In accordance with this framework, concession contracts have terms ranging from 30 to 50 years that may be extended for up to a similar term (or terms, as is the case with airports and civil aviation). A trend has been noted in legislative reforms to extend these terms to facilitate private investment. Permits, generally granted for provision of services, sometimes have a fixed term, and sometimes they

have variable or indefinite terms, according to the type of service. In any event, they are related to repayment terms resulting from the investment amounts required for rendering such services. By law, both concession contracts and permits are bound by financial provisions.

There are other complementary provisions related to the private sector's participation in the provision of transportation services, such as the agreement establishing the mode of federal motor transport services for cargo movement through border crossings and in the 20-km strip running parallel to the international borderline in the northern states of the Mexican Republic (a temporary accord), and the regulations governing the use of easements in federal roads and adjacent areas.

As mentioned before, foreign investment in transportation is also regulated. The federal legislation which governs it includes:

> the Foreign Investment Act; the Regulations of the Act promoting Mexican investment and regulating foreign investment (in force while regulations for the former are issued); the Population General Act and its regulations; as well as some complementary provisions such as Circular number RE.-1 describing the rules that will govern the temporary entry of business persons, in conformity with NAFTA.

The Foreign Investment Act establishes a limited participation of foreign investment which gradually ceases to be so, according to the same provision, either on a permanent basis or through a favorable resolution issued by the National Commission for Foreign Investment (CNIE). Under the Population General Act, special conditions are granted to foreign investors to enter and remain in the country, thus demonstrating the open attitude of the government of Mexico to facilitate foreign investment.

State and Local Regulations in Mexico

In the case of states and municipalities, public investment in transportation is generally regulated by laws similar to the federal legislation. In the legislation that encompasses the three jurisdictions, agreements for joint participation by the three levels of government are provided for; in other words, there is a legal basis for joint public investment in transport projects.

With respect to private participation in the funding of state roadway infrastructure projects and related services, state legislation is available, although its scope is not as broad as that of federal legislation.

State Regulations Governing Public Investment in Transportation

As is the case at the federal level, the northern border states have enacted laws to regulate public investment in transportation. From six to ten regulations were found in each Mexican border state, and it was noted that the official names of their laws–which are equivalent to federal laws–change from state to state.

These regulations include laying the bases for the organization, integration, and operation of the centralized and semi-state State Public Administration (APE), as well as the centralized and semi-state Municipal Public Administration (APM) for each state. These laws also include regulations on (1) procedures to prepare the Expense Budget and the Government Accounting, (2) the exercise, inspection, oversight, and assessment of the state and municipal public expenditures (3) the terms and requirements for contracting, registering, regulating, and controlling credits from states and municipalities and (4) the integration of state and municipal public revenue.

Just as in the federal level, state and municipal public expenditure must be based on annual budgets resulting from programs created by national, state, and municipal economic and social development plans and policies. As far as the APE is concerned, different agencies (whose name changes from state to state) are in charge of preparing annual expense budgets, calculating state revenues, approving finance and credit programs, preparing the schedule for state public expenditure, collecting state taxes, executing the expense budget, overseeing the proper application of these provisions, and the

management of the funds granted by the federation to the states and those given by each state to its municipalities. Semi-state agencies are also grouped in sectors coordinated by a branch of the state government designated to this end. The State Expense Budget is the one contained in a decree approved every year by the State Legislature at the initiative of the Governor; this budget assigns funds to APE agencies and institutions and to municipalities.

The State Legislature approves state and municipal finance programs and authorizes debt amounts for funding the states, the municipalities, and agencies of the state and municipal public sector. Likewise, it can authorize that additional debt be assumed above and beyond the level set forth in finance programs when special circumstances so warrant.

Within the municipal organization, the City's Treasurer provides the City Hall with data and information necessary to prepare the Expense Budget and the Municipal Revenue Bill. The State Legislature enacts the revenue bills and the credit projects affecting municipal revenue. The City Hall approves expense budgets, at the initiative of the Mayor. There is a municipal agency in charge of overseeing the execution of operations by semi-state agencies and institutions. At municipal level, the State Governor is the channel to negotiate agreements and contracts with federal, state, and municipal governments, as well as semi-state agencies.

By law, states and municipalities can only issue state and municipal bonds payable in national currency and within the national territory, with prior authorization of the State Legislation.

State Regulations Governing Private Investment in Transportation

This type of legislation was found only in the states of Sonora, Chihuahua, and Coahuila. In the case of Sonora, the State Commission for Assets and Concession Contracts, under the State Government, was created through the Finance Department to deal with matters related to the state's highway system (including roads and bridges within the state's jurisdiction and its related services). These matters include the construction, improvement, conservation, and use of state roads and highways; awarding, interpreting, and enforcing concession contracts or permits; entering into agreements with federal or municipal governments; approving, reviewing, or revising fees, distance tables, classifications, and, as a whole, all documents related to road usage.

The Sonora Transportation Law governs the provision and oversight of the state's public and private transportation services. Though this law, these services may be concessioned out to private companies.

The State of Chihuahua has enacted the Transportation and its Communication Modes Law regulating local roads and transportation services, urban and semi-urban transportation routes for passengers and cargo in the state municipalities, and organizing and controlling such transportation. In accordance with this law, the private sector can participate in the construction of infrastructure and provision of services governed by same.

In conformity with the State of Coahuila Transit and Transportation Law and its regulations, the private sector is entitled to provide public transportation services in this state.

The Organic Law of Municipal Public Administration of the State of Nuevo Leon establishes that public transit and transportation services in the municipalities of that state are not to be concessioned.

Conclusions on the Legal Framework in Mexico

Cross-border transportation takes place basically on general communication modes that, as such, are under federal jurisdiction. Where highways are connected to an urban area, they usually become local jurisdiction roadways. State highways complement federal highways for purposes of cross-border transportation.

The legislation governing public investment in transportation, at the three levels of government–federal, state and local–consists of similar laws and regulations dealing with procedures to collect, manage, and spend funds. Furthermore, most public resources allotted to transportation, regardless of their jurisdiction, come from the federal budget, either directly through the SCT and its semi-state agencies (the larger contributions) or indirectly through budget allocations to states and municipalities.

Legislation governing private investment in transportation is basically federal, since states work within a smaller legal framework whose scope regarding state highways and transport services has little influence on cross-border transportation; no transportation legislation was found in border municipalities, except for state legislation. As a whole, this legislation is aimed at attracting more private investment, and to this extent it continues to be modified.

Legal Framework in the United States for Transportation Investment

Public funding for transportation in the United States is generated and implemented at four levels:

- Federal
- State
- Local (cities, counties)
- Special district or authority

Metropolitan Planning Organizations, MPO's, are not included in the previous list. MPO's are not executing agencies; they do not build or operate transport facilities. They provide planning and scheduling for urban areas of more than 50,000 inhabitants, including plans for developed areas, prioritizing, as well as annual and longer-term scheduling (see Task 4 report). For purposes of this report, MPO's are not included separately. However, they do have a role in scheduling of transportation investments in urban areas with populations over 50,000.

The federal government distributes almost all its highway and transit funds to the states. The states are in charge of executing projects. The federal government implements very few projects, except for those in federal areas, through programs other than those where states receive funding. All other executing agencies obtain funds and spend them in project implementation.

Federal

Congress enacts budgets and fiscal year appropriations to finance transportation projects (either on an annual basis or for multiple-year terms). The United States Department of Transportation (USDOT), as the administrative agency of the federal government, proposes the budget and appropriations. Although they have changed over the years, budgets and appropriations are typically a mix of formula-allocated and discretionary funds to finance road infrastructure and transit projects. Congress may approve a budget and appropriations that may or may not reflect requests made by the USDOT. Once Congress approves the budget or appropriation it goes back to the President for his approval.

Most federal funding for highways and transit comes from a trust whose funds are derived from federal gasoline taxes. Almost since its inception, the federal gasoline tax revenue has been deposited in a trust fund for use on roads and highways (and more recently in transit projects). However, in recent years, a portion of this revenue was used to reduce the deficit. The current Congress is considering allocation of this deficit-reduction tax to the transportation trust.

In the past, the federal transportation budget has consisted of trusts and general funds. Usually, highway funds have come from the trust, and general funds were allocated to transit projects. Transit projects also receive a portion of the trust.

The federal highway and transit budget must be fundable through projected revenues. In general, annual appropriations follow the budget, but in recent years they have tended to be less than budgeted in long-term transportation funding enactments. This is an option available to the Congress.

As part of Congressional budgets and appropriations, funds are approved for each one of several program categories. Some are distributed to states using a formula; others are discretionary funds; most funds require local matching; in other words, a percentage of total funds must be paid by the states or local agencies.

At the date of this report, the next multiple-year budget was being debated in Congress. Apparently it will follow the same general form as prior budgets, but it will likely include some differences compared to the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 which contained the federal budget for the past six years.

Funds allotted by Congress are administered through the USDOT. FHWA administers highway funds and FTA administers transit funds. Both administrations cooperate to insure coordination in financing multimodal projects.

States

State legislatures have authority to obtain and allot transportation funds. All states have gasoline taxes and transportation trusts. General state funds are also used for transportation projects.

State legislatures enact both transportation taxes and budgets. Most transit funding comes from federal or local sources; most states contribute very little funds for transit projects (local agencies contribute almost all nonfederal funds). State transportation funds are used primarily for highway projects.

State departments of transportation (DOTs) typically submit annual and three-year (or multiple-year) budgets to the state legislatures, once they have been approved or recommended by the state transportation commissions. These budgets usually include a list of projects to be financed, as published in the State Transportation Improvement Program (STIP) encompassing at least all the projects involving federal funds (states also have separate lists of project which do not have federal funding participation). Funds allotted to MPO area projects also have to be included in the respective MPO TIP if they involve federal funds. State legislatures approve the budget, including federal funds and local funds which may apply, and then they allocate state funds. Just like the federal government, states normally fund on the basis of payment according to progress.

The state DOT's administer the federal and state funds and execute budgeted state projects. As a result of the complexity and sometimes unpredictable lead times of many projects or programs, transfers can be and are made between funded projects. Funds are applied by states to their own projects, or they may be transferred to local agencies for execution of jointly funded projects; for the latter, agreements are entered into between agencies.

Local

For purposes of this study, cities and counties represent the local level in the four U.S. border states. Special authorities and transit agencies are discussed later. Local entities may receive federal and state funds through the state, either directly or through an MPO, if available. Most of these entities only have highway programs under their jurisdiction. However, some (usually cities) also operate transit programs.

City and county legislative bodies enact their taxes and budgets, usually based on requests by departments in charge of enforcing transportation codes. However, the state legislature sets forth the types of taxes that may be collected and the types of transportation projects that local agencies can develop. For example, states and local agencies have to be empowered by legislation to sell bonds to build toll roads. This procedure takes different forms in the four border states.

MPO plans and TIPs include all local projects using federal funds. For federal funds to be assigned to local projects, they must be included in the approved long-range plan and in the current TIP. When a project with allotted funds cannot be completed as scheduled, both plans and TIPs may be modified during the year. This gives flexibility in the use of approved funds if the MPO agrees.

Local entity funding varies significantly. Virtually all cities and counties use general funds for transportation. Some have special taxes. Almost all local entities sell general obligation bonds that allow them to execute larger projects or programs more expeditiously. Local entities have a ceiling for debt obligations. That debt ceiling also applies collectively to other types of projects (for example, sanitation, water supply, parks, etc.).

Special Authorities

In addition to the aforementioned mechanisms, special transportation authorities exist to develop specific functions and/or projects. These include toll road authorities, transit authorities, special transportation districts, and special improvement districts (that may be put in charge of transportation projects). There is a broad range of special authorities and many different funding and operation structures; many are very creative and can be tailored to meet specific needs or find financing opportunities. The following description covers the more common characteristics, but given the number and variety of special authorities, some may not be adjusted to this description.

Special authorities can be created at state, county, or district level, or in a combination of these levels. Special authorities have to be empowered by state legislation. This legislation may encompass the whole state or it may be more specific, encompassing only some jurisdictions with certain characteristics.

The legislation that empowers them usually describes what agencies of a certain type can and cannot do, and what their permitted sources of funding can be. It also specifies the level of government where the agency is to be located and what types of projects or services it may provide. This is the source of the power of a special authority to dictate its own funding sources and programs, in accordance with the provisions of the legislation and any additional requirement established by the jurisdiction where it operates. In most cases, taxes must be approved by vote or by other level of government (city, county, state).

Some special authorities can receive federal, state, or local funds if their projects/programs meet regular eligibility requirements. They must follow the same process as other agencies follow for TIPs, STIPs, annual budgets, etc., as applicable.

Special authorities have their own annual and long-term programs approved by the authority's board of directors or commission. They are also subject to fund availability. The budgets of certain authorities must also be approved by a higher-level agency overseeing the operations of said authorities.

Common funding sources of special authorities are federal or state funds, general obligation and revenue bonds, sales taxes, gasoline taxes, toll revenues, environmental impact taxes or fees, special benefit assessments, and property taxes.

Public-Private Association

In addition to public funding, it is also possible to use private-sector funds to finance transportation projects, either separately or jointly with public agencies. The private sector has built and operates toll bridges across the two international borders of the United States (for example, the B&M Bridge in Brownsville; the B&PBridge in Progresso; and the Rio Grande City-Camargo Bridge). These are

associations between private owners from the United States and the Government of Mexico.[19] Among the four border states, California recently awarded a contract to the private sector for developing toll roads in some routes. Access routes were financed with public funds.

States are empowered to grant loans for toll (and no toll) projects with flows of allocated revenues, in accordance with the loan provisions under section 1012 of ISTEA.[20] Federal funding may also be included in toll road projects, although it is not clear if this can be done in a public-private association.

Special improvement districts and similar agencies can be established with revenues generated from property taxes to help fund transportation projects. Thus, the private sector is levied taxes to pay for its portion of the project. This calls for the creation of a geographic district that will benefit from the project. Along the border, this could include industrial/warehousing/distribution districts related to border area businesses and manufacturing industries.

Public-private associations may take different forms. For instance, it is not uncommon that the private sector be granted easements, with or without additional benefits to the owner. These associations may include entitlements to additional development, access, or other stipulations. Perhaps the greatest incentive for the private sector is to have a say in the location of a given project for its own benefit. By participating in the new project, the private company can manage to have a project be located on the most advantageous site for purposes of its own business. The private sector has also participated by paying for environmental studies or designs to expedite scheduling.

Given the shortage of transportation infrastructure funds and the significance of these funds for commerce, public-private associations can solve their restrictions in innovative ways. Ingenuity and creativity often play a major role in these associations. Some of the issues to be dealt with include tenancy (typically, public funds cannot be used in privately owned projects, except as loans), control, and standards to be complied with (engineering, operation, etc.).

Applicability in Borderland and Binational Projects

Federal, state, and local funds are applicable to almost any major project required for binational commerce-related transportation. So can the other less traditional types of financing described in this section. These are mechanisms available in the four U.S. states.

Binational projects can use the same funds. Legal requirements are greater because of the need for diplomatic exchanges between the United States and Mexico, as well as agreements between financing and operational agencies in both countries.

Privately owned transportation infrastructures and public-private associations are common in Mexico. This could facilitate the use of this option for binational projects.

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[19] *Texas-Mexico International Bridges and Border Crossings, Existing and Proposed*, published by the International Relations Office, Texas Department of Transportation, Austin, Texas, February 1997.

[20] *Rebuilding America: Partnership For Investment*, Publication FHWA-PL-96-001, Federal Highway Administration, Washington, DC, October 1995, p.7.

6.5
Investment Strategies For Improving Binational Transportation

With more transportation funding needs than there are funds available, it is both advantageous and necessary to make the best use of the available funding resources. This means both effective use of available funds and increasing the amount of investment by leveraging government moneys. This chapter presents several principles which can be used in the border area to gain the greatest possible transportation benefits from transportation investments.

6.5.1 Make Best Use Of Available Funds

The following investment principles can help gain the most benefit from available funds:

Use Systems Approach

The entire border area transportation network of transportation infrastructure should be viewed as a system. All major routes should function as a single continuous system at a consistent level of service.[21] For example, (binational) routes serving trucks should be provided with relatively consistent level of service throughout the various segments on the routes. Capacity variations should be responsive to demand.

As routes are improved, investments should bring the entire route up to the same level of service or demand/capacity level. Investments which provide higher or lower levels of service will be inefficient operationally or functionally as well as financially. Why spend money at a location if there may still be a capacity constraint nearby that will not permit the new section to operate up to the level of the rest of the highway?

A way to develop this type of systematic approach to a national or binational system or route is to perform a capacity analysis on all segments under consideration. All segments should have a similar level of service for the year being addressed. Those which do not, whether it is within a border crossing station (see Task 13 report for analysis details) or on a highway or road, can be improved to the same capacity or level of service.

However, a systematic approach can be applied not only to planning, but also to evaluation needs, programming projects, and system operation. These can directly affect binational projects. This principle involves little more than merely considering all of the parts of one route or system to be a single element of the transportation system that needs to function as part of a system.

For example, assume that available funds can pay for only five kilometers of projects. Three projects are offered for funding: (1) five kilometers on a main truck route to the POE, (2) segments on three different secondary roads which go in different directions, or (3) one border station access road, one bridge widening, and one automated vehicle identification installation distributed across the state. Which one should be funded?

Project #1 is on a truck route to the border and is continuous. An analysis might show that the road can be brought up to level of service C for 15 kilometers if the 5 kilometer section is improved. Project

[21] Level of service is defined as a measure that characterizes operational conditions within a traffic stream and the perception of that operation by motorists and passengers. For more detailed discussion, see *Highway Capacity Manual,* Special Report 209, Transportation Research Board, National Research Council, Washington, DC., 1994.

#2 will leave all three roads with improved but inconsistent service levels. In addition, the project would not likely help binationally since the three roads are minor and do not serve any binational movements. Project #3 might produce benefits, but not apparently to improve a continuous system. For this example, Project #1 best meets system needs and could probably produce the most effectiveness.

Binational routes and border crossings can have their efficiency maximized by considering each country's transportation system segments as if they are one system. A comprehensive application of this approach would include considering, where appropriate, methods for using funding available in one country to fund improvements in the other country to maximize the overall capacity (efficiency) of the cross border transportation corridor. In this report one example cited of such cross border funding is where the Texas Turnpike Authority funded improvements to a connecting roadway in Mexico. This type of funding does require special institutional considerations and may require special legislation. By using the system approach and investing where benefits can be maximized the effectiveness of investments will be improved.

Focus Resources On Improvements That Will Improve System Capacity And Operations

Use the available resources where it will make a system work better, rather than just an isolated segment. Eliminate bottlenecks so existing underutilized infrastructure can be put to work on behalf of the transportation system. This is like making 1 + 1 = 3. Make important pieces work, especially where it will leverage additional transportation capacity which may be currently unused or under utilized in another part of the system.

Maximize Efficiency of Existing Infrastructure and Operations Before Building More

Many existing transportation facilities can be improved at relatively small costs compared to building new roads, bridges, and other facilities. Roads may be provided capacity increases through intersection improvements, passing lanes, etc. Operational improvements or increased technology can also boost capacity. Even institutional changes can result in increased utilization of existing facilities. Hence, it is suggested that funds may be conserved if the existing facilities and services are evaluated to see if operational or minor capital improvements can meet needs before committing to the major investments.

Coordinate Plans And Programs

From the beginning, the transportation facilities and services in the border area will be more effective if planned as a system. Each component should have a specific purpose and function which contributes to the overall system. Any part that does not meet those requirements would logically have low priority for investment.

Scheduling of projects for implementation should consider not only the potential benefits of the project, but also how it relates to the rest of the transportation system in the area. There is no sense in improving one segment if the next one will remain capacity constrained. Programming will lead to the most effective use of funds if done systematically focusing on the resulting needs and functional effectiveness of the resulting improvements. This should be a consideration of the individual agency programming processes and coordinated binationally.

6.5.2 Increase Funds Available

All governmental units attempt some kind of geographic distribution of funds across their jurisdictions. Some funding is also available on a purely discretionary basis from state and federal sources. Most funding that will be available from U.S. state and federal resources have statewide allocation totals.

Some states allocate funds to smaller geographic units by formula or have ceiling limits. However, there is flexibility within most state allocation processes to enable areas with greater need to obtain additional funding. Local funds are normally allocated by need with some consideration of geographic distribution.

One of the ways to enhance the transportation improvement programs in the border area is to seek additional funds or funding shares. The following are some approaches to increasing border area funding.

Seek Discretionary Funds

In the United States there are discretionary or special purpose funds at federal and state levels in addition to program category funds. By finding special programs that are applicable, additional funds may be brought to the border area. For example, the proposed federal transportation funding being considered to replace ISTEA may include a category specifically for use along the border. If such funds could be secured for an area, it would add to the funds which might be available by formula or other state allocations. Discretionary funds can be attracted by demonstrating needs and potential benefits. Systematic programs for transportation system improvement will usually give the most benefits for the costs. These programs should draw support for discretionary funding.

Seek Demonstration Projects

In the United States there is a category of funding called demonstration projects. Over time these have had a number of connotations. However, the important aspect of demonstration projects is that they are discretionary and are supposed to test a new transportation concept or application. This type of funding opportunity may be applicable to a variety of binational projects which attempt to increase border crossing efficiency. The new concepts, technology, and applications could be attached to other (needed) improvements to test effectiveness and create another potential funding source.

Encourage Use Of Private Sector Funds

Another way to increase available funds in the area is to search for other sources not currently available for the project. Chapter 6.3 identified many different funding sources. These may even be use to leverage existing state and/or federal funds. Depending on the funding mechanism, additional legislation may be needed or merely a decision to use the mechanism must be made. Private sector funds seem to be popular for border crossing projects and toll roads. The private sector can also purchase bonds to help finance projects. Some private sector entities are also willing to design, finance, build, and operate transportation under certain circumstances. Franchises or concessions are available under the design, finance, operate, and maintain arrangement. This is another way to obtain private sector participation in funding effectively increasing available funds.

Another potential source of private funding is development agreements. In many cases private developers are willing to make cash or other contributions to pay for transportation projects (or parts of them) in order to either benefit their project or to merely gain development approvals. They may also pay for environmental or design work to expedite it or supplement funding.

Use More Non-Traditional Funding Sources

Most projects and services are paid for with government funds collected from various taxes and government-levied user fees. However, many other sources of funds exist; they are described earlier in this report. Some are not often used because they may give government less control over facilities than they wish to have (for example, private toll roads). Other methods may require special legislation, sponsorship, or oversight which can not always be provided (for example, special improvement or

road districts). Some may not be trusted politically (for example, a design-finance-build-operate-leaseback). However, each has a place and can be used to expand available funding for transportation infrastructure and services.

Binationally, the United States and Mexico can develop projects using combinations of funding techniques which are legal in the respective countries. The same sources do not have to be used. Hence, the issue becomes timing of fund availability more than which funds can be used.

Partnered approaches can also be used for binational projects. Partnerships between U.S. and Mexican entities can be formed to enable a single entity to build and operate a transportation facility which crosses the border. Funds can be raised by any means the venture may have available in either country. This can be either public, private, or a partnership between the two.

Non-traditional funding has the greatest potential for expanding the funds available for transportation, especially for major routes where traffic could generate enough revenue to pay the costs. This may require the transportation agencies and governments to make the primary transportation routes available for toll-type projects. Lesser routes could be funded with other types of funding such as developer/land owner contributions, special districts, etc. More traditional funds could be reserved for routes where other funding sources could not be applied or found.

Provide Incentives For Investing In Transportation Systems

There are several types of incentives which can attract investments to transportation projects. Some are for users and others for financial investors.

User incentives can include:

- travel time savings--may attract other agencies, users (pay tolls), developers, land owners, industry, shippers and shipping related business
- transportation accessibility--may attract land owners, developers, businesses, special improvement districts, road districts
- reduced conflict with existing land uses or other activities--may attract local agencies, special improvement districts
- improved technology to reduce cost and /or time for crossing border--may attract users, businesses shipping across border, shippers, inspection agencies

If these groups can be shown benefits, they may be convinced that investments in a portion of the transportation system can return financial or other benefits. For example, the Sinaloa Growers Association has put into operation an agricultural inspection station south of Nogales to have its produce inspected and sealed in bond before it reaches the border. This saves time and money which will be enough to more than cover their investment in the inspection facility. Another example is at the Ysleta-Zaragoza Bridge in El Paso, where a user fee is charged at the Mexican compound to recover the costs for recent improvements.

Investor incentives may include:

- Profit--will attract a variety of investors
- Reduced risk (government backs shortfalls with other revenues)--will increase attractiveness to (revenue bond) purchasers/investors
- Tax benefits--will attract those who can receive the benefits, either direct investors or ultimate bond purchasers
- Improved cash flow--may expand the number of entities which can consider the projects

- Low(er) cost loans--may expand the number of potential investors by making project financing more viable
- Subsidies or partnering--will attract more investors as long as the conditions for public agency participation are not onerous

6.5.3 Conclusion

There are numerous ways to increase investment in and improve the effectiveness of existing funds for binational transportation projects. There are few restrictions imposed on binational projects that would not otherwise apply other than the need for international agreements. Even this can be addressed by merely coordinating individual projects located across the border from each other. This can be done through the binational transportation planning and programming mechanism that the JWC will establish in 1998.

APPENDIX A

SUMMARY LIST OF MEXICAN PROJECTS

APPENDIX B

SUMMARY LIST OF U.S. PROJECTS

APPENDIX C

PROJECT LOCATION MAPS