The Honorable Bob Bullock  
Lieutenant Governor of Texas  
P.O. Box 12068  
Austin, Texas 78711

Dear Governor Bullock:

The Senate Committee on International Relations, Trade and Technology appreciates the opportunity to make recommendations on issues that will greatly impact the Texas-Mexico border health, infrastructure and economy.

This report compiles our response to your charges to make revisions and improve upon existing colonia legislation; assess the performance of the Water Development Board's Economically Distressed Areas Program; the impact of the North America Free Trade Agreement (NAFTA) on border infrastructure, housing, education and the environment; and to find methods to expand international trade with particular emphasis on the use of technology.

The recommendations contained in Section I of this report are based on testimony collected from one organizational hearing and five public hearings held statewide; several meetings and work sessions with private citizens, local and state government representatives, non-profit organizations; and a series of town meetings held statewide with the involvement of state agencies small business development centers, district export councils and small business owners.

The Committee expresses heartfelt thanks to the collected efforts and input on the part of the individuals and organizations which made possible the substantive development of the recommendations to the 75th Legislature.

Respectfully submitted,

[Signatures]

Senator Carlos F. Truan  
Chair

Senator Jerry Patterson  
Vice Chair

Senator Ken Armbrister
Senator David Cain
Senator Mario Gallegos, Jr.
Senator Eddie Lucio, Jr.

Senator Bill Ratliff
Senator Peggy Rosson
Senator David Sibley
INTRODUCTION

Lieutenant Governor Bob Bullock created the Senate Committee on International Relations, Trade & Technology (IRTT) during the 73rd Legislative Session. This Committee focuses on legislative issues pertaining to international relations, exchanges, and programs important to the social and economic well-being of the State of Texas.

During the 1996 interim, the Lt. Governor assigned this Committee five charges: three of those charges specifically address colonias issues and the remaining two charges encompass NAFTA issues. Due to this somewhat convenient split of topics, this Committee has chosen to divide the report into two parts: the first part will discuss colonias issues; the second part will address NAFTA and its effect on Texas trade.

Part I contains this Committee's final recommendations, as approved by the Committee members. Part II addresses interim charge numbers one, two and supplemental charge number one request specific information regarding the status of certain colonias legislation passed during the 74th Regular Session. Part II also evaluates three primary colonias issues: the enforcement status of House Bill 1001, including proposed changes that can strengthen the current law; the progress of the Texas Water Development Board's "economically distressed areas program," or EDAP, paying special attention to the number of applications received versus the number of projects actually completed in the colonias; and other colonias-related legislation enacted in the 74th Legislature, also offering suggestions for changes that can enhance those laws.

NAFTA, the central subject of Part III of this report, was promoted for two primary reasons: to boost the American economy and to create closer ties with our southern neighbor. Many people asserted that these strengthened ties would create a better Mexican economy that would ultimately benefit the United States. Proponents argued that expanded trade would translate into job retention and expansion. Further, NAFTA supporters argued that NAFTA's passage would have noneconomic benefits for the United States as well, noting that NAFTA's passage could help "rengthen" America's core values: commitment, optimism, a desire to help one's neighbors and, the very essence of America, competition. Only two years after the implementation of NAFTA, Texas has already begun to reap the economic benefits from increased trade flowing from Mexico.

One of the Committee's continuing roles in the legislative process is to successfully guide Texas into the world of international trade by broadening our economic horizon. Part III discusses the different ways in which Texas might broaden its economic horizon and examines NAFTA's impact on Texas trade, infrastructure and environment. More importantly, this report recommends means by which Texas may implement that plan. One way to fulfill this role is to suggest new and innovative ideas. Another way to fulfill this role is to provide a forum for the discussion of those ideas and therefore provide a vehicle for change. In creating a long-term trade policy, this Committee has encountered many obstacles, such as attempting to harmonize state laws with the ever-changing federal and international laws relating to NAFTA and other trade agreements. Developing an expansive, all-encompassing trade policy is not easy, but the realization of such a plan is central to Texas' financial long-term success in international trade circles.
The 1996 interim International Relations, Trade and Technology Committee members are:

Senator Carlos F. Truan
Chairman

Senator Kenneth Armbrister

Senator Mario Gallegos, Jr.

Senator Bill Ratliff

Senator David Sibley

Senator Jerry Patterson
Vice Chairman

Senator David Cain

Senator Eddie Lucio, Jr.

Senator Peggy Rosson

The Committee staff members are Salvador Mascorro Valdez, Director, Carla D. Buckner, General Counsel and Committee Clerk, Ellen Humpert, Policy Analyst, Aida Nunez, Policy Analyst, Sarah Acosta, Secretary, and Vick Hines, Chief Policy Analyst.
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Part I: COMMITTEE RECOMMENDATIONS
SECTION I:
The Recommendations
INTERIM CHARGES CONCERNING COLONIAS

Lieutenant Governor Bob Bullock gave the IRTT Committee two interim charges and one supplemental charge concerning the colonias. The Committee chose to address these charges using a broad approach that looked at the big picture of substandard subdivisions on the border. The first observations and recommendations are the result of this broad overview. Recommendations concerning the specific charges follow in order.

The Legislature's Strategy

In response to the existence of third-world conditions within our borders, the citizens of Texas have twice approved outlays of hundreds of millions of dollars to address the problems of the colonias. Since the passage of the first comprehensive colonias bill, SB 2, in 1989, every subsequent Texas Legislature has refined the State's approach. The Legislature's strategy has been:

1. To provide water and wastewater service in the colonias that currently exist;
2. To stop development of new substandard subdivisions through sanctions and enforcement; and
3. To improve affordable housing opportunities in areas where water and wastewater services already exist.

Observation: The Legislature's three-pronged approach is fundamentally sound. However, radical demographic and economic changes in the border region will create a crisis that can be met only with a shift in emphasis from water and wastewater systems to housing and education.

By 2010, most of the colonias that exist today are expected to be provided with water/wastewater services through the Economically Distressed Areas Program (EDAP). However, the low-income population of the border region is expected to nearly double by the year 2010 in a region with a 41 percent poverty rate. This unprecedented increase in poverty is taking place in a region that contains three of the ten fastest growing metropolitan areas in the nation. Regional growth has increased the cost of living without creating a commensurate improvement in the condition of the impoverished residents of the colonias.

Coordination

Texas' efforts to address the colonias are generally fragmented and uncoordinated. Despite numerous attempts to establish effective interagency coordination through coordinating councils, task forces, and other collaborative efforts, lack of commitment and authority has stymied effective coordination despite the Legislature's coherent and consistent vision.

Recommendation #1: The Legislature should establish interagency coordination as a statutory mandate upon the agencies whose activities affect the colonias, and should consider providing funding for agency coordination activities both at the local level and in the central offices of the relevant agencies.
Committee Charge #1

Monitor the enforcement of HB 1001, 74th Legislature, the colonias bill, and identify any provisions that need to be clarified or strengthened

The 74th Legislature enacted HB 1001 in response to the continued growth of the substandard subdivisions in the border region and difficulties that the Office of the Attorney General had encountered in bringing enforcement actions against the developers of substandard subdivisions. As of July 30, 1996, the Attorney General was involved in 38 active lawsuits. More than 100 open investigations were underway. Four Assistant Attorneys General and three field investigators were actively assigned to these cases and the development of additional cases. The Attorney General reports that HB 1001 has provided an effective deterrence to the development of new colonias.

Recommendation #2: The Legislature should consider methods to permit utility connections which will not at the same time create a loophole for unscrupulous developers.

Section 232.029 of the Local Government Code prohibits utility connections to property in subdivisions that have never been platted. Persons who live in subdivisions which have never been platted are denied the possibility of getting utility connections even though their neighbors may have utilities that were installed before the 1989 law went into effect. Furthermore, the impoverished condition of the majority of colonias residents effectively precludes them from obtaining the surveys and documentation necessary to plat the subdivision.

Specifically, in order to issue a certificate of compliance with the model subdivision rules, a commissioners court must determine that a plat has been reviewed and approved. Therefore, a resident of a subdivision that was filed prior to the requirement that a subdivision be platted, September 1, 1983, cannot obtain a certificate of compliance. In the case of gas and electric utilities, §232.029(c) creates an exception of doubtful practicality for colonias residents.

Recommendation #3: The Legislature should consider permitting termination of service for non-payment of a utility bill by amending §232.037(c) of the Local Government Code as follows:

(c) During the pendency of any enforcement action brought, any resident of the affected subdivision, or the attorney general, district attorney, or county attorney on behalf of a resident, may file a motion against the provider of utilities to halt termination of pre-existing utility service. The services may not be terminated if the court makes an affirmative finding after hearing the motion that termination poses a threat to public health, safety, or welfare of the residents. This remedy is not available to a resident if the service is being terminated by the utility for non-payment of the utility bill.

Section 232.037 of the Local Government Code protects residents against termination of utility service when the developer is being prosecuted for violation of the model rules or related offenses. However, this section does not provide for termination if the resident has simply not paid his utility bill.

Recommendation #4: The Legislature should consider closing the loophole for property conveyed as a gift by amending §232.022(a) of the Local Government Code as follows: This subchapter does not apply if the subdivision is incident to the conveyance of the land as a gift between persons within the second degree of consanguinity or affinity, as determined under Chapter 573 of the Texas Government Code.
Section 232.022 of the Local Government Code provides an exemption from the model subdivision rules for land that is conveyed as a gift. Several witnesses cautioned that the term gift could conceal unrecorded transactions.

**Recommendation #5:** The Legislature should consider closing the loophole for subdivisions not having public or private streets, parks or common areas by changing the first sentence in §232.001(a) of the Local Government Code as follows:

(a) The owner of a tract of land located outside the limits of a municipality who divides the tract into two or more parts to lay out a subdivision of the tract, including an addition, or to lay out suburban lots or building lots, or () to lay out streets, alleys, squares, parks, or other parts of the tract intended to be dedicated to public use or for the use of purchasers or owners of lots fronting on or adjacent to the streets, alleys, squares, parks, or other parts must have a plat of the subdivision prepared.

Subchapter A of the Local Government Code and the model rules both provide an exception from the platting requirements for a subdivision with no public or private streets. This creates a potential loophole that may interfere with enforcement of HB 1001. At the hearing, there was discussion regarding the statewide implications of this recommendation. It is the Committee's intention to affect only colonias, and due to time constraints, this recommendation will be revised further after the submission of this report in an attempt to resolve the statewide impact problems noted during the hearing.

**Recommendation #6:** The Legislature should consider an exemption from the platting requirements for travel parks. As yet, no clear policy solution has emerged with the exception that the federal Housing and Urban Development Administration's definition of HUD certifiable manufactured housing might serve to distinguish between temporary travel parks and permanent or semi-permanent settlements.

The question was raised as to whether the mobile home parks that serve "Winter Texans" should be under the model subdivision restrictions. Section 232.021(14) of the Local Government Code applies to subdivision for both sale and lease, and would seem to include the trailer parks.

The Attorney General noted that Texas courts have held division of land for a rental mobile home park can trigger the platting laws [See the 1985 case, City of Weslaco v. Carpenter, 694 S.W.2d 601]. An exception for certain "Manufactured Home Rental Communities" was added in 1985, through §232.007 of the Local Government Code, subchapter A of chapter 232. It does not apply in the economically distressed areas addressed in subchapter B.

**Committee Charge #2**

Assess the progress of the Texas Water Development Board's "economically distressed areas program" with regard to the number of applications received and the number of water and waste water projects actually implemented in the colonias.

**EDAP Progress Assessment**

The Economically Distressed Areas Program (EDAP) has overcome the institutional conflicts which hampered the program in its first years. The program is on track and is expected to complete its revised mission based upon the 1992 needs assessment. However, current funding is sufficient only to complete the projects that have submitted applications or are in the planning process. The most efficient projects will
be completed with current funding. The Texas Water Development Board (TWDB) estimates that completion of the remaining projects will cost an additional $400 million.

The Committee recommends that the EDAP program should continue on its current course. The following recommendations are suggested to permit improvements in the efficiency of the program.

Recommendation #7: The Legislature should consider permitting a city that has adopted an impact fee to charge cost of service rates for water and wastewater services provided to colonias, if the city proves to the satisfaction of TNRCC that the rate reflects the true cost of service.

In 1995, section 16.349 of the Texas Water Code was amended to allow water/wastewater service rates charged in a colonias to be the lower of: (1) the cost of providing service to colonia residents; or (2) the rates charged other residents of the political subdivisions plus 15 percent. Before 1995, the rates charged in colonias had to be equal to or less than the rate charged in a political subdivision providing service to the colonias. Political subdivisions argue that any rate below cost of service is a subsidy of the colonias from the political subdivision’s other customers. However, political subdivisions that have not adopted an impact rate do not require their own residents to pay the true cost of service and should not be able to force colonia residents to pay more than 15 percent of the rate within the political subdivision.

Recommendation #8: The Legislature should direct the TWDB in cooperation with TDHCA to investigate the cost-effectiveness of voluntary relocation of colonias residents from areas in which the cost of providing water and wastewater services exceeds the cost of relocation, and to develop a relocation option that will be available when it is needed.

Although all EDAP projects that are currently under consideration are cost effective, a number of identified colonias are located in remote areas that will be difficult to serve in a cost-effective manner. Voluntary relocation may be the most economical option in such cases. However, relocation will require the availability of affordable housing and financing options which are the purview of TDHCA.

Supplemental Charge #1

Monitor implementation of, and make recommendations for any needed changes in legislation passed by the 74th Legislature to address the problems of colonias, specifically Senate Bill 336, Senate Bill 1509, and House Bill 2726.

Several bills targeted the improvement of housing where services already exist, either within colonias with completed EDAP projects or within municipalities. These included the increased protection for buyers who purchase their property under contract for deed (SB 336), colonias self-help centers (SB 1509), and assistance in converting contracts for deed to mortgage loans with the attendant transfer of title (HB 2726). However, it will take a targeted, concerted effort aimed specifically at increasing the stock of affordable housing to overcome both the chronic housing shortage in the border region and the expected population growth.

Recommendation #9: The Legislature should direct the TDHCA to make a targeted, concerted effort aimed specifically at increasing the stock of affordable housing to overcome both the chronic housing shortage in the border region and the expected population growth of very low income households who would otherwise be forced to seek housing in substandard conditions. The Department should be instructed to prioritize available resources to programs which can provide a remedy for the housing needs of the very low income colonia residents facing the worst living conditions.
SB 336

The purpose of SB 336 is to extend to home buyers under contracts for deed protections similar to those enjoyed by buyers using conventional mortgage loans. SB 336 applies only to property transactions within a county in which water projects are eligible for funding under the Economically Distressed Areas Program (EDAP), including a county that becomes eligible by virtue of its income level or unemployment rate.

Recommendation #10: The Legislature should amend the Texas Property Code, as amended by Senate Bill 336, so that its provisions concerning the duties of affected counties and the rights of buyers and sellers of property within affected counties remain in effect either in perpetuity or for some period of years within any particular county once that county meets the criteria that trigger the applicability of SB 336. The Legislature should also consider amending Subchapter E, Chapter 5, Property Code as enacted by SB 336 (74th Regular Session) so that once the equity protections under section 5.101 and other legal protections added by SB 336 apply to a given contract, those protections will remain in effect for the term of the contract, regardless of whether Subchapter E continues to apply to property or contracts in that county in subsequent years.

SB 336 creates certain rights and duties regarding contracts for deed executed in a county in which the bill applies. However, the status of a county may change from year to year due to the eligibility criteria, creating great potential for confusion and misunderstanding. The continuity provided by this recommendation will reduce confusion and conflict.

Recommendation #11: The Legislature should consider providing funds for TDHCA to undertake a more comprehensive public information campaign to inform sellers and buyers within the affected counties of their rights and responsibilities under SB 336.

The protections provided under SB 336 will exist only to the extent that colonia developers and residents know about the provisions of the law and abide by it. SB 336 required TDHCA to conduct an extensive public education effort to inform buyers and sellers about the relevant provisions of the bill.

One problem TDHCA faces is that the Legislature did not provide funding for the public education effort the department is required to undertake. Colonia residents are a geographically, educationally, and linguistically isolated population that often lacks the financial resources to retain legal counsel to represent their interests in actions against sellers of real estate. Public education efforts in this context must be carefully designed and competently conducted. The Department and the Legislative Budget Board should propose to the 75th Legislature a budget that will provide adequate funding for this important task.

SB 1509

SB 1509 directed the Texas Department of Housing and Community Affairs to establish colonias self-help centers. The bill responded to the willingness of colonias residents to become actively involved in improving their housing. The self-help centers will provide training, guidance, and resources to improve the ability of colonias residents to make their own housing improvements.

Recommendation #12: The Legislature should consider funding the colonia self-help centers through the next biennium using the unexpended balance from this biennium's appropriation as well as an additional appropriation to cover the balance of the 1997-98 biennium.
TDHCA has not completed the process of selecting operators for the self-help centers as of July 9, 1996. Award of contracts to operate the centers in the five border counties is not expected to be complete until September, 1996. Therefore, funds approved for this activity could be carried over to partially fund the centers during the coming biennium.

**Recommendation #13:** The Legislature should consider directing TDHCA to review its available funding sources and to prioritize funding to provide assistance for the activities of the self-help centers, including refinancing contracts for deed, and construction and home improvement financing.

One of the principle tasks of the self-help centers is to assist low income colonia residents in obtaining home improvement financing through existing programs. It is TDHCA's job to be the State's clearinghouse for information on such programs.

The purpose of this recommendation is to ensure that the self-help centers have the full support and cooperation of TDHCA in carrying out their mission. The Legislature has provided funding primarily for the administration of the self-help centers, with the assumption that the Department would identify sufficient resources to allow the centers to carry out their housing rehabilitation and construction mandate, and it is vital that the Department fulfill this function.

**Recommendation #14:** The Legislature should direct TDHCA to use the Low Income Housing Resource Center to work with the local self-help centers in a concerted manner to ensure that the self-help centers have access to the most effective programmatic and financial resources available from both the public and private sector.

The purpose of this recommendation is to ensure that the Low Income Housing Resource Center is used effectively to assist the local self-help centers. The TDHCA Sunset Bill [Sec. 3.18, of Art. 4413(510) V.A.T.S] required TDHCA to establish a low and very low income housing resource center in the Housing Finance Division. The Center is to provide educational material, technical assistance to nonprofit groups, and should focus on low and very low income housing.

**Recommendation #15:** The Legislature should request the Texas Attorney General to coordinate enforcement activities within individual colonias with the local self-help centers.

The Attorney General should coordinate enforcement actions with the self-help centers established pursuant to SB 1509 to ensure that the remedies secured from developers through legal action will address the housing and infrastructure needs of the colonias in a comprehensive manner. The Hidalgo County Colonias Self-Help Center has designated the Jessup subdivision as one of the five colonias targeted for action through the self-help center grant. At the same time, the Attorney General has brought suit against the developer seeking to have the developer pay for the infrastructure needs of the colonias such as drainage which will not be met through other resources. Although this approach promises to be efficient and effective, several other situations have not been coordinated effectively. Clear direction from the Legislature would ensure that the Attorney General's policy is consistent.

**HB 2726**

HB 2726 provides for issuance of $20 million per year for 1996 and 1997 in tax exempt private activity bonds, known as mortgage revenue bonds (MRBs), for housing and the refinancing of contracts for deed into mortgage loans in the colonias.
Recommendation #16: The Legislature should provide clear direction to the TDHCA in its implementation of a program targeting conversion of contracts for deed which use mortgage revenue bonds authorized for that purpose by HB 2726.

As of June 20, 1996, TDHCA had structured the 1996 bond issue in such a way that it will not be available for use in refinancing contracts for deed. The Department has made progress on structuring the program to use the 1997 issue to reflect legislative intent.

Recommendation #17: The Legislature should consider authorizing TDHCA to issue an additional $50 million in tax exempt mortgage revenue bonds for the 1998-99 biennium to continue refinancing contracts for deed begun under SB 2726.

Federally authorized tax exempt bond funds available to TDHCA to provide for housing are the major source of housing finance assistance available to the State. During the last session of the Texas Legislature, $40 million was reserved for the purpose of providing funds to refinance contracts for deed.

Although no figures are available to accurately estimate the amount of existing debt owed by colonias residents to private developers, there is no doubt that it far exceeds the funds available from the mortgage revenue bonds. The use of mortgage revenue bonds for the purpose of refinancing contracts for deed is one of the most important single actions the State can take to improve housing conditions in the colonias.

INTERIM CHARGES CONCERNING NAFTA

Lt. Governor Bob Bullock also directed the IRTT Committee to study NAFTA and its effects on the Texas border region. The directive included one interim charge and one supplemental interim charge concerning the effects of NAFTA on Texas.

Committee Charge #3

Assess the effect of NAFTA on Texas' infrastructure including transportation, housing, education and the environment, with special attention to its impact along the Texas/Mexico border.

TRANSPORTATION

Railroads

On June 2, 1996, the U.S. Department of Transportation approved the merger between the Union Pacific and Southern Pacific railroads, even though the Texas Railroad Commission had voted unanimously against the rail merger on March 26, 1996. As a consequence of the merger, and to protect Texas rail shippers from the anti-competitive tendencies that may develop as a result of the merger, the Committee makes the following recommendations:

Recommendation #18: The Legislature should consider requesting the Texas Comptroller, in cooperation with the Texas Transportation Institute at Texas A&M University, to monitor the economic effects of the Southern Pacific-Union Pacific rail merger. Specific areas of concern include the merger's effect on cost and availability of rail transportation on the Texas/Mexico border and its impact on trade with Mexico. A report on this impact should be submitted to the 75th Legislature.
Recommendation #19: The Legislature should direct the Texas Department of Transportation (TXDoT) to monitor national level discussions addressing weight and length standards adopted pursuant to NAFTA. TXDoT should resist current efforts to influence the NAFTA Transportation Committee to permit multiple trailers and overweight trucks on U.S. highways. Texas' current standards should be honored and should continue to protect the public safety and the integrity of the public investment in highway infrastructure.

The federal government and the NAFTA Land Transportation Subcommittee are considering an increase in the weight and lengths of motor carriers in the U.S. under the transportation harmonization provisions of NAFTA. However, Texas' existing highway and bridge infrastructure is insufficient to handle heavier and longer trucks. Federal and state funding is insufficient for the construction and maintenance of the roadways necessary to handle the heavier and longer roads safely with reasonable maintenance costs. Heavy and longer trucks also endanger citizens travelling on Texas roadways.

Recommendation #20: The Legislature should consider directing TXDoT to provide a comprehensive cost assessment on the development and completion of a report addressing the origin and destination of goods transported overland to and through the State of Texas.

As the use of the state's transportation system changes under NAFTA trade, the origin and destination of products being transported to and from Mexico and Canada must be assessed in order to target key highways for construction, maintenance, and enforcement needs.

HOUSING

The primary finding of this Committee's review of the EDAP program is that the efficient, long-term solution to the colonias problem is increasing affordable housing opportunities where services already exist, either within colonias which benefit from EDAP projects or within municipalities.

In general, Texas is experiencing rapid economic and population growth, both of which increase the cost of housing and reduce its affordability for persons not experiencing income growth commensurate with the inflation of housing costs.

Recommendation #21: The Legislature should consider directing TDHCA to reconsider its standards on eligibility for publicly assisted housing, to determine whether there are more efficient methods of spending federal funds allotted to Texas for non-colonias type housing projects.

Recommendation #22: The Legislature should consider directing TDHCA to research and suggest alternative strategies and funding sources for additional housing units in the border region.

The rapid growth of the low-income population in the border region, coupled with the area's housing shortage, creates a housing shortage crisis which will require new and creative approaches to meet the growing low income housing need.
EDUCATION

Recommendation #23: The Legislature should consider directing the Texas Education Agency (TEA) to study the possibility of requiring implementation of a policy making foreign language instruction available in all grades from Kindergarten through Twelfth by the year 2005. A report on this study should be delivered to the entire Senate during the 75th Legislative Session.

Texas school children are facing a competitive, global job market. Language skills are as important in the new global marketplace as the more traditional school subjects. Language skills are most easily acquired in the earliest grades.

BORDER HEALTH

Recommendation #24: The Legislature should consider addressing the unique infrastructure needs in the medically underserved and rural border areas of Texas by supporting innovative initiatives with existing institutions that have direct missions and have specialized resources to address the priority needs of this area.

The border region needs to have its specialized, unique health concerns addressed. By supporting innovative initiatives, the State better addresses the unique infrastructure needs of the border region.

ENVIRONMENT

The Texas-Mexico border is a resource-poor region with a limited supply of water, air sheds that trap pollution, and a desert environment that preserves instead of degrades man-made materials, including hazardous and solid waste. The severity of these resource constraints threatens major economic dislocations and adjustments as population and industrialization increase dramatically as the result of the North American Free Trade Agreement. Environmental conditions on both sides of the border affect both Texas and Mexico directly.

The current drought affecting the lower Rio Grande is a glaring example of the region's resource limitations and the need for binational cooperation. The Texas allocation from the Amistad/Falcon reservoir system stands at 46 percent and the Mexican share has varied between 3 and 20 percent since March, 1995. Irrigated agriculture on both sides of the border is being hurt substantially, and the drought is forcing both long-term and short-term readjustments in water use and public investment.

Recommendation #25: The Legislature should direct the Texas Natural Resources Conservation Commission (TNRCC) in conjunction with the Texas Water Development Board (TWDB) and other state agencies to work with Congress and federal agencies to develop a structure for binational, comprehensive, basin-wide management of the Rio Grande.

Texas is the downstream claimant to Rio Grande water, but itself adds little water to the River. The actions of other jurisdictions affecting water supply, water quality, air, hazardous waste, and other natural resources have direct consequences for Texas. It is in Texas' best interests to promote the protection and wise management of the shared natural resources of the Rio Grande river basin.

Recommendation #26: The Legislature should adopt incentives to encourage agricultural water conservation, including incentives for individual irrigators and irrigation districts to convert to water-saving irrigation equipment and delivery systems.

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Irrigated agriculture along the Rio Grande uses 90 percent of the water taken from the river and its reservoirs. The supply available for the fast-growing urban areas would double if agriculture could improve its water use by only 11 percent.

Recommendation #27: The Legislature should consider the groundwater associated with the Rio Grande to be a special case requiring study and regulation on an equitable, binational and interstate basis. The Legislature should direct the TWDB and TNRCC to work with border communities as well as the water resource agencies of both Mexico and New Mexico to develop a management plan for transboundary water resources.

Along much of its course along the Texas border, the Rio Grande exchanges water constantly with the adjacent aquifers in the permeable strata adjacent to the river. The deeper aquifers such as the Hueco Bolson cross the international boundary, and El Paso shares the Mesilla Bolson with New Mexico. Although the connection between surface water and groundwater along the Rio Grande is dramatically evident, and although the surface supply is completely appropriated and jealously guarded, Texas water law and policy does not recognize that withdrawals of groundwater are in fact the use of surface water supplies. The Legislature and the Texas Supreme Court have recognized special cases in which groundwater regulation is justified in both the subsidence districts in the vicinity of Harris County and in the Edwards Aquifer region. The Rio Grande represents another case in which a divergence from the traditional treatment of groundwater is justified. However, the binational and interstate nature of groundwater in the region creates a need for a cooperative approach toward this shared resource.

Recommendation #28: The Legislature should consider co-funding wastewater treatment facilities in the major Mexican cities on the Rio Grande with the Federal Government.

The Legislature's appropriation of only $2 million to fund the wastewater collection and treatment system at Nuevo Laredo is helping to remove over 22 million gallons of raw sewage from the Rio Grande every day and will also help restore one of the most polluted reaches of the River. Unfortunately, several Mexican cities continue to add massive amounts of raw sewage to the River. Similar modest investments in additional Mexican wastewater treatment is an efficient and economical way for Texas to improve the quality of water used by our downstream cities, and to reduce the exposure of our population to dangerous, water-born diseases. The preferred source of funding is the North American Development Bank (NAD Bank). However, NAD Bank has not yet made significant loans, and seems to be encountering problems with its financing methods. The wastewater situation is a crisis that requires prompt attention.

Recommendation #29: The Legislature should direct TNRCC to study the cost and effectiveness of a tracking system for the quantity of hazardous waste that is obligated to be returned to the U.S. under the conditions of the La Paz Agreement.

Under the La Paz Agreement, U.S. companies are responsible for returning to the U.S. the hazardous waste from U.S. raw materials produced in the maquiladoras. Therefore, a significant part of the border's hazardous waste problem is a U.S. responsibility regardless of whether the waste is produced in Mexico. However, neither the U.S. nor Texas has implemented an effective system to track these materials.

The border industries use large quantities of hazardous material such as solvents, acids, reagents, paints, and resins, which become hazardous waste during industrial processing. The amount of waste produced in any particular industrial process can be predicted from standard industrial practice, and this prediction is a standard item included in industrial planning and auditing. An electronic tracking system can provide a reliable method to track the amount of hazardous waste that should be returned to the U.S.
Supplemental Committee Charge #2

Study and make recommendations regarding methods and programs to expand international trade, with particular focus on the use of technology.

TECHNOLOGY

Texas has a strong record of funding research and encouraging federal research support. Texas universities alone spend an estimated $1 billion each year on basic and applied research. While this research is certainly vital to the educational process and to the process of creating new knowledge, the time has come for Texas to forge ahead and embrace cutting-edge technology as a cornerstone in its long-term economic development strategy. Technology and its use in both the marketplace and the assembly line can provide a critical competitive advantage for Texas firms in both domestic and international markets.

The Texas economy would benefit from a program to prolong the productivity of existing strategic industries and to encourage the development of new industry which, in turn, will enhance job creation and tax revenues for the future. Furthermore, such efforts could foster the expansion of smaller businesses producing more jobs and increased local economic benefit.

Several technology commercialization initiatives are currently either at their maximum ability to service the small business community or are defunct due to lost federal and state funding. At the same time, small manufacturers in Texas find it difficult to identify new technology which could increase the efficiency of their operations or develop new domestic or international markets. Small business and manufacturers also find it difficult to identify new sources of capital that will allow them to advance technology development and increase operation efficiency and competitiveness. Small business entrepreneurs find it difficult, if not impossible, to identify and maximize available capital to develop prototypical technologies with domestic and international market potential.

The State of Texas should reinforce its commitment to basic and applied research as a key strategy in furthering economic development goals for the State. Texas should promote the full utilization of emerging technologies by Texas small business. This will allow small business to enhance its competitive stance in domestic and international markets. The following recommendations are intended to assist Texas in reinforcing its historic commitments to this effort.

Recommendation #30: The Legislature should consider creating and pursuing a more productive environment for public/private partnerships in technology fields that will improve Texas' competitiveness at home and with international trading partners.

The establishment of an active public/private partnership for technology in Texas will provide for an on-going, collaborative, technology-focused entity that could respond to international, federal and local technology opportunities.

Recommendation #31: The Legislature should consider directing the Texas Department of Commerce (TDOC) to explore and suggest existing program modifications and adjustments to increase technology based investments in the state which would increase both domestic and international market share for Texas business.
a. The Legislature should consider modifying the Texas Manufacturing Institute statute or Partnership for Economic Development statute to create a stronger, more stable oversight board.

b. The Legislature should consider modification of the Product Development Fund and Small Business Incubator Fund to allow for more flexible approaches that will provide increased access to capital for technology development and adoption.

Modifications of existing programs, where applicable and feasible, will allow greater numbers of small businesses to take advantage of new technology and to enhance their competitive position in domestic and international markets. Appropriate funding of the State’s efforts to promote technology commercialization will impact job retention and creation. An integrated approach to board and council oversight of technology initiatives will enhance the State’s ability to provide a comprehensive strategy in technology policy implementation.

Recommendation #32: The Legislature should consider designing and implementing a long-term sustainable source of funding for technology transfer and commercialization efforts for Texas small business.

a. The Legislature should consider authorizing the development of a one-stop technology funding authority which would consolidate all current and future technology commercialization funding programs. Special attempts should be made to coordinate its efforts through the existing system of Small Business Development Centers and the Texas Manufacturing Assistance Centers.

b. The Legislature should consider issuing a mandate to all entities whose technology initiatives are supported by state funds to increase Texas small business awareness of technology commercialization opportunities available through state-supported research and development. The investments in state-supported institutions such as UT, A&M, and the junior college system, should be maximized to provide greater access to technology and technology research for Texas small business. Innovation to increase their competitive edge in both the domestic and international trade arenas is critical for small business. More extensive and focused outreach programs targeting small business segments in rural and urban communities could increase awareness of available technology. Using clearly identified sites on the Internet and other Texas state government web sites should be promoted and well-maintained by those state-supported institutions active in technology development and commercialization.

The one-stop concept will provide an initial point of contact for the broad array of existing entities charged with technology development and commercialization. This will increase Texas’ small business participation in technology transfer and commercialization when accompanied by additional marketing and promotional efforts.

Recommendation #33: The Legislature should consider directing that a review of state licensing of patented or university-based technologies be conducted.

a. The Legislature should consider directing that a thorough review of the licensing process at state-supported universities be conducted. This review should identify the barriers to small business’ ability to access available or emerging technologies. The universities should amend those policy directives that either inhibit
or preclude Texas small business from utilizing available technologies. A special effort should be made by these same institutions to increase Texas small business participation in licensing agreements for selected use on targeted geographical markets.

b. The Legislature should consider directing that an evaluation be conducted of the current stream of royalty payments paid for those technologies licensed by state-supported institutions. This evaluation should assess the potential for diverting five percent of all royalties and licensing fees into the proposed Technology Fund. This study should also identify all royalties paid to State of Texas entities and authorize diversion of five percent of those and future funds to the proposed Technology Fund.

Identifying barriers to the adoption and commercialization of university-based technology by Texas small business is important because it increases its ability to use these technologies to gain a competitive advantage in domestic and international markets. Identification of royalty and licensing fees currently being collected could provide a supplemental source of funds. This additional source of funding could sustain a state technology funding program.

Recommendation #34: The Legislature should consider directing state-supported universities and junior college systems to leverage existing state-supported facilities for Texas small business research and development needs, as well as for prototyping.

Maximizing the existing financial capacity of state-supported universities and colleges will increase the ability of the Texas small business community to accelerate technology commercialization available either because the concept was developed by small business or in joint efforts with those same institutions.

EXPANSION OF INTERNATIONAL TRADE

Pursuant to the supplemental charge to "study and make recommendations regarding methods and programs to expand international trade, with particular focus on the use of technology," the IRTT Committee worked closely with private, academic and public sector representatives in developing a series of policy recommendations intended to help Texas small businesses promote their goods and services worldwide. The following recommendations were suggested to this Committee by those public and private representatives.

Recommendation #35: The Legislature should consider directing the General Services Commission (GSC) and the Texas Department of Information Resources (DIR) to conduct a statewide inventory of interactive video telecommunications resources and services provided by Texas state agencies and universities. A preliminary report should be submitted to the IRTT Committee by November 29, 1996, and will be forwarded to the entire Senate. The Legislature should also consider requiring each agency to dedicate at least one existing staff member to conduct this inventory.

Currently, there is no comprehensive inventory of the number and type of state-owned interactive video telecommunications resources. The systems used by the State and universities are not fully compatible with each other and Texas is therefore unable to enjoy the full benefit of this large public investment. A full picture of the various systems is the first step in increasing the usefulness of the system.
Recommendation #36: The Legislature should consider encouraging state-supported universities to coordinate the use of their video teleconferencing capabilities with the Small Business Development Centers (SBDCs) affiliated with the universities and the District Export Councils (DECs) to help small business expand its trade links.

Coordination of teleconferencing capabilities could expand trade links for Texas small business.

Recommendation #37: The Legislature should consider directing the Texas Department of Commerce (TDOC) to coordinate with the SBDCs to develop a video teleconferencing pilot program to assist small business in its initial forays into foreign markets.

Binational teleconferencing is currently used for academic purposes, but has the potential to help small business establish initial trade relationships. This technology reduces travel time and cost while permitting businesses with limited resources to expand their contacts. This technology also allows businesses to explore trade possibilities and expand their markets. Small businesses can make initial contacts and test the waters before investing in actual travel to a foreign country.

Recommendation #38: The Legislature should consider directing TDOC to establish a public/private task force to develop an International Strategic Plan which encompasses state goals for export and attraction of foreign investment. The Plan should address state funding for international trade, foreign representation, business services, TDOC operations and administration, information referral, infrastructure, education, training and related support services for all Texas businesses wishing to engage in international trade activities.

The international business climate has fundamentally changed due to the increasing number of regional trading blocks. Meanwhile, the State of Texas has long struggled to find an effective model to foster international trade. The strategic plan will provide direction for Texas' efforts.

Recommendation #39: The Legislature should assess the operations of TDOC and should make recommendations to promote the stability and continuity of services offered by TDOC. Two primary concerns in conducting this review should be the minimization of TDOC's turnover rate and the improvement of the agency's value to the Texas business community.

From its inception, the Department has faced constant change in its funding, mission, function, and leadership. This has challenged the agency's ability to provide consistent service to Texas small business.

Recommendation #40: The Legislature should consider changing the language of the Texas Tax Code provision pertaining to the amount of time an export product may remain in the state, so that export products may remain in the state for up to 175 days without being subjected to a sales tax, rather than the 30-day limit under current law.

Goods prepared for export often take a lot of time to leave the state. The costs in time, personnel, and cash flow imposed by the current tax code as it applies to exported products make Texas exporters less competitive. The current limit of 30 days is too short a time period to account for the many variables with which exporters must contend. By extending the time limit to 175 days, businesses can take the sales tax exemption and thereby increase the competitiveness of Texas exports. [NOTE: while this recommendation is being retained by this Committee, it is also being forwarded to the Senate Economic Development Committee for its consideration].

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Recommendation #41: The Legislature should consider reinstating the Texas Export Loan Guarantee Fund (TELF).

Until the last legislative session, the State of Texas operated the Texas Export Loan Guarantee Fund. The Fund, with an annual budget of $2 million, was used to help small- and medium-sized exporters obtain trade financing. Business leaders across the state feel that the fund was helpful, but too small.
SECTION II:
Committee Members' Responses to Charges
The Honorable Carlos Truan, Chairman  
Committee on International Relations, Trade and Technology  
Post Office Box 12068  
State Capitol  
Austin, Texas  78711-2068  

Dear Senator Truan:

I was prepared to be present July 19 to discuss my comments on the draft IRTT Committee report and regret that it was necessary to re-schedule, since I will be unable to attend the re-scheduled meeting on August 8. A long-standing family vacation in Rockport, Texas, during the first two weeks of August, will make it impossible for me to be present at the re-scheduled meeting.

You may assume my support for the recommendations contained in the draft report with the following exceptions:

**Recommendation #1:**

"The Legislature should establish interagency coordination as a statutory mandate upon the agencies whose activities affect the colonias, and should **consider providing** funding both for agency participation and for an office and staff located in the border region."

**COMMITTEE CHARGE #2**

**Recommendation #11:**

"The Legislature should **consider providing** funds for TDHCA to undertake a more comprehensive public information campaign to inform sellers and buyers within the affected counties of their rights and responsibilities under SB336."

**Recommendation #13:**

"The Legislature should **consider directing** TDHCA to review its available funding sources and to prioritize funding to provide assistance for the activities of the self-help centers, including refinancing contracts for deed, and construction and home improvement financing."

**Recommendation #17:**

"The Legislature should **consider authorizing** TDHCA to issue an additional $50 million in tax exempt mortgage revenue bonds for the 1998-99 biennium to continue the refinancing of contracts for deed which began under SB 2726"
COMMITTEE CHARGE #3

Recommendation #18:
Committee Charge #3 states that the committee is to "Assess the effect of NAFTA on Texas' infrastructure...". This recommendation, as stated, addresses the effect of the rail merger on rail transportation statewide, which I believe is outside the committee charge.

I cannot support this recommendation.

Recommendation #20:
The question of whether authority over turnpike development should be given to TxDOT goes far beyond the effect of NAFTA on Texas’ transportation infrastructure, and is therefore outside the committee charge.

I cannot support this recommendation.

Recommendation #21:
The possibility of increasing truck registration fees to parity with automobiles or implementing a weight-distance tax go far beyond the effect of NAFTA on Texas’ transportation infrastructure, and are therefore outside the committee charge.

I cannot support this recommendation.

Recommendation #22:
The question of whether the Legislature should increase diesel fuel taxes goes far beyond the effect of NAFTA on Texas’ transportation infrastructure, and is therefore outside the committee charge.

I cannot support this recommendation.

Recommendation #23:
The question of whether the Legislature should require the collection of the motor vehicle fuel taxes at the refinery goes far beyond the effect of NAFTA on Texas’ transportation infrastructure, and is therefore outside the committee charge.

I cannot support this recommendation.

Recommendation #29:
"The Legislature should direct the TDHCA to consider reevaluating its standards on eligibility for public assistance housing, to determine whether there are develop more efficient methods of spending federal funds allotted to Texas for non-colonias type housing projects."

Recommendation #33:
What statute or THECB rule currently prohibits community colleges from providing GED classes on the job site? If such an activity is currently prohibited by law or rule, I have no problem with rescinding this prohibition.
The Honorable Carlos Truan, Chairman
IRRT Committee
July 26, 1996
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Recommendation #35:
History and geography are currently included in the required curriculum of Texas' public schools - economics and politics are not, nor should they be added at this time. I believe the people of Texas are demanding that public schools concentrate on the basic core curriculum subjects until every student is well-grounded in those basics. The required curriculum should not be expanded at this time.
I cannot support this recommendation.

Recommendation #36:
I do not understand how the "State" can establish a partnership with one of its own agencies.

Recommendation #39:
I am not prepared to conclude that the hydrology of the Rio Grande region justifies groundwater regulation.
I cannot support this recommendation.

Recommendation #41:
To ban such facilities within the Rio Grande region will require that the hazardous wastes which are produced within the region, and which would otherwise have been processed in the region, would have to be transported to, and processed in, some other Texas location. The residents of the region which receives these wastes for processing would be justifiably displeased by this "dumping" into their neighborhood.
I cannot support this recommendation.

Recommendation #43:
I am not prepared to support the creation of a new bureaucracy (a Texas Science and Technology Advisory Council) for the purpose of assessing technology directives initiated by the Legislature.
I cannot support this recommendation.

Recommendation #44:
While this recommendation may have merit, its application is much broader and its implications much more far-reaching than that contained in the committee charge. An activity of this nature should be considered by the Senate Economic Development Committee.
I cannot support this recommendation.

Recommendation #45:
While this recommendation may have merit, its application is much broader and its implications much more far-reaching than that contained in the committee charge. An activity of this nature should be considered by the Senate Economic Development Committee.
I cannot support this recommendation.
Recommendation #46:
While this recommendation may have merit, its application is much broader and its implications much more far-reaching than that contained in the committee charge. An activity of this nature should be considered by the Senate Economic Development Committee.
I cannot support this recommendation.

Recommendation #47:
While this recommendation may have merit, its application is much broader and its implications much more far-reaching than that contained in the committee charge. An activity of this nature should be considered by the Senate Economic Development Committee.
I cannot support this recommendation.

Recommendation #52:
While this recommendation may have merit, its application is much broader and its implications much more far-reaching than that contained in the committee charge. An activity of this nature should be considered by the Senate Economic Development Committee.
I cannot support this recommendation.

Recommendation #53:
Conclusions about, and programs toward, job training and apprenticeships should originate with the Workforce Development Commission as a derivative of that commission's overall charge.
I cannot support this recommendation.

Recommendation #54:
I cannot support this recommendation without a fiscal note which indicates the negative impact upon the state's budget.

Recommendation #55:
Before supporting its reinstatement I would need to know why this program was discontinued.

Recommendation #56:
I cannot support this recommendation without a fiscal note which indicates the negative impact upon the state's budget.

Recommendation #57:
I cannot support this recommendation without a fiscal note which indicates the negative impact upon the state's budget.

Recommendation #59:
Considering the fact that the 74th Legislature had serious questions about the level of funding for the Mexico City office, I am not prepared to conclude that this level should be increased.
The Honorable Carlos Truan, Chairman
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Recommendation #60:
Texas currently grants too many tuition waivers to out-of-state students, which requires additional taxes on Texas residents or increased in-state tuition rates at our universities.
I cannot support this recommendation.

Recommendation #61:
The Texas taxpayer should not be required to subsidize businesses because they must meet foreign manufacturing standards.
I cannot support this recommendation.

Once again, I regret that I will not be able to be present at the August 8 meeting.

Yours very truly,

William R. Ratliff
State Senator

WRR:fb

cc: The Honorable Jerry Patterson, Vice Chairman
The Honorable Kenneth Armbrister
The Honorable David Cain
The Honorable Mario Gallegos
The Honorable Eddie Lucio
The Honorable Peggy Rosson
The Honorable David Sibley
The Honorable Carlos Truan
Chairman
Senate Committee on International Relations, Trade and Technology
Post Office Box 12068
Austin, TX 78711

Dear Chairman Truan:

I regret that scheduling conflicts resulted in my being unable to attend today's meeting. As you know, the work of the Committee significantly impacts my district and is of great interest to me. However, as you also know, my husband's hip replacement surgery has been long scheduled for this date, and between the two, I admit there was no contest as to where I would be.

The Lt. Governor's charge to the Committee was very broad and as a result the proposed committee report is, of necessity, wide-ranging in its recommendations. While some of the specific recommendations, particularly those dealing with education and job training and trade enhancement issues may well end up being fleshed out by other committees, I believe you are to be commended for raising them in your report.

I believe the report depicts very graphically the sheer magnitude and complexity of the issues involving our Borderlands and ultimately Texas. I particularly appreciate the report's emphasis and insistence upon increased cooperation at all levels of State government in addressing these issues. Our resources are finite and shrinking and the more information and effort that can be shared between state agencies and between the state and private sector, the better the public will be served. I believe the report also illuminates very well how inextricably entwined the issues are and the fact that we simply do not have the luxury of addressing each issue in a vacuum.

Whether we are talking about medical care, transportation, education, affordable housing, business opportunities, waste disposal or consumer rights, the fact of the Border is that no one problem can be solved without addressing the others. There is so much work to be done that I believe, under the circumstances, Texas has a truly unique opportunity to use the Border as a pilot project to demonstrate how government can and should best work for its people.
I am glad that the Lt. Governor had the wisdom and the foresight to create the Committee on International Relations, Trade and Technology and to name you as the chair. I know that you share my love and respect for the people and that you understand the intricate and frequently delicate balances that must be achieved with our Mexican counterparts. I know that your enthusiasm and boundless energy will well serve Texas in the future.

We have worked closely with your staff in developing the report and I believe the majority of the suggestions have been noted and/or incorporated. However, to be sure, I am attaching the list of recommendations that I believe have merit and should be incorporated in the report, if that has not already been accomplished. I will appreciate your careful consideration of my suggestions.

Again, thank you for your compassion and for allowing your staff the freedom to present in our report at least a small glimpse of the fascinating, complex and challenging mosaic that is the Borderlands.

Please accept this as my formal request to be shown voting with the chair to adopt the final report.

With kindest regards, I remain,

Very truly yours,

Peggy Rosson

PR/kn
Attachment
August 8, 1996

The Honorable Carlos Truan  
Chairman  
Senate Committee on International Relations, Trade and Technology  
Post Office Box 12068  
Austin, TX 78711

Dear Chairman Truan:

Please note the following suggested revisions to the August 1 draft IRTT report. I understand that the committee staff has already made some revisions to the August 1 draft report and has circulated a side by side document that reflects these changes.

1) With regard to Recommendation #9:  
The recommendation should be revised to read: "The Legislature should consider permitting a city that has adopted an impact fee to charge cost of service rates for water and wastewater services provided to colonias provided that the city proves to the satisfaction of the TNRCC that the rate reflects the true cost of service."

Rationale: Impact fees allow localities to recover the full long-term costs resulting from infrastructure expansion. Imposition of impact fees is regulated by state statute, and virtually all cities in EDAP eligible counties already impose impact fees. However, in those situations where the full cost of service is not being recovered within the locality, it is unfair to ask residents to bear the full cost of service.

2) With regard to Recommendation #11:  
The proposed recommendation should be replaced with the following language: "The Legislature should consider amending Subchapter E, Chapter 5 of the Property Code, as enacted by SB 336 (74th Legislature, Regular Session), so that once the equity protections under Section 5.101 and other legal protections added by SB 336 apply to a given contract, those protections will remain in effect for the term of the contract, regardless of whether Subchapter E continues to apply to property or contracts in that county in subsequent years."
Rationale: Senate Bill 336, enacted during the 74th Legislature, Regular Session, provided a number of protections and rights for individuals purchasing property under contracts for deed in certain counties. While these protections have increased residents' ability to borrow money for improvements, some lenders have expressed concern that the applicability of Subchapter E can change based on rates of unemployment and levels of per capita income. Private investment in colonias would be facilitated by removing this uncertainty.

3) With regard to Recommendation #28:
The recommendation should be revised to read: "The State should consider addressing the unique infrastructure needs in medically under served border areas of Texas by supporting innovative initiatives with existing institutions that have direct missions and have specialized resources that address the priority needs of this area."

Rationale: Senator Sibley has already made this suggestion, and I concur.

4) With regard to Recommendation #30:
The recommendation should be revised to read: "The Legislature should adopt incentives to encourage agricultural water conservation, including incentives for individual irrigators and irrigation districts to convert to water-saving irrigation equipment and delivery systems."

Rationale: In El Paso County, a significant amount of the irrigation water is lost because of continued use of unlined canals and ditches. While I support incentives for more water efficient equipment, we should similarly provide incentives for more efficient delivery of water.

5) With regard to Recommendation #31:
I support the language of the proposed recommendation and appreciate the changes made from the comparable recommendations in the committee's initial draft report. However, I do not agree with the content or thrust of the third sentence in the explanatory paragraph following the recommendation, which should be deleted. As proposed, that sentence reads as follows: "Although the connection between surface water and groundwater along the Rio Grande is dramatically evident, and although the surface supply is completely appropriated and jealously guarded, Texas water law and policy does not recognize that withdrawals of groundwater are in fact the use of surface water supplies."

Rationale: While this sentence likely intends to refer to groundwater in the alluvial plain of the Rio Grande, it does not make that clear. Moreover, any change in Texas law to lessen surface water rights based on ground water withdrawals would not be accounted for similarly for New Mexico and other upstream states, and this could negatively impact El Paso's water resources.

Very truly yours,

Peggy Rosson
August 5, 1996

The Honorable Carlos Truan
Chairman
Senate Committee on International Relations, Trade and Technology
Post Office Box 12068
Austin, TX 78711

Dear Senator Truan:

I regret that I will be unable to attend Thursday's IRTT Committee meeting due to a conflict that cannot be rescheduled. I appreciate the hard work of you and your staff in preparing the committee's interim report. However, I have a few concerns that I wish to bring to your attention before Thursday's meeting:

**Recommendation #28 (Border Health Initiative):**
At the very least, this recommendation should be revised to read "medically underserved border areas of Texas" instead of "rural border areas of Texas" to reflect that while some cities along the border may not be considered rural, they are medically underserved. However, I believe the language in the recommendation is too vague and does not make it clear that it is trying to address border health concerns. In addition, any "innovative initiatives" that might be taken to address border health problems should be closely coordinated so as not to duplicate or interfere with any existing programs, such as the Family Practice Residency Programs and the Family Practice Residency pilot program underway in those areas.

While I do not oppose this recommendation, I strongly urge that it be revised.

**Recommendation #32:**
The Legislature already has appropriated $2 million to help fund the wastewater collection and treatment center at Nuevo Laredo. While this has helped contribute to cleaning up the Rio Grande, I'm not sure Texas should start helping fund similar plants in the other Mexican cities on the Rio Grande. There is no fiscal note attached to this recommendation. Texas should not get into the practice of contributing to infrastructure improvements in Mexican cities. In addition, this appears to be addressed by the North American Free Trade Agreement (see attached). The North American Development Bank is authorized to provide loans to communities for water treatment plants and other infrastructure needed to improve the quality of drinking water and waste treatment. This program has not been effectively accessed, and perhaps changes to it are needed on the federal level to make it work properly.
I oppose this recommendation because there is a federal mechanism to address this problem.

** Recommendation #33:**
I agree with the argument set forth by Sen. Ratliff: To ban facilities in the region means that hazardous waste produced in that region would have to be transported to and processed at some other Texas locations. Residents of that location might be justified to be displeased or concerned about hazardous material that they did not produce being "dumped" in their neighborhood.

I oppose this recommendation.

** Recommendation #34:**
While keeping better track of hazardous waste that should be returned to the United States could cut down on illegal dumping and protect water quality, there is no fiscal note as to how much such a system would cost.

I would support restating this recommendation to ask TNRCC to study how such a system could be effectively implemented and what it might cost.

** Recommendation #35:**

a. The functions that the proposed Science and Technology council would fulfill are the responsibility of the Department of Information Resources (DIR). The creation of a new bureaucracy to perform a duplicative role is improper.

b. This recommendation may have merit in its objectives. However, the objectives proposed by this recommendation could be performed through a joint effort between the Department of Commerce and DIR.

** Recommendation #36:**
I concur that the Texas Department of Commerce should explore methods to increase the number of technology-based investments in the State. However, I do not support allocating a specific portion of Smart Jobs funds for this purpose. To my knowledge, both Smart Jobs and Skills Development Funds can already be used to provide training to companies involved in technology commercialization. In regards to the Product Development and Small Business Incubator Funds, I would like to know: (a) what is inflexible about the current fund structures, (b) why funding for the two programs was discontinued, and (c) what the two funds achieved when they were in existence.

I do not support this recommendation.

** Recommendation #37:**

a. Before a measure like this is adopted there should be an inventory and performance evaluation of existing technology commercialization funding programs. The annual expenditures of
existing programs should be reviewed. I would like to see a needs assessment.

b. I cannot support the dedication of lottery proceeds from specific games.

c. The concept of giving small businesses access to technology initiatives researched and developed by state supported institutions is good. However, there should be some type of qualification or threshold to determine which businesses have access to university facilities.

**Recommendation #38:**

a. Would like to see information to support the necessity for this recommendation.

b. How are royalties currently being spent? How much would a 5 percent assessment on the royalty payments being made to state supported institutions impact the funding to those institutions?

**Recommendation #40:**

I concur. However, this type of inventory should be performed by DIR. GSC's primary role is purchasing and operations of telecommunications resources, not planning and inventory of technology resources. Also, this information should be provided to the entire Legislature.

**Recommendation #41:**
This could be a good recommendation, but the technology would be expensive. The Texas Department of Commerce should first do a needs assessment before it is directed to develop a program using videoteleconferencing to assist small business forays into foreign markets.

**Recommendation #44:**
A comprehensive review of the Texas Department of Commerce would best be accomplished by formal Sunset review, currently set in statute for 2001. Although an earlier sunset review date may have merit, this issue falls outside the scope of the interim charge and should be considered by the Senate Economic Development Committee.

**Recommendation #45:**
Overall, this recommendation may have merit. However, the Senate Education Committee should consider the issue of vocational training. In addition, I would like to see more information and details on the type of incentives proposed and their estimated cost to the state.

**Recommendation #46:**
I cannot support this proposal without seeing a fiscal note on the cost of this proposal to the state.

**Recommendation #47:**
To properly evaluate the merits of this recommendation, I would like to review a needs and
performance assessment of the Texas Export Loan Guarantee Fund and a fiscal note on the proposed cost to the state.

Recommendation #48:
While this recommendation may have merit, it should be considered by the Senate Education Committee.

Recommendation #49:
I cannot support increased funding of the State of Texas' Mexico City foreign office without more specific information on the office's existing budget and performance. Although I support the enhanced use of video teleconferencing and computers, the Texas Department of Commerce should examine whether these needs can be met within its existing budget.

Recommendation #50:
This is an issue that should be considered by the Senate Education Committee. In waiving tuition requirements for exchange students, an additional burden is put on the state and state student tuition rates are driven up.

I do not support this recommendation.

Thank you for your consideration. Again, I am sorry I will not be present at the Aug. 8 meeting.

Sincerely,

David Sibley

DMS:kd
Attachment

cc: The Honorable Jerry Patterson, vice chairman
    The Honorable Kenneth Armbrister
    The Honorable David Cain
    The Honorable Mario Gallegos
    The Honorable Eddie Lucio
    The Honorable Peggy Rosson
Part II: COLONIAS
EXECUTIVE SUMMARY

Interim Committee Charge Number One: Monitor the enforcement of HB 1001, 74th Legislature, the colonias bill, and identify any provisions that need to be clarified or strengthened.

Interim Committee Charge Number Two: Assess the progress of the Texas Water Development Board's "economically distressed areas program" with regards to the number of applications received and the number of water and waste water projects actually implemented in the colonias.

Supplemental Committee Charge Number One: monitor implementation of, and make recommendations for any needed changes in, legislation passed by the 74th Legislature to address the problems of colonias, specifically Senate Bill 336, Senate Bill 1509 and House Bill 2726.

Pursuant to the interim charges, the Senate International Relations, Trade, and Technology (IRTT) Committee held a public hearing in four locations on the Texas-Mexico border on January 30, 1996 via teleconference and held several less formal focus meetings at separate locations on the border. The Committee also used information submitted to Senators Rosson and Montford in public hearings held concerning House Bill 1001 in July 26, 1995 and August 10, 1995.

In Texas law, a colonia is defined as an economically distressed area in which water supply or sewer services are inadequate to meet minimal needs of the residents and in which financial resources are inadequate to provide water supply or sewer services that will satisfy those needs. The term colonias means "neighborhood" in Spanish, but in Texas in recent years it has come to refer to substandard subdivisions found primarily along the Texas-Mexico border which are characterized by lack of sewer treatment and safe drinking water, and which usually contain substandard housing, inadequate roadways, and poor drainage.

Although substandard subdivisions exist throughout Texas, they are concentrated along the Texas-Mexico border. The poverty rate in the border region is the highest in the state, with over 41 percent of the residents living in poverty compared to a statewide average of 18 percent. Laredo is the poorest city in the United States, and the rest of the border region falls not far behind. Colonias originate from the shortage of affordable housing opportunities where water and wastewater services already exist and the lack of financing available to low-income home buyers. Such problems hinder, but do not prevent, low-income families on the Texas-Mexico border from meeting their most basic housing needs through their own initiative. Faced with limited housing opportunities, they locate land affordable to them and build their homes incrementally, using their own labor and the help of family and friends.

Before the Legislature imposed model subdivision rules, land without utilities, roads or other improvements could be purchased inexpensively under contracts for deed. Many older colonias originated as make-shift housing for migrant and seasonal agricultural workers and evolved into the home

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1. This report will also briefly address SB 542, which relates directly to the colonias issue by providing for cancellation of never-developed subdivisions.


bases of migrant families that have gradually shifted to year-round residence as agricultural mechanization has reduced the demand for their services.

The lack of safe drinking water and sewer treatment creates significant health problems including high rates of tuberculosis (3.9 percent), hepatitis (6.2 percent), gastrointestinal illness, and infantile dysentery.\(^4\) Unsafe water storage leads to contamination of drinking water supplies. Pit latrines or privies in the low-permeability soils that is predominate on the border combine with heavy rain storms and shallow water tables to cause fecal matter and pathogens to pool on the surface and to contaminate the shallow water table. Crowded and unsanitary living conditions lead to a high rate of disease transmission.\(^5\)

In response to the existence of third-world conditions within our borders, the citizens of Texas have twice approved outlays of hundreds of millions of dollars to address the problems of the colonias. Senate Bill 2 was passed during the 71st Legislative Session and was the first comprehensive colonias bill.

Every subsequent Texas Legislature has refined the State's approach to the colonias issue. The Legislature's strategy has been to:

1. Provide water and wastewater service to existing colonias;
2. Halt the development of new substandard subdivisions (i.e., colonias) through sanctions and enforcement; and
3. Improve affordable housing opportunities in areas where water and wastewater services already exist.

The 74th Legislature enacted House Bill 1001 (HB 1001) in response to the continued growth of the substandard subdivisions in the border region and difficulties encountered by the Office of the Attorney General in bringing enforcement actions against the developers of substandard subdivisions. HB 1001 was a broad-ranging bill aimed at reinforcing the legislative policy of ending the continued development of colonias.

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\(^5\) General references to colonias sanitary conditions:
The purpose of SB 336 was to extend to home buyers using contracts for deed protection similar to that enjoyed by buyers who use conventional mortgage loans. SB 336 applies only to property transactions within a county in which water projects are eligible for funding under the Economically Distressed Areas Program (EDAP), including a county that becomes eligible by virtue of its income level or unemployment rate. Therein lies the only problem identified in regard to SB 336. The rules for property transactions can change from year to year, creating confusion for buyers, sellers, and the county officials who are responsible for implementing the provisions of SB 336.

Senate Bill 1509 directed the Texas Department of Housing and Community Affairs (TDHCA) to establish colonia self-help centers. Senate Bill 1509 responded to the willingness of colonias residents to become more actively involved in the improvement of their housing. The self-help centers will provide training, guidance, and resources to improve the ability of colonias residents to conduct their own housing improvements. Senate Bill 1509 requires TDHCA to establish colonias self-help centers in a minimum of five border counties: Cameron (also serving Willacy), Hidalgo, Starr, Webb, and El Paso. The Department is permitted to establish centers in other qualifying counties as necessary. TDHCA will designate five colonias in each center's service area to receive focused assistance. TDHCA will also contract with a local nonprofit housing organization, community action agency, or housing authority to operate each center. Implementation of Senate Bill 1509 has been slow. Operators of the centers had not been selected as of July 1, 1996 and therefore the program has no record upon which to judge its effectiveness.

House Bill 2726 provided for issuance of $20 million per year in 1996 and 1997 in tax exempt private activity bonds, referred to as mortgage revenue bonds (MRBs), for housing and the refinancing of contracts for deed into mortgage loans in the colonias. TDHCA originally believed that the program envisioned by House Bill 2726 was not practical for a variety of reasons, and structured the 1996 bond issue in a manner that will not fulfill the Legislature's intent. TDHCA has since overcome the impediments to implementing the program, and has determined that the 1997 bond issue will follow the Legislature's original intent.

Senate Bill 542 addresses subdivisions that remain undeveloped and that were grandfathered under Senate Bill 2. Many of these subdivisions are not platted or are only partially platted and therefore are exempt from having to provide water and wastewater services. These grandfathered subdivisions do not qualify for EDAP funding, yet have the potential to create the same health and safety problems as other colonias. Senate Bill 542 authorized the commissioners court of a county that is eligible under EDAP to cancel a subdivision filed before September 1, 1989, if development or improvement had not begun prior to the effective date of the Act, June 5, 1995. Senate Bill 542 also required the court to adopt a resolution finding the subdivision likely to be developed as a colonia. No witness at the interim hearings raised any problems regarding Senate Bill 542. The bill seems to operate as intended, and, as it is not part of the formal charge, it will not be discussed further in this report.

The Legislature's three-pronged approach is fundamentally sound. However, radical demographic and economic changes in the border region will create a crisis that can be met only with a shift in emphasis from water and wastewater systems to housing and education.

The low-income population of the border region is expected to nearly double by the year 2010. 6 This unprecedented increase in poverty is taking place in a region that contains three of the ten fastest growing metropolitan areas in the nation. Regional growth has increased the cost of living without creating a commensurate improvement in the condition of the impoverished residents of the colonias.

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By 2010, most of the colonias that exist today are expected to be provided with water/wastewater services through the Economically Distressed Areas Program (EDAP). Therefore, the Committee finds that the EDAP program should remain on course, but the Legislature's emphasis should shift from installation of utilities to increasing affordable housing opportunities where services exist, either within colonias which benefit from EDAP projects or within municipalities.

The long-term solution for the colonias problem is to improve the economic opportunities available to the colonias residents. While education and training will be critical to this effort, that is beyond the purview of this part of the report. Significant improvements in economic opportunity may be achieved by improving housing opportunities, as addressed below.

SECTION I: COORDINATION

Despite numerous attempts to establish effective interagency coordination through coordinating councils, task forces, and other collaborative efforts, lack of commitment and authority has stymied effective coordination despite the Legislature's coherent and consistent vision. Furthermore, although many programs and opportunities exist to assist colonias residents, there is no central clearinghouse of information on what is available, qualification requirements or application procedures.

The very concept of interagency coordination flies in the face of bureaucratic culture. Agencies without specific legislative mandates are reluctant to divert resources from their statutory responsibilities. No agency is eager to accept policy direction from another. Where responding to the needs of the colonias conflicts with other political or policy agendas of an agency, the colonias lose. The only way to resolve this conflict is through the establishment of a super-agency with authority to direct the activities and resources of individual agencies or, perhaps, through a mandated, institutionalized interagency coordination effort through which the relevant agencies can resolve interagency conflicts. Given the legal, constitutional, and practical impracticality of the first alternative, the second seems most reasonable, especially since a number of federal agencies have mandates that concern the colonias.

The bright spot for interagency coordination is the local border offices of the various agencies which are responsible for the colonias. The border offices the Texas Water Development Board (TWDB), the Texas Natural Resources Conservation Commission (TNRCC), and the Texas Department of Health (TDH) meet monthly as the Interagency Colonias Task Force in the Valley, under the auspices of the Center for Entrepreneurship and Economic Development (CEED) at UT-Pan American in Edinburg. These meetings often include participants from the Texas Department of Housing and Community Affairs (TDHCA) and several federal agencies which do not have border offices. This effort to coordinate the activities of the various agencies with colonias programs or colonias-related responsibility provides a useful, proven model for cooperation.

It has become clear from the effectiveness of this local coordination effort at CEED that coordination and direction from the local level is more effective than similar efforts conducted in Austin. There is no substitute for the intimate knowledge of conditions and problems that is gained from continuous field experience. Unfortunately, many issues between agencies cannot be resolved at the field office level because the local staff members do not have authority over their agencies' policies.

On July 27 and 28, 1996, the Attorney General hosted a conference to develop a plan to address colonias needs. Coordination of agency efforts was the subject of one of the conference's

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Craig Pedersen, Executive Administrator, Texas Water Development Board. Letter to IRTT Committee Chairman Truan, February 28, 1996, pursuant to questions raised in hearing of January 30, 1996.
working groups. In broad terms, the strategy of the working group follows the recommendations in this section.

**Recommendation:** The Legislature should establish interagency coordination as a statutory mandate upon the agencies whose activities affect the colonias, and should consider providing funding for agency coordination activities at both the local level and in the central offices of the relevant agencies.

An effective colonias coordination effort would include:

1. A clearinghouse(s) for information on colonias and programs useful to colonias;
2. Provision of concise information to the colonias self-help centers (established under SB 1509, 74th Legislature) to aid them in counselling colonias residents concerning available programs and assistance;
3. Forums for coordinating the activities of state and federal agencies that deal with colonias issues; and
4. A mechanism to advise the Legislature on recommendations for improving colonias programs and cooperative efforts.

Specifically, the Legislature should amend the organic statute of each relevant agency to require each agency to establish an office of colonias initiatives at the deputy executive director level and for that office to participate as a member of the colonias coordination council. The purpose of establishing offices of colonias initiatives at the deputy executive director level is to ensure that those offices will have direct access to the executive directors to facilitate timely and authoritative decisions.

The Legislature should also require the relevant agencies to hold combined meetings of the board members or commissioners and the executive directors annually, to hold combined meetings of the executive directors quarterly, to hold monthly meetings of the heads of all the agencies' offices of colonias initiatives, and hold monthly meetings along the border of the local offices of the agencies. The purpose of these meetings is to coordinate the efforts of all the agencies whose actions affect colonias. The meetings of the local agency offices are to coordinate the specific details of particular colonias projects and to identify issues that must be coordinated at a higher level. The meetings of the Austin-based offices of colonias initiatives is to coordinate at a higher level. Problems of coordination that are identified at the local level would be passed up the chain of command to the Austin offices where staff would work out proposals among the various agencies and forward them to the executive directors who are identified as needing to take action.

The quarterly meetings of the executive directors is to address the larger issues of coordination and agency responsibility. The annual meetings of the boards are to keep the boards informed and focused on colonias issues and to provide the opportunity for the board members to cut through tough problems as only people with that degree of authority can.

It would be useful for one agency head to be designated as the chairman of this effort. In that case, a state-wide elected official such as the Attorney General might be the logical choice for chairman. The chairman should have the authority to call additional meetings of the executive directors and perhaps meetings of the board members and commissioners to address specific problems that must be decided at that level.

The agencies having responsibilities that bear directly upon colonias conditions include:

1. Texas Education Agency, because of the importance of education in overcoming the cycle of poverty that characterizes the colonias population;
2. Texas Workforce Commission, because of the importance of training and retraining for colonias residents;
3. Texas Department of Health;

1996 Senate IRTT Committee Interim Report
4. Texas Natural Resources Conservation Commission;
5. Texas Department of Housing and Community Affairs;
6. Texas Water Development Board; and
7. the Texas Attorney General.

SECTION II: HOUSE BILL 1001

Prior to the 74th Session, the Attorney General found that enforcement efforts aimed at stopping further development of substandard subdivisions were hampered by loopholes and weaknesses in the existing statutes. In several instances, local officials used these weaknesses to become colonias developers themselves. HB 1001 attempted to establish stricter standards for developments as well as more stringent standards for local officials.

As of January 30, 1996, the Attorney General was involved in 38 active lawsuits. Over 100 open investigations were underway. Four Assistant Attorneys General and three field investigators were actively assigned to these cases and the development of additional cases. In the opinion of the Chief of the Attorney General’s Natural Resources Division, the low number of suits attributable to HB 1001 may be due to the deterrent effect of the criminal and civil penalties imposed by the bill.

HB 1001 was a far-ranging and complicated bill that received criticism due to its strict enforcement provisions as well as the difficulty that affected persons and local governments experienced in understanding its implications. In deference to these concerns, all identifiable issues are included in this report along with an analysis and, if indicated, a recommendation for legislative action.

The authority of non-border counties to enforce model subdivision rules.

Sec. 16.341 of the Texas Water Code defines affected county as adjacent to an international border. Sec. 232.021 of the Local Government Code defines affected county as a county any part of which is within 50 miles of an international border. Each reference seems to remove the authority of counties beyond the border to enforce the model subdivision rules. If this were the case, it could create a new colonias problem in the second tier of counties and statewide.

However, the Attorney General maintains that other sections of the Water Code and Local Government Code provide clear authority for counties to enforce the model rules. Specifically, Sections 16.345 (a) and 16.350(a) and (b) of the Texas Water Code permit any affected county to enforce the model rules. Specific enforcement provisions are provided in Sections 16.352, 16.353, 16.354, and 16.356 of the Water Code. Note: This issue is different from the applicability of SB 336 which is the subject of a later recommendation.

Recommendation: No legislative action is needed.

Providing an exception to the prohibition against connecting utilities in never-platted subdivisions.

Section 232.029 of the Local Government Code prohibits utility connections to property in subdivisions that have never been platted. Persons who live in subdivisions which have never been platted are denied the possibility of ever getting utility connections, even though their neighbors may have had utilities installed before the 1989 law went into effect. Furthermore, the impoverished condition of the majority of colonias residents effectively precludes them from obtaining the surveys and documentation necessary to plat the subdivision.

In order to issue a certificate of compliance under the model subdivision rules, a commissioners court must determine that a plat has been reviewed and approved. Therefore, a

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8 Mr. Hal R. Ray, Jr., Assistant Attorney General, Chief of Natural Resources Division, testimony before the Senate IRTT Committee hearing in Laredo, Texas on January 30, 1996.
9 Id.
resident of a subdivision that was filed prior to the requirement that a subdivision be platted, September 1, 1983, cannot obtain a certificate of compliance. In the case of gas and electric utilities, §232.029(c) of the Local Government Code creates an exception of doubtful practicality for colonias residents.

**Recommendation:** The Legislature should consider methods to permit utility connections which will not at the same time create a loophole for unscrupulous developers.

**Requirements for access to water/wastewater before lots may be sold.**

Witnesses questioned whether the State should apply the requirement that lots must have water/wastewater before they may be sold to lots in subdivisions platted prior to Sept. 1, 1989 that are unsold or resold after July 1, 1995. The Attorney General opposes amending this provision of House Bill 1001 on the grounds that a large number of subdivisions were platted in 1989 to avoid the requirements of SB 2. Many of these subdivisions have little or no development. Public health and safety will be endangered if development is allowed without water and wastewater services. Finally, the Attorney General believes that changing this provision would result in a substantial increase in the number of persons without access to water and sewer services.

**Recommendation:** No action.

**Cost recovery.**

Sec. 2306.0985 of the Government Code imposes a lien on property that benefits from TWDB expenditures. If the property is under a contract for deed, who does the lien fall on, the buyer or the seller? Does this unfairly affect developers of legally platted or developed subdivisions?

Response 1: This provision may apply only to an economically distressed area as defined by Section 16.341 of the Texas Water Code which is in an unincorporated area of a affected county. However, the EDAP definition does not specifically refer to plating except by back reference. Perhaps this should be clarified.

Response 2: This provision is specifically intended to ensure that public money does not benefit the developer of a substandard colonia. If it applies inadvertently to a colonia resident or to a developer of a legally platted or developed subdivision, it could create problems. However, it is unclear whether either colonias residents or legitimate developers are affected.

Further, section 17.936 of the Texas Water Code states that the lien is permissive. At the time of this report, affected counties had not exercised the lien option.

**Recommendation:** No action.

**Do counties become developers under House Bill 1001?**

When Hidalgo County sought to plat an existing colonias subdivision using CDBG funds, as it did in the Rancho Sanchez subdivision, so the residents would be eligible for services, the Office of the Attorney General interpreted House Bill 1001 as deeming the County to be the developer, and required installation of infrastructure. Hidalgo County asks if this strict interpretation be amended. Ten to fifteen percent of Hidalgo County colonias are not platted, and the county is the only entity available to do it, but in any case any political subdivision platting a colonia could have this problem.

**Recommendation:** No clear policy direction has yet emerged from negotiations.

**Rescission and retroactivity.**

Section 232.038 of the Local Government Code permits the buyer of a lot lacking water or wastewater service to sue to void the sale, and to recover the purchase price, the market value of improvements, expenses for providing water and wastewater service, court costs, and attorney's fees provided that the purchase takes place after July 1, 1995. Does this apply to contracts for deed when payment is being made after that date? Should the right of rescission be made retroactive to sales and purchases of a lot prior to July 1, 1995?
The Attorney General has interpreted this section to apply only to sales after July 1, 1995. A contract for deed dates from the date the contract is entered into regardless of when the payments are made. Therefore, the section applies only to contracts for deed entered into after July 1, 1995. Further, making this provision retroactive would invite takings claims.

Recommendation: No action.

Resale of foreclosed lots.

Sec. 232.040(b) of the Local Government Code prohibits the sale of a foreclosed lot if the lot does not conform to water and sewer standards. Developers claim that if the lot meets the standards in effect at the time of the initial sale (for example, if the lot meets previous septic tank percolation standards, it is unreasonable to prohibit re-sale). They also claim that it is impossible to increase the size of lots in developed subdivisions to meet the new standards.

The Attorney General states that the clear intent of this section is to take lots that do not have water and wastewater service off the commercial market. Furthermore, the Attorney General observes that this section does not automatically preclude the re-sale of a lot smaller than ½ acre, which is the current minimum standard for a septic system under the 1990 Texas Department of Health Construction Standards. Septic systems are permitted on small lots sold prior to January 1, 1988, provided that inspection demonstrates that the system will operate properly [Sec. 301.11(f)(4)(D)].

Recommendation: No action.

Public health nuisance.

Section 232.035(b) of the Local Government Code states that a developer may not cause, suffer, allow or permit any part of a subdivision to offer over which he has control or a right of ingress and egress to become a public health nuisance. Developers claim that since they do not possess the property, they have no authority to enter it for the purpose of abating the nuisance, and that this makes the developer responsible for a third party’s actions. The fine is not less than $10,000 or more than $15,000 for each lot. Developers posed several questions related to this provision of HB 1001.

The Attorney General has stated that the developer is not responsible and liable for the actions of a third party. The developer is only responsible and liable for the actions which he caused, suffered, allowed, or permitted. Even then, the developer is only responsible for these conditions defined in Section 341.011, Health and Safety Code.

Does the phrase “control or right of ingress and egress” in the same section apply to land under contracts for deed where the developer holds the title, but does not actually possess the land? The Attorney General believes that if the developer is responsible for a nuisance condition, and has control or right of ingress and egress to the property, the developer is liable, even if the property is subject to a contract for deed.

The penalty is not less than $10,000 or more than $15,000 for each lot conveyed. Developers claim that this makes them responsible for a nuisance that develops at a later date on property that has already been conveyed. The Attorney General disagrees. Section 232.035(c) of the Texas Local Government Code provides for fines "...for each subdivision that becomes a nuisance," and not for each lot that is conveyed. The developer would be liable for a nuisance that he caused on a particular lot. The Attorney General maintains that this section is effectively written to provide legal authority for enforcement to abate specific nuisance conditions created by developers who do not provide safe water and wastewater services in the subdivisions they have created. In particular, it was intended to address the following conditions described in Section 341.011 of the Health and Safety Code:

1. a condition or place that is a breeding place for flies that is a populous area;
2. sewage, human excreta, wastewater, garbage, or other organic wastes deposited, stored, discharged, or exposed in such a way as to be a potential instrument or medium in disease transmission to a person or between persons.
(7) a collection of water in which mosquitoes are breeding in the limits of a municipality;
(9) a place or condition harboring rats in a populous area;
(11) the maintenance of an open surface privy or an overflowing septic tank so that the contents may be accessible to flies; and
(12) an object, place, or condition that is a possible and probable medium of disease transmission to or between humans.

Recommendation: No action.

Service termination for nonpayment.

Section 232.037 of the Local Government Code protects residents against termination of utility service when the developer is being prosecuted for violation of the model rules or related offenses. However, this section does not provide for termination if the resident has simply not paid his utility bill.

Recommendation: Permit termination of service for non-payment of the utility bill by amending §232.037(c) as follows:

(c) During the pendency of any enforcement action brought, any resident of the affected subdivision, or the attorney general, district attorney, or county attorney on behalf of a resident, may file a motion against the provider of utilities to halt termination of pre-existing utility service. The services may not be terminated if the court makes an affirmative finding after hearing the motion that termination poses a threat to public health, safety, or welfare of the residents. This remedy is not available to a resident if the service is being terminated by the utility for non-payment of the utility bill.

Loophole for gifts.

Section 232.022 of the Local Government Code provides an exemption from the model subdivision rules for land that is conveyed as a gift. Several witnesses cautioned that the term gift could conceal unrecorded transactions.

Recommendation: amend §232.022(a) as follows:
This subchapter does not apply if the subdivision is incident to the conveyance of the land as a gift between persons within the second degree of consanguinity or affinity, as determined under Chapter 573 of the Texas Government Code.

The loophole for subdivisions of fewer than four lots and where streets were not set aside for public use.

The Attorney General believes that this loophole is not a problem since the trigger conditions in Section 1.5 of the Model Rules are identical to those in §232.001 of the Local Government Code and apply the rules to subdivisions into two or more lots.

Recommendation. No action.

The loophole for subdivisions not having public or private streets or parks or common areas.

Subchapter A of the Local Government Code and the Model Rules both provide an exception from the platting requirements for a subdivision with no public or private streets.

Recommendation: The loophole can be closed by changing the first sentence in 232.001(a) as follows:

(a) The owner of a tract of land located outside the limits of a municipality who divides the tract into two or more parts to lay out a subdivision of the tract, including an addition, or to lay out suburban lots or building lots, or [and] to lay out streets, alleys, squares, parks, or other parts of the tract intended to be dedicated to public use or for the use of purchasers or owners of lots fronting on or adjacent to the streets, alleys, squares, parks, or other parts must have a plat of the subdivision prepared.

However, serious concerns have been expressed regarding the statewide applicability of this language, and the Committee prefers language that will apply exclusively to border counties.
Definition of a colonia.

Several witnesses observed that Sec. 2306.0985 of the Local Government Code and perhaps other statutes referenced or amended by HB 1001 seem to treat any subdivision in an unincorporated area of an EDAP county as a colonia. Is this an unreasonable burden on other subdivisions? Would a variance create a significant loophole?

Section 2306.0985 of the Government Code applies to any property located in an economically distressed area (EDA) as defined by Section 16.341 of the Texas Water Code in the unincorporated area of an affected county as defined in the same section. By this definition, an EDA is an area in which:

a. Water supply or sewer services are inadequate;
b. Financial resources are inadequate to provide needed water and sewer services; and
c. "80 percent of the dwellings covered by an application for funds or financial assistance were occupied on June 1, 1989."

Under this definition, it is unlikely that an economically distressed area would include a more affluent subdivision.

Recommendation: No action.

Mobile home parks.

The question was raised as to whether the mobile home parks used by the "Winter Texans" should be included under the model subdivision restrictions. Section 232.021(14) of the Local Government Code applies to subdivision for both sale and lease, and would seem to include the trailer parks.

The Attorney General observes that the Texas courts have held that dividing land for a rental mobile home park can trigger the platting laws [See the 1985 case, City of Weslaco v. Carpenter, 694 S.W.2d 601]. An exception for certain "Manufactured Home Rental Communities" was added in 1985 ($232.007 of the Local Government Code), but this is in Subchapter A of Chapter 232. It does not apply in the economically distressed areas which are the subject of Subchapter B.

The question before the Committee is whether it can be assured that exempting mobile home parks from the platting requirements will not open the door to abuse. How, other than maintaining the model rules, can the Committee ensure that adequate water and wastewater services will be provided?

Recommendation: The Legislature should consider an exemption from the platting requirements for travel parks. As yet, no clear policy solution has emerged with the exception that the federal Housing the Urban Development Administration's definition of HUD certifiable manufactured housing might serve to distinguish between temporary travel parks and permanent or semi-permanent settlements.

Fees for plat review.

Section 232.023 of the Local Government Code does not permit counties to charge a subdivider for plat review. Counties object to assuming this administrative burden without compensation.

Observation: It is not clear why EDAP-eligible counties should be authorized to assess fees for plat review since this is not generally permitted for plat review in other counties.

Recommendation: No action.

Extraterritorial jurisdictions (ETJs).

Under Section 212.001 of the Local Government Code as amended by House Bill 1001, cities in border counties with populations over 5,000 have a 5-mile ETJ for purposes of subdivision approval. For other purposes, such as annexation, the ETJ varies with the size of the city. Chapter 42 of the Local Government Code stipulates the following ETJs: for a city under 25,000, 1 mile; for a city under 50,000, 2 miles; for a city under 100,000; 3.5 miles; and for a city over 100,000, 5 miles. Chapter 212 of the Local Government Code imposed the stricter subdivision requirements that apply generally to counties in Subchapter B of §232 at the Chapter 42 ETJ line rather than at the 5-mile line stipulated in §212. Initially, these complicated provisions caused
interlocal finger-pointing, buck-passing, and general confusion.

The Attorney General points out that Section 242.001 of the Local Government Code addresses the division of authority within the part of a city's ETJ that falls between the Chapter 42 ETJ and the larger Section 212.001 ETJ. Within that territory, a subdivision must have the approval of both the city and the county before it can be filed with the county clerk.

The purpose of creating this overlapping authority lies in the fact that while counties are limited to the authority granted by statute, home rule cities may adopt stricter subdivision rules. HB 1001 permitted border cities to apply their stricter standards for subdivisions within the 5-mile ETJ without extending the general purpose ETJ established for all cities by the Legislature.

In the context of the rapid pace of growth among border cities and the disadvantages to cities if substandard subdivisions were to develop in their future Chapter 42 ETJs, the Legislature's decision to give cities approval authority over subdivision plats within 5 miles of their limits seems prudent.

All of the potential solutions to the confusion over jurisdiction would reduce the authority of either cities or counties, and have the potential to produce turf wars. It also seems that both cities and counties on the border have overcome their initial confusion and now understand the statute.

**Recommendation:** No action.

**Solid waste regulation and general inconsistencies.**

Several witnesses commented that at least one section of House Bill 1001 creates an inconsistency with existing law, primarily between the new §232 of the Local Government Code and the model rules in §16 of the Water Code. The question was whether the inconsistent parts of §232 should be stricken or amended. Questions were also raised about the suitability of §232.042 which requires commissioners courts to adopt requirements for solid waste disposal, flood control, roads, and other services not formerly contemplated in the model subdivision rules.

The Attorney General points out that these two statutes have different purposes which account for the differences in their requirements. Chapter 16 is part of EDAP, and addresses the provision of water and wastewater services anywhere in the state. The EDAP is a voluntary program that applies to both rural and urban areas. On the other hand, Subchapter B, Chapter 232, as added by HB 1001, is limited to rural areas and the urban fringe (see the discussion of extraterritorial jurisdiction) in economically distressed counties on the Texas-Mexico border where the problem of colonias development has been most problematic.

Further, Subchapter B attempts to address the multitude of problems that result from unregulated residential development. This comprehensive approach goes beyond water and wastewater to deal with drainage, flood control, solid waste, roads and other issues that are not addressed by the Water Code.

Several witnesses supported the comprehensive approach in HB 1001, and cited problems that have plagued colonias such as flooding and inadequate roads.

**Recommendation:** No action.

**Variances.**

House Bill 1001 contained strict prohibitions against variances for new subdivisions and for re-platting existing subdivisions. Senator Peggy Rosson and Senator John Montford held two days of public hearings concerning House Bill 1001 during which a number of objections were raised. The primary recommendation was that the developers in the El Paso area believed that commissioners courts should have the authority to grant certain variances from the model subdivision rules.

HB 1001 was not the first statute dealing with colonias to discourage variances. The Texas Water Code §16.350(d) does not permit a city or county to grant a variance from the requirement for a subdivision to have water and wastewater service in compliance with the model rules.

Under both House Bill 1001 and current law, the Legislature recognized the historical abuse of variances and the problems created by variances in the context of border development. Any
Proposal to permit variances from the water and wastewater standards should be carefully scrutinized to avoid compromising the health and safety goals that the Legislature has been dedicated to since passage of Senate Bill 2 in 1989. As one alternative, the Legislature might consider requiring a state-level review of proposed variances to avoid local inside-dealings.

Recommendation: No action.

SECTION III: THE ECONOMICALLY DISTRESSED AREAS PROGRAM (EDAP)

The Economically Distressed Areas Program originated in Senate Bill 2 in the 71st Regular Session, 1989. Its purpose was to correct the health and safety problems arising from the existence of thousands of households within the state that had no water service or wastewater treatment.

The program focused primarily on the border region because of the unusually high poverty and unemployment rate and the chronic public health emergency created by an alarming incidence of hepatitis, gastrointestinal illness, infantile dysentery and other health threats. The poverty rate along the border is over 41 percent compared to 18 percent state-wide. Unemployment runs well over 10 percent.10

Drinking water is carried and stored in unsafe, often contaminated, containers. Pit latrines or privies in clay soils combined with heavy rain storms and shallow water tables to cause fecal matter and pathogens to pool on the surface and to contaminate the shallow water table. Crowded and unsanitary living conditions lead to a high rate of disease transmission.

Senate Bill 2 gave the TWDB primary responsibility for conducting the EDAP program. Initial funding for EDAP was provided by 20 percent of a $500 million bond issue approved by the voters in a statewide constitutional referendum in 1989. In 1991, the voters increased the EDAP portion of the bonds to $250 million, 50 percent of the total authorization. The U.S. Environmental Protection Agency (EPA) provided an additional $50 million in 1993 and $100 million in 1995. The State has also provided $20 million from bond refunding profits. In March 1996, the EPA provided another $15 million, bringing the funding total to $435 million. Use of the EPA money is limited to wastewater projects within 150 miles of the Texas-Mexico border. The TWDB is also using $9.5 million appropriated by the Legislature for facility planning.

Two other EPA grants provide targeted funding for related programs specific to EDAP eligible areas: Colonias Assistance and Management Support (CAMSP) provides $292,000 for management grants to EDAP projects. The Colonia Plumbing Loan Program (CPLP) provides $15 million to assist in funding residential utility connections. The TWDB administers both programs.

Progress Assessment

From its inception in 1989, the EDAP program has completed six projects among the 1,481 identified colonias. Twenty-four projects are in the construction phase, and 45 projects are in the planning stage. A total of 1,051 projects are at some stage in the process. The current projects will deplete the $350 million dedicated for systems construction. Committed funds from all sources total $440 million. The TWDB estimates that the unmet needs total an additional $400 million.11, 12

The EDAP program has been criticized for proceeding slowly. In fact, the first 17 projects that received construction grants took an average of 22 months,13 not an unreasonable period compared to normal water projects. In terms of overall program implementation, EDAP did not show significant results for four years. There are many reasons the

10 Colonia Housing & Infrastructure Report, p. 7.


12 Texas Water Development Board, written testimony submitted to the Senate International Relations, Trade, and Technology Committee hearing on January 30, 1996.

13 Id.
program had a slow start. There has been a radical escalation in activity since completion of the 1992 needs assessment. That study provides the baseline to measure the program's effectiveness. It also provided the TWDB with a foundation upon which to establish a plan for addressing its mission systematically. The new administration was on a learning curve, but brought with it the commitment to carry out the program.

The TWDB faced several institutional problems in implementing EDAP. For example, the structure of Senate Bill 2 and the complicated institutional conflicts between local governments and water suppliers in the border region.

Senate Bill 2 did not give the TWDB the authority to initiate or construct EDAP projects. Each project required a local sponsor which would act as a responsible manager to plan and construct the project, to receive the loans, and to ensure repayment of the loans. In the early years, few local governments were willing to incur the expense, time commitment, and difficulty of sponsoring an EDAP project. In some cases, the only recourse for a colonias was to incorporate to form a municipality which would then act as the project sponsor. In other cases, negotiating with existing local governments consumed years.

The Rio Grande border has been the scene of the State's most serious conflicts over water, and these conflicts have carried over into the institutions that manage water there today. In many cases, cooperation on local and regional water projects was achieved only through careful, time consuming negotiation. The State Auditor found that projects were delayed by competing local interests and conflicts between service providers and in some cases by the lack of available service providers in the more remote areas.

<table>
<thead>
<tr>
<th>Table 1: EDAP Box Score</th>
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<tbody>
<tr>
<td><strong>1993</strong></td>
</tr>
<tr>
<td>Projects Completed</td>
</tr>
<tr>
<td>Total Projects with Funds Committed</td>
</tr>
<tr>
<td>Total People Served</td>
</tr>
<tr>
<td>Total Funds Committed (millions)</td>
</tr>
<tr>
<td>Projects in Planning Stage</td>
</tr>
<tr>
<td>Residents Served</td>
</tr>
<tr>
<td>Cost (millions)</td>
</tr>
</tbody>
</table>

An increase in the number of colonia incorporations, creating new municipalities, added new complications. These new municipalities created more competition with those already providing water and wastewater services outside their boundaries, and frequently were at odds with water suppliers within their boundaries over which entity would provide water and wastewater services. In some cases, projects were delayed for several years when these conflicts escalated into contested cases before the Texas Natural Resources Conservation Commission (TNRCC) which has authority over service areas. Other delaying factors included extensions requested by the applicants or engineers, disputes over inter-local agreements, and changes in the scope of work on projects.

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17 State Auditor's Report, supra, n. 16, p. 19.
By 1994, it had become clear that the TWDB could bring order to the process only by imposing a systematic application process. The Board chose to do this by providing planning grants to county water development boards in Cameron County and Hidalgo County with funds from the U.S. Environmental Protection Agency. The county water development boards would identify projects, formally apply for funding, organize project applications, negotiate with potential project sponsors. This localized approach as accelerated the process.

The efficiency and economy of the EDAP program compares favorably to other water projects funded by the TWDB. One method used to evaluate the efficiency of the program is its comparison to other TWDB-funded activities such as the Construction Grants Program. The time between Board approval of funding and project completion for the Construction Grants Program averages an undetermined number of months at this time. The average time for EDAP projects is 30 months. Another measure is the ratio of engineering and planning cost to total project costs including construction. Engineering and planning averages 30 percent for Construction Grants projects, and 16 percent for EDAP projects.18

The EDAP program is faced with problematic and continued growth in the poverty population along the border. If the 1992 needs assessment is used as the baseline for the performance of the program, then 75 percent of the residents and 65 percent of the colonias identified in 1992 will have service when projects currently in the planning stage are complete.

Despite the seeming success of the EDAP program, when population growth is taken into account, only 42 percent of the poverty-level population will have water and wastewater services unless this increased population locates in areas that have water and wastewater services already provided either because they have completed EDAP projects or are within municipalities. The obvious conclusion and one of the primary findings of this report is that the State’s efforts should shift to making affordable housing available where the services exist. In other words, the EDAP effort should continue through completion of the systems, but the State should shift its focus from water systems to housing.

### Issues

**Utility payment and default rate.**

The financial viability of EDAP projects could be endangered by a low rate of service connection or a high default rate on utility

### Table 2: Baseline Need Compared to Growth

<table>
<thead>
<tr>
<th></th>
<th>1992 Assessment</th>
<th>1995 Update</th>
<th>2010 Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (Percent)</td>
<td>272,325</td>
<td>339,041b (+24%)</td>
<td>600,000c 120%</td>
</tr>
<tr>
<td>Colonias (Percent)</td>
<td>1,193b</td>
<td>1,481b (+20%)</td>
<td>n.a.d</td>
</tr>
<tr>
<td>Percent Served with Current Funding</td>
<td>65% colonias</td>
<td>73% of residents</td>
<td></td>
</tr>
<tr>
<td>Funding Needed</td>
<td>$425 million</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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18 Unpublished analysis by the Texas Water Development Board.

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a. TWDB, 1992
b. TWDB, 1995 Update
c. LBJ School, Colonia Housing & Infrastructure, Jan., 1996.
d. The LBJ School report estimates the growth in the colonia-type population, not of colonias per se.
payments. Either situation might be expected with the impoverished customer base that characterizes all colonias.

Experience has run counter to this expectation. Utility payment rates in the completed EDAP projects are comparable to those in adjacent communities.\(^\text{19}\)

Rate of service connection in EDAP projects.

A more important issue is the ability of colonia residents to connect to EDAP systems once they are completed. EDAP funds cannot be used to connect services between private homes and the utility systems installed by the EDAP program. The impoverished residents of colonias are not usually able to obtain conventional financing to pay for service connections because they have usually bought their property under contracts for deed and do not hold title or equity to secure a loan.

Various state and federal programs are aimed specifically at providing assistance for residence connections. The rate of service connection in the completed projects is within the range needed to secure the financial viability of the projects. Since the summer of 1994, the TWDB has required a mandatory hook-up policy for all EDAP projects.\(^\text{20}\)

Certificates of convenience and necessity.

Conflicts between service providers over the right to provide service to an area have delayed EDAP projects unnecessarily. Contested cases have delayed colonia projects for months and in several cases for years. The cost to public entities is exorbitant. In one case, the City of Mission, which was not a principle party, spent $10,000 to produce copies for one discovery request, a request for information by one side in the contested case.

Service providers in unincorporated areas must obtain a certificate of convenience and

\(^{19}\) Craig Pedersen, Executive Administrator, Texas Water Development Board, letter to Senator Carlos F. Truan, January 3, 1996.

\(^{20}\) Id.

In the extra-territorial jurisdiction (ETJ) of a city or within its expected growth corridor, the city must obtain a CCN in order to extend service. Frequently, this brings the city into conflict with a WSC. Such conflicts frequently result in drawn-out contested cases before the TNRCC. In such cases, the WSCs enjoy special protection of federal law.

Federal law prevents any entity from taking over a federally financed system or service area in a way that will compromise repayment of the debt.\(^\text{21}\) Cities claim that WSCs use the federal debt as leverage to get unreasonable compensation. When a city or other entity wishes to assume a service area, the WSC’s investment in facilities must be satisfied in the purchase price. The means of calculating this cost is critical. Although a city may be forced to completely replace the WSC’s small and inadequate water lines, the price will be based, not on the utility of the WSC’s lines, but rather on the future revenues that the WSC expects to receive for the life of the lines. This gives the WSCs powerful leverage in contested cases.

Certificated service areas have traditionally been drawn to exclude colonias. However, the prospect of an EDAP project being built in a colonia with its guaranteed market for services often leads service providers in the vicinity to apply for CCNs that will give them exclusive right to provide the water and/or wastewater services. The provider who succeeds in getting the CCN first has the presumptive right to apply for EDAP funding. Therefore, whichever application is submitted first becomes the target for a contested case brought by competing service providers.

\(^{21}\) 7 U.S.C.A. § 1926(b).
The difficulty created by CCNs goes beyond the conflict between established cities and WSCs. Sometimes, individual colonias have become claimants to CCNs in competition with established service providers.

The role of the TWDB is limited to funding water projects. It cannot initiate EDAP applications or construct the projects. Where a suitable project sponsor does not exist or is not willing to assume responsibility, a colonia may be forced to incorporate as a municipality. In some cases, colonia communities have been led by consultants to reject suitable service providers.

Some colonias have been led to believe that once they incorporate, revenues from the utility system will be available to provide other government services. Incorporation also leads to development of local political programs and local interests with a stake in incorporation. Residents are wooed with visions of city services such as police and fire departments, parks, and a city hall, with little explanation of who will pay or how they will pay. There is a vague expectation that revenues from the utility services will be sufficient to subsidize other city services. In fact, if utility revenues are used to subsidize non-utility services, then one of two conditions exists: maintenance and operation of the utility is being under funded, or utility rates are being used as a substitute for taxes, and are higher than the cost of service.

During the EDAP application process, colonia residents' ability to pay is carefully calculated, and the TWDB uses these projected rates to establish the ratio of grants to loans that will be used to pay for the project. When the rates are raised to pay for municipal government instead of the water and wastewater services, they exceed the ability of residents to afford the services.

The TWDB has attempted to anticipate CCN conflicts and to negotiate among service providers. As of this report, no colonia project is being delayed by a CCN contested case. However, future conflicts are a distinct possibility.

Variance in county EDAP eligibility.

EDAP eligibility for non-border counties can vary from year to year. An eligible non-border county must have an average per capita income 25 percent below state average or an unemployment rate 25 percent above the state average for the most recent 3 consecutive years. Under the structure of the EDAP statutes, projects in non-border counties that are approved for EDAP funding while the county is eligible do not remain eligible if the county's poverty statistics improve. Both the state and the county may have incurred expenses in the application process, and the communities that have been led to expect relief are left with nothing. The TWDB has responded to this problem by adopting a rule that permits continuation of a project should the county lose its eligibility.

Service rates.

Section 16.349 of the Texas Water Code requires water/wastewater service rates charged in a colonia to be equal to or less than the rate charged in a political subdivision providing the services to the colonia. The 74th Legislature permitted rates to exceed those of the political subdivision by 15 percent. However, political subdivisions resist participating in EDAP projects where the rates they can charge are below the cost of service to the colonia. They argue that a rate below cost of service is a subsidy of the colonia from the entity's other customers.

Recommendation: The Legislature should consider permitting a city that has adopted an impact fee to charge cost of service rates for water and wastewater services provided to colonias, if the city proves to the satisfaction of TNRCC that the rate reflects the true cost of service.

Service connections.

EDAP funding may only be used to build water and wastewater systems. It cannot fund the service connections between homes and the mains. When EDAP was set up, it was recognized that the cost of providing individual service connections would drain the program. Furthermore, there are a variety of restrictions on the use of some funds to provide direct private benefits such as individual connections. Private benefits may be provided only through loans, whereas EDAP projects are a mixture of loans and grants.

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The Colonias Plumbing Loan Program (CPLP) is structured to allow funding for individual service connections. Additional funding is provided through Rural Economic and Community Development (RECD, formerly the Farm Home Administration (FmHA), U.S. Department of Agriculture (USDA)). The Water and Waste Disposal Loan and Grant programs provide one-time-only grants of up to $5,000 for water and waste disposal grants. The Texas agency with central responsibility for providing water and wastewater connections is the Texas Department of Housing and Community Affairs (TDHCA) through the Community Development Block (CDBG) program.

Relocation of colonias residents from hard-to-serve areas.

Although all EDAP projects currently under consideration are cost effective, a number of identified colonias are located in remote areas that will be difficult to serve in a cost-effective manner. Voluntary relocation may be the most economical option in such cases. However, relocation will require the availability of affordable housing and financing options which are the purview of TDHCA.

Recommendation: The Legislature should direct the TWDB in cooperation with TDHCA to investigate the cost-effectiveness of voluntary relocation of colonias residents from areas in which the cost of providing water and wastewater services exceeds the cost of relocation, and to develop a relocation option that will be available when it is needed.

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23 These are referred to as Section 306(c) grants.
1987
SB 585 permitted the Texas Water Development Board (TWDB) to provide grants for water and wastewater services in economically distressed areas.

1989
SB 2 enacted by 71st Legislature, effective September 1, 1989, with funding contingent on voter approval of SJR 5.

Voters approved $100 million in general obligation bonds in SJR 5 in November 1989. Total bond authorization is $500 million with 20 percent for colonias. Enabling legislation was SB 61.

SB 1075 revised the authority of counties to require subdivision plats in unincorporated areas.

HB 2318 authorized the TWDB to use $20 million of bond defeasance proceeds to finance EDAP projects. Additional $9.8 million was authorized for research and planning for EDAP projects.

1991
SJR 34, constitutional amendment, increased the EDAP share of the 1989 bond issue to $250 million or 50 percent of the issue. The voters approved SJR 34 in the November 5, 1991 election.

SB 818, the Clean Rivers Act, established the colonia plumbing loan program (CPLP) to assist residential water/wastewater connections and indoor plumbing improvements.

SB 1059 provided a technical correction to Section 15.401, Texas Water Code, to permit research and planning funds to be used for EDAP facility engineering.

SB 1189 required EDAP-eligible counties in which a political subdivision receives financial assistance from the TWDB to adopt model subdivision ordinances.

1992
TWDB completed the first comprehensive study of the scope of the colonias problem.

Congress approved $50 million for wastewater treatment in colonias in PL 102-389.

1993
HB 496 required filing of plats within the extraterritorial jurisdiction of a municipality.

HB 997 directed the TWDB to integrate the EDAP projects into regional projects to achieve greater efficiency and economy, and permitted use of EDAP funds for the portion of regional projects benefitting EDAP projects. The maximum grant to loan ratio for EDAP projects was changed from 75 percent to 90 percent.

HB 2079 granted the Attorney General greater enforcement powers.


1994
Congress approved $100 million for wastewater treatment in colonias. PL 103-327.

1995
HB 1, the General Appropriations Act, approved $9.3 million in Texas Water Resources Finance Authority (TWRFA) excess coverage payments for EDAP bond debt service.

HB 1001 granted the Attorney General greater enforcement powers. Provides for building projects for anticipated growth.

HB 1187, HB 1600, HB 1824, and SB 450 addressed several matters specific to colonias in El Paso County.

HB 2726 authorized issuance of tax-exempt private activity bonds in the amount of $20 million in 1996 and $20 million in 1997 to refinance contracts for deed and for construction or reconstruction of single family dwellings in colonias.

HB 2875 permitted EDAP projects for which the application process is underway in non-border counties to remain eligible for funding if the county's eligibility lapses.

SB 336 provided increased rights and protection for buyers purchasing property with contracts for deed.

SB 542 provided for the cancellation of undeveloped subdivisions that were filed prior to September 1, 1989.

SB 1509 directed TDHCA to establish colonias self-help housing centers in border counties to assist colonia residents with financing, tool libraries and technical assistance.

Chronology of Colonias Efforts
SECTION IV: COLONIAS HOUSING

The 74th Legislature enacted three bills to improve housing opportunities for low income border residents. These include increased protection for buyers who purchase their property under contract for deed (SB 336), assistance in converting contracts for deed to mortgage loans with the attendant transfer of title (HB 2726), and colonias self-help centers (SB 1509).

The purpose of HB 2726 was to facilitate conversion of contracts for deed to mortgage loans. The purpose of SB 336 was to provide basic rights to purchasers under contracts for deed. Each bill will help colonia residents enter the economic mainstream. Without title to the land upon which their homes are located, colonia residents do not have any equity in the structure, and consequently are less likely to qualify for home improvement loans as well as other loans that depend on the applicant having a credit history such as education, small business, and consumer loans.

The purpose of SB 1509 was to establish colonia self-help centers to assist colonia residents in performing home improvements, in the do-it-yourself tradition unique to the border, and to help residents with loan applications, contract for deed conversions and other paperwork matters. The establishment of self-help centers was also intended to establish a local entity that would coordinate and direct the efforts of the various governmental and nonprofit organizations to remedy the infrastructure and housing problems in selected colonias.

General Issues

The primary finding of this report is the efficient, long-term solution for the colonias problem is to improve affordable housing opportunities where services already exist, either within colonias which benefit from EDAP projects or within municipalities. EDAP is representative of the continuing commitment by the citizens of Texas to correcting the housing and health conditions along the border. The Legislature should make an equal commitment to affordable housing.

Recommendation: The Legislature should direct the TDHCA to make a targeted, concerted effort aimed specifically at increasing the stock of affordable housing to overcome both the chronic housing shortage in the border region and the expected population growth of very low income households who would otherwise be forced to seek housing in substandard conditions. The Department should be instructed to prioritize available resources to programs which can provide a remedy for the housing needs of the very low income colonia residents facing the worst living conditions.

Issues Pertaining to HB 2726

Conversion of contracts for deed to mortgage loans is the most efficient and economical way to increase the housing stock in the border region, to improve the availability of affordable housing, and to ensure that development takes place where utility services exist. Purchasers of lots in colonias are often charged high interest rates by sellers. The use of tax exempt mortgage revenue bonds to refinance existing high interest rate debt into low interest home mortgage debt can free up financial resources that colonias residents can use to improve their living conditions.

HB 2726 provides for issuance of $20 million per year for 1996 and 1997 in tax exempt private activity bonds for housing and refinancing contracts for deed in colonias. HB 2726 envisions the use of these mortgage revenue bonds (MRBs) to finance the conversion of contracts for deed into mortgage loans.

TDHCA was initially reluctant to implement HB 2726. It first argued Congress had limited MRBs to first-time home buyers, and therefore contracts for deed were ineligible. However, Congress in 1993, provided a specific exemption from the first-time home buyer requirement to permit loans to persons who had purchased their property under a contract for deed.


TDHCA then asserted Section 143 of the Internal Revenue Code does not generally permit MRBs to be used to refinance existing loans. Again, the 1993 Budget Reconciliation Act provides an exception (now incorporated in the IR Code § 143), for housing within colonias that is on land purchased under a contract for deed.

TDHCA finally contended refinancing contracts for deed becomes complicated when interacting with the rules of federal housing programs. Most federal and state housing finance programs operate within the context of market forces which determine the viability of particular financing schemes. The rules reflect these market forces.

For example, TDHCA maintained that to refinance a contract for deed, the mortgage must be on both the raw land and the structural improvements on the property because the rules of federal mortgage programs and the practices of private lenders prohibit lending against raw land alone. TDHCA further claimed that it is difficult to find federal mortgage programs which permit lending on substandard structures. For example, housing must meet minimum standards set by the Federal Housing Administration (FHA) in order to qualify for a mortgage loan. However, the Legislature had envisioned that in such cases, an aggressive program of combining available assistance such as federal HOME block grant funds available through TDHCA, Low Income Weatherization Assistance, the Colonias Plumbing Loan Program, and self-help assistance should be sufficient to upgrade homes so they can qualify for additional financing options.

Additionally, TDHCA argued that the lending criteria used by the Federal Housing Administration, the Veterans Administration, and the Farm Home Administration create other problems. In general, borrowers must have a credit history. Colonias residents do not characteristically have standard credit histories established through bank accounts, credit card use, and other borrowing. However, nonprofit housing assistance organizations have found it both necessary and sufficient to help potential borrowers establish credit through planned borrowing and payment transactions in order to establish credit histories.

As of June 20, 1996, TDHCA had structured the 1996 bond issue in such a way that it will not be available for use in refinancing contracts for deed. The Department has made a tentative commitment to structure the 1997 issue to reflect legislative intent.

Federally authorized tax exempt bond funds are available to TDHCA to provide for refinancing of contracts for deed as well as home mortgage and home repair loans. This is the major source of housing finance assistance available to the State. During the last session of the Legislature, $40 million was reserved for the purpose of providing funds to refinance contracts for deed.

Recommendation: The Legislature should provide clear direction to the TDHCA in its implementation of a program targeting conversion of contracts for deed which use mortgage revenue bonds authorized for that purpose by HB 2726.

Although no figures are available to accurately estimate the amount of existing debt owned by colonia residents to private developers, there is no doubt that it far exceeds the available funds from the mortgage revenue bonds. The use of mortgage revenue bonds for the purpose of refinancing contracts for deed is one of the most important single actions the State can take to improve housing conditions in the colonias.

TDHCA expressed considerable confusion over how to implement HB 2726. Consequently, the first year's bond issue was not dedicated to contract for deed conversion.

Recommendation: The Legislature should consider authorizing TDHCA to issue of an additional $50 million in tax exempt mortgage revenue bonds for the 1998-99 biennium to continue the refinancing of contracts for deed begun under SB 2726.

Issues Pertaining to SB 336

The contractual relationship between individual buyers and sellers of property and the legal duties and responsibilities of local officials. Annual change causes to confusion and uncertainty.
A contract for deed is sometimes the only option for a low-income family buying land. Low income families on the border, in particular, have erratic and seasonal income streams, little credit history, and no equity. Contracts for deed are a useful tool which nonprofit housing services can use to reduce land costs in housing projects. Unfortunately, prior to enactment of SB 336, contracts for deed were frequently informal documents or hand-shake agreements. They were not registered, and there was no accounting or regular statement of the amount the buyer had paid. These informal contracts led to numerous abuses.

Senate Bill 336 was created to rectify the problems associated with purchasing property under contracts for deed without eliminating a mechanism which had been useful and necessary. It also allowed colonia residents and other statewide low-income families and individuals to acquire land for their homes. The senate bill analysis for SB 336 states the matter accurately:

Colonia residents almost always acquire their lots by means of an executory contract, generally known as a contract for deed or contract for sale. This type of conveyance is unlike a typical deed of trust transaction in several notable respects: first, the property being conveyed generally is only land, with no house, structure or improvements; second, under a contract for deed, legal title does not transfer until all payments are made, and the purchaser may not accrue any equity in a tract even though substantial payments may have been made; third, contracts for deed are not required to be recorded; and fourth, virtually none of the state and federal protections afforded conventional home buyers are provided to a purchaser under a contract for deed.

The fact that a purchaser has very few rights or remedies under a contract for deed has led to a number of abusive practices by sellers of colonia lots. Sellers have sold individual lots to two or more buyers, sold lots without a written contract, and placed liens on lots subsequent to the sale without informing the purchaser. Colonia residents also suggest that sellers frequently misrepresent the availability of water, sewer service and other utilities, and that they are often not informed that the property being sold lies in a flood plain or is otherwise unsuitable for habitation.27

SB 336 applies only to residential property in counties that are within 200 miles of an international border and in which the per capita income average is 25 percent below the state average and an unemployment rate above 25 percent of the state average for the most recent three consecutive years. SB 336 amends the Texas Property Code to require sellers to give notice to the buyer concerning utility service, floodplain location, and encumbrances on the title. It also requires the seller to record the contract and to provide the buyer with an annual accounting statement. The buyer is afforded several protections including the right to cancel the contract without cause within 14 days of the date of the contract and to cancel at any time if the seller has misrepresented the contract or the condition of the property, the right to notice of impending default, and for the buyer to receive his equity in the property in case of a default. To facilitate improvements in existing colonia property, the buyer has the right to pledge his interest in property on contracts entered into before September 1, 1995.

The Texas Department of Housing and Community Affairs is required to determine the counties to which SB 336 applies, and to develop a consumer education program for potential buyers. By October, 1995, TDHCA had determined that 22 counties met the criteria. These included Bee, Brooks, Cameron, Dimmit, Duval, El Paso, Frio, Hidalgo, Jim Hogg, Jim Wells, La Salle, Maverick, Presidio, Reeves, San Patricio, Starr, Uvalde, Val Verde, Webb, Willacy, Zapata, and Zavala.

Senate Bill 336 also creates certain rights and duties regarding contracts for deed executed in a county in which the bill applies. However, the status of a county may change from year to year, creating great potential for confusion and misunderstanding. One recommendation of this report is to establish continuity in county applicability.

Recommendation: The Legislature should amend the Texas Property Code, as amended by SB 336, so that its provisions concerning the duties of affected counties and the rights of buyers and sellers of property within affected counties remain in effect either in perpetuity or for some period of years within any particular county once that county meets the criteria that trigger the applicability of SB 336. The Legislature should also consider amending Subchapter E, Chapter 5 of the Property Code as enacted by SB 336 (74th Regular Session) so that once the equity protections under section 5.101 and other legal protections added by SB 336 apply to a given contract, Subchapter E's applicability is irrelevant to property contracts in that county in subsequent years.

There is one caveat: the Water Development Board has adopted a rule to mitigate this problem as it affects EDAP projects, and the legislation should not conflict with the Board’s policy. Therefore, the continuing status should exempt eligibility for EDAP funding.

One problem faced by TDHCA is the lack of funding, supposed to be provided by the Legislature, for the public education effort the Department is required to undertake. Colonia residents are a geographically, educationally, and linguistically isolated population that often lacks the financial resources to retain legal counsel to represent their interests in actions against sellers of real estate. Public education efforts in this context must be carefully designed and competently conducted.

Recommendation: The Legislature should consider providing funds for TDHCA to undertake a more comprehensive public information campaign to inform sellers and buyers within affected counties of their rights and responsibilities under SB 336.

The protections provided under SB 336 will work only to the extent that colonia developers and residents know about the provisions of the law and abide by it. SB 336 required TDHCA to conduct an extensive public education effort to inform buyers and sellers about the relevant provisions of the bill. However, as late as January, 1996, TDHCA had not begun to implement this mandate.

Issues Pertaining to SB 1509

TDHCA did not implement SB 1509 expeditiously. Award of contracts to operate the centers in the five border counties is not expected to be complete until September, 1996. Therefore, funds approved for this activity can be partially used to fund the centers during the coming biennium.

Colonia residents typically build or improve their own homes with the assistance of family and friends. Because they frequently have no title to the land to secure conventional construction or home improvement loans, construction usually proceeds on a pay-as-you-go basis.

Senate Bill 1509 responds to the willingness of colonias residents to become more actively involved in the improvement of their housing by establishing self-help centers. The centers will provide training, guidance, and resources to improve the ability of colonia residents to make their own improvements.

Without guidance, do-it-yourself housing may not comply with municipal building codes for structure, plumbing, or electrical installation, so there is a tendency to locate in unincorporated areas. Building codes require use of a licensed or certified installer, prior approval of designs, and other measures that are beyond the pocketbooks of colonia residents. Noncompliant housing creates major problems for expanding cities which contemplate annexing an area containing colonias. A city's failure to enforce its building codes endangers the integrity of the code system. It can also result in downgrading the city's homeowners' insurance rating, which may increase rates for existing homeowners. Even more directly affecting the well-being of the residents are unsafe construction, wiring or plumbing.

Senate Bill 1509 requires TDHCA to establish colonias self-help centers in a minimum of five border counties: Cameron (also serving
The department is permitted to establish centers in other qualifying counties as necessary. The Department is to designate five colonias in each center's service area to receive focused assistance.

TDHCA will contract with a local nonprofit housing organization, community action agency, or housing authority to operate each center. The self-help centers will provide the basic assistance that colonia residents typically need. Services will include: providing assistance in obtaining loans or grants to build a home, teaching the necessary construction skills to repair or build a home, providing model home plans, operating a program to rent or provide tools for home construction and improvement for the benefit of colonia property owners building or repairing a residence or installing necessary residential infrastructure, helping to obtain, construct, access, or improve the service and utility infrastructure designed to service residences in a colonia, including potable water, wastewater disposal, drainage, streets, and utilities, surveying or platting residential property that an individual purchased without the benefit of a legal survey, plat, or record.

Services will also include help with credit and debt counseling related to home purchase and finance, help in applying for grants and loans to provide housing and other needed community improvements, the provision of other services that the self-help center, with the approval of the Department, determines are necessary to assist colonia residents in improving their physical living conditions, including help in obtaining suitable alternative housing outside of a colonia's area; and, assistance in obtaining loans or grants to enable an individual or a family to acquire fee simple title to property that originally was purchased under a contract for a deed, contract for sale, or other executory contract.

TDHCA will assist each colonia self-help center to obtain grants, low-interest mortgage financing, and revolving loan program funds to carry out the purposes of the centers. Under SB 1509, TDHCA is also required to establish a five-member Colonia Advisory Committee to advise the department concerning the mission of the self-help centers. Members of the advisory committee must be colonia residents, must be recommended by either the commissioners court of the county in which the center is located, and may not have any contractual or employment relationship to a contractor under the self-help program. One member will be appointed from each county in which a center is located.

TDHCA did not implement SB 1509 expeditiously. Contracts to operate the self-help centers in the five border counties are not expected to be awarded until September, 1996. Therefore, funding approved for this activity could be used to partially fund the centers during the coming biennium.

One of the principle tasks of the self-help centers is to assist low income colonia residents in obtaining home improvement financing through existing programs. It is TDHCA's job to be the state's clearinghouse for information on such programs.

The self-help centers will need the full support and cooperation of TDHCA in carrying out their mission. The Legislature has provided funding primarily for the administration of the self-help centers, under the assumption that the Department would identify sufficient resources to allow the centers to carry out their housing rehabilitation and construction mandate, and it is therefore vital that the Department fulfill this function.

Recommendation: The Legislature should consider funding the colonia self-help centers through the next biennium using the unexpended balance from this biennium's appropriation as well as an additional appropriation to cover the balance of the 1997-98 biennium.

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rehabilitation and construction mandate, it is vital that the Department fulfill this function.

Recommendation: The Legislature should consider directing TDHCA to review its available funding sources and to prioritize funding to provide assistance for the activities of the self-help centers, including refinancing contracts for deed, and construction and home improvement financing.

Texas Department of Housing and Community Affairs Sunset Bill [Sec. 3.18, Art. 4413(510) V.A.T.S.] required TDHCA to establish a low and very low income housing resource center in the Housing Finance Division. The Center is to provide educational materials, technical assistance for nonprofit organizations, and should focus on low and very low income housing. The purpose of this recommendation is to ensure that the Low Income Housing Resource Center is used effectively to assist the local self-help centers.

Recommendation: The Legislature should direct TDHCA to use the Low Income Housing Resource Center to work with the local self-help centers in a concerted manner to ensure that the self-help centers have access to the most effective programmatic and financial resources available from both the public and private sector.

Finally, the Attorney General should coordinate enforcement actions with the self-help centers established pursuant to SB 1509 to ensure that the remedies secured from developers through legal action will address the housing and infrastructure needs of the colonias in a comprehensive manner. The Hidalgo County Colonias Self-Help Center has designated the Jessup subdivision as one of the five colonias targeted for action through the self-help center grant. At the same time, the Attorney General has brought suit against the developer seeking to have the developer pay for the infrastructure needs of the colonias such as drainage which will not be met through other resources. Although this approach promises to be efficient and effective, several other situations have not been coordinated effectively. Clear direction from the Legislature would ensure that the Attorney General's policy is consistent.

Recommendation: The Legislature should request the Texas Attorney General to coordinate enforcement activities within individual colonias with the local self-help centers.

Additional Discussion

Colonias exist because low-income families on the border have not had the opportunity to acquire affordable housing in areas that are already equipped with water and wastewater services.

The primary finding of this report is that the efficient, long term solution for the colonias problem is to improve affordable housing opportunities where services already exist, either within colonias which benefit from EDAP projects or within municipalities.

The low-income population of the border region is expected to nearly double by the year 2010. Overall, the Texas-Mexico border is one of the fastest-growing regions of the nation. In-migration related to NAFTA has depleted stocks of suitable housing and has driven the price of new and existing housing to extremes. In 1995, Laredo was listed as the second least affordable place to live in the U.S. In 1990, when the inflation in housing costs began, one household in five was paying unaffordable housing costs. Chronic poverty in the midst of economic growth begs the question, where are the poor to live?

Home ownership is a necessary condition for economic improvement for individual families and the border region as a whole. The equity and credit history that results from buying a home can be used to finance further home improvements as well as other investments that depend on credit-worthiness such as education loans, small business loans that contribute to economic improvement.

28 Colonia Housing & Infrastructure Report.
30 Chapa, pp. 7-15.
The shortage of affordable housing is not limited to the border. It is a problem of poverty. However, the border has both a larger concentration of low income families and a higher proportion of low income persons. EDAP eligible counties are defined as those in which per capita income is 25 percent below the state average. Although non-border counties drop periodically to this average income level, only the border counties remain at this level chronically.

In the five largest border counties, Cameron, El Paso, Hidalgo, Starr, and Webb, over 41 percent of the population is below the poverty level. The statewide average is 18 percent. Colonia residents typically spend more than 35 percent of their income on housing.

The factors forcing border families to settle in unsuitable places vary from past segregationist strategies which intentionally isolated low income Hispanics to the difficulties all low-income home buyers face in acquiring conventional mortgage financing. Historically, many colonias originated as seasonal camps for migrant farm workers while others began as the home bases for farm workers. Several incorporated municipalities along the Rio Grande originated as colonias. Colonias evolved into year-round communities as agricultural mechanization reduced the demand for farm workers. However, during the past decade, colonias have become an affordable housing option for many families that have no alternative.

Colonia residents have shown commendable pioneering spirit by taking the initiative to provide shelter for their families. With these limited housing opportunities, they find land that they can afford, and build their homes incrementally: using their own labor and the help of family and friends as they can afford improvements. Before the Legislature imposed model subdivision rules, land without utilities, roads or other improvements could be purchased inexpensively under contracts for deed.

Colonia residents face several impediments in financing a home. These include low-income and seasonal income patterns, lack of credit history, non-ownership of the land held through a contract for deed (no title and no equity to secure a loan), poor condition of the existing residence which provides little or no equity in the structure, and the shortage of low-income housing assistance.

The low and erratic incomes of colonia residents are often cited as the reason lending institutions are unwilling to extend credit. Yet hundreds of thousands of colonia residents have obtained financing to purchase their lots at high interest rates from colonia developers who are willing to extend credit to them.

Despite low incomes, colonia residents are prime candidates for lending, since it is not unusual for colonia families to spend 35 percent of their incomes on housing, while lending institutions consider 30 percent of a family's income to be the practical upper limit of the family's ability to pay, the unusual willingness of low-income border families to sacrifice for home ownership is rarely taken into account.

It will take a concerted effort specifically targeted toward increasing the availability of affordable housing to overcome both the chronic housing shortage in the border region and the expected population growth. By 2010, most of the existing colonias are expected to be provided with water/wastewater services through the EDAP program. These developed colonias as well as the growing municipalities on the border and the Texas Water Development Board's regionalization of utilities are creating extensive areas with water and wastewater services.

Unfortunately, suitable building sites alone do not overcome the barriers which prevent low-income families from acquiring adequate housing. Much of the property in colonias is acquired through contracts for deed which do not convey the title until the contract is satisfied. Title to the land

31 Chapa, p. 7.
32 Chapa, pp. 8, 10, 11, 13.
33 Id.
34 TDHCA response to follow-up questions from IRTT hearing, January 30, 1996, transmitted to the Committee on May 6, 1996.
is needed to secure a construction mortgage, but most lending institutions will not provide mortgage financing to build or improve housing on land to which the applicant does not hold title.

TDHCA reports that contracts for deed are subject to lender practices similar to loan-sharking. These include encouraging negative amortization in which the principle continually grows. When monthly payments are insufficient to cover the interest, the difference is added to the principle. Buyers are often encouraged, or at least not discouraged, from making late or insufficient payments so that late fees and compounded interest are also added to the principle. The result is that in many cases, the buyer will never be able to pay off the property debt. 35

Further, because conversion of contracts for deed to conventional loans will also qualify the property for home improvement loans, a concentrated conversion program will increase the stock of housing that can be resold using conventional mortgages. As the economic condition of the owners improves enough to move up the housing scale, their first homes will become available to other low income buyers. Therefore, conversion of contracts for deed to conventional mortgage loans is the most efficient and effective method of resolving the colonias housing shortage.

An additional problem for EDAP projects is that the dilapidated condition of many colonia homes makes them poor candidates for home improvement loans. Without loans, families find it impossible to pay for utility connections or construction of bath and kitchen facilities for homes in EDAP projects and elsewhere even though the utility lines run past them.

Conventional financing is rarely available to colonia residents who usually purchase land under contracts for deed, and construction proceeds on a pay-as-you-go basis. This do-it-yourself housing may not comply with municipal building codes for structure, plumbing, or electrical installation, so there is a tendency to locate in unincorporated areas. Building codes require use of a licensed or certified installer, prior approval of designs, and other measures that are beyond the pocketbooks of colonia residents. Non-compliant housing and subdivisions with no infrastructure create major problems for expanding cities which contemplate annexing an area containing colonias. A city's failure to enforce its building codes endangers the integrity of the code system. It can also result in downgrading the city's homeowners' insurance rating which can increase rates for existing homeowners.

35 Id.
Part III: NAFTA AND TEXAS TRADE
SECTION I: AN OVERVIEW OF NAFTA'S INFLUENCE ON TEXAS TRADE

Background

There was much controversy over the impact of NAFTA on Texas both before and after it became effective on January 1, 1994. Concerns included the potential loss of jobs, the loss of manufacturing companies, and environmental pollution created by increased manufacturing in the border region. Recent polls conducted by Harte-Hanks indicate that the general public continues to have doubts over NAFTA's effects on Texas. Only seven percent of those surveyed viewed NAFTA as beneficial. Twenty six percent viewed NAFTA as "not very beneficial," and 14 percent were not even aware of NAFTA's effect or impact.

Despite this public perception, NAFTA has produced very real and positive results. Texas has increased its overall trade and improved its relations with Mexico, a market that overwhelmingly prefers American and Texas goods and services. The U.S. receives 71 cents of every dollar Mexico spends on imports, compared to six cents for Japan and ten cents for the European Union. Real prices in Texas for textiles and agricultural products have been reduced from pre-NAFTA levels.

The NAFTA preamble succinctly states its goals: contributing to the harmonious development and expansion of world trade and providing a catalyst to broader international cooperation; building on the respective rights and obligations of the member countries under the GATT and other multilateral and bilateral instruments of cooperation; creating new employment opportunities and improving working conditions and living standards in their respective territories; and, undertaking each of the preceding in a manner consistent with environmental protection and conservation. These goals are the guiding force behind NAFTA's implementation. They are also important because they espouse the core of the new, emerging world economic structure: a cooperative economic venture among neighboring countries, regardless of politics. In addition to NAFTA's effect on Texas trade, this section explores the continuing regionalization of trade and its implications for Texas.

In 1992, prior to the implementation of NAFTA, Texas had every hope and expectation that it would reap the greatest benefits because of its location on NAFTA's principal trade routes. Texas expected to benefit from NAFTA because 76 percent of all U.S.-Mexico trade already passed through Texas. Even without NAFTA, U.S.-Mexico trade increased 86 percent between 1987 and 1991, and was expected to increase by 300 percent by the year 2020. In NAFTA's first year, Texas 1994 exports alone exceeded 1993 exports by $1.48 billion.

In preparation for this increased trade, Texas agencies studied the impact of NAFTA on Texas laws. Several critical areas were identified that should be addressed to relieve the burden increased trade will impose on the border region. Some of the issues recognized were education, housing, health and human services, employment, environment and transportation. The agencies also flagged several state laws that need protection from preemption by NAFTA provisions, such as taxation, environment and business regulation.


37 Id.

38 "NAFTA's not a whipping boy," Houston Chronicle, June 9, 1996.

39 Id.


41 Id.

The Yin and Yang of Free Trade

The primary moving force behind the passage of NAFTA was the worldwide trend toward formation of localized trading blocks that protect the economies of individual countries and regions. The General Agreement on Trade and Tariffs (GATT) was the sole attempt to counter this trend. GATT created the World Trade Organization, which oversees and steers the policies and objectives of GATT. In 1993, the Uruguay Round Agreement expanded GATT dramatically, extending GATT rules to such areas as trade-related intellectual property, services, and trade-related investment measures. Improvements were also made in the rules governing other key areas of trade including anti-dumping safeguards, licensing, and customs valuation. However, the 1994 GATT revisions posed a potential threat to state laws governing agriculture, environmental protection, and transportation because GATT preempts local laws that are determined to be inconsistent with the goals or intent of the agreement. As a result, Texas will have to carefully consider federal preemption authority when drafting new state laws.

Large regional trading blocks began forming in the last decade. The European Community began forming trade coalitions at the end of the Cold War, and passed the Single European Act in the early 1990s to further reduce the trade barriers. The result has been greater integration of the economic systems of the 12 member countries: Belgium, Denmark, France, West Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and Great Britain.

In 1993, the European Community represented the largest trade block in the world. Americans feared that this trade block would hurt the U.S. economy because 1) the EC would favor their own trading partners' goods over America's goods; and 2) the EC was the largest trading partner for the U.S. These fears prompted the U.S. to join Mexico and Canada in creating NAFTA, a regional trade block with over 360 million consumers.

In the early 1990s, Japan was the most important trading partner for the U.S. The 1993 U.S. trade deficit with Japan exceeded $59.4 billion, and with such an economic advantage, Japan was reluctant to change the status quo by entering into a trade agreement where they were likely to lose economic ground. However, in July 1993, Japan and the U.S. entered into a basic trade agreement that allowed the U.S. to export more goods to Japan. Generally, though, new industrial nations in the Far East initiated efforts to form their own trade block.

There are on-going efforts to create a "Free Trade Area of the Americas" which would encompass the entire Western Hemisphere, except Cuba, by the year 2005. This plan is attractive because almost 40 percent of all U.S. exports, or $223 billion, are already shipped to countries in the Western Hemisphere, of which $114 billion went to Canada.

Chile is actively seeking inclusion in NAFTA, and already has a bilateral agreement with Mexico. Canada has begun bilateral agreement talks with Chile, and the agreement, if reached, would be compatible with NAFTA. Many Canadian firms expect to benefit from earlier access to Chile's markets because Chile's economy has grown by an annual average of six percent for the past ten years.

Chile offers a base for U.S. expansion into Latin American markets, particularly if Chile associates with Mercosur, the trading block composed of Argentina, Brazil, Paraguay and Uruguay. The Mercosur block has a gross domestic product (GDP) of $650 billion, 70 percent of South America's total GDP. Trade among the Mercosur


45 Id.


47 U.S. Trade Representative, 1996 National Trade Estimates.
members has more than doubled to $15.8 billion during the past three years, making it an increasingly significant world player. The European Union is currently negotiating a free trade pact with Mercosur and anticipates a pact to be in place by 2005.

Texas Trade Statistics

Texas' two biggest export markets are Mexico and Canada (See Appendix A at the end of this section). Texas' 1995 exports to Canada totalled $6.9 billion, up 25.3 percent from 1994. The largest export categories to Canada were electronic equipment and industrial machinery and computers.

Texas' 1995 exports to Mexico totalled $21 billion, down 8.3 percent from 1994 export levels (See Appendix B at the end of this section. For explanation of drop in levels, see discussion on peso devaluation below). Texas trade with Mexico is generally larger than all U.S. trade with Brazil, Argentina, Venezuela, and Chile combined. The largest export categories to Mexico were electronic equipment and components and transportation equipment.48

Ports of entry on the Texas-Mexico border handled 80 percent of all overland exports from the U.S. to Mexico in 1994,49 up from 76 percent in 1993.50 Two-thirds of this trade traffic went through Laredo, El Paso and Brownsville. In 1994, U.S. exports to Mexico totalled $50.84 billion.51 Texas' export growth rate of 17.1 percent in 1994 exceeded the national export growth rate.52 Texas' exports to Mexico fell 8.3 percent in the fourth quarter of 1995 from 1994 fourth quarter levels due to the Mexican peso devaluation crisis.53

Fortunately, Texas exports to Mexico in the first quarter of 1996 rebounded, growing 5.6 percent to $17.98 billion, a new quarterly record for Texas.54 Mexico's strengthening economy is credited for this dramatic increase in Texas exports, as Mexican purchases of Texas goods rose 11.6 percent in the first quarter of 1996 alone. All evidence points to a quicker recovery from the peso devaluation crisis than expected.55

U.S. imports from Mexico totalled nearly $31.2 billion in 1991. By the end of 1995, however, imports had increased over 50 percent to $48.6 billion.56 A good example of this explosive growth can be found in the apparel manufacturing sector. In 1983, Mexico supplied approximately 6 percent of all U.S. apparel imports, compared to 33 percent today.57 This increase in Mexican apparel production is due almost exclusively to increased maquiladora plant production along the border.58

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Texas' yearly imports from Mexico for 1995 exceeded $37.7 billion, accounting for over 71 percent of all U.S. border imports. This is up from $29.5 billion in 1994 imports. The type of Mexican imports into Texas markets has changed as well: during the 1980s Texas imported mostly oil and petroleum products. In the 1990s, most Mexican imports were manufactured goods such as auto and stereo components.

Texas Infrastructure

For the purposes of this assessment, we have defined infrastructure to include water and wastewater delivery systems, transportation systems, technological or telecommunications systems and economic development initiatives. Transportation, economic development and technology will be addressed in later sections in this part of the report and water and wastewater delivery systems are discussed in Part I of this report.

NAFTA has had a two-fold impact on Texas' border region infrastructure. The infrastructure needs have increased drastically while the resources needed to meet these increasing demands have remained stagnant. To gain the greatest benefit from NAFTA, many predicted in 1992 that the Texas border infrastructure would need to be vastly improved in many areas. For example, the total estimated cost for all publicly funded transportation infrastructure needed over the next decade was $3.25 billion. This figure does not account for the other resources needed to install or improve water and wastewater delivery systems that will serve the rapidly increasing border population, which in 1993 were estimated to cost $4.15 billion between 1993 and 2010.

Labor

The population of the border region is largely rural, young, Hispanic and economically disadvantaged. As of 1993, 1.7 million Texans lived in this region. Ninety percent of these residents lived in metropolitan areas, where the growth rate was approximately 23.9 percent, outpacing the 1993 statewide growth rate of 19.4 percent.

As the population continues to grow, so do the poverty levels in the border region. The poverty rate is increasing because the gap continues to grow between the increasing population and decreasing number of employment opportunities for minorities. "Barring fundamental changes, Texas will be overrun by poverty..." The Study is significant because it finds that Hispanics, the largest group in the border population, are going to be the group most affected by the increase in poverty levels. This is because the statewide population is expected to grow nearly 80 percent, to 33.8 million, and nearly all of this growth will occur in the Hispanic population, raising the Hispanic percentage of the population from its

62 Shiner Report, p. Ex-2, Environmental Infrastructure Section. This Report notes that this figure is for both Mexico and the U.S. and the U.S. cost estimate is $1.956 billion. Wastewater treatment comprised the majority, 60 percent, of the estimated costs, totalling $2.53 billion. Water supply was second at $1.31 billion.

63 "Research and Technology in the Underserved Populations of the Border," Dr. Darryl M. Williams and Robert J. Hastings, Office of Border Health, Texas Tech University Health Sciences Center at El Paso, April 1996 [hereinafter called the Williams-Hastings Report].

64 Williams-Hastings Report, p.2.

current 29 percent to 46 percent.\textsuperscript{66} The Study continues, noting that the State should provide more early childhood enrichment programs, specialized literacy and language training for immigrants, and work force training for higherskilled, high-tech job opportunities for minorities if Texas expects to compete in the world economy.\textsuperscript{67}

The employment rate for the border region is falling behind the border region's population growth and that means more people, and particularly, more children, are falling below the poverty line. "Texas now ranks 49th nationwide in the number of children living in families where at least one parent worked full-time but the total family income remained at or below the poverty level."\textsuperscript{66} Texas poverty levels remained 4 percent above national averages, hovering around 11.9 percent.\textsuperscript{69}

Key indicators of the region's economic condition include per capita income and unemployment figures. In 1993, the Border region had the highest unemployment rate in the nation.\textsuperscript{70} The 1993 average per capita income in the border region was $7,697, compared with a U.S. average of $20,800 and a Texas average of $19,145.\textsuperscript{71} The 1993 unemployment rate in the border region exceeded ten percent, compared to a statewide unemployment level of 7.5 percent. The 1994 statewide unemployment rate dropped to 6.4 percent and dropped again in January 1996 to 6.2 percent,\textsuperscript{72} while metropolitan unemployment rates in some border cities reached double digits. A good example is Laredo, where unemployment rates lingered around 13.2 percent for the month of April 1996.\textsuperscript{72}

In 1994, Texas surpassed the State of New York to become second in population and employment. Between December 1993 and December 1994, the first year of NAFTA, Texas added a quarter of a million non-farm jobs.\textsuperscript{74} Texas led the nation in employment growth in the 1990s, adding nearly 900,000 jobs.\textsuperscript{75} As exports to Mexico increased, so did export-related jobs in Texas, which increased by 15 percent.\textsuperscript{76} This job growth rate is also evident in the border region. For example, 30,000 more El Paso citizens have gained employment across the border in Juarez as a direct result of increased maquiladora production.\textsuperscript{77}

Keeping in step with statewide growth, employment growth in the border region posted equally impressive numbers. Employment has increased at least 36 percent since the mid 1980s, with the biggest increases occurring in manufacturing and services.\textsuperscript{78} Because of the reduced tariffs and extremely low labor costs available in Mexico, many people feared that American companies would rush to establish plants

\begin{itemize}
\item \textsuperscript{66} \textit{Id.}
\item \textsuperscript{67} \textit{Id.}
\item \textsuperscript{68} "Poverty levels for kids getting worse in Texas," \textit{San Antonio Express-News}, June 3, 1996.
\item \textsuperscript{69} \textit{Id.}
\item \textsuperscript{70} Shiner Report, p. 6, Employment and Worker Training Section. This is a 1993 figure, but the unemployment rate for the region remains one of the highest in the nation.
\item \textsuperscript{72} U.S. Bureau of Labor Statistics, as cited in \textit{Fiscal Notes}, April 1996, p.18.
\item \textsuperscript{73} "At Last, Hint of Recovery Along the Mexican Border," \textit{Wall Street Journal}, June 5, 1996.
\item \textsuperscript{74} John Sharp, Texas Comptroller of Public Accounts, "The Texas Economic Outlook," \textit{Gaining Ground: A Regional Outlook}, p. 3.
\item \textsuperscript{75} \textit{Id.}
\item \textsuperscript{76} \textit{Id.} For example, in 1993, 247,000 jobs in Texas were directly related to the export industry, and another 217,000 jobs were indirectly related to the export industry.
\item \textsuperscript{77} \textit{Id.}
\item \textsuperscript{78} \textit{Id.}, p. 9.
\end{itemize}
just south of the border. Despite these fears and two years after NAFTA's implementation, there has not been the rush of American companies fleeing to Mexico that many feared.

However, some companies do relocate to Mexico for the reasons just noted above. In addition, relocation of American companies to Mexico serves two primary goals:

1. It lowers production cost through lower labor costs;

2. It provides employment opportunities to Mexican citizens, increasing the overall purchasing power of the Mexican people.

Analysts predicted in early 1993 that certain U.S. labor markets would be hurt by Mexican competition created under NAFTA, such as agriculture, textiles and retail. Construction was another market predicted to be hurt, but instead experienced impressive growth. The manufacturing sector also experienced some growth, having added more than 12,000 jobs over the last few years. However, there are specific examples of maquiladora competition negatively impacting U.S. manufacturing. For example, Samsung, an electronics manufacturing company based in South Korea, relocated a manufacturing plant to Tijuana on March 29, 1996, from Ridgefield Park, New Jersey. Another electronics company, JVC, also moved its plant to Tijuana from Elmwood Park, New Jersey resulting in a net loss of 200 jobs at the Elmwood plant. The U.S. Department of Labor reports that since the implementation of NAFTA, over 66,600 U.S. jobs have been lost to Mexico.

Analysts also predicted that after NAFTA, capital-intensive, skilled industries would move to the U.S. until Mexico could create effective intellectual property rights protections that would make production in those industries in Mexico economically advantageous. However, Texas has enjoyed that benefit. As of 1993, there remained an ever-increasing gap between the skills of the Texas workforce and job requirements. Nearly half of all potential workers in the border region lack a high school diploma. Workers that lack education and technical skills are removed from employment consideration by the developing industries in the region.

The not-so-simple solution to balancing the loss of American and Texan jobs in the unskilled labor industries is to retrain those displaced workers to handle the more skilled, high wage jobs that will be migrating from Mexico. NAFTA contains specific labor protection mechanisms, such as the transitional assistance program, or NAFTA-TAA, which are meant to alleviate job market pressures created by international competition. Under NAFTA-TAA, over 50,000 workers have been certified for retraining.

The Texas Workforce Commission (TWC) works in tandem with the NAFTA-TAA program. Any Texas employee filing for unemployment compensation is given a general survey by TWC asking whether the worker thinks his/her layoff was due to NAFTA. If there is any question in the worker's mind, TWC counselors can assist the worker in pursuing the claim. The procedure can be tedious, but is thorough, and there are TWC employees to assist the workers in moving through the claims process.

NAFTA-TAA has many benefits for displaced workers. It establishes income payments to those workers displaced by NAFTA, retraining for employment in a new industry, a training

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79 Comptroller’s Report, p. 5. The construction industry grew by 8.9 percent in 1994, responding to an increase in state residential construction.

80 Id.

81 Id., p. 7. Aerospace, oil field and other instrumentation and food processing all lost in excess of 1,000 jobs in 1994.


83 Id.

84 Id.
readjustment allowance to supplement state unemployment compensation while the worker is enrolled in a TWC retraining program, job search allowances up to $800, and a relocation allowance,\(^5\) with no cap, for those workers who cannot locate employment within their normal commuting area.

One other provision of the NAFTA labor side agreement allows a member country to temporarily impose higher tariffs to protect a home industry that has been threatened with significant job losses due to either large numbers of imports or a faltering export market in a NAFTA member country.

Texas has implemented several programs, such as Smart Jobs, to train workers to meet the demands of the changing job markets as a result of NAFTA. The Texas Workforce Commission, replacing the Texas Employment Commission as the primary employment and job placement agency in Texas, has over $40 million to retrain workers hired by new businesses expanding into Texas.\(^6\) The TWC has an efficient system for coordinating with the federal programs.

Poverty, unemployment and other conditions place stressful demands on human service programs. Texas is not excepted from this general rule. However, economic forecasts for the border region are promising. The Texas Comptroller estimates that by the year 2000, nearly 33,600 jobs should be added to the border economy.\(^7\) The Comptroller also estimates that the border region's role as a transportation hub will continue to grow through the year 2000, creating over 1,600 jobs.\(^8\)

\(^5\) This benefit covers 90 percent of moving costs, or provides a lump sum payment of $800.


\(^7\) Texas Comptroller's Report, p. 10.

\(^8\) Id. For extended remarks, see generally Texas Comptroller's Report, pp. 10-12.

Other Issues

Education

This Committee identified several important educational issues in its examination of the border region educational system. However, some of these issues are beyond both the scope of this Committee's interim charges and time limitations. Therefore, those issues which this Committee will note in this report, but not fully address, are funding shortages, language barriers, and the education of immigrant children. Other educational issues which will be examined in this section more fully include the border region's dropout rate, the role of the Telecommunications Infrastructure Fund (TIF) in the border schools, and the lack of higher educational facilities in the region.

While the region's population continues to grow, high school graduation rates remain low. Forty-two percent of all colonias residents, for example, lack a 9th grade education. Regionally, almost half of all adults over the age of 25 did not have a high school degree and did not speak English "well."\(^9\) Language is a very real barrier to education on the border.\(^10\) Texas schools rely on English as the primary language for instruction. This is true, even in the border region, where many students' primary language is Spanish. The discrepancy between the language spoken at home and school jeopardizes a student's chances for success. If these students cannot communicate effectively in school, there is little motivation for them to remain there: "they are either going to put into the system or draw on the system," stated University of North Texas economist Bernard Weinstein.\(^11\) Steve Murdock, director of the Texas State Data Center at Texas A&M University also concluded in his Center's Study that "the future of Texas is tied to the future of its minority population.

\(^9\) Shiner Report, p. 5, Health and Human Services Section.

\(^10\) Shiner Report, p. 8, Health and Human Services Section.


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How well they do is how well the State will do.  

However, language barriers were not the only problem faced by educators along the border. Texas Education Agency's data on dropout rates for the 1993-1994 school year demonstrates that almost 10 percent of students in some border-area districts are dropouts. This is compared to 3.1 percent in Austin I.S.D. and 3.1 percent in Dallas I.S.D. A dropout, as defined by the TEA dropout report, is any individual, in the seventh through twelfth grade, absent for 30 or more consecutive days without an approved excuse or documented transfer, or who fails to reenroll during the first 30 days in the following semester. The top two reasons for dropping out were poor attendance and entering a GED program. Further, the TEA dropout report listed pregnancy as the reason for 3.8 percent of female dropouts.

In the 1993-1994 school year, 51.9 percent of the statewide dropouts were Hispanic, up from 49.6 percent in the 1992-1993 school year. This trend has existed since 1987. The greatest dropout rate for Hispanics statewide was found in the ninth and twelfth grades. While Texas is still searching for new ways to keep its students in school through graduation, the Legislature has implemented new funding mechanisms that increase the overall resources available to border region students.

To enhance the connection between rural school districts and educational resources, the Texas Legislature created the Telecommunications Infrastructure Fund, or TIF, in 1995. The TIF helps to distribute educational technology throughout the state. Use of this fund will assist border schools in gaining access to on-line computer systems and distance learning through closed-circuit learning channels. This TIF is significant to rural school districts on the border, in particular, because resources are so spread out. Using the TIF to equalize the border region's educational resources increases the students' educational opportunities and gives these students a better chance to graduate and do well in college.

A 1996 TAAS, or Texas Assessment of Academic Skills test was administered to Texas elementary, middle, and high school students during March, April, and May. Test results showed that overall passage rates were up from 1995. Hispanic scores in most every area tested, also increased, except sixth-grade reading. Hispanic and low-income students showed an encouraging 18 percent increase in sixth-grade math scores, and African-Americans posted an equally encouraging 19 percent increase.

Although the method of funding public education in Texas is still under debate, the State has provided the majority of funds for border school districts in the past. This is because the State "covers" what the local school districts cannot. In 1995, for example, only 21 percent of school funding was raised locally, so the State contributed the rest of the needed funding. As the cost of funding public education continues to increase, so do

92 Id.


94 TEA Dropout Report, pp. 42, 90.

95 TEA Dropout Report, p. 3.

96 TEA Dropout Report, p. 10.
property tax rates. While school property taxes continue to rise, the local tax base in South Texas remains below the state average. Federal funding in 1996 for school improvement programs decreased by 20.8 percent from $25.4 million to approximately $20 million, placing an even greater burden on the State.

There are currently 484 doctoral programs at public higher education facilities across Texas. Of these, seven are located at border region universities, such as the University of Texas at Pan American, the University of Texas at El Paso and Texas A&M International University. Only two doctoral programs in the border region relate to NAFTA, and both were implemented prior to NAFTA. The first is the University of Texas at Pan American's doctoral program in international business; the second is the University of Texas at El Paso's environmental sciences engineering doctoral program. Texas A&M International University also has three master's programs at their Graduate School of International Business that are related to NAFTA.

The new employment opportunities require more technical skills and college degrees than ever. To meet these increasing demands, primary, secondary, and higher education facilities must vastly improve the quality of services available to adequately prepare these students for meaningful competition in these new industries.

Recommendation: The Legislature should consider directing the Texas Education Agency to study the potential of requiring implementation and the associated costs of making foreign language instruction available in all grades from kindergarten through twelfth by the year 2005. A report of this study should be delivered to the 75th Legislature.

Texas school children are facing a competitive, global job market. Many children in other countries speak at least two or more languages by the time they graduate from high school. Language skills are as important in the new global marketplace as the more traditional school subjects. Language skills are most easily acquired in the earliest grades.

Border Health

The Border region possesses a unique population, culture and environment. This region has been, and continues to be, plagued by environmental, health, transportation and economic needs unmatched anywhere else in the State of Texas.

Global studies in economic development have documented the obvious link between economic achievement and health. The first thousand dollars in disposable income makes a huge difference in the health profile...[affluent populations tend to have better health care and to be healthier in general, and poor populations exhibit the health profiles typical of those found in the developing world.

The current health status of the Latino population is complex. The Latino health profile can be generally summarized as possessing a low mortality rate, healthy birth outcomes, a low service utilization and a low rate of insurance coverage. For example, 40 percent of all Latino mothers living on the border in the four U.S. border states do not receive pre- or post-natal care. Poor environmental conditions and a lack of knowledge regarding basic health matters add to the likelihood that there could be complications during or after pregnancy.


105 In this article and throughout this report, the terms "Latino" and "Hispanic" are used interchangeably to refer to U.S. residents who can trace their ancestry to the Spanish-speaking regions of Latin America and the Caribbean. See Rodolfo O. de la Garza & Louis DeSipio, From Rhetoric to Reality: Latino Politics in the 1988 Elections, 1992 (Westview Press).
Additionally, a notable lack of medical research and technology exists in the border region. Reasons for this include prohibitive costs of supplies, inadequate instruction, lack of insurance and a lack of monitoring those who do have health care insurance. Examples of existing technology essential to modern diagnosis and management of many illnesses include imaging technology, such as ultrasound; mammograms; radiography, and electrocardiography, or ECG, which helps in the diagnosis and management of heart disease. This lack of technology is debilitating: without it no effective health care system is capable of reaching a population as widely dispersed as the border population.

Other barriers to effective health care prevention and treatment also exist, such as limited public transportation systems, which are inadequate or nonexistent in the majority of rural border communities; language barriers, resulting from an inadequate number of qualified translators or poor translations by untrained individuals; financial support for existing facilities; and a lack of an effective health notification and education system.

Nowhere else in the state are life-threatening diseases, e.g., shigellosis, amebiasis, Hepatitis-A, tuberculosis, spina-bifida and anencephaly (both neural-tube defects), found in such alarming numbers as in the Texas-Mexico border communities. Substandard subdivisions, otherwise known as colonias, are plagued by poverty, low educational attainment, lack of public or private transportation systems, and inadequate housing. Colonias are also areas rife with environmental pollution which causes unsanitary living conditions. These unsanitary living conditions are health disasters waiting to happen. For example, birth defects, such as anencephaly, occur in border areas at a rate five to six times higher than the state average.

Michael G. Ellis, a professor in the Department of Economics at New Mexico State University, recently commented on the Texas colonias health problems in the U.S. Health Resources and Services Administration Border Vision Fronteriza Project:

Substandard housing developments, or "colonias," are found in Texas...These have high incidence rates of Hepatitis caused by fecal contamination of drinking water. Dust pollutants and transportation problems caused by lack of sufficient roadways are endemic with the net result being that thousands of children are at risk as their health is imperiled. As one public health official put it, our most important task is to insure that children are served...that the relationship of children to health, education, housing and basic services is strengthened so that children are successful. Such a commitment is difficult to achieve in the dusty colonias of Texas...

Another problem in rural border communities is the lack of adequate health care and health insurance. Over 140,000 border residents live in Colonias and 65 percent of these residents have no health insurance, which is due to the extreme poverty and lack of economic opportunities in the region. The poverty rate in the rural areas along the border runs 35.8 percent versus 18.1 percent rate statewide. Poverty forces those without health insurance to travel long distances, even to Mexico, for their medical care. In an informal poll taken in the Hidalgo Colonias, nearly 80 percent of the 300 residents questioned admitted going to Reynosa, Mexico for their medical needs at least once during the year. Almost 100 percent of the respondents also stated that they purchase their medications in Mexico. The reasons given for this phenomenon include the lower cost of services and the

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106 Id. p. 3.
108 Texas A&M University at College Station, "Battling the Health Care Crisis in Rural Texas" Briefing Document, 1996.
109 Ellis Report, p. 5.
accessibility of doctors. The Center for Rural Health Initiatives recently reported that "rural communities often lack the medical resources to care for [chronically ill and disabled] children, requiring them to travel long distances for appropriate medical care."

Primary care physicians, those in general and family practice, general internal medicine, general pediatrics and obstetrics/gynecology are in short supply. The ratio of available physicians to border residents, 101.1 to every 100,000 people, falls far below the state average of 181.3 available doctors to every 100,000 citizens and even further below the national average of 233 available doctors to every 100,000 citizens. Other health professionals, especially nurse practitioners, certified nurse midwives, physician assistants, and physical therapists are also needed in many rural communities.

There are several ways to compensate for the lack of sufficient numbers of qualified doctors to treat the rural populations. One way to increase the supply of health-care providers in rural regions is to capitalize on the region's resources and teach/provide counties preventive medicine techniques. Another way to increase the number of health education services in the region is through creating initiatives or partnerships that can utilize that region's already-existing infrastructure and local resources. The Center for Rural Health Initiatives recently reported that

Rural communities work hard to recruit and retain health professionals. Most communities spend much time and money recruiting physicians, nurses, and allied health professionals.

Virtually every rural hospital is involved in a continuous search for a health professional...One method communities use to attract and retain health professionals is the "grow your own" approach. Rural communities often support the training of local health professionals, knowing that these practitioners will return to practice in the community and will likely remain in the community after the service obligation is completed.

One, if not the most important, role that the state can fulfill is to provide appropriate forums to increase health providers through the above-mentioned educational opportunities.

After adequate housing and transportation, acceptable health care and health education are the most crucial elements to Texas' success in reaping its greatest benefit from NAFTA trade.

The Legislature has indirectly addressed the health problems faced in the rural border regions' colonias with the South Texas/Border Health Initiative. However, the mechanism which was used to implement the initiative did not have a clear and direct mission to address the needs of rural border or colonias residents. The Initiative per se focuses the majority of its attention on the urban areas near El Paso, San Antonio, Laredo, Brownsville and Corpus Christi. Thus, there are large health-care gaps in rural Texas. Presently, the Initiative does not provide the specialized expert attention needed in colonias for the array of health issues unique to the region or in the majority of the rural communities along the border.

The State created another initiative, the Texas Department of Health Center for Rural Health Initiatives, and the Texas A&M School of Rural Health whose mission is "to enhance the health and well-being of the citizens of Texas through excellence in education, research and outreach

110 Dr. Ramiro Casso, Texas Department of Health Board Member, Presentation/Interview.

111 Center for Rural Health Initiatives, "Rural Health in Texas; A Report to The Governor and The 74th Texas Legislature," Austin, January 1995 [hereinafter the Center for Rural Health Initiatives Report].


113 Center for Rural Health Initiatives Report, p.60-61.
services focused on rural Texas." The School of Rural Health is committed to developing new partnerships on the multi-disciplinary development and implementation of a solution to the problems of health in the rural environment. Currently, the school is participating in projects with numerous entities including, but not limited to: Scott & White Memorial Hospital & Clinic; Driscoll Children's Hospital; Texas A&M University, Extension Services and Schools; Central Texas Veterans Health Care System; Texas Department of Health, Texas Department of Human Services, Texas Department of Mental Health/Mental Retardation, Texas Center for Rural Health Initiatives and County Health; and, Education Agencies.

In acknowledging the unique health problems along the border, the Texas Department of Health (TDH), equipped with its Center for Rural Initiatives and other specialized resources, should affiliate itself with the Texas A&M School of Rural Health to more appropriately address the needs of rural border Texas. Within the scope of the interim charges, this Committee recommends that the State pursue innovative ventures such as that of the TDH and the School of Rural Health. These innovative solutions have the possibility of capitalizing on existing agencies' efforts and existing local/regional resources that have explicit missions addressing the concerns of rural Texas and of the Texas-Mexico Border.

Recommendation: The Legislature should consider addressing the unique infrastructure needs in the rural border areas in Texas by supporting innovative initiatives with existing institutions that have direct missions and have specialized resources that address the priority needs of this area.

The border region needs to have its specialized/unique health concerns addressed. By supporting innovative initiatives, such as the one discussed, the state better addresses the unique infrastructure needs of the border region.

Housing

The border region is one of the fastest growing areas in the U.S. and it now faces drastic change. Flexibility in the existing housing programs, independent of colonias housing programs, would allow for the additional housing necessary in the region. Projects to improve housing and infrastructure could provide the needed employment for many border residents lacking technical job skills while simultaneously creating new housing. While colonias remains the central housing issue for the region, there is still a need for low-income, non-colonias housing.

The explanation for the growing demand for non-colonias housing is the booming population growth in the border region. The increasing population has been outpacing the availability of adequate housing, and the problem of overcrowding in existing housing remains. For example, after the TDHCA conducted a 1993 study of overcrowding in 15 different border counties, the Shiner Report found that overcrowding was a serious concern in 10 of the 15 counties. The 1993 TDHCA study also found that affordability was a problem for one-third of the surveyed counties. The TDHCA has made a commitment to upgrade existing border housing and to establish more public housing units in the region for those citizens unable to otherwise afford housing.

TDHCA published a 1996 Strategic Affordable Housing Plan which identified several ways TDHCA might close the gap in available housing. For example, TDHCA released $98 million in mortgage financing to assist low and moderate income families' purchase of first homes at a 6.65 percent interest rate. There is a vast amount of information on the housing crisis in the border region, and most, if not all, of it relates to the status of colonias. Therefore, the remainder of the housing

114 Texas A&M University-School of Rural Public Health Mission Statement briefing statement.

115 Shiner Report, p. 8, Housing Section.

116 Id.

117 Senate Committee on International Relations, Trade & Technology hearing, January 30, 1996, address by Larry Paul Manley, Executive Director, TDHCA on the status of housing needs in the border region.
issues, including colonias, is addressed in Part I of this report.

Summary of key demographic and housing statistics

<table>
<thead>
<tr>
<th></th>
<th>Border</th>
<th>Texas</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg Per Capita Income</td>
<td>$7,657</td>
<td>$12,904</td>
<td>$14,420</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>$19,073</td>
<td>$27,016</td>
<td>$30,056</td>
</tr>
<tr>
<td>Percent in Poverty</td>
<td>36 %</td>
<td>18 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Households - overcrowded</td>
<td>20 %</td>
<td>8 %</td>
<td>4 %</td>
</tr>
<tr>
<td>Households - inadequate plumbing</td>
<td>4 %</td>
<td>1 %</td>
<td>1 %</td>
</tr>
<tr>
<td>Persons per Household</td>
<td>3.44</td>
<td>2.73</td>
<td>2.63</td>
</tr>
</tbody>
</table>
### NAFTA AND TEXAS TRADE
**Appendix A - Part III, Section 1**

**TEXAS EXPORTS TO MEXICO, CANADA AND MAJOR TRADE BLOCS, 1993-1995**

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>$20.4 billion</td>
<td>$23.8 billion</td>
<td>$21.9 billion</td>
<td>-8.33 percent</td>
<td>31.8 percent</td>
</tr>
<tr>
<td>Canada</td>
<td>$4.3 billion</td>
<td>$5.5 billion</td>
<td>$6.9 billion</td>
<td>25.3 percent</td>
<td>10.1 percent</td>
</tr>
<tr>
<td>North American Total</td>
<td>$24.7 billion</td>
<td>$29.3 billion</td>
<td>$28.8 billion</td>
<td>-1.99 percent</td>
<td>41.8 percent</td>
</tr>
<tr>
<td>Latin America</td>
<td>$4.99 billion</td>
<td>$6.08 billion</td>
<td>$7.7 billion</td>
<td>26.2 percent</td>
<td>11.2 percent</td>
</tr>
<tr>
<td>Europe</td>
<td>$5.95 billion</td>
<td>$6.71 billion</td>
<td>$8.7 billion</td>
<td>29.8 percent</td>
<td>12.7 percent</td>
</tr>
<tr>
<td>Communist Bloc</td>
<td>$1.03 billion</td>
<td>$592.2 million</td>
<td>$720.4 million</td>
<td>21.7 percent</td>
<td>1.05 percent</td>
</tr>
<tr>
<td>OPEC Countries</td>
<td>$4.2 billion</td>
<td>$4.05 billion</td>
<td>$4.3 billion</td>
<td>5.31 percent</td>
<td>6.20 percent</td>
</tr>
<tr>
<td>ASEAN Countries</td>
<td>$3.3 billion</td>
<td>$4.4 billion</td>
<td>$5.2 billion</td>
<td>18.35 percent</td>
<td>7.58 percent</td>
</tr>
<tr>
<td>East Asia</td>
<td>$5.6 billion</td>
<td>$6.71 billion</td>
<td>$10.4 billion</td>
<td>55.7 percent</td>
<td>15.2 percent</td>
</tr>
<tr>
<td>Total Major Blocs</td>
<td>$49.98 billion</td>
<td>$57.9 billion</td>
<td>$65.8 billion</td>
<td>13.62%</td>
<td>95.64%</td>
</tr>
<tr>
<td>Texas Aggregate Total</td>
<td>$52.2 billion</td>
<td>$59.9 billion</td>
<td>$68.8 billion</td>
<td>14.8 percent</td>
<td>100 percent</td>
</tr>
</tbody>
</table>

**SOURCE:** TEXAS DEPARTMENT OF COMMERCE
NAFTA AND TEXAS TRADE
Appendix B - Part III, Section 1

The Top 10 Markets for Texas Exports in 1995
exports ranked by total dollar value in 1995 (in millions)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mexico</td>
<td>23,849.5</td>
<td>21,863.5</td>
<td>-8.3%</td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>5,530.0</td>
<td>6,931.5</td>
<td>25.3%</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>2,153.7</td>
<td>3,132.2</td>
<td>45.4%</td>
</tr>
<tr>
<td>4</td>
<td>United Kingdom</td>
<td>1,943.8</td>
<td>2,409.6</td>
<td>24.0%</td>
</tr>
<tr>
<td>5</td>
<td>Taiwan</td>
<td>1,587.2</td>
<td>2,398.8</td>
<td>51.1%</td>
</tr>
<tr>
<td>6</td>
<td>Singapore</td>
<td>1,679.1</td>
<td>2,139.3</td>
<td>27.4%</td>
</tr>
<tr>
<td>7</td>
<td>Korea, South</td>
<td>1,340.8</td>
<td>2,031.8</td>
<td>51.5%</td>
</tr>
<tr>
<td>8</td>
<td>Venezuela</td>
<td>1,343.0</td>
<td>1,508.7</td>
<td>12.3%</td>
</tr>
<tr>
<td>9</td>
<td>China</td>
<td>774.1</td>
<td>1,507.3</td>
<td>94.7%</td>
</tr>
<tr>
<td>10</td>
<td>Netherlands</td>
<td>1,152.8</td>
<td>1,469.8</td>
<td>27.5%</td>
</tr>
<tr>
<td></td>
<td>Top 10 Countries</td>
<td>41,354.0</td>
<td>45,392.5</td>
<td>9.8%</td>
</tr>
<tr>
<td></td>
<td>All Texas Exports</td>
<td>59,972.1</td>
<td>68,818.6</td>
<td>14.8%</td>
</tr>
</tbody>
</table>

Source: Massachusetts Institute for Social and Economic Research and the U.S. Bureau of the Census (based on "origin of movement to port" state-level export date series).

Texas Exports to Mexico, 1987-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Texas Export Value</th>
<th>Texas Exports To Mexico</th>
<th>Mexico as a percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>$25,323,675,954</td>
<td>$6,465,122,696</td>
<td>25.53%</td>
</tr>
<tr>
<td>1988</td>
<td>$34,578,455,190</td>
<td>$9,334,029,242</td>
<td>26.99%</td>
</tr>
<tr>
<td>1989</td>
<td>$38,093,254,390</td>
<td>$11,010,627,045</td>
<td>28.90%</td>
</tr>
<tr>
<td>1990</td>
<td>$41,354,664,599</td>
<td>$13,287,718,158</td>
<td>32.13%</td>
</tr>
<tr>
<td>1991</td>
<td>$47,007,955,388</td>
<td>$15,485,378,770</td>
<td>32.94%</td>
</tr>
<tr>
<td>1992</td>
<td>$49,900,849,136</td>
<td>$18,839,147,837</td>
<td>37.75%</td>
</tr>
<tr>
<td>1993</td>
<td>$52,197,162,129</td>
<td>$20,379,583,586</td>
<td>39.04%</td>
</tr>
<tr>
<td>1994</td>
<td>$59,972,120,861</td>
<td>$23,849,512,126</td>
<td>39.77%</td>
</tr>
<tr>
<td>1995</td>
<td>$68,818,614,148</td>
<td>$21,863,455,716</td>
<td>31.77%</td>
</tr>
</tbody>
</table>

Source: Massachusetts Institute for Social and Economic Research and the U.S. Bureau of the Census (based on "origin of movement to port" state-level export date series).
At $21.86 billion last year, the state's exports to Mexico remained 7.3 percent above their 1993 (pre-NAFTA) level of $20.38 billion. Exports to Canada, our other NAFTA partner, rose by more than 25 percent last year. The $6.93 billion in merchandise shipped to Canada in 1995 accounted for more than 10 percent of total Texas exports.

Shipments to Mexico amounted to nearly 32 percent of total Texas exports in 1995, down from a peak of almost 40 percent in the previous year (see Table 2). Mexico was the destination for about one-quarter of all Texas exports in 1987, when U.S. state-level data first became available.

Just over 47 percent of overall U.S. exports to Mexico, which totaled $46.31 billion in 1995, came from Texas.

Table 2
Texas Exports to Mexico, 1987-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Texas Export Value</th>
<th>Total Exports To Mexico</th>
<th>Mexico as a percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>$25,323,675,954</td>
<td>$6,465,122,696</td>
<td>25.53%</td>
</tr>
<tr>
<td>1988</td>
<td>$34,578,455,190</td>
<td>$9,334,029,242</td>
<td>26.99%</td>
</tr>
<tr>
<td>1989</td>
<td>$38,093,254,390</td>
<td>$11,010,627,045</td>
<td>28.90%</td>
</tr>
<tr>
<td>1990</td>
<td>$41,354,664,599</td>
<td>$13,287,718,158</td>
<td>32.13%</td>
</tr>
<tr>
<td>1991</td>
<td>$47,007,955,388</td>
<td>$15,485,378,770</td>
<td>32.94%</td>
</tr>
<tr>
<td>1992</td>
<td>$49,900,849,136</td>
<td>$18,839,147,837</td>
<td>37.75%</td>
</tr>
<tr>
<td>1993</td>
<td>$52,197,162,129</td>
<td>$20,379,583,586</td>
<td>39.04%</td>
</tr>
<tr>
<td>1994</td>
<td>$59,972,120,861</td>
<td>$23,849,512,126</td>
<td>39.77%</td>
</tr>
<tr>
<td>1995</td>
<td>$68,818,614,148</td>
<td>$21,863,455,716</td>
<td>31.77%</td>
</tr>
</tbody>
</table>

Source: Massachusetts Institute for Social and Economic Research and the U.S. Bureau of the Census (based on "origin of movement to port" state-level export date series).

The list of Texas' top export industries changed somewhat from 1994 to 1995. Most notably, worldwide exports of chemicals & allied products from Texas soared by more than 37 percent, moving that industry from third place in 1994 to first in 1995 (see Table 3). Chemicals last held the top spot in 1991.

Electronic equipment & components and industrial machinery & computers each dropped a notch to second and third place, respectively, although both industries recorded healthy export growth last year.
Table 3
Texas’ Top Exporting Industries in 1995
*top 10 industries ranked by total (worldwide) export dollar value in 1995 (in millions)*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chemicals &amp; Allied Products</td>
<td>10,664.8</td>
<td>14,621.5</td>
<td>37.1%</td>
</tr>
<tr>
<td>2</td>
<td>Electronic Equipment &amp; Components</td>
<td>11,290.1</td>
<td>14,023.5</td>
<td>24.2%</td>
</tr>
<tr>
<td>3</td>
<td>Industrial Machinery &amp; Computer Equip.</td>
<td>11,072.2</td>
<td>12,731.8</td>
<td>15.0%</td>
</tr>
<tr>
<td>4</td>
<td>Transportation Equipment</td>
<td>6,618.8</td>
<td>4,901.6</td>
<td>-25.9%</td>
</tr>
<tr>
<td>5</td>
<td>Agricultural Production - Crops</td>
<td>2,256.0</td>
<td>3,387.4</td>
<td>50.2%</td>
</tr>
<tr>
<td>6</td>
<td>Scientific Instruments</td>
<td>2,691.4</td>
<td>2,642.1</td>
<td>-1.8%</td>
</tr>
<tr>
<td>7</td>
<td>Food &amp; Kindred Products</td>
<td>2,228.3</td>
<td>2,418.6</td>
<td>8.5%</td>
</tr>
<tr>
<td>8</td>
<td>Fabricated Metal Products</td>
<td>2,373.6</td>
<td>2,295.4</td>
<td>-3.3%</td>
</tr>
<tr>
<td>9</td>
<td>Petroleum Refining &amp; Related Industries</td>
<td>1,839.8</td>
<td>2,176.7</td>
<td>18.3%</td>
</tr>
<tr>
<td>10</td>
<td>Primary Metal Industries</td>
<td>1,723.1</td>
<td>2,149.3</td>
<td>24.7%</td>
</tr>
<tr>
<td></td>
<td>All Other Industries</td>
<td>7,214.0</td>
<td>7,470.6</td>
<td>3.6%</td>
</tr>
<tr>
<td></td>
<td>Texas Exports - All Industries</td>
<td>$59,972.1</td>
<td>$68,818.6</td>
<td>14.8%</td>
</tr>
</tbody>
</table>


- Transportation equipment remained in fourth place among Texas export industries, despite a decline of nearly 26 percent in worldwide export shipments. Most of that decline, it should be noted, resulted from lower transportation equipment exports to Mexico.

- Substantial growth in shipments to China were a major factor in boosting agricultural production-crops into fifth place among Texas’ export industries in 1995.

- The list of Texas’ top export industries to Mexico (Table 4) is somewhat different than the worldwide list shown above. Electronic equipment & components is by far Texas’ largest export category to Mexico, accounting for more than 29 percent of total state exports to that country last year.

- Transportation equipment remained Texas’ second-largest export industry to Mexico despite a drop of nearly 41 percent in shipments following the devaluation of the peso. Industrial machinery & computers ranked third among industries in exporting to Mexico as well as worldwide in 1995.

- Four of Texas’ top ten export industries showed growth in shipments to Mexico in 1995: electronic equipment & components, chemicals, primary metals, and apparel/other textile products.
SECTION II: NAFTA AND THE ENVIRONMENT

Executive Summary

The Texas-Mexico border is a resource-poor region with a limited supply of water, air sheds that trap pollution, and a desert environment that preserves instead of degrading man-made materials, including hazardous and solid waste. The severity of these resource constraints threatens major economic dislocations and adjustments as population and industrialization increase dramatically as the result of the North American Free Trade Agreement.

Environmental conditions on both sides of the border affect both Texas and Mexico directly:

- Untreated sewage flowing into the Rio Grande drives up the cost of water treatment;
- Air pollution from Juarez forces El Paso into air quality nonattainment status with health consequences for Texans and constraints on business and commerce;
- Hazardous waste produced in Mexico contaminates the river and enters the shared air shed as dust and fugitive emissions;
- Solid waste washes into the Rio Grande and the Gulf of Mexico to contaminate the tourist beaches as far north as Mustang Island;
- Uncontrolled air emissions from coal-fired power plants at Piedras Negras pollute the formerly pristine air of the Big Bend National Park, Texas' second largest tourist destination; and
- Texas' decision to locate the Low Level Radioactive Waste Disposal Authority facility at Sierra Blanca, 15 miles from the border, compromises attempts at binational cooperation, and complicates negotiations with Mexico concerning environmental management practices.

Two nations share the limited water of the Rio Grande. Little of the water in the Texas segment of the river comes from either Texas or the U.S., and the majority of the river's watershed lies in deserts with less than eight inches of rainfall per year.

The current drought affecting the lower Rio Grande is a glaring example of the region's resource limitations. The Texas allocation stands at 46 percent and the Mexican share has varied between 3 and 20 percent since March, 1995. Irrigated agriculture on both sides of the border is being hurt substantially, and the drought is forcing both long-term and short-term readjustments in water use and public investment.

Since this study was initiated, Texas as a whole has begun to feel the effects of a region-wide drought. This report finds that the Rio Grande drought, although severe, is manageable through planning, binational cooperation, and economically reasonable measures. The report does not address the statewide drought which is not linked to NAFTA.

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The El Paso-Juarez metropolitan area rivals Houston in population. (See Map 1 for a way to grasp the magnitude of the border’s population.) The region from Laredo to Brownsville contains three of the ten fastest growing metropolitan areas in the United States. The Mexican side of the border holds 80 percent of the region's population.

The Texas border has one of the highest poverty rates in the United States, with Webb and Starr Counties, among the ten poorest counties in the nation. The rapid growth of the cities on the Mexican side of the border is comprised largely of poor, displaced persons from the interior and south of Mexico who live in abysmal poverty as they seek work in the border industries.

Municipal water use per capita in the Mexican cities is currently far below the demand on the Texas side, but increased population on the Mexican side is producing unprecedented growth in the demand for water. As incomes increase, water demand per capita can be expected to increase.

One of the unexpected effects of NAFTA is the growth of border industry and population. NAFTA was expected to shift industrial activity and new industrial locations from the border to the interior of Mexico. This shift has not yet occurred to any significant degree. Instead the region that has the fewest resources to support growth has been the focus of the greatest increase in industrialization and population. At this writing, there is evidence that industry may be beginning to locate in the better endowed areas of central Mexico, although this represents new facilities rather than displacement of existing maquiladoras.

Persistent problems with water supply, water quality, wastewater management, solid and hazardous waste disposal and pesticide-herbicide management on the Rio Grande border argue for new and creative solutions.

Binational, Comprehensive Resource Management

Rio Grande/Rio Conchos basin is shared by two nations, eight states, and 19 Pueblos and Tribes. The watershed of the Rio Grande and its tributaries covers 335,500 square miles, twice the size of California.

No single entity, national or local, has the authority or scope to deal with the natural resource conditions of the Rio Grande basin. This report discusses three issues in greater detail, water, air, and hazardous waste, and demonstrates the need for binational, interstate, comprehensive natural resource protection and management.

Texas is the downstream terminus of the Rio Grande, the bottom of the pipeline. The actions of upstream jurisdictions affect Texas' water supply and water quality, as well as our air and other natural resources. It is in Texas' best interest to promote protection and wise management of the shared natural resources of the Rio Grande river basin.

The long-standing water problems on the border are a consequence of inadequate planning, weak and divided governance, and the shortage of local financial means. Existing institutions lack sufficient authority to govern the many practices that affect water quality, availability, and access. At the same time, competing local governments with


conflicting political, commercial and personal agendas interfere with efforts to remedy these problems.

Current state efforts to address the needs are represented primarily by the Economically Distressed Areas Program (EDAP) at the Texas Water Development Board (TWDB), the Governor's border drought management task force under the direction of the Secretary of State, various air and water protection programs of the TNRCC, public health efforts of the Texas Department of Health, and development of geographical information systems for mapping natural resources by the Texas General Land Office and the Bureau of Economic Geology. However, even among Texas agencies, coordination is lacking. For example, the TNRCC's approval of waste management permits near the border without consulting with Mexico violates the La Paz Agreement and complicates efforts to achieve cooperation with Mexico. When TNRCC grants "certificates of convenience and necessity" (CNNs) without consulting with the Water Development Board, it causes delays in constructing water and wastewater projects for colonias. Several state and federal agencies operate programs that affect border water issues. This myriad of agencies and division of responsibility when combined with fragmented local delivery systems and the social and economic conditions on the border complicate efforts to effectively deal with the problems.

The Rio Grande-Rio Bravo Alliance, an initiative of the TNRCC, is an attempt to bring some order to the border regulatory environment. The Alliance includes participants from Mexico, Texas, New Mexico, and Colorado and both federal governments and promises to provide a forum for coordination and planning for the entire Rio Grande basin. The Alliance consists of officials from Mexico's SEMARNAP, INE, CNA, PROFEPA, and CILA, U.S. officials from IBWC, U.S. Natural Resources Conservation Service (formerly Soil and Water Conservation Service), U.S. Rural Utilities Service, U.S. Department of the Interior, and Texas officials from TNRCC, TWDB, GLO, the State Soil and Water Conservation Board, the Texas Secretary of State, the Texas Departments of Agriculture, Health, Parks and Wildlife, and Transportation, and border regional councils of government.

The Alliance has six major goals:
1. Develop mechanisms for cooperative activities;
2. Foster community-based decision making that addresses local needs;
3. Promote action-oriented efforts focusing on sustainable development;
4. Develop interdisciplinary approaches to environmental problems;
5. Create opportunities for Basin-wide exchange of information and technology; and
6. Develop projects which specifically address human health issues. 121

Recommendation: The Legislature should direct the Texas Natural Resources Conservation Commission (TNRCC) in conjunction with the Texas Water Development Board (TWDB) and other state agencies to work with Congress and federal agencies to develop a structure for binational, comprehensive, basin-wide management of the Rio Grande.

Texas is the downstream claimant to Rio Grande water, but, itself, adds little water to the river. The actions of other jurisdictions affecting water supply, water quality, air, hazardous waste, and other natural resources have direct consequences for Texas. It is in Texas' best interests to promote the protection and wise management of the shared natural resources of the Rio Grande river basin. The purpose of the recommendation is to provide clear authority for TNRCC to promote and to participate in interstate and international cooperative efforts.

Recommendation: The Legislature should adopt incentives to encourage agricultural water conservation, including incentives for individual irrigators and irrigation districts to convert to water saving irrigation equipment and delivery systems.

Irrigated agriculture along the Rio Grande uses 90 percent of the water taken from the river and its reservoirs. The supply available for the fast-growing urban areas would double if agriculture could improve its water use by only 11 percent.

Recommendation: The Legislature should consider the groundwater associated with the Rio Grande to be a special case requiring regulation on an equitable, binational and interstate basis. The Legislature should direct the TWDB and TNRCC to work with border communities as well as the water resource agencies of both Mexico and New Mexico to develop a management plan for transboundary water resources.

Along much of its course along the Texas border, the Rio Grande exchanges water constantly with the adjacent aquifers in the permeable strata adjacent to the river. The deeper aquifers such as the Hueco Bolson cross the international boundary, and El Paso shares the Mesilla Bolson with New Mexico. Although the connection between surface water and groundwater along the Rio Grande is dramatically evident, and although the surface supply is completely appropriated and jealously guarded, Texas water law and policy does not recognize that withdrawals of groundwater are in fact the use of surface water supplies. The Legislature and the Texas Supreme Court have recognized special cases in which groundwater regulation is justified in both the subsidence districts in the vicinity of Harris County and the Edwards Aquifer region. The Rio Grande represents another case in which a divergence from the traditional treatment of groundwater is justified. However, the binational and interstate nature of groundwater in the region creates a need for a cooperative approach toward this shared resource.

Recommendation: The Legislature should consider co-funding wastewater treatment facilities in the major Mexican cities on the Rio Grande with the federal government.

The Legislature's appropriation of only $2 million to help fund the wastewater collection and treatment system at Nuevo Laredo is removing over 22 million gallons of raw sewage from the Rio Grande every day and will help restore one of the most polluted reaches of the river. Unfortunately, several other Mexican cities continue to add massive amounts of raw sewage to the river. A similar modest investments in additional Mexican wastewater treatment is an efficient and economical way for Texas to improve the quality of water used by our downstream cities, and to reduce the exposure of our population to dangerous, water-born diseases.

Recommendation: The Legislature should direct the TNRCC to study the cost and effectiveness of a tracking system for the quantity of hazardous waste that is obligated to be returned to the U.S. under the conditions of the La Paz Agreement.

Under the La Paz Agreement, U.S. companies are responsible for returning to the U.S. the hazardous waste produced in the maquiladoras from U.S. raw materials. Therefore, a significant part of the border's hazardous waste problem is a U.S. responsibility regardless of whether the waste is produced in Mexico. However, neither the U.S. nor Texas has implemented an effective system to track these materials.

The border industries use large quantities of hazardous material including solvents, acids, reagents, paints, and resins. These raw materials become hazardous waste during industrial processing. The amount of waste that any particular industrial process will produce can be predicted from standard industrial practice, and this prediction is a standard item of industrial planning and auditing. Electronic reporting and analysis would make this process relatively simple.

**NAFTA Structure for Environmental Matters**

**NAFTA and the Maquiladora Program**

The maquiladora program was developed by the Mexican government in 1965 to foster employment and economic growth in the border region by exempting foreign companies operating factories in Mexico from import-export duties on the value of parts and materials, provided that the goods they produce are exported from Mexico. The maquiladoras pay duty on the value added during production in Mexico rather than on the value of the parts and materials.

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122 *La Paz Agreement*, Annex V.

NAFTA was expected to shift industrial activity and new industrial locations from the border to the interior of Mexico. Instead the pace of industrial development has increased. After the implementation of NAFTA, the number of maquiladoras on the Texas/Mexico border has risen to 726. The centers of this growth include Juarez with over 154,000 workers employed in over 300 maquiladoras and a total population of over 1.3 million, Matamoros with 84 maquiladoras with over 42,000 workers, and Reynosa with 88 maquiladoras and more than 42,000 workers.124

During January-August, 1994, maquiladora production at the border was equivalent to $13.5 billion, representing a growth of 11.3 percent over the year-earlier period; the interior production was $3.5 billion.125 From January to March of 1995, maquiladora employment stood at 610,053, nearly 10 percent over same period in the previous year. Border-city maquiladora companies have the largest share in employment (73.2 percent). The Mexican counterparts to Texas’ major border cities, El Paso, Brownsville, McAllen and Laredo, employ over 41 percent of the maquiladora industry’ workers.126

Pre-NAFTA Environmental Provisions

Prior to NAFTA, the United States and Mexico had adopted a number of agreements to manage the shared resources of the border (see Table 2). Two pairs of agencies had primary border environmental responsibilities. The International Boundary and Water Commission (IBWC) and the Comisión Internacional de Límites y Aguas (CILA) act as a single entity to maintain the common border and manage shared water supply and water/wastewater infrastructure. The U.S. Environmental Protection Agency (EPA) and the Secretaria de Desarrollo Social (SEDESOL) are responsible for improving water supply and quality, wastewater treatment, solid and hazardous waste management, air quality, and other environmental matters.

The federal structure for managing the border’s resources had been criticized by state and local governments, nongovernmental organizations, and the private sector because it was perceived as a closed process, inaccessible to public influence and unresponsive to public needs. The consistency and persistence of this criticism lent it credibility.127 The NAFTA side agreements on the environment were designed to create a more open, responsive process.

Table 1: Maquiladoras and Workforce

<table>
<thead>
<tr>
<th></th>
<th>1996 Number of Maquiladoras</th>
<th>1996 Number of Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juarez &amp; Vicinity</td>
<td>311</td>
<td>154,337</td>
</tr>
<tr>
<td>Matamoros</td>
<td>84</td>
<td>42,481</td>
</tr>
<tr>
<td>Reynosa</td>
<td>88</td>
<td>42,356</td>
</tr>
<tr>
<td>Piedras Negras</td>
<td>43</td>
<td>12,453</td>
</tr>
<tr>
<td>Ciudad Acuña</td>
<td>47</td>
<td>21,621</td>
</tr>
<tr>
<td>Nuevo Laredo</td>
<td>50</td>
<td>17,250</td>
</tr>
<tr>
<td>Other</td>
<td>103</td>
<td>22,814</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>726</strong></td>
<td><strong>313,312</strong></td>
</tr>
</tbody>
</table>


The Structure of NAFTA Environmental Agreements

The NAFTA side agreements recognize that free trade can produce environmental consequences. NAFTA is the first trade agreement to incorporate mechanisms to encourage sustainable development in which environmental protection goes hand-in-hand with economic development. The NAFTA side agreements include the North American Agreement on Environmental Cooperation which provides a mechanism to resolve conflicts over environmental matters.

The Border Funding Agreement established the North American Development Bank (NAD Bank) to provide funding for environmental projects and the Border Environmental Cooperation Commission (BECC) which submits project proposals to the NAD Bank. The BECC is composed of a Board of Directors and a Public Advisory Committee, both of which have Texas representatives.

The usefulness of the NAD Bank for Texas projects is limited by the fact that its method of finance fails to produce loans at interest rates that are significantly better than market rates in the U.S. However, the cost of money in Mexico is currently high enough to make NAD Bank financing extremely attractive.128 129

128  Brady Net, Inc., "http://www.2020tech.com/bradynet/.", Mexican bond prices have fluctuated radically since the December 1994 peso devaluation, with issues trading at effective interest rates in the 50 percent range. Variances have ranged as high as 270 basis points on a single day.

129  Bloomberg Business News, "Mexican stocks rise as peso becomes strong," Austin American-Statesman, July 3, 1996, p. D-4. On this date, the cost of one-day commercial loans rose to 38.84 percent from 33.11 percent, illustrating the volatility of Mexican interest rates.
Table 3: NAFTA Institutions for Border Environmental Matters

<table>
<thead>
<tr>
<th>Institution</th>
<th>Committee/Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American Commission for Environmental Cooperation</td>
<td>Joint Public Council</td>
</tr>
<tr>
<td></td>
<td>Advisory Committee</td>
</tr>
<tr>
<td></td>
<td>Secretariat</td>
</tr>
<tr>
<td>North American Development Bank (NAD Bank)</td>
<td>Board of Directors</td>
</tr>
<tr>
<td></td>
<td>Staff</td>
</tr>
<tr>
<td>Border Environment Cooperation Commission (BECC)</td>
<td>Board of Directors</td>
</tr>
<tr>
<td></td>
<td>Public Advisory Committee</td>
</tr>
</tbody>
</table>

The Relationship Between NAFTA and Prior Agreements

In the event of a conflict between NAFTA and the prior environmental agreements listed in Table 2, the prior agreement will prevail. However, when a nation has a choice among "equally effective and reasonably available means of complying" with the prior treaty, it is obligated to use the alternative that is "least inconsistent" with the other provisions of NAFTA.¹³⁰

Current Status

The first binational effort toward broad environmental cooperation was the La Paz Agreement, the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area, signed at La Paz on August 14, 1983. The La Paz Agreement governs the activities of the U.S. and Mexico in a zone extending 100 kilometers (62 miles) on each side of the border. For example, it requires consultation concerning the location of hazardous waste disposal facilities within the border zone. La Paz also established general goals for environmental quality, and procedures for environmental cooperation through specialized work groups at the federal agency level.

A recent project completed under the La Paz Agreement was the Integrated Border Environmental Plan, a joint project of the U.S. EPA and Mexico's SEDUE, the predecessor to SEMARNAP. Published in February, 1992 after consultation with state environmental agencies and public hearings, the Border Environmental Plan is now being brought up to date.¹³¹


¹³¹ TNRCC presentation on the Rio Grande/Rio Bravo Alliance, Border Affairs Office.
WATER SUPPLY AND QUALITY

Committee Actions

On December 8, 1995, the Senate International Relations, Trade, and Technology Committee (IRITT), in conjunction with the Senate Water Subcommittee, conducted a hearing on the Rio Grande water crisis which brought together state, local, and national officials from both the U.S. and Mexico to discuss strategies to address the severe water shortage on the Rio Grande. The hearing was held at the University of Texas - Pan American University in Edinburg with over 125 people in attendance.

Executive Summary

When the current water management systems were set up in 1944, 1 million people, with a smaller economy and a simpler way of life, resided on the Texas-Mexico border. Today, over 10 million people live on both sides of the border. Increased industrialization and increased water demands in one of the fastest growing metropolitan areas in the United States can be expected to strain water resources and force changes in water management and in patterns of water use regardless of variations in rainfall in the watershed. The current drought affecting the lower segment of the river has brought the situation to a head.

Both El Paso and the Rio Grande Valley are facing severe water shortages, but for different reasons. Fortunately, the Valley's current crisis could result in future security if aggressive management strategies are implemented. The upper Rio Grande produces almost 1 million acre-feet of water per year at the Elephant Butte reservoir. However, all of the water is dedicated to irrigation. More appropriate federal water allocation policies would provide El Paso and Juarez with a generous supply. As in the case of the Lower Rio Grande, solutions hinge on binational cooperation as well as basin-wide management of the resource.

At the same time, pollution poses a serious threat to the security and safety of the water supply. Pollution on the Rio Grande also drives up the treatment cost of potable water, and creates a public health threat. Cholera, hepatitis-A, cryptosporidium, giardia, tuberculosis, and dengue fever are among the diseases that plague the border almost exclusively. Neural tube defects occur on the border at double the national average. The primary source for this pollution is untreated wastewater from the growing cities on the Mexican side. Other significant sources include industrial plants and random dumping of

Table 1: Key Agreements on Water Planning for the Rio Grande

<table>
<thead>
<tr>
<th>Year</th>
<th>Agreement Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1906</td>
<td>Convention</td>
<td>Allocation of irrigation water from the upper Rio Grande/Rio Bravo between the U.S. and Mexico. Allocates water between U.S. uses and Juarez. The U.S. received the majority of the production of the Elephant Butte dam. Juarez received 58,460 acre-feet per year which is used for irrigation. El Paso uses about 56,000 acre-feet through purchase of irrigation rights.</td>
</tr>
<tr>
<td>1938</td>
<td>Rio Grande Compact</td>
<td>Agreement between three U.S. states allocating Rio Grande Water. Applies only to water from the upper Rio Grande, allocating the yield of the Elephant Butte and Caballos Reservoirs and other reservoirs between Texas, New Mexico and Colorado.</td>
</tr>
<tr>
<td>1979</td>
<td>Minute 261</td>
<td>A binding minute order by the IBWC and CILA for joint control of sanitation measures.</td>
</tr>
<tr>
<td>1983</td>
<td>La Paz Agreement</td>
<td>Cooperative planning between Mexican and U.S. environmental agencies.</td>
</tr>
</tbody>
</table>
hazardous materials. 132

Discussion

The two regions of the Rio Grande, in the El Paso area and the Rio Grande Valley, face vastly different challenges because, for all practical purposes, they lie along separate rivers governed by separate treaties and statutes. Water flowing from the snow melt of Colorado in the U.S. segment is largely depleted within the U.S. as a matter of policy because one third of the water that passes Fort Quitman, about 70 miles below El Paso, must be shared with Mexico under the 1944 treaty.

The flow of the river remaining after withdrawals in New Mexico, El Paso and Juarez averages 136,690 acre-feet per year. Spring flows below Fort Quitman, augmented by water that has entered the shallow riparian aquifer in El Paso County, increases the actual amount to 218,215 acre-feet at Candelaria, before the river reaches the confluence of the Rio Conchos at Presidio. The interaction of surface and groundwater along the Rio Grande is so continuous and intimate that the distinction between the two is fictional.

The efficiency of the river segment from Fort Quitman to the Amistad reservoir for transmitting water is a matter of controversy. However, IBWC data for the last 55 years (1939 through 1993), show that net losses due to infiltration and evaporation are in the 20 percent range, which is unusually efficient (see Appendix A). This upper river segment flows through deep, hard-rock canyons for much of its course, which contributes to its efficiency. Water lost temporarily when it infiltrates the adjacent sands and gravels returns eventually to the surface with no evaporative loss.

At El Paso, the Rio Grande provides an average of 396,836 acre-feet per year. 133 El Paso County withdraws about 275,000 acre-feet, including irrigation water through the El Paso Water Supply and Improvement District. 134 Juarez withdraws only about 50,000 acre-feet for irrigation because of the limitations of its canal, the Acequia Madre, 135 although the 1906 treaty gives it 60,000 acre-feet per year. Return flows from wastewater (treated and untreated) and irrigation restore much of the flow. Although the balance remaining after withdrawals at El Paso is only about 72,000 acre-feet, actual volume at Fort Quitman is 136,690 acre-feet per year. By the time the river reaches Candelaria, its volume increases to 218,215 acre-feet due largely to ungauged spring flows as water from the adjacent aquifer returns to the river. High losses at Candelaria reduce the volume to 131,569 acre feet per year.

Juarez, a city of between 1.2 and 1.4 million residents, uses groundwater for its municipal needs. As El Paso is forced to rely more heavily on groundwater, the Juarez withdrawals pose a serious problem of international cooperation. 136 Neither the United States nor

132 General references to diseases attributed to border water conditions:
House Select Committee on Hunger, Colonias: A Third World Within Our Borders, 101st Congress, 1st Session, 1989;


134 IBWC Bulletin No. 63, p. 10. The City of El Paso uses only about 56,000 a/f from the river, 50,000 from the Hueco Bolson, and 23,600 from the Mesilla Bolson. (Ernest C. Rebock, El Paso Water Utilities, May 7, 1996).

135 IBWC Bulletin No. 63, p. 12.

136 Eaton, David J. and Hurlburt, David, Challenges in the Binational Management of Water Resources in the Rio Grande/ Rio Bravo, University of Texas Board
Mexico has a system for groundwater management. The politics of groundwater have prevented Texas from addressing such matters as management of the Edwards Aquifer in the San Antonio region, but have permitted establishment of subsidence districts in the Houston area.

Eighty percent of the water that flows from Presidio to Brownsville comes from Mexico, 30 percent from the Rio Conchos alone in an average year. In dry years, the Rio Conchos accounts for up to 80 percent of the water in the Rio Grande. The small amounts of water from the U.S. come through the Pecos from headwaters in New Mexico and from variable, seasonal runoff from intermittent tributaries such as the Devils River.137 The 1944 treaty concerning construction of the Amistad and Falcon Reservoirs allocates the water from Ft. Quitman in Hudspeth County to the mouth of the Rio Grande. The U.S. entitlement includes all the flow of the tributaries on the U.S. side. In addition, the U.S. received rights to one third of the flow of the tributaries on the Mexican side, but in case of low flows from the Mexican tributaries, the U.S. is entitled to a minimum of 340,900 acre-feet per year from the two reservoirs.138

Management of the Rio Grande

Management and control of water in the Rio Grande Basin is split between two nations and three U.S. states. Many agencies and interests are involved, including 4 Mexican states, and 19 Pueblos and tribes. This fragmentation is part of the difficulty in managing Rio Grande water.

The International Boundary and Water Commission (IBWC) is a binational management agency with primary authority over the Rio Grande. Although other federal natural resource agencies such as the Department of the Interior and the Environmental Protection Agency have a limited, consultative role in IBWC decisions, the IBWC is the final arbiter.

According to the conditions under which Texas entered the United States, Texas retained ownership of its land and waters. Under Texas and U.S. law, the State claims ownership to all surface water,139 and has the authority to permit the use of surface water for beneficial purposes.140 Therefore, although the IBWC supervises the division of water between Texas and Mexico, Texas is responsible for allocation of the water among Texas users.

Texas water management agencies such as TNRCC and TWDB, which have exclusive authority over surface water within the State of Texas, do not have corresponding powers over the Rio Grande since the IBWC's authority supersedes state authority. Until the drought in northern Mexico threatened water supplies in the Lower Valley, Texas agency action was largely limited to allocation and protection of the Texas entitlement through the Water Master and the Rio Grande Compact Commission and to regulation of surface discharges of wastewater from the Texas side. The TNRCC has completed a basin survey of the


140 1944 treaty, p. 54. Protocol #8(c): "... nothing contained in the treaty or protocol shall be construed... to alter or control the distribution of water to users within the territorial limits of any of the individual States." Several exceptions exist to state ownership. Spanish land grants carry a perpetual right to the water attached to the land. Texas has also granted permanent water rights (as opposed to provisional rights based on continued beneficial use). Surface water does not become the property of the state until it enters a defined water course, so diffuse surface water is the property of the land owner. Numerous other exceptions exist.
Rio Grande within Texas, although the survey lacks Mexican data on such matters as water demand and projections. Allocation of the Texas entitlement below the Amistad and Falcon reservoirs is under the authority of the Rio Grande Water Master. The Water Master was established by a court ruling in the 1950's which sought to end one of the major water rights conflicts in Texas' history.\footnote{Hidalgo Co. Water Improvement Dist. No.2 v Cameron Co. Water Control & Improvement Dist. No.5, 253 S.W.2d 294 (Tex.Civ.App. 1952).}

The Rio Grande Compact Commission is a joint agency of the states of Texas, New Mexico and Colorado. The Rio Grande begins in Colorado and runs through New Mexico before reaching Texas, and since several impoundments have been constructed in the upper states, the task of the Texas Compact Commissioner is to ensure that Texas receives the water to which it is entitled. The current allocation is based on negotiations, hydrologic studies and accounting conducted since completion of the Elephant Butte Reservoir in New Mexico under sponsorship of the U.S. Bureau of Reclamation. In relation to Texas, the Commission's activities primarily affect El Paso because its authority does not extend to negotiations with Juarez or Mexico.

\begin{table}[h]
\centering
\caption{Management Agencies for the Rio Grande}
\begin{tabular}{|l|l|}
\hline
\textbf{International Boundary Water Commission} & \textbf{Comisión Internacional de Límites Aquas (CILA)} \\
\textbf{(IBWC)} & \\
\hline
\textbf{IBWC (U.S.)} & \\
\textbf{Rio Grande Compact Commission} & \\
\textbf{Rio Grande Watermaster (TNRCC)} & \\
\hline
\textbf{U.S. Federal Agencies:} & \textbf{Texas State Agencies:} \\
Bureau of Reclamation & TNRCC \\
EPA & Department of Health \\
U.S. Fish and Wildlife Service & General Land Office \\
U.S. Parks Service & Parks and Wildlife Department \\
& Department of Agriculture \\
\hline
\end{tabular}
\end{table}

The need for a bi-national, comprehensive, basin-wide management system

The U.S. and Mexico do not have a comprehensive, basin-wide management plan. Management of the river's water accomplished through the International Boundary and Water Commission, consisting of the U.S. federal IBWC and Mexico's CILA. The actual allocation and management of water on the U.S. side managed by the Rio Grande Compact Commission, the Rio Grande Water Master and water agencies in New Mexico and Colorado. Texas cannot rationally expect its interests to be protected unless the entire Rio Grande Basin is managed fairly and equitably, from the headwaters in Mexico and Colorado all the way to the Boca Chica, the mouth of the River.
Long-term effective management can be achieved only through a cohesive, coherent, basin­wide and bi-national management structure. This can be achieved through a system of existing agencies or a new entity similar to the binational authority that manages the Rhine River between France and Germany. In any case, neither Texas nor the United States nor Mexico can provide effective management without the help and cooperation of the others.

Effective management must be comprehensive since the quality and safety of the water are as important as quantity. Pollution control, wastewater treatment, runoff controls, and hazardous and solid waste management affect the cost of potable water treatment, water supply, flood control, and delivery.

More realistically, there are a number of incremental steps that can be taken in lieu of creating a mega-agency. Texas agencies have taken a more aggressive role in inserting themselves into bi-national water management since the drought in northern Mexico. The TWDB has begun modeling the management of the Amistad and Falcon reservoirs, and has made its models and analysis available to Mexico for use in managing Mexican reservoirs and basin systems. The TNRCC has initiated the Rio Grande Alliance, a consortium of natural resource agencies in New Mexico, Colorado as well as Mexican and U.S. federal agencies. The Rio Grande Alliance will address all natural resource issues including air, water and land. However, this effort is voluntary on the part of the participants, and does not represent a true basin-wide management system. Other steps that could contribute to effective management include sharing of data, localized binational cooperation, and better characterization of binational aquifers.

Drought on the Rio Grande summary

The drought that has gripped northern Mexico since 1993 has reduced the U.S. water supply for the Rio Grande Valley to 46 percent of normal and the Mexican share has varied between 20 and 3 percent. The current drought interacts with rapidly increasing water demand due to industrialization and rapid population growth.

The Rio Grande drought creates several substantial dangers. Public health is endangered by the increasing concentration of sewage in the river. Cross-border violence could erupt over pumping that is believed to be illegal. Texan agriculture is faced with losses due to the inability to irrigate. Texan cities are faced with water use curtailment and increased costs for treating the concentrated pollution in raw water they obtain from the river.

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142 John Hinojosa, South Texas Watermaster, TNRCC, testimony before the Texas Senate IRIT Committee on December 5, 1995.

At the same time, Mexico is entitled to about 1/3 of the production of the Amistad/Falcon Reservoir System. While Texas has been reduced to about one year's supply of water, Mexico's supply has varied from 5 to 15 percent in the period from June 1995 through May, 1996.\(^{144}\) On May 24, 1995, Governor Bush in consultation with Mexican President Ernesto Zedillo, agreed to provide an emergency water loan of 81,071 acre-feet to Mexico, limited to municipal purposes.

On the Texas side, municipal and industrial uses have a superior claim on water if all uses cannot be satisfied in times of drought.\(^{145}\) Ninety percent of the water used in the Lower Valley goes to irrigation.\(^{146}\) Cheap, available supplies have not encouraged conservation practices that are standard in other regions such as lined canals and modern application systems. The TWDB estimates that a 10 percent savings is practical at relatively low cost, and higher savings are possible if individual growers invest in more efficient equipment. If the cities and other water purveyors can successfully negotiate to receive these savings, perhaps by providing subsidies or low interest loans to growers and irrigation districts, the municipal supply could easily be doubled.

Several cities rely on irrigation districts to convey water to their treatment plants through the irrigation canals. However, at least two irrigation districts in the Valley have little or no remaining allocation. Municipal use from those canals is insignificant compared to the normal flow, and delivering a small amount of municipal water through a canal designed to carry many times more water is highly inefficient and in some cases impractical. The TWDB is currently brokering arrangements for cities with their own conveyance systems to supply water to those which are dependent on irrigation districts.

The stability of irrigated agriculture in the Valley will depend on conversion to more efficient irrigation. Cheap, available supplies have given growers in the Valley a cost advantage over irrigators in regions such as the High Plains where heavy investment in water conservation is a necessary cost of doing business. Yet the High Plains is one of Texas' most productive agricultural areas. In other words, the Valley can have both generous municipal supplies and a healthy agricultural economy through conservation. An aggressive irrigation conservation effort is underway due to the efforts of the Valley Water Policy and Management Council, a local group formed by Governor Bush, which includes the irrigation districts.

**actions to date**

Governor George W. Bush, in May of 1995, directed Secretary of State Tony Garza to:

1. Open immediate communication with the State Department;

2. Ensure that Texas officials are at the table in all discussions between the U.S. and Mexico;

3. Form a team of Texas agencies: TNRCC, TWDB, TDH, TDA, TP&W to manage Texas interests and advise the Governor; and

4. Form a group of local officials in the Lower Rio Grande Valley to devise local drought management strategies.

Also on May 5, 1995, Mexico asked the U.S. and Texas to provide an emergency water loan for municipal purposes. Since Texas controls all surface water within its boundaries under U.S. law, the decision to make such a loan fell exclusively upon Texas.

\(^{144}\) IBWC unpublished daily tabulations.

\(^{145}\) TNRCC rules, Tex. Admin. Code, Chapter 303. Although the federal Wagstaff Act gives priority to municipal uses but does not apply to the Rio Grande due to a specific exemption, Texas law reserves 225,000 acre-feet per year for cities in the Lower Rio Grande Valley.

\(^{146}\) Rio Grande Watermaster, 1996, unpublished data.
On May 24, 1995, Governor Bush, in consultation with Mexican President Ernesto Zedillo, agreed to make an emergency loan of 81,071 acre feet to Mexican border cities for municipal purposes from the Texas allocation. This agreement was finalized on October 4, 1995, in International Boundary and Water Commission (IBWC) Minute No. 293. At that time, the water stored in the Amistad and Falcon reservoirs exceeded the total storage in the Mexican reservoirs in the basin system, with about 90 percent being the U.S. allocation. The loan is contingent on the reservoirs holding at least 600,000 acre feet. When the water available to Mexico increases to a total of 202,678 acre feet in the two reservoirs, Mexico will begin to repay the loan.147

short-term response

The Valley Water Policy and Management Council (VWPMC), headed by Mr. Glen Jarvis, was charged by Secretary of State Garza with developing a local response in coordination with the state. The TWDB and TNRCC in cooperation with the VWPMC in August of 1995, developed an eight-point response plan148 (see Appendix B).

The plan calls for state agencies and the VWPMC to develop statistical models to trigger drought management actions, a model drought management plan, and procedures to facilitate market-based water exchanges among irrigators and between the irrigators and municipal users. The agencies will also provide technical assistance and preapproval criteria for possible reuse of treated municipal wastewater for input into drinking water supplies, provide flexibility in addressing drinking water standards during critical periods, and provide technical assistance and provisional approval procedures for new or reactivated water supply wells. The agencies will also conduct workshops for municipal and agricultural water suppliers on implementation of drought management and water banking procedures, assist with public education and awareness programs and with media relations.

long-term management

The TWDB and TNRCC in cooperation with the VWPMC will plan, finance, and implement programs specific to the municipal and agricultural sectors to increase or extend the available water supply of the region (see Appendix C).149

TWDB estimates that the Valley can easily double the water supply for municipal use and probably achieve additional significant increases in available supply by reducing the current inefficiencies in both agricultural and municipal water use.

El Paso's chronic shortage

El Paso receives surface water from the El Paso County Irrigation District because Texas' share of the yield of the Elephant Butte reservoir is legally limited to agricultural irrigation under the terms of the Congressional appropriation that authorized the Bureau of Reclamation to build the Rio Grande Project, Elephant Butte.150 Furthermore, under the Rio Grande Compact, New Mexico counties receive 57 percent of the water for irrigation, and Texas receives 43 percent, or 313,900 acre feet, also for irrigation only.

Under the 1906 treaty with Mexico, signed in anticipation of U.S. dams in New Mexico, the El Paso County Irrigation District is entitled to 313,900 acre feet of water in an optimum year. Juarez received 60,000 acre-feet per year, but limitations on the Acequia Madre reduce the

147 IBWC, Minute No. 293, October 4, 1995.


149 Id.

actual withdrawal to about 50,000 acre-feet.  

The City of El Paso avoids the federal limitation on the use of Elephant Butte water by purchasing irrigated land and diverting the irrigation water to which the land is entitled to municipal water treatment plants. El Paso and Juarez, with a combined population of almost 2 million both rely heavily on groundwater.

El Paso has aggressively sought the rights to pump from the Rio Grande Bolson by purchasing irrigated farmland in Texas and New Mexico. El Paso also attempts to reduce its impact on the groundwater by injecting treated wastewater into the Hueco Bolson, the local aquifer.

The El Paso/Juarez region receives average annual rainfall of eight inches. Therefore, the region’s aquifers recharge slowly, and withdrawals are actually water mining. The aquifer on the Texas side is declining at a rate of from 0.5 to 5 feet per year, with the highest depletion in the vicinity of El Paso’s municipal well fields. Juarez, with its small allocation from the Rio Grande, is almost wholly reliant on groundwater for at least 1.3 million people.

Neither the U.S. nor Mexico have groundwater management policies similar to cooperative arrangements for surface water. Each nation has actively avoided groundwater management as has the State of Texas. The technology of groundwater management is simplified in a definable geographic situation such as the El Paso/Juarez region. The models for recharge, withdrawals, and water quality protection are similar to those for surface water.

In one case, Texas has ignored its long-standing tradition of avoiding groundwater management when faced with the probability of its major city, Houston, sinking into Galveston Bay. The Harris-Galveston Subsidence District created by House Bill 3215 (1975) and the Fort Bend Subsidence District (H.B. 2819, 1989), have the legal authority to regulate and eventually to ban all groundwater withdrawals in the counties of Harris, Galveston, and Fort Bend. The El Paso/Juarez region, with its chronic and worsening water situation may be sufficiently isolated from the state’s political currents to give the Legislature the comfort room to permit groundwater management there as well.

Any groundwater management plan for El Paso/Juarez would require bi-national cooperation. U.S. federal law does not speak to groundwater management, but leaves management to the states and localities. Proactive Texas legislation in support of a bi-national groundwater management plan would not conflict with federal law except that only the federal government has the authority to enter into an international treaty. Therefore, federal cooperation would be required.

Mexican groundwater law contains provisions that permit groundwater management. As in Texas' law, ownership and the right to pump groundwater is conveyed with title to the land. At the same time, the Mexican Constitution vests the federal government with authority to control the use and allocation of all subsurface minerals, including water, if the public interest dictates.

It is beyond the scope of this report to go into the factors that would have to be negotiated to arrive at a mutually acceptable binational arrangement.
groundwater management system. However, entrenched institutions and conflicting regional interests all mitigate against a basin-wide management system. One of the primary impediments is lack of geohydrologic data on the basin. A reasonable first step would seem to be the generation and analysis of this scientific data.

If treated wastewater from both El Paso and Juarez were injected into the aquifer for reuse, the water balance of the region would improve substantially. El Paso currently injects 7,560 acre feet per year. To add Juarez’ wastewater would require construction of an up-to-date wastewater treatment system. In the comprehensive resource picture of the region, that is a desirable step in any case. It is not possible to predict the contribution that the Juarez wastewater could make. However, given a population of at least 1.2 million, it is reasonable to believe that it would at least equal El Paso’s. The principle statutory barrier to re-use is the fact that neither El Paso nor Juarez has the authority to prevent a private landowner from pumping this water for free.

Capture and injection of flood flows on the Rio Grande could also improve aquifer levels. However, such a plan could reduce the water available to the Rio Grande Valley. Again, contrary to the common assertion, water that passes beyond El Paso reaches Amistad efficiently. Furthermore, such a plan for conjunctive use of groundwater and surface water would require strict controls by each nation over withdrawals.

On May 7, 1996, the U.S. and Mexico signed a joint agreement for binational management of the El Paso/Juarez airshed. One unusual aspect of the agreement is that it sets up strong local input into the binational regulation of air pollution. This agreement could be a harbinger of change in both U.S. and Mexican policy toward local management of resources, and could set the stage for a similar agreement for binational, conjunctive use of surface and groundwater by El Paso and Juarez.

**Rio Grande water pollution**

Water pollution poses a serious threat to the security and safety of the water supply. Fifteen Texas border communities had ten or more violations for unacceptable bacterial contamination levels in their drinking water at some point between 1979 and 1995, and nine systems had from three to ten violations. Only the waters of the Amistad and Falcon reservoirs are considered safe for recreational contact such as swimming. Two sections are safe for contact with skin but not for swimming, from El Paso to Presidio and the tidal reach below Brownsville. The remainder of the river is not considered safe for any contact with human skin. The most contaminated segment is from Amistad reservoir to Falcon. Although EPA and TNRCC consider this particular segment as a whole, the 30 miles from Laredo-Nuevo Laredo to Falcon reservoir accounts for most of the segment’s poor rating. Contaminant levels there have been 100 times higher than is considered safe for contact with human skin.

Nuevo Laredo is now the one bright spot in this otherwise dismal picture. On April 17, 1996, a new wastewater system was dedicated which will treat 90 percent of the city’s sewage. Previously, 23 million gallons of untreated sewage was flowing into the Rio Grande every day from Nuevo Laredo. This had been the major source of pollution in the River. The wastewater system is a $50 million cooperative project by Mexico, the U.S., and Texas, with all parties contributing to the financing. The Texas Legislature appropriated $2 million, and Mexico paid about 2/3. The U.S. government paid the balance.

Despite completion of the Nuevo Laredo treatment system, 98 million gallons of untreated sewage continues to enter the Rio Grande every day from the remaining cities on the border, five times the volume of Nuevo Laredo’s former

155 Eaton, pp. 33 - 53.


discharge. Table 3 shows the untreated discharges that enter the Rio Grande. TNRCC has identified the segments downstream of several Mexican cities as having elevated fecal coliform levels. Elevated toxics levels were found in several other segments below Amistad.

Additional evidence of the magnitude of the problem comes from the Binational Study Regarding the Presence of Toxic Substances in the Rio Grande/Rio Bravo and its Tributaries along the Boundary Portion between the United States and Mexico. This study was conducted by TNRCC, the U.S. EPA, the Texas Parks and Wildlife Department, the Texas Department of Health, the Comisión National de Aguas, the Secretaría de Desarrollo Social, and the International Boundary and Water Commission.\(^\text{158}\) Toxicity levels exceeded the screening criteria in all of the 45 sites tested. In the tests of fish, 92 percent of the samples exceeded the criteria. These results were obtained despite the fact that the samples were one-day "snap-shots" which do not have the sensitivity of long-term monitoring.\(^\text{159}\)


<table>
<thead>
<tr>
<th>Facility</th>
<th>Discharge (million gallons per day (Mgd))</th>
<th>% Population with potable drinking water</th>
<th>% Population with sewer services*</th>
<th>Facility Planning Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matamoros</td>
<td>24</td>
<td>85</td>
<td>70</td>
<td>---</td>
</tr>
<tr>
<td>Rio Bravo</td>
<td>2.7</td>
<td>95</td>
<td>65</td>
<td>---</td>
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<td>Reynosa</td>
<td>16</td>
<td>98</td>
<td>74</td>
<td>Planning initiated</td>
</tr>
<tr>
<td>Nuevo Laredo</td>
<td>22.7</td>
<td>87</td>
<td>79</td>
<td>Facility completed</td>
</tr>
<tr>
<td>Piedras Negras</td>
<td>5.7</td>
<td>82</td>
<td>60</td>
<td>Planning initiated</td>
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<tr>
<td>Ojinaga</td>
<td>1.7</td>
<td>94</td>
<td>80</td>
<td>Planning initiated</td>
</tr>
<tr>
<td>Juarez</td>
<td>68</td>
<td>90</td>
<td>84</td>
<td>---</td>
</tr>
</tbody>
</table>

* Matamoros' discharge goes into the Laguna Barril rather than the Rio Grande.

** does not refer to treated wastewater

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160 EPA - Region 6, draft, "Watershed based analysis of infrastructure needs US/Mexico Border, 1996, table A.
AIR QUALITY

El Paso and Ciudad Juarez form a metropolitan area with the population of Houston in a high desert basin that is subject to air inversions in which a layer of cold air blankets a layer of warm air, trapping pollution near the ground.

Both cities are heavily industrialized, and have experienced serious air pollution since the 1970s. By 1990, El Paso and the State of Texas had taken measures to reduce the major sources of pollution on the Texas side, including automobile emissions and the emissions of the ASARCO copper smelter. However, El Paso has remained an air quality noncompliance area under U.S. Clean-Air-Act standards. Lack of data on Juarez emissions has made it difficult to quantify how much Juarez contributes to the problem, but the obvious culprits include brick kilns fired with used tires and other wastes, backyard kilns firing asbestos brake linings, unpaved roads, open dumping, quarries, automobile painting and rebuilding shops.

On May 7, 1996, the U.S. and Mexico signed a joint agreement amending Annex V of the La Paz Agreement for binational management of the El Paso/Juarez air basin. The agreement includes El Paso County, Texas, parts of Dona Ana County, New Mexico and the metropolitan area of Ciudad Juarez that are within 100 kilometers (62 miles) of the border.

One unusual aspect of the agreement is that it sets up strong local input into the binational regulation of air pollution. It establishes a "Joint Advisory Committee for the improvement of Air Quality" which will advise the Air Work Group established under the La Paz Agreement. The Advisory Committee will have 20 members, half from the United States. Two of the U.S. members will be from local governments in Texas and New Mexico, and five will be public citizens from the area. The remaining three members will be from the federal government and the state governments of Texas and New Mexico.

The ten Mexican members will consist of one representative from the city government of Juarez, one from the health authority of Ciudad Juarez, and five public citizens from the area. The remaining three members will be from SEMARNAP, the Mexican environmental agency, one from the federal health agency (SSA), and one from the environmental agency for the State of Chihuahua.

Carbon I and II: a problem for international cooperation

In the past, on a clear day, one could see forever across the vast reaches of the Big Bend National Park. But in recent years, air pollution has cut visibility from the normal 150 miles to less than 50 miles on the average in the summer, and as little as 9 miles.161

The Big Bend National Park, Texas' second largest tourist attraction and Texas' most important eco-tourism area, attracts over 330,000 visitors per year, and is likely to attract even more with the addition of three adjoining natural areas in Mexico and recent nearby additions to the Texas parks system.

Analysis of the pollution attributes it to air pollution from northeastern Mexico, including the industries in Monterrey, Nuevo Leon. The largest sources are the Carbón 1 and II coal burning power plants near Piedras Negras. Several pollution sources in Texas contribute to the problem during the fall and winter months.162


162 Letter from John P. Christiano, chief, Air Quality Division, National Park Service, to Jodena Henneke, Director, Air Quality Planning Division, TNRCC, November 30, 1994. This conclusion is based on examination of the impacts of 28 Texas sources of SO2, within 290 miles of the Big Bend National Park.
The Carbón I and Carbón II power plants use mainly low grade local coal with some U.S. coal imports.\textsuperscript{163} The Comisión Federal de Electricidad (CFE), an agency of the Mexican federal government, owns and operates the plants. The 1,200 megawatt Carbón I plant began operating in the early 1980s, and Carbón II went on line in 1995. Carbón I does not have the equipment to remove particulates, and neither plant is equipped to remove \textsubscript{SO2}.\textsuperscript{164} 

Carbón I and II are particularly glaring examples of the general problem of cross-border air pollution. The power plants are easily identified point sources which should be easier to deal with than the multiple sources that cause the air pollution in El Paso/Ciudad Juarez. The example of cross-border cooperation on air pollution abatement at El Paso/Ciudad Juarez clearly shows that government initiative can be effective. Therefore, failure to address pollution from these power plants is particularly disturbing.

The EPA held hearings recently in Eagle Pass on January 18 and 19, 1996 regarding a pollution-discharge permit for a mine that would supply coal to these plants. A decision on that permit is scheduled for spring. EPA official, Stan Melburg, said at the hearing, "[T]here is not anything inherent in NAFTA that's going to specify a set of controls for power plants...but we certainly want to explore with the Mexicans what options there are to mitigate some of the potential adverse effects of the plant."

**Hazardous and solid waste**

Improper disposal of hazardous and solid waste threatens water supplies and public health. Industrialization along the border creates particular concerns about the custody, nature, quantities, and proper disposal of hazardous waste. Location of permitted disposal facilities is a major issue since the \textit{La Paz Agreement} requires binational consultation in siting hazardous and radioactive waste disposal facilities within 100 kilometers (62 miles) of the border.\textsuperscript{165} Mexican officials from the border region have expressed concern over Texas permitting the Texas Low Level Radioactive Waste Disposal Authority's facility at Sierra Blanca, approximately 15 miles from the river. In the case of a proposed facility near Spofford in Kinney County, TNRCC denied the permit, although the agency did not recognize the validity of the \textit{La Paz Agreement} which was cited by Mexican officials during the contested case hearing. Texas' unpredictable record in honoring that agreement has cost Texas the high ground in negotiating with Mexico on waste management issues.

Hazardous waste contaminates the River and local aquifers, and enters the shared air as dust and fugutive emissions while solid waste washes into the River and the Gulf of Mexico to contaminate the tourist beaches as far north as Mustang Island. Over 160 illegal dumps have been identified in Texas counties adjacent to the river since 1981.\textsuperscript{166} U.S. companies are responsible for disposal of hazardous waste produced in Mexico with U.S. raw materials in the maquiladoras under the \textit{La Paz Agreement},\textsuperscript{167} and under Mexico's Maquiladora Decree. Therefore, a significant part of the border's hazardous waste problem is a U.S. responsibility regardless of whether the waste is produced in Mexico. Nevertheless, no assurance


\textsuperscript{165} \textit{La Paz Agreement}, Annex V, formally the Agreement Between the Government of the United States of America and the Government of the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area, 1983.

\textsuperscript{166} Unpublished TNRCC data.

\textsuperscript{167} \textit{La Paz Agreement}, Annex V.
exists that this waste will not be improperly dumped in the vicinity of the border where it can contaminate the river.\textsuperscript{168} 

The border industries use large quantities of hazardous material including solvents, acids, reagents, paints, and resins. These raw materials become hazardous waste during industrial processing. Under the \textit{La Paz Agreement}, hazardous waste that is generated from U.S. raw materials is supposed to be returned to the U.S. for disposal. However, neither the U.S. nor Texas has implemented an effective system to track these materials.\textsuperscript{169} 

The amount of waste that any particular industrial process will produce can be predicted from experience, and this prediction is a standard item of industrial planning and auditing. A tracking system for the amount of hazardous waste that should be returned to the U.S. can provide a reliable method for tracking this hazardous waste.

Texas pioneered the U.S. system of requiring manifests for the shipment of hazardous waste. Companies which transport hazardous waste must report the origin, constituents, quantity, and destination of the waste, and the receiver must report receipt of the waste.\textsuperscript{170} Persons who import maquiladora waste are required to comply with the manifest requirements. By 1991, the EPA had taken enforcement actions against four companies that had disposed of hazardous waste illegally.\textsuperscript{171} The Legislature should institute a system for tracking the quantity of hazardous waste that is obligated to be returned to the U.S. under the conditions of the \textit{La Paz Agreement}. 

Mexico had only seven approved hazardous waste disposal sites in 1990.\textsuperscript{172} The EPA reports that the number of shipments of hazardous waste across the Texas-Mexico border increased from nine shipments and 189.9 tons in 1987 to 356 loads totalling 238.8 tons in 1990. The Integrated Environmental Plan states: 

It is believed that there are more illegal shipments made from Mexico to the U.S. than previously appeared to have been documented due to inconsistencies in tracking and mistakes in documentation. However, the total amount of waste produced by maquiladoras is not known and it is expected to be significantly higher than the recorded values. It is therefore likely... that illegal dumping is occurring.\textsuperscript{173} 

Illegal dumping seems to work both ways. EPA reports that by 1990, action had been taken against four illegal dumpers in each nation.\textsuperscript{174} 

\begin{footnotesize}
\footnotesize
\begin{enumerate}
\item L.G. Ellis, \textit{Transboundary Regulation of Hazardous Waste Management Along the U.S. - Mexico Border}, Border Research Institute, New Mexico State University, Las Cruces, New Mexico (1993) pp. 5,6.
\item TAC.
\item Id.
\item Id.
\item Id.
\end{enumerate}
\end{footnotesize}
ANOTHER VIEW OF TEXAS

If the populations of the twin cities on each side of the border are considered together, and they are switched with Texas cities with the same population, a surprising picture emerges.
Appendix A

The 1993 Water Bulletin (published annually by the IBWC\textsuperscript{175}) includes averages for the years 1939 through 1993. Analysis of the complete series permits estimation of transmission efficiency. The hydrology of this segment of the Rio Grande illustrates the active interaction of surface water in the river and its adjacent aquifer.

The river segment from Fort Quitman to Amistad consists of 1) the reach from Fort Quitman to above Presidio, 2) from above Presidio to Castolon, which includes the Rio Conchos and two gauged creeks, and 3) Castolon to Langtry above the slack water of the Amistad reservoir. Each segment has unique characteristics. Reach 1 receives significant spring flow from the shallow aquifer adjacent to the river. However, inefficient irrigation and flooding near Candelaria, Texas results in an average reduction of 86,645 acre feet, although this reduction tends to vary yearly in proportion to overall river flows. The average volume above the confluence of the Rio Conchos is 131,569 acre feet per year. The net transmission efficiency of this segment is 96 percent due mainly to spring contributions as water from the adjacent riparian aquifer returns to the river. Reach 2 includes the inflow of the Rio Conchos from Mexico which averages 844,883 acre-feet, the largest single source of water in the Texas segment of the Rio Grande. Reach 3 flows through the canyons of the Rio Grande including Colorado Canyon, Santa Elena, Mariscal, Boquillas, and the Lower Canyons. Due to the ungauged contributions of springs in this reach, it is not practical to calculate the efficiency of this reach. Net flows at Langtry average 124 percent of flows at Castolon. When the effect of tributaries as well as spring contributions in the first reach is removed, flows into the Amistad reservoir, including what can be attributed to springs and adjacent runoff (rainfall averages 8 inches per year) are 200 percent of the flow at Fort Quitman.

Appendix B


1. Conduct simulation modeling of the Falcon/Amistad Reservoir System to develop hydrologic "triggering" criteria for staged reductions of municipal and industrial (M&I) water demands. (TWDB)

2. Develop a model M&I drought management plan that provides for simultaneous region-wide implementation of staged water demand reductions. (TWDB, VWPMC, TNRCC)

3. Develop model procedures to facilitate market-based water exchanges within the irrigation sector and between the irrigation and M&I sectors. Priority should be placed on developing procedures for reallocating available irrigation water supplies to preserve the ability of the region's permanent crops (e.g., citrus, sugar cane). Procedures for expedited TNRCC review of transactions would also be developed. (TNRCC, TWDB, VWPMC)

4. Conduct workshops for municipal and agricultural water suppliers on implementation of drought management and water banking procedures and provide assistance to individual water suppliers upon request. (TWDB, VWPMC, TNRCC)

5. Provide assistance with public education and awareness programs and with media relations. (VWPMC, TNRCC, TWDB)

6. Provide technical assistance and preapproval criteria for possible reuse of treated municipal wastewater for input into drinking water supplies. (TNRCC)

7. Provide technical assistance and provisional approval procedures for new or reactivated water supply wells. (TNRCC)

8. Provide flexibility in addressing drinking water standards during critical periods. (TNRCC)
Appendix C

Long-Term Management of Rio Grande Drought

1. Agricultural Water Conservation
   a. Establish an inter-agency irrigation water efficiency task force to conduct evaluations of water conveyance and delivery systems and evaluations of on-farm water use efficiency. The task force will include the TWDB and TNRCC with the Texas Agricultural Extension Service, the U.S. Bureau of Reclamation, the U.S. Geological Survey, and the U.S.D.A. Natural Resource Conservation Service. The VWPMC will assist with prioritizing the work of the task force and TWDB will coordinate the work. This effort will require federal funding.

   b. Conduct technology transfer/training workshops for agricultural water suppliers and users on irrigation water efficiency measures. The workshops will focus on:
      1. Canal operations and maintenance training
      2. Canal rehabilitation
      3. Irrigation water measurement
      4. On-farm water efficiency technology and water management.

2. Municipal and Industrial Water Conservation
   a. Conduct technology transfer/training workshops for M&I water suppliers and users, including:
      1. Municipal water conservation program planning and implementation
      2. Water distribution system auditing and leak detection
      3. Commercial landscape irrigation auditor training
      4. Institutional, commercial, and industrial (ICI) water conservation

   b. TWDB staff will provide direct technical assistance, consultation, and technical information on water conservation measures, wastewater reclamation, and desalination to individual M&I suppliers and ICI water users.

   c. TWDB will provide water conservation education materials in both English and Spanish.

   d. Water distribution and leak detection and other equipment will be available for loan from TWDB.
GLOSSARY

UNITS OF MEASURE

acre-foot: 325,851 gallons = 1.2334867 x 10^{-3} cubic meters

cubic meter: 1,000 cubic meters = 0.81071 acre feet

kilometer = .62137 mile

TERMS

basin: See watershed.

BECC: Border Environmental Cooperation Commission (NAFTA)

BEG: Bureau of Economic Geology, University of Texas

BUREC: U.S. Bureau of Reclamation, Department of the Interior

CEC: Commission for Environmental Cooperation

CILA: Comisión Internacional de Limites y Aguas, the Mexican counterpart to the IBWC

CNA: Comision Nacional del Agua, the principal Mexican federal water agency

COSYDDHAC: Comisión de Solidaridad y Defensa Derechos Humanos, A.C., an NGO based in Chihuahua, Chihuahua, Mx.

FEMAC: Fundación Ecológica Mexicana, A.C., an NGO based in Saltillo, Coahuila, Mex., specializing in right-to-know and open government issues.

GCIA: Grupo Ciudadano de Información Ambiental, an NGO based in Chihuahua, Mx., specializing in human rights issues.

IBWC: International Boundary and Water Commission,

NACEC: North American Commission for Environmental Cooperation (NAFTA)

NAD Bank: North American Development Bank

NGO: Non-Governmental Organization.

SEDESOL: Secretaría de Desarrollo Social, Mexico's principal environmental protection agency

SEDUE: Secretaría de Desarrollo Urbano y Ecología, the predecessor to SEDESOL

SMARNP: Secretaría de Medio Ambiente, Recursos Naturales y Pesca, the Mexican Ministry of the Environment, Natural Resources, and Fisheries.

TNRCC: Texas Natural Resources Conservation Commission

TWDB: Texas Water Development Board

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Valley Water Policy and Management Council, established to plan local response to current drought conditions in the Rio Grande Valley.

watershed
a geographic area defined by the streams and tributaries that drain into a particular body of water. In the case of the Rio Grande, the watershed covers 335,500 square miles, about twice the size of California, 1.6 times the size of France, 1.7 times the size of Spain, 2.4 times the size of Germany.
SECTION III: NAFTA AND TRANSPORTATION

Executive Summary

Lieutenant Governor Bob Bullock has directed the Senate Committee on International Relations, Trade and Technology to assess the effect of the North American Free Trade Agreement (NAFTA) on Texas' infrastructure including transportation, housing, education and the environment, with special attention to its impact along the Texas/Mexico border. This section focuses on the issue of the international transportation of goods and Texas' transportation infrastructure as it pertains to NAFTA.

Since the signing of NAFTA in November 1993, the United States has experienced increased international trade with both Canada and Mexico. The augmented economic exchange with Mexico has been particularly influential on the State of Texas. Texas' transportation infrastructure had become the major trade route for U.S. products exported to Mexico and Mexico's products exported to the U.S. long before the signing of NAFTA. The state's economy was also significantly affected by trade with Mexico prior to NAFTA's implementation, and with NAFTA, the economic benefits to Texas have only multiplied. These benefits to Texas also accompany many transportation-related challenges. U.S. trade with Mexico is predicted to hit $150 billion a year by 2010. In 1994, 1.8 million crossings were made by Mexican trucks. It is estimated for the year 2000, eight million crossings will be made annually.

International trade in and through Texas is conducted by various means: highway, rail, air, water and pipelines, with the vast majority carried by truck. Eighty percent of U.S. trade with Mexico passed through Texas in 1994, and 80 percent of this traffic was carried on Texas highways. This trend is likely to continue as NAFTA trade continues to increase between the countries of North America.

In the next decade it is likely that NAFTA will grow to expand past North America to include countries in South and Central America. Texas, with its prime location, should continue to be the gateway for import and export trade from all points south of the border. The transfer of goods over greater distances will undoubtedly cause the NAFTA issues relating to transportation to change. The future needs of expanded NAFTA trade must be anticipated and planned by the State in coordination with the federal government and with the other NAFTA countries. By investing in the state's long-term transportation infrastructure Texas can become an economic leader in the United States and a major player in the world trade scene.

While this report will touch on the various modes of transportation used in international trade, a heavy emphasis falls on the issue of truck traffic and related highway issues. The topics of primary interest to Texas include motor carrier regulations and permits, overweight and oversized trucks, safety concerns and accidents, inspections and enforcement, damage to Texas highways and bridges, NAFTA corridors, and international bridges. Legislative recommendations regarding various aspects of NAFTA-related transportation are also presented.


177 For example, Chile has already been targeted for inclusion into NAFTA. Truck transport as a primary means of carrying Chilean products to the U.S. and U.S. products overland to Chile is unlikely. Trade with Chile may, for example, lead to an increased use of maritime transport and ports to allow for goods to travel a greater distance at a lower cost. Depending on the goods traded, other alternatives to motor carrier transport will be increasingly needed; i.e. perishable goods from Chile will need quicker methods of transport, probably by air freight.
Methods of Transportation and Destination of Goods

While trade with Mexico increased 25 percent from 1993 to 1994, 18-wheel truck traffic expanded by 41 percent. More than 80 percent of U.S. exports travelled in motor carriers to Mexico in 1994 and 80 percent of that passed through Texas.178 Mexico exported $49.5 billion worth of goods to the U.S. with nearly 70 percent entering through Texas in 1994.179 The following table shows how trade moves between the U.S. and Mexico.

Breakdown of U.S. - Mexico Trade by Mode of Transportation

Railroads are a distant second to highways as a method of transporting goods, and account for 10 percent of U.S. exports to Mexico and 15 percent of Mexico exports to the U.S. Truck and air transportation are relatively more important for southbound exports while rail and sea transportation claim a higher percentage of the northbound imports.

The destinations of Mexican exports are concentrated in Texas and the North East and Central region of the U.S. Mexico's northern border region and central Mexico around Mexico City and Guadalajara are the primary destinations of U.S. exports. In 1994, a total of $23 billion in Mexican exports were trucked through the five Texas ports of entry at El Paso, Eagle Pass, Laredo, Hidalgo and Brownsville. U.S. exports passing through these ports equalled almost $30 billion. Forty-five percent of U.S. exports were bound for Chihuahua, Coahuila, Nuevo Leon and Tamaulipas, mostly through El Paso, Laredo and Brownsville, for 80 percent of the total.

Texas was the point of origin for nearly 47 percent of all U.S. exports in 1994. Of the total Mexican exports heading into the U.S., some 43 percent remained in Texas. Mexico is by far Texas' largest export market with trade valued at $24 billion in 1994. Mexico trade accounted for nearly 40 percent of the state's total of $59.9 billion in exports worldwide.180

NAFTA's Transportation Agenda

NAFTA set in motion a phased approach to expanding trade between the three countries. The various provisions outlined by the agreement are to go into effect gradually over a 15-year time span. In the meantime, various working groups are negotiating the details of these provisions. When the NAFTA transportation provisions are fully implemented by 2004, all restrictions on truck and bus operations between Canada, Mexico and the U.S. will be eliminated.

NAFTA is not the first agreement that has attempted to increase trade. Since 1944, the Interstate Commerce Commission Commercial Zone agreements (also known as the ICC Agreements or the Paired cities Agreements) have been in place to facilitate the flow of goods within defined commercial zones on the border. These agreements were a way to allow Mexican trucks to operate in Texas and to allow Texas trucks to operate in Mexico inside the restricted border commercial zones varying from 5-15 miles.

While the paired-cities arrangement exempts Mexican residents from having to register their vehicles to travel within the limited border areas, the agreement does not relieve non-U.S. registered vehicles from compliance with other state and federal mandates regulating the operation of commercial vehicles, such as safety, weight limits, and fiscal responsibility requirements. Therefore, a Mexican truck driver is legally required to carry insurance and a Motor Carrier Identification (MCI) number to...
travel within the ICC zone.

In the next several sections this report explains how NAFTA's transportation provisions are unfolding, the delay encountered, and continuing state and federal activities that affect NAFTA transportation issues.

The phases of NAFTA transportation

NAFTA has five primary phases for implementing the transportation provisions:


December 1995: the movement of international cargo via trucks on a cross-border basis in contiguous border states was to begin. This provision was delayed by the U.S. Secretary of Transportation and has yet to go into effect (the harmonization of standards for medical driver standards followed in July 1996).

January 1997: the deadline for the agreement between the three countries to harmonize the standards for tires, brakes, weights, dimensions, engine emissions, and road signs.

January 2000: the movement of international cargo via trucks will be permitted throughout the three countries, and beyond the border states. Standards will be established for the transportation of hazardous materials.

January 2004: All limitations on investments in motor carriers in the NAFTA countries are to be eliminated and full foreign ownership of Mexican trucking firms, bus companies, and seaports and the Mexican ownership of U.S. truck and bus companies will be allowed.181

The delay of NAFTA transportation provisions

On December 18, 1995, the U.S. government unilaterally postponed full access of Mexican trucks to the U.S. border states claiming that major differences in the two countries' trucking regulations, operating practices, and enforcement activities could adversely affect highway safety and infrastructure. Further, in the U.S., state and federal officials needed more time to assure that safety enforcement programs were in effect on both sides of the border. Mexico, in turn, has denied full access for U.S. trucks into its border regions.

In January, 1996, the IRTT Committee heard testimony supporting the delay from the Teamsters Union, Citizens for Reliable and Safe Highways, Texas for Safe Roads, and the Texas Attorney General. Issues raised at the meeting included whether Mexican trucks meet Texas safety standards, licensing laws, and labor regulations, and whether the State possessed the means to enforce Mexican truckers' compliance with state laws, thereby putting Texas' motorists at risk.

The Texas Department of Transportation (TXDoT) and the Department of Public Safety (DPS) provided information on their efforts prior to Mexico gaining full access to Texas highways which included distributing information, holding seminars and training sessions, being involved in various cross border groups, and increasing enforcement efforts in border areas.

The DPS stated the federal government must be more explicit about its expectations of Texas' enforcement measures before border access will be implemented. DPS further stated that

if [the Federal government] intend[s] for us to stop and check every commercial vehicle crossing the border, then we will never be ready, given the dynamics of the state and the costs involved with manpower and facilities.\(^{182}\)

However, DPS communicated that it is ready to provide an enforcement presence along the border and throughout the State to ensure "voluntary compliance" with Texas statutes and federal regulations.

Presently, U.S. and Mexican government officials continue to negotiate the opening of U.S. border states to Mexican trucks and to address concerns regarding Mexican truck safety. Industry sources say they have been notified that the new safety review process will be in place by December 1996, one year after the scheduled opening and more than a month after U.S. presidential and congressional elections.\(^{183}\)

Although cross-border truck traffic within the border states was delayed, some of the NAFTA provisions scheduled for this same date did go into effect. They include:

1. Processing and accepting applications for cross border transportation. As of December 1995, 56 Mexican motor carriers representing 800 vehicles were properly registered and ready to do business in Texas, but their applications cannot be finalized until consultations to improve safety have concluded;

2. Permitting U.S. firms to own up to 49 percent of Mexican carriers. Mexican companies are permitted to set up wholly-owned subsidiaries in the U.S. to haul international cargo;

3. Allowing Mexican trucks to travel within 20 miles of border under the ICC or paired-cities agreement which remains in effect.\(^{184}\)

The Harmonization of Standards

A significant and continuing project conducted among the three countries aspires to standardize commercial vehicle and operator standards. The task of finding common definitions and compatible regulations has been given to the Land Transportation Standard Subcommittee (LTSS), created under NAFTA. The stated objectives for the LTSS are to establish compatibility in the following areas:

1. Locomotive and other rail equipment and rail operation personnel standards;

2. Nonmedical motor carrier standards including operator age and language requirements;

3. Nonoperator medical requirements;

4. Vehicle weight, dimension, tire, brake, parts and accessories, maintenance, repair, inspection and

\(^{182}\) Major Lester Mills, Major of Traffic Law Enforcement, Texas Department of Public Safety, Letter to Senate IRTT Committee dated March 6, 1996.

\(^{183}\) Kevin G. Hall, "U.S., Mexico Move Closer to Agreement on Trucking," Journal of Commerce, April 10, 1996; "Teamster Members Reach Out to Nonunion Truckers on NAFTA," The Teamster, April/May 1996.

\(^{184}\) The Texas Transportation Commission at one point tried to suspend the ICC agreements thereby requiring all persons after December 17, 1995 to secure and display the applicable temporary permit. After receiving complaints, the Commission reevaluated this decision and on November 30, 1995 adopted permanent rules that allow the informal understanding to continue, claiming that in the "spirit of NAFTA," the informal understandings should remain in place.
5. Motor carrier safety compliance;
6. Road signs; and
7. The transportation of dangerous cargo.

To date, the LTSS has approved uniform criteria for commercial vehicle inspections, published U.S. rules applying to drug and alcohol use and testing regulations for drivers working for foreign-based motor carriers, published 30 Mexican proposals/rules for hazardous materials which are compatible with those of the U.S., and jointly issued with Mexico the Emergency Response Guidebook.

Implementing NAFTA Transportation Provisions

Federal activities

Prior to the December 18, 1995 deadline, the Federal Highway Administration (FHWA) had implemented a high-profile strategy that ensured truck safety compliance in the border region equalled the compliance in the remainder of the U.S. This strategy included education, enforcement, and evaluation (the full process is reviewed in Appendix A: The U.S. Department of Transportation and the Federal Highways Administration Preparation Efforts for the Implementation of the North American Free Trade Agreement). The goals of this strategy are as follows:

Education goal: to ensure that all Mexican carriers, drivers, and brokers are aware of the safety and hazardous materials guidelines;

Enforcement goal: to maintain a full-time enforcement presence at the major border crossings, increase the number of enforcement officials, increase cooperation between the agencies and with officials in Mexico; and

Evaluation Goal: to conduct an ongoing evaluation of the results of the activities between the U.S., Mexican, and Canadian Secretaries of Transportation, and to evaluate coordination between U.S. federal agencies and Texas state agencies.

Current Texas activity

As the details of NAFTA are set in motion, state and local laws remain in place. A state may impose more stringent safety and environmental regulations on commercial vehicles using their roadways. However, such regulations must be "imposed in an equitable and nondiscriminatory manner" on all domestic and foreign vehicles. The goal is to establish a uniform system of registration and licensing for all carriers to eliminate confusion and multiple layers of regulatory red tape.

TXDoT has been active in preparing for NAFTA. TXDoT has representatives on the LTSS Committee, has conducted border-related research, and has participated in several international programs, working groups, and exchange programs with Mexico. (See Appendix B: The Texas Department of Transportation Preparation Efforts for the Implementation of the North American Free Trade Agreement).

By the end of FY 1997, TXDoT will have begun work on an additional $372 million in highway construction in the border region. Plans for the next ten years call for the department to begin construct a total of $1.39 billion in border highway improvement projects. In FY 1996, the state will distribute $8 million to the border districts from a fund specifically created for NAFTA-related projects.\footnote{Eddie Sanchez, P.E. El Paso District Engineer, Texas Department of Transportation, Testimony before the IRTT Committee on the Status Report: Implementation of the Transportation-related Legislation on the Texas Border, El Paso, Texas, March 26, 1996.}

The Texas Attorney General sent a set of recommendations to President Clinton in October 1995. These recommendations include:

\footnote{185 Eddie Sanchez, P.E. El Paso District Engineer, Texas Department of Transportation, Testimony before the IRTT Committee on the Status Report: Implementation of the Transportation-related Legislation on the Texas Border, El Paso, Texas, March 26, 1996.}
1. Issuing an executive order requiring the U.S. Customs Service to enter into a cooperative memorandum of understanding with the State of Texas regarding the placement of state law enforcement and regulatory officials at the 17 Customs Ports of Entry located on the 1,200 mile Texas-Mexico border;

2. Establishing a federal agency working group to coordinate with appropriate state officials to ensure that Texas state agencies may access all available federal funds for state enforcement and administrative efforts;

3. Directing the LTSS to preserve and enforce current state and federal health and safety laws;

4. Working to develop a 21st century "one-stop" border inspection facility that uses state-of-the-art x-ray machines, scales, scanners, computers and specially trained inspection officers to perform complex inspections uniformly, thoroughly and expeditiously; and

5. Seeking support for a feasibility study of "trucks-only" corridors as a means of handling the growth in North American ground transportation as a result of NAFTA.\textsuperscript{186}

\textbf{74th Legislature activities}

The 74th Texas Legislature passed several laws requiring Mexican carriers doing business beyond the border commercial zones to meet the same safety and insurance requirements as U.S. and Canadian truckers. These bills also made Texas truck regulations consistent with the provisions of NAFTA. Transportation bills passed in the 74th Legislature went into effect on September 1, 1995.

\textbf{House Bill 2060}

Also known as House Bill 1547, House Bill 2060 was initially passed in 1989 and authorized the State to issue annual permits allowing vehicles to operate at weights that exceed the legal gross weight of 80,000 pounds by a total tolerance of five percent and the axle weight by a tolerance of ten percent.

In 1995, the 74th Legislature amended HB 2060, through house bill 1547, to increase the fees associated with issuance of the overweight permits. The fee for a weight tolerance permit is now comprised of a base fee of $75 plus an additional fee ranging from $125 to $2000, depending upon the number of Texas counties in which the truck will be operating. The base fee is divided and distributed to all counties in the state, with each county receiving a percentage based on its total miles of county roads. Additional funds are distributed to only those counties in which the permittee will be operating.\textsuperscript{187}

\begin{table}[h]
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\begin{tabular}{|c|c|c|c|c|c|}
\hline
\hline
\textbf{Total} & 500,000 & 400,000 & 300,000 & 200,000 & 100,000 \\
\hline
\end{tabular}
\caption{Oversize/Overweight Permits}
\end{table}

\textsuperscript{186} Dan Morales, Attorney General, State of Texas, Letter to President Clinton, October 11, 1995.

\textsuperscript{187} Self-Evaluation Report to the Sunset Advisory Commission, Texas

\textit{1996 Senate IRTT Committee Interim Report}
During the last 20 years, U.S. federal law has been amended to increase legal gross truck weights from 54,000 pounds to a maximum of 80,000 pounds. The higher gross weights denote increased payload, which in turn implies lower operating costs and increased profitability to the industry.

2060 and overweight and oversize permits negatively affect Texas, as trucks as heavy as 84,000 pounds travel legally over Texas roadways. Some of these trucks travel on farm-to-market roads and cross bridges that were originally designed and constructed for loads of approximately 58,420 pounds.

The number of 2060 permits issued in Texas has grown to about 12,000 permits annually while oversize and overweight permits are on the increase as well, according to Jim Bisson of TXDoT. Some 400,000 overweight and oversize permits were issued last year, and in March, April and May of 1996, over 40,000 were issued per month.

TXDoT estimates that damage to the Texas highway system from heavier trucks already costs as much as $450 million annually while the revenue derived from special permits for those same trucks amounts to only $750,000. Despite the fact that the 74th Legislature raised 2060 permit fees to $75, a recent study done by the Texas Transportation Institute suggests that for trucks to pay their fair share, the fee should be closer to $2,000.

TXDoT also anticipates that as Mexican trucks begin to use Texas roadways, the State will experience an increasing number of overweight permits requests since Mexican trucks typically carry heavier loads.

If heavier and longer trucks are allowed under NAFTA, the State could face trucks with gross weights of up to 175,000 pounds, rather than 80,000; nine axles instead of four; and triple trailers, instead of the single or double trailers now common on Texas highways.

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Department of Transportation, September 22, 1995.

2060 permits are annual permits which allow vehicles to operate at weights that exceed the legal gross weight of 80,000 pounds by a total tolerance of five percent, and the axle weight increase by a tolerance of 10 percent. Overweight/oversize permits are issued routinely for shipments such as manufactured housing, concrete, lumber, etc. Most of the trucks hauling overweight/oversized goods have been specially fitted to properly distribute loads so as to conform with engineering principles regarding axle/weight variables.

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188 Barnhart & Associates study.


There are seven combination vehicles, in addition to the standard 48-foot tractor/trailer combination truck, that have been identified as being potentially appropriate for use in trade between Canada, the U.S., and Mexico.

A study conducted by Ray Barnhart and Associates examined the issue of legally increasing weight and length provisions of NAFTA trucks. This study warns:

Texas motorists today are subsidizing domestic truckers that operate on Texas roads; with NAFTA in effect, Texans will tomorrow be subsidizing Canadian and Mexican truck operations as well. Increasing legal truck weights can only worsen a situation that is, if one is at all concerned about the fairness of public policy, intolerable.\textsuperscript{192}

Another concern cited is the difficulty in preventing NAFTA trucks from leaving interstate highways and travelling on nondesignated roads, such as county roads and the farm-to-market roads that are not designed to handle large rigs. TXDoT is concerned that Mexican trucks with statewide access will unacceptably increase the number of 2060 permits requested. The Department expects that approximately 80,000 Mexican commercial vehicles weighing over 80,000 pounds could apply and receive registration permits based on a reciprocity agreement or under the existing registration agreements.\textsuperscript{193} In a report to the Sunset Advisory Committee TXDoT states that "if HB 2060 is not revisited, and a larger percentage of these vehicles are permitted [to travel] under the current provisions of the 2060 statute, then the damage done to the state's infrastructure will accelerate."\textsuperscript{194}

\begin{tabular}{|l|l|}
\hline
\textbf{Type of Truck} & \textbf{Typical Weight (pounds)} \\
\hline
CS-5-Typical 18 wheeler & 80,000 \\
Canadian stout heavy Double & 128,000 \\
Mexican Six Axle & 107,000 \\
U.S. Turnpike Double 48 & 126,000 \\
U.S. Six Axle & 90,000 \\
Mexican Rocky Mountain Double & 133,000 \\
U.S. Triple 28 & 115,000 \\
Canadian Six Axle & 102,000 \\
\hline
\end{tabular}


TXDoT has also requested additional federal funding from the U.S. Department of Transportation in anticipation of the additional road repair costs in Texas due to heavy Mexican trucks travelling with a 2060 permit.

\textbf{Senate Bills 981 and 1420}

Both Senate Bills 981 and 1420 were enacted to respond to new regulatory concerns over NAFTA. Senate Bill 981 requires foreign trucks to obtain an annual registration permit. For example, an 80,000 pound vehicle would pay $840.30 in annual registration fees.

Senate Bill 1420 eliminates the Texas Railroad Commission's (TRRC) "International Stamp Program" which required that Mexican truckers to register with the TRRC their insurance in an amount equal to the $500,000 liability insurance Texas trucks have to carry.

\textsuperscript{192} Barnhart & Associates study.
\textsuperscript{193} Id.
\textsuperscript{194} Id.
The Mexican trucker paid a $10 fee for the stamp. This program lacked an enforcement mechanism and was subject to court challenge. SB 1420 responded to NAFTA by ensuring that all motor carriers have the same registration obligations and meet the same insurance requirements in Texas.

Senate Bill 1420 made TXDoT responsible for state vehicle registrations and insurance payments. Prior to SB 1420, these tasks were handled by various entities such as insurance agents, customs brokers, the Texas Department of Insurance, DPS, TXDoT, and the TRRC.

In keeping with the spirit of NAFTA, provisions in Senate Bill 1420 allowed a Mexican truck, registered in Mexico, a temporary permit that is good for either 72 hours, at a cost of $25, or 144 hours, at a cost of $50. Senate Bill 1420 included Mexico in a reciprocal registration agreement that already existed between Texas and Canada as well as other U.S. states. 195

Senate Bill 3

SB 3 addressed the issue of insurance coverage requirements for all domestic and foreign motor carriers. It also shifted many of the permitting responsibilities to TXDoT. Senate Bill 3 authorized funding for 24 new DPS officers. At the same time, the General Appropriations Act authorized 85 new license and weight inspectors. This brought the total DPS strength to 335 troopers for FY96 and 359 for FY97. Senate Bill 3 also allowed more cities, such as El Paso and Socorro, to train and certify licensed officers. As Major Lester Mills of the DPS explained, "[a]s police officers from these cities and other border cities are trained and certified, the overall enforcement capabilities of the State will be enhanced." 196 (See Appendix C: Senate Bill 3, for details)

Senate Bill 1633

Senate Bill 1633 was designed to give TXDoT more oversight in the international bridge construction and federal Presidential Permit processes. Senate Bill 1633 involves the Texas Transportation Commission in the state process for future bridge construction and establishes a mechanism for prioritizing pending bridge construction where state dollars are involved.

NAFTA corridors in Texas

To understand the NAFTA transportation between the U.S. and Mexico, it is essential to note the location and concentration of populations and manufacturing in Mexico and the U.S. In the U.S., these concentrations are in the northeastern and southeastern regions, as well as Texas and California. More than three-fourths of the trade moved between Mexico and the U.S. are destined for Texas or flow through Texas in route to the northeastern U.S. (i.e., the upper midwest and mid-Atlantic regions).

In Mexico, the principal origin and destination of trade is the central portion of the country, which contains approximately two-thirds of the population and most of the manufacturing employment. The secondary origin and destination in Mexico are the maquiladora factories located along the Mexican side of the border, which are primarily concentrated in Ciudad Juarez, Matamoros and Reynosa. The primary trade flow from the U.S. to Mexico passes through Texas into the heart of Mexico, while the secondary flows are dispersed along the border with major traffic flow in

195 Formerly, Texas law authorized TXDoT to issue 72-hour and 144-hour temporary registration permits to domestic and Canadian motor carriers without proof of insurance. This bill extends access to the temporary registration to Mexican carriers and requires all operators (whether U.S., Canadian or Mexican) to present evidence of financial responsibility for the duration of the permit).

196 Letter from Major Lester Mills, Traffic Law Enforcement, DPS, to Senate IRTT Committee, March 6, 1996.
Lower Rio Grande Valley and El Paso.\textsuperscript{197}

Dominant U.S.-Mexico trade routes

Dominant U.S.-Mexico truck transportation corridor segments are those corridors in which over one million trucks per year travel. The map in Appendix C demonstrates the importance of Texas highways to trade routes throughout the entire U.S. Over one million trucks a year travel on the Texas' portions of Interstate Highways 35, 30, 40, and 10. Fifty percent of all U.S.-Mexican trade travels along the stretch of IH-35 between Laredo and San Antonio and an additional 10 percent of trade travels on IH-10 between San Antonio and Houston.

Four of the 20 U.S. Corridor designations made under ISTEA directly affect Texas. They are Corridors 1, 23, 18, and 20. From 1995 to 1997 Texas will spend roughly three quarters of a billion dollars in state and federal funds to maintain and improve these key trade corridors.\textsuperscript{198} The four high priority corridors specifically include:

1. Corridor 1, a North-South corridor running from Kansas City, Missouri to Shreveport, Louisiana. Corridor 1 and Corridor 20 will intersect in Texarkana at a point yet to be determined by an ongoing engineering study conducted by Arkansas and Texas;

2. Corridor 18, an extension of the existing IH-69 from Indianapolis to Memphis, Shreveport and Houston and to the Lower Rio Grande Valley;

3. Corridor 20, US 59 from Texarkana to Houston and Laredo. The State has added the Lower Rio Grande Valley (LRGV) to its current evaluation of the IH-69 Corridor 20 segment; and

4. Corridor 23, the IH-35 Corridor (See Appendix E, a map of 1994 Estimated Trucks Carrying U.S.-Mexico Trade on Texas Highway Corridors).

\textsuperscript{197} Barnhart & Associates study.

Texas has been involved in several efforts seeking corridor designation for NAFTA trade within the state. According to the Barnhart study, some of these efforts have been misguided. Several practical elements influence selection of new trade corridors or expanding or improving existing corridors. These include the political influence of elected officials, communities, or property owners; economic factors such as the availability of capital to finance the expansion or improvements; the desire localities to stimulate economic development; and a thorough and arduous planning process.

**IH-69 corridor**

IH-69 consists of two congressionally designated "High Priority Corridors of national significance," Corridor 18 and Corridor 20. Corridor 18 will begin at the existing IH-69 highway at Port Huron, Michigan about 60 miles northeast of Detroit. On the northern border, IH-69 would join to an interstate-quality road that connects to Toronto, Montreal and Quebec. In the U.S., the route will go through Indianapolis to Evansville, Memphis, Shreveport, Houston and on to the Rio Grande Valley via U.S. 281 and U.S. 77. Corridor 20 will run from U.S. 59 in Texarkana, where Corridor 20 and Corridor 18 intersect, to Houston and towards the border.

The combination of these two corridors creates an 1,800 mile route stretching from Port Huron, Michigan, adjacent to Ontario, Canada, to Laredo and the Rio Grande Valley.

In 1993, the eight states on the IH-69 corridor accounted for $50.6 billion, or 38 percent of the dollar value of U.S. trade with Mexico and Canada. These states accounted for 52 percent and 33 percent of truck trade with Mexico and Canada, respectively, in products such as transportation equipment, industrial...
machinery, electronic and computer equipment, chemicals and allied products, and fabricated metals.

There are two federally funded studies relating to the IH-69 Corridor. The Corridor 18 study, conducted by Wilbur Smith Associates and the HNTB Corporation, was completed in 1995. The Corridor 20 study, conducted by Rusty Lichlitter and Jameson, is to be presented to TXDoT this summer. In general, the stated objectives and potential benefits of the IH-69 Corridor are to:

1. Spur industrial development;
2. Save lives (it is estimated that over a 20-year period use of the IH-69 Corridor will save 342 lives and 20,000 injuries, at a savings of over $800 million);
3. Create jobs in the eight states along the route;
4. Reduce highway shipping costs and increase foreign trade;
5. Create intermodal connections with Houston's railroad freight lines and maritime ports and Texas' airports;
6. Reduce travel time between South Texas and Indianapolis by as much as four hours one-way (two hours of it in Texas); and
7. Pass through three Rural Empowerment Zones in the IH-69 area, including the Rio Grande Valley and six Enterprise Communities.

The total development costs of IH-69 are currently estimated at $9 billion with a construction time of 10 to 20 years to complete.

Federal provisions (under ISTEA) and state coffers will provide the necessary funding. Additional revenues sources could be generated from toll fees if they are converted into toll roads; from the use of right-of-way fees for fiber optic lines if an Intelligent Transportation System is incorporated into the design; from telephone commissions, fees; from phone booths placed on the Corridor; and from advertising.

IH-69 is predicted to create 40,000 jobs by 2025, resulting in $12.8 billion in additional wages and producing $24 billion in value-added revenues between 1995 and 2025. The Corridor 18 feasibility study indicated that for every dollar invested in the development of this highway it will produce $1.39 in user benefits and will positively affect the national economy by $2.21 billion. Preliminary findings for the Corridor 20 study show cost ratio benefits even higher ranging from $1.49 to $1.72. By 2015, the forecast is that the corridor will have daily traffic volumes in the range of 37,000 total vehicles with trucks projected to account for 26 percent of those vehicles.

The impact on Texas has been and will continue to be substantial. In 1994, community leaders from East and South Texas formed an organization to advocate the development of IH-69. The Alliance for I-69 represents Texas in the IH-69 Mid-Continent Highway Coalition, which is comprised of all the states along the corridor and focuses on advocacy at the federal level.


203 I-69 Study.
The IH-69 Corridor would serve most of Texas' ports including: Houston, Orange, Corpus Christi, Port Arthur, Texas City, Beaumont, Freeport, Galveston, Port Lavaca, Brownsville, Matagorda, Port Mansfield, and Harlingen.

Current proposed plans are to connect IH-69 with ports of entry in Laredo and in the Rio Grande Valley. The route linking Laredo to Houston would involve Highway 59 passing through Victoria, while the proposed link from Houston to the Rio Grande Valley would follow Highways 77 and 281.

Two Mexican toll roads to Monterrey are directly accessible from Laredo and the Rio Grande Valley. One turnpike from Laredo through Monterrey to Guadalajara and the Port of Manzanillo and another to Ciudad Victoria and Mexico City. There are plans to construct a Gulf Corridor from Mexico City to the Rio Grande Valley.

**The IH-35 corridor**

The IH-35 Corridor runs 1,550 miles from Deluth, Minnesota to Laredo, Texas, and passes through Minneapolis/Saint Paul, Des Moines, Kansas City, Wichita, Oklahoma City, Dallas/Fort Worth, Austin, and San Antonio. The Corridor connects to the Dallas/Fort Worth International Airport and an intermodal hub planned for Kansas City. The corridor will also traverse 580 miles of Texas roadways and pass through 21 counties, directly affecting 6.2 million Texans.

According to the Barnhart Report "Impact of Bigger Trucks on Texas Highways," the corridor section from Laredo to Dallas is predicted to be the major U.S.-Mexico trade corridor in the U.S., with over one million trucks per year carrying products to and from Mexico. Some descriptive statistics include:

1. Currently 74 percent of all goods traded between the U.S. and Mexico traverse Texas on IH-35;
2. Since 1960, traffic from San Antonio to Austin is up 754 percent; and
3. Approximately 908,891 loaded trucks crossed the border at Laredo, compared to 331,000 in 1988 and increase of nearly 300 percent.

The goals and objectives of the corridor are to provide:

1. Good, reliable roads that can be maintained and upgraded under ever-increasing usage; the NHS and ISTEA will provide the necessary funds;
2. A 2,000 mile fiber-optic line along the highway that creates a speedy tracking system for trucks;
3. Ports of preclearance, staffed by customs agents from the three countries, established at designated points along the corridor to speed time-consuming customs and weight inspections and tariff charges; and

The primary advocate of the corridor for improvements to the corridor is the IH-35 Coalition. The coalition, which was formed in 1994 under the leadership Texas Judge Jeff A. Moseley of Denton County and Texas Judge Mercurio Martinez of Webb County, hopes to obtain as much as $435 million in federal funding to improve intra-Texas portions of the

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204 Barnhart & Associates study.


The Coalition’s mission is to gain Congressional approval of a NAFTA Superhighway System designation for IH-35 which will:

1. Lead to the identification and elimination of barriers to international commerce;
2. Enhance funding for upgrading capacity;
3. Help increase safety and technology;
4. Reduce costly congestion; and,
5. Increase jobs.

If the use of heavier and longer trucks is approved by NAFTA negotiators, the project might incorporate two new heavy-duty lanes on IH-35 and the reconstruction or improvement of IH-35 bridges to accommodate the extra weight and truck configurations.

The Coalition also hopes to transform the 1,500 miles of IH-35 into a "smart" highway equipped with electronic tracking devices that will allow trucks to clear customs before they hit the border.

In theory, the system will allow trucks to stop along their route at an inland customs port, process paperwork and pay fees. Customs agents then could seal the rigs electronically. Using a card-sized electronic transmitter attached to the truck, customs agents could then track the vehicle to make sure it doesn’t deviate from the route it planned to use or detect if containers have been opened. The result will be that these trucks can then be free to bypass border bottlenecks and goods can be delivered faster and cheaper. An additional benefit of the system is that it will hinder drug traffickers who will have difficulty diverting trucks to load or unload drugs.

To implement this concept, fiber optic cable will need to be installed along the entire route. According to Judge Moseley, private industry would be interested in gaining the rights to install the cable, which in turn could help finance the road. "Between Kansas City and Mexico City there are 55 million people living along IH-35," Judge Moseley said. "There's very strong interest...in the private industry to have the right to install this cable...It costs the federal taxpayers nothing."

"Backers of [sic] the smart highway project say cutting the backlog to reduce transportation costs ultimately saves consumers money on the price of some $100 billion worth of goods shuttled between the United States and Mexico. That volume is expected to grow 50 percent over the next 15 years as tariffs fall and pan-American trade increases."

Several "smart highway" pilot projects are underway including, one in Arizona, one in California, and one along IH-75 from Miami to Detroit where the system allows for truckers to bypass state weigh stations and other checkpoints.

Other corridor initiatives

Other corridor projects include the Camino Real Corridor Initiative, La Entrada al Pacífico, and the Central North American Trade Corridor. The Camino Real Corridor Initiative in West Texas would connect Chihuahua, Mexico and Denver, Colorado, and pass through El Paso/Juarez, Las Cruces, New Mexico, Albuquerque, and Santa Fe.


Id.

"NAFTA Corridors," Fiscal Notes, Texas Comptroller of Public Accounts, October, 1995, Sources: U.S. Bureau of the Census and USDOT.
La Entrada al Pacífico is a collaborative effort of west Texas residents, known as the MOTRAN coalition, residing on the Midland-Odessa route of I-27. La Entrada al Pacífico corridor will link the Mexican port of Topolobampo to the eastern region of the U.S., thus providing greater access to key Asian markets.

The Central North American Trade Corridor project uses Highway 83 to link northern Mexico to Texas, Oklahoma, Kansas, Nebraska, South and North Dakota to the province of Manitoba in Canada. It is also known as the "wheat and meat" corridor, and it passes through the prime agricultural regions of the three NAFTA nations. This project along Highway 83, already part of the National Highway System, is based on the Super Two Highway design, i.e., a two-lane highway with interspersed passing lanes. Highway 83 crosses every major east-west interstate and railroad in the U.S. providing a great potential for intermodal connectivity. In Texas, some 900 miles of Highway 83 run along the border from Brownsville and Laredo, to Carrizo Springs and up through Abilene and the Panhandle.

Trucks and Texas Highway Infrastructure

Heavy trucks are predicted to cut the life span of Texas highways by up to half and to cost up to $450 million per year in added repair and maintenance costs. TXDoT currently reports that its resources can pay for only about 40 percent of current highway needs.

As previously noted, efforts are underway to increase the currently legal U.S. truck size and weight limits to match, or at least approximate, the limits that are legal in Canada and Mexico:

Since a large majority of U.S./Mexico land-transported trade moves over Texas roads through Texas ports of entry, the state and its highway agency, the TXDoT, would, more than any other state or agency in the nation, be adversely affected by those new weights limits.211

Safety issues

A major obstacle facing the implementation of cross-border transportation of NAFTA products is the concern over increased safety hazards on Texas roadways. As trade increases the number of all trucks using the highways will increase. Mexico and Canada have different standards for their trucks and truck drivers. Unfortunately, Mexican trucks have a poor safety record and are frequently out of compliance with U.S. regulations.

The next section will review accident statistics involving trucks in general and the truck safety organizations that have formed to address these safety questions. Also examined are the current differences between U.S. and Mexican standards and regulations which are under review by the Land Transportation Standard Subcommittee.

Trucks

Texas ranks second in the nation for the number of truck accidents after California.212 In 1994 there were 444,000 truck crashes nationwide with some 4,346 fatalities and more than 100,000 injuries.213 In Texas, heavy trucks were involved in 332 fatalities during 1994. Truck crashes involved 4,128 vehicles.214

211 Barnhart & Associates study.


Several organizations such as Citizens for Reliable and Safe Highways (CRASH), Texans for Safe Roads, and the Coalition Against Bigger Trucks are working to reduce truck-related accidents. Their combined goals are to save the lives of truck drivers and the motoring public; to reduce the number of injuries caused by truck-related crashes; to reduce the number of fatalities caused by truck-related crashes; to preserve the infrastructure of America's roads and highways; to maintain the integrity of bridges in states across the U.S.; and to ensure that trucks do not get bigger or heavier than current standards allow.

Safety concerns primarily focus on the many discrepancies between U.S. and Mexican truck and driver regulations. While the maximum weight of U.S. trucks is 80,000 pounds, (unless a special permit has been obtained), the maximum limits in Mexico are much higher and less enforced. Mexican limits depend on the configuration of the carrier. The most common Mexican truck used for commercial border transport, for example, is the 6-axle Tridum. The legal limit on this type of truck is 107,000 pounds. Mexico does not require front axle brakes (in addition to rear axle brakes) as does the U.S., nor does it impose limits on carrying hazardous or toxic materials. In the U.S., drivers are allowed to drive no more than 10 hours without a mandatory eight hour rest period, or to exceed 70 hours in a eight-day period. Mexico has no limits on truck drivers' time behind the wheel without rest. U.S. drivers face random testing for drug and alcohol use, and are required to maintain documentation of the test results. Although Mexican drivers may be tested, they are not required to carry documentation regarding test results.

**Bigger trucks**

Trucking interests in all three countries are calling for NAFTA to allow heavier and longer trucks to travel throughout North America. However, studies show that bigger, longer trucks are involved in more accidents and cause more damage to roadways and bridges.

Safety groups argue that heavier trucks increase the truck rollover rate; are more difficult to stop, are more likely to be involved in "runaway" crashes on steep hills; require greater distances to brake, which severely impairs a truck's ability to avoid collisions, particularly at high speeds; and destroy road pavements and bridges.

Increased truck length makes it more difficult to control and maneuver around corners and curves, resulting in "off tracking" or "swing out" lane encroachment. The turning radius of longer trucks causes the rear of the truck to either run over the curb or swing into the lane of oncoming traffic.

With Longer Combination Vehicles (LCV), vehicles with more than one trailer attached to the cab, crashes are more likely to be severe, drivers have less control over the second trailer and virtually none over a third, braking problems increase, and trucks are more likely to run away on steep downgrades. Furthermore, LCVs frequently travel at 15 to 20 mph on steep upgrades while other traffic passes at 55 mph. Speed disparities of only 20 mph are nine times more likely to lead to crashes.

While safety may be the most important issue for Texas citizens, another concern is cost, in terms of damage done to Texas roadways and bridges. The next section examines this aspect of the issue.

**Impact on infrastructure**

Texas has the nation's largest road network with eight interstate highways and over 300,000 miles of roadway. The State of Texas owns a total of 77,000 miles of roads; 3,233 miles of which are Interstate Highways, 12,100 miles are U.S. or state highways, and 62,000 miles are farm-to-market roads, state highways, and interstate frontage roads. These roads are maintained and operated by TXDoT. County governments control some 132,000 miles of roads in Texas. Another 34,000 miles are additional major arterial roads in major urban centers which tie directly to interstates. Sixty

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\(^{215}\text{Id.}\)
percent of the state's traffic travels on the 77,000 miles of interstates and divided highways that make up 10 percent of the total roads in Texas.

A study done by the Center for Transportation Research, found that tractor-trailers and other large commercial trucks are responsible for 34.5 percent of the costs of building and maintaining highways, but pay only 17.8 percent of all user fees (from gas and diesel tax and vehicle registration):

In the event combination truck/trailer size and weight limit increases are enacted, unless they are accompanied by tax rate increases that enable Texas and the other states to fully recover all of the direct and indirect costs resulting from their operation, (roughly two hundred percent of the rate they currently pay), there will be an explosion of those vehicles on the highways.

...[i]t would seem that TXDoT is left with but a few alternatives: continue the same truck fee and tax schedule and allow the road system to deteriorate more rapidly; significantly increase revenues in order to bring the road system up to an acceptable level of serviceability; institute truck size and weight laws that will protect the structural integrity of the roads and bridges and prevent their premature deterioration; or a combination of these actions. Whatever course is taken, Texas should strive to distribute the burden of highway costs equitably across the classes of highway users.216

Studies conducted by the Center for Transportation Research at the University of Texas show that one 80,000 pound truck travelling over a piece of roadway does as much damage to the road as 9,600 cars passing over the same area. The rate of increase per weight added is exponential, thus a 120,000 pound six-axle truck does 390 percent more damage than to 80,000 pound trucks. It would equal to the amount of damage as some 37,440 cars.217 Roads that were built to last 40 years have their lifespan diminished to only 12 years.

The Barnhart & Associates study also examined the condition of Texas' bridges and provided possible damage cost scenarios should heavier NAFTA vehicles be allowed on these bridges.

Of the 4,800 bridge structures on the major NAFTA trade routes in Texas, 1,300 or 28 percent have already been found deficient to existing truck limits and configurations. It would cost an estimated $9 billion in construction and user costs to repair.

Of the remaining 3,450 bridges, $23 billion taxpayer dollars would have to be collected to make the following improvements:

1. Over 2,200, or 64 percent, of Texas bridges would be inadequate for use by the Canadian C double type rig. To make those bridges safe would cost approximately $9 billion;

2. Over 1,900, or 55 percent, of all Texas bridges would be deficient for the Mexican Six Axle truck, costing $7 billion to make safe;

3. Over 700 bridges, or 20 percent of all bridges, would be deficient by the Double 48 at a cost of $4 billion;

4. Over 1,020, or 30 percent, of all bridges would be deficient by the six axle 90,000 lb. semi-trailer truck at a cost of over $3 billion.

216 Id.
217 Citizens for Reliable and Safe Highways brochure, supra, fn. 197.
Upgrading, strengthening, and maintaining this infrastructure also costs motorists when they are delayed as they attempt to navigate through road and bridge construction areas.

Cumulatively, this analysis demonstrates TXDoT is already facing major investment requirements due to thousands of deficient bridges. Regardless of whether NAFTA negotiations lead to higher legal weight limits for trucks, 4,808 bridges on the NAFTA trade routes fail to meet inventory rating requirements, a test customarily used by engineers to determine structural sufficiency. Another study concurred in its finding that some 32 percent, or 115,000, federally-assisted bridges in the U.S. are rated as structurally deficient. These bridges are not built to carry the heavy loads larger trucks would allow. Texas is cited as having the most deficient bridges in the nation. TXDoT already faces an $880 million liability to replace bridges that are deficient even for today's truck traffic. Satisfying current bridge needs will cost more than $8 billion.

Border enforcement

Overland traffic in Texas has increased by approximately 190 percent in the last ten years. Much of this growth is due to the implementation of NAFTA. This traffic is not limited to the border areas, but occurs in cities along the major trade routes between Mexico and Texas.

The border crossings are the first places to see some of the problems this increased traffic brings. Some 5,000 to 7,000 trucks cross the border between Mexico and Texas daily and adequate inspection of these trucks has become a major point of contention in the implementation of NAFTA. Congestion already exists at many of the international border crossings due to the large number of trucks crossing daily. The inspections of these trucks by U.S. Customs and DPS officers add to the congestion that is occurring. One part of the problem is an inadequate amount of law enforcement and inspection stations monitoring the trucks involved in international trade. While some argue more bridges are needed, many argue the existing crossings only need better management. This would require better coordination between the enforcement bodies and highway agencies; U.S. Customs Service, the Texas Department of Public Safety, U.S. Department of Commerce, and TXDoT. The federal government allocated $3.1 million to the four U.S. border states in 1994 and 1995 to beef up NAFTA-related enforcement.

Texas Department of Public Safety

The Texas Department of Public Safety (DPS) is the most important agency in the effort to enforce laws regarding the vehicle size and weight, transportation of hazardous waste, and commercial driver standards. Prior to September 1995, there were only 14 troopers

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218 Barnhart & Associates study.

spread along the border from El Paso to Brownsville covering the 24 border crossings in Texas.

In response to the anticipated increasing number of truck crossings from Mexico to Texas, the 74th Legislature made provisions for 109 new officials to be hired which will be phased in through 1996 and 1997. Of the total 359 DPS officials in the State, some 36 will be specifically located in border areas.220

Additionally, TXDoT has authorized construction of eight new truck inspection stations, with four to serve significant amounts of border traffic: two on Loop 385 in El Paso (at a cost of $1.4 million); one on IH-13 at Devine in Medina County; and one at U.S. 83 in Weslaco. DPS operates 28 scale-equipped weigh stations.221 Other weigh stations are to begin operation on a regular basis on US 77 at Riviera, US 281 at Falfurrias, and IH 10 at Van Horn.

Drayage trucks and Type II trucks are the primary vehicles that are used by Mexico to export goods to Texas. Drayage trucks haul loaded trailers back and forth across the border to warehouses and the maquiladoras. They are typically older than the normal truck fleet and often fail to meet all of the motor carrier safety standards. They usually operate at low speeds and remain within five miles of the border. There has been a 80-90 percent Out-of-Service rate for these drayage trucks, but DPS’ presence on the border is helping to improve the compliance level of these vehicles. Newer trucks are generally owned by a large company in Mexico, and are already taking full advantage of NAFTA by travelling throughout Texas. Although federal regulations restrict these trucks to remain within the ICC zones the state does not have a comparable state statute restricting movement throughout the state.

Between December 1995 and March 1996, DPS license and weight troopers stopped 231 vehicles from Mexico at locations outside of the ICC Commercial zone. Of these, 20 drivers (9 percent), and 11 vehicles (5 percent) were placed Out-of-Service. These percentages are lower than the percentages for Texas and for U.S. Commercial vehicles. These figures suggest that these vehicles are capable of complying with the state requirements and can operate safely in Texas.222

Serious safety problems with vehicles or drivers increase the likelihood of an accident or incident. Vehicles placed Out-Of-Service are prohibited from further operation on the highways until the Out-of-Service defect(s) are repaired. About one in 75 Mexican trucks that cross the border into Texas are placed Out-of-Service. From June of 1994 to June of 1995 the DPS inspected a total of 63,587 vehicles (including buses and trucks carrying hazardous materials). Of those, some 19,769 (31 percent) were fined for out-of-service vehicle violations, and 9,345 (15 percent) for Out-of-Service driver violations. The majority of the vehicle offenses included brake, lighting and wheel defects. The majority of driver offenses included not possessing a log (or an out-of-date log), and hours of service violations. For hazardous materials trucks, the majority of the violations were for improper shipping information or placarding.

Although 48 percent of the Mexican trucks that were placed Out-of-Service had failed to meet U.S. safety standards, compared to a 28 percent average Out-of-Service rate for U.S. trucks nationally, this discrepancy is due to the DPS’s ability to stop trucks at the border that

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220 Comments by Major Lester Mills, Major of Traffic Law Enforcement, Texas Department of Public Safety to Senate IRTT Committee staff.


222 Major Lester Mills, Major of Traffic Law Enforcement, Texas Department of Public Safety Letter to Senate IRTT Committee, dated March 6, 1996.
looked suspicious.\textsuperscript{223}

Recently, DPS coordinated informational seminars in six border cities (Brownsville, McAllen, Laredo, Eagle Pass, Del Rio, El Paso) during the months of October and November 1995 to provide information to motor carriers, drivers, shippers, and brokers from Mexico on the regulations and statutes applicable to their operation in Texas. Major Lester Mills, Major of Traffic Law Enforcement of the DPS, stated disappointment over the lack of attendance to these educational seminars.

The DPS has also participated in training efforts with its Mexican counterparts at the federal level, but has seen little application of this training. The lack of enforcement on the Mexico side has not helped the NAFTA process.

Since October 1995, the DPS has been working out of the U.S. Customs facilities to conduct a series of inspections at various sites along the border. During these periods, the number of inspections went up due to a higher number of officers conducting inspections. However, the inspections are no more stringent than before, according to Major Mills.

Recent border blockades

On June 24, 1995, Mexican truckers imposed a blockade of the Pharr and Gateway bridges at Reynosa and Matamoros to protest increased DPS inspections and the imposition of more stringent regulations. Meetings involving the Mexican truckers, officials of the Mexican and Texas government, the DPS, the U.S. Customs, and other interested parties are ongoing.

The Intermodal Surface Transportation Efficiency Act (ISTEA)

The interstate highway system, designed in the 1950s, designated 41,500 miles of highway construction for the entire country. Texas was authorized to build 3,200 miles. Today, highways IH-10, IH-20, I-35, and IH-45 are a part of this system. In 1991, Congress began efforts to add to the system by authorizing the Intermodal Surface Transportation Efficiency Act (ISTEA) which represented a shift in the 40-year old transportation policy. The ISTEA provided new "innovative financing" options for the construction of U.S. roadways, and it also designated certain highway corridors of national significance to be included in the National Highway System.

The ISTEA has six general fiscal guidelines:

1. To authorize $155 billion over six years (1991-1997);
2. To provide new revenue options in the form of tolls;
3. To waive state-matching funds;
4. To allow the use of toll revenues that are generated and used by public, quasi-public, and private agencies as the match to federal highway funds;
5. To use recycled transportation-related grant funds, through a state highway revolving fund, for additional highway projects; and
6. To allow greater private involvement in building, maintaining and operating toll roads and bridges and allows for federal funds to be spent on private toll roads.

The 1994 Innovative Financing Program was designed to make it easier for states to take advantage of ISTEA financing. To date, the Federal Highway Administration (FHWA) has received proposals from over 30 states for projects that range in cost from a few hundred thousand dollars to $1 billion. The FHWA has accepted about 45 projects which include rural, suburban, and urban projects.

\textsuperscript{223} International Brotherhood of Teamsters, letter to Senator Carlos F. Truan, March 7, 1995; Information from the Office of the United States Trade Representative.
Another component of ISTEA was the establishment of the National Highway System (NHS). The NHS was designed "to provide an inter-connected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, other intermodal transportation facilities, and other major travel destinations. The NHS was also designed to meet national defense requirements and serve interstate and inter-regional travel." This national plan attempts to integrate all modes of travel and to enable state officials, in consultation with local governments, to determine the best methods to transport people and products.224

ISTEA dedicated approximately 155,000 miles of U.S. highways to the NHS. This figure represents 4 percent of the nation's total roadways, 50 percent of the nation's total traffic, and about 70 percent of the truck traffic in the nation. The NHS's 155,000 miles are allocated as follows:

1. 45,272 miles to the Interstate Highway Program;
2. 14,961 miles to the Strategic Highway Corridor Network under the Department of Defense, which is to provide defense accessibility;
3. 4,506 miles to go to High-Priority Corridors;
4. 1,000 miles for access to major ports, airports and other intermodal facilities; and
5. The FHWA, state and local officials are to decide the best use for the remaining approximately 87,000 miles.225

Through ISTEA, Congress designated 20 "Corridors of National Significance." The Congress had three purposes for this designation:

1. To ensure that the corridors were included on the NHS;
2. To permit USDOT and the State to develop long-range plans and feasibility studies for these corridors; and
3. To allow the states to give priority to funding the construction of these corridors. Identified High-Priority Corridors are required to be included on the NHS but would not necessarily become interstate highways.

Congress authorized $48 million ($8 million per year for 1992-1997) to fund feasibility and design studies on the identified corridors.

On November 28, 1995, President Clinton signed the National Highway Systems Designation Act which established IH-69 as a "Future Interstate Highway" and IH-35 as a high-priority corridor under the ISTEA. Consideration of the new NHS and the innovative transportation financing options will be major components in the reauthorization of the ISTEA's coming up in 1997.

Secretary of Transportation Federico Peña allotted Texas 13,311 miles of the NHS, with 4,540 miles dedicated to urban roads and 8,711 dedicated to rural roads. After six years of ISTEA authorizations, Texas has used $1.3 billion in federal funds on NHS routes within Texas—about $440 million annually.226

224 David Bernsen, Commissioner, Texas Transportation Commission, Testimony on the National Highway System before the Surface Transportation Subcommittee, March 15, 1994.


226 David Bernsen, Commissioner, Texas Transportation Commission, Testimony
International Bridges

At present, the need for additional international bridges is a hotly contested issue. There are financial and environmental concerns surrounding the existing bridges and those proposed for construction. This section will provide background on existing and planned bridges, as well as, a list of concerns and recommendations on how to remedy some of the traffic issues.

Twenty-one international bridges (not including the Roma International Suspension Bridge), two dam crossings and one hand-drawn ferry connect the Texas and Mexican highway systems. The U.S. portions of these bridges are generally owned by the city or county in which they are located. Five Texas border crossings, however, are privately owned; one is owned by the State of Texas and three (in the El Paso area) are owned by the U.S. government through the International Boundary and Water Commission.

The Mexican government owns the Mexican portion of all international bridges, while the federal agency Caminos y Puentes Federales de Ingresos y Servicios Conexos (CAPURE) oversees bridge operations. Some private ownership is awarded during construction and extends through initial startup of the bridge for two years, after which ownership returns to the federal government.

Present and future investments

In the 12 months prior to NAFTA’s ratified, TXDoT projects totaling $141.6 million in state and federal funds were under construction in the border region and additional projects, totaling $669.3 million, were planned. In January 1995, almost $80 million in projects to improve access to the international bridges were underway or were scheduled, according to TXDoT.227

Two new international bridges, the Los Indios Bridge and the Pharr/Reynosa Bridge, have opened in the Lower Rio Grande Valley since 1992. The Los Indios Bridge connects Los Indios, Texas and Lucio Blanco, Tamaulipas and opened in November 1992. Los Indios Bridge traffic has been less than forecasted amounts, due primarily to a lack of a customs office, inadequate road access on both sides, inadequate warehousing space, competition between Brownsville and Harlingen, and competition for the same noncommercial traffic as the Los Tomates Bridge. The Pharr/Reynosa Bridge opened on January 10, 1995. The bridge and the approach roads are fully elevated to protect adjacent riverside tracts of the Lower Rio Grande Valley (LRGV) national wildlife refuge. "The Pharr bridge is the best model in the LRGV of a properly sited bridge with an environmentally-sensitive design."228

Bridge proposals

There are currently eight new bridges, in various stages of the approval process, proposed to serve as international border crossings between Texas and Mexico. Before a bridge is constructed, it must go through a series of approvals including:

1. Presidential Permits, reviewing application by several federal and state agencies that assess the viability and impact of the proposed crossing (the most important permit);
2. International Boundary and Water Commission (IBWS) approval;
3. U.S. Coast Guard permit; and

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on the National Highway System before the Surface Transportation Subcommittee, March 15, 1994.

“Texas Trade Routes,” Fiscal Notes, Texas Comptroller of Public Accounts, October 1995. Sources U.S. Bureau of the Census and USDOT.

4. Authorization under Senate Bill 1633; the Texas Transportation Commission is also involved in the process on the state level. It helps to prioritize pending bridge construction when state dollars are involved.

Following are some details and concerns regarding international bridge proposals and construction.

The Port of Brownsville-Matamoros Bridge will be a toll bridge 8.5 miles east of the existing Gateway Bridge. $21 million will be expended for bridge and federal facilities and access roads will be funded by the Port of Brownsville through General Obligation Bonds authorized by voters in 1991. Revenues will go to the Port. Roads will connect South Port Road to the bridge and will extend the port railroad to the bridge site. South Port Road connects to Texas Highway 48 and FM 511 which connects to US 77/83. On the Mexico side the bridge road will lead to the Carretera de La Playa leading to Matamoros. The proposal awaits the Presidential Permit and environmental assessment. 229 Some of the chief environmental concerns include the bridge's effect on wetlands, endangered species, other wildlife, and flood plain protection. The bridge's necessity has been questioned: an analysis presented for the Port Bridge failed to closely examine possible improvements in traffic management, mass transit, coordination of customs at the Gateway Bridge, and the effects of the opening of Los Indios Bridge. 230 To date, there has been no firm commitment from Mexico on the project.

The Brownsville Los Tomates-Matamoros III Bridge (Los Tomates) will be a toll bridge owned by the City of Brownsville and Cameron County. The bridge received a Presidential Permit in October 1993. $27.5 million has thus far been authorized from TXDoT to build the connecting roadway extension to U.S. 77/83. The bridge will connect to Mexico Highways 2, 40, and 101.

One of the concerns surrounding the bridge is that hazardous waste will pass through residential communities. The question has also been raised as to whether improving scheduling at the Gateway Bridge and opening the Los Indios Bridge would eliminate the majority of traffic.

In 1979, the Donna International Bridge received a Presidential Permit to link Donna with Rio Bravo. Although the bridge proposal did not move forward in the 1980s, there was renewed interest in the bridge in 1991. The chief concern over the proposal is the lack of a Mexican co-sponsor for the project.

The proposed Anzaldua International Bridge and Rail Crossing would be located in Pharr, a few miles west of the existing McAllen-Hidalgo-Reynosa bridge. Some claim it will reduce congestion on the McAllen-Hidalgo bridge and provide a shorter travel route for international commercial traffic by-passing Reynosa on the west side. $15.7 million has been allocated by TXDoT for construction of the bridge. The total cost for the U.S. portion of the proposal ranges from $22.9 to $41.7 million.

Opponents against the Anzaldua International Bridge and Rail Crossing argue the bridge is unnecessary because congestion at existing bridges results from poor traffic management and a lack of coordination in customs procedures. Opponents also argue that the Mexican government would have to construct almost five miles of access road to link the bridge to the new Monterrey-Reynosa Autopista, which is financially unfeasible at this time. Similarly, a proposal for a bridge at Mission, Texas has questioned the necessity of both of these projects.

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229 "Texas-Mexico International Bridges and Border Crossings," Texas Department of Transportation, January 1995, with update from January 1996.

230 Id.
The proposed Los Ebanos/Diaz Ordaz bridge would replace the hand-drawn ferry owned by the Reyna Family. The Reyna Bridge Company applied for a Presidential Permit in 1990 and expects the total costs for the bridge to be $6.5 million. The bridge would also serve as an outlet for traffic currently using the McAllen/Hidalgo Bridge. However, the bridge could have adverse impacts on both historical sites and wildlife habitat. Also, the government of Tamaulipas has shown little interest in the project.

Three other bridge projects include the Laredo Northwest International Bridge, Eagle Pass Bridge #2, and the Mission Bridge. The Laredo Bridge will be owned by the City of Laredo and will cost $53 million for both the supporting roads and bridge. The Presidential Permit for the Laredo bridge was approved in October 1994. The Eagle Pass Bridge #2 will cost $10 million for the bridge alone and the Presidential Permit is still pending. The Mission Bridge applied for a Presidential Permit in 1978, and would be located a few miles north of the Anzaldua International Bridge.

Impact reports

In June 1994, the Texas Center for Policy Studies Report entitled "The Bridges of Cameron and Hidalgo Counties" studied the proposed international bridges in the Lower Rio Grande Valley. The findings highlight many significant issues, including:

1. How bridge congestion, due to insufficient infrastructure, is affected by the growing population, and whether this congestion creates a need for road and bridge infrastructure development;

2. The lack of coordination between U.S. and Mexican customs, staffing shortages in customs and immigration inspection, and a lack of a full implementation of traffic management alternatives.

3. The lack of a comprehensive, coordinated plan to define actual and predicted international traffic patterns and to select the most appropriate sites for those new crossings that are justified. Instead, "each proposed new crossing is backed by its own group of special interests and large landowners who foresee big profits in developing industrial parks and warehouse centers near new bridge crossings." 231

4. Unsubstantiated or questionable projections of traffic flows that are relied upon by promoters of new bridges;

5. A lack of initiative on state and local officials' parts regarding coordinated planning and selection of new crossing sites. TXDoT is not taking a stand on local proposals; and

6. Significant building costs for local, state and federal government officials, which are carried by taxpayers, especially if bridge revenues are below predictions.

The report also emphasized environmental concerns, such as protection of scarce riparian wildlife habitats and the maintenance of an adequate flood protection system. While the Report found the Pharr/Reynosa Bridge a model for environmentally sound bridge construction, the Report questioned the environmental soundness of the proposed Los Tomates and Anzaldua bridges.

The report argued the need for the U.S. State Department to require a full environmental Impact Statement (EIS) before issuing the Presidential Permit. Presently, the State Department has relied on the Environmental Assessment (EA) and Findings of No Significant Impact (FONSI). "The EAs are inadequate, often superficial, and contain many unsubstantiated broad conclusions. They fail to evaluate realistic alternatives to the proposed crossing, and to fairly consider the environmental effects of the indirect industrial and other developments that could be spurred by the new crossings."

231 Id.
Another argument regarding the EA/FONSI analyses is that they do not examine the environmental impacts of the bridge project on the Mexico side of the border or how development in Mexico could affect the U.S. side of the border.

According to the report, the U.S. State Department recently announced that it would prepare a Programmatic Environmental Impact Statement (PEIS) on the Texas/Mexico bridges. This report will examine the cumulative impacts of the various bridge proposals and guide the State Department toward action on the Presidential Permit applications.232

In addition, the Task Force on Border Infrastructure and Facilitation for Improvements in U.S.-Border Activities was formed by the federal government in January 1994. The Task Force examined congestion and delays at border crossings and found the following reasons for the delays:

1. Inadequate or dated transportation facilities;
2. Inadequate staffing;
3. Incomplete, inaccurate, and delayed paperwork;
4. Inefficient inspection procedures;
5. A lack of coordinated infrastructure planning; and
6. Traffic peaks at particular times of the day.233

The Task Force recommended three major areas where improvement might help:

1. Operational improvements, including coordination of hours of operation, staffing levels, paperwork processes, and use of automated systems and new technologies;
2. Infrastructure improvements, including the need for smaller-scale infrastructure improvements, such as access roads and commercial inspection facilities, and border planning mechanisms;
3. Institutional and Regulatory-Legislative Improvement, including changes in laws and regulations that facilitate the movement of traffic, as well as the implementation of user fees, tools, and other financial incentives to effect changes in the use of border resources.

Railroad Issues

In 1995, nearly $13 billion of U.S.-Mexico trade was conducted by rail.234 U.S. exports to Mexico by rail were $4.6 billion (1994)235 and Mexican rail exports to U.S. in 1994 were $7.6 million. Rail accounted for the transportation of 10 percent of U.S.-Mexico trade, but 97 percent of that trade moved through Texas rail ports.

Five railroads serve the border. Three Class I railroads, Burlington Northern/Santa Fe Railroad (BNSF), Union Pacific, and Southern Pacific, serve El Paso, Eagle Pass, Laredo, McAllen, and Brownsville. The Texas-Mexico Railway, a Class II railroad, operates a line from Corpus Christi to Laredo. The South Orient, a Class III railroad, serves Presidio to San Angelo. Texas export goods primarily shipped by rail include non-metallic minerals, chemicals and

232 "Transportation\Habitat Conflicts," Ambiente Fronterizo, Texas Center for Policy Studies, March 1996.

233 Unpublished preliminary Staff recommendations of the Task Force on Border Infrastructure and Facilitation regarding U.S. border operations.


235 Barnhart and Associates study.
The railroad merger

The Surface Transportation Board in Washington, D.C. recently approved the $3.9 billion take-over bid by Union Pacific (UP) of the Southern Pacific (SF) railroad. This will be largest railroad merger in U.S. history, combining more than 36,000 miles of track and serving 25 U.S. states, Canada and Mexico. Texas will be the most affected state because almost 6,900 miles of the affected rail are in Texas. The Burlington Northern (BN) and Atchison, Topeka and Santa Fe Railroad (SF) merged in July 1995. The company, based in Fort Worth, has 31,000 route miles in 27 states. Together, The UP-SP and BNSF railroads will control 90 percent of the rail traffic between the U.S. and Mexico.

The merger faced much criticism prior to its approval and is likely to be taken to court. Opponents of the merger argued that:

1. It would create a monopolistic rail giant (UP-SP),

2. Any other merger would effectively create two national railroads, which may cause the U.S. government to regulate the industry again;

3. Mergers like the UP-SP have forced over 200,000 layoffs since the 1980s, and that this particular merger has stated in its application that only 4,000 jobs would be lost while 2,100 jobs would be transferred; and,

4. The merger will limit choices for small business and shippers and halt services to communities.

The merger will control 90 percent of all rail traffic between Texas and Mexico and 70 percent of the State's petrochemical tonnage. It will also control nearly two-thirds of the Class I miles in the state and more than half of the rail traffic carried on Class I railroads. Additionally, the railroad would control two direct routes linking Texas ports, and specifically the petrochemical complexes on the Houston Ship Channel, to gateways on the East Coast in New Orleans, Memphis and St. Louis. Finally, it would control all of the rail ports of entry into Mexico except for El Paso, where Burlington Northern provides service.

Mexican business interests fear that the merger will give UP control over 90 percent of the rail traffic into and out of Mexico. UP already controls 48 percent of the traffic to Mexico and 39 percent of the petrochemical tonnage.

Privatization of Mexican railroads

The Mexican government announced November 13, 1995, that it would break up its 16,000 mile railroad system into four lines that would be sold to private investors, probably including American companies, starting next year. Those lines would be:

1. Line number one serves northeastern Mexico, linking the industrial areas of San Luis Potosí, Monterrey, to Mexico City and Laredo;

2. Line number two serves northern and western Mexico, linking Guadalajara, Chihuahua with El Paso and Eagle Pass;

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236 Class I railroads are defined are those having more than $251.4 million in annual revenue. Class II have between $20.1 million to $251.3 million and Class III have less than $20.1 million. Nationwide there are 12 Class I, 33 Class II and approximately 500 Class III railroads.

237 “Merger's impact on Texas would be significant; both sides pressing case hard,” Texas State Agencies Newsletter, February 28, 1995.

3. Line number three serves southeast Mexico, below Mexico City; and

4. Line number four serves the greater Mexico City area.  

Airports

Funding issues

The State of Texas does not directly fund the major Texas commercial airports. TXDoT funding is limited to the 280 smaller, local general aviation fields. Current state and federal funding for general aviation in Texas is $20 million per year, which covers 20,000 airplanes, 50,000 pilots, and 307 airports.

Texas currently receives about $10 million from the Federal Aviation Administration, which represents a 35 percent funding decline over the past four years. Meanwhile, state funding for general aviation airports increased from approximately $1 million to $10 million.

TXDoT has stated it needs $243 million over 1994-1998 period to adequately improve and maintain the state's airports. This is approximately $48 million a year. Texas expects to receive $14 million for the FAA's Airport Improvement Program, $4.25 million in state funds and $1.02 million in local contributions.

To address the funding deficit, the State has examined several different methods of increasing aviation revenue. Other states have attempted to access additional revenue sources from aviation fuel taxes, state and franchise taxes on aircraft and aviation parts, bonds, and personal property tax on aircraft. Texas is the only state in the nation without a tax on aviation fuel. Thirty-five states, not including Texas, have dedicated a source of funding to ensure investment into airports.

74th Legislature's efforts

During the 74th Legislature two bills were proposed to direct the proceeds from the collection of taxes on the provision of aviation services, aircraft and aviation parts be deposited in to a special public aviation account in the state highway fund instead of being deposited directly in the state's general fund. Both legislative initiatives, HB 2116 by Rep. Allen Place and, SB 1023 by Frank Madla, failed to pass.

Federal funding update

In June 1996, the House Appropriations Subcommittee on Transportation approved $36.69 billion in transportation spending which is a slight increase over current levels. Airports, however, received significant reductions in funding. The Airport Improvement Program (AIP) received $1.3 billion, a $150 million reduction. The reduction in AIP funds has had a greater impact on Texas because the state-administered aviation programs and Texas' large network of AIP-eligible airports are reliant on this program.

Texas Maritime Ports

Texas has 13 maritime ports including Houston, Orange, Corpus Christi, Port Arthur, Texas City, Beaumont, Freeport, Galveston, Port Lavaca, Brownsville, Matagorda, Port Mansfield and Harlingen. These Texas ports, combined, managed 47.7 million short tons in exports and 165.2 million short tons in imports, generating $40.9 billion in trade in 1993. Currently, Texas waterways only receive one percent of TXDoT's budget. This sum is inadequate for the needs of Texas' waterways.

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Water transport offers several advantages over other forms of transportation. Waterborne transport produces lower hydrocarbon emissions than truck or rail. Ports also take hazardous waste material cargo out of high-traffic areas. Should the cargo going by barge now be transported by truck it would take 2,000,000 extra trucks to haul the 400 million tons that the Texas intercostal waterway carries each year.\(^241\) The number and volume of spills from barges and ships is lower than for either trucks or rail. Unfortunately, the construction and maintenance of the Intracoastal Canal system has created serious problems in some areas.

### The Gulf Intracoastal Waterway and the Laguna Madre

The Gulf Intracoastal Waterway is a 125-foot wide, 12-foot deep canal linking major seaports from Texas to Florida. Dredging in the waterway began in 1905 and was completed in 1949. It is 1,300 miles long with 426 miles in Texas. In 1993, almost 115 million tons of cargo moved through the GIWW.\(^242\)

The La Laguna Madre is the 125 mile-long bay from Corpus to Brownsville. This portion of the GIWW is under fire from the Lower Laguna Madre Foundation and other environmental groups because those groups believe the tax-supported maintenance of the La Laguna Madre exceeds the economic benefits enjoyed by users in the Lower Rio Grande Valley. These groups also argue costs are too high to continue the dredging of the laguna and the dredging causes continuous environmental damage.

Opponents to closure of the canal argue that the closure would require transfer of 4


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### Mexico’s Tamaulipas Waterway

The Mexican State of Tamaulipas is planning an extension of the Intracoastal Canal to Tampico. Last summer, Mexico’s federal environmental agency, SEMARNAP, awarded the state of Tamaulipas a permit for the extension over the protests of several Mexican and U.S. environmental organizations. The permit also authorized the construction of four major new ports, El Mezquital, La Carbonera, La Pesca, and Barra del Tordo. The proposal includes three to five cuts to be made in the barrier islands which separate the open gulf from the shoreline. Opponents fear this would open the pristine and undeveloped areas of the Tamaulipas coast to heavy industrial development.

Seven environmental organizations have filed an administrative challenge to the issuance of the permit, which they claim fails to specify methods or sites for the disposal of the massive amounts of dredge spoil that would be produced by construction and maintenance dredging of the proposed extension. A response was due in December 1995 but PROFEPA requested more time to prepare its materials.

While officials of the Mexican federal government remain skeptical that the Tamaulipas waterway can be financed, the Tamaulipas government has continued to move forward with the plan. In February of 1995, Tamaulipas awarded a $756 million, 25-year concession of the canal to ProTexa (a Monterrey

\(^243\) Letter from Richard Berry with the Port of Brownsville to Senator Truan, February 21, 1993.
construction company) and Great Lakes Dredge Co.244

The state government argues that the waterway is necessary to accommodate increased trade under NAFTA. However, it is not clear that many shippers would actually use the long inland waterway route. Instead, it appears that a more feasible transport alternative would be ocean transport from the deep water ports such as Houston or Corpus Christi to Tampico.245

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244 "Making Waves: Gulf Intracoastal Waterway provides vital commercial link for Texas Ports," Fiscal Notes, Texas Comptroller of Public Accounts, April 1996.

NAFTA AND TEXAS TRANSPORTATION ISSUES
Appendix A – Part III, Section 3

The Texas Department of Transportation Preparation Efforts for the Implementation of the North American Free Trade Agreement

The Land Transportation Standards Subcommittee (LTSS)
TXDOT has three representatives on the LTSS. Bob Cuellar, Deputy Executive Director for Transportation Planning and Development serves as the State's representative on the LTSS. Bill Bisson, Assistant Executive Director for Motorist Services, is working on Truck Dimensions and Weight of the LSTT working groups, and Tom Newburn, Director of the Traffic Operations Division, is working on Traffic Control Devices another working groups.

Border-related Research
Since Fiscal Year 1991 TXDOT has spent about $2,230,000 on border-related research on trucking issues, signing needs, highways planning, studying new border crossings, etc.2

TXDOT Divisions
TXDOT has the International Relations Office with Henry Nevares. It produces the Texas-Mexico International Bridges and Border Crossings book.

TXDOT Transportation Planning and Programming Division has gathered border traffic information from 25 sites on or near the border crossings.3

Recent Cross Border Cooperation involving TXDot

The Border Technology Exchange Program
In August 1994 TXDOT received a $25,000 grant from the Federal Highway Administration to initiate this program to host to visits of transportation officials from each of four Mexican border states. The visits are to provide a forum for the exchange of information on technological exchange, district operations and planned border projects. TXDOT arranges training for Mexican engineers on various transportation topics. TXDOT has also sent engineers and technicians into Mexico to assist on engineering problems on several occasions.

The Joint Working Committee (JWC)
This 20 member committee oversees funding and logistics for a binational border study. The Committee is currently working to establish the "U.S.-Mexico Border Multimodal Transportation Planning Process." TXDOT's International Relations Office director sits on the Committee.

2 Bill Burnett, Director, Texas Department of Transportation, Testimony before the IRTT Committee, Laredo, Texas, January 29, 1996.
Southwest Border Transportation Alliance (SWBTA)
The SWBTA, organized in September 1992, consisting of representatives from Arizona, California, New Mexico and Texas, determines the infrastructure needs, binational planning programs and funding mechanisms that will provide optimum service of intermodal transportation at the border.

Binational Conference on Bridges and Border Crossings
A biannual meeting to discuss proposed international border crossings and the status and needs of current border crossing facilities. Helps TxDOT plan for its border development infrastructure needs.

Border Governors' Conference Transportation Committee
Governors of the 10 U.S.-Mexico border states meet once a year to discuss topics of mutual interest and concern.

Western Transportation Trade network (WTTN)
Established in 1993 by the Western Association of State Highway and Transportation Officials (WASHTO). Charged with defining and implementing a multimodal transportation network, to facilitate coordination of transportation planning among western states.

Los Camino Del Rio Heritage Project
Involves U.S.-Mexican state and federal agencies focusing on the Rio Grande Valley from Laredo-Nuevo Laredo to Brownsville-Matamoros. Charged with preserving the historical resources and distinct culture of the binational corridor.

Border Station Task Force
Primarily concerned with U.S. border stations at the international ports of entry. Discusses border station development and improvements.

Additional Activities TxDOT is involved in:
- International Affairs Committee-Commercial Vehicle Safety Alliance
- Texas-Nuevo Leon International Coordinating Committee
- International regional planning and development activities of the Paso del Norte area
- Governor’s Office Border Working Group
- Association of South Texas Communities

International Groups working on NAFTA border issues:
U.S. Mexico Bilateral Committee on Bridges and Border Crossings,
The NAFTA Working Group on Customs Administration
The U.S. Canadian Committee on Border Stations
U.S.-Mexico Bilateral Custom Working Group (proposed)
<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>U.S. Exports to Mexico (in billions of U.S. dollars)</th>
<th>% of Total Exports</th>
<th>U.S. Imports from Mexico (in billions U.S. dollars)</th>
<th>% of Total Imports</th>
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<tr>
<td>Truck</td>
<td>41.5*</td>
<td>81.62</td>
<td>34.6</td>
<td>69.84</td>
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<td>Rail</td>
<td>4.6</td>
<td>9.07</td>
<td>7.6</td>
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<td>Sea</td>
<td>2</td>
<td>4.10</td>
<td>6.2</td>
<td>12.5</td>
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<tr>
<td>Air</td>
<td>2.6*</td>
<td>5.21</td>
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<td>100</td>
<td>49.5</td>
<td>100</td>
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Transportation table on value of Mexican exports

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<tr>
<th>Destinations for Mexican exports (through five Texas ports)</th>
<th>Value in billions</th>
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<tbody>
<tr>
<td>Northeastern U.S.</td>
<td>$1.8</td>
</tr>
<tr>
<td>East North Central</td>
<td>6.4</td>
</tr>
<tr>
<td>South</td>
<td>3.6</td>
</tr>
<tr>
<td>West North Central</td>
<td>.370</td>
</tr>
<tr>
<td>West</td>
<td>$1.1</td>
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<tr>
<td>Texas</td>
<td>over $10.0</td>
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<table>
<thead>
<tr>
<th>Destination of U.S. exports (through five Texas ports)</th>
<th>Value in Billions</th>
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<tbody>
<tr>
<td>North</td>
<td>$13.4</td>
</tr>
<tr>
<td>North Central</td>
<td>.886</td>
</tr>
<tr>
<td>Central</td>
<td>13.8</td>
</tr>
<tr>
<td>South</td>
<td>0.87</td>
</tr>
<tr>
<td>Baja California</td>
<td>.010</td>
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<tr>
<td>others</td>
<td>1.6</td>
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Source:
### Annual Trade Trucks on Highway

<table>
<thead>
<tr>
<th>Annual Trade Trucks on Highway</th>
<th>Dominant Highway Trade Corridors in Texas</th>
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<tbody>
<tr>
<td>≥1,000,000</td>
<td>IH-35-- Laredo to San Antonio to Dallas</td>
</tr>
<tr>
<td>600,000-999,000</td>
<td>I-10-- El Paso to I-10 and I-20</td>
</tr>
<tr>
<td></td>
<td>IH-30-- Dallas east to Texas border</td>
</tr>
<tr>
<td>300,000-599,999</td>
<td>IH-37-- San Antonio to Corpus Christi</td>
</tr>
<tr>
<td>100,000-299,999</td>
<td>U.S. 281-- McAllen to IH-37</td>
</tr>
<tr>
<td></td>
<td>U.S. 77-- Brownsville /Harlingen to Victoria</td>
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<td>U.S. 59-- Houston to IH-37</td>
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<tr>
<td></td>
<td>IH-10-- the intersection of IH-10 and IH-20 to San Antonio</td>
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<tr>
<td></td>
<td>IH-40 across the Texas Panhandle</td>
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<tr>
<td>70,000-99,999</td>
<td>U.S. 75-- Dallas to the northern Texas border</td>
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<tr>
<td>40,000-69,999</td>
<td>U.S. 59-- Laredo to IH-37</td>
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<tr>
<td></td>
<td>IH-20-- Dallas to the eastern border of Texas</td>
</tr>
</tbody>
</table>

Based on Information found in the "U.S.-Mexico Truck Trade, Four Studies Investigating the Impacts of Bigger Trucks on Texas," Ray Barnhart and Associates.
NAFTA AND TEXAS TRANSPORTATION ISSUES
Appendix C – Part III, Section 3

Senate Bill 3

Background
Senate Bill 3, passed in the 74th Legislature, took effect in December 1995.

Provisions of the bill

- Mexican and domestic motor carriers must file proof of liability insurance coverage in the amounts, per occurrence. (as defined in the box at right)
- Coverage must be with licensed company, eligible surplus lines carrier, or through a TxDOT approved self-insurance mechanism.
- Federal law requires that for-hire motor carriers of household goods must carry cargo insurance in amounts of $5,000 to $10,000 per vehicle.
- Must have proof of insurance when vehicle is registered, when the insurer changes, when ownership of the certificate changes, the motor carrier changes its name, or when the motor carrier changes the classification of the cargo being transferred.
- If the motor carrier's insurance fails, the carrier may apply for new coverage after giving proof to TxDOT that no accidents or claims have occurred during the insurer's insolvency or that all damages and claims have been satisfied.
- Eliminated the marketplace entry and rate-paying powers of the Texas Railroad Commission and transferred remaining duties pertaining to commercial vehicle regulations, to TxDOT.
- Allowed for use of International Registration Stamp for cross-border trips into Texas for up to seven days. Bonded agents may charge up to $10 to affix an international registration stamp to a vehicle's temporary insurance policy to show current coverage. A master policy must be on file with TxDOT. The stamp is valid for one trip of up to seven days' duration. Failure to return unused stamps or for remitting payment may lead TxDOT to enforce payment of the surety bond.

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Minimum Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two trucks (gross vehicle weight under 26,000 lbs)</td>
<td>$300,000</td>
</tr>
<tr>
<td>Buses (15-25 passengers)</td>
<td>$500,000</td>
</tr>
<tr>
<td>Buses (more than 25 passengers)</td>
<td>$5,000,000</td>
</tr>
<tr>
<td>Farm trucks (gross vehicle weight 48,000 lbs. or more)</td>
<td>$500,000</td>
</tr>
<tr>
<td>Commercial motor vehicles, including tow trucks, over 26,000 lbs.</td>
<td>$500,000</td>
</tr>
<tr>
<td>Commercial motor vehicles</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Oil listed in 49 CFR 172.101; hazardous waste, hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in CFR 172.101.</td>
<td>$5,000,000</td>
</tr>
<tr>
<td>Commercial motor vehicles—hazardous substances as defined in 49 CFR 171.8 transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk Class A or B explosive, poison gas (Poison A) liquefied compressed gas or compressed gas; or highway route controlled quantity radioactive materials as defined in 49 CFR 173.403.</td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>
• TxDOT created the Motor Carrier Division to implement Senate Bill 3. Responsibilities include:
  --providing services for motor carrier insurance filings
  --insurance of motor carrier certificates of registration
  --issue oversize/overweight permits
  --issue temporary registrations
  --issue vehicle storage facility licensing
  --registration of foreign commercial vehicles
  --performance bond filings for transportation brokers
  --consumer protection for shippers of household goods

• Vehicle Titles and Registration Division
  Responsibilities include:
  --Registration permits
  (14 million vehicles are registered annually in Texas.)
  --Certificates of Title
  (4 million annually)

Authorization of New DPS Inspectors
During the 74th Legislature DPS was authorized:
• 85 New License and Weight (L&W) troopers authorized under General Appropriations
• 24 by Senate Bill 3 (DPS Compliance Audit Review Program).
Total Strength=335 troopers for FY96 and 359 FY97.

Troopers being brought in by phases in since 9-95—approximately 82 positions filled along the border and in regions adjacent to the border.

SB3 also authorized more Texas cities to conduct training and certifying of licensed officers.
NAFTA AND TEXAS TRANSPORTATION ISSUES
Appendix D – Part III, Section 3

1994 Dominant U.S. - Mexico Highway Trade Corridors
Highway Segments with More than 40,000 Trade Trucks per Year

1 San Ysidro Includes ports of Southern California
2 Nogales Includes parts of Arizona
3 El Paso Includes parts of New Mexico and West Texas
4 Laredo Includes Del Rio and Eagle Pass
5 Lower Rio Grande Valley Includes ports from Rio Grande City to Brownsville

Annual Trade Trucks by Highway Segment
- 40,000 - 69,999
- 70,000 - 99,999
- 100,000 - 299,999
- 300,000 - 599,999
- 600,000 - 999,999
- ≥ 1,000,000

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14007 Foothills Court, San Antonio, TX 78249
(210) 641-7481; Fax (210) 641-9815
NAFTA AND TEXAS TRANSPORTATION ISSUES
Appendix D – Part III, Section 3

1994 Dominant U.S. - Mexico Highway Trade Corridors
Highway Segments with More than 40,000 Trade Trucks per Year

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Annual Trade Trucks by Highway Segment

- - 0 – 39,999

- 40,000 – 69,999

- 70,000 – 99,999

- 100,000 – 299,999

- 300,000 – 599,999

- 600,000 – 999,999

- ≥ 1,000,000
SECTION IV: TECHNOLOGY AND TRADE

Executive Summary

Emerging technology promises to Texas, with its widely dispersed population, that it can develop and maintain a sustainable industrial and small business economic base into the 21st century and beyond. Transferring technology from the research and development stage into a practical, commercially useful form is crucial to Texas' efforts to use technical knowledge to gain a competitive edge.

An effective technology policy should intentionally create an environment that allows entrepreneurs the freedom to develop new technology and encourage existing industry to adopt and implement that technology. Through legislative and policy directives, Texas has provided a foundation for technology to advance Texas' economic interests in the world markets. Texas has succeeded both in attracting national high tech companies and in developing its own high tech industry from scratch.

Two key components of the State's effort to marry the technology industry to a technology-literate workforce are:

1. Integrating fundamental curriculum changes in primary, secondary, and higher education, such as adding courses in geography and international business; and

2. Linking job training programs to novel funding sources.

These continue to be key components in achieving Texas' economic success. However, as bright as the picture may seem, several disturbing patterns continue to appear in Texas' efforts to lead in technology development and commercialization. First, the rate and success of the transfer of university research to practical production within Texas is relatively low. Second, the availability of investment capital needed to begin advanced technology companies falls behind several other states; and third, several initiatives implemented by the Texas Legislature have met early demise through funding shortfalls and/or implementation barriers that were never revisited and addressed. Texans have yet to enjoy the full benefit of their emerging technologies.

The IRTT Committee held focus meetings and several hearings during the months of March and April, 1996 which brought together key technology development and commercialization entities in Texas. Numerous meetings with representatives from small business organizations and individual manufacturers were also conducted during this interim period. Meetings that included representatives from large Texas public universities and private research and development firms were also conducted. The Committee staff also reviewed many historic and current publications, papers and organizational reports on technology and its role in international trade and economic development. The recommendations that follow are a synthesis of these efforts.

Discussion

Texas has a strong record of funding research and encouraging federal research support. Texas universities alone spend an estimated $1 billion annually on basic and applied research. While this research is certainly vital to the educational and invention process, the time has come for Texas to provide an environment that recognizes and promotes cutting-edge technology as a primary aspect of its long-term economic development strategy.

Texas must implement initiatives which will prolong the productivity of existing strategic industries and encourage the development of new
industries which, in turn, will enhance job creation and tax revenues for the future. Several technology transfer initiatives are either currently at their maximum ability to service the small business community or are now defunct because of lost federal and state funding.

Small manufacturers in Texas find it difficult to identify new technology able to increase the efficiency of their operations and appeal to new domestic or international markets. Small business and small manufacturers find it difficult, if not impossible, to identify and obtain capital to develop the prototypes of products that have both domestic and international market potential. Technology and its implementation can provide a critical competitive advantage for Texas firms in domestic and international markets, and Texas should take an aggressive stance in developing these industries.

Recommendation: The Legislature should consider creating and pursuing a more productive environment for public/private partnerships in technology fields that will improve Texas' competitiveness at home and with international trading partners.

Texas has a strong record of funding research and encouraging federal research support. Texas universities alone spend an estimated $1 billion each year on basic and applied research.

While this research is certainly vital to the educational process and to the process of creating new knowledge, the time has come for Texas to forge ahead and embrace cutting-edge technology as a primary aspect of its long-term economic development strategy. Technology and its use in both the marketplace and the assembly line can provide a critical competitive advantage for Texas firms in both domestic and international markets.

Further, such efforts have the potential to foster the development of the smaller businesses which produce the most jobs and the most local economic benefit.

Recommendation: The Legislature should consider directing the Texas Department of Commerce (TDOC) to explore and suggest existing program modifications and adjustments to increase technology-based investments in the state which would increase both domestic and international market share for Texas business.

a. The Legislature should consider modifying the Texas Manufacturing Institute statute or Partnership for Economic Development statute to create a stronger, more stable oversight Board.

b. The Legislature should consider modification of the Product Development Fund and the Small Business Incubator Fund to allow for more flexible approaches that will provide increased access to capital for technology development and adoption.

Modification of existing programs, where applicable and feasible, will allow greater numbers of small businesses to take advantage of new technology and enhance their competitive stance in both domestic and international markets.

Appropriate funding of the state's efforts to promote technology commercialization will impact job retention and creation. An integrated approach for board and council oversight of technology initiatives will enhance the state's ability to provide a comprehensive strategy in technology policy implementation.

Recommendation: The Legislature should consider designing and implementing a long-term sustainable source of funding for technology transfer and commercialization efforts for Texas small businesses.

a. The Legislature should consider authorizing the development of a one-stop technology funding authority which will consolidate all current and future technology commercialization funding programs. Special attempts should be made to coordinate its efforts through the existing system of Small Business Development Centers and the Texas Manufacturing Assistance Centers.

b. The Legislature should consider issuing a mandate to all entities whose technology initiatives are supported by state funds to increase Texas' small business awareness of technology.
commercialization opportunities available through state-supported research and development. The investments in state-supported institutions such as UT, A&M, and the junior college system, should be maximized to provide greater access to technology and technology research for Texas small business. Innovation to increase their competitive edge in both the domestic and international trade arenas is critical for small business. More extensive and focused outreach programs targeting small business segments in rural and urban communities could increase awareness of available technology. Using clearly identified sites on the Internet and other Texas State government web sites should be promoted and well-maintained by those state-supported institutions active in technology development and commercialization.

The one-stop concept will provide a single point of contact for the broad array of existing entities charged with technology development and commercialization. This will increase Texas' small business participation in technology transfer and commercialization when accompanied by additional marketing and promotional efforts.

Recommendation: The Legislature should consider directing that a review of state licensing of patented or university-based technologies be conducted.

a. The Legislature should consider directing that a thorough review of the licensing process at state-supported universities be conducted. This review should identify the barriers to small business' ability to access available or emerging technologies. The universities should amend those policy directives that either inhibit or preclude Texas small business from utilizing available technologies. A special effort should be made by these same institutions to increase Texas small business participation in licensing agreements for selected use on targeted geographical markets.

b. The Legislature should consider directing that an evaluation of the current stream of royalty payments paid for those technologies licensed by state-supported institutions be conducted. This evaluation should assess the potential for diverting five percent of all royalties and licensing fees into the proposed Technology Fund. This study should also identify all royalties paid to State of Texas entities and authorize diversion of five percent of those and future funds to the proposed Technology Fund.

Identifying barriers to the adoption and commercialization of university-based technology by Texas small business is important in increasing their ability to use these technologies for a competitive edge in domestic and international markets. Identification of royalty and licensing fees currently being collected could provide an augmenting stream of funds for the sustained ability of a state technology funding program.

Recommendation: The Legislature should consider directing state-supported universities and junior college systems to leverage existing state-supported facilities for Texas small business research and development needs, as well as for prototyping.

Maximizing the existing financial capacity of state-supported universities and colleges will increase the ability of the Texas small business community to accelerate technology commercialization available either because the concept was developed by small business or in cooperation with those same institutions.

Research and Development in Texas: Fertile Ground for Technology Development

Texas is home to two of the top four research universities in the country, it supports a model national program, the Advanced Technology and Advanced Research Program, and has a multitude of university-industry consortia. There are more than 400 public research centers in the state, and the Microelectronics and Computer Technology Corporation (MCC) and the Semiconductor Manufacturing Technology Consortium (SEMATech), two internationally recognized research consortia, are located in the state partly because of the active involvement of the State of Texas and the University of Texas systems.

State-supported technology transfer and adoption has not been as strong as the support found in many other states. Recent investments in
programs such as the Texas Manufacturing Assistance Center (TMAC) highlight the relatively recent commitments to improve this area of technology support.

Early investments in technology focused on basic university research but the late 80s and early 90s saw increased activity in applied technology as a means for economic enhancement.

Texas Department of Commerce's Office of Advanced Technology

To build on Texas' research strengths and its potential in the technology industry, the State created the Office of Advanced Technology (OAT), a division of the Texas Department of Commerce (TDOC). OAT was established in 1989 as the lead technology business development organization in the state. Its mission was to establish Texas as a global economic leader by creating an environment that encourages and supports the development and adoption of technology. OAT's four staff members served as catalysts and facilitators for developing programs that created a stronger technology support structure in the state.

The Office of Advanced Technology succeeded in increasing the number of Small Business Innovation Research awards won by Texas businesses. OAT also runs the Commercialization Planning Workshops for Texas entrepreneurs, which brings a National Science Foundation Center for State/Industry/University Cooperative Research Center to the state. OAT also implemented the Product Commercialization Fund, started a Recycling Market Development, and started the Renewable Energy Market Development Programs within Commerce. In addition, the OAT planned, created, and obtained federal funding to launch TEXAS-ONE, one of the first Internet information services in the country, and the Texas Manufacturing Assistance Center (TMAC), the largest statewide manufacturing extension network in the country [see below for more program descriptions of PCF, TEXAS-ONE, and TMAC]. The Office of Advanced Technology does not currently exist although some of OAT staff currently manages the Texas Manufacturing Assistance Center.

The Advanced Technology Program and Advanced Research Program

Created in 1987 as complementary statewide research programs, the Research and Technology Programs are administered by the Texas Higher Education Coordinating Board. Both programs were created as peer-reviewed, competitive grants programs. The Advanced Research Program supports basic research in specified areas. Its support is designed to attract and retain the best students and researchers and to help provide the knowledge base needed for innovation. Proposals are accepted in the areas of astronomy, atmospheric sciences, biological sciences, chemistry, computer sciences, earth sciences, engineering, marine sciences, materials science, mathematics, physics, and the social and behavioral sciences.

The Advanced Technology Program supports applied research in specific areas. It focuses on research with technological objectives and long-term economic goals. The program promotes the state's economic growth and diversification by increasing the number and quality of scientists and engineers in Texas. This enlarges the technology base available to business and industry and creates new products and services, which in turn attracts new industries to Texas. Proposals are accepted in aerospace, agriculture and aquaculture, biomedicine, biotechnology, computer and information engineering, energy, environmental science and engineering (including recycling), manufacturing technology (including waste minimization), marine technology, materials technology, microelectronics and telecommunications.

In 1993, the Higher Education Coordinating Board began providing funds for Advanced Technology Program development and transfer grants to support the further development of technology created under previous Advanced Research Program or Advanced Technology Program grants. The funding also supports the transfer of that technology to the private sector. These grants require at least a one-to-one match with private sector support, preferably a Texas company or a company prepared to commercialize its technology in Texas.
Funding is restricted to Texas public institutions of higher education. Private institutions are not eligible for support from the Advanced Research Program, and proposals may be submitted for any amount. Interdisciplinary proposals, interinstitutional proposals, and collaborations with industry are encouraged. A panel of scientists and engineers with nationally recognized expertise evaluate the proposals. Panel members may not be Texas college or university employees. Each panel ranks proposals eligible for funding and the chairs of all the panels then meet to recommend awards. Those recommendations are reviewed by an advisory board which recommends proposals for funding to the Coordinating Board.

Texas Advanced Research Program and Advanced Technology Program have received about $60 million in state funding each biennium since FY88. In FY 94, the Advanced Research Program received $10 million, the Advanced Technology Program $16 million, and the Advanced Technology Program Development and Transfer Grants Program was allocated $3 million. For the years ending August 31, 1996 and August 31, 1997, the State Legislature allocated the following amounts:

<table>
<thead>
<tr>
<th>Program</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Research Program</td>
<td>$19,855,101</td>
</tr>
<tr>
<td>Number of research projects to be funded</td>
<td>175</td>
</tr>
<tr>
<td>Advanced Technology Program</td>
<td>$39,769,827</td>
</tr>
<tr>
<td>Number of research projects to be funded</td>
<td>250</td>
</tr>
</tbody>
</table>

Texas Innovation Network System (TINS)

TINS was a nonprofit, 501(c)(3) organization chartered by the Texas Legislature as a clearinghouse for science and technology information. TINS has built and managed a user-friendly, Internet-based online system featuring databases that described the activities of key technology areas:

"High-Tech" Texas provides current, extensive data on approximately 3,000 technology firms, including technology service industries. High-Tech Texas is also available as a printed directory;

"Fac Prof" contains detailed profiles of more than 4,000 faculty members at public and private Texas universities in such fields as science, engineering, medicine, agriculture, arts, and humanities, and business at more than 50 Texas colleges and universities. Information includes research expertise, important publications, industrial-international expertise and current research projects;

"Texas Research Centers" describes the activities of more than 400 research centers across the state, including areas of research, special capabilities, research equipment, budgets, and contact information. It is also available as a printed directory; and

Texas Guide to Business Resources provides descriptions of more than 150 business and technical assistance programs.

TINS worked closely with the Office of Advanced Technology and the Texas Higher Education Coordinating Board to assist with technology development and transfer. Lack of funding forced TINS to close in 1994.

Product Development Fund and Small Business Incubator Fund

Texas voters passed a constitutional amendment to permit the state to issue up to $25 million in general obligation bonds to capitalize a Product Development Fund (PDF) and $20 million in general obligation bonds to support a Small Business Incubator Fund. The intent of the PDF was to increase the amount of risk capital for new technology development projects. The Small Business Incubator Fund was authorized to create and expand incubators that would give entrepreneurs with new technology products support during the critical early business
development stage. The Texas Department of Commerce was designated to establish the rules and guidelines to manage these funds.

Although Advisory Boards were formed and public hearings conducted, general obligation bonds were never issued to support these programs. Strong concern of investing State of Texas funds in high risk ventures ultimately sidetracked these funding programs.

Product Commercialization Fund

At the same time, the Texas Legislature passed the Product Commercialization Fund (PCF) and capitalized this loan program with $500,000 of general revenue funds. The Office of Advanced Technology administered this program until funds were fully invested. Additional funds were obtained to supplement PCF with money targeted to renewable energy projects or recycling technology projects.

The PCF helped a number of companies obtain financing that allowed innovative products to develop and enter the market. After all the funds were invested, the PCF ceased to operate except to administer ongoing projects.

Technology Oversight Boards

The Texas Legislature recognized that planning, development, and implementation of technology policy required some type of oversight entity that included members of the private sector and the technology resource providers in the state. The Partnership for Economic Development Board was created to develop a plan for technology in Texas. Its members consisted of appointees by the Governor, the Lieutenant Governor, Speaker of the House and Representatives of the Texas Higher Education Coordinating Board.

The Partnership held a number of public meetings and hearings and produced a report that identified key areas for technology policy direction in the state. The Partnership ceased to function after completing their report.

The Texas Manufacturing Institute authorized the creation of a public-private partnership organization with a mission of advancing manufacturing and technology adoption in the State of Texas. The Texas Manufacturing Institute currently is the current advisory board that supports the Texas Manufacturing Assistance Center (TMAC).

Texas Manufacturing Assistance Center

The Texas Manufacturing Assistance Center is a statewide manufacturing extension network with a mission of improving and expanding manufacturing in Texas. TMAC engineers operate out of offices located across the state and help small and medium-sized manufacturers adopt technology that can improve the businesses quality, productivity, and bottom line. TMAC is a partnership of the Texas Department of Commerce, the Texas Engineering Extension Service, Southwest Research Institute, the University of Houston's Institute for Enterprise Excellence, UT-Arlington's Automation and Robotics Research Institute, and UT-El Paso's Institute for Manufacturing and Materials Management.

TMAC was awarded a federal grant in February 1995 and received a state appropriation of $3 million per year beginning September 1, 1995. TMAC opened its doors in September one with six offices and 20 engineers and will have 80 field engineers to support Texas' 22,000 small and medium-sized manufacturers by April 1997. TMAC has already been recognized by the U.S. Department of Commerce for the speed and excellence of its startup period. Over 500 manufacturers were assisted with technology adoption in the first nine months of operation.

TEXAS-ONE

TEXAS-ONE was another OAT initiative and was implemented through a $2.5 million grant awarded to the state by the National Institute of Standards and Technology (NIST) in 1993. The project was a national pilot program to set standards for the delivery of electronic information and electronic commerce across the Internet at a time when the Internet was still an unknown commodity. TEXAS-ONE streamlined
the delivery of government information and has accelerated the use of electronic information and product by Texas companies. In addition, TEXAS-ONE funding helped establish an “Intranet” application for the TMAC that demonstrates how distributed operations can save thousands of dollars by using the Internet as an internal communication and operating tool. TEXAS-ONE also contains the Texas Marketplace, a site that allows companies to list products and services to sell or buy.

The federal grant for TEXAS-ONE expires in August 1997. Current developments include expanding the Texas Marketplace to allow easier matching between products of Texas companies and needs of customers in-state and throughout the world.

**Small Business Development Centers**

Other state-supported organizations such as the Small Business Development Centers (SBDCs) began to take a more active role in supporting technology, often on their own initiative and many times in partnership with other entities such as the Office of Advanced Technology. The Dallas SBDC created the Technology Assistance Center (TAC) to assist small businesses in the commercialization of new and innovative technologies. It links inventors, manufacturers, and marketers with solutions to problems and with opportunities on which to capitalize in commercializing their products. The Texas Product Development Center (TPDC) housed at the University of Houston SBDC offers a Product Evaluation Program in which experts assist with market feasibility and provide financial leads to individuals with an idea for a new product.

**University-Supported Efforts**

Universities expanded their traditional role of education and research to become more active in technology transfer. The Texas Engineering Extension Service (TEEX) at Texas A&M won a NASA award to house the Mid-Continent Technology Transfer Center (MCTTC). The MCTTC serves a 14-state region and provides assistance in identifying and transferring technology from federal labs to businesses. Meanwhile, Texas A&M’s Technology Licensing Office (TLO) has grown into one of the premier university technology transfer operations in the country.

**University of Texas Research and Commercialization**

The University of Texas at Austin is recognized as one of the most eminent research institutions in the world. There are approximately 81 research centers and institutes at the University of Texas at Austin. The centers’ research budgets, combined, are approximately $200 million a year. Less than 10 percent of these funds come from the Texas Legislature. Many of these research centers’ outstanding reputations have helped to increase the university’s overall reputation as a research institution. The University’s research efforts explore the fourth industrial technology area: energy, biotechnology, genetics, nuclear, medical engineering, computer, ecology and environment, transportation, and software development. Technology transfer and commercialization in Texas and the nation are the universities’ increasingly important mission. Technology commercialization supplements the traditional mission of higher education to promote excellence in teaching, research, and community service. Technology research and commercialization have resulted in new Texas-based firms and established a generation of royalties to The University of Texas at Austin and to the research faculty. These efforts also created intellectual resources and technologies that can be used for Texas to:

1. Provide a meaningful broad base of employment for all citizens;
2. Restructure the Texas economy for increased standards of living, and well-being with an improved quality of life; and
3. Diversify the economy to participate actively and in a leadership role for global competition and cooperation.

The Center for Technology Venturing, co-directed by the IC² Institute of the University of Texas at Austin, was established fifteen years ago...
with the mission to:

1. Investigate the market-driven system and the interfaces between government, business, and academia;

2. Link and implement business, technological, and economic issues; and

3. Transfer the results of IC² research to business, academe, government, and the general public.

Innovative Technology Transfer Programs

IC² extensive research in the area of technology transfer concentrated on strategic alliances that were started in the 1980s and 1990s in response to global competitive challenges. Among these public-private-academic institutional alliances are SBIRs, teaching/learning factories, university/industry centers of excellence, national technology initiatives, research and development consortia, and others.

Technology Transfer General Principles and Issues

Collaboration

Collaboration between industry and government in the United States has reached unprecedented levels. Partnerships between the public and private sectors are crafting national, state, and local responses to such domestic challenges as welfare reform, education, environmental protection, and job training. Some of the most ambitious alliances are those designed to help American industry become more competitive by developing, applying, and diffusing technology. The past fifteen years have seen an explosion of such initiatives, with varied goals and strategies.

Cooperative technology programs are defined as public-private initiatives involving government and industry, and often universities, which sponsor the development and use of technology and improved practices to measurably benefit specific companies. The programs' primary goal is economic growth.

Cooperative technology

Cooperative technology programs have inspired intense interest since the first great wave of state programs in the early 1980's, yet there is still little appreciation of their significance. Forty-nine states sponsor cooperative technology programs, and the fiftieth, Nevada, is preparing to initiate its own. A majority of federal agencies maintain active cooperative technology programs. In fiscal year 1994, the Department of Defense spent more than $1.1 billion in this area. Conservatively estimated, the states and federal government spent more than $3 billion in FY 94 to sponsor cooperative technology programs, most of it matched by private sector commitments. Many of these programs are expected to grow rapidly in the next several years. Great hope rests on these efforts as investment in future economic vitality.

These programs are based on the recognition that private-sector partnerships involving government and universities can create new wealth through the development and diffusion of market-responsive technology. At the state level, where such programs have the longest history and greatest proven effectiveness, cooperative technology has always received its strongest support. In Congress, too, there has long been strong bipartisan support for cooperative technology, as shown by the Bayh-Dole and Stevenson-Wydler acts of 1980. President Clinton has heralded the potential of the field in his progress report on technology for economic growth:

Increasingly, leadership in the use and commercialization of technology provides the foundation for America's status as an economic and military superpower...All of our (technology) initiatives...will

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require a new partnership between government, industry, labor and academia. I am committed to building this partnership and tearing down the walls that have prevented meaningful cooperation in the past.

The entrepreneurial economy

Several years ago, a researcher revised much of the conventional wisdom on sources of economic vitality, as they were measured by job growth, in the U.S. economy. While that original research has been criticized on some methodological grounds, the fundamental conclusion is still valid: Most of the growth and vibrancy in the national economy is among start-ups and entrepreneurial small companies. This has been echoed in more recent studies, which, for example, point to the importance of entrepreneurial companies in the commercialization of university-based inventions. A parallel development has been the emergence of an entrepreneurial support industry, as represented by the phenomenal growth of business incubation programs throughout the past decade.

The role of small business in the American economy

The 1995 White House Conference on Small Business defined companies with fewer than 500 employees as "small," while other studies use 100 as the cut-off line. Financial publications and analysts often interpret companies with annual revenues of less than $250 million to be small businesses. The fact is, businesses with fewer than 20 employees comprise the overwhelming majority of small business in this country, and account for 85 percent of the U.S. economy.

Reiterating the economic impact of small business, the U.S. Small Business Administration predicts that in the next millennium:

- business formation by women will continue to grow;
- the number of self-employed will increase;
- small business earnings will increase to record levels;
- downsizing will create a greater pool of trained workers and managers;
- most new entrants to the labor force will be women and minorities;
- small business will continue to play a dominant role in job creation;

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the number of business failures will continue to drop;

small businesses will create high-wage jobs;

The role of small manufacturers in the economy

Texas' 22,000 manufacturers employ over one million Texans and contribute $72 billion to the state’s GSP. Over 98 percent of these manufacturers employ less than 500 people and most of those employ fewer than 100. On average, manufacturing employees are paid twice the rate of their service sector counterparts. The creation of each manufacturing job adds another 2.6 jobs in support-related jobs. High-skill, high-wage job creation and retention depends heavily upon the ability of small manufacturers to survive and prosper in an increasingly competitive environment.

According to a National Academy of Sciences study conducted in 1993, the five biggest barriers to competitiveness for small manufacturers are:

1. Disproportionate impact of regulation;

2. Lack of awareness of changing technology, production techniques, and business management practices;

3. Isolation (too few opportunities for interaction with other companies in similar situations);

4. Difficulty in finding high-quality unbiased information, advice and assistance; and

5. Scarcity of capital.

Manufacturing Extension Centers (like TMAC in Texas) are positively impacting the success of manufacturers throughout the country. A recent GAO report found that every federal dollar invested in manufacturing extension yields $8 in economic return.

New economic development strategies

Since the early part of this century when the practice of economic or industrial development was launched, it has been characterized by a dominant company recruitment strategy. Under this strategy, derided as "smokestack-chasing" by its critics, various units of state and local government have orchestrated literally thousands of inducement packages to lure established companies from one part of the country to another. Governments have competed shamelessly to craft combinations of tax abatements, subsidized training, and business-friendly labor laws. Some of the recent plant-siting competitions involving Japanese and German auto makers illustrate how fierce these contests can become. In addition, it is becoming increasingly clear that some states and communities have given away nearly as much as they have gained, and in the eyes of some observers, the entire process has evolved into a zero-sum game with few real winners.

Within the last ten to twenty years, however, government has gained more understanding and appreciation of the economic changes occurring on a global scale. Many communities and states have abandoned or decreased industrial recruiting in favor of growing their own entrepreneurial technology-based economies. The 1992 Carnegie Commission on


pointed out the necessity for state and interstate cooperation between government, industry, and science organizations. This challenge has been taken up by regional organizations as well. In the South, long the bastion of traditional industrial-development practice, the Southern Growth Policies Board and its Southern Technology Council have published sweeping agendas for change in how economic development is pursued in the region, with major emphasis on technology-linked entrepreneurialism. The Center for the New West has been a major advocate in the mountain and Pacific states for "high performance communities," with a policy mix of technology, entrepreneurial enterprise, greater attention to private-public partnerships, investment in human resources, and advanced telecommunications. Programs such as Enterprise Florida and the Kansas Technology Enterprise Corporation signal major policy shifts in state legislatures and significant public funds in support of new strategies.

Creating jobs

Entrepreneurs in venture-capital-backed firms added new jobs at a rate of 25 percent a year between 1989 and 1993, while employment in the Fortune 500 companies fell 3 percent a year, according to the fifth annual survey by Coopers & Lybrand. By the time the average venture-capital-funded company is six years old, it employs 200 workers.

In its Fifth Annual Economic Impact of Venture Capital Study, the firm of Coopers & Lybrand L.L.P. surveyed over 500 companies. Its results included:

1. Venture-Backed Companies are engines of quality job creation;

2. The companies surveyed generated an average of 152 U.S. jobs per company from 1989 to 1993. For the first five years of a venture-backed company's life, it grows its workforce nearly 90 percent annually;

3. Professional venture capital helps companies create breakthrough technologies and products, enhancing U.S. competitiveness;

4. A strong research and development foundation expands America's prowess and creates new technologies and industries. Venture-backed companies invest significant sums of capital in research and development (R&D): an average of $8.7 million per company between 1989 and 1993;

5. Rapidly growing venture-backed companies boost U.S. competitiveness;

6. Today's venture-backed companies aggressively grow export sales. From 1989 to 1993, the average company surveyed by Coopers & Lybrand generated $4 million in exports. During the very early years of these companies' lives, export sales more than tripled each year; and

7. Venture capital cash requirements intensify over time.

Today's entrepreneur faces greater financing challenges than yesterday's visionaries in generating significant economic streams. The average amount of venture capital required by start-up companies during their first five years of
life has risen considerably since the early 1980's. Companies established between 1981 and 1985 needed an average of $7 million in venture capital during the first five years. Companies that were founded and raised venture capital between 1985 and 1989 saw this financing threshold rise to $10 million. Most recently, young venture-backed companies founded between 1989 and 1993 needed to raise an average of $12 million during these first five years to survive and thrive. The average venture-backed company receives almost 70 percent of its investment equity from professional venture capitalists who invest alongside the company's founders. As more companies secure venture capital financing, the positive impact on our economy continues to grow.

Technology licensing

In their paper "Pre-Production Investment and Jobs Induced by MIT Exclusive Patent Licenses: A Preliminary Model to Measure the Economic Impact of University Licensing," the authors examined the effectiveness of invention licensing at the Massachusetts Institute of Technology (MIT). This body of research work is important to evaluate the impact of funding University based Research and Development and in the measurement of technology transfer efforts into the private sector. The primary goal of their research was to create a model to examine licensing activity at the MIT in the context of certain objectives outlined in the Bayh-Dole Act, with the emphasis on quantifying licensee investment in product development and, therefore, jobs created in product development. Their paper presents a case study of university licensing describing certain activities and impacts derived therefrom.

The Bayh-Dole Act allowed universities to elect to retain title to inventions arising from their federally funded research and to grant licenses to patents derived from these inventions. The preamble, as follows, describes the objectives of the law.

35 U.S.C. § 200 policy and objectives

It is the policy and objective of the Congress to use the patent system to promote the utilization of inventions arising from federally supported research or development; to encourage maximum participation of small business firms in federally supported research and development efforts; to promote collaboration between commercial concerns and nonprofit organizations, including universities; to ensure that inventions made by nonprofit organizations and small business firms are used in a manner to promote free competition and enterprise; to promote the commercialization and public availability of inventions made in the United State by United State industry and labor; to ensure that the Government obtains sufficient rights in federally supported inventions to meet the needs of Government and protect the public against the nonuse or unreasonable use of inventions; and to minimize the costs of administering policies in this area.

Based on a preliminary extrapolation of the findings associated with the MIT analysis and an Association of University Technology Managers Survey, it is suggested that preproduct

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261 PL 96-517 (1980).
introduction development investment nationwide in university-based technology is in the range of at least $2 to $5 billion per year.

**Bench-marking best practices**

As part of its ongoing research and action programs, the Southern Technology Council (STC) conducted a study of university technology transfer involving start-up companies. The goal of its study was to describe practices and policies that either hinder or facilitate university technology transfer to new enterprises.262

Interest in the start-up phenomenon was shaped by another STC study that documented the extent to which university inventions and licenses tend to migrate out of the South. That is, the majority of intellectual property originating in Southern universities seems to be licensed to companies elsewhere in the country or the world. This has important implications for economic competitiveness in the region, particularly regarding our ability to compete in a technology-based international economy.

The results of the STC study identified key areas that make a difference in effective technology transfer. Those institutions which seem to be leaders in technology transfer, particularly involving start-ups and new enterprises, tend to have somewhat differing perspectives and practices in several areas. This included:

1. **Technology Match.** For a variety of reasons, often beyond the control of the institution, universities differ widely in the mix of strengths in their research and technology "portfolio." However, some universities seem to be more sensitive to the potentials of their technology, its match with regional or state economy, and what needs to be done to exploit inventions through the start-up route;

2. **Mission and Goals.** Some universities have explicitly taken on economic development through technology transfer, particularly to state-based start-ups, as an institutional mission or goal. This may be expressed in mission statements, in position descriptions, in administrative practices, in hiring preferences, or in public communication;

3. **Personnel Policies and Practices.** In universities friendly to start-ups based on faculty technology, there tends to be an easy flexibility regarding personnel policies and practices. This translates to liberal consulting policies, with minimal reporting regulations, as well as flexibility in granting leaves of absence or part-time appointments. For example, in some universities it is relatively commonplace for a faculty member to drop back to a half-time appointment, or take six months off, in order to become involved in the launch of a new company;

4. **Business Support Systems.** Universities that are more involved in licensing to start-ups are, not surprisingly, also more inclined to be linked to, or operators of, business support systems and programs. Most prominent are technology business incubators, with nearly half of the study sample having a working relationship with an adjacent incubator program. In addition, several of the more active institutions are involved with venture forums or other entrepreneurial support organizations. In addition to these institution-specific business support programs, three states are involved in broad-based programs of technology entrepreneurial development, with strong links to universities in their states. These include Virginia's Center for Innovative Technology, Florida's Enterprise Innovation Partnership, and the Kansas Technology Enterprise Corporation (KTEC);

Interestingly, few of the respondents mentioned any positive support role being played

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by a business school on their campuses. Apparently, business schools are more focused on the major corporation as a focus of study than they are on entrepreneurial development.

5. Facilities and Physical Infrastructure. Several universities reported creative use of laboratories and/or major equipment in partnerships with technology entrepreneurs. These ranged from flexible leasing or rental arrangements, to in-kind investment in a new enterprise via free space or equipment use. On the other hand, many universities in the sample had quite strict policies about not making their facilities available to private companies, particularly to faculty entrepreneurs;

6. Faculty and Organizational Culture. Universities do not include faculty entrepreneurialism as a formal factor in promotion of tenure decisions; it is simply not done. However, in a number of more informal ways, institutions provide rewards or incentives in support of this behavior. For example, several institutions in our study reported "inventor of the year" awards or events. Other are involved in workshops for faculty about technology transfer, which tends to spread knowledge about and acceptance of an entrepreneurial role. In addition, when a faculty member becomes part of a financially successful entrepreneurial venture, it tends to have a widespread effect on the informal culture of the faculty;

7. Capital and Finance. Several of the leading institutions, in terms of involvement with start-ups, report a proactive role in enterprise capitalization. These range from institution or state-level programs of funds for prototype development and proof-of-concept work, to seed and venture funds. In the latter, the university tends to play a facilitating rather than a direct role.

8. Conflict-of-Interest. Universities that are doing well in technology transfer generally, and working with start-ups specifically, tend not to be inhibited by issues of faculty conflict-of-interest. In most cases, there are high expectations about reporting and disclosure, coupled with few direct prohibitions and a decentralized approach to administration of the rules. The net flexibility tends to be high; and

9. Technology Transfer Office Operations. In a similar manner, the technology transfer or licensing office at leading universities tends to have a great deal of autonomy and flexibility in its operations. There is limited ongoing oversight by upper level administration, or by institutional boards. This approach tends to result in creative deals and arrangements, which advance the technology transfer performance of the institution.

Key recommendations of the STC study

The conduct of academic research, from the perspectives of both financial backers and performers, should be closely linked to the growth opportunities in state and regional economies and to the needs of leading-edge companies.

Economic development and technology transfer should have a more prominent place in the mission and goals of universities and in the practices of institutional leaders.

University personnel policies should be as minimally restrictive as possible, consistent with accepted administrative practice, to promote greater faculty involvement with new ventures and work with industry.

Universities should expand their support of linkages to entrepreneurial business support systems. In particular, the numbers of university-related technology business incubators should be expanded.

Business schools should strengthen their entrepreneurial development programs and focus faculty attention on the needs of technology-based, start-up ventures.
Creative use of university facilities and laboratories by technology start-ups should be encouraged and enabled, both in terms of state law and institutional policies.

University leadership, at all levels, should expand organizational recognition and rewards for faculty involved in technology transfer and technology-based enterprises. This includes both symbolic rewards as well as changes in tenure and promotion criteria and policies.

Explicit professional development and educational outreach efforts to university faculty should be significantly expanded to orient them to issues and practices of technology transfer.

States and universities should explore a variety of approaches to expand venture capital in the region, including the facilitation of informal "angel" networks as well as formal funds.

States and/or institutions should launch programs to provide funds for very early stage technology development (prototyping, testing, proof-of-concept experiments).

University and state officials should review state laws and regulations for conflict-of-interest definitions and policies which are a hindrance to adopting more appropriate policies at state universities, and they should devise alternatives that could be adopted through change in law or regulations.

State government and universities should invest more in the technology transfer function at the universities, including a significant increase in staffing levels as well as resources for patent filings.
SECTION V: SMALL BUSINESS AND INTERNATIONAL TRADE DEVELOPMENT

Executive Summary

With the 21st century approaching, the world's commercial trading sector is faced with unprecedented opportunities, challenges and innovative ways to conduct business. Although the success or failure of any business enterprise depends almost entirely and directly on the entrepreneur, three elements play an increasingly important key role in shaping the way international trade is conducted and how it impacts regional economic development: the formation of trading blocks and how their rules affect a state's global position; emerging telecommunications technologies and how are these applied to further the goals of small- and medium-sized business; and federal and state governmental support and their establishment of a well-defined mission in providing an effective, inter-linked package of resources, programs and technical assistance.

A good illustration of the strategic role of government can be seen in the debate between Congress and the Clinton Administration on how to restructure the U.S. Department of Commerce (USDOC) to more effectively assist U.S. businesses to achieve leadership in world trade. The International Trade Administration, the USDOC unit responsible for expanding U.S. exports, has a 1997 fiscal budget request of $285 million pending before Congress.\(^{263}\) Texas has for long been at the forefront on business development and trade promotion. With the advent of NAFTA, and to some extent the General Agreement on Tariffs and Trade (GATT), the state has a greater stake in tailoring existing programs to ensure that Texas' small businesses enjoy a level-playing field when competing in a global market. In 1995, Texas exports totaled $68.82 billion. These 1995 export figures represent an increase of 14.8 percent over the 1994 total of $59.97 billion.\(^{264}\) The 74th Legislature recognized these new challenges by appropriating $669.1 million to the Texas Department of Commerce (TDOC) for the 1996-1997. TDOC, in turn, allocates $85.5 million for business development-related functions.\(^{265}\)

In an effort to ensure that TDOC adequately addresses the needs of businesses seeking to engage in international trade, the Senate IRTT Committee initiated a series of discussions on September 1995, with the private, public and academic sectors. A series of statewide town meetings resulted during the months of February, March and April 1996, under the guidance of the Small Business Development Centers (SBDCs) and the District Export Councils (DECs), with the assistance of the Center for International Business Education and Research (CIBER) at the University of Texas at Austin. These forums enabled individuals and business owners who are knowledgeable about trade issues to develop recommendations to improve the processes that allow small to medium-sized business owners to become competitive in international markets.

Discussions at the town meetings led to the identification of 115 issues that participants felt needed legislative consideration. These cumulative recommendations were analyzed and streamlined during the DEC statewide annual meeting in Austin on April 12, 1996. Delegates from the DECs and the SBDCs appeared before the Senate IRTT Committee hearing in Dallas on April 26, 1996 to present supplemental background information on their legislative agenda. The final result was 17


\(^{265}\) Legislative Budget Board, Fiscal Size-Up: 1996-97 Biennium.
recommendations covering taxes, investment, direct assistance, education, technology and infrastructure. Some of the original recommendations have been dropped, modified or included in other sections of this report (i.e., education and technology sections.)

In 1987, former House Speaker Gibson Lewis’ Strategic Planning Task Force on Economic Development addressed a number of these issues in the larger context of an economic development plan for the State of Texas. The international business climate has changed considerably since that plan was developed. Significant changes have been made in GATT, NAFTA has been passed, the European Community has been evolving into a cohesive group and regional trading blocks are continuing to form. In light of this global economic restructuring that has occurred in the last 10 years, Texas must implement a focused, long-range strategy that will guide future investments made by the State, and the goal of this strategy must be economic diversification.

Video Telecommunications Resources

The expansion of technological and telecommunication advancements has given Texas’ international small-business community an opportunity to revolutionize the way global business meetings are conducted by increasing accessibility and reducing the cost of initial surveys of foreign markets and trade opportunities.

The majority of Texas’ University System schools have new telecommunications technologies in place. The Texas A&M University System has had the Trans-Texas Videoconference Network (TTVN) in operation since October of 1990, and discussions are currently underway to initiate a TTVN link to Mexico City which will also serve the TDOC State of Texas Office in Mexico City. About 64 Texas community/technical colleges are members of STARLINK, a statewide videoconference network established in 1989, this network produces and distributes programming to benefit diverse Texas audiences. Recently, the Texas Department of Education established its own videoconference network linking the 20 regional education service centers in the state.

The State does seem to have adequate videoconferencing resources in place, and about more that half are state-owned, but how effective are these networks with each other? for example, can a region service center communicate directly with the U.T. Austin campus vidnet connection or with a college that has access to STARLINK?

Moreover, what percentage of these networks, in particular universities, have accessible schedules for purposes other than academic, and can these be linked internationally?

Recommendation: The Legislature should consider directing the General Services Commission and the Department of Information Resources (DIR) to conduct a statewide inventory of interactive video telecommunications resources and services provided by Texas state agencies and universities. A preliminary report should be submitted to the IRTT Committee by November 29, 1996, and will be forwarded to the entire Senate. The Legislature should also consider requiring each agency to dedicate at least one existing staff member to conduct this inventory.

Recommendation: The Legislature should consider encouraging state-supported universities to coordinate the use of their video teleconferencing capabilities with the SBDCs and the DECs to help small business expand its trade links.

Recommendation: The Legislature should consider directing the Texas Department of Commerce (TDOC) to coordinate with the SBDCs to develop a video teleconferencing pilot program to assist small business in its initial forays into foreign markets.

Internet Development and Access

The Internet is quickly emerging as a valuable resource for information about businesses around the globe. More companies join
the World Wide Web every day. Because companies trading internationally rely on up-to-date information, the Internet provides a quick and inexpensive means to transfer information to and from other companies and customers.

Town hall meeting participants recommend that the State provide additional support to develop the Internet across Texas. Because companies trading internationally rely on up-to-date information, the Internet provides a quick and inexpensive means to transfer information to and from other companies and customers.

Service providers already support most cities, and the state should focus primarily on rural community net access. Businesses in the town halls across Texas also wanted a well-maintained, centralized resource for international trade information. TEXAS ONE (http://www.texas-one.org), developed by the Texas Department of Commerce (TDOC) in coordination with the Texas Department of Information Resources (TDIR), is designed to make worldwide trade leads more accessible to Texas businesses, but TDOC needs additional funding from the State to expand and update the information.

HB 2128 created the Telecommunications Infrastructure Fund and includes policies to serve distance learning, telemedicine and digital libraries. The DECs suggest that a fourth priority be added for development of the rural infrastructure to assist businesses that are providing crucial employment in rural areas of Texas to have access to high speed, cost-competitive network services.

TEXAS-ONE is a crucial one-stop shopping resource for key information such as trade leads, business opportunities, supplier information, and much more. Texas-One currently has several levels with differing degrees of timeliness. The TINS database needs to be updated at least biennially. The Texas Marketplace should be updated daily, and its information should be marketed more aggressively. Up to $100,000 may be required to expand TEXAS ONE to a first-class WEB site which will be used to project Texas' commercial interests around the world. This money should be used both to expand the Web site and to market its location to insure that people around the world know about it and use it. TDOC should cooperate with the Texas Department of Agriculture, the SBDC's and others to maintain and update TEXAS ONE.

International Strategic Plan

In the past, coordination between state agencies dealing with international economic issues has not been adequate. It is critical that all agencies which are involved in these issues participate in the planning stages. It is also important that Texas coordinate with the appropriate federal agencies to avoid duplication of effort.

There is a need to direct TDOC, by itself or in coordination with another agency, to begin an international planning process which should include trade, infrastructure, economic development, education, and other relevant issues. Private sector participation in the process is critical. An interagency public/private task force, could spearhead an international strategic planning process to address State finance, business services, foreign representation, information and referral, infrastructure, education and training, and related support services for all Texas businesses interested in conducting international business or in expanding their international business opportunities. This task force would report back to the Legislature and the Governor with recommendations on how Texas can better support a network of integrated programs and services to advance Texas' economic interests into the 21st Century.

The task force should include high-ranking employees from the Department of Commerce, the Department of Agriculture, the Department of Transportation, the Workforce Development Commission, the Texas Education Agency, the Higher Education Coordinating Board, and the Comptroller's Office. It should also include representatives from the DECs, the Small Business Development Centers, the Senate Committee on International Relations, Trade and Technology, Senate Finance Committee, the House Committee on State, Federal and International Relations, the House Appropriations Committee, the Texas public universities, private companies and professional industry trade associations.
Recommendation: The Legislature should consider directing TDOC to establish a public/private task force to develop an International Strategic Plan which encompasses state goals for export and attraction of foreign investment. The plan should address state funding for international trade, foreign representation, business services, TDOC operations and administration, information referral, infrastructure, education, training and related support services for all Texas businesses wishing to engage in international trade activities.

This proposal should not require the State to hire additional staff. It could be conducted with the support of the agencies involved as a part of their routine duties, though a lead agency (e.g., TDOC) may wish to dedicate a staff person to shepherd the entire process, dedicating 25-40 percent of their time as an in-kind contribution. Printing the final report would cost approximately $3,000. This could cost even less if the full results of this study were posted to the World Wide Web.

Texas Department of Commerce

Since 1983, the Texas Department of Commerce (TDOC) has faced constant changes in funding, mission, function and leadership. This has led to frequent staff turnovers, poor continuity of service to Texas businesses, and inconsistent representation of Texas to other states and nations.

The people attending the 1996 DEC Town Hall Meetings across the state expressed concern for the lack of interactive communication among TDOC, the business community, and the potential strategic partners of TDOC such as the District Export Council, the International Trade Centers of the state’s SBDCs and others. Concern was also universally expressed over the high rate of staff turnover at TDOC which has interfered with the continuity of effective communication, long-term planning and programs.

The coming years offer Texas businesses the opportunity to become the leaders in global commerce. Not only large corporations, but small to medium-sized businesses can and will prosper if the infrastructure to promote this trade is put into place now. Businesses can no longer shroud themselves in a cocoon of domestic protectionism and expect to survive: the competition already existing is severe, and will only become more competitive as time passes.

Further, the economic development agency that represents the State cannot isolate itself and expect to be effective. By forming alliances and partnerships with both the public and private sectors, this agency can set the standard in the nation for having a competitive and effective trade program. The opportunity now exists to combine available resources from both the public and private sectors. These combined resources can then be used to support TDOC efforts to advocate State interests on national and international levels.

Recommendation: The Legislature should assess the operations of TDOC and should make recommendations to promote the stability and continuity of services offered by the agency. Two primary concerns in conducting this review should be the minimization of TDOC’s turnover rate and the improvement of the agency’s value to the Texas business community.

There are three goals to be accomplished in tandem with the agency’s assessment:

1. The Legislature should either create or direct TDOC to create a new advisory board made up of public and private sector people who have extensive knowledge and actual experience in international trade. This advisory board would assist in strategic planning, establishment of trade-related plans and programs, and to act as a sounding board in evaluating the progress of these plans and programs; offer input from the exporting business community as to the perceived effectiveness of plans and programs prior to initiating action; and periodically meet with TDOC to evaluate the actual effectiveness of plans and programs and to advise on any midstream corrections that may be needed.
2. The Legislature should consider supplementing or reorganizing the staffing plan within TDOC to eliminate or minimize the high turnover rate of professional staff; to insure that professional staff positions are filled by personnel that have actual knowledge and experience in the field of responsibility; and to insulate key staff positions from changes in administrations to insure a continuity of staff and a continuation of programs. The current rate of staff turnover with each new administration has proven to be fatal to any long-term plans or programs. Also, the high turnover rate of staff makes it difficult for businesses and other strategic partners to establish a level of confidence and rapport with TDOC and their plans and programs.

3. The Legislature should direct TDOC to improve its communication and outreach to the Texas business community and to its strategic partners. In the majority of town hall meetings across the state, businesses were very often not aware of TDOC's international trade efforts, plans, or services. Those businesses that had contacted TDOC complained that TDOC had given them inaccurate or outdated information.

TDOC should use, to a greater extent, the services and abilities of the strategic partners as an effective vehicle to publicize trade opportunities, trade leads, plans and programs. Strategic partners, such as the District Export Councils (DECs) and the Small Business Development Centers (SBDCs), are not always consulted or informed of TDOC programs or actions, and many times have little or no knowledge of what actions or programs are underway at the agency. The interaction occurs long after the plan or program has been put into effect and does not leave adequate time for the strategic partners to properly involve themselves or their clients. These strategic partners are a proven vehicle for delivering information, training, plans and programs to the thousands of businesses across the state. The strategic partners are also a proven source for expertise in international trade matters.

These partners also have an established track record for delivery of seminars, workshops and other international trade assistance. In addition, they have a proven track record for developing trade shows, trade missions and promotional programs.

TDOC should form a partnership with the DECs, the SBDCs, and others in a comprehensive effort to educate the business community on the benefits of international trade and on how to operate in this global business environment. This partnership should be a comprehensive outreach effort, not only into the major cities, but into the rural communities as well.

Implementing these changes will require more funds for TDOC. However, use of the strategic partners, along with the increased efficiencies realized by minimizing the staff turnover rate, should increase TDOC's cost-effectiveness.

Sales Tax on Export Products

Currently, there is a method for claiming an exemption from Texas sales tax on tangible personal property when the goods are exported beyond the territorial limits of the United States.

After proof of export is shown by a bill of lading issued by a licensed and certified carrier, documents are provided by a United States Customs Broker. Import documents from the country of destination include an original airway, ocean, or railroad bill of lading, a forwarder's receipt, or any other document designated by the comptroller for an enterprise, are authorized to make tax-free purchases under a maquiladora enterprise.

Under this method, the exporter pays the tax, exports the goods and applies for a tax refund. The refund occurs many months after the initial purchase, tying up funds needed by the exporter. A maquiladora enterprise may make tax-free purchases of tangible personal property because the property is immediately exported. The only requirements of the maquiladora are to post a bond or other security and make the maquiladora's books and records available to the comptroller on request. The maquiladora must
also report its tax-free purchases quarterly and is subject to the comptroller's revocation or suspension of the maquiladora's authority to make tax-free purchases for good cause.

Texas already has a pro-export environment for business. The present tax code creates a costly and cumbersome environment for export businesses and focuses only on the border retail trade to the detriment of statewide export businesses. The time, personnel, and loss of cash flow are costs which make Texas exporters less competitive under the present tax code. Goods prepared for export often take time to leave the state. Thirty days is too short a time period to account for the many variables with which exporters must contend.

**Recommendation:** The Legislature should consider changing the Texas Tax Code provision pertaining to the amount of time an export product may remain in the state, so that export products may remain in the state for up to 175 days without being subjected to a sales tax, rather than the 30-day limit under current law (NOTE: Due to the subject matter of this recommendation, it is being retained by this Committee, but forwarded to the Senate Economic Development Committee as well).

The purpose of this sales tax exemption is to make Texas exports more competitive and extending this time limit will further that goal, as it is revenue neutral. This proposal will save companies the administrative costs associated with the present taxation system. Neither state nor local governmental entities will lose any tax revenue from this proposal.

**Texas Export Loan Guarantee Fund**

Until the last legislative session, the State of Texas operated the Texas Export Loan Guarantee Fund (TELF). The Fund, with an annual budget of $2 million, was used to help small- and medium-sized exporters obtain trade financing. Business leaders across the state feel that the fund was helpful, but too small. California, for example, has a similar program with a $10 million appropriation which, when leveraged, can guaranty $40 million in loans.

**Recommendation:** The Legislature should consider reinstating the Texas Export Loan Guarantee Fund (TELF).

Reinstatement of the Fund would allow State appropriations to be combined with private sector dollars. This reinstatement would increase existing sources of trade financing. The State will face increased expenditures equal to the size of the annual fund budget. However, guaranty fees can offset the administrative monies.

**Foreign Office in Mexico City**

The State of Texas is the second largest exporting state in the nation. Mexico is by far our largest trading partner. As such, exports to Mexico are important to the health of the Texas economy.

Securing the continuation and enhancing the support of the Foreign Office in Mexico City would help improve Texas exports to not only Mexico, but to Central and South America as well.

The following recommendation was presented to, but not accepted by this Committee regarding the level of funding for this office.

The Legislature should consider an increase in funding for the State of Texas Foreign Office in Mexico City.

**International Student Exchange Programs**

Experience with foreign travel can provide critical training for Texas students who are preparing for careers that involve international business. The most effective, cost-efficient, and academically sound ways for students to gain international experience is through reciprocal student exchange programs in which Texas students trade places with counterparts at foreign institutions for a designated period of time, generally one or two academic semesters. The students participating in these exchanges pay their own tuition at their home institutions often retaining access to financial aid, and simply change places with students from the cooperating foreign institution.
Unfortunately, Texas students have not been able to take advantage of these reciprocal arrangements as have students from public institutions in most other states. Two problems inhibit the ability of Texas institutions to enter into reciprocal exchange agreements. First, foreign exchange students coming to Texas cannot officially enroll in the Texas institution without paying tuition directly to that institution, which discourages willingness of foreign schools to enter into exchange agreements with Texas schools. Second, under current state regulations, exchange students coming to Texas are subject to the requirements of the Texas Academic Skills Program (TASP), further discouraging foreign schools from entering into exchange agreements with Texas public institutions.

It is proposed that Texas higher education institutions be allowed to enter into student exchange agreements that involve the following: a) reciprocal tuition waivers with comparable overseas institutions and formal enrollment of exchange students from such institutions without payment of state tuition, providing that Texas students are accorded the same privilege at the foreign institution; and b) exempting exchange students from the TASP requirement. The exemption from TASP for overseas participants in exchange programs is similar to the exemption provided by Section 51.929 of the Education Code for participants in the national student exchange program.

There are no fiscal implications for the State from this proposal because tuition and fees are in fact paid by each student at his or her home institution. Enrollments of foreign students in Texas institutions would not be reported for state formula funding of credit hours. Tuition and fees are paid to the Texas institution by the Texas student studying at the overseas institution. From an institutional perspective, the only additional cost is that associated with record keeping and reporting.

Technical and Vocational Training

The international marketplace demands cutting-edge technology and high quality products that can only be provided by a highly skilled industrial workforce. The current primary and secondary education systems do not adequately prepare young people for industrial and technical careers, despite a growing demand for qualified high school graduates. Although Texas has several technical, junior and community colleges with acceptable courses, these institutions do not adequately meet industry's needs for skilled workers and craftsmen. Other states have already begun to respond to this need. For example, South Carolina has created nine trade learning centers that are not only helping fulfill the needs of home-grown companies, but are contributing to the state's efforts to attract international investment as well (e.g., the BMW plant near Spartanburg).

There is a shortage of apprenticeship certification programs between businesses and Texas schools. Texas is the 12th largest economy in the world, but from a labor-skills standpoint, Texas cannot compete with export-oriented economies that have these apprenticeship programs.

The Smart Jobs Program helps companies train employees after they have already been hired. What is needed, however, is a statewide apprenticeship certification system for junior high school and high school students to prepare them for the future needs of Texas companies, many of which are exporters. In this regard, Texas would not have to reinvent the wheel.

A model of a successful apprenticeship certification program is already available, the German youth training system. This type of program will encompass the following:

1. Improve vocational facilities at the junior high school and high school levels;

2. Launch a statewide cooperative apprenticeship certification program involving Texas companies, the Texas Education Agency, and local school districts, and provide tax or other financial incentives to companies that participate; and

3. The cost of a beginning program is estimated to be $15 million annually and should be expanded substantially...
into the new century. Possible sources for direction and funding could be the Smart Jobs Program or the Job Skills Program.

Creating a skilled workforce capable of producing the technology-based, high quality, market-oriented products that allow Texas manufacturers to compete in the global economy would have the following long-term impacts:

1. Sustained growth for existing Texas manufacturers of all sizes;
2. Lower unemployment, especially among teenagers and young adults;
3. Lower crime levels, especially among teenagers and young adults; and

Short-term impacts include lower tax revenues or higher expenditures due to incentive payments to participating companies, but the long-term benefits are numerous. The most important benefit to Texas from an educated workforce is a stronger state economy and employment base capable of producing substantially higher tax revenues. The following recommendation was presented to, but not accepted by, the Committee.

The Legislature should consider providing more resources for vocational training as well as incentives to manufacturing exporters to offer apprenticeship training.

Business Curricula Focus

Traditionally, business programs have focused on preparing students for employment in large companies. However, the largest spur to job growth in Texas and the nation is coming from small- and medium-sized businesses. Business-related offerings at Texas' educational institutions should reflect this shift. The following recommendation was presented to, but not accepted by, the Committee because it was decided the Senate Education Committee was a more proper forum.

The Legislature should consider encouraging the schools of business at state-supported universities to expand their curricula to prepare students to succeed in small and medium-sized business.