United States General Accounting Office

GAO

Report to Congressional Requesters

March 2000

# U.S.-MEXICO BORDER

# Despite Some Progress, Environmental Infrastructure Challenges Remain



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GAO/NSIAD-00-26

# Contents

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United States General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

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March 3, 2000

The Honorable Henry Bonilla
The Honorable Bob Filner
The Honorable Ruben E. Hinojosa
The Honorable Solomon P. Ortiz
The Honorable Sylvestre Reyes
The Honorable Ciro D. Rodriguez
House of Representatives

Many communities on both sides of the nearly 2,000-mile U.S.-Mexico border continue to face significant environmental problems. To varying degrees, these communities lack systems for clean drinking water, wastewater treatment, and solid waste disposal. These problems were exacerbated by large gains in population associated with rapid industrial growth that has occurred over the past 3 decades. In response, various U.S. and Mexican federal, state, and local agencies have worked to improve border environmental infrastructure over the years. With the expectation of greater industrialization along the border as a result of the 1993 North American Free Trade Agreement, the United States and Mexico created and funded two binational organizations to promote the planning and financing of environmental infrastructure projects in the border region: the Border Environment Cooperation Commission (referred to throughout the report as the Border Commission) and the North American Development Bank (referred to throughout the report as the Bank). The Border Commission reviews projects to certify that they meet established criteria for technical and financial feasibility, are environmentally sound and self-sustaining, and are supported by the public. The Bank was established to provide financing for projects certified by the Border Commission.

You expressed concern about the current status of the border environmental infrastructure and the performance of responsible institutions and programs. As agreed with your offices, this report provides information and analysis on (1) the nature and extent of environmental infrastructure problems along the border, (2) the programs and funding levels in place to address these problems, and (3) the impediments to improving the environmental infrastructure. This report provides a more in-depth analysis of the environment infrastructure issues than were presented in our July 1999 report.[1] In addition, we are preparing another report that focuses on commercial traffic congestion at the border.

Our work focused primarily on the three environmental infrastructure areas being addressed by the two key binational institutions: water, wastewater, and solid waste. To gain perspectives on the nature and extent of border environmental infrastructure needs and the challenges communities face, we conducted detailed analyses at five key sister cities: San Diego-Tijuana, El Paso-Ciudad Juarez, Brownsville-Matamoros, Calexico-Mexicali, and Douglas-Agua Prieta. We also interviewed officials from the relevant federal, state, and local agencies as well as nongovernmental organizations in the United States and Mexico. Appendix II contains additional information on our scope and methodology.

## Results in Brief

Despite binational, federal, state, and local efforts, communities along both sides of the U.S.-Mexico border continue to face environmental infrastructure problems. According to a binational assessment completed in 1999, 12 percent of the border population did not have access to potable water, 30 percent lacked access to wastewater treatment facilities, and 25 percent needed access to solid waste disposal facilities. It estimated that $3.2 billion is needed to correct existing water, wastewater, and solid waste infrastructure shortfalls on both sides of the border and that about 77 percent of this amount is needed for wastewater treatment. As of September 1999, U.S. and Mexican border communities had submitted 281 border environmental infrastructure projects to the binational Border Environment Cooperation Commission for assistance in planning and developing sustainable projects. Of these projects, 162 qualified for further consideration based on technical and economic feasibility. Most incorporated communities on the U.S. side of the border have

[1]See *U.S.-Mexico Border: Issues and Challenges Confronting the United States and Mexico* (GAO/NSIAD-99-190, July 1, 1999).

environmental infrastructure in place; however, in some communities, it is inadequate and in need of upgrading or expansion. Small, unincorporated U.S. border communities, such as colonias settlements, generally lack access to potable water and wastewater treatment. On the Mexican side of the border, the problems are more acute. Although access to safe drinking water has improved on the Mexican side of the border, currently only 34 percent of wastewater is treated. In a few areas, raw or insufficiently treated wastewater eventually flows into drinking water sources that are shared by both countries. This is the situation in Ciudad Juarez, Mexico, which has approximately 1.1 million people. The city is scheduled to get its first wastewater treatment facilities in the year 2000. In addition to the above cited problems, only about half of the household solid waste collected from border communities in Mexico is deposited in sanitary landfills.

Since 1994, through various initiatives, the United States and Mexico have provided approximately $3.1 billion to address border environmental infrastructure needs. These funds have supported the planning and construction of projects that will lead to improved wastewater treatment and other environmental infrastructure. The United States has contributed nearly 80 percent of this amount. The leading source of U.S. funding has been the Environmental Protection Agency, which has provided $1.2 billion in grants to states and local communities to help reduce the cost of environmental projects. During this same time period, Mexico has contributed $648 million, or about 20 percent, of the funding provided to address border environmental infrastructure needs.

There are numerous impediments to meeting the environmental infrastructure needs of border communities. These impediments vary by community, but key among them is the lack of human capital to plan, implement, and maintain environmental infrastructure and the limited ability of communities to obtain affordable financing for the construction of needed projects. The Border Environment Cooperation Commission and the North American Development Bank were created to address these impediments. However, these organizations' roles, particularly the Bank's, are likely to continue to be limited unless there are changes in its loan rates, which have been unattractive or unaffordable for many border communities. Moreover, binational efforts to address communities' needs are hampered by a lack of a strategic plan that addresses impediments to environmental infrastructure improvements. Given the existing infrastructure needs and the expected population growth, environmental

infrastructure improvements on the border are likely to be limited unless some of the key impediments are addressed.

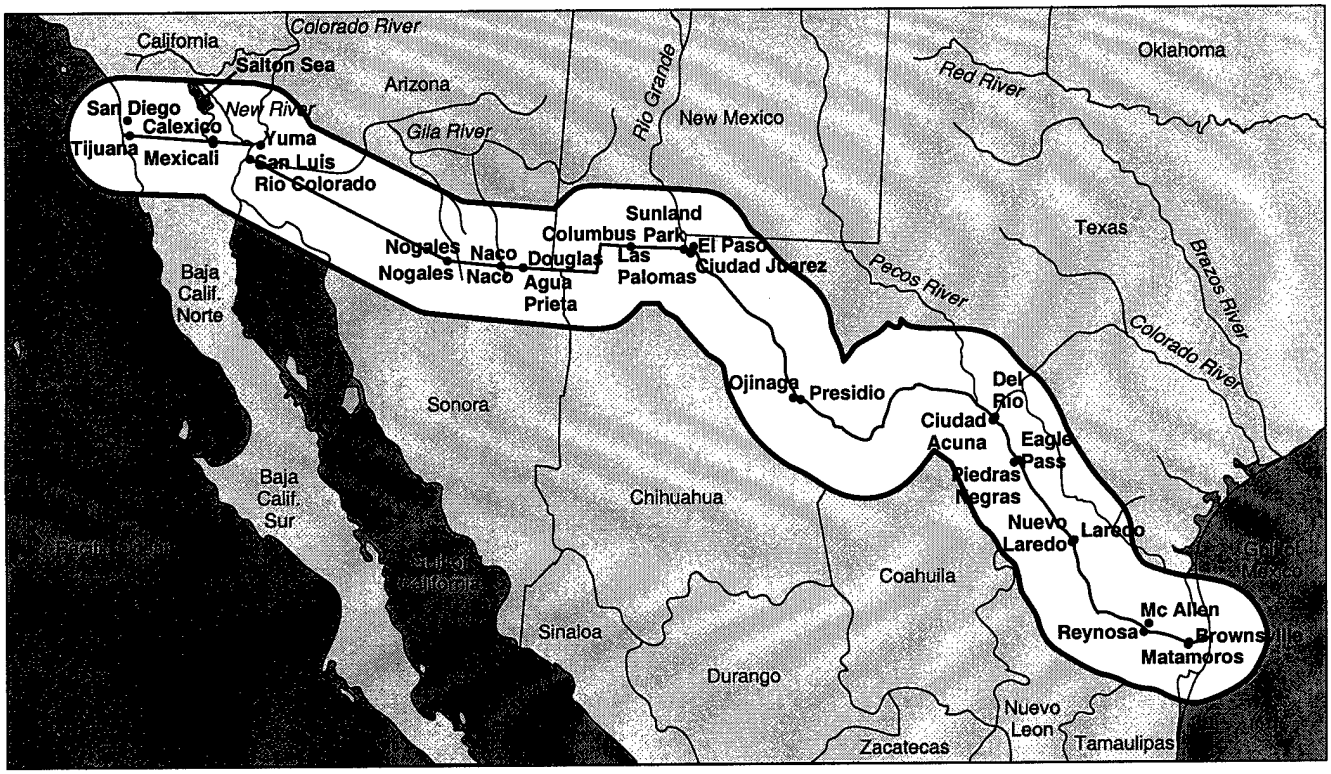
This report makes recommendations that would provide communities access to more affordable financing and establish a strategic plan to more effectively address environmental infrastructure problems along the border.

## Background

The nearly 2,000-mile U.S.-Mexico border extends from the Gulf of Mexico in the east to the Pacific Ocean in the west. The U.S.-Mexico border region, as defined by the La Paz Agreement of 1983,[2] is 100 kilometers (62 miles) wide on each side of the border. Four U.S. states (Arizona, California, New Mexico, and Texas) and six Mexican states (Baja California, Sonora, Chihuahua, Coahuila, Tamaulipas, and Nuevo Leon) make up the border. About 92 percent of the population of the U.S.-Mexico border region live in 14 sister or twin cities that straddle the border. These sister cities often constitute binational and bicultural "single" communities, even though legally they are separate cities in separate countries. Many people live on one side of the border and commute daily to work or school on the other side. Figure 1 depicts the border region, U.S. and Mexican states, and the 14 sister cities.

[2]The 1983 Agreement for the Protection and Improvement of the Environment in the Border Area, commonly referred to as the "La Paz Agreement."

**Figure 1: U.S.-Mexico Border Region and 14 Sister Cities**




Source: GAO.

The border region has experienced a dramatic increase in its population since 1965, when the Mexican government initiated a program to foster much-needed job growth in northern Mexico. The program sponsored a maquiladora, or export assembly, industry,[3] which capitalized on the region's proximity to the United States and Mexico's low-cost labor. As jobs were created in these new maquiladora plants, more Mexican workers moved to border cities, which grew dramatically. For example, the population of Ciudad Juarez, Chihuahua, the sister city to El Paso, Texas,

[3]The maquiladora program allows duty-free imports into Mexico of materials and components from foreign suppliers. These processed materials are assembled into finished products that must then be re-exported from Mexico unless special approval is given to sell them in the Mexican market.

grew from about 262,000 in 1960, prior to the start of the maquiladora industry, to an estimated 1.1 million by 1999. The number of maquiladora plants and maquiladora employees in Ciudad Juarez, Chihuahua, increased from 102 plants and 36,943 employees in 1980 to 254 plants and nearly 216,945 employees in March 1999. The overall border population was about 4 million in 1980, while the latest figures showed almost 10.5 million in 1997. Current population projections forecast a doubling of the border population over the next 20 years.

## Many Border Communities Have Environmental Infrastructure Shortfalls

Communities on both sides of the border face environmental problems associated with water supply, wastewater treatment, and solid waste disposal. A 1999 binational assessment prepared for the Border Environment Cooperation Commission estimates that about $3.2 billion is needed to address existing environmental infrastructure shortfalls. The need for environmental infrastructure is far greater on the Mexican side of the border, where many communities lack a clean and safe drinking water supply, proper wastewater treatment, or solid waste disposal facilities. While most incorporated (legally established) border communities on the U.S. side have environmental infrastructure in place, in some locations it is in need of repairs, upgrading, and/or expansion. These environmental conditions have presented increased health concerns along both sides of the border.

### Recent Assessment of Border Environmental Infrastructure Needs

The Southwest Center for Environmental Research and Policy,[4] a consortium of five U.S. universities and four Mexican universities, prepared a study for the Border Environment Cooperation Commission in 1999 that estimated that $3.2 billion would be needed to meet existing infrastructure requirements on both sides of the border for potable water, wastewater treatment, and solid waste disposal. About 77 percent of this amount is needed for wastewater treatment. The Center's approach was to identify and compile existing border infrastructure needs studies that had been identified by U.S. states and the U.S. and Mexican federal

[4]The Southwest Center for Environmental Research and Policy study was funded by the Environmental Protection Agency and the Border Environment Cooperation Commission. The Center was established in 1990 to find solutions to the acute air and water quality and other environmental problems that affect the U.S.-Mexico border. Since 1990, the Center has implemented more than 150 projects addressing air quality, water quality and quantity, environmental health and education, and hazardous waste.

governments. The Center determined that 12 percent of the border population did not have access to potable water, 30 percent lacked access to wastewater treatment facilities, and 25 percent needed access to solid waste disposal facilities. Table 1 shows a breakdown of the year 2000 U.S. and Mexican environmental infrastructure needs.

**Table 1: Estimated Costs of Year 2000 Environmental Infrastructure Shortfalls Along the Southwest Border**

| | Total population (millions) | Population in need (millions) | Percent of population in need | Cost estimates (millions) |
|---|---|---|---|---|
| **Mexico border municipalities** | 9.6 | | | |
| Potable water | | 1.72 | 18 | $344 |
| Wastewater | | 3.17 | 33 | 951 |
| Solid waste | | 4.04 | 42 | 280 |
| **Subtotal** | | | | $1,575 |
| **U.S. border counties** | 6.5 | | | |
| Potable water | | 0.21 | 3 | $125 |
| Wastewater | | 1.72 | 27 | 1,550 |
| Solid waste | | N/A | N/A | N/A |
| **Subtotal** | | | | $1,675 |
| **Total U.S.-Mexico border counties** | 16.1 | | | |
| Potable water | | 1.93 | 12 | $469 |
| Wastewater | | 4.89 | 30 | 2,501 |
| Solid waste | | 4.04 | 25 | 280 |
| **Total** | | | | **$3,250** |

Legend

N/A = Not available for U.S. counties.

Note: Population estimates are based on calculated growth rates applied to U.S. and Mexico 1990 Census data.

Source: Border Environment Cooperation Commission-provided data.

During 1995-99, U.S. and Mexican border communities submitted 281 environmental infrastructure projects to the binational Border Environment Cooperation Commission for assistance in planning and developing sustainable projects. Of this amount, 162 met initial screening criteria for project certification, which includes such requirements as being located within the defined border area and related to water, wastewater

treatment, or solid waste disposal. As of September 1999, 31 of the 162 have been certified and 131 projects remain in the pipeline.

## Water Supply

Population and industrial growth along the border has created large demands for clean and safe drinking water. According to Mexico's National Water Commission, about 12 percent of the Mexican border population did not have access to drinking water in 1997. The 1999 needs assessment discussed earlier estimated that by the year 2000, 18 percent of the Mexican border population would not have access to drinking water. In the United States, the lack of safe drinking water is associated primarily with colonias–small unincorporated communities–which are located mainly in Texas. A 1998 Texas A&M University[5] document reported that 50 percent of the estimated 350,000 colonias residents lacked access to safe drinking water. In addition, due to population growth, major border sister cities such as San Diego, California/Tijuana, Baja California Norte, and El Paso, Texas /Ciudad Juarez, Chihuahua, may face serious drinking water shortages early in the next century unless additional sources of potable water are found.

## Wastewater Treatment

Wastewater treatment is also a significant environmental issue on the border. On the U.S. side of the border, the majority of municipalities have Environmental Protection Agency-approved, publicly owned, wastewater treatment plants. In some communities (such as Heber, California; Douglas, Arizona; and Mercedes, Texas) water and wastewater treatment systems are at capacity and are being upgraded or expanded. Moreover, U.S. colonias, which are typically outside of established water districts, generally do not have access to sewer and wastewater disposal systems. In 1997, the Environmental Protection Agency estimated the colonias' population to be over 390,000 people in Texas and over 42,000 in New Mexico.

On the Mexican side of the border, Mexico's National Water Commission estimated that, in 1997, while 69 percent of the population lived in residences connected to sewage collection systems, only 34 percent of the collected wastewater was treated. In a few communities, raw or insufficiently treated wastewater eventually flowed into surface and

[5] *Colonias Factbook* (College Station, Tx: Texas A&M University, College of Architecture, Center for Housing and Urban Development, 1998).

drinking water sources shared by both countries. This is the case in cities like Ciudad Juarez, Chihuahua, and Matamoros, Tamaulipas, which currently have no wastewater treatment systems.

## Solid Waste Disposal

Many communities in the border region also lack the infrastructure to collect and properly dispose of solid waste. Solid waste disposal problems in the United States are mainly restricted to colonias, where solid waste collection is often inconsistent and inadequate. Mexican border cities often have waste management institutions that are beset with administrative deficiencies and lack adequate legal authority to regulate and collect user fees for services. These institutions often have too few reliable trucks to collect the garbage. As a result, according to Mexico's National Water Commission, while about 86 percent of household waste was collected in 1997, only 53 percent of this amount was deposited in sanitary landfills.

## Other Environmental Concerns

In addition to concerns about water, wastewater, and solid waste, hazardous waste disposal and air pollution are growing problems in the border region. In Mexico, most hazardous waste, defined as waste that is corrosive, reactive, explosive, toxic, ignitable, or bio-infectious, in the border region is generated by maquiladora plants. While this waste is supposed to be returned to the country of origin of the raw materials, the Mexican Secretariat for Environment, Natural Resources, and Fisheries has identified several hazardous waste disposal problems in Baja California, including a lack of treatment, neutralization, or incineration systems for hazardous and toxic waste. Mexico currently has only one hazardous waste disposal facility, and the Secretariat has recognized the need to develop additional hazardous waste infrastructure throughout Mexico.

Air quality is also a major problem in the border region because many residents of border cities are exposed to health-threatening levels of air pollution from a variety of sources. According to the Environmental Protection Agency, 14 border cities in 1999 exceeded or were expected to exceed at least one of the ambient air quality standards set by their respective federal governments. Rapid urbanization and industrialization are responsible for most of the air pollution problems in the border region. The citizens of El Paso, Texas; nearby Sunland Park, New Mexico; and Ciudad Juarez, Chihuahua, have long been exposed to high levels of air pollution. According to a local binational task force for improving air quality,[6] the sources of this pollution are emissions from the increasing vehicular traffic in the area, dust from unpaved roads and the surrounding desert, open burning, fireplaces and wood-burning stoves, and industrial activity.

## Public Health Concerns Along the Border

Contamination of air, water, and soil by solid waste, raw sewage, and untreated wastewater, which facilitates the growth of parasites, bacteria, and other pollutants, is suspected to be a key factor contributing to the presence of certain diseases in border populations. These include respiratory diseases, elevated blood lead levels in children, cancer, hepatitis A, and infectious gastrointestinal diseases. For example, according to Texas officials, hepatitis A occurred on the U.S. side of the border at rates from 2 to 5 times the national average between 1994 and 1997. According to the Interhemispheric Resource Center,[7] about one-third of the U.S. tuberculosis cases reported for the first 10 weeks of 1998 were from the four U.S. border states. An outbreak of a disease on one side of the border poses a potential threat to both countries because of the daily movement of people back and forth between the United States and Mexico.

[6]The Joint Advisory Committee for the Improvement of Air Quality in the Paso del Norte Air Basin was established in 1996 pursuant to appendix I to annex V of the 1983 La Paz Agreement, with the mission to recommend to the Border XXI Air Work Group policies to improve air quality in the area.

[7]The Interhemispheric Resource Center is a nonprofit organization in New Mexico that was founded in 1979. This information on tuberculosis was reported in the May 1998 issue of its monthly bulletin, titled *Borderlines*.

## Institutions and Programs That Address Border Needs

The United States and Mexico, through a variety of binational, federal, state, and local initiatives, have directed a total of about $3.1 billion toward border environment infrastructure needs since 1994. The United States has contributed nearly 80 percent of this amount. Binational efforts have been led by the Border Environment Cooperation Commission and the North American Development Bank, which have become the focal points for promoting the development and financing of environmental infrastructure on both sides of the border. The U.S. Environmental Protection Agency has provided the most funding, $1.2 billion of the $3.1 billion provided by U.S. and Mexican federal, state, and local agencies to help reduce the cost of environmental projects.

## The Border Environment Cooperation Commission

The Border Environment Cooperation Commission's primary function is to certify that proposals submitted by border communities for environmental infrastructure projects meet criteria for technical and financial feasibility and that the projects are environmentally sound, self-sustaining, and supported by the public. The Border Commission also assists states and localities in the preparation, development, implementation, and oversight of environmental projects in the border region. Based on guidance in the Border Commission's charter, the board of directors has limited its area of consideration to water, wastewater, and solid waste disposal. The Border Commission emphasizes the importance of project sustainability in its certification process because, in the past, projects have been built in poor communities with grants and other assistance that could not be properly maintained due to the communities' limited institutional capacity and financial resources. The Border Commission also provides technical assistance to border communities with project development activities, including devising plans, creating project designs, and performing environmental assessments. According to Border Commission officials, the process to develop and certify a project generally takes between 3 and 5 years, depending on (1) the complexity of the project, (2) the level of development a project is at when submitted, (3) the institutional capacity of the community, and (4) the amount of technical assistance the Border Commission needs to provide to the community. (Table 3 in app. I provides further details on the Border Commission's project identification and development process.)

As of September 1999, the Border Commission had certified 31 projects–12 in Mexico and 19 in the United States. Twenty-eight projects are for water and wastewater treatment systems, and 3 are for solid waste disposal

facilities. The total estimated construction cost of these projects is $680.2 million, and, when completed, they are expected to benefit a total of 6.7 million people. (See table 4 in app. I for more details on the 31 Border Commission-certified projects.)

The United States and Mexico provide annual appropriations to the Border Environment Cooperation Commission to cover operational expenses. In addition, most of the Environmental Protection Agency's technical assistance funding to U.S. and Mexican communities for water or wastewater treatment projects is provided through the Border Commission. (See table 6 in app. I for more details on Border Commission funding.)

## North American Development Bank

Only projects certified by the Border Environment Cooperation Commission qualify for construction financial assistance from the North American Development Bank. The Bank's primary purpose is to facilitate financing for the development, execution, and operation of environmental infrastructure projects. The Bank may make loans and/or loan guarantees, and it also administers Environmental Protection Agency grant funds through the Border Environmental Infrastructure Fund. Established in 1997, the Border Environmental Infrastructure Fund provides grants to communities to reduce the total cost of needed projects. These grant funds may be applied to water and wastewater projects on the U.S. side of the border and on the Mexican side, if the infrastructure deficiency affects both sides of the border. If grant funds are used on the Mexican side of the border, Mexico must provide an equal border investment. The Bank also provides technical assistance to communities to help them develop the financial and administrative capacities of utility managers and their staffs.

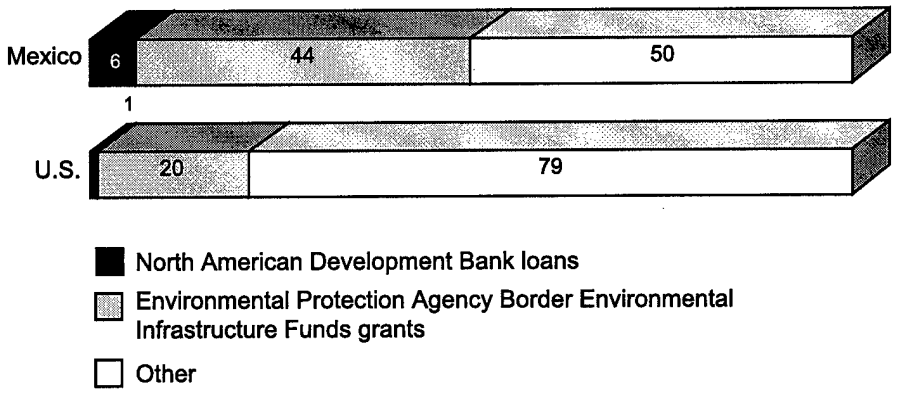
The United States and Mexico agreed to contribute equally to the capitalization of the bank. The agreement called for a total of $3 billion–$450 million in paid-in capital and an additional $2.55 billion in callable capital.[8] Ten percent of the paid-in capital was earmarked to community adjustment and investment activities in both countries. To date, each country has contributed $174.4 million, or 78 percent, of the Bank's paid-in capital, with the remaining paid-in capital to be paid by September 2004.

[8]The Bank's paid-in capital is available to support borrowing for its international programs. Callable capital is composed of funds that the governments are to provide to the Bank, if required, to meet outstanding debt obligations or guaranties issued by the Bank.

As of September 1999, the Bank had obligated a total of $154.5 million in loans and grants to fund construction for 20 Border Commission-certified projects. Of the total, $11.2 million was provided through direct loans. These loans represent only 3.2 percent of the Bank's total paid-in capital contributed to date. The biggest source of the Bank's assistance has been through Border Environmental Infrastructure Fund grants, which had an initial funding of $170 million. All but 4 of the 20 Bank-financed projects had such grant funding. Since the creation of the Border Environmental Infrastructure Fund, $143.4 million have been obligated—representing 93 percent of the total funds provided through the Bank. Applications for $34.4 million were pending certification by December 1999, which will deplete the initial funding. However, as of December 1999, the Environmental Protection Agency allocated an additional $41 million to the Border Environmental Infrastructure Fund. According to North American Development Bank officials, without continued funding for Border Environmental Infrastructure Fund grants, environmental infrastructure development along the border will be jeopardized.

Figure 2 shows the breakdown of all funding sources for the 20 projects. The Bank provided $85.2 million, or 21 percent, of U.S. project costs, and $69.3 million, or 50 percent, of Mexican project costs through loans or Environmental Protection Agency grants. The grants, however, amounted to 96 percent and 88 percent of the Bank's funds provided to U.S. and Mexican projects, respectively. (See table 7 in app. I for more details on the 20 Bank-financed projects.)

**Figure 2: Percentage Breakdown of Funding for Bank-financed Projects, 1995-99**




Note: Other funding sources include loans from international, binational, federal, state, and local agencies and programs.

Source: North American Development Bank-provided data.

## Other Binational Efforts to Address Environmental Infrastructure

The United States and Mexico have used other binational efforts to help deal with environmental issues along the border. The International Boundary and Water Commission, established in March 1889, is responsible for maintaining the boundary between the United States and Mexico and managing issues involving the waters of the Rio Grande and Colorado rivers. Its responsibilities include resolving water quality problems and designing, constructing, operating, and maintaining wastewater treatment facilities along the border. The Boundary Commission constructed and maintains wastewater treatment facilities in the South Bay area of San Diego, California, and Nogales, Arizona, that involved a total U.S. federal government investment of $321.9 million. The Boundary Commission also has administered an Environmental Protection Agency Facilities Management Planning Grant Program that provided technical assistance to communities attempting to develop water or wastewater projects for Border Commission certification. With the creation of the Border Environment Cooperation Commission and the North American Development Bank, the role of the Boundary Commission in transboundary environmental infrastructure issues has been reduced.

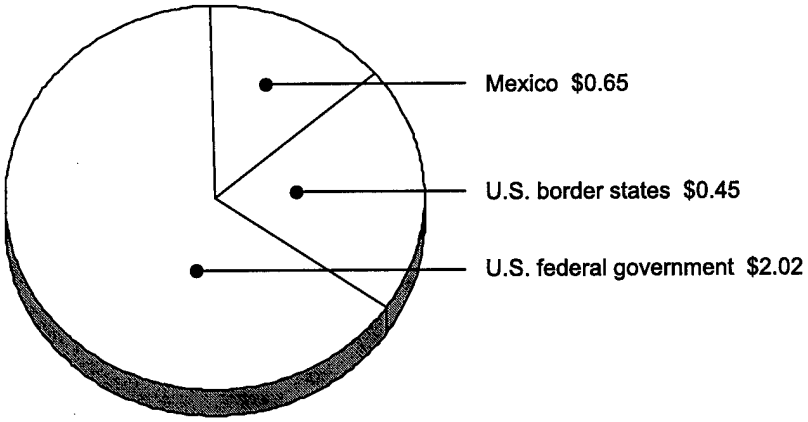
The United States and Mexico have also created mechanisms to help address border environmental issues. In 1992, the United States and Mexico issued the Integrated Environmental Plan for the U.S.-Mexico

Border Area, which linked long-term economic growth and environmental protection. Specifically, the plan recognized that economic growth along the border resulted in significant increases to the border population, which in turn, overtaxed the existing environmental infrastructure system. The United States and Mexico subsequently developed an expanded planning and coordination mechanism known as Border XXI. Border XXI is intended to be a comprehensive program emphasizing three strategies: (1) public participation in project development; (2) decentralized environmental management and building the capacity of local and state institutions to deal with environmental problems; and (3) interagency cooperation to maximize available resources, avoid duplicative efforts on the part of government and other organizations, and reduce the burden that coordination with multiple entities places on border communities. Many officials involved in border environmental issues believe that Border XXI has become a useful forum for discussing environmental issues. It has (1) provided an inventory of past and ongoing environmental improvement projects in the border region, (2) listed broad objectives for each of the nine resource working groups, and (3) developed indicators to measure the success of efforts to improve the border environment. It has not, however, identified environmental infrastructure needs on the border or prioritized those needs.

## U.S. and Mexico's Federal and State Funding Efforts Since 1994

The United States and Mexico have funded a number of federal programs and activities directed at improving the environmental infrastructure in the border region. In addition, U.S. border states fund programs to address environmental infrastructure issues. Developing information on the amount of funding directed at environmental activities along the border is complicated by a number of factors, including the existence of a variety of funding sources and funding mechanisms (for example, the State Revolving Fund). Thus, the information presented in this report contains a comprehensive picture of funding that has been made available for the design and construction of environmental infrastructure as well as funding for the operating expenses of key binational organizations dealing with environmental issues along the border. As shown in figure 3, since 1994, U.S. federal agencies have provided approximately $2 billion; U.S. state and local governments have provided approximately $450 million; and Mexico has provided approximately $648 million to correct infrastructure shortfalls.

**Figure 3: U.S.-Mexico Border Funding, 1994-99 (in billions)**




Source: GAO analysis based on data gathered from the Departments of Agriculture, Housing and Urban Development, the Interior, State, and the Treasury; the Environmental Protection Agency; the states of Arizona, California, New Mexico, and Texas; the Border Environment Cooperation Commission; the International Boundary and Water Commission; and the North American Development Bank.

In the United States, six federal agencies and the four border states–Texas, Arizona, New Mexico, and California–provide funding that addresses environmental infrastructure needs on the border. Most of the U.S. federal assistance comes from the Environmental Protection Agency and is available for water and wastewater treatment facilities through state revolving funds administered by the four border states.[9] Federal assistance is also available to communities through the Department of Housing and Urban Development's Community Development Block Grant Program, the Department of Agriculture's Rural Utility Grant Program, and, to a lesser extent, the Department of the Interior. The Department of State also provides funding directly to the Border Commission and the Boundary Commission previously discussed for operational expenses. Border states

[9]With the passage of the amendments to the Clean Water Act in 1987, the U.S. Congress created the State Revolving Fund program. Under this program, each state and Puerto Rico provide independent and permanent sources of low-cost financing for a range of water quality infrastructure projects. States have a wide variety of options, including loan, refinancing, purchasing, or guaranteeing local debt, and purchasing bond issuance. As payments are made, funds are recycled to fund additional projects. Funds to establish or capitalize the State Revolving Fund program are provided by the federal (83 percent) and state (17 percent) governments.

also provide some assistance for environmental infrastructure directly to local communities.

Several federal and state programs are directed at providing colonias residents with basic water and sanitation services. The Environmental Protection Agency and the Departments of Agriculture and Housing and Urban Development all provide grants for establishing water service for colonias and other depressed areas. The state of Texas supplements the Environmental Protection Agency grants with state funds to provide these services. Texas also manages a program for rehabilitating colonias housing, including installing septic systems for homes with no access to sewer lines.

In Mexico, the federal, state, and local governments administer a number of programs to improve Mexican border communities' environmental infrastructure. Mexico's National Water Commission has been the major contributor to Mexico's efforts and has provided about $174 million to address environmental infrastructure shortfalls.

Table 2 provides more details on the sources of the U.S. and Mexico's funding of border environmental activities.

**Table 2: U.S. Federal, State, and Local Funding and Mexican Organization Funding for Border Environmental Activities, Fiscal Years 1994-99**

| | Amount |
|---|---|
| **U.S. federal funding** | |
| Department of Agriculture | $ 183,422,306 |
| Department of Housing and Urban Development | 210,729,949 |
| Department of the Interior | 91,041,254 |
| Department of State[a] | 143,954,000 |
| International Boundary and Water Commission | |
| Border Environment Cooperation Commission | |
| Department of the Treasury[b] | 174,375,000 |
| North American Development Bank | |
| Environmental Protection Agency | 1,221,764,357 |
| **Total U.S. federal funding** | **$ 2,025,286,866** |

Continued

| | |
|---|---|
| **U.S. state and local funding** | |
| Arizona | $ 357,555 |
| California | 226,067,586 |
| New Mexico | 6,310,014 |
| Texas | 217,647,354 |
| **Total U.S. state and local funding** | **$ 450,382,509** |
| | |
| **Mexico funding** | |
| Border Environment Cooperation Commission | $ 6,499,593 |
| North American Development Bank | 174,375,000 |
| National Water Commission | 173,956,556 |
| International Boundary and Water Commission | 172,691,992 |
| Credit | 6,373,100 |
| State government | 82,331,800 |
| Local government | 31,515,000 |
| **Total Mexico funding** | **$ 647,743,041** |
| | |
| **Total U.S.-Mexico border funding[c]** | **$ 3,123,412,416** |

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[a]Total expenditures by the Department of State consist of $135,864,000 for the International Boundary and Water Commission and $8,090,000 for the Border Environment Cooperation Commission. These funds also include operational expenses for these organizations.

[b]Total expenditures by the Department of the Treasury are allocated to the North American Development Bank. The U.S. and Mexican contributions to the Bank include 10 percent that must be dedicated to community adjustment and investment activities.

[c]Table includes 1999 estimates.

Source: GAO analysis based on data gathered from the Departments of Agriculture, Housing and Urban Development, the Interior, State, and the Treasury; the Environmental Protection Agency; the states of Arizona, California, New Mexico, and Texas; the Border Environment Cooperation Commission; the International Boundary and Water Commission; and the North American Development Bank.

In recognition of the range of problems that border communities face, President Clinton established an Interagency Task Force on the Economic Development of the Southwest Border in May 1999. The purpose of the Task Force is to coordinate and better leverage existing federal and local efforts in addressing a multitude of challenges on the Southwest border, including environment and health care issues. In November 1999, the Task Force issued an interim report that discussed the various federal, state, and local efforts underway to address southwest border issues and outlined various broad objectives to pursue. Environmental objectives include addressing environmental health and infrastructure issues and the need to

preserve border ecosystems. The Task Force plans on issuing its first annual report in April 2000.

## Impediments to Border Infrastructure Development

There are several impediments that affect environmental infrastructure development along the U.S.-Mexico border. These impediments include (1) the lack of human capital, that is, the technical capacity of some communities on both sides of the border to plan, implement, and maintain environmental infrastructure; (2) the North American Development Bank's loan rates, which have been unattractive or unaffordable for many of the border communities; (3) the limited availability of grant funds for solid waste disposal projects; and (4) the absence of a plan that identifies total environmental infrastructure needs and develops a strategy for meeting them.

### Some Border Communities Lack Human Capital to Develop and Sustain Environmental Infrastructure

Human capital limitations, including the lack of technical skills to design, build, or manage utility systems, on both sides of the border, prevent communities from planning and developing infrastructure projects and managing them when built. According to Border Commission and Bank officials, they have developed programs to provide technical assistance to communities lacking these skills. For example, the Bank developed the Institutional Development and Cooperation Program. This program attempts to develop utility management skills for those communities applying for Border Commission certification. Some U.S. communities have received technical assistance through this program. The Border Commission has also provided technical assistance to 28 U.S. communities through its Project Development Assistance Program. Funded by Environmental Protection Agency grants, this program is designed to assist communities in translating an environmental infrastructure need, such as wastewater treatment, into a designed project that is ready for certification review.

Mexican local officials generally have limited experience in conducting the required technical, economic, and fiscal analyses of proposed infrastructure projects or the experience to operate them when built. Local Mexican administrations change every 3 years, and personnel in key management positions are usually removed, taking with them the experience gained while in office. Technical personnel, such as utility directors, often only stay in their positions an average of 1.8 years, according to Border Commission officials.

Although efforts are underway to improve the institutional capacity of Mexican border communities, it will take time. As part of a federal effort to decentralize governmental decision-making, communities have assumed more responsibility for planning and providing public services to their residents. According to Mexican officials, the Border Commission's approach to involving public participation in project development has facilitated its efforts to decentralize responsibility for environmental infrastructure. For example, a state water commission was recently created in Baja California to better plan and administer the water supply to the rapidly growing urban areas throughout the state. Previously, the federal government had been solely responsible for ensuring the quality and quantity of the water in the state. In addition, the Border Commission, the Bank, and U.S. states and municipalities have provided technical assistance to Mexican border communities for utility system evaluations, project design, project financing, and operations and maintenance of environmental infrastructure systems.

## North American Development Bank's Ability to Provide Financial Assistance to Border Communities Has Been Limited

Although the Bank has initiated a number of programs to assist border communities, it has had limited impact in helping them overcome long-standing financial impediments to environmental infrastructure development. Since the Bank became operational in 1994, it has made very few direct loans. Larger communities on the U.S. side generally have lower cost alternatives to finance projects, whereas smaller communities may not be able to afford the Bank's interest rates. Mexican communities also find the Bank's loans to be unaffordable and generally face greater impediments for obtaining environmental infrastructure financing. While Border Environmental Infrastructure Fund grants are available to border communities in need of technical assistance for developing and designing water and wastewater projects, these funds are not available for solid waste projects.

In creating the Bank, the United States and Mexico envisioned it would play a role similar to that of an investment bank by "acting to secure needed equity, grants, and/or other sources of financing from a variety of public and private sources on a project-by project basis." This investment banking role was intended to encourage border communities to depend less on grant financing and more on loans to be repaid through user fees or other dedicated sources of revenue.

Because the Bank was intended to be a self-sustaining entity, potential borrowers must meet standards for creditworthiness that are similar to those of a commercial bank. The Bank's charter also requires that it charge appropriate interest rates and service fees and that it receive suitable compensation for the risk it incurs. Therefore, the Bank's credit guidelines require charging an interest rate at least 1 percent above U.S. Treasury rates for securities having a comparable maturity date. Any changes to the Bank's charter that would affect the Bank's purpose, function, or increase the obligations of the United States must be authorized by Congress.[10] According to Bank officials, as of September 1999, the Bank had two loans to U.S. communities with variable rates ranging between 5.15 and 7.375 percent. The rate is much higher for Mexican communities because the Bank adds a margin to cover its exposure for currency conversion and other factors. For Mexican communities, a representative peso rate for a Bank 15-year loan, in February 1999, was between 25.5 and 27.1 percent.

## Larger U.S. Communities Do Not Seek Bank Loans

Officials in the larger and mid-sized U.S. border cities we visited, including El Paso, San Diego, Brownsville, and Calexico, said that rather than applying for a Bank loan, they would seek lower cost financing through a variety of sources, including State Revolving Funds, municipal bonds, or other grants. For example, the city of San Diego is currently building a wastewater reclamation plant that is projected to cost over $99.6 million. San Diego did not apply for a Bank loan but did obtain a Border Environmental Infrastructure Fund grant totaling $17 million. The balance of the funding will be obtained from other federal grants and municipal tax and revenue certificates of obligation. Bank officials admit that its loans cannot compete with the rates larger U.S. communities can obtain through the State Revolving Fund or issuance of tax-exempt municipal bonds.

[10] 22 U.S.C. 290m(e)(2).

## Small U.S. Communities Face Greater Challenges to Financing Environmental Infrastructure

Some small U.S. communities with limited tax bases may not qualify for loans—not only Bank loans, but the lower cost loans available through State Revolving Funds. In addition, some of these communities do not have the credit rating necessary to raise money by issuing municipal bonds. Bank officials stated that while its loans are primarily intended for smaller communities that do not have access to other types of financing, only two of its direct loans have gone to U.S. communities. Colonias, in particular, do not have the tax base or other credit mechanisms available to most U.S. cities and counties. However, the Bank has developed a program to improve small U.S. border communities' access to financing for environmental infrastructure projects. The Small Communities Initiative would dedicate $1 million of the Bank's net income as grants to each of the four border states.[11] The money would be used, in conjunction with matching funds from the state, to provide lower cost financing to small communities for projects. To date, however, the Bank has not made any disbursements to states under this program.

While several federal and state grant programs exist to provide assistance to colonias residents, several program requirements restrict the use of these funds. According to a Texas state official, federal funds cannot be spent to improve property that is subject to any ongoing litigation, which is often the case in colonias, where land ownership is frequently in dispute. In addition, federal and Texas state funds cannot be used for the many colonias located in flood plains. Further, funds for the Texas Colonia Housing Rehabilitation Program cannot be used unless there are existing water and sewer hookups. Finally, funds cannot be used to establish septic systems in homes if a utility district plans to connect the colonia to a sewer system, even if the connection is projected well into the future. As a result, much of the funding available for environmental infrastructure development in the colonias has not been used. For example, in Texas, a total of $579 million in federal grants, state matching funds, and funds from state bond issues has been allocated for water and sanitation services to colonias since 1989. However, only $337 million of these funds have been spent. According to Texas state officials, many colonias do not qualify for assistance for the reasons just discussed.

[11]The funding is generated from the interest earned from the paid-in capital deposits and loan payments.

## Mexican Communities Face Significant Barriers to Obtaining Project Financing

Insufficient revenues continue to be an impediment to financing and operating projects for most Mexican communities. Under the Mexican constitution, most taxes collected by local communities are deposited with the federal government. Communities are then dependent on allocations from a revenue-sharing system from the federal and state governments to help finance new infrastructure projects. However, the revenue available to most communities is uncertain because it is dependent on allocations made annually by legislative decree. As a result, many Mexican communities' financial condition precludes qualifying for commercial loans. According to Treasury officials, the system of central government revenue collection and allocation is currently undergoing reform and decentralization. Mexico's National Bank of Public Works and Services offers loans for projects in Mexican pesos at a few points above the Mexican Treasury rate. It also levies additional interest points to reduce the risk of losses from currency devaluation, which has occurred repeatedly during the last decade. Most Mexican communities have not been able to borrow at these high rates.

Also, according to Mexican officials, Mexican border communities are restricted by the Mexican constitution from seeking infrastructure financing outside of Mexico's domestic market. To get around this restriction, Mexican communities seeking infrastructure loans could negotiate a line of credit from sources offering foreign capital, such as the World Bank or the North American Development Bank, which lends in U.S. dollars. Mexico's Treasury then would serve as a recipient of funds for borrowers and forward the funds to Mexico's National Bank, which would loan them to the community at a higher rate. This approach for environmental infrastructure development along the border has met with limited success.

The Bank and the Mexican government recently undertook an international effort to increase communities' access to foreign capital. In September 1998, the Bank, in conjunction with the Mexican Ministry of Finance and Public Credit, established a Mexican Limited Purpose Financial Company, which is authorized to make loans for border environmental infrastructure direct to municipalities. Under this agreement, the Company operates like an agent for the Bank, using policies and procedures similar to those of the Bank to make loans to Mexican communities. As of September 1999, the Bank had made loans, through the Company, to four Mexican communities, totaling $3.69 million.

Because Mexico does not have a mechanism similar to the State Revolving Fund, and Mexican communities cannot issue debt, it was thought that

Bank loans would be an attractive alternative for some Mexican border communities. However, since 1994, only five loans totaling $8.3 million from the Bank have been committed for Mexican projects. These loans amounted to only 15 percent of the total project costs of $56 million. As an alternative, Baja California state officials are negotiating a $240-million loan agreement with Japan's Financial Overseas Economic Development Fund to help finance wastewater treatment and sewer improvement projects in the cities of Tijuana and Mexicali, as well as smaller communities in the state. According to a state official, the loan rate and repayment terms offered by the Japanese government are much lower than those of the Bank.

## Limited Assistance Available for Solid Waste Disposal Projects

The Border Commission's and the Bank's ability to assist border communities in meeting solid waste disposal needs has been limited. As discussed earlier, a recent binational assessment showed solid waste disposal to be a critical need on the Mexican side of the border. To date, only 3 of the 31 Border Commission-certified projects have addressed solid waste disposal, and there are currently 24 solid waste projects awaiting Border Commission certification.

According to Border Commission officials, technical assistance grants for solid waste disposal projects are necessary because many border communities cannot afford the planning and technical studies required to obtain Border Commission certification. However, while Program Development Assistance Program grants are used to assist border communities in need of technical assistance for developing and designing water and wastewater projects, these grants are not available for solid waste projects. The Border Commission has been able to fund a limited amount of technical assistance for solid waste proposals from its operating funds. In fiscal year 1999, the assistance amounted to about $733,333. However, Border Commission officials told us that due to reductions in their fiscal year 2000 budget, they would no longer be able to provide this assistance. Border Commission officials noted that failure to develop solid waste projects will result in the degradation of ground and surface water supplies and undermine any progress made.

Recognizing this need, the Bank board of directors has approved a $5-million grant program funded by the earnings on the Bank's paid-in capital for the construction of solid waste disposal projects. These funds may not, however, be used for the planning and design of projects. Only projects sponsored by public entities and certified by the Border Commission are eligible for the program. Project grants are limited to

$500,000 for each community, and the grant cannot be greater than 50 percent of the total cost of the project. This pilot program will only address a small percentage of the cost of solid waste projects currently in the Border Commission certification pipeline.

## No Overall Border Environmental Infrastructure Plan

U.S. and Mexican efforts to address communities' needs are hampered by a lack of a strategic plan that overcomes some of the well-established impediments to infrastructure development. The need for a more focused approach to addressing the environmental problems has been a recurring theme in studies of the border region. (See the bibliography for a comprehensive list of studies.) To date, none of the agencies and institutions with environmental responsibility have developed a comprehensive strategy to identify overall border environmental infrastructure needs, the communities' ability to develop needed infrastructure, the available resources, and measurable outcome objectives (for example, 95 percent of the border population will have potable water by 2005). Without such a framework, it is difficult to see how the gap between what is needed and what exists will be closed.

In response to our 1996 report,[12] the Environmental Protection Agency said that one of the objectives of its new U.S.-Mexico Border XXI Program was to inventory all existing environmental information on the border region. However, to date, Border XXI has not achieved this objective. While the Border Environment Cooperation Commission–the current focal point for environmental infrastructure development in the border region–has conducted an assessment that identified a need for $3.2 billion in water, wastewater, and solid waste projects for communities in the border region,[13] it has not yet developed a strategy to overcome known impediments or to address the most urgent needs.

The absence of a Border Commission-generated strategy is consistent with its view that its role is to react to requests for assistance from border communities. Under the Border Commission's current operating approach, communities submit proposals to the Border Commission for certification that can be at various stages of development, ranging from a concept to a

[12] *See International Environment: Environmental Infrastructure Needs in the U.S.-Mexican Border Region Remain Unmet* (GAO/RCED-96-179, July 22, 1996).

[13] The Border Commission developed this assessment in conjunction with the Southwest Center for Environmental Research and Policy.

fully designed project ready for construction. The Border Commission then works with the communities to help them complete the certification process, which is critical to communities getting Bank financing. The Border Commission's certification process does not involve making trade-offs among various projects submitted by communities.

## Conclusions

The United States and Mexico have made notable progress to date in developing and constructing border environmental infrastructure projects. Moreover, a significant number of project proposals are undergoing review, and some portion of them will be determined to be technically and financially viable. However, as currently structured and implemented, existing programs and activities are not likely to close the gap between what is needed and what exists for the foreseeable future, particularly in view of expected population growth.

The Border Environment Cooperation Commission and the North American Development Bank have just begun to have some impact, particularly their efforts to provide funding for technical assistance to meet communities' human capital needs or financial obstacles to project development. However, these organizations' roles, particularly the Bank's, are likely to continue to be limited unless there are changes in the Bank's loan rates. The Bank has had limited success making loans because its rates are unaffordable to small communities. Any changes to the Bank's charter that would affect the Bank's purpose and function or increase the obligations of the United States would have to be authorized by Congress. Without lower cost loan financing and/or continued Environmental Protection Agency grant funding to help reduce the cost of new projects, many communities will not be able to build needed environmental infrastructure. Grant funding has been critical to the projects that have actually been completed.

Although the Border XXI initiative has become a forum for discussing environmental issues on a binational level, it has not served to create an overall approach to addressing border environmental needs. Without a border strategic plan that assesses environmental needs and identifies approaches to overcome the impediments border communities face, it is reasonable to assume that progress in solving environmental infrastructure needs will be limited.

## Recommendation

In order to more effectively address environmental infrastructure problems and the associated impediments on the United States-Mexico border, we recommend that the Secretary of State and the Administrator of the Environmental Protection Agency work jointly with Mexico's Secretariats of Foreign Relations and of Environment, Natural Resources, and Fisheries to recommend to the Board of Directors of the Border Environment Cooperation Commission to develop a Border Infrastructure Strategic Plan that should include

- a needs assessment along the border,
- strategies for addressing impediments to infrastructure development, and
- a statement of measurable goals with milestones so that progress can be assessed.

## Matter for Congressional Consideration

To enable the North American Development Bank to more effectively fulfill its mission, Congress might wish to consider directing the Secretary of the Treasury to work with Mexico's Treasury Department to amend the Bank charter to allow it to create lower cost financing mechanisms that make funding more affordable to border communities for environmental infrastructure.

## Agency Comments

We received comments on a draft of this report from the Environmental Protection Agency, the Departments of State and the Treasury, the Border Environment Cooperation Commission, and the North American Development Bank. The Environmental Protection Agency and the Departments of the Treasury and State provided written comments, which are reprinted in appendixes III to V. The Border Environment Cooperation Commission's and the North American Development Bank's comments were coordinated through the Departments of State and the Treasury, respectively, and were considered during the final preparation of the report. We also requested and received some technical comments from Mexico's Secretariat of Foreign Relations, which were considered.

The Department of State, the Environmental Protection Agency, and the Border Commission all agreed that there was a need for a border environmental infrastructure strategic plan and that the Border Commission should have the lead role in the plan's development. They emphasized that developing such a plan would require that U.S. and

Mexican entities take an integrated approach to addressing border environmental infrastructure problems. However, they questioned whether the Border Commission could do so within its current resources. We recognize that developing such a plan would require financial and human resources. However, given the importance of such a plan, we believe it is essential that the United States and Mexico find ways to support the strategic planning effort. In addition, in light of these comments, we redirected the recommendation to reflect that the U.S. and Mexican governments should recommend to the Commission's Board of Directors to develop a Border Infrastructure Strategic Plan.

Regarding the matter for congressional consideration to modify the Bank's charter to allow for lower cost financing mechanisms, the Environmental Protection Agency and the Department of State agreed that it would be appropriate to explore options for making lower cost financing available to make the Bank's capital more accessible to the poorer communities and that a mix of mechanisms would provide the greatest ability to address infrastructure financing problems. They and the Department of the Treasury and the North American Development Bank also concurred with our observation that Bank lending has been limited and grants made under the Border Environmental Infrastructure Fund were the most important contributor to the financing of border environmental infrastructure projects underway and completed.

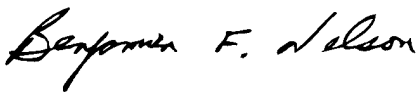
The Department of the Treasury, however, disagreed with our conclusion that a major impediment to border infrastructure development is the Bank's interest rates. Rather, it said that many border communities are extremely poor and that border utilities do not have the technical capacity to manage financial resources and infrastructure projects. The Treasury commented that legislation creating the Bank did not provide for concessional (below market interest rate) lending. Further, Treasury stated that the Bank effectively had a mechanism that provides low-cost financing in those instances when Bank loans were combined with grants.

Our report discusses a number of key impediments to the development of environmental infrastructure along the border—including the lack of communities' technical capacity to design, build, or manage utility systems. The report also discusses U.S. and Mexican efforts, including those of the Bank, to address many of these impediments. However, we note that the Bank was established to assist border communities in financing needed environmental infrastructure. In this regard, the United States and Mexico have provided the Bank with substantial funding to assist communities by

using the Bank's capital to leverage borrowing for construction. As our work shows, the Bank's interest rates remain unaffordable to many border communities, and very few loans have been made. Since the Bank's inception, loans have represented only 3.2 percent of the Bank's paid-in capital. While we recognize that grants have been heavily used to support the environmental infrastructure development along the border to date, the Treasury stated that it has seen diminishing congressional support for the funds requested for the Border Environmental Infrastructure Fund. Unless lower cost financing mechanisms are found to help make the Bank's capital more accessible to poorer communities, including a consideration of the Bank's interest rates, many communities will likely continue to struggle with their significant environmental infrastructure needs. Any consideration of lower cost financing mechanisms, however, should not minimize the Bank's focus on ensuring the long-term feasibility and sustainability of environmental projects.

We are sending copies of this report to appropriate congressional Committees and the Honorable Dan Glickman, Secretary of Agriculture; the Honorable Andrew M. Cuomo, Secretary of Housing and Urban Development; the Honorable Madeleine K. Albright, Secretary of State; the Honorable Lawrence H. Summers, Secretary of the Treasury; the Honorable Carol M. Browner, Administrator of the Environmental Protection Agency; and the Honorable Bruce Babbitt, Secretary of the Interior. We will make copies available to other interested parties upon request.

Please contact me at (202) 512-4128 if you or your staff have any questions regarding this report. Other GAO contacts and staff acknowledgments are listed in appendix VI.



Benjamin F. Nelson
Director, International Relations
and Trade Issues

# Programs to Address Border Environmental Infrastructure Needs

The United States and Mexico have established a number of binational, federal, state, and local programs to address border infrastructure concerns. Binational efforts to plan and finance environmental infrastructure were underscored with the creation of the Border Environment Cooperation Commission and the North American Development Bank in 1993.

## Border Environment Cooperation Commission

The stated purpose of the Border Commission is "to help preserve, protect, and enhance the environment of the border region in order to advance the well-being of the people of the U.S. and Mexico." In carrying out this purpose, the Border Commission cooperates with the Bank, other national and international institutions, and private sources supplying capital to establish environmental infrastructure projects in the border region. The Border Commission's charter requires preference to be given to projects dealing with water pollution, wastewater treatment, and municipal solid waste.[1]

Border states, communities, other public entities, and private investors may approach the Border Commission to obtain assistance to

- coordinate environmental infrastructure projects in the border region;
- prepare, develop, implement, and oversee projects, including the design, siting, and other technical aspects of projects;
- analyze the financial feasibility and/or environmental aspects of the projects;
- evaluate the social and economic benefits of the projects;
- organize, develop, and arrange public and private financing for projects; and
- certify applications for project financing for submission to the Bank or other financing sources.

When proposed project applications are submitted to the Border Commission for certification, they are initially reviewed by a project

[1]The Border Commission is governed by a board comprised of 10 directors, including the ex-officio member from the U.S. and Mexican Commissioners of the International Boundary and Water Commission, the Administrator of the Environmental Protection Agency, and the Secretario de Deasarrollo Social of Mexico. Six additional directors having expertise in environmental planning, economics, engineering, finance, or related matters are appointed by their respective governments.

manager to determine whether the project meets the general criteria for certification. The Border Commission will consider such things as the project type, location, and viability. If the project meets the Border Commission's preliminary requirements, project applicants are required to provide more detailed information. Among the information required is material on (1) whether the project would be in compliance with applicable laws and regulations and (2) whether the project is feasible technically and financially, that is, whether the project will use appropriate technology, whether alternatives have been assessed, and whether the project can be properly operated, maintained, and sustained.

If acceptable, a proposed project goes through an extensive process from concept development to preparation for construction. This process can take between 3 and 5 years to complete, depending on the level of development when the project is presented. The time required to make a project ready for initial construction undermines the expectation that the creation of the Border Commission would result in the immediate construction of infrastructure projects. According to Border Commission officials, more time is required for smaller communities that may lack the technical expertise and administrative structure needed to develop projects. They added that projects submitted by the larger cities usually are much further along in project development and require less time to be certified. According to an environmental infrastructure official responsible for overseeing the construction of major water and wastewater projects in San Antonio, Texas, the Border Commission's processing time of 3-5 years is similar to the length of time typically required to develop an environmental infrastructure project, regardless of geographic location or size of the community. The process used and time required for preparing a project for construction are shown in table 3.

**Table 3: The Border Commission's Project Identification and Development Process**

| Process phase | Concept development | Planning | Project development | Final design | Preparation for construction |
|---|---|---|---|---|---|
| Time required | 1 to 6 months | 1 to 3 years | 1 to 3 years | 0.5 to 1.5 years | 1 to 6 months |
| Steps | • Diagnostics<br>• Needs assessment | • Master plan<br>• Land survey<br>• Sewer network and water survey<br>• Hydrology studies<br>• Cartography<br>• Analysis of funding alternatives<br>• Capital improvement program | • Analysis of alternatives<br>• Technical feasibility studies<br>• Environmental assessment<br>• Preliminary engineering design<br>• Financial analysis<br>• Rate study<br>• Other | • Final design and specifications<br>• Operations and maintenance manuals<br>• Value engineering | • Advertise, bid, and award construction contract |

Source: Border Commission-provided data.

As of September 1999, the Border Commission had certified 31 projects, with estimated project costs of about $680 million. As shown in table 4, 12 projects are in Mexico, and the remaining 19 are in the United States. These projects are expected to benefit 3.7 million people in Mexico and 3 million people in the United States.

**Table 4: Border Commission-certified Projects as of September 30, 1999**

| Dollars in millions | Type of need addressed | | | |
|---|---|---|---|---|
| Project location | Water related | Solid waste | Population served | Estimated cost |
| **Mexico** | | | | |
| Ensenada, Baja California | • | | 25,000 | $8.19 |
| Tijuana, Baja California | • | | 1,000,000 | 19.52 |
| Mexicali, Baja California | • | | 600,000 | 50.40 |
| Tijuana, Baja California | • | | 21,000 | 0.18 |
| Ciudad Juarez, Chihuahua | • | | 1,100,250 | 31.16 |
| Agua Prieta, Sonora | | • | 5,600 | 2.01 |
| Nogales, Sonora | • | | 21,500 | 39.00 |
| Naco, Sonora | • | | 5,733 | 1.10 |
| Puerto Penasco, Sonora | • | • | 27,200 | 2.25 |
| Matamoros, Tamaulipas | • | | 22,000 | 1.10 |
| Matamoros, Tamaulipas | | • | 348,186 | 14.30 |
| Reynosa, Tamaulipas | • | | 500,000 | 82.90 |
| **Subtotal** | | | **3,676,469** | **$252.11** |
| **United States** | | | | |
| Douglas, Arizona | • | | 1,250 | $2.00 |
| Somerton, Arizona | • | | 6,000 | 2.72 |
| Westmoreland, California | • | | 2,300 | 4.40 |
| Brawley, California[a] | • | | 24,000 | 38.40 |
| Heber, California[a] | • | | 3,320 | 7.80 |
| San Diego, California | • | | 1,900,000 | 99.30 |
| Calexico, California | • | | 26,400 | 11.33 |
| Berino, New Mexico | • | | 1,200 | 1.95 |
| Mercedes, Texas | • | | 14,000 | 4.30 |
| El Paso, Texas | • | | 180 | 0.16 |
| El Paso, Texas | • | | 70,559 | 98.35 |
| El Paso, Texas | • | | 796,643 | 37.82 |
| El Paso, Texas | • | | 90,000 | 11.68 |
| Del Rio, Texas | • | | 55,000 | 40.25 |
| Donna, Texas | • | | 21,245 | 23.85 |

Continued

| Dollars in millions | Type of need addressed | | | |
|---|---|---|---|---|
| Project location | Water related | Solid waste | Population served | Estimated cost |
| Roma, Texas | • | | 21,000 | 29.00 |
| Alton, Texas | • | | 12,987 | 14.77 |
| **Subtotal** | | | **3,046,084** | **$428.08** |
| **Total** | | | **6,722,553** | **$680.19** |

Continued from Previous Page

[a]These projects involved two phases, with each phase requiring separate Border Commission certification.

Source: Border Commission-provided data.

The Border Commission currently has a backlog of projects in its pipeline awaiting decisions on certification and, according to Border Commission officials, this backlog will continue to grow. As of September 1999, 131 projects awaited certification. The Border Commission has averaged about six certifications per year since its inception, although Border Commission managers indicate that the number of annual certifications is increasing. Still, Border Commission managers told us that optimally, the Border Commission could only certify 20 to 25 projects per year. At the same time, the Border Commission expects the number of new projects submitted annually to remain static at 55. They estimate that at this pace it would take several years to deal with the existing backlog. Table 5 shows the pace at which the Border Commission has been certifying environmental infrastructure projects.

**Table 5: Border Commission Project Development Pipeline, 1995-99**

| Year | Projects presented | Projects disqualified | Qualified projects | Projects certified as of 09/99 | Cumulative projects in pipeline |
|---|---|---|---|---|---|
| 1995 | 52 | 34 | 18 | 12 | 6 |
| 1996 | 58 | 34 | 24 | 8 | 22 |
| 1997 | 43 | 19 | 24 | 7 | 39 |
| 1998 | 65 | 19 | 46 | 4 | 81 |
| 1999 | 63 | 13 | 50 | 0 | 131 |
| **Total** | **281** | **119** | **162** | **31** | |

Source: Border Commission-provided data.

The Border Commission's funding comes from a variety of sources. Table 6 shows the amount of funding that both countries have contributed to the Border Commission's operations.

**Table 6: Border Commission Funding for Fiscal Years 1995-2000**

Dollars in millions

| Income source | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|
| U.S. appropriations | $1.51 | $1.80 | $1.70 | $1.54 | $1.54 | $1.53 |
| Mexican contribution | 1.14 | 2.07 | 1.72 | 1.61 | 1.52 | 1.54 |
| EPA | 0 | 0 | 0 | 0 | 6.42 | 7.15 |
| Other[a] | 0.06 | 0.09 | 0.08 | 0.42 | 1.41 | 0.21 |
| **Total** | **$2.71** | **$3.96** | **$3.50** | **$3.57** | **$10.89** | **$10.43** |

Legend

EPA = Environmental Protection Agency

[a]Includes interest earned, liabilities cancelled from prior years, and other income.

Source: The Border Commission's annual financial reports and other Border Commission-provided data.

## The North American Development Bank Participates in the Financing of Border Commission-Certified Projects

The Bank was established to meet critical public capital needs by participating in the financing of Border Commission-certified projects. A binational board of directors consisting of six members governs the Bank. The chairmanship of the board alternates between U.S. and Mexican representatives every year.

The Bank's charter provided that it would make loans and loan guarantees to supplement private and public investment in environmental infrastructure projects on the border. The Bank also established the Border Environmental Infrastructure Fund in 1997, which consisted of an original allotment of $170 million in Environmental Protection Agency grant funds administered by the Bank. Loans and Border Environmental Infrastructure Funds are made available to Border Commission-certified projects if they meet the Bank's financial viability and affordability criteria. A project is considered viable when the utility or project sponsor demonstrates that a project will operate with a positive cash flow after meeting the costs of operations and maintenance, debt service, and funding of financial reserves for unexpected expenses. Determination of financial viability now occurs

during the Border Commission certification process so that when the project is ready for certification, the required mix of project financing has been determined.

Not all Border Commission-certified projects involve Bank assistance. As of September 1999, the Bank had provided construction funding in the form of a loan, grant, or both to 20 of the 31 projects certified by the Border Commission. Three projects received both loans and grants, 4 projects received only loans, and 13 projects received only grants. The total cost of the 20 projects involving Bank funding was $551.8 million. As shown in table 7, the Bank provided $143.4 million of the $551.8 million through Border Environmental Infrastructure Fund grants and another $11.2 million in loans. The remainder of the project funding, about $397 million, was to come from other sources such as State Revolving Funds, U.S. and Mexican federal agencies, and municipal debt.

**Table 7: Status of Funds for Bank-financed Projects as of September 30, 1999**

Dollars in millions

| Project | Total cost | Bank loans | Border Environmental Infrastructure Fund grants | Other funding sources |
|---|---|---|---|---|
| **United States** | | | | |
| Alton | $14.47 | $0 | $0.26 | $14.21 |
| Brawley ('95) | 24.90 | 1.00 | - | $23.90 |
| Brawley ('99) | 13.56 | 0 | 6.39 | 7.17 |
| Calexico | 11.33 | 0 | 6.48 | 4.85 |
| Del Rio | 40.25 | | 6.50 | 33.75 |
| Donna | 21.62 | 0 | 1.97 | 19.64 |
| El Paso | 37.82 | 0 | 14.91 | 22.91 |
| El Paso | 98.35 | 0 | 17.50 | 80.85 |
| Heber | 4.34 | 0 | 2.53 | 1.81 |
| Heber | 3.38 | | 1.08 | 2.30 |
| Mercedes | 4.12 | 1.87 | 0 | 2.25 |
| Roma | 34.18 | 0 | 5.57 | 28.61 |
| San Diego | 99.59 | 0 | 17.20 | 82.39 |
| Westmoreland | 4.41 | 0 | 1.98 | 2.43 |
| **Total** | **$412.32** | **$2.87** | **$82.37** | **$326.47** |
| **Percent of total** | | **1** | **20** | **79** |
| | | | | |
| **Mexico** | | | | |
| Agua Prieta | $2.01 | $0.50 | $ 0 | $1.51 |
| Ciudad Juarez | 31.16 | 4.58 | 11.08 | 15.50 |
| Naco | 1.10 | 0.18 | 0.42 | 0.50 |
| Puerto Pensaco | 2.25 | 0.52 | 0 | 1.73 |
| Reynosa | 83.40 | 0 | 33.50 | 49.90 |
| Tijuana | 19.52 | 2.50 | 16.00 | 1.02 |
| **Total** | **$139.44** | **$8.28** | **$61.00** | **$70.16** |
| **Percent of total** | | **6** | **44** | **50** |

Source: Bank-provided data.

The Bank has also instituted a technical assistance program using funds generated by net income to assist communities in the development of utility management. Training is provided to ensure that the utility system will be properly managed and to assist the community in the Border

Commission's certification process. As of March 31, 1999, the Bank had expended approximately $1 million for this program.

## U.S. Federal and State and Mexican Governments Address Border Infrastructure Needs

U.S. federal and state and Mexican government organizations have been long-term participants in addressing environmental infrastructure needs along the border. A variety of programs have been developed by both countries to deal with these needs.

### U.S. Federal and State Programs to Address Border Environmental Infrastructure Needs

U.S. federal agencies and states have numerous programs that address environmental infrastructure shortfalls along the U.S.–Mexico border. The federal government programs and activities are shown in table 8.

**Table 8: Programs Funded by U.S. Federal Agencies for Border Environmental Activities**

| Department/agency | Program type | Program description |
|---|---|---|
| Dept. of the Interior | National Park Service grant | To protect and manage shared natural, historic, and cultural resources along the U.S.-Mexico border. |
| | U.S. Geological Survey grant | To conduct digital base mapping and remote sensing for landscape characterization and resource management. |
| | Bureau of Reclamation grant | To identify the problems affecting water quality in the Salton Sea due to agricultural runoff and wastewater originating in Mexico. |
| | U.S. Fish and Wildlife Service grant | To evaluate cross-boundary contaminant threats, water quality degradation, endangered species protection, migratory bird management, refuges and wildlife maintenance, habitat restoration, etc. |
| Dept. of Housing and Urban Development | Community Development Block Grants (CDGB) | To provide entitlement CDBGs as annual grant funding directly to local governments with populations of 50,000 or greater or to other local governments such as metropolitan areas and urban counties with populations of 200,000 or more. Funds are used to revitalize neighborhoods, improve community facilities and services, etc.<br><br>To give state CDBG annual direct grants that states award to smaller communities (fewer than 50,000 residents) and rural areas for the same purposes as entitlement CDBGs. |

Continued

| Department/agency | Program type | Program description |
|---|---|---|
| | Colonias set-asides | To assist colonias through CDBG set-asides for water systems, sewers, and housing. California must set aside 2 percent; Texas, New Mexico, and Arizona must set aside 10 percent each. |
| Department of Agriculture | Rural Development - Rural Utility Service loan/grant | To provide water, wastewater, and solid waste disposal loans and/or grants to rural areas and cities with populations of 10,000 or less. |
| Environmental Protection Agency | National Office grant | To provide appropriated funding and to administer environment programs for water, wastewater, solid and hazardous waste, and air pollution abatement. |
| | Bank grant | To fund Border Environmental Infrastructure Fund projects. |
| | Border Commission grant | To fund technical assistance grants. |
| | International Boundary and Water Commission grant | To fund technical assistance grants. |
| | Colonias grant | To fund state programs for environmental infrastructure programs for colonias. |
| | Fundacion Mexico-Estados Unidos para la Ciencia | To conduct studies and training for utility operators and communities on such issues as health, potable water, and environmental infrastructure along the border. |

Continued from Previous Page

Source: GAO analysis of U.S. agency data.

The four U.S. southwest border states–Arizona, California, New Mexico, and Texas–invest their own resources, along with federal funding, to support environmental infrastructure projects. Most federal infrastructure funding to the states comes through the Environmental Protection Agency. These are principally Clean Water Act funds that are used to finance the State Revolving Funds, a permanent source of low-cost financing for a range of water quality infrastructure projects. The other principal source of funding to states comes from the Department of Housing and Urban Development through its Community Development Block Grants. These grants are allocated annually to metropolitan cities and urban counties and to nonentitlement areas within states for smaller communities. Some specific activities funded thorough Community Development Block Grants include rehabilitation of residential structures and provisions for and improvements to public facilities, including water and sewer facilities.

## Mexican Federally Funded Programs

Mexico's federal government addresses border environmental infrastructure needs through a number of programs, as shown in table 9.

**Table 9: Mexican Programs to Address Border Environmental Issues**

| Agency | Program type | Description |
|---|---|---|
| Secretaria de Medio Ambiente, Recursos Natural y Pesca (SEMARNAP) | Comision Nacional del Agua (CNA) grant | To administer and enforce the federal water laws; to provide clean, sustainable water countrywide, and to provide, promote, construct, administer, and operate water infrastructure. CNA provides grant funding for environmental infrastructure to Mexican border states and municipalities. |
| | Institute Nacional de Ecologia (INE) grant | To design ecological policies and instruments for regulating the industry and the environment, such as controlling the use of pesticides, fertilizers, and other toxins. |
| | Procuraduria Federal de Proteccion al Ambiente (PROFEPA) grant | To enforce environmental regulations and to inspect industrial complexes for water pollution and hazardous waste violations. |
| Fundacion Mexico-Estados Unidos para la Ciencia (FUMEC) | Binational research and training grant | To conduct studies and training for utility operators and communities on such issues as health, potable water, and environmental infrastructure along the border. |
| Secretaria de Desarrollo Social (SEDESOL) | Social infrastructure landfills grant | To fund construction of sanitary landfills. |
| Comision Internacional de Limites y Aguas (CILA) | International Boundary and Water Commission, Mexican Section grant | To fund international wastewater projects in conjunction with the U.S. Section of the International Boundary and Water Commission. |
| Secretaria de Hacienda y Credito Publico | BANOBRAS loan | To extend credit to state and local communities that can be used for environmental infrastructure planning and construction. |

Source: GAO analysis of Mexican government data.

# Objectives, Scope, and Methodology

Concerned that U.S., Mexican, and binational efforts to improve the environmental infrastructure along the border region were not keeping pace with growing needs, members of the House Congressional Border Caucus asked us to examine (1) the nature and extent of environmental infrastructure problems along the U.S.-Mexico border, (2) the programs and funding levels in place to address these problems, and (3) the impediments to improving the environmental infrastructure. Although we identified concerns with air pollution and hazardous waste disposal, our review focused primarily on environmental infrastructure issues related to water, wastewater, and solid waste. These are the three priority areas being pursued by the principal binational organizations established under the North American Free Trade Agreement environmental side agreements–the Border Environment Cooperation Commission and the North American Development Bank. As requested, we also focused on the environmental needs on both sides of the U.S.-Mexico border. In doing so, we used the definition that is contained in the 1983 La Paz Agreement–the area lying 100 kilometers or within 62.5 miles of each side of the U.S.-Mexico boundary.

To obtain information on the nature and extent of the environmental infrastructure problems and to identify impediments to improvement, we reviewed studies prepared by federal, state, and local governments as well as ones done by academicians and nongovernmental and binational organizations. The list of reports and studies that we reviewed are included in the bibliography. We also interviewed agency officials and reviewed program documents from the Environmental Protection Agency and the U.S. Departments of State, Agriculture, Housing and Urban Development, the Interior, and the Treasury. We also interviewed officials and reviewed documents prepared by key state agencies such as the Texas Natural Resource Conservation Commission, the Border Commission, and the Bank.

To obtain the Mexican government's perspective on the environmental infrastructure needs of the border region, we visited Mexico City, where we obtained documentation and interviewed key Mexican government officials, including officials in Mexico's National Water Commission; and the Secretariats for Finance; Health; Foreign Relations; Environment, Natural Resources, and Fisheries; and Social Development. We also obtained information from Mexico's Section of the International Boundary and Water Commission. We attended various conferences dealing with border environmental issues, including those sponsored by the Southwest Center for Environmental Research and Policy, the Good Neighbor

Environmental Board, and the Border XXI Binational Work Group. The information on Mexican laws in this report is based on interviews and secondary sources.

To gain additional perspectives on the nature of the problem and impediments to improvement, we conducted case study analyses in five key sister cities along the border: San Diego-Tijuana, El Paso-Ciudad Juarez, Brownsville-Matamoras, Calexico-Mexicali, and Douglas-Agua Prieta. We selected these locations primarily to obtain a cross-sectional view of the needs and challenges faced by small-, medium-, and large-sized sister cities. In selecting the sister cities, we also considered whether they had submitted proposals to the Border Commission and the Bank for assistance.

At these locations, we interviewed representatives of the U.S. and Mexican consuls and local representatives, including city mayors, council members, public utility boards, and local environment and solid waste departments when available. Where possible, we met with representatives of nongovernmental organizations on both sides of the border such as the Border Information and Solutions Network, the Border Ecology Project, the Surfriders, Companeros, Enlance Ecologico, Paso Del Norte Clean Cities Coalition, the Center for Environmental Resource Management, and the Paso Del Norte Joint Advisory Committee members. To the extent possible, we discussed the colonias issues with state and local officials.

To obtain information on the programs and funding in place to address environmental infrastructure needs on the border, we contacted federal and state agencies and requested actual expenditures on environmental infrastructure within 100 kilometers of each side of the U.S.-Mexico border for fiscal years 1994-99. Developing information on the amount of funding directed at environmental activities along the border is complicated by a number of factors, including the existence of a variety of funding sources and funding mechanisms (for example, State Revolving Fund). Thus, this report contains a comprehensive picture of funding that has been made available for the design and construction of environmental infrastructure as well as funding for the operating expenses of key binational organizations dealing with environmental issues along the border.

In gathering program funding data, we contacted the Environmental Protection Agency and the U.S. Departments of Agriculture, Housing and Urban Development, the Interior, and the Treasury. State agencies contacted included the Arizona Department of Environmental Quality's

U.S.-Mexico Border Affairs Office, the Arizona Office of Housing and Infrastructure Development, the California Border Environmental Cooperation Committee, the California Department of Housing and Community Development, the New Mexico Department of Finance and Administration, the New Mexico Environment Department, the Texas Department of Economic Development, the Texas Department of Housing and Community Affairs, and the Texas Water Development Board's Border Region Office. Although we did not independently verify all of the program data provided by the federal government and states, we did rely on agency financial and management reports to the extent possible. To identify Mexican programs and funds for environmental infrastructure, we interviewed officials from the key Mexican federal agencies and discussed Mexican funding issues with a representative of the Environmental Protection Agency.

We performed our review from September 1998 through December 1999 in accordance with generally accepted government auditing standards.

# Comments From the Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 18 2000

OFFICE OF
INTERNATIONAL ACTIVITIES

Mr. Benjamin F. Nelson
Director, International Relations and Trade Issues
National Security and International Affairs Division
General Accounting Office
441 G Street, NW, Room 4964
Washington, D.C. 20548

Dear Mr. Nelson:

The Environmental Protection Agency (EPA) is responding to the draft General Accounting Office (GAO) report entitled, *Despite Some Progress, Environmental Infrastructure Challenges Remain* (GAO code 711419). In this letter, EPA addresses the 'Recommendation' and 'Matters for Congressional Consideration'. In attachments, we provide (1) page-by-page comments on other sections of the draft, and (2) BECC and NADBank documents, whose contents we endorse, concerning GAO figures in the draft.

In preparing this response, we have consulted with staff in EPA's Office of International Activities, Office of Water, and EPA Region 6 (Dallas) and Region 9 (San Francisco) offices, as well as with BECC, NADBank, and the Departments of State, Treasury, and Commerce.

GAO Recommendation

In order to more effectively address environmental infrastructure problems and the associated impediments on the United States-Mexico border, we recommend that the Secretary of State (State) and the Administrator of the Environmental Protection Agency work jointly with Mexico's Secretariats of Foreign Relations and Environment, Natural Resources and Fisheries, to direct the Border Environment Cooperation Commission to develop a Border Infrastructure Strategic Plan (Strategic Plan) that should include:

- a needs assessment along the border.
- strategies for addressing impediments to infrastructure development, and
- a statement of measurable goals with milestones so that progress can be assessed.

EPA Response

EPA agrees with the recommendation to work with the State Department, Mexico's Secretariats of Foreign Relations and Environment, Natural Resources and Fisheries and the BECC to develop a Strategic Plan. While EPA cannot direct the BECC to develop a Strategic Plan, it can recommend that BECC do so as one member of a binational Board that includes nine other government and non-government members. It is the Board of Directors that determines how the BECC's resources, provided by the U.S. and Mexican governments, will be spent and which activities will be pursued.

The three components of the Strategic Plan – needs assessment, strategy for addressing impediments, and goals – are issues not unfamiliar to the BECC and NADBank. The BECC has completed a binational assessment of community needs along the border, and the NADBank has completed a financial assessment for the next ten years. In addition, the BECC's Project Development Assistance Program (PDAP) was developed to assist border communities in developing infrastructure, and the NADBank's Institutional Development Cooperation Program (IDP) and Utility Management Institute (UMI) were designed to strengthen human capital. EPA agrees that a more comprehensive strategy is needed and therefore will recommend that the BECC collaborate with the NADBank, and the membership of the U.S.-Mexico Border Infrastructure Coordinating Committee.

Finally, development of a Strategic Plan will require more financial and human resources than BECC currently has available. While there are several funding options available, EPA notes that it is unclear how this effort would be funded.

Matters for Congressional Consideration

To enable the North American Development Bank to more effectively fulfill its mission, Congress might wish to consider directing the Secretary of the Treasury to work with Mexico's Treasury Department to amend the Bank charter to allow it to create lower-cost financing mechanisms that make funding more affordable to border communities for environmental infrastructure.

EPA Response

EPA, as a member of the NADBank Board, acknowledges that under the current structure, the ability to provide lower-cost financing through NADBank has been limited due, in part, to provisions in the founding Agreement. EPA's recognition of these limits has been a major factor in the Agency's close collaboration with NADBank in the development and administration of the Border Environmental Infrastructure Fund (BEIF) from EPA appropriations for water-related infrastructure.

EPA considers the BEIF to be an effective mechanism given current limitations. However, we also believe that it would not be inappropriate to explore additional mechanisms to subsidize NADBank's loans. It has been EPA's experience in the domestic context that a mix of

mechanisms provides the greatest ability to address infrastructure financing problems. Identifying optimum financing schemes from a critical and creative analysis of all options will further fulfill the central mission of the BECC and NADBank -- the development of affordable, top-quality, sustainable infrastructure to improve environmental and health conditions on the border.

Clearly, the consideration of such a change implies a host of issues that require careful review. If Congress intends to initiate that consideration, the Agency is prepared to work with its partners to do so.

We recognize the efforts that GAO has undertaken over the past year to review the complex issues affecting the U.S.-Mexico border. Thank you for the opportunity to comment on this draft.

Sincerely,

William A. Nitze
Assistant Administrator

Attachments

# Comments From the Department of the Treasury

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

**DEPARTMENT OF THE TREASURY**
**WASHINGTON, D.C. 20220**

January 17, 2000

Mr. Benjamin F. Nelson
Director, International Relations and Trade Issues
National Security and International Affairs Division
General Accounting Office
441 G Street, NW, Room 4964
Washington, DC 20548

Dear Mr. Nelson:

We appreciate the opportunity to comment on the draft GAO report entitled: "US – Mexico Border Environmental Infrastructure (GAO code 711419)." We commend your team for its efforts to understand this complex issue and the institutions that work to address it.

It is certainly true that the North American Development Bank lending has been limited and that early hopes on this score have not been borne out thus far. This reflects several facts. Operating in this region is particularly challenging given limited access to financial markets, inadequate governing structures, and lack of human capacity in particular. Experience shows that the difficulty of putting together affordable financing packages has been significantly underestimated. We recognize that the legislation created a Bank with no concessional lending operation; it was justified to the Congress and financed as such. Within that structure, the institution's management has done an excellent job putting together financing packages. In this environment, the Border Environment Cooperation Commission and the North American Development Bank have already been able to move 12 projects into construction, with ten additional projects approved and entering the procurement phase.

While we agree with the report's assessment of the myriad problems facing border communities, we disagree in part with its conclusions regarding the North American Development Bank, and in particular with the report's conclusion that a major impediment to border infrastructure development is the NADBank's interest rates. The problem is that border communities are extremely poor and affordable financing is a serious concern. The inability to afford the Bank's loans is merely a symptom of this more fundamental problem that the report does not address, and to which there are a wide variety of potential responses. For example, to increase the ability of border utilities to manage financial resources and infrastructure projects, the Bank initiated an Institutional Development Cooperation Program to provide direct technical assistance, and the Utility Management Institute to provide longer-term financial management training tailored to environmental infrastructure managers. These are effective solutions that directly address the fundamental problem.

Another response already being implemented to make NADBank financing more affordable for border communities is a program of complementary grants at the NADBank, with funds from the Environmental Protection Agency's border program. The Administration worked with the Bank to create the Border Environment Infrastructure Fund (BEIF) at the Bank to allow it to combine

See comment 1.

grants with its loans – or use grants directly with other sources of finance - to solve the real problem of community project affordability. Of the fourteen financial packages signed to date, for example, BEIF grants accounted for almost 92% of total NADBank support. Of the four projects that have included both loans and grants, the calculated average interest rate on the project packages closed was 1.76%. In other words, the Bank does have a mechanism that provides low-cost financing.

We have found the BEIF program to be more effective than the more general subsidized loan program that this report suggests be considered. It allows the size of the subsidy and thereby the cost of the project to be tailored to the particular community and project, and it allows for a match that is more feasible given the austere Mexican budget. As a result, in our view it makes more sense to continue to provide the grant funds already available to the Bank through the Environmental Protection Agency or other mechanisms than to create a new NADBank soft loan operation requiring a new appropriation.

Regarding the general point that the Bank's interest rates are "too high," the fact of the matter is that the Bank's rates are extremely competitive with other, non-subsidized loan programs available in the U.S. and Mexico. The average NADBank interest rate on a ten-year dollar loan in the United States for a non-rated community, for example, was 7.57% in 1999, compared to roughly 7.73% for a taxable municipal bond. In Mexico, in 1999 the average interest rate on a ten-year peso loan was 27% from the NADBank compared to 33% from the World Bank and 35.6% from the Mexican development bank, Banobras. To our knowledge these are the only source of long-term infrastructure finance in Mexico. The report is correct in that the NADBank's loans are not competitive in the United States with programs like the State Revolving Fund, tax-exempt municipal bonds, or a variety of low-cost state loan programs because these programs operate with heavy state and/or federal subsidies. The NADBank's only subsidy is that its borrowings will be backed by the guarantee of its two member countries. This allows the Bank to lend at lower rates than commercial operations but not most publicly-subsidized programs. In addition, it is our understanding that Congress does not intend for the NADBank to compete directly with other federally-funded programs; rather the NADBank should work as a complement.

See comment 2.

This report recommends that Congress consider instructing the US Treasury to work with our counterparts in the Mexican Ministry of Finance to find more creative ways to lower the interest rate that the Bank charges on its loans. Because of the need to assure that they do not diminish their capital, neither the NADBank nor any other multilateral development bank makes concessional loans out of its ordinary paid-in capital – instead they fund a separate concessional loan window. We have not seen evidence for Congressional support for a so-called "soft loan" window at the NADBank and in fact have seen diminishing Congressional support for the funds requested for the BEIF. Without such soft loan resources, we have looked for other possible funding sources, a prime example of which is the BEIF program, which allows a flexible grant / loan package.

2

We have also examined possibilities for internal subsidization of Bank loans. For example, last year the Bank Board was able to set aside five million dollars in earnings accumulated on the Bank's investments to start the pilot Solid Waste Environment Program. As part of this program, communities can choose whether they would like their financial assistance package to come in the form of a grant or as a subsidy on a loan.

Notwithstanding the recent improved pace of projects moving into construction, and the availability of some grant funds, we agree that the North American Development Bank should make more of its resources available by increasing its loan portfolio. In our considered opinion, the future of water and wastewater project financing at the NADBank is dependent on continued availability of subsidies. An increase in the loan portfolio would increase the internal resources available to the Bank to cross-subsidize operations in water and wastewater. In order to advance this objective, the Bank's Board of Directors recently initiated a mandate review, which intends to examine in part additional types of projects that fit the border environmental infrastructure criteria in the Bank's Charter and that the Bank could finance with loans. This binational initiative was announced by the Secretary of the Treasury in his address to the *Bordering the 21st Century* community forum in Tucson, Arizona in November. As this mandate review continues, we will solicit input from the public as well as members of Congress.

I would like to close with a note on the commitment of our Mexican colleagues to improve environmental infrastructure along the US - Mexican border. Last year our counterparts worked to create a limited purpose Mexican financial institution that would allow the NADBank to lend directly to Mexican municipalities in a way that has never been tried before. Four projects have been financed thus far through this facility. This model is now being examined by the World Bank and the Inter-American Development Bank as a potential model for broader utilization in project finance in Mexico. We also enjoyed close cooperation on the development of the new Solid Waste Environment Program, which will utilize net income from the Bank to subsidize comprehensive municipal solid waste programs. We have found no shortage of creativity in Mexico City to make this institution work and look forward to continuing the productive relationship we enjoy as the NADBank moves more projects into the construction and implementation phase.

Sincerely,

William E. Schuerch

William E. Schuerch
Deputy Assistant Secretary
International Development, Debt and Environment Policy

*Technical edits attached*

3

The following are GAO's comments on the Department of the Treasury's letter dated January 17, 2000.

## GAO Comments

1. The draft report recognized the importance of Border Environmental Infrastructure Fund grants to the development of environmental infrastructure along the border. While we agree that in a few instances the interest rates may have been effectively lower due to grant funding, reliance on such grant funding is heavily dependent on continued appropriations. This is especially important in view of the Treasury's comment that there has been diminishing congressional support for the funds requested for the Border Environmental Infrastructure Fund.

2. We revised the text to clarify that the Bank's paid-in capital is available to support borrowing for its international activities.

# Comments From the Department of State

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

United States Department of State

*Chief Financial Officer*

*Washington, D.C. 20520-7427*

January 19, 2000

Dear Mr. Hinton:

We appreciate the opportunity to review your draft report "U.S.-MEXICO BORDER: Despite Some Progress, Environmental Infrastructure Challenges Remain," GAO Job Code 711419.

The Department of State's comments, with attached comments from the Border Environment Cooperation Commission, are enclosed for incorporation in the final report. If you have any questions concerning this response, please contact Mr. William McLeese, Office of Mexican Affairs, Bureau of Western Hemisphere Affairs, at (202) 647-9364 .

Sincerely,

Bert Edwards

Bert T. Edwards

Enclosure:

As stated.

cc:
GAO/NSIAD– Mr. Hutton
State/WHA/MEX – Mr. McLeese

Mr. Henry L. Hinton, Jr.,
Assistant Comptroller General,
National Security and International Affairs,
U.S. General Accounting Office.

Department of State Comments on GAO Draft Report
"U.S.-Mexico Border: Despite Some Progress, Environmental Infrastructure Challenges Remain"
GAO Job Code 711419

The Department of State welcomes the opportunity to comment on this draft GAO report. The environmental infrastructure of the rapidly growing border region does indeed present an enormous challenge to policy makers at many levels. We appreciate the GAO's valuable contribution. These comments will be directed primarily to the two core recommendations.

Strategic Plan

The Department fully agrees that a comprehensive Border Infrastructure Strategic Plan is needed. Because the Border Environment Cooperation Commission (BECC) is a permanent binational institution charged with addressing environmental infrastructure issues and is also a public access organization, there are strong arguments for giving it the lead in developing this plan. Since this project would require a considerable commitment of time, expertise and resources as well as broad coordination, there are a number of factors that would need to considered. First, the limited resources of the BECC are already stretched thin. If the BECC is to undertake a comprehensive project of this scope, U.S. federal agencies would need to work closely with their Mexican counterparts and with Congress to provide the BECC the necessary additional resources. Second, the plan should address the full range of issues relating to the BECC, the North American Development Bank (NADBank), and other relevant institutions. Therefore the BECC should work in close consultation with the U.S.-Mexico Border Infrastructure Coordinating Committee and with state and local governments, tribes, NGOs, and the private sector, all of which should have a role in developing a comprehensive strategy.

In addition, there is a procedural issue that should be kept in mind. The BECC is a binational institution that operates under the guidance of its Board of Directors,

consisting of three non-federal members and two federal members on each side. Any recommendation for action should reflect the Board's autonomy.

Lower Cost Financing Mechanisms

This recommendation relates to a very complex issue, as the Department of the Treasury explains separately in its comments to the draft GAO report. There is a wide perception that the low level of lending by the NADBank results largely from its inability to offer lower than market rate financing mechanisms that would make loans more affordable or attractive to poorer border communities. First we should point out that there has been already been considerable effort expended by the NADBank and its Board-member agencies (the Departments of the Treasury and State and the Environmental Protection Agency from the United States) to make financing available at favorable rates. The use of grant money from the Border Environmental Infrastructure Fund (BEIF) in combination with loans has lowered the effective interest rates in NADBank loan packages. In a further effort to make maximum use of the funds available to the NADBank, the Department of State has supported the Institutional Development Cooperation Program (IDP) and strongly encouraged the development of the Utility Management Institute (UMI) and the Solid Waste Environmental Program (SWEP). These programs provide important technical assistance, training, and grants to lower income communities.

Despite these efforts, there remains a widespread perception that further steps should be taken to make the NADBank's capital more accessible to the poorer communities. The Department of State believes it would be appropriate to analyze options for making lower-cost financing available. We believe it would be useful to lay out the costs and benefits of each option, and to include the views of the Government of Mexico. Such an analysis would facilitate informed decisions as to how best to support the Strategic Plan described above, and how to accomplish the core objective of improving the environment along the border.

We want to take this opportunity to emphasize the importance of BEIF grant funding, which is the primary means of making lower-cost financing available. These grant funds will be depleted in the current fiscal year,

causing many important infrastructure projects to be put on hold. We hope that Congress will give a high priority to funding BEIF grants at requested levels.

The Department also believes it is appropriate to discuss ways to expand the mandate of the BECC and NADBank beyond water, wastewater and solid waste. We note that border communities have a wide range of environmental priorities, and the September 1999 Joint Declaration of the U.S.-Mexico Border Governors Conference specifically requested that the BECC and NADBank expand their activities into other areas. The Department supports a process that would consider mandate expansion and would include public comment on options for achieving this objective, including more emphasis on private sector projects. In principle, the expansion of the NADBank mandate to allow for additional funding of private sector projects would be more useful if such projects could be directed at meeting the needs of poorer communities. We propose incorporating this topic into future discussions with Congress.

Now on p. 5.

The figure of "$3.1 billion to address border environmental infrastructure needs" by the United States and Mexico since 1994 (page 3) deserves comment. Table 2 on page 22 gives the derivation of this figure. This table appears to lump together a number of activities that are not necessarily comparable and that may not have been made available in their entirety for border environmental infrastructure. It thus tends to offer a misleadingly large picture of the amount of funding that has actually been made available to address infrastructure needs. Also, it is not clear whether the figures in this table represent budget authority (the usual meaning of "funding") or actual expenditures. The table heading uses the word "funding," but footnotes a and b refer to "expenditures."

See comment 1.

3

The following is a GAO comment on the Department of State's letter dated January 19, 2000.

## GAO Comment

1. We modified the report to provide a better understanding of the complexities in developing funding information on environmental activities along the U.S.-Mexican border.

# GAO Contacts and Staff Acknowledgments

## GAO Contacts

Elliott C. Smith, (214) 777-5700
John Hutton, (202) 512-7773

## Acknowledgments

In addition to those listed above, Jeffrey A. Kans, Patricia Sari-Spear, Edward J. Laughlin, Larry S. Thomas, and Thomas E. Baril, Jr., made key contributions to this report.

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