United States-Mexico Border Program

budgeted by

Environmental Protection Agency

State and Tribal Assistance Grants: *Healthy Community and Ecosystems*[1]

An Analysis of Program Impacts and Pending Needs

Introduction

The US-Mexico Border Program administered by the US Environmental Protection Agency (EPA) provides funding for the development of critical environmental infrastructure along the US-Mexico border region, defined as 100 km (62 miles) north and 100 km south of the US-Mexico border. Early allocations of the program resources were provided directly to a handful of projects, such as the San Diego International Wastewater Treatment Plant and projects pursuant to Minute 294. The largest allocation of program resources has been utilized to provide funding assistance to communities located in the border region through the Project Development Assistance Program (PDAP) and Border Environment Infrastructure Fund (BEIF) administered by the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADB) respectively.

As of Fiscal Year (FY) 2006, the PDAP and BEIF have received approximately $613 million from the US-Mexico Border Program. These critical resources have accomplished a significant human health and environmental impact in and beyond the border region. The following are a few of the notable accomplishments supported by these resources:

- **$30 million in PDAP technical assistance grants provided to 130 communities**
- **$490 million of BEIF to 54 BECC/NADB-Certified/Funded Projects valued at $1.4 billion and directly benefiting 7 million border residents, many of which reside in designated colonias.**
- **Historical leveraging strength of $1.00 BEIF to $1.85 of other sources, with new projects gaining additional strength of $1.00 BEIF to $2.11 of other sources.**
- **Every project, whether located in the US or Mexico, has provided an environmental and human health benefit for the U.S.**
- **Eliminated nearly 300 million gallons per day of untreated or inadequately treated wastewater discharges, an equivalent to the wastewater discharge of 6.8 million persons or 1.64 million households.**
- **A significant increase of investment by Mexico in this region with the Comision Nacional del Agua (National Water Commission) tripling its investment in the border in the past three years for drinking water and wastewater infrastructure, reflecting the priority given to this region compared to the rest of the country.**
- **Service coverage for drinking water, sewer and wastewater treatment have increased dramatically in Mexico's border region with the most significant being an increase in wastewater treatment coverage from 31% to 80%, whereas the national average in coverage of wastewater treatment services is less than 30%.**

Even with the program achievements listed above, nearly **$1 billion of existing drinking water and wastewater infrastructure needs have been documented** through the prioritization of projects implemented for funding assistance available through PDAP and BEIF. In the FY2008 federal budget, **only $10 million is proposed** for the US-Mexico Border Program, an insufficient amount to address even 5% of the total documented needs.

This analysis is provided to draw attention to the importance of continuing this critical bi-national program, reviewing its background, the needs and program effectiveness in addressing such needs, as well as the direct and indirect program impacts. Accurate and complete information will help decision-makers to be convinced

[1] Funding for the US-Mexico Border Program is budgeted under EPA's State and Tribal Assistance Grants: Healthy Communities and Ecosystems, which can be found on pages 952-954 of the FY08 budget proposal for EPA.

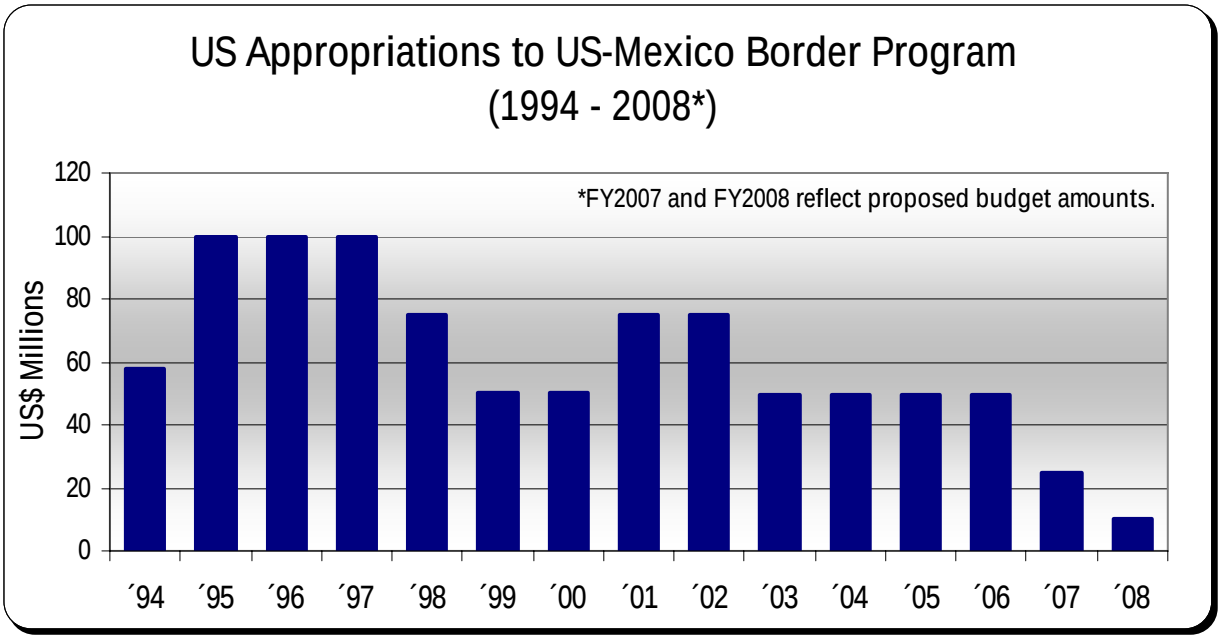
of the program benefits and **offer their comprehensive support for program funding, maintaining annual funding allocation at or near $50 to 100 million for FY2008 and future funding cycles**.

US-Mexico Border Program - Background

During the debate on the North American Free Trade Agreement (NAFTA), the unique environmental conditions and needs existing on the US-Mexico border received significant attention. Both proponents and opponents of the treaty required that the US Administration address these concerns through special environmental side-agreements to be considered in tangent with NAFTA. At that time, it was estimated that **"$8 billion would be required to address needs for sewage treatment, drinking water, and municipal solid waste infrastructure projects along the border** over the next decade and that NAFTA-related industrialization would create additional needs."[2]

As a measure to address environmental concerns in the context of the NAFTA negotiations, the US and Mexico established the US-Mexico Border Environment Cooperation Agreement, formally executed as the *Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank*, signed November 16 and 18, 1993 and subsequently amended through Protocol of Amendment signed November 25 and 26, 2002, which entered into effect on August 6, 2004. This international agreement created the BECC and NADB, to certify and fund environmental infrastructure projects in border-area communities. In addition, both Administrations made commitments to provide funding for infrastructure development in the region. Thus, the US-Mexico Border Program was formalized under the management of the EPA.

Funding for the US-Mexico Border Program initiated in FY1994 and has continued to present, with significantly decreased funding proposals in FY2007 and FY2008. Early funding amounts were allocated to specific projects including the San Diego International Wastewater Treatment Plant, Minute 294 projects and other bi-national efforts such as the US-Mexico Foundation for Science (FUMEC). Below is a graph of the US appropriations to the US-Mexico Border Program.

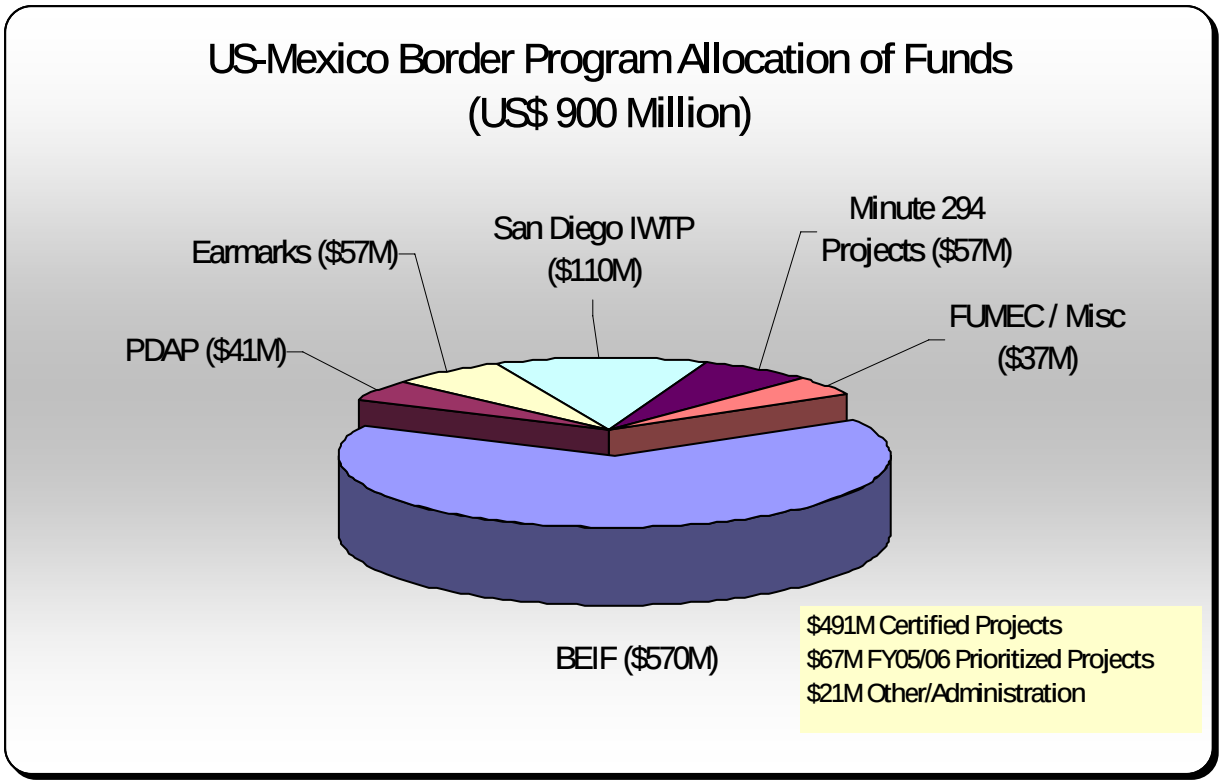


[2] U.S. Congress. House. Committee on Banking, Finance, and Urban Affairs. *United States-Mexican Border Environment Agreement*. Hearings, 103d Cong., 2d Sess. Oct. 27, 1993. Washington, US Govt. Print. Off., 1993, P8 and 141.

US-Mexico Border Program allocated to PDAP and BEIF

In 1997, a portion of the US-Mexico Border Program resources began to be allocated to the PDAP and the BEIF for water and wastewater projects on both sides of the border. **Projects, located in either Mexico or the US, must provide a US-side benefit to be eligible for funding and must have local ordinances in place to prevent the development of colonias and/or the construction of residential, commercial or public facilities which lack water, wastewater, or other necessary infrastructure**. The construction grant funds are intended to supplement other sources of funds in order to make the project affordable to its users.

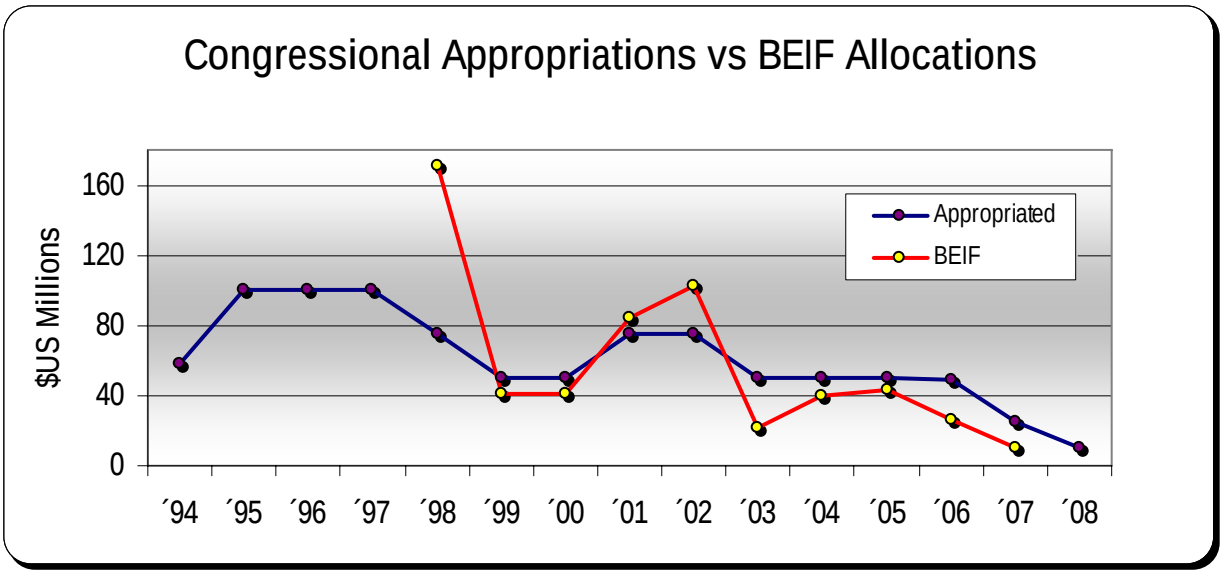
The BEIF and PDAP have received approximately $613 million of the total funding appropriated to the US-Mexico Border Program. In addition to direct project allocations (San Diego, Minute 294, FUMEC), annual earmarks totaling approximately $57 million have been provided from the program directly to El Paso and Brownsville, Texas. The pie chart shows the allocation of total US-Mexico Border Program funds.



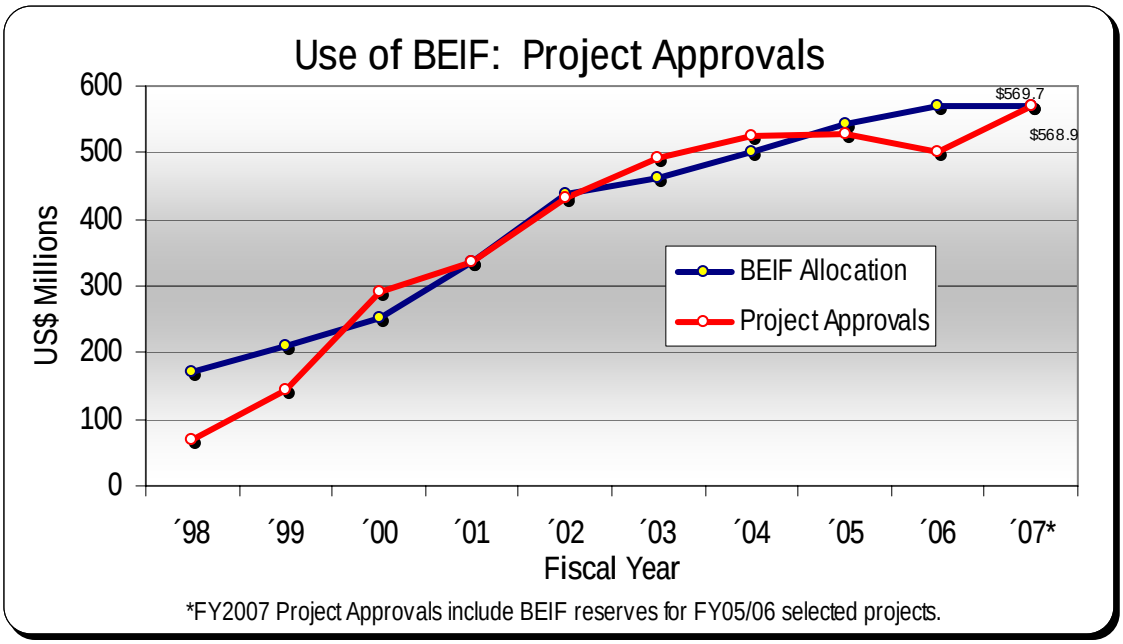
PDAP-BEIF have provided aid to sustainable solutions for a broad spectrum of threatening environmental and human health conditions related to the lack of drinking water and wastewater infrastructure. Its success has been attributable to extensive coordination by BECC/NADB with project sponsors, funding and regulatory agencies, and community residents affected by the projects. The following statistics evidence the **effectiveness** of the allocations provided to PDAP and BEIF from the US-Mexico Border Program:

- **$491 million of BEIF, 54.2% to US projects and 45.7% to projects in Mexico, for the implementation of 54 certified projects valued at $1.4 billion, many of which are located in rural communities and designated colonias.**
- **BEIF funding obligated to FY05/06 prioritized projects of approximately $67 million will support the implementation of 25 additional projects valued at an estimated $207 million**.
- **The projects resulting from the BEIF-PDAP allocations have provided a direct benefit to more than 7.5 million people**.
- **Nearly 300 millions of gallons per day of untreated and inadequately treated wastewater discharges, generated by more than 1.6 million households or approximately 6.8 million border residents, eliminated**.

As illustrated in the graph, below, the allocations to BEIF have historically been provided at inconsistent amounts; however, as one year faced a dip in funding allocation, the next year(s) typically experienced an increase in budget.



The inconsistency in budget allocations, in the past, has not had a significant impact on implementing projects since the resources have simply accumulated and been obligated when the project is ready for implementation. **However**, the trend seems to have changed in the past few fiscal years with consistently decreasing budget allocations, which certainly has an impact on implementing projects. BEIF obligations to projects have utilized almost all of the available resources, as illustrated below.



With project obligations reaching their limit, it is critical to attempt to understand why budget requests have fallen during the past two fiscal years. With substantial progress achieved with program funds, other factors must have influenced the decreased requests. This new tendency may be caused by many factors one of which is the **misleading interpretation that lagging disbursement rates reflect an ineffective program**.

Influences on Budget Requests

Since it is all too common to measure program performance by the percentage of funds disbursed, a delay in funding disbursements may be interpreted as a sign of inefficiency or ineffectiveness. Or worse, non-disbursed funds may be misinterpreted as an accumulation of un-obligated funds, which are not needed for projects. Neither of these conclusions is true for the US-Mexico Border Program.

An adequate project development cycle for the types of projects supported by PDAP-BEIF includes several stages, which build upon the conclusions of the previous step's analysis. Eliminating steps or allowing short cuts in the project cycle may result in quicker disbursements but the technical, financial and environmental sustainability of the project is jeopardized. The time required to appropriately develop and implement a project typically ranges between 4-6 years, including 2 to 3 years for technical development and financing commitment and require an additional 2 to 3 years for construction. Many projects require more than one contract for construction and the contracts may need to be completed in a sequence rather than simultaneously. The rate of disbursement is dependent on the rate of construction and also may be impacted by external influences such as the readiness of matching funds for completing the project financing structure. Therefore, it cannot be expected for disbursements to advance as quickly as funding may be allocated.

Given this fact, it may be true that the **lagging disbursement rate of BEIF,** due primarily to efforts and time required to assure project readiness for implementation**, has influenced EPA's budget level requests to fall to an amount insufficient to continue the established momentum for addressing the need for environmental infrastructure improvements in the border region**. In addition, **it is not accurate to interpret non-disbursed funds as un-obligated.** As it is specifically noted in the FY2008 budget, the budget request was made in consideration of $300 million in un-obligated program funds. As established, above, nearly all of the appropriated funds, greater than 95% are contracted or obligated to projects. One strategy to mitigate the time-lapse in allocations and disbursements is to offer funding to initiate the technical and financial development tasks for an additional group of projects. With project development tasks complete, future program allocations can contribute directly to the implementation of these projects, creating an opportunity for immediate and substantial funding disbursements.

Nevertheless, because of the increasing funding limitation, BECC, in coordination with EPA and NADB, have implemented a prioritization process to identify projects, which will address the most severe environmental and human health conditions existing in the border region. To date, the BECC has conducted two processes for the prioritization of water and wastewater projects. The initial process was completed in July 2005 for funds available from FY2005 and FY2006, with 26 priority projects selected for funding consideration. A second process was initiated in May 2006 for funding anticipated to be available from FY2007 and FY2008 budgets. The needs identified by the prioritization efforts are presented in the following section.

Identified BEIF Needs - BEIF/PDAP Prioritization Efforts

Several advantages have been realized in the implementation of a prioritization process for available funds. One advantage is a well-documented list of needs existing on the border. The prioritization of projects provides the ability to select projects in an order, which will address the most severe conditions first. In addition, appropriate planning for funding priorities of matching source programs can be supported by the prioritized list.

In July 2005, the first prioritization process to select water and wastewater infrastructure projects for opportunities to receive BEIF and PDAP was completed. Some 135 eligible projects were evaluated with an estimated financial need of almost $900 million. **Although each project proposed to address important environmental needs and merited further development**, the US-Mexico Border Program funding was not sufficient to support the entirety of border infrastructure project needs. Based on funding availability in

FY2005 and FY2006, 26 projects were selected to receive PDAP technical assistance funds for project development activities and BEIF construction assistance.

In April 2006, the second prioritization process was announced for funding that might be available from the FY2007 and FY2008 budgets. **The FY07/08 solicitation resulted in the prioritization of 152 eligible projects, with an estimated construction funding need of $662.1 million**. Nearly half of the eligible projects in the current process are intended to address conditions meeting Category 1 placement, the highest priority for funding due to the severity of environmental and human health conditions existing in the project area.

When the FY07/08 needs are combined with the *unfunded* needs identified in the FY05/06 process, the **documented needs grow to nearly $1 billion**. The following table presents the distribution of needs by border state and the respective number of residential connections directly impacted by the proposed projects.

	# of Projects	Estimated Construction Cost	**Connections** Directly Impacted
BC	38	$94.2M	197,205
Chih	12	$50.8M	183,338
Coah	13	$108.6M	250,269
Son	16	$55.8M	35,880
Tamps	20	$184.9M	328,647
CA	19	$48.5M	12,100
AZ	13	$39.9M	18,150
NM	21	$115.9M	26,170
TX	52	$258.5M	96,870
Summary of Needs			
Total MEX	**99**	**$492.6M**	**995,339**
Total US	**105**	**$462.7M**	**153,290**
Total	**204**	**$955.3M**	**1,148,629**

Projects with **BEIF contributions have historically leveraged funding from local, state and federal sources at a ratio of approximately $1.85 to every $1.00 of BEIF**. Utilizing this funding proportion, **the estimated BEIF resources needed to implement the documented needs is approximately $325 million**.

Cost per Connection – Documented Needs

For the combined FY05/06 and FY07/08 BEIF/PDAP prioritization processes, **the number of connections directly benefited from the proposed projects is defined as the connection served by the system that will directly receive the new or improved service by the proposed project**. It does not take into account the total population (local and transboundary) that also benefits from human health and environmental improvements. Given the population and estimated BEIF need, a BEIF cost per benefited connection can be calculated:

	Estimated BEIF Need	Connections Directly Benefited	Estimated BEIF Cost/Benefited Connection
Total MEX	**$167.5M**	**995,339**	**$170.00**
Total US	**$157.3M**	**153,290**	**$1,030.00**

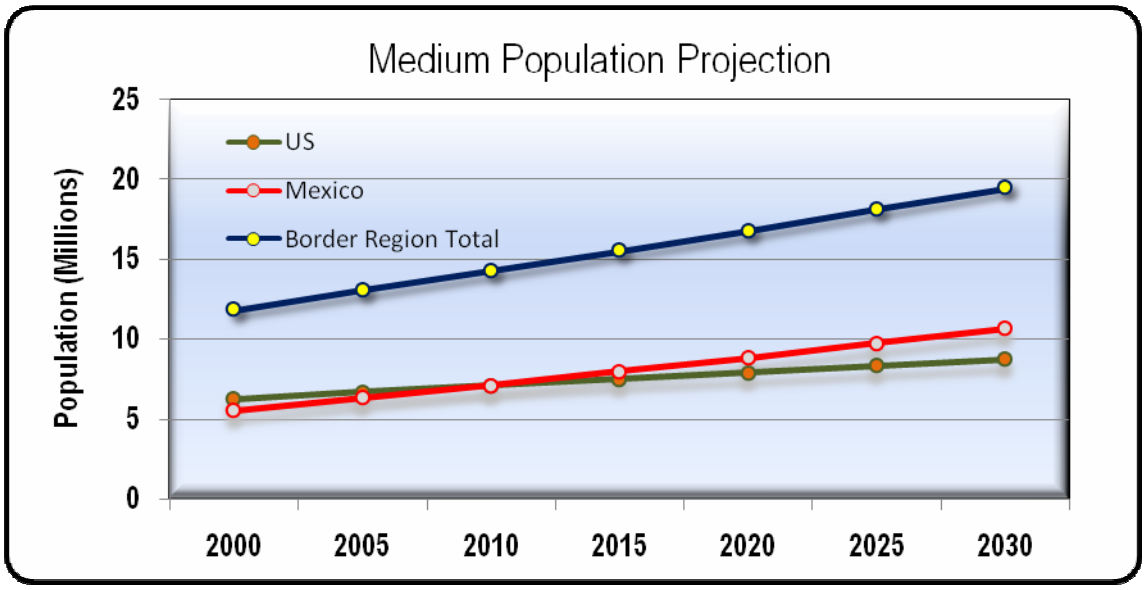
The total BEIF need for projects identified in Mexico require a BEIF investment of less than $170/connection and for projects in the US, $1,030/connection. Using an estimated 4 persons/connection, the per connection cost translate into approximately $42.00 per capita for projects in Mexico and $257 per

capita for US projects. These per connection and per capita investment costs are low compared to the investment standards of other US programs[3].

Acknowledging the Undocumented BEIF-needs

In addition to those needs submitted for consideration in these two prioritization efforts, it can still be anticipated that this number does not truly capture all of the existing needs because many project sponsors submitted only their highest priorities for the process and others have been discouraged from submitting applications due to anticipated funding limitations. The burden of rehabilitating, expanding, and developing new infrastructure is further impacted by the rapid population growth experienced in the border region.

Population growth in the 24 US border region counties, as reported by the US/Mexico Border Counties Coalition, was nearly 30% since 1990. In the Border 2012 *State of the Border Indicators Report 2005*, the following population trends are presented:



The medium population projections show a continuing trend of substantial population growth in the border region. With a significant backlog already existing in basic infrastructure needs, the impact of population growth places an additional burden on the ability of the existing inadequate or deteriorating infrastructure to meet these demands. More concerning are the areas where infrastructure does not already exist and the inevitable human health and environmental conditions which will be further exacerbated by the population growth.

Impacting Local, Regional and Transboundary Populations

As previously noted, the connection benefited statistics **do not include the hundreds of thousands of additional people residing in the same community or the cross-border community who will benefit from the new or improved services**. To be considered eligible for funding from PDAP-BEIF, projects, both in the U.S. and in Mexico, must propose to address existing conditions that if improved will have a positive impact to the health and environment in the U.S. Taking into account the number of projects in Mexico that continue to need BEIF support, **a significant transboundary environmental and human health effect in the US also**

[3] Through an unofficial consultation with US Department of Agriculture Rural Development – Rural Utility Services (USDA-RUS) and the Texas Water Development Board (TWDB), it appears that $1,500/capita is a typical target for USDA-RUS projects. For TWDB, which has completed several projects providing first-time services, projects ranging between $5,000 and $10,000/capita are considered expensive but not necessarily unacceptable.

continues to exist until these proposed projects are addressed. It is also important to recognize that there are both economic and socio-economic impacts that occur when these projects are left unaddressed due to the integrated relationship held by these bi-national communities.

In addition to the impacts to the cross-border community, even populations residing well beyond the project area may appreciate benefits from the new infrastructure – from healthier communities to an increase in economic opportunities. This dissemination of impact occurs because of several factors, including but not limited to:

- Shared water bodies along much of the border are impacted by untreated or partially treated wastewater discharges as well as other pollutants.
- Residents of the US border counties experience incidence rates, which typically exceed state and national averages, for water-borne ailments and diseases such as hepatitis. More concerning is the high mortality rates related to such diseases.
- It is estimated that approximately 132,000 pedestrians, 523,000 passenger vehicles, 12,000 commercial trucks, and 2,000 rail containers cross the border on any given day.[4]
- Seven ports of entry are at the center of cross-border trade and crossings between the US and Mexico. These crossings handle 90% of all southwest border trade and northbound commercial truck traffic.[4]
- The region's top ports, Laredo, El Paso, and San Diego, are also the 2nd, 5th, and 6th busiest land gateways by trade value in the nation, respectively.[4]
- According to Border 2012 program documentation, approximately 90% of the border population resides in 14 paired trans-border communities. Urban populations along the border and especially in Mexico have increased due, in part, to the maquiladora program and the opportunities for greater industrial development supported by NAFTA.

Several of the factors, described above, are related to economic impacts to the border region and beyond. An economic impact analysis conducted by BECC, in 2004, reviewed the economic impacts in US communities of the investment in water and wastewater infrastructure and found that for a $1 million investment, the forecasted 10-year impacts for the community include:

- $11.1 million in private sector investment
- 221 new jobs created
- $1.7 million in tax revenue
- $52.2 million in goods produced by the private sector.

Evidence of this type of economic impact is reflected in statistics reported by the US/Mexico Border Counties Coalition (Coalition) related to personal income in border counties, which increased 41.4% compared to 29.3% growth in non-border counties in the same states. The Coalition's report goes on to note, "Since 1990, border counties have managed to narrow the unemployment rate gap with the rest of the nation." Still the vast majority of border counties have unemployment rates that are double the national average. However, the unemployment rates are likely impacted by the influence of a rapidly growing population and a job growth rate that simply cannot develop at the same speed.

Turning the discussion to the supplemental impacts that have been experienced south of the US-Mexico border, as a result of the availability of PDAP-BEIF investments, **Mexico's Comision Nacional del Agua (National Water Commission) has tripled its investment in the border** in the past three years. This is clear evidence of the priority Mexico has given to improving these conditions. Service coverage increases for communities within 100 km south of the US-Mexico border substantiate the accomplishments of the leveraged investments. Service coverage for drinking water, sewer and wastewater treatment have increased dramatically with the most significant being **an increase in wastewater treatment coverage from 31% to 80%, whereas the national average in coverage of wastewater treatment services is less than 30%.**

With this unprecedented access to infrastructure, other programs in Mexico have also increased their investment, such as the INFONVIT program which facilitates the access to affordable housing with full

[4] US/Mexico Border Counties Coalition

services of water wastewater, natural gas, paving, and electricity for border residents through a financial tool subsidized by public and private contributions. This affordable housing program has been critical to address new needs generated from the increase in population within these communities due to migration and local growth. In the years 2000 through 2005, the INFONVIT program, also, nearly tripled its annual investment in the Border States from approximately US$59 million to US$159 million. Further, **considering the increased access to new infrastructure, services, and affordable housing along the border in Mexico, it is more likely that migration to the border will be met with sufficient resources to mitigate the pressure for residents to immigrate north in search of an improved quality of life**. Thus, these benefits can likely be translated into a significant effect on important bi-national issues such as immigration.

Specific Program Impacts – Sustainable Development

Projects receiving BEIF must achieve BECC Certification and NADB financing approval, which requires the project and/or project sponsor to meet various criteria related to human health and the environment, technical feasibility, financial feasibility, community participation and sustainable development. The activities completed to satisfy the criteria also provide benefits that may not exist if the BEIF is not a contributing resource. These benefits include but are not limited to:

- USEPA NEPA process requires critical environmental impact analyses including studies related to transboundary environmental impacts for projects in Mexico.
- Standardized technical development practices providing analysis of best and cost-effective project alternatives, appropriate technology and operation/maintenance plans.
- In-depth financial analyses intended to determine affordability requirements, sufficient revenue streams to support the capital improvement project and operation/maintenance, and establish reserve budgets to advance toward financial sustainability. The process drives utilities to move from operating in the "red" to operating in the "black".
- Formal public announcement and comment solicitation, supporting a transparent process.
- Documented outreach efforts and community support for acceptance of the project and other community impacts.
- Sustainable development concepts such as community development[5] and regional planning must be considered.

Conclusions and Recommendations

Although the US-Mexico Border Program has supported substantial advancement in addressing environmental infrastructure needs in the border region, nearly $1 billion in additional drinking water and wastewater infrastructure needs have been identified and documented by the PDAP-BEIF prioritization process. It is anticipated that there are a large number of other existing needs, which have not been documented through this process. And those factors such as a rapid population growth place a greater burden on deteriorating and sub-standard systems, which continue to go unaddressed due to a lack of funding resources. Finally, it is easy to recognize that deficiencies in drinking water and wastewater infrastructure on either side of the US-Mexico border jeopardize the human health, environment, economy and socio-economic well-being of both nations, in and beyond the defined border region. This becomes a concern not only for the present but also for future generations.

With a well-established history of program effectiveness, it is critical to enhance the opportunities available for PDAP and BEIF to support the resolution of threatening human health and environmental condition in the US-Mexico border region. **This can be accomplished through a comprehensive funding obligation, providing sufficient resources at or near $100 million per year, to the US-Mexico Border Program, specifically directed to PDAP and BEIF.**

[5] Community development includes opportunities for economic and socio-economic improvements. Research has established that environmental infrastructure, in general, is necessary to support economic development and that a link is also established to the improvement of socio-economic conditions given the increased economic and community revitalization opportunities.