

Chairman Udall, members of the committee, thank you for this opportunity to present to you information regarding the Border Environment Cooperation Commission (BECC) and its work.

Background

The Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADB) are binational organizations created in 1993 by the governments of the United States and Mexico under a side agreement to the North American Free Trade Agreement (NAFTA). Both institutions work cooperatively to help preserve, protect and enhance the environment of the U.S.-Mexico border region, in order to advance the well-being of the people of the United States and Mexico, through the development, certification, and financing of environmental infrastructure projects.

BECC and NADB assist local, state, federal and private entities in evaluating, developing, implementing, overseeing and measuring the results of environmental infrastructure projects. While BECC focuses on the technical and environmental feasibility of projects, NADB evaluates their financial feasibility and oversees disbursement and construction.

BECC Accomplishments

As of March 30, 2012 BECC has accomplished the following:

- **191 certified projects (87 U.S./104 Mexico) representing nearly \$4.315 billion in environmental infrastructure investment, directly benefiting 14 million border residents. NADB has provided \$1.34 billion in financing for 153 of those projects.**
- **115 Water and wastewater projects valued at \$2.3 billion providing new or improved services to 12 million border residents.**
- **25 Water conservation projects estimated to save energy and to decrease water losses by approximately 330 MGD, enough to serve the average demands of some 4 million people.**
- **22 Solid Waste projects accommodating approximately 1,550 tons/day of waste previously disposed of in open or uncontrolled sites.**
- **13 Air Quality projects related to paving that will eliminate approximately 200,000 tons per year of PM₁₀, caused primarily by vehicular traffic on unpaved roadways.**
- **7 Energy projects anticipated to prevent greenhouse gas emissions equivalent to almost 798,600 metric tons of CO₂-e per year through the use of alternative energy and fuel sources.**

Specifically in New Mexico 9 projects have been certified with a construction cost of almost \$70M. Of these 9 projects, 7 are related to water and wastewater services, 1 to municipal solid waste and 1 to water conservation. Additionally, \$4.32M has been provided for studies necessary for development of the projects such as facility plans, environmental information assessments, final design, and public participation activities. Attached is a fact sheet for the state of New Mexico with specific details.

US Mexico Program

Program Accomplishments

Since 1997, the U.S.-Mexico Border Water Infrastructure Program, funded by Congress through EPA, has awarded grants to water and wastewater systems in the border region through the Project Development Assistance Program (PDAP) for project development and design and the Border Environment Infrastructure Fund (BEIF) for construction, programs administered by BECC and NADB, respectively. Notable program accomplishments include:

- **More than \$34 million in PDAP technical assistance grants for project development in 155+ communities. Approximately 85% of these funds have led to projects already implemented or under development. Demonstrating how investment in master plans and facility planning create tools necessary to define investments needs and access construction funding.**
- **\$571 million in BEIF funds committed to the implementation of 98 drinking water and wastewater infrastructure projects valued at \$1.7 billion, leveraging \$1.1 billion and directly benefiting 8.5 million border residents, including underserved communities in the U.S. Specifically, and considering that some projects have multiple components, the infrastructure supported includes 20 water treatment plants, 29 water distribution systems, 52 wastewater treatment plants, and 72 wastewater collection systems.**
- **A leveraging strength of more than \$2.00 of other sources to every \$1.00 BEIF reflects the program's ability as a catalyst for other stakeholder participation.**

On-Going Investment Needs – US Border Region

EPA's U.S.-Mexico Border Water Infrastructure Program has offered the greatest investment and leveraging tool for successful basic service infrastructure development in the border region. Still, additional drinking water and wastewater infrastructure needs continue to be identified and far surpass available program resources.

To ensure that funds are used in the most effective manner possible, targeting the most critical needs, the BECC and EPA conduct a bi-yearly prioritization process. For the FY 11/12 prioritization process, **200 applications** were received, worth nearly **\$800 million in construction investments**. 132 of these projects propose to construct new infrastructure, much of which provides first-time access to these basic services. Eligible projects representing **\$664 million in construction needs** were evaluated and a total of **23 projects**, worth an estimated **\$193.7 million in construction costs**, have been identified as candidates to receive PDAP funding to advance their development. Additional project selection is anticipated for this year; however, the number of projects is not yet defined.

Up to FY2007, contributions to the program had been on the order of \$50 to \$100 million, annually. Since 2008 the president's proposed budget for this program has greatly diminished to only \$10 million annually. Until FY 2012 Congress has consistently increased the budget through the appropriations process. The president's budget for FY2013, again, **only proposes \$10 million** for the US-Mexico Border Program, an insufficient amount to address the total remaining unfunded applications from the FY11/12 prioritization process of more than \$460 million.

On March 31, 2008 EPA's Office of Inspector General published an audit report entitled "Improvements Needed to Ensure Grant Funds for U.S.-Mexico Border Water Infrastructure Program are Spent More Timely". The report acknowledged the important accomplishments of the program and made several recommendations for improving program operations, all of which have been implemented. Comprehensively, these program improvements have substantially addressed the unliquidated balance for the US-Mexico Border Program. BEIF construction disbursements have increased, outpacing new program funding since 2006, an indicator that water and wastewater services are also more quickly reaching the end-user and the environment and human health conditions are being improved. **Total unliquidated BEIF balances, once as high as \$320 million, have been reduced to less than \$107 million** even with the continuation of annual funding awards to BEIF.

**María Elena Giner, General Manager, Border Environment Cooperation Commission
Presentation to Senate Committee on the Environment and Public Works
Subcommittee: Children's Health and Environmental Responsibility (Sen. Tom Udall, Chairman)
April 11, 2012
Las Cruces, New Mexico**

My colleagues at EPA and NADB may offer further comments about this essential infrastructure investment program for the region. Attached is a fact sheet for the US Mexico Border program with more specific details on accomplishments, needs, and program improvements.

Needs Assessment

BECC has long recognized the value of generating information through strategic studies intended to identify needs, project opportunities, and improve the effectiveness of infrastructure program investments that could be supported by BECC and NADB. Some of the important studies which are available on our webpage include Greenhouse gas inventories and projections for the six border states of Mexico, a Strategy for Sustainable Housing Development and School buildings, and satellite diagnostics of paving needs for Sonora and Tamaulipas.

With respect to needs in water and wastewater infrastructure, BECC has concluded needs assessments for the 6 Mexican border states, as well as for New Mexico and Arizona. Preliminary information is available for Texas and California. These needs assessments focus on identifying areas that are not being served with a centralized water and wastewater system. Sources of information for the reports include state and regional planning efforts, census or other demographic/economic/health databases, public financial records, annual performance reports, government funding program investment archives, and previously certified projects.

Providing access to adequate drinking water and wastewater services continues to be a need for residents in US border counties. While the primary gap in centralized service coverage primarily exists in the rural setting, an investment may likely be required whether connecting to a centralized system or making improvements to address drinking water quality or adequate on-site wastewater disposal. As a priority for investment, the needs assessments have identified a gap in coverage related to household connections with centralized water service but without centralized wastewater service. This gap merits the most immediate attention due to an increased risk of exposure to untreated or inadequately treated wastewater caused by potential surfacing of effluent, which is influenced by the following:

- Residents connected to centralized water systems tend to be higher water users causing a greater burden on wastewater disposal methods, especially individual on-site systems.**
- Areas served by centralized water systems are typically characterized by higher density development, resulting in insufficient space for adequate leach field operation.**
- High water tables and/or poor soil conditions are typical in the border region and influence risks related to over-saturated leach fields.**

It is estimated that the priority investment need to address this gap of service in the US states is \$3.2B and in the Mexican Border states, it is \$515M. For New Mexico, this need is estimated at \$322.1M. Attached is a fact sheet with more specific details on the results of our Needs Assessments.

In conclusion, a demonstrated need for critical water and wastewater services has been documented, based on the needs assessments, and on the number of unfunded applications in the FY 11/12 prioritization, representing an immediate investment need of \$460 million. Therefore funding for the US Mexico Border program continues to be an important priority for our region.

Border 2012

The U.S.-Mexico Environmental Program (Border 2012) is a collaboration between the United States and Mexico to improve the environment and protect the health of the nearly 12 million people living along the border. The bi-national program focuses on cleaning the air, providing safe drinking water, reducing the risk of exposure to hazardous waste, and ensuring emergency preparedness along the U.S.-Mexico border. To support EPA and Mexico's Ministry of the Environment and Natural Resources (SEMARNAT) in their efforts to achieve results, BECC provides its services to facilitate stakeholder meetings as well as to identify, contract, and manage projects.

BECC strongly supports the Border 2012 Program, as it has proven to be a bottoms-up, stakeholder driven approach to addressing the primary environmental problems along the U.S.-Mexico border region.

Border Region Strategic Initiatives

BECC continuously supports a pipeline of projects related to environmental infrastructure needs and has long-established competencies to facilitate the development of traditional projects related to water, wastewater, and solid waste. In addition, BECC continues to build capacity necessary to advance solutions for emerging environmental sectors, such as **air quality, transportation, energy and climate change planning**. With increasing attention to these environmental issues and the experience and partnerships built through 15 years of working in the border region, BECC has responded strategically with an approach which focuses on the following activities:

- **Strengthening Border Stakeholder Cooperation** - BECC offers its knowledge and experience to assist in project/program coordination, consistent information exchange, and strategy development.
- **Climate Change Planning, Mitigation and Adaptation Initiatives** - BECC has supported the development of essential technical assistance tasks such as greenhouse gas inventories and projections as well as energy resource assessments for the 6 Mexican states and is focused on climate action planning as well as identifying opportunities in current climate action efforts for the US states, supporting the efforts of both countries for emission reductions.
- **Energy Efficiency and Renewable Source Projects** - Hand-in-hand with a more efficient use of water, BECC is working to facilitate energy efficiency efforts that can be quick and cost-effective for large energy users like utilities. In 2011, BECC/NADB received certification and financing approval for 2 utility-scale solar projects located in California and Arizona and received approval for the first utility-scale wind project located in Tamaulipas, Mexico, just after the first of the year.



BECC Development Assistance Programs (PDAP/BEIF)

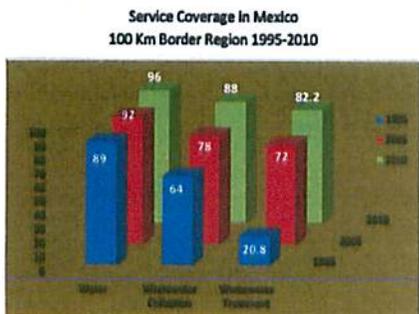
Integrating Environmental Solutions for the US-Mexico Border



EPA's US-Mexico Water Infrastructure Program

Since 1997, the U.S.-Mexico Border Water Infrastructure Program, funded by Congress through EPA, has awarded grants to water and wastewater systems in the border region through the Project Development Assistance Program (PDAP) for project development and design and the Border Environment Infrastructure Fund (BEIF) for construction, programs administered by BECC and NADB, respectively. Notable program accomplishments include:

- More than \$34 million in PDAP technical assistance grants for project development in 155+ communities. Approximately 85% of these funds have led to projects already implemented or under development.



Wastewater treatment coverage in Mexico's border region has increased from 21% to 82% (1995-2010), whereas Mexico's national average wastewater treatment coverage is less than 40%. Refs. INEGI 2005; 2008; CONAGUA 2006; BECC

- \$571 million in BEIF funds committed to the implementation of 98 drinking water and wastewater infrastructure projects valued at \$1.7 billion and directly benefiting more than 8.5 million border residents, including underserved communities in the U.S.

	Total	# in U.S. Communities	# in Mexican Communities
Water Treatment Facilities	20	16	4
Water Distribution Systems	29	18	11
Wastewater Treatment Plants	52	21	31
Wastewater Collection Systems	72	29	43

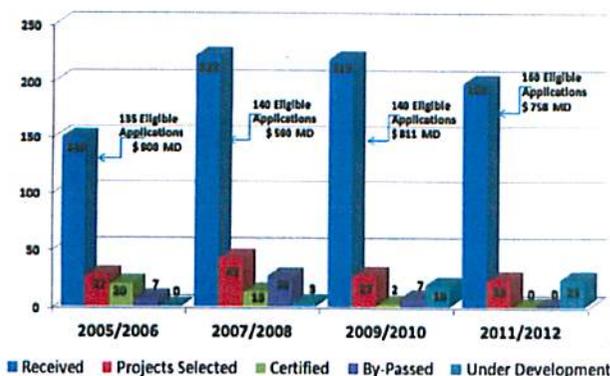
- A leveraging strength of more than \$2.00 of other sources to every \$1.00 BEIF reflects the program's ability as a catalyst for other stakeholder participation.

- Every project, whether located in the US or Mexico, has provided an environmental and human health benefit for the U.S.
- A capacity to eliminate more than 400 million gallons per day of untreated or inadequately treated wastewater discharges has been achieved, equivalent to the wastewater discharge of nearly 8 million persons or 1.86 million households.
- Influenced by the availability of this critical bi-national funding program, a significant increase of investment by Mexico has been experienced in the border region through programs of the *Comisión Nacional del Agua* (National Water Commission).

Economic Impact: Water Infrastructure

Interested in documenting the role of infrastructure investment as a driver or catalyst for new private sector economic activity and job/wealth creation, BECC conducted an **Economic Impact Study** to determine the extent to which water and wastewater infrastructure improvements **create/enhance economic opportunities in the community**. The study was supported by data calculated from the Bureau of Economic Analysis ("BEA") RIMS II model for five US communities. In terms of infrastructure and well-being, the study concluded that one million dollars invested in water and wastewater infrastructure over 10 years results in: \$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.

On-Going Investment Needs – US Border Region



Year	Received	Projects Selected	Certified	By-Passed	Under Development
05/06	\$ 1030 MD	\$ 141 MD	\$ 163 MD	0	
07/08	\$ 171 MD	\$ 231 MD	\$ 107 MD	\$ 8 MD	
09/10	\$ 1130 MD	\$ 743 MD	\$ 9 MD	\$ 67 MD	
11/12	\$ 841 MD	\$ 303 MD	TBD	\$ 193 MD	

Drinking water and wastewater infrastructure needs continue to be identified and far surpass available program resources in EPA's U.S.-Mexico Border Water Infrastructure Program.

For the FY 11/12 prioritization process, 200 applications were received, representing nearly \$800 million in construction investments.

FY11-12 Prioritization Cycle	Number of Applications	Estimated Construction Cost USD
Baja California	43	\$105,690,269
Sonora	10	\$27,594,189
Tamaulipas	30	\$150,853,543
Coahuila	8	\$13,397,690
Chihuahua	11	\$44,476,103
Total MX	102	\$342,011,794

FY11-12 Prioritization Cycle	Number of Applications	Estimated Construction Cost USD
California	22	\$125,740,229
Arizona	11	\$20,665,871
Texas	54	\$266,133,733
New Mexico	11	\$40,404,551
Total US	98	\$452,944,384

On-Going Investment Needs



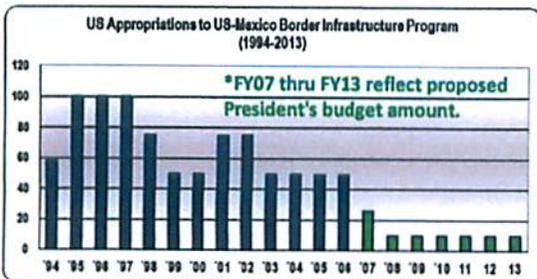
BECC Development Assistance Programs (PDAP/BEIF)

Integrating Environmental Solutions for the US-Mexico Border



132 of these projects propose to provide first-time access to these basic services. Approximately \$664 million of eligible projects were evaluated and a total of **23 projects, worth an estimated \$193.7 million in construction costs**, have been selected as candidates to receive PDAP funding to advance their development. Detailed information on the FY 11/12 Prioritization process, including selected projects, can be found on BECC's website at www.cocéf.org

Historically, contributions to the program have been on the order of \$50M to \$100M, annually. Since 2008 the president's proposed budget for this program has greatly diminished to only \$10M annually. This budget has consistently been increased to between \$20M and \$25M by congress through the appropriations process. The president's budget for FY2013 proposed only **\$10 million** for the US-Mexico Border Program, an insufficient amount to address the total remaining documented needs of more than **\$460 million**.



Success through Effective Program Management

In 2008, EPA's Office of Inspector General (OIG) published an audit report entitled "Improvements Needed to Ensure Grant Funds for U.S.-Mexico Border Water Infrastructure Program are Spent More Timely." EPA, in coordination with its program partners – BECC and NADB, developed and implemented strategies to achieve a more effective and efficient use of program resources. These program modifications, which

had initiated several years prior to the OIG report, included: implementation of a Biannual Project Prioritization Process; issuance of the *By-pass and Schedule Provision* (2-years for project development and certification; 3 ½ years for financing and project implementation); enactment of the *Policy for US-Mexico Border Program* (aimed at optimizing project completion rates); and, development of a program *Transition Plan* – (which defines an approach to decouple grant awards for project planning/design and construction). With these program improvements, total unliquidated BEIF balances, once as high as \$320 million, have been reduced to less than \$107 million even with the continuation of annual funding awards to BEIF.

FY11/12 SELECTED PROJECTS LIST						
Process ID	Project Name	Location	State	Type	Benefited Population	Estimated Construction Cost from Application (US\$ Million)
P4R90071	Drinking Water Quality Improvement (Arsenic Removal) in Pomasera, AZ	Pomasera	AZ	Potable Water	375	\$628,500.00
P4R90078	Wastewater Collection System Extension to Sulgor Subdivision in Sierra Vista, AZ	Sierra Vista	AZ	Sewer	390	\$3,121,507.00
P4R90107	Wastewater Treatment Plant Improvements in Wilcox, AZ	Wilcox	AZ	WW Treatment	3,900	\$7,203,199.00
P4R90127	Wastewater Treatment Plant Improvements for Holtville, CA	Holtville	CA	WW Treatment	6,699	\$4,715,906.00
P4R90130	Wastewater Treatment Plant Improvements for Niland, CA	Niland	CA	WW Treatment	1,153	\$6,262,000.00
P4R90116	Sewer System and Wastewater Treatment Plant for Colonia Nueva Hindú, Tecate, BC	Tecate	BC	Sewer and WW Treatment	7,995	\$4,400,000.00
P4R90258	Rehabilitation of Primary Wastewater Collection Lines in Tijuana, BC	Tijuana	BC	Sewer	130,950	\$5,277,751.59
Combined P4R90149/160	Rehabilitation of the Wastewater Collection System in Colonias Loma Linda and Esperanza, Mexicali, BC	Mexicali	BC	Sewer	2,568	\$1,439,988.21
Combined P4R90117/121/264	Potable Water Distribution System, Wastewater Collection System and Wastewater Treatment Plant, Agua Prieta, SON	Agua Prieta	SON	Potable Water, Sewer and WW Treatment	68,144	\$6,665,000.00
P4R90085	Expansión del Sistema de Distribución de Agua Potable y Alcantarillado en Topahué I y Topahué II, en San Luis Rio Colorado, SON	San Luis Rio Colorado	SON	Potable Water, Sewer and WW Treatment	16,000	\$2,800,000.00
Combined P4R90137/128	Expansion of the Water Distribution and Wastewater Collection Systems in Southwest Nogales, SON	Nogales	SON	Potable Water and Sewer	68,000	\$12,421,000.00
P4R60243	Wastewater Treatment Capacity Expansion in Reynosa, Tamaulipas	Reynosa	Tamps	WW Treatment	228,814	\$22,341,701.11
P4R60240	Construction of the Lift Station # 278 in Reynosa, Tamaulipas	Reynosa	Tamps	Sewer	16,033	\$2,735,153.00
P4R60237	Construction of the Lift Station # 1 in Reynosa, Tamaulipas	Reynosa	Tamps	Sewer	68,632	\$8,627,624.00
P4R60109	WW Collection Improvements - Disconnection from Storm Water Sewer	Nuevo Laredo	Tamps	Sewer	80,269	\$4,802,773.00
P4R60202, 222, 226, 229, 233 and 234	Wastewater Collection Expansion to Un-served areas Colonia La Misión, and Colonia El Saúz, Sewer Main Rehabilitation and Wastewater Treatment Plant	Camargo	Tamps	Sewer	11,000	\$2,880,000.00
P4R60200	Matamoros West Wastewater Treatment Plant Construction (First Phase 12.3 MGD)	Matamoros	Tamps	WW Treatment	184,524	\$11,604,065.00
P4R60206	West Wastewater Conveyance System and Lift Stations Construction (First phase)	Matamoros	Tamps	Sewer	147,300	\$28,313,071.00
P4R60208	Wastewater collection system expansion, wastewater conveyance system and lift stations for the southwestern areas of the City of Matamoros	Matamoros	Tamps	Sewer	39,604	\$12,768,181.00
P4R60196	Water Distribution and Wastewater Collection Expansion to Un-served Areas in Rio Bravo, Tamps	Rio Bravo	Tamps	Potable Water and Sewer	33,000	\$7,264,230.00
P4R60168	Sunland Park North Wastewater Plant Replacement	Sunland Park	NM	WW Treatment	18,580	\$16,626,000.00
P4R60236	Cuadrilla WWTP	Cuadrilla	TX	WW Treatment	108	\$650,000.00
P4R60070	AGUA SUD - East Sewer Project	Palmerview	TX	Sewer and WW Treatment	31,027	\$22,043,511.00
Total: 23 Projects Selected					1,185,085	\$193,791,160.91

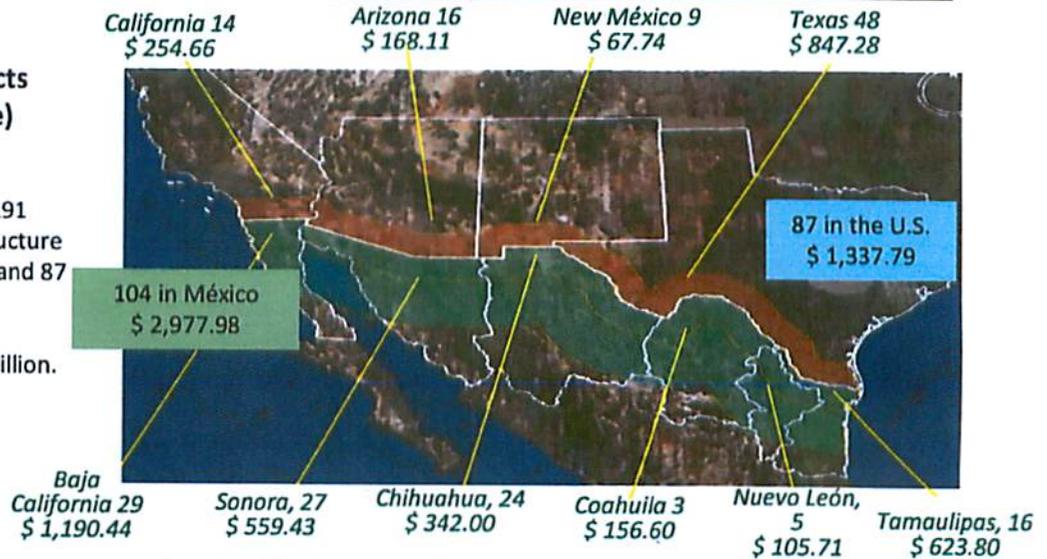
CERTIFIED PROJECTS BY BECC

"Integrating Environmental Solutions for the Border "

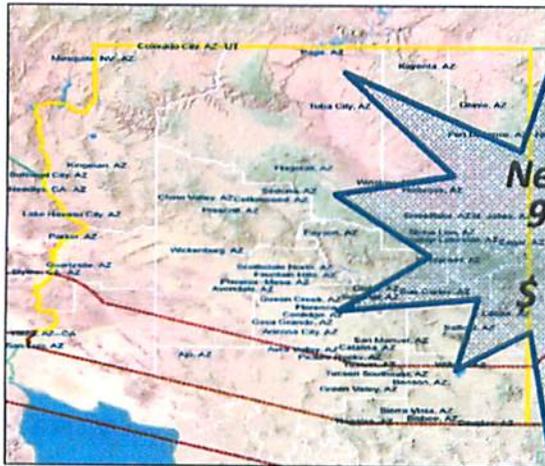


Certified Projects (1995 to date)

As of March 31, 2012, the BECC has certified 191 environmental infrastructure projects 104 in México and 87 in the U.S. – with an estimated total cost of approximately \$4.315 billion.



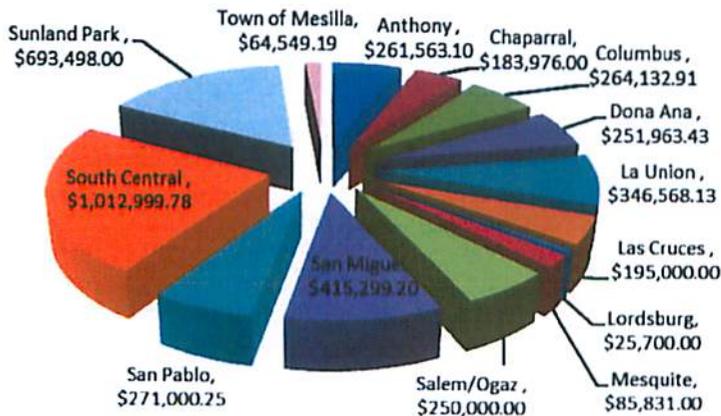
191 Certified Projects with an estimated cost of \$ 4,315 MD



**New Mexico,
9 Certified
Projects
\$ 67.74 MD**

Of these 9 projects, 7 are related to water and wastewater services, 1 to municipal solid waste and 1 to water conservation .

Technical Assistance New Mexico



Total Technical Assistance for New Mexico \$ 4.34 MD

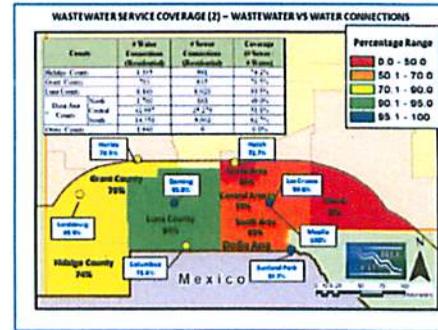
BECC provides technical assistance for project development through the EPA-funded Project Development Assistance Program (PDAP), and through a special technical assistance program funded with its own operating budget. Additionally, BECC manages EPA funds to support the development of strategic initiatives and specific projects linked to the objectives and goals of the Border 2012: U.S.-Mexico Environmental Program.

CERTIFIED PROJECTS BY BECC

“Integrating Environmental Solutions for the Border “



BECC’s effort to perform a US border region needs assessment is focused on defining the lack of access to centralized water and wastewater services as well as to evaluate service needs in the sectors of solid waste and air quality within the 100 km border region. Providing access to adequate drinking water and wastewater services continues to be a need for residents in US border counties. While the primary gap in centralized service coverage primarily exists in the rural setting, an investment may likely be required whether connecting to a centralized system or making improvements to address drinking water quality or adequate on-site ww disposal.



State	# of Counties	Drinking Water - Unserved	Estimated Investment - DW	Wastewater - Unserved	Estimated Investment - WW	Total Estimated Investment
California	2	38,864	\$287.6 M	70,803	\$849.6 M	\$1.14 B
Arizona	4	133,491	\$987.8 M	138,359	\$1.67 B	\$2.65 B
New Mexico	5	11,826	\$87.5 M	38,669	\$464.0 M	\$551.5 M
Texas	25	87,377	\$646.6 M	289,609	\$3.48 B	\$4.12 B
Total US Border Region	36	271,558	\$2.01 B	537,440	\$6.45 B	\$8.46 B

Air Quality Conditions

- > New Mexico Environment Department operates monitoring stations to document ground-level ozone (O₃) or smog, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), nitrogen dioxide (NO₂) and lead (Pb).
- > The following designated nonattainment and maintenance areas exist in NM border counties: (1) O₃ in Sunland Park; (2) PM₁₀ in Anthony; and (3) SO₂ in Grant County. In addition, DAC air quality is subject to a Natural Events Action Plan related to PM₁₀ and Luna County has also experienced periodic violations of this pollutant.
- > While PM₁₀ may be associated with high-wind events in the area, this condition is also influenced by highly traveled unpaved roads in densely populated rural areas where approximately 2,000 miles of unpaved roadways exist, representing an investment need of more than \$850M.

Projects in the Pipeline from New Mexico

Prj. ID	Project Name	Cost (MD)	Benefited Population
738	Sunland Park North Wastewater Plant Replacement	16.62	5,464

New Mexico Certified Projects

Prj. ID	Updated Project Name	Cost (MD)	Benefited Population
128	Construction of Wastewater Collection and Treatment System for La Union, NM	7.6	1,163
129	Construction of Wastewater Collection System for San Pablo, NM.	2.99	866
130	Construction of WW Collection and Treatment System for (South Central WWTP) Vado/Del Cerro/San Miguel/La Mesa/Berino/Chamberino, NM	29.8	5,488
164	Wastewater Collection System for Berino Phase I, New Mexico in Doña Ana County	1.9	1,200
165	Construction of Wastewater Collection and Treatment System for Salem/Ogaz, NM.	3	935
272	Improvements to the Waste Management System in Dona Ana County, NM.	3.14	174,682
397	Water Conservation Improvements for the Elephant Butte Irrigation District in Doña Ana County, NM	8.49	TBD
450	Lordsburg, NM: Rehabilitation of the Potable Water Treatment System.	2	3,100
677	Water Improvements Project in Anthony, New Mexico	8.82	8,388

Total Certified Projects 9 Total Cost 67.74 MD Total Benefited Population 195,822

NEEDS ASSESSMENTS BY BECC

“Integrating Environmental Solutions for the Border “



BECC’s effort to perform a **US border region needs assessment** is focused on defining the lack of access to centralized water and wastewater services as well as to evaluate service needs in the sectors of solid waste and air quality within the 100 km border region.

Drinking Water and Wastewater Infrastructure

Access to Centralized Municipal Services - US Needs and Investment Estimates								
State	# of Counties	Drinking Water - Unserved	Drinking Water Coverage	Estimated Investment - DW	Wastewater - Unserved	Wastewater Coverage	Estimated Investment - WW	Total Estimated Investment
California	2	38,864	97%	\$287.6 M	70,803	94%	\$849.6 M	\$1.14 B
Arizona	4	133,491	78%	\$987.8 M	138,359	77%	\$1.67 B	\$2.65 B
New Mexico	5	11,826	85%	\$87.5 M	38,669	53%	\$464.0 M	\$551.5 M
Texas	25	87,377	89%	\$646.6 M	289,609	64%	\$3.48 B	\$4.12 B
Total US Border Region	36	271,558		\$2.01 B	537,440		\$6.45 B	\$8.46 B

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Connections with Centralized Water Service and without Centralized Wastewater Service					
State	# of Counties	Drinking Water Connections	Wastewater Connections	% Coverage	Total Estimated Investment
California	2	1,154,181	1,122,242	97%	\$383.3 M
Arizona	4	465,534	460,666	99%	\$58 M
New Mexico	5	69,613	42,770	61%	\$322.1 M
Texas	25	728,192	525,960	72%	\$2.4 B
Total US Border Region	36	2,417,520	2,151,638	89%	\$3.2 B

- Residents connected to centralized water systems tend to be higher water users causing a greater burden on wastewater disposal methods, especially individual on-site systems.
- Areas served by centralized water systems are typically characterized by higher density development, resulting in insufficient space for adequate leach field operation.
- High water tables and/or poor soil conditions are typical in the border region and influence risks related to over-saturated leach fields.

Water Sector Strategies

- **PLANNING INVESTMENTS.** Adequate investment in master plans and facility planning create tools necessary to define investments needs; however, few funding sources are available to support this task.
- **WATER MANAGEMENT STRATEGIES.** Border counties, especially in AZ (>150 in Pima County) and NM (>70 in Dona Ana County), are served by an overwhelming number of small water utilities. Regionalization may be an effective approach to better protect water resources and cooperatively improve the capacity to generate revenues, access public funding (grants and loans), and meet system demands.
- **WATER/ENERGY NEXUS.** Energy is one of the largest O&M expenses in a water utility. By reducing energy costs at water utilities, saved funds are available for needed infrastructure investments.
- Water conservation practices such as leak detection programs, tiered rate structures and public education provide increased opportunities for sustainable water supply as well as decreased energy demands.
- Alternative sources of energy including renewables (solar or wind) as well as co-generation at WW treatment facilities is another effective way to curtail energy costs and offer emission reductions.

NEEDS ASSESSMENTS BY BECC

“Integrating Environmental Solutions for the Border “



Solid Waste Management

- Existing capacity at landfills and disposal facilities within the border counties appear to be adequate to meet local needs.
- Municipal waste collection services are typically available in the urbanized areas; however, a significant number of rural households depend on private trash collection services or self-hauling, increasing the risk for illegal dumping or improper disposal of waste.
- Strengthened reduction, reuse and recycling (3R) programs provide opportunities to divert the demand on landfill capacity, increase energy savings and reduce greenhouse gas emissions, as well as provide new economic development growth in the border counties

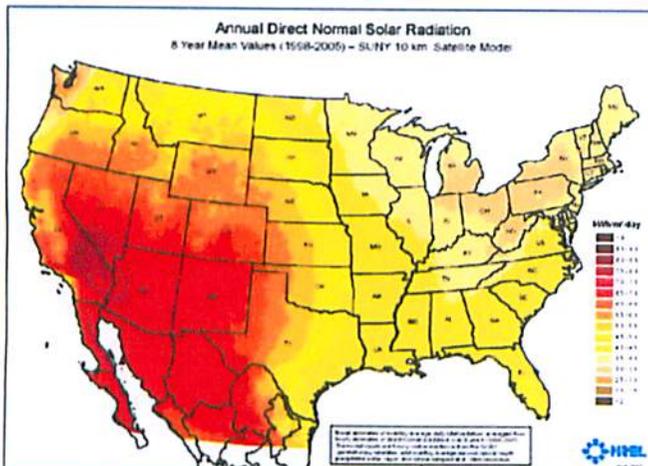
Diversion/Recycling Rates			
National	33%		
Arizona	7%	New Mexico	11%
Yuma	.95%	Hidalgo	1.8%
Pima	9.1%	Grant	4.6%
Santa Cruz	5.5%	Luna	3.3%
Cochise	6.11%	DAC	5.5%
California	62%	Otero	5.9%
San Diego	52%	Texas	35%
Imperial	pending	Border Counties	unavailable

Air Quality and Reduction Strategies

- EPA Non-Attainment Designations exist for at least one air quality standard in 8 border counties related to PM₁₀, PM_{2.5}, Ozone.
- Air quality problems in border region counties are also impacted by cross-border activity such as the significant travel on unpaved roads and vehicle emissions exacerbated by port-of-entry wait times.
- While PM₁₀ may be associated with high-wind events in the region, this condition is also influenced by highly traveled unpaved roads. A paving investment priority should be placed on residential areas, where direct exposure to PM₁₀ directly affects the health of residents, as well as to support public safety and bus routes.

State	Total Roads	Unpaved Roads	% Unpaved	Estimated Cost
Texas	16,500 miles	12,000 miles	73%	\$4.8 Billion
New Mexico	2,800 miles	2,100 miles	75%	\$850 Million
Arizona	6,400 miles	3,000 miles	47%	\$1.2 Billion
California	4,500 miles	1,300 miles	29%	\$530 Million

Renewable Energy Opportunities



Certified/Financed utility-scale Energy Projects:

- ASTROSOL 5MW Solar, Tucson, Arizona**
Up to \$15.9 million NADB loan
Emissions avoided: target \geq 7,700 MT/yr CO₂;
44 MT/yr SO₂; 28 MT/yr NO_x
- El Porvenir 54MW Wind, Reynosa, Tamaulipas**
Up to \$51 million NADB loan
Emissions avoided: target \geq 90,900 MT/yr CO₂;
1,440 MT/yr SO₂; 190 MT/yr NO_x

Certified/Financed utility-scale Energy Projects:

- SunPeak 23MW Solar, Niland, California**
Up to \$77 million NADB loan
Emissions avoided: target \geq 20,000 MT/yr CO₂;
100 MT/yr SO₂; 85 MT/yr NO_x
- FRV Tucson 20MW Solar, Tucson, Arizona**
Up to \$91 million NADB loan
Emissions avoided: target \geq 42,182 MT/yr CO₂;
200 MT/yr SO₂; 125 MT/yr NO_x

