UNITED STATES-MÉXICO ENVIRONMENTAL PROGRAM

BORDER 2020

HIGHLIGHTS REPORT

WINTER 2014-2015

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ESTADOS UNIDOS MEXICANOS

SEMARNAT

SECRETARÍA DE MEDIO AMBIENTE Y RECURSOS NATURALES

MESSAGE FROM THE NATIONAL COORDINATORS

In August 2012, the United States Environmental Protection Agency and the Secretary of Environment and Natural Resources of México commenced binational activities on border cooperation under the Border 2020 Environmental Program. These efforts continue nearly three decades of collaboration between our nations to achieve tangible goals that benefit the environment we share and the communities on both sides of our border.

Through the Border 2020 Program, we continue to foster our strong binational partnership allowing us to reinforce the message that cooperation is the best way to achieve comprehensive solutions to the environmental issues challenging our countries. Our model of cooperation has been fundamental to ensuring that border communities develop sustainably and in harmony with their environment.

Activities undertaken through the Border 2020 Environmental Program are being implemented and we are pleased to report that our border cooperation continues. Many projects started under our previous binational initiative came to a close these past two years, and this report highlights some of the most significant achievements of 2013-2014.

We wish to acknowledge the support and commitment to the Program from all individuals, communities, organizations, and institutions involved in the numerous activities and whose participation is essential to improving environmental and public health conditions in the border region. As National Coordinators for the Program, we recognize and celebrate your efforts, your dedication, and your commitment, which are the essential ingredients for the successful completion of our ambitious goals and objectives.

Finally, we invite you to join us in renewing our dedication and commitment to developing comprehensive binational solutions to the environmental challenges that persist in the border region. As we implement the Plans of Action for 2015-2016, let us take stock of our recent accomplishments, make adjustments where needed, and continue to be responsible stewards of our shared resources.

Thank you very much!

Jane Nishida
National Coordinator, United States

Enrique Lendo
National Coordinator, México

Introduction

The first two years, 2013-2014.

The U.S.-Mexico Environmental Program: Border 2020 is the fourth iteration of the border cooperation between U.S. and Mexico under the La Paz Agreement of 1983. The purpose of the Program is to address the environmental and health related challenges facing border communities. The Program officially began its implementation in August of 2012 with the development of the first 2-year Actions Plans. In January 2013 the implementation of the Action Plans began and since then the Policy Fora and Regional Workgroups have guided projects that will fulfill the goals and objectives of the Program.

Similar to past Border Environmental Programs, the Border 2020 Program is a partnership between the U.S. Environmental Protection Agency, the Secretariat for Environment and Natural Resources of México, the ten Border States, the U.S. Border Tribes, Mexican Indigenous Communities, NGOs, communities and stakeholders. The Border 2020 Program also embraces a strong partnership with the Border Environment Cooperation Commission (BECC) to administer EPA's resources to implement projects and to provide technical assistance and support regional and the National Coordinators convenings.

The Border 2020 Program convenes Task Force and Regional Workgroup meetings to discuss progress, share information, discuss challenges, and identify needs and emerging environmental issues. Meetings take place every 3 to 6 months and a National Coordinator's Meeting is convened once every 2 years, where stakeholders discuss progress, priorities, and future actions.

This highlights report contains short summaries of border projects that were still ongoing during the transition between the Border 2012 and Border 2020 Programs and cover a range of activities including scrap tire management, environmental health awareness, air quality, emergency response, and wastewater treatment, among others. The projects highlighted in this report represent an investment of approximately $24 million USD in grants and include the construction of the first renewable energy powered wastewater treatment plant in the border region.

To see more detail on the goals and objectives of the Border 2020 Program, please refer to the Border 2020 Framework Document on the EPA and/or SEMARNAT web pages.

Feature Story: The New River

Introduction

The New River originates 20 river miles south of the international border and, after crossing the border, travels 65 river miles northward through Calexico and the Imperial Valley of California before emptying into the Salton Sea. This transboundary river was recognized as significantly polluted as early as the 1940s. Subsequently, solutions to New River contamination from untreated sewage originating in Mexico have been the topic of four International Treaty Minutes between 1980 and 1995.

Up until 2007, approximately 15 million gallons per day (mgd) i.e. (675 liters per second (lps)) of untreated wastewater from the City of Mexicali flowed into the New River. The untreated wastewater, making up about 10% of the New River flow at the U.S.-Mexico border, posed serious public health and environmental threats both in the U.S. and Mexico.

Border Environment Infrastructure Program

To address this problem, the United States and Mexico invested in multiple wastewater treatment projects in Mexicali, including the construction of a wastewater treatment plant called *Las Arenitas*, which was completed in 2007. These projects have benefited an estimated 635,000 people and have removed nearly all untreated wastewater from the river.

The source of the U.S. investment is EPA's Border Environment Infrastructure Fund (BEIF). The BEIF funds construction projects through a cooperative agreement with North American Development Bank (NADB). As a general rule, all BEIF projects must have a U.S.-side benefit and be funded at least 50% by Mexico. In this case, the $42 million in U.S. investment in Mexicali was matched by approximately $100 million in funding from Mexico. EPA also supports project development through a cooperative agreement with the Border Environment Cooperation Commission (BECC).

Cover of the National Geographic article on the Las Arenitas wetlands funded, in part, by Border 2012 Program. Full article can be found in the National Geographic website.

In addition to this investment, the Mexicali water utility agency from the State of Baja (CESPM) and the Mexican Federal Water Commission (CONAGUA) continue to fund, build, and operate wastewater infrastructure projects to keep pace with population growth in the city.

BEIF has also funded projects in U.S. communities that discharge wastewater to the New River, including Brawley, Westmorland, Heber, Seeley, and Calexico.

Border 2012 Program

Through the binational Border 2012 Program, EPA and the BECC funded the non-profit Sonoran Institute to help design 250 acres of artificial wetlands in Mexicali, immediately downstream of the Las Arenitas wastewater treatment plant. These wetlands were constructed with $1.1M from the State of Baja California's Secretariat of the Environment (SPA), CESPM, SEMARNAT and the U.S. Fish and Wildlife Service (USFWS). They provide additional treatment of the wastewater, create habitat for birds and other wildlife, and create opportunities for environmental education. Since their construction, over 140 species of birds have been seen in the area, including the endangered *Yuma Clapper Rail.*

Furthermore, as prescribed in Border 2012 and 2020 Program goals, CONAGUA has been working to ensure that slaughterhouses provide treatment to their wastewater when these facilities discharge directly to the New River.

Water Quality Results

Monitoring conducted by the International Boundary and Water Commission (IBWC) and the California Regional Water Quality Control Board (CRWQCB) have shown the benefits of the investments: the 12-month average measurement of dissolved oxygen in the river jumped from just above 1 mg/l to above 5 mg/l, which is EPA's water quality criterion for warm water (see graph below).

In addition, levels of the indicator bacteria, *fecal coliform,* have dropped exponentially.

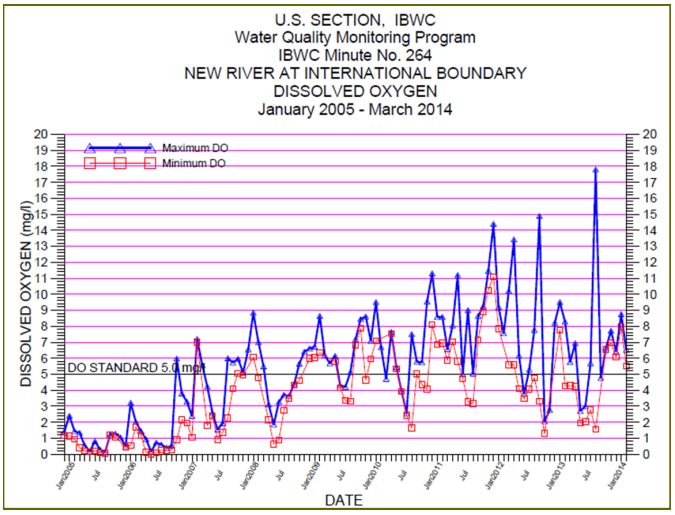
Next steps

The Binational Technical Committee, which is chaired by the Mexican Section of the IBWC (CILA), and whose members include the IBWC, EPA, CESPM, State of Baja California Water Commission (CEA), CONAGUA, and CRWQCB; believe that the most cost-effective and expeditious way to further improve water quality in the New River is by treating and/or preventing pollution at its source in Mexicali. Through this committee, the United States and Mexico continue to work together to address these sources. A collector rehabilitation project, for example, will be jointly funded for construction later this year to address collapses and leaks impacting the New River.

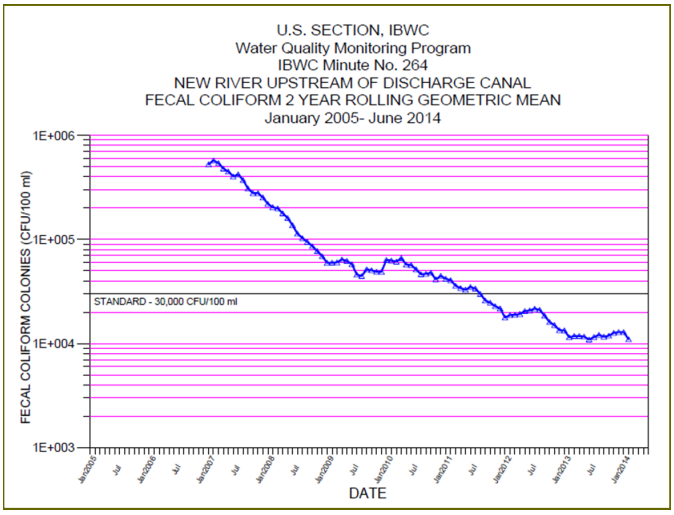
EPA is also working with the BECC to develop wastewater improvement projects in Brawley and Heber that will benefit the New River. Finally, through the Border 2020 Program, EPA will be funding a trash cleanup and prevention program in Mexicali as a means of reducing the trash that flows across the border.

Conclusion

These projects highlight the importance of the Border 2012 and Border 2020 Programs in reducing the sources of binational pollution. EPA and SEMARNAT recognize the continued need for coordination among the many governmental agencies involved in designing, funding, and implementing the solutions. Binational agreements, such as the Border 2020 Program, established under the La Paz Agreement, as well as the 1944 U.S.-Mexico Water Treaty and subsequent Minutes, allow for such coordination and joint investments to occur.



The Regional Water Quality Control Board of California's standard for dissolved oxygen (DO) for warm water is not less than 5 mg/l. As evidenced in the graph, this level is now being achieved much of the time.



Graph showing reducing in bacteria (fecal coliform) at border. The "standard" of 30,000 coliform forming units/100 ml was a goal set in the IBWC Treaty Minute. The Regional Water Quality Control Board of California's fecal coliform standard for water contact recreation (REC I) is 200 MPN/100 ml based on a minimum of not less than five samples for any 30-day period. Also, more than ten percent of total samples during any 30-day period may not exceed 400 MPN per 100 ml. While fecal coliform levels have dropped significantly, this level has not yet being achieved.

Scrap Tire Clean-Up Program in Ojinaga, Chihuahua

12,745 scrap tires properly disposed in Ojinaga, Chihuahua, 25% of all disposed tires in the city

Inadequate disposal of scrap tires has negative effects on environmental and public health in border communities. For example, burning tires in open fields result in the human exposure to fumes from hazardous material and substances that affect air quality. In addition, scrap tires can become habitats that enable diseases caused by distinct agents, such as rabies through rodents, or dengue, yellow fever or west Nile from mosquitoes.

The municipality of Ojinaga, Chihuahua received approximately $7,100 in funding from EPA Region 6 thru the BECC to address the disposal of scrap tires in their community. Institutions such as EPA, BECC, and SEMARNAT collaborated on the project in partnership with the local government. Ojinaga´s municipal government adopted BECC's strategy on how to manage scrap tires.

A total of 12, 745 scrap tires were disposed during the project's 3-month period. The 12,745 scrap tires represent 25% of all disposed tires in the city of Ojinaga's temporary disposal site. More than 26,000 individuals of the municipality of Ojinaga benefitted from the implementation of this project .

Inadequate disposal of scrape tires in open field.

Estimates of Health Costs Associated with Air Pollution in Mexicali and Tijuana, Baja California

Study highlights the economic benefits of reducing air pollution in Tijuana and Mexicali

A study was conducted by the Autonomous University of Baja California that estimated the social costs (health costs and lost work day costs) due to high levels of particulate matter less than 10 microns in diameter (PM10) and carbon monoxide (CO) in Mexicali and Tijuana. The study estimated social costs under various scenarios for both cities.

Assuming no actions were taken to reduce PM10 and CO in Mexicali between 2013 and 2020, the study estimated that the total social costs would be USD$1,659 million for PM10 and USD$2,503 million for CO. This represents 5.6% and 8.5% of the State's gross domestic product, respectively. However, if it were assumed that Mexicali reduced PM10 emissions by about 8% per year starting in 2013 and thereby attain Mexico's PM10 standard by 2020, the savings on social costs could reach USD$633 million. Likewise, implementation of actions to reduce CO levels can translate into savings of USD$2,129 million in social costs.

For Tijuana, PM10 and CO pollution levels were projected to decrease between 2013 and 2020. If this trend continues, and there are further actions to reduce PM or CO, this would result in a net social costs of USD$447 million (1.51% of the State's GDP) for PM and USD$264 million (0.9% of the State's GDP) for CO.

Healthy Homes Training in New Mexico

Green cleaning kit.

Regional early care conference in Deming, NM on November 2013.

The Southern Area Health Education Center at New México State University (SoAHEC) received $25,000 in funding to conduct the Healthy Homes training for pregnant mothers, children and low income families in the disadvantaged and underserved New Mexico communities' of Sunland Park, Deming, Lordsburg, Chaparral, Columbus and Las Cruces. The Healthy Homes project developed from the need to continue educating pregnant mothers, families with young parents, elderly, and low income families about the interconnection between health and the household environment. It is estimated that children spend 70% of their time in the home and the elderly spend 90% of their time in the home. It has been well documented through research the links between everyday household substances or other environmental triggers in the home can lead to illnesses; for example lead paint contributing towards lead poisoning and tobacco use can trigger asthma or even contribute to lung cancer, among many others.

At the conclusion of the project, 87 community health workers were trained in the National Center for Healthy Housing (NCHH) for Community Health Workers Program. Additionally, 120 pregnant or new teen parents received training in children's environmental health and healthy homes. The program also provided training to 151 child care providers (Community Action Agency, Families and Youth Inc., Help New Mexico, and Childcare Connection clients) in the seven healthy homes principles. Overall, 350 participants participated in the various training events. Additional activities conducted during the project included surveys, pre and post knowledge tests, 300 kit distribution (Help Yourself to a Healthy Home Booklet, How to Control Pest Safely-Health Homes Guide, Preventing Rats on Your Property) and agency partner. The post-test indicated substantial improvements in understanding the triggers of lead paint poisoning and asthma, among other improvements, for both English and Spanish speaking participants. The average scores for Spanish speaking participants went up from pre-test scores of 65% to post-test scores of 82%, and the average scores for English speaking participants rose from 70% to 85% .

Over 300 people participated in the Healthy Homes Training

Binational Enforcement Workshop in San Diego

In June 2013, the Border 2020 Program held a two-day Environmental Compliance & Enforcement Workshop in San Diego. The workshop provided enforcement discussions and presentations during the two day sessions (also available via webinar), covering binational issues on communication, information sharing sources, and emerging issues.

The workshop included federal and state governments representatives associated with regional environmental enforcement, task force members from Arizona, Baja California, California, and Sonora, as well as tribal representatives, and Canadian agencies. This workshop is the first of five that are planned under the Border 2020 Program designed to improve communication and intelligence sharing binationally.

Workshop participants during breakout session.

"Eco-Driving" Training Workshops for Commercial Truckers

Promoting "Eco-Driving" techniques in border cities

Eco-efficiency driving training sessions in Monterrey.

The Clean Air Institute received approximately $92,500 in border funds to conduct training sessions at four major U.S.-Mexico border cities as part of a larger plan called "*National Network of Trainers on Eco-Driving*" developed by this Institute, supported by the public and private sectors, which has as its main goal to promote skills and tools that will enhance eco-driving throughout the region. The project focused its efforts in the northern border region of México in 4 important cities (Tijuana, Juárez, Monterrey, and Nuevo Laredo). Other collaborators included SEMARNAT, the EPA, the Transportation and Communications Ministry of Mexico), the World Bank, and the Global Environment Facility.

The project was created to strengthen and build capacity training of instructors to advise freight drivers on the importance of eco-efficiency in driving which improves fuel consumption and reduces emissions (15 to 40%) in corporate freight operations among others. It is essential to understand that freight transportation in Mexico produces large quantities of greenhouse gas emissions, and consumes a great deal of energy. The principal objective of the project was to find the necessary means to promote the benefits of eco- driving in a sustainable fashion at the national level, and as a result strengthen transportation, environmental and energy fields.

Through the implementation of the four training workshops, approximately 55 instructors were educated in efficient driving techniques for freight transportation, as well as having 37 drivers trained; a grand total of 92 individuals were trained (future trainers and drivers). Prior to the training between 65% and 90% of all participants had no prior experience in eco-driving. Results obtained in the study shows that eco-driving in cities such as Juárez and Tijuana have a positive effect on fuel consumption, reduced by 40%, and CO2 emissions, are also reduced by 40%. To learn more about eco-driving visit the web page of the Clean Air Institute.

Hazardous Waste Surveillance at California Ports-of-Entry

California's Department of Toxic Substances Control (DTSC) has place-based inspectors working at Otay Mesa and Calexico Ports of Entry conducting inspections associated with northbound and southbound surveillance and enforcement of hazardous waste shipments.

Inspectors at the California Port of Entry work collaboratively with U.S. Customs and Border Protection, San Diego County, and others. DTSC monitors waste shipment activities, as necessary, by taking representative samples and conducting follow-up communications. DTSC also provides compliance assistance to Mexican business and brokerage companies and government agencies on requirements for both U.S. federal and California's state hazardous waste manifest and transport requirements.

Otay Mesa Land Port of Entry.

Household Hazardous Waste and e-Waste Management and Collection in Juárez, Chihuahua

EL HERALDO de Chihuahua — industria

Residuos peligrosos en el hogar

Awareness campaign.

In 2013, the company Ecorecikla, in conjunction with the US-Mexico Border 2020 Program and BECC, conducted an outreach campaign on the management of household hazardous waste and included two waste collection events in Juárez, Chihuahua. The project was carried out with the support, and in partnership, with the municipality of Juárez and the State of Chihuahua. The project consisted of an awareness campaign on the management of household hazardous waste where over 20,000 flyers, 5,000 educational brochures, and 500 technical data sheets were distributed to the public and public schools. The outreach campaign also consisted of several radio, newspaper and television announcements, and an official press event. Several lectures were conducted at local schools, fire stations, and at public events.

The objective of the outreach campaign was to increase citizen awareness of the household hazardous waste problem and how to identify household chemicals, proper disposal of these items, and how these items affect health and the environment. Ultimately, the goal is to change the behavior of citizens to be mindful of proper household waste management.

The household hazardous waste collection events took place in Juárez from April 9 through April 11 and the Ecological Fair on May 31, 2013 where over 150 tons of hazardous waste was collected. At both events, citizens were asked to bring their domestic household hazardous waste for proper disposal. In addition, on October 25-27, 2013, another event collected over 150 tons of e-waste. The events were announced through media. The campaign had a strong positive environmental and social impact that, if continued, may create a culture of proper management of household hazardous waste.

300 tons of household hazardous waste and e-waste collected

Reducing Children's Environmental Health Risks in Imperial Valley, California

A $50,000 Border grant was awarded in 2012 to *Comite Civico del Valle* and *Clinicas de Salud del Pueblo*, focused on targeting education to improve children's environmental health in Imperial County, California, which has the highest rates of asthma hospitalizations among children in the State, the highest rates of emergency department visits for asthma among children, the fourth highest rates of blood lead levels between 4.5 and 9.5 ug/dl, and the third highest percent of days above the PM10 national air standard. These indicators were the impetus for focusing limited funding in this area of the U.S.-Mexico Border.

The project targeted childcare providers and families of children under 5 years of age, to provide information on children's environmental health issues, such as pesticide safety, chemical exposure, indoor air quality and asthma trigger awareness and lead exposure. *Promotoras* distributed lead and information kits, and gave presentations to over 1,100 parents, caregivers, and childcare providers during the course of the 6 month project.

This project was accomplished in partnership with the Office of Children's Health Protection (EPA Headquarters) and the Children's Environmental Health Program (EPA Region 9).

Children's environmental health campaign in Imperial Valley reaches 1,100 parents

Assessment of Existing and Future Markets for Recycled Rubber from Scrap Tires

Retreading process, one of the scrap tire processing technologies.

Abandoned scrap tires continue to plague communities along the U.S.-Mexico border. *Tecnológico de Monterrey* received approximately $40,000 to conduct a study on the potential market for recycled rubber obtained from scrap tires or their byproducts. In addition the study looked to identify future markets, technologies, and applications for the rubber byproducts that could be implemented in close proximity to areas where the stockpiles are generated.

To achieve these objectives, the following activities were undertaken: a review of the current status of tire generation in the region; an estimate of the use of tires in 2015; research into technologies available to process scrap tires or use rubber reclaimed from scrap tires; and an energy balance that consisted of the analysis of the energy investment required to generate a new tire versus energy derived from a recycled tire.

Results from the study concluded that currently the primary use of scrap tires has been for fuel. Based on the research conducted, a wide variety of products and applications derived from scrap-tire rubber have been identified. However, market research shows that these products have not been fully implemented by either lack of interest or lack of information. Another problem that companies that use recycled rubber face is the uncertainty of supply. Greater educational efforts are needed to communicate the benefits of using recycled rubber as raw material in place of virgin rubber and other materials that do not necessarily come from virgin rubber.

The energy balance shows that the proposed practice of recycling is sustainable from an energy standpoint provided the raw material for the recycled tire is based on the cold emulsion technique. It was also concluded that the farther tires are transported and the smaller their presentation (powder, chips, chunks, etc.), the lower the energy benefit. A copy of the full study can be found in BECC's website.

Tijuana Host the First Urban Compost Center in the Border Region

The Tijuana Compost Center generated 153 tons of compost, used to plant over 140 trees and 300 shrubs

In January 2013, the city of Tijuana, Baja California, celebrated the opening of the first urban compost center of its kind for Mexican residents in the border region. Led by the NGO *Tijuana Calidad de Vida* (TCV), the pilot project was funded with a $94,000 Border grant and was completed in December 2014. Through a partnership with the City of Tijuana, TCV collected landscape cuttings supplied by the city and a unused road easement as the facility's location. San Diego's Miramar Greenery worked with TCV to share expertise and knowledge.

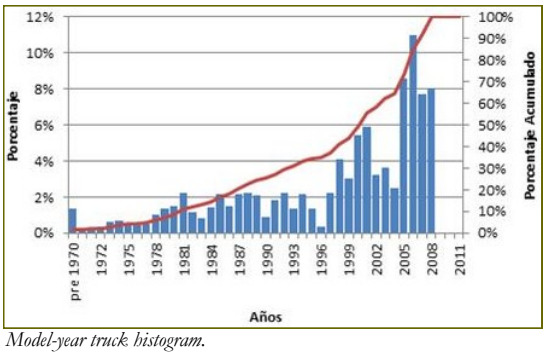
The Compost Center generated 153 tons of compost, used to plant over 140 trees and 300 shrubs. It educated over 800 people on zero waste and compost practices, reached thousands through press and social-media outreach, and presented at numerous professional international conferences including Biocyle. The compost center is serving as a catalyst to promote zero waste initiatives. In 2014, TCV signed an agreement with The Federal Energy Commission to compost their landscape greenery generated through maintaining high-intensity lines instead of sending it to the landfill.

Tijuana Urban Compost Center.

The Clean Transportation Program Designs a Strategy to Reduce PM Emissions from Commercial Trucks

The port of entry at Laredo-Nuevo Laredo has the highest concentration of truck traffic across the US-Mexico border with approximately 35% of all Mexican freight crossing the border through this region. Due to current commercial traffic processing, high volumes of commercial fleet congestion from drayage trucks at the port of entry have resulted in high emissions levels from the truck and transport sector. The Texas A&M Transportation Institute (TTI) received approximately $41,000 in border funding through the U.S.-Mexico Border Program to conduct a study of the current flow of truck or freight transport through the Laredo-Nuevo Laredo region Port of Entry. The aim of the study was to analyze and determine possible retrofit technologies that have the greatest potential to reduce particulate emissions, as well as, to propose a preliminary program that could be potentially implemented in the region with those technologies.

The initial part of the study involved identifying the type of trucks, including the age and engine type, within the drayage fleet. It was estimated that a total of 4365 trucks cross daily up to 1.5 roundtrips. Regarding the characteristics of the truck, 50% of the trucks sampled were model-year 2000 or earlier (i.e. with an age of over 13 years) and 84% are model-year 2006 or earlier (i.e. aged 7 years or more). Additionally, the study found that approximately 43% of trucks in operation in the region were



Model-year truck histogram.

Kenworth engines, model-year 2001-2004.

It was concluded that the strategy to reduce emissions from the truck fleets was dependent on a number of factors: 1) cost of emissions reduction strategy, 2) type of reduction that is implemented, 3) applicability of strategies or technologies proposed, 4) fuel type, and 5) maintenance of the technology implemented. The recommended technology for the project area was the installation of Oxidation Catalysts (OC) which could be implemented in the immediate future. It was estimated that the installation of the OC in a fleet of 1,700 trucks could reduce up to 11.8 tons of fine particulate matter (PM). This translates to a health benefit of approximately $ 9.5 million annually to the populations of Laredo and Nuevo Laredo. A copy of the full study can by found in BECC's website.

Residential Wastewater Service Extended in Sierra Vista, Arizona

Sulger Subdivision, Sierra Vista

In August 2014, the City of Sierra Vista, Arizona, completed a project extending wastewater collection service to approximately 374 residents in the city's Sulger subdivision. The project's $2 million construction cost was funded with EPA funding administered by the North American Development Bank. This project includes the installation of approximately 9,700 linear feet of 8-inch gravity sewer pipe and 20 manholes, the connection of 154 homes to the existing wastewater system, and the decommissioning of the existing septic tanks compliant with ADEQ regulations. Flows from these homes will be treated at the city's wastewater treatment plant, eliminating discharges of inadequately treated sewage and reducing environmental pollution and the risk of waterborne diseases.

374 residents of Sierra Vista connected to the city wastewater system

Wastewater Conservation in Puerto Palomas, Chihuahua

Home gardens in Puerto Palomas.

Puerto Palomas is a small border village consisting of approximately 3,000 people, located in Chihuahua, México. Over the past decade, residents of Palomas have been experiencing severe drought conditions resulting in poor soil quality and limited access to low-cost water. In addition to these environmental challenges, the town lacks a strong economy, leaving residents without the means for proper nutrition which can lead to additional health problems. In 2012, Border Partners received a $10,000 grant from US EPA Region 6 administered through the BECC for a water conservation project. The project consisted of building efficient, low-cost systems for reusing gray water and harvesting rainwater in order to provide water for high-intensity, year-round vegetable gardens and to divert rainwater from streets in Palomas.

The project assisted with installing 26 gray water systems at residential homes and an additional system at the public library that reused water from kitchen and bathroom sinks, showers, and washing machines to irrigate gardens and orchards. In addition, three rainwater systems were built (funeral building and two residential homes). Through the project, Border Partners was also able to install two solar water heaters and a dry toilet. Approximately 120 individuals benefitted from the gray water system installations and an additional 100 individuals attended workshops that introduced them to this low-cost sustainable technology. The project will indirectly increase the size and number of home gardens, in order to be able to grow more produce (vegetables), and will employ low-cost sustainable technologies that will confine energy and water resources in inhospitable environments.

The U.S.-Mexico Border Health Commission and Border 2020 Partner to Improve Environmental Health

Building alliances to improve quality of life in the border region

The Border 2020 Program and the U.S. Section of the U.S.-México Border Health Commission (BHC) will leverage their collective resources to address public health and environment challenges along the U.S.-Mexico Border.

The new collaboration will bring new synergy and institutional expertise to fulfill the environmental health goals in the U.S.-Mexico Environmental Program Border 2020 and the public health goals in the upcoming Border Health Commission's Healthy Borders 2020 Program.

For the past 2 years, negotiations have resulted in identification of areas of mutual interest and collaboration to improve environmental health along the U.S. -Mexico Border. In August of 2013, the final draft of the Collaborative Agreement between the Border 2020 Program and the U.S. Section of the Border Health Commission was released, detailing the areas of commitment that will guide the partnership. For additional details, please visit the Border 2020 website.

Building Capacity: Assessment on Scrap Tire Management along the U.S.-Mexico Border

It is estimated that more than 1.5 million scrap tires are discarded illegally in the border area between the Mexican states of Chihuahua, Coahuila, Tamaulipas and Nuevo León and the US state of Texas. The insufficient management of illegally dumped scrap tires creates environmental and public health hazards that directly affect citizens living in these areas.

The Secretariat of Sustainable Development for the State of Nuevo Leon received Border funding to help better address the issue of illegally dumped scrap tires in the Texas, Coahuila, Nuevo Leon, Tamaulipas region (Four-State Region) and develop a plan to help strengthen the way the region addresses scrap tires in the future. The project conducted an assessment of the current conditions and infrastructure for the management of scrap tires among the various states and municipalities within the Four-State Region. Second, the project developed a manual of best practices for the management of scrap tires that includes potential financial sources and recommendation for strengthening local programs.

The project concluded that there are areas of opportunity in the short term that would aid with tire management in the region: 1) improve the infrastructure within the municipalities with the proper equipment to reduce scrap tires; 2) improve local and state regulations regarding the disposal of tire rims, 3) improve communication and education between government and the public with regards to the prevention and control of scrap tires, 4) develop a regional scrap tire management plan that will involve all stakeholders in scrap tire management in such a way that it establishes environmental stewardship and cooperation while encouraging new markets for scrap tires. For a copy of the full report please contact Nuevo Leon's Sustainable Development Secretariat.

Scrap tires in the border region.

First Renewable Energy-Powered Wastewater Treatment Plant Launched in Border Region

Over $21 million USD invested in wastewater treatment and solar energy

EPA partnered with Mexico to fund and inaugurate the $17 million "Los Alisos" Wastewater Treatment and Conveyance Project in Nogales, Sonora. The Los Alisos plant has the capacity to treat 220 liters per second of raw sewage and to receive wastewater flows from approximately 20,300 existing residences. The project also includes a $4.5 million on-site solar energy plant, the first of its kind in Mexico and one which was begun with EPA seed money. The plant has an installed capacity of nearly one Megawatt that will supply the electricity needs of the plant.

Los Alisos Wastewater Treatment and Conveyance Project and the on-site solar energy plant.

Waste Tire Reuse Piloted at the Landfill in Brownsville, Texas

12,500 waste tires used to construct road bed thru pilot project in Texas

Texas A&M University-Kingsville received $15,000 in US-Mexico Border funds to demonstrate and evaluate the performance of utilizing tire bales in a heavily-loaded highway construction application at a roadway located at a landfill within the City of Brownsville, Texas. The aim of the project was to demonstrate that there is improved long-term performance for highway construction roadways located in difficult soil areas if tire bales are utilized as fill material through enhanced compaction and vibration technology. The project also aimed to assist rural communities in developing a long-term viable solution for scrap tire management and to help reduce land contamination by diverting scrap tires from landfills.

The data from the project indicated that there was adequate performance for light-duty vehicle traffic; however, additional vibration and re-compaction operations are needed for better performance under heavier traffic conditions. The data analysis from this study will assist stakeholders in further developing specific recommendation and guidelines on the use of tire bales for engineering applications. This demonstration project safely disposed of 125 tire bales which include approximately 12,500 waste tires, thus reducing land contamination while preserving available, valuable landfill space. When the entire proposed road section is built with the tires, about 500 bales (50,000 waste tires) will have been disposed of in the construction at this single location in Brownsville.

Tire bale.

U.S.-Mexico Webinars on Electronics Recycling Certification

Promoting sound electronic recycling practices in the border region

Old discarded electronic waste or e-waste, poses a challenge along the border region, where these materials often end up in landfills or in illegal dump sites around the city posing a threat to human health and the environment. Reuse and safe recycling of these materials is a goal of the Border 2020 Program and as such, EPA's Regional Offices 6 and 9 co-hosted two Electronics Recycling Certification webinars in 2013 and early 2014, to introduce electronics recyclers located on the U.S.-Mexico border to the R2® and eStewards®* electronics recycling certification programs. The webinars were presented in Spanish and drew over 150 participants representing government, business, academia, and community-based nonprofits. The webinars also drew participants from Mexico City, Honduras, and El Salvador. The webinars available in Spanish and English are posted on the Border 2020 websites.

*NOTE: the Responsible Recycling Practices Standard (R2®) certification, recognized by the EPA, is a set of voluntary principles and guidelines designed to promote and assess responsible practices for electronics recyclers.
The eStewards® Initiative is an electronics waste recycling standard created by the Basel Action Network that recognizes the companies that recycle electronics complying with the most stringent environmentally and socially responsible practices when recovering hazardous electronic materials.

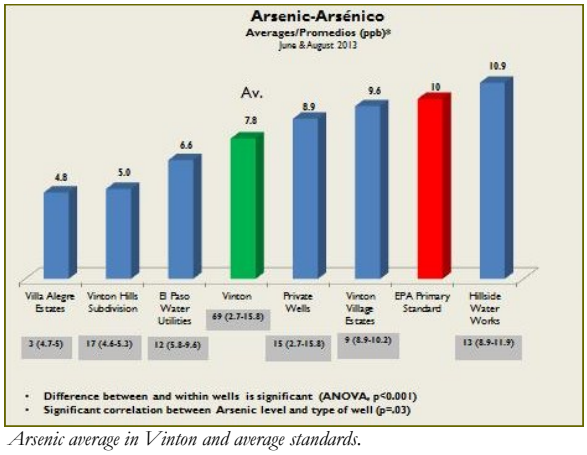
Water Quality Survey Assesses Water and Wastewater Infrastructure in Vinton, Texas

Survey identifies actions to improve water quality in Vinton

Vinton, Texas, is a small town neighboring the city of El Paso and currently has a population of approximately 2,000 residents. The residents of this predominantly-Hispanic border town live in challenging conditions. High levels of unemployment and poverty burden the town and there is a lack of proper infrastructure. One major infrastructure problem includes the absence of suitable drinking water supply systems, with two out of the three water supplies suspected of being contaminated with industrial agents. In addition, failing septic tanks and open cesspools also pose additional health risks to residents.

The University of Texas at El Paso (UTEP) collaborated with the BECC, with funding from the Border Program, as well as with the Pan American Health Organization (PAHO) and the Town of Vinton in order to develop a baseline for a better understanding of current public health conditions and to improve existing water infrastructure and sanitation conditions. The project itself was based on qualitative and quantitative information derived from water samples gathered from different households (a total of 113 samples, on two distinct sampling dates coming from 105 homes and seven businesses) and surveys of home owners on their water use and sanitation habits. After analyzing distinct water samples, the study concluded that in many cases the water does not meet U.S. drinking water standards because it is contaminated with arsenic at moderate to high risk levels, and high concentrations of salt and fecal contamination due to the improper management of septic tanks. Exposure to these contaminants could possibly be associated with pathogens that cause gastrointestinal diseases, dysentery, hepatitis, cramping, and skin rashes.

Recommendations developed after analyzing water samples and administering surveys to the homeowners included: 1) implementing programs to treat current water sources at the source or at the point of use, 2) connecting to El Paso Water Utilities for water and sanitation, 3) develop an economic and community development strategic plan and 4) conduct education campaign for residents.



Arsenic average in Vinton and average standards.

Building Pediatric Environmental Health Capacity in Calexico, California

Participants of the environmental health training.

Two binational Pediatric Environmental Health workshops were held in El Centro, California on February 6th and February 7th, 2013. The workshops were conducted by doctors from the Pediatric Environmental Health Specialty Units at the University of California, San Francisco and Irvine, as well as from the University of California, Berkeley's Center for Environmental Research and Children's Health.

The workshops reached approximately 130 childcare providers, community health workers, school nurses, Mexican officials, and public health and nursing focused students with information about how to reduce children's exposures to environmental contaminants in schools, childcares centers, homes, and neighborhoods.

The Border 2020 Program partnered with the U.S.-Mexico Border Health Commission, the EPA Region 9 Office Children's Health and Pesticides Programs and EPA Headquarters' Office of Children's Health Protection (Clean, Green and Healthy Schools Initiative) to fund the workshops.

Lower Rio Grande Quality Initiative

Working to improve water quality in the Lower Rio Grande

Through border funds provided by EPA Region 6 Office, administered by the BECC, the University of Texas at Austin, in partnership with the Texas Commission on Environmental Quality (TCEQ), provided a binational, two-day water quality training session in July 2013. The focus of the training session was part of the Lower Rio Grande/Rio Bravo Water Quality Initiative between federal, state and local water agencies.

The initiative looks at addressing water quality issues in the Lower Rio Grande and will look to review historical data, create a water quality model that will be used to assess impacts from recommended changes in the watershed, create a larger water quality monitoring network, and develop and implement recommendations for improving water quality from point and non-point sources.

Agencies who attended the training included the National Water Commission of México, the Mexican and U.S. Sections of the IBWC, the Mexican Institute of Water Technologies, the State Water Commission of Tamaulipas, the EPA and SEMARNAT. The two-day training included sessions on surveys, a discussion of laboratory specifications and requirements, mapping and planning events, flow measurement, and a field exercise in addition to other agenda items.

Rio Grande/Rio Bravo.

Repurposing Trash to Improve Parks

10,000 native plants planted and 1,000 lbs. of trash recycled

As a broad effort to improve binational watersheds and the environment, the Border 2020 Program, in partnership with 4Walls International and the San Diego Foundation, leveraged resources to improve the binational *Los Sauces* Park in Tijuana, Baja California and Border Field State Park in Imperial Beach, California. This binational park originates in Tijuana and turns into Border Field State park as it crosses the international Border into the United States. Trash and sediment has been an ongoing challenge affecting the health of the Tijuana River Estuary in Imperial Beach, which is home to eight threatened and endangered species of plants and birds and is recognized as a 'wetland of international importance' by the Ramsar Convention.

The project involved planting 10,000 native plants, and construction of park structures made with 4,000 repurposed plastic and 276 glass bottles and 1,000 lbs. of plastic, foam and other trash all collected from the Tijuana River watershed. The portion funded by Border 2020 through a $25,000 grant was leveraged with SEMARNAT's Temporary Employment Program and $20,000 from the San Diego Foundation. Tying the entire park together, the San Diego Foundation focused on similar park structure improvements at the entrance of Border Field State Park.

Inauguration of the Border Field State park in Imperial Beach, California.

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www.epa.gov/border2020

www.semarnat.gob.mx

MISSION STATEMENT

As a result of the partnership among U.S. Border Tribes and federal, state and local governments in the United States and Mexico, the mission of the Border 2020 program is to:

Protect the environment and public health in the U.S.-Mexico border region, consistent with the principles of sustainable development.

The Pinacate and Gran Desierto de Altar Biosphere Reserve