

U.S.-Mexico Environmental Program

Spring 2018 Newsletter



Santa Cruz River in Arizona. Photo/Tom Konner.

Arizona-Sonora and California-Baja California



Spring 2018

Dear Border 2020 Stakeholders,

We are pleased to share our most recent newsletter highlighting accomplishments and events from the past year in the Arizona-Sonora and California-Baja California border communities.

These environmental and public health improvements in the U.S.-Mexico border region were possible thanks to all our program partners.

We look forward to your continued engagement in the Border 2020:
U.S.-Mexico Environmental Program,

Héctor F. Aguirre
Director, San Diego Border Office

Partnerships and Getting Involved



Leadership and key staff from ADEQ, CEDES, SEMARNAT, and EPA at the Arizona-Sonora regional meeting (March 2017).

The Border 2020 Program relies on regional workgroups and task forces, represented by federal, state and local leadership, to support and guide program implementation. These stakeholders helped develop the 2017-2018 [Action Plans](#) detailing specific activities, projects and completion timeframes.

In 2017, the California-Baja California and Arizona-Sonora Regional Workgroups and Task Forces met thirteen times through several business and public plenaries in the border region, reaching over 700 community border residents and key stakeholders.



The air, water, waste, and emergency preparedness and response task forces discussed on-going environmental efforts, upcoming priorities, and implemented related trainings and workshops.

For more information on the Border 2020 Program and to become involved in the regional workgroups and task forces, please visit: <http://www.epa.gov/border2020> or contact Lorena López-Powers (lopez-Powers.Lorena@epa.gov).

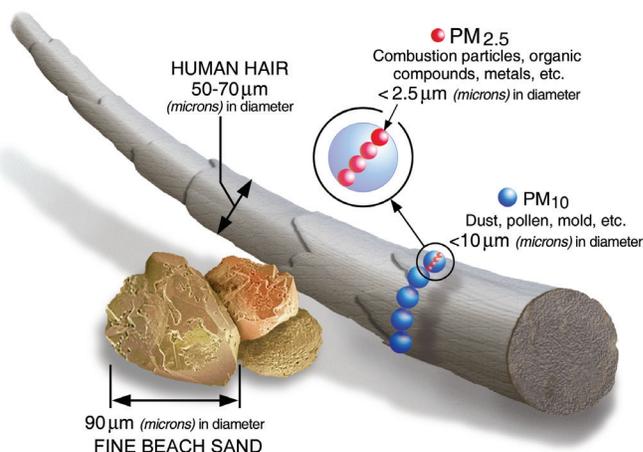
Improving Air Quality

Jeremy Bauer (Bauer.Jeremy@epa.gov) and Lauren Maghran (Maghran.Lauren@epa.gov)

Transboundary Air Pollution Linked to Burning and Industry in Mexicali

Imperial County is a rural, agricultural region home to 180,000 Californians and is a non-attainment area for PM_{2.5} (fine particles with diameters 2.5 micrometers and smaller, also known as soot). Across the border is Mexicali, a city of one million. Because Imperial County and Mexicali share an air basin, emissions from one side of the border influence air quality on either side.

In April 2018, the California Air Resources Board (CARB) will complete the first phase of an EPA-funded study on the origins and movement of PM_{2.5} from Mexicali to Imperial County to better understand impacts on California air quality and associated public health effects.



Preliminary results show PM levels in Mexicali are consistently higher than those of Calexico, CA. Calexico levels typically increase only when Mexicali experiences high PM_{2.5} episodes. Further testing demonstrates increased levels in Mexicali concentrations are primarily due to industrial emissions and burning activity (e.g., based on presence of carbon compounds).

The air is particularly hazardous between Christmas Eve and New Year's Day due to traditional, celebratory burning of fireworks and bonfires. At the levels observed, residents in Calexico inhale the equivalent of a teaspoon and a half of soot over the course of the holiday week, while in Mexicali, residents breathe in over a teaspoon of soot on Christmas Day alone. This is especially worrisome given the small size of PM_{2.5} particles, recognizing they can travel deep into the lungs and even reach the bloodstream.

EPA is currently funding a binational [campaign](#) by the Imperial County Air Pollution Control District to discourage bonfires and fireworks and provided a grant to CARB to update an inventory of air pollution emissions originating in Mexicali. Officials in Mexicali will use this information to prioritize emissions reductions activities.



Sunrise over Mexicali on Christmas Day 2017 when many celebrate with fireworks and bonfires. Photo/Eliud Gil Samaniego.

EPA Supports Border Tribe Facing Transboundary Air Pollution

In July 2016, a member of the Tohono O'odham Nation reached out to the U.S. EPA San Diego Border Office to share concerns of smoke and pesticides crossing from Mexico into the reservation, located in southern Arizona adjacent to the border. EPA invited the Tohono O'odham tribal member to share these concerns at an upcoming Border 2020 air quality task force meeting.

EPA also responded by inviting a representative from the [Commission for Environmental Cooperation \(CEC\)](#) to present on their "Submissions on Enforcement Matters," allowing submitters to raise concerns if they have reason to believe that an environmental law is not being effectively enforced by Canada, Mexico or the U.S. Once a submission is received, the CEC confirms it meets their requirements, and then begins the creation of a "factual record," an information-collection exercise which can include site visits.

Following additional meetings, dialogue, and a site visit by the CEC to the Tohono O'odham Nation after the initial presentation in October 2016, CEC received an official submission from Tohono O'odham Nation on January 10, 2018, asserting impacts by "unannounced episodes of smoke drift from Mexico (agricultural burns)." The submission asserted the agricultural burnings had been occurring since June 2016, and noted the failure of effective enforcement of Mexican environmental laws.

On February 29, 2018, CEC determined that the submission met their criteria to formally request a response from the state and federal officials in Mexico. CEC will continue to work with the Tohono O'odham Nation and Mexican government officials to determine appropriate next steps for the complaint.

Tohono O'odham Nation's persistence, with input from EPA, has helped make progress to address transboundary movement of smoke due to agricultural burning. For the latest information and additional details, please visit the [CEC website](#).

Enhancing Water Quality

Roger Kohn (Kohn.Roger@epa.gov) and Douglas Liden (Liden.Douglas@epa.gov)

Achieving Tijuana River Improvements

EPA Region 9 committed resources in 2017 to help repair the aging wastewater infrastructure in Tijuana, Baja California, thereby reducing transboundary sewage spills. Historically, these spills have led to beach closures throughout San Diego County, hurting the economy of hundreds of businesses and threatening the health of residents who might come into direct contact with raw sewage.

With \$3M in EPA funding, administered by the North American Development Bank (NADB), the water utility in Tijuana completed a \$7M wastewater infrastructure improvement project. These works included the repair of 6 miles of large wastewater collection pipes, the rehabilitation of 35 manholes, and first-time wastewater collection service for over 400 households. In addition, in November 2017, the NADB Board certified a project to repair 2.5 miles of a major wastewater collection pipe in Tijuana that will help prevent major spills as large as 10 million gallons per day, which is over half the average dry weather flow in the Tijuana River. EPA will fund \$1.2 M, 40% of the project total, while Mexico will provide 60%.

EPA also agreed to fund a diagnostic study, to be completed in 2018, to examine operations and maintenance procedures in Mexico and alternatives for new and/or improved infrastructure on both sides of the California-Baja California border to reduce the number of transboundary flows in the Tijuana River.



Sewer collection pipe in repair, after collapse. Tijuana, MX. March 29, 2017.

In 2017, EPA chose to fund two ocean monitoring/modeling projects with Scripps Institute of Oceanography and Southern California Coastal Water Research Project to better assess impacts of wastewater flows in the Tijuana River, Estuary, and California beaches. These studies will help measure the transport of sewage from Tijuana along the California coast, leading to more accurate and timely beach alerts as well as preventing water-borne illnesses.

While vast improvements to mitigate transboundary flows have been achieved in the past two decades, this effort is still a work in progress. EPA will continue to work with partners such as Tijuana's local water utility (CESPT), the Mexican Federal Water Commission (CONAGUA), the International Boundary and Water Commission (IBWC) and the NADB to develop wastewater infrastructure rehabilitation projects to improve water quality in the Tijuana River Watershed.

Enhancing Water Quality, Continued

Preventing Severe Flooding through Green Infrastructure in Nogales, Arizona

Frequent flooding during monsoon storms severely impact both sides of the U.S.-Mexico border in the Nogales, Arizona and Nogales, Sonora region. Sediment created through storm-related erosion scours wastewater collection pipes and can lead to sewer line breaks, which threaten public health.

To reduce flooding and sediment production, EPA funded both the Municipal Planning Institute of Nogales (IMIP) and the Watershed Management Group, a non-profit based in Tucson, Arizona, to promulgate the concept of “green infrastructure” in Nogales, Sonora. Green infrastructure, according to EPA, uses vegetation, soils, and other elements and practices to restore some of the natural processes required to manage water and create healthier urban environments. At the neighborhood or site scale, green infrastructure includes stormwater management systems that mimic nature’s ability to absorb and store water.



Contouring the land to capture rainwater.

These projects, which were completed in 2017, resulted in the following:

- 28 community events and trainings with 700+ community members participating.
- 88 professionals trained at an advanced 2-day course on green infrastructure.
- 15 professionals trained at a 2-day training on native plants and nursery management.
- Multiple on-the-ground demonstration projects that have created over one million liters of stormwater infiltration capacity (see photos above).
- Construction of a sediment trap constructed of large rocks (gabion) that can capture over 650 cubic meters of sediment.
- The adoption of a green infrastructure law by the state of Sonora (April 2017).

Together, IMIP and the Watershed Management Group continue to demonstrate through these projects that investment in local green infrastructure is a beneficial and cost-effective way to reduce the threat of floods and sediment on these cities’ infrastructure.

Reducing Waste

Emily Pimentel (Pimentel.Emily@epa.gov)

Trash Cleanups and Mitigation in Mexicali

Illegal dumping of household trash, tires, and other materials into the City of Mexicali's agricultural drains contributes to urban blight, adverse environmental impacts, and public health threats associated with mosquitoes and other vectors of diseases.



Trash trap at International Drain.



Tula Drain during trash removal.



Tula Drain after trash removal.

As part of a trash mitigation and rehabilitation of five agricultural drains in Mexicali completed through a \$100,000 Border 2020 grant and leveraged with a \$200,000 CalEPA grant to the Sonoran Institute (SI), in 2017 the SI removed:

- 5,520 tons of trash, equivalent to 6,066 cubic meters or 2.4 times the volume of an Olympic swimming pool.
- 1,760 scrap tires, equivalent to 440 vehicles.

The grantee developed an integrated waste management approach with short and long-term goals to address prevention through infrastructure and service needs, enforcement, and environmental education. For example, the SI installed a trash trap across the international drain to prevent trash flow into Imperial County as a short-term solution until adequate trash collection services are established.

As part of a long-term and city-wide, green corridor initiative in Mexicali, SI completed a pilot-scale ecosystem restoration and landscaping task along the Tula, Mexicali, and Norte drains to build support among key stakeholders for a drainage system that would be valued, instead of trashed.

SI also launched “Mexicali Fluye,” a city-wide educational campaign raising awareness of trash impacts, drainage ecosystem values, and actions to mitigate trash and rehabilitate the agricultural drains into green corridors. See link for [video](#).

This grant directly benefited the 17,420 people who live adjacent to drains and the transboundary community by reducing the environmental health risks associated with illegal dumping.

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Campo Band Zero Waste Plan

Unmanaged trash contributes to public health risks and poses significant environmental harm including the clogging of streams and creating unsightly views. In the border region, unmanaged trash raises potential transboundary impacts to water quality and streamflow. Addressing these problems is a priority for the Campo Band of Mission Indians (Campo Band), located along the U.S.-Mexico border in California.

In 2015, Campo Band raised concerns about transboundary solid waste issues to representatives implementing the Border 2020: U.S.-Mexico Environmental Program. The Border 2020 Program provided funds to conduct a solid waste assessment and prepare a Zero Waste Plan. The Zero Waste Plan was completed in January 2018.

Along with the recommendations in the Zero Waste Plan, Campo Band is actively exploring other materials management activities including short and long-term goals to develop a self-sustaining waste and recycling program and transfer station.



Strengthening Emergency Preparedness and Response

Bill Jones (Jones.Bill@epa.gov)

Emergency Preparedness and Response Training for First Responders and Industry

The U.S.-Mexico border region is highly industrial and hazardous materials pose a threat to communities and transboundary air and watersheds. Through technical support from EPA and a grant from the NADB, Arizona State University (ASU) led the development of a binational Hazardous Materials Emergency Response Training (HAZMAT) Pilot Program with industry, academia, and federal, state, and local agencies in Nogales, Sonora that trained over 200 students and certified 14 instructors. A key success of the grant was the establishment of a training institute at Instituto Tecnológico de Nogales, capable of delivering emergency response courses for managing hazardous materials incidents.

ASU is presently undertaking a follow-up project in Nogales, Sonora to develop tabletop exercise course content and to train maquiladora



Strengthening Emergency Preparedness and Response, *Continued*

environmental health and safety managers and emergency response personnel on the activation and use of the Sister City Plans for Ambos Nogales, Douglas-Agua Prieta and San Luis -San Luis Rio Colorado.

The fundamental objective of the collaborative training and exercises is the implementation of tactical objectives by industry emergency staff and first responders during pre-emergency planning, high risk operations, and the four phases of response: discovery, initial response, sustained response, and termination of the emergency event.

Binational Emergency Response to Tire Fire near Douglas, AZ



Binational emergency preparedness and response coordination is critical because toxic smoke, contaminated water and other impacts from disasters and incidents transcend local, state and international boundaries. From 2000-2013, there were approximately 200 chemical emergencies in the border areas of Sonora, Mexico reported to the Federal Attorney for Environmental Protection (PROFEPA), representing a 36% increase. Emergency preparedness efforts – sister city emergency plans, training, exercises, equipment – have been put to the test in real-life emergencies and have led to a more efficient coordinated response in

the border region.

When a major tire fire on December 7, 2017 sent dangerous billows of smoke from Agua Prieta, Sonora into Douglas, Arizona, Douglas firefighters crossed the border and helped put it out. In 2016, the Douglas fire department responded to tire ignitions and warehouse fires in Agua Prieta. On another occasion, when a huge fire in Douglas was about to take an entire city block, Douglas received assistance from Mexican firefighters.

In Spring 2018, a 200-hour HAZMAT technician training will commence for 20 Douglas and Agua Prieta firefighters, which will result in additional HAZMAT technicians in Douglas and a full HAZMAT team in Agua Prieta so that they can better respond to incidents and continue to assist each other in emergencies across borders.

EPA has worked to ensure proper personal protective gear for first responders and to determine the best options for protecting the public under different scenarios (e.g., evacuation routes, shelter in place). In addition to testing known issues and scenarios, training and exercises provide valuable lessons learned regarding unanticipated issues. Since the inception of the Border 2020 program, over 10,000 people have been trained on both sides of the border.

“The Border 2020 program brings people together to better understand and coordinate emergency preparedness and response tactics. The result is emergency responders on both sides of the Border who are better trained and equipped to protect human health and the environment,”

-Mario Novoa, Fire Chief, City of Douglas

Promoting Environmental Stewardship and Environmental Compliance

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Reducing Illegal Transfer of Hazardous Waste

The illegal import and export of hazardous waste is a threat to safety, public health and the environment and can promote scam recycling and unfair business practices. To address these issues, EPA funds the port of entry inspection program led by the California Department of Toxic Substances Control (DTSC).

DTSC and the Emergency Response Division, in partnership with San Diego County, inspected northbound trucks crossing into the United States for compliance with federal and state hazardous materials management and import/export requirements.

They also collaborated on special southbound inspection operations, which engages multiple federal, state, and local agencies to address special import/export concerns. Participants included the U.S. Department of Transportation, U.S. Customs and Border Protection, and the California Highway Patrol.



Photo/Jessica Rodriguez.

Two special operations were conducted in April and June of 2017, with DTSC participation in San Diego and Calexico. These inspections required hazardous materials experts who are trained in how to work in enclosed spaces and extreme temperatures. As seen in the photo, Carlo Rodriguez of the DTSC San Diego office, in a modified level-C personal protection (Tyvek suit), is conducting the inspections at the southbound truck stop in Calexico on a day when the temperatures hit 117 F. These operations resulted in the inspection of 78 southbound trucks and two separate cases of violations of hazardous waste transport requirements involving used cars and lead contaminated cathode ray tubes from electronic devices.

Addressing Environmental Health

Jessica Helgesen (Helgesen.Jessica@epa.gov)

Preventing Asthma Emergency Visits and Reducing Asthma Triggers in Imperial County

The children of Imperial County, California experience some of the highest rates of asthma emergency visits in the state. The reasons include a naturally high concentration of asthma triggers in the environment, lifestyle, and cross border air pollution among other factors. Breathing with asthma is the equivalent of how it feels when you plug your nose and try to breathe through a straw with your mouth.

Addressing Environmental Health, *Continued*

To help reduce emergency room visits, the Border 2020 Program funded the Imperial Valley Child Asthma Program (IVCAP) from 2016-2017 to conduct in-home asthma interventions for over 100 asthmatic children of 20 low-income families living in Imperial County. These families were identified through 13 Healthy Homes forums attended by 223 residents under the same grant. The project also included training of over 50 low-income housing maintenance workers on Healthy Homes practices focused on practical and cost effective methods for making residents' homes healthier.

In coordination with staff of the El Centro Regional Medical Center, EPA served as moderator for the 2017 "Stop and Listen Asthma Forum" held in El Centro, California (Imperial County) for World Asthma Day and Air Quality Week. EPA presented a summary of the Agency's work in protecting public health and the environment in Imperial County and along the U.S.-Mexico border.

Approximately 75 participants attended the event hosted by the Regional Medical Center, including public officials, medical providers, teachers, students, and the public. Participants signed a



Pledging to reduce asthma triggers in their homes and schools.

"Those monies may not last long, but will definitely help the patients we serve who don't have the money to buy these products," Aide Fulton said. "This program focuses on the elimination of triggers at home and is going to help them maintain long-term control of the disease."

Fulton is the current program manager for the Imperial Valley Child Asthma Program.



EPA staff stand by pledge poster designed to encourage the reduction of asthma triggers in homes and schools in Imperial County.



IVCAP team: Rubi Alvarez, Lourdes Salazar, Aide Fulton, and Graciela Ruiz.

pledge poster committing to stand up for those with asthma in Imperial County by electing to keep schools and homes clean and dry, smoke-free and/or fragrance-free. Results suggest many are not yet ready to reduce the use of fragrance, demonstrating the need for additional outreach or targeted messaging.

The need for work on asthma triggers in Imperial County continues. EPA is extending funding to educate approximately 70 families on asthma management through additional home visits to continue to reduce hospitalizations and trips to the emergency room.



Border 2020: U.S.-Mexico Environmental Program

Border 2020 and Children's Environmental Health Grants in Region 9

Read our recent press releases about projects selected to improve air and water quality, reduce waste, strengthen emergency preparedness and response, promote environmental stewardship and address environmental health needs: <https://www.epa.gov/border2020/borderwide-publications>

Recent Publication

Read about the history and impact the Border Programs have made to improve public health and the environment: <https://www.epa.gov/border2020/border-publication-protecting-environment-and-public-health>

PROTECTING THE ENVIRONMENT AND PUBLIC HEALTH



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