

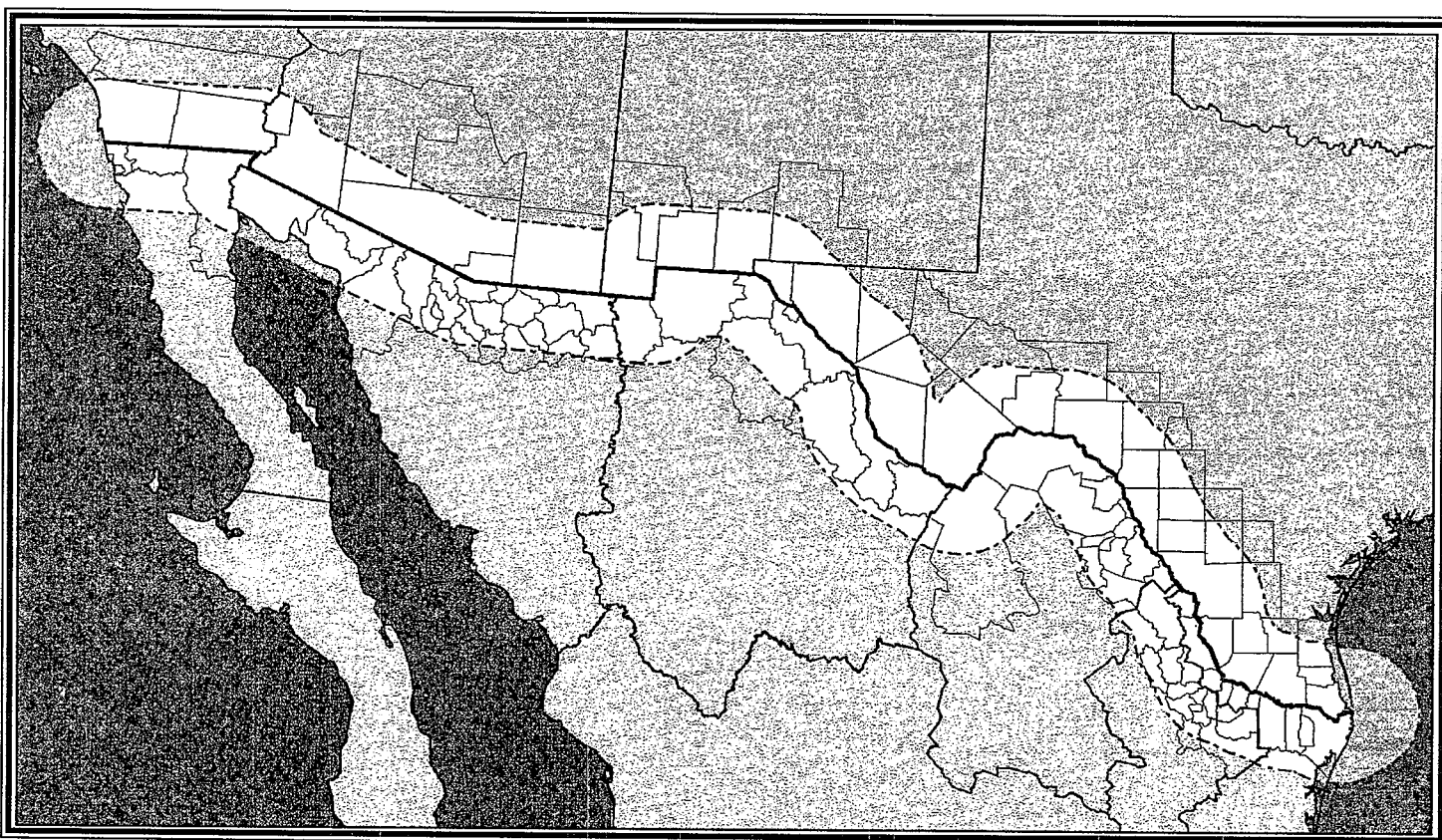
# **US - MEXICO**

## **Border XXI Program**

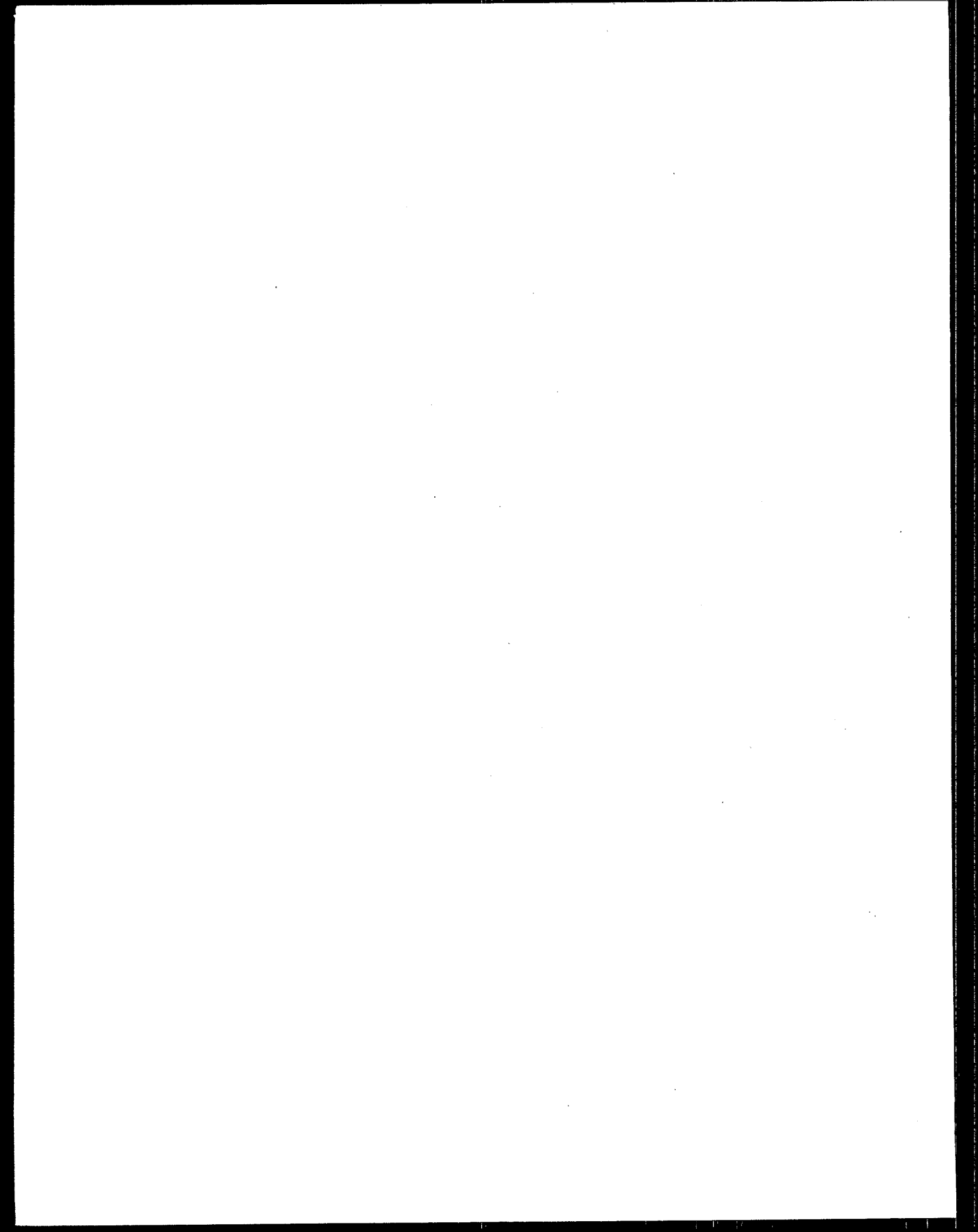
### ***1996 Implementation Plans***

**October 1996**

EPA 160-R-96-004



• Environment • Natural Resources • Environmental Health •



**US - MEXICO**  
**Border XXI Program**  
***1996 Implementation Plans***

**October 1996**



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# **1996 BORDER XXI ANNUAL WORKGROUP IMPLEMENTATION PLANS**

## **What are the objectives of Border XXI?**

The Border XXI Program (Border XXI or Program) is an innovative binational effort which brings together the diverse U.S. and Mexican federal entities responsible for the shared border environment to work cooperatively toward sustainable development through protection of human health and the environment as well as proper management of natural resources in each country. The *Border XXI Framework Document* (Framework Document) is a product of extensive public input which defines five-year objectives for the border environment and describes mechanisms for fulfilling those objectives by facilitating federal and state involvement.

Nine binational Border XXI Workgroups will implement the Program by integrating the efforts of participating entities and defining specific projects to meet Border XXI objectives. Each Workgroup is lead by a U.S. and Mexican Cochairperson. The Workgroups will ensure effective coordination of bilateral efforts by bringing together federal agencies from both countries with a wide array of environmental interests and perspectives. All of the Workgroups are committed to actively encouraging state participation in their endeavors. The Workgroups are in the process of exploring the development of subgroups and other mechanisms to assure the participation of border communities in their implementation of the Program.

The Border XXI Workgroups are (1) water, (2) air, (3) hazardous and solid waste, (4) pollution prevention, (5) contingency planning and emergency response, (6) cooperative enforcement and compliance, (7) environmental information resources, (8) natural resources, and (9) environmental health. These nine Workgroups will meet individually as necessary and will convene as a whole at least once a year.

## **What are the Border XXI Annual Implementation Plans?**

Each year, the nine Workgroups will develop Border XXI Annual Implementation Plans. These Annual Implementation Plans will identify federal funding levels for a given year and, based upon available funds, describe specific projects that will advance the long-term objectives outlined in the Framework Document. The Annual Implementation Plans ensure correlation of short-term budget realities with the long-term objectives identified in the Framework Document.

The 1996 Implementation Plans are enclosed in this document. The 1996 Implementation Plans provide basic information on those projects which will be initiated and/or implemented by the Workgroups based on 1996 budget allocations.

Beginning in 1997, the Workgroups will develop and release their Annual Implementation Plans early in the calendar year. From 1997 forward, in addition to information contained in the 1996 implementation plans (federal funding levels for the year and specific projects based on those funding levels), the Annual Implementation Plans will include an assessment of progress in implementing specific projects.

## **How can the public participate in the Border XXI Program?**

The *Border XXI Framework Document* outlines the Program in detail and describes mechanisms for public participation which include biennial public forums, ongoing communication with the Workgroup Cochairpersons, binational subgroups and other mechanisms to channel local perspectives into the Border XXI Workgroups, public advisory boards, mechanisms for increasing public access to information, support for academic research on the border environment, and grant programs to support community involvement.

The EPA San Diego and El Paso Border Liaison Offices can provide you with a copy of the Framework Document and answer your questions about Border XXI. These offices can be reached by calling 800-334-0741.



# NATURAL RESOURCES WORKGROUP 1996 IMPLEMENTATION PLAN

## CONTACTS:

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## PROJECTS:

**Project:** Training Course on Management Planning of Protected Areas in Mexico

**Purpose:** To provide participants with a general introduction and field experience on management and strategic planning of protected natural areas.

**Funding:** To be determined.

**Partners:** National Park Service, Instituto Nacional de Ecología, ProFauna, Nature Conservancy.

**Description:** This is a course on "Introduction to Park Management" for Mexico protected areas managers. It includes formal classroom sessions and field trips to protected areas in Mexico and the United States. End product is a strategic plan for a protected area.

### Relevant Border XXI Objectives:

- Develop and implement management plans for all federal protected areas in the border zone and exchange relevant experiences.
- Design and conduct training courses and workshops regarding protected area management, protected area planning, environmental education, legislation, and new conservation methods along the border.

**Contact:** Howard Ness, NPS, (505)646-7880; fax (505)646-8083.

**Project:** Exchange of Biological Data and Information Networks with CONABIO

**Purpose:** To identify joint areas of interest and link the efforts of the Biological Resources Division (BRD) of USGS on the National Biological Information Infrastructure (NBII) with development of the CONABIO biodiversity information system.

**Funding:** To be determined.

**Partners:** BRD, Information and Technology Services Office; Mexican Commission on the Understanding and Use of Biodiversity (CONABIO).

**Description:** BRD and CONABIO will pursue cooperative activities to establish meta-data standards for biological data and information. They will develop directories of taxonomic expertise and taxonomic collections in the U.S. and Mexico. They will pilot a project to electronically catalog selected specimens of plants and animals collected in Mexico that reside in the Smithsonian National Museum of Natural History. Other activities will also be initiated and information summarizing activities are already available at the Internet address: <http://www.nbs.gov/nbii/>.

**Relevant Border XXI Objective:**

- Cooperate in the development of mutually accessible information systems, identifying status, trends, and research priorities of shared biological resources.

**Contact:** Larry Ludke, BRD, (314)876-1808; fax (314)876-1855  
Hesiquio Benites, CONABIO, (5) 554-43-32; fax (5) 554-74-72.

**Project:** Lower Rio Grande Ecosystem Initiative

**Purpose:** To improve multisector user access to biological data and information about the ecosystem and to assess the status, trends and threats to biological diversity and ecosystem integrity.

**Funding:** \$175,000 U.S.

**Partners:** Midwest Science Center, BRD; National Park Service; U.S. Fish and Wildlife Service; USGS; Biological Evaluation of Status and Trends (BEST), BRD; CONABIO.

**Description:** To ensure better management and conservation of biological resources while supporting sustained development, it will be necessary to understand all of the interdependent facets that interact on the landscape. This activity is intended to facilitate data gathering and access to information that will promote enlightened management decisions that are based on sound science.

Initial efforts will focus on developing an extensive bibliography of existing information related to biological diversity and sources of threats to biodiversity in the lower Rio Grande Valley. Emphasis at first will highlight species and activities in protected areas. Results are intended to assist conservation managers and developers in promoting good conservation and sustained development.

**Relevant Border XXI Objectives:**

- Cooperate in the development of mutually accessible information systems, identifying status, trends, and research priorities of shared biological resources.
- Design and conduct training courses and workshops regarding protected area management, protected area planning, exchange of relevant experiences among personnel from both countries, environmental education, legislation, and new conservation methods along the border.

**Contact:** Larry Ludke, BRD, (314)876-1808; fax (314)876-1855  
Hesiquio Benites, CONABIO, (5) 554-43-32; fax (5) 554-74-72.

**Project:** Binational Fire Management Agreement

**Purpose:** To develop and implement a binational agreement for international fire management. The objective is to establish a mechanism for the U.S. Department of the Interior and SEMARNAP to (1) provide cooperative fire management along the international border, (2) address needs for technical assistance, and (3) cooperate in the use of fire as a natural resource management tool.

**Funding:** This is primarily a cooperative effort with in-kind services contributed by each partner.

**Partners:** U.S. Department of the Interior and Secretaria del Medio Ambiente, Recursos Naturales y Pesca.

**Description:** The significant natural and cultural resources shared by Mexico and the United States can quickly be consumed by human-caused or natural fires. A mechanism is needed to efficiently manage fires which threaten a neighboring country's resources. Opportunities for technical assistance also need to be identified and addressed in the agreement. This will strengthen and build capacity to manage fires quickly and with the least loss of natural and cultural resources. The use of fire also can be an excellent management tool for manipulating vegetation communities. Cooperative efforts will improve shared ecosystems and reduce the spread of undesirable plant communities.

**Relevant Border XXI Objectives:**

- Refine mechanisms for preparing, preventing, and responding to wildfires through expansion of regional collaboration and improved fire management activities.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning, especially with regard to soils and the evaluation of desertification processes.

**Contact:** Beau McClure, BLM, (602)650-1207; fax (602)650-0398.

**Project:** Upper San Pedro River Basin Binational Education/Training Project

**Purpose:** To share knowledge and scientific and cultural information with concerned parties to enhance protection and the long-term sustainability of the Upper San Pedro River Basin. The long-term objective is binational sustainable resource management of the Upper San Pedro River Basin.

**Funding:** A cooperative effort primarily with in-kind services contributed by each partner.

**Partners:** U.S. Bureau of Land Management, National Park Service, University of Arizona, U.S. Department of Agriculture/Agricultural Research Service, Sonora Department of Ecology, Centro Ecologico de Sonora, University of Sonora, and AGFD.

**Description:** The Upper San Pedro River Basin is a shared resource, with human and wildlife communities depending on the limited water and interconnected resources which are dependent on the river. The Basin and its associated resources are a common concern to the United States and Mexico. A collaborative Ecosystem Program Team has been organized to define issues and to develop an environmental education/training package for the Upper San Pedro River Basin. Resource managers, technicians, scientists, and academia are part of the team that will exchange information between Mexico and the U.S. A workshop for 20 participants (10 from Mexico and 10 from the U.S.) is scheduled on the Upper San Pedro River Basin in September 1996. Issues are to be identified and an action plan for further education/training efforts in subsequent years is to be developed at that workshop.

**Relevant Border XXI Objectives:**

- Promote the protection, conservation, and utilization of a biodiversity program in the border region, and the establishment of controlled production units as strategies for restoring threatened and endangered flora and fauna.
- Establish and implement conservation plans for species of special interest.
- Support the adoption of ecosystem management principles that further sustainable development in local communities.
- Design and conduct training courses and workshops regarding protected area management, protected area planning, exchange of relevant experiences among personnel from both countries, environmental education, legislation, and new conservation methods along the border.
- Promote sustainable management of natural resources in the entire border zone through productive projects to improve the quality of life for local communities.

**Contact:** Beau McClure, BLM, (602)650-1207; fax (602)650-0398.

**Project:** The Restoration of Desert Riparian Vegetation in the Santa Cruz River

**Purpose:** To protect and restore ecosystem values for riparian habitats along the U.S.-Mexico border.

**Funding:** To be determined.

**Partners:** USFWS, NRCS, AGFD, Nature Conservancy, Instituto Ecologico de Sonora.

**Description:** The Santa Cruz River is considered one of the most important riparian corridors in southern Arizona and Sonora, Mexico. This area is of extreme importance to neotropical migratory birds, such as cuckoos, orioles sulphur-bellied flycatcher and the willow flycatcher. The narrow riparian zone provides migratory stopovers, resting and nesting habitat for neotropical wildlife.

**Relevant Border XXI Objectives:**

- Promote the protection, conservation, and utilization of a biodiversity program in the border region, and the establishment of controlled production units as strategies for restoring threatened and endangered flora and fauna.
- Improve and expand the protection of species and habitats in the border zone.

**Contact:** Sam Spiller, FWS, (602)640-2720; fax (602)640-2730.

**Project:** National Aerial Photography Program

**Purpose:** To coordinate the collection of aerial photography every five years to include border states of Mexico.

**Funding:** To be determined.

**Partners:** USFS, USGS, other federal agencies.

**Description:** The original objective of this project was to update aerial photography maps of the 48 contiguous states every five years. In order to improve resource management programs and update inventories of natural resources on an ecosystem scale, it is being proposed to expand this aerial photography mapping effort to include the northern states of Mexico. In that way, research and resource projects along the border could be monitored, interpreted and analyzed more effectively.

**Relevant Border XXI Objectives:**

- Cooperate in the development of mutually accessible information systems, identifying status, trends, and research priorities of shared biological resources.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning.

**Contact:** Ken Osborne, USGS, (303)202-4138.

**Project:** Arizona Fire Ecology Program and Border Area Fire Suppression

**Purpose:** To improve research, management and local community understanding of the important role of fire in maintaining certain ecosystems; continue to jointly suppress fires along the Coronado

National Forest and states of Sonora-Chihuahua border; and continue to provide fire suppression training to those located along the border.

**Funding:** To be determined.

**Partners:** USDA Forest Service Coronado National Forest, Sequoia National Forest, Lincoln National Forest, Prescott National Forest, Rocky Mountain Research Station, University of Arizona, University of Sonora, and SEMARNAP-Sonora-Chihuahua.

**Description:** Historically, the naturally induced fires in the remote forest areas have not been put out while fires in forests near the more populated areas have been suppressed. Little was understood about the relationship between the vegetation and fire. The role that fire plays in the maintenance of ecosystems along the Arizona-Sonora-Chihuahua border is now better understood. Many species within these ecosystems are dependent on fire to regenerate. We now have a unique opportunity to set up research plots in areas where fire has been suppressed as well as where it has been left to burn within the same ecosystem. Much can be learned by comparing the vegetation within these areas to determine the role that fire has played to maintain this vegetation type. For those species that we now know are dependent on fire for survival, like apache and ponderosa pine, use of prescribed burning to maintain these species should be implemented. This program also proposes to develop an education effort to assist local communities to identify a process for deciding whether to extinguish existing fires or let them continue to burn.

A binational crew exists to respond to fires along the Coronado National Forest-states of Sonora-Chihuahua border. However, at this time there are four trained crews to respond to protect nine million hectares (22,500,000 acres) of land. It is proposed that three additional crews be assembled, and that these crews be based outside the communities (located closer to likely occurrence of fire breakouts) on the Mexico side of the border. Through the North American Forestry Commission Fire Management Study Group, helitack and basic fire training could be given to these crews as well as instruction on the use of prescribed burning to reduce fire danger.

**Relevant Border XXI Objectives:**

- Refine mechanisms for preparing, preventing, and responding to wildfires through expansion of regional collaboration and improved fire management activities.
- Implement programs to restore and enhance soil and forest resources to improve nursery management, silvicultural practices, and soil protection with emphasis on native species.
- Encourage the conservation and sustainable use of forest, rangeland, soil, and wildlife resources as a fundamental part of ecosystem management through collaboration with local communities and public participation.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning.

**Contact:** John Edwards, USFS, (505)842-3424; fax (505)842-3801.

**Project:** Reintroduction of Gould's Turkey

**Purpose:** Continue the transfer of Gould's turkey, an extirpated species in the U.S., from Sonora to Arizona while assuring the maintenance of a healthy population in Sonora.

**Funding:** To be determined.

**Partners:** USFS-Coronado National Forest, Arizona State Fish & Game, FWS, SEMARNAP-Sonora.

**Description:** Gould's turkey is a species that used to be found in Arizona in the Coronado National Forest. It disappeared from the area but is still prevalent in the state of Sonora, Mexico. For the last two years, 10 to 20 turkeys a year have been brought into Arizona from Sonora. It is proposed that this transfer of turkeys from Mexico continue. In addition, it is important that an inventory of the turkey population in Sonora is completed this year to ensure that the Mexico population continues to grow.

**Relevant Border XXI Objective:**

- Promote the protection, conservation, and utilization of a biodiversity program in the border region and the establishment of controlled production units as strategies for restoring threatened and endangered flora and fauna.

**Contact:** Vicky Estrada-Bustillo, USFS, (505)842-3424; fax (505)842-3801.

**Project:** Assessment, Inspection and Training for Reduction of Forest Pests and Disease at the Border

**Purpose:** Assess the potential risks that insects and diseases transported across the border may have on forests on either side of the border. Increase inspection efforts to minimize these risks and implement training efforts for foresters on either side of the border on the recognition of cross-border forest insects and diseases.

**Funding:** To be determined.

**Partners:** USFS, APHIS, SEMARNAP, PROFEPA, U.S. Customs Service.

**Description:** Due to the increased transfer of logs between the U.S. and Mexico, the number of forest insects and diseases crossing the border has also increased. In some areas like Oregon and Washington, diseases and insect problems are on the increase. A risk assessment is already underway to determine the potential effects on forests. What is also needed is an increase in the number of inspectors and additional training of these inspectors to help them more effectively identify disease or pest-infected logs. In addition, foresters along either side of the border need additional training to accurately recognize the insects and diseases as well as the visible early signs and symptoms on the trees.

**Relevant Border XXI Objectives:**

- Improve forest health through strengthened monitoring and enforcement with respect to forestry and wildlife uses, and land use modifications. Promote verification of phytosanitary conditions of forest species, products and by-products during transportation, storage, and trade, with a focus on ports and border crossings.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning, especially with regard to soils and the evaluation of desertification processes.

**Contact:** Larry Allen, NRCS, (505)842-3424.

**Project:** Assessment of Forest Air Pollution Impact in Western and Eastern United States and Central Mexico

**Purpose:** Improve the genetic quality of local species in Southern California as a result of monitoring of ozone injury to native trees species and climatic variables at forest sites.

**Funding:** To be determined.

**Partners:** USFS-Pacific Southwest Experimental Station, SEMARNAP, INIFAP, Pennsylvania State University.

**Description:** Climatic conditions have a decisive influence on forest response to ozone injury and the cumulative effects of nitrogen and sulfur compounds. The study will standardize procedures and methods, and begin simultaneous measurements of climate, pollution exposure and tree response at sites with distinctly different climates in California, Pennsylvania, and Central Mexico. Results will aid assessment of global climate changes influences on forest ecosystem response to photochemical oxidant pollution.

**Relevant Border XXI Objective:**

- Improve and expand the protection of species and habitats in the border zone.
- Reduce the effects of global climate change through improvement of local air quality by promoting forestation and reforestation within the border area.

**Contact:** Paul Miller, USFS, (505)842-3424.

**Project:** Practices for the Sustainable Use of Forests

**Purpose:** Develop "Best Management Practices" manual and provide training seminars on the implementation of "Best Management Practices" in both the U.S. and Mexico.

**Funding:** To be determined.



**Partners:** USFS-Region 3, SEMARNAP, Ejido Basaseachi.

**Description:** This project will support the implementation of sustainable forestry practices through the development of a forest management plan that addresses environmental impacts of management actions, forest road planning and the application and evaluation of silvicultural practices. Best practices will be demonstrated at a site in Ejido Basaseachi.

**Relevant Border XXI Objectives:**

- Encourage the conservation and sustainable use of forest, rangeland, soil, and wildlife resources as a fundamental part of ecosystem management through collaboration with local communities and public participation.
- Implement programs to restore and enhance soil and forest activities, including nursery management, silvicultural methods, and soil protection, with an emphasis on native species.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning, with particular consideration given to land use-soil changes that lead to desertification.

**Contact:** Doug Shaw, USFS, (505)842-3424.

**Project:** Coronado National Forest-State of Sonora Sister Forest Program

**Purpose:** Through long-term interdisciplinary sharing of managers and resources, current as well as newly arising issues and problems can be jointly solved. Another of the objectives will be to improve management and conservation capabilities within the Sierra de Los Ajos, Buenos Aires, and La Purica Natural Protected Areas while continuing to harvest commodities.

**Funding:** To be determined.

**Partners:** USFS-Coronado National Forest, SEMARNAP-Sonora, Centro Ecologico.

**Description:** Various issues have been identified for implementation in FY 96. They include the training and use of GIS and GPS equipment to improve mapping information in Sonora, assist in the detection and treatment of insects, training in fire suppression, prescribed burning for fuels reduction and fire ecology research development. In order to assist NPA managers in maintaining a balance between harvesting commodities and preserving the resources, SEMARNAP state representatives and an interdisciplinary team from the Coronado National Forest will develop an ecosystem management plan for Sierra de Los Ajos with an emphasis on fire management. The plan will also focus on the improvement of the transportation system, improve watershed management and continue management of the Gould's turkey.

**Relevant Border XXI Objectives:**

- Encourage the conservation and sustainable use of forest, rangeland, soil, and wildlife resources as a fundamental part of ecosystem management through collaboration with local communities and public participation.

- Refine mechanisms for preparing, preventing, and responding to wildfires through expansion of regional collaboration and improved fire management activities.
- Improve forest health through strengthened monitoring and enforcement with respect to forestry and wildlife uses, and land use modifications. Promote verification of phytosanitary conditions of forest species, products and by-products during transportation, storage, and trade, with a focus on ports and border crossings.
- Continue to build and expand links between research and management of forests, rangeland and soils. Fundamental to this is promoting a consistent and compatible classification and inventory system for soils and ecosystems to better coordinate binational research activities and resource management planning, especially with regard to soils and the evaluation of desertification processes.

**Contact:** Mr. Larry Allen, NRCS, (505)842-3424.

**Project:** Implementation of the Management Program for the Alto Golfo de California y Delta del Rio Colorado Biosphere Reserve

**Purpose:** Develop activities aimed at protecting and preserving the enforcement of environmental policies, lines of authority, and standards established by the Reserve, through the cooperation of federal, state, and municipal governments, local communities, academia, and other entities.

**Funding:** \$1,770,157 pesos from INE.

**Partners:** INE's Center for Scientific and Technological Investigations at the University of Sonora.

**Description:** The protection and preservation projects for implementation of the Management Program will be developed during the first year, and will be carried out by Reserve personnel. The program consists of supervision, protection, and conservation of the natural resources in the area; zoning and dissemination; analysis of the current situation of fisheries; and a specific program for ecotourism management.

**Relevant Border XXI Objectives:**

- Promote sustainable management of natural resources in the entire border zone through productive projects to improve the quality of life for local communities.
- Support the adoption of ecosystem management principles that further sustainable development in local communities.
- Manage natural protected areas to guarantee the conservation of ecosystems and biodiversity.
- Develop and implement management plans for all federal protected areas in the border zone and exchange relevant experiences.
- Establish and implement conservation plans for species of special interest.
- Facilitate participation from state and municipal authorities, Indian nations, nongovernmental organizations, and local communities in all aspects of conservation activities.
- Initiate training, educational programs, and outreach activities that support marine and aquatic resources through cooperative investigations, exchange of technology and improved user access to data.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Implementation of the Management Program for El Pinacate y Gran Desierto de Altar Biosphere Reserve

**Purpose:** Develop activities aimed at protecting and preserving the enforcement of environmental policies, lines of authority, and standards established by the Management Program.

**Funding:** \$1,331,007 pesos from INE.

**Partners:** INE, academic and research institutions, as well as local organizations.

**Description:** During the first year, the following Management Program projects will be implemented:

- a) Protection and preservation will be carried out by Reserve personnel and consist of supervision, monitoring, protection, and preservation of the natural resources of the Reserve.
- b) Zoning and dissemination will be carried out by the Sonoran Ecological Center and consist in defining priority areas to place the signs and create brochures and placards for the Reserve.
- c) Study of nonmetallic mineral extraction activities, to determine those sites where the extraction of morusa can take place with minimal impact.

**Relevant Border XXI Objectives:**

- Promote sustainable management of natural resources in the entire border zone through productive projects to improve the quality of life for local communities, such as supporting the adoption of ecosystem management principles that further sustainable development in local communities.
- Establish an organizational structure and joint inspection committees for protected areas.
- Design and conduct training courses and workshops regarding protected area management, protected area planning, environmental education, legislation, and new conservation methods along the border.
- Manage natural protected areas to guarantee the conservation of ecosystems and biodiversity.
- Develop and implement management plans for all federal protected areas in the border zone and exchange relevant experiences.
- Establish and implement conservation plans for species of special interest.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Emerging Program for Area de Proteccion de Flora y Fauna Maderas del Carmen, Coahuila

**Purpose:** Develop a program from which human, material, and financial resources allow the establishment of basic administration, protection and dissemination actions for the Area de Proteccion de Flora y Fauna Maderas del Carmen.

**Funding:** \$1,174,142 pesos from INE.

**Partners:** INE.

**Description:** The Emerging Program consists of the following activities:

- a) Resource protection that includes traversing the area, forest fire prevention and control, and community participation in the protection of resources and species.
- b) Basic administration and operation: contracting personnel to administer financial, human, and material resources; and operation and enforcement indicators of the Emerging Program.
- c) Zoning and dissemination, consisting in the location, manufacturing, and placement of placards and signs in the Reserve, design, publication, and circulation of a brochure with basic information for the protected area.

**Relevant Border XXI Objectives:**

- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.
- Promote sustainable management of natural resources in the entire border zone through productive projects to improve the quality of life for local communities.
- Support the adoption of ecosystem management principles that further sustainable development.
- Develop and implement management plans for all federal protected areas in the border zone and exchange relevant experiences.
- Establish an organizational structure and joint inspection committees for protected areas.
- Manage natural protected areas to guarantee conservation of ecosystems and biodiversity.
- Facilitate participation from state and municipal authorities, Indian nations, nongovernmental organizations, universities, and local communities in all aspects of conservation activities.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Emerging Program of Areas de Proteccion de Flora y Fauna Canon de Santa Elena, Chihuahua

**Purpose:** Develop a program from which human, material, and financial resources permit the establishment of basic administration, protection, and dissemination actions for the Area de Proteccion de Flora y Fauna Canon de Santa Elena de Chihuahua.

**Funding:** \$1,033,806 pesos from INE.

**Partners:** INE.

**Description:** The Emerging Program consists of the following activities:

- a) Protection of resources that includes traversing the area, prevention and control of forest fires, and community participation in the protection of species and resources.
- b) Basic administration and operation: contracting personnel for the administration of financial, human, and material resources; operation; and enforcement indicators for the Emerging Program.
- c) Zoning and dissemination consists in the location, manufacturing, and placement of placards and signs in the Reserve; design and circulate a brochure with basic information of the protected area.

**Relevant Border XXI Objectives:**

- Design and conduct training courses and workshops regarding protected area management, protected area planning, environmental education, legislation, and new conservation methods along the border.
- Establish an organizational structure and joint inspection committees for protected areas.
- Encourage the conservation and sustainable use of forest, rangeland, soil and wildlife resources as a fundamental part of ecosystem management through collaboration with local communities and public participation.
- Continue to build and expand links between investigation and management of forest, rangeland and soils. Encourage training, education and research to identify and address forest and soil resource problems. Identify and solve resource and soil problems, support capacity building, education and research.
- Promote sustainable management of natural resources in the entire border zone through productive projects to improve the quality of life for local communities.
- Support the adoption of ecosystem management principles that further sustainable development in local communities.
- Manage natural protected areas to guarantee the conservation of ecosystems and biodiversity.
- Facilitate participation from state and municipal authorities, Indian nations, nongovernmental organizations, universities and local communities in all aspects of conservation activities.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Base Study for the Establishment of a Natural Protected Area in Laguna Madre, Tamaulipas

**Purpose:** Analyze the physical, biological, and social setting for the Laguna Madre, Tamaulipas region to determine if it would support a designation of a natural protected area. Determine the area and category of protection.

**Funding:** \$116,000 pesos from INE.

**Partners:** INE-DUMAC.

**Description:** Integrate in one document the basic information with the zone characterization and the analysis of the physical, biological, and socioeconomic aspects of the area of study. Define the area proposed for protection and the values and overriding issues of the zone that justify designation.

**Relevant Border XXI Objective:**

- Improve and expand the protection of species and habitats in the border zone.
- Promote the protection, conservation, and utilization of a biodiversity program in the border region, and the establishment of controlled production units as strategies for restoring threatened and endangered flora and fauna.
- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Implementation of Capacity Courses and Meetings on Experiences in the Administration and Operation of Natural Protected Areas in the Northern Border

**Purpose:** Create capacity courses and public participation workshops that allow the personnel of the natural protected areas and the communities an adequate management and use of natural resources, in order to attain sustainable development.

**Funding:** \$520,000 pesos from INE.

**Partners:** INE and other yet to be identified institutions.

**Description:** Implementation of public participation workshops, as well as courses on the management and operation, in the Natural Protected Areas of the Northern Border.

**Relevant Border XXI Objective:**

- Design and conduct training courses and workshops regarding protected area management, protected area planning, exchange of relevant experiences among personnel from both countries, environmental education, legislation, and new conservation methods along the border.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Flora and Fauna Inventory for Laguna Madre, Tamaulipas

**Purpose:** Create an inventory of the flora and fauna species of the northern estuary system of Laguna Madre.

**Funding:** \$64,800 pesos from INE.

**Partners:** INE-Ocean Sciences Institute of UNAM.

**Description:** Review recent bibliographical information and scientific literature, in addition, field trips will be integrated in the inventory for Laguna Madre.

**Relevant Border XXI Objective:**

- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Biologic Diversity of the Meadows of the Northeast of Mexico

**Purpose:** Create a biologic inventory of the terrestrial vertebrates and flora of the meadows of the northeast of Mexico, in the state of Chihuahua.

**Funding:** \$67,056 pesos from INE.

**Partners:** INE-Ecology Center.

**Description:** Compile bibliographical information in scientific literature of vertebrates and flora of the region, in addition, conduct field trips to confirm the collected information.

**Relevant Border XXI Objective:**

- Cooperate in the development of mutually accessible information systems, identifying status, trends, and research priorities of shared biological resources.
- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Mammals of Baja California

**Purpose:** Create an inventory on the terrestrial mammals of Baja California.

**Funding:** \$32,580 pesos from INE.

**Partners:** INE, Biological Institute, UNAM.

**Description:** Integrate the inventory of terrestrial mammals of Baja California through bibliographic research and review of scientific literature.

**Relevant Border XXI Objective:**

- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Review of the Current Situation of Floral Estuary Habitats in the Border Zone of the State of Sonora

**Purpose:** Obtain current information on the floral estuary habitats in the border zone of the state of Sonora.

**Funding:** \$54,096 pesos from INE.

**Partners:** INE, Scientific Research and Technology Center of the University of Sonora.

**Description:** Review of the bibliography and plant collections.

**Relevant Border XXI Objective:**

- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Species with Special Protected Status

**Purpose:** Implement various studies of species with protected status in the northern border, with the objective of integrating a current database of the ecological conditions for aquatic and terrestrial flora and fauna.

**Funding:** \$982,000 pesos from INE.

**Partners:** INE and different academic institutions and/or NGOs.

**Description:** Integrate a database with the information of each of the contracted studies.

**Relevant Border XXI Objective:**

- Cooperate in the development of mutually accessible information systems, identifying status, trends, and research priorities of shared biological resources.
- Promote research and investigations of habitats and species of flora and fauna, to initiate management and protection programs that concentrate on biodiversity and the sustainable use of resources.

**Contact:** Celia Pigueron, UCANP-INE, (5)624-36-06; fax (5)624-35-89.

**Project:** Rehabilitation of Saline Soils

**Purpose:** Restore the productive properties of land that has been affected by poor management practices.



**Funding:** To be determined.

**Partners:** SEMARNAP de Sonora and United States Forest Service (USFS).

**Description:** The conversion of lands presently being used for livestock grazing by establishing better range conditions through native revegetation in the brushy areas and foothills.

**Relevant Border XXI Objectives:**

- By using native species, encourage the conservation and sustainable use of forest, rangeland, soil, and wildlife resources as a fundamental part of ecosystem management through collaboration with local communities and public participation.
- Implement programs to restore and enhance soil and forest resources through projects to improve nursery management, silvicultural practices, and soil protection with emphasis on native species.
- Promote voluntary soil conservation programs and practices.

**Contact:** Diana Ponce, SRN-SEMARNAP, (5) 628-08-75; fax (5) 628-06-54.

**Project:** Rehabilitation of Reforested and Nursery Areas in Urban and Suburban Zones

**Purpose:** Reinitiate the operation of nurseries for reforestation in cities located in the border zone for improving air quality.

**Funding:** To be determined.

**Partners:** SEMARNAP in Coahuila and the USFS.

**Description:** Produce 200,000 forest seedlings to plant 200 hectares of trees in urban and suburban areas in borderland cities with emphasis in industrial areas.

**Relevant Border XXI Objectives:**

- Implement programs to restore and enhance soil and forest resources through projects to improve nursery management, silvicultural practices, and soil protection with emphasis on native species.
- Promote reforestation in urban areas with low water-consumptive plants as a method for improving air quality.

**Contact:** Diana Ponce, SRN-SEMARNAP, (5) 628-08-75; fax (5) 628-06-54.

# WATER WORKGROUP 1996 IMPLEMENTATION PLAN

## CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
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<b>Contacts:</b> Oscar Cabra U.S. EPA - Region 6 (mail code 6WQ) First Interstate Bank Tower at Fountain Place 1445 Ross Avenue, Suite 1200 Dallas, TX 75202-2733 phone: (214) 665-2718  Doug Eberhardt (EPA Region 9) phone: (415) 744-1280 e-mail: eberhardt.doug@epamail.epa.gov	<b>Contact:</b> Ing. Jaime Tinoco Rubi Coordinador de Asuntos Fronterizos CNA Insurgentes Sur 1806 Mezzanine Col. Florida Mexico, DF CP 01030 phone: (525) 229-8650, -8651, or -8652 fax: (525) 229-8353

## OVERVIEW:

The Water Workgroup has two primary objectives:

- Develop relationships and establish mechanisms which encourage ongoing binational communication and information exchange to increase effectiveness of project planning and implementation; and
- Act on the binational priorities for environmental infrastructure development, pollution prevention and watershed planning, water quality monitoring, environmental training, and public education and involvement.

### Environmental Infrastructure Development

- **Rio Grande Cities Facilities Planning** -- The U.S. has made available financial support (US \$10 million) to Mexico, through the IBWC, to develop plans, studies and projects for wastewater treatment facilities in communities along the Rio Grande. EPA will continue to work with the IBWC to facilitate the development of these projects.

The U.S. and Mexico, recognizing the importance of the Rio Grande-Rio Bravo to sustainable development, will work together on a watershed-based analysis of drinking water and wastewater infrastructure needs for the cities, towns and communities near the river.

- **EPA-IBWC Sanitation and Water Quality Projects in Mexicali and Nogales** -- The U.S. has offered financial support (\$36 million) to Mexico and the city of Nogales, Arizona and will work toward developing sustainable projects. Some projects are underway to address problems with existing local systems and longer term facilities plans are also being developed.
- **Existing Projects at Tijuana** -- The U.S. will work with Mexico to develop an operation and maintenance plan for the international wastewater treatment plant and a plan for disposal of the international plant sludge.

The U.S. will work with Mexico to select the most appropriate alternative for handling wastewaters pending the construction of the ocean outfall.

The U.S. will complete construction of the advanced primary treatment facilities.

In addition to activities being performed by the Mexican border states and municipalities, CNA will assign resources to partially finance work for 37.3 million dollars in 1996, according to the following (amounts in millions):

Baja California (Tijuana, Mexicali, Tecate, and Ensenada)	20.0
Sonora (Nogales)	3.4
Tamaulipas (Nuevo Laredo, Reynosa, and Valle Hermoso)	<u>13.9</u>
TOTAL	37.3

### **Pollution Prevention**

- **Municipal Wastewater Monitoring at Nogales-Nogales, San Diego-Tijuana** -- The U.S. will continue to work with Mexico regarding the monitoring program for municipal wastewaters in Nogales-Nogales and San Diego-Tijuana.

In Mexico, CNA will provide guidance to the wastewater operating entities in the wastewater pretreatment program implementation. State authorities will be in charge of following up the pretreatment program.

### **Watershed Planning and Management**

- **Rio Grande Alliance** -- The U.S. and the Texas Natural Resources Conservation Commission will continue to share information with Mexico regarding the creation of the Rio Grande Alliance and related projects. Similar collaboration will be encouraged along the rest of the border.
- **Colorado and Rio Grande Estuaries** -- The U.S. will continue to talk to Mexico regarding studies for the Colorado River and Rio Grande estuaries. The U.S. proposes a basin-wide approach for the Rio Grande-Rio Bravo.
- **Ecosystems Issues** -- The U.S. and Mexico will continue to be engaged by different state and federal agencies regarding their ecosystem and watershed activities.

## **Water Workgroup 1996 Implementation Plan**

- **Data Management** -- The U.S. will continue to work with Mexico in sharing various information and database systems.

The U.S. will continue with actions leading to resolutions for sediment and salinity problems in the Colorado River.

## **Water Quality Monitoring**

- **El Paso- Cd. Juarez Groundwater** -- The U.S.-Mexico technical subgroup will continue the process of data exchange and the development of regional hydrogeological studies.
- **Ambos Nogales Groundwater** -- The U.S. will continue working with Mexico in the installation and sampling of groundwater monitoring wells in this area and in the development of regional hydrogeological studies.
- **Rio Grande-Colorado-New River Toxicity Studies** -- The second phase of the binational Rio Grande and the initial binational Colorado-New River surveys began in 1995. In 1996, the U.S. will continue to work with Mexico to complete the studies and begin analyzing the data and preparing the reports.

## **Training**

In Mexico, CNA will continue with the training programs for the certification of wastewater plant operators as well as for the operation and maintenance of drinking water and sewerage systems.

In addition, the U.S. will develop a training course concerning surface and groundwater sampling to standardize the respective sampling methodologies.

## **Promoting Water Conservation - Development of a Water Culture**

Mexico will continue to promote public outreach on the efficient and rational use of water.

## **Public Participation**

Mexico will increase the creation of public forum committees at state and local levels to involve the public on the decision-making process in hydraulic infrastructure projects.

## **PROJECTS:**

### **Project: Nogales Potable Water and Wastewater**

**Purpose:** The project consists of a potable water component and a wastewater component. The purpose of the Integral Project for the Use of Potable Water, Treatment, and Recharge in Nogales, Sonora, (first stage) is to improve the services and infrastructure of the city to optimize the use of water; the objective is the sustainable development of the Nogales, Sonora, water supply to make the most efficient use of water in accordance with all of the services that COAPAES provides. The

purpose of the wastewater component is to provide adequate wastewater treatment for the ambos Nogales area to protect public health and the environment. Objectives include providing more treatment capacity for Nogales, Sonora, and implementing an effective pretreatment program.

**Funding:** For the potable water project, the funding is to be determined using a combination of funds from COAPAES-Nogales, state of Sonora and NADBank loans. The government of Mexico is analyzing the possibility of assisting with federal resources. For the wastewater component, EPA has \$36,058,414 available for this and other border wastewater projects in Arizona and California. For this project, EPA has provided funds to (a) IBWC (U.S. and Mexican Sections) for contractor support and project coordination; (b) Arizona Department of Environmental Quality (ADEQ) to provide technical assistance on the project; and (c) city of Nogales for an infiltration/inflow study and improvements. Additional U.S. funding for this project could come from EPA or BECC/NADBank funds in future years. In addition, EPA has provided IBWC U.S. Section \$200,000 for development of a pretreatment program.

**Partners:** For the potable water project, the partners are CNA, COAPAES-Nogales, and the state of Sonora. For the wastewater component, the primary U.S. partners are EPA, IBWC U.S. Section, ADEQ, Arizona Department of Water Resources (ADWR), Santa Cruz County and city of Nogales, Arizona; the primary Mexican partners are IBWC Mexican Section, CNA, SIUE, and city of Nogales, Sonora.

**Description:** The potable water project has been conditionally certified by BECC. Thus, CNA will support COAPAES with a comprehensive study that will allow the project to satisfy the remaining requirements for complete certification, such as analyzing the priority elements to be realized. In this first stage, only drinking water elements have been included. In future stages, wastewater elements will be added, based on a facility planning effort.

Regarding wastewater, the ambos Nogales area is currently served by the Nogales International Wastewater Treatment Plant (IWTP). However, deficiencies in the system result in raw sewage flowing across the border in the Nogales Wash and in adjacent washes. Also, Nogales, Sonora, is utilizing its full capacity at the IWTP and additional capacity is needed. The project involves planning, design, and construction of wastewater collection, conveyance, and treatment facilities. This year we will continue or initiate the following activities.

*Wastewater Facility Planning:* U.S. and Mexico have agreed to jointly study the wastewater needs and issues of ambos Nogales and identify possible solutions to provide additional treatment capacity. The facility study will analyze the environmental, technical, and financial aspects of different wastewater alternatives, closely coordinated with planning aspects of the potable water project. Architectural and engineering consultants have been hired to prepare the study and facilitate public information activities. The study will begin this winter and will conclude with a facility plan and design for a proposed project that may be presented for BECC certification.

*Wastewater Immediate-need Projects:* Reduction of extraneous flows in the wastewater collection systems of Nogales, Arizona and Nogales, Sonora is urgently needed. In Arizona, an intensive study to identify sources of infiltration and inflow (I/I) and limited rehabilitation of the collection system has been completed. Similarly, an I/I study for Sonora may be conducted this year. The findings of

the studies will become the basis for a program of I/I improvements for each collection and conveyance system.

**Wastewater Pretreatment Program:** IBWC U.S. Section has procured a consultant to calculate the maximum levels of toxic pollutants that can safely be treated at the IWTP (headworks analysis). IBWC will then allocate the allowable amounts to the two countries, which will regulate users of the system to ensure compliance. The headworks analysis will take approximately 10 months to complete, starting in 1996.

**Relevant Border XXI Objectives:** Develop infrastructure, pollution prevention, public participation.

**Contacts:** Evelyn Wachtel, EPA Region 9, (415) 744-1167  
Armando Roam, USIBWC, (915) 534-6605  
Mario Castañeda, ADEQ, (602) 207-4409  
Hugh Holub, City of Nogales, Arizona, (602) 287-6571  
Miguel Angel Jurado, CNA, 62 13 03 47  
Silverio Luis Aguilar, COAAPAES Nogales, 63 12 31 02

**Project:** Nogales Groundwater Monitoring

**Purpose:** The purpose is to determine the extent and possible origin of volatile organic compounds (VOCs) in the transboundary aquifer under Nogales Wash in ambos Nogales, which could pose a public health threat. Objectives include the construction of monitoring wells and implementation of a quarterly monitoring program to quantify levels of VOCs and inorganics, assist in groundwater contaminant source identification and control, and establish a baseline for VOCs and inorganics in the transboundary aquifer.

**Funding:** EPA has provided \$200,000 to IBWC U.S. Section and \$65,000 to Arizona Department of Environmental Quality (ADEQ) to implement this project. EPA is also funding two positions at ADEQ in part to provide technical support on this project.

**Partners:** ADEQ will be the lead for the U.S. and IBWC U.S. Section will also be a primary partner. Mexican partners include IBWC Mexican Section, CNA and state of Sonora.

**Description:** Past studies of groundwater quality in the Nogales, Arizona, area have indicated the presence of VOCs and trihalomethanes in the transboundary aquifer under the Nogales Wash. The problem seems to be on both sides of the border, but the problem has not been satisfactorily studied on a binational level.

The project consists of the construction and monitoring of wells on each side of the border. The wells on the U.S. side have been drilled and developed. Well construction equipment has been purchased and transferred to Mexico for their use. Drilling of wells in Mexico still needs to be scheduled. After all the wells are constructed, samples will be taken by a binational team and analyzed on a quarterly basis for a period of one year. Sampling in the U.S. was initiated in July 1996. All samples will be split for separate analysis by the U.S. and Mexico. IBWC arranged OSHA

training in April 1996 for the Mexican members of the sampling team; the training was necessary for their participation in the sampling activities in the U.S.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Evelyn Wachtel, EPA Region 9, (415) 744-1167  
Sylvia Waggoner, USIBWC, (915) 534-6704  
Mario Castañeda, ADEQ, (602) 207-4409  
Miguel Angel Jurado, CNA, 62 13 03 47  
Silverio Luis Aguilar, COAAPAES Nogales, 63 12 31 02

**Project:** Nogales Wellhead Projection

**Purpose:** The purpose is to employ wellhead protection strategies in a proactive effort to protect the quality of the groundwater in the transboundary aquifer under the ambos Nogales-Santa Cruz River area. Objectives include enhancement of local voluntary involvement in the management of groundwater quality, education of the public on groundwater quality, and measurement of direct environmental and human health benefits for wellhead protection.

**Funding:** EPA is providing \$195,078 to the Southeastern Arizona Governments Organization (SEAGO) to implement the project, including funding an EPA staff person on loan to SEAGO. EPA is also funding a position at ADEQ in part to provide technical support on this project.

**Partners:** Primary U.S. partners include SEAGO, ADEQ, Santa Cruz County, ADWR, ADHS, IBWC private industry, community groups, and city of Nogales, Arizona. Discussions on extending the effort into Mexico would involve the IBWC.

**Description:** This project is intended to protect the region's groundwater before it becomes contaminated. The project focuses on the apparent, but often ignored, link between activities that take place on the land near aquifer recharge areas around groundwater wells and the quality of ground water supplied by those wells. General elements of the project include defining the land area to be protected, identifying and locating potential sources of contamination, managing the protection area, and planning accordingly.

Three wellhead protection areas have been identified: Potrero Creek, Santa Cruz, and Valle Verde. Potential sources of contamination have been mapped in each area. Resolution of how to deal with one known contaminant plume is nearing completion. Existing protection measures have been evaluated, and an implementation plan for additional protection measures is being developed. A safe drinking water bilingual curriculum for use in kindergarten through twelfth grade is nearing completion, and three bilingual public information pamphlets are being developed. EPA is planning to award a grant for \$40,000 to Nogales, Arizona, for implementation of the management strategies.

**Relevant Border XXI Objective:** Pollution prevention.

**Contacts:** Evelyn Wachtel, EPA Region 9, (415) 744-1167  
Mario Castañeda, ADEQ, (602) 207-4409  
Michele Kimpel, SEAGO, (602) 432-5301.

**Project:** Lower Colorado-New River Toxics Survey

**Purpose:** The purpose is to determine the levels of toxic pollutants in the lower Colorado River and in the New River. Mexico has requested monitoring of the lower Colorado River due to concern about the quality of the water supply for Mexicali and Tijuana. Interest in New River monitoring was elevated when Imperial County and a coalition of environmental justice groups filed petitions under the Toxic Substances Control Act.

**Funding:** EPA has provided a total of \$361,000 for this project: \$240,000 to the United States Geological Survey (USGS) to monitor for toxic pollutants in water and sediments; \$72,000 to the University of California at Davis (UCD) to measure aquatic toxicity and assist in data compilation; and \$49,000 to California Department of Fish and Game (DFG) for analysis of bioaccumulation in fish tissue.

**Partners:** Primary U.S. partners include EPA, USGS, UCD, DFG, state of Arizona, and IBWC U.S. Section. Mexican partners include IBWC Mexican Section and CNA.

**Description:** A binational program for monitoring toxic pollutants in the Colorado and New Rivers has been developed. Three sites on each river were monitored during the first round. Five sites were monitored on the Colorado River during the second round. The second round of sampling on the New River has also been completed. Now, work is beginning on the preparation of a binational report describing the results of both rounds of sampling.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Ed Liu, EPA Region 9, (415) 744-1934  
Roy Schroeder, USGS, (619) 637-6824  
Dr. Francisco Oyarbazal, CNA, 65 52 86 82  
Carlos Pena, IBWC (915) 534-6704

**Project:** Lower Colorado-New River Data Synthesis

**Purpose:** The purpose is to develop a better understanding of the water quality of the Colorado and New Rivers by compiling and synthesizing existing data.

**Funding:** EPA has provided \$182,000 to the University of California at Davis (UCD) for this project.

**Partners:** UCD.



**Description:** UCD is compiling existing data on the lower Colorado River and on the New River and performing a series of reviews to synthesize the data and make it more understandable to the public. UCD will prepare copies of their reviews in both English and Spanish. UCD is also preparing a database of the existing data. The database will also be used for the data collected as part of the Binational Colorado River-New River Toxics Survey project.

UCD is gathering the data and preparing the reviews and the database.

**Relevant Border XXI Objectives:** Water quality monitoring, public participation.

**Contacts:** Ed Liu, EPA Region 9, (415) 744-1934  
Jim Quinn, UCD, (916) 752-8027.

**Project:** New River Toxics Model

**Purpose:** The purpose is to understand the fate of toxic organic pollutants in the New River.

**Funding:** EPA has provided \$70,000 to the University of California at Davis (UCD) for this project.

**Partners:** EPA and UCD.

**Description:** UCD has collected samples along the length of the New River and is using the results to develop a model which will predict the behavior of toxic organic pollutants in river sediments and water.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Ed Liu, EPA Region 9, (415) 744-1934.

**Project:** Mexicali Wastewater

**Purpose:** The purpose is to provide adequate wastewater treatment for the city of Mexicali, Baja California, and thereby improve the quality of the New River. Objectives include improvement of the existing wastewater treatment system (Mexicali I), development of a second system (Mexicali II), and implementation of an effective pretreatment program. Control of industrial and domestic wastewater will result in considerable improvement in the quality of the New River where it crosses the international boundary, reducing a serious existing public health threat.

**Funding:** EPA has \$36,058,414 available for this and other border wastewater projects in Arizona and California. For this project, EPA has provided funds to (a) IBWC (U.S. and Mexican Sections) for contractor support and project coordination; and (b) the state of California (State Water Resources Control Board [SWRCB] and Regional Water Quality Control Board, Colorado River Basin Region [RWQCB 7]) for technical assistance and water quality monitoring. Additional U.S. funding for this project could come from EPA or BECC/NADBank in future years. Mexico is

currently studying the possibility of providing resources for improvements to the various components of sanitation in Mexicali.

**Partners:** Primary U.S. partners are EPA, IBWC U.S. Section, SWRCB, RWQCB 7, and Imperial Irrigation District. Primary Mexican partners are IBWC Mexican Section, CNA, and state of Baja California Norte.

**Description:** Deficiencies in the existing Mexicali wastewater system result in the discharge of considerable amounts of untreated or partially treated domestic and industrial wastewater to the New River, and the Alamo River is also threatened. In November 1995, a binational agreement was signed committing both governments to the preparation of a binational facility plan which will analyze the technical, financial, and environmental aspects of the project alternatives available. The facility plan will examine options for the long-term solution to the wastewater problem. Eleven short-term projects, which are relatively inexpensive and certain to be part of the overall solution (quick fixes), were also identified and construction of those projects has begun. IBWC has awarded a contract for engineering services to assist in development of the facility plan and implementation of the quick fixes. RWQCB 7 is monitoring the New River for conventional pollutants and metals to document improvements in water quality associated with the project. Monitoring of the New River will help document progress resulting from implementation of the Mexicali wastewater project.

**Relevant Border XXI Objectives:** Develop infrastructure, water quality monitoring, pollution prevention.

**Contacts:** Doug Eberhardt, EPA Region 9, (415) 744-1280  
Glenn Hansel, USIBWC, (915) 534-6605  
Bart Christensen, SWRCB, (916) 227-4426  
Ron Rodríguez, RWQCB 7, (619) 776-8944  
Dr. Francisco Oyarbazal, CNA, 65 52 86 82  
Gaston Loustana, CESPM, 65 57 15 50

**Project:** Tijuana Wastewater

**Purpose:** The purpose is to provide adequate wastewater treatment for the Tijuana, Baja California, area, to reduce a serious existing threat to public health and the environment. Objectives include construction of the South Bay International Wastewater Treatment Plant (IWTP), land outfall, and ocean outfall and implementation of an effective pretreatment program.

**Funding:** EPA has received \$239,400,000 for planning, design, and construction of the IWTP and outfall facilities. The city of San Diego will pay a pro rata share (40% for the ocean outfall) for its use of the outfall facilities. The state of California has contributed \$5,300,000 for the outfall facilities. Mexico will contribute funds to the IWTP in the amount it would have spent to construct its own plant in Mexico. Current estimates indicate that sufficient funds are available to construct the advanced primary treatment plant, ocean outfall, and canyon collectors, but funding is not sufficient for construction of the secondary treatment facilities as currently designed.

**Partners:** Primary U.S. partners include IBWC, state of California (SWRCB), and city of San Diego. Mexico is participating through IBWC.

**Description:** Raw sewage from Tijuana contaminates the Tijuana River and results in adverse impacts to the Tijuana River National Estuarine Research Reserve and quarantine of U.S. beaches. IBWC Minute No. 283 calls for the construction of the IWTP and outfall facilities to supplement Tijuana's existing treatment plant. This construction, in conjunction with improvements in Tijuana's collection system, will eliminate the dry-weather contamination of the river. Three types of structures will be constructed: canyon collectors (to convey renegade sewage flows from canyons which drain to the U.S. to the IWTP), the IWTP, and the outfall pipelines. Minute No. 283 also calls for Mexico to develop and implement an effective pretreatment program. The city of San Diego has been working with the city of Tijuana on program development.

The primary treatment phase of the IWTP is under construction. The secondary treatment facilities (activated sludge) and canyon collectors have been designed. The South Bay Land Outfall has been constructed and construction of the ocean outfall has begun. Wastewater samples have been collected at three locations in the Tijuana collection system. Supplemental environmental reviews are underway to (1) examine options for operating the advanced primary IWTP pending completion of the ocean outfall and secondary treatment facilities and (2) examine potentially less expensive alternatives to activated sludge for providing secondary treatment.

Construction of the advanced primary treatment plant and ocean outfall will be completed in February 1997 and May 1998, respectively. Design of the activated sludge secondary treatment facilities and canyon collectors was completed in March 1996. A draft supplemental environmental review regarding interim treatment options was released in the summer of 1996, and a draft of the analysis of alternative secondary treatment technologies will be released in 1997.

**Relevant Border XXI Objectives:** Develop infrastructure, public participation, pollution prevention, water quality monitoring.

**Contacts:** Nancy Woo, EPA Region 9, (415) 744-1164  
Bill Ruth, USIBWC, (915) 534-6676  
Bart Christensen, SWRCB, (916) 227-4426  
Ann Sasaki, City of San Diego, (619) 533-4211  
Dr. Francisco Oyarbaza, CNA, 65 52 86 82  
Ismael Geijalba, CESPT, 65 52 86 82 or 66 22 40 62

**Project:** Texas Colonias Plumbing Loan Program

**Purpose:** To improve public health for the colonia residents by providing safe and sanitary drinking water and wastewater service.

**Funding:** On September 27, 1991, EPA awarded a \$15,000,000 grant to the Texas Water Development Board (TWDB).

**Partners:** EPA Region 6 and the TWDB.

**Description:** Loans are made between the TWDB and a local government. Loans to low income residents are made available and administered at the local level for residential plumbing improvements to improve public health for the colonia residents in designated border counties. Loans have been made to the cities of Pharr and Edinburg and El Paso County.

**Relevant Border XXI Objective:** Develop infrastructure.

**Contacts:** Federal: Oscar Cabra Jr., EPA, (214) 665-2718  
State: Fernando Escarcega, TWDB, (512) 475-2068.

**Project:** New Mexico Colonias Wastewater Construction Grants Program (CWCGP)

**Purpose:** To provide financial assistance for the purpose of planning, designing and constructing adequate wastewater systems to serve unincorporated colonias as expeditiously as possible, consistent with implementation of the Integrated Border Environmental Plan (IBEP) for the U.S.-Mexico border in New Mexico; to improve public health for the colonia residents. To maintain the fiscal integrity of the CWCGP.

**Funding:** In accordance with the 1993 and 1995 Fiscal Year Appropriation Acts, \$20 million of federal funds were awarded for the CWCGP (\$10 million for each appropriation year).

**Partners:** The region's primary contact is the New Mexico Environment Department (NMED) Construction Programs Bureau.

**Description:** The FY93 and FY95 Appropriations Act for the Environmental Protection Agency (EPA) programs authorized funds for grants to New Mexico for the purpose of providing wastewater treatment facilities to colonias.

Provide funds to the NMED for the establishment of a CWCGP. Federal dollars from the CWCGP fund shall be used solely to make grants to construct eligible wastewater treatment improvements which address the existing wastewater needs of the unincorporated colonias in existence before November 28, 1990.

To date, the colonias program has funded 13 facility plans for 18 communities. Of the 13 facility plans, four have been finalized and received a finding of no significant impact (FONSI). Three of the four, Mesquite, Hatch, and Anthony, are under construction; the fourth, Doña Ana Village, is under design. Of the remaining nine colonias, five are fundable for construction and four are not. San Miguel-La Mesa, Vado-Del Cerro, Berino, Rincón and North Hurley are fundable for construction once outstanding issues are resolved. Chamberino, La Unión, Salem-Ogaz and San Pablo cannot be funded for construction because they do not currently have a community water system, which is a requirement for EPA's federal construction funding.

**Relevant Border XXI Objective:** Develop infrastructure.

**Contacts:** Oscar Cabra Jr., EPA, (214) 665-2718  
Pat Olachea, NMED, (505) 827-2812.

**Project:** Constructed Wetlands Wastewater Treatment Model Project to Address Wastewater Treatment in the Colonias

**Purpose:** This project will demonstrate the constructed wetlands type of wastewater treatment technology in a colonia as provided for in the FY93 Appropriations Act.

**Funding:** On December 22, 1992, a \$650,000 grant was awarded to the New Mexico Environment Department (NMED).

**Partners:** Mesquite Mutual Domestic Water Consumers and Mutual Sewerage Works Association, New Mexico Environment Department, EPA.

**Description:** The NMED administers the planning, design and construction of this project. EPA provides the performance standards to be achieved by the treatment facility, technical consultation during design, and assists NMED in oversight during construction. EPA also provides technical consultation to NMED during the design of the monitoring program and oversight during monitoring. Construction is underway.

**Relevant Border XXI Objective:** Develop infrastructure.

**Contacts:** Federal: Oscar Cabra, Jr., EPA, (214) 665-2718  
State: Patrick Oleachea, NMED, (505) 827-2812.

**Project:** Environmental Partnership Effort along the U.S.-Mexico Border: Ciudad Juarez-El Paso Wellhead Protection-Groundwater Pilot Project

**Purpose:** The purpose of this project is to implement the state of Texas' Wellhead Protection (WHP) Program in all communities along the U.S. border with Mexico. The project will also provide technical assistance to Ciudad Juarez's Junta Municipal de Agua y Saneamiento as they develop a WHP program for the 200+ water wells in Ciudad Juarez. The project will result in an added level of protection for the drinking water supply wells along the U.S. side of the border and will set a standard which future Mexican groundwater protection efforts may use as a model.

**Funding:** In September 1993, EPA awarded assistance funds to the Texas Natural Resource and Conservation Commission (TNRCC) in the amount of \$150,000.

**Partners:** Texas Natural Resource Conservation Commission, Junta Municipal de Agua y Saneamiento de Ciudad Juarez, Comisión Nacional del Agua, Comisión Internacional de Límites y Aguas, EPA Region 6, U.S. Section, International Boundary and Water Commission, the University of Texas at El Paso, and the Retired and Senior Volunteer Program.

**Description:** The TNRCC is responsible for implementing the state's approved WHP program. This project funded the implementation of the state's program in all U.S. communities along the Texas-

Mexico border that rely on groundwater as a source of drinking water. The Commission was also funded to provide technical assistance and programmatic guidance to Ciudad Juárez to aid in the development of a groundwater protection program for that city's 200+ public water supply wells. The TNRCC also assists in providing technical assistance to 20 university students and 10 senior citizen mentors in the EPA AmeriCorps groundwater protection project.

The project has been completed with 12 communities along the Texas-Mexico border currently participating in the state's WHP program. On February 3, 1995, Ciudad Juarez held an official launch of its WHP program and the inventory efforts are underway. Mexico's inventory of potential sources of contamination is being placed into an international database.

**Relevant Border XXI Objective:** Pollution prevention.

**Contacts:** Federal: Ken Williams, EPA, (214) 665-7129  
State: Brad Cross, TNRCC, (512) 239-4753  
Manuel Jesus Diaz, CNA, 14 13 98 94  
Jose Mateos, JMAS, Ciudad Juarez, 16 11 54 22

**Project:** Texas Colonia Wastewater Treatment Assistance Program

**Purpose:** To expedite the construction of eligible wastewater treatment improvements which address the existing wastewater needs of the unincorporated colonias in existence as of November 9, 1989.

**Funding:** On December 22, 1992, EPA awarded a \$50,000,000 grant to the Texas Water Development Board (TWDB). On January 22, 1995, EPA awarded a second grant in the amount of \$100,000,000. During FY 1996, EPA anticipates an award of \$50,000,000.

**Partners:** The Texas Water Development Board (TWDB) provides a 100% match to the FY 1993/96 EPA funds and a 20% match to the FY 1995 funds. Various local water and wastewater service providers participate in the colonia projects.

**Description:** The TWDB administers this program and provides grants to local governments and nonprofit water supply corporations for design and construction of wastewater collection and treatment facilities in the colonias. The TWDB has set aside \$2 million for regional facility planning studies to address areas where a regional solution is possible. The TWDB has set aside \$2 million for rural planning to provide direct technical support and financial assistance for facility planning in areas not well suited to a regional or subregional solution.

TWDB has awarded grants totaling over \$90 million for design/construction and rural/urban planning. Three projects have completed construction, four projects are under construction, and 13 projects are in the design phase. The TWDB has regional facility planning studies underway in Cameron County and in Hidalgo County. The TWDB has rural facility planning studies underway in Cameron, Hidalgo, Webb and El Paso Counties.

**Relevant Border XXI Objective:** Develop infrastructure.

**Contacts:** Federal: Oscar Cabra Jr., EPA, (214) 665-2718  
State: Fernando Escarcega, TWDB, (512) 475-2068.

**Project:** Characterization of Transboundary Aquifers in the El Paso-Ciudad Juarez-Las Cruces Region of the U.S.-Mexico Border

**Purpose:** This study is a joint effort by the governments of the U.S. and Mexico and the states of Texas and New Mexico. It is designed to identify the border region's transboundary aquifers, quantify the natural and induced chemical quality of each aquifer, characterize and quantify the available supply of each aquifer, determine the direction of groundwater flow and its relationship to the flow of the Rio Grande-Rio Bravo, and develop Geographic Information System (GIS) coverages of the region. The New Mexico portion of the study will also include a Sunland Park, New Mexico public water system investigation to determine the cause of and recommend solutions to nematodes and other invasive organisms in the distribution system.

The study initially focused on the El Paso-Juarez-Las Cruces area and in FY97 the project was expanded to include the transboundary aquifers located in the Del Rio-Eagle Pass area of the U.S.-Mexico border.

In response to recommendations by the Texas Water Development Board, FY97 funds will be used to address two specific deficiencies in the Del Rio-Eagle Pass area: lack of water quality data necessary to properly evaluate human health risks and insufficient water level information to determine groundwater flow paths.

**Funding:** Funds in the amount of \$200,000 are being used for water quality monitoring and the gathering of additional water level data. Region 6 is providing the additional funds to the cooperative agreement with the Texas Water Development Board for use on this project enhancement.

**Partners:** EPA Region 6, Texas Water Development Board, New Mexico State University - Water Resources Research Institute (New Mexico area only), and Comisión Internacional de Límites y Aguas (CILA).

**Description:** The Texas Water Development Board, in cooperation with the partners, will sample selected water wells in the study area in order to evaluate two groups of analyses: toxic trace metals that represent a human health hazard and tritium activity, carbon-14, and stable isotopes of hydrogen, oxygen, and inorganic carbon. These data will assist in tracing groundwater flow paths and determine groundwater residence times. This information is vital in evaluating contaminant plume configuration, aquifer interaction with the Rio Grande-Rio Bravo, and other similar flow direction characterizations.

Compilation and verification of well data have been completed. A hydrochemical-stiff diagram map of the study region and development of broad categories of GIS coverages are near completion.

The El Paso-Juarez-Las Cruces portion of the project has been completed with a final draft report to be released in August 1996. The Del Rio-Eagle Pass segment of the study will be completed in March 1998.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Ken Williams, EPA, (214) 665-7166  
John Ashworth, TWDB, (512) 936-0872  
Bobby Creel, NMSU-WRRI, (505) 646-4337  
Ruben Chavez, CNA, 56 63 22 17

**Project:** Binational Wastewater Operators Training

**Purpose:** To have the Water Environment Association of Texas (WEAT), formerly the Water Environment Federation, conduct training for wastewater treatment plant operators along the border in a binational forum and to provide Spanish translation of related EPA manuals.

**Funding:** EPA initially provided \$100,000 to WEAT to conduct the designated training in June 1995. An additional \$50,000 was provided in September 1995 for Spanish translation of EPA manuals.

**Partners:** The partners in the project are EPA Region 6 and the WEAT.

**Description:** Wastewater plant operators will be trained in the importance of source protection (surface and groundwater supplies), treatment techniques, and the importance of testing and quality control, as well as methods to maintain the treatment plant and the collection system. Additional tasks include Spanish translation of three EPA manuals.

The first 20-hour training course was held in Piedras Negra, Mexico in February 1996, with attendance of over 70 professionals from both sides of the U.S.-Mexico border. The second course is scheduled to be held in Monterrey, Mexico in October 1996.

The training portion of the grant will cover a five-year period for a minimum of two training sessions per year. The Spanish translation is scheduled for completion in September 1996.

**Relevant Border XXI Objectives:** Training and development.

**U.S. Contacts:** Federal: Terri Kelley, EPA, (214) 665-6797  
State: Rhonda Harris, WEAT, (214) 985-7147.

**Project:** Binational Water Supply Operators Training

**Purpose:** To conduct training for water supply operators along the border to provide information on the requirements of the Safe Drinking Water Act (SDWA) in a binational forum.



**Funding:** EPA awarded \$100,000 to the American Water Works Association (AWWA) in July 1995. An additional \$100,000 is currently targeted to expand the scope of this project.

**Partners:** The partners in the project are EPA Region 6 and the AWWA.

**Description:** Drinking water operators will be trained in the importance of source protection (sanitary survey for surface supplies or wellhead protection for groundwater supplies), treatment techniques and the importance of testing and quality control, and methods to maintain the quality of the finished water within the distribution system.

Initial training has been completed and plans are underway for the next session. The intent is to conduct a minimum of two training programs each year.

**Relevant Border XXI Objectives:** Training and development.

**Contacts:** Federal: Terri Kelley, EPA, (214) 665-6797  
State: Larry Webb, AWWA, (713) 338-4848.

**Project:** Circuit Rider Technical Assistance for Public Water Systems along the Texas-Mexico Border

**Purpose:** Funds from the Office of International Activities (OIA) were allocated to the Region 6 Office of the EPA to support U.S.-Mexico border initiatives. Funds were approved for a project which would supplement the current "Circuit Rider" contract which exists between the Texas Natural Resource Conservation Commission (TNRCC) and the Texas Rural Water Association (TRWA). The fundamental objective was to improve the quality of water and wastewater utility service to consumers throughout Texas, especially in rural areas.

**Funding:** The total cost of the two-year (FY95 - FY96) Circuit Rider Program for the Texas-Mexico border region is \$147,368. Of this amount, \$140,000 are federal funds and \$7,368 are state funds.

**Partners:** The Utility Assistance Team of TNRCC's Water Utilities Division will administer this contract with the TRWA. EPA's contacts will be with both the TNRCC and the TRWA.

**Description:** The "Circuit Rider Technical Assistance for Public Water Systems Along the Texas-Mexico Border" provides for concentrated management and technical assistance to water utilities in the region for two years. This project calls for the contractor, the TRWA, to provide the hands-on assistance with an experienced "circuit rider." Two objectives of the TNRCC are, by 1988: to decrease by 50% the number of public drinking water systems in substantial noncompliance with public drinking water systems standards; and to ensure that 100% of regulated water and wastewater utilities provide reliable and adequate customer service in a cost-effective manner.

#### **Water Workgroup 1996 Implementation Plan**

Work began September 1, 1994, and is continuing. The program will be conducted over a two-year period, ending August 31, 1996.

**Relevant Border XXI Objectives:** Training and development.

**Contacts:** Federal: Joan E. Brown, EPA, (214) 665-7130  
State: George Freitag, TRWA, (512) 239-6103.

#### **Project: Toxics Studies of the Rio Grande**

**Purpose:** The purpose of these studies is to screen the Rio Grande for the prevalence, magnitude, and impact of toxic chemicals.

**Funding:** EPA has provided \$1,106,000 to the Texas Natural Resource Conservation Commission (TNRCC) to coordinate water quality studies with Mexico on the Rio Grande. In FY92 the Office of Water and the Region provided \$280,000. In FY93 the Office of International Activities and the Region provided \$201,000. In FY94, FY95 and FY96, Regional Geographic Initiative funds of \$325,000, \$200,000 and \$100,000, respectively, were provided.

**Partners:** U.S. and Texas agencies involved are EPA, TNRCC, the Texas Department of Health and the International Boundary and Water Commission, U.S. Section. Mexican agencies involved are the National Water Commission of Mexico and the International Boundary and Water Commission, Mexican Section. These agencies were involved in work plan development, data collection, and data evaluation.

**Description:** The studies include determinations of toxic pollutant concentrations in water, sediment, and fish tissue; toxicity testing of water and sediment using minnows and waterfleas; and biological assessments of fish and macroinvertebrate communities that live in the river. The study area is from El Paso-Juarez to Brownsville-Matamoros. The Phase I binational report, which has been issued, has helped identify areas where water pollution control is needed.

Binational toxics sampling began in November 1992. A binational report was issued in September 1994. In evaluating the Rio Grande, the U.S. and Mexico found that the river is not heavily impacted by toxics. Follow-up toxics sampling began in May 1995, with a second binational report to be released in March 1997. There has been excellent cooperation among the Mexican and U.S. scientists involved.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Federal: Forrest John, EPA, (214) 665-8368  
State: Patrick Roques, TNRCC, (512) 239-4604  
Mexico: Ignacio Castillo, CNA, 55 95 29 88

**Project:** Rio Grande Alliance

**Purpose:** To establish community partnerships which will address identified environmental needs in the Rio Grande Basin. The partnerships will create a community-based Rio Grande Alliance (R.A.) for the protection and restoration of the river's watershed.

**Funding:** In FY94 and FY95, EPA Region 6 provided a total of \$525,000 to the Texas Natural Resource Conservation Commission (TNRCC) for the project.

**Partners:** Federal, tribal, state and local governments and nongovernmental organizations (NGOs) active within the Rio Grande Basin. TNRCC has completed an extensive outreach effort to involve Mexican government officials at the federal and state level and representatives from Colorado and New Mexico to ensure that the R.A. includes all Basin stakeholders.

**Description:** The R.A. has been formed to accomplish three primary goals:

- Through the Alliance, agencies and decision-makers in the Basin will have a forum in which they can coordinate their programs, thus eliminating redundant activities. This will promote efficient use of limited resources and assist the agencies involved in targeting funds where they are most needed. This will be accomplished by a series of R.A. meetings that will be held in the Basin, and also through continuing communication mechanisms including a newsletter and Web site.
- The Alliance will increase communication between people and entities that may not otherwise interact. This will expand the awareness of problems, issues and possible solutions throughout the Basin. To fulfill this task, TNRCC will maintain a stakeholder database, identify ongoing environmental programs, projects and studies in the Basin, and develop an information center to house information on Basin activities.
- The Alliance will focus on implementation and corrective activities. The R.A. is not another research project or another layer of government. The R.A. will help communities find solutions to their environmental problems by acting as matchmaker for Basin residents; TNRCC will consolidate information on available resources and provide the information to the communities faced with environmental problems.

TNRCC laid the groundwork for the R.A. by meeting with over 40 different federal, state and local agencies and NGOs in Mexico, Colorado, New Mexico and Texas. The first R.A. meeting was held in El Paso, Texas, July 15-16, 1996. The R.A. mission statement, which was developed at the kickoff meeting, is as follows:

*The Rio Grande Alliance provides an international forum to bring together diverse groups committed to the management, protection and conservation of natural resources and human health in the Rio Grande-Rio Bravo Basin.*

TNRCC is currently working with R.A. members to establish a steering committee for the R.A., and to develop three initial projects for the Alliance: a transboundary Basin-wide evaluation, a Basin-wide project inventory, and a riparian restoration project.

The Basin stakeholder database has been developed and will be updated throughout the project. The World Wide Web site detailing current events in the Basin, environmental infrastructure projects, identified needs, and resources available will be completed in September, 1996. A draft matrix of funding solutions for identified needs will be completed by November, 1997. The information center, which will house information on Basin activities, and the final report for R.A. activities will be completed by September, 1998.

**Relevant Border XXI Objectives:** Watershed planning and management.

**Contacts:** Karen Young, EPA Region 6, (214) 665-6679  
Susan Branning, EPA Region 6, (214) 665-8022  
Terri Buchanan, TNRCC, (512) 239-4620  
Sam Archer, TNRCC, (512) 239-6132  
Jose Luis Moltalvo, CNA, 17 17 42 28

**Project:** Rio Grande Cities Facilities Planning

**Purpose:** Planning and design of wastewater facilities to control wastewater discharges from Mexico into the Rio Grande-Rio Bravo.

**Funding:** In accordance with the Appropriations Act of 1995, EPA awarded \$10 million in January 1995 to the International Boundary and Water Commission (IBWC).

**Partners:** EPA's primary contact will be the U.S. Section of the IBWC; however, the Mexican Section of the IBWC will participate as will the National Water Commission (CNA) in Mexico.

**Description:** Monies from this I.G. are to be used to fund facilities' planning of wastewater treatment and collection facilities in Mexico and in border areas. The plans will meet the criteria developed by the Border Environmental Cooperation Commission. Projects are currently being funded for the communities of Reynosa, Acuna, Piedras Negras and Ojinaga.

The initial task will be the development of project proposals and work plans. The A-E firms have been selected for each project; the contracts have been awarded; the first task orders have been approved for each of the four projects; and the notices to proceed have been issued to the A-E firms.

**Relevant Border XXI Objective:** Develop infrastructure.

**Contacts:** Oscar Cabra, Jr., EPA Region 6, (214) 665-2718  
Terry Turner, EPA Region, (214) 665- 7182  
Armando Roam, IBWC, (915) 534-6700

Jose Luis Moltalvo, CNA, 17 17 42 28

**Project:** Characterization of Transboundary Aquifers in the Del Rio to Eagle Pass Segment of the Rio Grande Region

**Purpose:** This study is a continuation study of the transboundary aquifers along the Texas-Mexico border with particular emphasis to be placed on the "twin cities" of Del Rio-Ciudad Acuña, Eagle Pass-Piedras Negras, and Laredo-Nuevo Laredo. It will be a joint effort by the governments of the United States and Mexico and the state of Texas, designed to identify the region's transboundary aquifers, quantify the natural and induced chemical quality of each aquifer, characterize and quantify the available supply of each aquifer, determine the direction of groundwater flow and its relationship to the flow of the Rio Grande-Rio Bravo, and develop Geographic Information System (GIS) coverages of the region.

**Funding:** EPA proposes to award \$200,000 to the Texas Water Development Board for the study by September, 1996.

**Partners:** EPA Region 6, the Texas Water Development Board, and the Comisión Internacional de Límites y Aguas (CILA).

**Description:** The project will review existing literature and water quality information to identify gaps where additional information is needed to characterize the area's shared groundwater resources. The study will be "blind" to political boundaries and will focus on the chemical and physical characteristics of the aquifers.

The application and work plan are being reviewed. The study is scheduled to be completed by August 31, 1999.

**Relevant Border XXI Objective:** Water quality monitoring.

**Contacts:** Ken Williams, EPA Region 6, (214) 665-7166  
John Ashworth, TWDB, (512) 936-0872  
Ruben Chavez, CNA, 56 63 22 17

## ENVIRONMENTAL HEALTH WORKGROUP 1996 IMPLEMENTATION PLAN

### CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
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### OVERVIEW:

In the accompanying text and tables, descriptions are provided of environmental health projects involving ICC partnerships that are ongoing (Table 1), identified as binational initiatives to be started in 1997 (Table 2) or will undergo further discussion/consideration (Table 3). Contacts for the ongoing projects are provided. Similar individuals will be identified as the initiatives are further developed. The specific objectives listed in the *Border XXI Framework Document* (Chapter 3) that are supported by each of these undertakings is also indicated in each table. Those objectives are as follows:

1. Improve the capacity of state, tribal and local health and environmental agencies to assess the relationship between human health and environmental exposures by conducting surveillance, monitoring and research.

2. Improve the capacity of state, tribal and local health and environmental agencies to deliver environmental health intervention, prevention and educational services.
3. Increase the opportunities for stakeholders on the border (e.g., individuals, communities, institutions/organizations, and occupational groups) to participate in environmental health initiatives.
4. Improve training opportunities for environmental and health personnel.
5. Improve public awareness and understanding of environmental exposure conditions and health problems by providing information and educational opportunities.

It is anticipated that the results of the projects will have binational, borderwide benefit. In several instances, full project implementation will be preceded by pilot (feasibility) activities to aid subsequent project design. Stakeholder input will be sought during the planning and implementation of these initiatives.

**Table 1: Border XXI Ongoing Environmental Health Projects Involving ICC Partnerships**

Activity	Partners	Purpose	Environmental Health Objective Addressed <sup>1</sup>
Lower Rio Grande Valley Transboundary Air Pollution Project	TNRCC, EPA	Ascertain the contribution of transboundary air pollution to air quality in the Lower Rio Grande Valley.	1
National Human Exposure Assessment Survey (NHEXAS) Border Project	University of Arizona, EPA	Establish the distribution of exposure to key environmental pollutants in communities along the Arizona-Mexico border.	1,2
Environmental Health Survey of the Texas-Mexico Border	TDH, CDC, ORD/EPA	Assess environmental health conditions at distinct areas along the Texas-Mexico border.	1,2,3
Environmental Epidemiologic Survey of Lead Exposure of Children in Tijuana, Baja California, Mexico	Univ. of Calif. at Irvine, ORD/EPA; El Colegio de la Frontera Norte, A.C. (COLEF), Secretaria de Salud	Determine the extent and distribution of lead exposure among children in Tijuana, Baja California, Mexico. Enhance public health programs and technical infrastructure for monitoring and prevention of childhood lead poisoning in Tijuana, Baja California.	1,2,4,5
Evaluation of the Hispanic HANES Database	EPA	Evaluate database for usefulness as reference (comparison) database for current and future environmental health studies involving Hispanic populations.	1
FDA Market Basket Survey	FDA; EPA	Provide database on levels of nutrients, pesticides, and metals in diet including sampling of community-specific items in three border cities.	1,2



**Table 1: Border XXI Ongoing Environmental Health Projects Involving ICC Partnerships**

Activity	Partners	Purpose	Environmental Health Objective Addressed <sup>1</sup>
Community-based Epidemiology Projects	AZ Dept. of Health, National Board of Lupus Foundation; NM Border Health Office; Physicians for Social Responsibility, Univ. of Texas-Houston/School of Public Health at El Paso; CDC; ORD/EPA	Epidemiologic investigation of community identified health concerns. Specific objectives are to (a) determine if lupus in Nogales, Arizona is associated with exposure to environmental contaminants; (b) characterize well water quality in Dona Ana County, New Mexico and identify possible health effects related to exposure to environmental contaminants in well water; and (c) study the association between acute respiratory morbidity in children and air quality in El Paso, Texas and Sunland Park, New Mexico.	1,2,3,5
Neural Tube Defect (NTD) Project	TDH, CDC, ORD/EPA	Implement a case-control study on risk factors for neural tube defect (NTD) occurrence. Examine feasibility of carrying out environmental epidemiologic studies of NTD in Mexico border communities.	1,2
Support of Workshops and Conferences	TDH, CDC, ORD/EPA	Provide support for binational environmental health meetings and workshops.	3,4,5

<sup>1</sup> Objective Addressed refers to the environmental health objectives described in the *Border XXI Framework Document*. See cover page of this section.

## PROJECTS:

### **Project:** Lower Rio Grande Valley Transboundary Air Pollution Project

**Purpose:** Ascertain the contribution of transboundary air pollution to air quality in the Lower Rio Grande Valley.

**Partners:** Texas Natural Resources Conservation Commission (TNRCC), ORD/U.S. EPA.

**Description:** This study will obtain air quality data and meteorological data to assess the extent of transboundary transport of air pollutants. This will be accomplished by the strategic placement of the monitoring stations and application of back-trajectory models utilizing the data gathered. Data gathered will be used as input into the models for tracking the movement of air masses as well as evaluating associations between pollutant concentrations and wind directions and speeds. A long-term goal of the study will be to provide the state of Texas with background data against which future changes in air pollutant levels in the community can be assessed. In addition, the study will provide a cost-effective monitoring and modeling approach for use by Texas and others to address airborne pollutant transport in other border communities. This data will provide a baseline for identification of air pollutants that may pose a potential health risk.

**Contacts:**     Federal:     Stephen Hern, EPA, (702) 798-2594  
                                  Shaibal Mukerjee, EPA, (919) 541-1865  
                  TNRCC:     Tony Franco, (210) 425-6098  
                                  Maria Aponte-Pons, (512) 239-1822.

### **Project:** National Human Exposure Assessment Survey (NHEXAS) Border Project

**Purpose:** Establish the distribution of exposure to key environmental pollutants in communities along the Arizona-Mexico border.

**Partners:** University of Arizona, EPA.

**Description:** The proposed project will build upon the existing National Human Exposure Assessment Survey (NHEXAS) Project awarded to the state of Arizona to characterize actual environmental exposures experienced by Arizona residents. It takes advantage of resources and groundwork already expended as part of the NHEXAS program. Additional sampling of Arizona border communities will be added to the Arizona NHEXAS Project. The project will over-sample to provide a basis for comparing exposure between communities along the border and the state's general population. This project will establish vital reference data for ongoing and future border studies.

**Contacts:**     Federal: Gary Robertson, EPA, (702) 798-2215  
                  University of Arizona: Mike Liebowitz, (520) 626-6379  
  Mary Kay O'Rourke, (520) 626-6835.

**Project:** Environmental Health Survey of the Texas-Mexico Border

**Purpose:** Assess environmental health conditions at distinct areas along the Texas-Mexico border.

**Partners:** Texas Department of Health (TDH), Centers for Disease Control and Prevention (CDC), ORD/U.S. EPA.

**Description:** The Environmental Health Survey of the Texas-Mexico border is designed to assess the relationship of environmental exposure to various risks/diseases including pesticide poisoning, lead poisoning, asthma, cancer, gastrointestinal diseases, and hepatitis. About 2,100 household surveys will be conducted to collect data on household structure, general sanitation, health conditions, and potential sources of exposure to environmental contaminants (e.g., source of drinking water, waste disposal practices, fish consumption, sources of lead exposure, and use of pesticides). The survey will be used to develop a baseline from which to reduce the incidence of environmentally-related disease along the border through environmental health education and other public health interventions.

**Contacts:** Federal: Rossanne Philen, CDC, (770) 488-7350  
Yolanda Banks Anderson, EPA, (919) 541-0479  
TDH: R.J. Dutton, (512) 458-7541.

**Project:** Environmental Epidemiologic Survey of Lead Exposure of Children in Tijuana, Baja California, Mexico

**Purpose:** Determine the extent and distribution of lead exposure among children in Tijuana, Baja California, Mexico. Enhance public health programs and technical infrastructure for monitoring and prevention of childhood lead poisoning in Tijuana, Baja California.

**Partners:** University of California at Irvine (UCI), U.S. EPA; El Colegio de la Frontera Norte, A.C. (COLEF), Secretaria de Salud.

**Description:** A geographical age-stratified epidemiological study of blood lead concentration, lead use, and socioeconomic and demographic factors will be conducted for 1,600 Tijuana children, ages 1 to 6 years old. The study will evaluate associations between blood lead concentration in children and potential sources of lead exposure at the neighborhood, household, and individual level. As part of this project, a CDC-certified blood lead testing laboratory will be established in Tijuana. The findings of this study will expand current knowledge of lead exposure during childhood development by studying a population with high and varied potential exposure sources. Information derived from this study will be used to establish public health priorities and plan public health programs for lead surveillance and control in Tijuana.

**Contacts:** Federal: Yolanda Banks Anderson, EPA, (919) 541-0479  
UCI: Jonathon Ericson, (714) 824-7261.

**Project:** Evaluation of the Hispanic HANES Database

**Purpose:** Evaluate database for usefulness as reference (comparison) database for current and future environmental health studies involving Hispanic populations.

**Partners:** ORD/EPA.

**Description:** As part of the National Health and Nutritional Examination Survey (NHANES) series, Hispanic HANES sampled 12,000 Hispanics (including 7,500 in the southwestern U.S.) from 1982-1984. In addition to extensive health questionnaires and physical examinations, biological fluids were collected and analyzed for various markers including some pesticides and metals. This database is being resurrected and undergoing documentation to determine the extent to which the environmental markers data can serve as a point of reference (comparison) for measurements in border populations being studied or that may be studied.

**Contacts:** Denise Lewis, EPA, (919) 966-6385  
Rebecca Calderon, EPA, (919) 966-0617.

**Project:** FDA Market Basket Survey

**Purpose:** Provide database on levels of nutrients, pesticides, and metals in diet including sampling of community-specific items in three border cities.

**Partners:** Food and Drug Administration (FDA); U.S. EPA.

**Description:** As part of their continuing national survey of food contamination in the U.S., FDA dedicated a Total Diet Study to the border region. Food was collected in three communities (Brownsville, TX; Nogales, AZ; and San Diego, CA). The 261-item food market basket was supplemented by the collection of 30 to 40 additional food items that are typically consumed by border residents. These samples were analyzed for pesticides and metals.

**Contact:** EPA: Maurice Berry, (513) 569-7284.

**Project:** Community-based Epidemiology Projects

**Purpose:** Epidemiologic investigation of community identified health concerns. Specific objectives are to (a) determine if lupus in Nogales, Arizona is associated with exposure to environmental contaminants; (b) characterize well water quality in Dona Ana County, New Mexico and identify possible health effects related to exposure to environmental contaminants in well water; and (c) study the association between acute respiratory morbidity in children and air quality in El Paso, Texas and Sunland Park, New Mexico.

**Partners:** Arizona Department of Health, National Board of the Lupus Foundation; New Mexico Border Health Office (NM BHO); Physicians for Social Responsibility (PSR), University of Texas-

Houston/School of Public Health at El Paso (UTH/SPH-El Paso); Centers for Disease Control and Prevention (CDC); ORD/U.S. EPA.

**Description:** The study of lupus in Nogales will be a case-control study. Environmental sampling data will be reviewed to determine/select contaminants of concern. Identification of cases will be verified by physician diagnosis and laboratory tests. The protocol is not finalized.

The study of well water in Dona Ana County involves testing water from 120 private wells for contaminants (heavy metals, coliphages, fecal coliforms, volatile organic compounds, pesticides (organophosphates and acid herbicides), nutrients, anions, and cations). A health survey will be conducted in households with elevated levels of contaminants in wells. Survey results will be communicated to health-care providers (physicians, clinicians, and promotoras), farm workers, and community residents.

The El Paso/Sunland Park respiratory morbidity study is a retrospective time series examination of the association between air quality and acute respiratory health problems in children ages 1 to 18 years old for a two-year period. Study subjects will be identified from hospital emergency room records. Air quality data (CO, NO<sub>2</sub>, O<sub>3</sub>, particulate matter, and SO<sub>2</sub>) have been collected on both sides of the U.S.-Mexico border as part of an air monitoring project.

**Contacts:** Federal: Lina Balluz, CDC, (770) 488-7350  
Rebecca Hart, CDC, (770) 488-7350  
Rossanne Philen, CDC, (770) 488-7350  
NM BHO: Kitty Richards, (505) 646-7966  
PSR: Beatriz Vera, (915) 543-3223  
UTH/SPH - El Paso: James Vanderslice, (915) 747-8514.

**Project:** Neural Tube Defect (NTD) Project

**Purpose:** Implement a case-control study on risk factors for neural tube defect (NTD) occurrence. Examine feasibility of carrying out environmental epidemiology studies of NTD in Mexico border communities.

**Partners:** Texas Department of Health (TDH), Centers for Disease Control and Prevention (CDC), ORD/U.S. EPA.

**Description:** The Texas Department of Health initiated a three-year case-control study of risk factors for neural tube defects in 14 counties along the Texas-Mexico border: Cameron, Hidalgo, Starr, Webb, Zapata, Maverick, Kinney, Val Verde, Terrell, Brewster, Presidio, Jeff Davis, Hudspeth, and El Paso. Case mothers are identified through surveillance in the 14-county study area. The case-control protocol includes a general questionnaire, laboratory tests of biological samples, and a food frequency questionnaire. This study is being supported by CDC and EPA and is the third component of a project that includes neural tube defect surveillance and a vitamin supplement program that was initiated earlier.

## **Environmental Health Workgroup 1996 Implementation Plan**

A second component of this project is funding, through the Pan American Health Organization (PAHO), of small pilot projects in environmental epidemiology of NTDs. This activity is a follow-up to a recently completed binational workshop, during which high priority areas for PAHO's environmental epidemiology grants program were identified.

**Contacts:** Federal: Sherry Selevan, EPA, (202) 260-2604  
Joseph Mulinaire, CDC, (770) 488-7190  
TDH: Kate Hendrix, (512) 458-7328.

### **Project: Support of Workshops and Conferences**

**Purpose:** Provide support for binational environmental health meetings and workshops.

**Partners:** ORD/U.S. EPA, CDC.

**Description:** Support is provided for major meetings and workshops that convene environmental health and public health specialists to exchange information, set priorities, and plan collaborative activities, for example, the U.S.-Mexico Border Health Conference.

**Contact:** EPA: Hal Zenick, (919) 541-2283.

**Table 2: Border XXI Environmental Health Initiatives Involving ICC Partnerships**

Activity	Partners	Objective/Purpose	Environmental Health Objective Addressed <sup>1</sup>
The International Toxicology and Poison Center Development Program	Secretariat of Health, Mexico; ECO/PAHO/WHO; CSPI-West Texas Regional Poison Center	Develop Toxicology Centers in the main border cities that will provide information on emergency services and orientation to the community and conduct monitoring and health surveillance of poisonings.	2,3,4,5
Pesticide Exposure and Adverse Health Effects in Young Children Along the U.S.-Mexico Border	EPA/ORD, PHS, TDH, (SALUD, SEMARNAP)	Develop and implement an approach to examine the cumulative risks in children from persistent exposure to pesticides via multiple sources and pathways.	1,2,3,4,5
Advanced Training in Environmental Health: Developing Human Resources to Support Border 21	SALUD, CDC, SEMARNAP, EPA, West Texas Poison Control Center, Univ. Texas in El Paso, Fogarty Center Environment Health Awardees	Strengthen professionals and institutions in the areas of environmental and clinical toxicology, occupational health, epidemiology, toxic substances and risk assessment.	2,4,5
U.S.-Mexico Border 21 Initiative for Pediatric Lead Exposure Identification and Risk Reduction	Texas Dept. of Health, New Mexico Dept. of Health, Arizona Dept. of Health, California Dept. of Health, EPA, CDC, PAHO, Mexico Border States (Baja California, Sonora, Nuevo Leon, Tamaulipas, Coahuila, Chihuahua), Mexican Federal Agencies	Document and reduce the prevalence of childhood lead poisoning in the border region through better source characterization, risk communication, and reduction of exposure and integrated risk assessment/risk management.	1,2,4,5

**Table 2: Border XXI Environmental Health Initiatives Involving ICC Partnerships**

Activity	Partners	Objective/Purpose	Environmental Health Objective Addressed <sup>1</sup>
Border Health Alert and Disease Outbreak Information Exchange Using a Guide to Environmental and Health Organizations and Internet Bulletin Board	New Mexico Dept. of Health; New Mexico Environment Dept.; California Dept. of Health Services; Arizona Dept. of Health; Texas Dept. of Health; Centers for Disease Control; PAHO; El Paso Field Office, EPA; FDA; Secretaria de Salud	<ol style="list-style-type: none"> <li>1. Establish/maintain a directory of border environmental and health organizations.</li> <li>2. Enhance exchange of information among environmental and health agencies regarding health alerts or disease outbreaks.</li> <li>3. Improve capabilities for electronic communication between U.S. and Mexican health and environmental agencies.</li> </ol>	2,3,4,5

<sup>1</sup> Objective Addressed refers to the environmental health objectives described in the *Border XXI Framework Document*. See cover page of this section.



**Project:** The International Toxicology and Poison Center Development Program

**Purpose:** This proposal aims to develop and strengthen toxicology centers in the main border cities to provide information on emergency services, an orientation to the community, and conduct monitoring and health surveillance of poisonings.

**Partners:** Secretariat of Health, Mexico; ECO/PAHO/WHO; CSPI-West Texas Regional Poison Center.

**Description:** The specific elements of the project include:

- Advanced training for senior Mexican clinical toxicologists in short stays in centers of excellence in the U.S. or Canada;
- Identifying or developing, and providing basic, low-cost bibliographic resources for the multiple Mexican institutions involved in poison control and disaster response;
- Providing advice on strengthening programs for community and physician information services and 24-hour response capabilities;
- Assisting Mexican institutions in the development of a basic package of low-cost antidotes for emergency treatment, including a distribution mechanism. This model could subsequently be exported to other parts of Latin America and the Caribbean;
- Promoting the use of poison control data collection in a standardized format and using these data for surveillance of chemical hazards.

**Project:** Pesticide Exposure and Adverse Health Effects in Young Children Along the U.S.-Mexico Border

**Purpose:** To develop and implement an approach to examine the cumulative risks in children from persistent exposure to pesticides via multiple sources and pathways.

**Partners:** ORD/U.S. EPA, PHS, TDH, (SALUD, SEMARNAP).

**Description:** For many border communities, a major concern is the risks from persistent, often year-round, exposure to pesticides. This issue is complicated by the fact that these exposures are to multiple pesticides from a variety of sources (land use, residential practices, etc.) via many pathways (food, water, dust, etc.) so that the cumulative impact is unknown. Of special concern are children since their behaviors (pica, playing in the dirt, etc.) and developmental vulnerability may substantially increase the risk. No standardized protocol exists to study this issue.

This project will be conducted in three phases. The first phase will include a review of existing data and methods. All U.S. states along the U.S.-Mexico border will be included in this review. The second phase includes initial screening of the pediatric population for evidence of pesticide exposure. The third phase will include more detailed follow-up of "high exposure" individuals and an epidemiologic study, the design of which will be determined by the results of phases one and two and specific disease outcomes (prevalence rates) and their hypothesized temporal relationship to exposures.

**Contact:** Dr. Yolanda Banks-Anderson  
U.S. EPA  
(919)541-0479.

**Project:** Advanced Training in Environmental Health: Developing Human Resources to Support Border XXI

**Purpose:** To strengthen environmental health capabilities of professionals and institutions in the areas of environmental and clinical toxicology, epidemiology, occupational health and risk assessment. Approaches include training graduate students and promoting binational faculty exchanges and border sabbaticals.

**Partners:** SALUD (General Directorate of Environmental Health, National Institute of Public Health, International Affairs), CDC, SEMARNAP, U.S. EPA, West Texas Poison Control Center, University of Texas in El Paso, Fogarty Center Environmental Health Awardees (University of Texas, Mount Sinai School of Medicine).

**Description:** This project will provide scholarships for students at border institutions to receive graduate training at academic institutions in either the U.S. or Mexico. The project will also support binational faculty exchanges and provide funding for border sabbaticals for faculty at U.S. and Mexican institutions to engage in environmental health projects along the U.S.-Mexico border. The unique feature of this initiative will be linking universities with the priority monitoring and surveillance projects of the Interagency Coordinating Committee.

**Project:** U.S.-Mexico Border XXI Initiative for Pediatric Lead Exposure Identification and Risk Reduction

**Purpose:** To document and reduce the prevalence of childhood lead poisoning in the border region through better source characterization, risk communication, and reduction of exposure and integrated risk assessment/risk management.

**Partners:** Texas Department of Health, New Mexico Department of Health, Arizona Department of Health, California Department of Health, U.S. Environmental Protection Agency, Centers for Disease Control, Pan American Health Organization, Mexican states along the border (Baja California, Sonora, Nuevo Leon, Tamaulipas, Coahuila, Chihuahua), and Mexican Federal Agencies.

**Description:**

- **Historical Data and Information Inventory:** During the first phases of this initiative, the partners will identify childhood lead surveillance activities and studies that have occurred previously in the border region. Types of exposure and availability of field personnel with appropriate educational materials will be inventoried. Cost and availability of screening techniques for products containing lead, blood lead screening, and methods for reducing lead exposure will be evaluated.

- **Data Integration and Information Outreach:** Information on the prevalence of childhood lead poisoning and sources of lead exposure: The Lead Workgroup will assess the current status of lead screening programs in each of the U.S. and Mexican states, the amount of community education that is targeted to the border population and whether there needs to be additional efforts to screen children who are seen in clinics along the border. It is expected that it will be necessary to increase the number of children screened, and followed, as appropriate. In addition, it will be desirable to provide educational materials to parents that emphasize ways to reduce lead exposure in the future.

**Project:** Border Health Alert and Disease Outbreak Information Exchange Using a Guide to Environmental and Health Organizations and Internet Bulletin Board

**Purpose:**

- Establish and maintain a directory of border environmental and health organizations to facilitate information exchange.
- Enhance communication efforts among environmental and health agency contact people regarding health alerts or disease outbreaks including detailed information on the nature of disease outbreak and/or health alert.
- Establish bulletin board capabilities, via the Internet, for public and private access to information regarding disease outbreak and/or health alert for "official" release to the public.
- Assist the Secretariat de Salud and other Mexican government agencies in setting up e-mail accounts and interim fax accounts to enhance emergency communications between U.S. border states and Mexico border states.

**Funding:** Funding will be needed to provide technical assistance in maintaining an environmental and health organization and resources directory and developing a bulletin board for the Internet.

**Partners:** New Mexico Department of Health; New Mexico Environment Department; California Department of Health Services; Arizona Department of Health; Texas Department of Health; Centers for Disease Control; Pan American Health Organization; El Paso Field Office, U.S. Environmental Protection Agency; Food and Drug Administration; Secretaria de Salud.

**Description:** Various environmental and health agencies along the border are already in the process of developing portions of an environmental health directory for their respective states. The idea of this project is to combine and enhance existing directories of agency contact people into a prime U.S.-Mexico directory to environmental and health organizations and key contact people. This directory will be updated quarterly.

Next, the directory will be used to establish an Internet address book for the U.S. border states and a fax networking system for the Mexico border states to alert contact people within environmental and health agencies and organizations to health problems and disease outbreaks. Finally, if a public health alert is necessary or a disease outbreak established, information will be placed on a public bulletin board or home page via the Internet to alert public and private entities, with complete background information and numbers to call for reporting of new cases and questions.

**Border XXI Environmental Health Initiatives for Further Discussion**

Activity	Partners	Objective/Purpose	Environmental Health Objective Addressed <sup>1</sup>
Risk and Decision-making Training	Office of Environmental Health Hazard Assessment/California EPA, U.S. EPA Region 9; Departamento of Salud Ambiental, Chihuahua; Texas Natural Resource Cons. Comm.	Provide training on risk assessment, risk management, and risk communication as practiced by U.S. EPA. Provide a common bilateral understanding of the use of risk assessment in environmental regulatory decision-making by risk managers.	1,4,5
U.S.-Mexico Border Geographic Information System (GIS) for Environmental Health	California Dept. of Health Services (CDHS), Arizona Dept. of Health, New Mexico Dept. of Health, New Mexico Environment Dept., Texas Dept. of Health, Univ. of Texas School of Public Health, EPA, CDC, NIEHS, HRSA, Ministerio de Salud/Salud Ambiental, Mexican Border States	<ol style="list-style-type: none"> <li>1. Identify/inventory border-related environmental and epidemiological data in each U.S. and Mexican state and coordinate with existing projects using GIS data.</li> <li>2. Establish a GIS which links the occurrence of environmentally sensitive disease conditions (sentinel health events), demographic factors, and the location of potential environmental hazards and known pollution.</li> <li>3. Enable standardized and consistent bi-national and interstate exchange of health, environmental, and demographic data.</li> </ol>	1,2,3,4,5

**Border XXI Environmental Health Initiatives for Further Discussion**

Activity	Partners	Objective/Purpose	Environmental Health Objective Addressed <sup>1</sup>
Mexico-U.S. Border EIS Program for Environmental Health	California Department of Health Services, CDC, ECO/PAHO, Border State Health Departments	1. Create one-year Preventive Medicine Residency program for health professionals as follow-up year to the ECO/PAHO training program in Mexico City. 2. Provide training/support for one Mexican national originating from U.S.-Mexico and based in one of the Mexican State Health Departments.	3,4,5
Continuing Education for Health Professionals at the Border	Calif. Dept. of Health Services, U.S.-Mexico Border Health Offices, Asociacion de Medicos de Empresa de Tijuana y Tecata, Mexican Ministry of Health, National Institute of Occupational Safety and Health, Universidad Autonoma de Baja California	Establish continuing education programs to enable health professionals along the border to respond to chemical accidents and other environmental/occupational-related incidences.	2,4,5

<sup>1</sup> Objective Addressed refers to the environmental health objectives described in the *Border XXI Framework Document*. See cover page of this section.

**Project:** Risk and Decision-making Training

**Purpose:** The course is developed to provide training on risk assessment, risk management, and risk communication as practiced by the U.S. EPA. The concepts employed are accepted and used throughout the United States and Mexico. The primary intent of this training is to provide a common bilateral understanding of the use of risk assessment in environmental regulatory decision-making by risk managers. By providing risk managers along the border with a common understanding, management decisions by one jurisdiction affecting other jurisdictions can be discussed in common terms. The bases and objectives of these decisions can be better separated into health, regulatory, and communication issues; and concerns raised about the issues can be addressed at the same level.

**Funding:** There is no current funding for this project. We will be seeking funding from the U.S. EPA and other available sources.

**Partners:** The Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency is currently working with U.S. EPA Region 9 to provide training to local and state risk management staff. While OEHHA can provide this training alone, it is in consultation with Region 9 staff to form a partnership in this training program. Additional interested participants are the Departamento of Salud Ambiental, Chihuahua, and the Texas Natural Resource Conservation Commission.

**Description:** This is a three-day training course presented in a workshop style for full participation by the participants. The goal of this training is to provide an understanding of the basis of risk assessment, develop a common base of knowledge on risk assessment, provide a framework for developing risk-based management decisions, and provide knowledge on how to communicate risk assessment and risk management information to the public. Risk management staff are provided information on the usefulness of risk assessment to support effective risk-based decision-making.

Risk assessment has become an important part of regulatory decision-making in the United States because it can be an effective tool in prioritizing agency goals by ranking environmental problems based on their potential impact on human health. It also is essential in developing health-based standards and site-specific remediation goals for contaminants which are then modified based on social, technical, and fiscal factors.

The course is given by instructors who act both as teachers and as facilitators. While the primary focus of the program is to provide risk managers an understanding of how to use risk assessment in their decision-making process, it is meant also to identify participants who can become teachers and facilitators. Through this course, these individuals can form teams to provide additional training in their regions.

The teachers/facilitators will be available (via e-mail, telephone, or fax) after the workshop to answer questions or to solve problems that participants may encounter once they start to implement the tools of risk assessment.

**Project:** U.S.-Mexico Border Geographic Information System for Environmental Health

**Purpose:**

- Identify and inventory border-related environmental and epidemiological data in each U.S. and Mexican state and coordinate with existing projects using Geographic Information System (GIS) data.
- Establish a GIS which links the occurrence of environmentally sensitive disease conditions (sentinel health events), demographic factors, and the location of potential environmental hazards and known pollution.
- Enable standardized and consistent binational and interstate exchange of health, environmental, and demographic data.
- In the course of developing this system, identify weaknesses and biases in existing databases and recommend steps to remedy the problems.

**Funding:** The California Department of Health Services, Environmental Health Investigations Branch, has received funding from NIEHS to begin establishing a GIS in San Diego and Imperial Counties, California. Additional funding would be needed to support activities in the other three U.S. border states, to support additional California effort to provide technical assistance to the other states, and to assure integration of the borderwide database. We would assist at least two interested Mexican border states in planning and costing out a GIS in those states. Preliminary support has been provided by New Mexico and Texas to begin environmental data collection and GIS activities.

**Partners:** California Department of Health Services (CDHS), Arizona Department of Health, New Mexico Department of Health, New Mexico Environment Department, Texas Department of Health, University of Texas School of Public Health, U.S. EPA, CDC, NIEHS, HRSA, Ministerio de Salud/Salud Ambiental, Mexican Border States.

**Description:** There are a number of efforts on the border to integrate information about air pollution, point source emissions, ground and surface water pollution, and the location of hazardous waste sites. The location of these potential environmental sources of contamination, along with their attribute data, such as types and levels of pollutants, can be used for identifying potential environmental hazards and for planning environmental health services.

While substantial environmental data have been incorporated into existing GIS, very little health data have been merged to allow for planning public health services, for evaluating access to health services, and for exploring links between exposures and disease. To identify sites of environmental contamination that may be causing health problems, the spatial distribution of incident cases of environmentally sensitive diseases (e.g., childhood asthma, hepatitis A, infant diarrheal mortality, childhood lead poisoning, birth defects) could be compared to the spatial distributions of the population and of environmental contaminants.

The work to be carried out in the proposed first phase of the GIS effort would be to focus on the issues of water supply, water quality, sanitation, and enteric disease. During the initial stages, base maps, databases on drinking water sources and sanitation, and databases with demographic "denominators" and enteric disease incidence would be assembled in a standardized format. All these data sets must be acquired, "cleaned," and prepared for use in a GIS system. At the end of two years, a demonstration assessment could be made of the relation between specific enteric diseases and such

factors as per capita water consumption, water quality, and age and type of both drinking water distribution and sanitation systems.

Mexican colleagues would be involved in the planning of north-of-the-border activities and would be assisted in preparing a proposal when they were ready for an application south of the border. Ongoing coordination of the U.S. and Mexican efforts would be facilitated by monthly phone conferences and a yearly in-person meeting to be held before the annual Border Health Association meeting.

**Project:** U.S.-Mexico Border EIS Program for Environmental Health

**Purpose:**

- Create a one-year Preventive Medicine Residency program for health professionals as follow-up year to the current ECO/PAHO training program in Mexico City. For purposes of this brief document, this program will be called the "Border EIS Program."
- Provide training and support for one Mexican national originating from the U.S.- Mexico border region (border region) and based in one of the Mexican State Health Departments.
- Have the EIS-like trainee meet the following requirements: conduct at least one field-based epidemiological study in the border region in coordination with the appropriate binational governmental and nongovernmental groups; produce at least one scientific report suitable for submission to a peer-reviewed scientific journal; and attend the yearly CDC EIS conference in Atlanta, Georgia. Mentoring from bilingual specialists in investigative environmental health would be available if requested from the U.S. Border State Health Department.

**Funding:** Currently, there is no funding for this project. There is a Cal-EIS program within the California Department of Health Services, but there is no support for any of the Cal-EIS residents to conduct any research on the Mexican side of the U.S.-Mexico border. The ECO/PAHO program currently does not have funding to base one of their trainees in the border region, but they can conduct selective projects along the border. Thus, outside funding is being explored for this proposed program.

**Partners:** California Department of Health Services is the Principal Investigator. Partners include the CDC and ECO/PAHO and other border state Health Departments.

**Description:** There is a need for creating experienced environmental public health professionals within the border region. This Border EIS Program can help toward this goal. It is felt that a bilingual candidate would be preferable and that establishment of contacts binationally will help provide long-standing sources of consultation. The goal is to initially fund one person per year to pilot test the feasibility and utility of the Border EIS Program. Eventually, if funding allows, there could be more border EIS trainees placed to cover different areas of the border.

**Project:** Continuing Education for Health Professionals at the Border

**Purpose:** Establish continuing education programs to enable health professionals along the border to respond to chemical accidents and other environmental/occupational-related incidences.



**Partners:** California Department of Health Services, U.S.-Mexico Border Health Offices, Asociacion de Medicos de Empresa de Tijuana y Tecate, Mexican Ministry of Health, National Institute of Occupational Safety and Health, and Universidad Autonoma de Baja California.

**Description:** This project has three components: (1) Preparing emergency room staff for chemical accidents at the border, (2) Environmental health education program for community practitioners, (3) U.S.-Mexico border training on occupational/environmental health. The first component would identify likely sites of chemical accidents, identify emergency rooms (ER) which would respond to those accidents, and provide emergency response training at these ER. The second component is designed to provide comprehensive education for health-care professionals regarding human exposure to environmental hazards. The third component would improve the capability of local health-care providers to respond to occupational health problems in border work sites.

## AIR QUALITY WORKGROUP 1996 IMPLEMENTATION PLAN

### CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
<b>Cochair:</b> David Howekamp Division Director Air Division U.S. EPA- Region 9 75 Hawthorne St. San Francisco, CA 94105	<b>Cochair:</b> Adrián Fernández Bremauntz Director General de Gestión e Información Ambiental INE-SEMARNAP Ave. Revolución 1425 Col. Tlacapac-San Angel Delegación Alvaro Obregón México, DF CP 01040 phone: (525) 624 3456 fax: (525) 624 3584
<b>Contacts:</b> Bill Jones U.S. EPA- Region 9 75 Hawthorne St. San Francisco, CA 94105 phone: (415) 744-1283 fax: (415) 744-1072 e-mail: jones.bill@epamail.epa.gov  Mathew Witosky (EPA Region 6) phone: (214) 665-8015 e-mail: witosky.mathew@epamail.epa.gov	<b>Contact:</b> Dr. Victor Hugo Páramo INE-SEMARNAP Ave. Revolución 1425 Col. Tlacopac-San Angel Delegación Alvaro Obregón México, DF CP 01040 phone: (525) 624-3450 and (525) 624-3451 fax: (525) 624-3584

### OVERVIEW:

Annex V of the La Paz Agreement allows Mexico and the United States to evaluate the causes and formulate solutions to air quality problems in the border cities. Given the increase in population, vehicular traffic, and industrial activity in the areas of Ciudad Juarez-El Paso-Sunland Park, Tijuana-San Diego, Mexicali-Imperial Valley, Nogales-Nogales, and Agua Prieta-Douglas, there is an urgent need to evaluate the current levels of specific pollutants. Other areas could be added if necessary.

Specifically, the Air Workgroup will continue efforts through their subgroups to promote the creation of air quality monitoring networks, emission inventories, air quality modeling, and improvement strategies. These strategies to improve air quality will be useful tools for local decision-makers when considering the interrelationship among air quality, land use, transportation planning, and economic development. The Air Workgroup will work closely with state and local governments, indigenous groups, the private sector, academia, and nongovernmental organizations (NGOs) for the management of air quality in the region. For example, bilateral agreement was reached to establish a Joint Advisory Committee for the Improvement of Air Quality, which will recommend strategies for the prevention and control of pollution in the El Paso-Juarez-Sunland Park air shed. In the course of the next few years, both countries will be in a position to develop and apply air quality

improvement strategies in the border area, with the goal of achieving the air quality and health standards of each country.

## PROJECTS:

**Project:** U.S.-Mexico Information Center on Air Pollution  
Centro de Información sobre Contaminación del Aire - CICA

**Purpose:** Develop and operate an information transfer center for the U.S.-Mexico border area as an extension of the existing Control Technology Center (CTC). The center (CICA) provides Mexican federal, state and local environmental officials and universities working along the U.S.-Mexico border with access to pertinent information related to assessment of air pollutant emissions, ambient monitoring, dispersion modeling, and control technologies and pollution prevention programs that will aid in achievement of emission reductions.

**Funding:** FY95 - \$247,000 to CICA/CTC/OAQPS; FY96 - \$100,000.

**Partners:** INE, CTC (EPA).

**Description:** The CICA capabilities include access to EPA technical expertise through a bilingual (Spanish-English) hotline and World Wide Web home page; technical assistance and projects on air-related problems along the border; Spanish-language versions of technical documents and air quality models; development of a U.S.-Mexico ambient air quality monitoring clearinghouse and bilingual bulletin board system on the Technology Transfer Network (in conjunction and integrated with the CICA home page) to answer technical questions and provide information.

### Status:

- CICA HOTLINE (bilingual - Spanish/English) initiated 5/1/95 - fully funded through FY97.
- Senior Environmental Employee Program. Sixty-one requests have been received.
- 167 publications delivered; software and documentation for 19 EPA models provided.
- Projects:
  - Spanish versions of SCREEN III and ISC III Models - final due September 1996
  - Piedras Negras-Ciudad Acuña Monitoring Plan - final due in November 1996
  - Mexicali Unique Sources Emissions Evaluation - final due in November 1996
  - Ciudad Juarez Auto Body Shop Emissions - Final due in January 1997
- CICA home page (Spanish/English) currently operational and expanding - ongoing (<http://www.epa.gov/oar/oaqps/cica/>)
- CICA brochures in English and Spanish are available from EPA contacts listed below.

**Contacts:** Bob Blaszcak - EPA, OAQPS (919) 541-5432/[blaszcak.bob@epamail.epa.gov](mailto:blaszcak.bob@epamail.epa.gov)  
Jaime Mendieta - EPA, OAQPS (919) 541-0547/[mendieta.jaime@epamail.epa.gov](mailto:mendieta.jaime@epamail.epa.gov)  
CICA Hotline (919) 541-1800; fax (919) 541-0242  
Manuel Llana, SEMARNAP Chihuahua  
Oscar Ibanez, SEMARNAP Chihuahua  
Victor Hugo Páramo, INE-Mexico City, 52-56-24-3451.

## Air Quality Workgroup Implementation Plan

### **Project:** Mexico's Air Pollution Training Program (Training Needs Assessment and Referral)

**Purpose:** Build infrastructure and expertise in Mexico to deliver needed air quality management training in an efficient and coordinated manner.

**Funding:** The University of Texas at Arlington (UTA) has been awarded a cooperative agreement for \$290,000 (amount funded). (Project period and budget period 10/01/94 to 09/30/97). Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** In the United States: EPA Office of Air Quality Planning and Standards (OAQPS), EPA Regions 6 and 9, EPA Office of International Activities (OIA), and UTA. In Mexico: Instituto Nacional de Ecología (INE), Procuraduría Federal de Protección al Ambiente (PROFEPA), Universidad Autónoma Metropolitana de Azcapotzalco (UAM-Azc), and Instituto Tecnológico de Tijuana (ITT).

**Description:** The UTA is assisting INE and its designated institutions (1) to design, develop and implement an air pollution training needs assessment; and (2) to establish Mexico's air pollution training program. The first element will identify the current and future training needs of federal, state and municipal air quality management staff in five cities along the border (Tijuana, Nogales, Ciudad Juárez, Ciudad Acuña and Matamoros). The second element will identify and develop needed infrastructure to efficiently prepare and deliver air quality management training in Mexico.

**Status:** The air pollution training needs assessment report and the training program blueprint document are complete. A discussion of the two documents was held during the March 1996 binational meeting in El Paso, Texas. Mexico's air pollution training program will be supported by border regional training centers. These centers will serve as main sources for training development activities, depositories for environmental training materials, training sites, and downlink sites. The Control of Particulate course was translated, adapted, and pilot tested in Mexico City by the UAM-AZC and INE in July 1995. In April 1996 the course was also offered at ITT by UAM, INE and ITT instructors.

**Schedule:** INE and UTA will be visiting the Institutos Tecnológicos de Cd. Juárez and Matamoros to initiate negotiations on the establishment of Regional Environmental Centers in those cities. INE, ITT, UTA, and EPA inaugurated the first Regional Environmental Center at the ITT- April 16, 1996. In addition to training activities, INE's plan for these centers includes having access to relevant environmental information and environmental research activities. INE will be signing a broader agreement with Dirección General de Institutos Tecnológicos to support the future establishment of similar centers throughout Mexico. (INE's plan for the establishment of Regional Environmental Centers is far beyond the extent of this project.)

**Contacts:** Lourdes Morales, EPA-OAQPS, (919) 541-4940  
morales.lourdes@epamail.epa.gov  
Victor Hugo Páramo, INE-Mexico City, 52-56-24-3451.

**Project:** Mexico Emissions Inventory Development Program

**Purpose:** Build the capacity in Mexico for the development of emissions inventories that can be used by both countries. These emissions data will provide Mexico with a better understanding of its own air pollution sources and thus form the basis for developing an emissions control program. They will also enhance the air quality planning process in the U.S.

**Funding:** A total of \$500,000 in FY96 grant funds will be used toward continued implementation of Phase II. The funds were awarded to the Western Governors' Association (WGA). Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years. INE is financing the Spanish translation of the emission inventory manuals with its own resources.

**Partners:** INE, PROFEPA, WGA, border states.

**Description:** The Grand Canyon Visibility Transport Commission of WGA and Mexico have common needs for developing emissions inventory information. The GCVTC is sponsoring projects to develop an emissions inventory for areas, including Mexico, that potentially contribute to regional haze on the Colorado Plateau. Mexico is conducting a variety of air quality planning efforts that will benefit from countrywide emission information.

**Status:** The final implementation plan for the methodology has been developed. Training course materials and inventory manuals are being prepared. Training is tentatively scheduled for Juarez and Tijuana in the fall of 1996. Two technical manuals have been completed (basic emissions inventory techniques, point sources) and area source manuals are being prepared. Technical studies have been planned and will consist of five parts: special studies and refinement of inventory methodology; methodology testing; validation of emission estimates; emission factor applicability to Mexico; and uncertainty analysis. Over the next two years, pilot implementation of the methodology is targeted for Mexicali and Tijuana.

Monitoring data and other air quality information are available through the U.S.-Mexico Air Pollution Clearinghouse via Internet (<http://www.epa.gov/oar/oaqps/cica.html>) or by telephone 919-541-1800. By October, all monitoring data for the border will be available and will be updated quarterly.

**Contacts:** John Leary, WA (303) 623-9378  
Victor Hugo Páramo, INE-Mexico City, 52-56-24-3451.  
Bill Kugkendale, EPA-OAQPS  
Bill Jones, EPA-Region 9, (415) 744-1283

**Project:** Tijuana-San Diego/Mexicali-Imperial Valley Air Programs

**Purpose:** Develop and operate monitoring networks in Tijuana and Mexicali for nitrogen oxides, ozone, carbon monoxide, sulfur dioxide, particulates (PM-10), lead, selected airborne toxic compounds, and meteorological parameters (e.g., wind speed/wind direction). These efforts are intended to lay the foundation for an air quality management program with overall goals of determining ambient air pollutant concentrations, apportioning sources and their relative impacts,

recommending cost effective control strategies, and measuring progress/compliance with the national air quality standards of each country.

**Funding:** In an ongoing attempt to foster state and local involvement, EPA FY96 grant funds have been allocated to support the following efforts of the California Air Resources Board (CARB): (1)\$300,000 for Tijuana air monitoring; (2) \$300,000 for Mexicali-Imperial air monitoring. Funds include resources for a Border Coordinator position at the CARB. Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** Primary U.S. partners are EPA, CARB, the San Diego Air Pollution Control District, and the Imperial Valley Air Pollution Control District. Primary Mexican partners are Instituto Nacional de Ecología (INE), Procuraduría Federal de Protección al Ambiente (PROFEPA) in Mexico City and Baja California, and the Tijuana Technical Institute (ITT).

**Description:** Given the recent increases in population, vehicular traffic, and industrial activity in the Tijuana-San Diego and Mexicali-Imperial Valley air basins, there is an immediate need to evaluate levels of targeted air pollutants. Annex V to the 1983 La Paz Agreement directs EPA and INE to assess the causes of and develop solutions to air quality problems in border sister cities. In addition to the La Paz Agreement directives, the Clean Air Act directs EPA, in coordination with Mexican agencies, to monitor and improve air quality along the border. In Mexico, this will be carried out in accordance with the air pollution and prevention regulations under the General Law on Ecological Balance and Environmental Protection.

The Tijuana-San Diego and Mexicali-Imperial Valley projects represent a continuation of efforts to operate the Tijuana air monitoring network, initiate monitoring in Mexicali, purchase equipment to complete and operate the Mexicali network, analyze samples, quality assure data, and provide technical support. Emissions inventory work will be based on the recently developed Mexican emissions inventory methodology (See "Emissions Inventory Methodology Pilot Project"). The methodology identifies the most appropriate emissions estimation methods by individual source type for point area, motor vehicle, and natural sources. A variety of inventory methods are used in the methodology including source sampling, modeling, surveying, census-based emissions factors, activity data, and material balance.

**Status:** The California-Baja California Technical Subgroup of the Binational Air Workgroup has met regularly to discuss the projects and a contractor is providing technical support in the installation, operation and maintenance of the network. The subgroup will be meeting in April to discuss ongoing operation of the Tijuana network, selection of sites for the Mexicali network, and initiation of emissions inventory work.

Monitoring data and other air quality information are available through the U.S-Mexico Air Pollution Clearinghouse via Internet (<http://www.epa.gov/oar/oaqps/cica.html>) or by telephone 919-541-1800. By October, all monitoring data for the border will be available and will be updated quarterly.

**Contacts:** Mark Fuentes, CARB, 619-645-5233;  
Octavio Alonso, SEMARNAP - Baja CA, 52-65-52-4987;  
Oralia Lopez, ITT - 52-66-21055 ext. 252;

Gaspar Torres, Imperial APCD, 619-339-4606;  
Bill Jones, EPA 415-744-1283;  
Dr. Victor Hugo Páramo, INE - Ciudad de Mexico;  
Bill Oslund, CARB;  
Fernando Calzada, INE--Baja California;  
Jim Stirling, Team Environmental;  
Dan Spier, San Diego Air Pollution Control District.

**Project:** Ambos Nogales Air Programs

**Purpose:** Complete the ongoing particulate (PM-10) air toxics study with an overall goal of determining ambient air pollutant concentrations, apportioning sources and their relative impacts, recommending cost effective control strategies, and measuring progress/compliance with the national air quality standards of each country.

**Funding:** In an ongoing attempt to foster state and local involvement, \$175,000 in EPA FY96 grant funds have been allocated to support the efforts of the Arizona Department of Environmental Quality (ADEQ). These funds include support for an ADEQ Border Air Coordinator. Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** Instituto Nacional de Ecología (INE) and Procuraduría Federal de Protección al Ambiente (PROFEPA), EPA, ADEQ, the state of Sonora, and the city of Nogales, Sonora.

**Description:** Given the recent increases in population, vehicular traffic, and industrial activity in the ambos Nogales air basin, there is an immediate need to evaluate levels of targeted air pollutants. Annex V to the 1983 La Paz Agreement directs EPA and INE to assess the causes of and develop solutions to air quality problems in border sister cities. In addition to the La Paz Agreement directives, the Clean Air Act authorizes EPA, in cooperation with counterpart Mexican agencies, to monitor and improve air quality in regions along the border. In Mexico, this will be carried out in accordance with the air pollution and prevention regulations under the General Law on Ecological Balance and Environmental Protection.

A total of six sites measuring PM-10, PM-2.5, and meteorological parameters, as well as four air toxics sites measuring selected air toxics, operated on both sides of the border for one year.

**Status:** All sites ran on a winter-intensive (1 in 3-day cycle) sampling schedule from October 1994 through March 1995, and subsequently returned to the regular (1 in 6-day cycle) sampling schedule. The large-scale monitoring portion of the study has terminated, although one base site will continue operating on each side of the border for ongoing measurement of PM-10, PM-2.5 and meteorological parameters. Emissions inventory work is underway.

**Schedule:** Emissions inventory development will continue through September 1996. Subsequent to the completion of these activities, a draft final report will be prepared by November 1996 and will include exposure/risk assessment, source attribution, and potential control strategies. A final report should be ready by January 1997.

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Monitoring data and other air quality information are available through the U.S-Mexico Air Pollution Clearinghouse via Internet (<http://www.epa.gov/oar/oaqps/cica.html>) or by telephone 919-541-1800. By October, all monitoring data for the border will be available and will be updated quarterly.

**Contacts:** Gerardo Monroy, ADEQ, (520) 628-6732  
Cesar Catalan, INE - Sonora, 52-62-13-5229.  
Bill Jones, EPA, Region 9, (415) 744-1283  
Dr. Victor Hugo Páramo, INE, Mexico City

### **Project: Agua Prieta-Douglas Air Programs**

**Purpose:** Initiate a particulate (PM-10) air toxics study with an overall goal of determining ambient air pollutant concentrations, apportioning sources and their relative impacts, recommending cost-effective control strategies, and measuring progress/compliance with the national air quality standards of each country.

**Funding:** In an ongoing attempt to foster state and local involvement, \$225,000 in EPA FY96 grant funds has been allocated to support the efforts of the Arizona Department of Environmental Quality (ADEQ). These funds include support for a ADEQ Border Air Coordinator. Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** Instituto Nacional de Ecología (INE) and Procuraduría Federal de Protección al Ambiente (PROFEPA), EPA, ADEQ, the state of Sonora, the city of Douglas, and the city of Agua Prieta.

**Description:** Given the recent increases in population, vehicular traffic, and industrial activity in the Agua Prieta-Douglas air basin, there is an immediate need to evaluate levels of targeted air pollutants. Annex V to the 1983 La Paz Agreement directs EPA and INE to assess the causes of and develop solutions to air quality problems in border sister cities. In addition to the La Paz Agreement directives, the Clean Air Act authorizes EPA, in cooperation with counterpart Mexican agencies, to monitor and improve air quality in regions along the border. In Mexico, this will be carried out in accordance with the air pollution and prevention regulations under the General Law on Ecological Balance and Environmental Protection.

A total of four sites measuring PM-10, selected air toxics, and meteorological parameters will be sited on the both sides of the border.

**Status:** A workplan has been developed and a project team meeting is scheduled for April 1997.

**Schedule:** An emissions inventory will be developed by December 1996 and sampling will run from January 1997 through December 1997. Subsequent to the completion of these activities, a draft final report will be prepared by March 1998 and will include exposure-risk assessment, source attribution, and potential control strategies. A final report is scheduled for completion by May 1998.



Monitoring data and other air quality information is available through the U.S-Mexico Air Pollution Clearinghouse via Internet (<http://www.epa.gov/oar/oaqps/cica.html>) or by telephone 919-541-1800. By October, all monitoring data for the border will be available and will be updated quarterly.

**Contacts:** Gerardo Monroy, ADEQ, (520) 628-6732  
Cesar Catalan, INE - Sonora, 52-62-13-5229  
Bill Jones, EPA Region 9, (415) 744-1283  
Dr. Victor Hugo Páramo, INE, Mexico City.

**Project:** Ciudad Juarez-El Paso-Sunland Park Air Programs

**Purpose:** Continue a wide variety of programs including advanced monitoring, emissions inventory development, modeling and identification of innovative emissions controls. The overall goal of these efforts is an air quality management program which assesses and protects the air quality and consequently the public health of the El Paso-Juarez border community.

**Funding:** In an ongoing attempt to foster state and local involvement, the following FY96 funds are in the process of being awarded: (1) \$339,900 to the Texas Natural Resource Conservation Commission (TNRCC); (2) \$275,000 to the city of El Paso; (3) \$33,818 to the New Mexico Environment Department (NMED); (4) \$60,000 to the Environmental Defense Fund (EDF); (5) \$632,400 for contractor support. These resources include support for a TNRCC Border Air Coordinator position and technical staff expenses. Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** Instituto Nacional de Ecología (INE), the state of Chihuahua, the city of Juarez, TNRCC, city of El Paso, NMED, Office of Air Quality Planning and Standards (OAQPS), U.S. Department of Energy, EDF, Southwest Center for Environmental Research and Policy (SCERP).

**Description:** Given the physical, demographic, vehicular traffic, and industrial characteristics of the Ciudad Juarez-El Paso-Sunland Park air basin, there is an immediate need to evaluate levels of targeted air pollutants. Annex V to the 1983 La Paz Agreement directs EPA and INE to assess the causes of and develop solutions to air quality problems in border sister cities. In addition to the La Paz Agreement directives, the Clean Air Act authorizes EPA, in cooperation with counterpart Mexican agencies, to monitor and improve air quality in border regions. In Mexico, this will be carried out in accordance with the air pollution and prevention regulations under the General Law on Ecological Balance and Environmental Protection.

Ongoing and new activities include (1) a joint study of ozone pollution throughout the air shed in the summer of 1996; (2) operation of five-station monitoring network in Juarez for nitrogen oxides, ozone, carbon monoxide, sulfur dioxide, particulate (PM-10), lead, and wind speed/wind direction and other meteorological parameters; (3) continued operation and deployment of new monitoring sites adjacent to El Paso in southern Dona Ana County, NM; (4) operation of hot-spot monitoring; (5) collection of upper air wind speed and wind direction data for air modeling purposes; (6) refinement of existing emissions inventories; (7) utilization of advanced technologies to estimate Juarez mobile source emissions; (8) improvement of Juarez industrial emissions inventory; (9)

## Air Quality Workgroup Implementation Plan

promotion of widespread community involvement in the implementation of innovative, cost-effective air quality solutions through the continued support of the identification of El Paso - Juarez Sunland Park as a U.S.-Mexico Air Quality Management District (AQMD) with the Joint Advisory Committee for Air Quality Improvement. It is anticipated that the Joint Advisory Committee would work to ease bridge queuing to reduce air emissions from idling vehicles; integrate air monitoring strategies within the air shed, and implement economic incentive programs to quickly improve air quality.

**Status:** For a detailed discussion, please contact Jim Yarbrough 214-665-2164.

**Contacts:** Jim Yarbrough, EPA-Region 6 (214) 665-7232  
Cecilia Williams, NMED  
Archie Clouse, TNRCC  
Jesus Reynoso, City of El Paso  
Pete Emerson, EDF  
Adrián Fernández, INE  
Dr. Victor Hugo Páramo, INE

### **Project:** Big Bend Air Quality

**Purpose:** Determine by monitoring methods the likely impact of pollution sources on visibility at Big Bend National Park.

**Funding:** \$95,770 in FY94 and \$300,000 in FY96 have been awarded to the National Park Service (NPS). Regarding resources from Mexico, Mexico has requested a loan of 13 million dollars to carry out all the activities to improve air quality throughout the country during the next five years.

**Partners:** NPS, Instituto Nacional de Ecología (INE), Procuraduría Federal de Protección al Ambiente (PROFEPA), Texas Natural Resource Conservation Commission (TNRCC)

**Description:** An issue in this region is the deterioration of visibility in Big Bend National Park, a Class I protected area. Another area in the region that is experiencing visibility impairment is the Black Gap (Texas) State Refuge Area. Visibility is the ability to see the color, shape, contrast, and texture of a landscape or city skyline. While natural events such as wildfire can impair visibility, often man-made air pollution is the major cause of decreased visibility.

In 1993, concerns were raised over the possible degradation of the air quality in Big Bend National Park. To that end and within the framework of the La Paz Agreement, an adhoc working group exchanged views and information with the purpose of determining the possible effects on the air quality of the Park and the probable causes of any effects. The working group met regularly from 1993-1996.

**Status/Schedule:** In May 1996, the two counties agreed on a multiyear study to identify possible sources of contamination impacting Big Bend National Park. The Big Bend Air Quality Study will involve the analysis of monitoring data from a 19-station network to determine the origin of the types of emissions responsible for reduced visibility in the area. The monitoring data will be used to help determine the scope of subsequent studies projected for the summer and winter of 1997-1998.

**Contacts:** Miguel Flores, NPS-Denver, (303) 969-2072  
Alfredo David Gidi, PROFEPA  
Jim Yarbrough, EPA Region 6, (214) 665-7232.

**Project:** Brownsville-Laredo Air Programs

**Purpose:** Develop and operate monitoring station networks in Brownsville and Laredo for nitrogen oxides, ozone, carbon monoxide, sulfur dioxide, particulate (PM-10), lead, pesticides, and meteorological parameters (e.g., wind speed/wind direction). These efforts are designed to acquire better baseline air quality information for these cities.

**Funding:** The EPA has awarded \$50,000 in FY96 funds to the Texas Natural Resource Conservation Commission (TNRCC).

**Partners:** TNRCC.

**Description:** We all pay, individually and as a community, an immense price for polluted air, both in terms of our health and our economy -- in lost work days, diminished job performance, crop damage, reduced property values and increased health costs. Given the physical, demographic, vehicular traffic, and industrial characteristics of the Brownsville-Matamoros and Laredo-Nuevo Laredo air basins, there is an immediate need to evaluate levels of targeted air pollutants. Annex V to the 1983 La Paz Agreement directs EPA and Instituto Nacional de Ecología (INE) to assess the causes of and develop solutions to air quality problems in border sister cities. In addition to the La Paz Agreement directives, the Clean Air Act authorizes EPA, in cooperation with counterpart Mexican agencies, to monitor and improve air quality in regions along the border. In Mexico, this will be carried out in accordance with the air and pollution prevention regulations under the General Law on Ecological Balance and Environmental Protection.

The EPA is sponsoring monitors in both communities. In Brownsville, TNRCC operates a monitoring device for polyaromatic hydrocarbons, ozone, carbon monoxide, volatile organic compounds, lead, arsenic, and meteorological data. Monitoring will begin in Laredo in FY97. Monitoring for polyaromatic hydrocarbons began in May of 1996. Monitoring data will be gathered during FY97 for polyaromatic hydrocarbons, ozone, carbon monoxide, volatile organic compounds, lead, arsenic, and meteorological data.

**Status:** Sites are in operation.

**Schedule:** Continued operation in 1997.

**Contacts:** Stuart Dattner, TNRCC  
Jim Yarbrough, EPA Region 6, (214) 665-2164.

## HAZARDOUS AND SOLID WASTE WORKGROUP 1996 IMPLEMENTATION PLAN

### CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
<b>Cochair:</b> Jeff Scott Deputy Division Director Waste Management Division U.S. EPA- Region 9 75 Hawthorne St. San Francisco, CA 94105	<b>Cochair:</b> Jorge Sánchez Gómez Director General Materiales, Residuos y Actividades Riesgosas INE
<b>Contacts:</b> Heidi Hall U.S. EPA- Region 9 75 Hawthorne St. San Francisco, CA 94105 phone: (415) 744-1284 fax: (415) 744-1072 e-mail: hall.heidi@epamail.epa.gov  Bonnie Romo (EPA Region 6) phone: (214) 665-6756 e-mail: romo.bonnie@epamail.epa.gov	<b>Contact:</b> Ing. Luis Wolf INE Av. Revolución 1425, Nivel 12 Col. Campestre, San Angel Delegación Alvaro Obregón Mexico, D.F. 01040 phone: (525) 624-3423 fax: (525) 624-3586 e-mail: RTN@0488CRTN.NET.MX

The Binational La Paz Hazardous and Solid Waste Workgroup undertakes projects and activities that promote sound waste management practices. An overarching goal of the workgroup is to build improved capability along both sides of the border to develop and implement waste management programs. Other primary goals of the workgroup are to improve the monitoring of transborder movements of hazardous wastes and toxic substances, and to promote pollution prevention and waste reduction practices. The workgroup seeks to involve key local, state and federal officials from both countries in its activities.

### PROJECTS:

**Project:** Binational Field Sampling and Lab Capability (FSLC) Project

**Purpose:** Improve the ability to detect violations of hazardous waste management and import/export regulations along the U.S.-Mexico border.

**Funding:** EPA has granted \$35,000 from the Hazardous and Solid Waste Workgroup to the Western States Hazardous Waste Project for this project. Additional funds from the Cooperative Enforcement and Compliance Workgroup have also been provided (see Cooperative Enforcement and Compliance Implementation Plan).

**Partners:** These efforts will be carried out in partnership with the Binational Enforcement Workgroup. Other partners include EPA, SEMARNAP, INE, PROFEPA, SINALP, U.S. and Mexican Customs, the Western States Hazardous Waste Project, California Department of Toxic

Substances Control (Cal-EPA/DTSC), Arizona Department of Environmental Quality (ADEQ), Texas Natural Resources Conservation Commission (TNRCC), San Diego and other relevant border counties.

**Description:** Conduct at least two training courses in the Binational FSLC Project training series, with emphasis on building field sampling and analysis capability. Explore the possibility of implementing other projects outlined in Region 9's "Proposal to Expand and Improve Hazardous Waste Field Sampling and Lab Capability along the U.S.-Mexico Border" (e.g., personnel exchanges, lab inventory, regulatory comparison). Explore creation of a mobile lab for the border area.

**Contacts:** Heidi Hall - EPA Region 9;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Establish Regional Subgroups

**Purpose:** The establishment of geographically-based subgroups would allow for enhanced coordination on Workgroup initiatives, enforcement issues and other matters of mutual concern. The subgroups would facilitate the development of improved networks for information exchange and coordination among key local, state and federal officials on both sides of the border.

**Funding:** EPA has granted \$16,000 from the Hazardous and Solid Waste Workgroup to the Western States Hazardous Waste Project for this project. Additional funds from the Enforcement Workgroup have also been provided (see Enforcement Implementation Plan).

**Partners:** Participants include EPA, SEMARNAP, PROFEPA, INE, U.S. and Mexican Customs, DOT, SCT, Cal-EPA/DTSC, ADEQ, TNRCC, New Mexico's Hazardous and Radioactive Materials Bureau (HRMB) and appropriate local agencies.

**Description:** The first regional Workgroup meeting for the California-Baja California region took place on February 22, 1996 in San Diego and addressed, among other things, the Binational Field Sampling and Lab Capability Training. A Texas-New Mexico-Chihuahua regional subgroup has been formed and held its first meeting on March 4, 1996. Six additional meetings over the rest of 1996 have been planned. Similar regional subgroups are being organized for the Arizona-Sonora, Texas-Coahuila, and Texas-Tamaulipas border areas.

**Contacts:** Heidi Hall, Chris Reiner, John Rothman - EPA Region 9;  
Bonnie Romo, Efren Ordonez - EPA Region 6;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Technology Transfer - Hazardous Waste Training

**Purpose:** Improve waste management capability among environmental and regulatory officials along the U.S.-Mexico border.

**Funding:** EPA has provided \$137,000 to PRC Environmental Management, Inc. for this project.

**Partners:** Participants include EPA, PROFEPA, INE, Cal-EPA/DTSC, ADEQ, San Diego County.

**Description:** We will conduct two or more training courses with INE and PROFEPA on hazardous waste management with a focus on specific sites that present good opportunities for field training. The course will cover site identification and inspections, preliminary assessments and prioritization, stabilization options, removal and remediation options, and the most appropriate use of risk assessment. Other topics include the U.S. approach to community relations and public participation in siting, enforcement options, and determining and handling liability.

**Contacts:** Heidi Hall - EPA Region 9;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Environmental Technology Initiative - San Diego-Tijuana WasteWiSe Project

**Purpose:** Work with the cities of San Diego and Tijuana to assess the solid waste stream of the maquiladora/industrial sector along the border and the extent of current binational recycling efforts. Identify and implement opportunities for recycling, reuse and solid waste prevention.

**Funding:** EPA has awarded a grant of \$280,000 to the California Integrated Waste Management Board for this project.

**Partners:** EPA, Cal-EPA Integrated Waste Management Board, cities of San Diego and Tijuana, San Diego State University, Universidad Autonoma de Baja California, Science Applications International Corporation.

**Description:** Provide on-site waste reduction opportunity assessments and develop binational electronic database for tracking recycled materials, products and recycling companies. This project will be managed and implemented in conjunction with the Recycling Market Development Zone project described below and in cooperation with the Pollution Prevention Workgroup.

**Contact:** Chris Reiner - EPA Region 9.

**Project:** San Diego-Tijuana Recycling Market Development Zone Initiative

**Purpose:** Work with the cities of San Diego and Tijuana to develop a Binational Recycling Market Development Zone that will divert materials with value from the waste stream of commercial/industrial entities along the border and seek to attract businesses that manufacture with recycled materials to the area. This project will be carried out in cooperation with the Pollution Prevention Workgroup.

**Funding:** EPA has awarded a grant of \$60,000 to the City of San Diego for this project.

**Partners:** EPA, cities of San Diego and Tijuana, Cal-EPA Integrated Waste Management Board.

**Description:** Assess current cross-border trade of recyclables and barriers to expanding current trade levels. Evaluate options for creating regulatory, financial and other incentives for attracting recycling businesses to a designated geographic area in Tijuana that will adjoin with the current Otay Mesa Recycling Market Development Zone. This project will be carried out in cooperation with the Pollution Prevention Workgroup.

**Contact:** Chris Reiner - EPA Region 9.

**Project:** City of Nogales Pollution Prevention Program

**Purpose:** Establish a pollution prevention program for ambos Nogales.

**Funding:** EPA has contributed \$33,000 to an Intergovernmental Personnel Act person to carry out this program.

**Partners:** EPA, cities of Nogales, Arizona and Nogales, Sonora, ADEQ.

**Description:** Work with the cities of Nogales, Arizona and Nogales, Sonora to implement a pollution prevention program that will provide technical assistance to industry, institute a pollution prevention award program and provide outreach and education to the public.

**Contact:** Chris Reiner - EPA Region 9.

**Project:** Alco-Pacifico

**Purpose:** Facilitate adoption and implementation of a remediation plan for a former lead recycling facility, known as the Alco Pacifico site. Provide technical assistance on an as-needed basis. Conduct at least one training course in conjunction with remediation of the site.

**Funding:** EPA has provided technical assistance to SEMARNAP for this project.

**Partners:** EPA, PROFEPA, L.A. District Attorney's Office.

**Description:** Provide technical reviews of proposals for site remediation as requested. Provide other technical or administrative assistance as requested by PROFEPA to facilitate stabilization and remediation of the site.

**Contact:** John Rothman, Heidi Hall - EPA Region 9;  
Eduardo Jimenez - PROFEPA;  
Luis Wolf - INE.

**Project:** HAZTRAKS

**Purpose:** Assess current functions and overall effectiveness of the HAZTRAKS transboundary waste tracking system in order to improve binational monitoring of hazardous waste movements and enforcement of import/export regulations. Assess feasibility of expanding system to include data from and electronic interchanges with other agencies in Mexico and the U.S. Plan the future direction of HAZTRAKS, with respect to system expansion and overall system operating plan. Coordinate decisions and activities through the binational subgroup on HAZTRAKS and transboundary shipping issues.

**Funding:** EPA has provided \$356,000 over two years to PRC Environmental Management, Inc. for this project.

**Partners:** EPA, SEMARNAP, INE, PROFEPA, and with assistance from Arizona, California, New Mexico and Texas.

**Description:** Develop draft and final assessment reports, including recommendations for system improvements. The draft report will be widely distributed to solicit comments and additional information to be included in the final report. The final report will serve as a basis for the HAZTRAKS/Transboundary Tracking subgroup to select and implement recommendations for system improvement or expansion.

**Contacts:** Joe Schultes, Bonnie Romo - EPA Region 6;  
Heidi Hall, Marc Mowrey - EPA Region 9;  
Hugh Harleston, Luis Wolf - INE.

**Project:** Texas Border Solid Waste Compliance and Assessment of Illegal Landfills

**Purpose:** To determine waste disposal and collection needs of border communities along the Texas border region regarding illegal dumping, and to improve municipal waste management practices through public education.

**Funding:** EPA has granted \$222,727 to the Texas Natural Resource Conservation Commission for this project.

**Partners:** Participants include EPA, TNRCC, and border regional planning agencies (COGs).

**Description:** This project will focus on compliance assurance with regard to illegal dumping of municipal solid waste along the Texas-Mexico border, the magnitude of the problem and its causes, with particular emphasis on illegal dumping in and around the border's colonias, and maquiladora waste issues. Work on the project will include assessment of border disposal capacity, development of information and contact databases, assisting local governments seeking funding for border solid waste projects, and a variety of outreach activities to ensure adequate coordination and cooperation with all entities involved in border solid waste problem resolution.

**Contact:** Matthew Witosky, Paul Thomas - EPA Region 6.

**Project:** Training for Customs Inspectors

**Purpose:** Facilitate information sharing and increase capability by U.S. and Mexican Customs personnel to detect and handle illegal hazardous waste shipments.

**Funding:** EPA has granted \$9,000 from the Hazardous and Solid Waste Workgroup to the Western States Hazardous Waste Project for this project. Additional funds from the Cooperative Enforcement and Compliance Workgroup have also been provided (see Cooperative Enforcement and Compliance Implementation Plan).



**Partners:** EPA, Enforcement Workgroup, California DTSC, ADEQ, TNRCC, New Mexico HRMB, San Diego County, Western States Hazardous Waste Project and the Southern Environmental Enforcement Network.

**Description:** Partner with the Enforcement Workgroup to repeat the successful training courses that were held along the California-Baja California and Texas borders on detection of illegal transboundary hazardous waste and hazardous materials shipments in fiscal year 1995. Hold at least one course, more if possible, along the Arizona-Sonora border in 1996. One course in each of the border areas of Ciudad Juarez-El Paso, Acuña-Del Rio-Eagle Pass, and Nuevo Laredo-Laredo-Matamoros-Brownsville.

**Contact:** Bonnie Romo - EPA Region 6;  
Heidi Hall, Chris Reiner - EPA Region 9;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Vulnerability Atlas

**Purpose:** Develop a map to assist with identification of potential areas for the siting of waste management facilities and to help target geographic priorities for waste management activities.

**Funding:** SEMARNAP will provide \$100,000 from a World Bank loan for the implementation of this project.

**Partners:** EPA, SEMARNAP, INE.

**Description:** Project scope to be developed.

**Contacts:** Oscar Armendariz, Luis Wolf Hegmann, Lenka Ruiz - INE;  
Heidi Hall - EPA Region 9;  
Bonnie Romo - EPA Region 6.

**Project Name:** Environmental Auditing

**Purpose and Objective:** Partner with Enforcement Workgroup to hold a technical seminar for U.S. and Mexican industries to stimulate participation by border industries in Mexican and U.S. environmental auditing programs.

**Funding:** EPA provided \$50,000 from the Hazardous and Solid Waste Workgroup to SAIC for this project. Additional funds from the Cooperative Enforcement and Compliance Workgroup were also provided (see Cooperative Enforcement and Compliance Implementation Plan).

**Partners:** EPA, Enforcement Workgroup, CEC, Cal-EPA/DTSC, PROFEPA.

**Description:** Provide information on each country's environmental auditing programs and policies, the development of programs or systems that include routine environmental auditing, and the potential for use of pollution prevention techniques or strategies to address compliance issues.

**Contacts:** Heidi Hall - EPA Region 9;  
Larry Sperling - EPA Headquarters;  
Jaime de la Cruz - PROFEPA.

**Project:** Technical Support to the Border Environmental Cooperation Commission (BECC)

**Purpose:** The BECC will soon be considering border solid and possibly hazardous waste infrastructure projects for funding. The Workgroup will seek to provide technical support to the BECC during the review and selection process for such projects.

**Funding:** None

**Partners:** EPA, SEMARNAP, Cal-EPA/DTSC, ADEQ, TNRCC.

**Description:** See above.

**Contacts:** Heidi Hall, Chris Reiner - EPA Region 9;  
Bonnie Romo, Matthew Witosky - EPA Region 6;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Information Exchange

**Purpose:** Provide INE with information on clean-up levels and risk-based corrective action levels for petroleum leaks and spills to be used in remediation of PEMEX sites. Provide INE with information on conditions under which PCBs may be imported into the U.S. Provide compliance information on companies exporting hazardous wastes without Mexican Guías. Company names will be provided by Mexico.

**Funding:** None

**Partners:** EPA, INE, Cal-EPA/DTSC, ADEQ, TNRCC.

**Description:** See above.

**Contact:** Bonnie Romo, Joe Schultes - EPA Region 6;  
Heidi Hall, Chris Reiner - EPA Region 9;  
Luis Wolf, Lenka Ruiz - INE.

**Project:** Repatriation Strategies

**Purpose:** To analyze the strategies and the Guidelines for Repatriation and propose mechanisms for their application to hazardous substances and wastes, and municipal wastes.

**Funding:** No funding required.

**Partners:** SEMARNAP, EPA, PROFEPA, Border States

**Description:** To analyze the transborder movements of hazardous substances and solid wastes and include them in strategies for repatriation of hazardous wastes.

**Contacts:** Luis Wolf, Lenka Ruiz - INE;  
John Rothman, Heidi Hall - EPA Region 9;  
Efren Ordonez, Bonnie Romo - EPA Region 6.

**Project:** Control and Monitoring of Hazardous Waste Storage, Treatment and Disposal Facilities

**Purpose:** Establish technical strategies for the stages of design, construction, and monitoring of facilities for the management of hazardous wastes.

**Funding:** None identified.

**Partners:** SEMARNAP, INE, PROFEPA, SRE, CILA, CNA, EPA

**Description:** Create an integrated working group of technical experts, academics and agency specialists of both countries who will work together to establish technological criteria for the phases of design, construction of new and monitoring of existing facilities for the storage, treatment and disposal of hazardous wastes.

**Contacts:** Luis Wolf, Lenka Ruiz - INE;  
Heidi Hall - EPA Region 9;  
Bonnie Romo - EPA Region 6.

## CONTINGENCY PLANNING AND EMERGENCY RESPONSE WORKGROUP 1996 IMPLEMENTATION PLAN

### CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
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<b>Contacts:</b> Ms. Kim Jennings U.S. EPA Mailcode: 5101 401 M Street, SW Washington, DC 20460 phone: (202) 260-5046 fax: (202) 260-7906 e-mail: jennings.kim@epamail.epa.gov  Fendol Chiles (EPA Region 6) phone: (214) 665-2283  Kathleen Shimmin (EPA Region 9) phone: (415) 744-2216	<b>Contact:</b> Jaime E. García Sepúlveda Director of Clasificación de Zonas de Riesgo Ambiental Procuraduría Federal de Protección al Ambiente Periférico Sur 5000, Piso 4 Col. Insurgentes Cuicuilco México, DF C.P. 04530 phone: (525) 666-9450 fax: (525) 666-9452

### PROJECTS:

**Project:** Technical Assistance Workshops for Sister Cities

**Purpose:** To assist sister cities in developing sister city contingency plans and to discuss joint chemical emergency planning and response between the sister cities.

**Funding:** EPA resources.

**Partners:** Federal and state officials and sister city representatives.

**Description:** Technical assistance workshops were held in Calexico/Mexicali; McAllen/Reynosa; and Eagle Pass/Piedras Negras. These workshops were conducted by the International City/County Management Association under a cooperative agreement with EPA. The purpose of these workshops was to bring together sister cities to identify chemical emergency planning and response issues and work to resolve those issues and develop a joint sister city contingency plan.

**Relevant Border XXI Objectives:**

- Implement and complete the following pending activities: joint contingency plan, notification system, and procedures for the quick mobilization of transboundary movement of emergency response personnel and equipment.
- Promote the creation of and coordination between Local Emergency Planning Committees (LEPCs) in the U.S. and Local Committees for Mutual Assistance (CLAMs) in Mexico in developing the information on hazardous materials inventories in computer databases.
- Initiate communication to the public about chemical risk in the area in an effort to create a public awareness and to increase public participation in contingency planning.
- Encourage industrial facilities to make use and storage of chemicals information and inventories available to local response officials and provide response equipment and assistance in the event of a chemical emergency.

**Contact:** Kim Jennings (202) 260-5046; fax (202)260-7906 (e-mail: jennings.kim@epamail.epa.gov).

**Project:** Inventory of Emergency Response Resources in Mexican Sister Cities

**Purpose:** Gather information on each of the Mexican sister cities with regard to agencies, personnel, equipment, etc. related to chemical emergency contingency planning and response.

**Funding:** PROFEPA.

**Partners:** PROFEPA and Mexican sister cities.

**Description:** Development of emergency response inventory for each sister city will allow for an assessment of the current state of readiness in each of the Mexican sister cities as well as easy access to information during an emergency response. The first states where this will be implemented are Baja California and Chihuahua. These inventories currently exist for each of the U.S. sister cities.

**Relevant Border XXI Objectives:**

- Implement and complete the following pending activities: joint contingency plan, notification system, and procedures for the quick mobilization of transboundary movement of emergency response personnel and equipment.
- Create an Emergency Response Center in each neighboring city, with adequate computer equipment and chemical substances databases.
- Promote the creation of and coordination between Local Emergency Planning Committees (LEPCs) in the U.S. and Local Committees for Mutual Assistance (CLAMs) in Mexico in developing the information on hazardous materials inventories in computer databases.

**Contact:** Jamie Garcia (525) 666-9450; fax (525) 666-9452;  
Kim Jennings (202) 260-5046.

**Project:** Border Movement of Personnel and Equipment and Liability Issues

**Purpose:** Establish a U.S.-Mexico Workgroup to examine issues impacting cross-border mobilization of personnel and equipment during a hazardous materials emergency and resolve problems related to legal responsibility.

**Funding:** The project will be realized through the participation of U.S. and Mexican federal, state and local agencies.

**Partners:** Federal, state, and local agencies and officials with responsibilities in the area of chemical emergency preparedness and response.

**Description:** Both countries need to mobilize emergency response resources quickly, without impairment, to assist each other during cross-border chemical incidents. In order to ensure no impediments to cross-border response, the Workgroup will review current barriers to rapid cross-border mobilization of personnel and equipment; identify appropriate agencies, programs, experts, etc. to assist in addressing those barriers, and develop recommendations for a course of action to resolve the barriers.

**Relevant Border XXI Objectives:**

- Implement and complete the following pending activities: joint contingency plan, notification system, and procedures for the quick mobilization of transboundary movement of emergency response personnel and equipment.
- Government officials in both countries will work to remove impediments - legal, political and liability issues - related to emergency response, including compensation from responsible parties.
- The issue/incident-specific Joint Response Team (JRT) will be responsible for effective implementation of the Inland Plan on a regional level in the U.S. and on a state and local level in Mexico in accordance with the policies of the JRT and the JCP.

**Contact:** Jim Staves (214) 665-6485; fax (214) 665-7447.

**Project:** CAMEO Translation and Training

**Purpose:** Translate CAMEO (Computer-aided Management of Emergency Operations), into Spanish and identify a strategy for distributing and providing training on CAMEO to the sister cities. CAMEO is a computer system jointly developed by NOAA and EPA.

**Funding:** EPA resources.

**Partners:** NOAA, EPA and PROFEPA.

**Description:** CAMEO can hold information on hazardous substances, industries, emergency response groups, maps, and other matters. This will aid in identifying hazardous chemical risks in the sister cities and, in some instances, assist in the decision-making process in an emergency. This system has been developed for Windows, and that version will be translated into Spanish. A pilot project will be undertaken in several sister cities to ensure effective use of the system.

**Relevant Border XXI Objectives:**

- Implement and complete the following pending activities: joint contingency plan, notification system, procedures for the quick mobilization of transboundary movement of emergency response personnel and equipment, and a pilot project with CAMEO.
- Promote the creation of and coordination between Local Emergency Planning Committees (LEPCs) in the U.S. and Local Committees for Mutual Assistance (CLAMs) in Mexico in developing the information on hazardous materials inventories in computer databases.
- Encourage industrial facilities to make use and storage of chemicals information and inventories available to local response officials and provide response equipment and assistance in the event of a chemical emergency.

**Contact:** Sherry Fielding (202) 260-6174; fax (202) 260-7906 (e-mail: fielding.sherry@epamail.epa.gov).

**Project:** Joint Contingency Plan (JCP)

**Purpose:** Complete review and revision of the U.S.-Mexico JCP which serves as a basis for coordination at the federal and state levels.

**Funding:** The project will be funded through the contributions of all participants.

**Partners:** Expanded Joint Response Team (JRT) and 14 sister city pairs.

**Description:** The last version of the JCP has been revised by the Expanded Joint Response Team. The JCP will go through a final review by the JRT and will be signed by both countries. This plan will be used as an umbrella plan for development of the 14 sister city plans.

**Relevant Border XXI Objectives:**

- Implement and complete the following pending activities: joint contingency plan, notification system, and procedures for the quick mobilization of transboundary movement of emergency response personnel and equipment.

**Contact:** Sherry Fielding (202) 260-6174; fax (202) 260-7906 (e-mail: fielding.sherry@epamail.epa.gov).

**Project:** U.S.-Mexico Notification Procedures

**Purpose:** Develop a fast and effective notification procedure in cases of environmental emergencies and establish a National Response Center in Mexico.

**Funding:** The project will be funded through the Joint Response Team.

**Partners:** Joint Response Team agencies.

**Description:** The U.S. National Response Center will clarify notification protocols for chemical incidents along the U.S.-Mexico border. Mexico will establish a national response center to facilitate rapid notification to all appropriate authorities on chemical incidents along the U.S.-Mexico border. In support of this effort, EPA will arrange for PROFEPA representatives who are involved with Mexico's new response center to visit the U.S. National Response Center, CHEMTREC, and other installations. EPA will also explore opportunities for training for Mexican personnel in the National Response Center.

**Relevant Border XXI Objectives:**

- Implement and complete the joint contingency plan and the notification system.
- Create an Emergency Response Center in each neighboring city, with adequate computer equipment and chemical substances databases.
- Integrate a specialized team of emergency response personnel and prepare training and simulations for the Response Center, the Communications Center, and for the management of the mobile units.

**Contact:** Kim Jennings (202)260-5046; fax: (202) 260-7906 (e-mail: [jennings.kim@epamail.epa.gov](mailto:jennings.kim@epamail.epa.gov))  
Jamie Garcia (525) 666-9450; fax: (525) 666-9452.



# ENVIRONMENTAL INFORMATION RESOURCES WORKGROUP

## 1996 IMPLEMENTATION PLAN

### CONTACTS:

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### PROJECTS:

#### Project: U.S.-Mexico Aerial Photography and Mapping Initiative

**Purpose:** As part of Environmental Information Resource Workgroup there is a formal binational initiative to acquire aerial photography and create new and revised maps in the U.S.-Mexico border region.

**Funding:** U.S. Geological Survey (USGS) is funded for the aerial photography acquisition and the FY96 digital elevation model (DEM), digital raster graphics (DRG), and digital line graphs (DLG) public land survey system (PLSS and boundaries) production. Funding for FY97 and beyond is now being planned. Funding sources include DOI/USGS, EPA, IBWC, state and local agencies.

SEMARNAP and INEGI are anticipating receipt of approximately \$130,000 to initiate work in the priority areas. Funding sources include the North American Commission for Environmental Cooperation and the U.S.

**Partners:** DOI/USGS, SEMARNAP, INEGI.

**Description:** The new aerial photography will be used as the foundation for subsequent binational digital mapping efforts and for populating geographic information systems (GIS). GIS will be used to integrate and analyze geospatial data in a compatible format, on both sides of the border, to develop effective and appropriate strategies for decision-makers on issues such as:

- Natural resources and biodiversity protection
- Land use planning
- Environmental impact assessments
- Water resources
- Geologic studies
- Forest management
- Waste disposal sites
- Pollution detection and monitoring
- Emergency response.

The USGS is now acquiring color infrared (CIR) photography for the entire U.S. portion of the boundary region. Photography acquisition was initiated in January 1995 and will be completed in September 1996.

Based on the requirements of SEMARNAP, Instituto Nacional de Estadística, Geografía e Informática (INEGI) will acquire color infrared and black and white photography in priority areas to complete coverages of the Mexico border region. Seventy percent of this region has existing black and white photography that was acquired from 1993-1995. During 1996, INEGI will begin the acquisition of CIR imagery over the priority areas as determined by SEMARNAP. These priority areas cover approximately 30 percent of the border area and additional areas will be considered as additional resources become available.

The USGS is producing 1:24,000-scale geospatial data, within the U.S. 100-mile border region, consisting of 2581 7.5-minute quadrangles. During FY96 the USGS will produce all DEMs, DRGs, and DLGs for boundaries and the PLSS. In FY97, USGS is planning to begin the production of digital orthophotography quadrangles (1:12,000 scale) and revision of the 7.5-minute quadrangles.

INEGI is producing 1:50,000-scale geospatial data in the border region based on black and white photography. Digital elevation models will be produced as part of the digital topographic map production. Using the CIR imagery as a source, 1:20,000 digital maps will be produced for the priority areas.

**Relevant Border XXI Objective:** This addresses the long-term goal of establishing a unified GIS for the U.S.-Mexico border area.

**Contact:** Mr. Ken Osborn (303) 202-4138 (e-mail: kosborn@usgs.gov).

**Project:** Home Page Development

**Purpose:** To create an effective mechanism of sharing information, EPA and SEMARNAP will create a BORDER XXI home page.

**Funding:** \$20,000.

**Partners:** EPA/SEMARNAP.

**Description:** In order to promote public access to the maximum extent possible through the Internet, a home page will be created of border-related environmental information on the Internet which will include, among other items:

- Border XXI accomplishments and plans
- Compendium of EPA binational and domestic U.S.-Mexico activities
- Ongoing and planned community project status
- Points of contact
- Environmental education information
- Links to related home pages.

**Relevant Border XXI Objective:** This addresses the long-term goal of improving and increasing public access to information.

**Contact:** Marie Martel (415) 744-1639 (e-mail: [martel.marie@epamail.epa.gov](mailto:martel.marie@epamail.epa.gov))  
Carmen Maso (415) 744-1750 (e-mail: [maso.carmen@epamail.epa.gov](mailto:maso.carmen@epamail.epa.gov)).

**Project:** Information Centers

**Purpose:** Improve and increase public access to information through the establishment of information and training centers in Mexico and the continued maintenance and expansion of the EPA Border Liaison Offices.

**Funding:** To be determined.

**Partners:** EPA/SEMARNAP.

**Description:** Maintain and expand the Border XXI repositories established in El Paso, Texas and San Diego, California Border Liaison Offices. Establish workstations connected to the Internet and other on-line environmental services in the EPA Border Liaison Offices.

Establish public Environmental Information and Training Centers in Mexico. Center patrons will be able to review hard-copy publications and access information on workstations that will be connected to the Internet and SEMARNAP and EPA on-line environmental services.

**Relevant Border XXI Objective:** This addresses the long-term goal of improving and increasing public access to information.

**Contact:** Adrián Fernández with SEMARNAP  
Brent Maier (619) 235-4767 (e-mail: [maier.brent@epamail.epa.gov](mailto:maier.brent@epamail.epa.gov)).

**Project:** Environmental Indicators

**Purpose:** Environmental indicators, by systematically organizing information, serve as a fundamental tool for measuring whether environmental policy addresses the most urgent environmental issues. They can also provide clear and comprehensive information to the public on the status of the environment on the U.S.-Mexico border.

**Funding:** To be determined.

**Partners:** SEMARNAP/EPA.

**Description:** The Office of Policy and Program Evaluation, U.S. EPA sponsored a workshop on Baseline Indicators for the U.S.-Mexico Border which was held between September 18 and 20, 1995 in San Diego, California. It successfully brought together a diverse group from the United States and Mexico to discuss issues of information relevant to decision-making within the border area.

The workshop workgroups also recommended that the Border XXI's Environmental Information Resources Workgroup follow up on at least those recommendations that support its role as a central clearinghouse of border data and information and that it is inclusive of all data and information sources. There was also general consensus on the need for a data inventory that is kept current as new data collection and information efforts emerge. In this regard, the workshop data inventory is a good foundation for such a comprehensive inventory. The workshop data inventory was designed to identify data gaps, eliminate duplication of efforts, and facilitate the exchange of information.

**Relevant Border XXI Objective:** This addresses the long-term goal of developing environmental indicators for the border region.

**Contact:** Adrian Fernández with SEMARNAP.

# POLLUTION PREVENTION WORKGROUP 1996 IMPLEMENTATION PLAN

## CONTACTS:

<u>U.S.</u>	<u>Mexico</u>
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## PROJECTS:

**Project:** Bilingual Pollution Prevention Manual for Selected Industrial Sectors: Wood Finishing Industry, Metal Finishing Industry, Electronics Industry, and Textile and Apparel Industry

**Purpose:** Translate pollution prevention information material into Spanish for use in maquiladora facilities.

**Funding:** \$30,000 per manual.

**Partners:** The U.S.-Mexico Pollution Prevention Workgroup is composed of representatives of EPA Regions 6 and 9, Office of Prevention, Pesticides and Toxic Substances, Texas Natural Resource Conservation Commission, New Mexico Environment Department, Arizona Department of Environmental Quality, California Department of Toxic Substances Control, and Mexico's environmental agency, the Secretariat for the Environment, Natural Resources and Fisheries (SEMARNAP). The Workgroup members will be actively engaged in evaluating the English and Spanish versions of the manuals and will be responsible for its distribution in their geographic areas.

**Description:** The U.S.-Mexico Pollution Prevention Workgroup has developed and published three bilingual pollution prevention manuals for use in the border area. The first manual focused on the metal finishing industry; the second dealt with pollution prevention options and techniques for wood

## **Pollution Prevention Workgroup 1996 Implementation Plan**

finishing operations; and the most recent deals with the electronics industry and is currently available. The fourth manual will address the textile and apparel industry and is expected to be completed by March of 1997.

**Status:** The electronics industry manual (both English and Spanish texts) has been approved by the Workgroup, has been published and preliminary distribution has been made. The textile and apparel industry manual (English text) has been approved by the Workgroup and is in the process of being translated into Spanish.

**Relevant Border XXI Objectives:** Develop additional bilingual pollution prevention manuals for priority industrial sectors; expand assistance to maquiladoras; expand pollution prevention technical assistance to small business operators.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036.  
Dr. Adrián Fernández, DGGIA-INE 52 56 24 34 56  
Quim. Juan Barrera, INE

### **Project: Bilingual Pollution Prevention Technical Conferences**

**Purpose:** In order to encourage the use of pollution prevention information, the Workgroup decided to hold technical conferences for maquiladora facilities based on industrial sectors.

**Funding:** \$30,000 per conference.

**Partners:** The U.S.-Mexico Pollution Prevention Workgroup is composed of representatives of EPA Regions 6 and 9, Office of Prevention, Pesticides and Toxic Substances, Texas Natural Resource Conservation Commission, New Mexico Environment Department, Arizona Department of Environmental Quality, California Department of Toxic Substances Control, and Mexico's environmental agency, the Secretariat for the Environment, Natural Resources and Fisheries (SEMARNAP). The Workgroup members will be actively engaged in promotion of and participation in the technical conferences.

**Description:** Conferences on pollution prevention in the wood finishing industry and metal finishing industry have been held.

**Status:** The electronics industry technical conferences were held on July 30, 1996 in El Paso and on August 1, 1996 in Laredo. We expect to hold a "Pollution Prevention in the Textiles and Apparel Industry" conference upon completion of the bilingual manual.

**Relevant Border XXI Objective:** Expand technical assistance for pollution prevention to maquiladoras.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036.

**Project:** Bilingual Video on Pollution Prevention as a Solution to Compliance Problems in the Maquiladora Industries

**Purpose:** The purpose of this project is to develop a video that will provide visual information on the link between pollution prevention and compliance to compliance officials and industries on both sides of the border. The video will emphasize the industrial subsectors prevalent among the maquiladoras, and will provide information about pollution prevention opportunities to achieve or exceed compliance and to resolve compliance problems. The video will attempt to stimulate voluntary adoption of pollution prevention practices as a way to resolve compliance problems. Both English and Spanish versions will be produced.

**Funding:** \$100,000.

**Partners:** EPA, Instituto Nacional de Ecologia (INE) and Procuraduria Federal de Proteccion al Ambiente (PROFEPA).

**Description:** The video will highlight pollution prevention practices for selected industries and provide basic information on the role of pollution prevention in reducing the costs of regulatory compliance and enforcement risks.

**Status:** Video is to assist maquiladoras' compliance through voluntary auditing. The video is currently being reviewed and translated into the final draft by PROFEPA.

**Relevant Border XXI Objectives:** Expand pollution prevention technical assistance to maquiladoras; expand pollution prevention assistance to small business operators; and increase cooperation and coordination with Border XXI Workgroups.

**Contacts:** Lawrence Sperling, EPA OECA, (202) 564-7141.  
Dr. Adrián Fernández, DGGIA - INE 52 56 24 34 56  
Carlos Silva Murillo, PROFEPA 52 55 89 82 57

**Project:** Pollution Prevention Curriculum Conference for Students and Graduates in Engineering

**Purpose:** To foster exchange of pollution prevention curriculum for technical colleges and universities in order to train the scientific and technical leaders of the next generation.

**Funding:** \$25,000.

**Partners:** Texas Natural Resource Conservation Commission (TNRCC), University of Texas-Pan American, Instituto Tecnológico y de Estudios Superiores de Monterrey.

**Description:** A conference was held on November 30 through December 2, 1995, which focused on the development of pollution prevention curriculum for undergraduate and graduate engineering courses. University of Texas - Pan American's College of Engineering organized the conference to include engineering programs from Mexico, Canada, and the United States. Conference goals

included (1) creation of prevention-based engineering curriculum materials; (2) dissemination of available information materials; and (3) exchange of creative problem-solving approaches.

**Status:** Guideline chapters are under development and should be completed by October 1996. Another conference is being organized to further the curriculum on pollution prevention, disseminate available information materials and exchange creative problem-solving approaches.

**Relevant Border XXI Objectives:** Increase technical assistance and outreach to federal, state, and municipal authorities, and the general public.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132  
Alberto Bustiani, Centro de Calidad Ambiental ITESM, 83 28 40 32

**Project:** Assist Mexican Pollutant Release and Transfer Registry (PRTR)

**Purpose:** Develop a more standardized Toxic Release Inventory (TRI) to aid in enforcement and compliance issues, release estimation techniques and pollution prevention.

**Funding:** Pending.

**Partners:** EPA, INE (Instituto Nacional de Ecologia), NJDEP (New Jersey Environment Department).

**Description:** Develop sector manuals to assist Mexican Pollutant Release and Transfer Register (PRTR) covering the following issues: enforcement and compliance assurance; release estimation techniques; and pollution prevention.

**Status:** Planning stages of developing of more standardized TRI manuals to aid in enforcement and compliance issues, release estimation techniques and pollution prevention. The scope of the services is still being developed.

**Relevant Border XXI Objectives:** Initiate a Pollution Release and Transfer Registry (PRTC [RETC in Spanish]) in Mexico and develop common information dissemination procedures and compatibility between the Mexican PRTR and the EPA TRI.

**Contacts:** Rob Lawrence, EPA, (214) 665-2258  
Luis Sánchez Cataño, INE, 52 56 24 34 70 or 6 24 35 70

**Project:** Infrastructure Development Exchange With Mexico Technology Transfer and Capacity Building on Pollution Prevention

**Purpose:** To provide technical assistance to Mexico as it develops its pollution prevention and clean technology programs.



**Funding:** \$35,000 approximately annually.

**Partners:** TNRCC and Secretaría de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP).

**Description:** There are several components including:

- Provision of technical assistance to the SEMARNAP's Attorney General for the Environment (PROFEPA) in development of a pollution prevention focused element to the Mexican environmental audit program. Assistance will be in the form of an exchange of technical materials and on-site visits to industrial facilities in Texas and Mexico by a team of TNRCC, EPA and SEMARNAP technical staffs.
- Exchange of technical materials from U.S. environmental agencies and field visits by INE staff to TNRCC and other state environmental agencies with active pollution prevention programs. INE staff would be invited to participate in regional and/or national pollution prevention roundtables to study evolving U.S. programs.
- Training for state governments and maquiladora associations related to developing and improving workplace recycling and community recycling programs. A major focus will be on the reduction of solid waste material generation and disposal. The process will also identify potential markets for recyclable materials in the border region and opportunities for the development of recycling industries.

**Status:** TNRCC and SEMARNAP have an ongoing exchange program of materials and hands-on experiences between the staff members engaged in pollution prevention delivery. These efforts have included side-by-side site assessments of industrial facilities in the United States and Mexico.

**Relevant Border XXI Objectives:** Increase technical exchange at all levels of government to enhance assistance and outreach to industry and expand pollution prevention assistance to maquiladoras.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132  
Dr. Adrián Fernández, DIGGIA - INE (525) 624 3456  
Quim. Juan Barrera, INE

**Project:** Solid Waste Recycling Initiatives

**Purpose:** Identify ways to expand binational markets for recycled materials and commodities.

**Funding:** \$60,000.

**Partners:** EPA, California Department of Toxic Substances and San Diego County.

**Description:** The public outreach goals of the Integrated Border Environmental Plan (IBEP) addressed the need to involve the general public in efforts to prevent illegal dumping and to foster pollution prevention and waste reduction. With the passage of NAFTA, we would now like to look more closely at ways to promote binational markets for recycled materials. While a great deal of trade in recycled materials and products already occurs, the potential to expand existing markets is enormous. This project will seek to assess current trade of recyclables across the border and identify obstacles to expanding such trade.

**Status:** Solid waste and recycling conferences were held with state and local environmental agencies. A solid waste recycling survey is being done to determine potential markets.

**Relevant Border XXI Objectives:** Increase technical assistance and outreach to federal, state, and municipal authorities, and the general public; and develop an initiative on recycling and solid waste handling authorities.

**Contact:** Chris Reiner, EPA Region 9, (415) 744-2096.

**Project:** Technology Transfer and Capacity Building on Pollution Prevention with PROFEPA

**Purpose:** To provide voluntary on-site evaluation of operations to highlight opportunities for pollution prevention implementation by Mexican industrial facilities.

**Funding:** \$40,000 approximately annually.

**Partners:** Arizona Department of Environmental Quality (ADEQ) and the Mexican Attorney General for the Environment (PROFEPA) have expressed interest in the site assessments of maquiladora facilities as conducted by the Texas Natural Resource Conservation Commission (TNRCC). Over the past several years, TNRCC personnel have made a number of pollution prevention presentations to Mexican government officials (federal and state), consulting engineers, and facility managers.

**Description:** The ADEQ/PROFEPA site assessments and the follow-up site visits would focus on determining opportunities to implement pollution prevention and clean technology. These initial on-site evaluations have yielded reduction of hundreds of thousands of gallons of wastewater, tons of emissions to the air, and transfers of hazardous waste back to the United States. The facilities have also saved, cumulatively, over a million dollars through pollution prevention.

**Status:** ADEQ and SEMARNAP seek to develop an ongoing exchange program of materials and hands-on experiences between the staff members engaged in pollution prevention delivery. These efforts would include side-by-side site assessments of industrial facilities in the U.S. and Mexico.

**Relevant Border XXI Objective:** Increase technical exchange at all levels of government to enhance assistance and outreach to industry.

**Contact:** Chris Reiner, EPA Region 9, (415) 744-2096  
Mike Foster, ADEQ, (520) 628-6733  
Carlos Silva, PROFEPA, (525) 589-8257

**Project:** Video Conference on Permanent Pollution Prevention Program (P4) Broadcast through Monterrey Institute of Technology

**Purpose:** To assist in the development of permanent pollution prevention programs with maquiladora industries.

**Funding:** \$50,000 approximately.

**Partners:** TNRCC, Secretaría de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP), Mexican state governmental agencies.

**Description:** The Texas Natural Resource Conservation Commission (TNRCC) is implementing the Permanent Pollution Prevention Program (P4) in the El Paso area. The program is designed to approach pollution prevention on a regional basis. P4 brings together several facilities, providing them with a framework and the technical assistance to implement permanent pollution prevention programs. This approach allows the pooling of knowledge and sharing of information on common issues and solutions. P4 builds industrial and governmental cooperation, assists facilities in developing environmental partnerships, and fosters environmental leadership. Previously, the TNRCC's Permanent Pollution Prevention Program (P4) was presented to the maquiladora industries through the Monterrey Institute of Technology's interactive video network which downlinks to 26 satellite campuses throughout Mexico. Classroom instruction in pollution prevention methods could be augmented by on-site waste audits provided by Monterrey Tech, SEMARNAP, and TNRCC staff members. In addition to the provision of in-plant pollution prevention techniques, the program will serve as a training device for SEMARNAP inspectors and Monterrey Tech extension service engineers.

**Status:** The video teleconference, held on July 14, 1995, was attended by more than 330 maquiladora managers and environmental managers.

**Relevant Border XXI Objectives:** Expand pollution prevention assistance to maquiladoras and increase technical assistance and outreach to federal, state, and municipal authorities, and the general public.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132  
Dr. Adrián Fernández, DGGIA - INE, (525) 624-3456  
Alberto Bustani, Centro di Calidad Ambiental, ITESM, 83 28 40 32

**Project:** Technology Transfer and Capacity Building on Pollution Prevention with PROFEPA

**Purpose:** To provide voluntary on-site evaluation of operations to highlight opportunities for pollution prevention implementation by Mexican industrial facilities.

**Funding:** \$50,000 approximately.

**Partners:** Texas Natural Resource Conservation Commission (TNRCC) and the Mexican Attorney General for the Environment (PROFEPA) have conducted 14 site assessments of maquiladora facilities. Over the past several years, TNRCC personnel have made a number of pollution prevention presentations to Mexican government officials (federal and state), consulting engineers, and facility managers.

**Description:** The TNRCC/PROFEPA site assessments and the follow-up site visits are focused on determining opportunities to implement pollution prevention and clean technology. These initial on-site technology evaluations have yielded reductions in hundreds of thousands of gallons of wastewater, tons of emissions to the air and transfers of hazardous waste back to the United States. The facilities have also saved, cumulatively, over a million dollars through pollution prevention.

**Status:** With 14 site assessments completed and the remarkable results being noted, SEMARNAP is interested in expanding the availability of the program throughout Mexico.

**Relevant Border XXI Objectives:** Increase technical exchange at all levels of government to enhance assistance and outreach to industry.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132.

**Project:** Border Pollution Prevention Technical Assistance - Small Business Operations

**Purpose:** To address a prevalent source of volatile organic compound (VOCs) emissions which directly impact ozone pollution in border communities; practical and common sense solutions are being used.

**Funding:** \$25,000 approximately.

**Partners:** Texas Natural Resource Conservation Commission (TNRCC) and the Small Business Advocate for the state of Texas.

**Description:** TNRCC has built a model paint spray booth at El Paso Technical Center that is used as a demonstration site for training operators in the auto body and paint shops industry. Operators from the El Paso and Juarez communities are taught how to use low VOC paint spray systems and solvent recovery and recycling machines.

**Status:** Over 75 operators have been trained in the use of pollution prevention techniques for this sector of the small business community. Businesses in the lower Rio Grande Valley have expressed an interest in having this service provided in their community.

**Relevant Border XXI Objective:** Expand pollution prevention technical assistance to small businesses.

**Contacts:** Rob Lawrence, EPA Region 9, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132  
Tamra Oatman, TNRCC, (512) 239-1062.

**Project:** Technical Assistance to Mexican State Environmental Agencies

**Purpose:** To continue capacity building efforts with Mexican state environmental agencies by providing training and technical assistance in the four Mexican states bordering Texas, in partnership with state agencies, trade associations and universities.

**Funding:** \$50,000 approximately.

**Partners:** TNRCC, Secretaría de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP), Mexican state governmental agencies.

**Description:** The Texas Natural Resource Conservation Commission (TNRCC) is currently involved in the provision of technical assistance in the areas of development and implementation of pollution prevention at the state level of government. TNRCC also proposes to further this effort by encouraging INE to develop a Mexican Pollution Prevention Roundtable, modeled on the United States approach. The voluntary association of state university and environmental agencies provides a forum for the exchange of information. This effort could become the model for a Pollution Prevention Roundtable for Latin America.

**Status:** TNRCC and SEMARNAP have an ongoing exchange program of materials and hands-on experiences between staff members engaged in pollution prevention delivery. These efforts have included side-by-side site assessments of industrial facilities in Mexico and the United States. Several of the Mexican state environmental agencies are interested in adapting TNRCC programs as they develop their environmental agendas. The border states of Tamaulipas, Nuevo Leon, Coahuila, and Chihuahua now have Clean Coahuila-Chihuahua programs which were modeled after the very successful Clean Texas 2000 initiative. Coahuila developed their own Clean Coahuila program. All the above states will meet with TNRCC in September 1996 to develop a "Clean Border" plan.

**Relevant Border XXI Objective:** Provide technical support to Mexican state governmental agencies in recycling and pollution prevention.

**Contacts:** Rob Lawrence, EPA Region 6, (214) 665-2258  
Joy Tibuni, EPA Region 6, (214) 665-8036  
Pierre Lichaa, TNRCC, (512) 239-3132.

## COOPERATIVE ENFORCEMENT AND COMPLIANCE WORKGROUP 1996 IMPLEMENTATION PLAN

### CONTACTS:

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### PROJECTS:

#### Project: Cooperative Targeting

**Funding:** PROFEPA estimates that a budget of \$7.5 million (USD) is required for the operation of the inspection programs in the northern border states, between 1996 and 2000.

EPA committed \$40,000 of FY96 funds for contract support in developing and exploring cooperative targeting methodologies. (Promotion of Interagency Cooperation).

**Partners:** EPA, PROFEPA, state environmental agencies, DOJ, U.S. and Mexican Customs Services.

**Description:** EPA and PROFEPA will address problems in which they may coordinate their activities within their frames of competence. The cooperative activities may be directed, for example, at specific problems identified in the industrial sector. To achieve the above, EPA and PROFEPA will target efforts that will include:

- The sharing of information held by one country which may assist the other in detecting noncompliance with the latter's environmental regulations.
- The planning, programming and realization of activities necessary to assure compliance with the laws of the respective countries.
- When the country where the source of contamination is located considers it appropriate, it may request from the other technical support, such as information and equipment, which the other will provide as feasible.

**Relevant Border XXI Objectives:** Continue efforts to achieve compliance with environmental requirements in the border area. Establish and enhance networks of cooperation among the various state, local and federal agencies on both sides of the border involved in environmental enforcement and compliance. Promote the evolution of mechanisms to enhance the evaluation of compliance with environmental law.

**Project:** Enforcement Results Information-sharing

**Funding:** The cost of this activity is distributed among the other projects which implicate exchange of information and development of reporting formats regarding compliance and enforcement. This effort will be accomplished with EPA and PROFEPA staff time, with support of state environmental agencies through EPA grants. (See Promotion of Interagency Cooperation.)

**Partners:** EPA, PROFEPA, state environmental agencies, DOJ.

**Description:** EPA and PROFEPA will conduct an annual exchange regarding enforcement activities in the border zone, for which it will be necessary to define the type of information and the format in which it will be presented.

To complement this, EPA and PROFEPA will consider, in specific cases, sharing information regarding the nature and severity of the violations detected and the sanctions imposed. It will be necessary to define the criteria needed to determine specific cases.

**Relevant Border XXI Objective:** Develop similar systems of reporting regarding compliance and enforcement, in accordance with the legal framework of each party. Promote the evolution of mechanisms to enhance the evaluation of compliance with environmental law.

**Project:** Training

**Funding:** EPA has committed \$90,000 of FY96 funds for contract support, plus support from states and regional environmental enforcement associations funded by EPA through grants and cooperative agreements (See Promotion of Interagency Cooperation.) In the area of hazardous waste enforcement, the Enforcement Workgroup will work jointly with the Hazardous Waste Workgroup to organize specific courses or workshops. (See Hazardous Waste Workgroup 1996 Implementation

Plan.) The approximate cost to Mexico for carrying out this activity is calculated to be \$100,000 USD, between 1996 and 2000.

**Partners:** EPA, PROFEPA, regional environmental enforcement associations, state and local environmental agencies, DOJ, Cal-DTSC, ADEQ, NMED, TNRCC, San Diego County Health Department, U.S. and Mexican Customs, DOT, SCT, CNA, CICOPLAFEST.

**Description:**

- **Transboundary Hazardous Waste Shipment Compliance Training for Customs and Environmental Inspectors** -- EPA and PROFEPA will continue to work together to deliver this course at the primary customs facilities established along the U.S.-Mexico border. Goals will include involving inspectors on both sides of the border as instructors, and promoting cooperative interaction among customs and environmental inspectors from both countries.

Time frame: Provide courses in a systematic manner.

- **Training to Detect Possible CFC Smuggling** -- EPA and PROFEPA will develop and deliver courses for environmental inspectors and customs agents of both countries to detect possible illegal shipments of CFCs.

Time frame: Ongoing.

- **Multimedia Inspector Training** -- EPA and PROFEPA will continue training inspectors with the participation of instructors from PROFEPA, and the next courses will include water quality inspection information.

Time frame: Ongoing.

- **Principles of Environmental Enforcement Workshop** -- EPA and PROFEPA will explore additional presentations of this workshop in one or more border states of northern Mexico, integrating previous participants as workshop facilitators. EPA and PROFEPA will explore the possibility of working together to present this workshop to Central or South American countries (or inviting them to participate in future workshops in Mexico).

Time frame: Ongoing. EPA and PROFEPA will develop a proposal to the World Bank to finance courses in northern Mexico.

- **Field Investigations and Sampling** -- In cooperation with the Hazardous Waste Workgroup, EPA and PROFEPA will explore the development of workshops or courses in the conduct of field investigation and taking of samples.

**Relevant Border XXI Objectives:** Continue efforts to achieve compliance with environmental requirements in the border area, particularly through institutionalized national training programs. Establish and enhance networks of cooperation among the various state, local, and federal agencies on both sides of the border involved in environmental enforcement and compliance.



**Project:** Technical and Legal Consultations

**Funding:** EPA and PROFEPA relying on in-house personnel. State and regional environmental enforcement association participation to be assisted through EPA grants. (See Promotion of Interagency Cooperation.) PROFEPA estimates its cost for this activity to be \$300,000 USD, between 1996 and 2000.

**Partners:** EPA, PROFEPA, DOJ, state environmental agencies and regional environmental enforcement associations, U.S. Customs Service, Environmental Law institute, U.S. Attorney.

**Description:**

- Policies regarding enforcement of the environmental laws and regulations -- EPA and PROFEPA will hold a conference for technical and legal enforcement personnel of the Mexican and U.S. governments considering legal and technical aspects involved in enforcing their environmental laws and regulations. The conference will be based on case studies developed by the participants of the conference.

Time frame: Conference occurred July 1996. Follow-up being explored.

- Improvement of Enforcement Data Systems -- EPA and PROFEPA will continue the technical consultations regarding enforcement and compliance data systems management, in coordination with Canada and the North American Commission for Environmental Cooperation (CEC).

Time frame: To be defined in the next meetings of the CEC.

- Calculation of Economic Sanctions -- EPA and PROFEPA will conduct a technical consultation regarding methodologies of both countries to calculate economic sanctions.
- Criminal Environmental Enforcement -- EPA and PROFEPA will continue consultations regarding criminal environmental law enforcement.

Time frame: Ongoing. TNRCC to invite PROFEPA to participate in an environmental crimes training course. At TNRCC's invitation PROFEPA participated in an environmental crimes training course in Austin in May 1996.

**Relevant Border XXI Objectives:** Continue efforts to achieve compliance with environmental requirements in the border area. Establish and enhance networks of cooperation among the various agencies involved in environmental enforcement and compliance. Develop similar systems of reporting regarding enforcement and compliance, within the legal framework of each party. Promote evolution of mechanisms to enhance evaluation of compliance with environmental law. Promote pollution prevention as a mechanism for solving compliance problems.

**Project:** Case-specific Investigations

**Funding:** EPA and PROFEPA relying on in-house personnel. State and local agency participation to be assisted through EPA grants. (See Promotion of Interagency Cooperation.) PROFEPA estimates the cost for the operation of this project to be \$62,500 USD, between 1996 and 2000.

**Partners:** EPA, PROFEPA, DOJ, state environmental agencies, U.S. and Mexican Customs, U.S. Attorney.

**Description:**

- Case-by-case Cooperation -- EPA and PROFEPA will continue to cooperate in specific enforcement cases, including the participation of the existing regional subgroups.
- Protocol for Cooperation in Investigations -- In cooperation with the Hazardous Waste Workgroup, EPA and PROFEPA will explore the possibility of establishing a protocol for cooperation in the development of evidence for enforcement cases of each country, including exchange of information, sampling and analysis, and provision of legal testimony to give basis to legal proceedings.

Time frame: Ongoing. EPA and PROFEPA to define the process and time frame for concluding the protocol.

**Relevant Border XXI Objectives:** Continue efforts to achieve compliance with environmental requirements in the border area. Establish and enhance networks of cooperation among the various agencies involved in environmental enforcement and compliance; promote the establishment of subgroups for each geographic region, to enhance multiagency binational cooperation and identify priorities for regional enforcement cooperation; promote the participation of the representatives of the different competent agencies, through the coordinators of the border subgroups, to explore solutions to specific environmental problems.

**Project:** Promotion of Interagency Cooperation

**Funding:** In FY96, EPA provided \$325,000 in direct grants to state agencies and \$20,000 in cooperative agreement funding to regional environmental enforcement associations to support border area enforcement activities. PROFEPA estimates that the approximate cost of this project will be \$37,500 USD, between 1996 and 2000.

**Partners:** EPA, PROFEPA, DOJ, U.S. and Mexican Customs, DOT, SCT, U.S. Fish and Wildlife Service, state and local environmental and public health agencies, U.S. state Attorney General.

**Description:** EPA and PROFEPA will work to improve the coordination among the state and federal agencies on both sides of the border involved in enforcement of environmental legislation, in accordance with the attributes which have been conferred to them and their resources. To facilitate these efforts, EPA and PROFEPA have established regional subgroups for El Paso-Juárez and California-Baja California, and will analyze the possibility of creating additional subgroups, in

accordance with the availability of human and financial resources. The 1996 workplan for the El Paso-Juárez subgroup is included as an appendix to this Plan. The Mexican Section of IBWC and the National Water Commission (CNA) will be invited to participate in the Cooperative Enforcement Strategy Workgroup's efforts. The workgroup will work with the Hazardous Waste Workgroup to improve field coordination of customs officials of both countries, and will develop multiagency task forces to ensure compliance with the regulations regarding transboundary shipments.

**Relevant Border XXI Objectives:** Continue efforts to achieve compliance with environmental requirements in the border area. Establish and enhance networks of cooperation among the various agencies involved in environmental enforcement and compliance; promote the establishment of subgroups for each geographic region, to enhance multiagency binational cooperation and identify priorities for regional enforcement cooperation; promote the participation of the representatives of the different competent agencies, through the coordinators of the border subgroups, to explore solutions to specific environmental problems.

**Project:** Environmental Auditing and Voluntary Compliance

**Funding:** \$85,000 in EPA FY96 funds for contract support. PROFEPA estimates that the approximate cost of this program would be \$100,000 USD, between 1996 and 2000.

**Partners:** EPA, PROFEPA, state environmental agencies, regional environmental enforcement networks, industry associations.

**Description:**

- Industry Outreach/Promotion -- EPA and PROFEPA will continue the efforts initiated in 1994 to provide information to U.S. parent corporations of Mexican industries regarding, and stimulate their participation in, PROFEPA's environmental auditing programs. EPA and PROFEPA will expand their coordinated efforts to promote voluntary compliance in industrial sectors, including by means of environmental auditing and the adoption of pollution prevention practices and technologies as solutions to problems of compliance. Such efforts will include industry seminars and workshops to promote environmental auditing.

Time frame: EPA to send a letter to the U.S. parent companies previously approved by PROFEPA promoting their voluntary participation in PROFEPA's environmental auditing program. Subject to the allocation of additional resources, EPA and PROFEPA will explore the possibility of developing a third conference on voluntary compliance by means of environmental auditing.

- Government Consultations -- EPA and PROFEPA, in coordination with Canada and the CEC, will continue with mutual technical consultations regarding their respective programs and policies for environmental auditing as a tool to assure voluntary compliance and promote pollution prevention.

Time frame: An intergovernmental meeting occurred August 1996. Follow-up being pursued.

- **Production of Video on Pollution Prevention and Compliance** -- In coordination with the Pollution Prevention Workgroup, EPA is to complete production of a video, "Environmental Auditing and Pollution Prevention: Strategies for Voluntary Compliance in the Maquiladora Industry." The video will include a focus on environmental auditing as a tool to assure compliance and identify pollution prevention opportunities. EPA and PROFEPA will discuss possible uses of the video in compliance promotion efforts.

Time frame: PROFEPA will provide EPA comments on the preliminary version of the video. Final revisions and distribution of the video in 1997 are subject to allocation of additional resources.

**Relevant Border XXI Objectives:** Encourage voluntary compliance by industry through strategies, such as environmental auditing and the use of clean technologies and less-contaminating raw materials, as a complement to a strong program of law enforcement. Promote pollution prevention as a mechanism for solving compliance problems. Promote public participation within the legal framework of each party.

# Glossary of Abbreviations

ACAAN	Acuerdo de Cooperación Ambiental del Norte (see NAAEC)
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
AID	U.S. Agency for International Development
APHIS	Agriculture Pest Health Inspection Service
ASU	Arizona State University
ATSDR	Agency for Toxic Substance and Disease Registry
BANDAN	Banco para el Desarrollo de América del Norte (see NADBank)
BBS	Bulletin Board System
BECC	Border Environment Cooperation Commission (see COCEF)
BHO	Border Health Office
BLM	Bureau of Land Management
BMP	Best Management Practices
BOR	Bureau of Reclamation
BRD	Biological Resources Division of USGS
Cal-DTSC	California Department of Toxic Substances Control
CAMEO	Computer aided Management of Emergency Operations
CARB	California Air Resources Board
CCA	Comisión de Cooperación Ambiental de América del Norte (see CEC)
CCPC	Comité Consultivo Público Conjunto de la CCA (see JPAC)
CDC	Centers for Disease Control
CDFG	California Department of Fish and Game
CDHS	California Department of Health Services
CEAS	Comisión Estatal de Aguas y Saneamiento de Coahuila (Coahuila State Commission for Water and Sanitation)
CEC	Commission for Environmental Cooperation (see CCA)
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act Information System
CES	Centro Ecológico de Sonora (Sonora Ecological Center)
CESPM	Comité Estatal de Servicios Públicos de Mexicali (State Committee for Public Services of Mexicali)
CFC	Chlorofluorocarbons
CFP	Cooperative Fisheries Program
CICA	U.S.-Mexico Information Center on Air Pollution
CICOPLAFEST	Comisión InterSecretarial para el Control de Plaguicidas, Fertilizantes y Substancias Tóxicas (Interagency Commission for Control of Pesticides, Fertilizers and Toxic Substances)
CICTUS	Centro de Investigaciones Científicas y Tecnológicas (Center for Scientific and Technological Research)
CIDESON	Centro de Investigación y Desarrollo de Sonora (Sonora Center for Research and Development)
CIESIN	Consortium for International Earth Sciences Information Network
CILA	Comisión Internacional de Límites y Aguas (see IBWC)
CITES	Convention on International Trade for Endangered Species
CLAM	Comité Local para Ayuda Mutua (Local Committee for Mutual Assistance)

## Glossary of Abbreviations

CNA	Comisión Nacional de Agua (National Water Commission)
CO	Carbon monoxide
COAPES	Comisión de Agua Potable y Alcantarillado del Estado de Sonora (Sonora State Commission for Drinking Water and Sewers)
COCEF	Comisión de Cooperación Ecológico Fronterizo (see BECC)
COLEF	El Colegio de la Frontera Norte (College of the Northern Border)
CONABIO	Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (National Commission for Knowledge and Use of Biodiversity)
CONACYT	Consejo Nacional de Ciencia y Tecnología (National Advisory Council for Science and Technology)
COSAE	Comisión de Servicios de Agua del Estado de Baja California (Water Utilities Commission for the State of Baja California)
CWS	Canadian Wildlife Service
DEM	Digital elevation model
DFG	Department of Fish and Game (California)
DGPS	Differential Geographic Positioning System
DIAAPROY	Diseño, Asesoría, y Administración de Proyectos, S.A. de C.V. (Project Design, Assistance, and Management, Inc.)
DLG	Digital line graph
DOC	U.S. Department of Commerce
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DOJ	U.S. Department of Justice
DOQ	Digital ortho-quadrangles
DOS	U.S. Department of State
DOT	U.S. Department of Transportation
DRGs	Digital raster graphics
DUMAC	Ducks Unlimited de Mexico, A.C.
EDF	Environmental Defense Fund
EJ	Environmental Justice
EPA	U.S. Environmental Protection Agency
EPA/OW	U.S. Environmental Protection Agency - Office of Water
EPA R6	U.S. Environmental Protection Agency - Region 6
EPA R9	U.S. Environmental Protection Agency - Region 9
EPCCHED	El Paso City and County Health and Environment Department
EPOMEX	Programa de Ecología, Pesca, y Oceanografía del Golfo de México (Gulf of Mexico Program for Ecology, Fisheries, and Oceanography)
FCC	U.S. Field Coordinating Committee (DOI)
FDA	Food and Drug Administration
FONSI	Finding of No Significant Impact
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
GCD	Grupo Coordinador Estatal del Proyecto de Descentralización (State Coordinating Group for the Decentralization Project)
GGA	Grupo de Gestión Ambiental Estatal (State Environmental Management Group)
GIS	Geographical Information Systems

GNEB	Good Neighbor Environmental Board
GPS	Global Positioning System
HAZTRAKS	Hazardous Waste Tracking System
HHS	U.S. Department of Health and Human Services
HMMD	County of San Diego - Hazardous Materials Management Division
HRSA	Health Resources and Services Administration
HUD	U.S. Department of Housing and Urban Development
IB	Instituto de Biología, UNAM (Biology Institute, UNAM)
IBEP	Integrated Border Environmental Plan, <i>Integrated Environmental Plan for the U.S.-Mexico Border Area, First Stage (1992-94)</i> (see PIAF)
IBWC	International Boundary and Water Commission (see CILA)
ICC	Interagency Coordinating Committee
ICMA	International City/County Management Association
IID	Imperial Irrigation District
IMADES	Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora (State of Sonora Institute for the Environment and Sustainable Development) - formed through the joining of CIDESON and CES
IMSS	Instituto Mexicano del Seguro Social (Mexican Institute for Social Security)
INAH	Instituto Nacional de Antropología e Historia (National Institute for Anthropology and History)
Inc.	Incorporated (see S.A. de C.V.)
INE	Instituto Nacional de Ecología (National Institute for Ecology)
INEGI	Instituto Nacional de Estadística, Geografía, e Informática (National Institute for Statistics, Geography, and Information)
INIFAP	Instituto Nacional de Investigaciones Forestales, Agrícola y Pecuaria (National Institute for Investigations of Forests, Agriculture and Livestock)
INP	Instituto Nacional de Pesca (National Institute of Fisheries)
ISO 14000	International Standards Organization 14000 (14000 is a series of standards on environmental management)
ISSSTE	Instituto de Seguridad Social y Servicios para los Trabajadores del Estado (Institute for Social Security & Services for State Workers)
ITESM	Instituto Tecnológico de Estudios Superiores de Monterrey (Technology Institute of Superior Studies of Monterrey)
IWMB	Integrated Waste Management Board
IWRC	Iowa Waste Reduction Center
IWTP	International Wastewater Treatment Plant
JCP	Joint Contingency Plan
JMAS	Junta Municipal de Alcantarillado y Saneamiento de Ciudad Juárez (Sewer and Sanitation Municipal Authority for Ciudad Juarez)
JPAC	Joint Public Advisory Committee for the CEC (see CCPC)
JRT	Joint Response Team
LEPC	Local Emergency Planning Committee
LIDAR	Light, intensity, distancing, and ranging
LOI	Letter of intent
lps	Liters per second
MEXUS	MOU on fisheries investigation between Mexico and the U.S. for the Gulf of Mexico and the Pacific Ocean

## Glossary of Abbreviations

MMS	U.S. Minerals Management Service
MOU	Memorandum of Understanding
NAAEC	North American Agreement on Environmental Cooperation (see ACAAN)
NAAQS	National Ambient Air Quality Standards
NADBank	North American Development Bank (see BANDAN)
NAFTA	North American Free Trade Agreement (see TLC)
NAS	National Audubon Society
NASQAN	National Stream Quality Accounting Network
NAWCC	North American Waterfowl Conservation Commission
NAWQAP	National Water Quality Assessment Program
NBEP	Northern Border Environmental Program (see PAFN)
NBII	National Biological Information Infrastructure
NGO	Nongovernmental organization
NIEHS	National Institute of Environmental Health Sciences
NIH	National Institute of Health
NIWTP	Nogales International Wastewater Treatment Plant
NJDEP	New Jersey Department of Environmental Protection
NMBHO	New Mexico Border Health Office
NMDFG	New Mexico Department of Fish and Game
NMDOH	New Mexico Department of Health
NMED	New Mexico Environment Department
NMFS	National Marine Fisheries Service
NM-GIC	New Mexico Geographic Information Council
NMSU	New Mexico State University
NOAA	U.S. National Oceanic and Atmospheric Administration
NOS	U.S. National Ocean Service
NO <sub>x</sub>	Oxides of Nitrogen .
NPS	National Park Service
NRCS	U.S. Department of Agriculture - Natural Resources Conservation Service
NTDs	Neural tube defects
NWR	National Wildlife Refuge
O <sub>3</sub>	Ozone
OCRM	Ocean and Coastal Resource Management
ONG	Organizaciones no Gubernamentales (see NGO)
OPS	Organización Panamericana para la Salud (see PAHO)
OWM	Office of Wastewater Management
P2	Pollution Prevention/Prevención de la Contaminación
PAFN	Programa Ambiental de la Frontera Norte (see NBEP)
PAH	Polycyclic aromatic hydrocarbons
PAHO	Pan American Health Organization (see OPS)
Pb	Lead
PCS	Permit and Compliance System
PEMEX	Petróleos Mexicanos (Mexican Petroleum Company)
PHS	Public Health Service
PM-10	Particulate matter (size = less than 10 microns)
PND	Plan Nacional de Desarrollo (Mexico's National Development Plan)
PROFAUNA	Asociación para la Protección de la Fauna, A.C. (Association for the Protection of Wildlife)



PROFEPA	Procuraduría Federal de Protección al Ambiente (Federal Attorney General for Environmental Protection)
PRTR	Pollution Release and Transfer Registry
PSU	Pennsylvania State University
QA/QC	Quality Assurance/Quality Control
RMRS	Rocky Mountain Research Station
RTP	Research Triangle Park
RWQCB	Regional Water Quality Control Board
S.A. de C.V.	Sociedad Anónima de Capital Variable (see Inc.)
SAGAR	Secretaría de Agricultura, Ganadería, y Desarrollo Rural (Mexican Secretariat for Agriculture, Cattle, and Rural Development)
SAHOPE	Secretaría de Asentamientos Humanos y Obras Públicas del Estado (Baja California State Secretariat for Human Housing and Public Works)
SARH	Secretaría de Agricultura y Recursos Hidráulicos (Mexican Secretariat for Agriculture and Hydraulic Resources)
SCT	Secretaría de Comunicaciones y Transportes (Mexican Secretariat of Communication and Transportation)
SCERP	Southwest Center for Environmental Research and Policy
SE	Secretariat of Energy
SDSU	San Diego State University
SEAGO	Southeastern Arizona Governments Organization
SEDESOL	Secretaría de Desarrollo Social (Mexico's Secretary for Social Development)
SEDUE	Secretaría de Desarrollo Urbano y Ecología (Mexican Secretary for Urban Development and Ecology)
SEMARNAP	Secretaría de Medio Ambiente Recursos Naturales y Pesca (Mexico's Secretary for the Environment, Natural Resources, and Fisheries)
SFFS	Subsecretaría Forestal y de la Fauna Silvestre (Subsecretariat for Forestry and Wildlife)
SIP	State Implementation Plan
SIUE	Secretaría de Infraestructura Urbana y Ecología, Sonora (Secretary for Urban Infrastructure and Ecology, Sonora)
SO <sub>2</sub>	Sulfur dioxide
SRE	Secretaría de Relaciones Exteriores - (Mexico's Secretariat for External Affairs)
SRN	Subsecretaría de Recursos Naturales, (Undersecretariat for Natural Resources, under SEMARNAP)
SSA	Secretaría de Salud (Mexico's Secretary of Health)
SWRCB	State Water Resources Control Board (California)
TB	Tuberculosis
TDH	Texas Department of Health
TDPS	Texas Department of Public Safety
Texas (STEP)	Texas Small Towns Environment Program
TGLO	Texas General Land Office
TIGER	Topologically Integrated Geographic Encoding and Referencing
TLC	Tratado de Libre Comercio (see NAFTA)
TNRCC	Texas Natural Resource Conservation Commission
TNRIS	Texas Natural Resource Information System
TPWD	Texas Parks and Wildlife Department
TRI	Toxics Release Inventory

## Glossary of Abbreviations

TRIP	Transboundary Resource Inventory Project
TSP	Total suspended particulates
TWDB	Texas Water Development Board
TX-GISPC	Texas Geographic Information Systems Planning Council
UAAAN	Universidad Autónoma Agraria Antonio Narro (Antonio Narro Autonomous Agrarian University)
UABC	Universidad Autónoma de Baja California (Autonomous University of Baja California)
UACH	Universidad Autónoma de Chihuahua (Autonomous University of Chihuahua)
UAG	Universidad Autónoma de Guadalajara (Autonomous University of Guadalajara)
UAM	Universidad Autónoma Metropolitana (Autonomous Metropolitan University)
UANL	Universidad Autónoma de Nuevo León (Autonomous University of Nuevo Leon)
UAS	Universidad Autónoma de Sonora
UAT	Universidad Autónoma de Tamaulipas
UCANP	Unidad Coordinadora de Areas Naturales Protegidas, INE (Division of Coordination of Natural Protected Areas)
UCAI	Unidad de Coordinación de Asuntos Internacionales, SEMARNAP (Office of Coordination of International Activities)
UCD	University of California at Davis
UNAM	Universidad Nacional Autónoma de Mexico (Autonomous National University of Mexico)
UNISON	Universidad de Sonora (University of Sonora)
UNM	University of New Mexico
UNT	University of North Texas
U of A	University of Arizona
USACE	U.S. Army Corps of Engineers
USD	United States Dollars
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USMBHA	U.S.-Mexico Border Health Association
UT	University of Texas
UTA	University of Texas at Austin
UT-BEG	University of Texas at Austin, Bureau of Economic Geology
UTEP	University of Texas at El Paso
U of U	University of Utah
VOCs	Volatile organic compounds
WEF	Water Environment Federation
WGA	Western Governors Association