1999 Report

International Boundary and Water Commission

"The application of the present Treaty, the regulation and exercise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise are hereby entrusted to the International Boundary and Water Commission, which shall function in conformity with the powers and limitations set forth in this Treaty...

"The International Boundary and Water Commission shall have, in addition to the powers and duties otherwise specifically provided in this Treaty, the following powers and duties:...

"In general to exercise and discharge the specific powers and duties entrusted to the Commission by this and other treaties and agreements in force between the two countries, and to carry into execution and prevent the violation of the provisions of those treaties and agreements."

Articles 2 and 24, paragraph c, United States-Mexico Treaty for Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed February 3, 1944, Washington, D.C.

The International Boundary and Water Commission
United States and Mexico
The Commons Building C, Suite 310
4171 North Mesa Street
El Paso, Texas 79902-1422
Tel: 915/832-4100; Fax: 915/832-4190

Visit our Website: www.ibwc.state.gov

Cover photo: Drought conditions at Falcon Dam, Falcon Height, TX.

1999 Annual Report

The International Boundary and Water Commission provided binational leadership in its traditional treaty-mandated duties involving the waters of the Colorado River and the Rio Grande, acknowledging the changing needs of the border area's growing population and its ecology. This includes the use of the boundary river waters in manners that their uses are balanced between urban and agricultural needs and between human and wildlife needs.

Among highlights, the Commission led consultations with water resource agencies in the two countries concerning drought conditions in the Rio Grande and concerning flow and natural resource conditions in the Colorado River waters arriving in Mexico. The Commission completed community-based wastewater infrastructure project planning for two Mexican communities along the Rio Grande and for Nogales, Arizona-Nogales, Sonora in support of the Border Environment Cooperation Commission. The Commission concluded international agreements, as documented by Minutes Numbers 300, 301 and 302, for the coordination of Colorado River supply studies for the San Diego, California-Tijuana, Baja California area, for improvements in boundary demarcation and for a maintenance program for the international Cordova Bridge of the Americas on the Rio Grande at El Paso, Texas and Ciudad Juárez.

The United States and Mexican International Boundary and Water Commissioners as members of the board of directors of the Border Environment Cooperation Commission participated in the project development activities of this international organization. The Commission also participated in various binational and multinational fora to share its experience of more than one century concerning international management of the waters of the Rio Grande and the Colorado River. At the El Paso-Juárez region, the Commission organized for the United States and Mexican consulates in that area, a community development work group to support the consulates' border liaison mechanism within the framework of the New Border Vision.

This annual report is prepared in compliance with the provision in Article 24, paragraph D, of the United States-Mexico Treaty for Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed on February 3, 1944. The activities in 1999 are summarized in the following sections: International Boundary Preservation and Demarcation, Waters of the Rio Grande, Waters of the Colorado River, Border Sanitation and Other International Waters Studies.

John M. Bernal
United States Commissioner

J. Arturo Herrera Solís
Commissioner for Mexico

Enhanced Demarcation

The Commission concluded Minute No. 302, "Enhanced Demarcation and Monumentation of the International Boundary at International River Bridges and at Land Boundary Ports of Entry," signed on December 13, 1999. The international program provides to the two countries a more visible manner of marking the international boundary at the existing and future international bridges, primarily over the Rio Grande in its international boundary segment which extends for 1,254 miles (2018 kilometers) from El Paso, Texas-Ciudad Juárez, Chihuahua to the Gulf of Mexico, and at border crossings along the 674 miles (1,091 kilometers) of the western land boundary from El Paso, Texas-Ciudad Juárez, Chihuahua to the Pacific Ocean. The Commission maintains 276 international boundary markers and 475 intermediate markers along the western land boundary under authority of the 1944 Water Treaty. Under Minute No. 302 the Commission is identifying those areas between the western land boundary crossings that may need additional demarcation. In this process, the Commission discussed use of signs in a pilot project in the area west of El Paso-Ciudad Juárez.

Bridge of the Americas

The Commission signed, and the two Governments approved, IBWC Minute No. 300 on August 30, 1999 for a maintenance program at the toll-free replacement International Bridge of the Americas on the Rio Grande at El Paso, Texas-Ciudad Juárez, Chihuahua. Under this agreement, the Commission suspended the temporary commercial users' fees upon determining that an amount necessary to cover the commercial user's costs for the construction and operation and maintenance of the bridge had been achieved.

The replacement bridge was constructed through the Commission between 1996 and 1998 authorized by Minute No. 290 under the 1963 Chamizal Convention. Texts of this and other recent Commission Minutes may be viewed in the U.S. Section's web site.

Obstructions of International Channels

The United States and Mexico are obligated to preserve the channels of the international segments of the Rio Grande and the Colorado River maintaining them free of obstructions and thus allow clear unobstructed passage of normal and flood flows of these rivers. The Commission reviews and approves plans for works, including international bridges, proposed in the channel and on adjacent lands to ensure that these do not cause deflection or obstruction to normal or flood flows of these rivers, in application of the United States Mexico Boundary Treaty of 1970. The Commission reviewed and approved 14 of these types of projects during 1999. The Commission is involved in hydraulic and environmental studies concerning the preservation of the international boundary segment of the Colorado River, along with improvements to normal and flood flows conveyance in this international river segment. In addition, the Commission reviewed and approved plans for pipe and power lines that cross the international boundary.

1906 Convention Deliveries

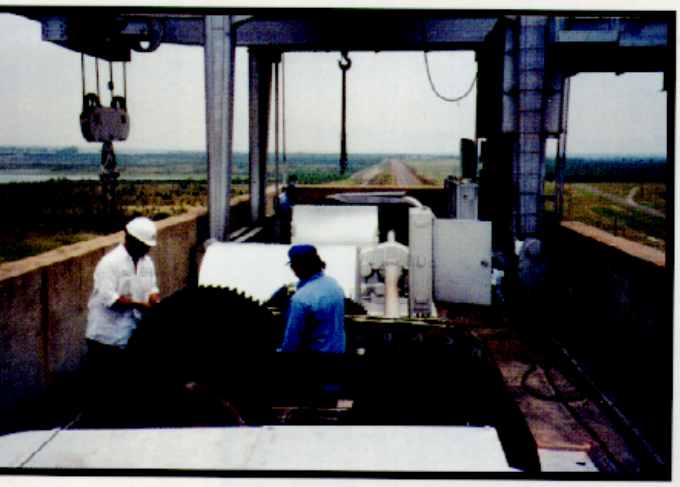
At the upper 90 miles (145 kilometers) of the Rio Grande in the El Paso-Juárez Valley, the Commission agreed on schedules for delivery to Mexico of 60,000 acre feet (74 million cubic meters) guaranteed annually to Mexico under the United States-Mexico Convention of 1906. Mexico, through its *Comisión Nacional del Agua*, diverted these guaranteed deliveries at the Acequia Madre facilitated by Commission operation of the International Dam at El Paso-Juárez. The United States made the deliveries with the cooperation of the United States Bureau of Reclamation, which operates Elephant Butte and Caballo dams in southern New Mexico.

1944 Water Treaty

Water Accounting

For the remaining 1,100 miles (1,770 kilometers) of the Rio Grande to the Gulf of Mexico, the Commission maintained, "a record of the waters belonging to each country and of those that may be available at a given moment, taking into account the measurement of the allotments, the regulation of the waters in storage, the consumptive uses, the withdrawals, the diversions, and the losses," as established in Article 9 of the 1944 Water Treaty. The Commission publishes those records in English and Spanish language annual reports. The historical and current flow data along with storage conditions in the international dams are available in the United States Section's website.

International Reservoir Operations



At the end of 1999, the United States had 1,353,000 acre-feet (1,669,000 thousand cubic meters) and Mexico had 672,000 acre-feet (829,000 thousand cubic meters) in storage in the international Amistad and Falcon Dams. Storage of United States and Mexican waters were at 48.68 per cent for the United States and 27.11 per cent for Mexico, of each country's combined conservation capacity. The two dams were constructed by the Commission on the Rio Grande some 12 miles (19 kilometers) upstream of Del Rio, Texas-Ciudad Acuña, Coahuila and some 73 miles (117 kilometers) downstream of Laredo, Texas-Nuevo Laredo, Tamaulipas international reservoirs, respectively. Their low storage levels coincided with extended drought conditions in the Rio Grande basin in the United States and Mexico. Large populations and irrigated lands in the United States and Mexico depend on these waters stored in the international dams which are operated and maintained by the Commission under the 1944 Water Treaty, as well as electric power generation projects which benefit both countries.

Looking at Amistad Dam from the beach located left of the reservoir, at a level 38.5 per cent of conservation capacity.

Water Deficit

In late 1999, the Commission intensified talks concerning the manner in which Mexico would cover a deficit of 1.024 million acre-feet (1263 million cubic meters) from six Mexican tributaries to the Rio Grande specified in the 1944 Treaty that occurred in the five year accounting period of 1992-1997. The talks also included consideration of a program to avoid, to the extent possible, a significant deficit in the current five year accounting cycle and future years. In these talks, the Commission promoted an exchange of technical information concerning Rio Grande basin conditions, involving Mexico's *Comisión Nacional del Agua* and Texas water users, in furtherance of the cooperative information exchange program in Commission Minute No. 293.

Falcon International Reservoir, looking towards Nuevo Guerrero, Tamaulipas, which, at the close of 1999, is at 16.1 per cent of its conservation capacity.

Flood Control Projects

The Commission maintained to the extent practical, river levee systems to protect life and property along the border, in both countries, from river floods along 88 miles (141 kilometers) in the El Paso, Texas-Ciudad Juárez Valley, 10 miles (16 kilometers) in Presidio, Texas-Ojinaga, Chihuahua, and 170 miles (273 kilometers) in the delta of the Rio Grande, known as the Lower Rio Grande Valley. In this last project, the Commission operates two diversion structures, Anzalduas Dam, near Hidalgo, Texas-Reynosa, Tamaulipas, and Retamal Dam, near Mission, Texas-Rio Bravo, Tamaulipas. These structures divert to off-river floodway systems in each country for conveyance to the Gulf of Mexico, those flood waters in excess of the limited carrying capacity of the Rio Grande in its lower reach between Brownsville, Texas-Matamoros, Tamaulipas.

The Commission also supervised operations for the project in the Lower Rio Grande Valley under Commission Minute No. 224 as well as for the flood control project in the Presidio, Texas-Ojinaga, Chihuahua under Commission Minute No. 247.

"...There is a challenge in the use of the boundary river waters in manners that their uses are balanced between urban and agricultural needs and between human and wildlife needs." -IBWC Commissioners

Photo of endangered ocelot courtesy of U.S. Fish and Wildlife.

Lower Rio Grande Salinity

The Commission inspected the saline water bypass project originating from the Morillo Drain pumping station in Mexico and started discussions for project improvement.

The project was constructed in 1967. Its construction, operation and maintenance costs are shared equally by the United States and Mexico.

Rio Grande Rectification

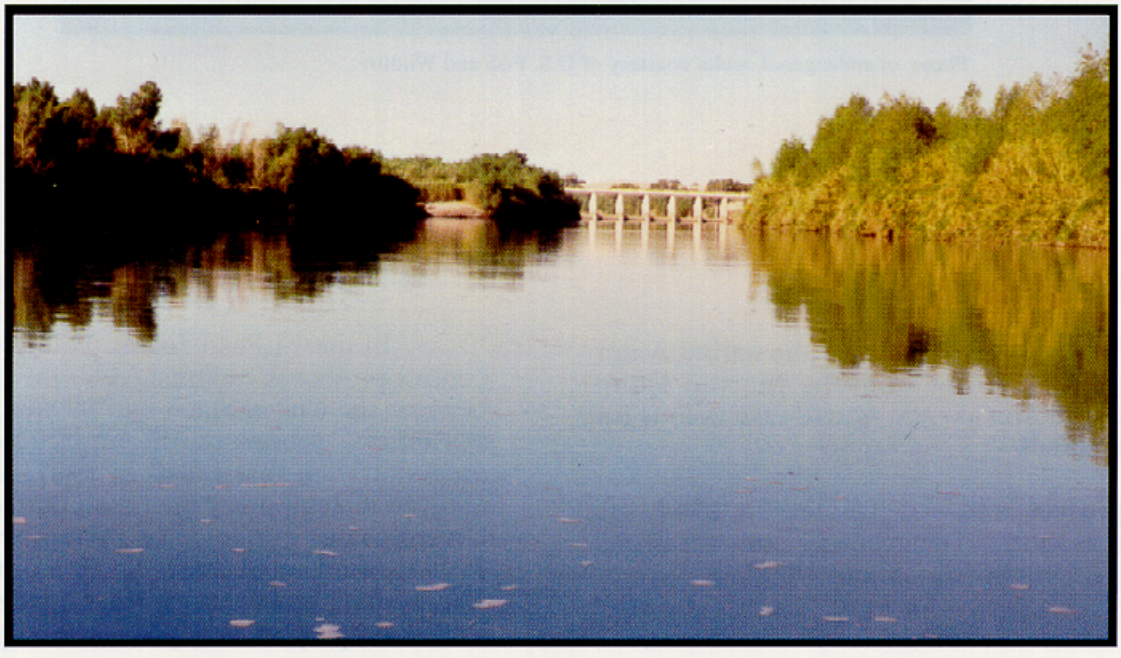
In the El Paso-Juárez Valley, where the flood control project is established by the 1933 Convention between the United States and Mexico, the Commission started discussions on the replacement of Riverside diversion dam that failed in 1987. The Commission allowed its temporary operation until construction of a United States conveyance system was completed in 1999 by the United States Section of the Commission. This system, known as the Rio Grande American Canal Extension project, was placed into operation in 1999.

1944 Water Treaty Deliveries

The United States Section, with the cooperation of the United States Bureau of Reclamation, ensured the delivery of a "guaranteed annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters)" of water to Mexico, under provisions of Articles 10 and 15 of the 1944 Water Treaty, with a salinity which is within the terms of the international agreement made in Commission Minute No. 242 of August 30, 1973. The United States delivered an additional 200,000 acre-feet (247,000,000 cubic meters) in scheduled deliveries to Mexico based on a United States declaration that when the United States declares that there exist waters surplus to United States consumptive uses, also under the terms of the 1944 Water Treaty. The United States declared a similar surplus of waters for 2000. The Mexican Section ensured the development of a delivery schedule by Mexico's *Comisión Nacional del Agua* for 2000. Further the Mexican Section ensured the operation of Morelos Dam in the Colorado River for the diversion of the waters delivered to Mexico and for passage of flood-waters in this river. The Commission convened policy and technical level information exchange meetings and field trips involving the United States Bureau of Reclamation and the *Comisión Nacional del Agua*, including representatives of the seven United States Colorado River basin states.

Salinity Control

The Commission continued technical talks for mid and long-term joint cooperative projects concerning the salinity in the waters delivered by the United States to Mexico at the land boundary in San Luis, Arizona. The surplus waters that were delivered to Mexico provided dilution for these drainage waters during 1999. The technical talks are in the context of a binational technical work group that includes participation of the United States Bureau of Reclamation and Mexico's *Comisión Nacional del Agua*.



View of Morelos Dam from downstream of the Colorado River.

Dredging operations on the Colorado River above Morelos Dam.

Sediment

The Commission advanced discussions, also through a binational technical work group, concerning deposition of silt in the international segment of the Colorado River following the 1993 flood from the Gila River. The United States Bureau of Reclamation began a two-year effort to remove sediment from the international river channel for a distance of one-mile (1.6 kilometers) segment upstream of Morelos Dam and another one-mile segment upstream of the international boundary. Mexico's *Comisión Nacional del Agua* continued sediment removal downstream of Morelos Dam and in the lower reaches in Mexico.

Long Term Conveyance

Concerning the long-term conveyance needs in the 24-mile (39 kilometers) international segment of the Colorado River, the Commission reviewed preliminary hydraulic studies. The United States Section advanced environmental impact studies preparatory to joining the Mexican Section in developing joint international project options.

Delta

The Commission's technical work group on the Colorado River Delta continued to exchange information concerning the hydrology and ecology of the delta. Mexico's *Instituto Nacional de Ecología* informed the group of Mexico's protected ecological reserve located at the mouth of the Colorado River and the upper part of the Gulf of California. The United States Fish and Wildlife Service informed the group of cooperative programs concerning the Colorado River migratory birds flyway.

Nogales, Piedras Negras, and Ciudad Acuña Minute No. 294 Sanitation Project Planning

The Commission assured completion of wastewater infrastructure plans for Piedras Negras and Ciudad Acuña, Coahuila and Nogales, Arizona-Nogales, Sonora, under Minute No. 294. The communities submitted their proposals for wastewater collection and treatment facilities to the Border Environment Cooperation Commission for their certification and arrangement of financing through the North American Development Bank or other international financial institutions that require certification.

The binational technical effort involved local, state, and federal water quality infrastructure agencies in both countries. In addition to the United States Environmental Protection Agency, Mexico's *Comisión Nacional del Agua* and the utilities for the states of Baja California, Sonora, Coahuila, and Tamaulipas participated in the effort, along with California and Arizona state water quality agencies.

Nuevo Laredo and Matamoros

Similar planning continued for wastewater collection and treatment projects at Matamoros and Nuevo Laredo, Tamaulipas. The planning efforts were funded in large part by a grant of the United States Environmental Protection Agency. Also under this arrangement, the Commission began coordination of the design of one of the treatment facilities at Reynosa, Tamaulipas. That project's plans were completed in 1998 under Minute No. 294. The Commission also coordinated the start of the Minute No. 294 facility planning effort for Nuevo Laredo to handle future flows in excess of the international plant capacity.

Reynosa

Also under Minute No. 294, the Commission started coordination of the design for one of the treatment plants at Reynosa, Tamaulipas. The plans for this project were completed in 1998 under Minute No. 294, taking its certification before the Border Environment Cooperation Commission in that year.

Wastewater treatment plant in ciudad Acuña, Coahuila, Mexico.

Border Sanitation

The Commission monitored design and construction activities at the sanitation projects at Ciudad Juárez, Chihuahua, Naco, Sonora and Tijuana, Baja California under international understandings concluded under Minute No. 261 for safeguards against transboundary pollution. These are projects that have been certified by the Border Environment Cooperation Commission, which among other criteria require that certified projects be consistent with international agreements. At Ciudad Juárez, Chihuahua and El Paso, Texas, the Commission adopted a water quality-monitoring program concerning treatment plant discharges to the Rio Grande. Ciudad Juárez is constructing two wastewater treatment plants. The monitoring program arrangement can be viewed at the U. S. Section' s website. At Naco, the State of Sonora is rehabilitating the sewage collection and treatment systems consistent with transboundary safeguards in Minute No. 293. At Tijuana, the State of Baja California is upgrading the Tijuana ocean discharge plant sewage treatment plant to achieve secondary treatment of 25 mgd (1,100 lps) and constructing a pumping station and pressure line, parallel to the existing one, to provide greater conveyance reliability. Arrangements to assure against transboundary sewage impacts are in Minute No. 298.

Wastewater Treatment Plant at Piedras Negras City, Coahuila.

Other Border Communities

The Commission also is exchanging water quality information concerning existing or proposed border sanitation projects at Piedras Negras and Ciudad Acuña, Coahuila, Douglas and Nogales, Arizona, Mexicali and Tijuana, Baja California. Information for the Tijuana flows and quality can be viewed at the U.S. Section's website. (www.ibwc.state.gov)

Nuevo Laredo International Plant Supervision Sanitation

The Commission supervised the operation and maintenance of the Nuevo Laredo International Wastewater Treatment Plant under Minute No. 297. This plant, with a treatment capacity of 31mgd (1360 lps) provides secondary treatment to Nuevo Laredo sewage before its discharge to the Rio Grande. The Commission administered the payments by the United States covering the operation and maintenance to ensure that operations meet the standards adopted by the United States and Mexico and to assist the Nuevo Laredo utility to build its operations capacity.

The Commission also promoted coordination between the Nuevo Laredo operating agency and the North American Development Bank in an effort to provide improved capacity for the agency to operate the sanitation system.

Aereal View of the International Wastewater Treatment Plant in Nuevo Laredo, Tamaulipas, Mexico

Nogales Sanitation International Plant Supervision

The Commission supervised the operation and maintenance of the Nogales International Wastewater Treatment Plant in Nogales, Arizona under Minute No. 276. The plant, with a treatment capacity of 17.2 mgd (754 lps) provides secondary treatment to Nogales, Arizona and Nogales, Sonora sewage and discharges the treated waters into the Santa Cruz River in the United States. The Commission arranged for payment by Mexico for treatment of Nogales, Sonora sewage. The United States Section of the Commission began the design of components that will improve treatment pending the longer term upgrade of the international plant.

The Commission coordinated, and brought to completion, the binational regional wastewater infrastructure planning effort under Minute No. 294. The effort resulted in proposals to upgrade and expand the international plant and outfall and for new collection works in Nogales, Arizona. In Nogales, Sonora, the plan calls for a new treatment plant and new conveyance, pumping and collection facilities. The two communities presented the proposals to the Border Environment Cooperation Commission for certification and began discussions on the financing elements with the North American Development Bank.

Tijuana (South Bay) International Plant Supervision

The Commission supervised the operation and maintenance of the international wastewater treatment plant in San Diego, California, which treats nearly one-half of the sewage in Tijuana, Baja California. The plant has a capacity to treat up to 25 million gallons per day (mgd) or 1,100 liters per second (lps) of sewage from that city. Mexico treats another 17-25 mgd (750 - 1,100 lps) of sewage at the San Antonio de los Buenos plant near the ocean in Tijuana. The United States and Mexico participate in the cost of operation and maintenance of the international facilities under IBWC Minutes Nos. 270, 283, 296 and 298. The Commission continued dialogue with region officials concerning plans for handling Tijuana sewage in excess of 50 mgd (2,200 lps).

View of the International Wastewater Plant, San Diego - Tijuana.

Tijuana Secondary Treatment Plant Design

The Commission continued discussions for final design of the international plant that will provide secondary treatment to Tijuana sewage before discharge to the ocean. The international plant currently treats that sewage to advanced primary levels under a first phase operation that began in 1998.

Mexicali Sanitation Project Construction

The Commission began supervision of the construction by Baja California of the pumping station, pressure line and treatment plant components of the Mexicali facility plan developed under Minute No. 294, and which was certified by the Border Environment Cooperation Commission in December 1997. This current construction is jointly funded by the United States and Mexico. Funding for the other components is being arranged by Baja California through the North American Development Bank and Japan's international development.

Other International Waters Studies

Border Groundwaters

The Commission coordinated border groundwater information exchange and model development for transboundary aquifers in the Rio Grande between the Amistad and Falcon international dams, in the El Paso-Juárez area, in the Santa Cruz basin in the Nogales-Nogales area, and the Colorado River Delta. The IBWC has published a summary of the El Paso-Juárez aquifer characterization effort concerning the Hueco Bolson and in coordinating the development of a binational model for that groundwater basin. The El Paso-Juárez effort also involves the El Paso Water Utilities; the Juárez Municipal Water Board, Mexico's *Comisión Nacional del Agua,* and the Texas Water Development Board.

.

San Diego-Tijuana Aqueduct

The Commission concluded Minute No. 301 on October 14, 1999, which facilitates planning level studies by the San Diego County Water Authority and Mexico's *Comisión Nacional del Agua* and Baja California authorities. The Studies will consider Colorado River to San Diego-Tijuana aqueduct alignments. Studies are expected to be complete in 2001. The studies are part of planning efforts by two communities facing water shortages: San Diego in 2010, and Tijuana in 2004. At the same time, the Commission began exploring coordination options for emergency water deliveries of a portion of Mexico's Colorado River waters to Tijuana utilizing the Southern California aqueducts.

Water Supply Studies at El Paso-Juárez

At El Paso-Juárez, the Commission is promoting dialogue concerning international questions that have arisen in the context of a Juárez mid and long-term water supply master plan development and a City of El Paso project to increase diversion of Rio Grande waters for municipal supply. The efforts are intended to reduce the two communities' reliability on limited groundwater supplies.

Participation in Conferences

Activities included the sponsorship of a drought conference with the United States Bureau of Reclamation and Mexico's *Comisión Nacional del Agua* in 1999 and preparations for a binational symposium in 2000 on the environmental health of the Rio Grande in the sparsely inhabited wild and scenic reach in the Big Bend-*Maderas del Carmen/Santa Helena* segment of this river in Texas and Coahuila/Chihuahua. The latter is a joint effort with the United States Department of the Interior and Mexico's *Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP).*

Relationship with the Border Environment Cooperation Commission

As members of the Board of Directors for the Border Environment Cooperation Commission, both Commissioners in 1999 participated in more than ten meetings of the Board and the Executive Committee, of which the Mexican Commissioner presides. In such meetings, various issues were discussed. Among them, the review of projects for certification; the review of requests for technical assistance; and the review of budgetary, legal and personal aspects, among other relevant topics.