



# **INTERNATIONAL BOUNDARY AND WATER COMMISSION**

UNITED STATES SECTION

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## **Managing Water Along the U.S. – Mexico Border**

**“Collaboration through the exchange of science and information is key to growing the pie.”**

Dr. Maria-Elena Giner, P.E.

Commissioner U.S. Section



# INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES SECTION

The International Boundary and Water Commission is responsible for **applying the boundary and water treaties** between the United States and Mexico. The USIBWC has a broad range of responsibilities, including:

- **Flood Control:** More than 500 miles of levees and 20,000 acres of flood plain
- **Water Delivery:** Ensure compliance with the 1906 Convention and 1944 Water Treaty for the Rio Grande and Colorado River
- **Dams and Hydroelectric Power Plants:** Manage two international dams with hydroelectric plants and four diversion dams
- **Sanitation:** Border sanitation with two international wastewater treatment plants in San Diego, CA and Nogales, AZ
- **Boundary Demarcation:** Maintain two international bridges and almost 800 monuments, markers and buoys that demarcate the U.S.-MX border



UNITED STATES POWER PLANT at Falcon Dam.



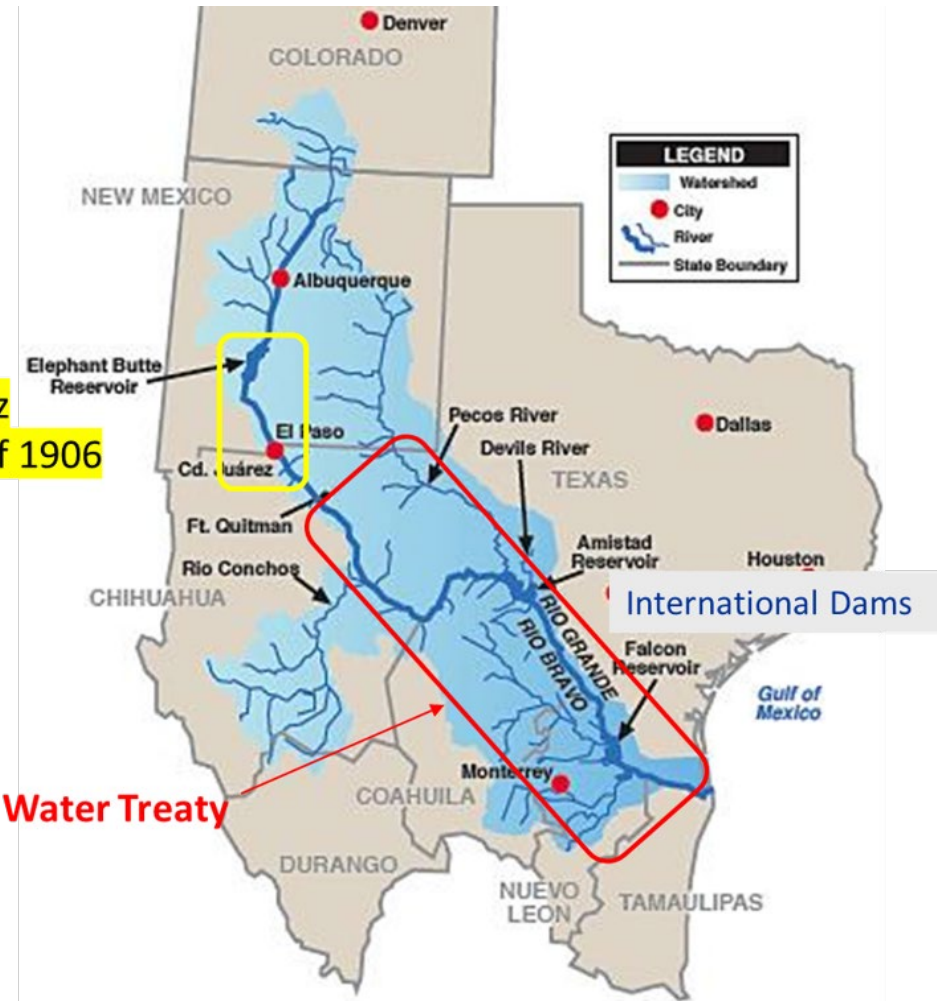


# Water Deliveries – 3 Basins, 2 Treaties, many challenges



El Paso-Juarez  
Convention of 1906

1944 Water Treaty





# 1944 WATER TREATY- COLORADO RIVER



- U.S. to deliver to Mexico a volume of 1.85 MCM/Year
- Challenges – **Salinity & Drought**
- **Cooperation**

- 1965
- Minute 218 (1965) – Recommendations on Colorado River Salinity Problem
  - Minute 241 (1972) – Improve Immediately the Quality of Water
  - Minute 242 (1973) - Solution to Salinity
- ↓
- 1975
- Minute 248 (1975) – Extension of Wellton-Mohawk Drain in Mexico
  - Minute 317 (2010) – Conceptual Framework for cooperative actions
  - Minute 318 (2010) – Adjustment of delivery schedules as a result of earthquake damage
  - Minute 319 (2012) -Pilot on investment in conservation, conserved volumes, reduced deliveries, water for environment, binational workgroups
  - Minute 323 (2017) – Extension of Minute 319 and adoption of the binational water scarcity contingency plan (5 year)
  - Minute 330 (2024) Expansion of Colorado River Temporary Measures



# Salinity on the Colorado River

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## Wellton-Mohawk Drain (1961)

- Began operation by Drainage District in 1961
- **Ground water and Drainage waters** included as part of Mexico's annual allotment

### Problem: Increase in Colorado River Salinity After 1961

- Introduction of highly saline waters combined with reduction in Colorado River flows caused a change in water quality
- Led to increased salinity of Colorado River Water at NIB  
**800 ppm (before 1961) to 1,500 ppm (after 1961)**

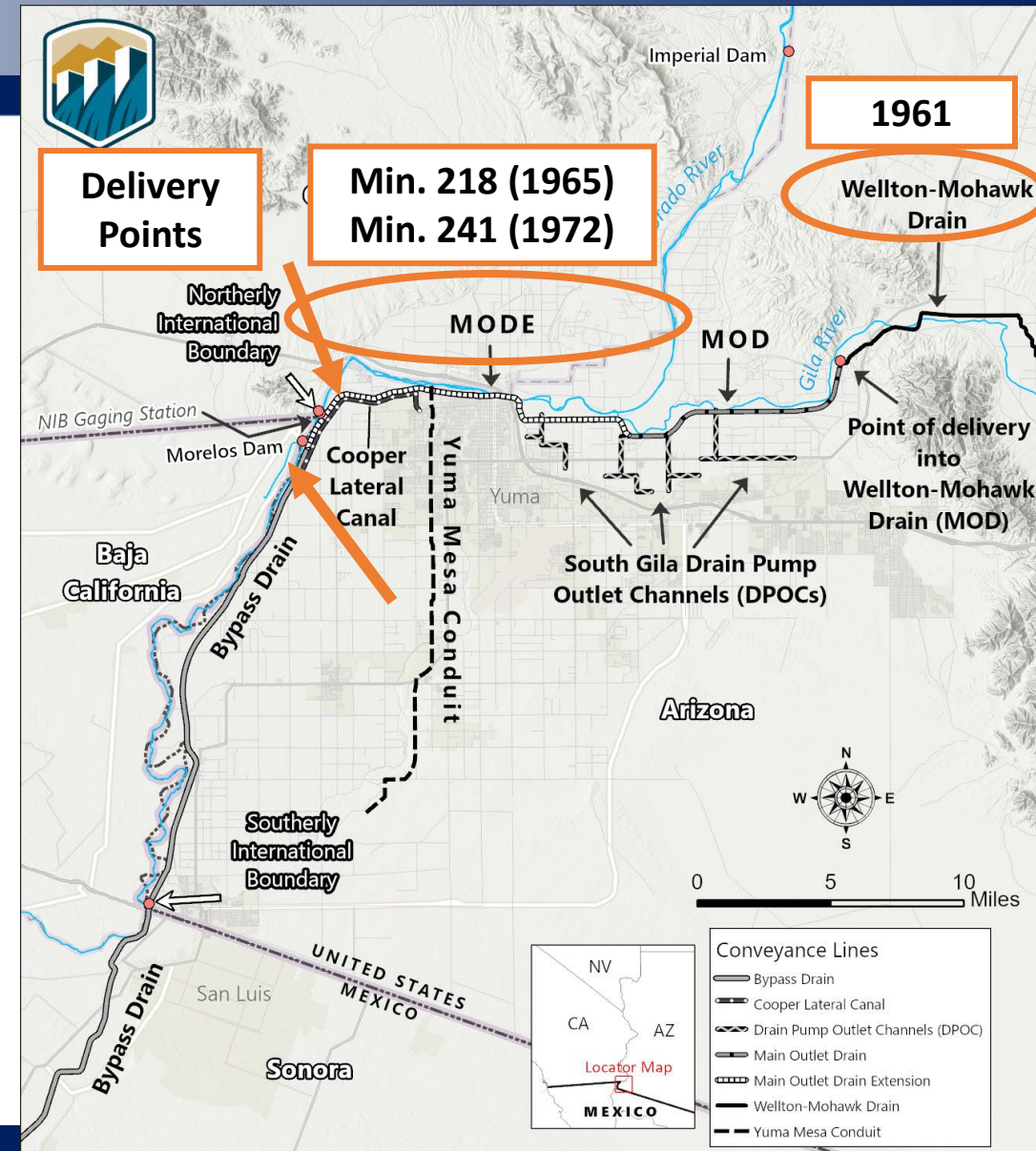
## • Mexico protested change in water quality

### • Reducing Salinity - Minute No. 218 (1965)

- 12-Mile channel constructed **to change delivery point of saline waters**
- Change in Operations: Monthly averages from **1,105 to 1,500 ppm**
- **Mexico reported issues** with water >1,240 ppm in Mexicali Valley

### • Extension to Reduce Salinity - Minute No. 241 (1972)

- Minute 218 extended to negotiate a more complete solution
- **Bypass of 118,000 ac-ft** annually of Wellton Mohawk Drainage
- Bypass waters replaced by **wells and waters from Colorado River**





# Salinity on the Colorado River

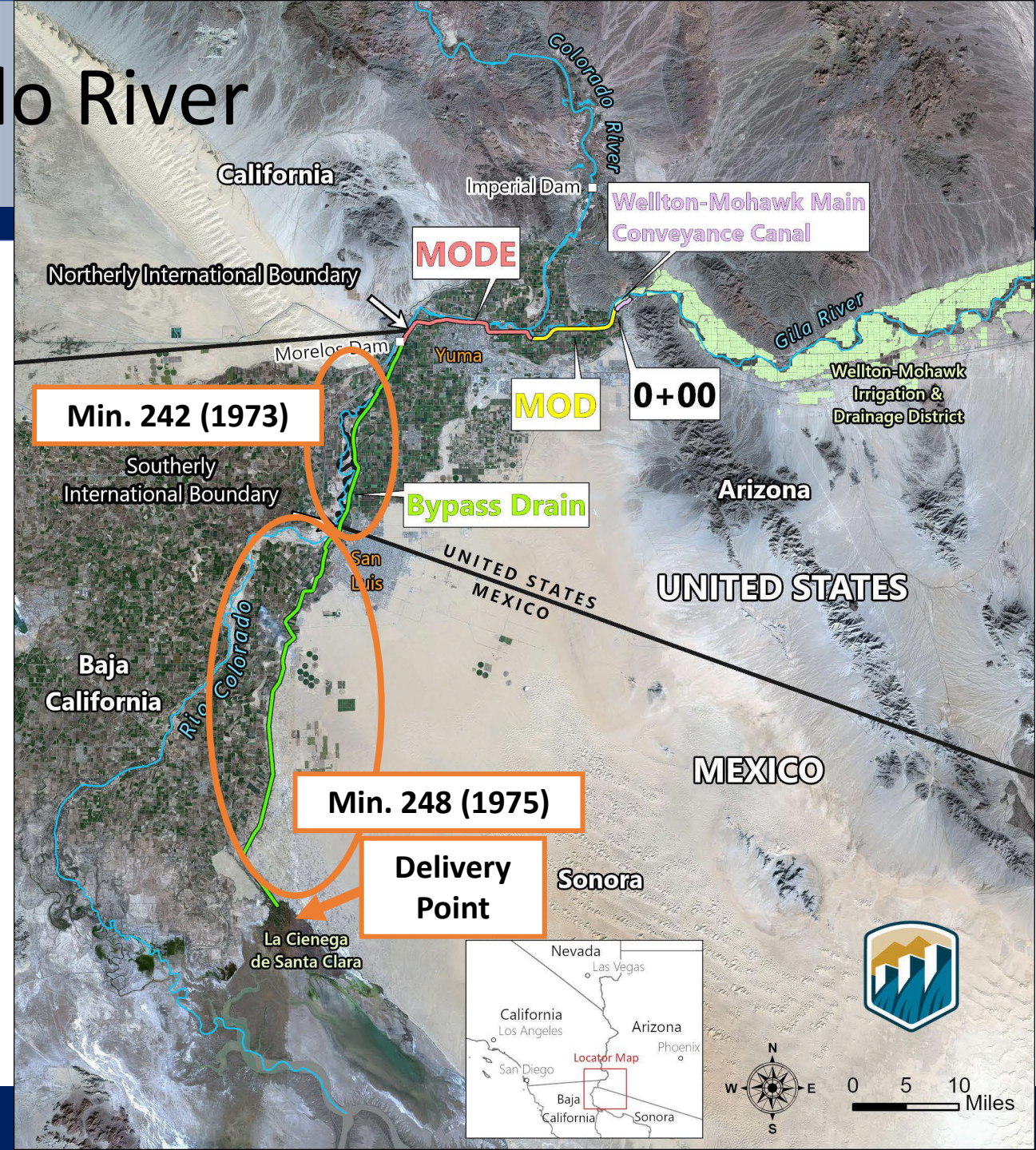
## Wellton-Mohawk Drain (1973 to Present)

### Minute No. 242 (1973)

- Developed the **salinity differential of 115 ppm +/- 30 ppm** over what arrives at Imperial Dam.
- **Extension of the Wellton-Mohawk Drain (Bypass Drain)** to send waters to Southerly International Boundary
- Led to development of **Yuma Desalting Plant** to treat Wellton-Mohawk Drainage Flows

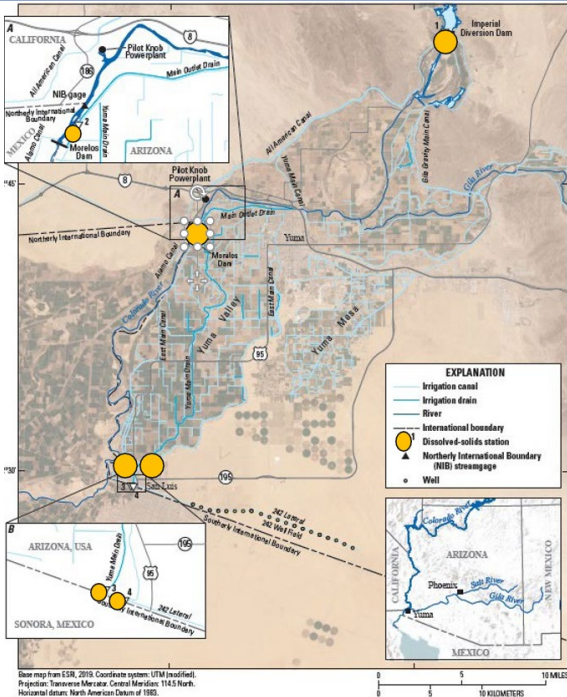
### Minute No. 248 (1975)

- **Bypass Drain Extended into Mexico** – 56km long and 10 cms
- Bypassed Drainage waters formed the Cienega de Santa Clara
- **Construction Cost** \$16M funded by U.S. (1975-1977)
- **Operation & Maintenance** \$225,000 per year funded by U.S.





# SALINITY ON THE COLORADO RIVER



Key measuring points used for salinity modelling.



- **Minute 242 (1973) – Binational Salinity Workgroup**
  - Continues to **meet at least twice per year** to review technical methods and quality control of field, lab and reporting data in both countries to help in the analysis of salinity within the framework of this Minute.
- **Min 323 D.1 (2017) – Adoption of Water Scarcity Plan**
  - **D.1.a. Modernize salinity monitoring equipment** so that both countries can utilize real-time salinity levels in daily operational decision making
    - **D.1.b.** The U.S. will fund, install, operate and maintain electrical conductivity monitoring equipment at **key measuring points** including Imperial Dam, Morelos Dam, and the SIB.
    - **D.1.c.** Develop **binational reporting tools** to make real-time data available to operators in both countries.
    - **D.2.** On an ongoing basis, consider and **evaluate the data** in the context of the current procedures for salinity management and provide any recommendations
- **Min 330 (2024) – Temporary Reductions**
  - Additional salinity considerations

[Map of Yuma area salinity sites \(NWISmapper\)](#)



# WATER QUALITY ON THE RIO GRANDE

## Goal: Binational Watershed Protection plan

**Phase I** – Water quality sampling, data assessment and analysis, modelling and building consensus for the final report (2014 – 2021)

**Phase II** – Sources and recommendations - ongoing



**1944 Water Treaty requires measurements at 31 stations** for fecal coliforms, water temperature, PH, dissolved oxygen, specific conductance, and flow. An additional 60 stations and 16 additional parameters were added in 1999.



## Texas Clean Rivers Program- USIBWC administers the Rio Grande basin for the Texas Commission on Environmental Quality

- Routine water quality monitoring program, special studies, and citizen stakeholder forums
- TDS does not meet U.S. standards in three segments- 2 in Rio Grande mainstem, 1 in the Pecos River (3 of 14)
- Partnerships in monitoring
  - IBWC field offices
  - Laredo Health Department
  - U.T. Rio Grande Valley
  - U.T. El Paso
  - Rio Grande International Study Center
  - TCEQ field offices
  - El Paso Water





# SALINITY ON THE RIO GRANDE

**Minute No. 223 (1965)** – Measures for Solution of the Lower Rio Grande Salinity Problem

- **El Morillo Drain waters** – Identifies return agriculture flows as source of salinity issues.
- Approves the construction of 37 km canal with capacity of 3 cms in Mexico
- Cost share of 50% for each country for both capital and operation and maintenance.

**Minute 269 (1984) and Minute 282 (1990)** – addressed some rehabilitation needs

**Minute No. 303 (2000)** – Operation and Maintenance of the Jointly – Financed Works for Solution of the Lower Rio Grande Salinity Problem

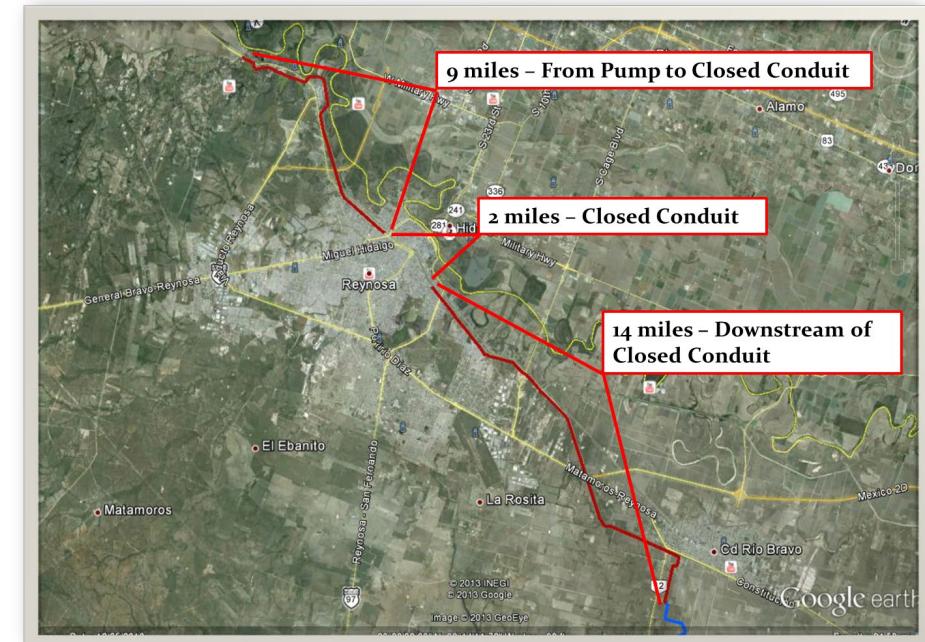
- Capital improvement project at pump station and trash and sediment removal canal with 50% cost share for each country. Permanent source of funding moving forward.



Control Panel and Pumps



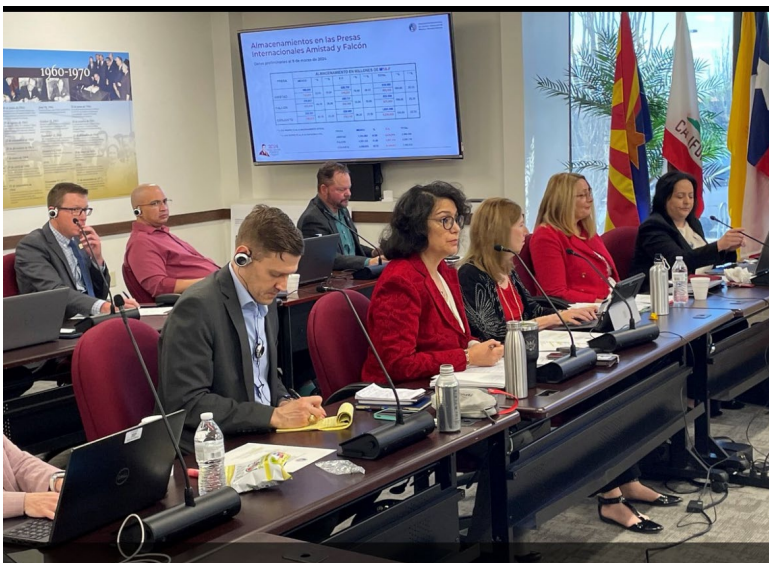
New Overhead Crane for Use on Pump Maintenance





# BINATIONAL COOPERATION

- IBWC and CILA Commissioners meet at least monthly to discuss water quality, water delivery, and binational infrastructure.
- **Members**
  - **United States:** IBWC, Bureau of Reclamation, Department of Interior, and U.S. Border States
  - **Mexico:** CILA and National Water Commission
  - **Observers:** Department of State and Secretariat of Foreign Relations
- **Two Federal Agencies, 1 International Commission**
  - Legal framework
  - Institutional design
  - Scientific and technical water resources management
  - Strategic activities to address conflict



**Binational Policy Workgroup  
meeting in El Paso, TX**

Source: Kittikhoun, Anoulak & Schmeier, Susanne. (2020). River Basin Organizations in Water Diplomacy.