

# Using RiverWare to Explore Binational Basin Management Scenarios



IBWC



CONAGUA



DOI



TCEQ

2023 RiverWare User Group Meeting



## **Mission**

The International Boundary and Water Commission, United States and Mexico, is responsible for applying the boundary and water treaties between the two countries and settling differences that arise in their application.

# 1944 Water Treaty

## Article 4

Ft. Quitman, TX – Gulf of Mexico



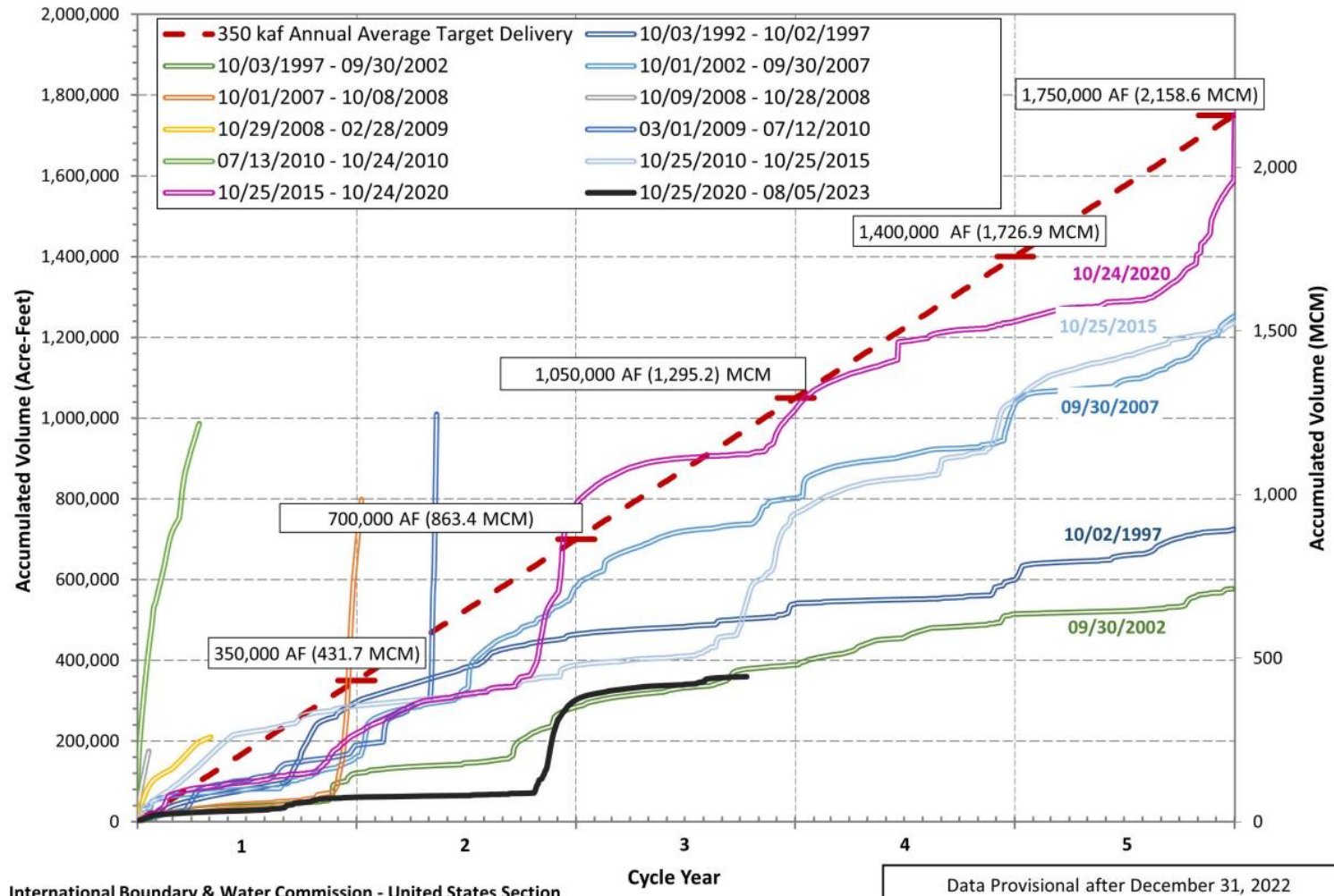
# 1944 Water Treaty – Rio Grande Summary

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- Mexico delivers water to the U.S. from Ft. Quitman to the Gulf of Mexico.
  - U.S. Receives 1/3 of the discharge from six Mexican tributaries named in the treaty.
  - This 1/3 shall not be less, as an average amount in cycles of 5 consecutive years, than 350,000 acre-feet annually.
  - Current cycle ends in October 2025.
- In the event of extraordinary drought or serious accident, Mexico may make up any deficit in the next 5-year cycle.
- The 5-year cycle ends early if U.S. Conservation capacity fills at both dams.



**Rio Grande River Basin**  
**Estimated Volumes Allotted to the United States by Mexico from Six Named Mexican Tributaries**  
**and Other Accepted Sources under the 1944 Water Treaty**  
**Current Cycle: October 25, 2020 thru August 5, 2023**



# Minute 325

The Commission met at 10:00 a.m. on October 21, 2020 in Ciudad Juarez, Chihuahua near International Monument No. 1 to consider measures to end the current Rio Grande water delivery cycle without a shortfall, to improve the predictability and reliability of Rio Grande water deliveries to users in the United States and Mexico, and to permit the adoption of measures that may supply the municipal water needs of Mexican communities located along the Rio Grande downstream from Amistad International Dam in the event of an emergency.

  
Jayne Harkins  
U.S. Commissioner

  
Humberto Marengo Mogollón  
Mexican Commissioner

  
Sally E. Spener  
U.S. Section Secretary

  
José de Jesús Cuévano Grano  
Mexican Section Secretary



“...to improve the predictability and reliability of Rio Grande water deliveries to users in the United States and Mexico....”

# Established Work Groups

## Policy Work Group

- Established to oversee the Hydrology Work Group and to consider water policies in the basin.
- Goal is to develop a Minute by December 2023 that provides increased reliability and predictability in Rio Grande water deliveries to users in the United States and Mexico.

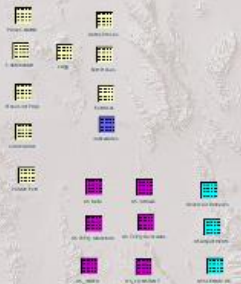
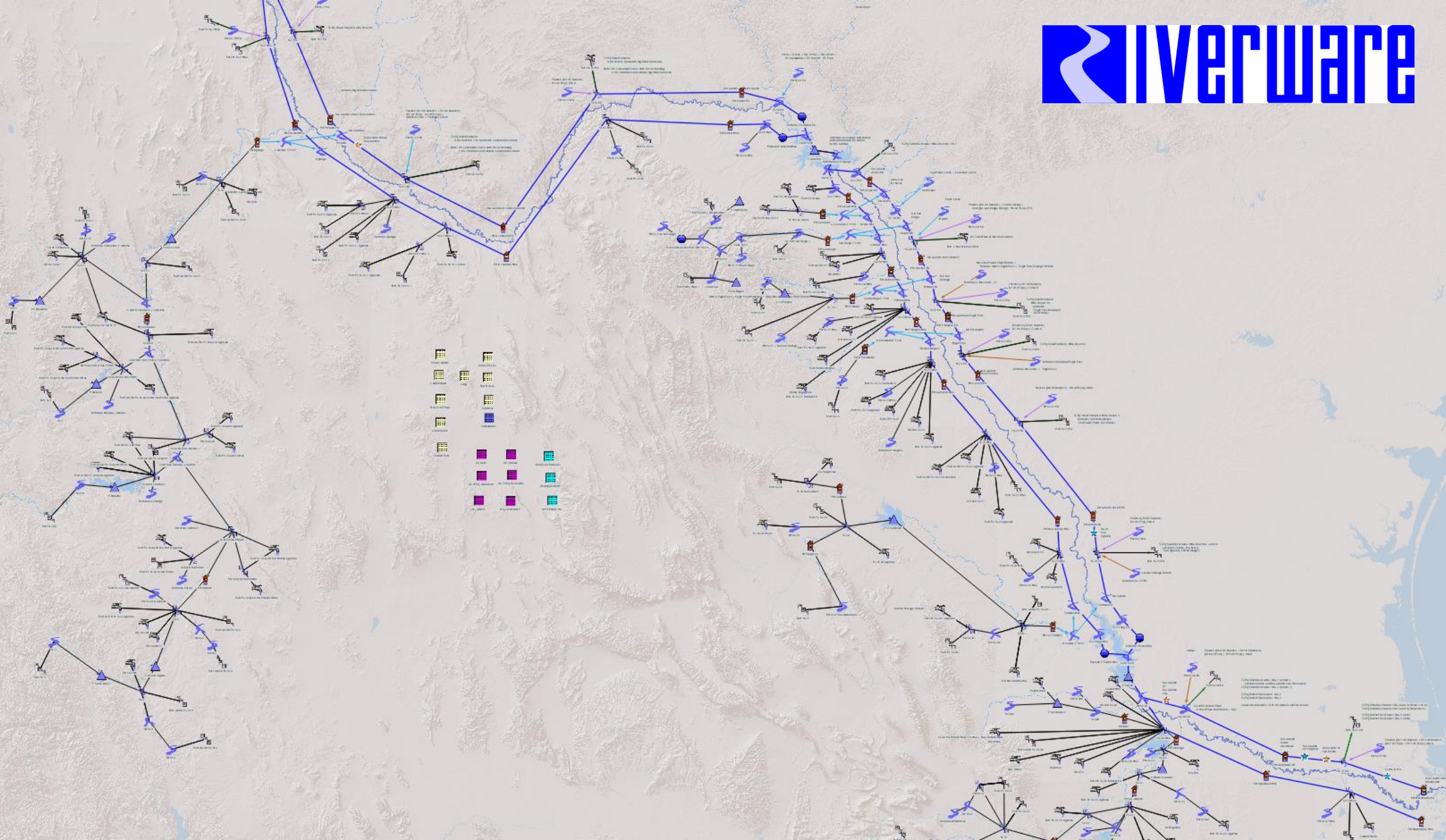


## Hydrology Work Group

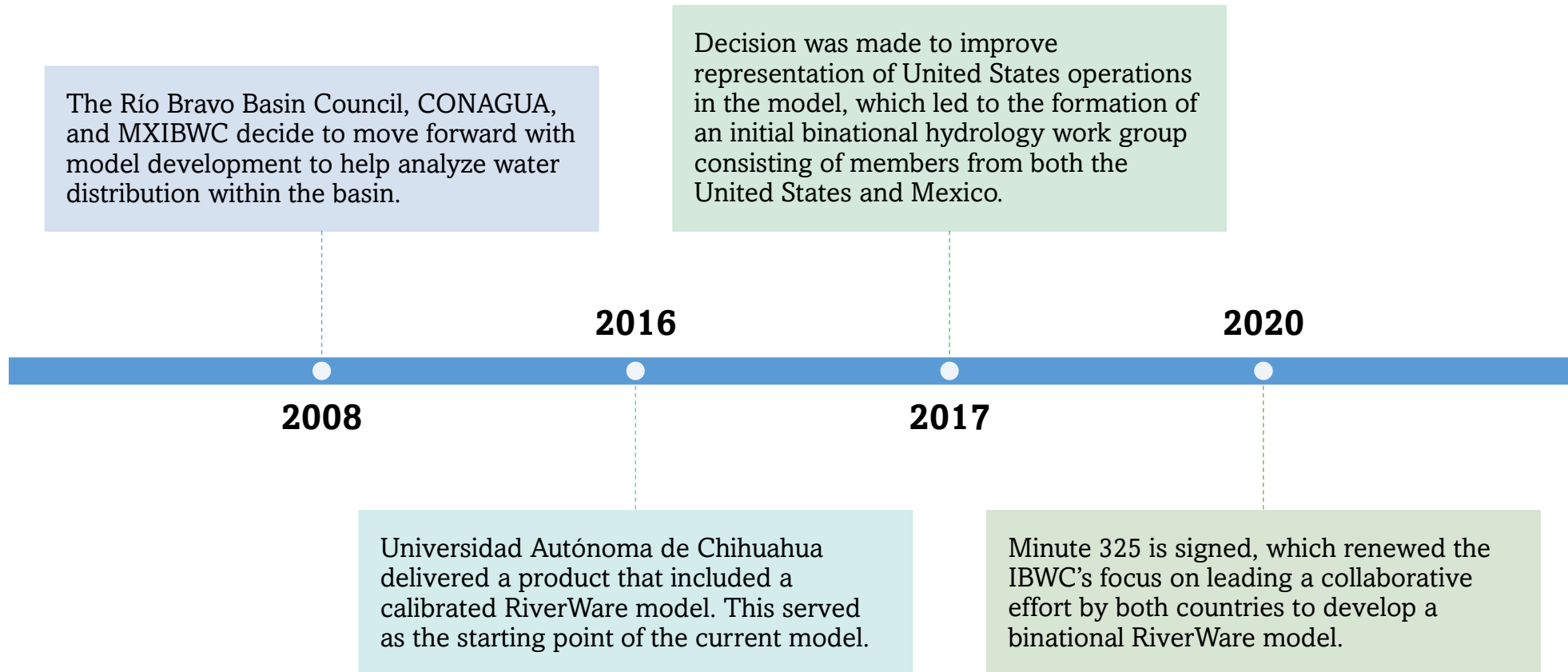
- Established a Rio Grande Hydrology Work Group with technical experts from both countries.
- Purpose is to enhance information exchange, develop **a binational Rio Grande model, and use the model to analyze water management scenarios.**







# Model/Hydrology Work Group Background



# Modeling Workflow

- Develop a baseline scenario that couples current basin water management practices with 1950-2008 input hydrology.
- Develop alternate management scenarios for the same input hydrology.
- Compare results of alternate scenarios to baseline scenarios using performance metrics focused on:
  - 1944 Treaty Compliance
  - Equity of water distribution
  - Delivery volume to water users
  - Potential for Environmental Benefit

# Goal

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## What is it Good for?

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Establishing a baseline scenario and comparing it with alternative scenarios for planning purposes.

Comparing the impact that different management policies have on the distribution of water.

Identifying general rules to manage the basin.

## What is it NOT good for?

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Simulating daily operations.

Forecasting or predicting specifics.

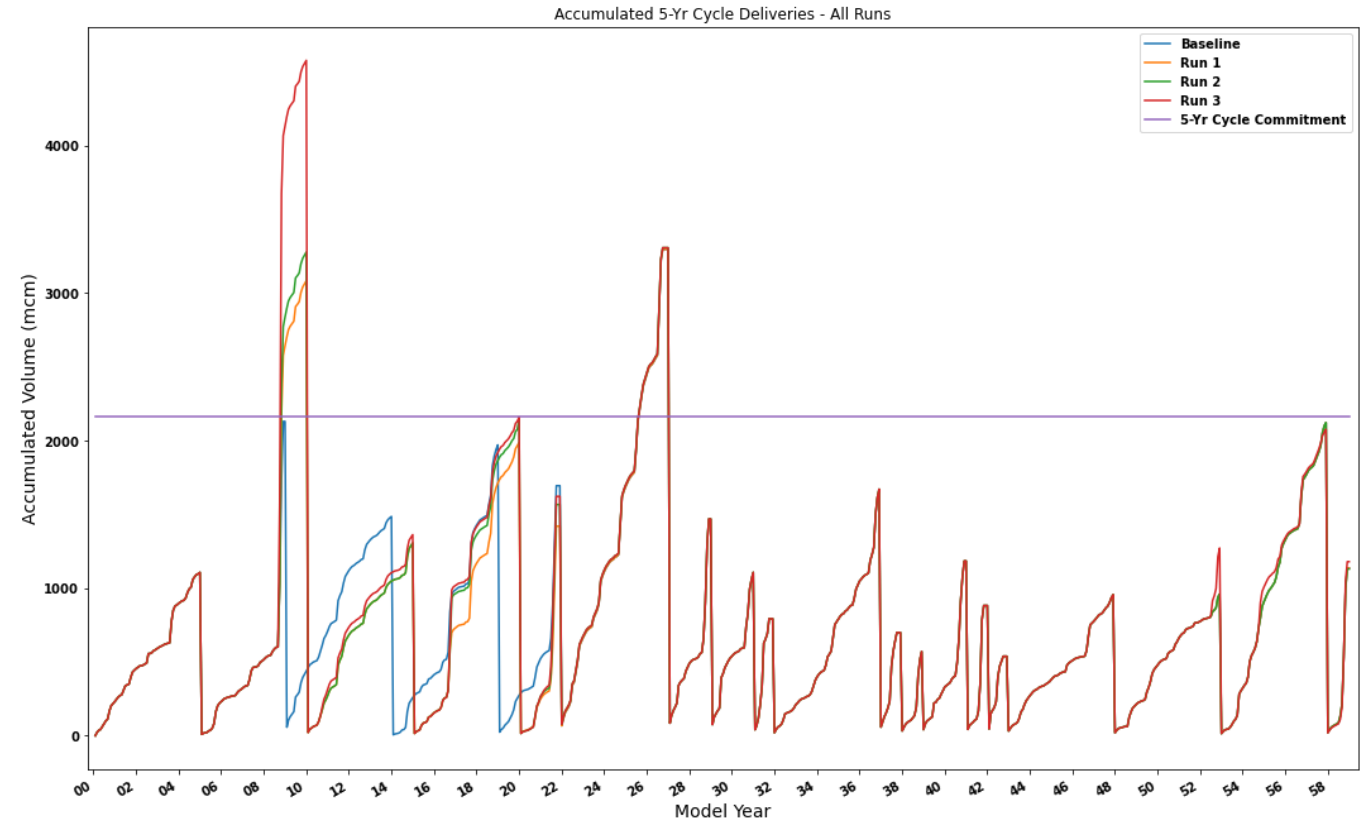
Results are comparable only with the reference scenario, NOT with a historical scenario or any other specific circumstances that occurred in the past on the basin.



# Where are we?

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- Version 1.0 near completion.
- Several scenarios have been developed.
- Data visualization in development.
- On track to support development of a new Treaty Minute by the end of 2023.





# Questions?

## The Team

- Kathy Alexander, TCEQ
- Hector Eduardo Álvarez Novoa, CONAGUA
- Erick Alberto Chávez Holguín, IBWC
- Adrian Cortez, IBWC
- Jose Davila, TCEQ
- Aldo Héctor García Servín, IBWC
- Andrew Garcia, TCEQ
- Manuel Rafael Rosales González, CONAGUA
- Delbert Humberson, IBWC
- Isela Jazmin Molina Torres, CONAGUA
- Stephen Lantz, DOI
- Samantha Stiffler, IBWC