International Boundary and Water Commission
United States Section

USIBWC Lower Rio Grande Citizens Forum Public Meeting in Mercedes, Texas, on April 17

The U.S. Section of the International Boundary and Water Commission (USIBWC) Lower Rio Grande Citizens Forum board will host an in-person and virtual public meeting on:
Thursday, **April 17, 2025, from 3-5 p.m. CDT**

- **Joseph Tritz, USIBWC Maintenance Worker Supervisor,** will present Lower Rio Grande Flood Control Project updates.

- **Ivan Santos, Graduate Research Engineer with Research, Applied Technology, Education, and Service, Inc, Rio Grande Valley,** will discuss the development of a demonstrable hydrologic forecasting framework and prototype decision support tool.

The public meeting will be held in person at:
USIBWC Mercedes Field Office
325 Golf Course Rd.
Mercedes, TX 78570

The public meeting will also be held virtually. Click here to join the meeting. If possible, it may be helpful for you to test connectivity on your own prior to the meeting by clicking on the "Join" link and ensuring your camera and microphone are functioning. Or join by phone: +1 915-320-4718,,118647706# Phone conference ID: 118 647 706#

For those connecting via phone, the presentations will be available before the start of the meeting. Go to the USIBWC Citizens Forum page at https://www.ibwc.gov/citizens-forums-past-meetings/ and look for the Lower Rio Grande Citizen Forum meeting.

If you would like to speak during the public comment period, please sign up by contacting Frankie Pinon at frankie.pinon@ibwc.gov or 915-832-4716 by noon on April 14, 2025.

Media Contact :

Frankie Pinon
frankie.pinon@ibwc.gov
915-832-4716

LOWER RIO GRANDE CITIZENS FORUM
Thursday, April 17, 2025, from 3-5 p.m. CDT

USIBWC Mercedes Field Office
325 Golf Course Rd.
Mercedes, TX 78570
And Via Teams

<u>Agenda</u>

- **Welcome and Introductions** – USIBWC Citizen Forum Board

- **Joseph Tritz, USIBWC Maintenance Worker Supervisor,** will present Lower Rio Grande Flood Control Project updates.

- **Ivan Santos, Graduate Research Engineer with Research, Applied Technology, Education, and Service, Inc, Rio Grande Valley,** will discuss the development of a demonstrable hydrologic forecasting framework and prototype decision support tool.

- **Public Comment**

- **Board Discussion**

- **Suggested Future Agenda Items**

If you have a disability that you wish to self-identify confidentially that requires accommodation, please advise us ahead of time. For more information call 915-832-4716 or email frankie.pinon@ibwc.gov

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Microsoft Teams meeting

Join on your computer, mobile app or room device: <u>Click here to join the meeting</u>.

Meeting ID: 272 609 818 006
Passcode: Jm7Be6vo

<u>Download Teams</u> | <u>Join on the web</u>

Or call in (audio only)

+1 915-320-4718,,118647706#

Phone conference ID: 118 647 706#

USIBWC

OPERATIONS DEPARTMENT

LOWER RIO GRANDE FIELD OFFICE

Joseph Tritz, O&M Supervisor
Juan F. Uribe, RM

April 17, 2025

Levee Grading and Surface Repair

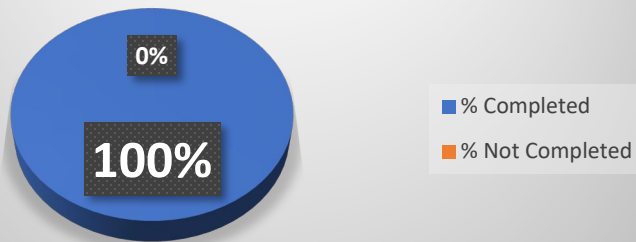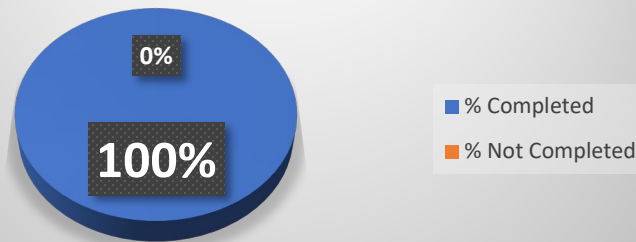- Completed 6.2 miles as per MOA with Border Patrol on the river levee.

- Completed 33.7 miles of in-house levee resurfacing of interior floodway.

- Graded and repaired 18.4 miles on the River Levee

Levee Resurfacing - FY 25, 2nd Quarter

0%

100%

- % Completed
- % Not Completed

Levee Grading - FY 25, 2nd Quarter

0%

100%

- % Completed
- % Not Completed

Pilot Channel and Drain Desilting

- A total of 15,000 yd^3 are scheduled to be completed by the end of FY 2025.

- 8,000 yd^3 have been desilted to date.

Pilot Channel and Drain Desilting – FY 25, 2nd Qtr
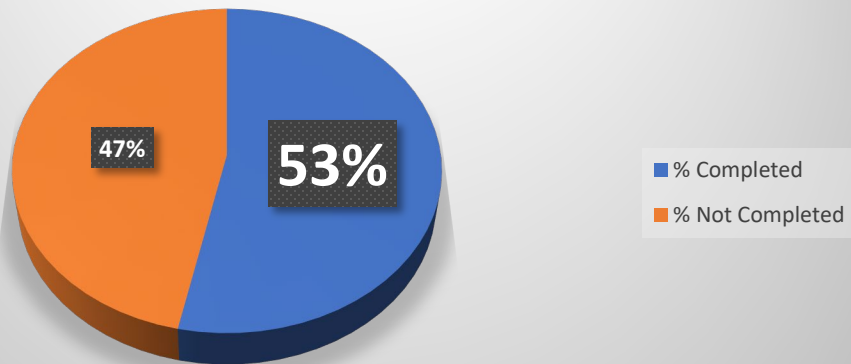
47%

53%

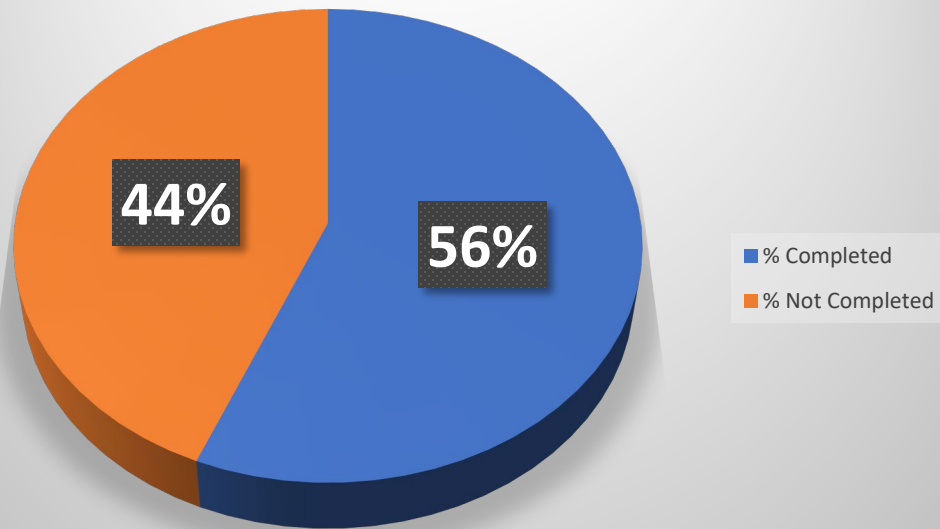■ % Completed
■ % Not Completed

Mowing and Brush Clearing

- A total of 4,500 acres have been mowed to date.

Mowing and Brush Clearing

44%

56%

■ % Completed
■ % Not Completed

Floodgate Maintenance

- Maintenance of 10 floodgates are to be completed in FY 2024.

- Looking to begin in Mid-February and completing by the end of April 2024.
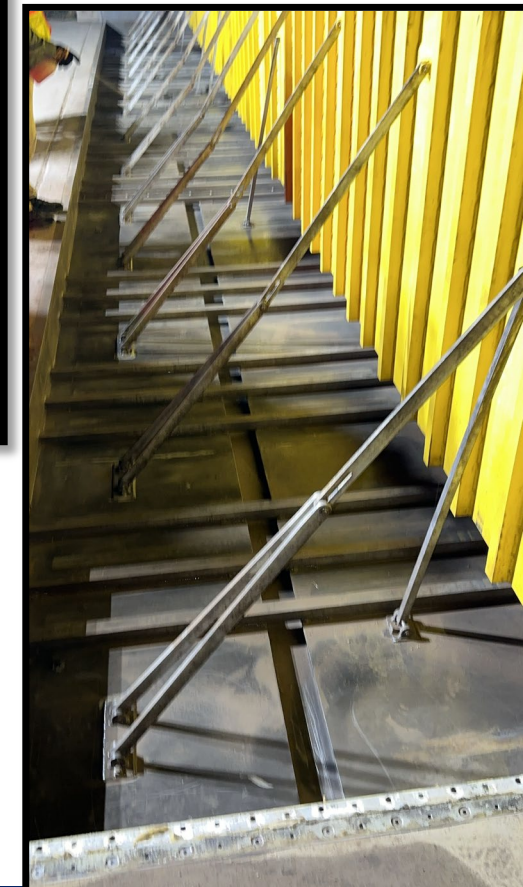
Floodgate Maintenance

20%

80%

- % Completed
- % Not Completed
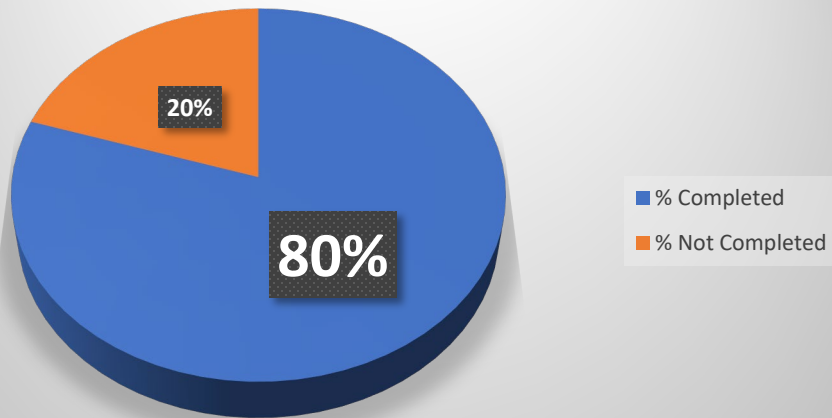
March 2025 Rainstorm Event

- Operated Anzalduas and Retamal on the Rio Grande

- Patrol levees to assess flooding and oversee pump placement of levees

- Monitored and operated structures to control flows into and out of floodways.

- Assisted other agencies and provided them with plastic liner to prevent levee erosion.

Network: Mar 30, 2025 at 1:50:20 PM CDT
26.1275° N, 97.9369° W
191° S
50-98 Matamoros Ave
Mercedes TX 78570

Santa Monica

Anzalduas Dam

Harlingen

Weslaco

Retamal Dam

Questions

Arroyo flooding April 2025

John Goolsby USDA-ARS, Edinburg, TX (Ret.)

U.S. International Boundary and Water Commission

Mercedes, TX

Arroyo in Harlingen at McKelvey Park on Business 77 looking downstream

Arroyo in Harlingen at McKelvey Park on Business 77 looking downstream

Arroyo in Harlingen at McKelvey Park on Business 77 looking downstream

Arroyo in Harlingen at McKelvey Park on Business 77 looking upstream torwards US 77

Brush Clearing and Revegetation on Arroyo to improve water flow

- Clearing and revegetation – 2021
- Removed invasive non-native vegetation
- Selective clearing of brush along river bank
- Left ebonies and other large native trees
- Replanted with low growing native plants

Selective brush Clearing on Arroyo in Harlingen at McKelvey Park on Business 77

Replanting of native Low-growing plants along bank of Arroyo in Harlingen at McKelvey Park

Blackberries flourished after replanting

Native low-growing daisies

Selective clearing included leaving all ebonies and most large trees

Increased water flow and preserved native ecosystem

Summary

- 19 Inches of rain in Harlingen around Arroyo Colorado watershed

- Selective brush clearing and replanting of low-growing native plants increased water flow and prevented overtopping of flood waters

RATES INC

Enhancing Hydrologic Forecasting in the Rio Grande Basin

Research, Applied Technology,

Education, and Services, (RATES, Inc.)

Christopher Fuller - PI, Ivan Santos - PM

Project Insights

- **Project Start:** July 2, 2024

- **Project End:** June 31, 2026
- **Total Duration:** 24 months

- **Christopher Fuller**, PhD - Principal Investigator
- **Ivan Santos**, MS - Project Manager

- **Funding Source:** NASA Jet Propulsion Laboratory (JPL)
- **Key Partners:** US-International Boundary Water Commission (US-IBWC) and the Regional Flood Planning Group (RFPG-15)
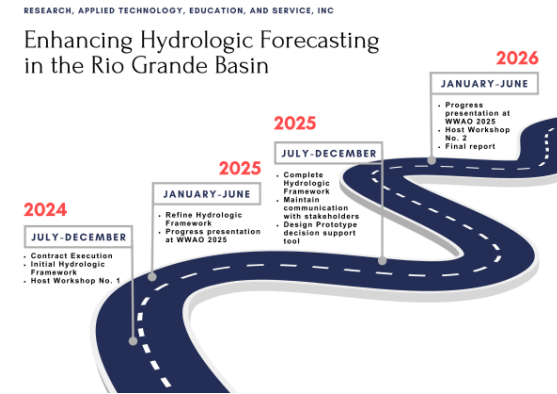

Project Timeline (July 2024-June 2026).

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Introduction

The Rio Grande Basin

The Rio Grande Basin (**RGB**) is a **binational** region that extends from the southern Colorado Rockies and stretches south to the Gulf of America. The RGB covers multiple states across both nations:

Rio Grande Basin boundaries.

- **US:** Colorado, New Mexico, Texas.

- **MX:** Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas.

The Rio Grande River

The Rio Grande is one of the longest rivers in North America, totaling more than 1,800 miles in length. In Texas, the Rio Grande has a length of 1,273 miles (**73%**), that also serve as a natural boundary between the United States and Mexico.

The Rio Grande River is unique:

- Serves as a natural boundary between two nations,
- Large Biodiversity and Conservation Areas,
- Supports Irrigation Supply,
- Great Cultural and Historical Significance,
- Represents Environmental Challenges, and
- Endless Recreational Activities.

The Rio Grande and it's tributaries. Author: Kmusser.

Water Availability

During the decade from 2011 to 2020, total U.S. inflow into the Amistad International Reservoir was 33% less than the decade between 1981 and 1990, an overall decrease of 4.6 million-acre

feet, the US-IBWC research shows. Meanwhile, Falcon International Reservoir received 21.5% less than it did in the 1980s.

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Project's Objective

RATES is working towards the development of **1)** a demonstrable **hydrologic forecasting framework** and **2)** prototype decision support tool (**PDST**), to assist stakeholders within the Rio Grande Basin between the Amistad Reservoir and the Gulf of America with water supply forecasting. The hydrologic model will be a demonstratable model with the potential to be run continuously.

Other Outcomes

- Determine the benefits and impact that NASA datasets and technologies can have at the local level.
- Explore with the partners how data gaps and/or modeling deficiencies can be addressed with supplemental data gathering techniques, such as low-cost in situ observations from Real-Time Hydrologic Stations (RTHS).

How to achieve it?

- Analyzing and documenting how NASA data and technology can be applied to support water supply decision making by

engaging in co-creation of knowledge with municipalities, irrigation districts, and other stakeholders in the basin.

- Hosting workshops (2) with stakeholders and decision makers, assess how the modeling framework, augmented with NASA data and technology, can be leveraged to support water supply.
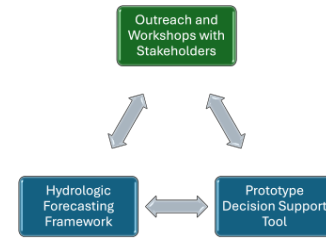
Project Interactions

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Study Area

Initially the hydrologic model will cover the Texan side of the RGB watershed, that goes from the Amistad International Reservoir to the Gulf of America.

The binational nature of the RGB basin demands to include as much as possible the Mexican side of the basin for these modeling efforts to better address the hydrologic features and get a more realistic representation. Major Texan cities within the study area include:

- Laredo
- El Paso
- Eagle Pass

Modeling area comparison.

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Modeling Framework

The hydrological modeling forecasting framework will be developed using USACE's HEC-HMS software and will be fed with NASA datasets such as:

- Shuttle Radar Topography Mission (SRTM),
- Integrated Multi-satellitE Retrievals for GPM (IMERG),
- Soil Moisture Active Passive (SMAP),
- Modern-Era Retrospective analysis for Research and Applications, Version 2 (MERRA-2),
- Surface Water and Ocean Topography (SWOT).

Additionally, US-IBWC and USGS historical flow and storage-discharge observations will be utilized to calibrate and increase

water accuracy.
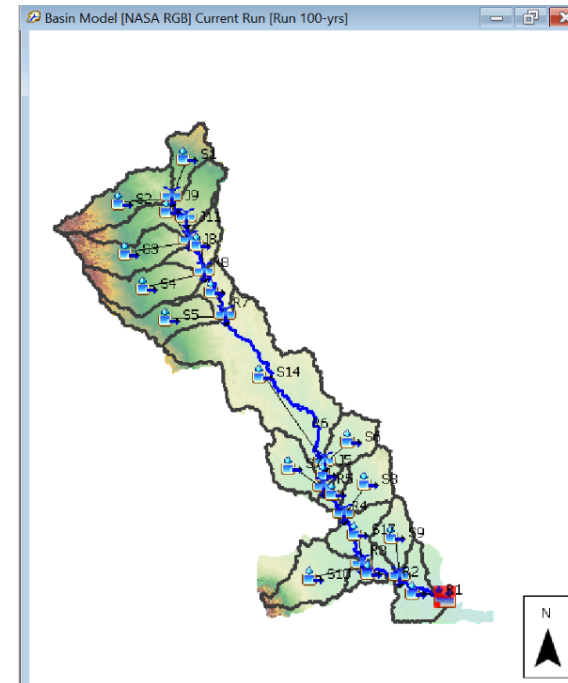
Initial Hydrologic Model Set up developed in HEC-HMS.

Some datasets typically used to model hydrologic features such within the US (i.e., USDA, USGS, NOAA, etc.), tend to lack of information in the Mexican side of the basin which adds more complexity to model watersheds like the RGB, however NASA products rely on satellite observations which provides a worldwide view, making complex areas like the RGB basin more suitable to model.
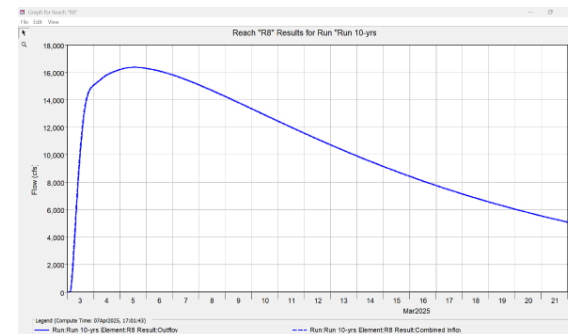
Observed discharge (cfs) at the Rio Grande segment near the City of Eagle Pass.

Prototype Decision Support Tool (PDST)

The Prototype Decision Support Tool (PDST) will be designed for the stakeholders, starting its development by Quarter 5. It will be developed based on the output obtained from the hydrologic model forecasting framework and the feedback obtained from the stakeholders.

Outreach and Partnerships

RATES will host two (2) workshops with stakeholders and decision makers to address their needs and use them as guidelines towards the deevelopment of the hydrologic framework and PDST. These interactions and additional outreacha ugmented with NASA data and technology will help to support their water supply challenges.

Project Outreach Activities.

Outreach conducted at:

- **2024** WWAO Annual Conference at University of Colorado Boulder, Denver.
- **May 15th, 2024**: Region M Meeting.

- **2024** Del Rio, TX Workgroup.
- **Nov 5th, 2024:** Workshop No. 1. Laredo, TX.
- **April 17th, 2025:** USIBWC Lower Rio Grande Citizens Forum
- **May 13-15th, 2025:** WWAO Annual Conference at University of New Mexico. Albuquerque, NM.

Project Partners:

Project Partners: US-IBWC, RFPG-15, TCEQ, TWDB, RGV-STF.

Initial outreach interactions indicates:

- A forecasting time frame between 1 month and 3 months is enough to suit stakeholders' water supply needs.
- Most stakeholders experience water shortages in between six and twenty-four months.
- US-IBWC is presently working on a model to forecast near term streamflow's using historic data.
- TCEQ employs a water master for the Rio Grande that acts as "air-traffic control" for water allocations.
- Feedack is continuosly reviewed and compiled though our interactive feedback dashboard .

Photo taken during Workshop No. 1 at Laredo, TX in November 2025.

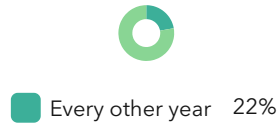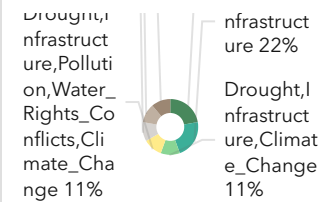## Interactive Feedback Dashboard

Enhancing Hydrologic Forecasting in the Rio Gra...

Project's objective: RATES is working towards the development of **1)** demonstrable hydrologic forecasting framework and **2)** prototype decision support tool for the stakeholders within the Rio
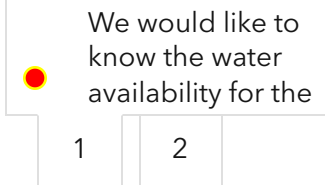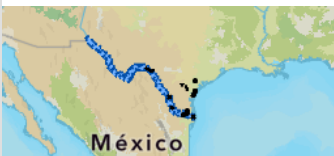
How often do you ex...

■ Every other year   22%

Main challenges rega...

Drought,Infrastructure,Pollution,Water_Rights_Conflicts,Climate_Change 11%

nfrastructure 22%

Drought,Infrastructure,Climate_Change 11%

How can water suppl...

● We would like to know the water availability for the

| 1 | 2 |

Study Area and Rio G...

Esri, Tom...   Powered by Esri

◄   Stud...   ►

How often do you fac...

■ Every 2 years   43%

■ Every 5 years   14%

Most optimal forecas...

■ <1 month   3

■ <1 week   1

What are the primary...

■ Groundwater, Aquifer_Spri...   1
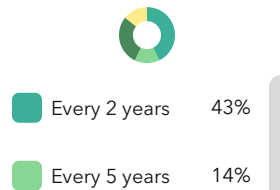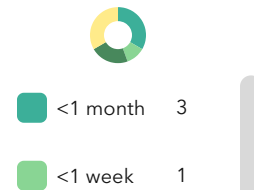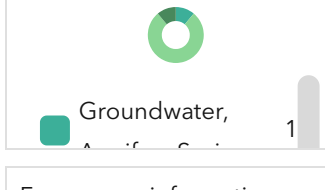
For more information or

Enhancing Hydrologic Forecasting in the Rio Grande Basin Interactive Feedback Dashboard.

Enhancing Hydrologic Forecasting in the Rio Grande Basin

Water Supply Situation and Key Challenges

City where your organization is:

-Please select- ▼

What are your primary sources of water supply?

Select all applicable options.

☐ Rivers and Streams   ☐ Lakes   ☐ Groundwater

☐ Aquifers   ☐ Springs   ☐ Desalination

Share your Feedback

Scan the QR code or use the link below to submit your feedback in regard to water supply in the Rio Grande.

Scan or visit: https://arcg.is/1qvTvS1

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Next Steps

Quarter   3-4

January 2025 -June 2025:
-Continuous improvement to the hydrologic modeling framework and development of PDST.
-Mantain engagement with stakeholders.
-Progress presentation at 2025 WWAO Annual Conference at Albuquerque, NM.

Quarter   5-6

July 2025 - December 2025:
-Complete Hydrologic Framework
-Continuous refinement of the prototype decision support tool.
-Maintain engagement with stakeholders.

Quarter 7-8

January 2026 - June 2026:
-Host Workshop No. 2.
-Progress presentation at 2025 WWAO Annual Conference.   -Final Report.

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Acknowledgement

International Amistad Reservoir. Source: US-NPS

About RATES, Inc

RATES, Research, Applied Technology, Education, and Service is a 501(c)3 Not for Profit Corporation formed to promote and coordinate the collaborative and cooperative use of technology by and among colleges, high schools, public schools, community school districts, public and school libraries, health care facilities, government offices, businesses, health and educational professionals, other educational and community service organizations and community residents for the benefit of the collaborating organizations, their clients, and community residents. For more information, visit: RATES website. Contact us:

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