

## The Second Joint TWDB-UTA-NIDIS Workshop on Texas Forecast-informed Reservoir Operation (FIRO)

**Date:** Sep 21-22, 2023

**Location:** University of Texas at Arlington, Nedderman Hall, Rady Room (6th floor), Arlington, TX

**Sponsors:** National Integrated Drought Information System (NIDIS)

**Organizers:** The University of Texas at Arlington (UTA), Texas Water Development Board (TWDB), and National Oceanic and Atmospheric Administration

### Goals and Objectives:

This workshop builds on the findings from the 2019 joint Texas-Oklahoma FIRO workshop. It is intended to serve a platform for a broad spectrum of regional and national stakeholders to share lessons from FIRO initiatives in the nation and through the Texas FIRO Pilot, and collaboratively determine pathways forward for FIRO adoption in the state of Texas.

The workshop will comprise six thematic sessions, featuring talks, a panel discussion, and breakouts. Speakers include policy makers of the Texas Water Development Board, regional reservoir operators, practitioners and researchers of FIRO, and forecasters, scientists and program managers from NOAA and partnering agencies. The participants will have the opportunities to learn about latest developments in FIRO, review outcomes from the Texas FIRO Pilot, understand pressing forecast needs by operators, and contribute to identifying synergistic activities that will facilitate the adoption of forecasts in reservoir management and transition of research products into National Weather Service operations.

The meeting will be held in a hybrid mode with limited virtual participation through MS Teams. The link to virtual mode can be found at the end of this agenda.

### Thursday, September 21

#### Session 1: Opening Remarks and Background

9:00-9:10 am	Opening remarks from TWDB	John Dupnik, Office of Water Science & Conservation, TWDB
9:10-9:15 am	Welcome remarks from UTA Dean of Engineering	Peter Crouch, Dean of College of Engineering, UT Arlington
9:15-9:30 am	Keynote address by TWDB Board member	L'Oreal Stepney, Board Member, TWDB
9:25-9:40 am	Challenges to water supply in Texas and Potential Role of FIRO	Matt Nelson, Office of Planning, TWDB
9:40-9:50 am	FIRO and Weather Ready Nation	Michael Coyne, Director of

		NWS Southern Region
9:50-10:00	Opening remark from USACE Fort Worth District	Jerry Cotter, USACE Fort Worth District
10:00-10:10 am	Update on Texas Legislature on items related to water	Sarah Kinkle, Texas Water Conservation Association
10:10-10:30 am	Coffee Break/Group Photo	

### Session 2: Status of FIRO on a National Level and Lessons Learned

10:30-10:35 am	Introduction of Session and Speakers	Joel Lisenbee, National Integrated Drought Information System
10:35-10:50 am	USACE National FIRO Program	Cary Talbot, US Army Corps of Engineers, Engineer Research and Development Center
10:50-11:05 am	FIRO in California -overview	Marty Ralph, Center for Western Weather and Water Extremes, Scripps Institution of Oceanography
11:05-11:20 am	FIRO application in recent CA floods	Christopher Delaney, Center for Western Weather and Water Extremes, Scripps Institution of Oceanography
11:20-11:35 am	Use of forecasts in water supply operations at New York City	Jerry Mead, New York City Department of Environment
11:35-1:00 pm	Lunch Break	

### Session 3: NOAA's support of FIRO

1:00-1:05 pm	Introduction of session and speakers	Yu Zhang
1:05-1:20 pm	NWS National Water Center support for national FIRO activities	Edward Clark, NWS, National Water Center
1:20-1:35 pm	NWS WPC product suites and decision support	David Novak, NWS, Weather Prediction Center
1:35-1:50 pm	NWS CPC product suites and decision support	David Dewitt, NWS, Climate Prediction Center
1:50-2:05 pm	NOAA PSL's contribution to California FIRO	Robin Webb, NOAA Physical Science Lab

2:05-2:20 pm	NIDIS and drought early warning system	Joel Lisenbee, National Integrated Drought Information System
2:20-2:35 pm	Panel Q&A	Yu Zhang
2:35-2:45 pm	Coffee Break	

#### Session 4: Texas FIRO Initiatives

2:45-2:55 pm	Texas FIRO, a brief history: introduction of session speakers	Nelun Fernando, TWDB
2:55-3:10 pm	Vision of Texas FIRO by USACE Fort Worth District	Max Strickler/John Hunter, US Army Corps of Engineers - Fort Worth District
3:10-3:25 pm	West Gulf River Forecast Center FIRO decision support	Kris Lander, NWS West Gulf River Forecast Center
3:25-3:50 pm	Texas FIRO Pilot, overview and lessons learned	Yu Zhang, UTA,
3:50-4:05 pm	Incorporating forecasts into the Brazos River Authority's (BRA's) operational model	John Malito, U of Texas Austin Bureau of Economic Geology
4:05-4:25 pm	TWDB Lake Conroe Project	John Zhu, TWDB
4:25-5:10 pm	Breakout Session	
5:10-5:20	Breakout session report	

#### Friday, September 22

#### Session 5: FIRO: From Operation to Research

9:00-9:05 am	Introduction to session and speakers	Yu Zhang, UTA
9:05-9:50 am	Panel discussion: Matching water supplier's forecast needs and NOAA R&D activities, Moderated by Rob Cifelli	Aaron Abel, Brazos River Authority, Webster Mangham, Trinity River Authority, Denis Qualls, Dallas Water Utility Rob Cifelli, Physical Science Laboratory Kris Lander, West Gulf River

		Forecast Center Matthew Rosencrans, Climate Prediction Center
9:50-10:05	HEFS and FIRO - what needs to be done	Yu Zhang, UTA
10:05-10:20 am	PSL forecast improvement initiatives	Mimi Hughes/Nachiketa Acharya, NOAA Physical Science Lab
10:20-10:40 am	Coffee Break	
10:40-10:55 am	FIRO-related projects at Climate Testbed	Matthew Rosencrans, NWS Climate Prediction Center
10:55-11:10 am	OAR WPO initiatives and FIRO	Mark Olsen, NOAA Weather Program Office
11:10-11:25 am	NASA Applied Science program and its role in facilitating FIRO	Chris Hain, NASA SPoRT/Applied Science Program
11:25-12:00 pm	Breakout Session and report	
12:00-1:00pm	Lunch Break	

#### Session 6: Texas FIRO: Synergistic Activities and Emerging Themes

1:00-1:05 pm	Introduction to session and speakers	Sarah Fakhreddine, Carnegie Mellon University
1:05-1:20 pm	FIRO and flood resilience	Jonathan Quebbeman, RTI
1:20-1:35 pm	Water supply and flood planning; walking a tightrope	Denis Qualls, Dallas Water Utilities
1:35-1:50 pm	FIRO and Dam Safety: Probable Maximum Precipitation	Kelly Mahoney/Mimi Hughes, NOAA Physical Science Lab
1:50-2:05 pm	Conjunctive use of FIRO and ASR	Bridget Scanlon/John Malito, UT BEG
2:05-2:30 pm	Coffee Break	
2:30-2:45 pm	Prediction of Water Demand	Sarah Fakhreddine, Carnegie Mellon University
2:45-3:00 pm	Lake evaporation estimation and prediction	Hulin Gao, Texas A&M University

3:00-3:15 pm	Soil moisture conditions and uncertainties in inflow prediction	Farhad Hassani, UTA
3:15-3:30	USACE-SWF precipitation climatology and trends	Diana Hanbali and Eric Van Vleet, US Army Corps of Engineers, Fort Worth District Glenn Harwel and Monica Yesildirek, USGS
3:30-4:15 pm	Breakout	
4:15-4:45 pm	Plenary and closing remarks	David Dewitt, NWS Climate Prediction Center  John Hunter, US Army Corps of Engineers, Fort Worth District  Carla Guthrie, Texas Water Development Board  Yu Zhang, UTA
4:45pm	Adjourn	

**Virtual option: MS-Teams**

[Click here to join the meeting](#)

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