Water Resources Council (WRC)

October 12, 2022

North Central Texas Council of Governments
Environment & Development

www.nctcog.org/WaterResources

Procedures for Online Meeting

➢ Today's presentation is posted on the WRC website at:

https://www.nctcog.org/envir/committees/water-resources-council

➢ Roll call today in lieu of sign-in sheet.

➢ Please state your name and entity you are representing when you ask a question or provide a comment.

➢ Please keep your microphone on mute when not speaking.

➢ Approval of action items will still be done by a voice vote. Please only vote if you are a member of the WRC.

Water Resources Council October 12, 2022

1. Welcome and Introductions

➢ WRC attendance by roll call

➢ Guests are welcome to introduce themselves in the chat.

➢ Thank you for attending!

Water Resources Council October 12, 2022

2. New Member Welcome

➢ Stephen Gay, Director of Utilities, City of Denton

➢ Rachel Ickert, Chief Water Resources Officer, Tarrant Regional Water District

➢ Matthew Jalbert, P.E., Executive Manger, Northern Region, Trinity River Authority

Action Items

3. Meeting Summary

The [July 13, 2022 meeting summary](#) will be presented for approval.

Presentation

4. U.S. Geological Survey (USGS) National Water Dashboard (NWD): Modern Water Data Delivery for the Next Decade.

Thomas Burley, Physical Scientist (Informatics Specialist)

Oklahoma-Texas Water Science Center,

U.S. Geological Survey (USGS)

USGS NATIONAL WATER DASHBOARD

MODERN WATER DATA DELIVERY FOR THE NEXT DECADE

Thomas E. Burley
Physical Scientist (Informatics Specialist)
National Water Dashboard Product Owner
Oklahoma-Texas Water Science Center
U.S. Geological Survey
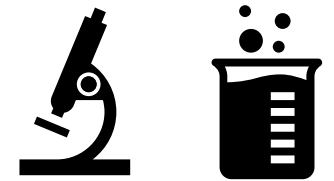October 12, 2022

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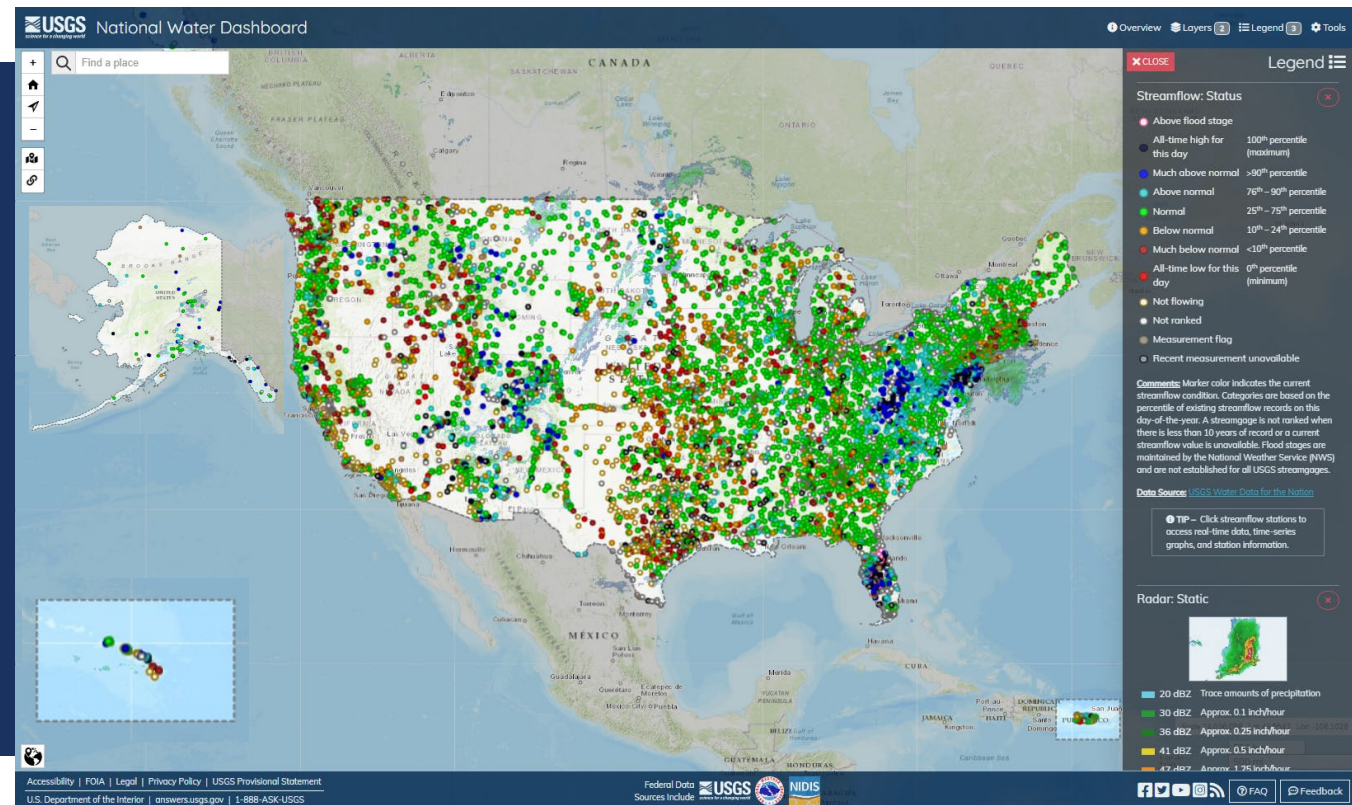
USGS WATER DATA DISCOVERY AND ACCESS

- National Water Dashboard (NWD) Overview

- Data and Data Criteria

- Use Cases

- New Features and Planned Enhancements

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THE USGS WATER RESOURCES MISSION

- Department of the Interior, USGS founded in 1879, non-regulatory scientific mission

- Vision for Water Science in the USGS[1]: *The USGS will provide unbiased knowledge of the Nation's water resources to support human well-being, healthy ecosystems, economic prosperity, and anticipate and help resolve impending water resources conflicts and emergencies….through integrated activities…will serve society through water-resource monitoring, assessment, modeling, and research to provide tools that managers and policymakers can use for the following*:

  - Preserving the quality and quantity of the Nation's water resources

  - Balancing water quantity and quality in relation to potential conflicting uses

  - Understanding, predicting, and mitigating water-related hazards such as floods, droughts, and contamination events

  - Quantifying the vulnerability of human populations and ecosystems to water shortages, surpluses, and degradation of water quality

1.) Evenson, E.J., Orndorff, R.C., Blome, C.D., Böhlke, J.K., Hershberger, P.K., Langenheim, V.E., McCabe, G.J., Morlock, S.E., Reeves, H.W., Verdin, J.P., Weyers, H.S., and Wood, T.M., 2013, U.S. Geological Survey water science strategy—Observing, understanding, predicting, and delivering water science to the Nation: U.S. Geological Survey Circular 1383–G, 49 p.

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REALITY: MOTIVATION AND CONTEXT

Flood fatalities occur in almost every state. Texas from 2010-2018 lead the U.S. in flood fatalities and vehicle-related flood fatalities[1]

2010-2018 U.S. Flood Fatalities
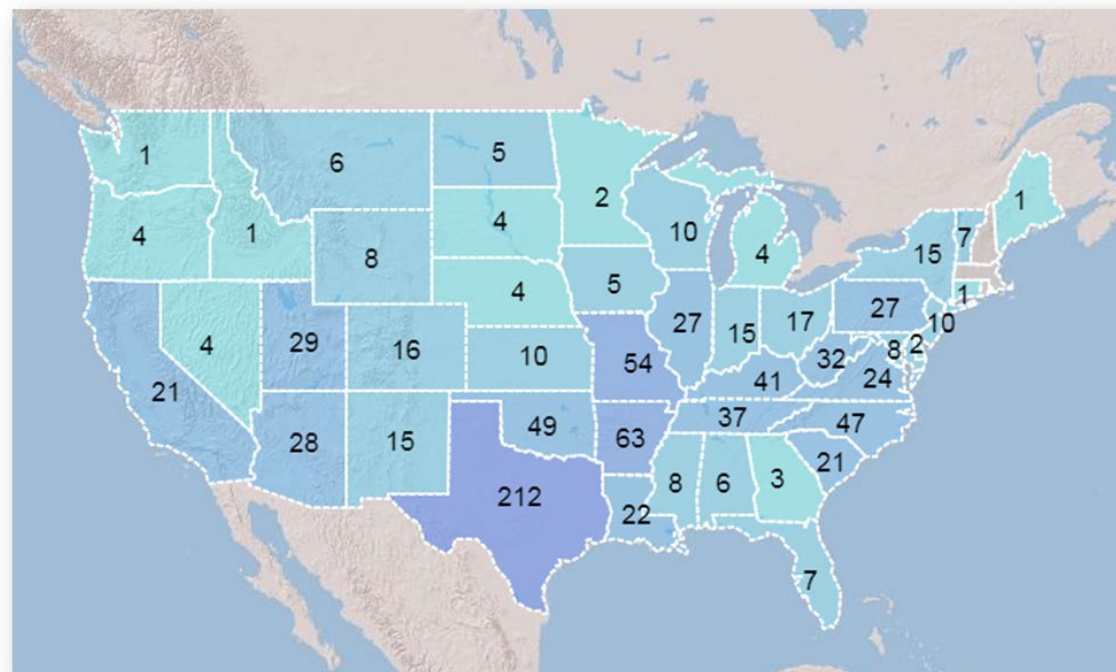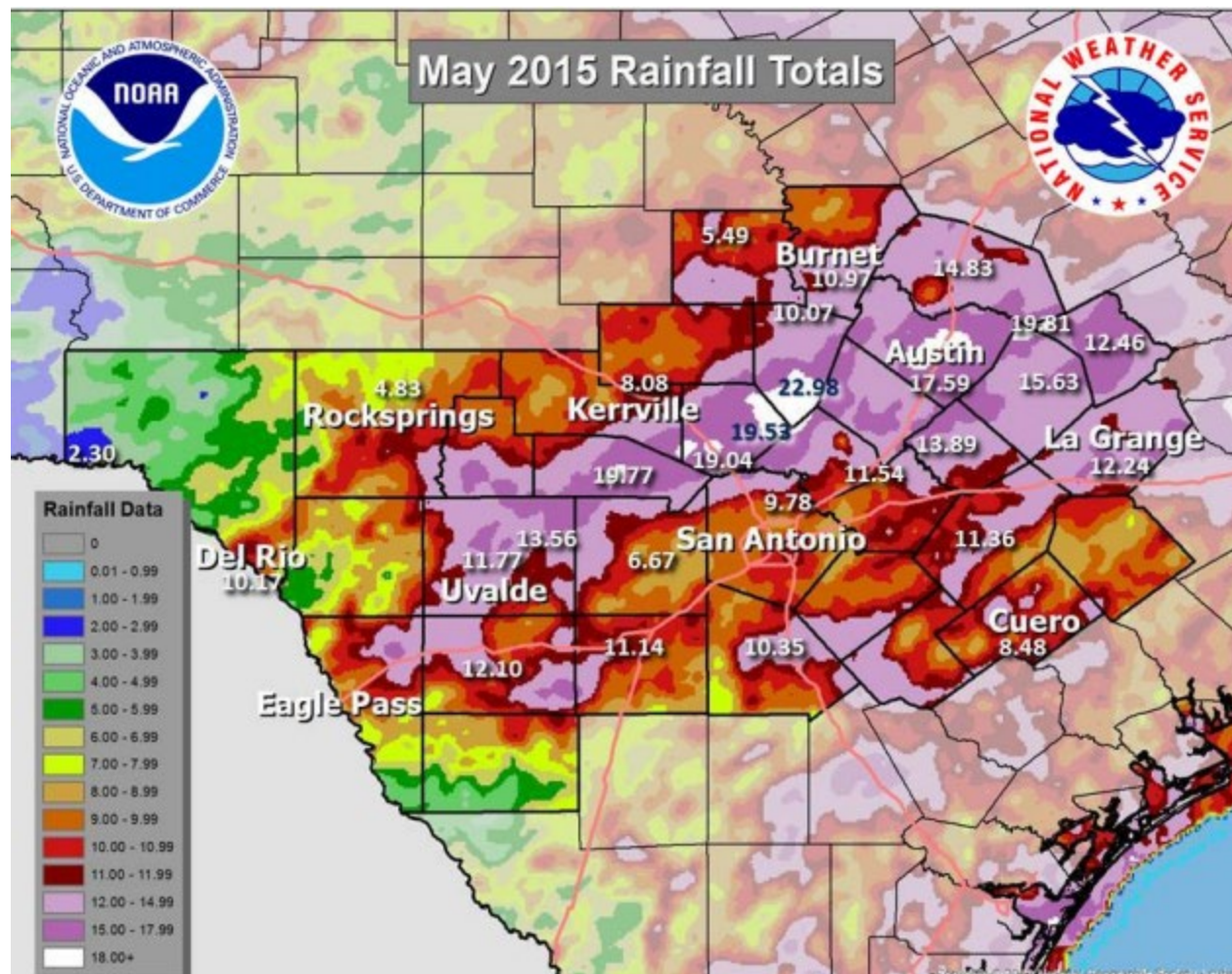

Source: NOAA/National Weather Service

1.) Han, Z., and Sharif, H.O., 2020, Vehicle-Related Flood Fatalities in Texas, 1959-2019, Water 12(10), p.1-15.
2.) https://www.weather.gov/arx/usflood

DRIVER: MEMORIAL DAY FLOODING 2015

- May 2015 All-Time Record Wet Month in Texas[1]

- Memorial Day 2015: approx. 10-13 inches rain in < 24 hours

- USGS Site Blanco River at Wimberley, TX (08171000) stream stage increased from approx. 9 feet at 10:30 PM CDT on May 23 to over 40 feet at 1 AM CDT on May 24

- 14 people lost their lives, including 12 along the Blanco River

1.) https://weather.com/forecast/regional/news/plains-rain-flood-threat-wettest-may-ranking
2.) https://www.weather.gov/media/ewx/wxevents/ewx-20150524.pdf

USGS NATIONAL WATER INFORMATION SYSTEM (NWIS)

- Public data from USGS Water Data for the Nation (WDFN) (historically known as NWISWeb)

- Current conditions (commonly referred to as real-time): typically 15 minute data

- Historical observations

- Detailed monitoring site information

- Discrete data (field measurements)

- Statistics

- Types: Surface Water, Groundwater, Water Quality, Water Use, Precipitation

https://waterdata.usgs.gov

NWIS WEB CLASSIC AND WDFN: MODERNIZATION

https://waterdata.usgs.gov
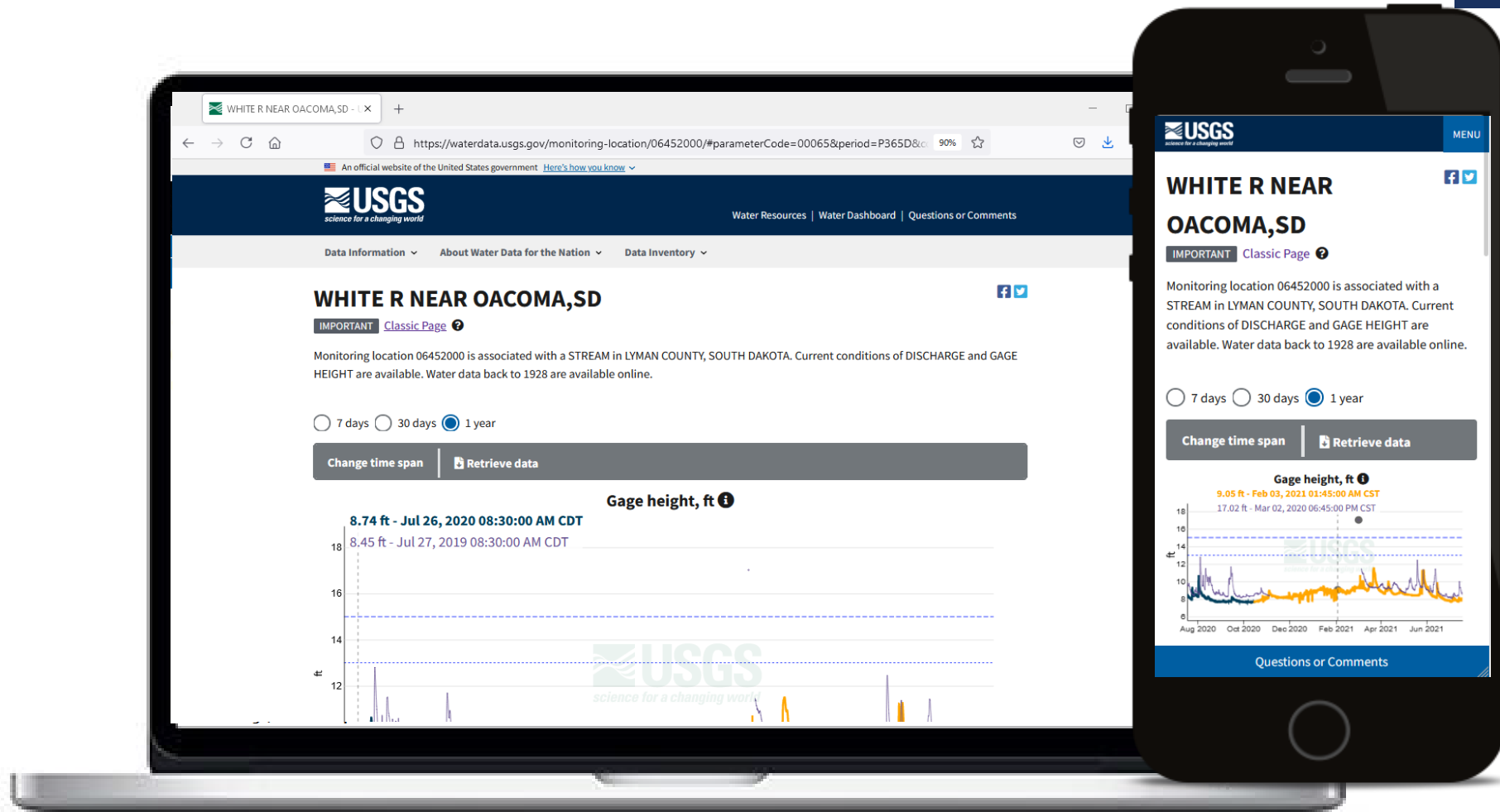
THE REALITIES OF PROVIDING SITUATIONAL AWARENESS

- Current conditions: Where are the nearest streamgages? Which ones are upstream of me? What if I'm not familiar with the area?

- Forecast conditions: National Weather Service (NWS) Advanced Hydrologic Prediction Service (AHPS)

- Can you show me all this on a map with contextual layers including NWS Watches, Warnings, and Radar?

- User experience and user interface for non-hydrologists

- Assume urgent use cases and reliance on mobile devices

When an event hits and a river rises more than 30 feet in about 4 hours, how do we make all of this information consumable for a wide audience?

Source: https://www.texastribune.org/2018/02/05/wimberley-floods-2015-caused-weather-patterns-intensified-development/, Photo Credit: Marjorie Kamys Cotera
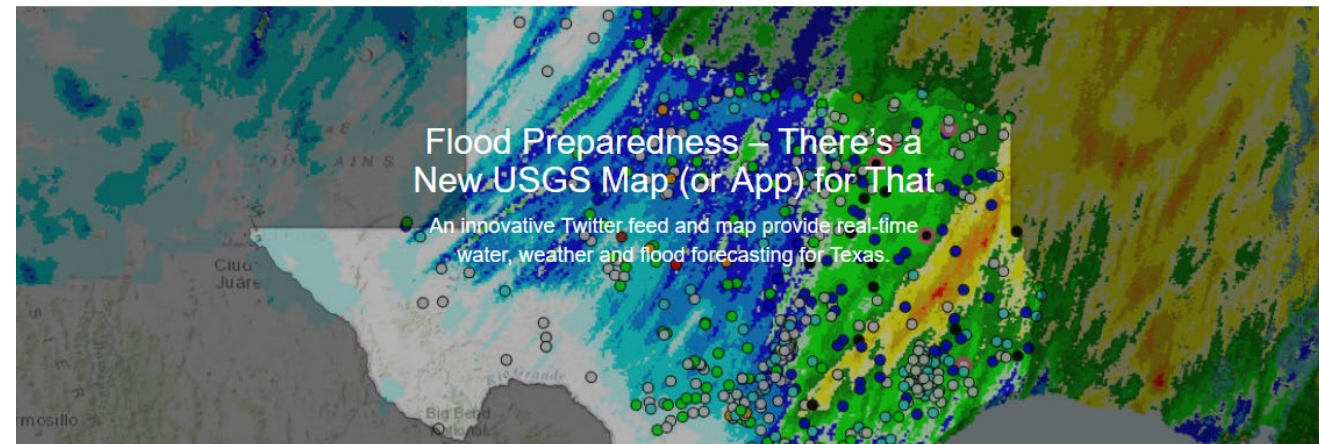
GETTING STARTED: TEXAS SCALE

- Texas Water Dashboard formally announced in Spring 2016

- First generation web mashup built with mobile in mind

- At-a-glance situational awareness: current conditions, forecast conditions, flood stage information

It was a start…

NATIONAL WATER DASHBOARD

- **October 2020 release**

- Integrates USGS current conditions water data and other Federal water information together into a streamlined mobile-friendly interface

- Streamflow, surface water levels, groundwater, springs, water quality, precipitation, atmospheric

  - Current conditions, flow statistics, rate of change

- Streamflow summaries

- National Weather Service (NWS) flood stage status

- National Integrated Drought Information System (NIDIS) drought layer

- Weather radar, alerts, recent conditions, forecast

- Hydrologic context layers

- Additional partner data

- WaterAlert ➡ NextGen WaterAlert

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https://dashboard.waterdata.usgs.gov
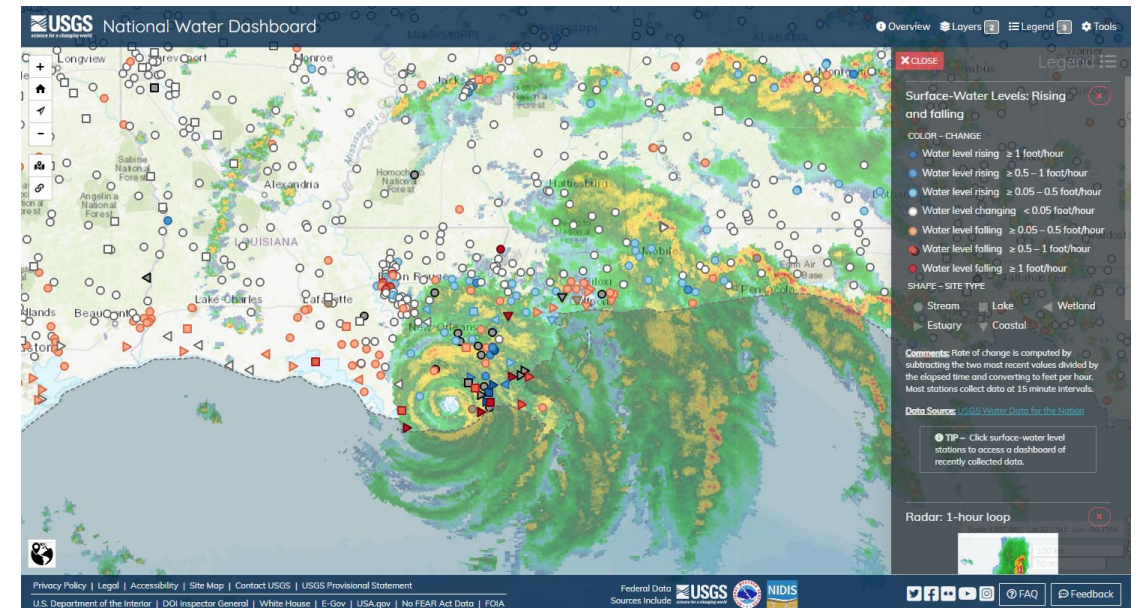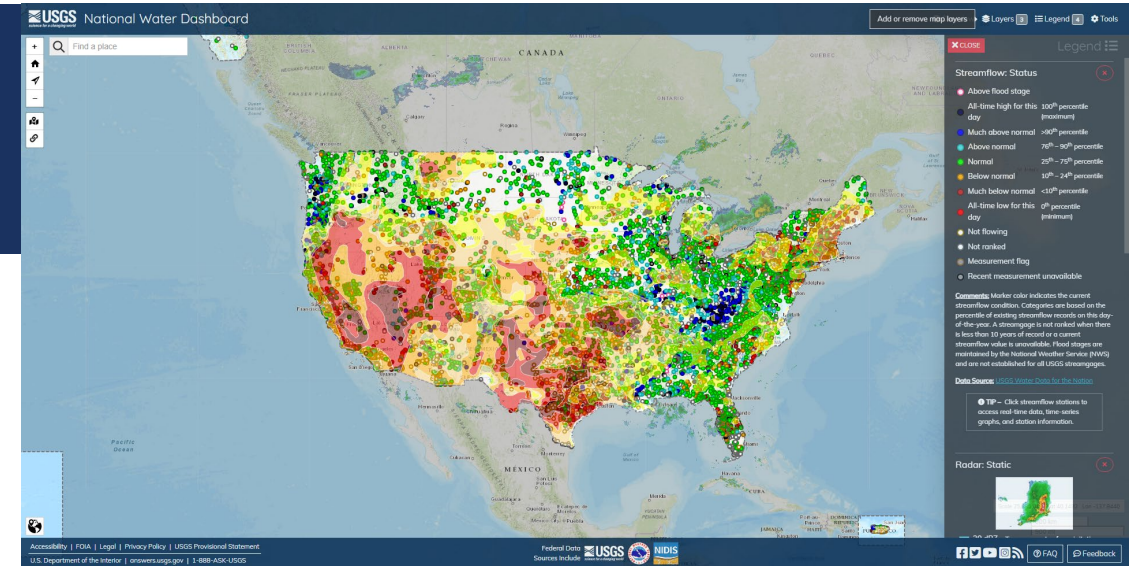
USGS WATER DATA, DELIVERED

"The National Water Information System (NWIS) Modernization Program **will provide necessary improvements to NWIS**, the world's largest authoritative enterprise water information system, which is **foundational to advancing priorities and meeting the emerging needs of USGS and WMA stakeholders**."

Components:
- Alerts ✓
- Web Services ✓
- Monitoring Locations ✓
- Robust Search ✓ *in development*
- **National: NWD** ✓
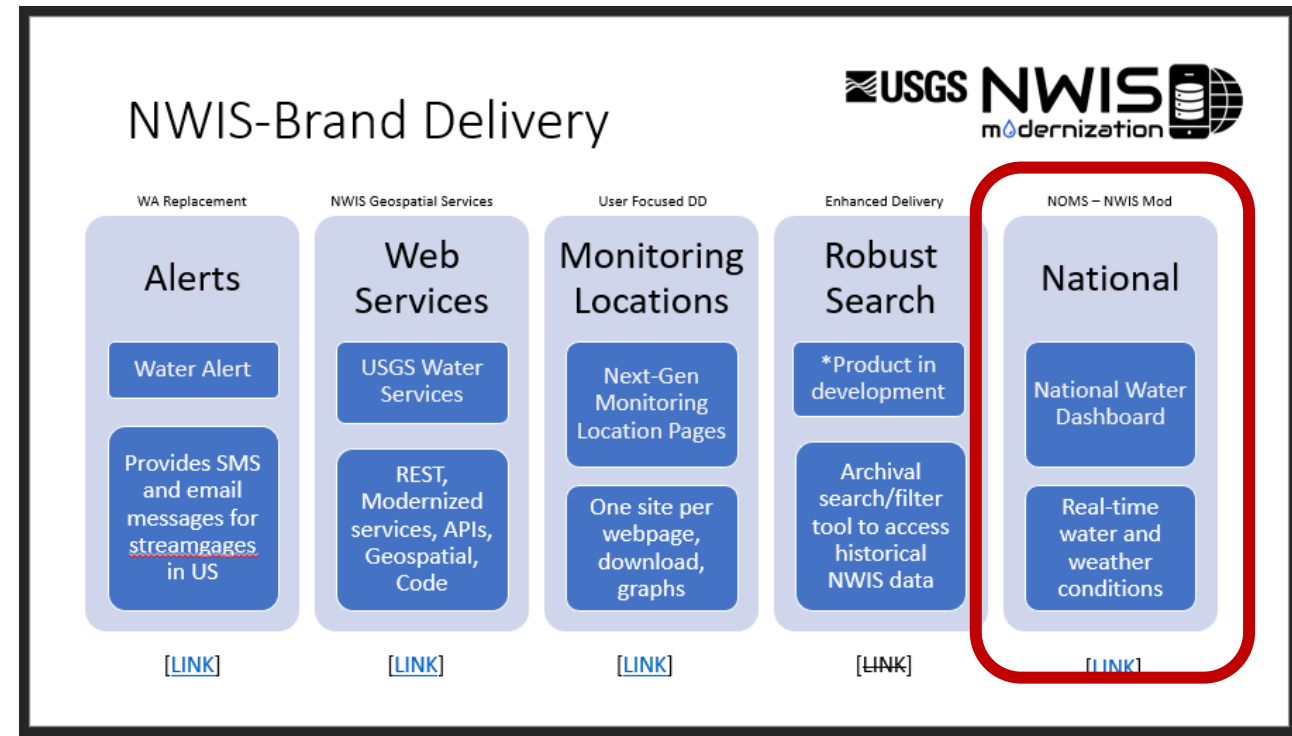
AUDIENCE ←→ DATA NEEDS…ENDLESS CONNECTIONS
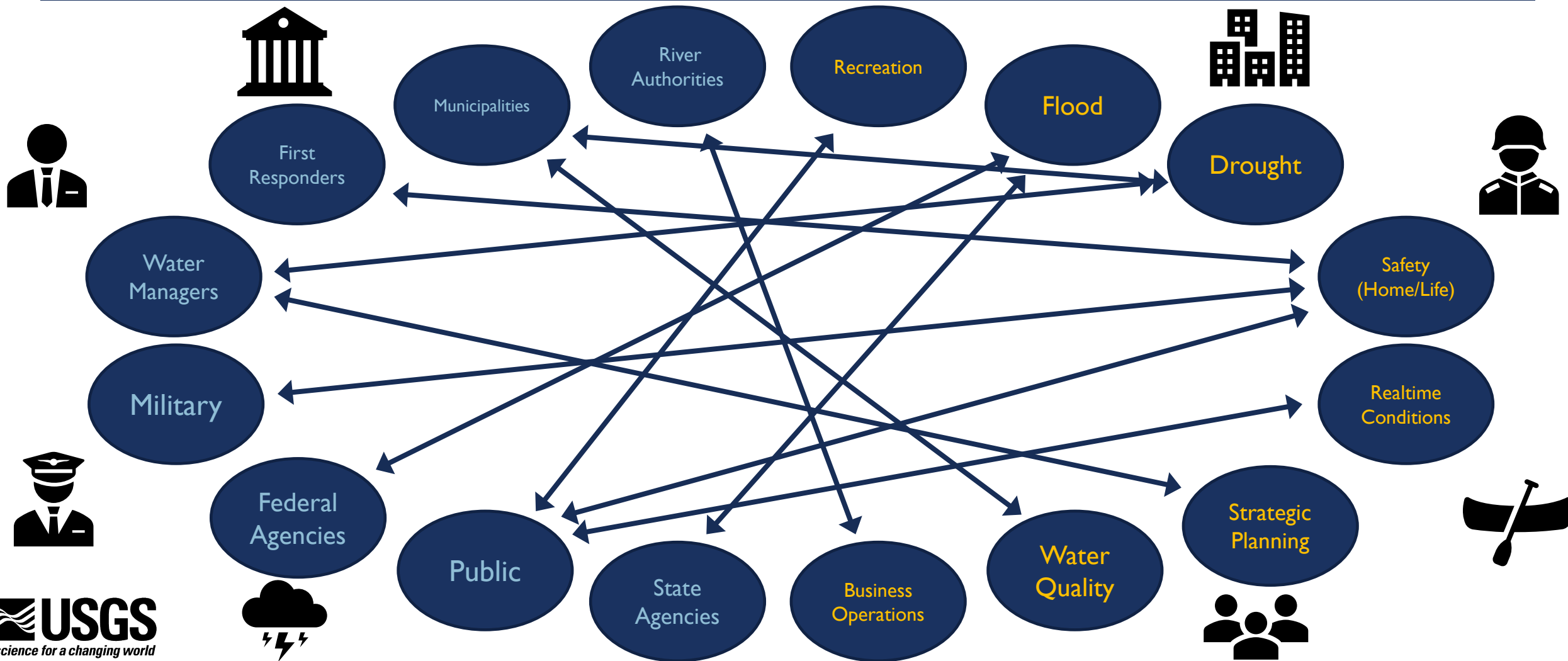
SCENARIOS

"I am a private citizen camping in the Texas Hill Country and need to understand the local flow conditions due to a significant storm"

"I am a decision maker or program manager needing to know USGS current conditions monitoring sites near me while in the field on a mobile device"

"I need a one-stop resource for exploring USGS water data to make decisions associated with preserving life and property related to a chemical spill"

"I am an emergency manager or first responder in need of USGS current conditions water data in concert with watches, warnings, and forecast data from the National Weather Service for situational awareness in a rapidly changing flood event"

"I am a landowner and am concerned about the drought status of my area as well as groundwater levels"

"I am a manager concerned about chemical transport and monitoring real-time water quality conditions upstream of public drinking water intakes"

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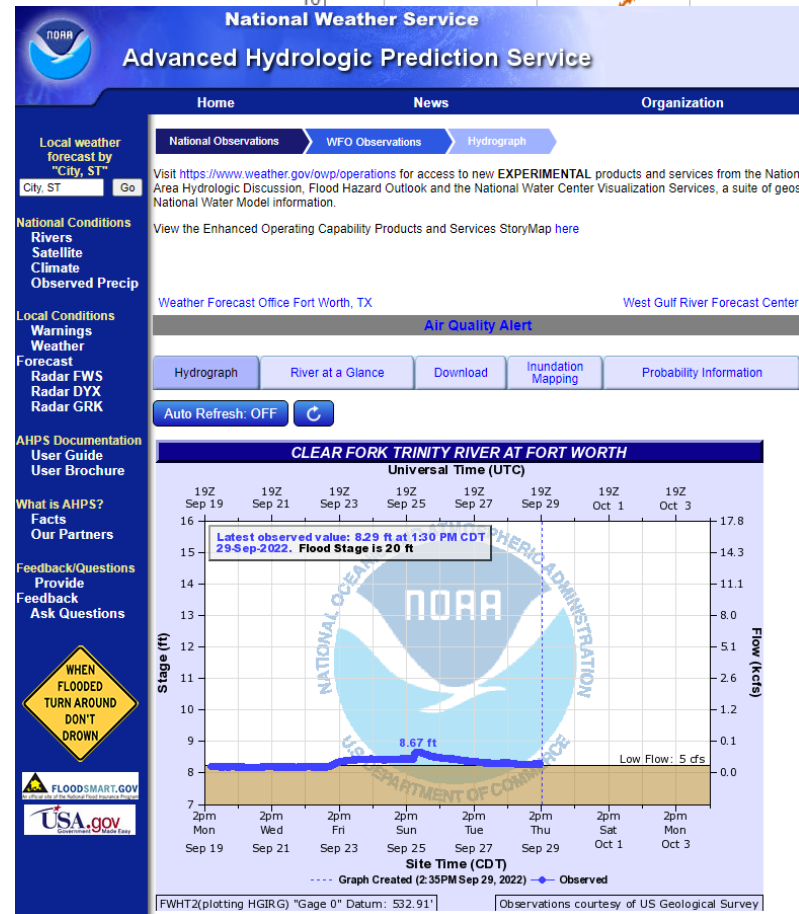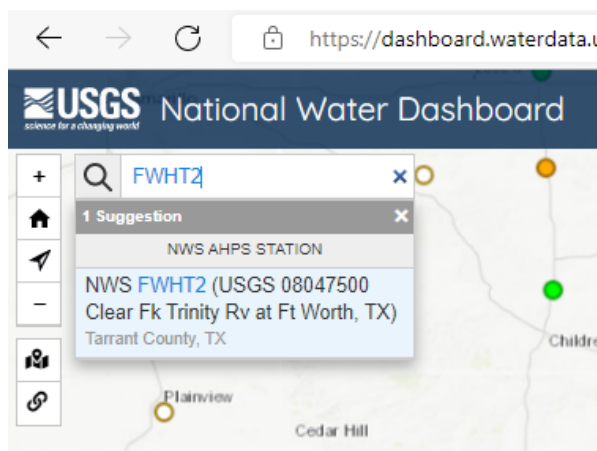
DATA CRITERIA

- National scale

- Stable web services

- Use case / requirements driven

- Audience
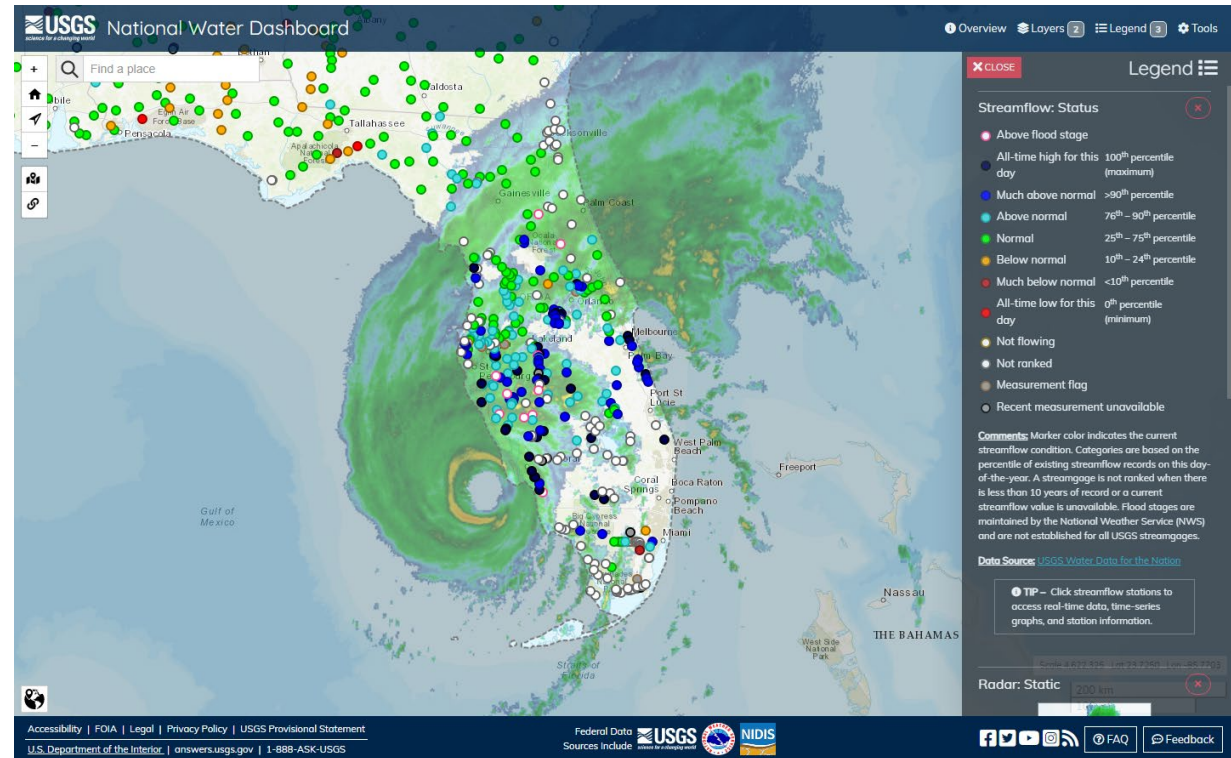
NEW FEATURES

- Recent New Features and Functionality

  - Handshake connection with NWS Forecasts

  - Search for NWS five-digit site IDs

  - Refactor for modernized USGS WaterAlert

  - Data plot logscale option

USGS NEXT GENERATION WATERALERT

"I am a case manager that <u>needs to know when certain water condition thresholds are exceeded</u>, including pH, turbidity, dissolved oxygen, and discharge (flow)"

"...and I <u>need push notifications</u> to where I don't need to worry about checking a web page"

- Original WaterAlert released in 2010, first of its kind SMS (text) and email-based notification system for alerts when threshold conditions are met

- Allows users to set notification thresholds for any current conditions streamgage, precipitation, water-quality, or groundwater monitoring site

- NextGen updates include message delivery formats, look and feel, design refactor
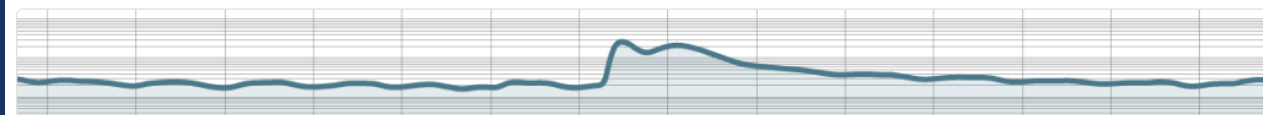
https://accounts.waterdata.usgs.gov/wateralert/

NEW FEATURES

- Update to Graphing Water Information System (GWIS) API

- Build USGS water data time-series plots and link to or embed them in your own dashboard or web application

Example: National Park Service Chattahoochee National Recreation Area:
https://www.nps.gov/chat/planyourvisit/river-flow-rate.htm

https://dashboard.waterdata.usgs.gov/api/gwis/1.0/doc/#overview
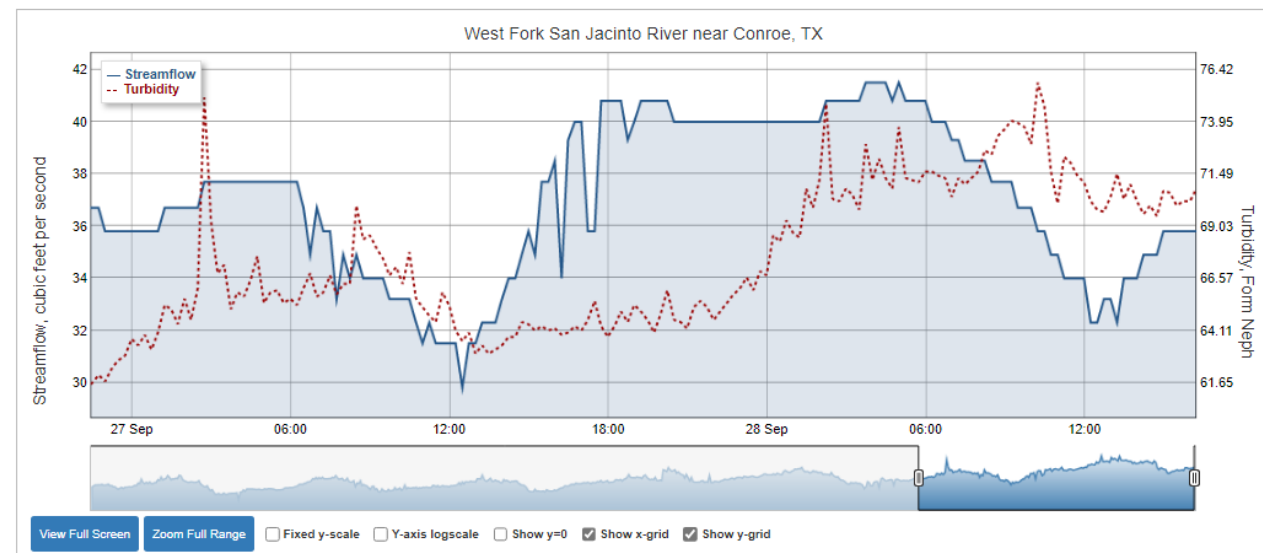
NEW FEATURES AND PRODUCTS

- Geocoder JavaScript API for webpage search boxes

  - Built on top of Geographic Names Information System (GNIS)

  - USGS sites update automatically

  - Search by USGS site descriptive names

  - Agency codes included

https://dashboard.waterdata.usgs.gov/api/geocoder/1.0.0/doc/#Overview

PLANNED ENHANCEMENTS

- Spanish language version

- Current conditions geospatial services API

- Groundwater status

- More detailed sensor information

- New areas of interest (for example, hydrologic unit codes)

- Incorporate NWS forecast plots

- Streamgage cameras (fixed)
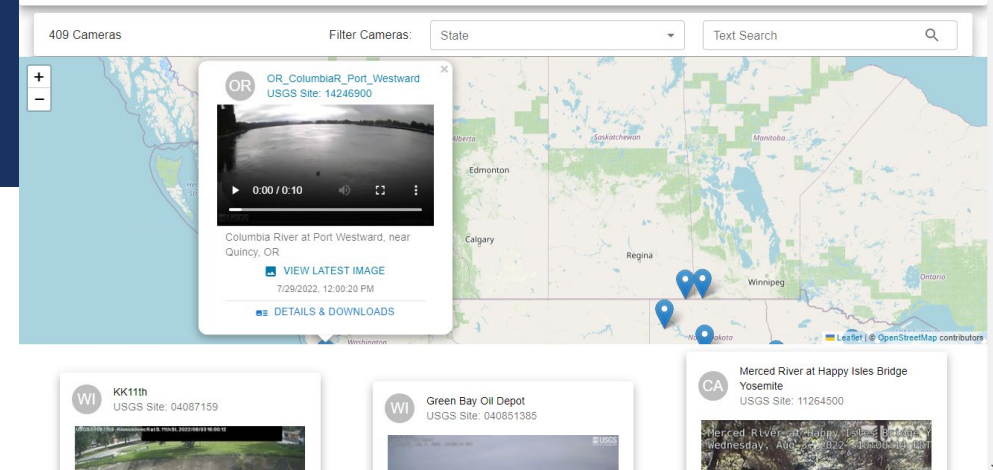
- Advanced search
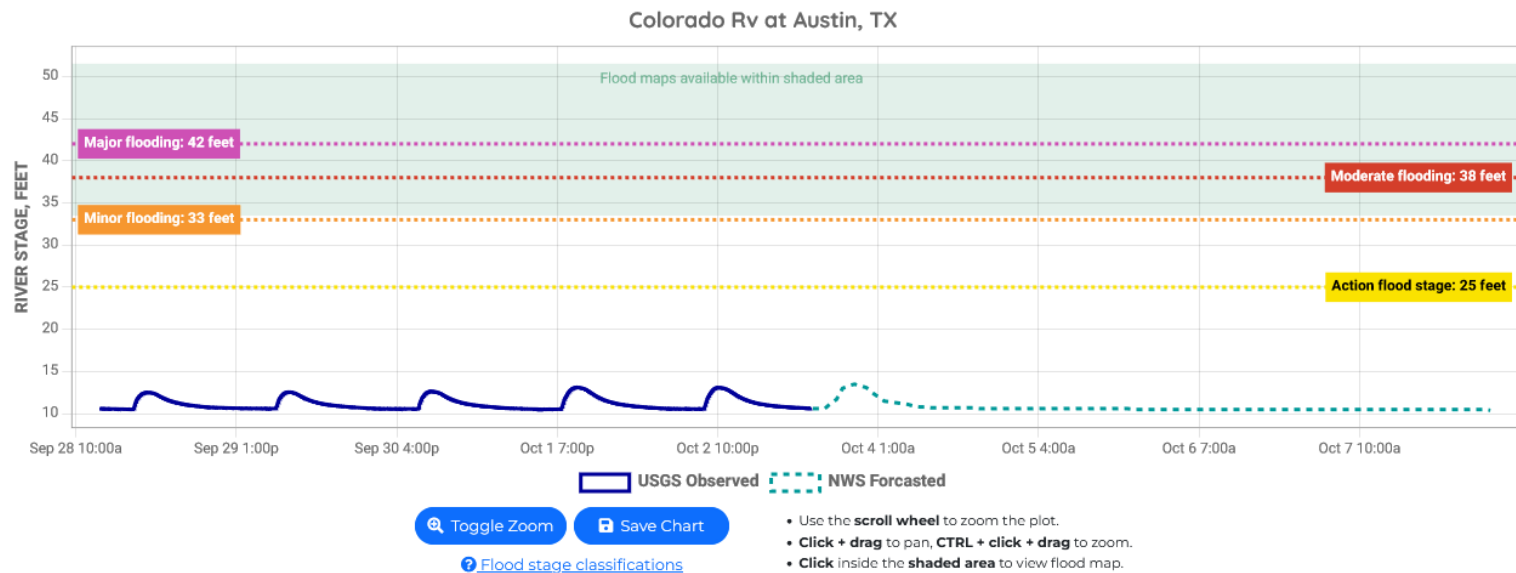
THANK YOU!

Thomas E. Burley

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https://dashboard.waterdata.usgs.gov

NWD:
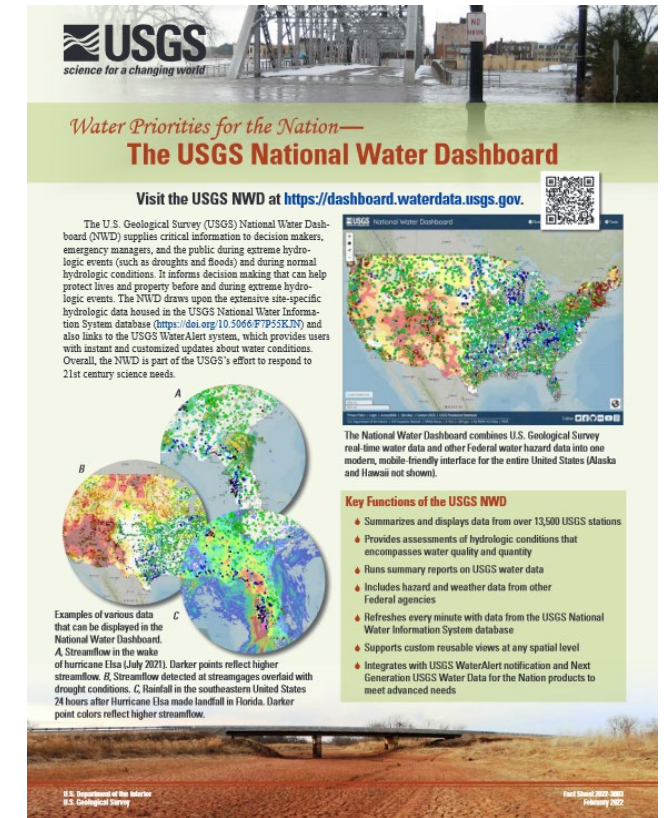
Fact Sheet:

Miller, M.P., Burley, T.E., and McCallum, B.E., 2022, Water priorities for the Nation—The USGS National Water Dashboard: U.S. Geological Survey Fact Sheet 2022–3003, 2 p., https://doi.org/10.3133/fs20223003

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Discussion

5. FY2023 Water Resources Council Membership

NCTCOG will present the final WRC FY2023 membership roster and structure. New two-year terms began for new members and reappointed members on October 1, 2022, and expire on September 30, 2024.

Discussion

6. FY2023 Water Resources Education and Outreach

The WRC is asked for input on the topics and speakers for upcoming webinars or workshops. Thank you!

Other Business and Roundtable Discussion

7. NCTCOG Updates

   a. *[Final 2022 Update to the North Central Texas Water Quality Management Plan](#)*.

2022 Update to the North Central Texas Water Quality Management Plan - Executive Summary, Acronyms, and Figures

North Central Texas Council of Governments

August 30, 2022

PREPARED IN COOPERATION WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND U.S. ENVIRONMENTAL PROTECTION AGENCY

Other Business and Roundtable Discussion

7. NCTCOG Updates (con't)

b. Trash Free Waters Project

➢ Trash Free Texas partners

➢ Trash Free Texas map

➢ Trash Free Texas Single-Use Plastic Reduction Workgroup Meeting. (Virtual)

    ➢ Monday, November 7 at 2:30 p.m. Add to Calendar

Other Business and Roundtable Discussion

7. NCTCOG Updates (con't)

c. Trinity River National Water Trail Task Force Meeting.

➢ <mark>Wednesday, November 2</mark>, 2022

10:00 a.m. Online.

Add to Calendar

Other Business and Roundtable Discussion

7. NCTCOG Updates (con't)

d. Total Maximum Daily Load Program

Staff Contact – Hannah Allen, hallen@nctcog.org

➢ DRAFT "Don't Feed the Birds" Educational Explainer Video, Draft Script and Draft Video

➢ DRAFT "No Muss, No Fuss – Be Wise When You Flush" Explainer Video, Draft Script and Draft Video

Other Business and Roundtable Discussion

7. NCTCOG Updates (con't)

e. Wastewater and Treatment Education Roundtable

Staff contact: Hannah Allen, hallen@nctcog.org.

➤ Join the 2022 [Holiday Grease Roundup](#)!

Monday, November 14, 2022 through January 9, 2023.

➤ Next WATER Meeting. Thursday, October 20, 2022, 10:00 a.m. **In-Person** at NCTCOG. [Add to Calendar](#)

➤ [FY2023 Water Program](#) participation is open now.

Other Business and Roundtable Discussion

16TH ANNUAL NORTH TEXAS REGIONAL WATER CONSERVATION SYMPOSIUM

NOVEMBER 17, 2022
8 AM - 3:30 PM

EVENT LOCATION:
FOUR POINTS SHERATON
1580 POINT W BLVD
COPPELL, TX 75019

NTXH2OSYMPOSIUM.EVENTBRITE.COM

Sponsored by:
City of Dallas Water Utilities

North Texas Municipal Water District

Tarrant Regional Water District

Upper Trinity Regional Water District

DON'T MISS IT!

TOPICS
COMMUNICATING CONSERVATION
CONSERVATION AND PLANNING FOR THE FUTURE
INCENTIVE PROGRAMS
CONSERVATION FOR SMALL AND MEDIUM UTILITIES

BREAKFAST AND LUNCH SERVED

PRIZE DRAWINGS!

https://ntxh2osymposium.eventbrite.com/

Other Business and Roundtable Discussion

North Central Texas Community Rating System (CRS) Users Group Meeting and Elected Officials Floodplain Seminar

Tuesday, October 25, In-Person

9:30 a.m. – 11:30 a.m.

NCTCOG's Transportation Council Room

Register here

Other Business and Roundtable Discussion

L-273 Course for Floodplain Managers

Hosted by the Federal Emergency Management Agency and NCTCOG

Monday – Thursday, November 14-17, 8:00 a.m. – 5:00 p.m., and

TFMA Certified Floodplain Manager exam on

Friday, November 18 at 9:00 a.m.

NCTCOG's Metroplex Conference Room

Other Business and Roundtable Discussion

8. Future Agenda Items

The WRC can request future agenda items.

9. Roundtable

The WRC is invited to share what is happening in their communities.

Other Business and Roundtable Discussion

10. Next Meetings

➢ All meetings are from 10:30 a.m. – 12:30 p.m.

<mark>Tuesday,</mark> January 10, 2023 – [Add to Calendar](#) (In-Person)

Wednesday, April 12, 2023 – [Add to Calendar](#) (Online)

Wednesday, July 12, 2023 – [Add to Calendar](#) (In-Person)

Wednesday, October 11, 2023 – [Add to Calendar](#) (Online)

11. Adjournment

Staff Contacts

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