

A stylized graphic on the left side of the slide. It features a large, light blue shape that resembles a river or a rain gauge, with a dark blue semi-circle at the top and a green semi-circle at the bottom. The background is a light blue gradient.

River & Rain Gauge Network Program Webinar

MARCH 6, 2020

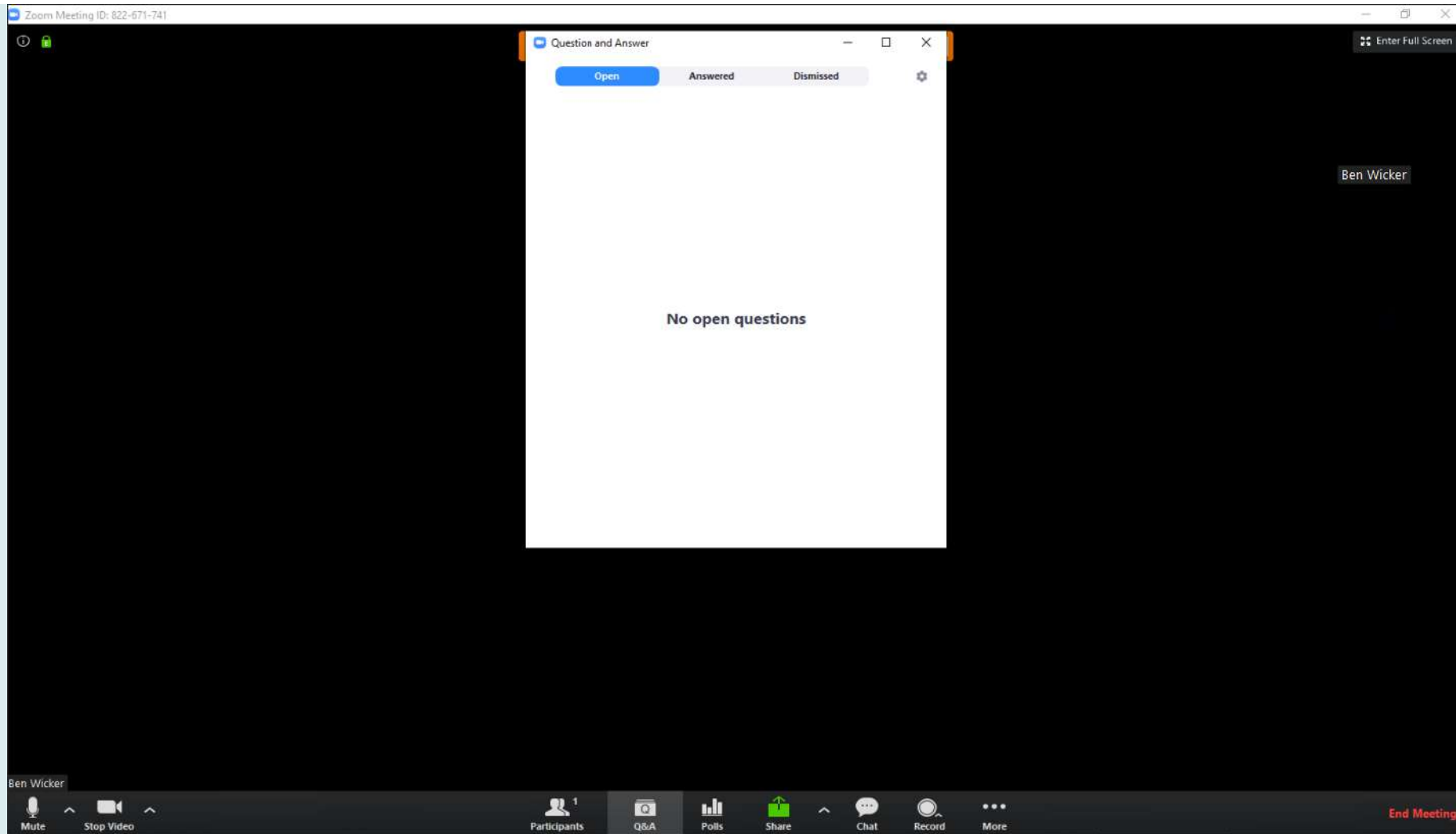
Alexandra Carter, AICP
Louisiana Office of Community Development

Dr. Emad Habib, Ph.D., P.E.
University of Louisiana at Lafayette

LOUISIANA
WATERSHED
INITIATIVE

working together for sustainability and resilience

Question and answer





Agenda

- About the Louisiana Watershed Initiative
- Statewide Modeling Effort
- Gauge Network Objectives
- Context
- Next Steps
- Questions



Our mission

Gov. John Bel Edwards launched the LWI in 2018 to:

Reduce flood risk, improve floodplain management throughout the state and maximize the natural and beneficial function of floodplains



Our vision

Transform how Louisiana manages and reduces flood risk statewide through regional collaboration, science-based decision making and best practices in floodplain management



Guiding principles

SCIENTIFIC TOOLS AND APPROACHES

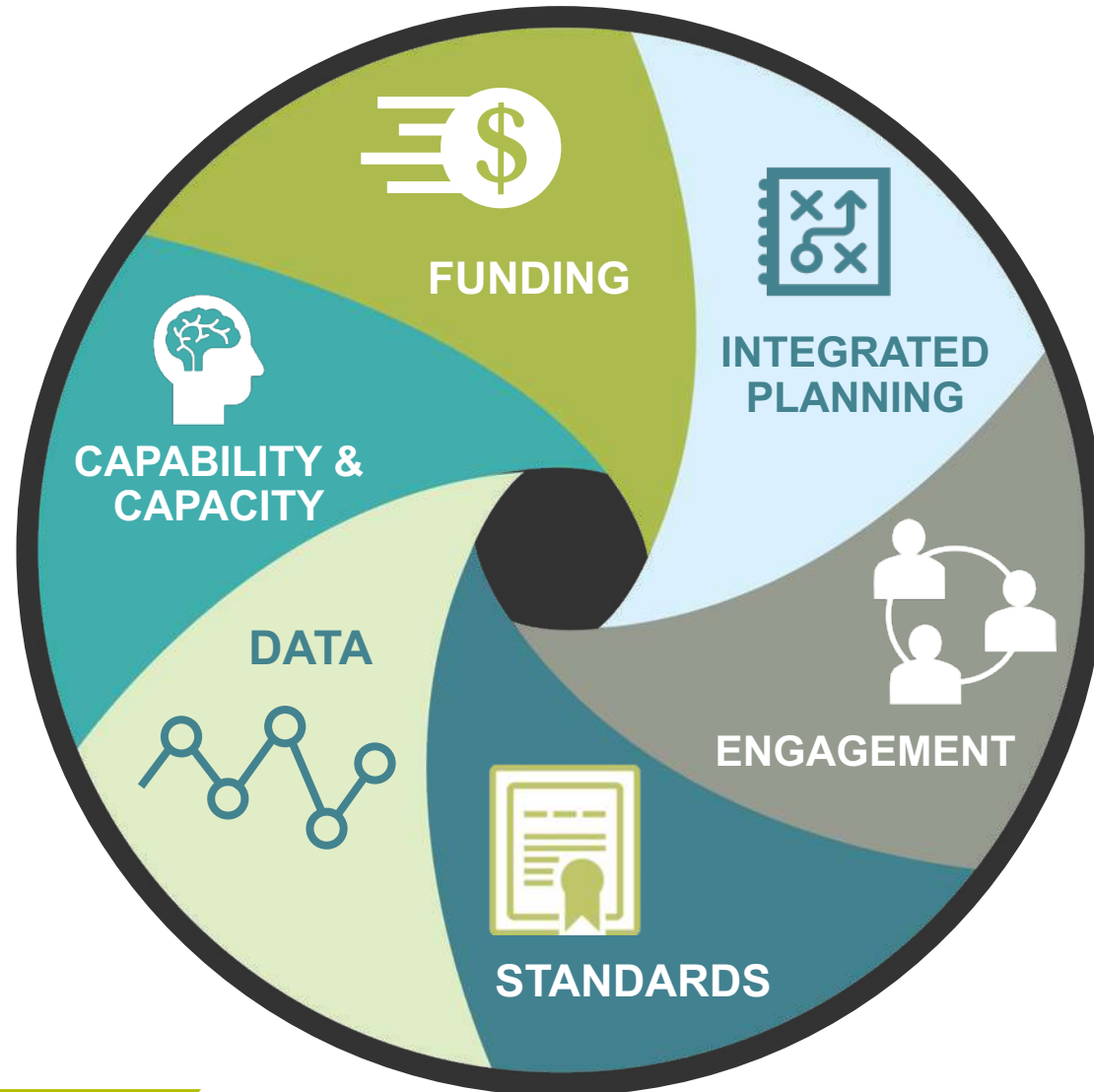
TRANSPARENT AND OBJECTIVE
DECISION MAKING

MAXIMIZING NATURAL FUNCTION
OF FLOODPLAINS

REGIONAL WATER MANAGEMENT



Strategic areas of focus





Council on Watershed Management

“It’s harder. It requires more work. It’s politically risky, but it is **the right thing to do.**”

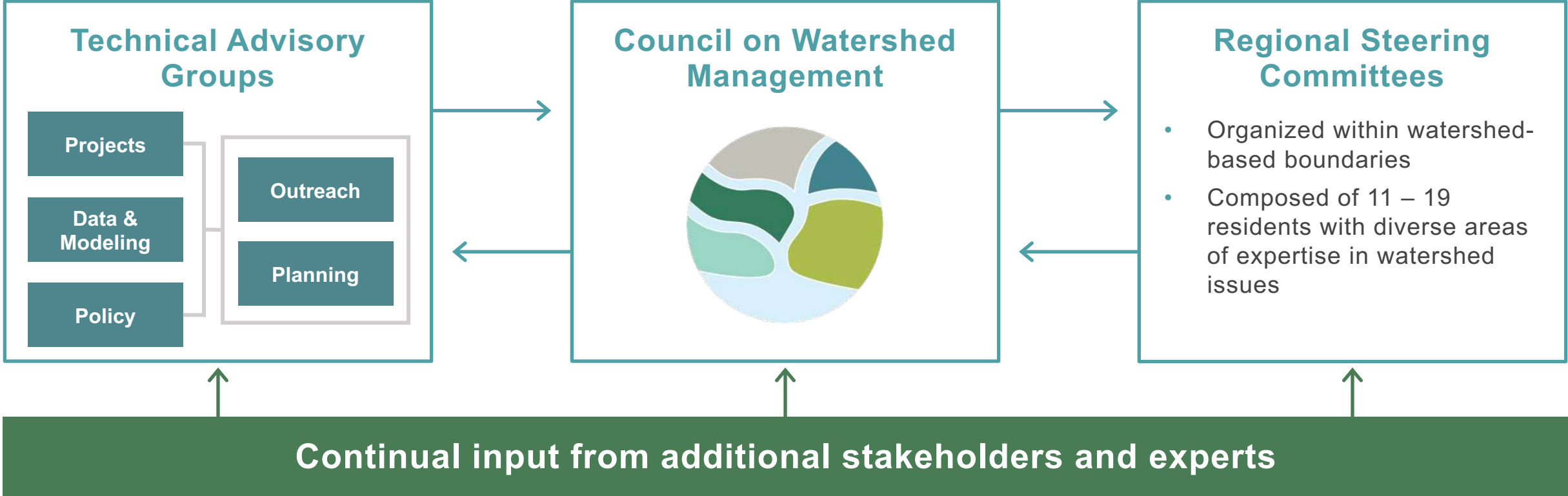
– Gov. John Bel Edwards



LOUISIANA
Office of
**COMMUNITY
DEVELOPMENT**



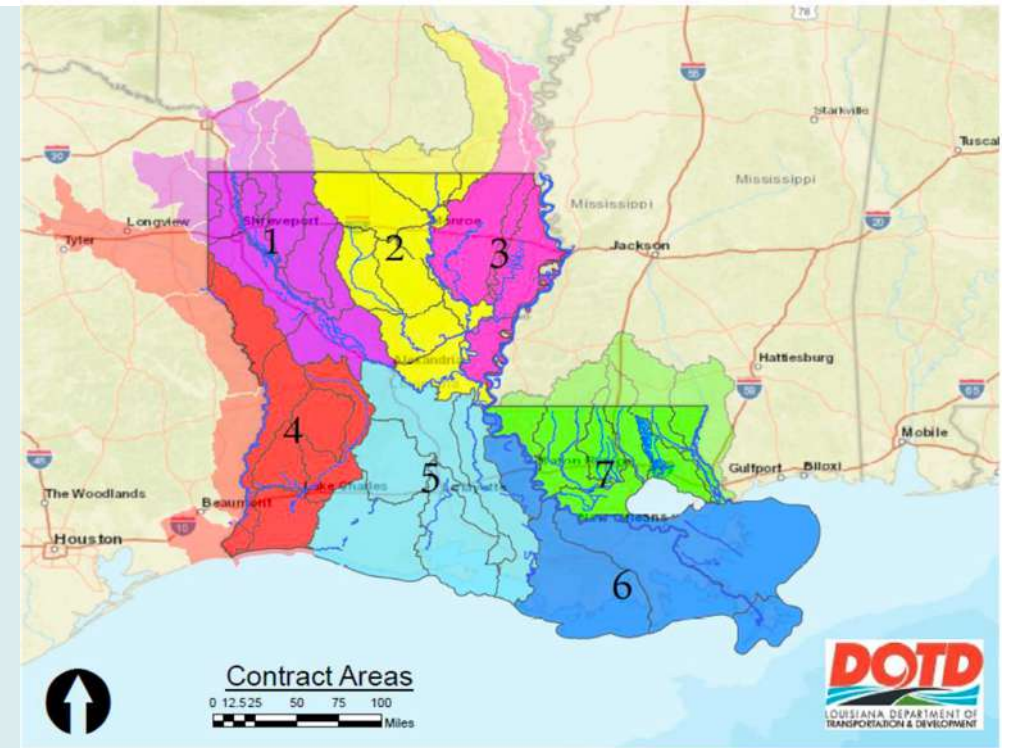
Shared focus on resilience



Statewide watershed modeling effort

SCIENCE-BASED UNDERSTANDING OF RISK

- Modeling guidance creates consistency in models statewide and enables evaluation of projects with regional impacts.
- The state issued RFQs for developing models in May 2019, and procurement is nearly complete.
- Modeling will be conducted at the HUC8 scale, consistent with watershed boundaries.
- Gauge network data will enhance modeling outputs.
- This approach aligns with USACE and FEMA methodologies.



Map of Louisiana DOTD modeling regions
Source: DOTD Modeling RFQ



Objectives of the gauge network

SCIENCE-BASED UNDERSTANDING OF RISK

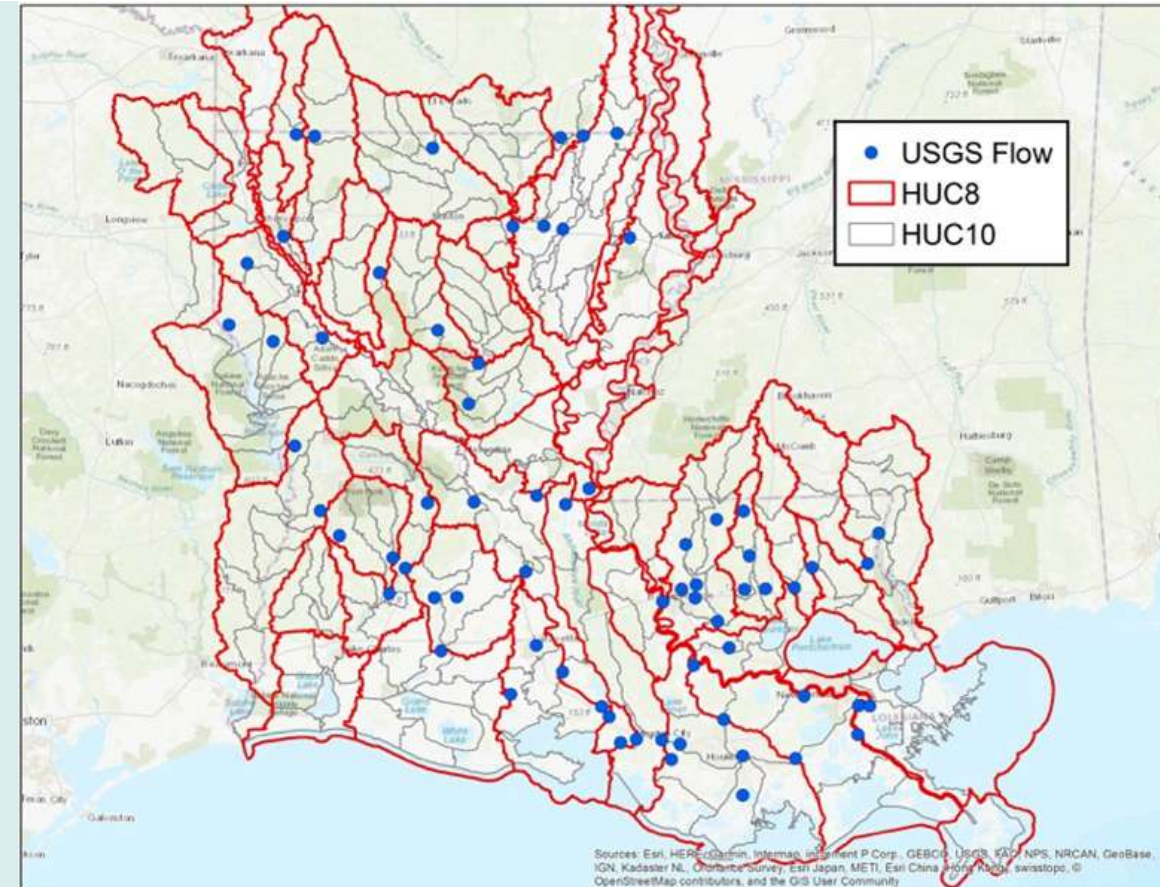
MONITOR WATER LEVELS, FLOW RATES
AND RAINFALL IN LOUISIANA WATERSHEDS

SUPPORT CALIBRATION OF LWI MODELS

PROVIDE REAL-TIME RIVER HEIGHTS

INFORM WATERWAY AND WATERSHED
MANAGEMENT

IMPROVE QUALITY OF LIFE IN AND
AROUND LOUISIANA WATERWAYS



A collaborative, stakeholder-driven approach

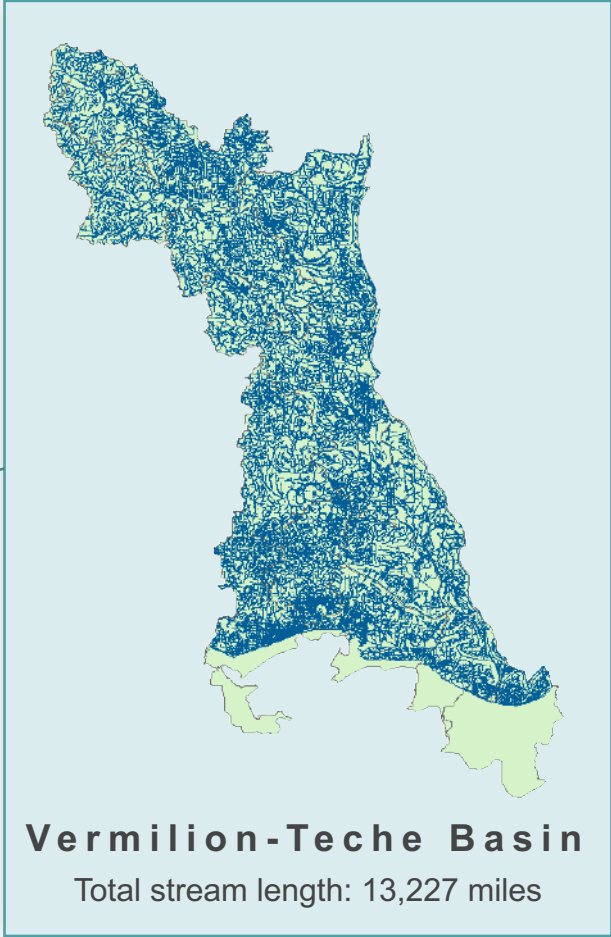
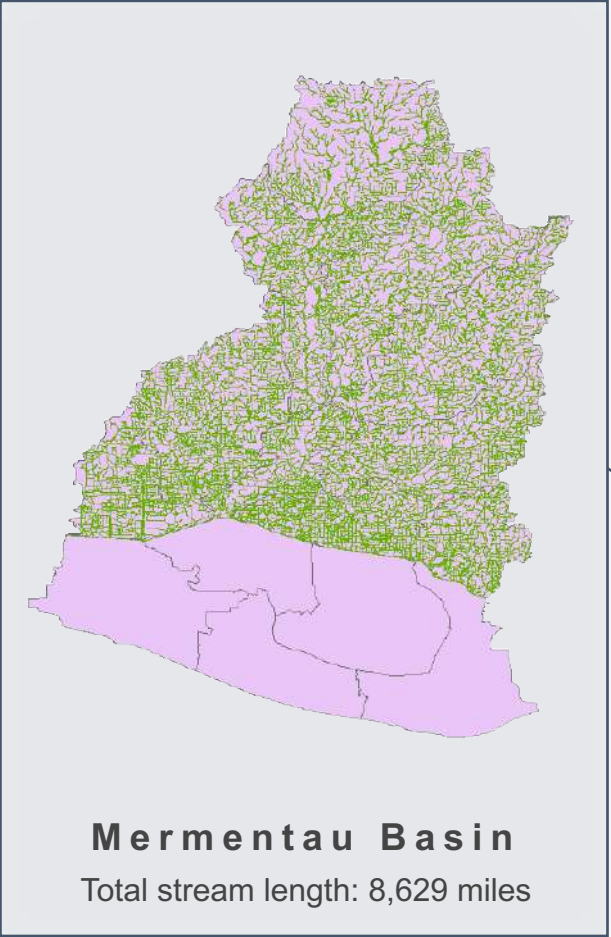
- Develop a backbone network in collaboration with USGS and federal, state and local agencies
- Hold public meetings with regional and local stakeholders
- Solicit stakeholders' suggestions for new gauge infrastructure and gauge locations
- Revise network design to incorporate stakeholders' input
- Engage DEQ and USGS to support the deployment and operation of the network



A stage sensor at Coulee Mine in Lafayette
Source: UL-Lafayette

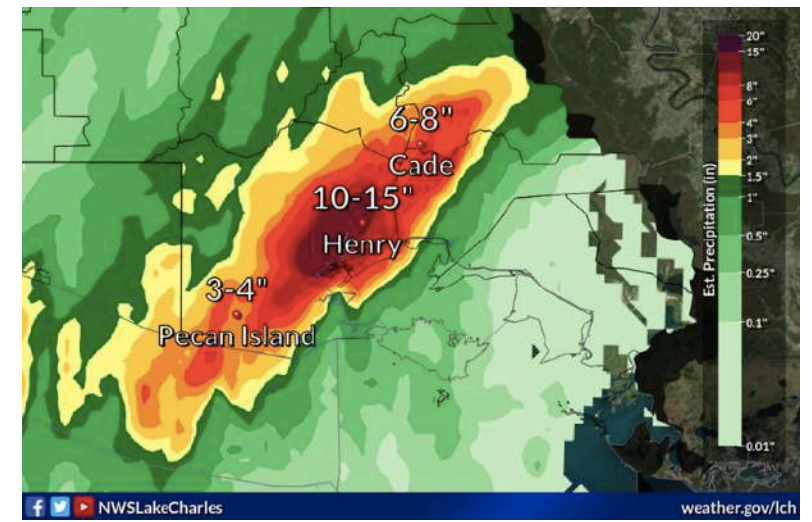


Louisiana has thousands of miles of streams



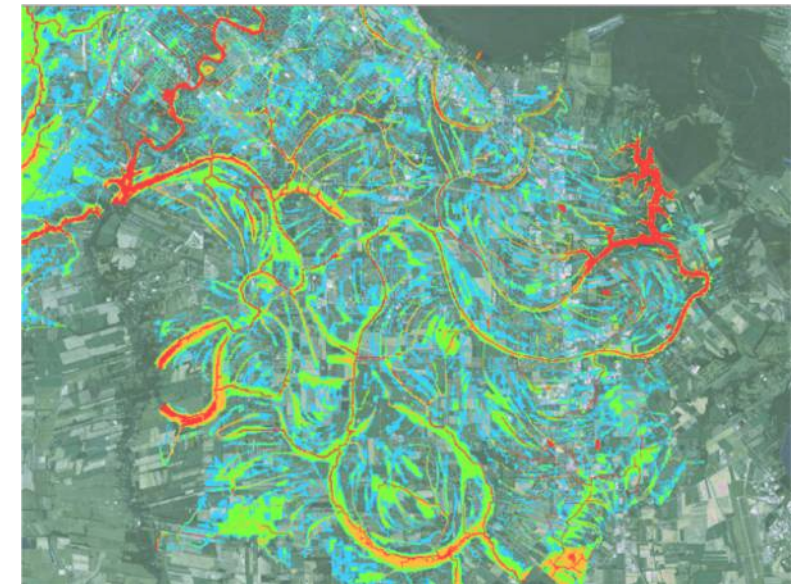
Why should we invest in monitoring?

We need a watershed-scale monitoring system that supports communities in **flood risk assessment, planning, preparedness and real-time warning and response.**



Radar-rainfall field over Lake Charles

Source: weather.gov/lch



Flood inundation simulation over Isaac Verot watershed

Source: [UL-Lafayette](#)



What can we monitor?

STAGE (WATER LEVEL)



FLOW RATE (DISCHARGE)

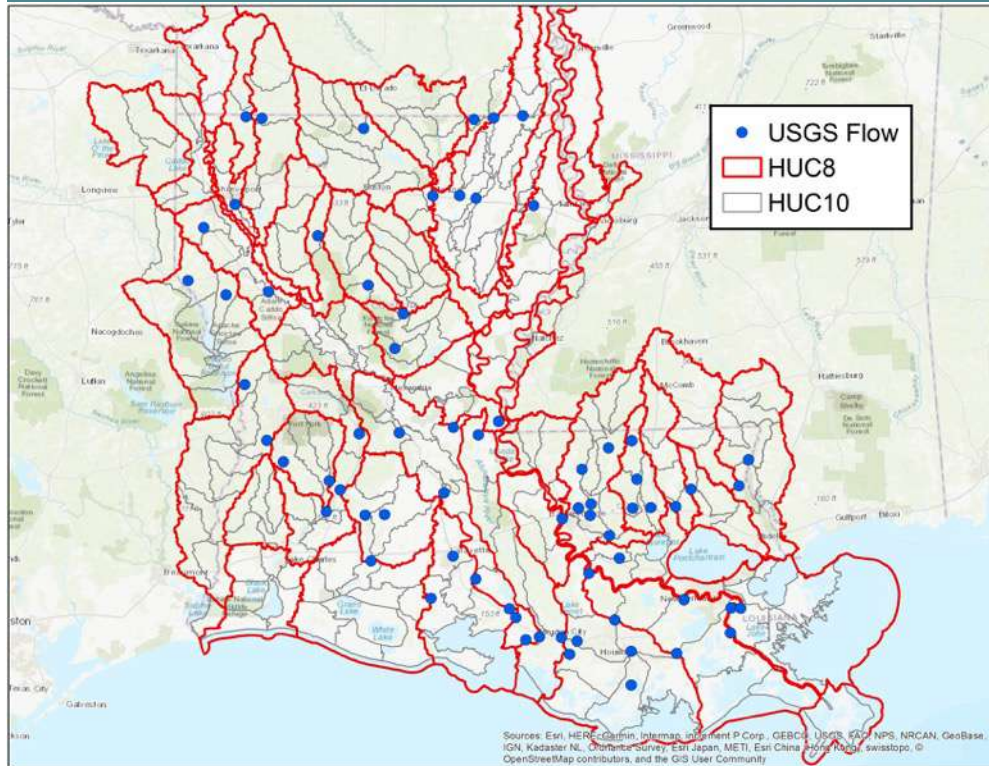


RAINFALL



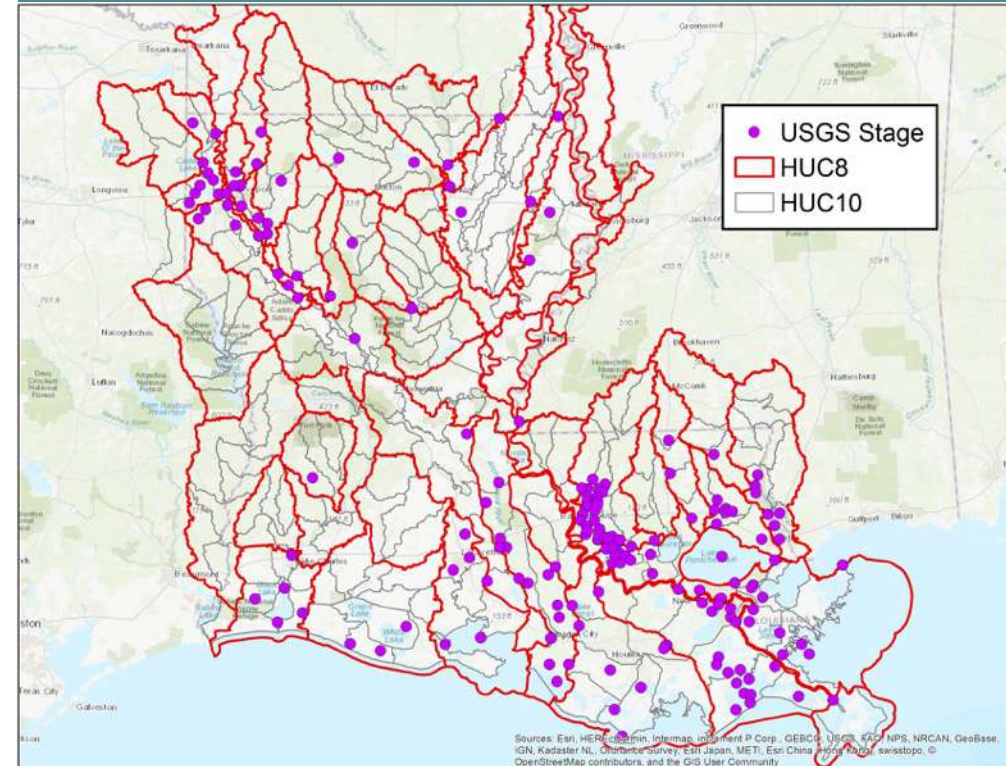
Many regions lack river gauges

Flow Gauges



- 26 of 60 HUC8s without flow gauges
- 188 of 250 HUC10s without flow gauges

Stage Gauges



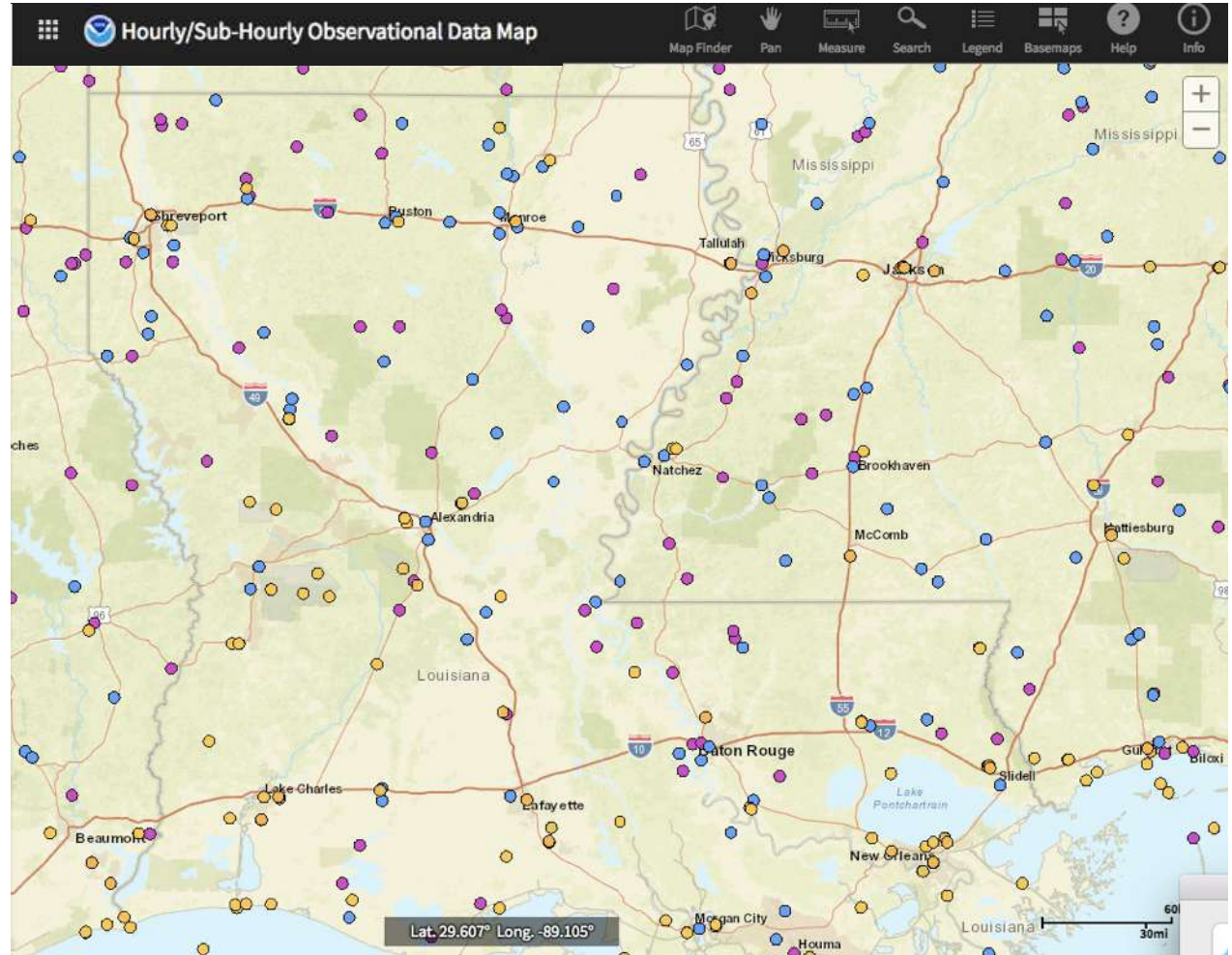
- 23 of 60 HUC8s without stage gauges
- 177 of 250 HUC10s without stage gauges



Rain gauge coverage is sparse

A DATA MAP OF
LOUISIANA'S LIMITED RAIN
GAUGE NETWORK

- Hourly Global
- 15 Minute Precipitation
- Hourly Precipitation



River and rain gauge network phases

Design and Deployment

- Develop backbone network to address clear gaps
- Review with USGS and regional and local stakeholders
- Solicit requests for additional gauges from modeling contractors
- Engage DEQ and USGS to deploy gauges

Operation and Maintenance

- Collect data and evaluate quality
- Use in model setup, calibration and validation
- Disseminate data through open-access web portals
- Incorporate real-time flood warning and forecasting systems
- Develop sustainability plans with regional and local partnerships
- Identify funding for long-term operations and maintenance



How can you participate?

1

PROPOSE LOCATIONS FOR NEW GAUGES

- Use our interactive web apps at watershed.la.gov/gauge-network-program to mark desired locations
- Email watershed@la.gov with proposed gauge locations in your area—provide specific coordinates, justification and variables to be measured

2

PROVIDE FEEDBACK ON PRELIMINARY DESIGN

- Use our web apps to comment on proposed locations

***DEADLINE FOR FEEDBACK IS MARCH 27**

1. Enter Information

Name

Affiliation

Please provide justification for your suggested location.

Date/Time

Please indicate the level of need for this added location
Select...

Attachment
Select File

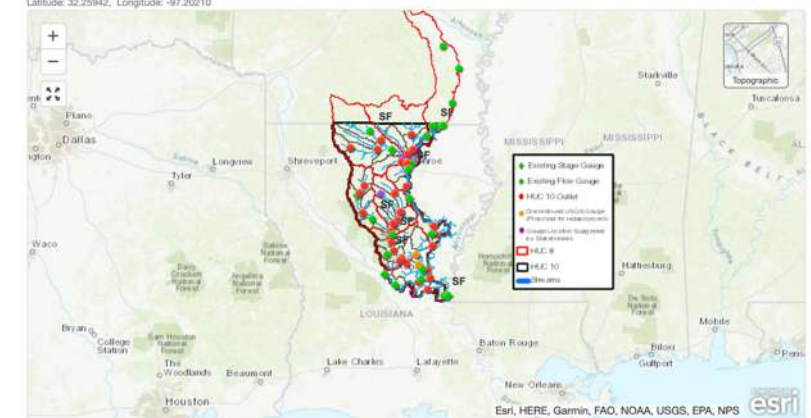
2. Select Location

Specify the location for this entry by clicking/tapping the map or by using one of the following options.

Search Lat/Lon

Find address or place Locate Me

Latitude: 32.25942; Longitude: -97.20210



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

3. Complete Form

Add this information to the map.

Submit Entry View Submissions

Preview of interactive web app

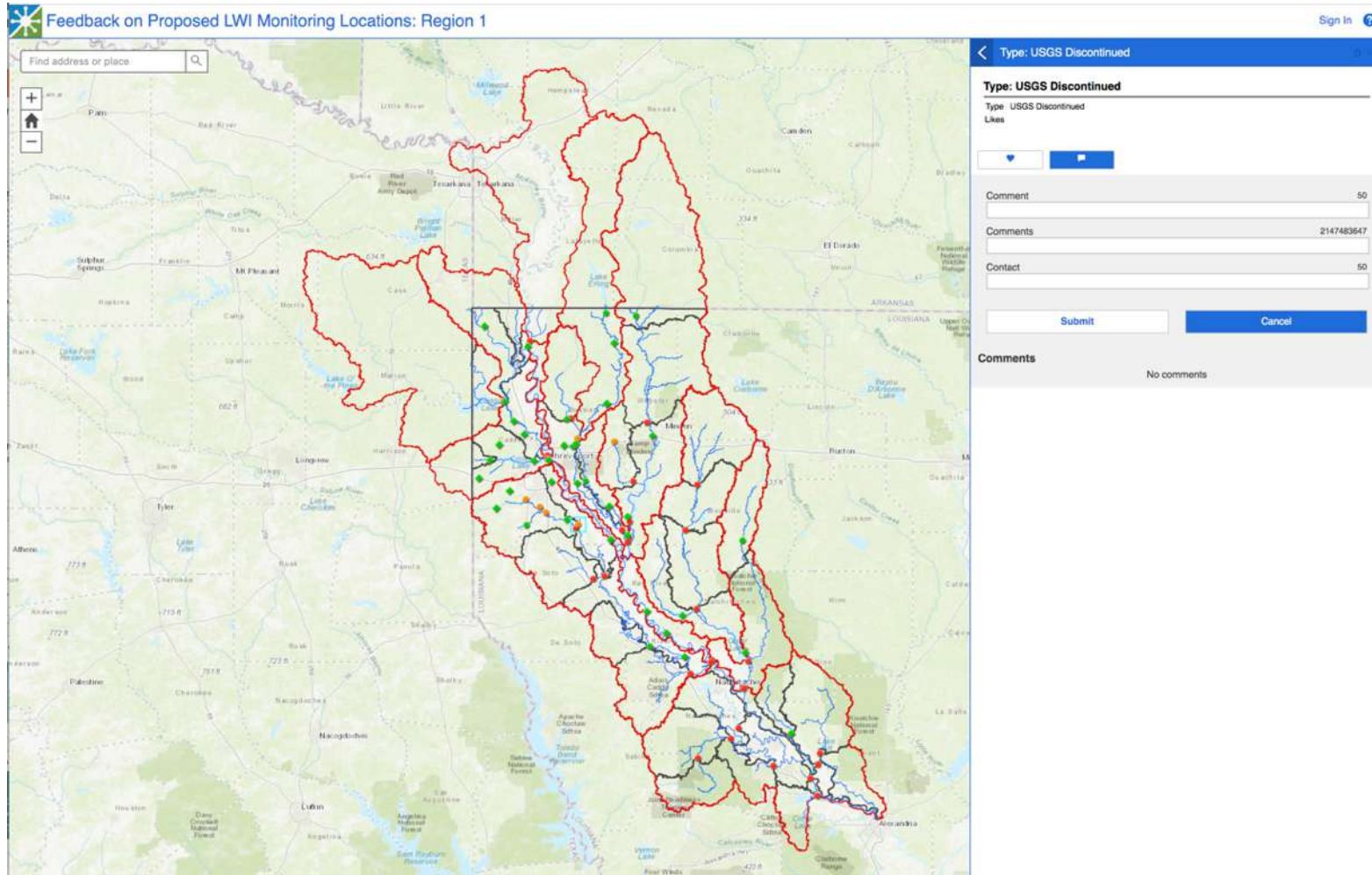


Web app demonstration



Crowdsourcing gauge placement web apps

PREVIEW OF INTERACTIVE WEB APP




Use the
interactive web
app to like and
comment on
proposed gauges



Crowdsourcing gauge placement web apps

PREVIEW OF INTERACTIVE WEB APP

Suggestions for New LWI Monitoring Locations: Region 1

This site is developed by the Louisiana Watershed Initiative to collect feedback on proposed locations of new hydrologic monitoring stations in your region.

The symbols you see in the map represent the following:

- (a) Green symbols: Existing USGS streamflow gauges (green circles) and existing USGS stage gauges (green diamonds)
- (b) Red-circle symbols: Outlets of HUC10 Watersheds
- (c) Orange-circle symbols: Locations of historical discontinued USGS gauges (proposed for redeployment)
- (d) Purple symbols: Locations of gauges proposed so far by different stakeholders

Note: Boundaries of HUC8 and HUC10 are shown in red and black lines, respectively.

To suggest a new gauge, start by pressing the "expand map" button located under the zoom buttons (top left corner of the map). You can now click on a specific location in the map to propose a location for a new gauge. To confirm the selected location, please exit the full screen mode by clicking the cross on the top left corner and proceed by filling out the form. Please provide a brief justification on your proposed location(s) and whether you recommend a full streamflow gauge, or a stage gauge only. You will also have the capability of uploading pictures of your location of interest if needed.

1. Enter Information

Name

Affiliation

Please provide justification for your suggested location

Date/Time

Please indicate the level of need for this added location

Attachment

2. Select Location

Specify the location for this entry by clicking/tapping the map or by using one of the following options.

Lat/Lon


Use the
interactive web
app to propose
sites for new
gauges





Questions?

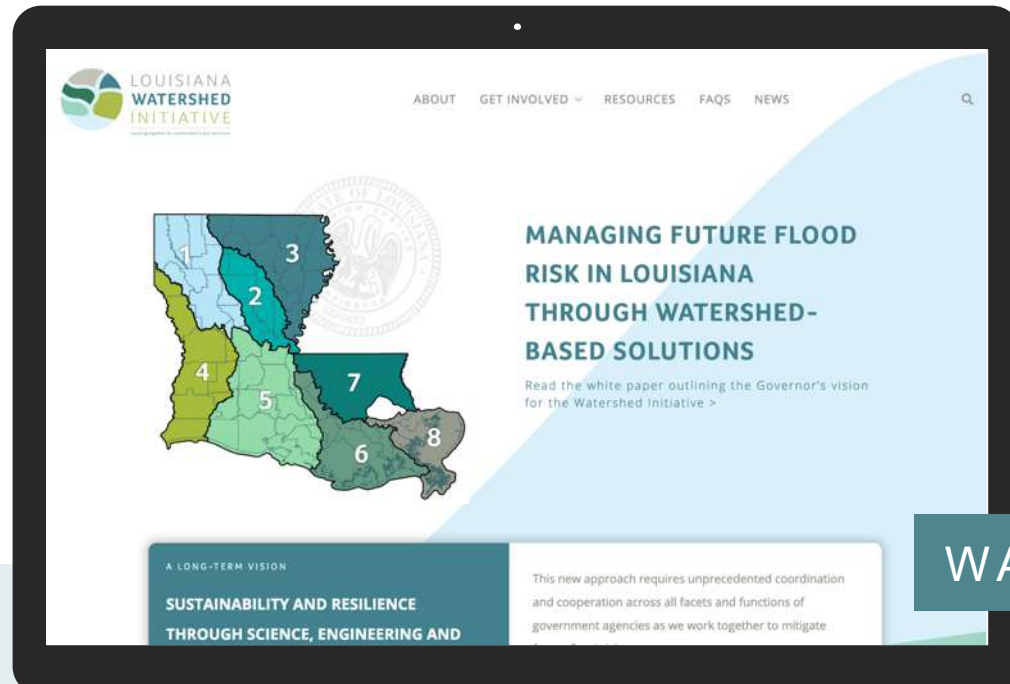


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 WATERSHED@LA.GOV

THANK YOU



WATERSHED.LA.GOV