



Louisiana FloodID Overview

June 2023

LOUISIANA
WATERSHED
INITIATIVE

working together for sustainability and resilience

MULTIPLE AGENCY INVOLVEMENT



PROTOTYPE DEVELOPMENT TEAM



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

LSU

PSC

IOWA



GOALS OF FloodID DEVELOPMENT

Advanced storm surge and compound flood hazard forecasts

Decision support dashboards assisting multiple emergency support functions

Extensible beyond hurricane storm surge in coastal areas to year-round, statewide flood forecasting



LOUISIANA FloodID PATH FORWARD

LEAD AGENCY

GOHSEP as the lead agency for continued R&D and FloodID operations to support across ESFs

BETA TESTING

GOHSEP led beta testing for 2023 hurricane season to test the system and further evaluate integrating system operations into existing workflows.

ONGOING OPERATIONS AND R&D

Identifying pathways to fund and staff FloodID operations and ongoing R&D considerations



FloodID COMPONENTS

METEOROLOGICAL FORECAST:
WIND AND PRESSURE FIELDS

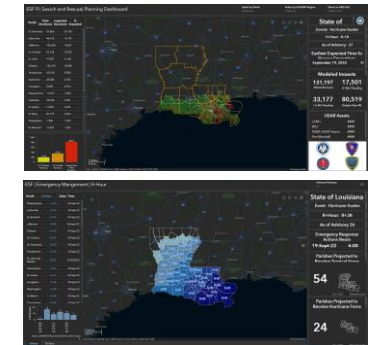
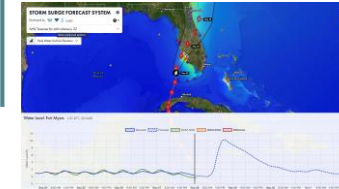
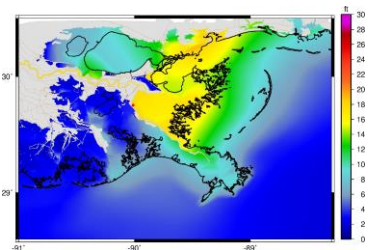
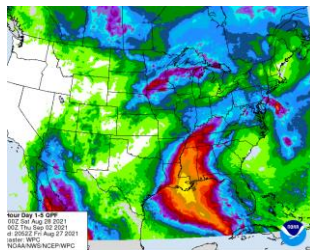
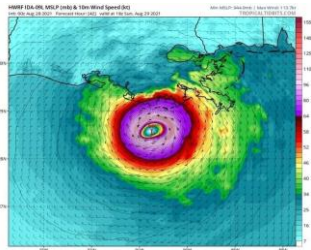
METEOROLOGICAL FORECAST:
RAINFALL

TROPICAL STORM SURGE MODELING

COMPOUND FLOOD MODELING

FLOOD EXTENT, DEPTH, AND TIMING VISUALIZATION

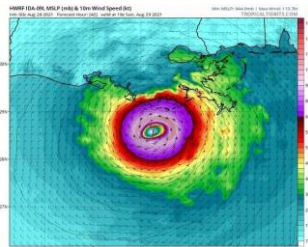
DECISION SUPPORT TOOLS



FloodID COMPONENTS

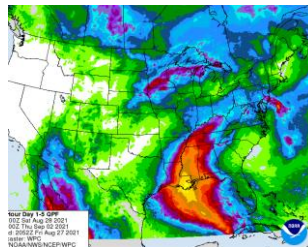
METEOROLOGICAL FORECAST: WIND AND PRESSURE FIELDS

Leverage NOAA atmospheric pressure and wind velocity, which drive the coastal storm surge response



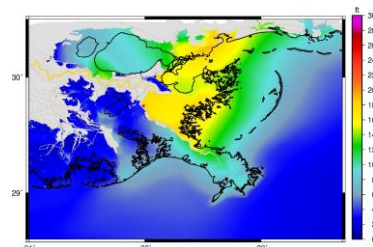
METEOROLOGICAL FORECAST: RAINFALL

NOAA rainfall forecasts appropriate to combine with pressure and wind forecast for estimating compound flooding



TROPICAL STORM SURGE MODELING

Using pressure/wind forecast data to estimate storm surge and wave conditions, extents and timing



COMPOUND FLOOD MODELING

Using rainfall and streamflow data, as well as storm surge forecasts to estimate compound flooding



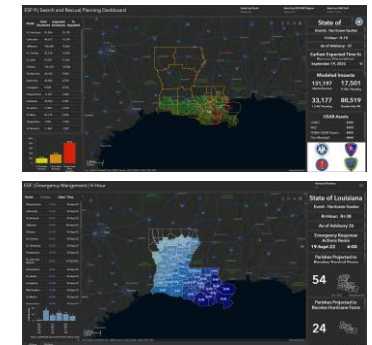
FLOOD EXTENT, DEPTH, AND TIMING VISUALIZATION

Visualize the outputs from tropical storm surge modeling and compound flood modeling



DECISION SUPPORT TOOLS

Custom set of decision support tools to meet stakeholder-specified needs



BACKEND DATA WORKFLOW

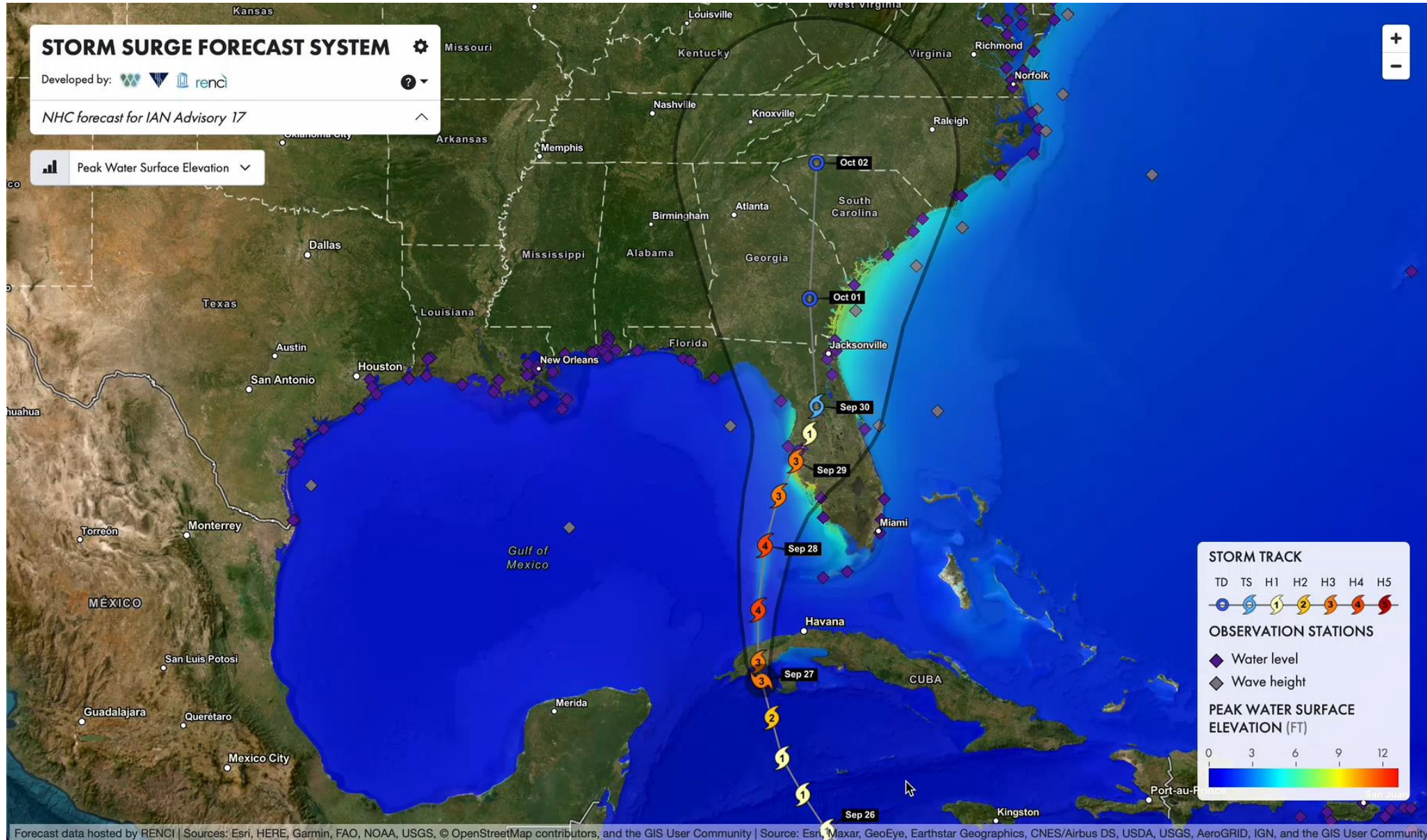
Data workflows are built into and between the six above components



FLOOD HAZARD INFORMATION SYSTEM

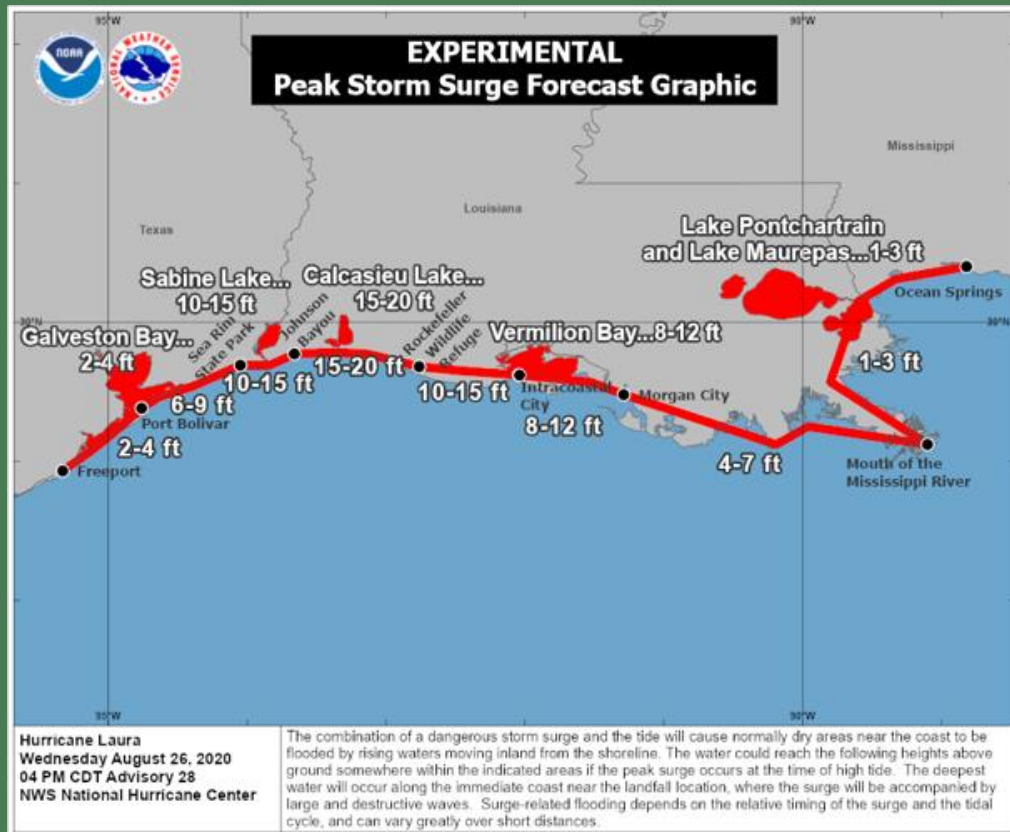


FloodID WEB INTERFACE

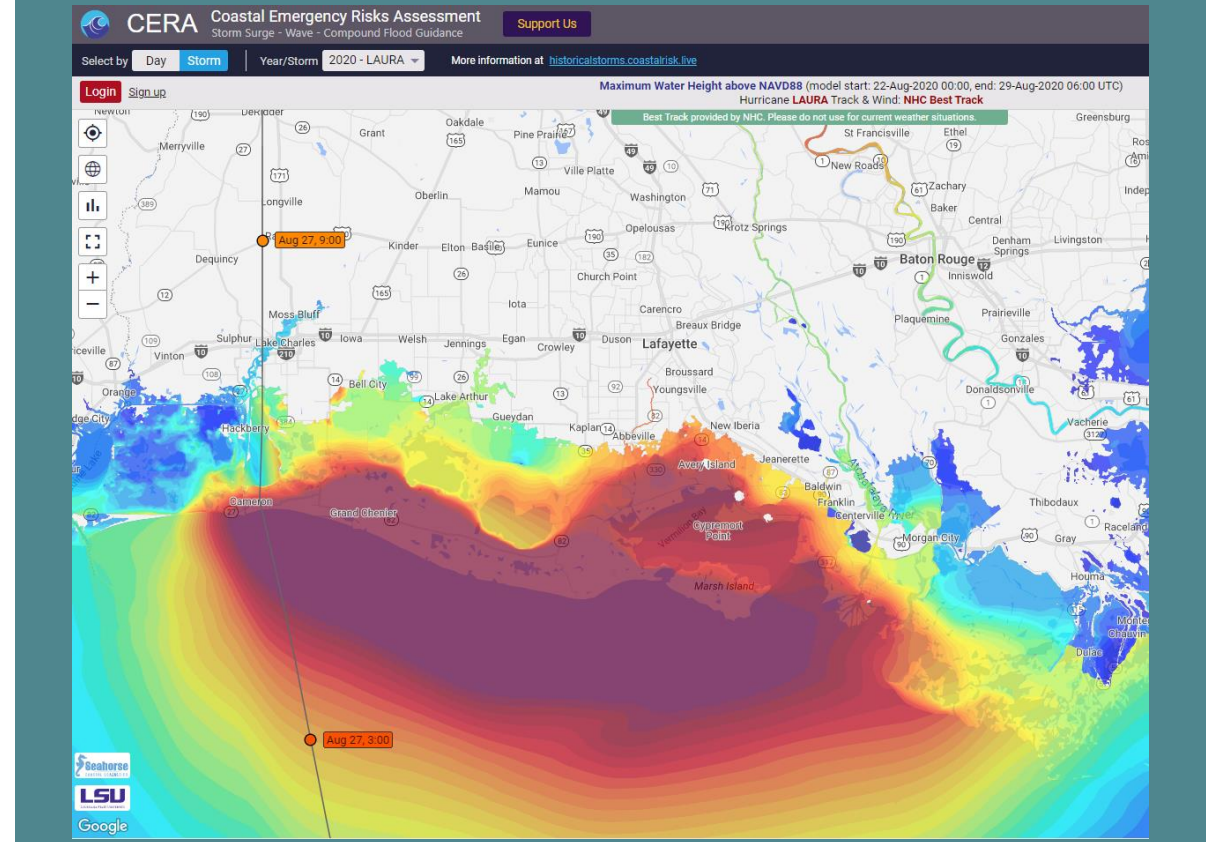


EXISTING FLOOD HAZARD FORECASTS

Federal Products



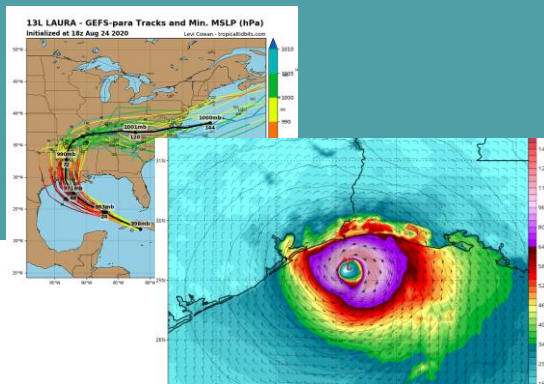
State Commissioned Products



FloodID EXTENSIBLE DESIGN

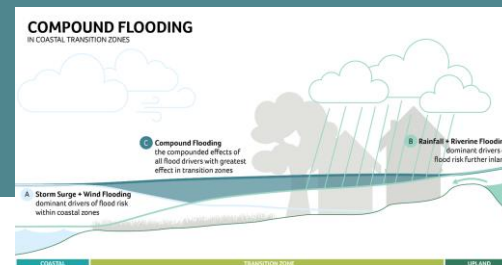
MULTIPLE METEOROLOGICAL OPTIONS

- Ensembles
- Individual storm representations



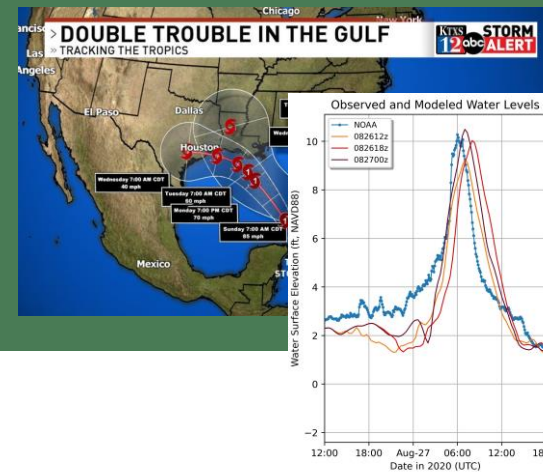
COMPOUND FLOODING

- Rainfall
- Streamflows
- Surge



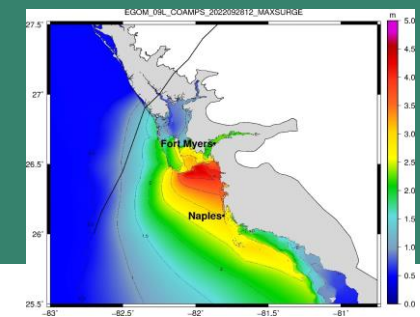
COMPLEX CONDITIONS

- Multiple storms
- High river



MULTIPLE USERS

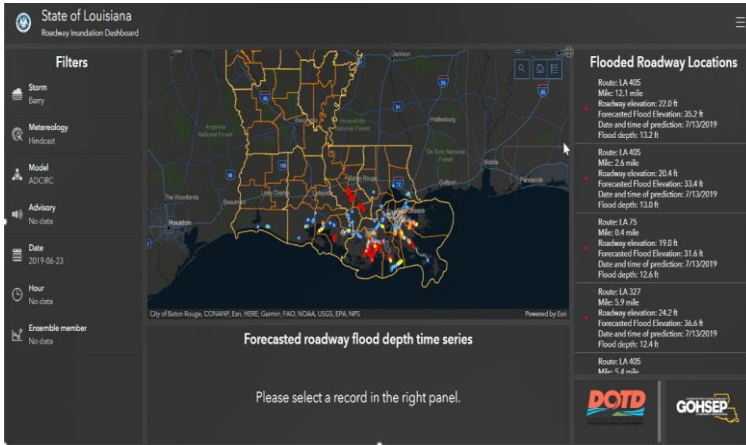
- DHS
- NOPP
- University partners



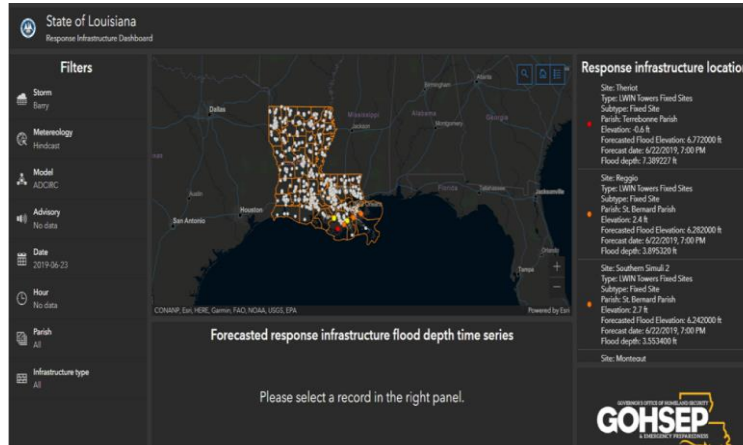
DECISION SUPPORT TOOLS



DECISION SUPPORT TOOLS



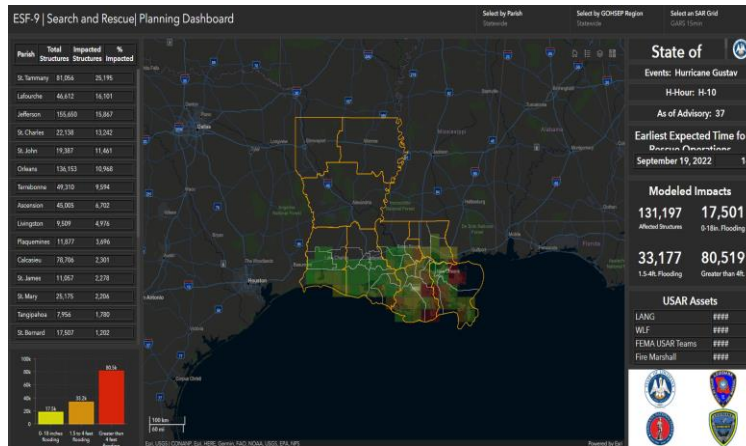
ROADWAY INUNDATION



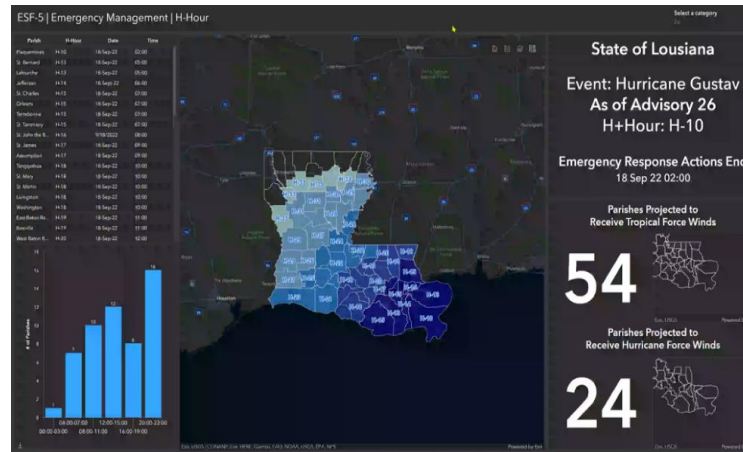
RESPONSE INFRASTRUCTURE



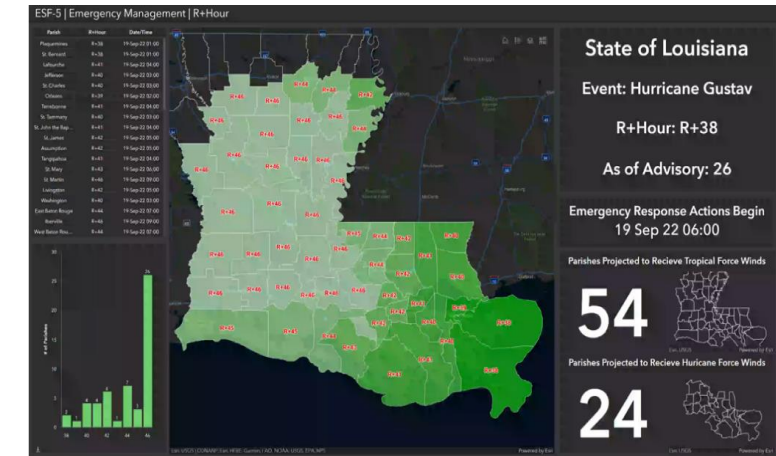
DIRECT DAMAGES



SEARCH AND RESCUE



H-HOUR



R-HOUR

ROADWAY INUNDATION DECISION SUPPORT TOOL

Expected Users: ESF-01

Lead State Agency: GOHSEP

State of Louisiana
Roadway Inundation Dashboard

Filters

- Storm
IDA
- Meteorology
NHC
- Model
ADCIRC
- Date or advisory**
13
- Ensemble member
Official Track

Flooded Roadway Locations

- Route: LA 1
Mile: 2.9 mile
Roadway elevation: 2.8 ft
Forecasted Flood Elevation: 12.1 ft
Date and time of prediction: August 29, 2021
Flood depth: 9.3 ft
- Route: LA 1
Mile: 0.8 mile
Roadway elevation: 1.3 ft
Forecasted Flood Elevation: 10.4 ft
Date and time of prediction: August 29, 2021
Flood depth: 9.1 ft
- Route: LA 1
Mile: 0.9 mile
Roadway elevation: 1.3 ft
Forecasted Flood Elevation: 10.3 ft
Date and time of prediction: August 29, 2021
Flood depth: 9.0 ft
- Route: LA 3151
Mile: 0.0 mile
Roadway elevation: 1.1 ft
Forecasted Flood Elevation: 10.1 ft
Date and time of prediction: August 29, 2021
Flood depth: 9.0 ft
- Route: LA 1
Mile: 5.9 mile
Roadway elevation: 1.6 ft
Forecasted Flood Elevation: 10.5 ft
Date and time of prediction: August 29, 2021
Flood depth: 8.9 ft
- Route: LA 1
Mile: 5.7 mile
Roadway elevation: 1.5 ft
Forecasted Flood Elevation: 10.2 ft
Date and time of prediction: August 29, 2021

City of Baton Rouge, CONANP, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS
Powered by Esri

Forecasted roadway flood depth time series

Please select a record in the right panel.

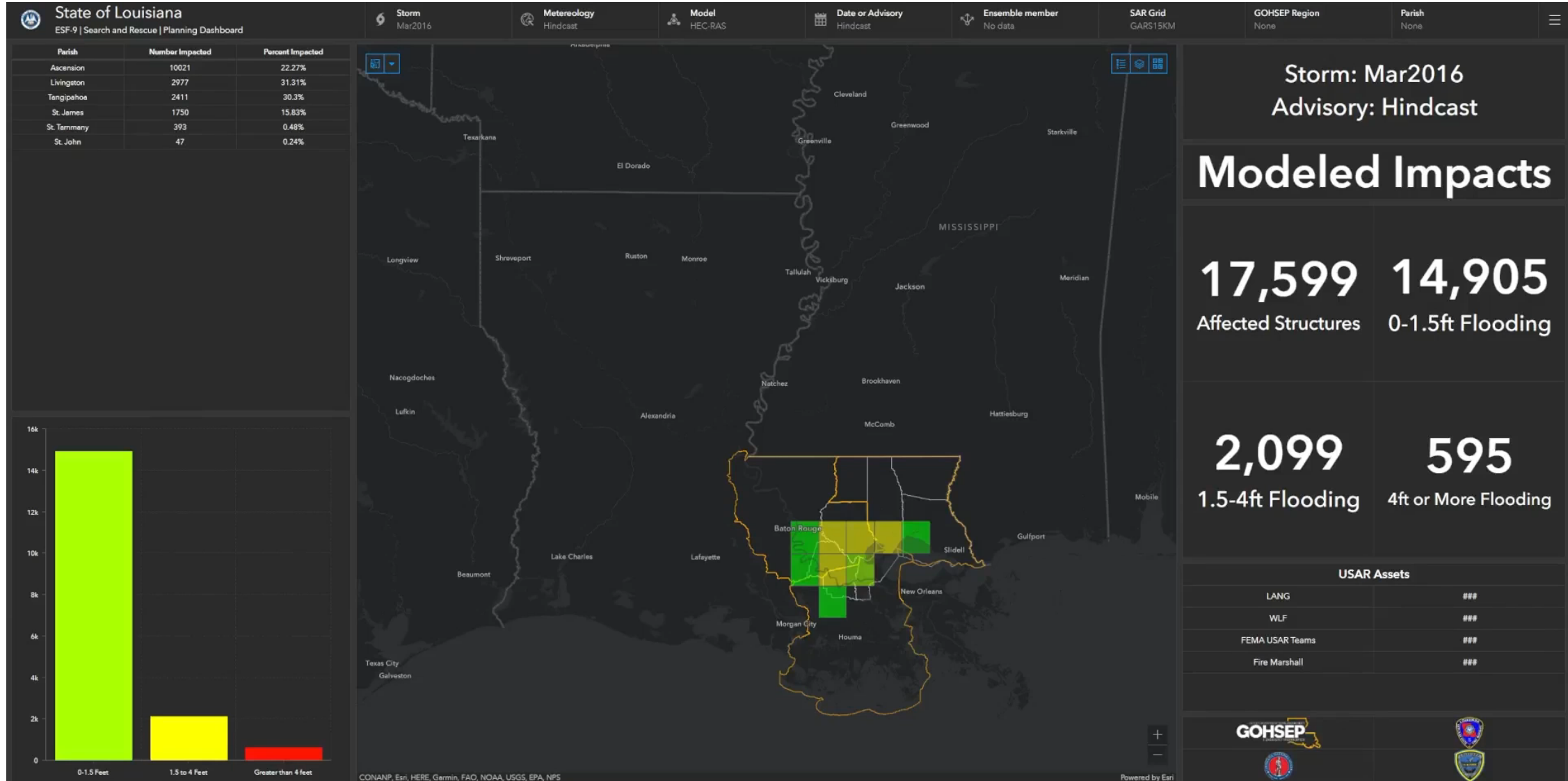
DOTD **GOHSEP**



SEARCH AND RESCUE DECISION SUPPORT TOOL

Expected Users: ESF-9

Lead State Agency: GOHSEP





DISCUSSION

For additional information, contact
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