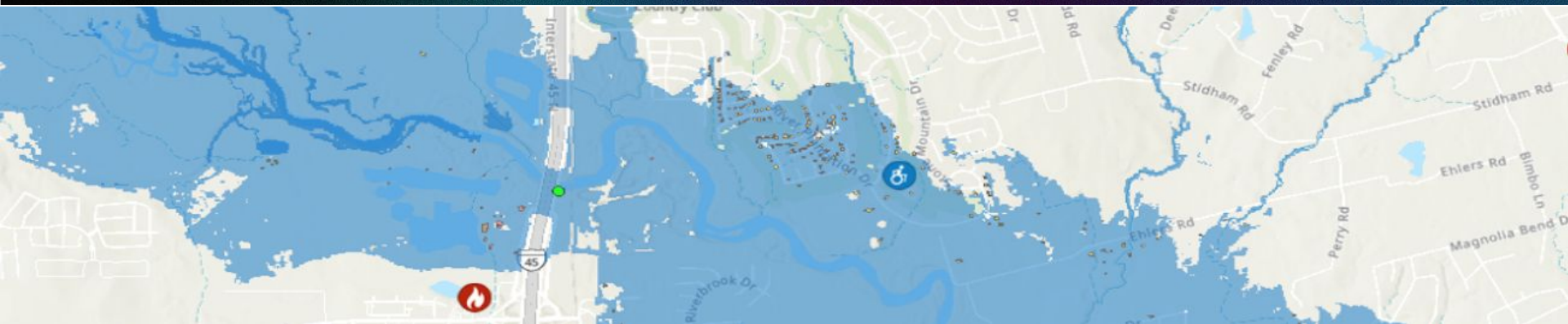


# Flood Inundation Mapping: A New Paradigm of Hydrologic Impact-Based Decision Support Services

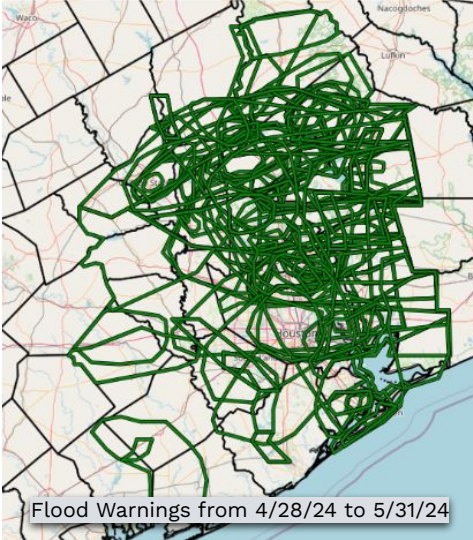
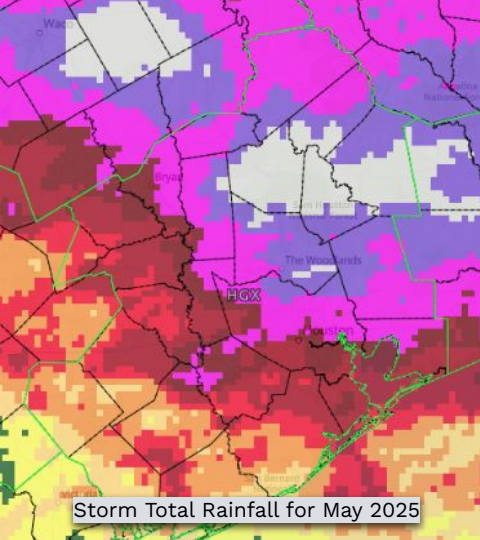


01.15.25

15TH CONFERENCE ON TRANSITION OF RESEARCH TO  
OPERATIONS at 105TH AMS ANNUAL MEETING

KATIE LANDRY-GUYTON  
SENIOR SERVICE HYDROLOGIST  
NWS HOUSTON/GALVESTON





# Overview of April/May 2024 Flood

- Issued over 160 flood watches, warnings, advisories.
- Conducted over 40 coordination calls and webinars.
- Ran over 16 contingency forecasts.

Shared over 150 targeted flood inundation maps (FIM) by email, briefing, and screen share.



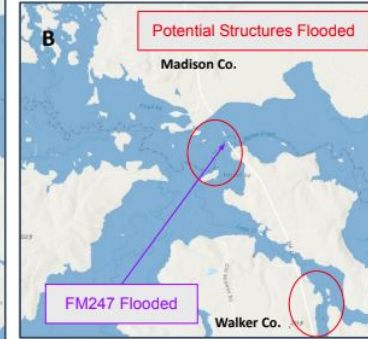
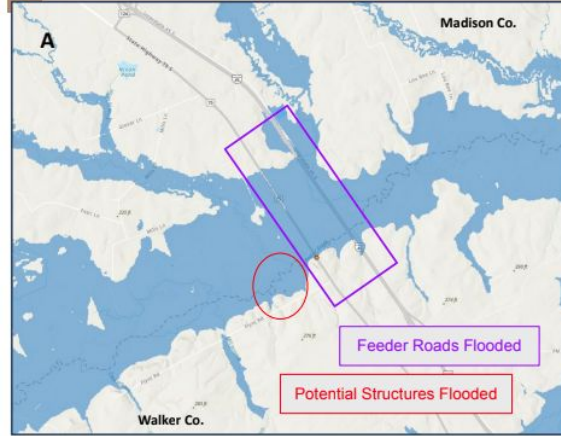
# #1 Most partners used the FIMs that were provided via briefings and emails.

Slides from NWS briefings show annotations highlighting key locations where flood impacts are forecast.

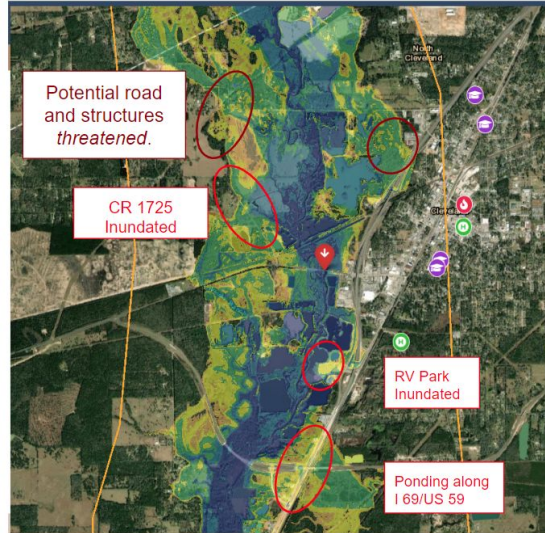
## Bedias Creek



Houston/Galveston  
WEATHER FORECAST OFFICE

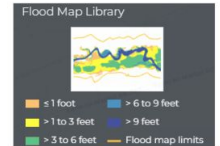


www.weather.gov/Houston



Houston/Galveston  
WEATHER FORECAST OFFICE

INFRM FIM for 21.5 ft (Moderate Flood)



Impacts:

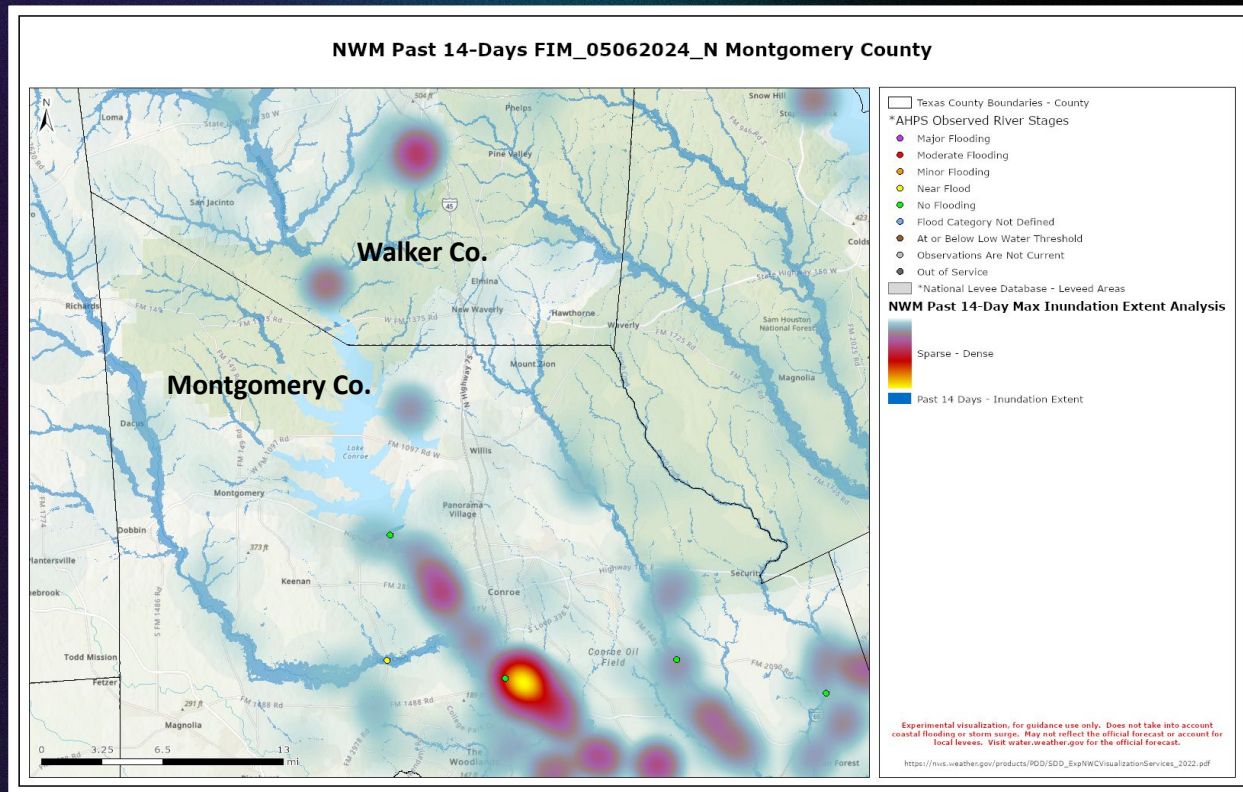
- CR 1725 inundated
- East Fork RV Resort inundated
- Ponding along I 69/US 59
- Santa Fe Railroad is NOT expected to flood

www.weather.gov/Houston



# #2 Most FIM requests came post-event.

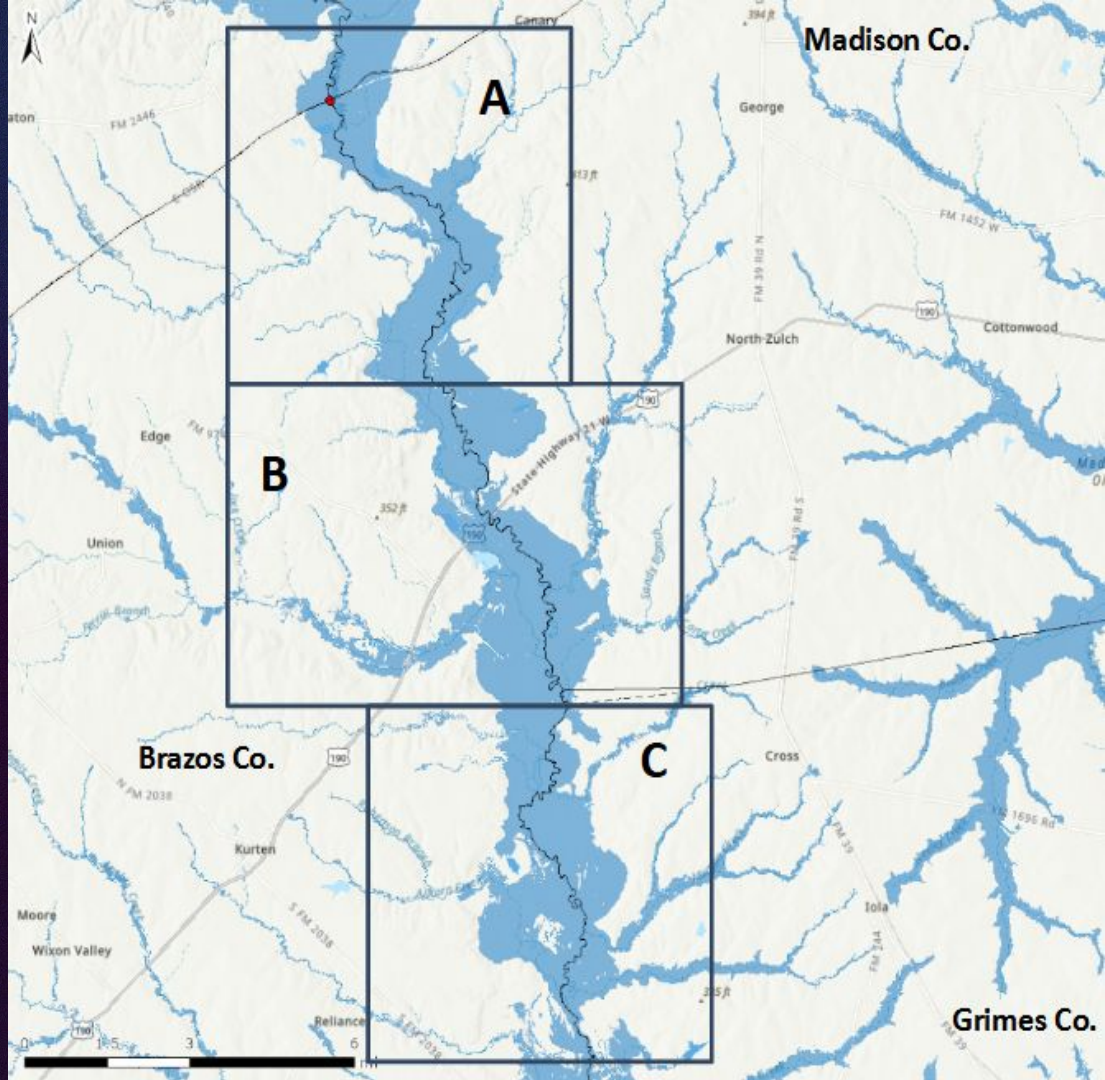
Shared analysis maps post event to support damage assessments and recovery efforts.





# #3 Some partners used FIMs inappropriately.

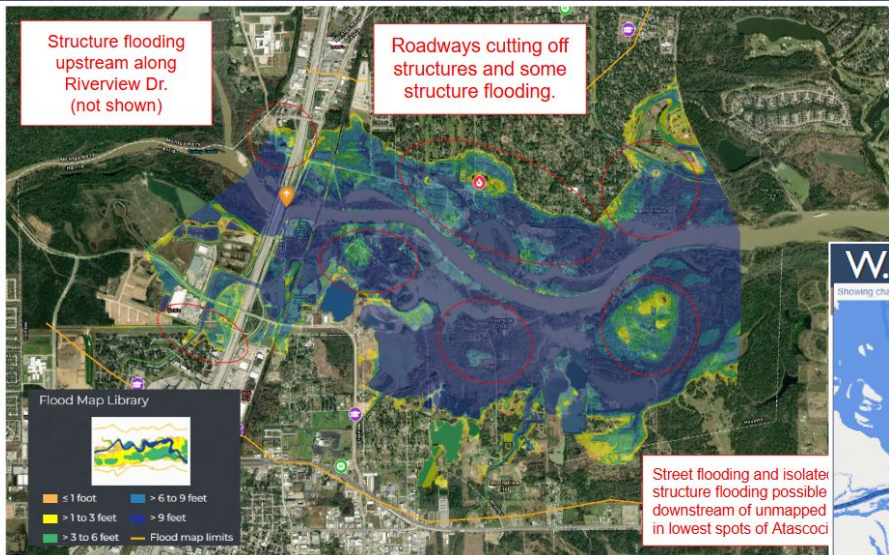
Backwater locations inaccurately portraying flood threat.





# #4 Multiple FIMs caused confusion.

West Fork San Jacinto at Humble

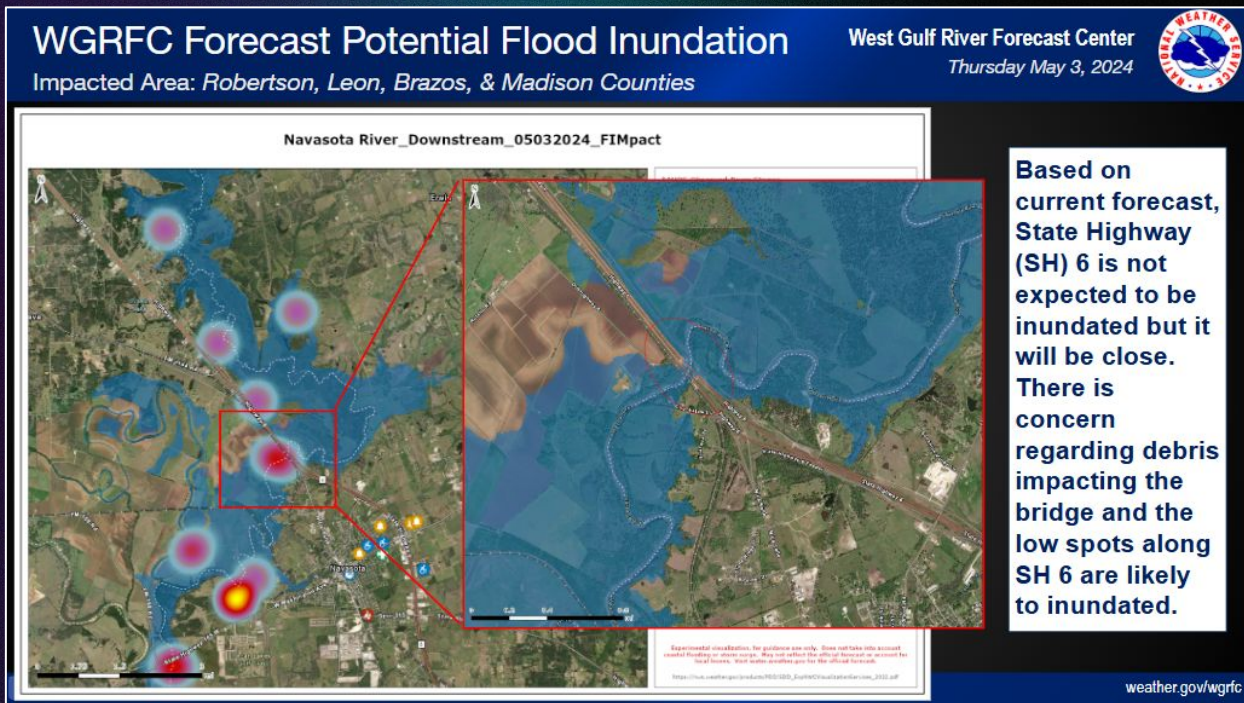


Different FIMs available for the same location. Both vetted by NWS hydrologists for accuracy.



# #5 Mutual aid was crucial but needs significant improvement.

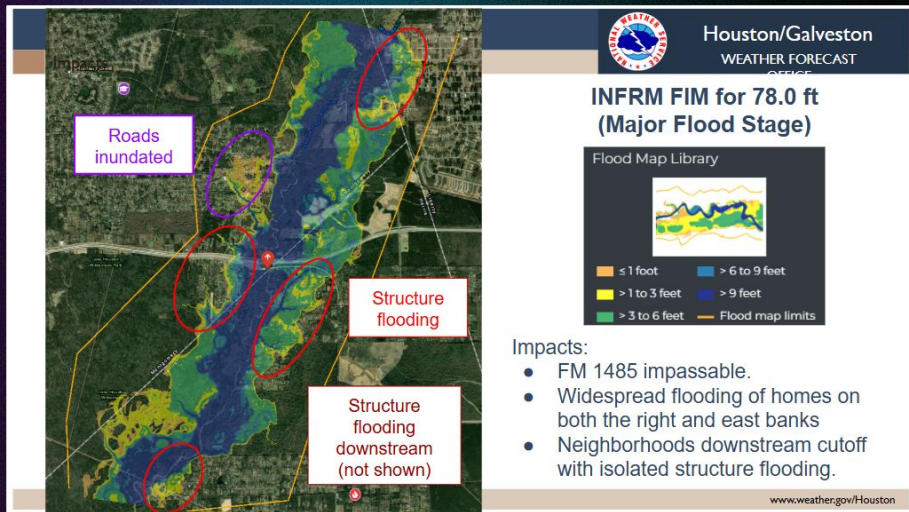
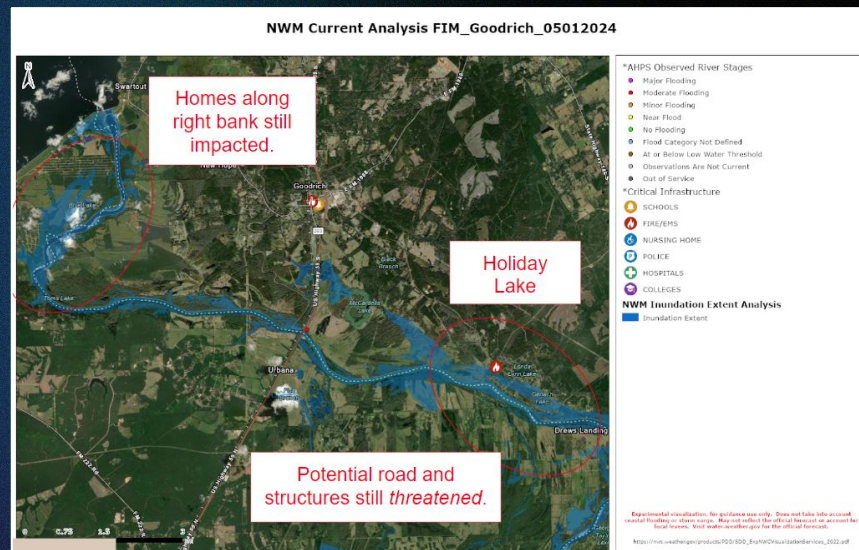
Reachback capability worked for FIM reviews, not as much for FIM IDSS.





# #6 Overall good feedback on accuracy and application.

FIMs helped with the planning, response, and recovery efforts especially where data was lacking.





“ They were very accurate. We utilized them extensively after the event to help with searches after the flood waters receded and damage assessments, determining which areas to send crews. It was also beneficial during the incident for planning purposes on what we could expect.”

Trey Baxter

Montgomery County Office of Homeland Security & Emergency Management

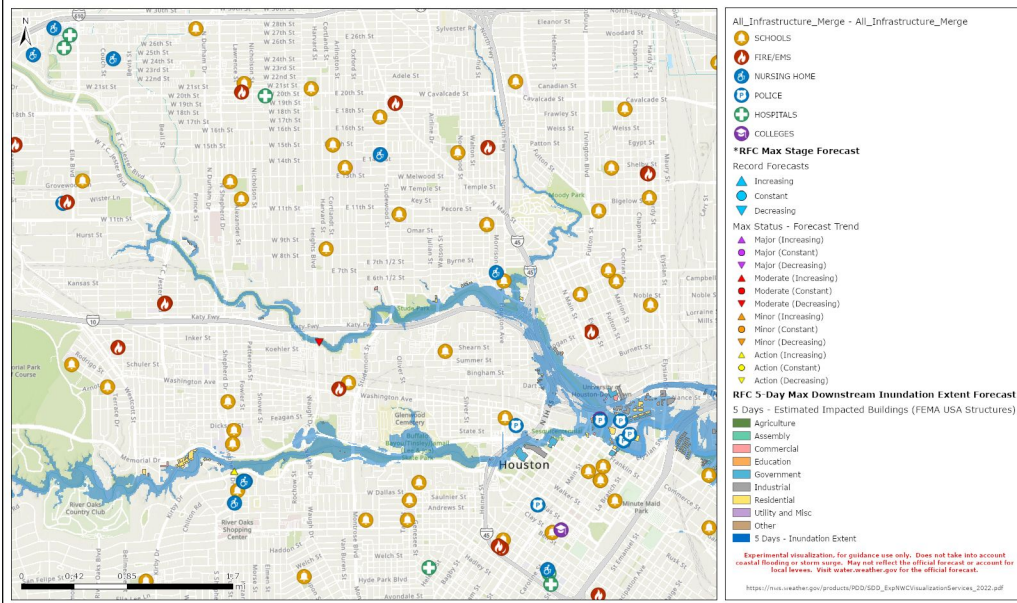


# #7 FIM IDSS did not work the same during Hurricane Beryl.

FIMs were extremely difficult to message with a lot of uncertainty, both in track and QPF.



NWM RFC 5-Day Inundation Extent Forecast\_07082024\_White Oak Buffalo Confluence





# Questions?

11



01.15.25

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“ The different flood inundation maps being used in the NWS webinars and briefings are causing issues with the HCFCD maps. Can yall at least include both maps...labeling ours as current and yours as forecasted. People looking at FWS and your maps and can't figure out why they are showing different images.”

Jeff Lindner  
Harris County Flood Control District (HCFCD)