

SE LOUISIANA FLOOD PROTECTION AUTHORITY -

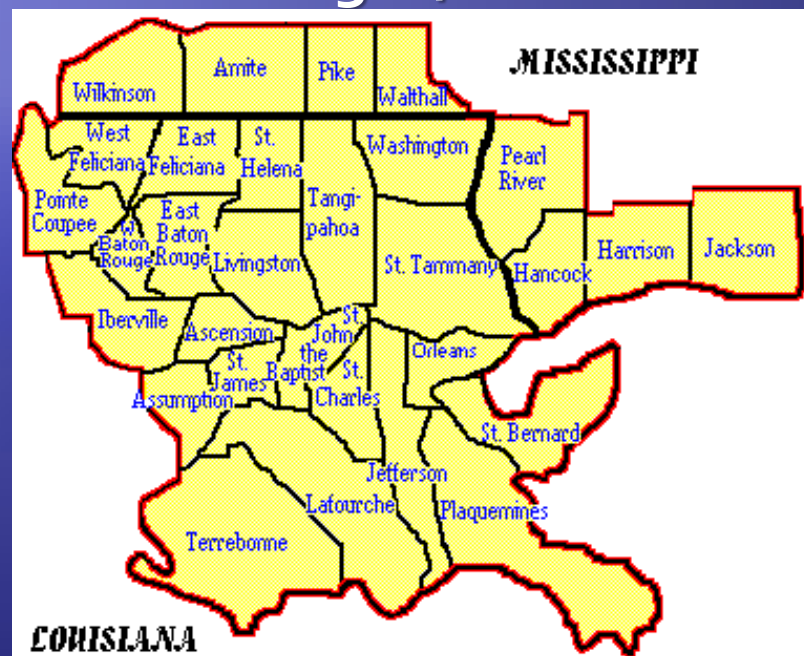
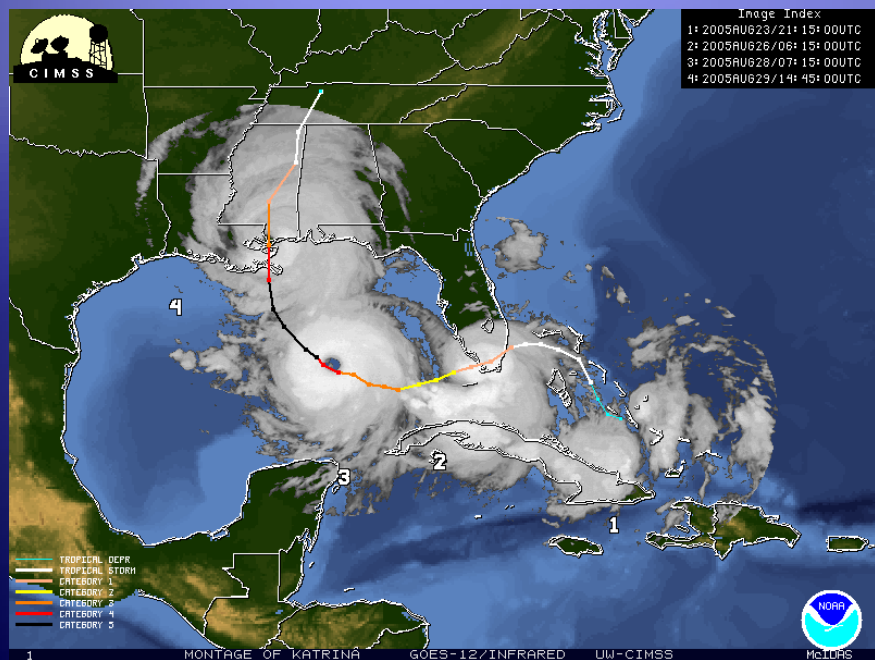


Frank Revitte

National Weather Service

New Orleans/Baton Rouge Area

www.srh.noaa.gov/lix





The National Weather Service



National Weather Service Coverage Map



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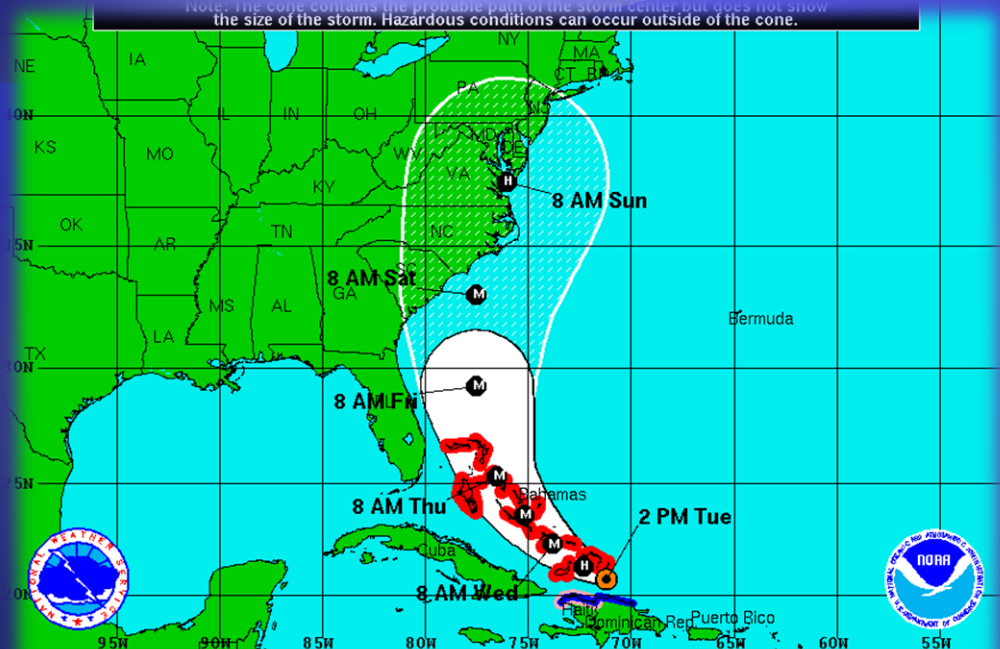


NHC Tropical Cyclone Products



NHC provides the “big picture” that complements and guides local NWS forecast office products, and provides guidance for international partners

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Hurricane Irene

Tuesday August 23, 2011

2 PM EDT Intermediate Advisory 13A

NWS National Hurricane Center

Current Information:

Center Location 20.7 N 71.2 W

Max Sustained Wind 100 mph

Movement WNW at 10 mph

Forecast Positions:

● Tropical Cyclone ○ Post-Tropical

Sustained Winds: D < 39 mph

S 39-73 mph H 74-110 mph M > 110 mph

Potential Track Area:

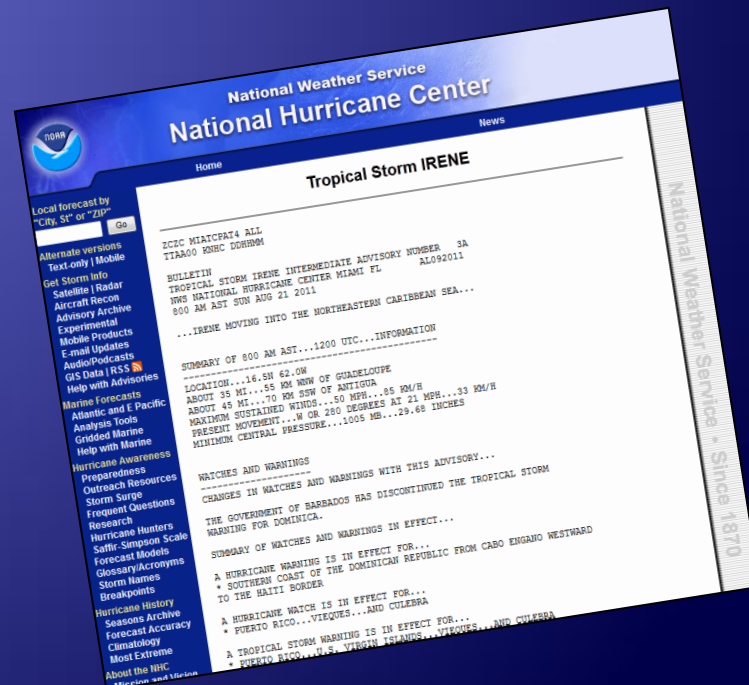
Day 1-3 Day 4-5

Watches:

Hurricane Trop.Storm

Warnings:

Hurricane Trop.Storm





NHC Text Products



- **Public Advisory**
- **Forecast Advisory**
- **Forecast Discussion**
- **Wind Speed Probabilities**
- **Tropical Cyclone Update**
- **Tropical Weather Outlook**
- **Tropical Cyclone Reports**
- **Monthly Tropical Weather Summary**



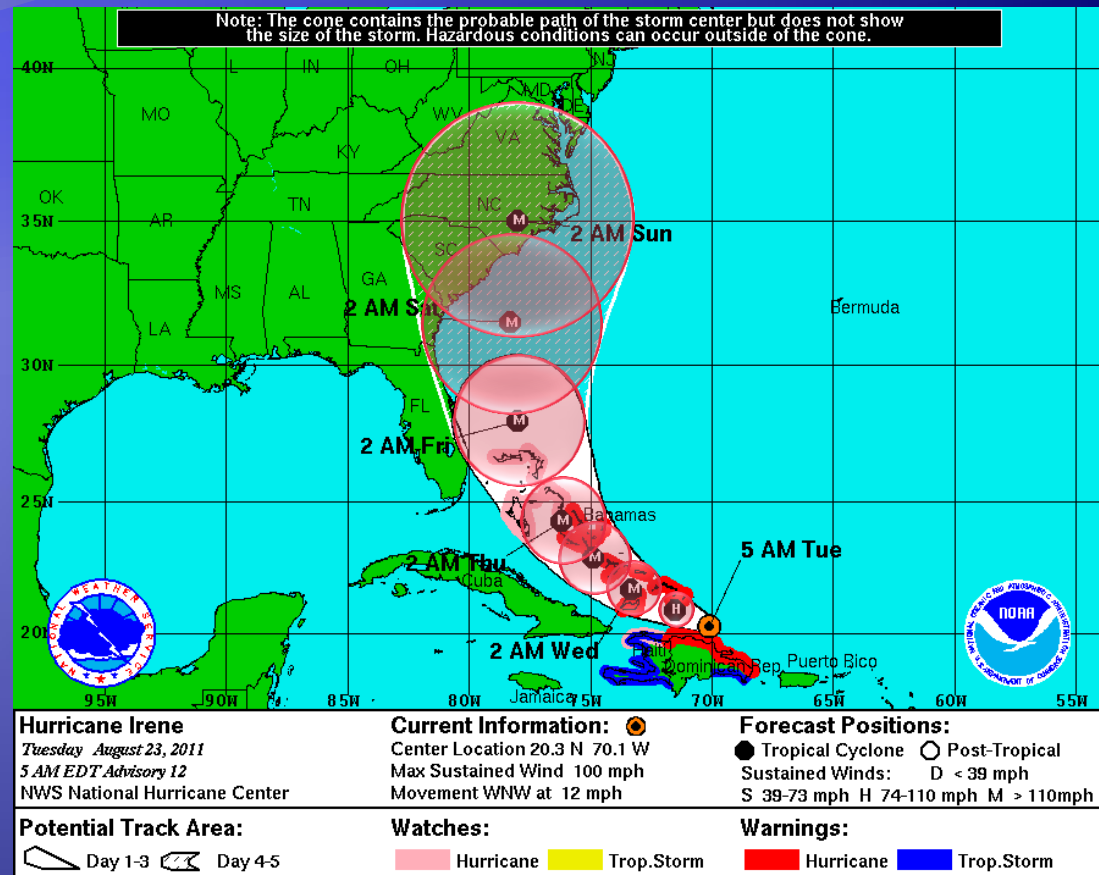
NHC Graphical Products



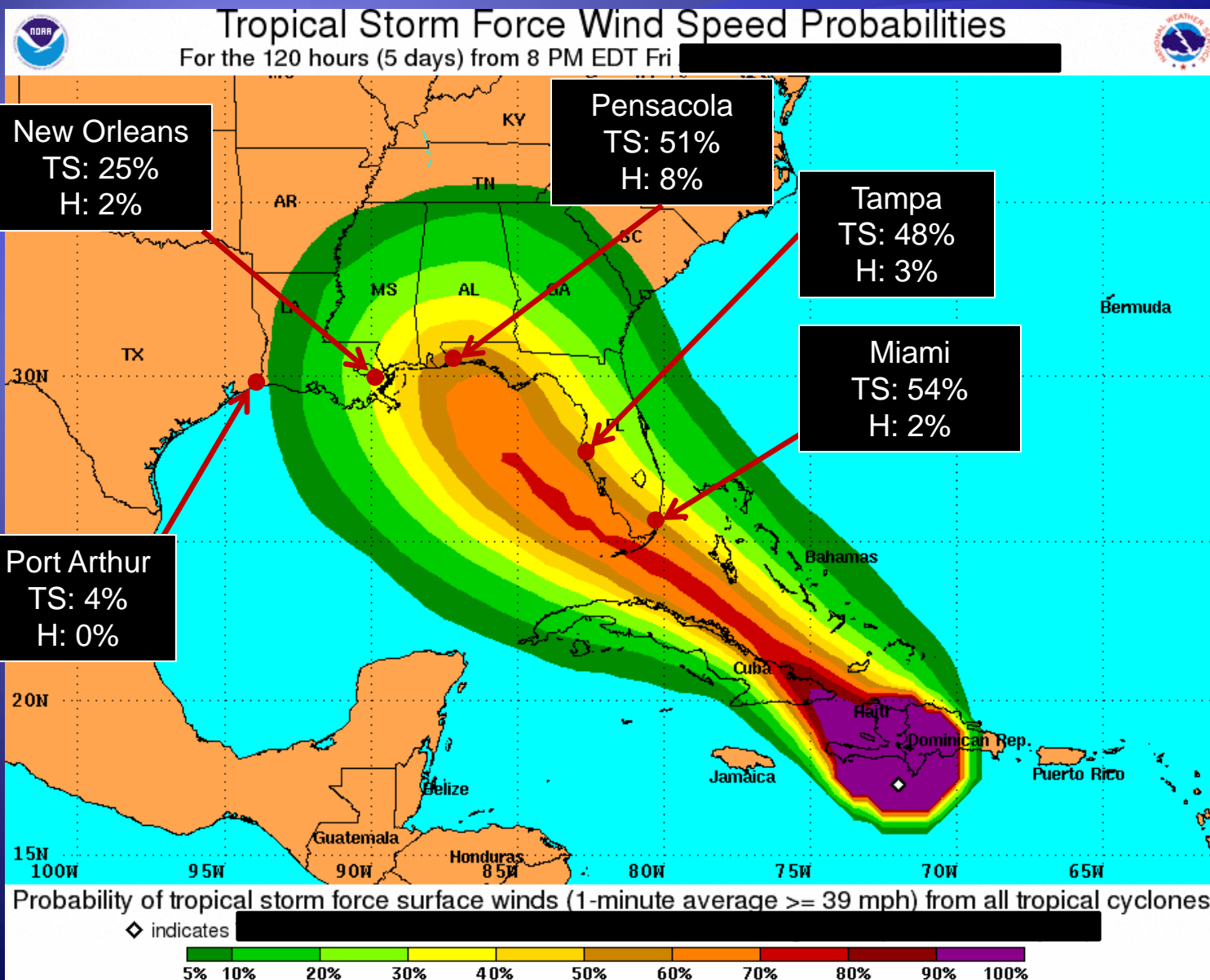
- Track Forecast Cone
- Surface Wind Field
- Surface Wind Speed Probabilities
- Cumulative Wind History
- Graphical Tropical Weather Outlook
- Storm Surge Probabilities
- Storm Surge Inundation Graphic (Experimental)
- Podcasts (Audio)

NHC Forecast Cone

- ◆ Represents probable track of tropical cyclone center
- ◆ Formed by connecting circles centered on each forecast point (at 12, 24, 36 h, etc.)
- ◆ Size of the circles determined so that, for example, the actual storm position at 48 h will be within the 48-h circle 67% of the time



Wind Probability Information





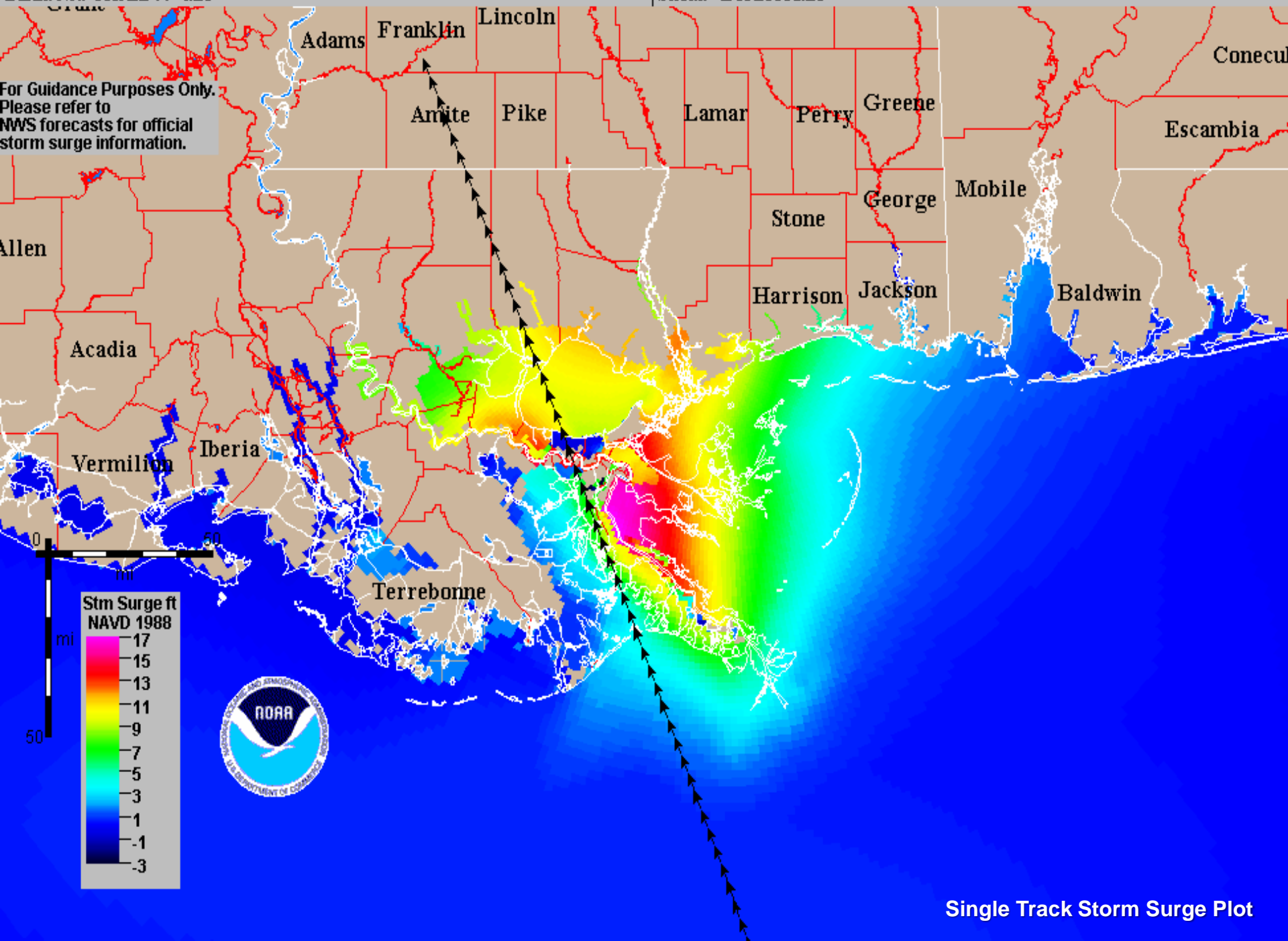
Storm Surge Products

- ◆ SLOSH Model – Sea Lake Overland Surge from Hurricanes
 - ◆ Synthetic tracks of hurricanes of similar intensity and similar track grouped together to show vulnerability.
- ◆ Probabilistic Storm Surge – Real time during event
 - ◆ Run SLOSH model numerous times varying intensity, forward speed, size and direction based on past history of forecast error.
 - ◆ Developed probability of various surge levels.



Forecast Error and Impact on Storm Surge

For Guidance Purposes Only.
Please refer to
NWS forecasts for official
storm surge information.

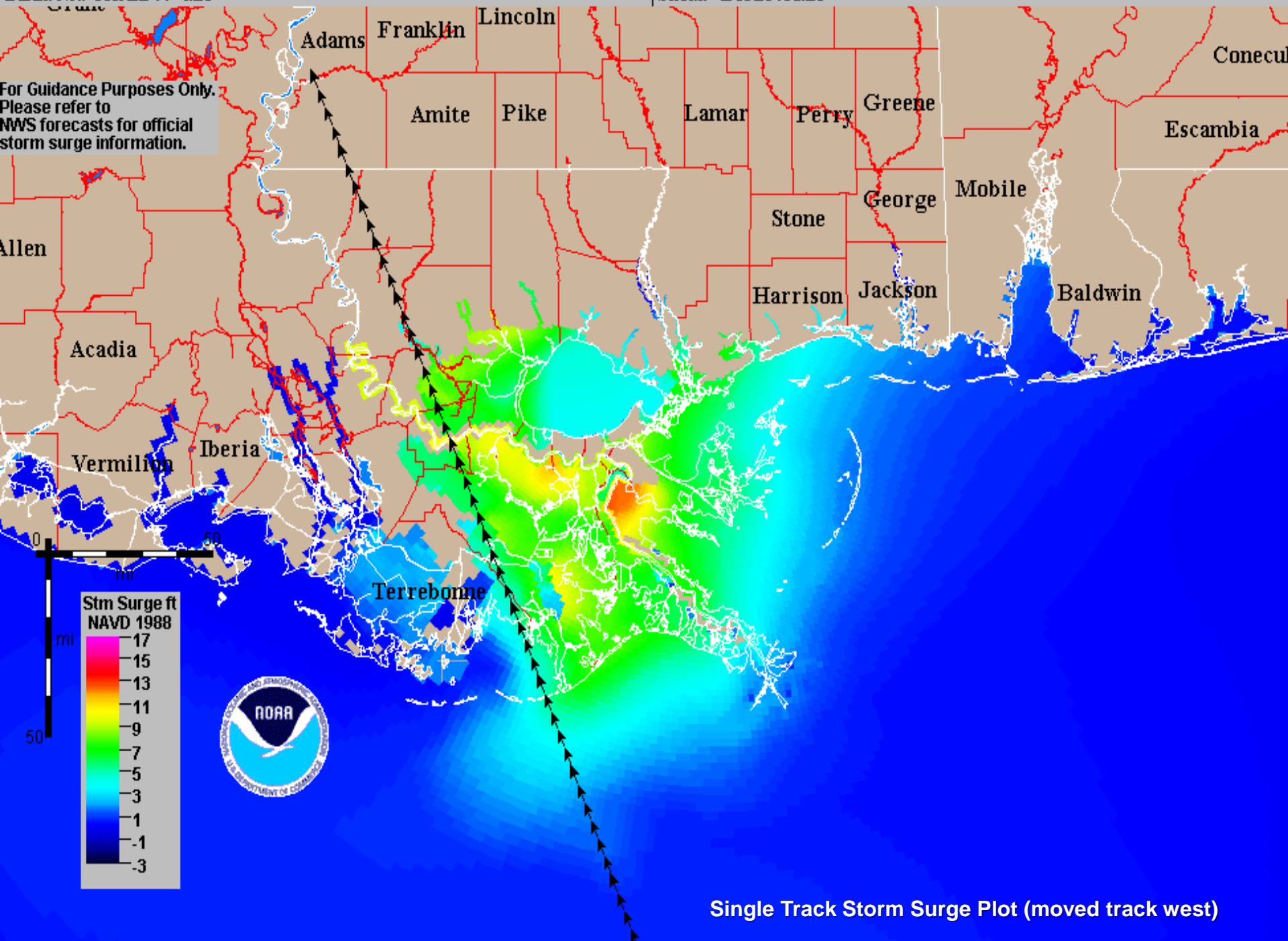


Single Track Storm Surge Plot

Basin: New Orleans v4 <ms3>

Storm: <f305L040.ms3>

For Guidance Purposes Only.
Please refer to
NWS forecasts for official
storm surge information.

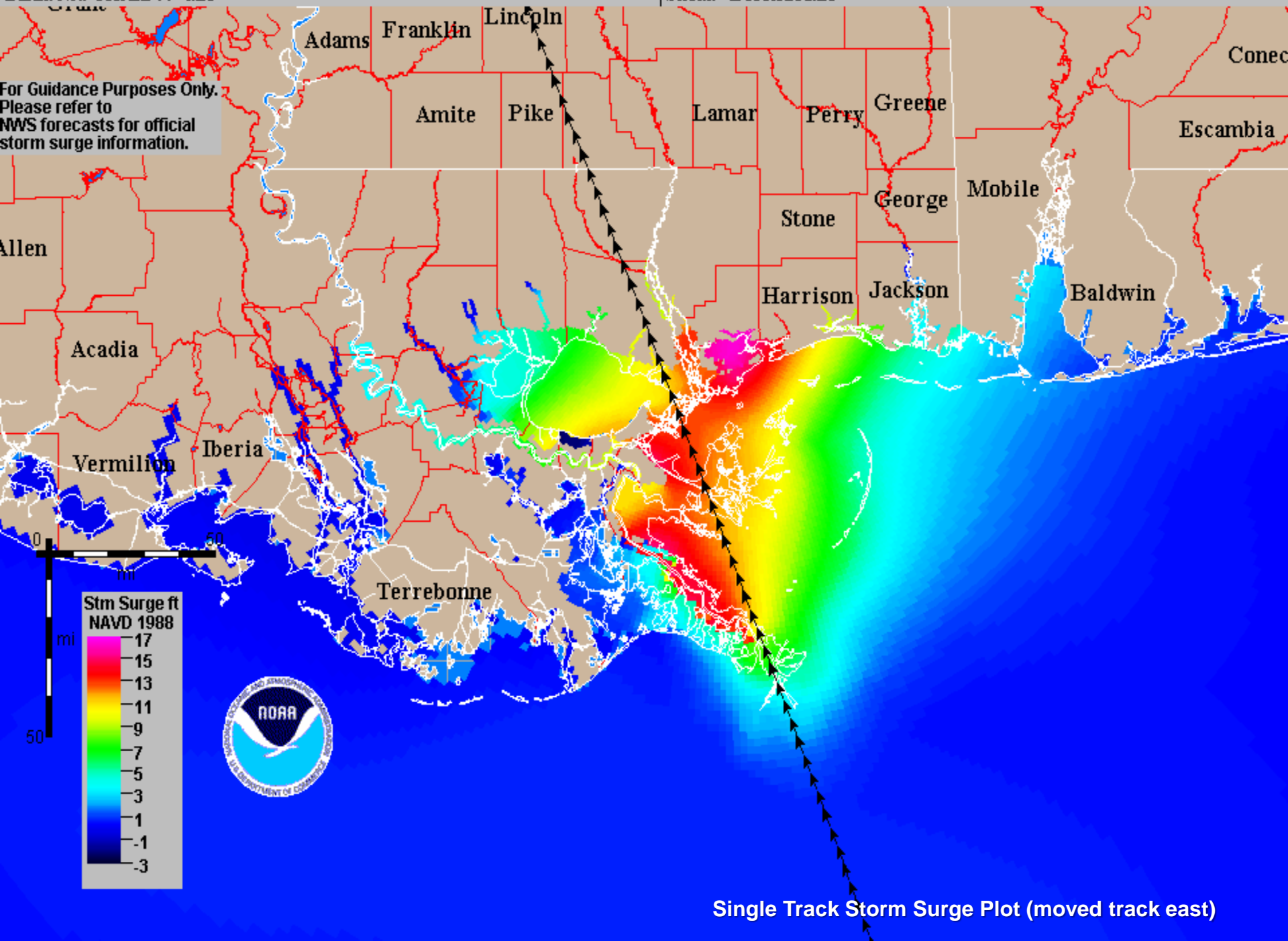


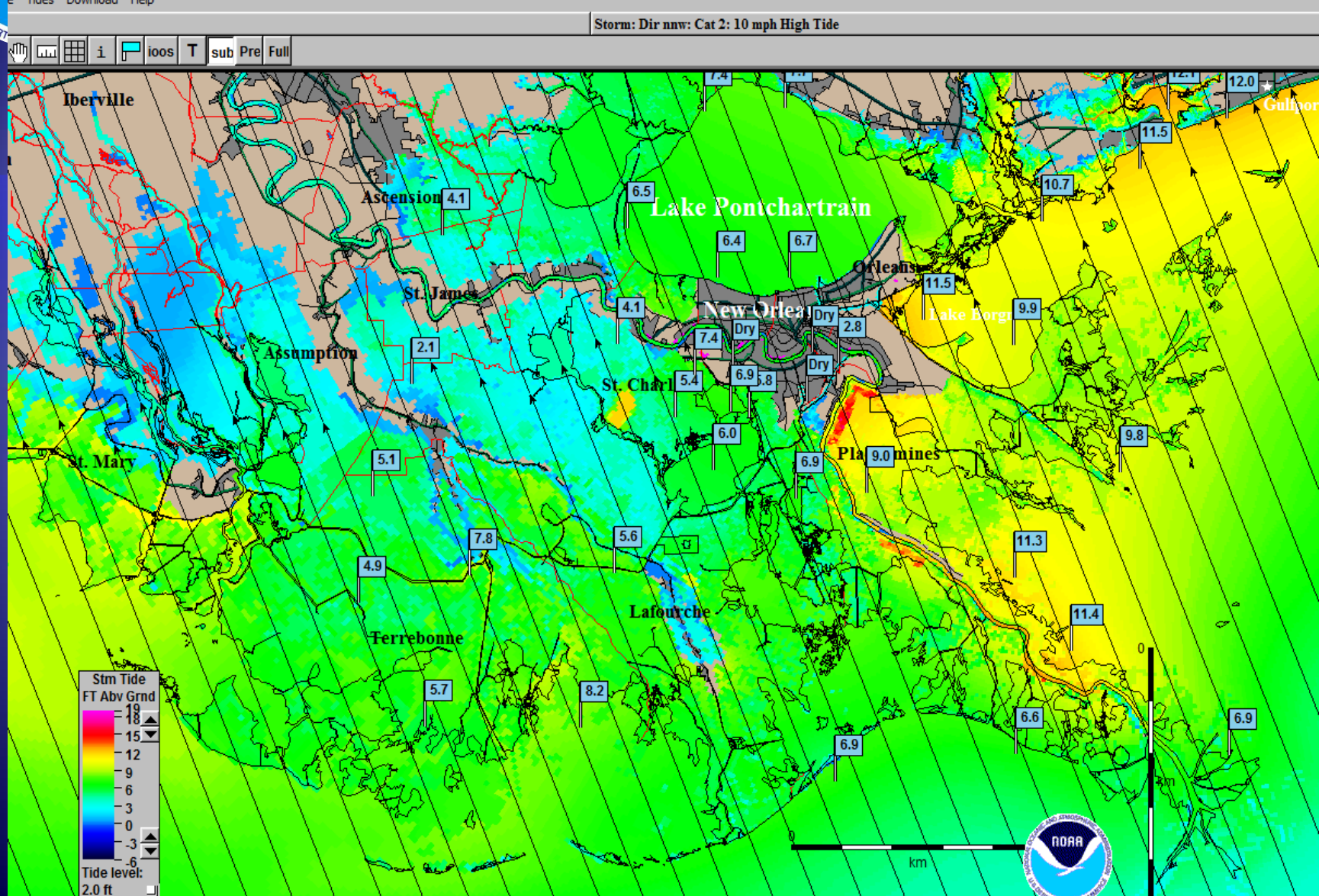
Single Track Storm Surge Plot (moved track west)

Basin: New Orleans v4 <ms3>

Storm: <f305R020.ms3>

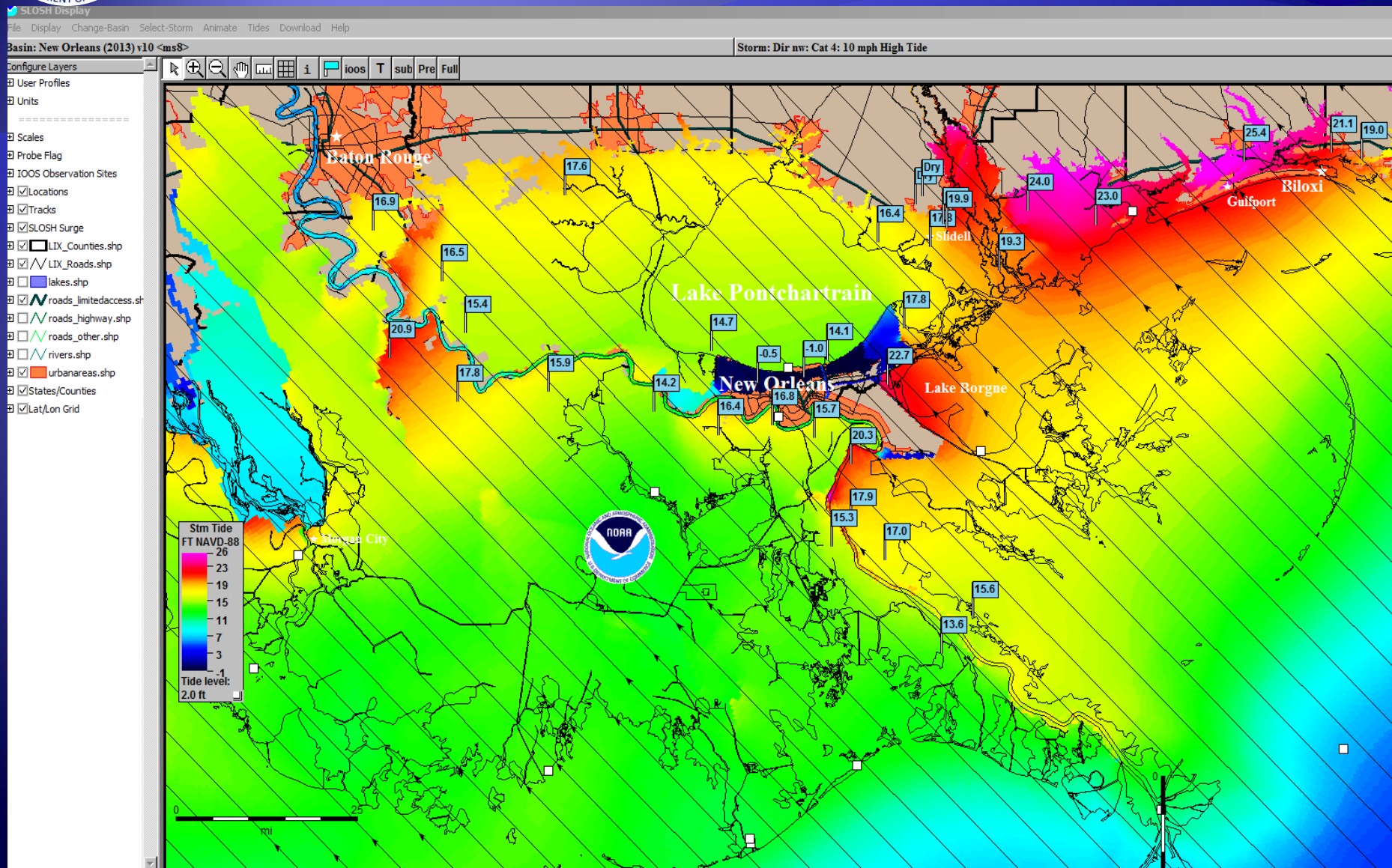
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Cat 4 NW 10 mph

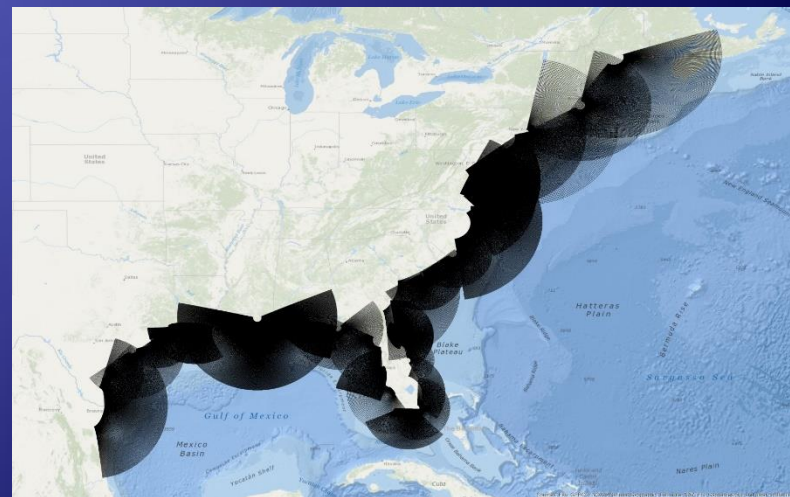
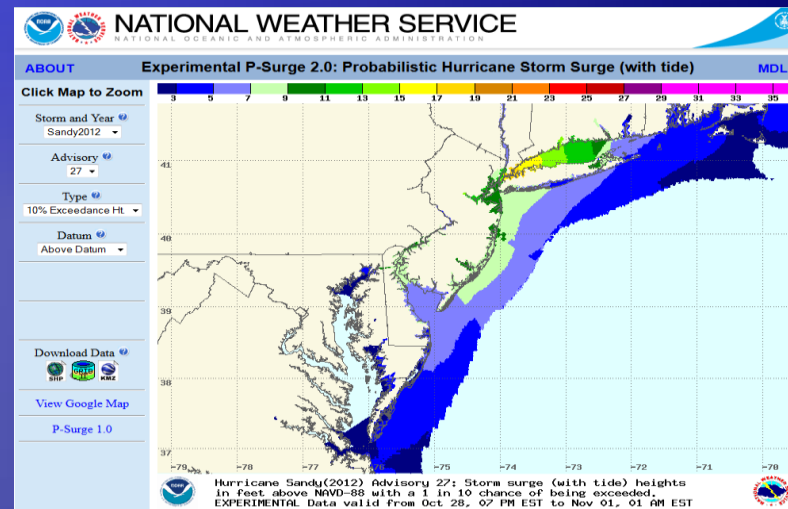


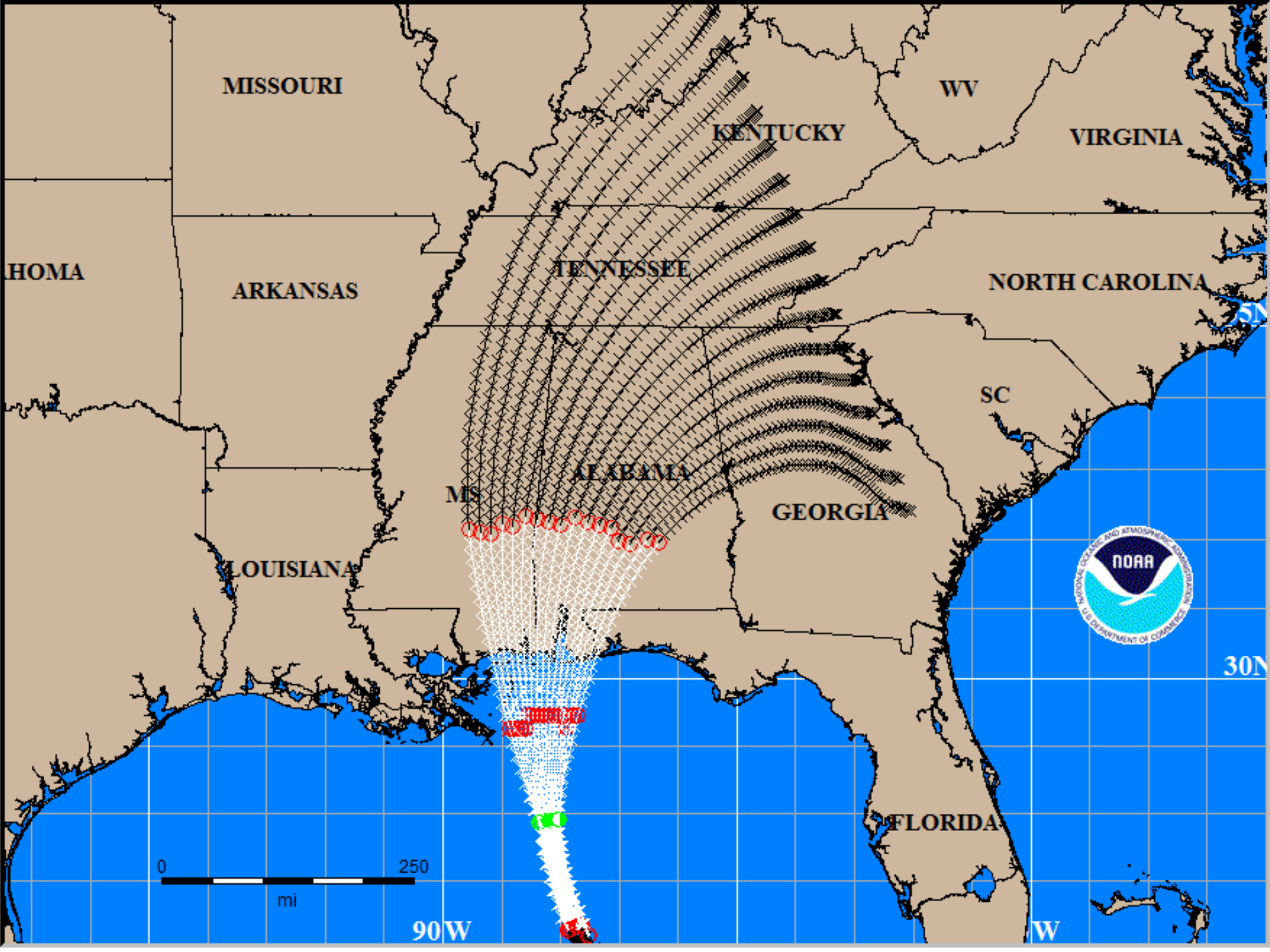


Probabilistic Storm Surge (p-surge)



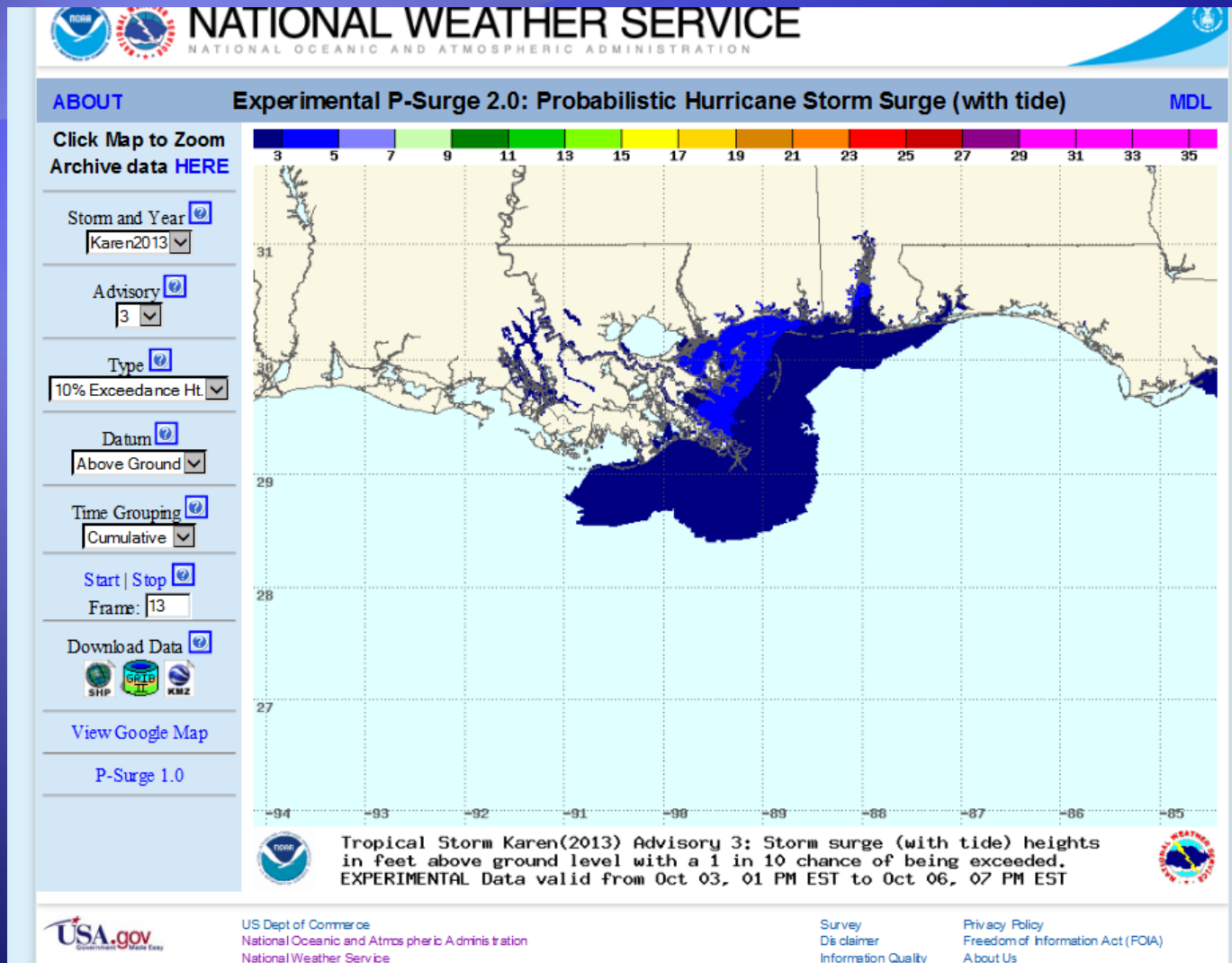
- Storm surge probabilities based on NHC official advisory
- Available roughly 48 hours prior to arrival of TS winds
- Accounts for meteorological uncertainty in:
 - Track
 - Size
 - Forward speed
 - Intensity
- Uncertainties based on historical errors
- Version 2.0 (2014) also accounts for the tide and is above ground level







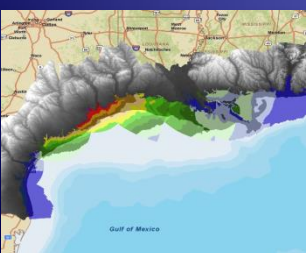
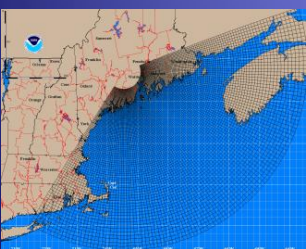
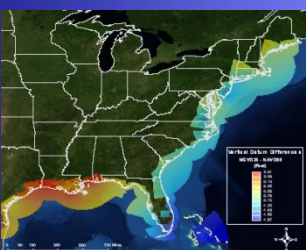
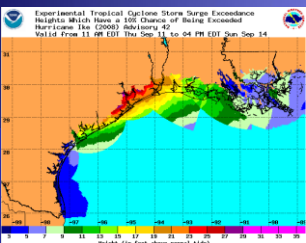
P-Surge 2.0 Web Site





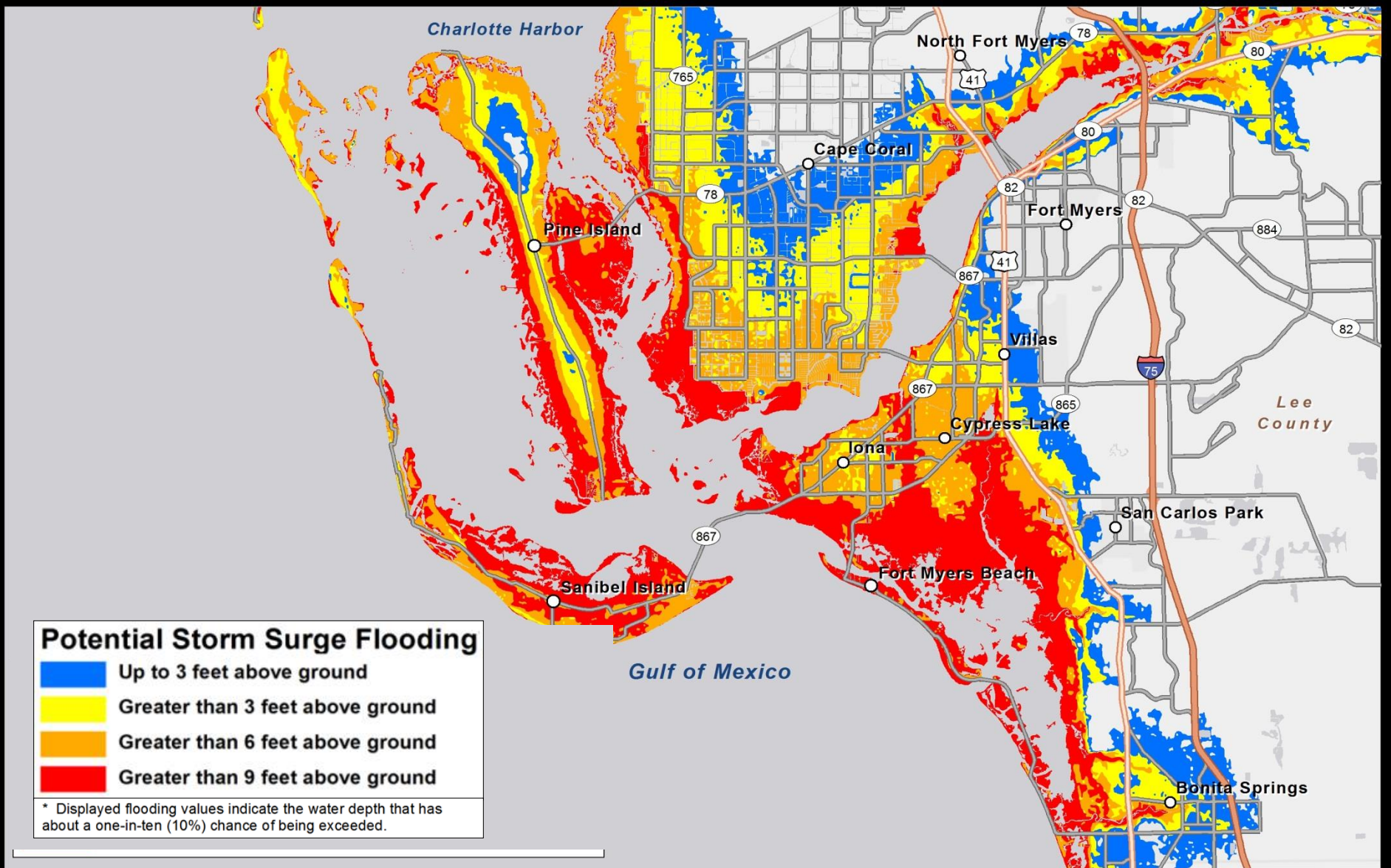
NHC Experimental Inundation Graphic

- Driven by psurge2.0 (includes tides) 10% exceedance
- Grids
 - Latest SLOSH basins updated to NAVD88
- Topography/DEMs
 - NOAA CSC Sea-level rise DEM
 - Resampled to smoother resolution
 - Augmented with USGS NED
- Processing
 - Locally using ArcGIS for Server and Desktop
 - Working toward leveraging NWS integrated dissemination program (IDP) for 2015 season





Hurricane X



Potential Storm Surge Flooding

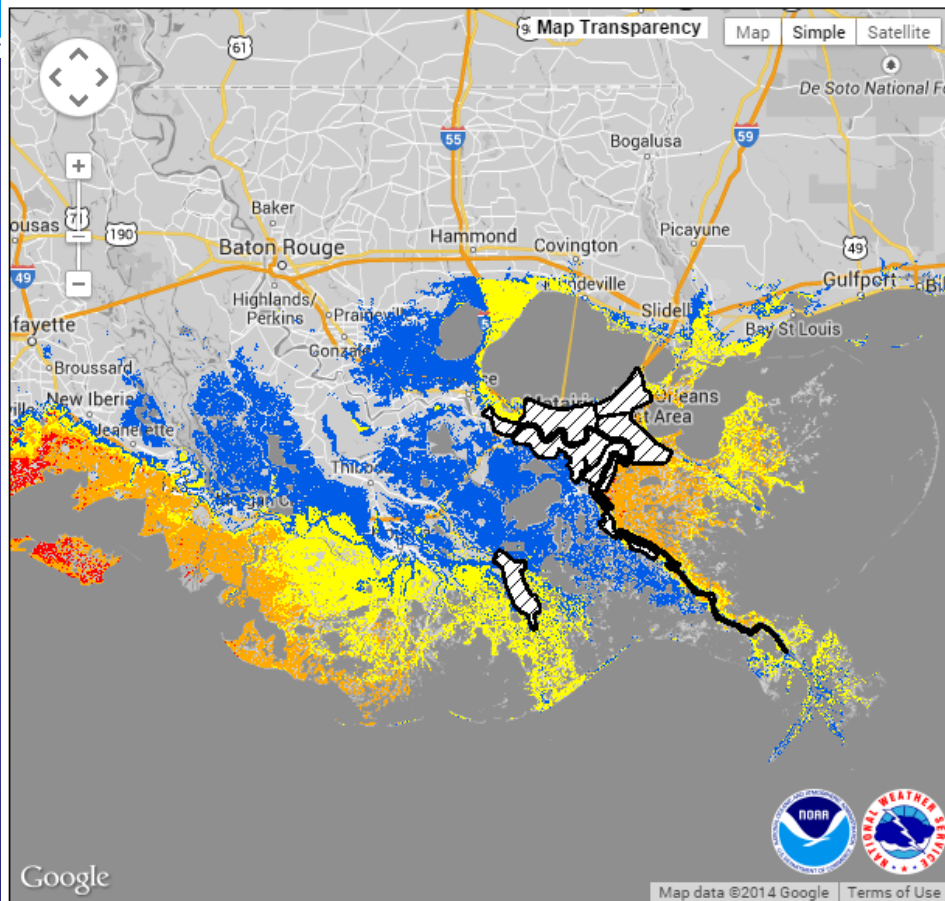
- Up to 3 feet above ground
- Greater than 3 feet above ground
- Greater than 6 feet above ground
- Greater than 9 feet above ground

* Displayed flooding values indicate the water depth that has about a one-in-ten (10%) chance of being exceeded.



Experimental Potential Storm Surge Flooding Map (Inundation)

NHC Experimental Potential Storm Surge Flooding Map
Hurricane TEST (2014) Advisory 1



Potential Storm Surge Flooding*

- Up to 3 feet above ground
- Greater than 3 feet above ground
- Greater than 6 feet above ground
- Greater than 9 feet above ground
- Levee protected area
Consult local officials for flood risk

*Displayed flooding values indicate the water depth that has about a 1-in-10 (10%) chance of being exceeded.

The potential storm surge hazard is not depicted within certain levee-protected areas, such as the Hurricane and Storm Damage Risk Reduction System in Louisiana. A diagonal hatch pattern is used to display these areas on the map. These areas are highly complex, and local officials are best equipped to forecast and monitor the threat of storm surge flooding inside these areas. Customers are asked to consult local officials for flood risk inside these leveed areas.

Potential Storm Surge Flooding Map (Inundation Map)



Based on P-Surge 2.0 – 10 percent exceedance (90% percent at this depth or lower)

“Reasonable” worst case scenario

Available when P-surge 2.0 is running
(Watches/Warnings in effect within 48 hours of the onset of Tropical Storm force winds)

Will be available approximately 80 minutes after the Public Advisory issuance

New map generated for each advisory
– so some subtle change is possible

Risk Reduction System is included but at current time does not show overtopping.
Inside the system is hatched



NHC Experimental Inundation Graphic



- Available during the 2014 hurricane season experimentally via the NHC website
 - For 2014 season, will be static graphic only
 - No GIS data dissemination during experimental phase
- Interactive map with zoom capability that is available roughly 20-30 min after P-Surge 2.0
- P-Surge 2.0 post-processed to produce a user-friendly graphic of potential storm surge depth
- Marketing/outreach efforts underway
 - Fact sheets, examples, website, video, etc.



Experimental Storm Surge Warning Graphic

