



Hurricane Delta Advisory Bulletin

Risk Services Division

8 October 2020

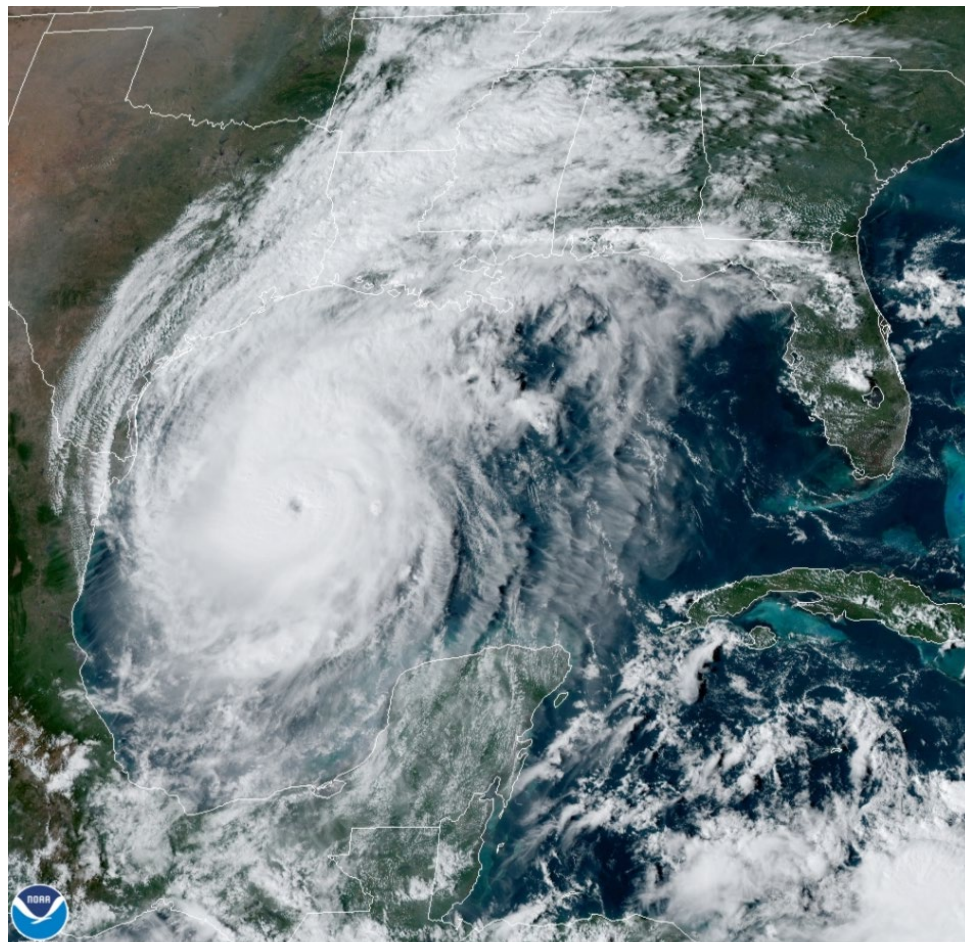
Legal Notice

All consulting services performed by HUB are advisory in nature. All resultant reports are based upon conditions and practices observed by HUB and information supplied by the client. Any such reports may not identify or contemplate all unsafe conditions and practices; others may exist. HUB does not imply, guarantee or warrant the safety of any of the client's properties or operations or that the client or any such properties or operations are in compliance with all federal, state or local laws, codes, statutes, ordinances, standards or recommendations. All decisions in connection with the implementation, if any, of any of HUB's advice or recommendations shall be the sole responsibility of, and be made by, the client. The advice and recommendations submitted in this plan constitute neither a warranty of future results nor an assurance against risk. This material represents the best judgment of HUB and is based on information obtained from both open and closed sources.

HURRICANE DELTA

Status at 100 PM CDT (1800 UTC) 8 October 2020

- The center of Hurricane Delta is located at 24.4N 93.1W about 370miles (595km) S of Cameron, Louisiana
- Delta is moving NW (310°) at 13mph (21km/h) and is expected to move over the western Gulf of Mexico this afternoon, over the northwestern Gulf of Mexico on Friday, and then move inland Friday afternoon or Friday night
- Delta will produce life-threatening storm surge, tropical-storm-force and hurricane-force winds, tornadoes, and torrential rainfall with flash flooding
- Maximum sustained winds are near 105mph (165km/h)
- Hurricane-force winds extend outward to 35miles (55km) and tropical-storm-force winds extend outward to 125miles (205km)
- Hurricane conditions are expected within the hurricane warning area by Friday afternoon or evening, with tropical storm conditions expected within this area by early Friday. Tropical storm conditions are expected within the tropical storm warning areas on Friday, and are possible in the tropical storm watch area Friday night
- Friday through Saturday, Delta is expected to produce 5 to 10 inches of rain, with isolated maximum totals of 15 inches from southwest into south-central Louisiana
- Life-threatening surf and rip current conditions will begin to affect portions of the northern and western Gulf coast on Thursday



08 Oct 2020 20:16Z NOAA/NESDIS/STAR GOES-East GEOCOLOR

Summary

At 100 PM CDT (1800 UTC), the center of Hurricane Delta was located near 24.4N 93.1W about 370miles (595km) S of Cameron, Louisiana.

Delta is moving NW (310°) at 13mph (21km/h) and is expected to move over the western Gulf of Mexico this afternoon, over the northwestern Gulf of Mexico on Friday, and then move inland Friday afternoon or Friday night.

On the forecast track, the center of Delta will move over the western Gulf of Mexico this afternoon, over the northwestern Gulf of Mexico on Friday, and then move inland Friday afternoon or Friday night.

Maximum sustained winds are near 105 mph (165 km/h) with higher gusts. Strengthening is forecast, and Delta is expected to become a major hurricane again by tonight. Some weakening is possible as Delta approaches the northern Gulf coast on Friday, with rapid weakening expected after the center moves inland.

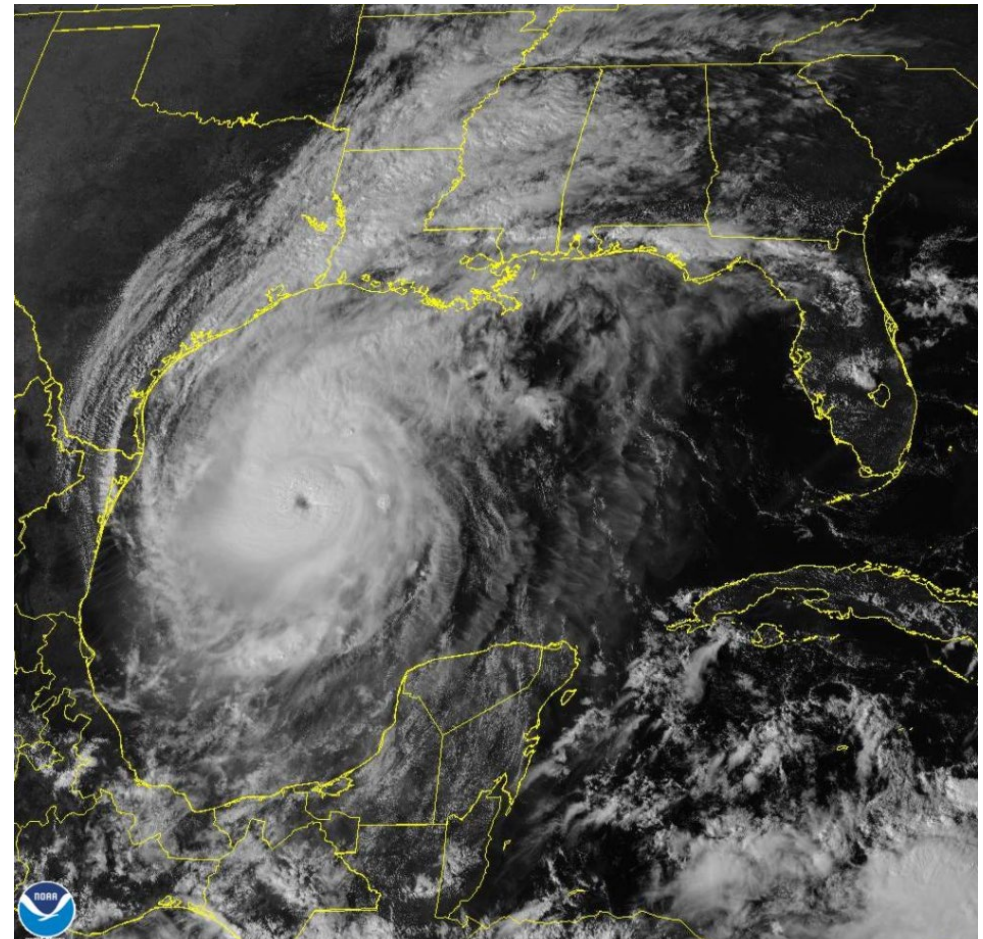
Hurricane-force winds extend outward up to 35 miles (55 km) from the center and tropical-storm-force winds extend outward up to 125 miles (205 km).

The latest estimated minimum central pressure is 966 mb (28.53 inches).

Discussion

Delta is strengthening. Current motion is northwestward. This motion is expected to move to north-northwestward which will bring the center near or over the northern Gulf Coast, most likely in southwestern Louisiana, in approximately thirty hours. After landfall, the cyclone should move northeastward through the Lower Mississippi and Tennessee Valleys along the southern edge of the mid-latitude westerlies.

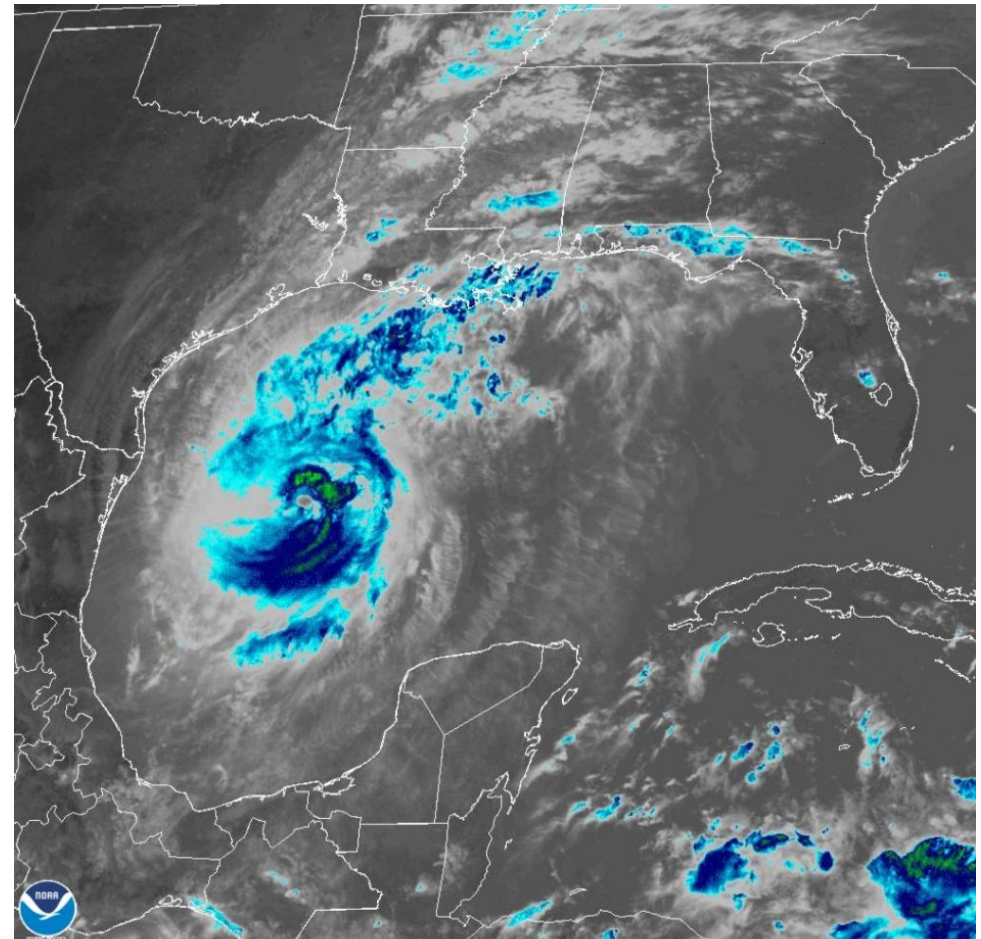
Rapid weakening is expected after landfall. The system is expected to weaken to a depression within the next 60 hours and degenerate to a remnant low within 72 hours, with dissipation following shortly thereafter.



08 Oct 2020 20:21Z NOAA/NESDIS/STAR GOES-East Band 02

Key Messages

1. Life-threatening storm surge is expected near and east of where Delta makes landfall on Friday, and a Storm Surge Warning is in effect from High Island, Texas, to Ocean Springs, Mississippi. The highest inundation of 7 to 11 feet is expected somewhere between Rockefeller Wildlife Refuge and Port Fourchon, Louisiana. Residents in the warning area should promptly follow advice given by local officials. The storm surge risk remains high despite the forecast decrease in intensity before landfall since Delta is expected to grow in size.
2. Hurricane-force winds are expected Friday afternoon and evening somewhere within the Hurricane Warning area between High Island, Texas, and Morgan City, Louisiana. Hurricane-force winds will also spread inland across portions of southern Louisiana near the path of Delta's center Friday evening and Friday night.
3. Significant flash flooding and minor to moderate river flooding are likely in parts of Louisiana Friday and Saturday, with additional flooding in portions of the central Gulf Coast into the Lower Mississippi Valley.



08 Oct 2020 20:21Z NOAA/NESDIS/STAR GOES-East Band 07

Watches and Warnings

Hurricane Warning in effect for:	<ul style="list-style-type: none">▪ High Island Texas to Morgan City Louisiana
<hr/>	
Tropical Storm Warning in effect for:	<ul style="list-style-type: none">▪ West of High Island to Sargent Texas▪ East of Morgan City Louisiana to the mouth of the Pearl River, including New Orleans▪ Lake Pontchartrain and Lake Maurepas
<hr/>	
Tropical Storm Watch in effect for:	<ul style="list-style-type: none">▪ East of the mouth of the Pearl River to Bay St. Louis Mississippi
<hr/>	
Storm Surge Warning in effect for:	<ul style="list-style-type: none">▪ High Island, Texas to Ocean Springs Mississippi including Calcasieu Lake, Vermilion Bay, Lake Pontchartrain, Lake Maurepas, and Lake Borgne

A **Hurricane Warning** means that hurricane conditions are expected somewhere within the warning area. A warning is typically issued 36 hours before the anticipated first occurrence of tropical-storm-force winds, conditions that make outside preparations difficult or dangerous. Preparations to protect life and property should be rushed to completion.

A **Hurricane Watch** means that hurricane conditions are possible within the watch area. A watch is typically issued 48 hours before the anticipated first occurrence of tropical-storm-force winds, conditions that make outside preparations difficult or dangerous.

A **Tropical Storm Warning** means that tropical storm conditions are expected somewhere within the warning area within 36 hours.

A **Tropical Storm Watch** means that tropical storm conditions are possible within the watch area, generally within 48 hours.

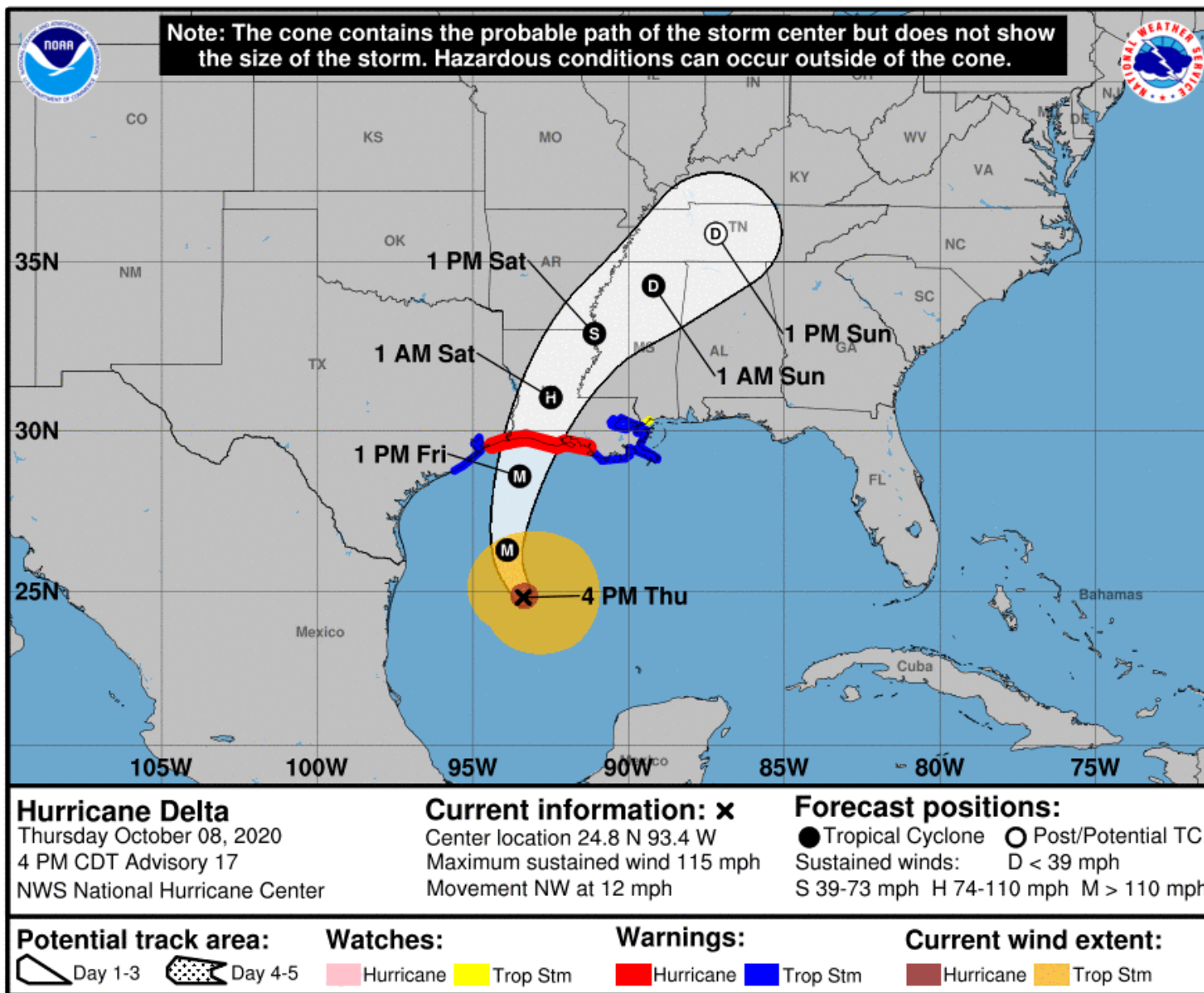
A **Storm Surge Warning** means there is a danger of life-threatening inundation, from rising water moving inland from the coastline, during the next 36 hours in the indicated locations. This is a life-threatening situation. Persons located within these areas should take all necessary actions to protect life and property from rising water and the potential for other dangerous conditions. Promptly follow evacuation and other instructions from local officials.

A **Storm Surge Watch** means there is a possibility of life-threatening inundation, from rising water moving inland from the coastline, in the indicated locations during the next 48 hours.

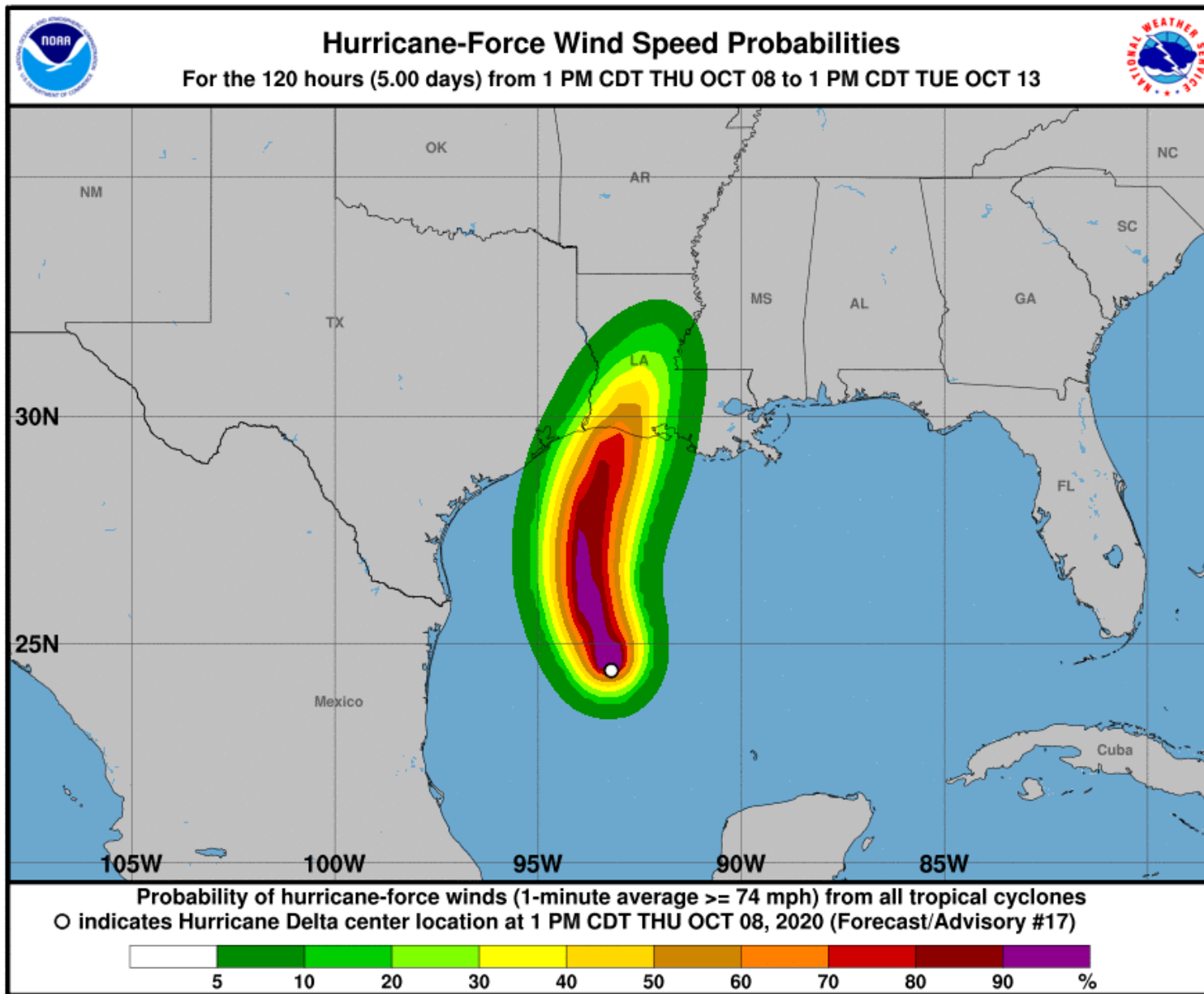
Hazards Affecting Land

RAINFALL	<ul style="list-style-type: none">▪ Friday through Saturday, Delta is expected to produce 5 to 10 inches of rain, with isolated maximum totals of 15 inches from southwest to south-central Louisiana. These rainfall amounts will lead to flash, urban, small stream, and minor river flooding.▪ As Delta moves farther inland, 1 to 3 inches of rain, with locally higher amounts, is expected in the Ohio Valley and Mid Atlantic this weekend.
STORM SURGE	<ul style="list-style-type: none">▪ The combination of a dangerous storm surge and the tide will cause normally dry areas near the coast to be flooded by rising waters moving inland from the shoreline.▪ The deepest water will occur along the immediate coast near and to the east of the landfall location, where the surge will be accompanied by large and dangerous waves.
WIND:	<ul style="list-style-type: none">▪ Hurricane conditions are expected within the hurricane warning area by Friday afternoon or evening, with tropical storm conditions expected within this area by early Friday.▪ Tropical storm conditions are expected within the tropical storm warning areas on Friday, and are possible in the tropical storm watch area Friday night.
SURF	<ul style="list-style-type: none">▪ Swells generated by Delta will begin to affect portions of the northern and western Gulf coast in the next several hours. These swells are likely to cause life-threatening surf and rip current conditions.
TORNADOES	<ul style="list-style-type: none">▪ There is a risk of a few tornadoes beginning late tonight and continuing through Friday over southern portions of Louisiana and Mississippi

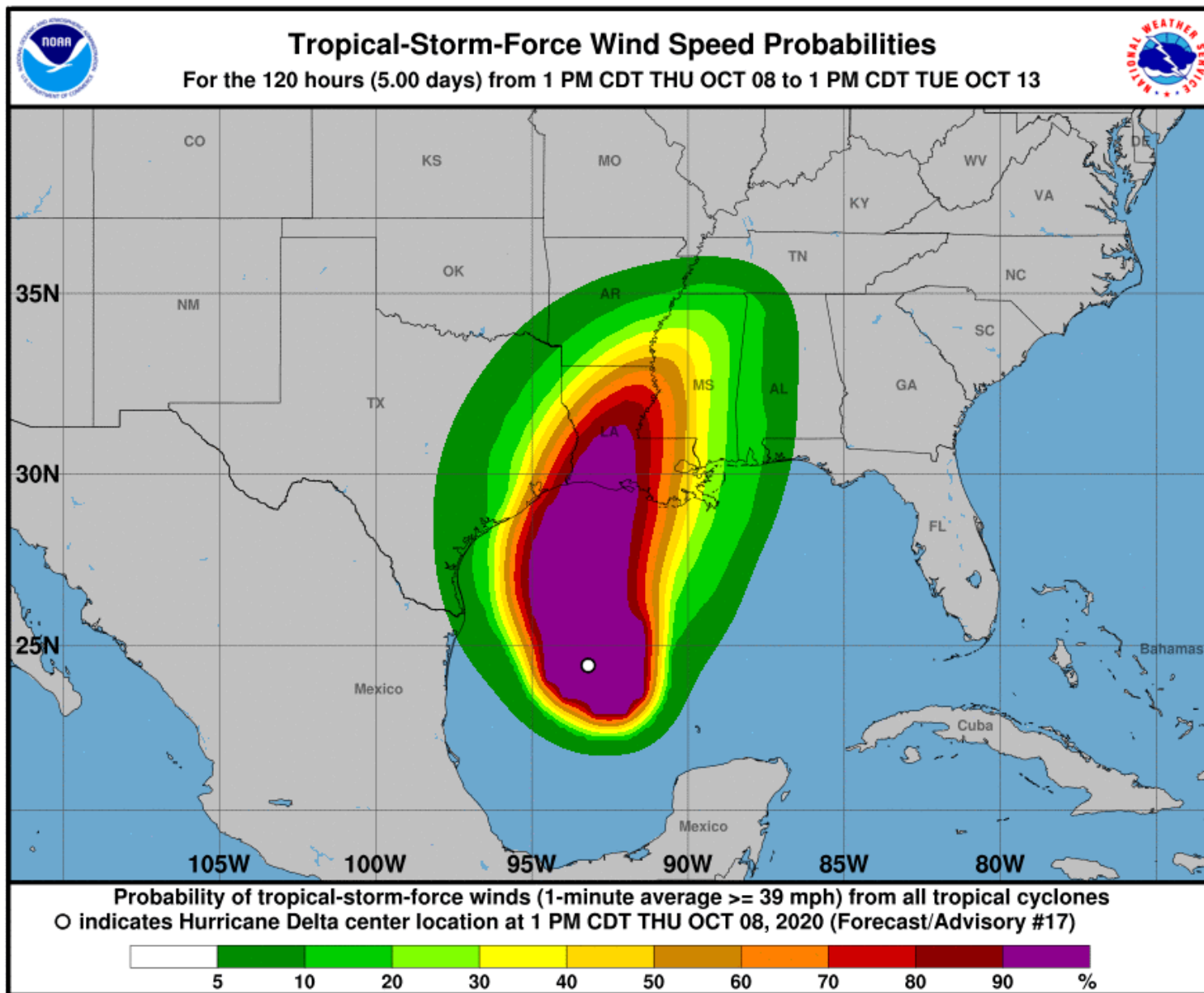
Current Predicted Path



Hurricane-Force Wind Speed Probabilities



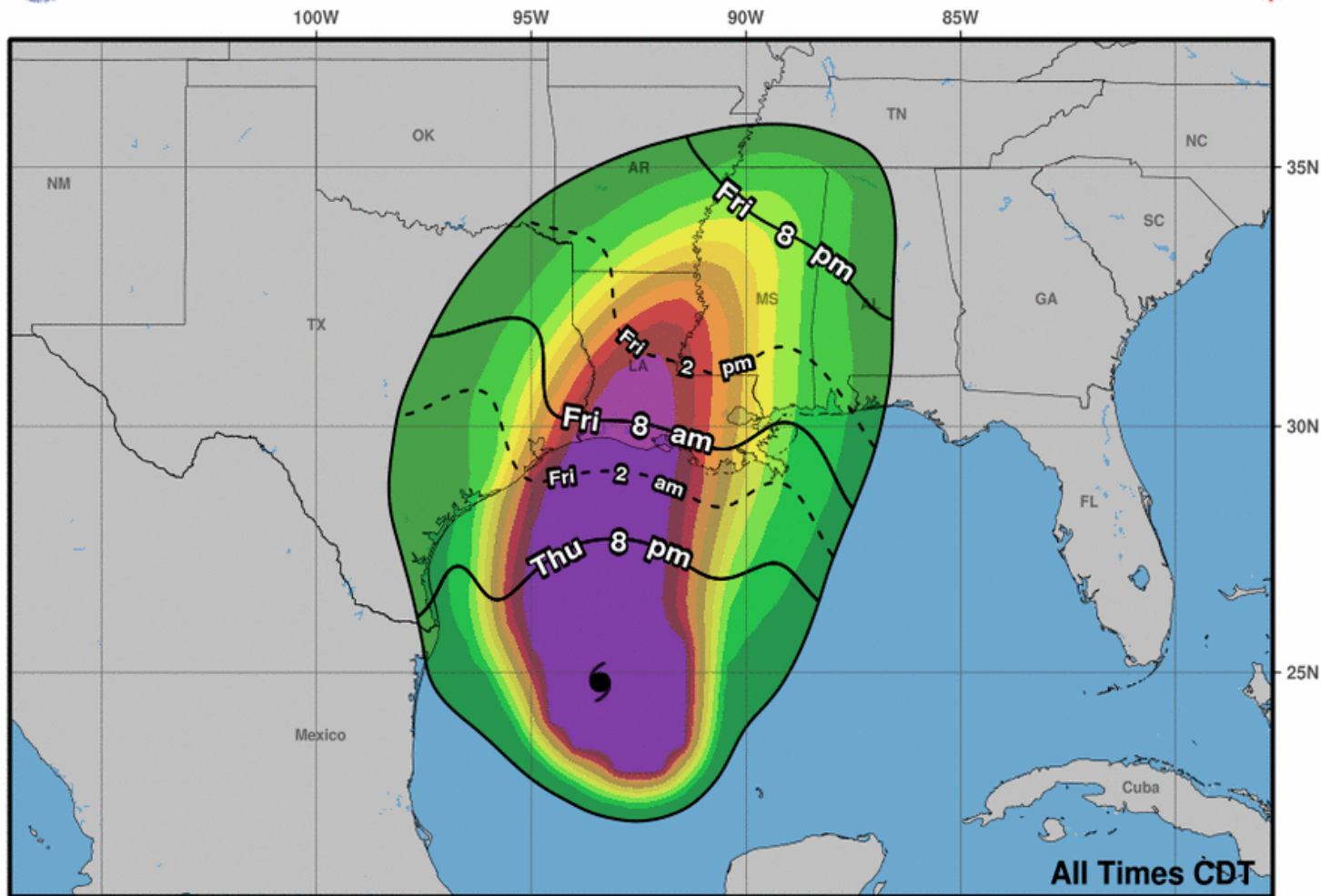
Tropical-Storm-Force Wind Speed Probabilities



Most Likely Arrival Time of Tropical-Storm-Force Winds



Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds

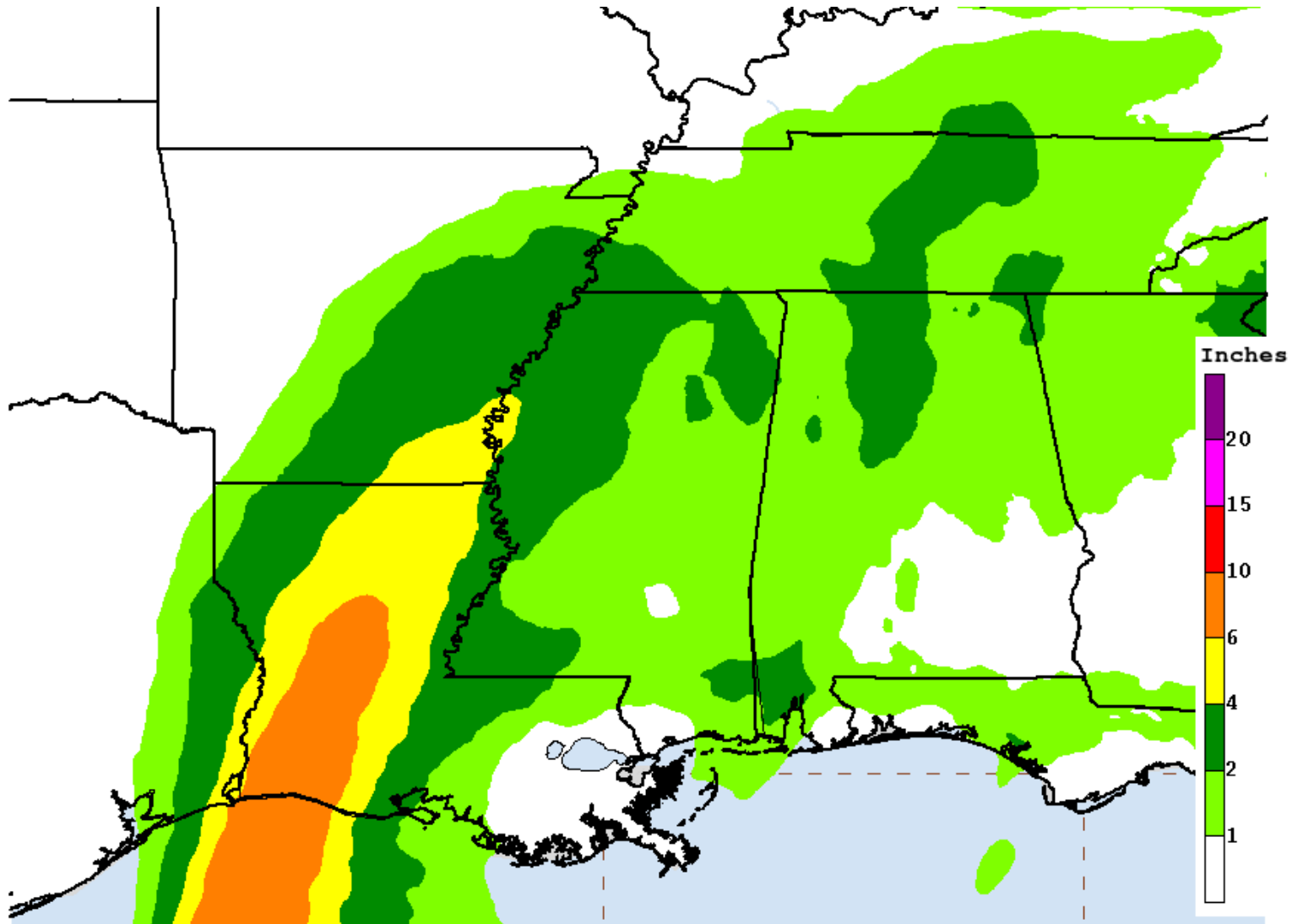


Hurricane Delta
Thu. Oct. 8, 2020 4 pm CDT
Advisory 17

Storm Location ○ < 34 kt (39 mph)
& ○ 34-63 kt (39-73 mph)
Wind Speed ● ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds
5 10 20 30 40 50 60 70 80 90 100 %

Rainfall Potential



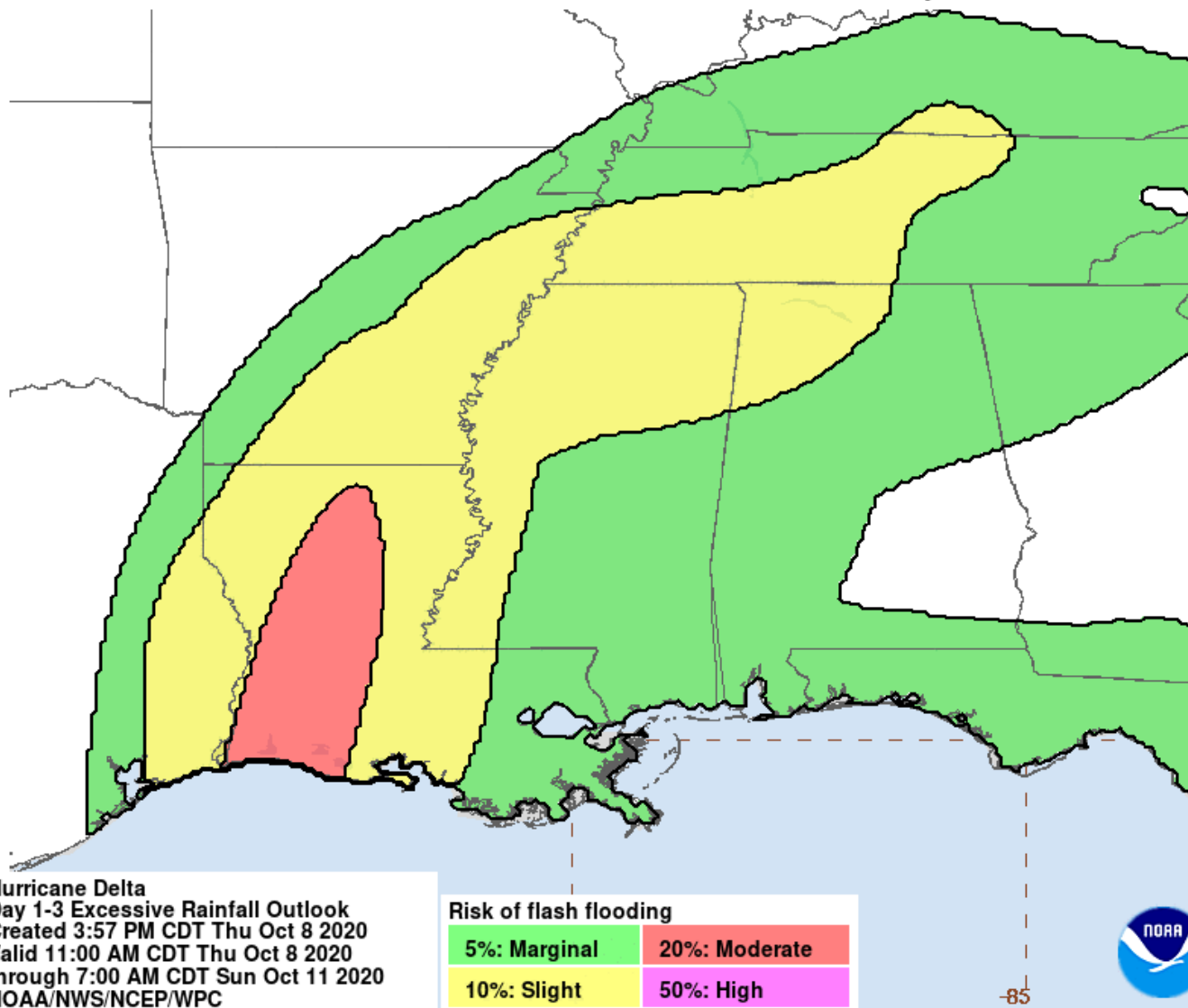
Hurricane Delta
Day 1-3 Rainfall Forecast (inches)
Created 3:57 PM CDT Thu Oct 8 2020
Valid 1:00 PM CDT Thu Oct 8 2020
through 7:00 PM CDT Sun Oct 11 2020
DOC/NOAA/NWS/NCEP/WPC

Local point maximum rainfall may be higher than shown.
See the NHC public advisories for the latest tropical cyclone information.



Flash Flood Potential

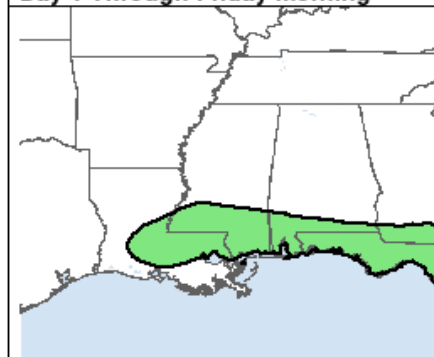
Greatest Flash Flood Risk Over the Next 3 Days



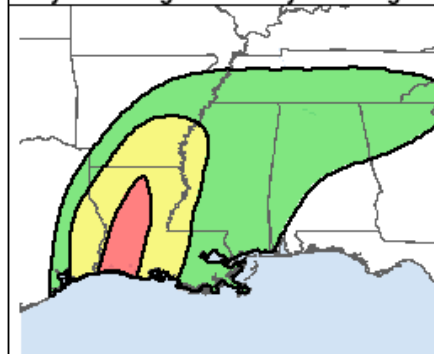
Hurricane Delta
 Day 1-3 Excessive Rainfall Outlook
 Created 3:57 PM CDT Thu Oct 8 2020
 Valid 11:00 AM CDT Thu Oct 8 2020
 through 7:00 AM CDT Sun Oct 11 2020
 NOAA/NWS/NCEP/WPC

Risk of flash flooding	
5%: Marginal	20%: Moderate
10%: Slight	50%: High

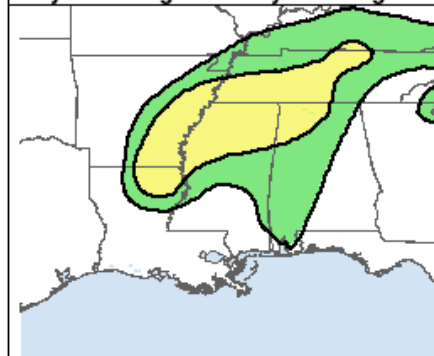
Day 1 Through Friday morning



Day 2 Through Saturday morning



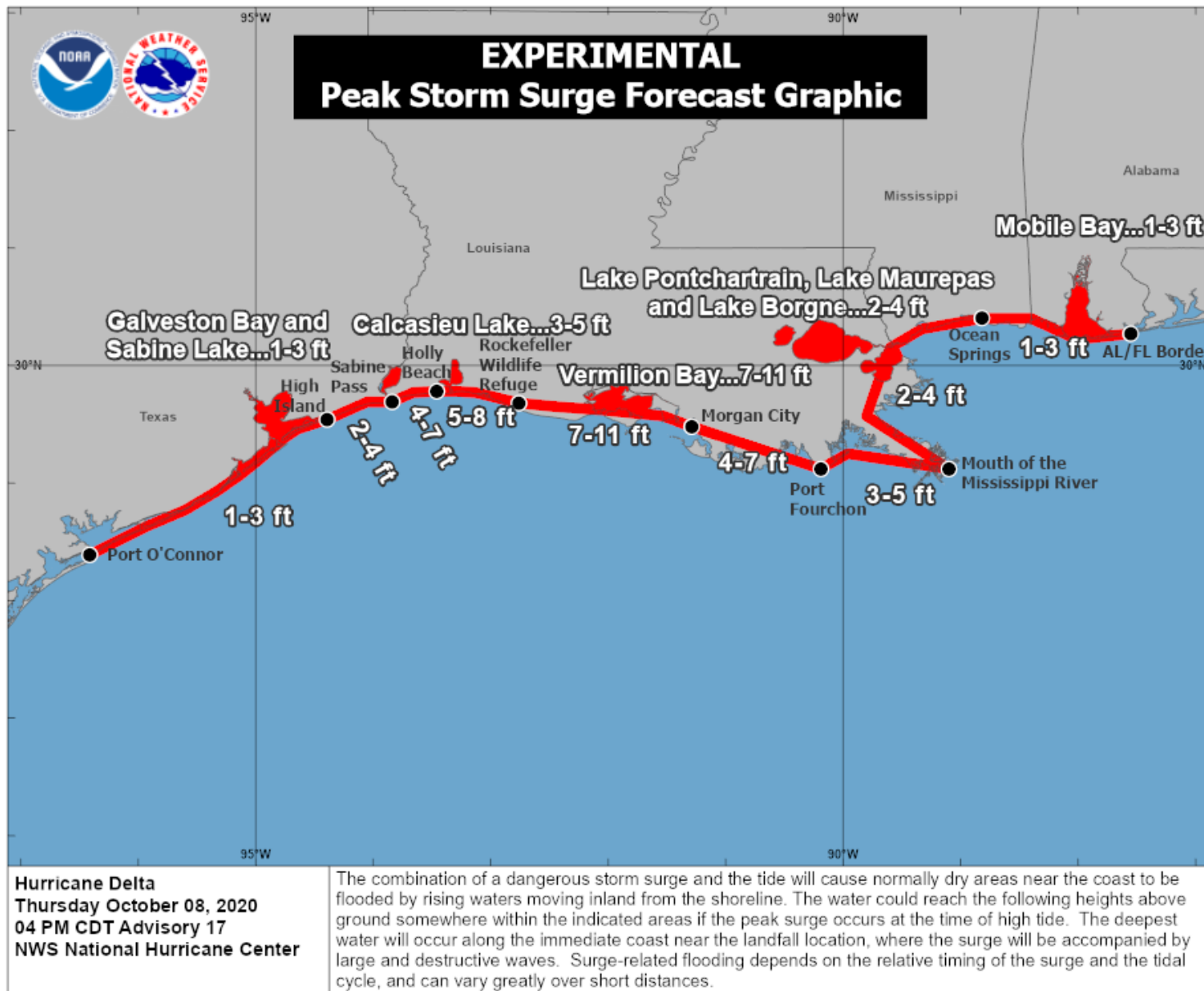
Day 3 Through Sunday morning



Storm Surge Inundation Potential



Storm Surge Potential



Safety Procedures & Readiness

Hurricane Hazards

While hurricanes pose the greatest threat to life and property, tropical storms and depressions also can be devastating. The primary hazards from tropical cyclones (which include tropical depressions, tropical storms, and hurricanes) are storm surge flooding, inland flooding from heavy rains, destructive winds, tornadoes, and high surf and rip currents.

- Storm surge is the abnormal rise of water generated by a storm's winds. This hazard is historically the leading cause of hurricane related deaths in the United States. Storm surge and large battering waves can result in large loss of life and cause massive destruction along the coast.
- Storm surge can travel several miles inland, especially along bays, rivers, and estuaries.
- Flooding from heavy rains is the second leading cause of fatalities from landfalling tropical cyclones. Widespread torrential rains associated with these storms often cause flooding hundreds of miles inland. This flooding can persist for several days after a storm has dissipated
- Winds from a hurricane can destroy buildings and manufactured homes. Signs, roofing material, and other items left outside can become flying missiles during hurricanes.
- Tornadoes can accompany landfalling tropical cyclones. These tornadoes typically occur in rain bands well away from the center of the storm
- Dangerous waves produced by a tropical cyclone's strong winds can pose a significant hazard to coastal residents and mariners. These waves can cause deadly rip currents, significant beach erosion, and damage to structures along the coastline, even when the storm is more than 1,000 miles offshore

Now is the time to prepare. All residents and visitors in the path of the Hurricane should review these tips:

- Check to make sure your [emergency kit](#) is stocked and test your [family communications plan](#).
- Know your evacuation routes and how to find higher ground. Determine where you would go, and how you would get there if instructed to evacuate. *If directed to evacuate by local officials, **evacuate**.*

Stay vigilant and continue to monitor local radio or TV stations and local emergency management officials for updated weather and emergency information.

- The [FEMA App](#) (available in English and Spanish) provides National Weather Service alerts (for up to 5 areas), emergency kit checklists, directions to open shelters, safety preparation tips and more.
- Make plans to secure your property:
 - Cover all of your home's windows. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8" marine plywood, cut to fit and ready to install. Tape does not prevent windows from breaking.
 - Reinforce your garage doors; if wind enters a garage it can cause dangerous and expensive structural damage.
 - Plan to bring in all outdoor furniture, decorations, garbage cans, and anything else that is not tied down.
 - Determine how and where to secure boats and other marine craft.
- You can safely install a generator for emergencies. Remember, never run a generator inside and keep it away from windows, doors, and vents.
- If using candles, please use caution. If possible, use flashlights instead. If you must use candles, do not burn them on or near anything that can catch fire.
- Your phone is an important tool to ensure your family's safety. Make sure to charge your phone and other electronic devices.
- Businesses of all sizes are encouraged to follow local public safety authority direction and to share safety messaging with employees in order to reduce risk.
- If you have a National Flood Insurance Program (NFIP) flood insurance policy, you may be eligible for reimbursement for actions taken to protect your property. Call your insurance agent to find out more.

The Saffir-Simpson Hurricane Wind Scale

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures. In the western North Pacific, the term "super typhoon" is used for tropical cyclones with sustained winds exceeding 150 mph.

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

For Additional Information:

American Red Cross	http://www.redcross.org/
US Coast Guard Storm Center	https://www.uscg.mil/news/stormcenter/
US National Hurricane Center	www.nhc.noaa.gov
US Federal Emergency Management Agency	http://www.ready.gov/hurricanes
FEMA – Mobile App	https://www.fema.gov/mobile-app
FEMA – Flooding	https://www.fema.gov/media-library-data/1522342356506-54bd8d92d0d0d07bca4c1250ebde2b21/Flood_508.pdf
Ready Gov	www.ready.gov
Listo Gov (Spanish)	www.listo.gov
Emergency Management Agencies	https://www.fema.gov/emergency-management-agencies
Caribbean Disaster Emergency Management Agency	http://www.cdema.org/index.php?option=com_wrapper&view=wrapper&Itemid=417
Smart Traveler Enrollment Program	https://step.state.gov/