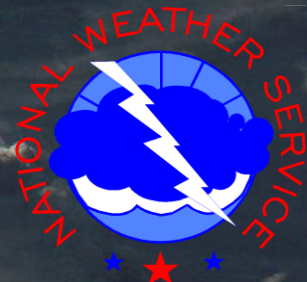


Southwest Louisiana and Southeast Texas Hurricane and Marine Guide



*National Weather Service
500 Airport Blvd. #115
Lake Charles, LA 70607
337-477-5285*

<http://www.srh.weather.gov/lch>



Welcome

Fellow Citizens of Southwest Louisiana and Southeast Texas,

On behalf of the National Weather Service in Lake Charles, I am pleased to present the *Southwest Louisiana and Southeast Texas Hurricane and Marine Guide*. This guide will provide you with excellent resources as you prepare for the 2008 hurricane season. Besides providing historical documentation on past hurricanes that has affected the region, information on the various hurricane hazards will be provided. Essential tracking charts and evacuation maps are also provided for your reference.

2008 marks the 90th anniversary of the 1918 Hurricane of Southwest Louisiana. As we reflect on the devastating impacts of this hurricane, let us take this opportunity to develop our own hurricane plan. This guide will help prepare you in this endeavor.

Sincerely,

Andy Patrick
Meteorologist in Charge

2008 Storm Names

Arthur
Bertha
Cristobal
Dolly
Edouard
Fay
Gustav
Hanna
Ike
Josephine
Kyle
Laura
Marco
Nana
Omar
Paloma
Rene
Sally
Teddy
Vicky
Wilfred

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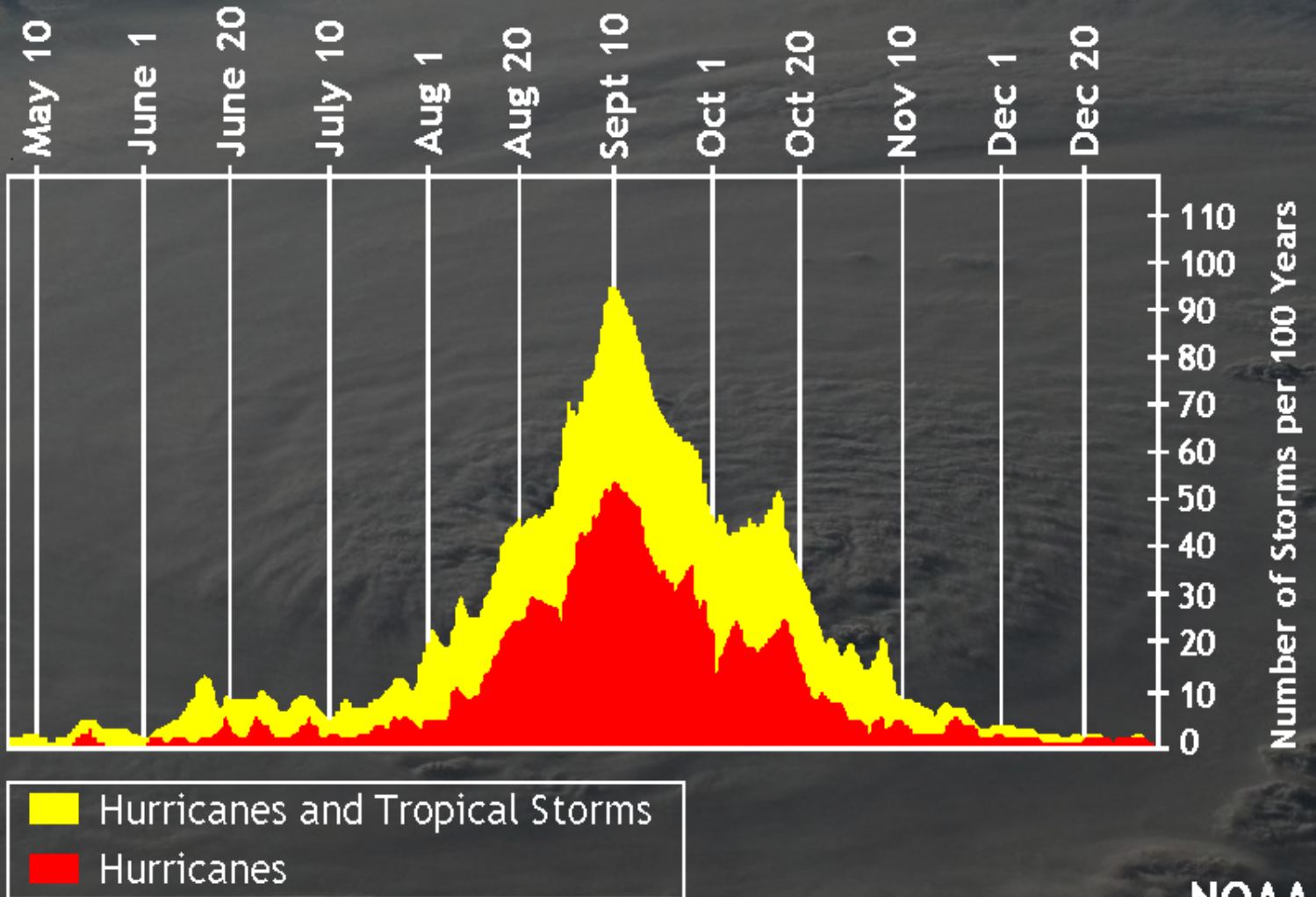
Guide created and edited by Donovan Landreneau, Forecaster, with contributions from Forecasters Lance Escudé & Joe Rua.

This publication can be obtained at: <http://www.srh.weather.gov/lch/tropical/LCHHurricaneGuide.pdf>

Booklet cover and background image is a photo of Hurricane Felix from the Space Station. Image from NASA.

Hurricane Frequency

The Atlantic hurricane season begins June 1st, and lasts through November 30th. Tropical storm and hurricane formation increases significantly by August, with the peak of the season usually reached on September 10th. Activity begins to decline significantly towards the end of October. The earliest tropical storm to strike our area was May 30, 1959, with the latest being Hurricane Juan on October 29, 1985; both coming ashore in South Central Louisiana.



Hurricane Terminology

TROPICAL CYCLONE is a general term used to describe a tropical depression, tropical storm, or hurricane.

TROPICAL WAVE or **TROPICAL DISTURBANCE** is a collection of thunderstorms in the tropics without a closed circulation. An average of a 100 of these systems cross the Atlantic each season.

TROPICAL DEPRESSION is an un-organized cyclone with winds less than 39 mph.

TROPICAL STORM is a better organized cyclone with winds between 39 and 73 mph.

HURRICANE is a well organized cyclone with winds of 74 mph or greater.

TROPICAL STORM/HURRICANE WATCH is issued when these conditions are POSSIBLE within 36 hours.

TROPICAL STORM/HURRICANE WARNING is issued when these conditions are EXPECTED within 24 hours.

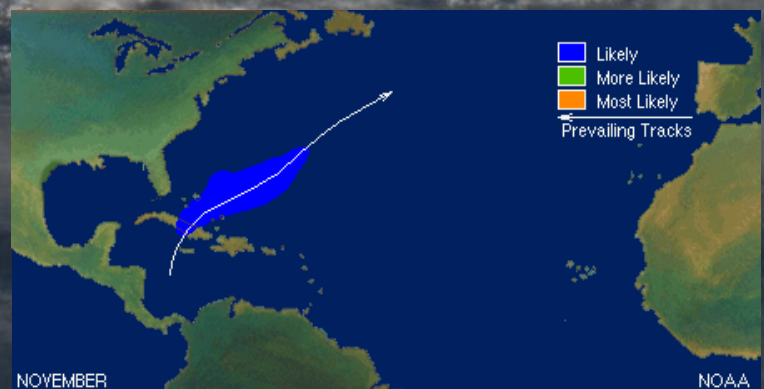
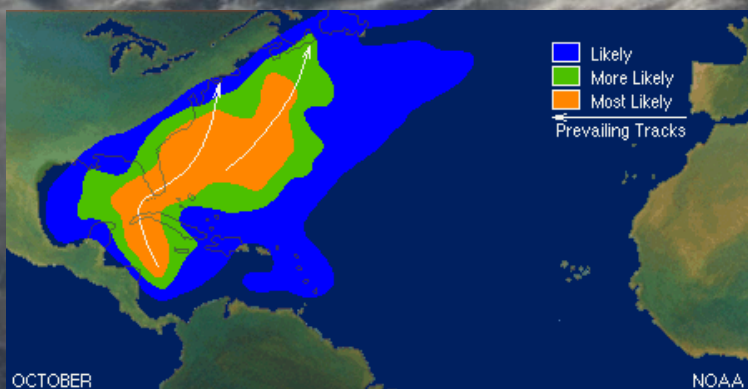
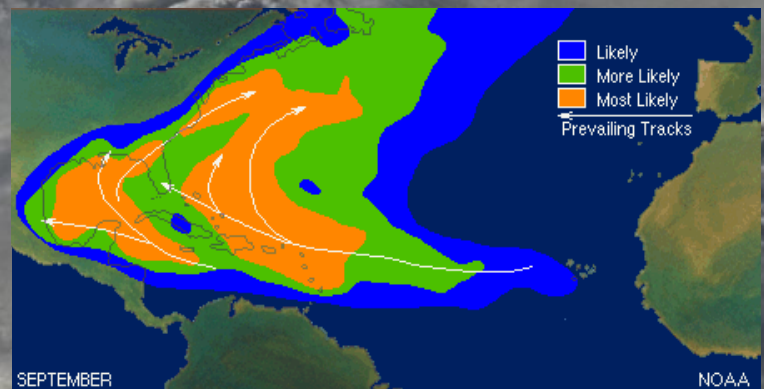
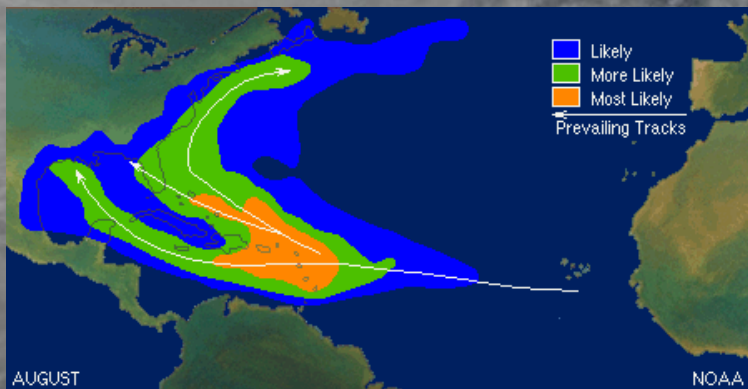
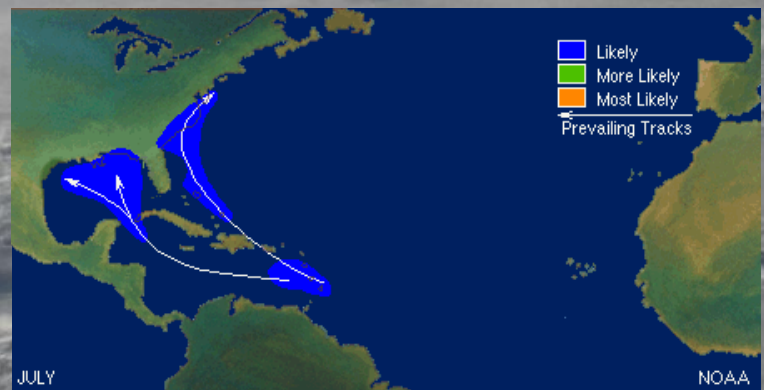
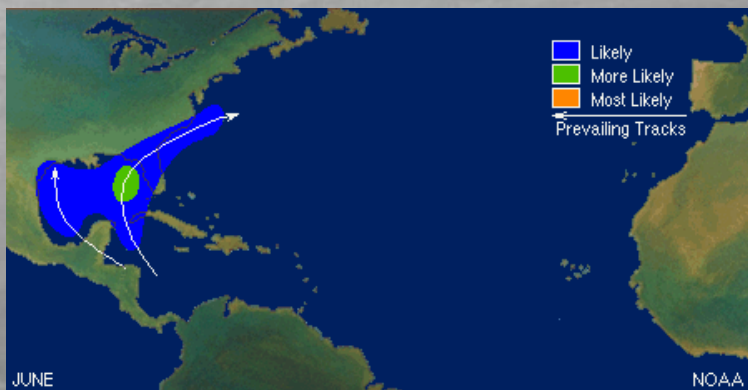
Hurricane Formation

Tropical storms and hurricanes form across different areas of the Atlantic, Caribbean, and the Gulf of Mexico during the season.

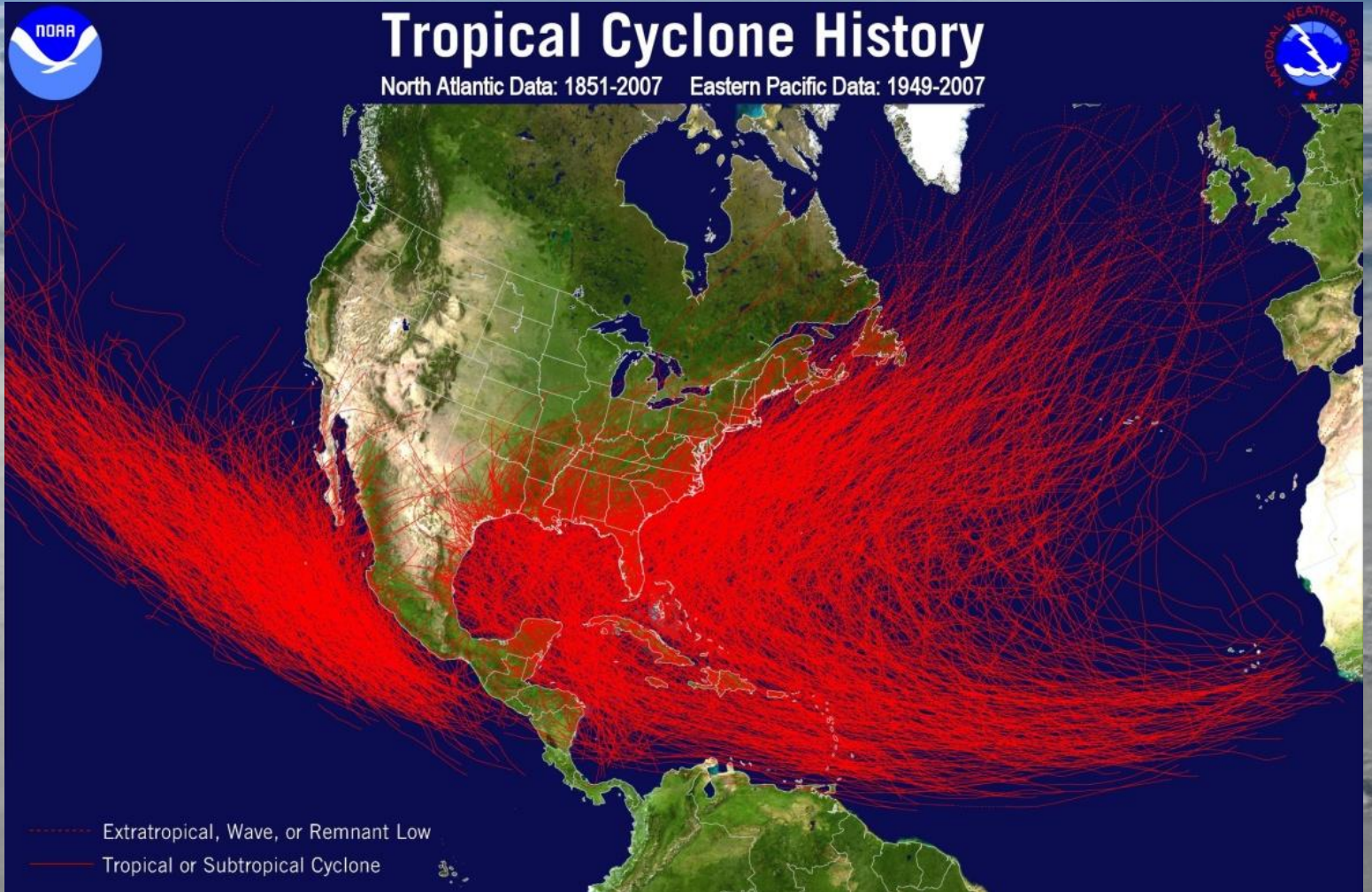
During June, an average of one storm forms every other year, usually across the Gulf of Mexico or Western Caribbean. During July, an average of one storm forms yearly, and includes areas just off the East Coast.

August begins the heart of the hurricane season, with an average of three storms forming yearly. The area of formation extends further eastward into the Eastern Caribbean, and towards the Cape Verde Islands later in the month. September is the peak of the hurricane season, with an average of four to five storms forming just about anywhere. October sees an average of two to three storms form per year, with the greatest concentration shifting back west over the Gulf, Western Atlantic and Caribbean.

For November, activity is greatly reduced, with an average of one storm forming every other year.



Hurricane History



Hurricane Humberto: September 12-13, 2007. Very small category one hurricane that made landfall between High Island and Sea Rim State Park in Jefferson county, Texas. Due to the small size, storm surge values were less than 5 feet across Jefferson county, and 3 to 4 feet across central and western Cameron parish.

Hurricane Rita: September 23-24, 2005. Very large category three hurricane that made landfall between Johnson's Bayou and Sabine Pass, affecting the entire Louisiana and Southeast Texas coasts. Hurricane force winds recorded within a polygon from Intracoastal City, Jennings, and De Ridder, Louisiana to Jasper, Kountze, and High Island, Texas. Storm surge values 8 to 10 feet across Jefferson and Orange counties in Southeast Texas. Across Southwest Louisiana, storm surge values of 12 to 18 feet across most of Cameron parish, and 10 to 12 feet across most of Vermilion parish, which was the worst storm surge flooding recorded during the last 150+ years of record keeping. Only one direct fatality occurred within our area.

Hurricane Lili: October 3, 2002. Category one hurricane that made landfall at Intracoastal City in Vermilion Parish. Storm surge values were high, ranging between 10-12 feet across Iberia and St. Mary parishes.

Hurricane Andrew: August 26, 1992. Category three hurricane that made landfall west-southwest of Morgan City in St. Mary parish. Storm surge values were at least 8 feet across Iberia and St. Mary parishes, which were lower than expected due to Andrew paralleling the coast at landfall.

Hurricane Bonnie: June 26, 1986. Very small category one hurricane that made landfall between High Island and Sea Rim State Park in Jefferson County. Storm surge values were 5 feet across Jefferson county, and 3 to 4 feet across central and western Cameron Parish.

Hurricane History

Hurricane Juan: October 28-30, 1985. Very large hybrid-type category one hurricane which approached Vermilion parish on the 28th but stayed offshore to make a cyclonic loop, eventually making landfall at Morgan City in St. Mary parish. Juan made another cyclonic loop inland across Acadiana, moving offshore to affect Southeast Louisiana and the Florida Panhandle. Storm surge values fluctuated between 3 to 6 feet across Vermilion, Iberia, and St. Mary parishes. Around 10 to 15 inches of rain fell over the region during the three day period.

Hurricane Danny: August 15, 1985. Category one hurricane that made landfall between Grand Chenier in Cameron parish and Pecan Island in Vermilion parish. Storm surge values ranged between 5 and 8 feet across Vermilion, Iberia, and St. Mary parishes.

Hurricane Carmen: September 8, 1974. Category three hurricane that made landfall across St. Mary parish, spread category two conditions across Iberia parish, with category one conditions across Vermilion, Lafayette and Acadia parishes. Storm surge ranged between 4 and 6 feet across Iberia and St. Mary parishes.

Hurricane Edith: September 16, 1971. Category two hurricane at landfall across Cameron and Vermilion parishes, and spread category one conditions across Iberia, St Mary, Lafayette, Acadia, and St. Martin Parishes. Storm surge values of 6 feet at Sabine Pass, with 8+ feet across Cameron and Vermilion parishes.

Hurricane Hilda: October 3-4, 1964. Category three hurricane landfall across St. Mary parish, where 10+ foot storm surge occurred. Storm surge ranged between 2 to 5 feet across Vermilion and Cameron parishes.

Hurricane Carla: September 10-12, 1961. Extremely large category four hurricane (circulation covered the entire Gulf of Mexico at one point) made landfall across the Central Texas coast. Due to the large size of the storm, storm surge values of 7 to 8 feet were common across coastal areas of Southeast Texas, as well as Southwest Louisiana. Hurricane force wind gusts were recorded along the entire Texas coast, with tropical storm force wind gusts recorded across the remainder of Inland Southeast Texas/Southwest Louisiana and the remainder of the Louisiana coast.

Hurricane Audrey: June 26-27, 1957. Very large and deadly category four hurricane, with a 40 mile wide eye, made landfall from Sabine Pass to Cameron. Audrey affected the entire Louisiana and Southeast Texas coasts. Storm surge values of 8 to 10 feet were recorded across Jefferson and Orange Counties in Southeast Texas. Across Southwest Louisiana, storm surge values of 10 to 14 feet occurred across most of Cameron Parish, and 7 to 10 feet across Vermilion, Iberia, and St. Mary Parishes. Unfortunately, over 500 direct fatalities was attributed to Audrey, mainly across Cameron and Vermilion parishes due to storm surge.

Storm #2: June 16, 1934. Louisiana's earliest category three hurricane that made landfall across South Central Louisiana over Iberia and St. Mary parishes. Storm surge information is not available.

Storm #1: August 6, 1918. Fairly small category three hurricane made landfall across central Cameron parish between Cameron and Rutherford Beach. Due to the small size of the storm and landfall across a data void area, maximum storm surge values are unavailable. However, the small core of the hurricane went directly over Lake Charles & Sulphur, Louisiana, causing more damage than Audrey or Rita.

Storm #2: August 17, 1915. Very large category four hurricane made landfall across western Galveston Island Texas. Due to the large size of the storm, storm surge of 9 to 11 feet were common across coastal areas of Southeast Texas east to Vermilion and Atchafalaya Bay in Southern Louisiana.

Storm #8: September 20-21, 1909. Very large category three hurricane that made landfall across South Central Louisiana over eastern St. Mary parish near Morgan City. Storm surge of 5 feet was measured across eastern St. Mary parish, with 8 to 12 feet common across the remainder of Southeast Louisiana and the Mississippi Coast.

Storm #10: October 12, 1886. Category three hurricane made landfall across western Cameron parish just west of Cameron near present day Holly Beach, Louisiana. Storm surge of 9 to 12 feet were common across Cameron parish.

Additional hurricane history can be obtained at: <http://www.srh.weather.gov/lch/tropical/hurclihist.php>

Storm Surge

STORM SURGE is the abnormal rise in sea level before, during, and even after a tropical storm or hurricane approaches and/or makes landfall.

Historically, storm surge used to claim 9 out of 10 lives. Over the last several decades, advancements in the science of hurricane forecasting and communications have lead to a marked decrease in this number. However, Katrina was a grim reminder that certain areas are still very susceptible to storm surge fatalities.

Storm surge is extremely destructive to anything in it's path, especially if the surge comes in with a significant speed. This is because water is extremely heavy. **A cubic yard of water weighs nearly 1700 pounds!** Remember, there is a reason why large steel ships and barges float.

The height of the storm surge depends on the size and strength of the tropical cyclone. The larger and/or stronger the storm, the higher the storm surge. However, this is not the only factor that affects the height of the storm surge. The shape and slope of the continental shelf across the coastal waters is another big factor in determining the height of the storm surge.

For example, a hurricane with 90 mph sustained winds (a high end category one) strikes the Florida East Coast. Since this area of Florida has a steep continental shelf, the storm surge is only around 4 feet (illustrated in figures 1a & 1b below). Now if this hurricane with the exact same size and strength made landfall across the Upper Texas or Louisiana coasts, the storm surge could be in the 7-8 foot range (illustrated in figures 2a & 2b below). This is due to the shallow continental shelf that extends over a hundred miles offshore, which typically piles the water higher and creates higher waves.

As the illustrations show below, this made the difference between no surge entering the beach house across the Florida East Coast and the complete destruction of the beach house across the Upper Texas or Louisiana coasts.

1a



Beach house along the East Coast of Florida before hurricane landfall.

1b



The 4 foot storm surge barely inundates the yard.

2a



Beach house along the Upper Texas or Louisiana Coast before hurricane landfall.

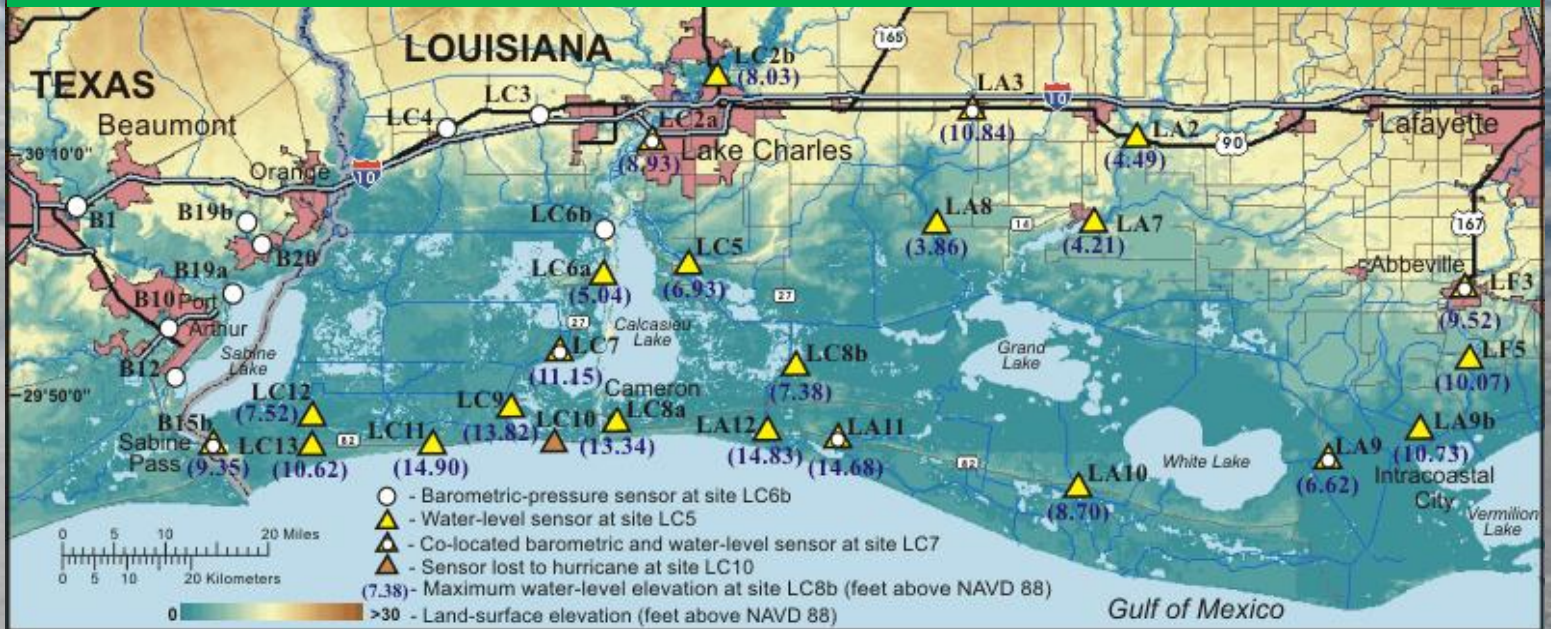
2b



The 8 foot storm surge and crashing waves completely destroys the house.

Storm Surge

USGS Hurricane Rita Storm Surge Inundation & Water Level Map

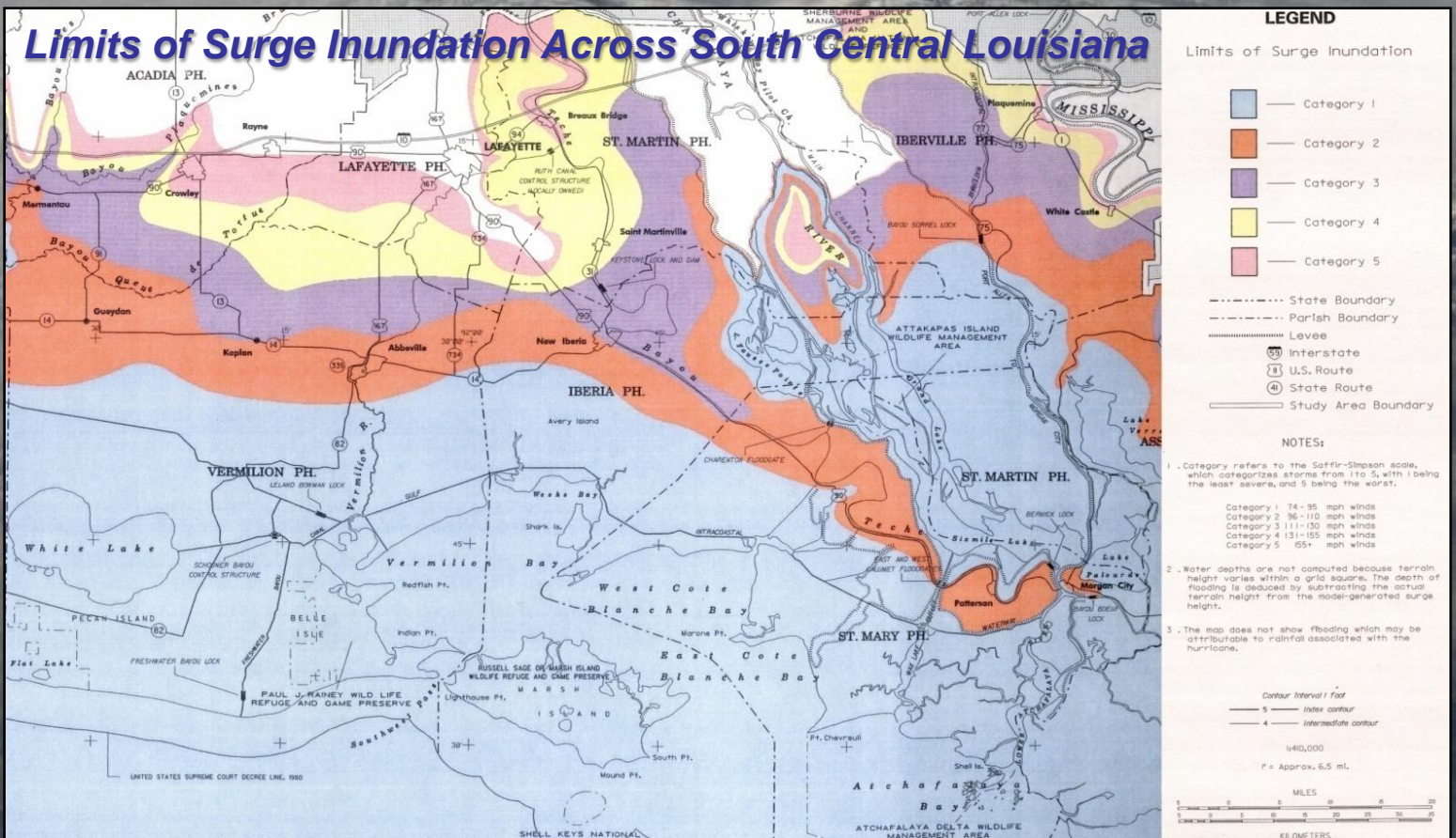
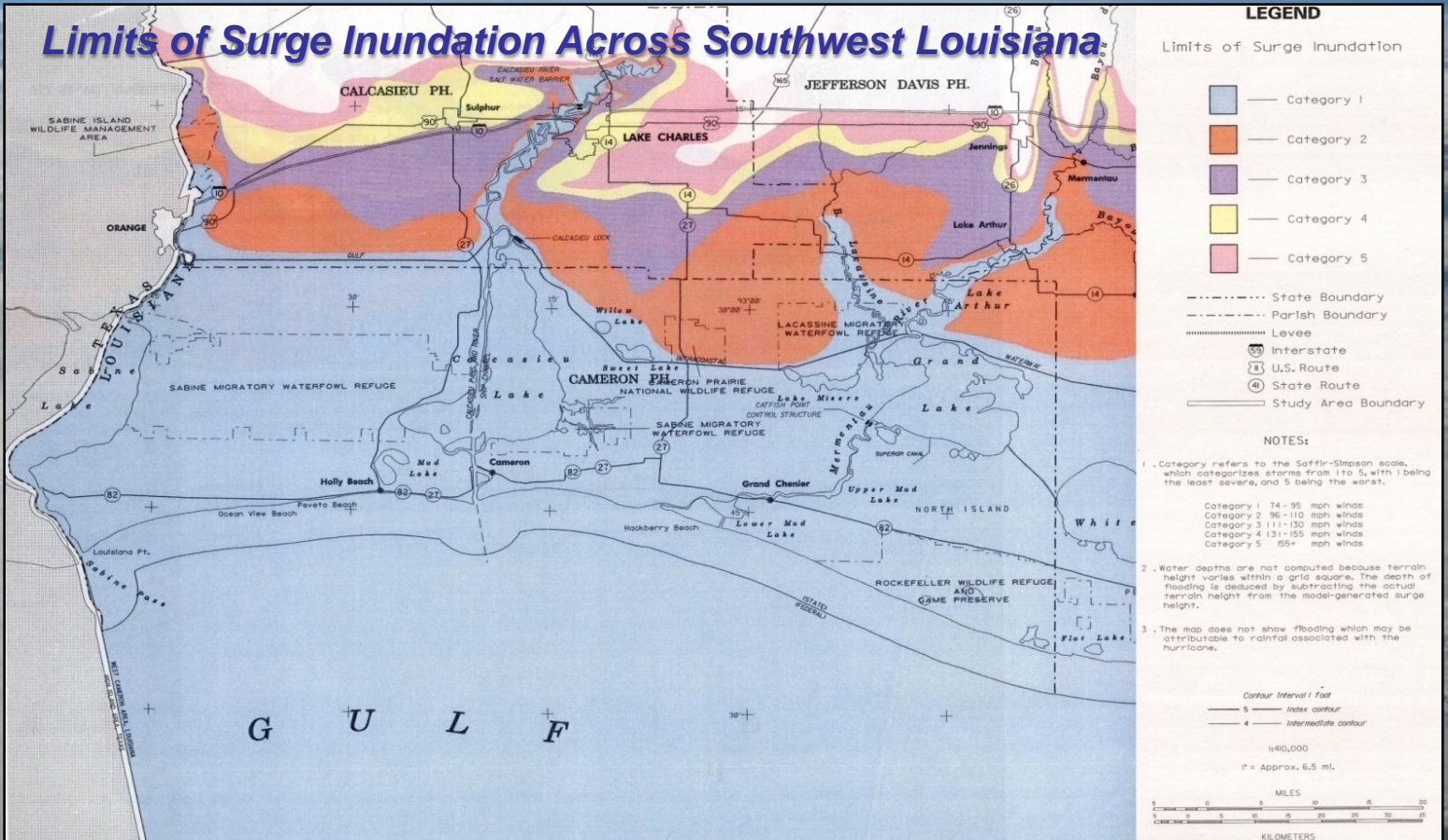


Holly Beach, Louisiana before and after Hurricane Rita

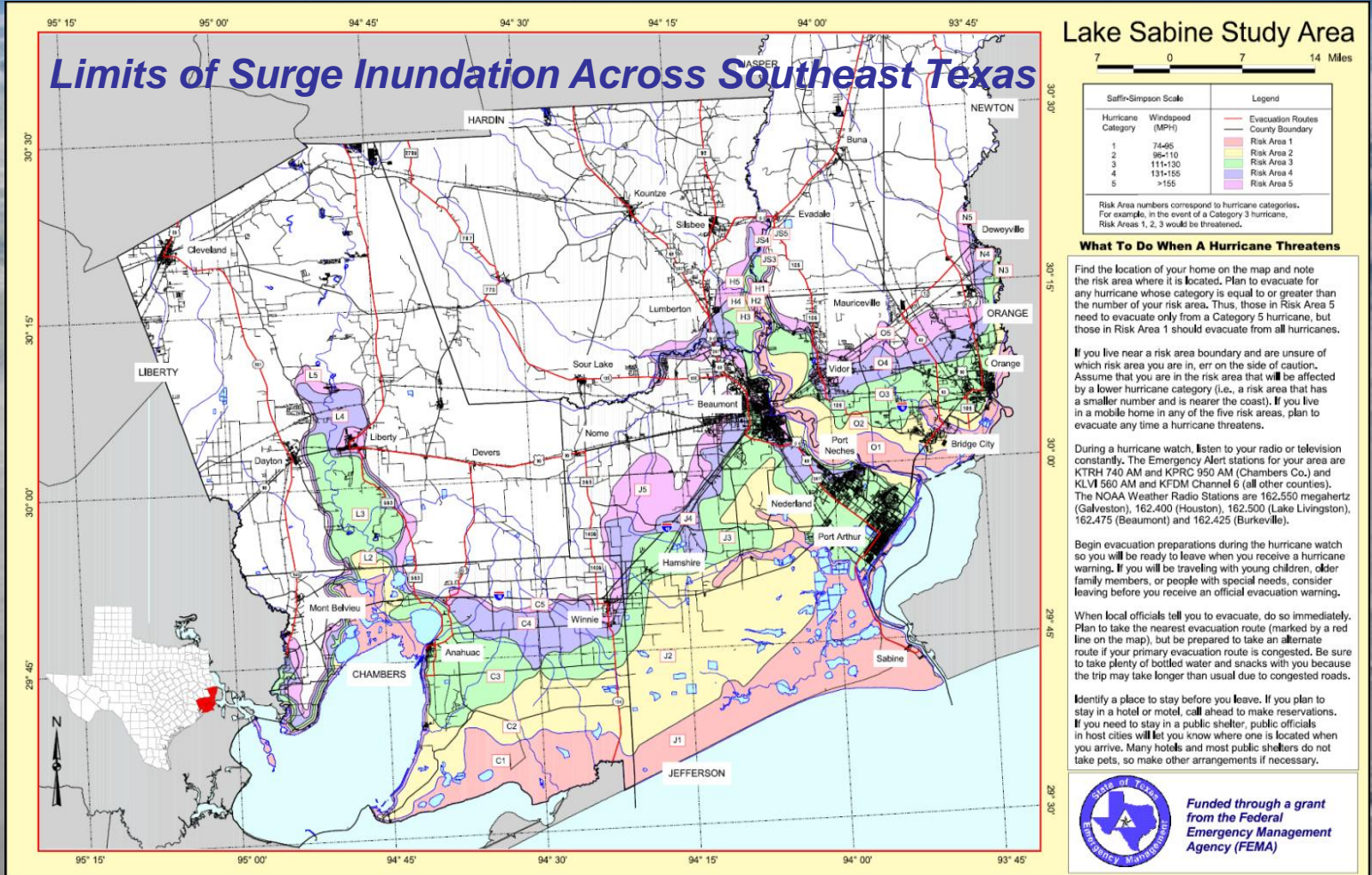


Hurricane Rita swept away the coastal community of Holly Beach, Louisiana (population: ~300). The top image shows the small fishing town in 2004 before the hurricane struck. Early on September 24, 2005, around 3:30 a.m., Hurricane Rita made landfall near the Texas-Louisiana coastal border. The bottom image, taken by the National Oceanic and Atmospheric Administration (NOAA) on September 25, 2005, reveals the damage. With the surrounding wetlands under water and roads buried by dirt and debris, little sign of the town remain.

Storm Surge



Storm Surge



For more detailed parish and county storm surge maps in .pdf format, go to the following website:
<http://www.srh.weather.gov/lch/tropical/StormSurgeMaps.php>

Tornadoes

TORNADOES can occur anytime and anywhere from the eye wall to within rainbands 200+ miles away from the center. Statistics show the most common location for formation is within the right front quadrant of the storm, while the most frequent time of day are the daylight hours. These tornadoes are usually weak and short-lived.

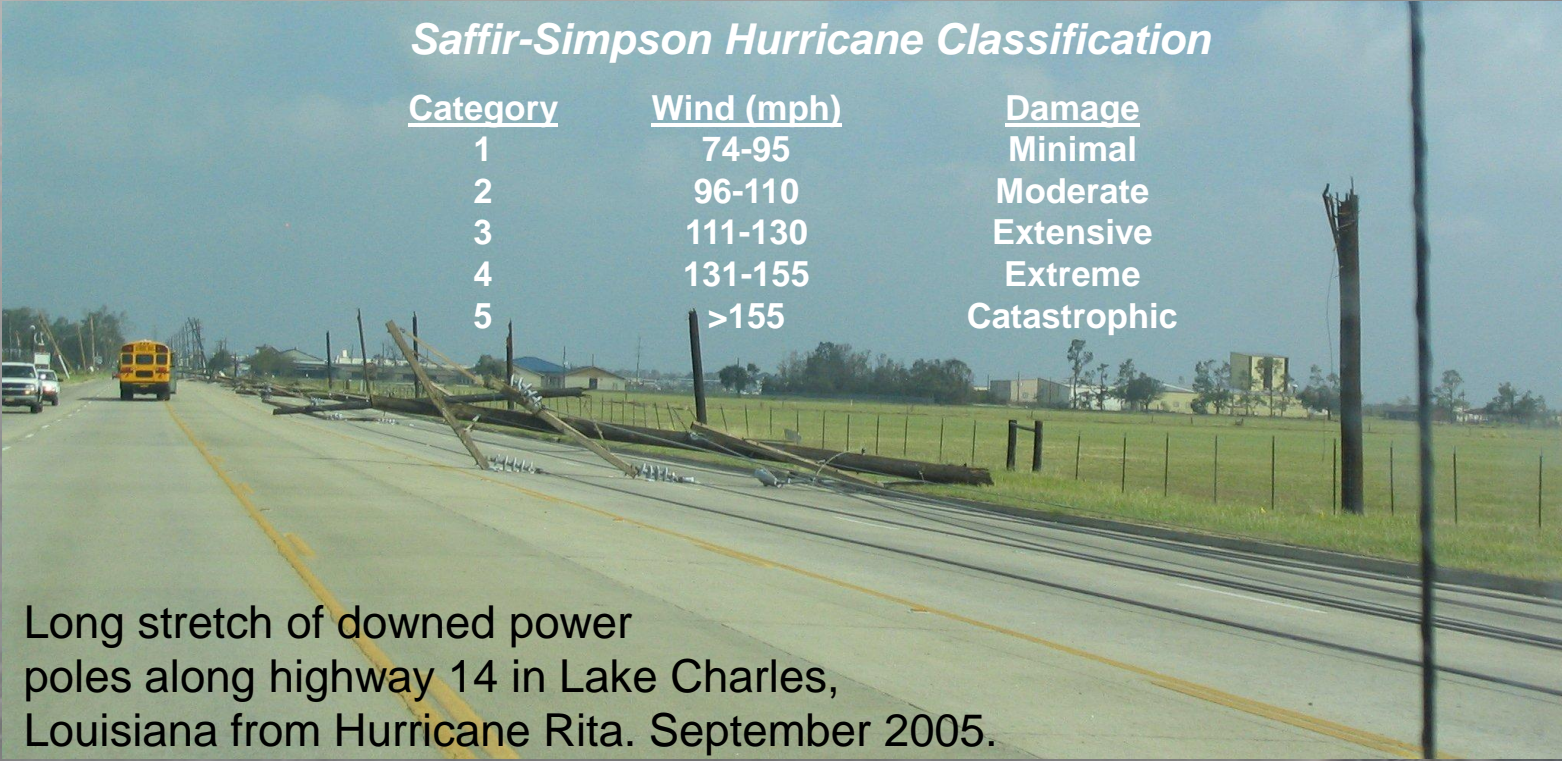


Winds

Hurricane-force winds (74 mph or more) can destroy buildings, as well as trees. In fact, the majority of home damage within category 1 or 2 storms comes from fallen trees. However, within major hurricanes, winds can cause partial to total destruction of a building. Hurricane-force winds can extend very far inland with large major hurricanes. Hurricane Rita produced hurricane force winds across Sam Rayburn and Toledo Bend Reservoirs, some 100 miles inland.

Saffir-Simpson Hurricane Classification

<u>Category</u>	<u>Wind (mph)</u>	<u>Damage</u>
1	74-95	Minimal
2	96-110	Moderate
3	111-130	Extensive
4	131-155	Extreme
5	>155	Catastrophic



Long stretch of downed power poles along highway 14 in Lake Charles, Louisiana from Hurricane Rita. September 2005.

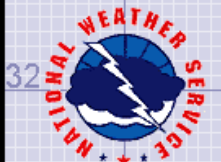
Hurricane wind damage is proportional to the square of the wind speed!

For example, the damage from a category 4 hurricane at 150 mph is typically **FOUR** times greater than that of a category 1 hurricane at 75 mph. It is imperative that you keep the wind from entering the structure, which is best done by protecting windows and doors with shutters. See page 18 of this guide for additional home preparedness guidelines.

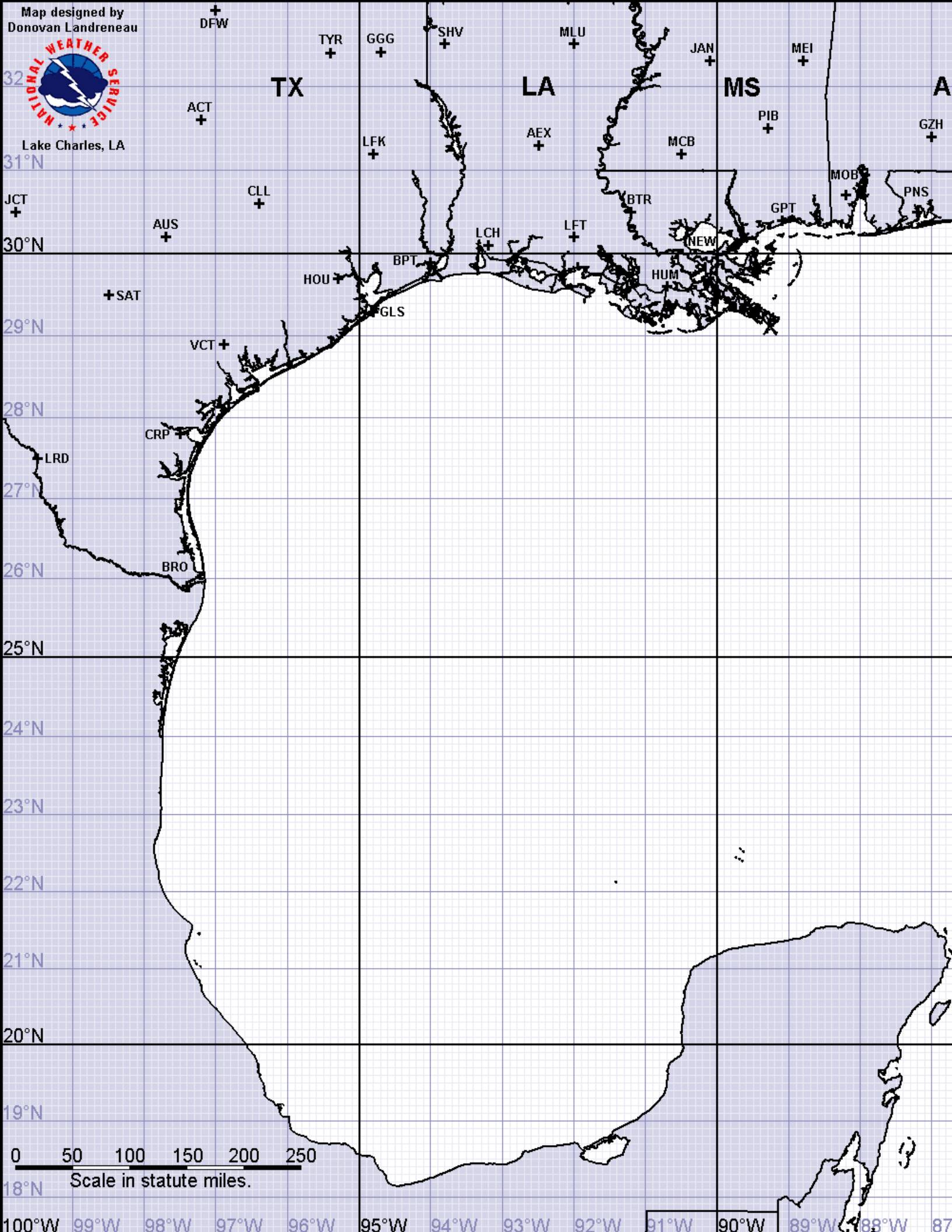


Roof damage from Hurricane Rita's winds in Lake Charles, Louisiana. September 2005.

Map designed by
Donovan Landreneau



Lake Charles, LA



0 50 100 150 200 250

Scale in statute miles.

100°W 99°W 98°W 97°W 96°W 95°W 94°W 93°W 92°W 91°W 90°W 89°W 88°W 87°W

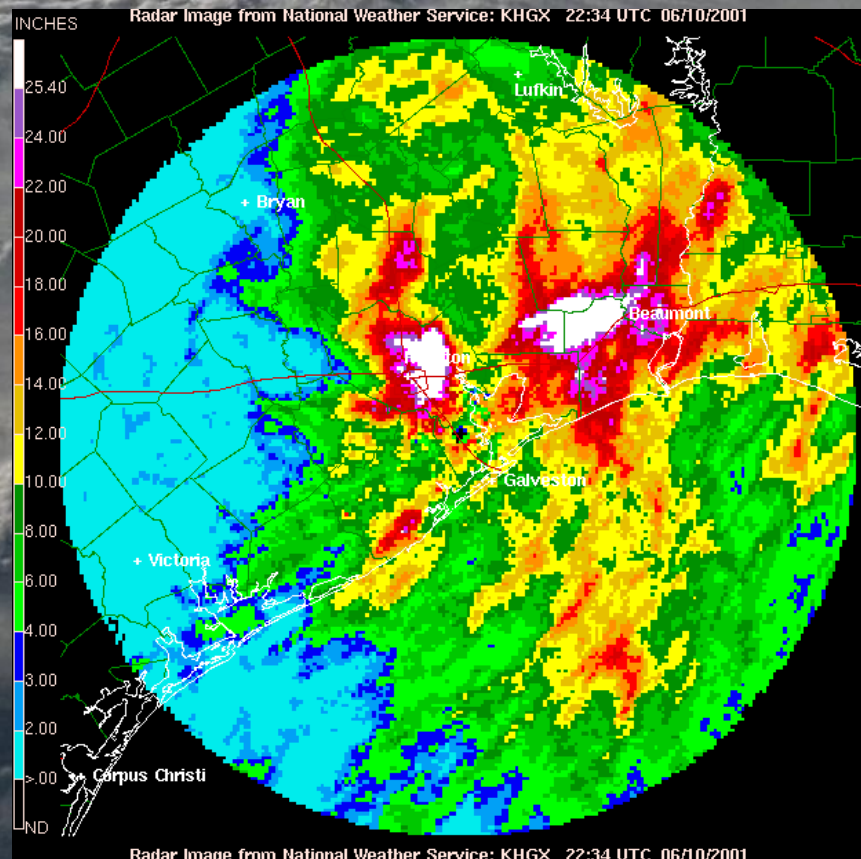
Inland Flooding

Tropical storms and hurricanes generally produce 5 to 10 inches of rain across the region of landfall. However, much higher totals can occur with stalled or slow moving systems. Inland fresh water flooding can occur anywhere near the region of landfall to over 1000 miles inland, or can enhance rainfall with other non-tropical systems, such as cold fronts.

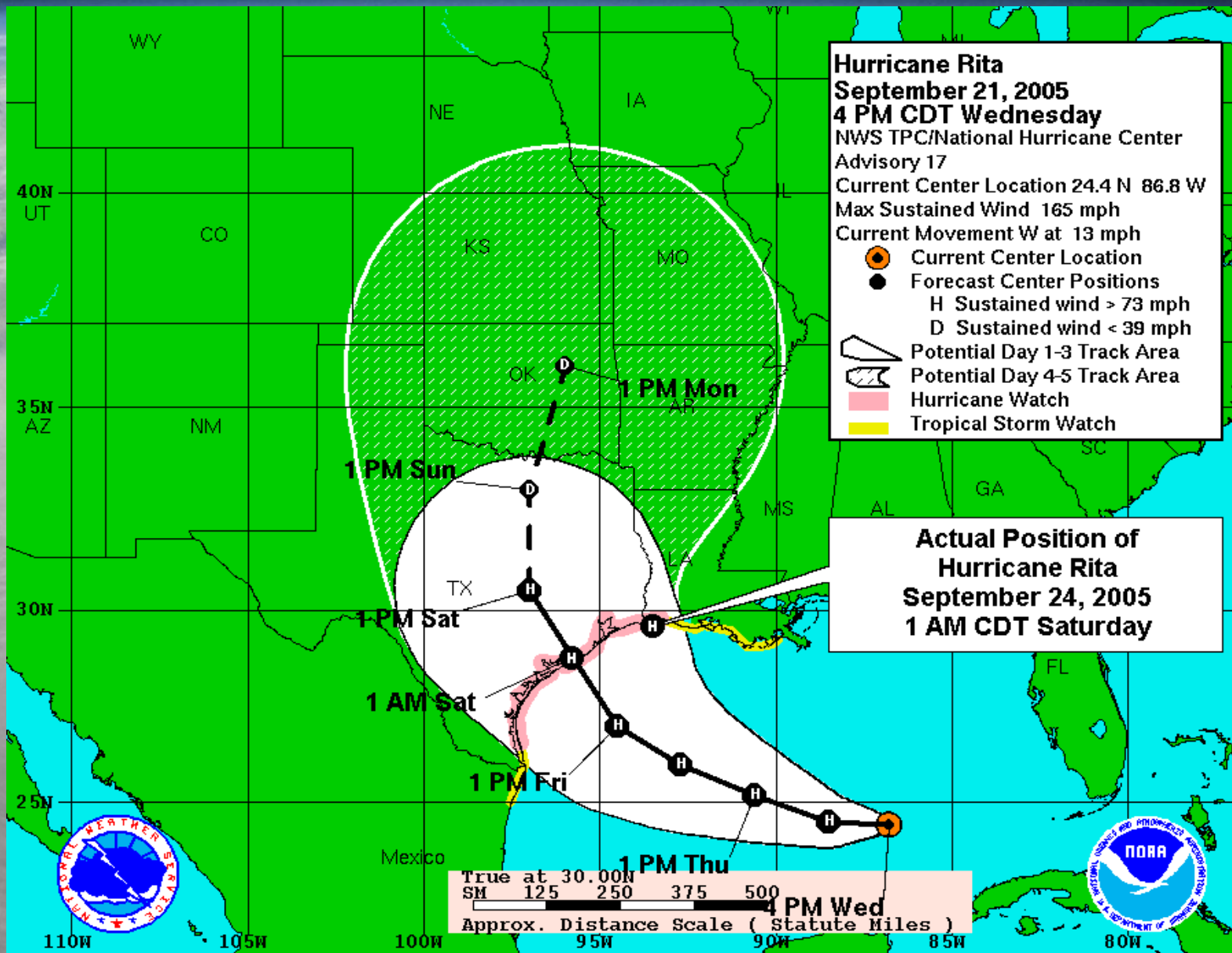
FLOOD SAFETY RULES:

- Monitor NOAA Weather Radio or your favorite news source for vital weather-related information.
- If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, washes, etc.
- Avoid already flooded and high velocity flow areas. Do not attempt to cross flowing streams. If you enter a flowing stream and the water gets above your knees, **TURN AROUND, DON'T DROWN.**
- If driving, be aware that the road bed may not be intact under flood waters. Turn around and go another way. **NEVER** drive through flooded roadways! If your vehicle stalls, leave it immediately and seek higher ground. Rapidly rising water may engulf the vehicle and sweep you and your occupants away.
- Do not camp or park your vehicle along streams and washes, particularly during threatening conditions.
- Be especially cautious at night when it is harder to recognize flood dangers.

Tropical Storm Allison in June 2001 produced catastrophic flooding across Houston & Beaumont, Texas, as well as portions of Louisiana near Lafayette, Baton Rouge, and New Orleans. To the right is a Storm Total Precipitation map from the Houston WSR-88D radar. Below is a photo of the devastating flooding in Houston.



Understanding the Forecast



Don't Focus on the Skinny Black Line!!!

Weather forecasting has never been and will likely never be an exact science. Thus, the ability to forecast the exact track and intensity of a hurricane will always present a challenge for forecasters and users of the forecasts to make critical evacuation decisions. In the figure below, the “skinny black line” represents the forecast track of highest confidence. However, one must not just focus on the skinny black line, but rather focus on the potential area the hurricane could affect, as illustrated by the white and hatched areas around the forecast track. This area, known as the “cone of uncertainty,” represents the average track errors during the last five years. Fortunately, track forecasting has improved over the last several decades. Unfortunately, intensity forecasting has not shown much increase in accuracy over the same time period.

The forecast graphic above illustrates why users of the hurricane forecast must take into consideration the “cone of uncertainty.”

Marine Forecast Area

The National Weather Service in Lake Charles is responsible for issuing marine warnings, watches, advisories, and forecasts for the coastal waters that extend from the Atchafalaya River westward to High Island, Texas out 60 nautical miles.

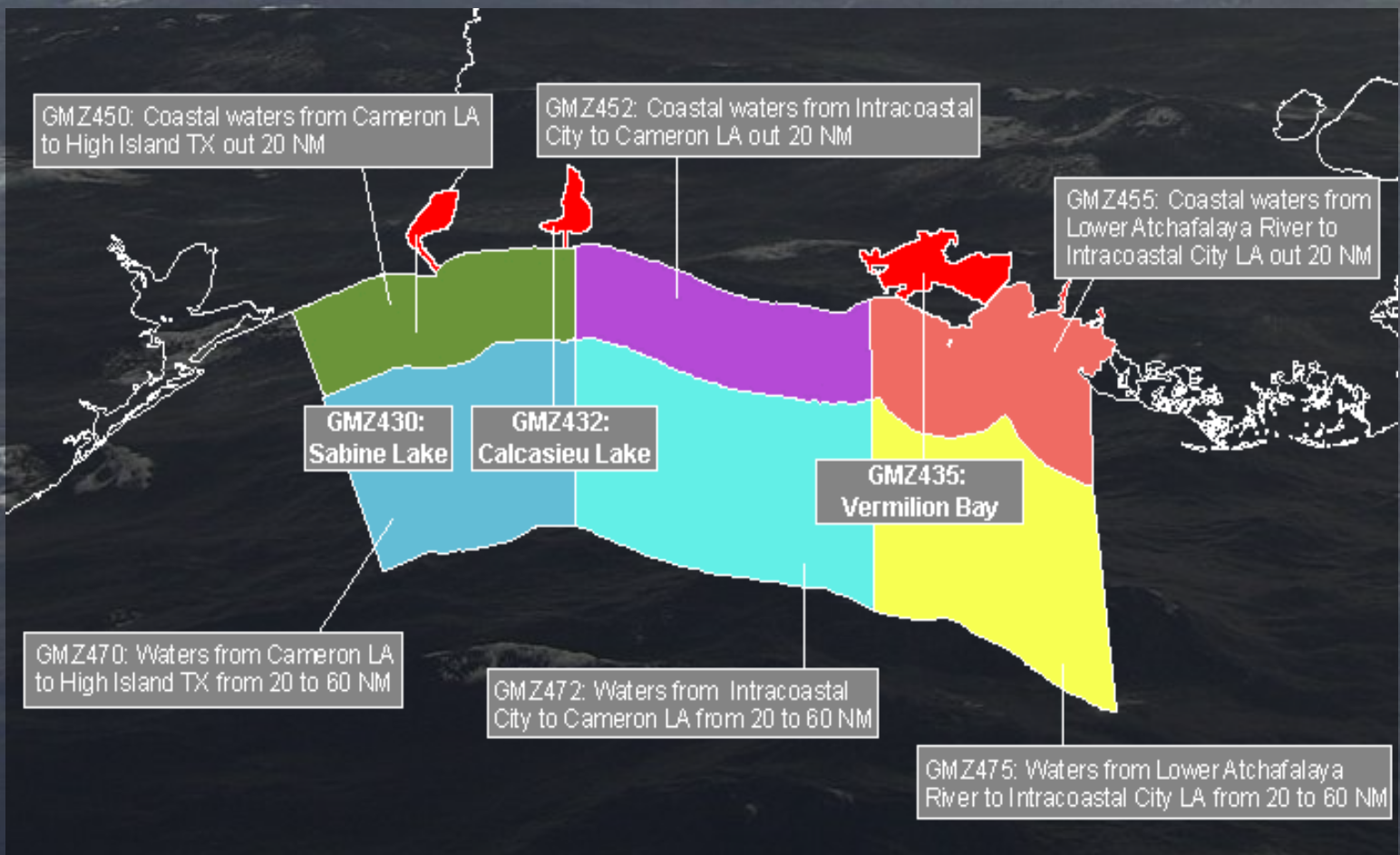
On Wednesday, October 1, 2008, the marine zones will be improved to include major inland lakes and bays. The new marine zones to be added within the Lake Charles area of responsibility are Sabine Lake, Calcasieu Lake, and Vermilion Bay.

Here are a few reasons why the National Weather Service in Lake Charles will make these changes:

1) Both the Calcasieu River & Lake (The Calcasieu Channel) and the Sabine River & Lake (The Sabine Channel) inland lakes are major transportation waterways for industrial and recreational vessels vital to the economy of Southwest Louisiana and Southeast Texas.

2) Sea heights across Vermilion Bay are usually significantly less than Atchafalaya Bay and areas further offshore due to Marsh Island blocking most swell and wave action from the Gulf of Mexico.

Below is a map of the new coastal marine zones distribution, with the new zones in red.



Marine Products and Terms

Marine Products

Coastal Waters Forecast is issued 4 times a day (updated when necessary) and forecasts wind, wave, and weather conditions out 5 days for the coastal waters from the Atchafalaya River westward to High Island, Texas out 60 nautical miles.

Marine Weather Message is issued to describe long duration (greater than 2 hours) marine weather hazards impacting the coastal waters.

Special Marine Warning is a severe local storm warning affecting coastal water areas usually of short duration (2 hours or less), covering potentially hazardous weather conditions of wind speeds 34 knots or more, hail of 3/4 inches in diameter or more, tornado, and/or waterspout.

Marine Weather Statement is issued to provide mariners with details on significant or potentially hazardous conditions (an update to the **Special Marine Warning**) or other information not covered in existing marine forecasts.

Marine Warning, Watch, and Advisory Terms

Dense Fog Advisory is issued when localized or widespread fog reducing visibilities below 1 nautical mile is occurring or forecast.

Small Craft Exercise Caution is issued when sustained winds of 15 to 20 knots, and/or seas of 6 feet is occurring or forecast

Small Craft Advisory is issued when sustained winds of 20 to 33 knots, and/or seas 7 feet or greater are occurring or forecast within 12 hours.

Gale Watch is issued when sustained winds of 34 to 47 knots is possible within 48 hours, and not associated with a tropical cyclone.

Gale Warning is issued when sustained winds of 34 to 47 knots is occurring or forecast within 24 hours, and not associated with a tropical cyclone.

Storm Warning is issued when sustained winds or frequent gusts of 48 to 63 knots is occurring or forecast within 24 hours, and not associated with a tropical cyclone.

Coastal Flood Watch is issued when coastal flooding is possible within 36 hours.

Coastal Flood Warning is issued when coastal flooding is occurring, is imminent, or is expected within 24 hours.

National Weather Service Lake Charles, Louisiana

<http://www.srh.weather.gov/lch/>
(337) 477-5285

The screenshot shows the National Weather Service Forecast Office website for Lake Charles, Louisiana, viewed in a Microsoft Internet Explorer browser. The browser's address bar shows the URL <http://www.srh.weather.gov/lch/>. The website header includes the NOAA logo, the text "National Weather Service Forecast Office Lake Charles, Louisiana", and the website URL www.weather.gov. Navigation links for "Local News", "SRH News", and "Organization" are present, along with a search bar.

The main content area features a "Local weather forecast by 'City, St' or zip code" section with a search box and a "Go" button. Below this is a "Current Hazards" section for "SW La./SE Tex. National". A "Current Conditions" sidebar lists various data types: Observations, Satellite Images, Rivers & Lakes AHPS, Precip Estimate, and Hydrology. A "Radar Imagery" section includes "Lake Charles", "Fort Polk", and "Nationwide". "Forecasts" are provided for "SW La./SE Tex.", "Marine", "Graphical", "Aviation", and "Fire Weather". "Climate" information is available for "Local", "National", "More", and "Climate Prediction". "Tropical Weather" includes "SW La./SE Tex.", "Hurricane Rita", and "Nat'l Hurricane Ctr". "Weather Safety" covers "Local Storm Ready" and "Preparedness". "Additional Info" includes "Tide Data", "Model Data", "NOAA Wx Radio", "Co-op/SAWRS", "Upper Air/LAWRS", and "PMO/VOS".

The "Top News" section contains three items:

- Get prepared during Hurricane Preparedness Week!
- View summaries of recent weather events across our region
- Join CoCoRaHS and become a volunteer weather observer!

A "Cell Phone Weather Link" is provided: www.srh.noaa.gov/wml. Below this is a "Click on the map for your Point Forecast (What is a Point forecast?)" section. It includes a map of the Lake Charles region with various cities labeled (e.g., Leesville, Alexandria, Marksville, Lake Charles, Abbeville). A text box on the right of the map says "There are no watches, warnings, or advisories at this time." and includes a "Zoom Out" button. A link for "en español" is also present.

At the bottom of the page, there are six thumbnail images with captions:

- Latest LCH Radar
- Latest Satellite
- Latest POE Radar
- Latest Weather Map
- Latest River Stages
- Old LCH Homepage

Serving and Protecting our Area since 1893

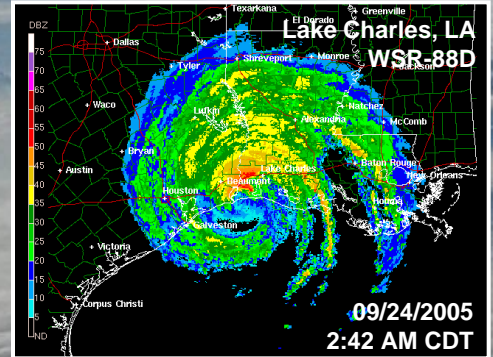
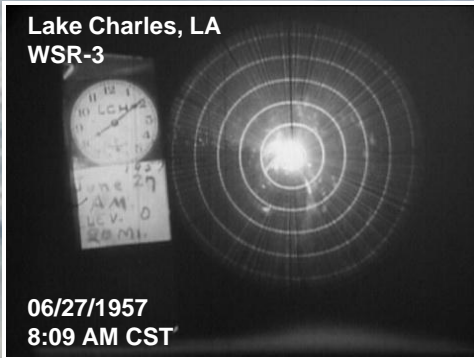


National Weather Service Lake Charles, Louisiana



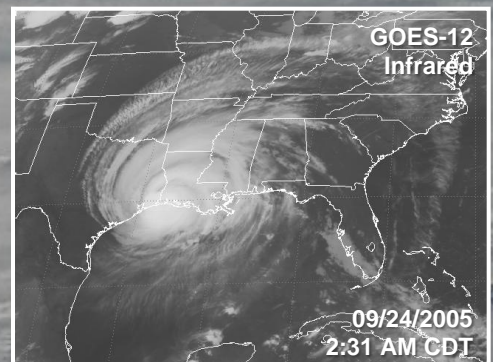
Audrey 1957

Rita 2005



Radar

No satellite images were available until the launch of TIROS-1 on 4/1/1960.



Satellite

RAWARC 7021 Teletypewriter
Transmitted and received text data only.

NEW ORLEANS WEATHER BUREAU ADVISORY NO 8 AUDREY JUNE 27 1957 4 AM CST.

HURRICANE AUDREY WAS ABOUT 70 MILES SOUTH OF PORT ARTHUR TEXAS NEAR LATITUDE 29 LONGITUDE 94 AT 4 AM CST...MOVING NORTHWARD 15 TO 20 MPH. THE CENTER IS EXPECTED TO REACH PORT ARTHUR AREA BY MID MORNING WITH WINDS OF 100 MPH OR SLIGHTLY HIGHER AND TIDES OF 5 FEET.

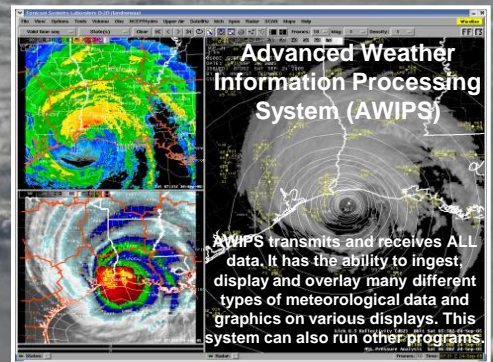
GALES EXTEND OUT 150 TO 200 MILES TO NORTHW AND EAST OF CENTER AND 50 MILES SOUTHWEST.

TIDES WILL REACH 5 TO 9 FEET TODAY FROM HIGH ISLAND TEXAS TO MORGAN CITY LA AND 3 TO 6 FEET ELSEWHERE FROM FREEPORT TEX TO BILOXI MISS. PRECAUTIONS AGAINST THESE HIGH TIDES SHOULD BE CONTINUED. FOUR TO EIGHT INCH RAINS AND HIGH WINDS WILL SPREAD INLAND THRU EXTREME EAST TEXAS AND WESTERN LOUISIANA TODAY.

HURRICANE WARNINGS ARE DISPLAYED FROM HIGH ISLAND TEXAS EASTWARD ALONG THE ENTIRE LOUISIANA COAST AND STORM WARNINGS AT GALVESTON. ZINBS ALONG E SOUTHEAST LOUISIANA COAST WILL OT REACH HURRICANE X FORCE BUT ROUGH SEAS AND HIGH TIDES JUSTIFY CONTINUING THE WARNING. SMALL CRAFT FROM CORPUS CHRISTI TO PENSACOLA SHOULD REMAIN IN PORT.

NEXT ADVISORY 10 AM CST BULLETIN 7 AM CST.

KRAFT WEATHER BUREAU NEW ORLEANS



Equipment

Communication to the public in 1957 consisted of a few radio stations and one television station. Telephones were present, but often as party lines.



Communication

500+

Direct Fatalities

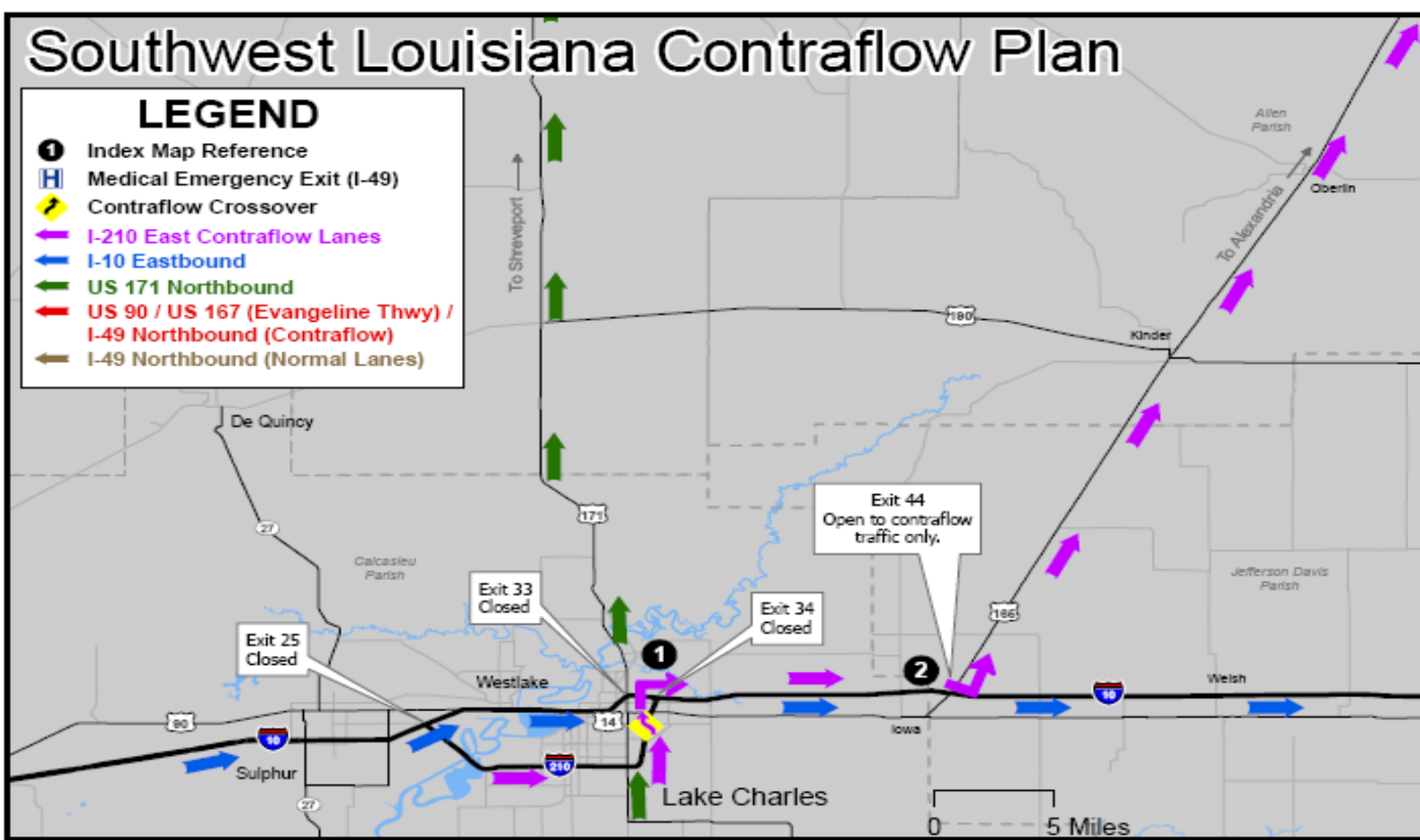
1

Improved Tools and Communication Saves Lives!

Southwest Louisiana Contraflow Plan

LEGEND

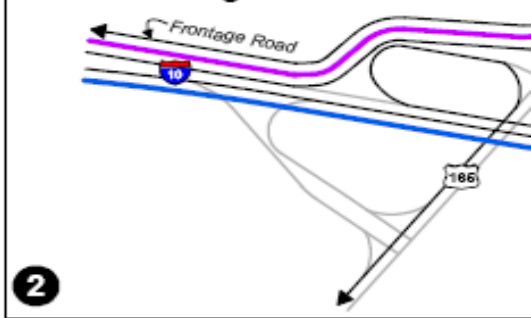
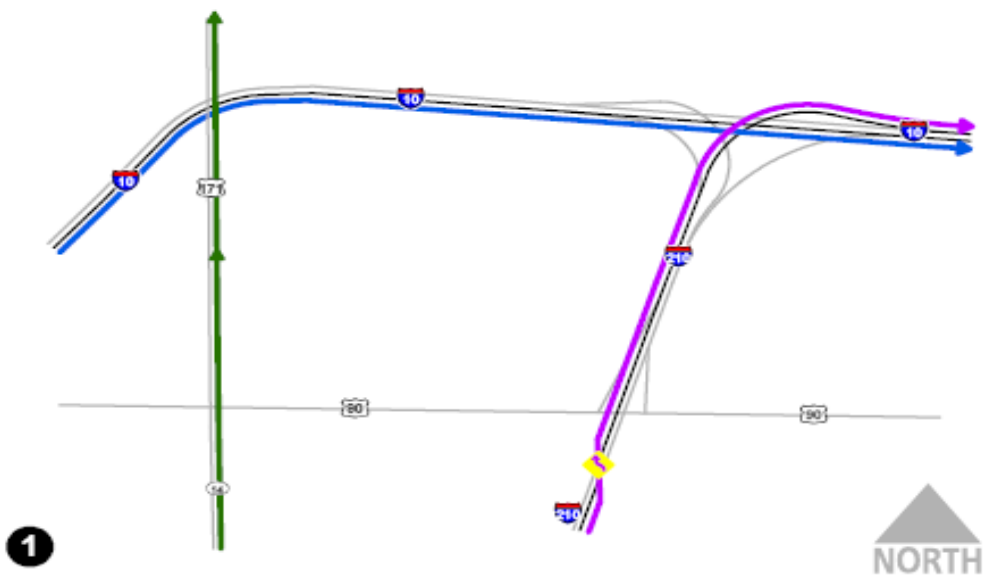
- 1** Index Map Reference
- H** Medical Emergency Exit (I-49)
- Y** Contraflow Crossover
- Purple Arrow** I-210 East Contraflow Lanes
- Blue Arrow** I-10 Eastbound
- Green Arrow** US 171 Northbound
- Red Arrow** US 90 / US 167 (Evangeline Thwy) / I-49 Northbound (Contraflow)
- Brown Arrow** I-49 Northbound (Normal Lanes)



US 171 Northbound

I-210 @ I-10 Eastbound

I-10 @ US 165 Interchange



Study this!
There will be
Upon entering the Con
If you do not wish
your best strategy i

Lake Charles Area Instructions

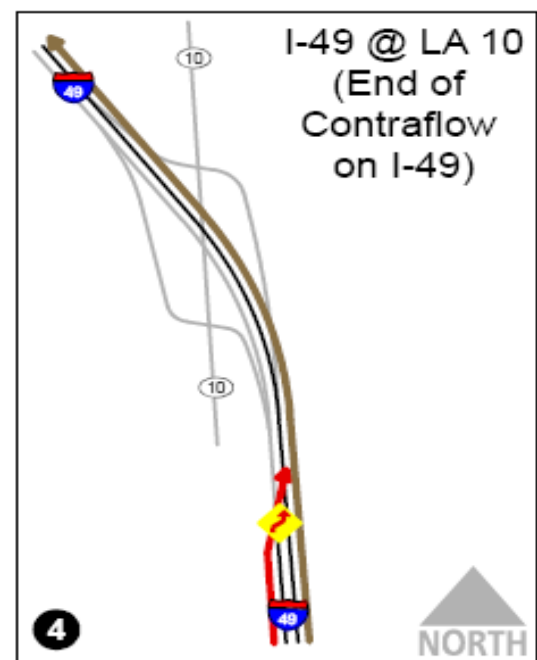
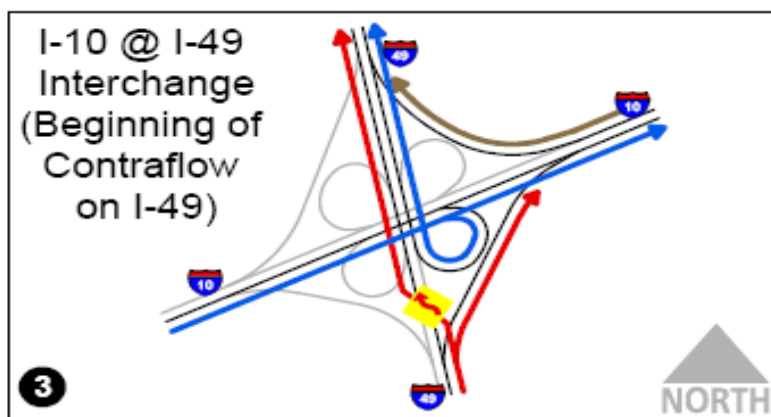
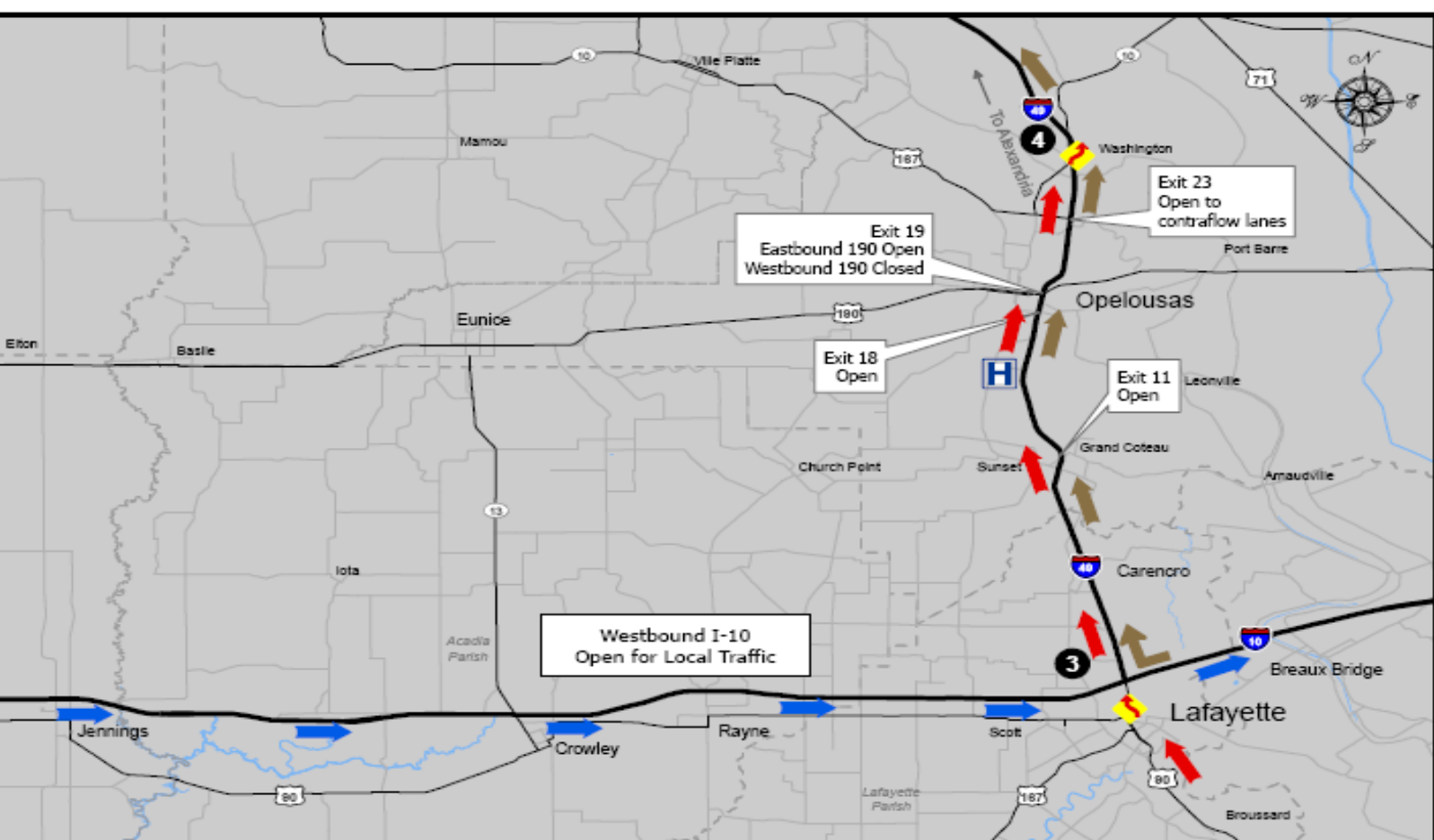
I-210 East (contraflow lanes) - To Alexandria (PURPLE)
 Eastbound I-210 traffic will cross over to the westbound lanes of I-210 just before (south of) US 90. The crossed-over traffic will contraflow (travel east on the westbound lanes of I-10) to US 165 North. Traffic using the I-10 contraflow lanes will be diverted northbound onto US 165.

I-10 Eastbound - To Alexandria or Baton Rouge (BLUE)
 I-10 eastbound traffic (normal lanes) will not be allowed to exit at the following exits:
 Exit 25, I-210 East
 Exit 33, US 171
 Exit 34, I-210 West
 Exit 44, US 165
 All other exits along I-10 will be open.
 I-10 eastbound lanes will flow as normal to Lafayette through the Lake Charles area.

US 171 North - To Shreveport (GREEN)
 To access US 171 North, traffic must use LA 14 North from Lake Charles. I-10 eastbound traffic will NOT be allowed to exit onto US 171.

I-10 West at US 165
 Westbound I-10 traffic will be diverted at Exit 44 to US 165 South to US 90 West.

US 165 North
 To access US 165 North, traffic must use I-210 East.



Map and **CHOOSE YOUR ROUTE WISELY.**
 many restrictions on the Interstate System.
 In the contraflow area, it may not be possible to change routes.
 In order to evacuate under the Contraflow restrictions,
 it is to **LEAVE EARLY** before Contraflow is activated.

Lafayette Area Instructions

I-10 East and West - To Alexandria or Baton Rouge (BLUE)

Eastbound I-10 traffic may continue East or travel North on I-49.

Westbound I-10 traffic from Baton Rouge will be diverted to I-49 North if Lake Charles has begun contraflow.

US 90 / US 167 (Evangeline Thwy) / I-49 North (contraflow lanes) - To Alexandria/Shreveport (RED)

Northbound traffic on US 90/US 167 (Evangeline Thwy) through Lafayette will cross over to contraflow lanes just before (south of) the I-10/I-49 interchange.

Northbound traffic on US 90/US 167 (Evangeline Thwy) also will be allowed to travel East to I-10.

Northbound I-49 traffic (contraflow lanes) will be allowed to exit at Exit 23 (US 167).

All other exits along the I-49 North contraflow route, including US 190, will be closed.

I-49 North (normal lanes) - To Alexandria/Shreveport (BROWN)

Northbound I-49 traffic (normal lanes) may exit at US 190 (Exit 19) to the east but not US 190 to the west.

Northbound I-49 traffic (normal lanes) will be allowed to exit at Sunset/Grand Coteau (Exit 11) and Cresswell Lane (Exit 18).

All other exits on I-49 North (normal lanes) between I-10 and Washington will be closed.

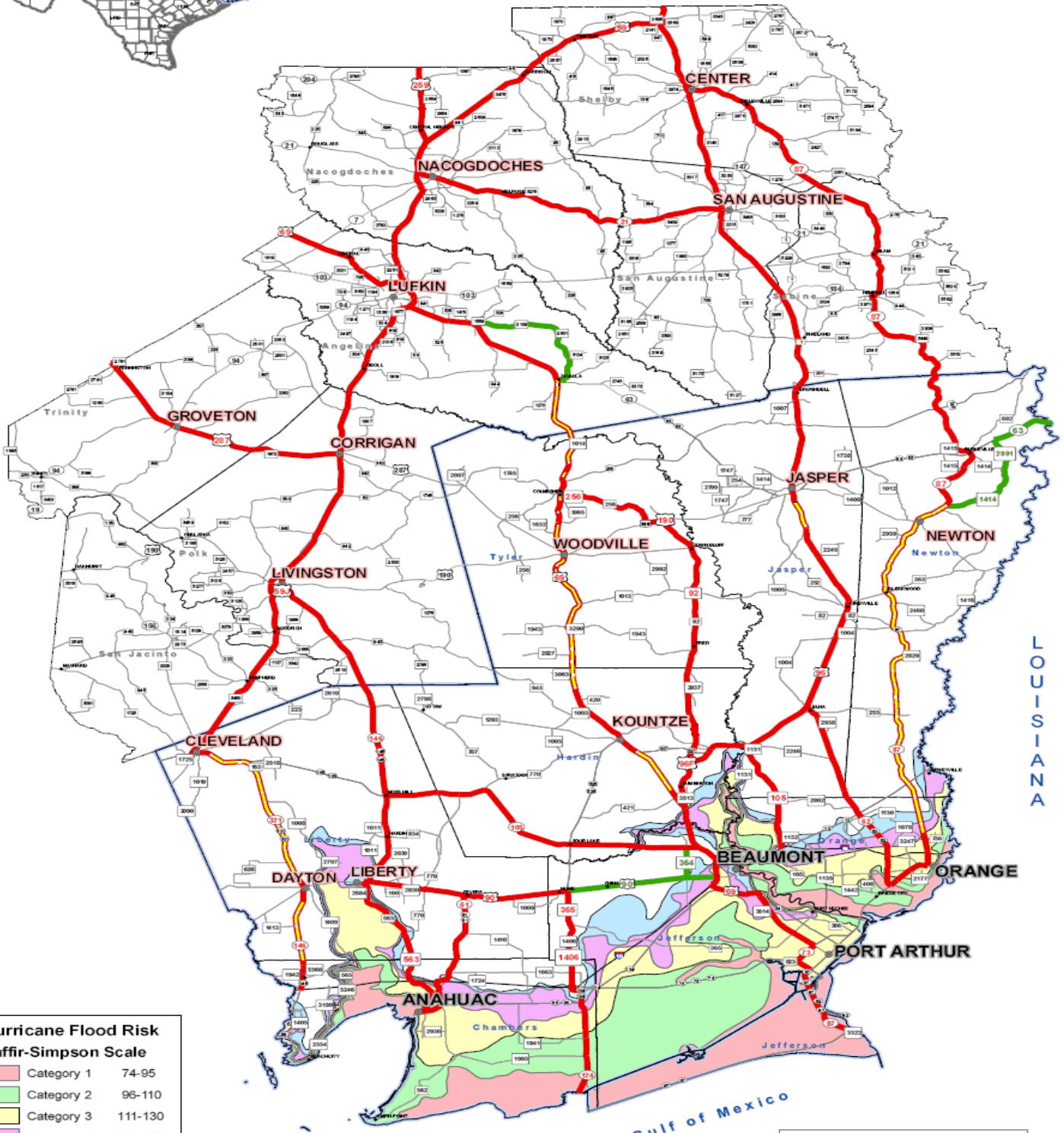
I-49 South Traffic

Southbound I-49 traffic will be diverted at the Meeker Exit (US 167). From there, drivers can use US 167/LA 13/US 71 to continue South.

Medical Emergencies **H**

Drivers with medical emergencies on I-49 (normal and contraflow lanes) will be allowed to exit at Harry Guilbeau Road (Exit 15). No other services are available at this exit.

2008 Inland Evacuation Map Beaumont District



Hurricane Flood Risk	
Saffir-Simpson Scale	
 Category 1	74-95
 Category 2	96-110
 Category 3	111-130
 Category 4	131-155
 Category 5	>155 mph

Evaculanes

EVACULANES: The use of shoulders and/or center turn lanes in addition to the normal mainlane(s) to create additional outbound evacuation lanes to be used during emergencies.

Emergency Evacuation Routes

Alternate Evacuation Routes



Plot Date - March, 2008
Map Projection and Datum:
Texas State Mapping System (TSMS), NAD 83
Created by Sue Tidwell

Hurricane Preparation

THINGS TO DO BEFORE HURRICANE SEASON:

- Create a family disaster plan. Talk about hurricanes with your family, especially any young children. Know the vulnerability of your home to storm surge, flooding and wind. Decide which part of your home is safest, should you decide to stay.
- Review all insurance policies, keeping in mind what types of damage (wind, water, etc) are covered.
- Have a place where valuable papers, photographs, etc. can be kept, ready to be grabbed on short notice. The best way to prevent water damage is to store valuables in plastic garbage bags.
- Prepare window shutters or plywood to cover doors and windows. Have attachment supplies arranged for quick installation.
- Get a NOAA Weather Radio with battery backup. It's your fastest and most accurate source for weather warnings and information.

PREPARATION BEFORE THE STORM:

- Check stock of canned foods, first aid supplies, drinking water, and prescription drugs. Plan for one to two weeks without basic utilities.
- Gas up your vehicle as widespread power outages will shut down service stations. Get extra cash as ATM machines will be inoperative as well.
- Plan to evacuate early if you live on the coastline, in a mobile home, or in a flood plain. Know evacuation routes. Contact friends or relatives who live inland and tell them you plan to visit - hurricanes make great excuses for visiting out-of-town people!
- Keep your pets in mind if you plan to evacuate, since all shelters and many hotels will not accept them.

WHAT TO DO AFTER THE STORM:

- Listen to commercial media or NOAA Weather Radio for the latest information from local emergency officials. Wait until an area is declared safe before returning.
- Roads may be closed for your protection, so don't travel across a flooded or barricaded road.
- Check gas, water and electrical lines, as well as appliances for damage.
- Do not drink or prepare food with tap water until you are certain it is not contaminated.
- Avoid using candles and other open flames indoors. Use flashlights instead.
- Use the telephone to report life-threatening emergencies only.
- Be extremely careful if using a chain saw or other mechanical devices to cut fallen trees. Many post-storm injuries are the result of chain saw accidents.

Emergency Information

**NATIONAL WEATHER SERVICE
LAKE CHARLES FORECAST OFFICE**

337-477-5285

<http://www.srh.weather.gov/lch/>

NATIONAL HURRICANE CENTER
<http://www.nhc.noaa.gov>

NOAA EXTREME WEATHER INFORMATION SHEETS

LOUISIANA: <http://ecowatch.ncddc.noaa.gov/c-side/louisiana.pdf>

TEXAS: <http://ecowatch.ncddc.noaa.gov/c-side/texas.pdf>

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

800-621-FEMA

<http://www.fema.gov>

NATIONAL FLOOD INSURANCE PROGRAM

888-379-9531

<http://www.floodsmart.gov>

LOUISIANA HOMELAND SECURITY AND EMERGENCY PREPAREDNESS

225-925-7500

<http://www.ohsep.louisiana.gov>

LOUISIANA ROADS CONDITIONS

<http://www.511la.org>

TEXAS GOVERNOR'S DIVISION OF EMERGENCY MANAGEMENT

512-424-2138

<http://www.txdps.state.tx.us/dem/pages/index.htm>

TEXAS ROADS CONDITIONS

800-452-9292

http://apps.dot.state.tx.us/travel/road_conditions2.htm

ACADIANA AREA RED CROSS

337-234-7371

<http://www.acadianaredcross.org>

AMERICAN RED CROSS OF SOUTHWEST LOUISIANA

337-478-5122

<http://www.swla-redcross.org>

CENTRAL LOUISIANA RED CROSS

318-442-6621

<http://www.cenlaredcross.org>

RED CROSS BEAUMONT CHAPTER

409-832-1644

<http://www.redcrossbeaumont.org>

RED CROSS ORANGE CHAPTER

409-883-2322

<http://www.redcrossorange.org>

Emergency Information

LOUISIANA PARISH CONTACTS

ACADIA 337-783-4357

www.acadiaparishpolicejury.org/Departments/emergency_mgmt.htm

ALLEN 337-584-5156

AVOUELLES 318-253-7291

BEAUREGARD 337-463-3281

<http://www.beau.org/~oem>

CALCASIEU 337-721-3800

<http://www.cppj.net/dept/oep>

CAMERON 337-775-7048

EVANGELINE 337-363-3267

IBERIA 337-369-4427

JEFFERSON DAVIS 337-821-2100

LAFAYETTE 337-291-5075

<http://www.lafayetteoep.org>

RAPIDES 318-445-5141

<http://www.rppj.com>

SAINT LANDRY 337-948-7177

http://www.stlandryparishgovernment.org/dept_emergency.htm

SAINT MARTIN 337-394-3071

SAINT MARY 337-828-4100

VERMILION 337-898-4308

VERNON 337-238-7225

TEXAS COUNTY CONTACTS

HARDIN 409-246-5119

www.co.hardin.tx.us/ips/cms/othercountyoffices/emergencyManagement.html

JASPER 409-994-2543

NEWTON 409-379-5691

<http://www.ih2000.net/jasperem>

JEFFERSON

Beaumont: 409-835-8757

Port Arthur: 409-983-8333

<http://www.co.jefferson.tx.us/em/em.htm>

TYLER 409-283-5411

ORANGE 409-882-7895

<http://www.co.orange.tx.us/ocem.htm>