



Tensas Parish Hazard Mitigation Plan Update Public Meeting



February 27, 2024
St. Joseph, LA

Agenda



Introductions



**Hazard Mitigation
Overview**



Planning Process



**Risk Assessment
Maps**



**Public Outreach
Activities**



Introductions

- **Stephenson Disaster Management Institute (SDMI) at LSU**
 - Chris Rippetoe – Hazard Mitigation Program Manager
 - Jason Martin – Emergency Management Analyst
- **Tensas Parish OHSEP Director/Parish Staff**
- **Governor's Office of Homeland Security and Emergency Preparedness**
 - Jeffrey Giering – State Hazard Mitigation Officer
 - Marion Pearson – Hazard Mitigation Planner

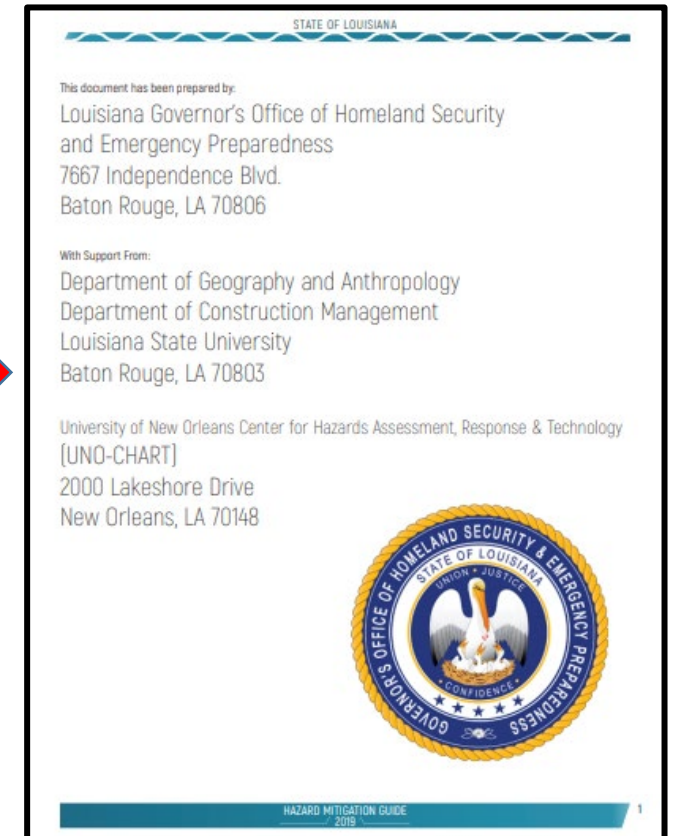
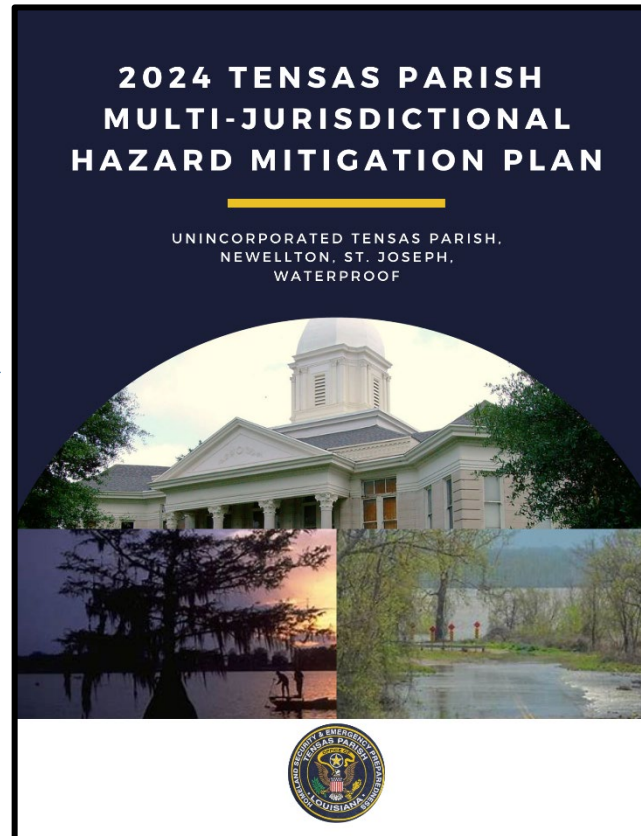


Who is SDMI?

- Stephenson Disaster Management Institute (SDMI) at Louisiana State University
- Non-Academic, Applied Research Unit on campus
- Specialize in providing programmatic support and decision making tools for state and local emergency managers
 - Hazard Mitigation Plans
 - Emergency Operations Plans
 - Geographic Information Systems
 - Application Development
 - Data Visualization
 - Aerial Imagery Collection/Processing



Why We're Here



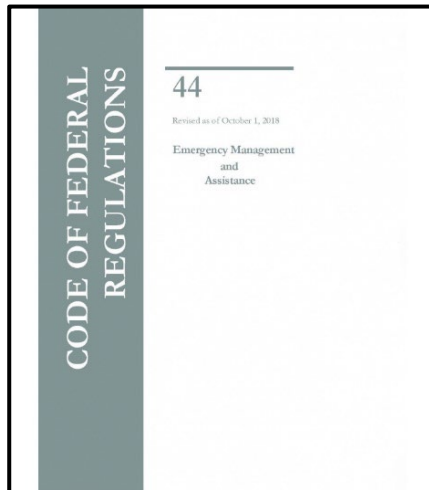
Hazard Mitigation Is...

- Any action taken to reduce long term risk to life and property;
- On-going process that occurs before, during, and after disasters;
- Mitigation actions help prevent damage to a community's infrastructure, economic, cultural and environmental assets;
- Minimize operational downtime and accelerate recovery of government and the private sector after an event;
- ***Implementation of mitigation actions leads to building stronger, safer and smarter!***



Why the Plan is Required

- Disaster Mitigation Act of 2000 (DMA 2000)
 - Section 322 of the Act specifically addresses mitigation planning and requires state and local governments to prepare multi-hazard mitigation plans as a precondition for receiving FEMA mitigation project grants.
- Title 44 Code of Regulations (CFR) §201.6
 - Meet federal requirements for approval and eligibility for FEMA Hazard Mitigation Assistance grant programs.

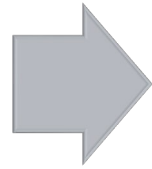


- The approved Tensas Parish Hazard Mitigation Plan will allow for distribution of HM funding following future disasters.

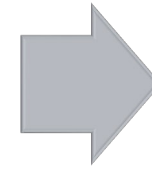


Planning Process to Date

Initial Planning
Meeting with
OHSEP



Full Planning
Committee
Meeting



Risk Assessment
Review with
Planning
Committee

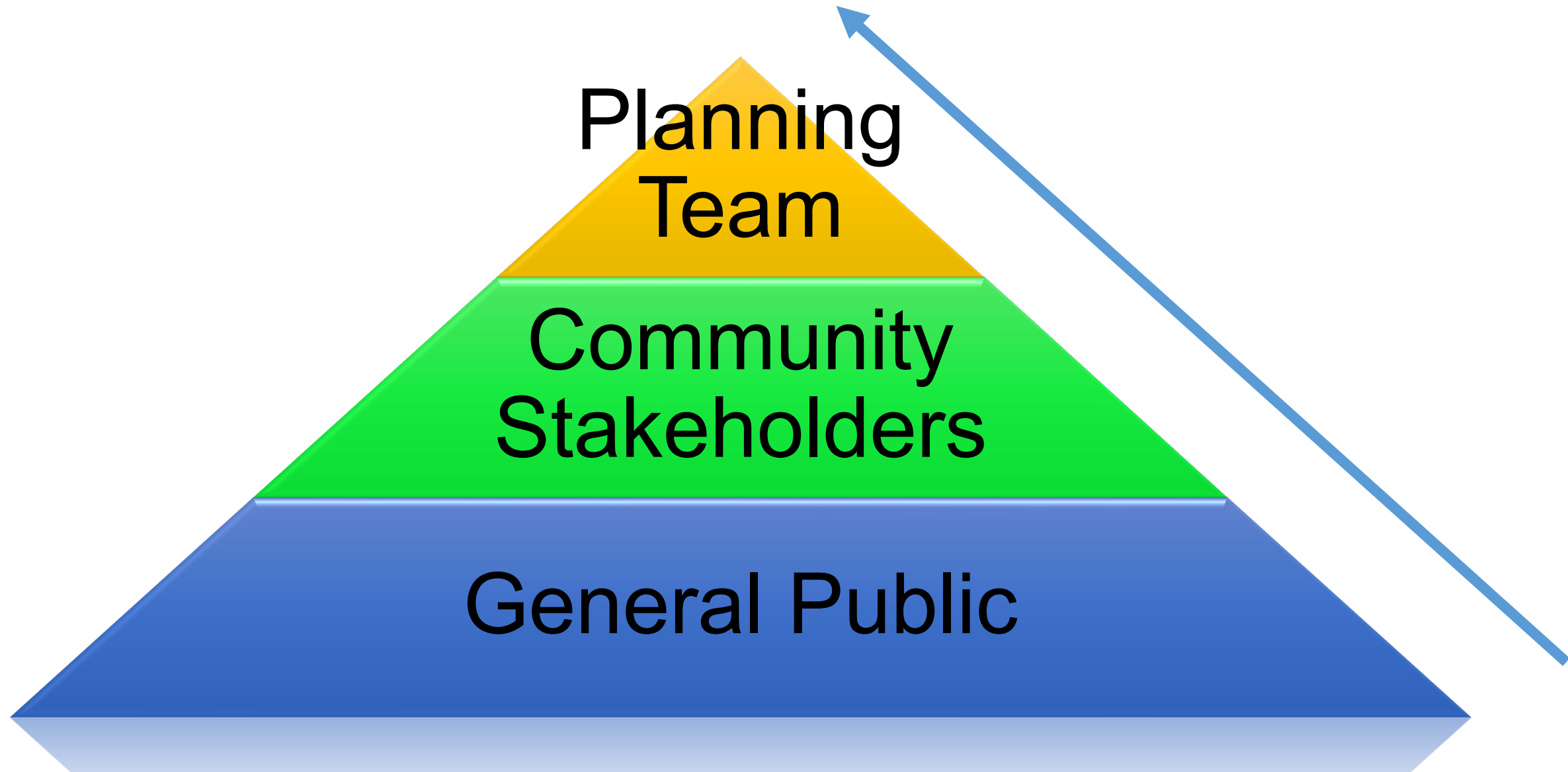


Public Meeting

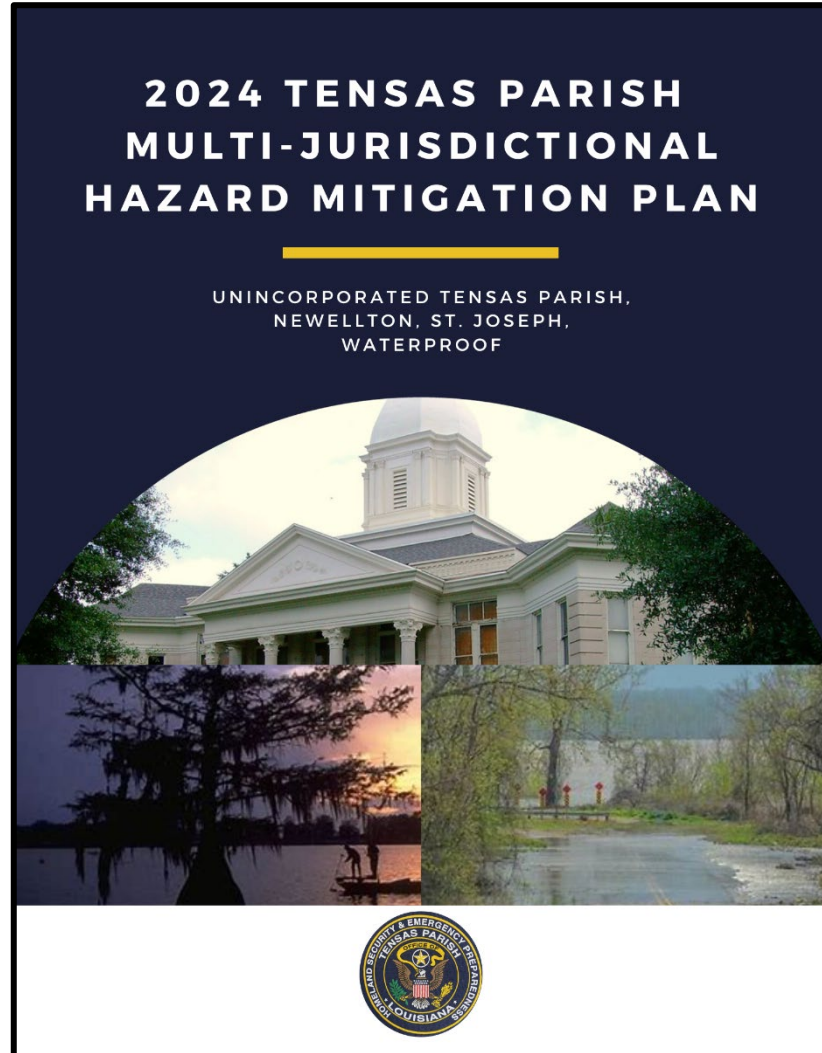
*Constant communication
with Parish and
Committee members!*



Collaborative Planning Approach



Hazard Mitigation Plan Development



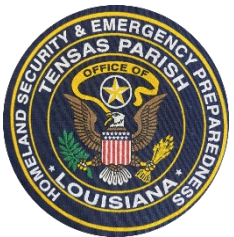
Plan Layout

- **Section 1: Introduction**
 - Updated parish description
 - Updated demographics
 - Economics
- **Section 2: Hazard Identification and Parish-wide Risk Assessment**
- **Section 3: Capability Assessment**
- **Section 4: Mitigation Strategies**
 - New actions
 - Action updates
 - Survey results



Plan Layout

- **Appendix A:** Planning Process
- **Appendix B:** Plan Maintenance
- **Appendix C:** Parish Critical Facilities
- **Appendix D:** Plan Adoption
- **Appendix E:** State Required Worksheets



Hazard Identification and Risk Assessment

- The plan includes descriptions of the natural hazards that affect the jurisdictions in the planning area.
- The hazards identification includes the following:
 - *locations affected*
 - *extent or strength*
 - *previous occurrences*
 - *probability of future events*



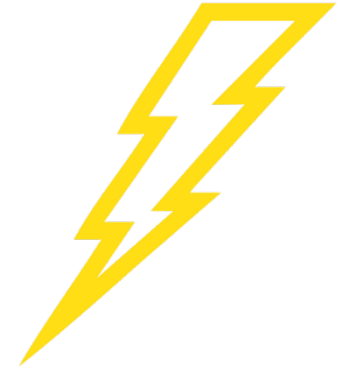
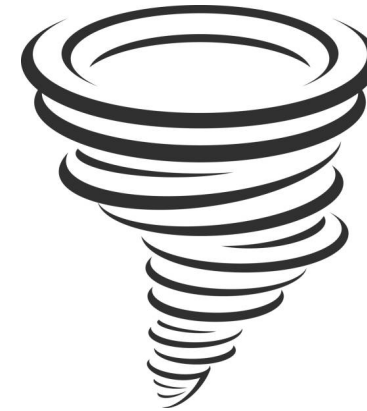
Hazard Identification And Risk Assessment

- Based on Currently Profiled Prevalent Natural Hazards
- Identify Any New Hazards
- Previous Occurrences
- Impact from Events
- Probability of Future Events
- Critical Facilities
- Future Development Trends
- Future Hazard Impacts
- Zoning and Land Use



Hazard Identification And Risk Assessment

- Drought
- Excessive Heat
- Flooding
- Levee Failure
- Sinkholes
- Thunderstorms
- Tornadoes
- Tropical Cyclones
- Wildfires
- Winter Weather

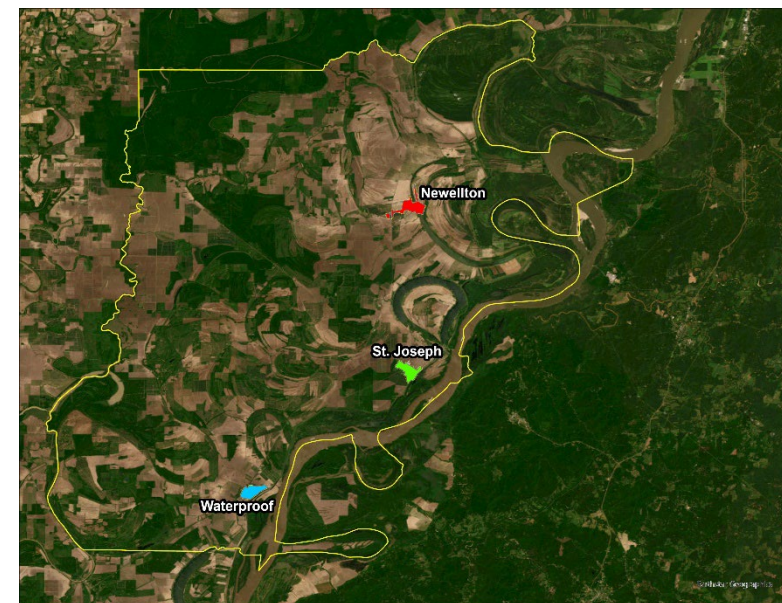


Risk Matrix for Tensas Parish

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Drought	3	2	4	2	3	2.8
Excessive Heat	2	2	4	1	2	2.25
Flooding	3	4	3	4	3	3.4
Levee Failure	1	3	4	1	3	2.4
Sinkhole	1	3	2	4	2	2.3
Thunderstorms - Hail	4	2	3	3	1	2.7
Thunderstorms - Lightning	2	2	2	3	1	2
Thunderstorms - Wind	4	2	3	3	1	2.7
Tornadoes	3	3	2	4	3	2.95
Tropical Cyclones	3	4	4	1	4	3.3
Wildfires	1	3	4	1	2	2.25
Winter Weather	3	4	4	1	2	3

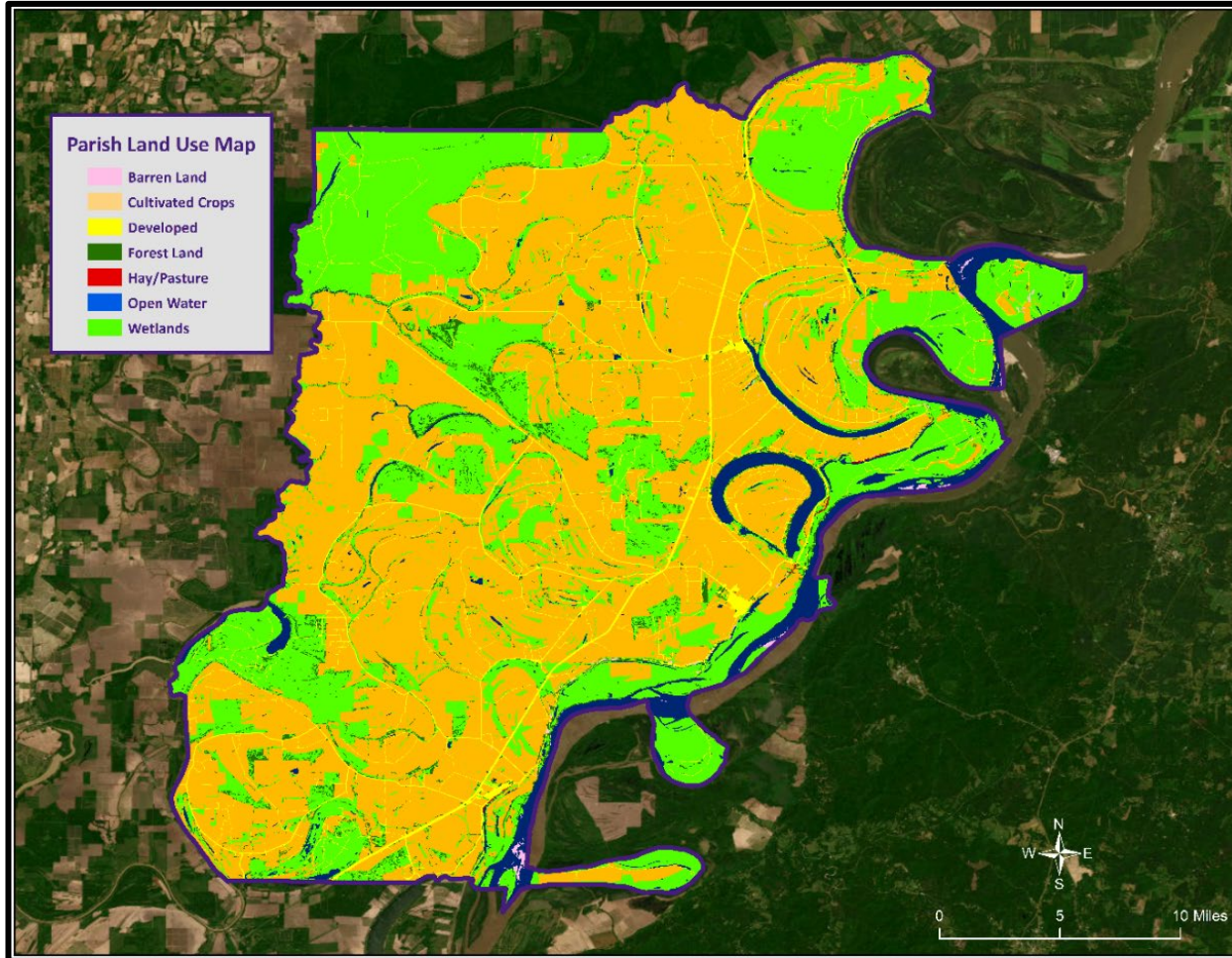
Risk Factor	PRI Range
High Risk	2.5 to 4.0
Moderate Risk	2.0 to 2.4
Low Risk	0 to 1.9





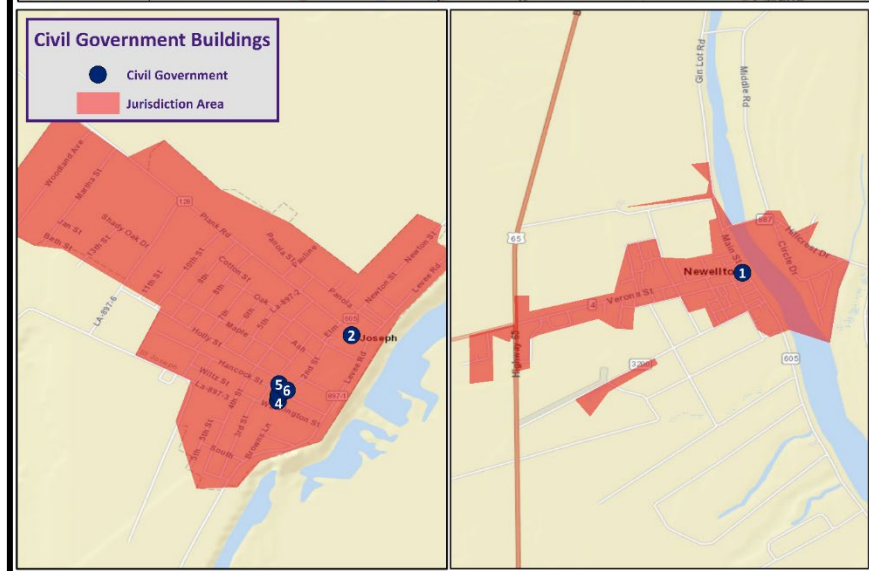
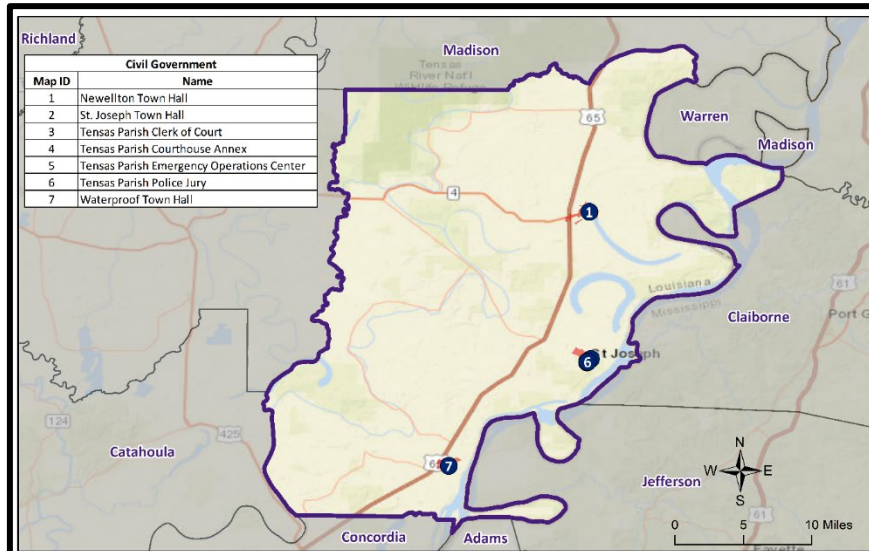
Risk Assessment Maps

Tensas Parish Land Use

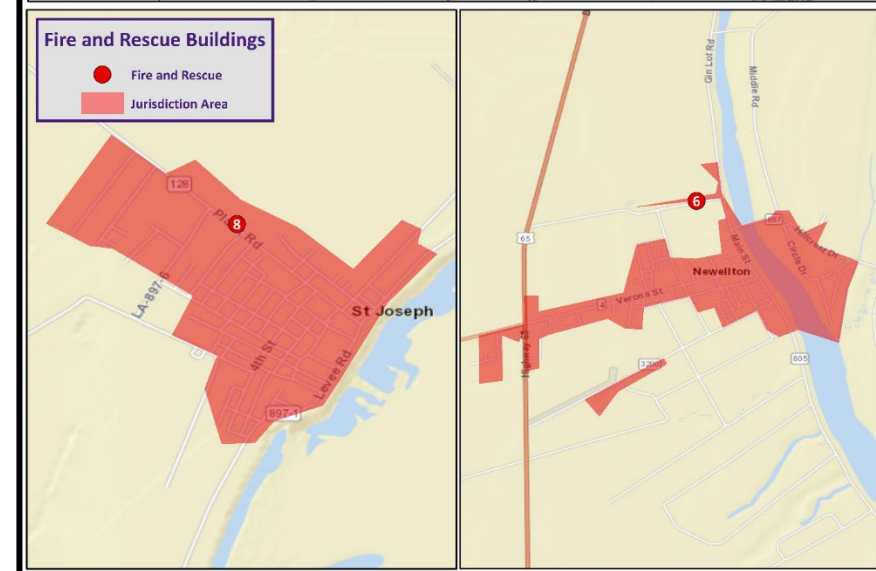
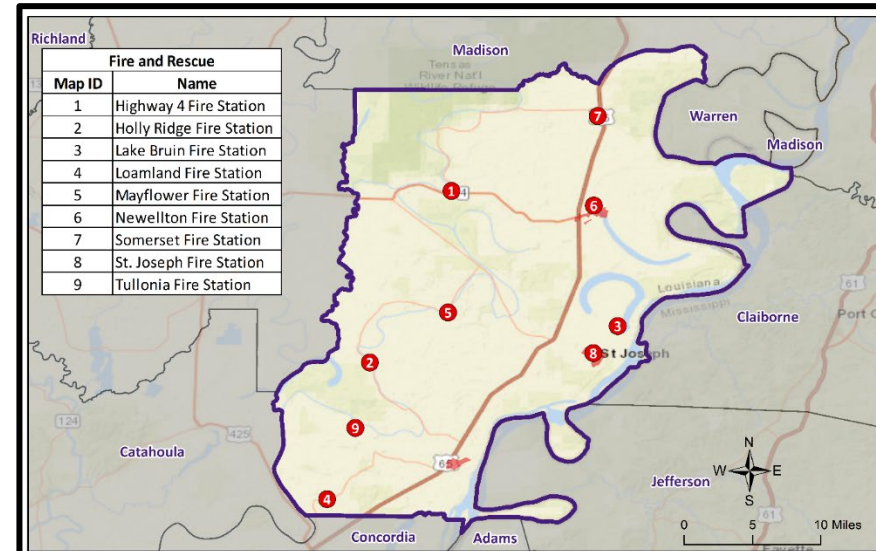


Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	230,386	56%
Wetlands	131,211	32%
Forest Land (Not including forested wetlands)	10,783	3%
Urban/Development	16,262	4%
Water	21,899	5%

Tensas Parish Critical Facilities

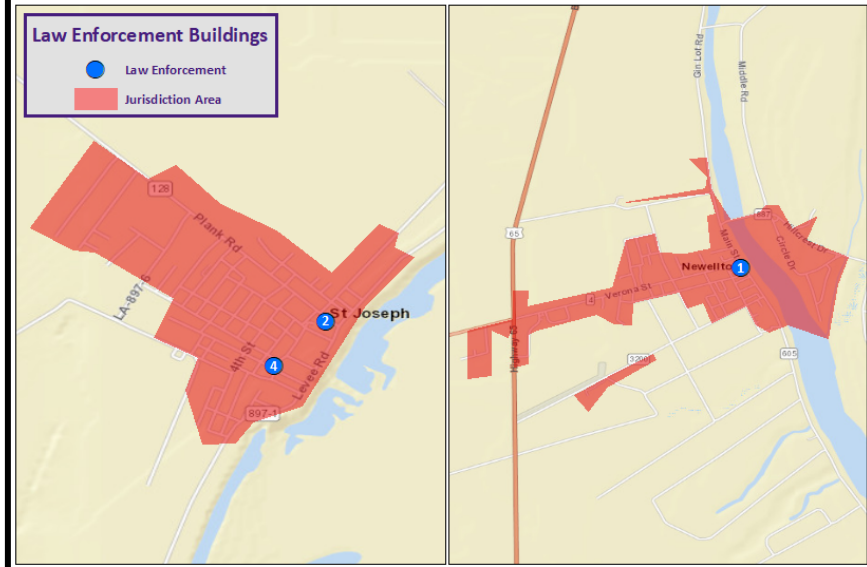
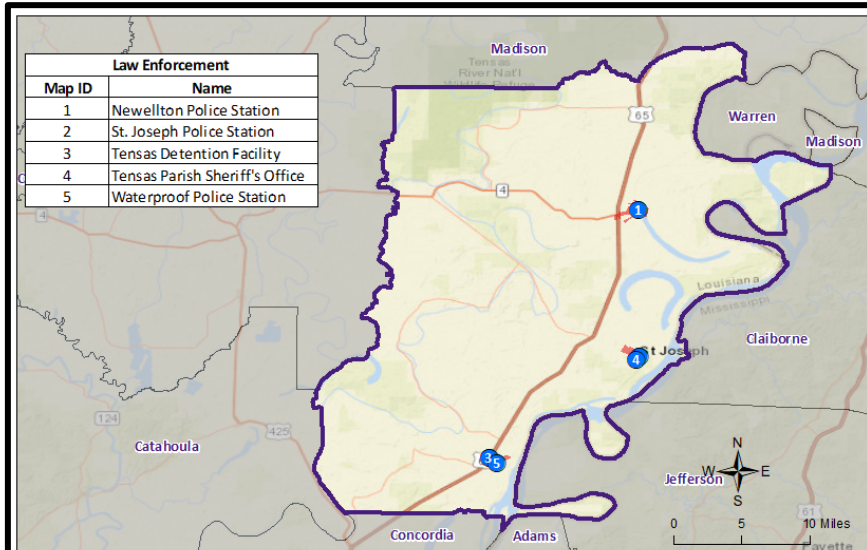


Civil Government

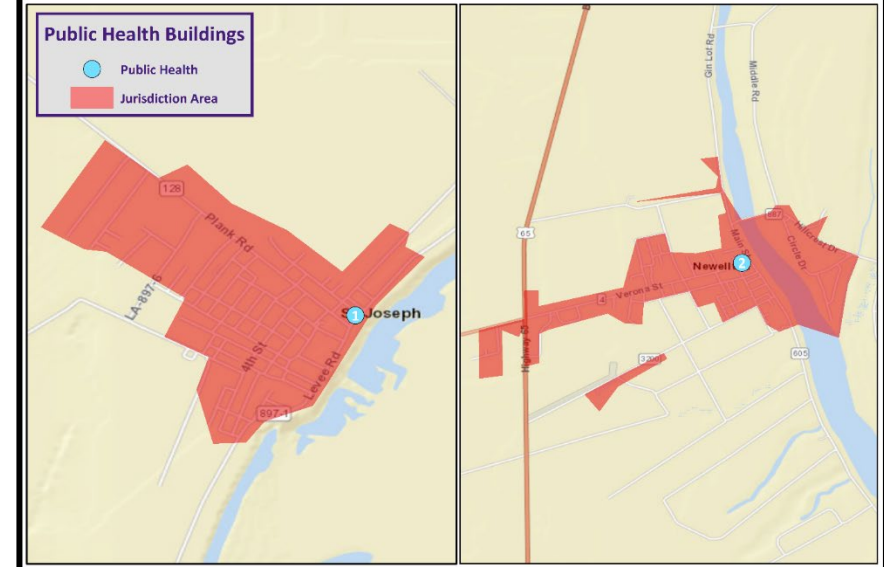
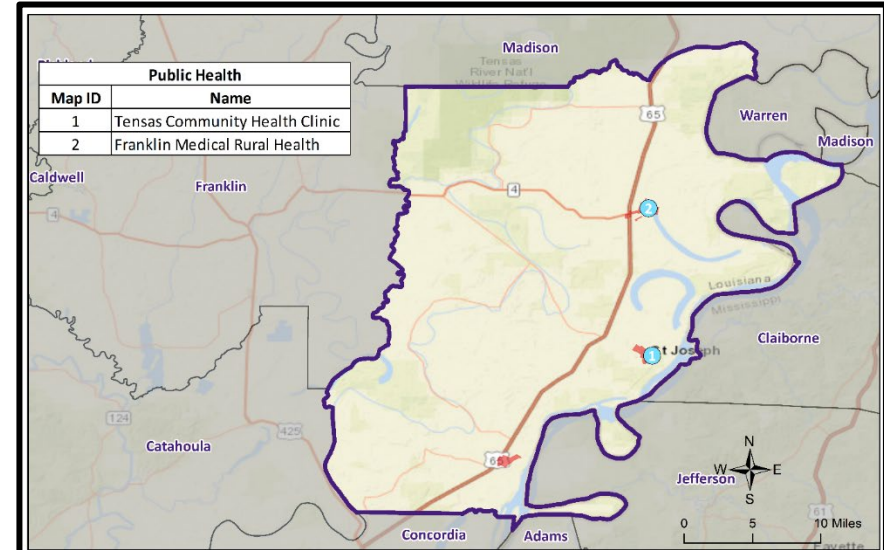


Fire & SAR

Tensas Parish Critical Facilities

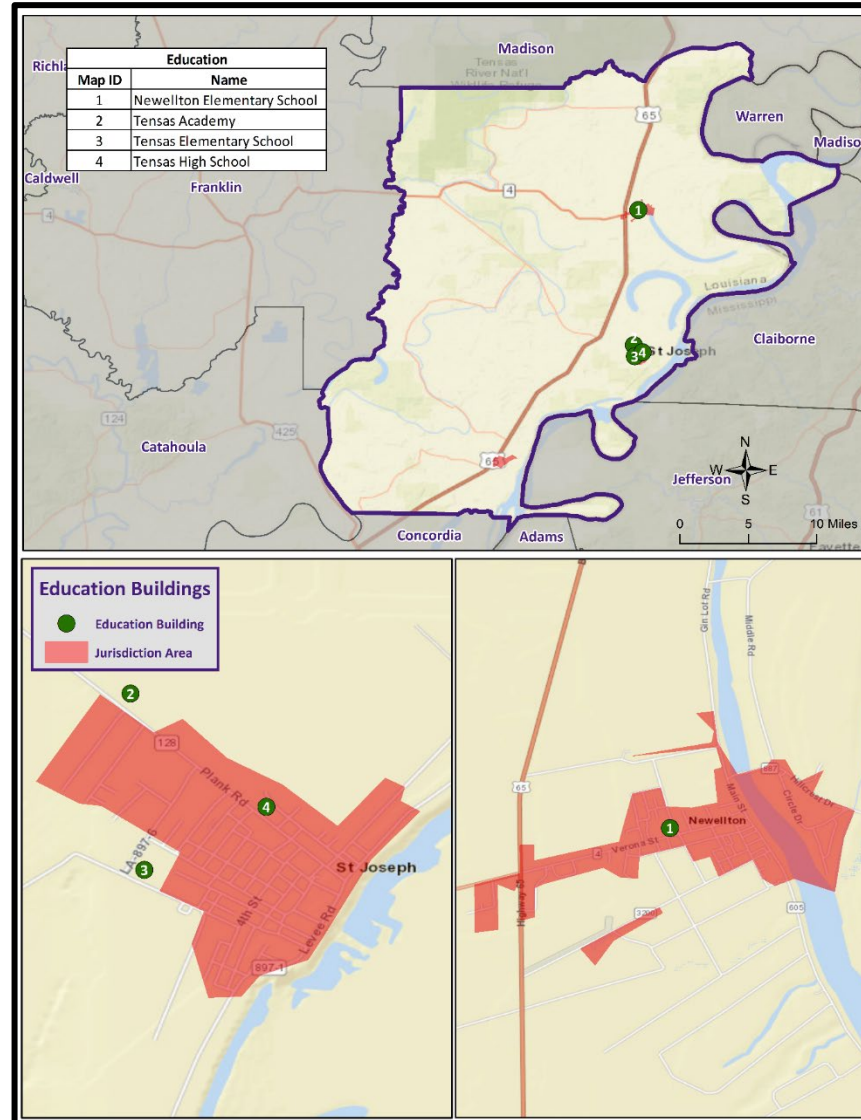


Law Enforcement



Public Health

Tensas Parish Critical Facilities



Public Education

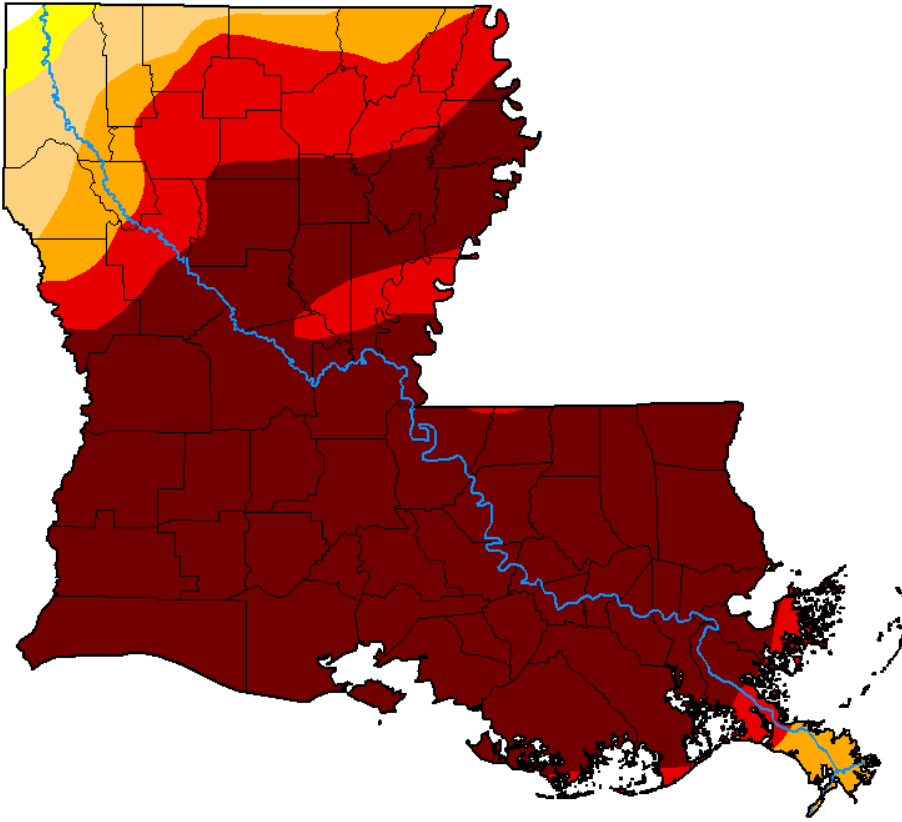
Drought



- A drought is a deficiency in water availability over an extended period of time, caused by precipitation totals and soil water storages that do not satisfy the environmental demand for water either by evaporation or transpiration through plant leaves.
- There are four classes of drought:
 - ✓ Meteorological Drought
 - ✓ Hydrologic Drought
 - ✓ Agricultural Drought
 - ✓ Socioeconomic Drought
- Generally, the entire parish will be affected by drought
 - Not limited to one particular location within the parish

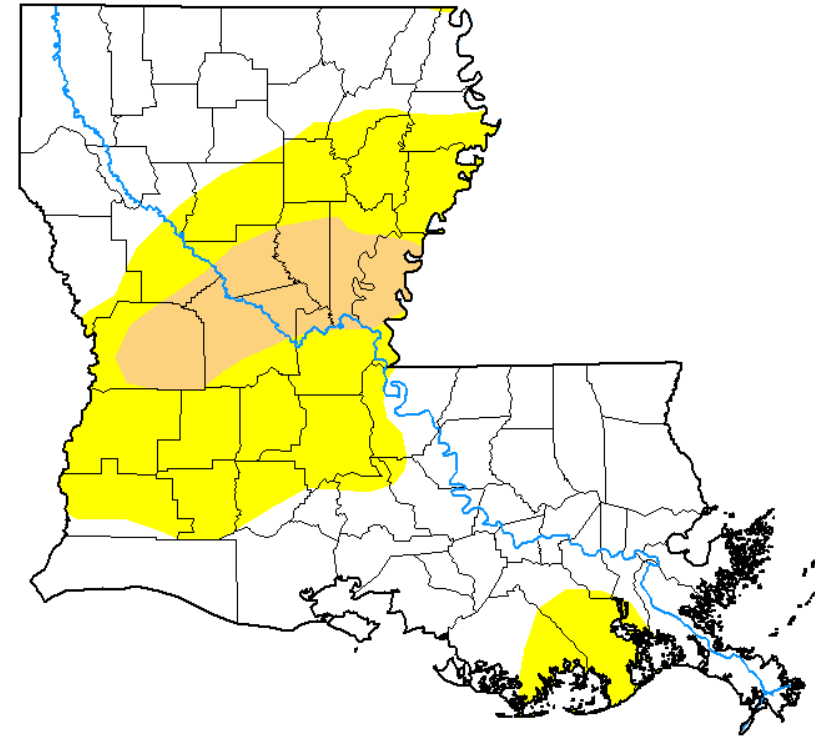
State-wide Drought Monitor

November 21, 2023

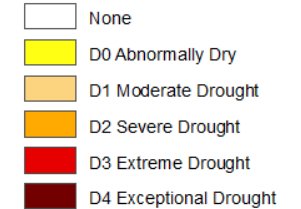


U.S. Drought Monitor
Louisiana

February 20, 2024
(Released Thursday, Feb. 22, 2024)
Valid 7 a.m. EST



Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Richard Heim
NCEI/NOAA



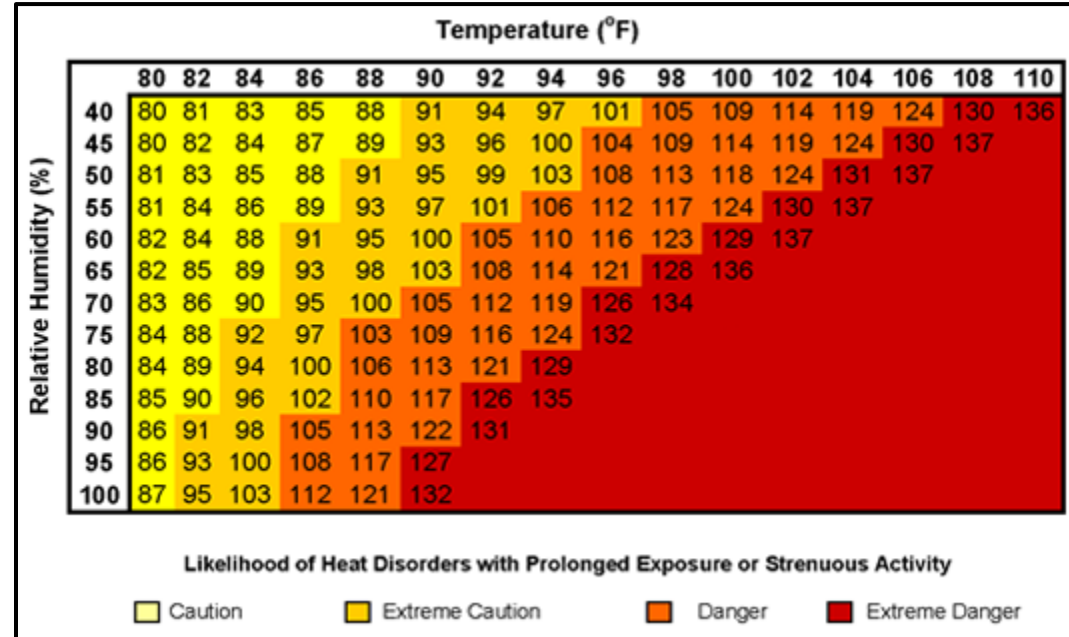
droughtmonitor.unl.edu

Excessive Heat

- No universal definition for Excessive Heat
- Often seen in conjunction with regional drought
- Heat waves are easier to define
 - At least 5 consecutive days where the daily max temperature exceeds the average max temperature by 9 degrees



Excessive Heat



Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning.
91°F to 103°F	Moderate	Implement precautions and heighten awareness.
103°F to 115°F	High	Additional precautions to protect workers.
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures.



Flooding

- A flood is the overflow of water onto land that is usually not inundated.
- The National Flood Insurance Program defines a flood as “a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waves, unusual and rapid accumulation or runoff of surface waters from any source, mudflow, or collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.”



Flooding

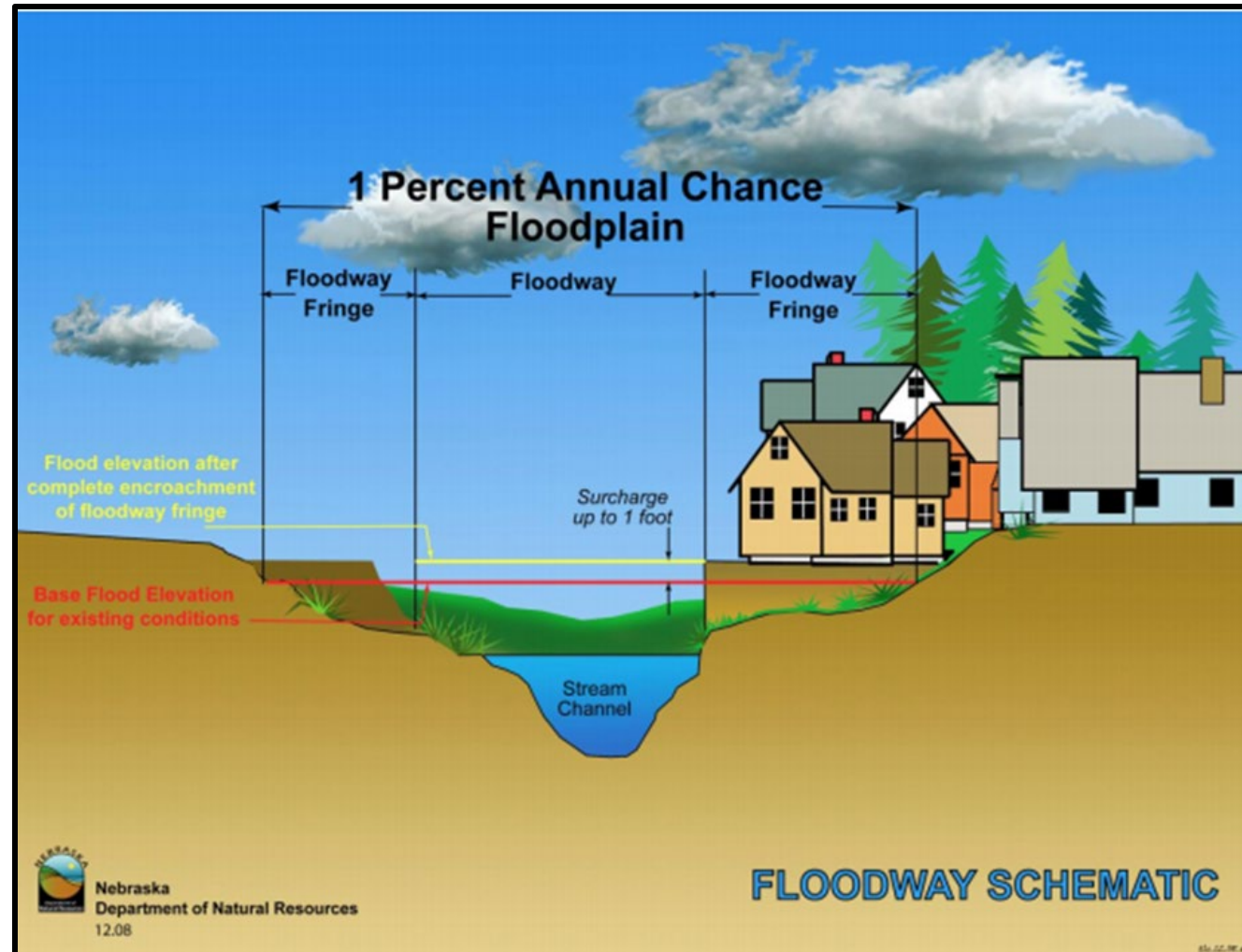


In Louisiana, six specific types of flooding are of main concern:

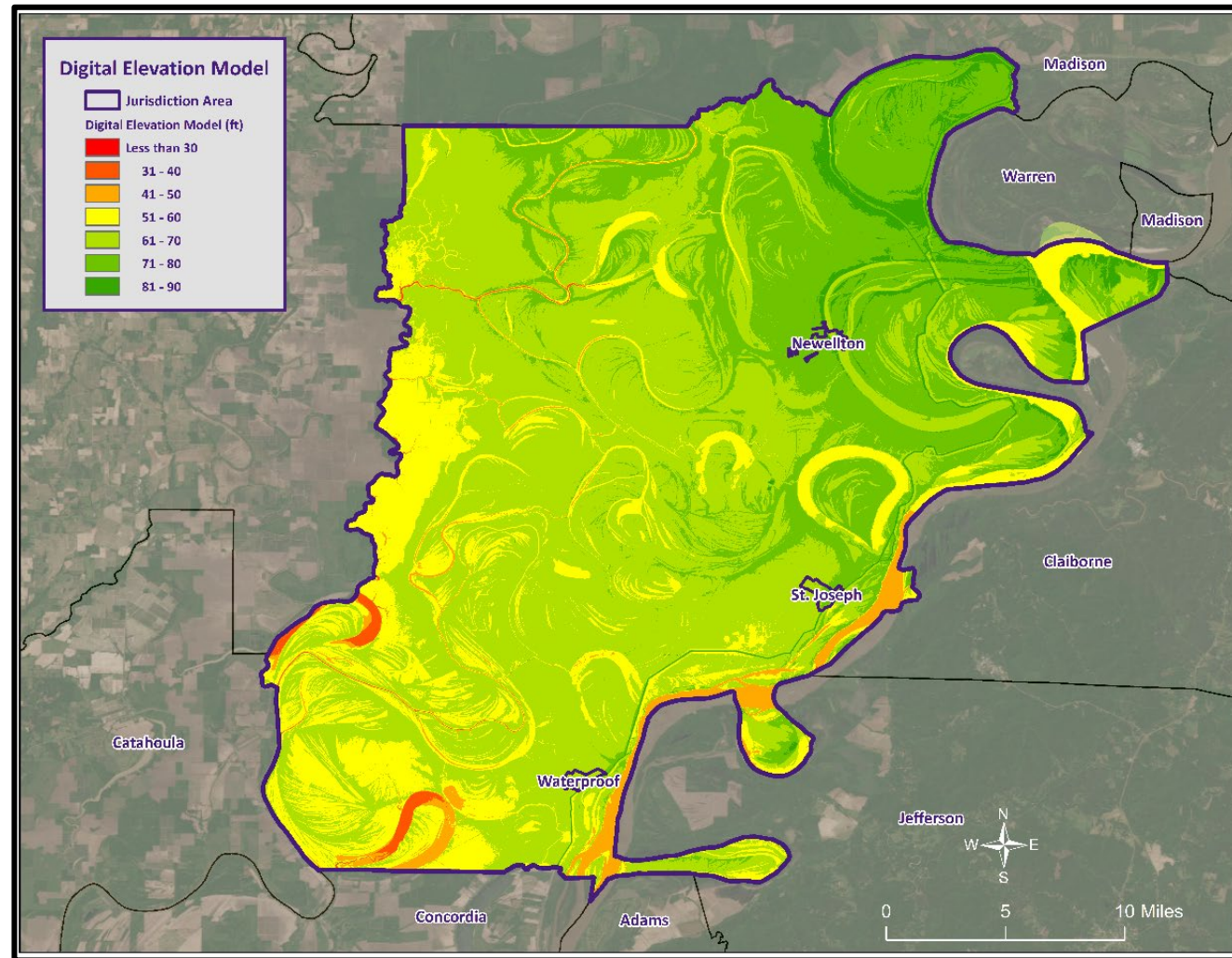
- Riverine
- Flash
- Ponding
- Backwater
- Urban
- Coastal



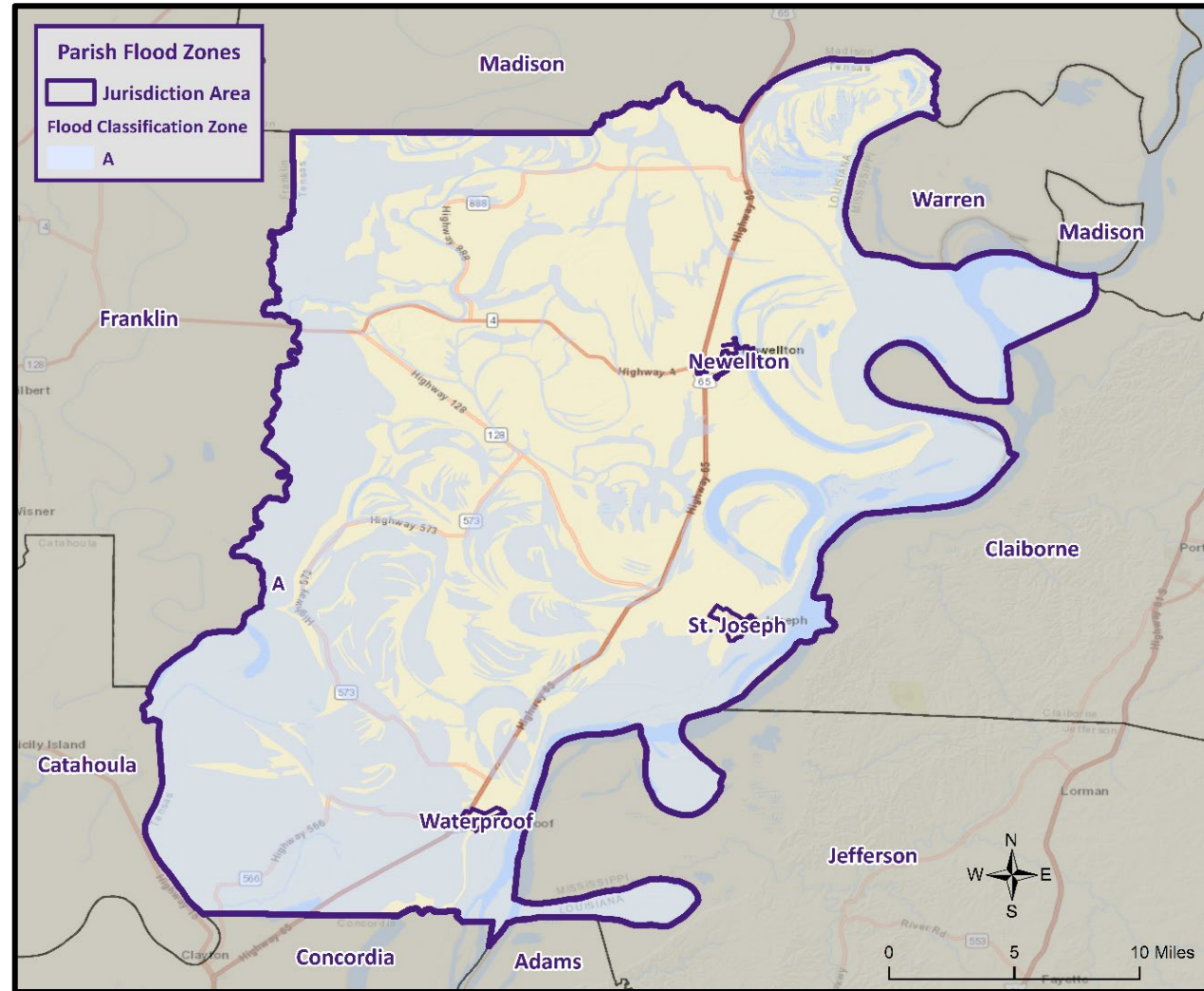
Floodway Diagram



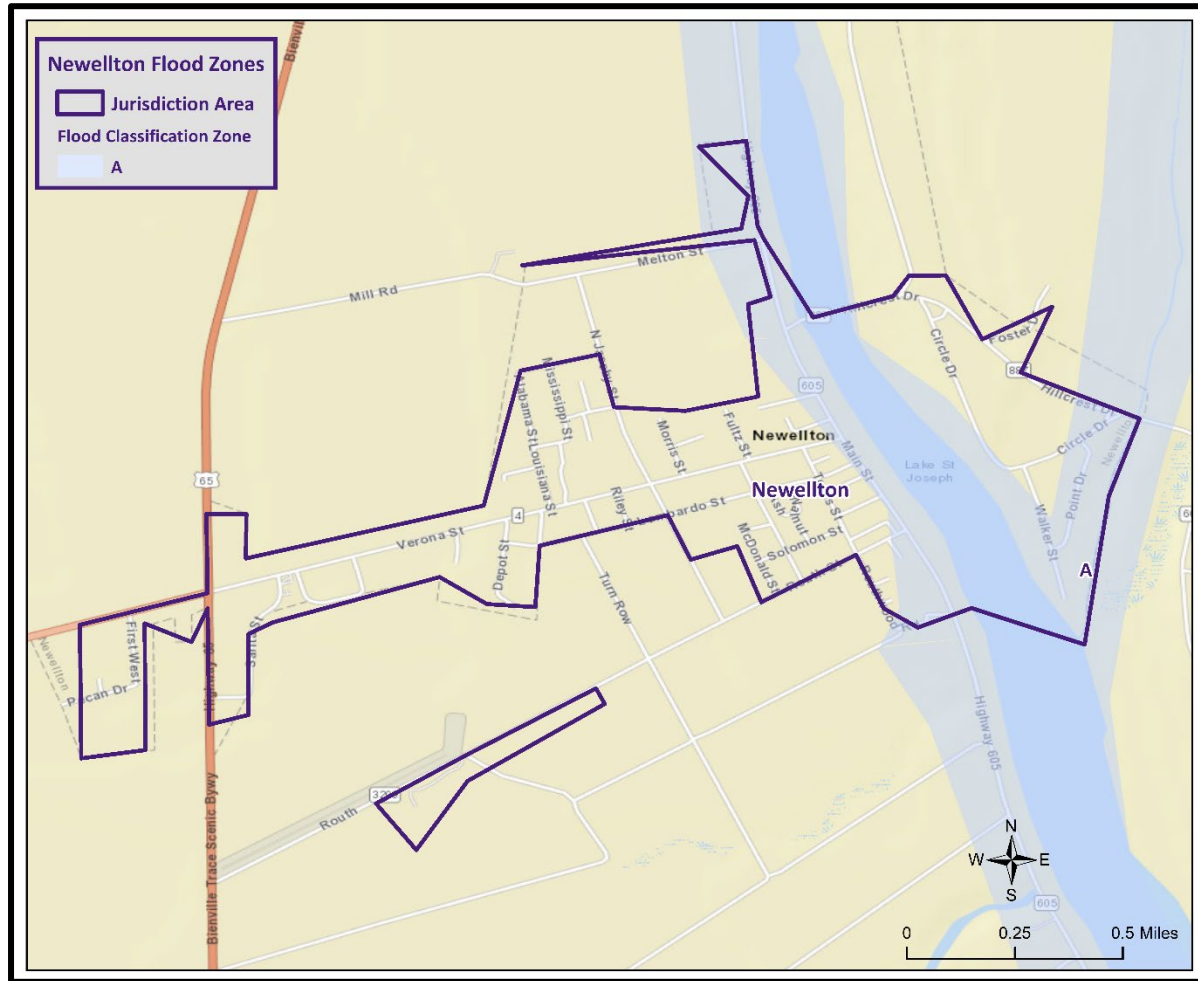
Digital Elevation Model



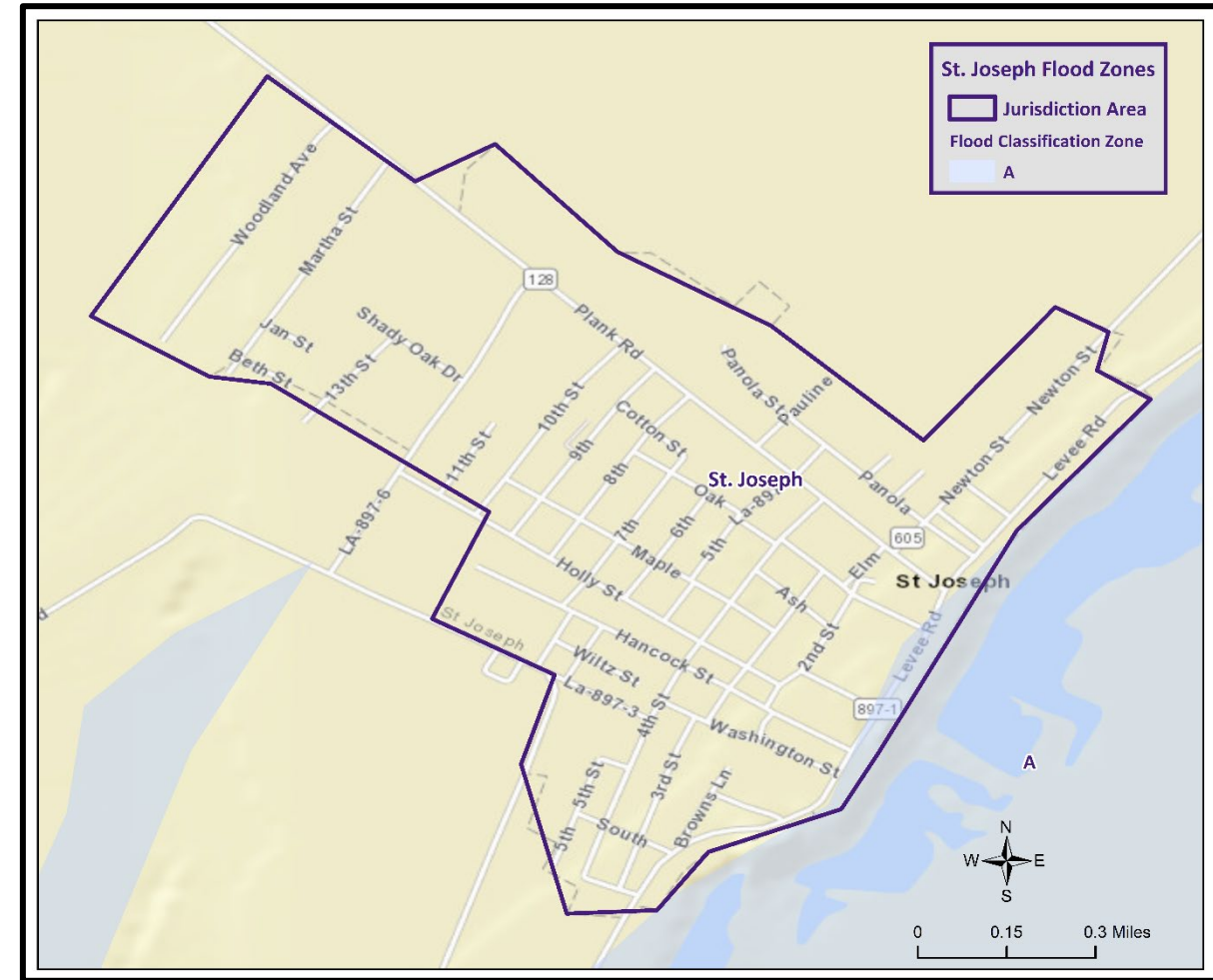
Tensas Parish Flood Map



Municipal Flood Maps

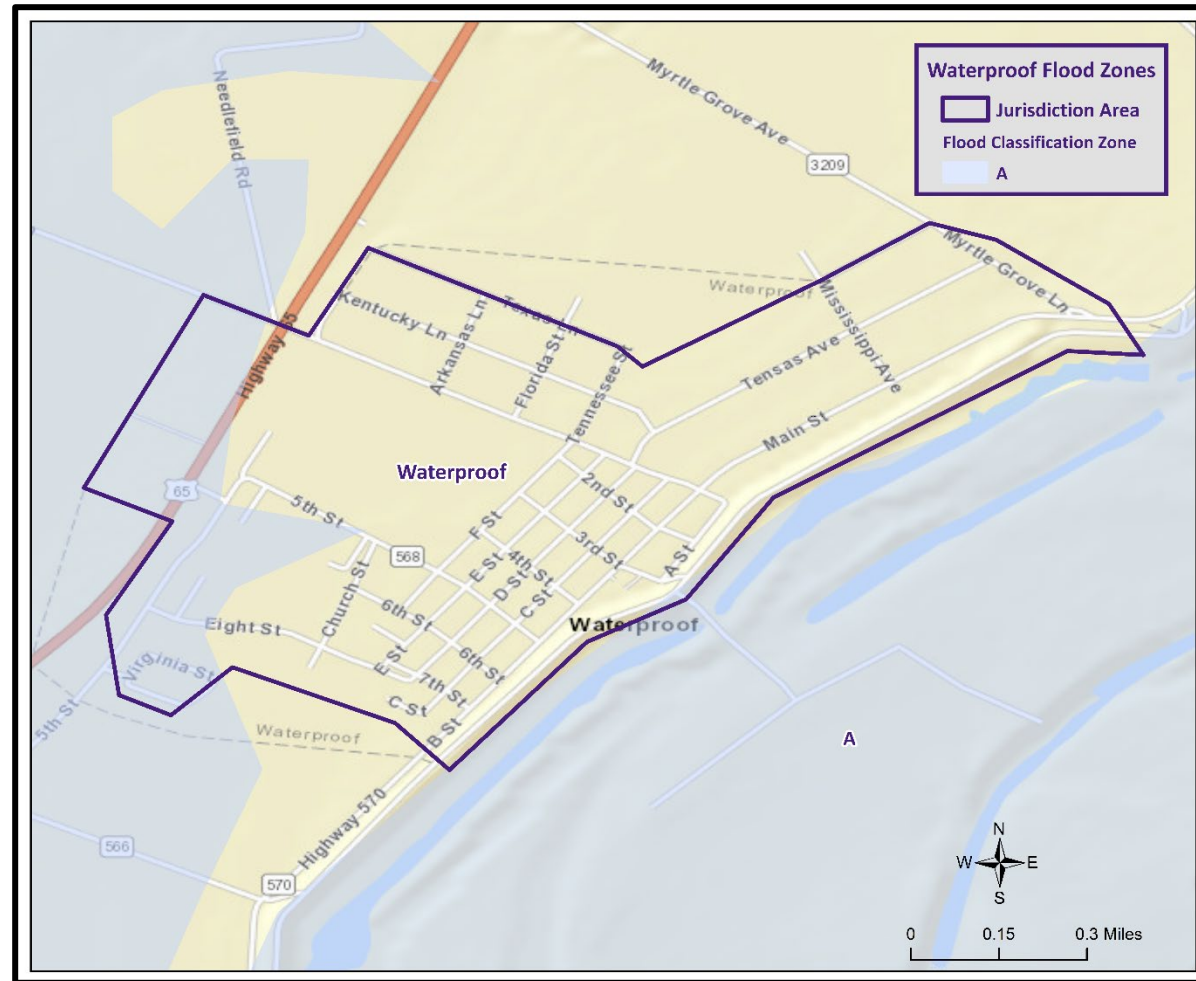


Newellton



St. Joseph

Municipal Flood Maps



Waterproof

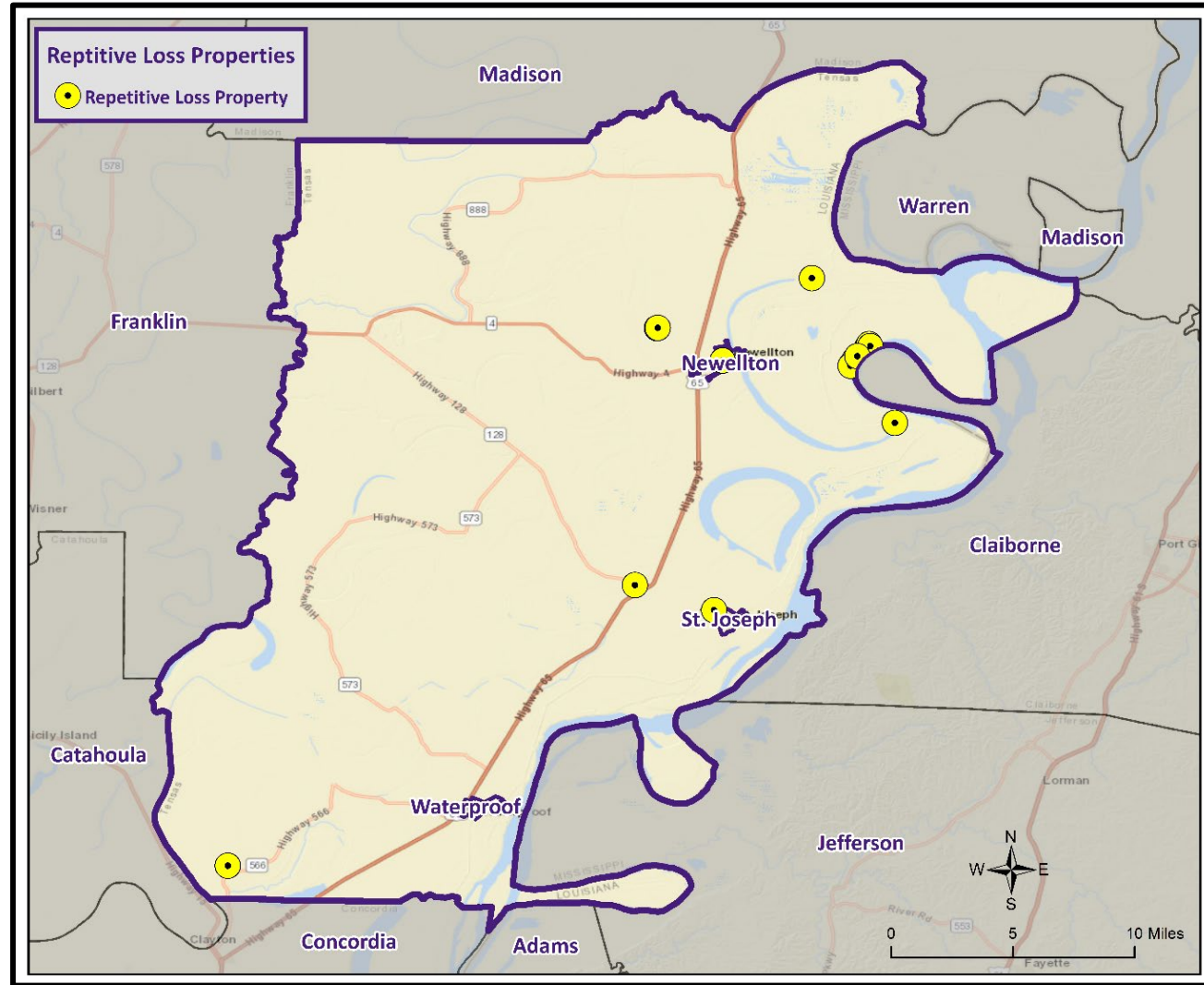


Flooding

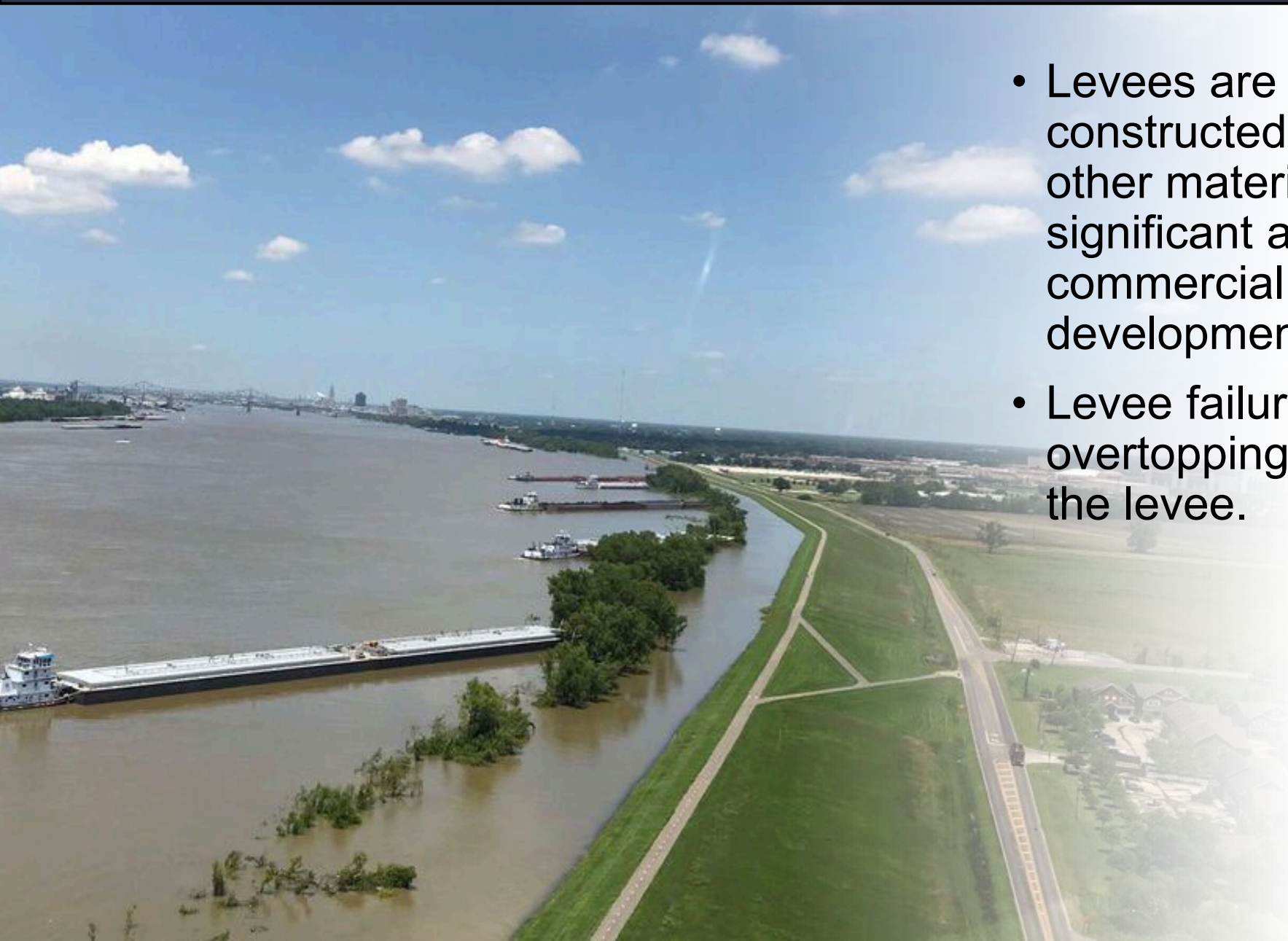


- Some areas flood more often than other properties, even more than those in the mapped 100-year floodplain.
- FEMA defines a “repetitive loss” property as one which has received two flood insurance claim payments for at least \$1,000 over any 10-year period since 1978.
- There are currently around 160,000 repetitive loss properties in the U.S.
- These properties comprise 1% of the NFIP policy base, but they account for approximately 30% of the country’s flood insurance claim payments.

Repetitive Loss Properties



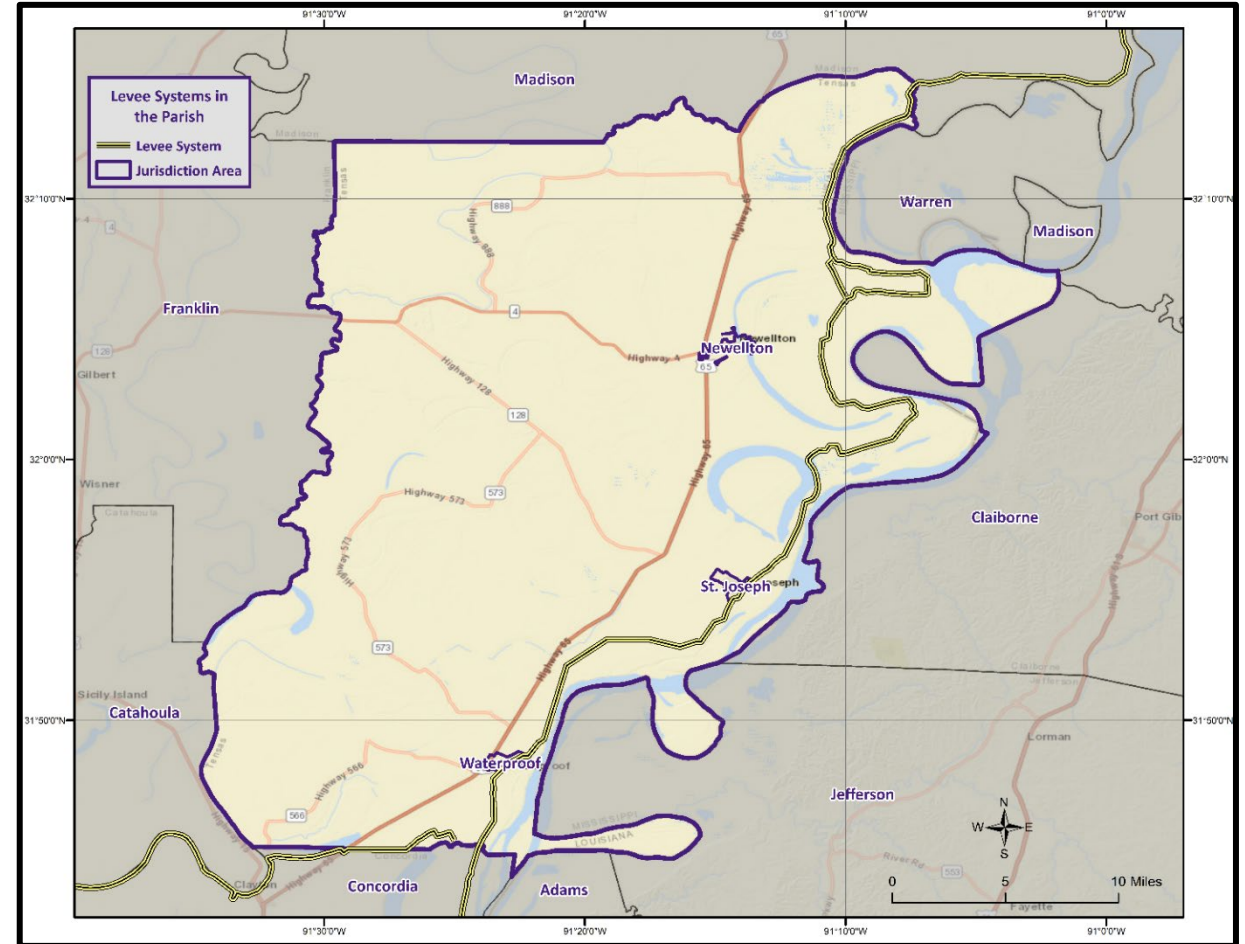
Levee Failure



- Levees are flood control barriers constructed of earth, concrete, or other materials that protect significant areas of residential, commercial, or industrial development.
- Levee failure involves the overtopping, breach, or collapse of the levee.

Location of Levees in Tensas Parish

System	Risk	Height (ft)	Population	Buildings	Property Value
AR-LA Mississippi River	High	35	227,280	110,450	\$20.9 Billion
Point Pleasant System	No Data	No Data	14	148,852	\$3 Million
Red River BW LA	High	20	19,638	10,170	\$1.72 Billion

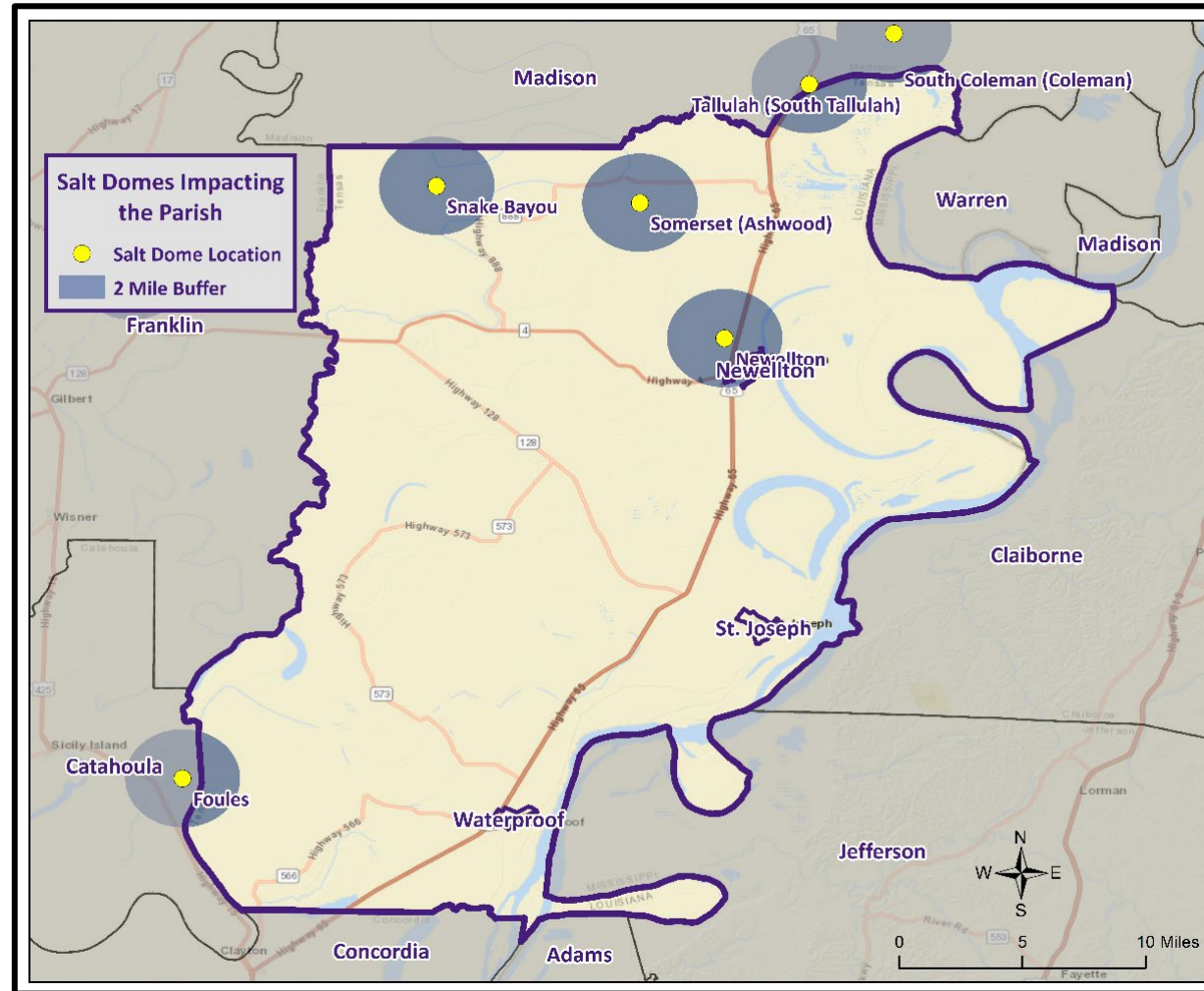


Sinkholes

- A sinkhole is an area of ground that has no natural external surface drainage – when it rains, all of the water stays inside the sinkhole and typically drains into the subsurface.
- Sinkholes form in areas where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by groundwater circulating through them.
- As the rock dissolves, spaces and caverns develop underground. Once the spaces underground become too large, there is not enough support for the land above the spaces which causes a sudden collapse on the land surface.



Salt Dome Locations



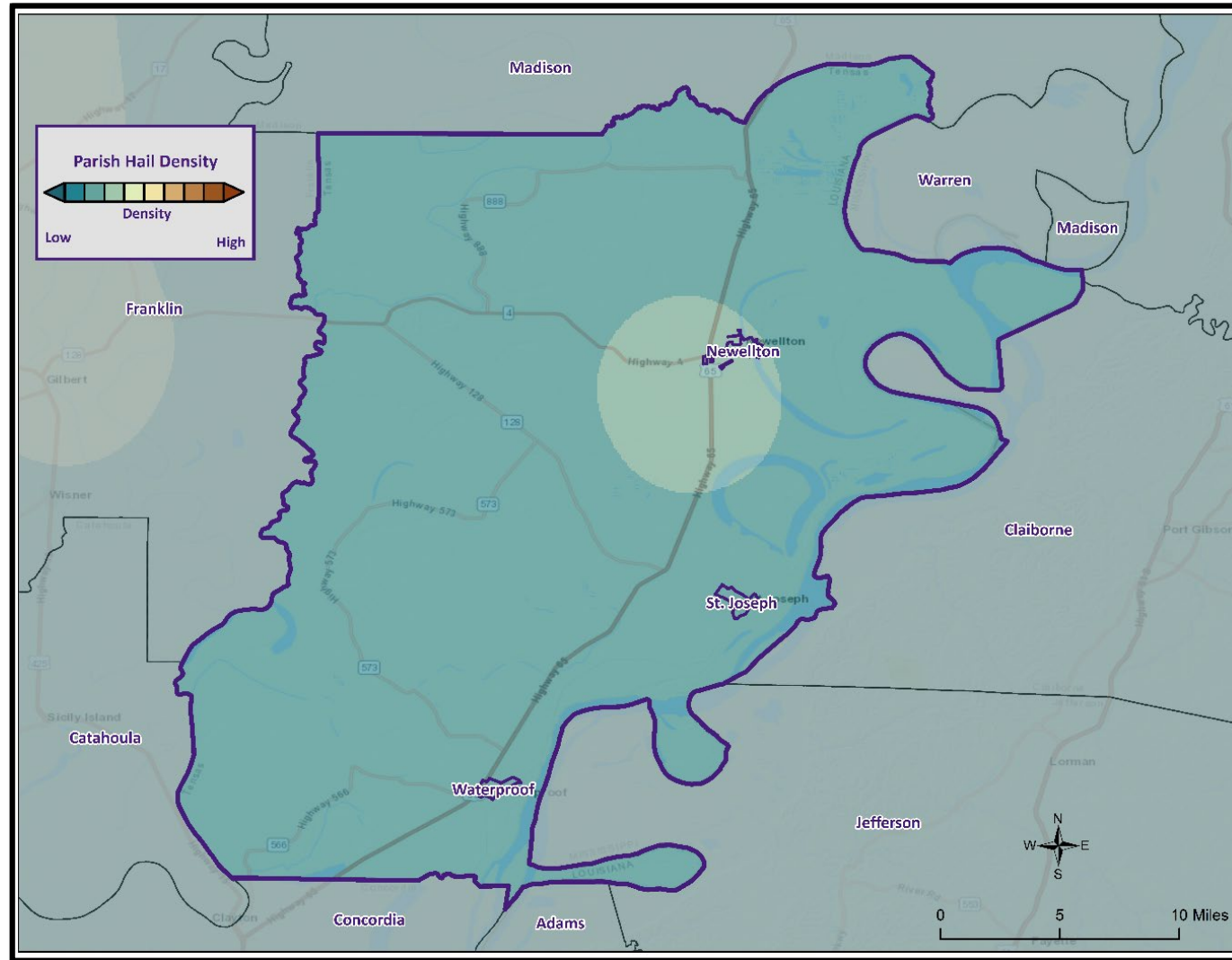
Thunderstorms



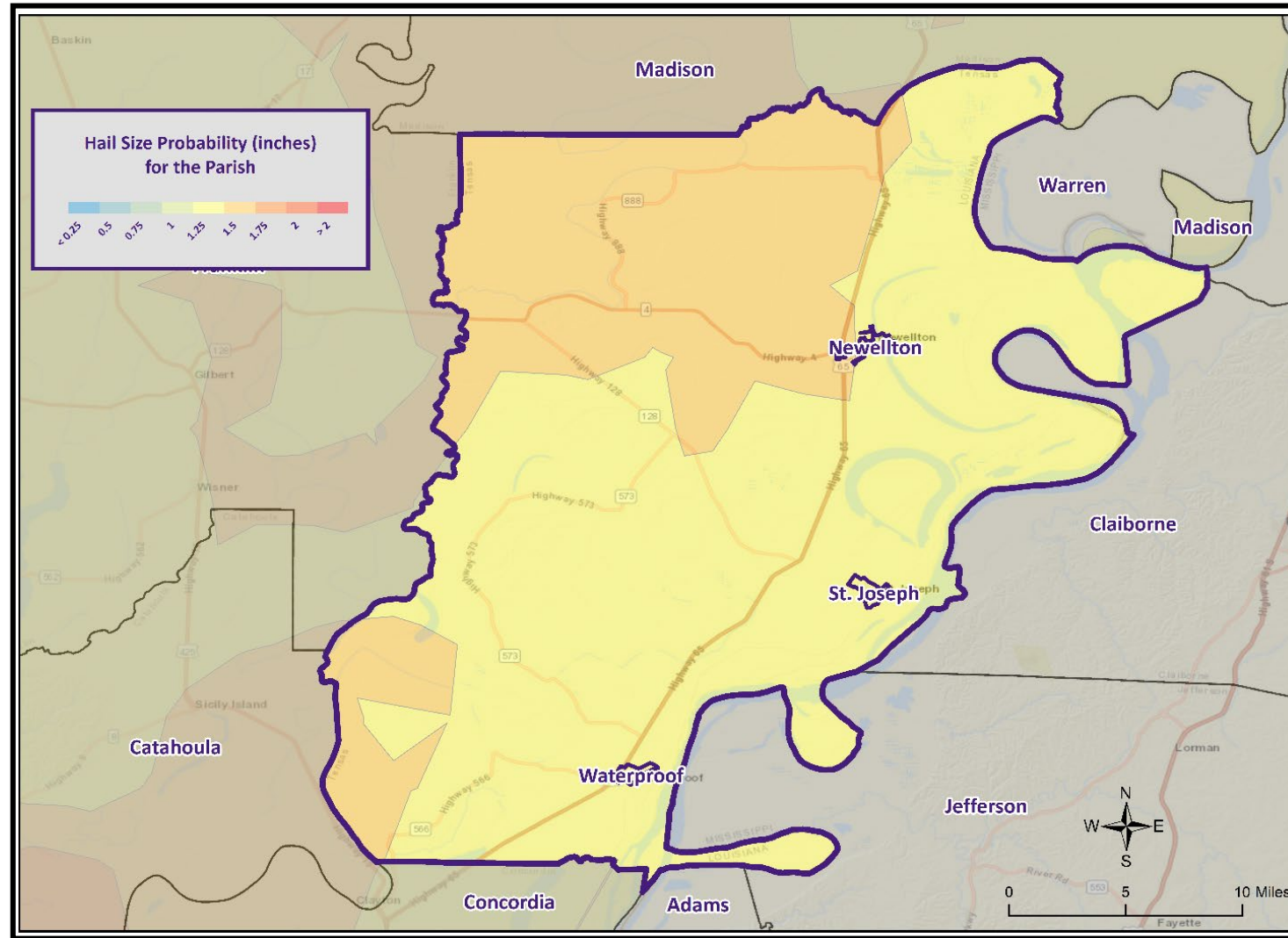
- A **thunderstorm**, also known as an **electrical storm**, a **lightning storm**, or a **thundershower**, is a type of storm characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder.
- They are usually accompanied by strong winds, heavy rain, and sometimes snow, sleet, or hail.
- Thunderstorms may line up in a series or rainband, known as a squall line. Strong or severe thunderstorms may rotate, known as supercells. While most thunderstorms move with the mean wind flow through the layer of the troposphere that they occupy, vertical wind shear causes a deviation in their course at a right angle to the wind shear direction.



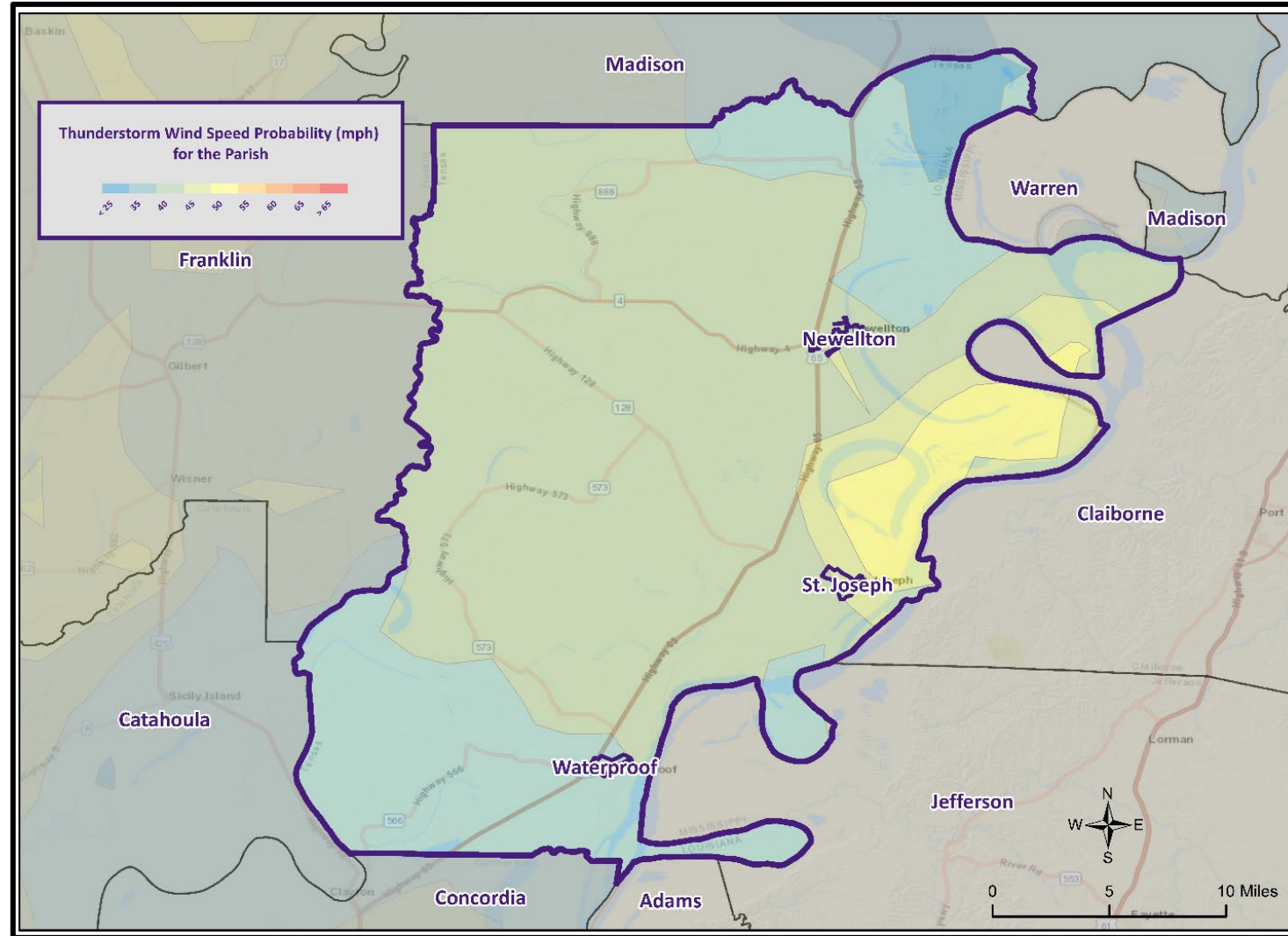
Hailstorm Density



Maximum Hail Size Probability



Maximum Wind Speed Probability



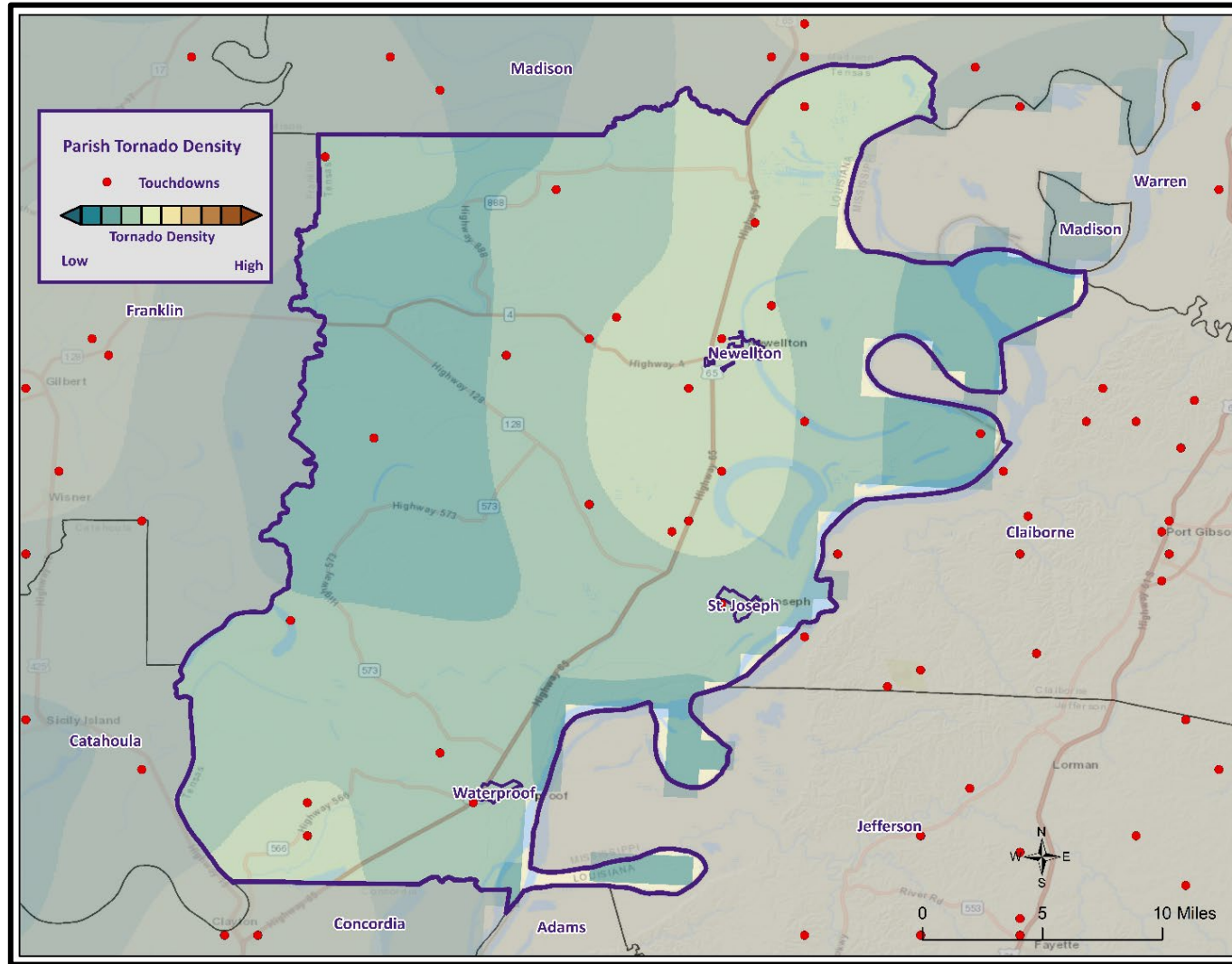
Tornadoes

- Tornadoes are rapidly rotating funnels of wind extending between storm clouds and the ground.
- Tornadoes are the most severe storms for their size, and 70% of the world's reported tornadoes occur within the continental United States.

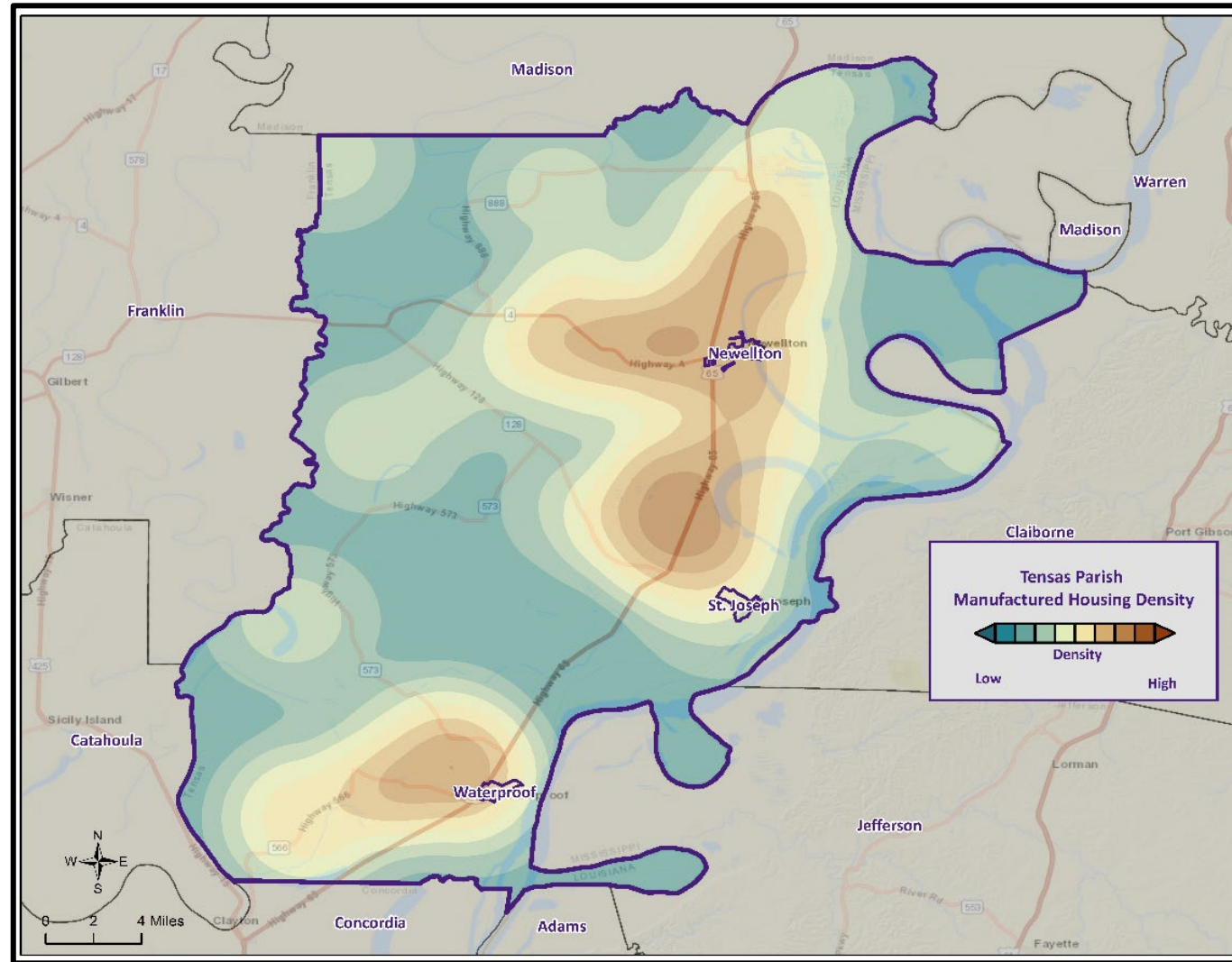
ORIGINAL FUJITA SCALE		ENHANCED FUJITA SCALE	
F5	261-318 mph	EF5	+200 mph
F4	207-260 mph	EF4	166-200 mph
F3	158-206 mph	EF3	136-165 mph
F2	113-157 mph	EF2	111-135 mph
F1	73-112 mph	EF1	86-110 mph
F0	<73 mph	EF0	65-85 mph



Tornadoes in Tensas Parish



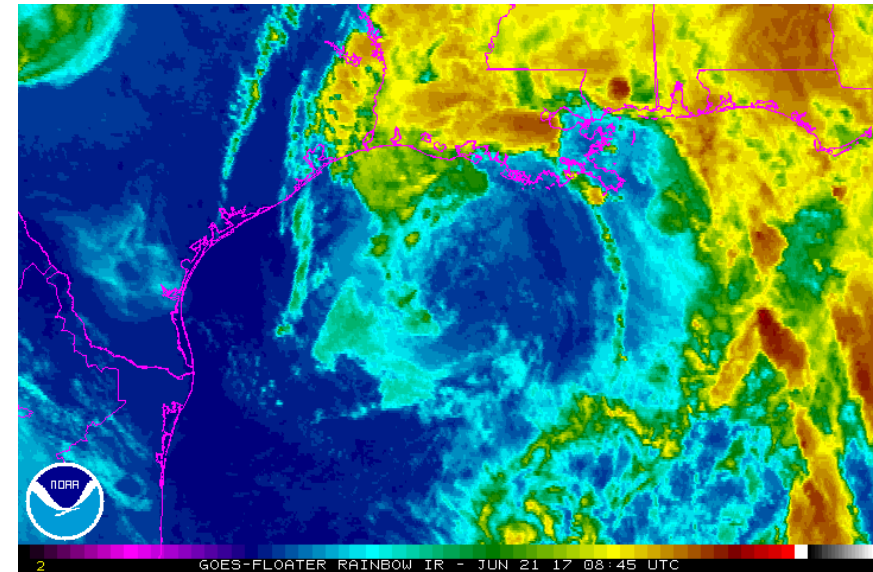
Manufactured Home Density



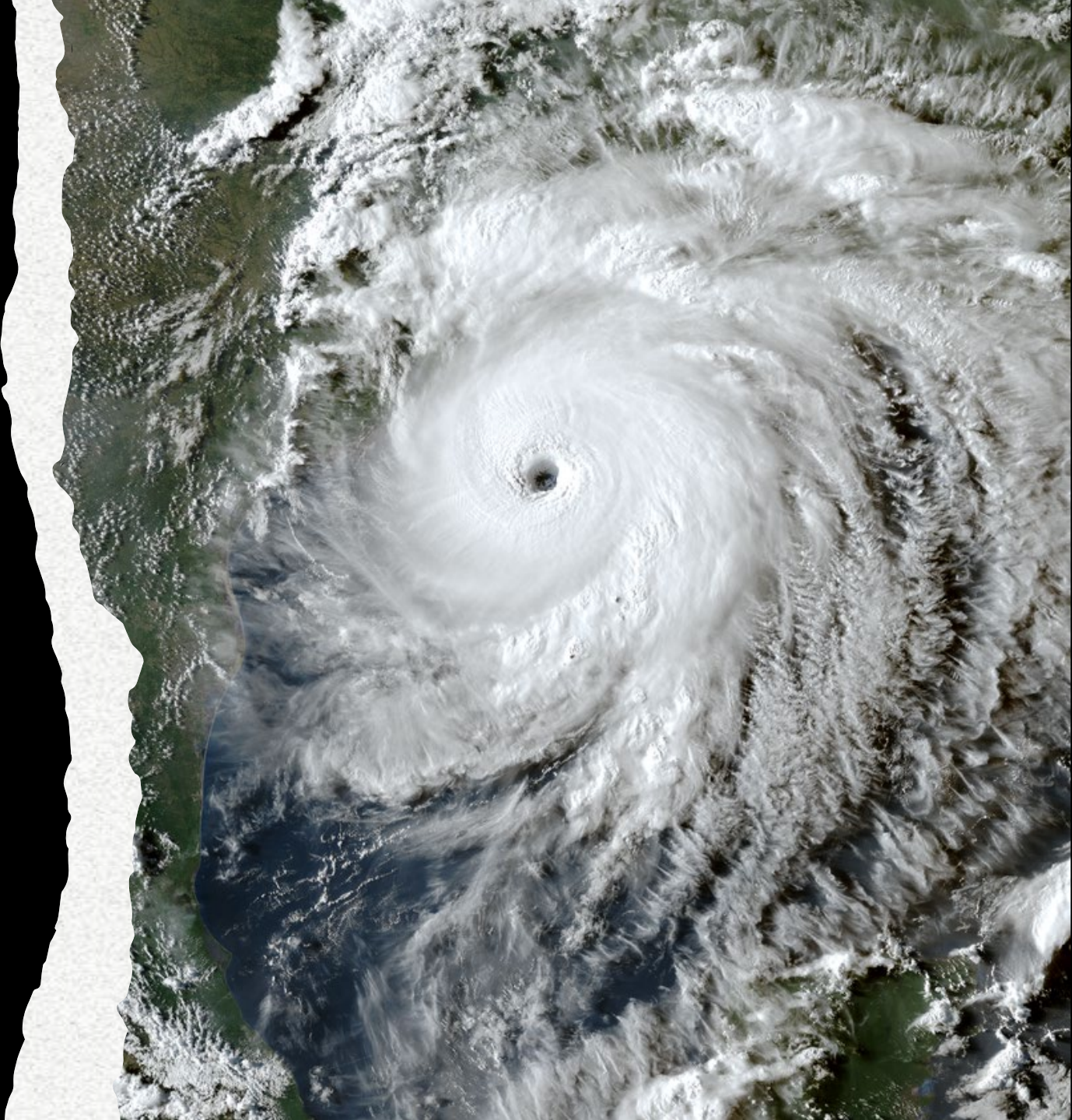
Tropical Cyclones

- Tropical cyclones are defined spinning, low-pressure air masses that draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes

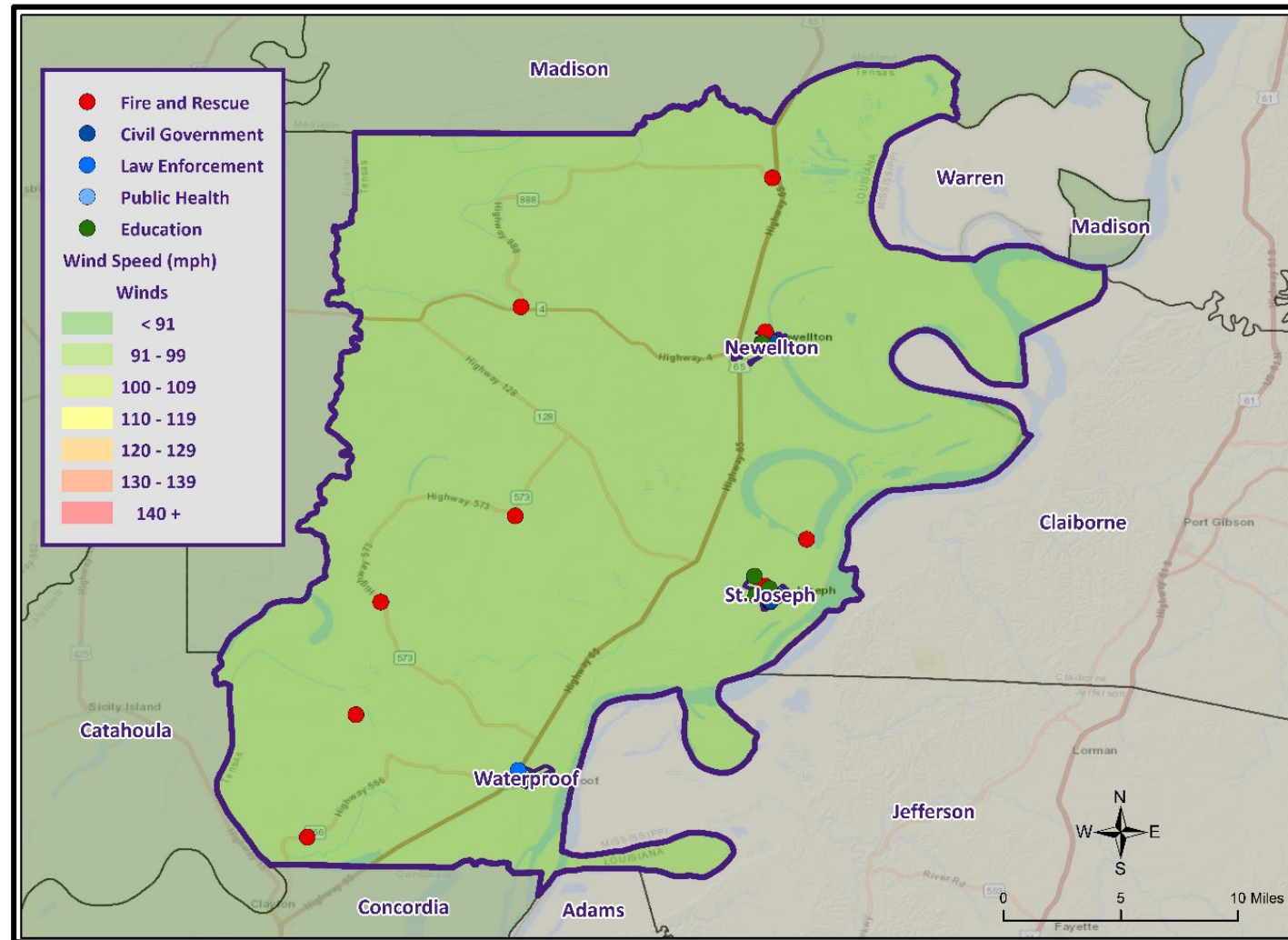
Saffir-Simpson Hurricane Wind Scale		
	Sustained Wind Speed	Effects
Category 1	74-95 mph (119-153 km/hr)	Very dangerous winds will produce some damage. Low-lying coastal roads flooded, minor pier damage
Category 2	96-110 mph (154-177 km/hr)	Extremely dangerous winds will cause extensive damage. Major damage to exposed mobile homes, evacuation of some shoreline residents
Category 3	111-130 mph (178-209 km/hr)	Devastating damage will occur. Some structural damage to small buildings; serious flooding at coast and many smaller structures near coast destroyed
Category 4	131-155 mph (210-249 km/hr)	Catastrophic damage will occur. High risk of injury or death to people, livestock, and pets due to flying and falling debris. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.
Category 5	> 155 mph (249 km/hr)	Catastrophic damage will occur. People, livestock, and pets are at very high risk of injury or death from flying or falling debris. A high percentage of frame homes will be destroyed. Long-term power outages and water shortages will render area uninhabitable for weeks or months.



Hurricane Laura (2020)



Wind Speed Impacts on C.I.

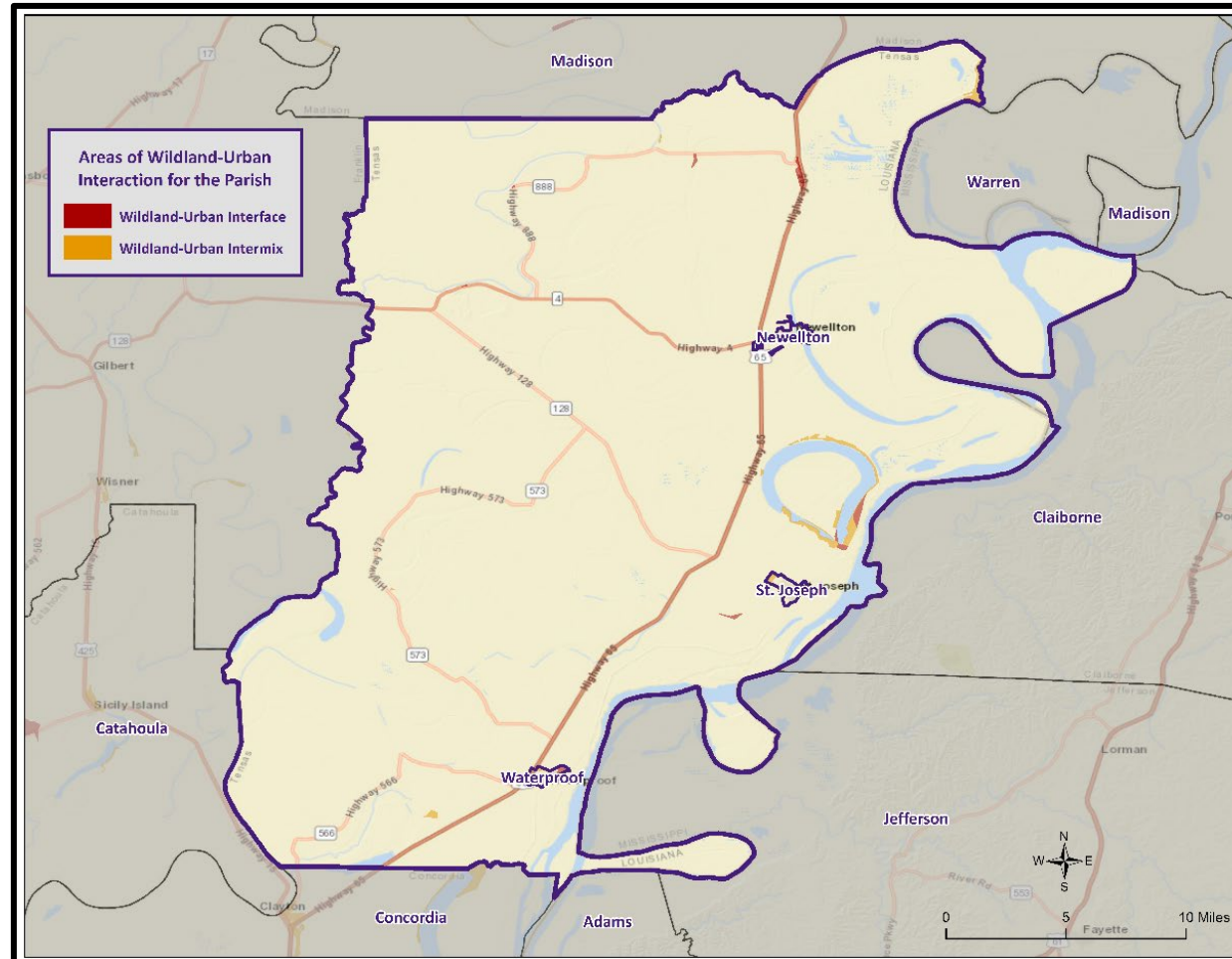


Wildfires

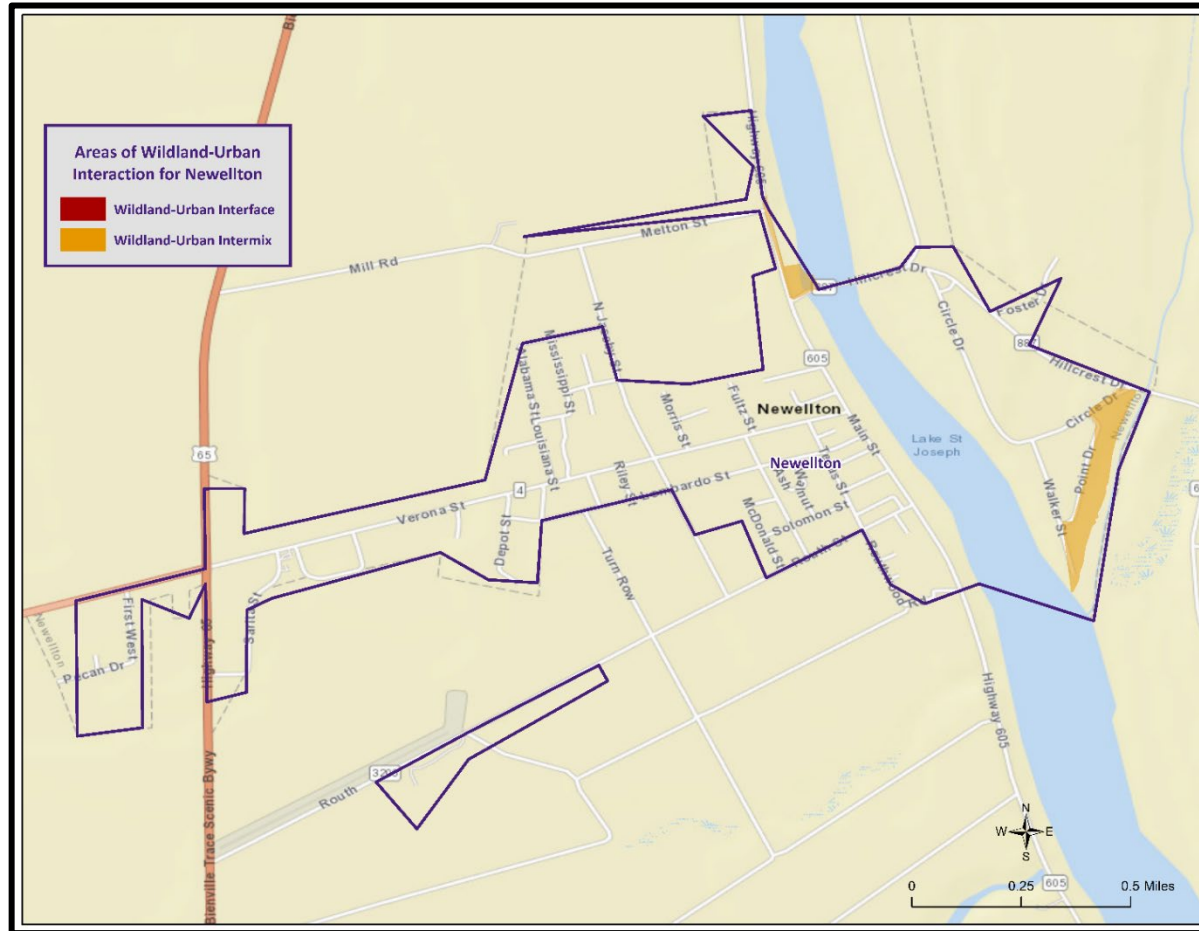


- A wildfire is combustion in a natural setting, marked by flames or intense heat.
- Most frequently, wildfires are ignited by lightning or unintentionally by humans. Fires set purposefully (but lawfully) are referred to as controlled fires or burns
- While loss of timber is a problem, the real hazard is when wildfires threaten developed areas. As more development moves into and next to forested areas, the hazards to people and property increases.

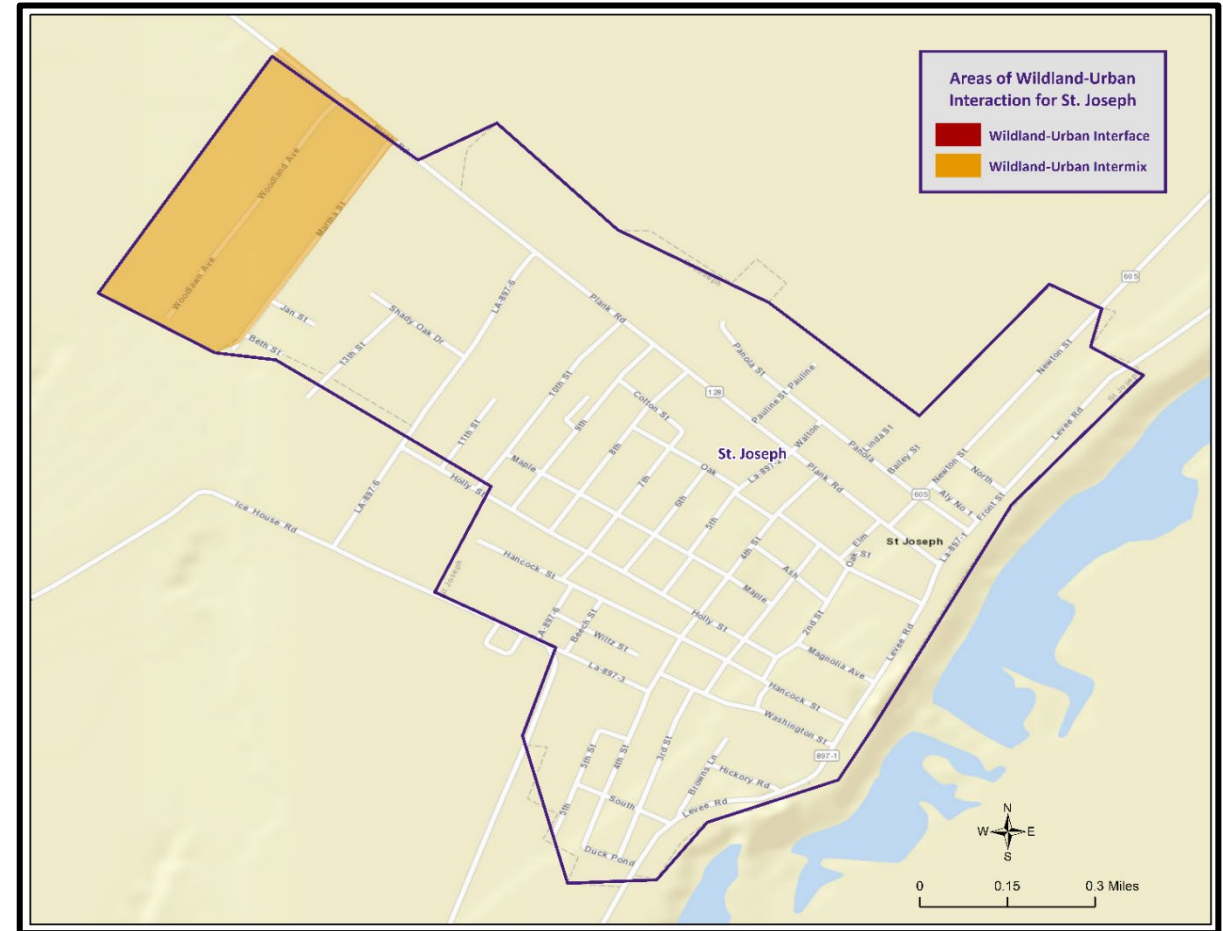
Wildland-Urban Interaction in Tensas Parish



Municipal WUI Maps

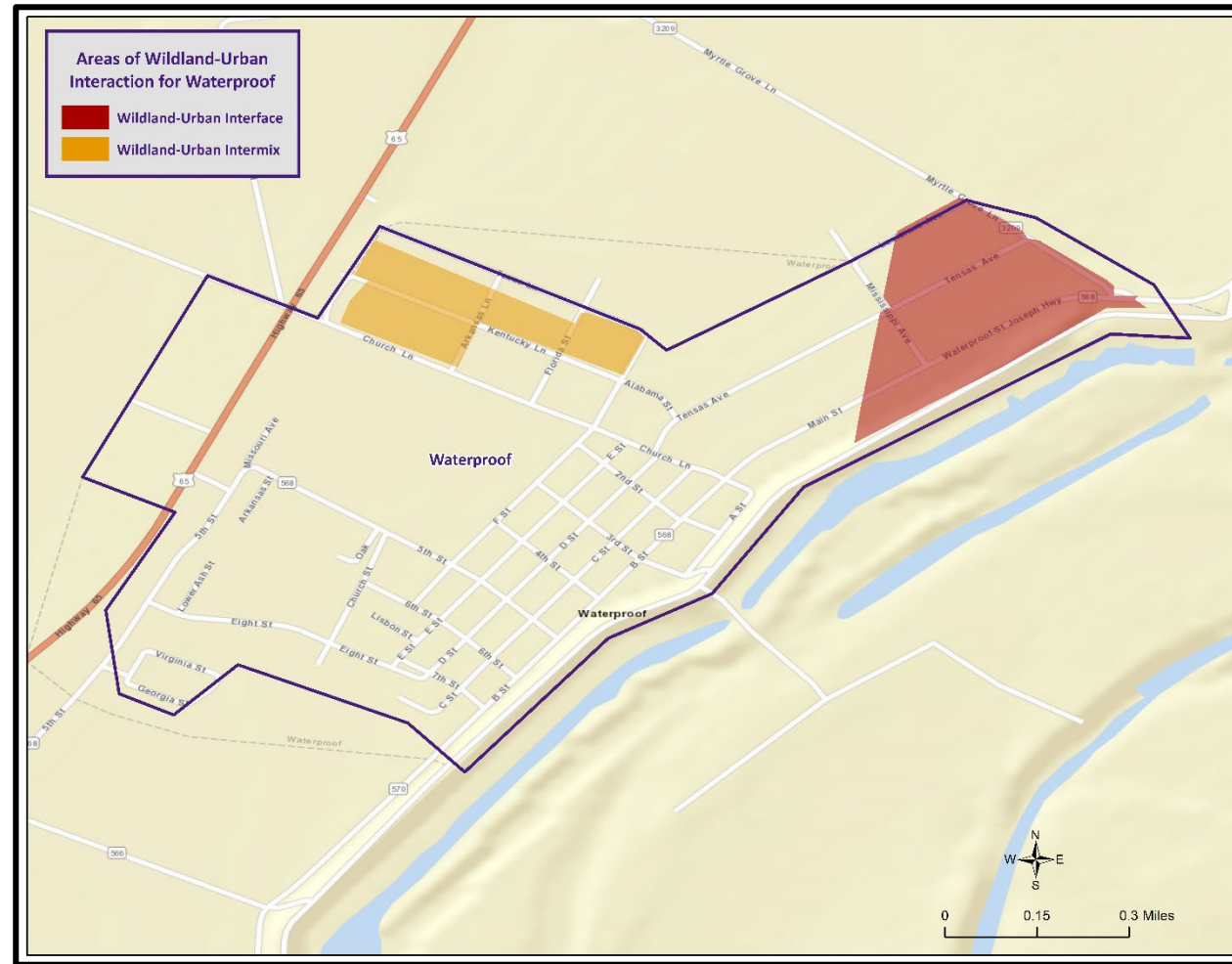


Newellton



St. Joseph

Municipal WUI Maps

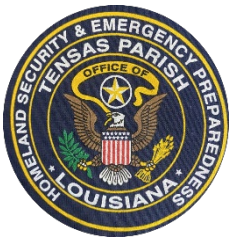


Waterproof



Winter Weather

- Occurs when humid air from the Gulf of Mexico meets a cold air mass from the north.
- As the temperature falls, precipitation may fall in the form of snow or sleet.
- If the ground temperature is cold enough but air temperature is above freezing, rain can freeze instantly on contact with the surface, causing massive ice storms.



Tensas Parish Mitigation Goals

1. Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact
2. Improve data collection, use, and sharing to reduce the impact of hazards
3. Improve capabilities, coordination, and opportunities at municipal and parish level to plan and implement hazard mitigation projects, programs, and activities
4. Pursue opportunities to mitigate repetitive and severe repetitive loss properties and other appropriate hazard mitigation projects, programs, and activities



Parish Hazard Mitigation Project Update

Tensas OHSEP/
Tensas Parish Police Jury Discussion

Public Outreach Activity #1

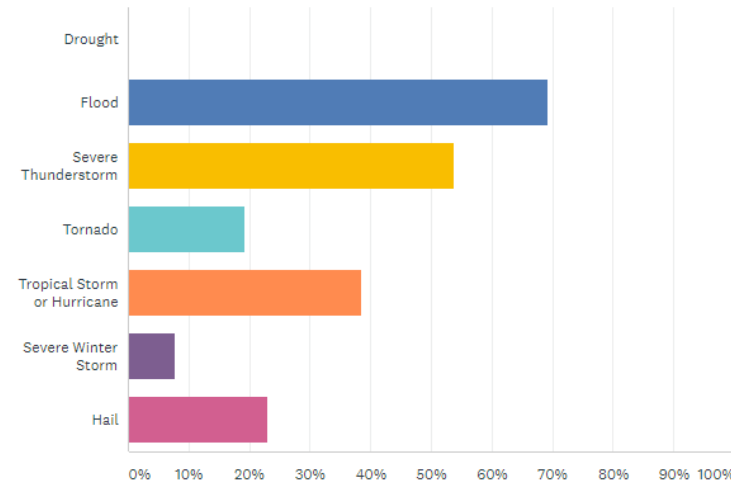
Hazard Mitigation Public Opinion Survey

https://lsu.qualtrics.com/jfe/form/SV_3JXWOGpj2vFbqrc



Which of these natural disasters have you or someone in your household experienced in the past five years? (Check all that apply)

Answered: 26 Skipped: 1



Public Outreach Activity #2

Please fill out an incident questionnaire!



TENSAS PARISH PUBLIC MEETING

PUBLIC ACTIVITY: INCIDENT/ ISSUE QUESTIONNAIRE

1. HAZARD TYPE(S):

- A. DROUGHT
- B. EXCESSIVE HEAT
- C. FLOODING
- D. LEVEE FAILURE
- E. SINKHOLES
- F. THUNDERSTORMS
- G. TORNADOES
- H. TROPICAL CYCLONES
- I. WILDFIRES
- J. WINTER WEATHER

2. DESCRIBE INCIDENT OR ISSUE:

3. LOCATION:

A. CITY:

B. ADDRESS OR AREA:

4. INTENSITY:

A. DEPTH (FLOODING) OR SIZE (HAIL ETC.):

B. WIND STRENGTH

5. RECURRING OR ONE TIME:

A. IF RECURRING, HOW OFTEN:

6. WHAT TYPE OF INTERRUPTIONS
DOES/DID THE INCIDENT OR ISSUE
CAUSE? (BUSINESS CLOSURE, DAMAGE,
EVACUATION, ETC.)

7. HOW LONG WAS THE INTERRUPTION
(HOURS, DAYS, WEEKS ETC.)

8. HOW COULD THIS HAZARD OR
IMPACT BE PREVENTED, FIXED
OR ALLEVIATED?



SDMI Hazard Mitigation Website

The screenshot shows the SDMI Hazard Mitigation Website interface. At the top, the LSU Stephenson Disaster Management Institute logo is on the left, and 'SDMI HOME' with social media icons is on the right. Below this is a yellow 'HAZARD MITIGATION' header with a navigation bar containing 'Intro', 'Events', 'FEMA Resources', 'Parish Plans' (highlighted), and 'Settings'.

The main content area is for 'Tensas Parish'. It features a 'PLAN DUE DATE: AUGUST 8 2024' badge. Below this is a 'DEVELOPMENT STATUS' section with a progress bar showing four stages: 'PLAN DEVELOPMENT' (yellow), 'PLAN REVIEW' (purple), 'PLAN ADOPTION' (purple), and 'COMPLETED' (purple). The progress bar indicates the current status is in the 'PLAN REVIEW' stage. Below the progress bar, the stages are labeled: 'INITIAL PLANNING COMMITTEE', 'TBD', 'TBD', and 'TBD'.

Below the progress bar is a 'PARTICIPATING JURISDICTIONS' section with four locations: 'Town of Newellton', 'Town of St. Joseph', 'Tensas Parish, unincorporated areas', and 'Town of Waterproof'.

Below this is a '2023 TENSAS PARISH HM KICKOFF MEETING' section with two events:

- OCT 12** 2023 TENSAS PARISH HM KICKOFF MEETING
Phone Call
10:00 AM - 10:30 AM 10/12/2023
- NOV 8** 2023 TENSAS PARISH HM INITIAL PLANNING COMMITTEE MEETING
St. Joseph, LA
10:00 AM - 11:00 AM 11/8/2023

Below this is a 'PREVIOUS PLANS' section for the year 2016, showing three documents with 'DOWNLOAD' buttons:

- TENSAS PARISH KICK OFF MEETING
- TENSAS PARISH PUBLIC MEETING
- TENSAS PARISH HAZARD MITIGATION PLAN

At the bottom, there is a 'Survey' section with a button labeled 'Access Survey'.

- Repository for materials used during update process
- <https://hmplans.sdmi.lsu.edu/Home/Parish/tensas>

Contact Us

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