



# **Evangeline Parish Hazard Mitigation Plan Update Public Meeting**

March 13, 2024

Ville Platte, 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
- **Evangeline 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

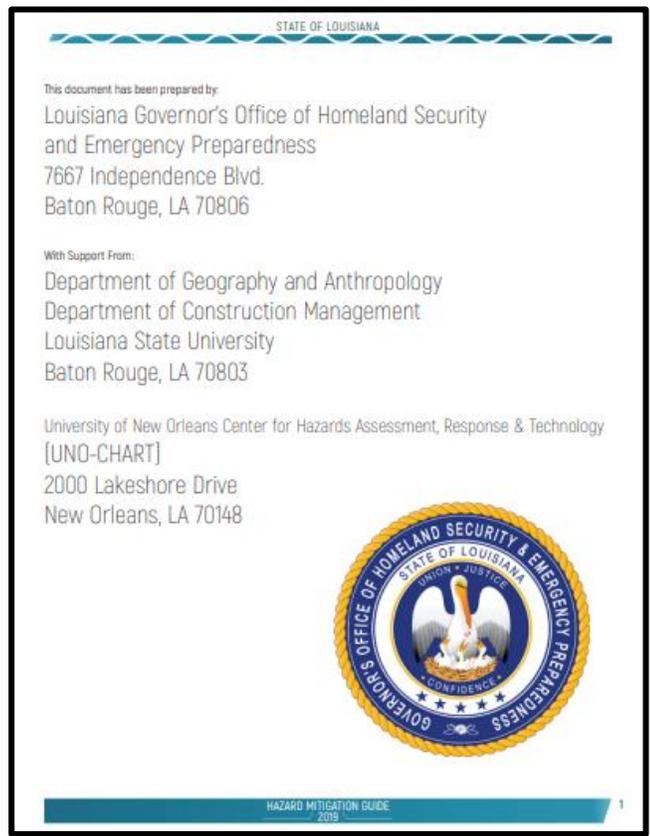
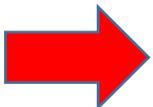
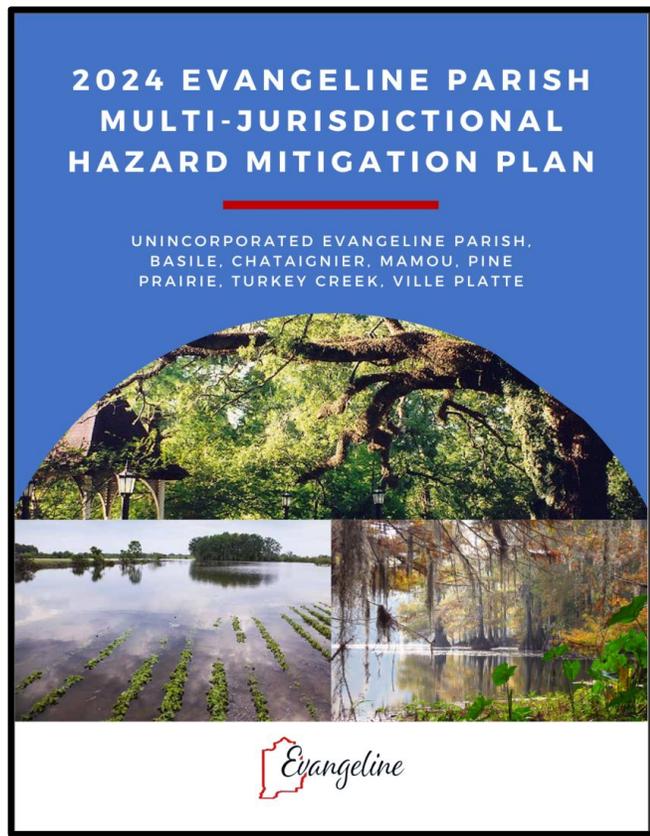
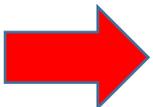


# Who is SDMI?

- 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 Evangeline 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

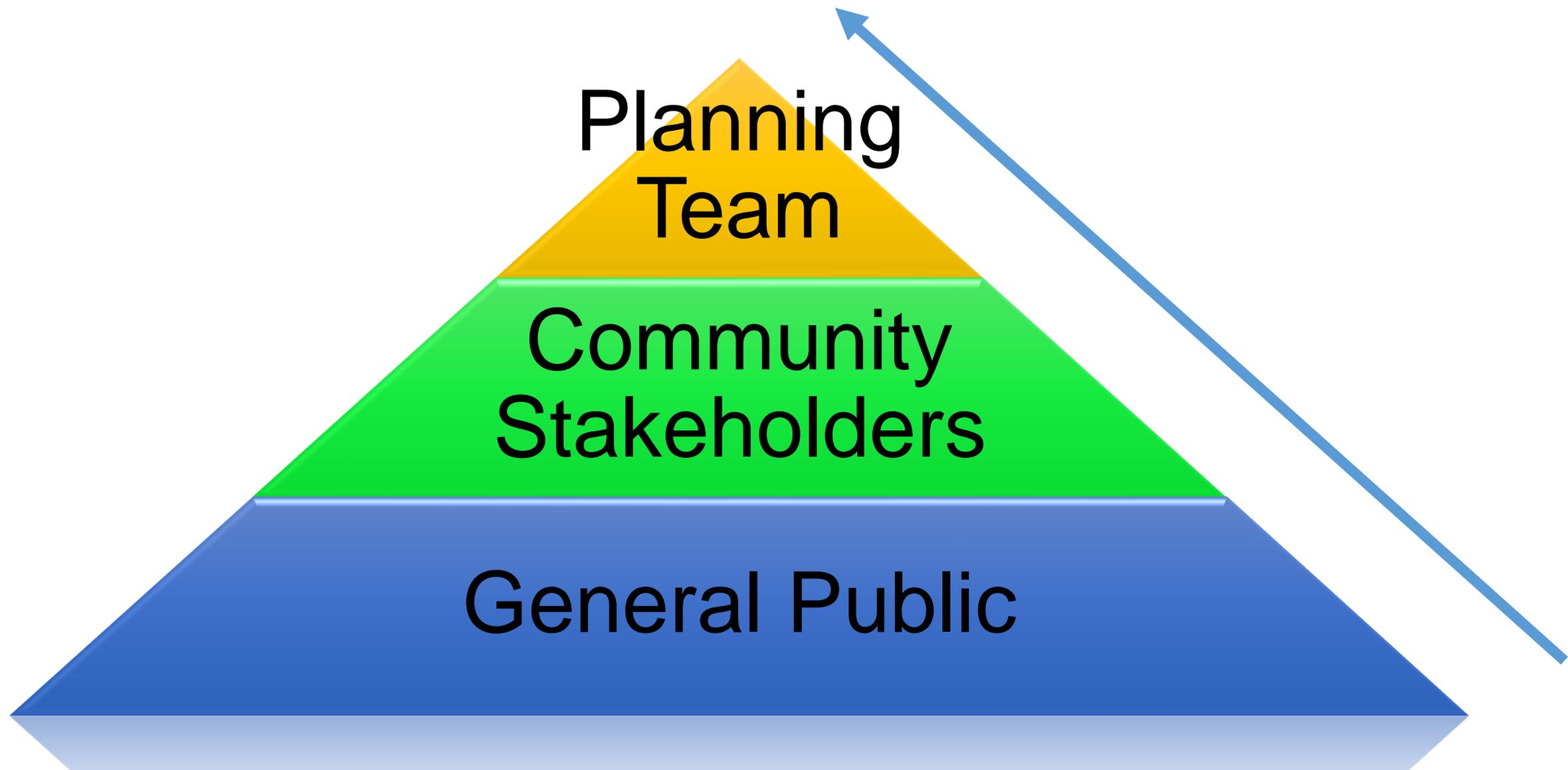


Risk Assessment Review with Planning Committee

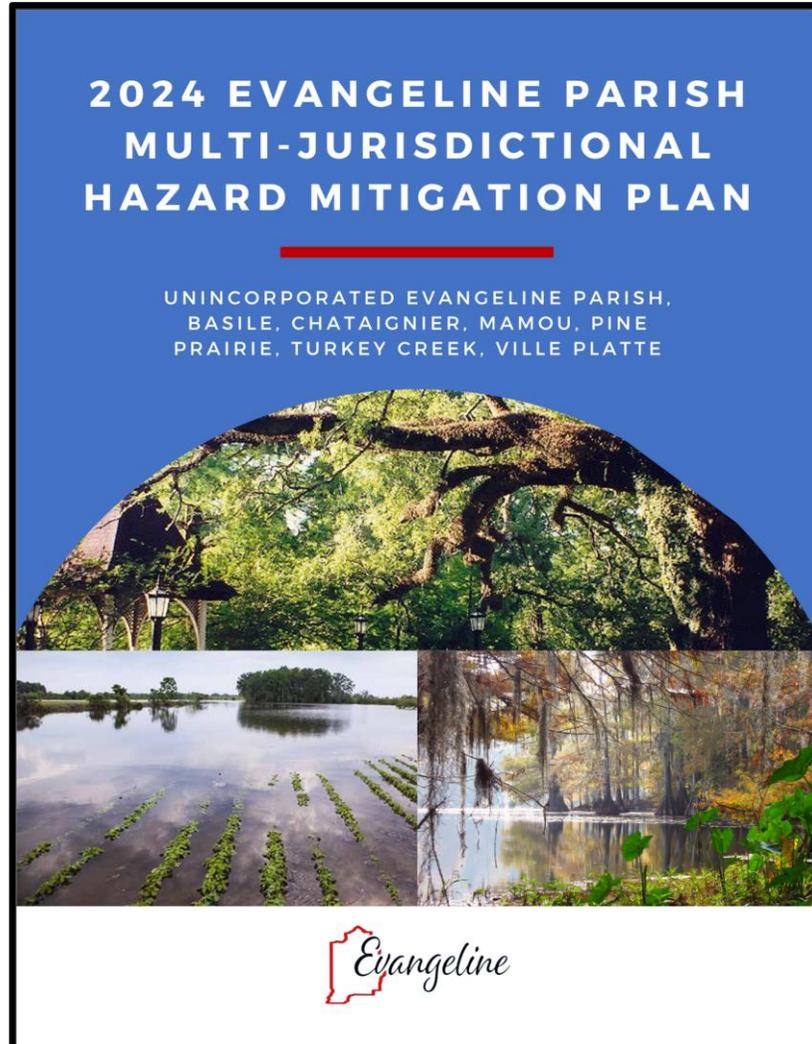
*Constant communication with Parish and committee members!*

Public Meeting

# 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



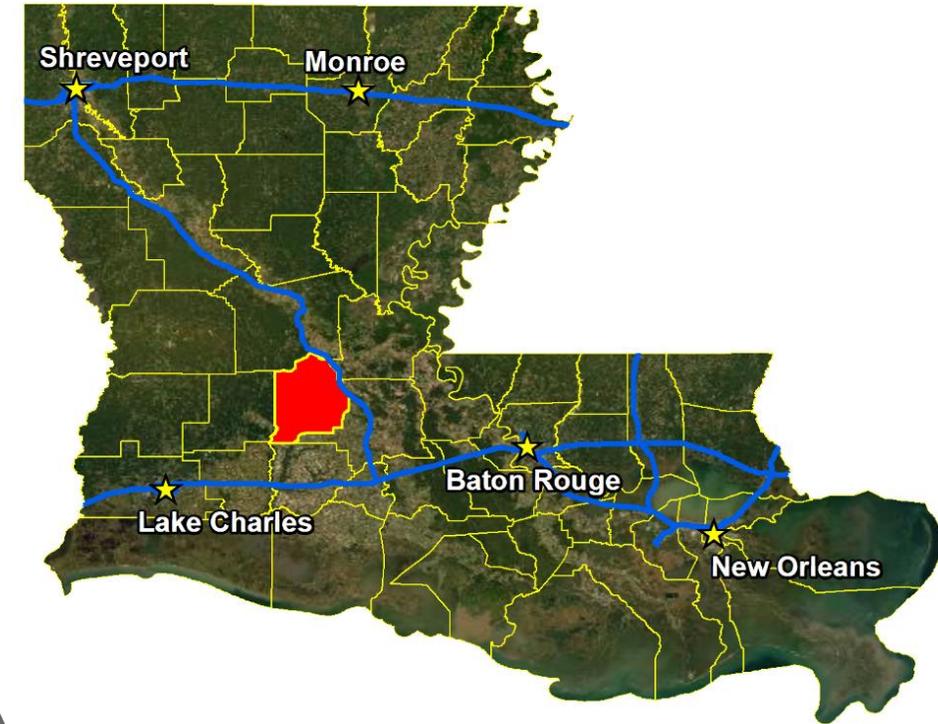
# Plan Layout

- **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*

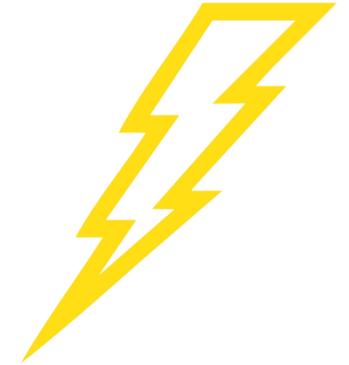
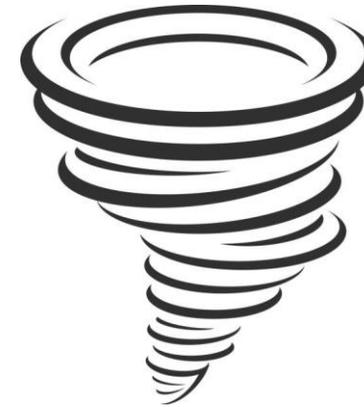


# Hazard Identification And Risk Assessment

- 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

- Dam Failure
- Drought
- Flooding
- Sinkholes
- Thunderstorms
- Tornadoes
- Tropical Cyclones
- Winter Weather

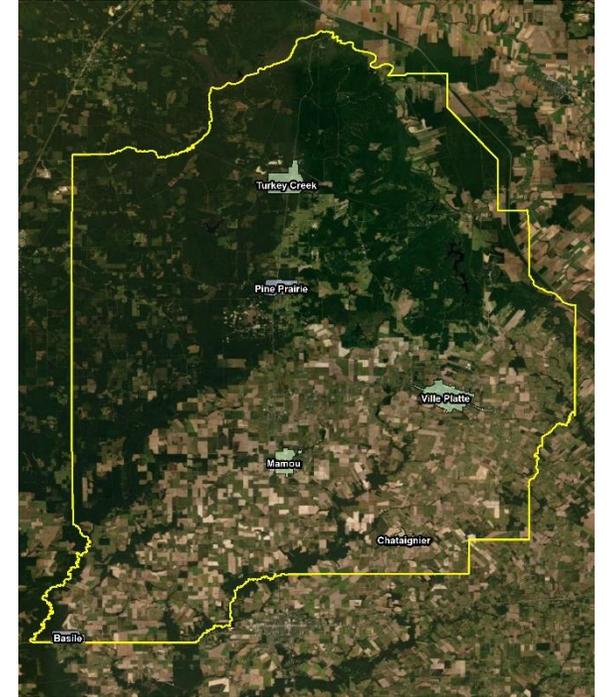


# Risk Matrix for Evangeline Parish

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Dam Failure	1	3	4	1	3	2.4
Drought	3	2	4	2	3	2.8
Flooding	3	4	3	4	3	3.4
Sinkholes	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	4	3	2	4	3	3.2
Tropical Cyclones	3	4	4	1	4	3.3
Winter Weather	3	4	4	1	2	3

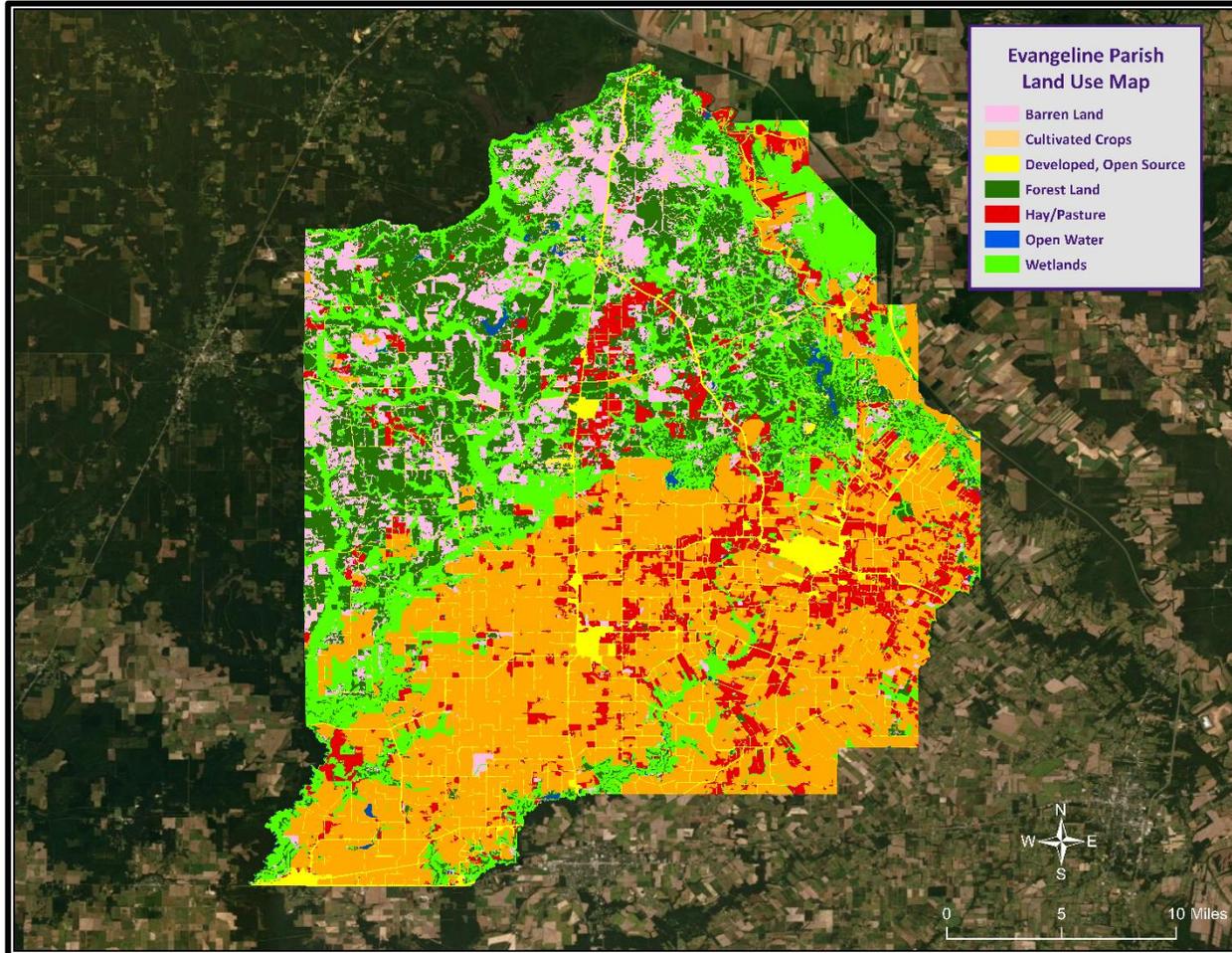
Risk Factor	PRI Range
High Risk	2.5 to 4.0
Moderate Risk	2.0 to 2.4
Low Risk	0 to 1.9





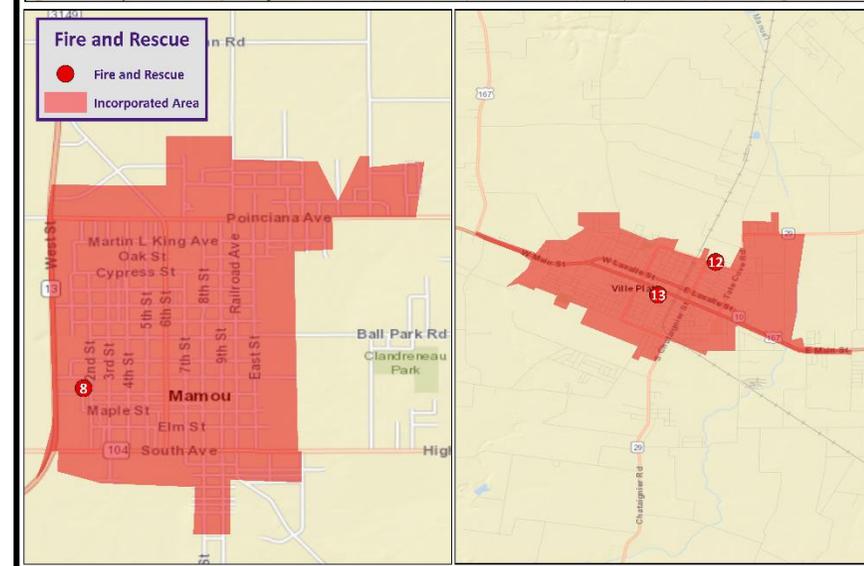
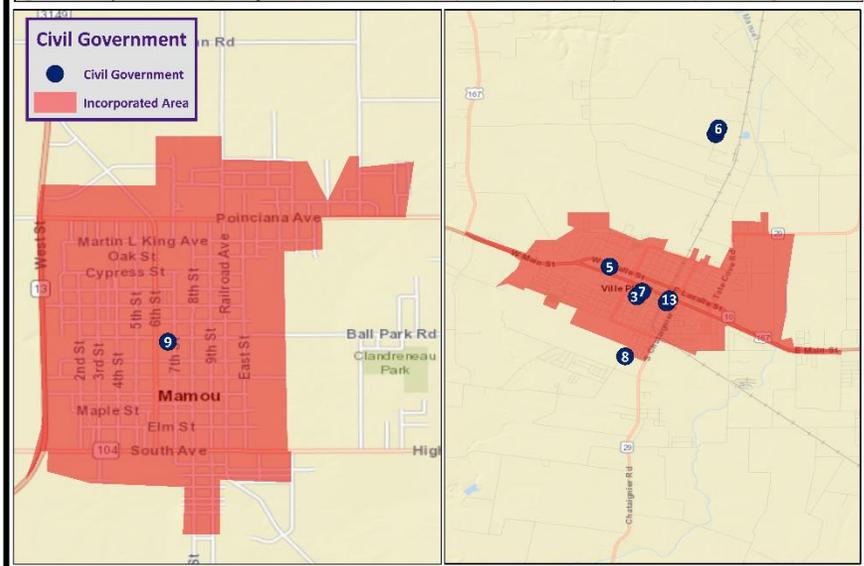
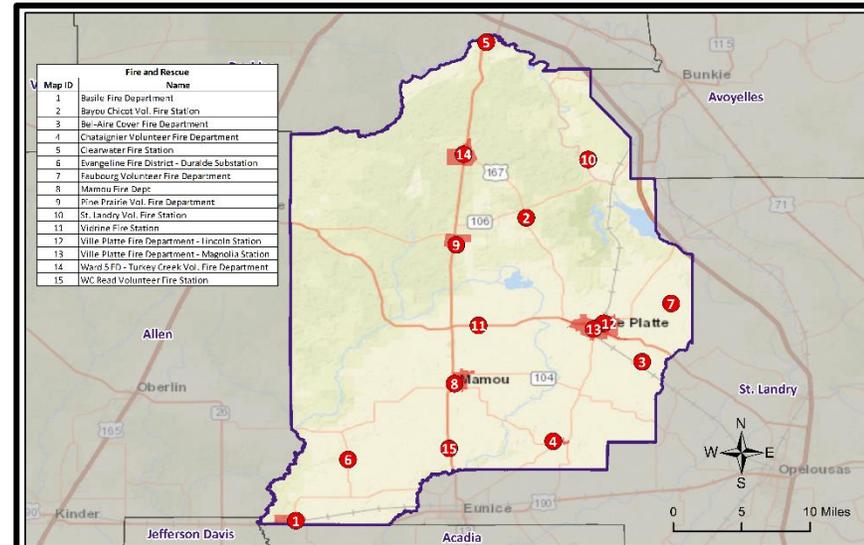
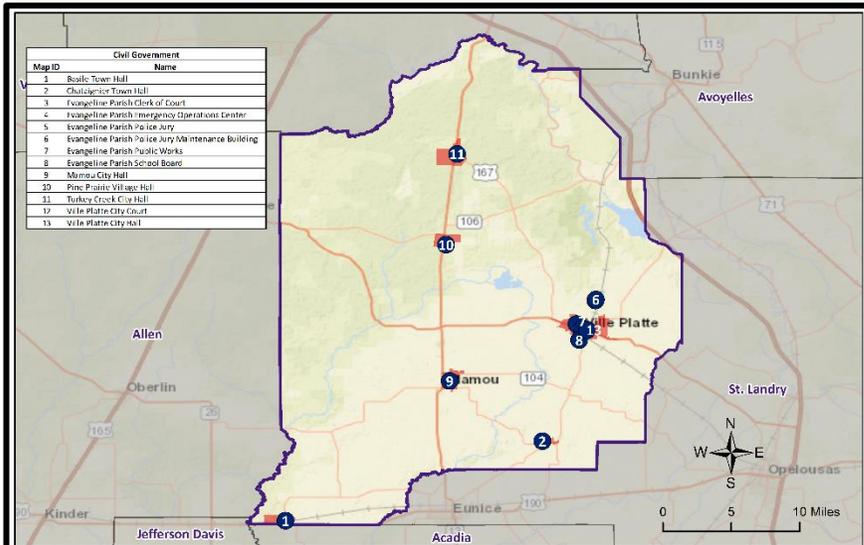
# Risk Assessment Maps

# Evangeline Parish Land Use



Land Use	Acres	Percentage
<b>Agricultural Land, Cropland, and Pasture</b>	231,667	53%
<b>Wetlands</b>	89,816	21%
<b>Forest Land (Not including forested wetlands)</b>	82,411	19%
<b>Urban/Development</b>	28,324	7%
<b>Water</b>	2,655	1%

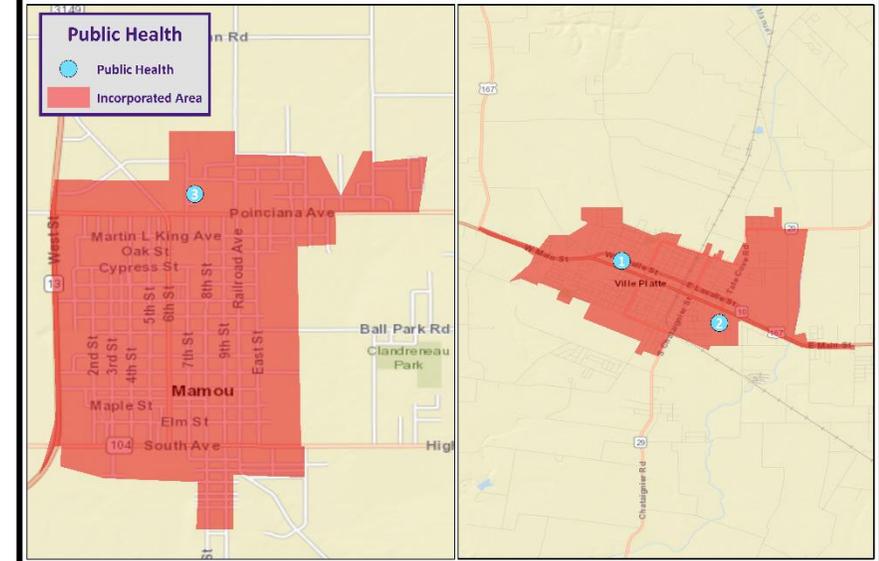
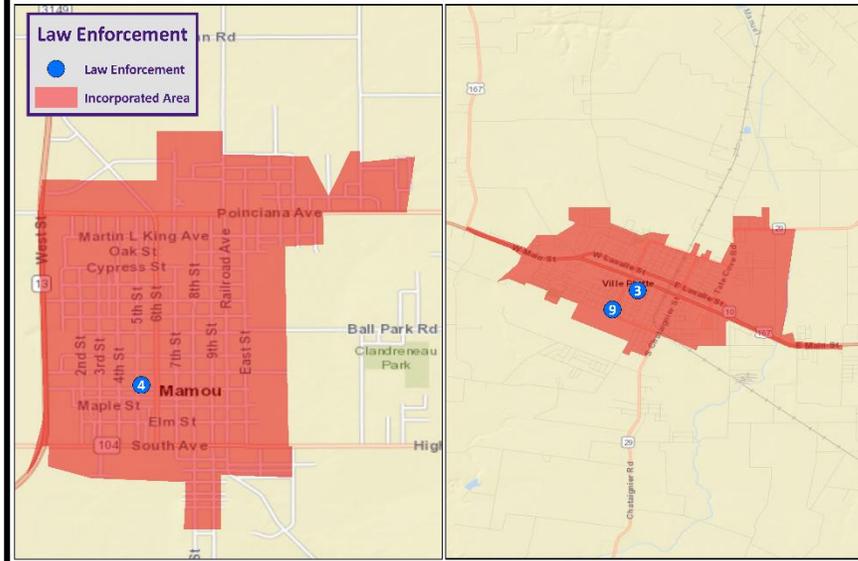
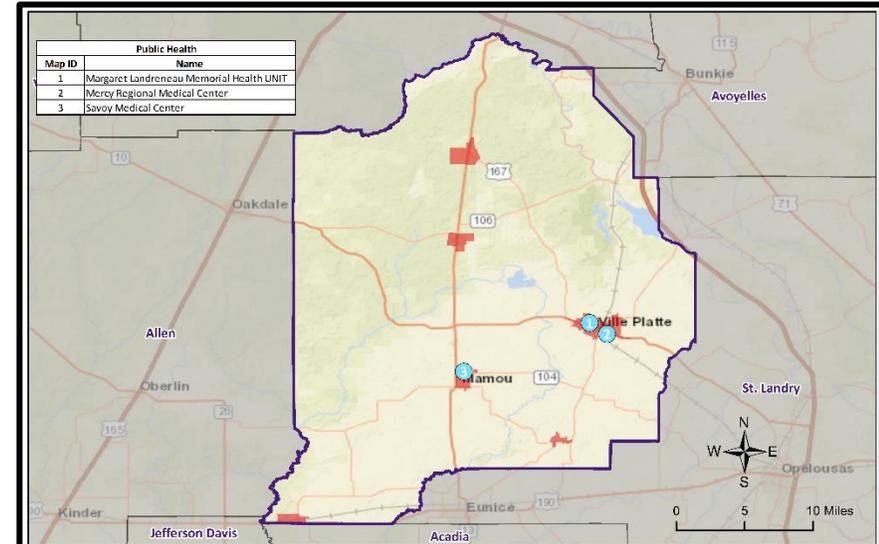
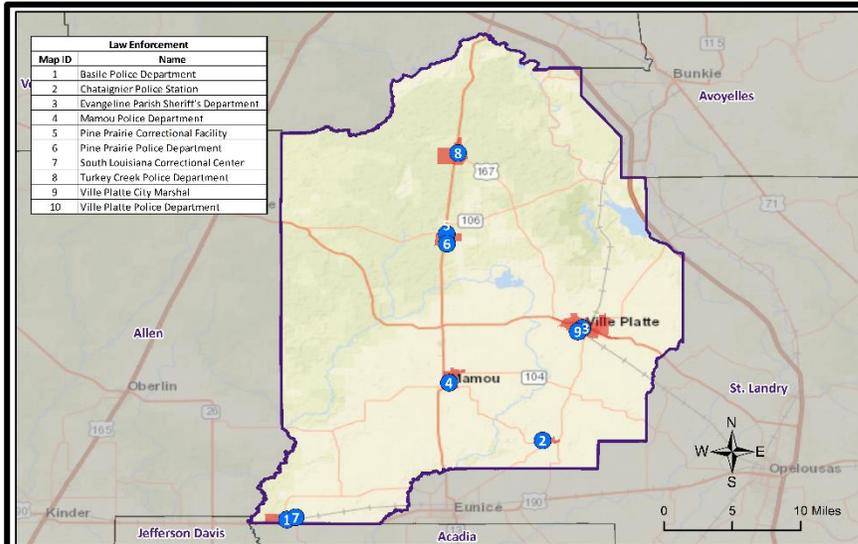
# Evangeline Parish Critical Facilities



## Civil Government

## Fire & SAR

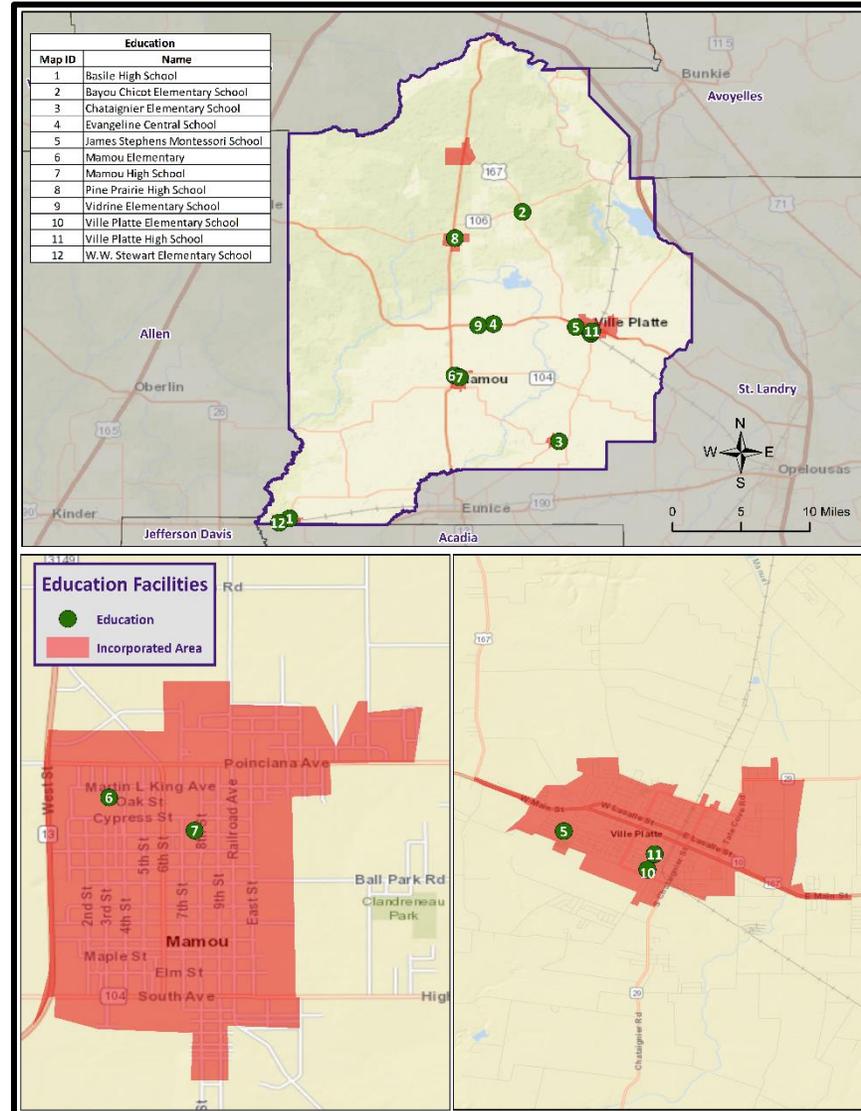
# Evangeline Parish Critical Facilities



## Law Enforcement

## Public Health

# Evangeline Parish Critical Facilities



## Public Education

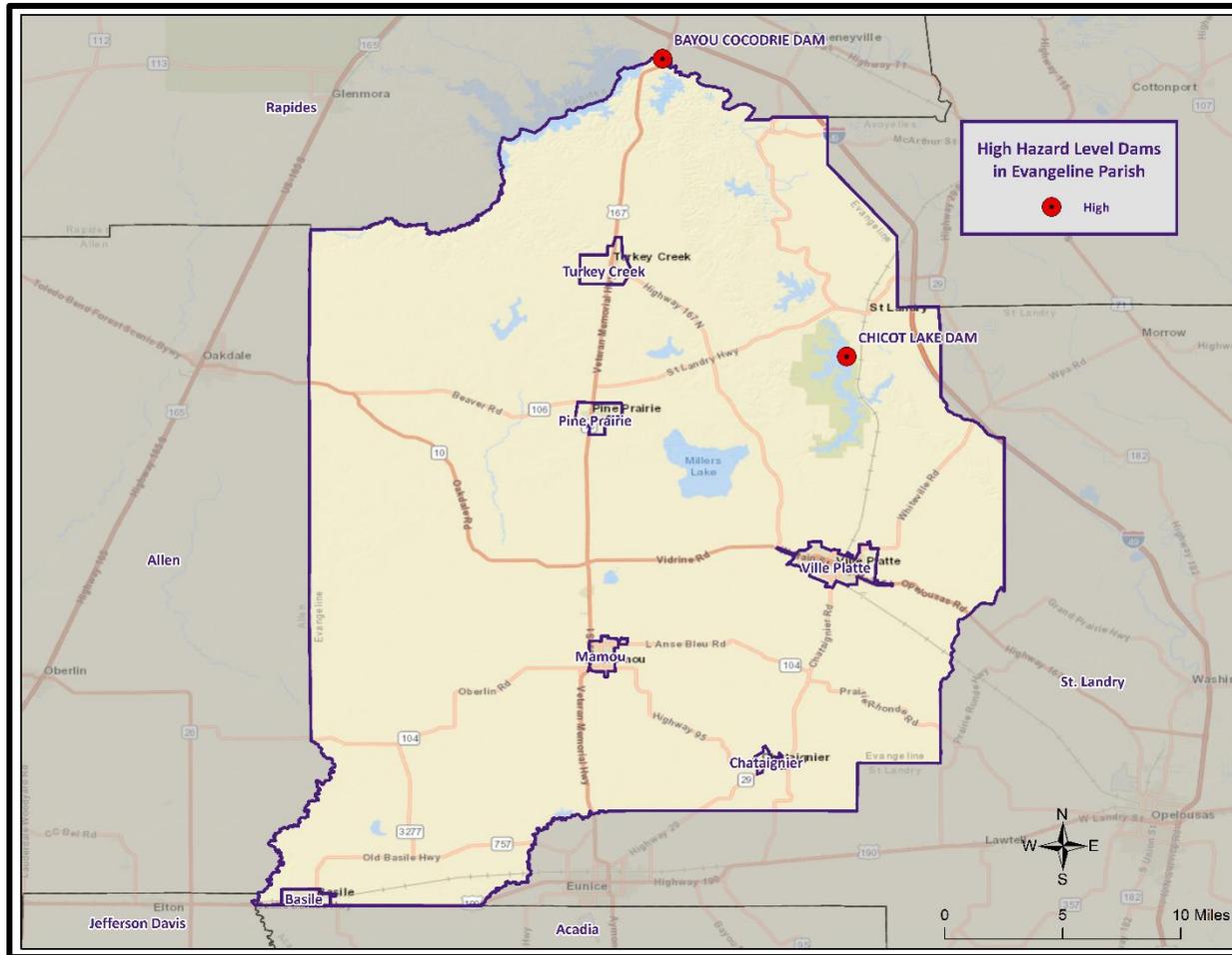
# Dam Failure



- A dam is a barrier across flowing water that obstructs, redirects, or slows the flow, often creating a reservoir or lake.
- There are five main causes of dam failure:
  - ✓ Overtopping
  - ✓ Foundation Defects
  - ✓ Cracking
  - ✓ Inadequate maintenance and upkeep
  - ✓ Piping



# Location of Dams in Evangeline Parish



System	Rating	Height (ft)	Storage (Acre-Feet)	Dam Type	Last Inspection Date
Bayou Cocodrie	High	28	100,000	Earth	11/16/2022
Chicot Lake Dam	High	30	13,200	Earth	7/25/2022

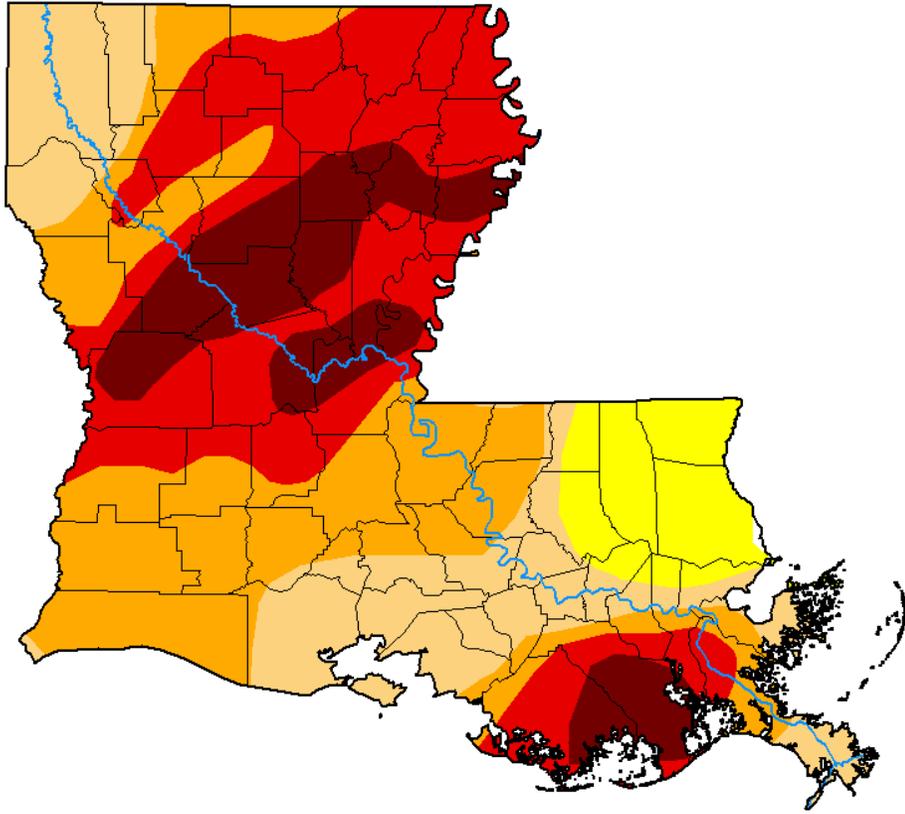
# Drought



- 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

January 9, 2024

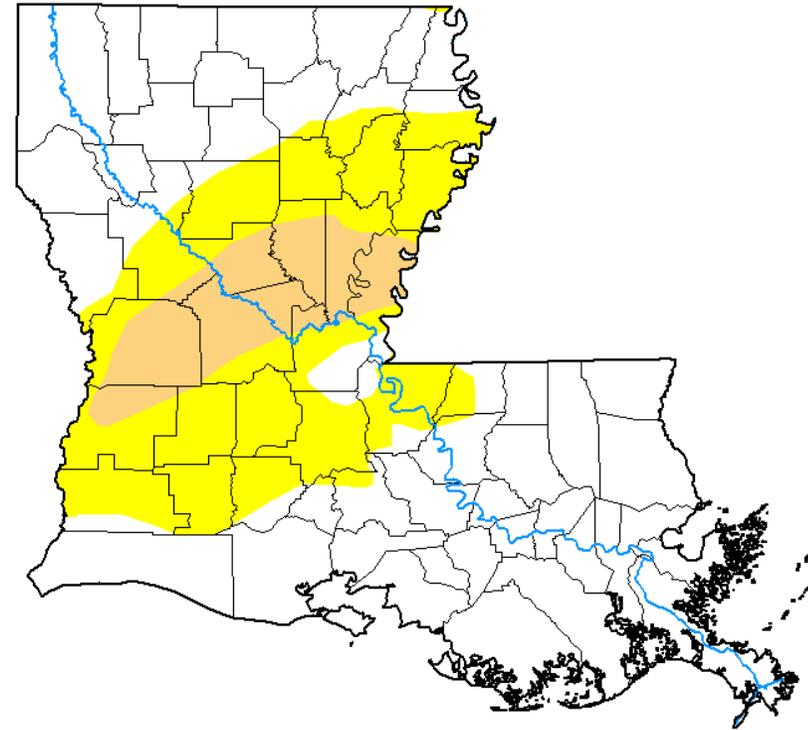


U.S. Drought Monitor  
Louisiana

March 5, 2024

(Released Thursday, Mar. 7, 2024)

Valid 7 a.m. EST



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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:**

Curtis Riganti  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

# 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.”



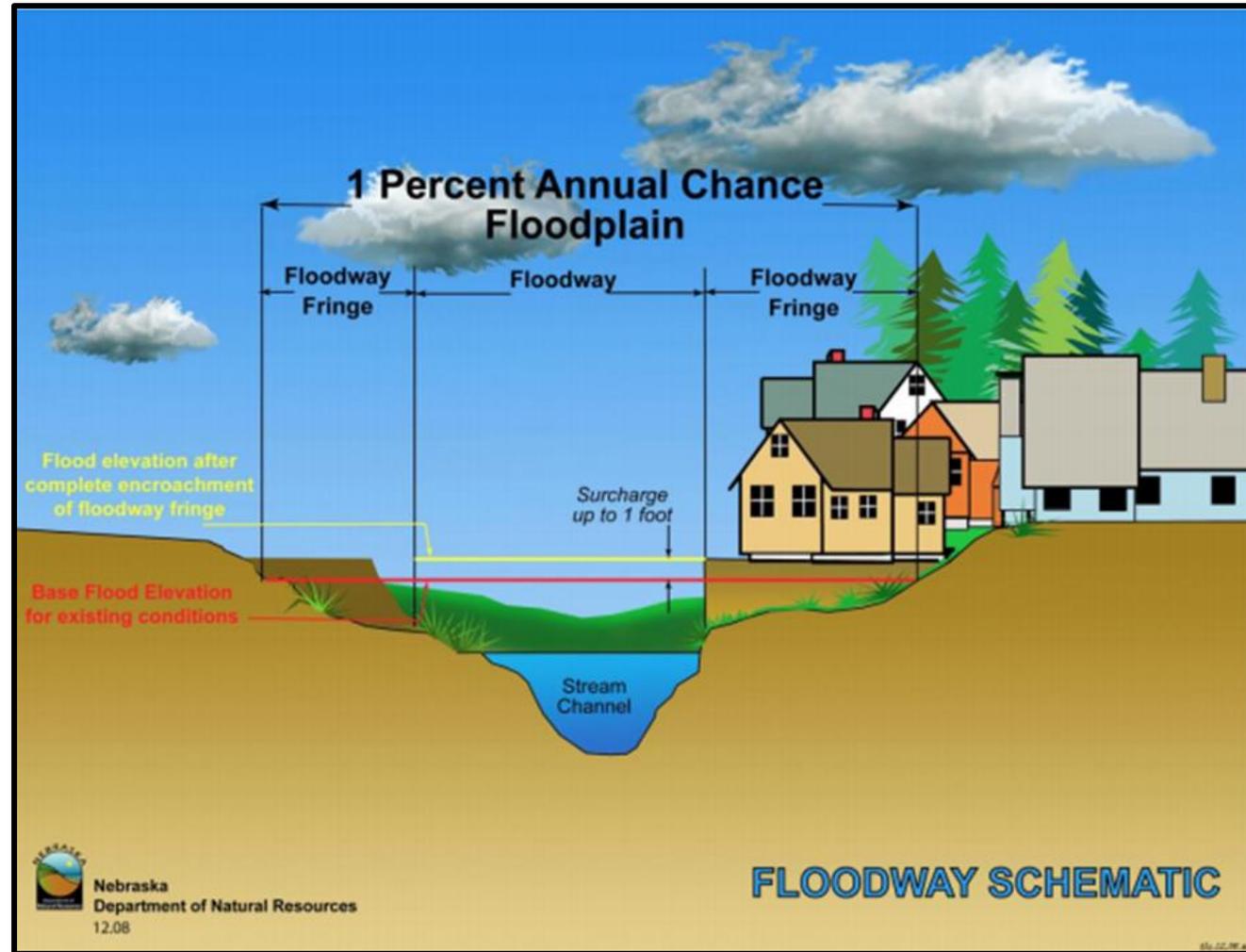
# Flooding



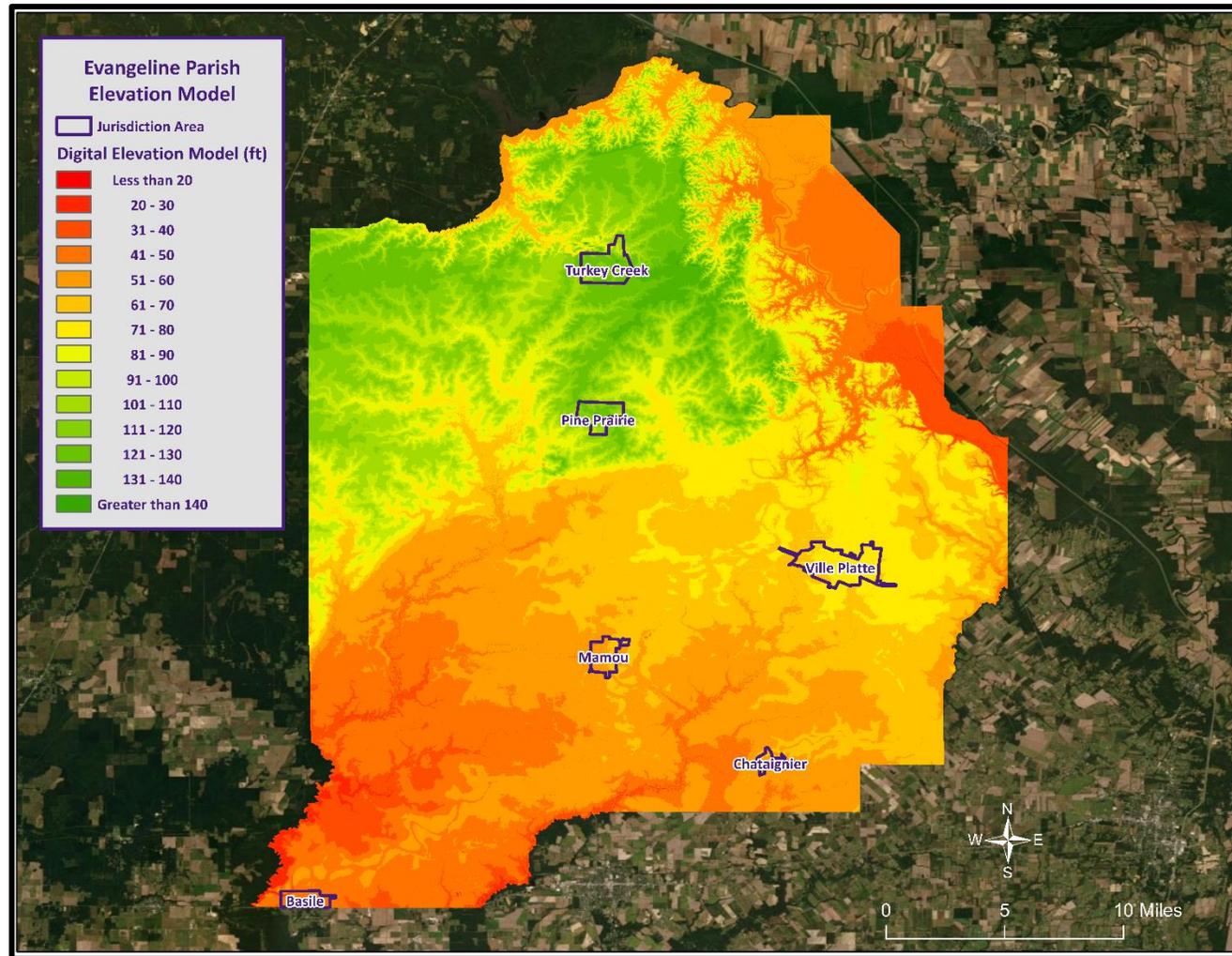
In Louisiana, six specific types of flooding are of main concern:

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

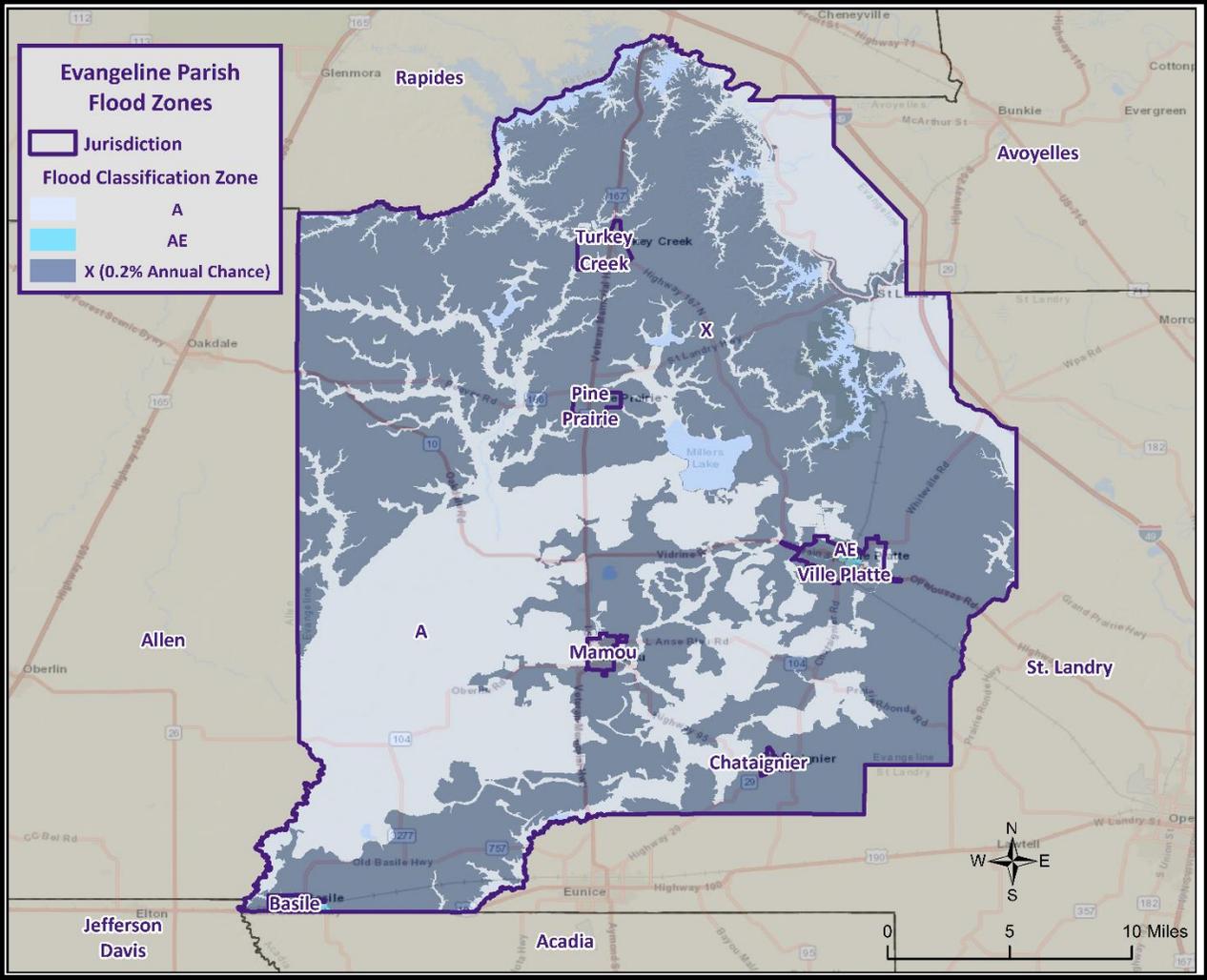
# Floodway Diagram



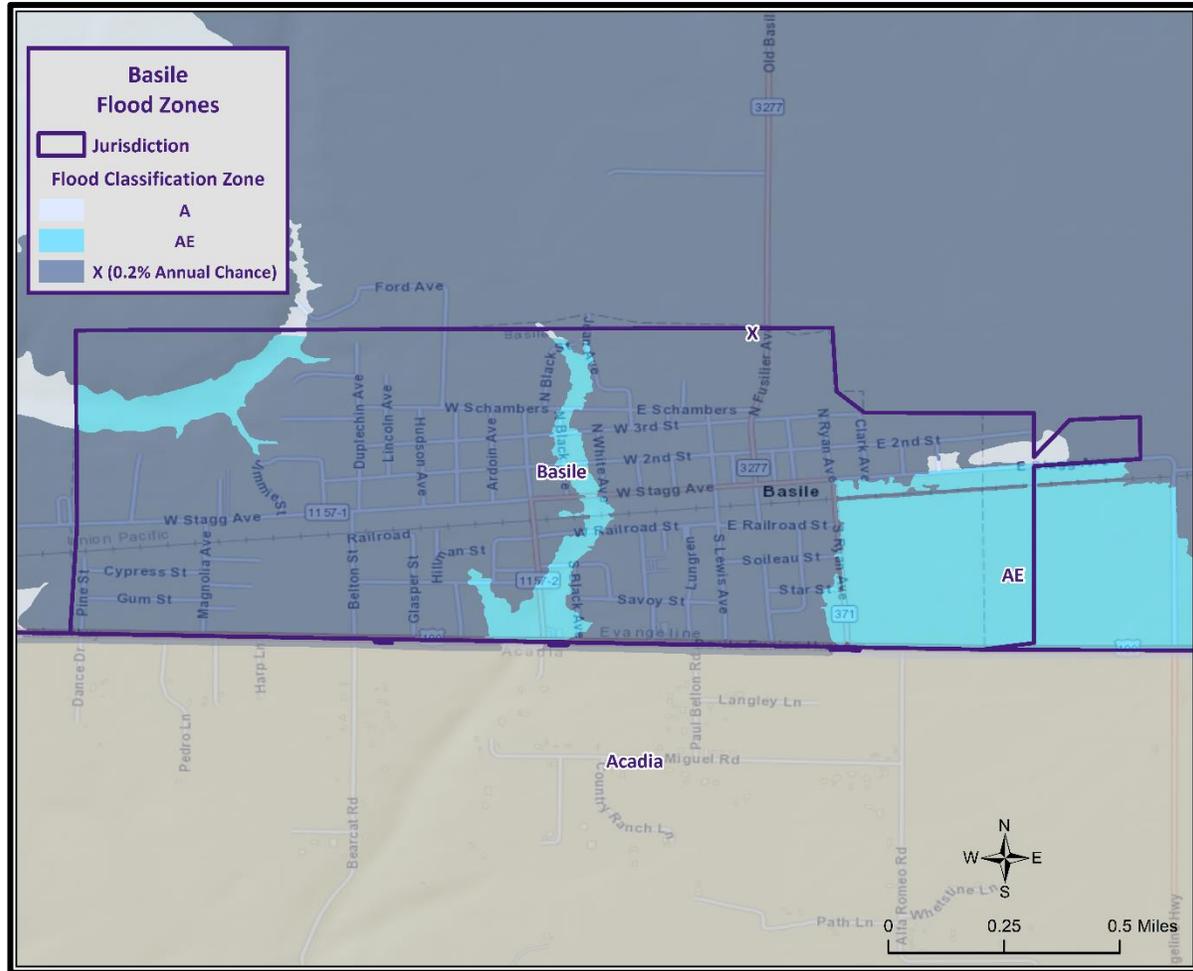
# Digital Elevation Model



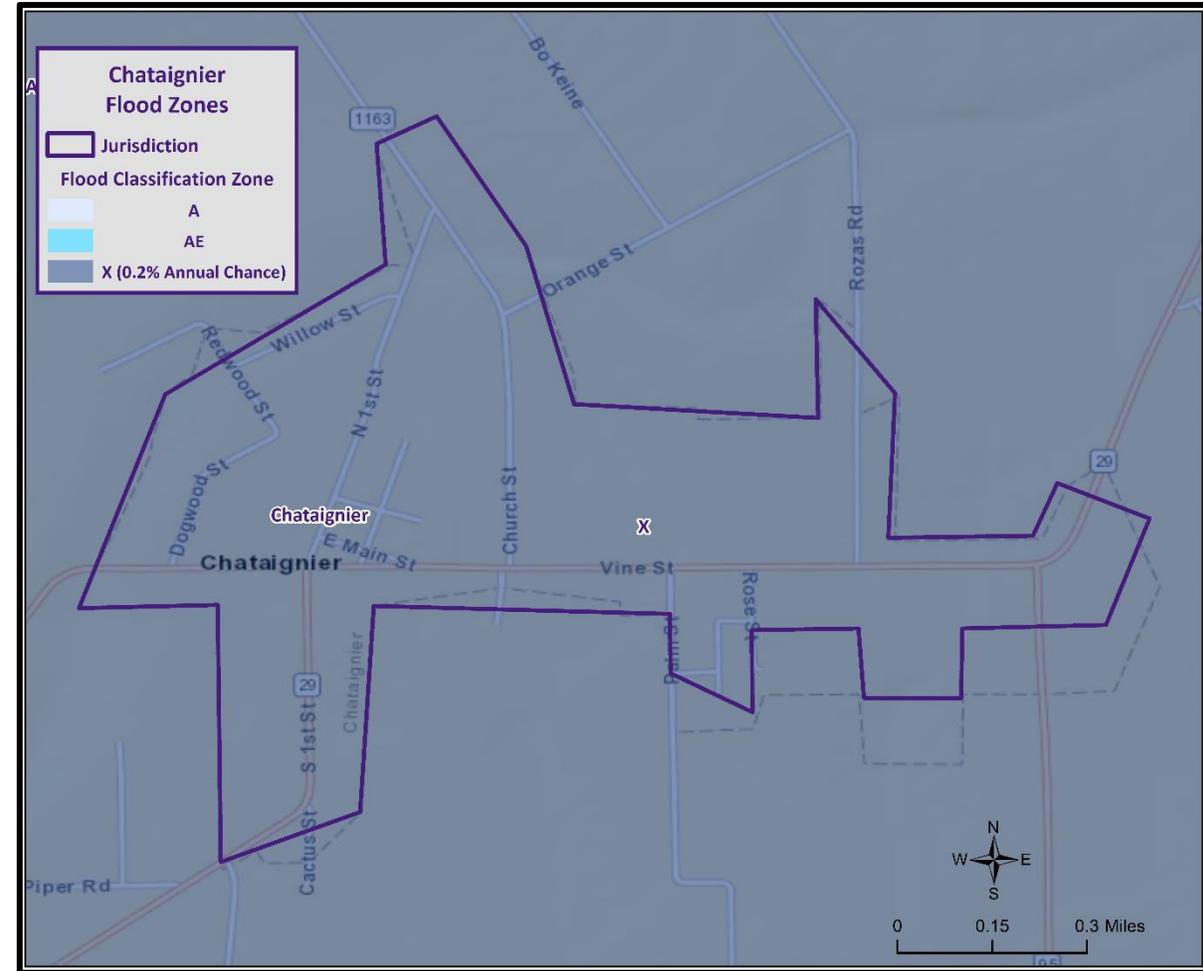
# Evangeline Parish Flood Map



# Municipal Flood Maps

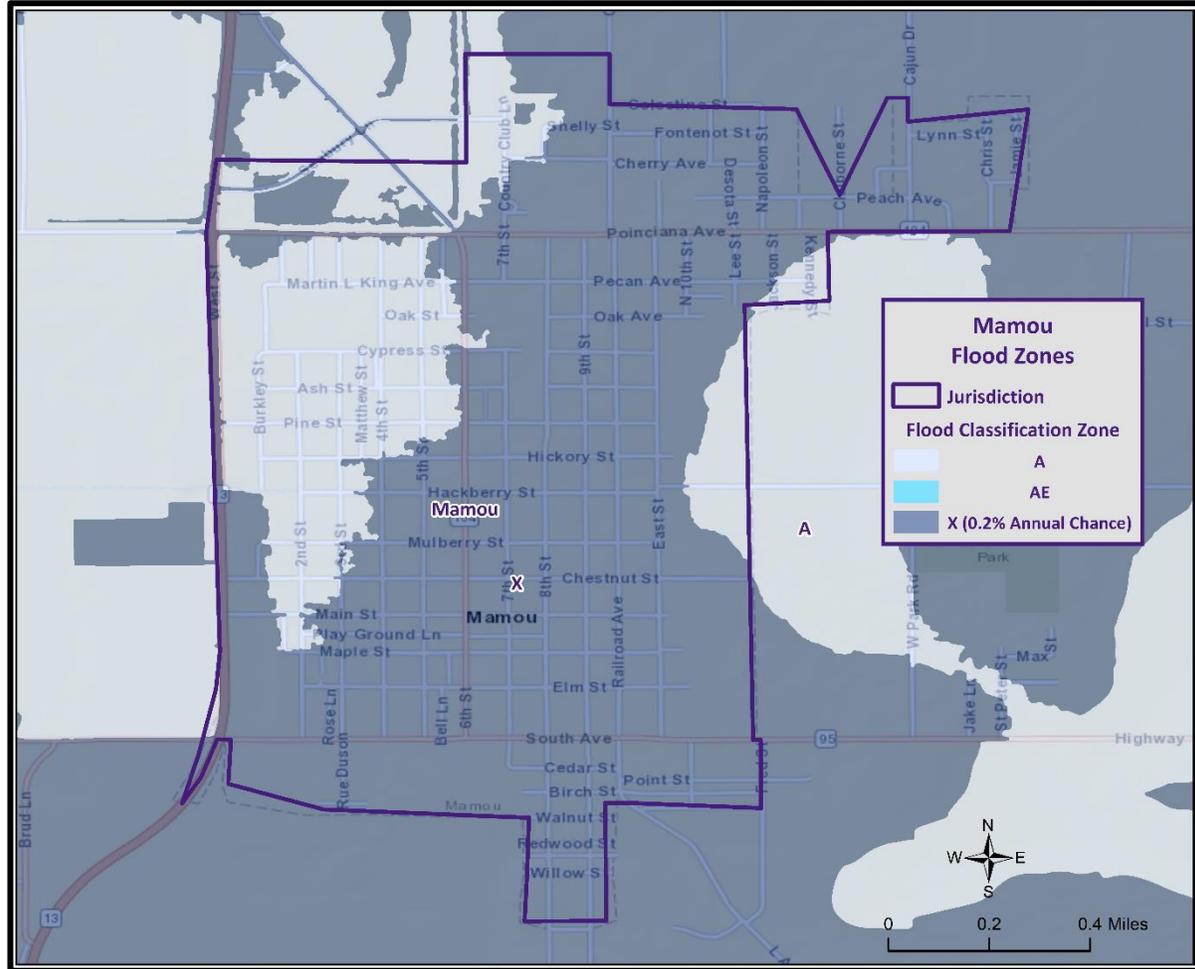


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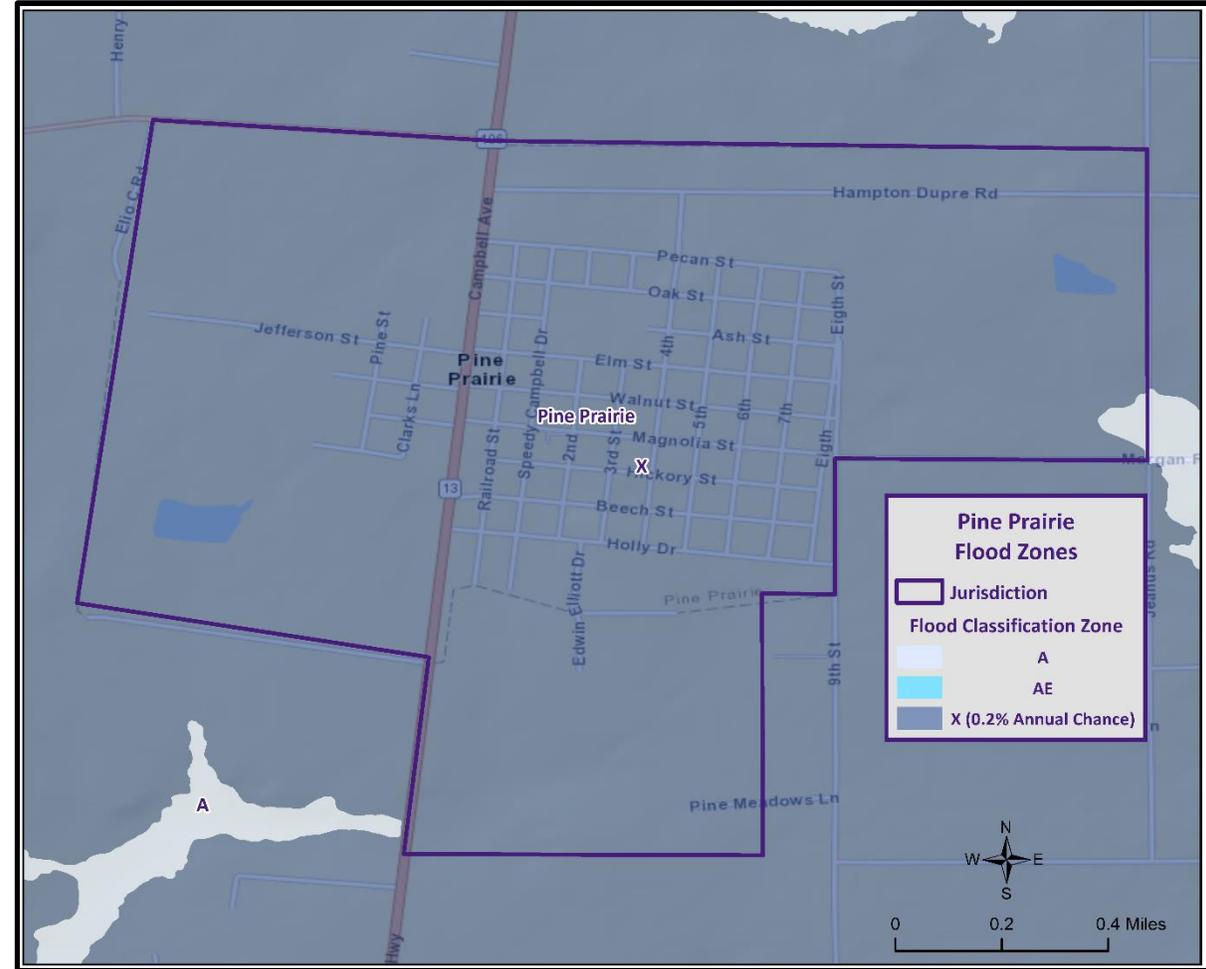


**Chataignier**

# Municipal Flood Maps

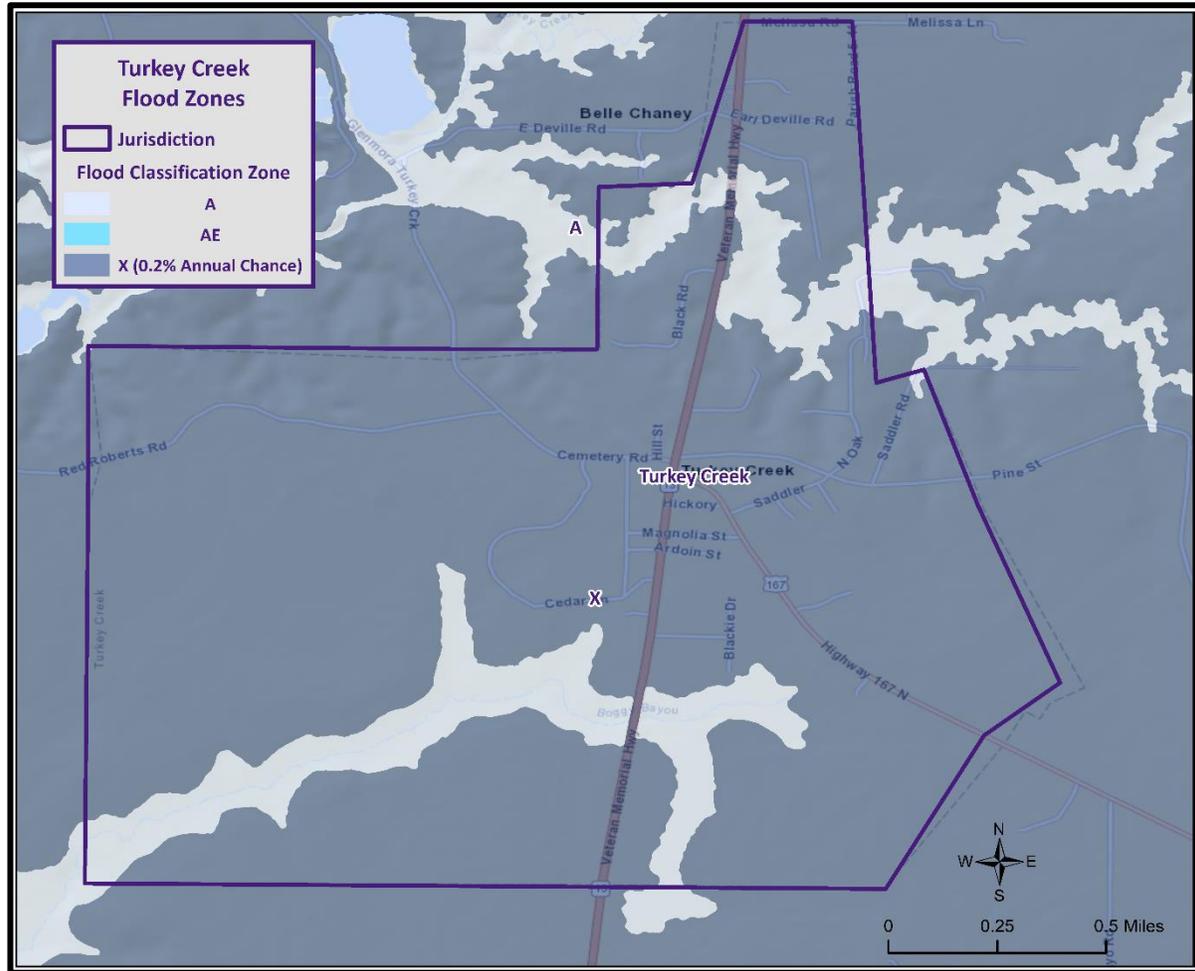


## Mamou

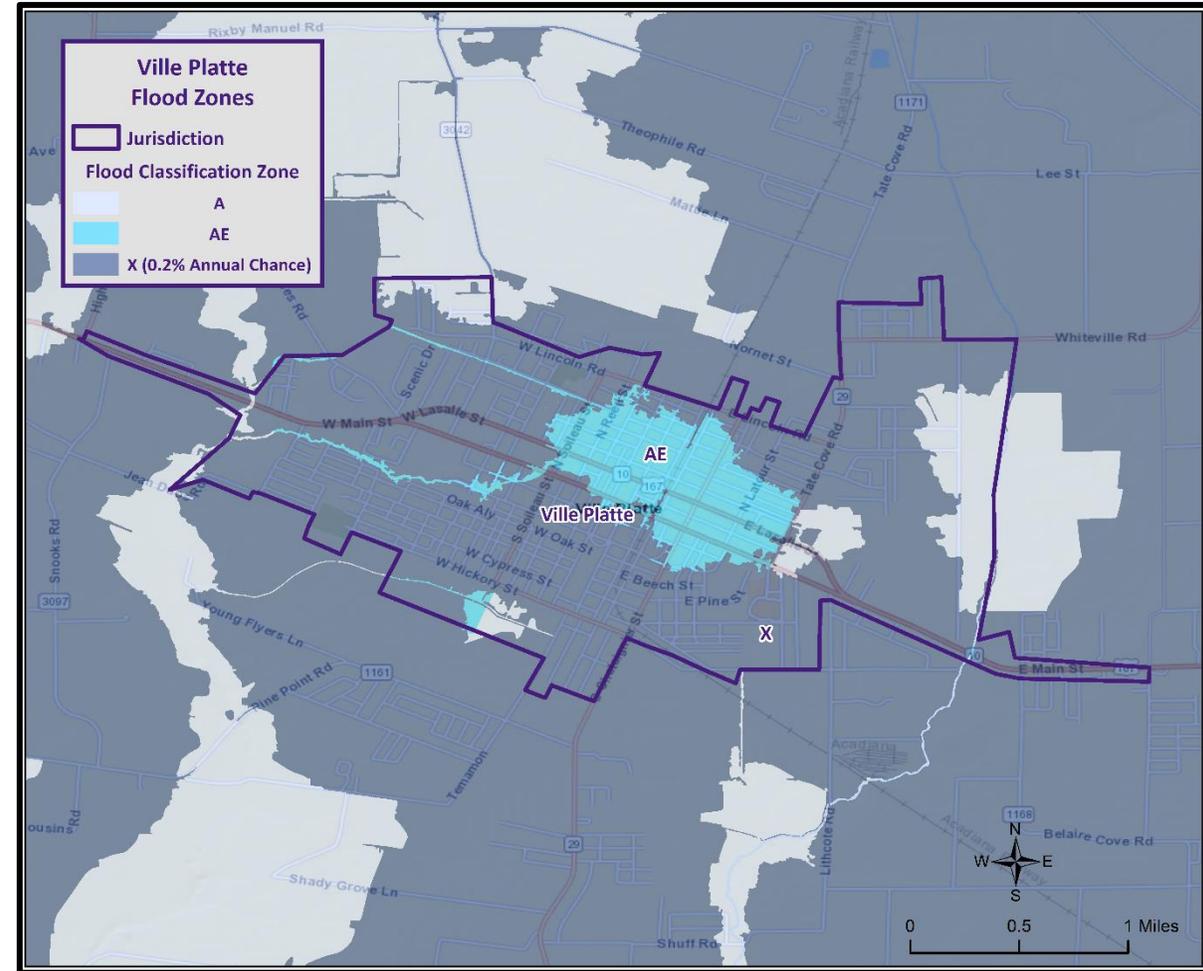


## Pine Prairie

# Municipal Flood Maps



## Turkey Creek



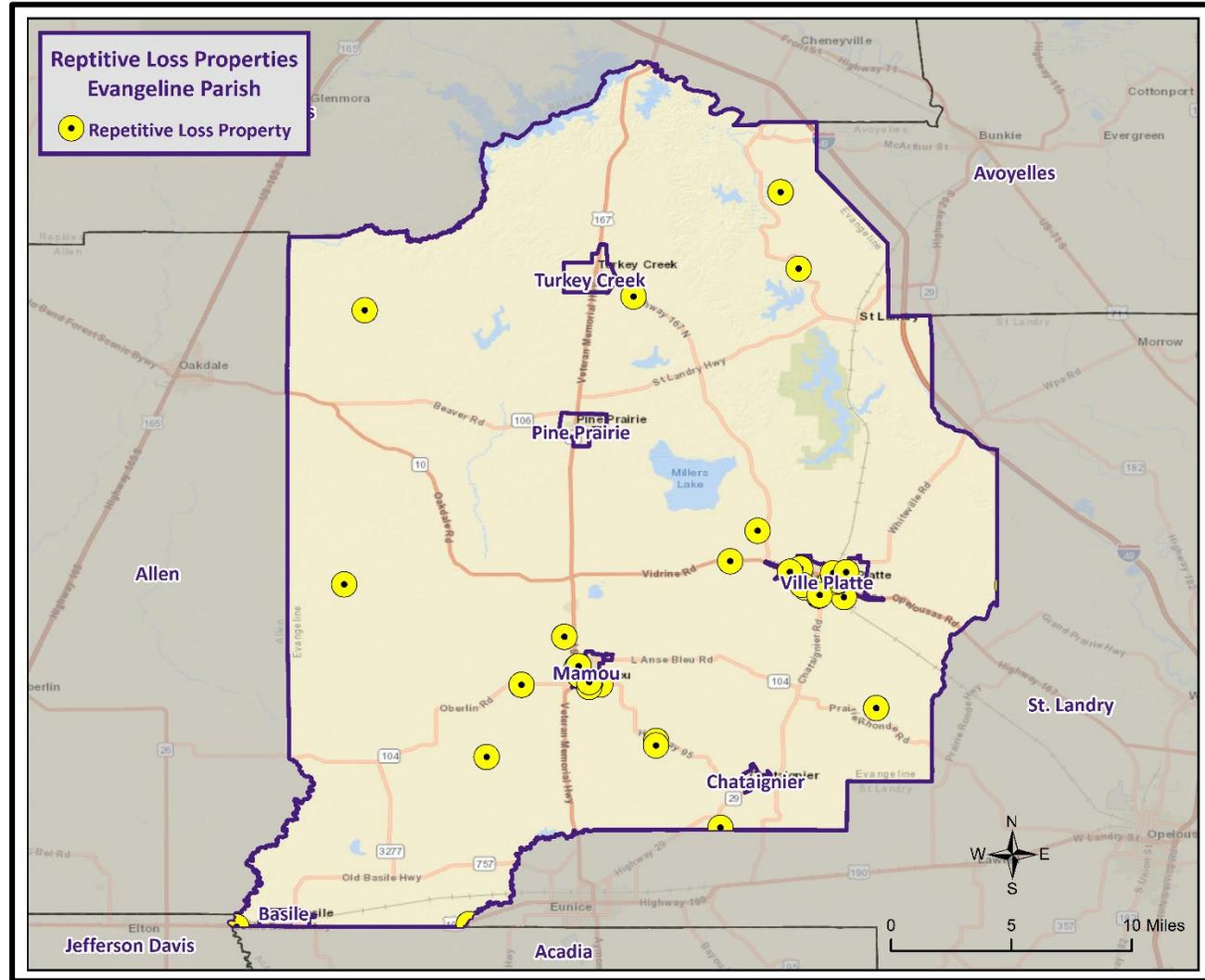
## Ville Platte

# 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



# 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.





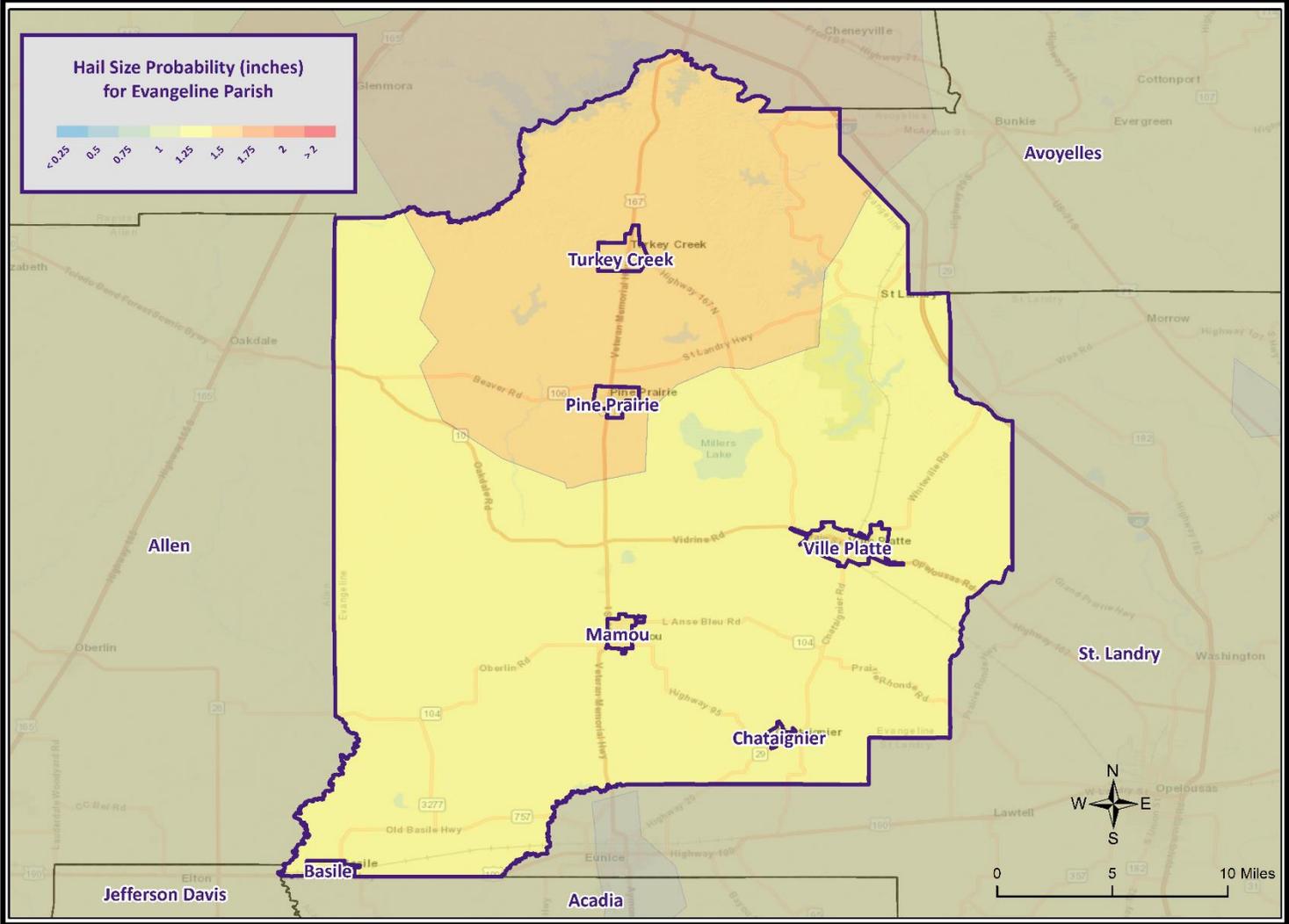
# Thunderstorms



- 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.



# Maximum Hail Size Probability



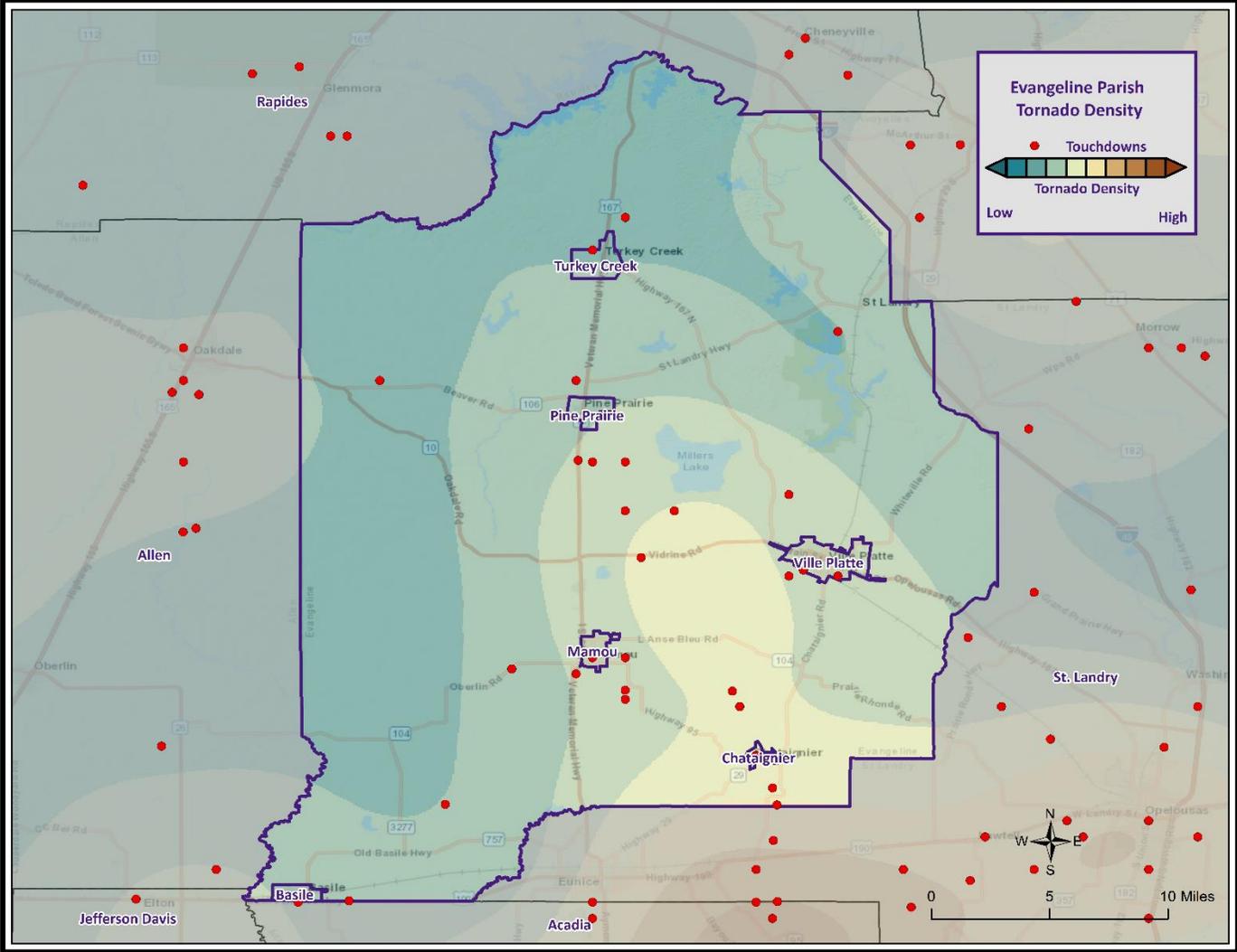


# Tornadoes

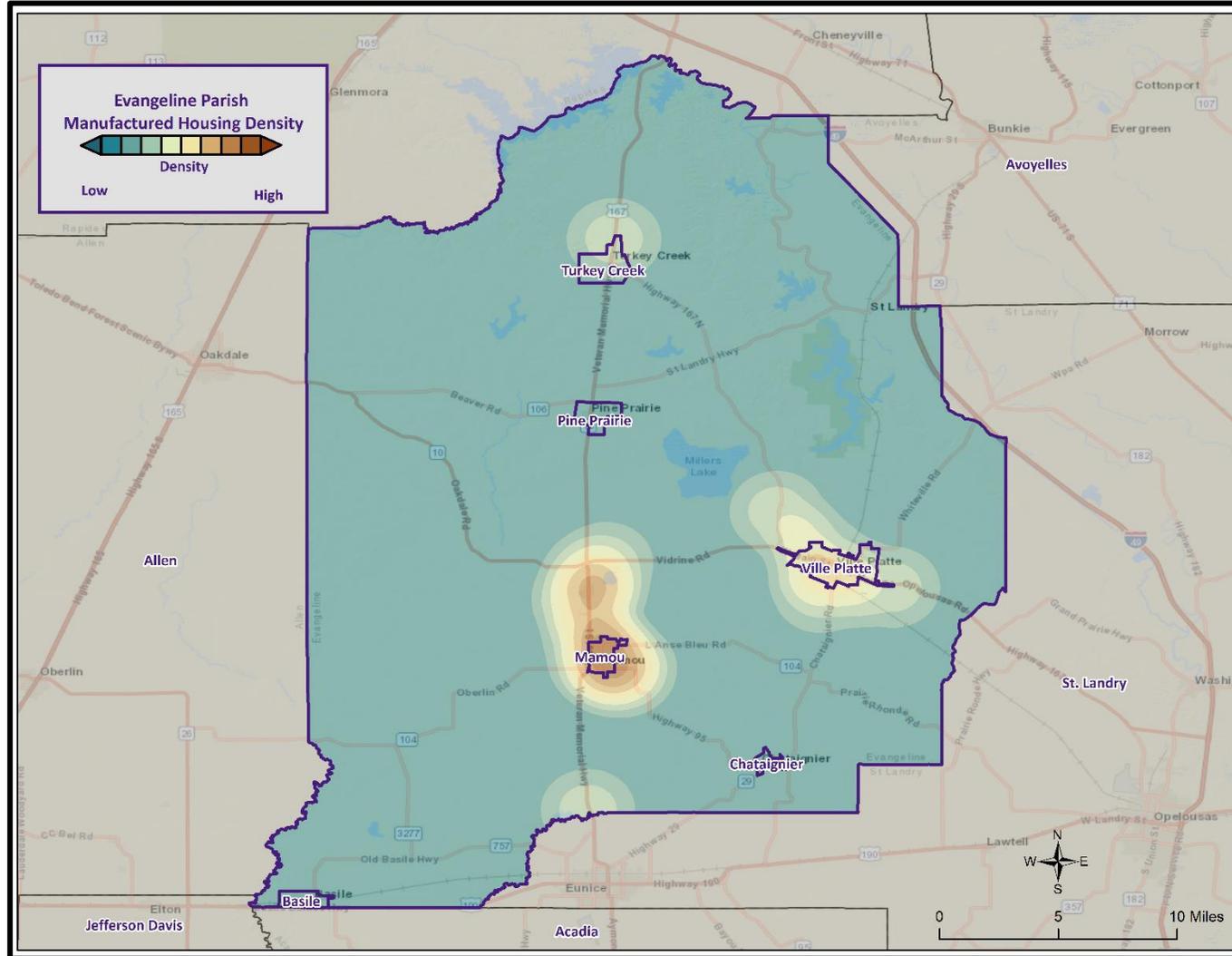
- Tornadoes are rapidly rotating funnels of wind extending between storm clouds and the ground.
- Tornadoes are the most severe storms for their size, and 70% of the world's reported tornadoes occur within the continental United States.

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 Evangeline Parish



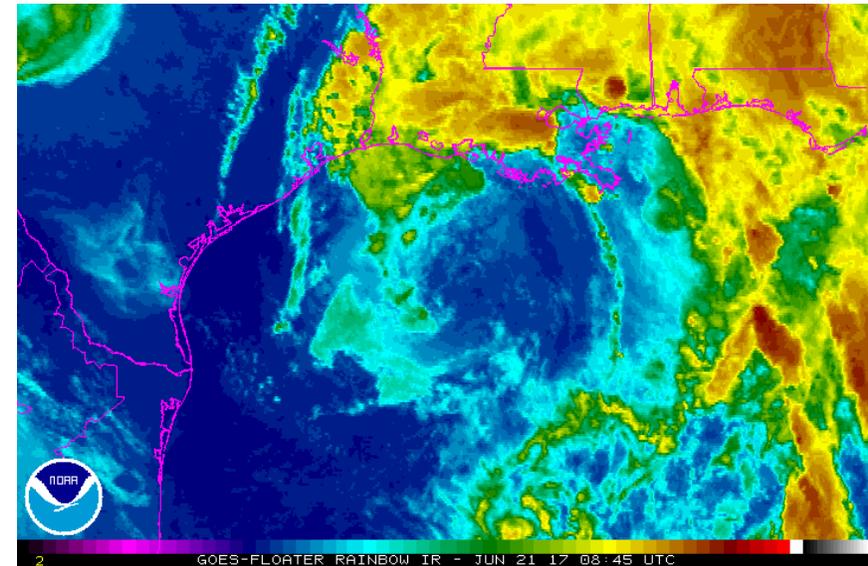
# Manufactured Home Density

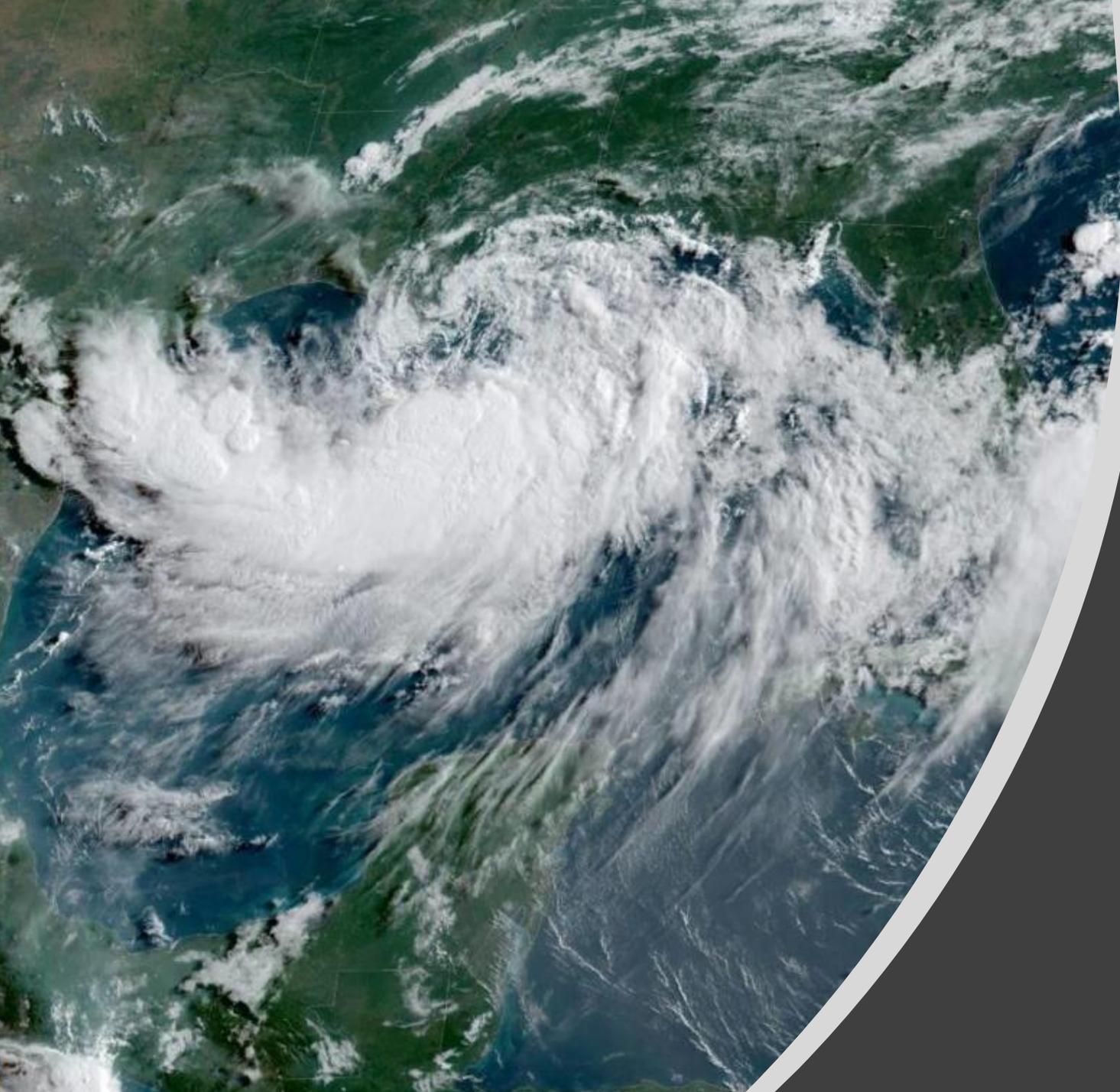


# Tropical Cyclones

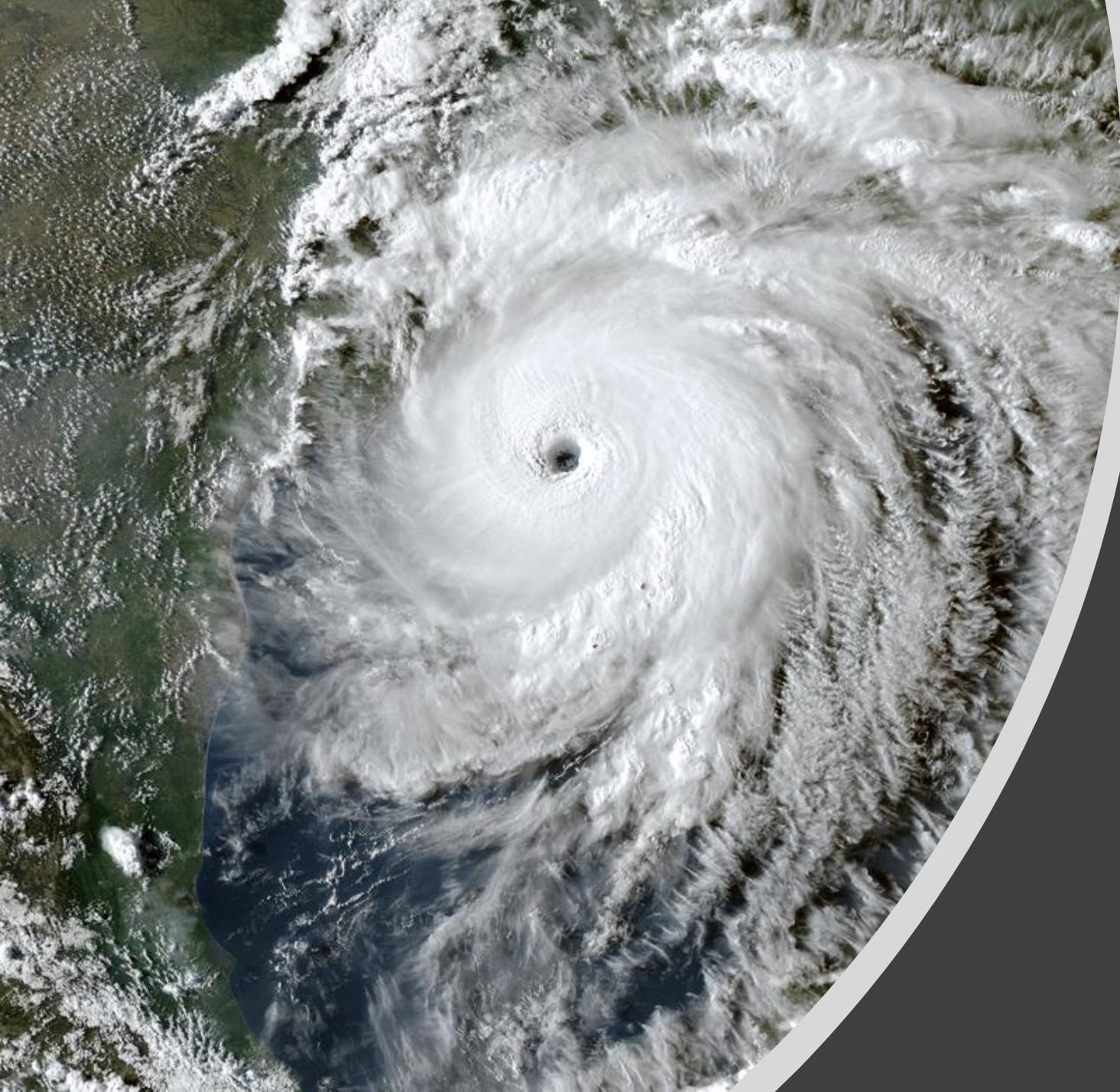
- Tropical cyclones are defined spinning, low-pressure air masses that draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes

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 Barry (2019)

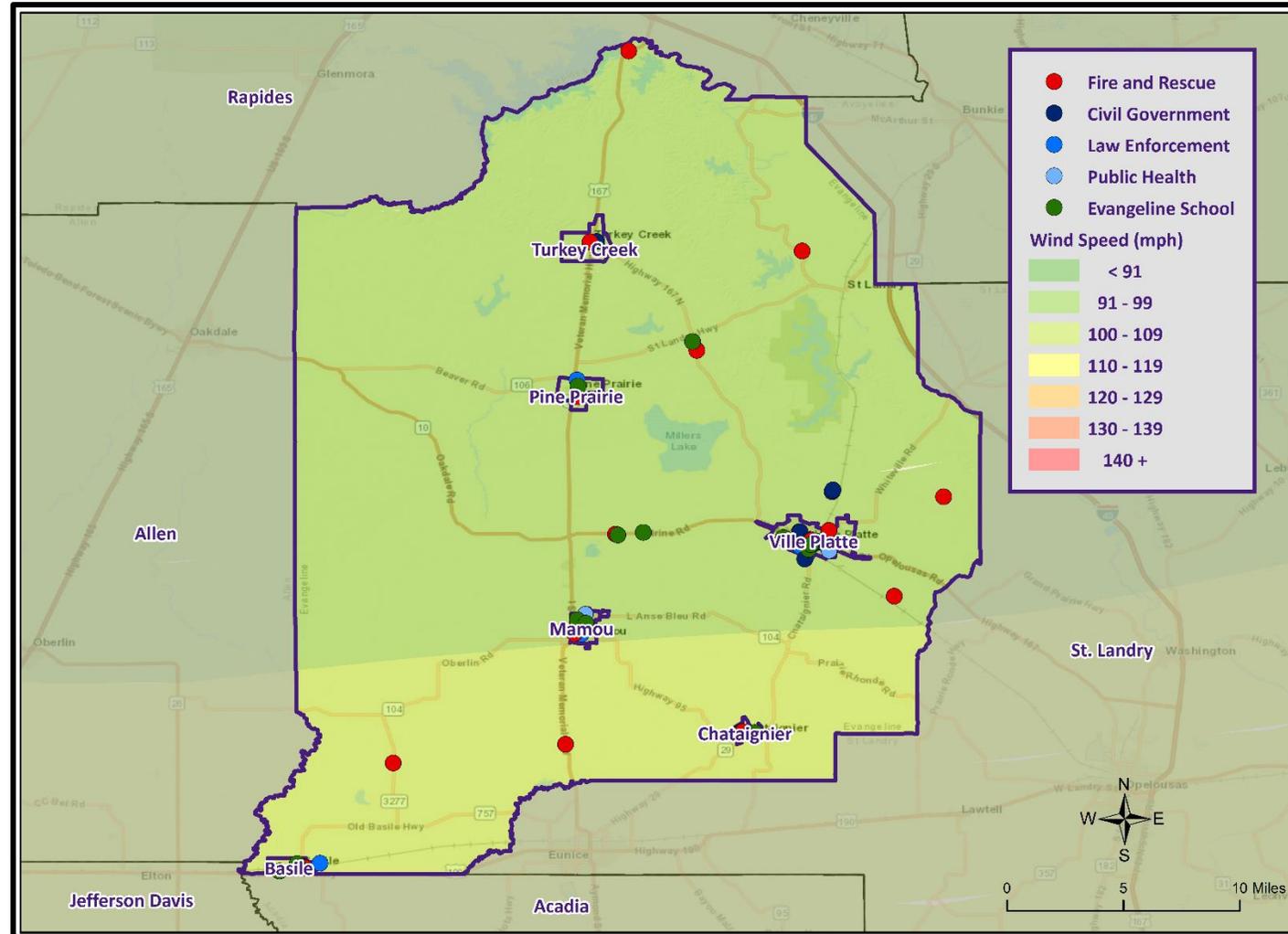


# Hurricane Laura (2020)



# Hurricane Delta (2020)

# Wind Speed Impacts on C.I.



# 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.



# Evangeline Parish Mitigation Goals

1. Identify and implement mitigation measures that will reduce the vulnerability of buildings, critical facilities, infrastructure, and populations from natural hazards
2. Improve citizen education and practice in the field of disaster preparedness and hazard mitigation
3. Support economic recovery and resiliency through the mitigation of natural hazard impacts and recovery costs
4. Improve sustainable land-use development practices by integrating hazard mitigation strategies and technologies that reduce or eliminate the potential impact of hazards



## Parish Hazard Mitigation Project Update

Evangeline Parish OHSEP/  
Evangeline Parish Police Jury Discussion

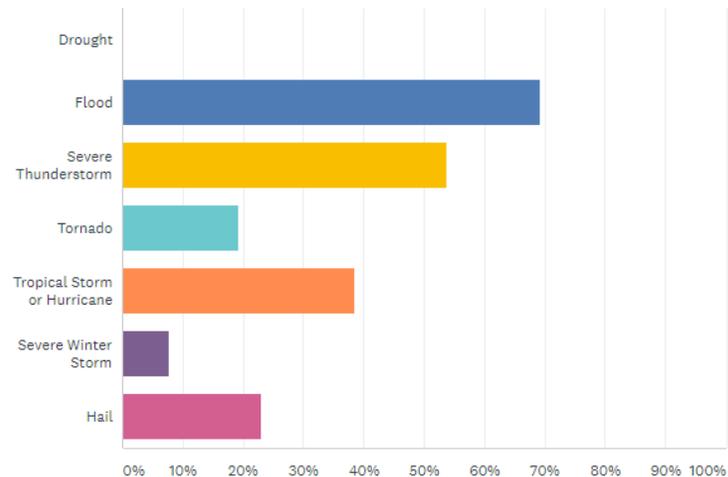
# Public Outreach Activity #1

## Hazard Mitigation Public Opinion Survey

<https://www.surveymonkey.com/r/EvangelineHM2022>

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!



**EVANGELINE PARISH PUBLIC MEETING**

**PUBLIC ACTIVITY: INCIDENT/ ISSUE QUESTIONNAIRE**

**1. HAZARD TYPE(S):**

A. DAM FAILURE  
B. DROUGHT  
C. FLOODING  
D. SINKHOLES  
E. THUNDERSTORMS  
F. TORNADOES  
G. TROPICAL CYCLONES  
H. 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 website interface for the Evangeline Parish Hazard Mitigation Plan. 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. A yellow navigation bar contains 'HAZARD MITIGATION' and a dropdown menu with 'Intro', 'Events', 'FEMA Resources', and 'Parish Plans'. The main content area is titled 'Evangeline Parish' and includes a 'PLAN DUE DATE: JUNE 14 2022' badge. A 'DEVELOPMENT STATUS' section features a progress bar with four stages: 'PLAN DEVELOPMENT' (yellow), 'PLAN REVIEW' (purple), 'PLAN ADOPTION' (purple), and 'COMPLETED' (purple). Below the progress bar, the corresponding entities are listed: 'INITIAL PLANNING COMMITTEE', 'TBD', 'TBD', and 'TBD'. A 'PARTICIPATING JURISDICTIONS' section lists several entities with radio button indicators. A calendar-style section shows two upcoming events: '2022 EVANGELINE PARISH KICKOFF' on May 17 and '2023 EVANGELINE PARISH INITIAL PLANNING COMMITTEE MEETING' on Feb 9. A large purple button labeled 'DOWNLOAD FINAL PLAN' is positioned to the right. The 'PREVIOUS PLANS' section for the year 2016 features three download buttons for 'EVANGELINE HM PLAN', 'EVANGELINE PARISH KICK OFF MEETING', and 'EVANGELINE PARISH PUBLIC MEETING'. At the bottom, a 'Survey' section has a purple button labeled 'Access Survey'. The LSU logo is at the very bottom center.

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

# Contact Us

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