



St. Landry Parish Hazard Mitigation Plan Update Public Meeting

Opelousas, LA
June 30, 2022



Introductions

- **St. Landry Parish OHSEP Director/Planning Committee**
- **Stephenson Disaster Management Institute (SDMI) at LSU**
 - Chris Rippetoe – Hazard Mitigation Program Manager
 - Jessie Jenkins Kirkpatrick – Emergency Management Specialist
- **Governor's Office of Homeland Security and Emergency Preparedness**
 - Jeffrey Giering – State Hazard Mitigation Officer
 - Marion Pearson – Hazard Mitigation Planner



Agenda



Introductions



**Hazard Mitigation
Overview**



Planning Process



**Risk Assessment
Maps**



**Public Outreach
Activities**





The Hazard Mitigation Plan: What is in it for us?



Hazard Mitigation Is....

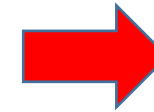
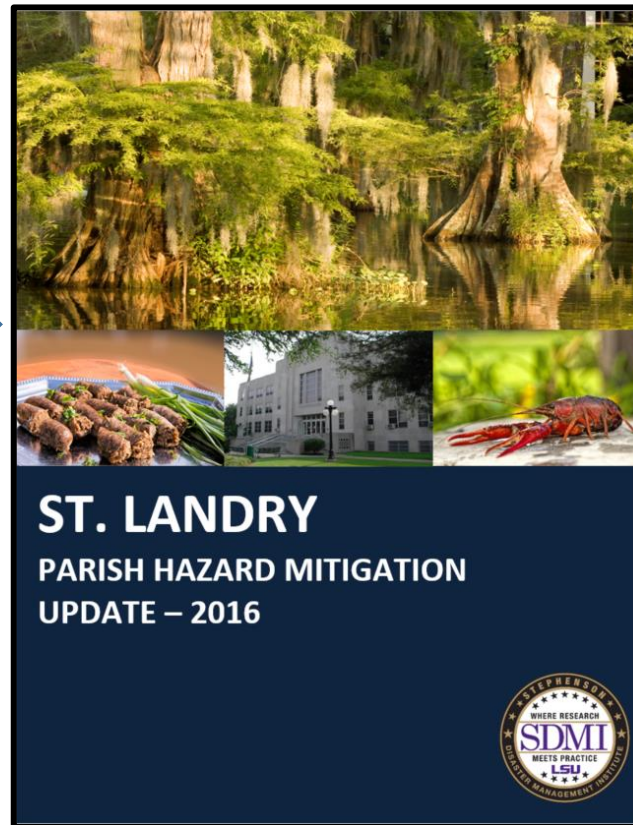
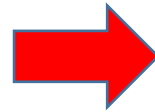
Any action taken to reduce long term risk to life and property;

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*;

Implementation of mitigation actions leads to building stronger, safer and smarter!

Why Are We Here?



STATE OF LOUISIANA

This document has been prepared by:

Louisiana Governor's Office of Homeland Security
and Emergency Preparedness
7667 Independence Blvd.
Baton Rouge, LA 70806

With Support From:

Department of Geography and Anthropology
Department of Construction Management
Louisiana State University
Baton Rouge, LA 70803

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New Orleans, LA 70148

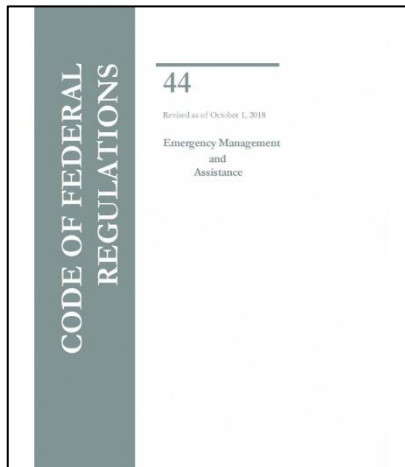


Why Are We Required To Have A Hazard Mitigation Plan?

- Disaster Mitigation Act of 2000 (DMA 2000)

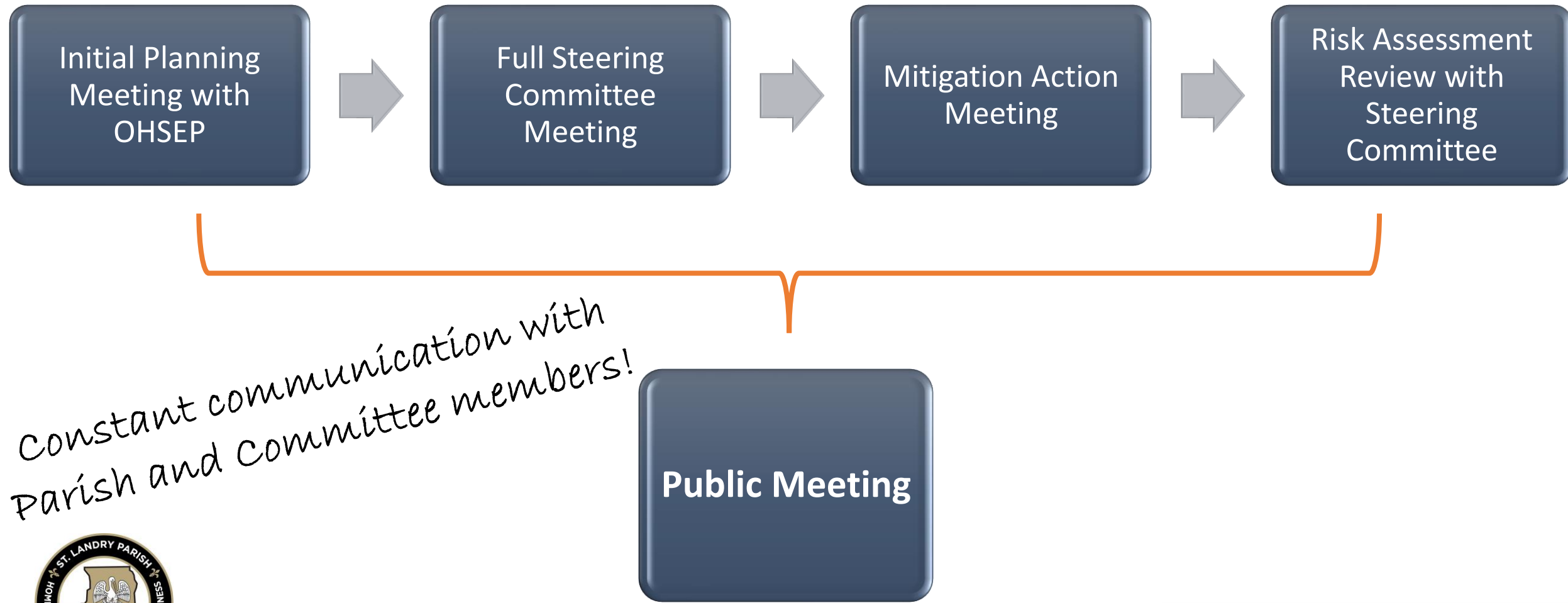
Section 322 of the Act specifically addresses mitigation planning and requires state and local governments to prepare multi-hazard migration plans as a precondition for receiving FEMA mitigation project grants.

- Meet federal requirements of Title 44 Code of Regulations (CFR) §201.6 for approval and eligibility to apply for FEMA Hazard Mitigation Assistance grant programs.

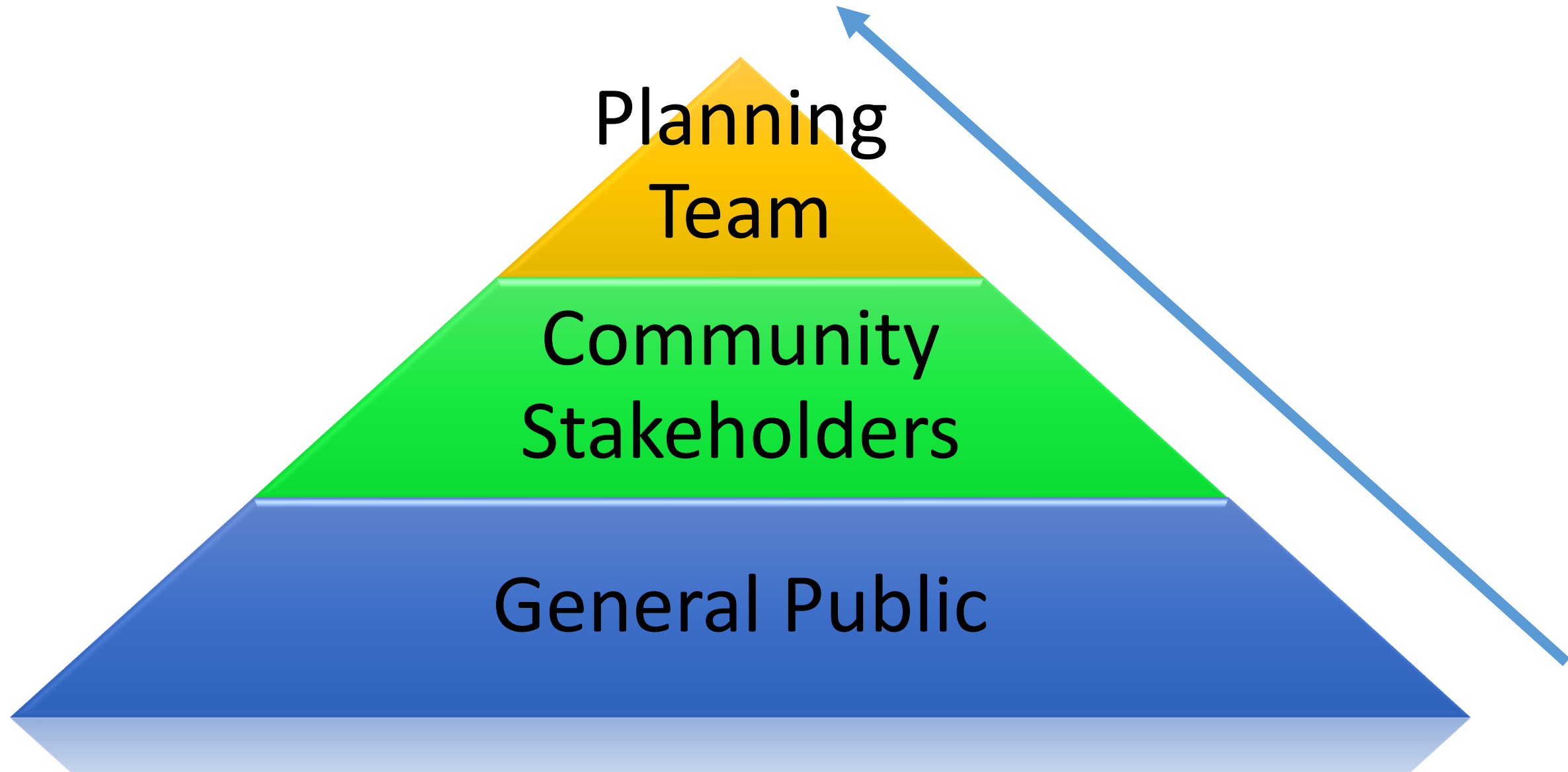


- The approved St. Landry Parish Hazard Mitigation Plan will allow for distribution of HM funding following future disasters.

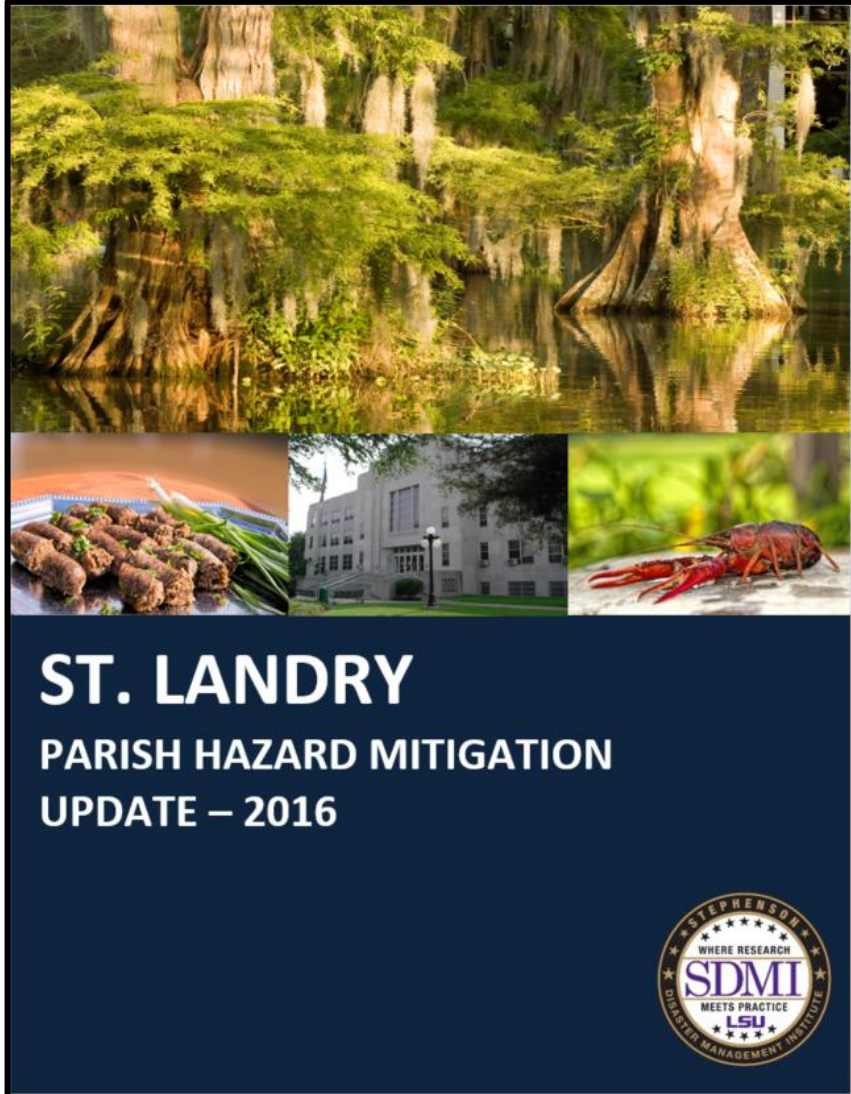
Planning Process to Date



Collaborative Planning Approach



Planning Development



Plan Layout

- **Section 1: Introduction**
 - Update parish description
 - Update demographic and economic information
- **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 Risks
- Any Newly Identified Risks
- Prevalent Hazards
- Previous Occurrences
- Probability of Future Events
- Assets Inventory
- Essential Facilities
- Hazard Impact
- Future Development
- Future Hazard Impacts
- Zoning and Land Use
- Hazard Profiles



Hazard Identification and Risk Assessment

- Drought
- Flooding
- Thunderstorms
- Tornadoes



- Tropical Cyclones
- Wildfires
- Winter Weather

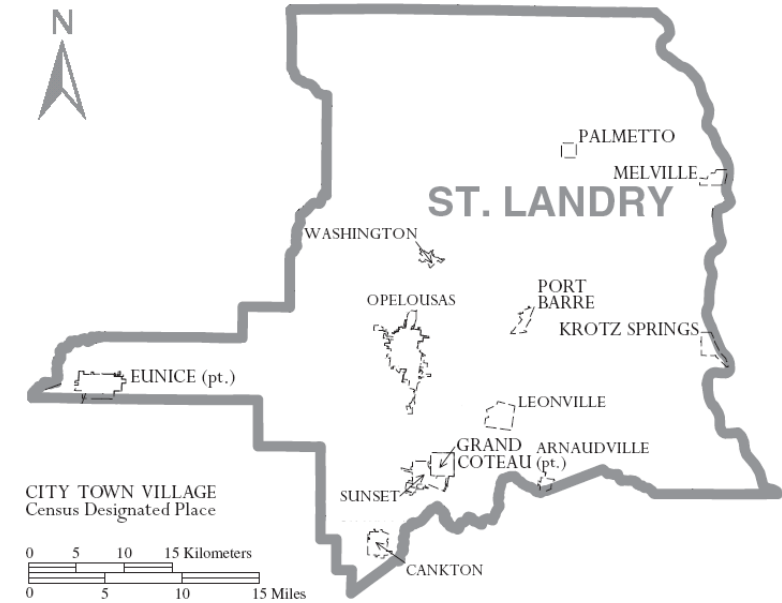


Risk Matrix for St. Landry Parish

| Hazard | Probability | Impact | Spatial Extent | Warning Time | Duration | Overall Risk |
|---------------------------|-------------|--------|----------------|--------------|----------|--------------|
| Drought | 3 | 2 | 4 | 2 | 3 | 2.8 |
| Flooding | 3 | 4 | 3 | 4 | 3 | 3.4 |
| Thunderstorms - Hail | 4 | 2 | 3 | 3 | 1 | 2.7 |
| Thunderstorms - Lightning | 3 | 2 | 2 | 3 | 1 | 2.25 |
| 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 |
| Wildfires | 1 | 3 | 4 | 1 | 2 | 2.25 |
| Winter Storms | 3 | 2 | 2 | 4 | 2 | 2.55 |

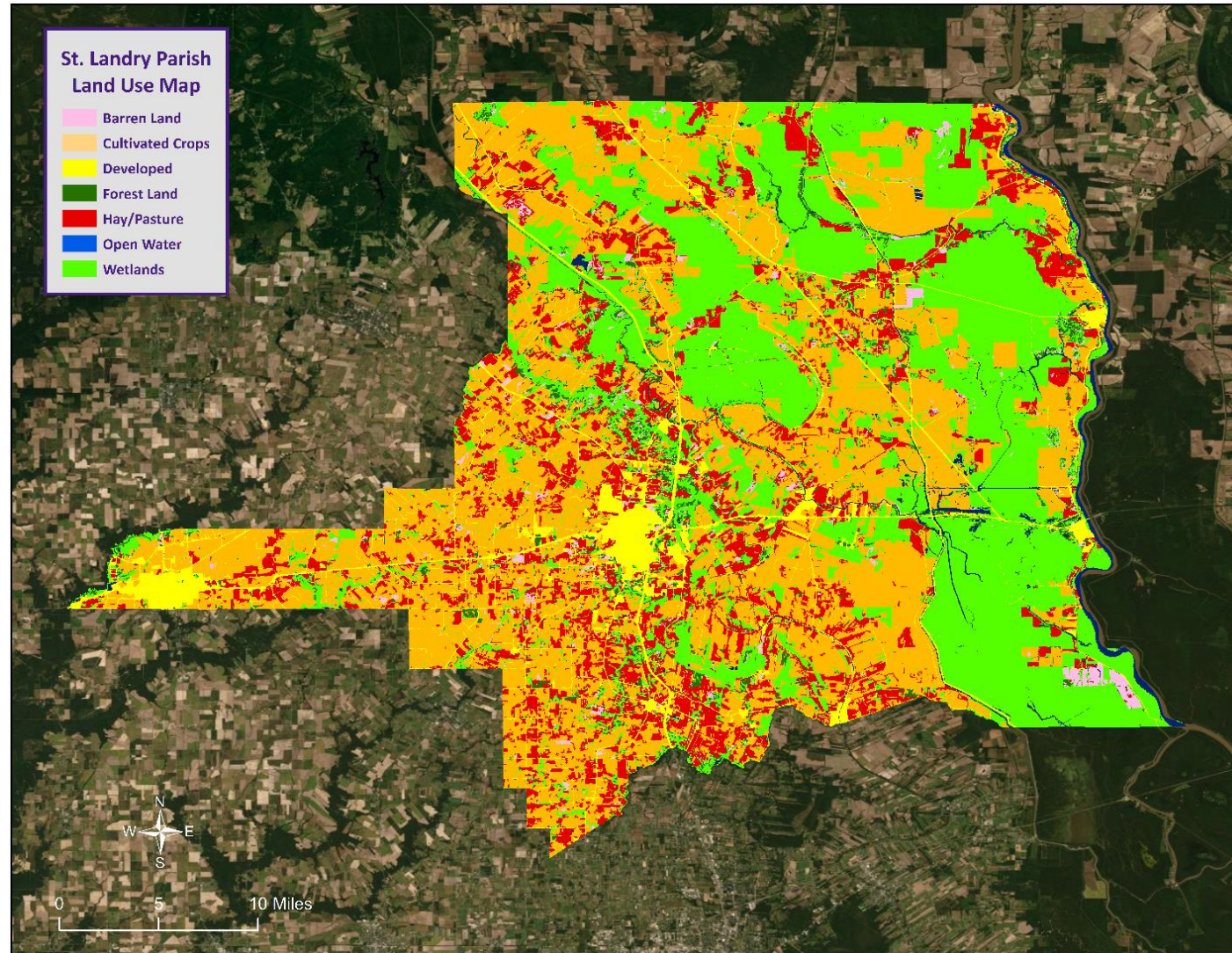
| Risk Factor | PRI Range |
|---------------|------------|
| High Risk | 2.5 to 4.0 |
| Moderate Risk | 2.0 to 2.4 |
| Low Risk | 0 to 1.9 |



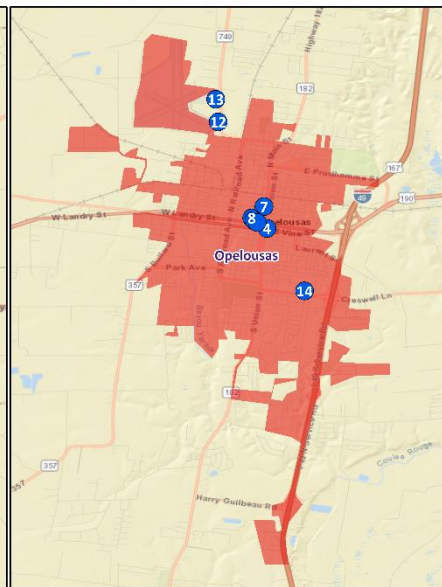
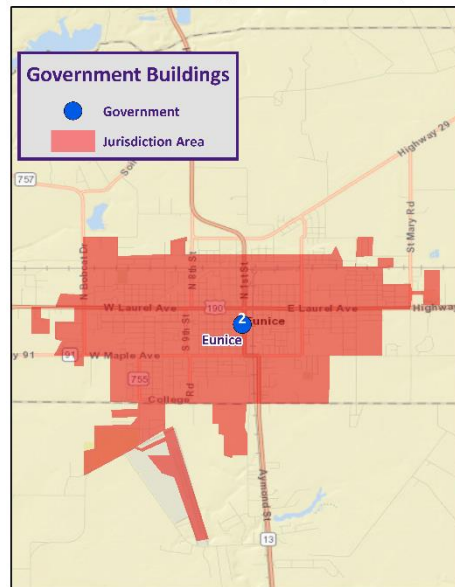
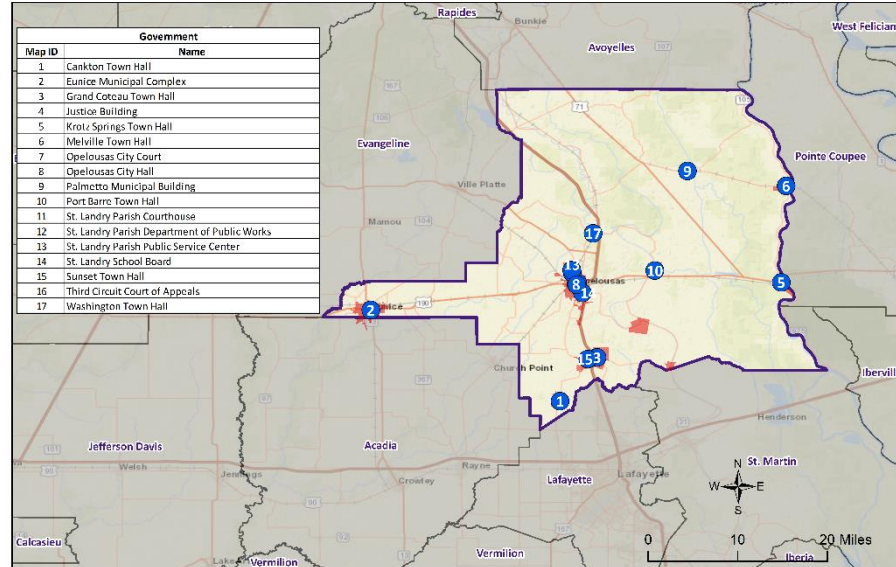


Risk Assessment Maps

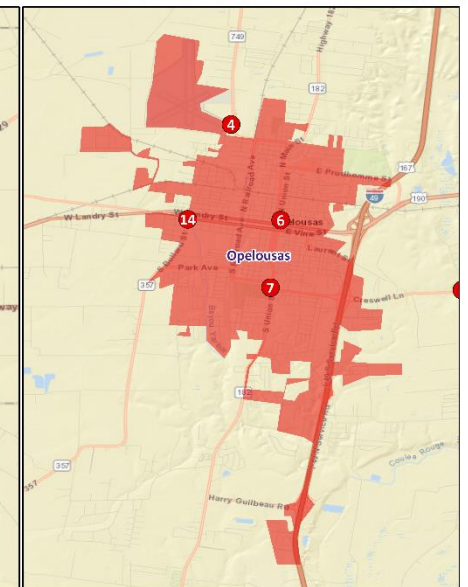
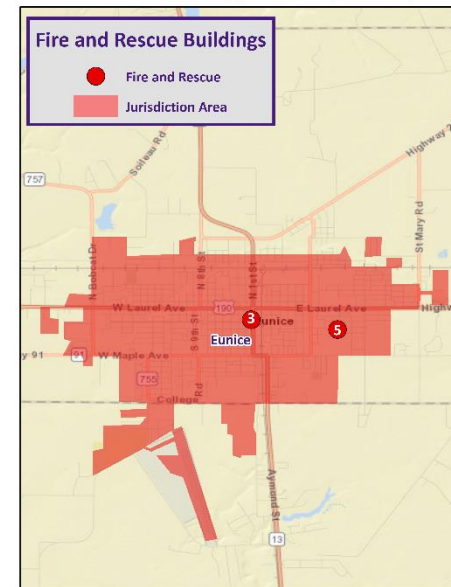
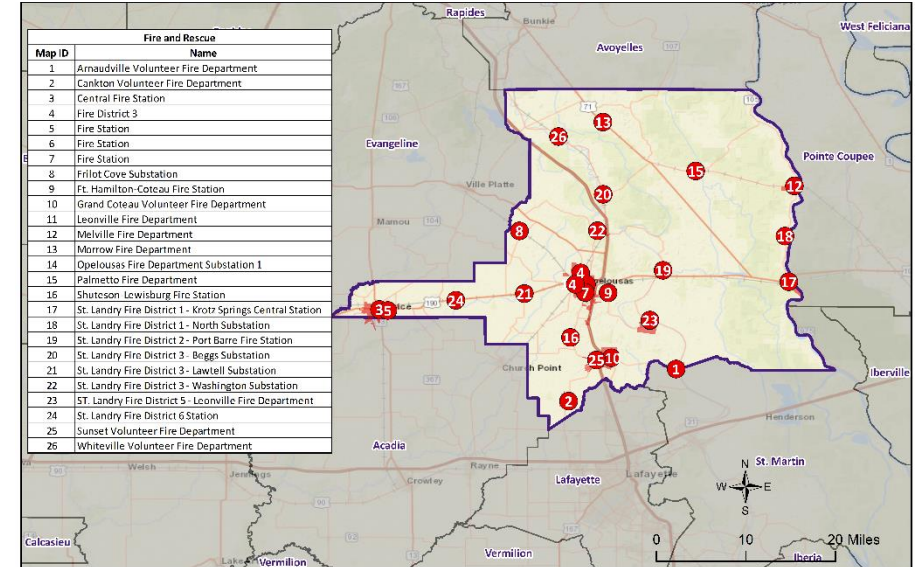
St. Landry Parish Land Use



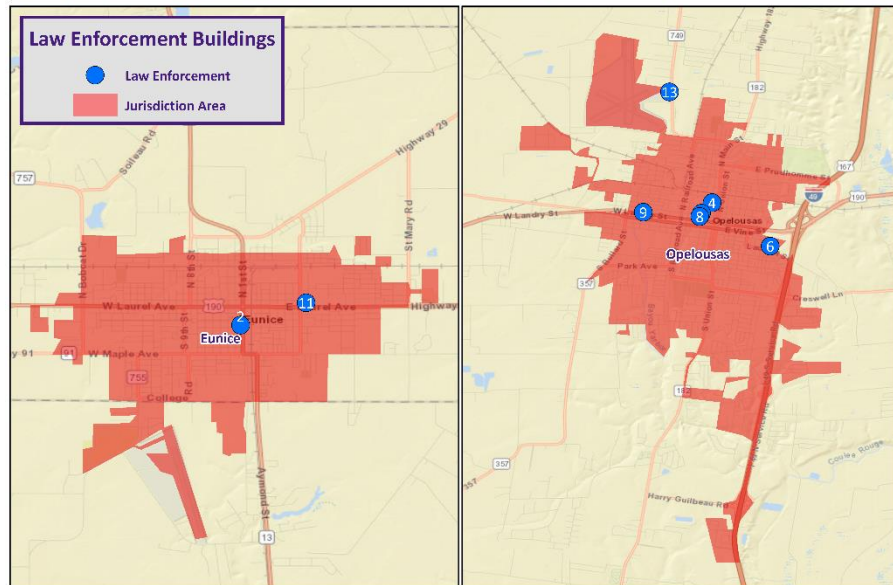
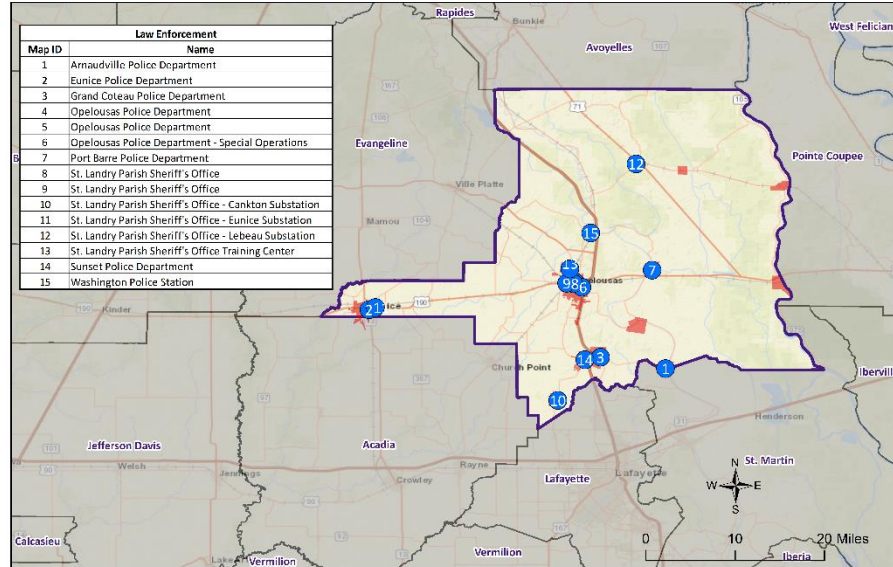
Critical Facilities: Civil Government



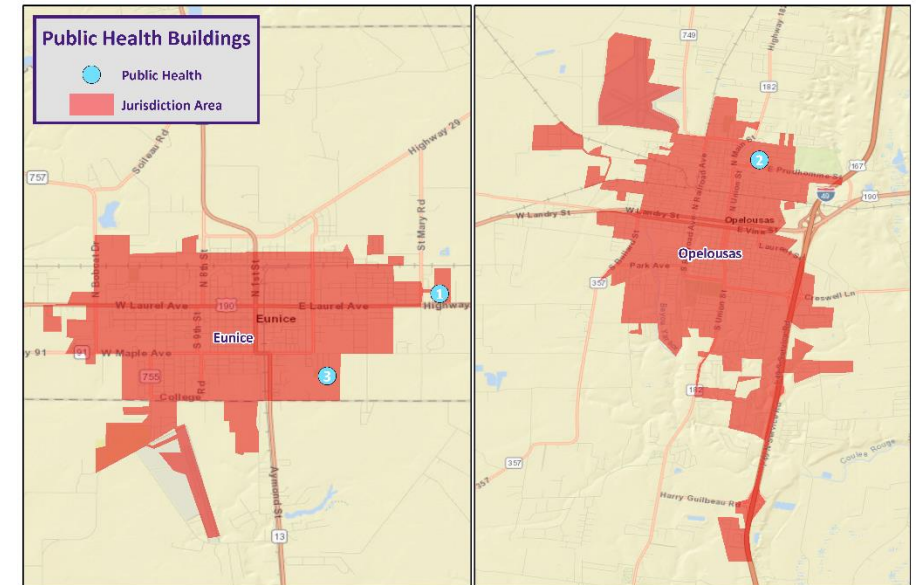
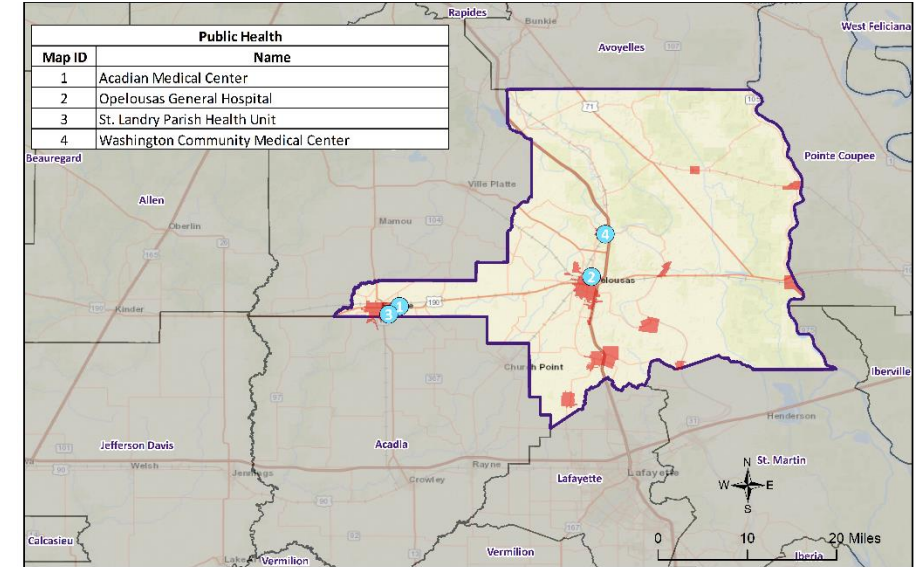
Critical Facilities: Fire & SAR



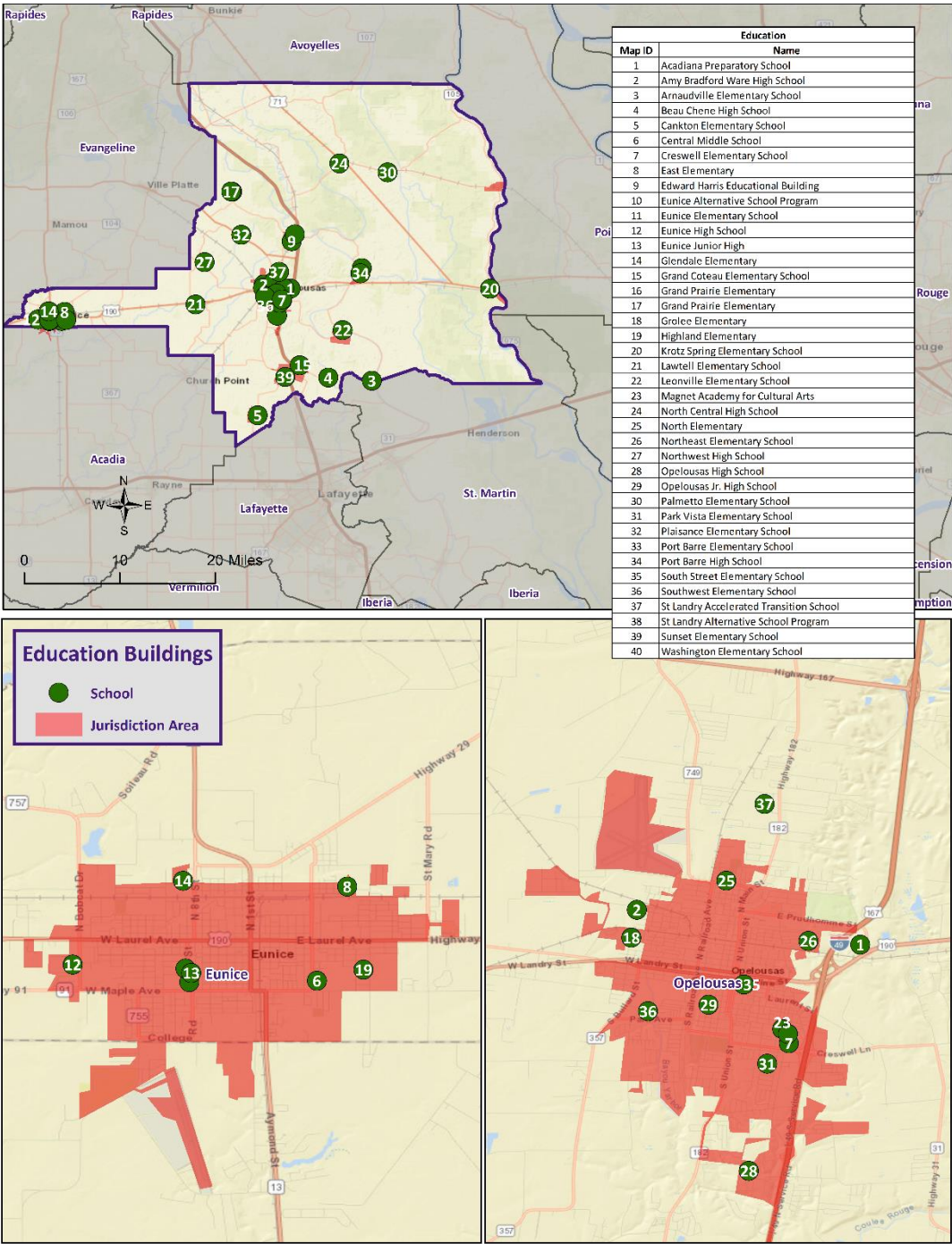
Critical Facilities: Law Enforcement



Critical Facilities: Public Health



Critical Facilities: Education



Drought



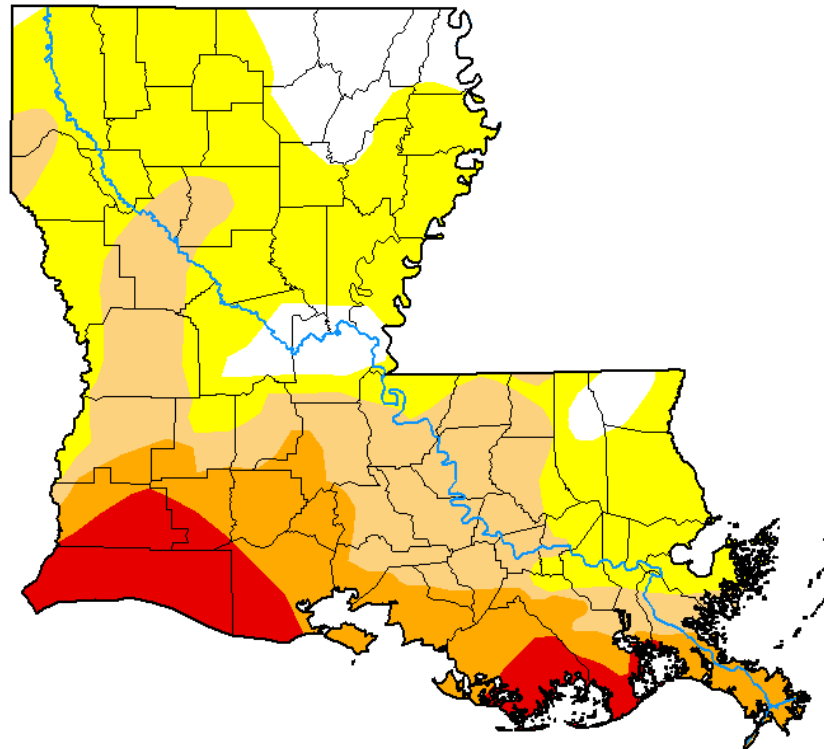
- A drought is a deficiency in water availability over an extended period of time, caused by precipitation totals and soil water storages that do not satisfy the environmental demand for water either by evaporation or transpiration through plant leaves.
- There are four classes of drought:
 - ✓ Meteorological 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









Drought Monitor

U.S. Drought Monitor Louisiana

June 21, 2022
(Released Thursday, Jun. 23, 2022)
Valid 8 a.m. EDT



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:

Adam Hartman
NOAA/NWS/NCEP/CPC



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.”

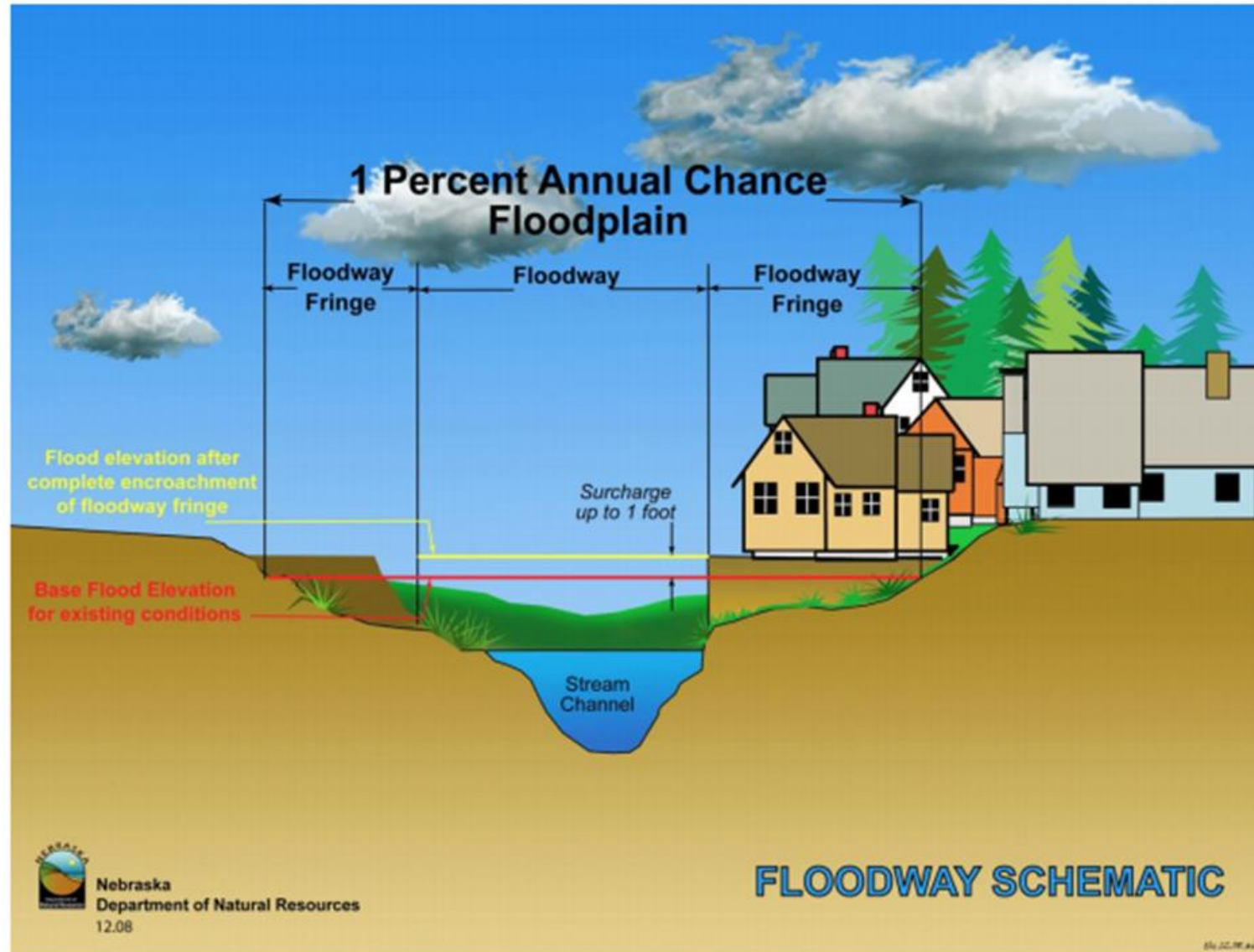
Flooding

Types of flooding may include the following:

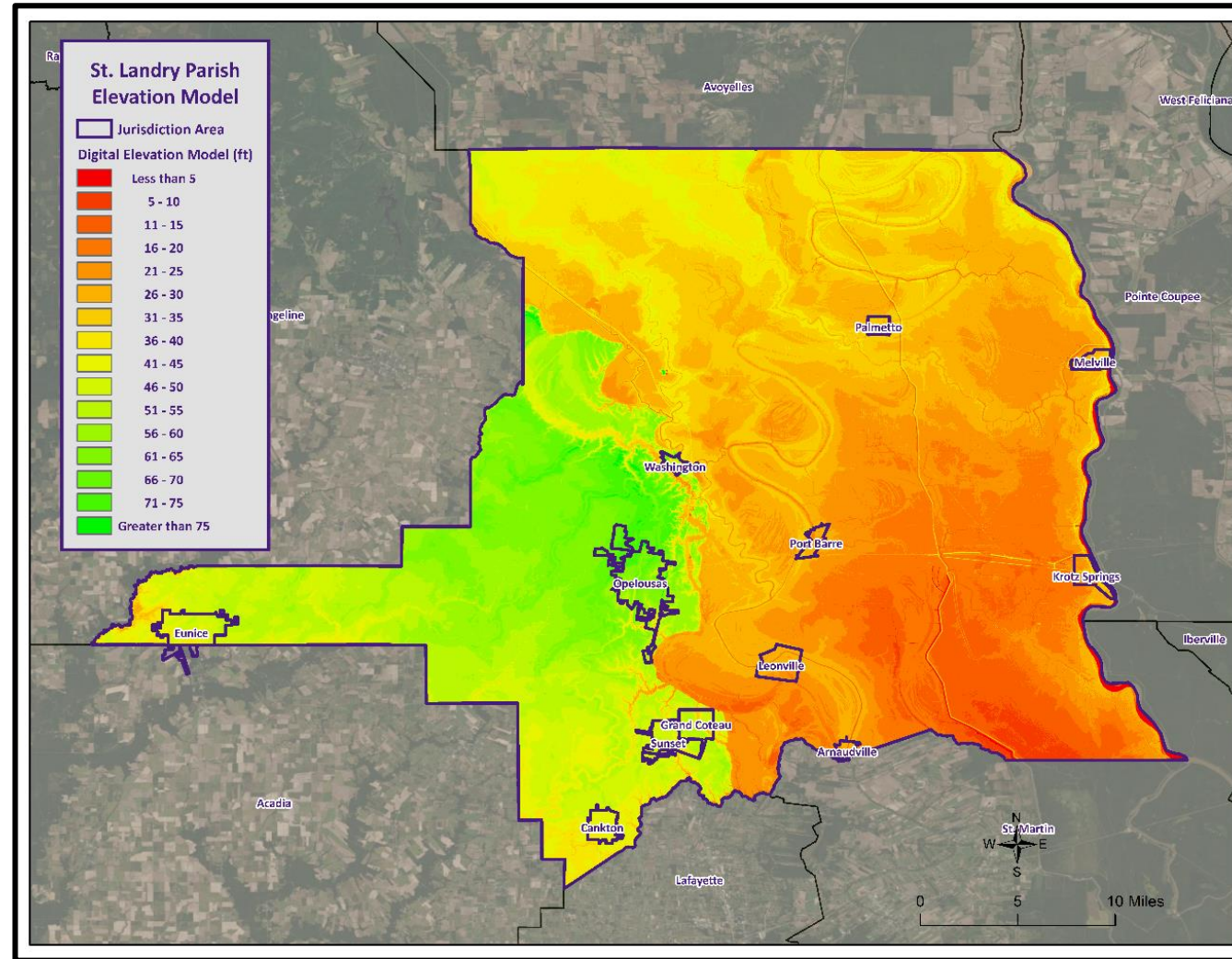
- Riverine
- Flash
- Ponding
- Backwater
- Urban
- Coastal



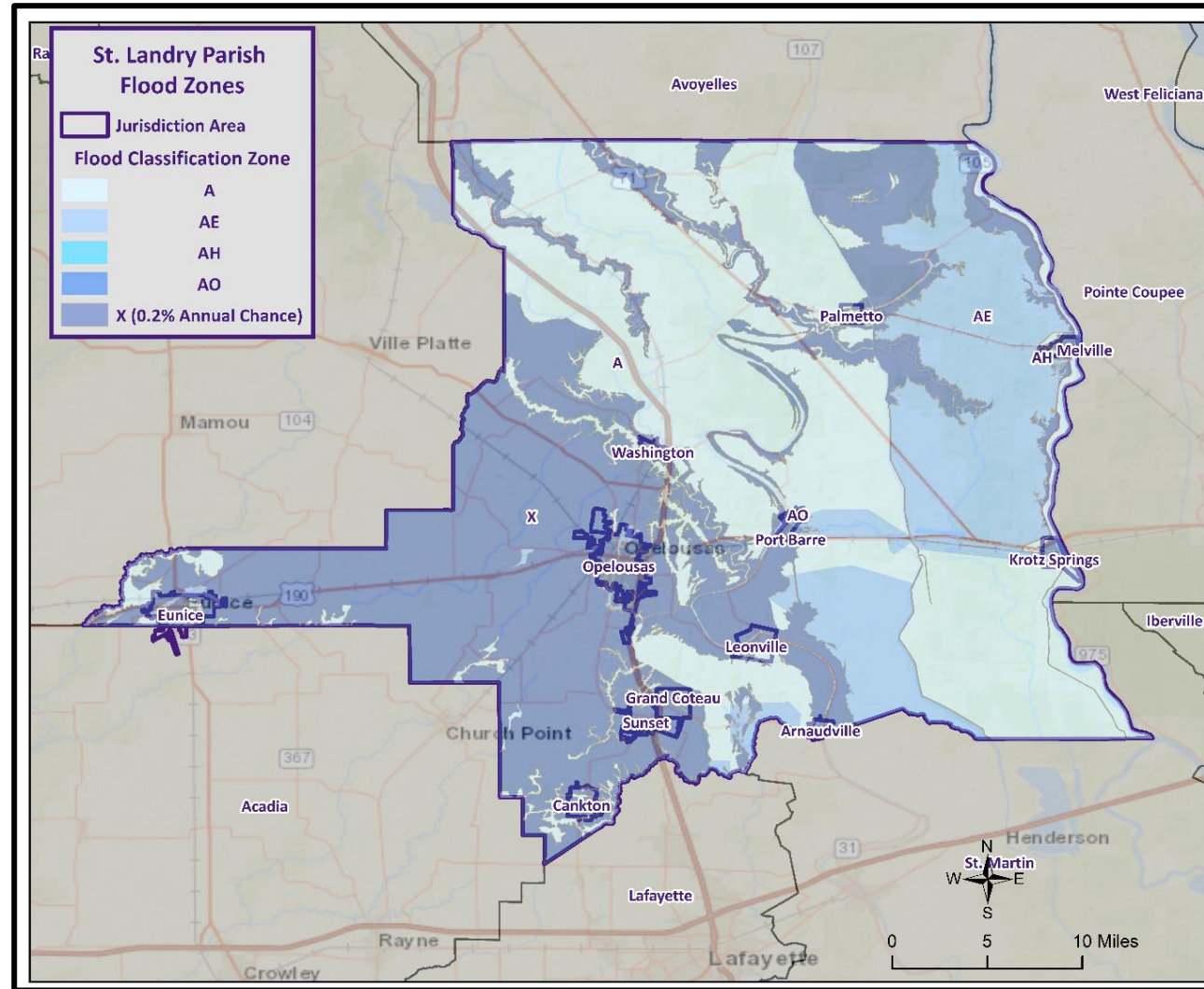
Floodway Diagram



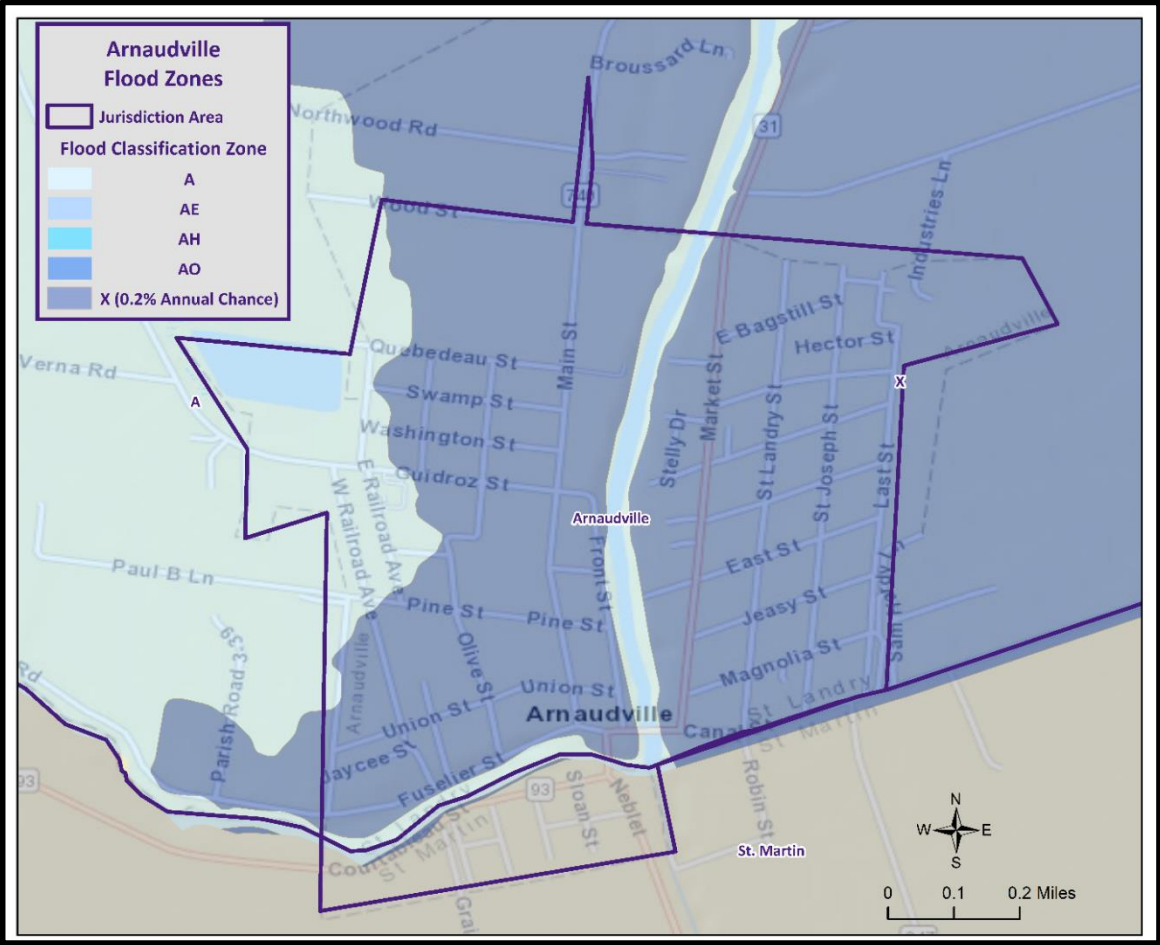
Digital Elevation Model



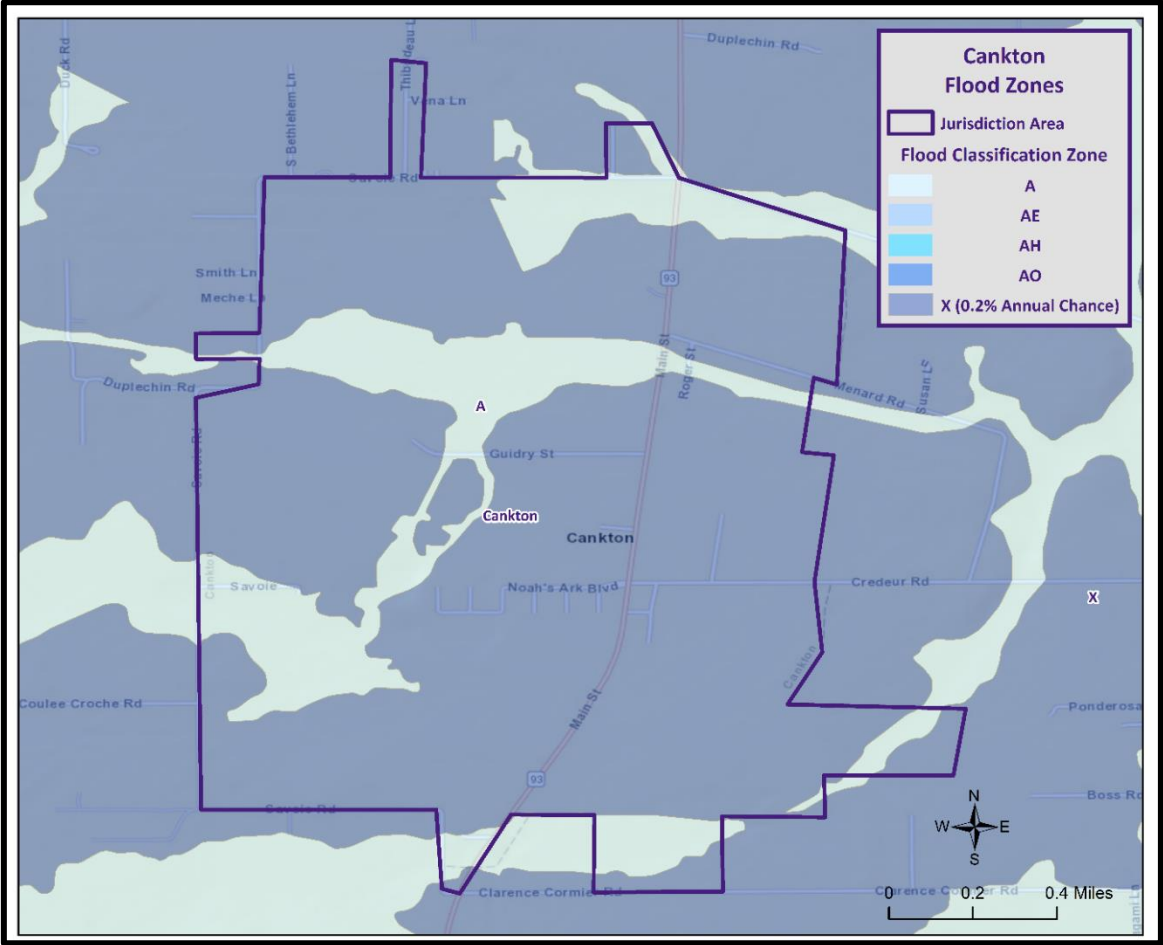
St. Landry Parish Flood Map



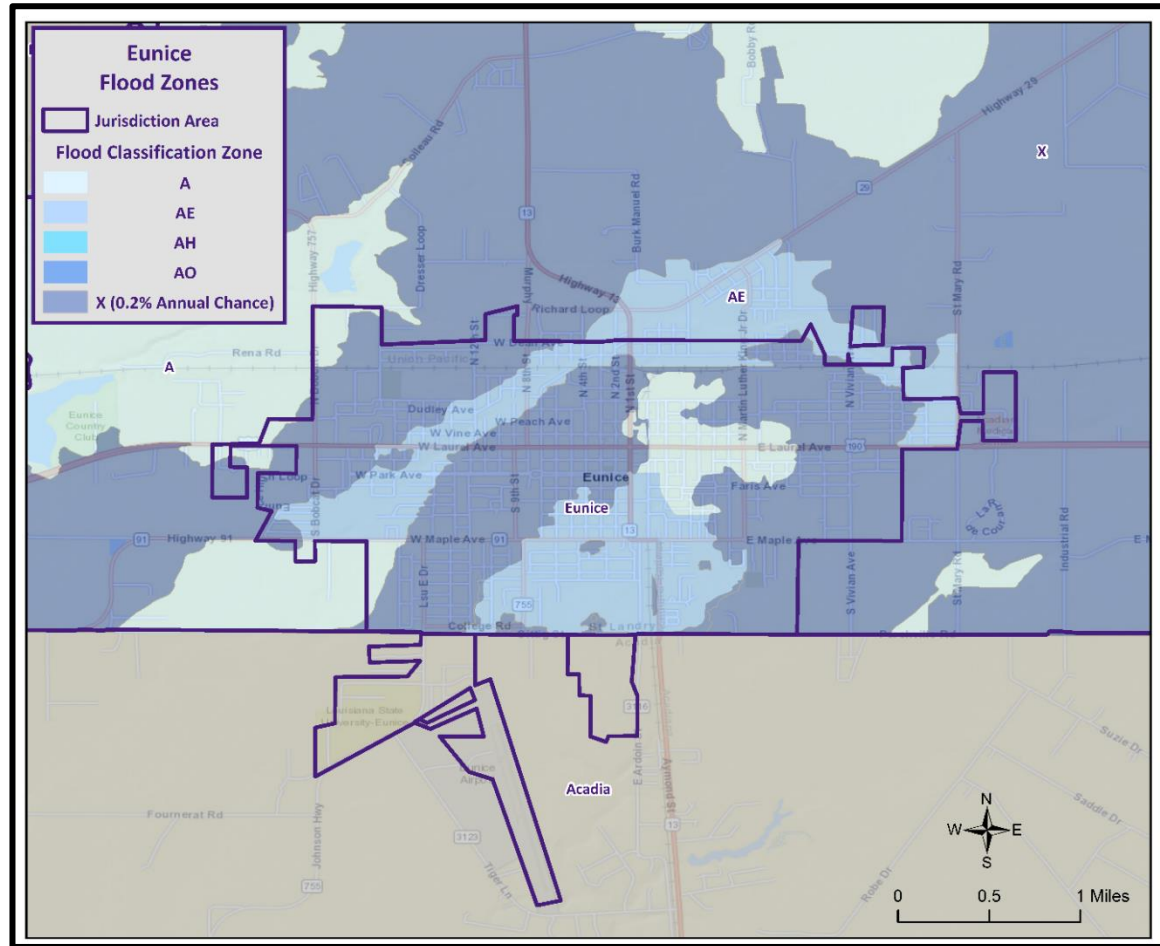
Flood Map: Arnaudville



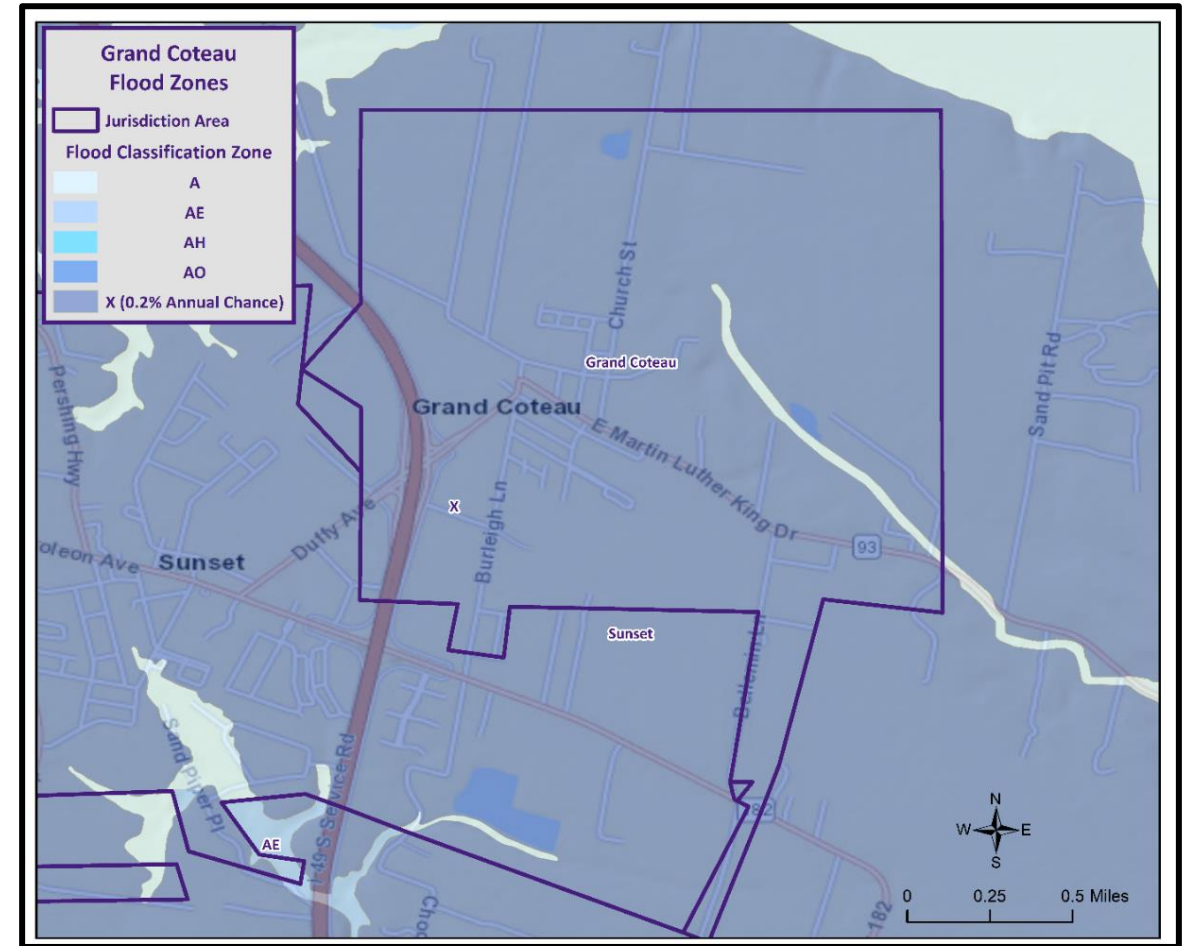
Flood Map: Cankton



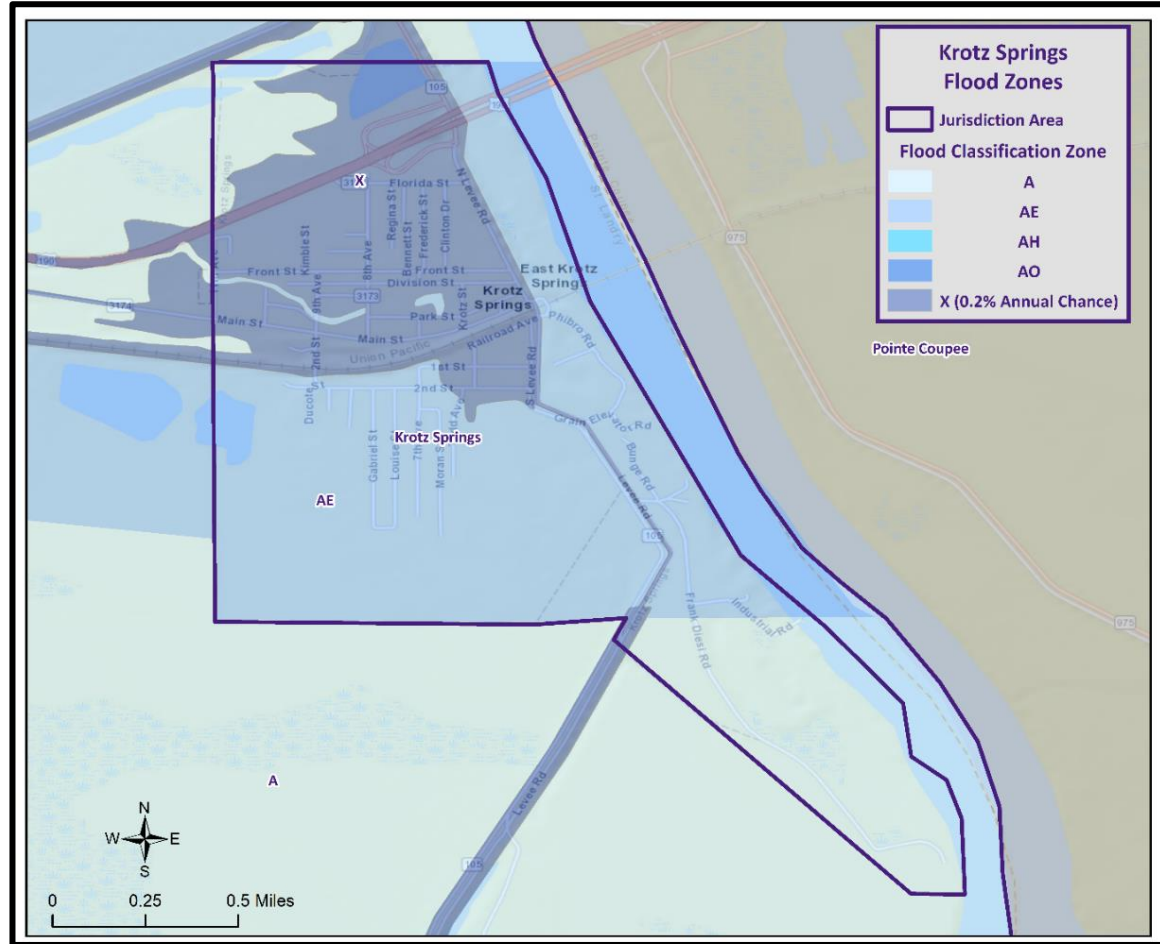
Flood Map: Eunice



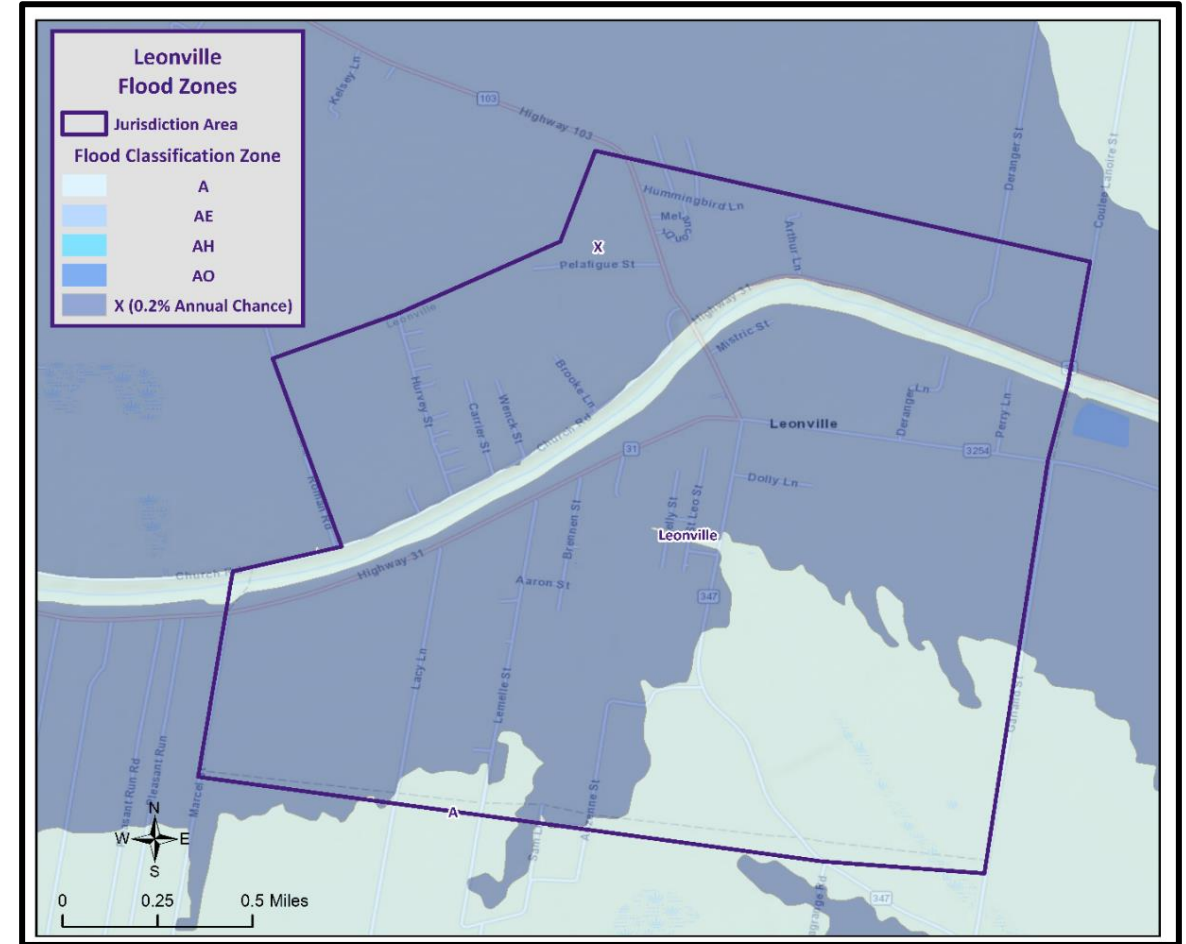
Flood Map: Grand Coteau



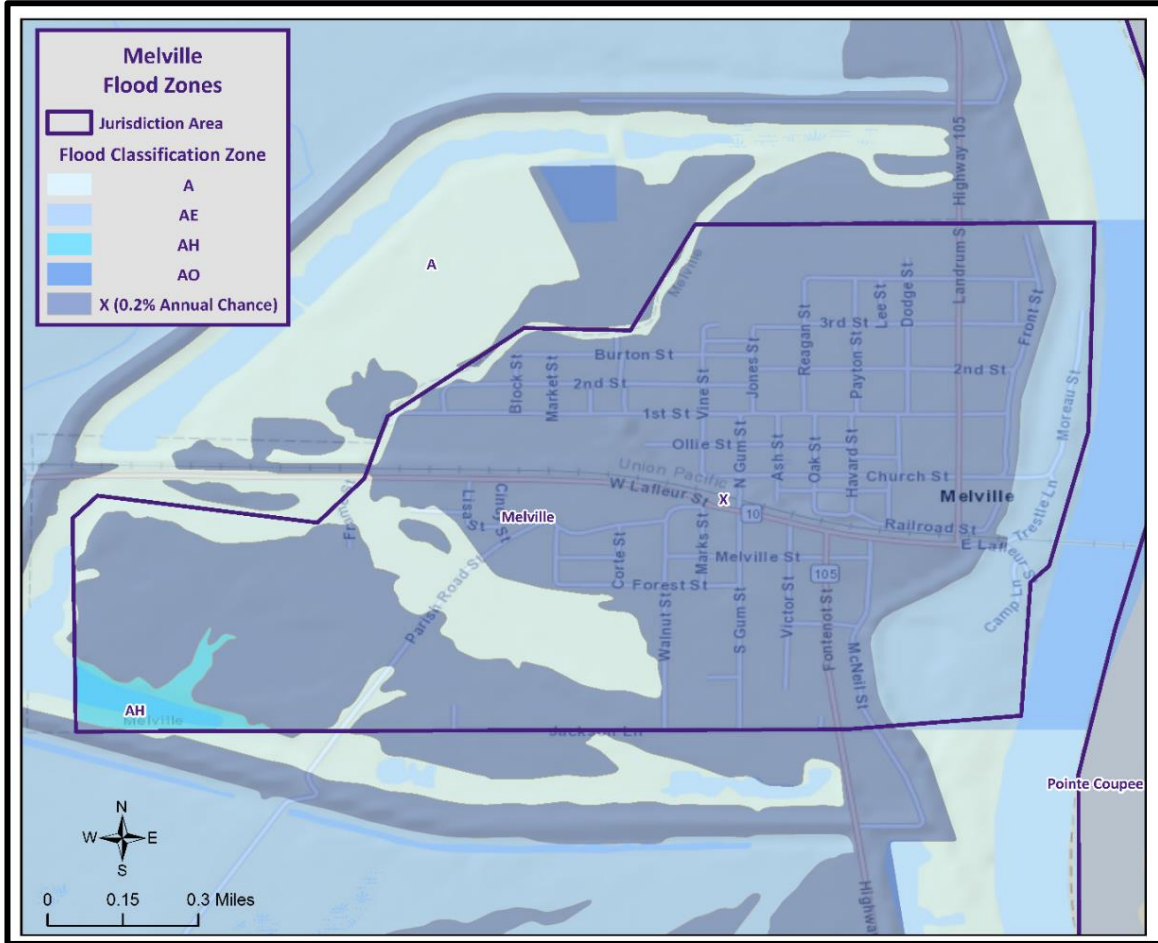
Flood Map: Krotz Springs



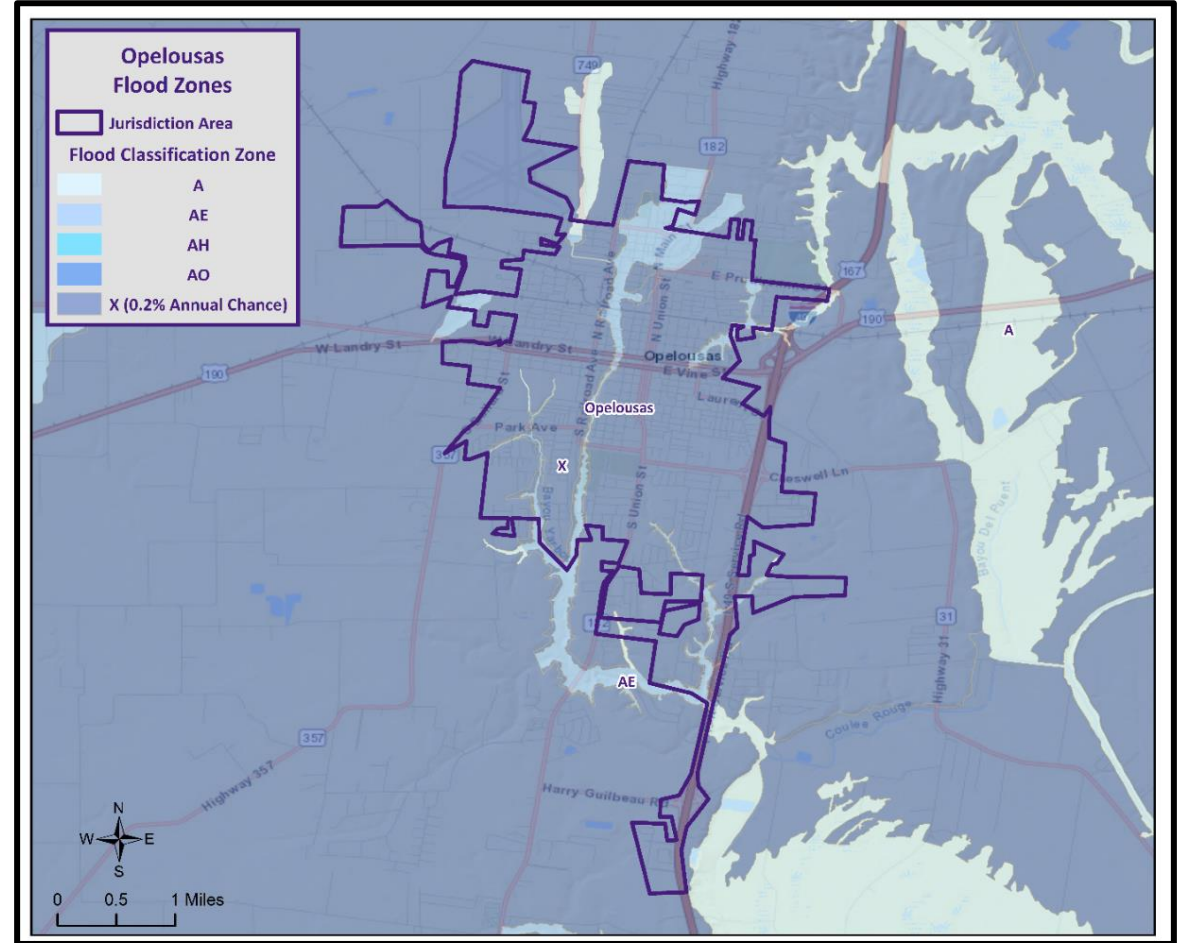
Flood Map: Leonville



Flood Map: Melville



Flood Map: Opelousas



Palmetto Flood Zones

Jurisdiction Area

Flood Classification Zone

- A
- AE
- AH
- AO
- X (0.2% Annual Chance)

Map labels include: Robertson St, Veazie St, Joseph St, E Hawkins St, Myers Ln, E Railroad Ave, Palmetto, Benhard St, S Main St, Taylor St, Charles St, Blum St, Union Pacific, W Railroad Ave, Nursing Home St, Rideau St, Stewart Ln, Bat, Negro Foot, and Palmetto.

Scale: 0 0.1 0.2 Miles

Compass rose: N, S, E, W

Port Barre Flood Zones

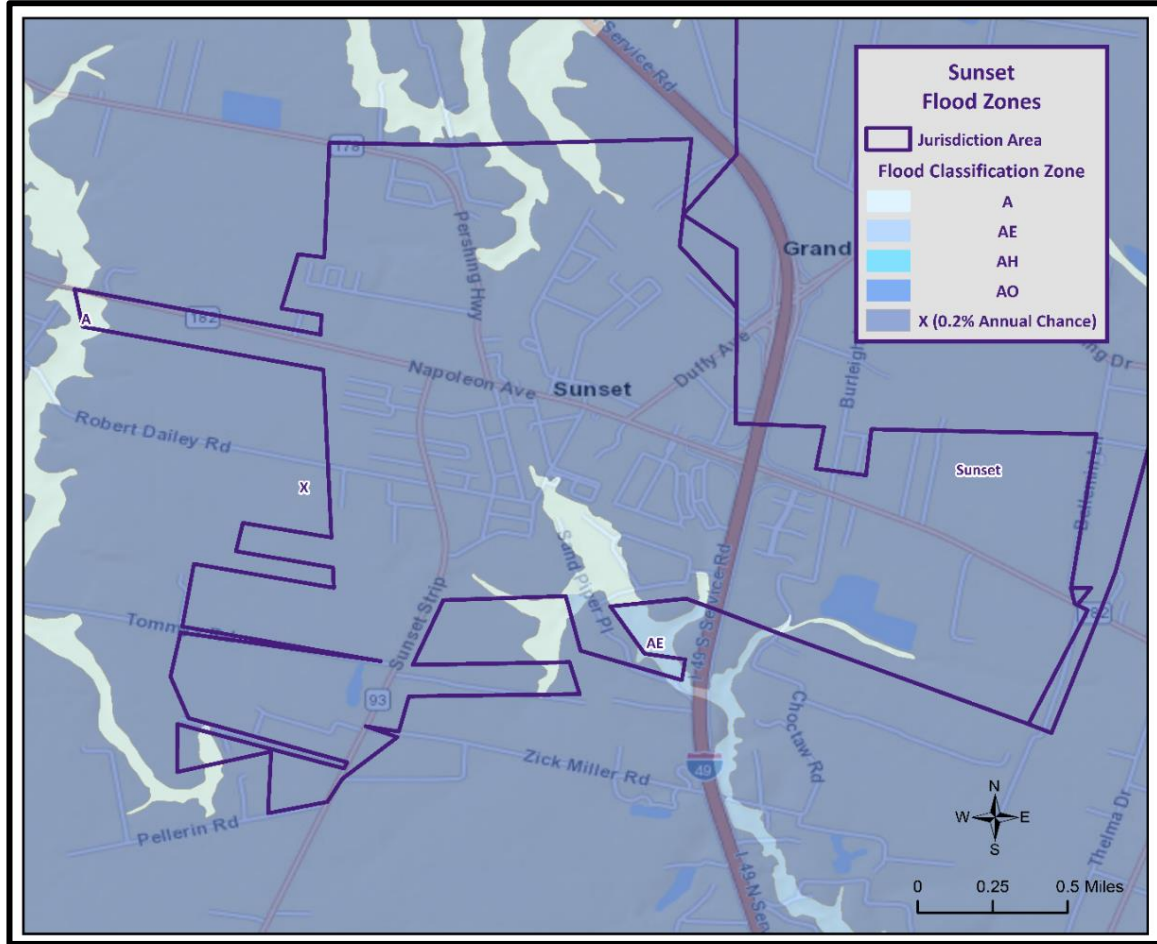
Jurisdiction Area

Flood Classification Zone

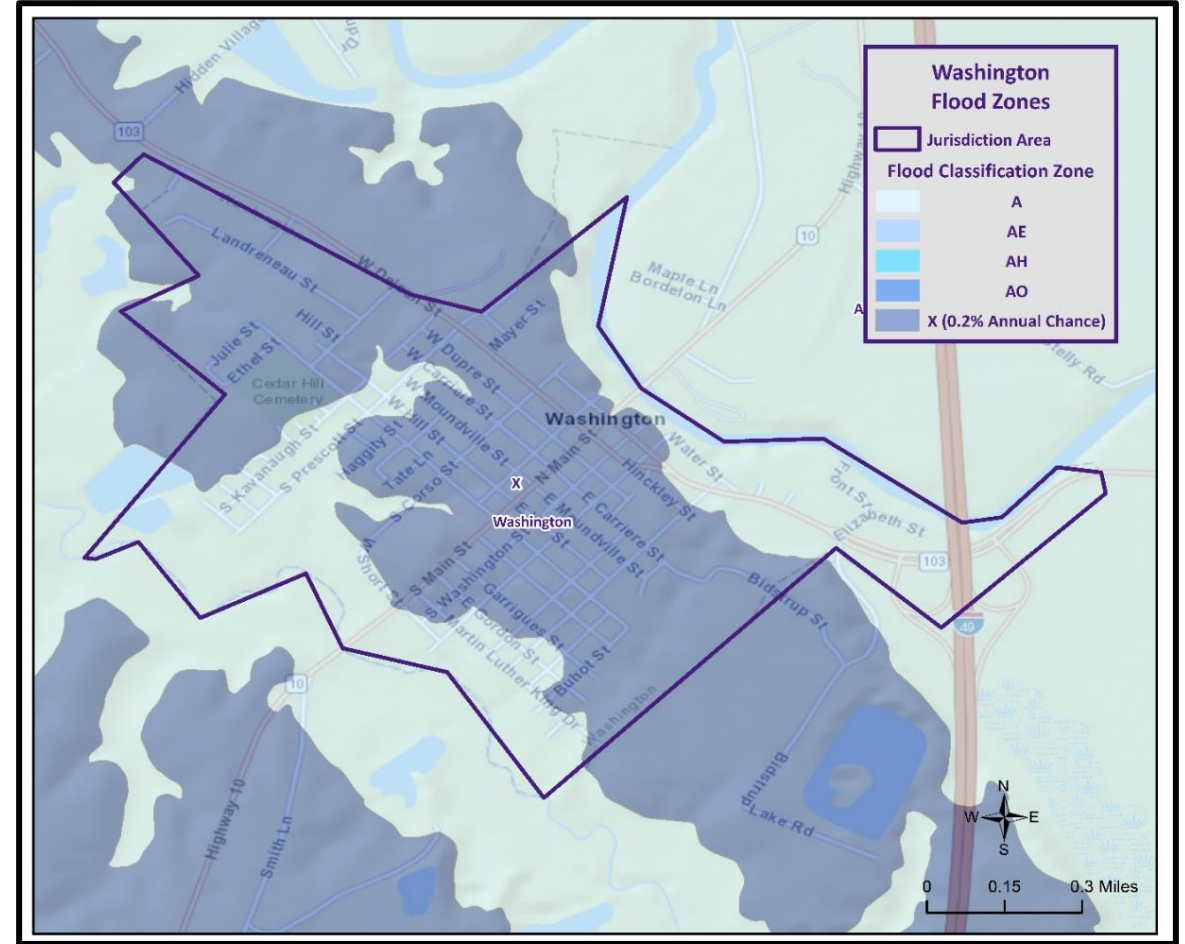
- A
- AE
- AH
- AO
- X (0.2% Annual Chance)

The map displays the Port Barre area with various flood zones. The jurisdiction area is outlined in black. Flood zones are color-coded: A (light blue), AE (medium blue), AH (dark blue), AO (light purple), and X (0.2% Annual Chance) (dark purple). The map includes a north arrow and a scale bar (0 to 0.4 miles). Major roads shown include Highway 103, Highway 190, and several local streets like Bellanise Rd, Sawmill Dr, Rayne Rd, and others. The map also shows the Port Barre area and the surrounding region.

Flood Map: Sunset



Flood Map: Washington

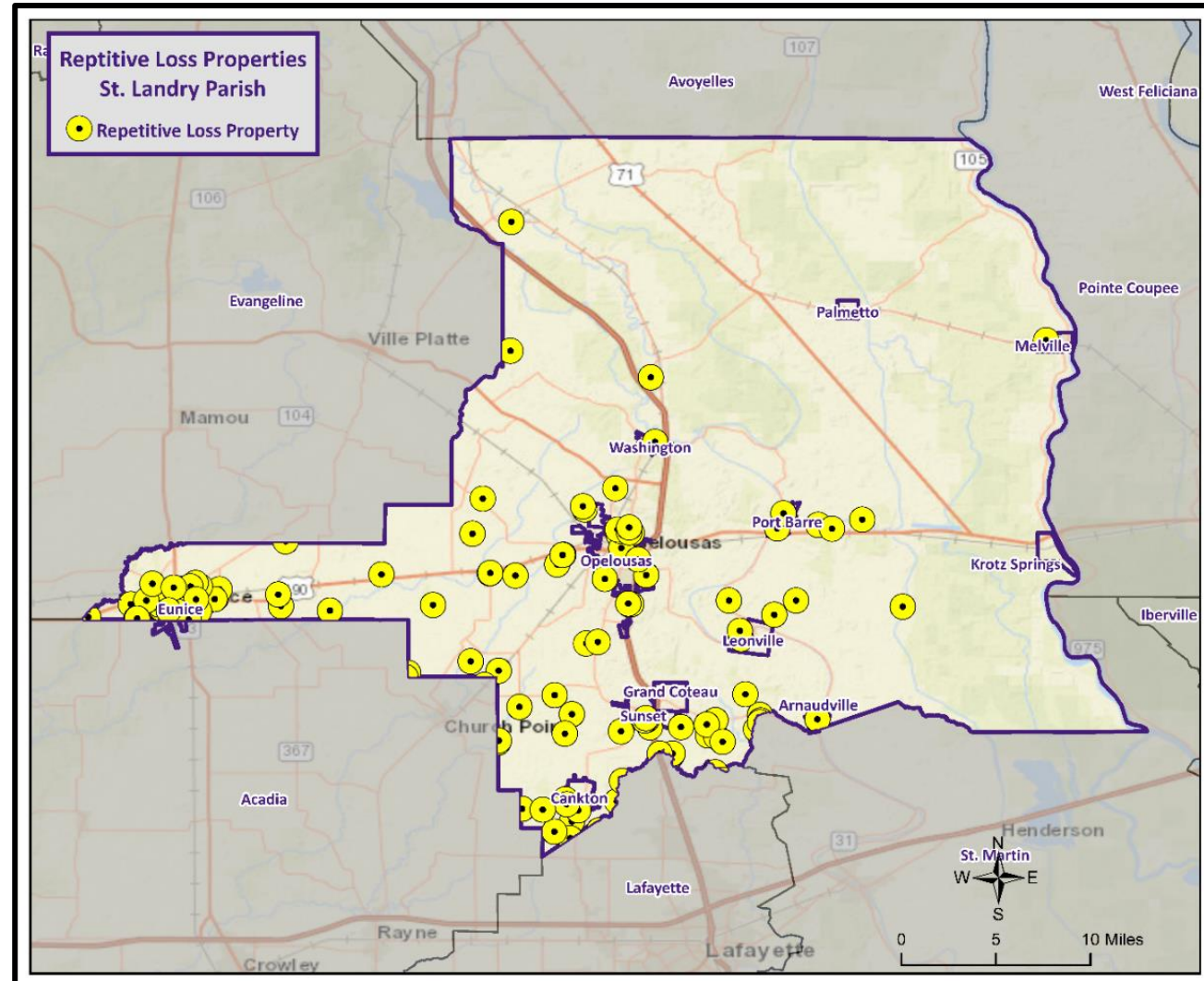




Repetitive Loss Properties

- 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

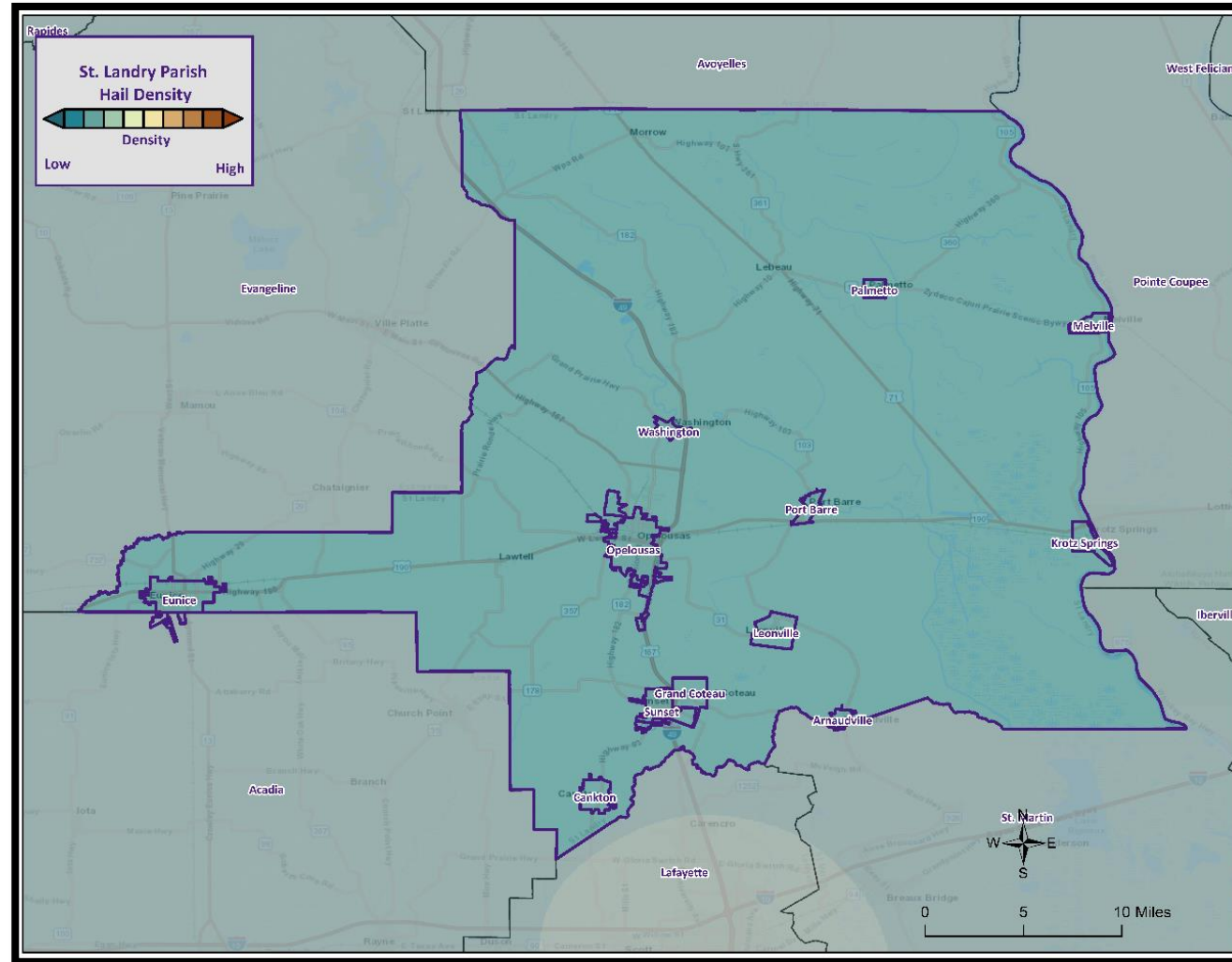


Thunderstorms

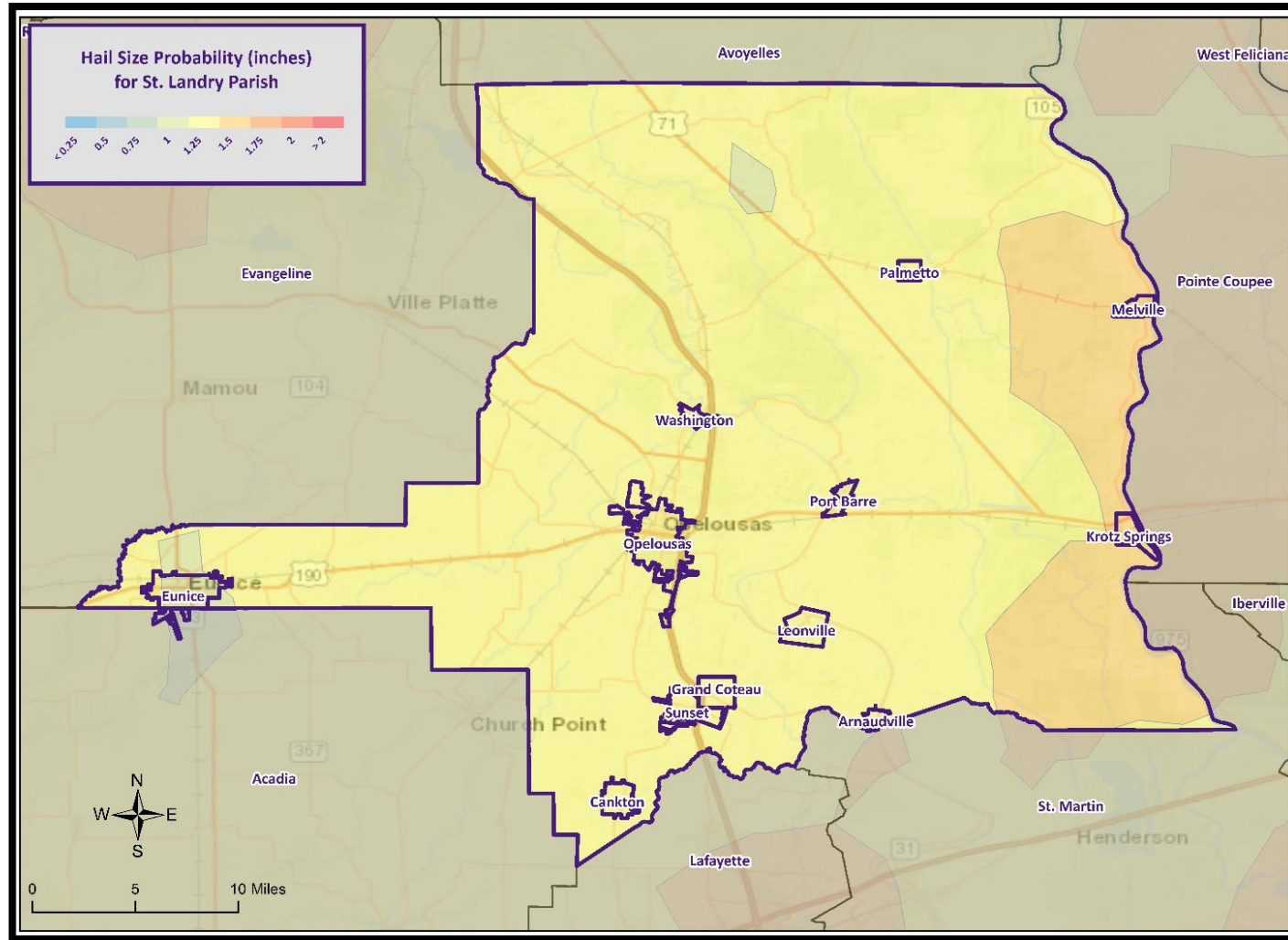
- A **thunderstorm**, also known as an **electrical storm**, a **lightning storm**, or a **thundershower**, is a type of storm characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder.
- They are usually accompanied by strong winds, heavy rain, and 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.



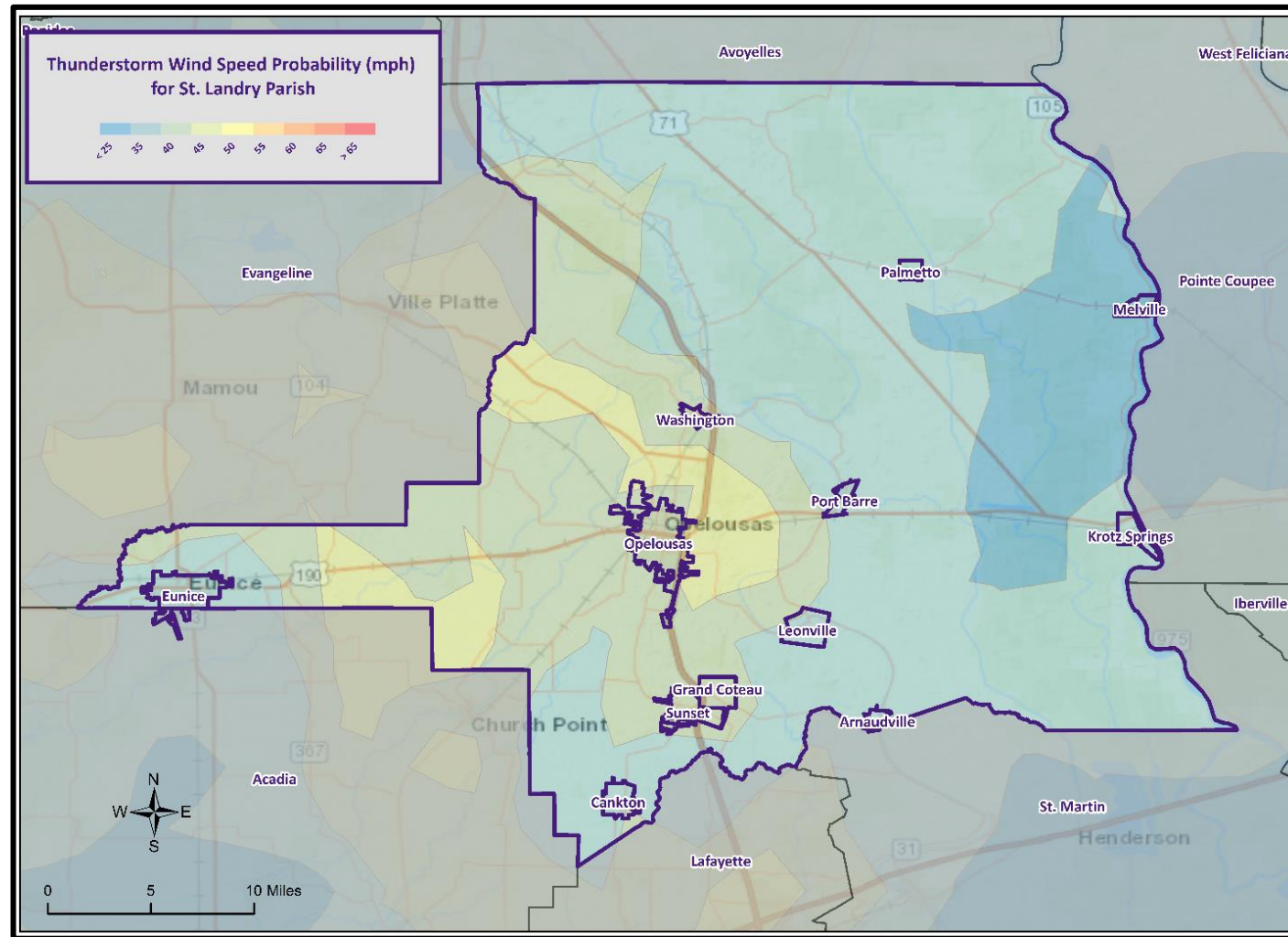
Density of Prior Hailstorms



Maximum Hail Size Probability



Maximum Wind Speed Probability



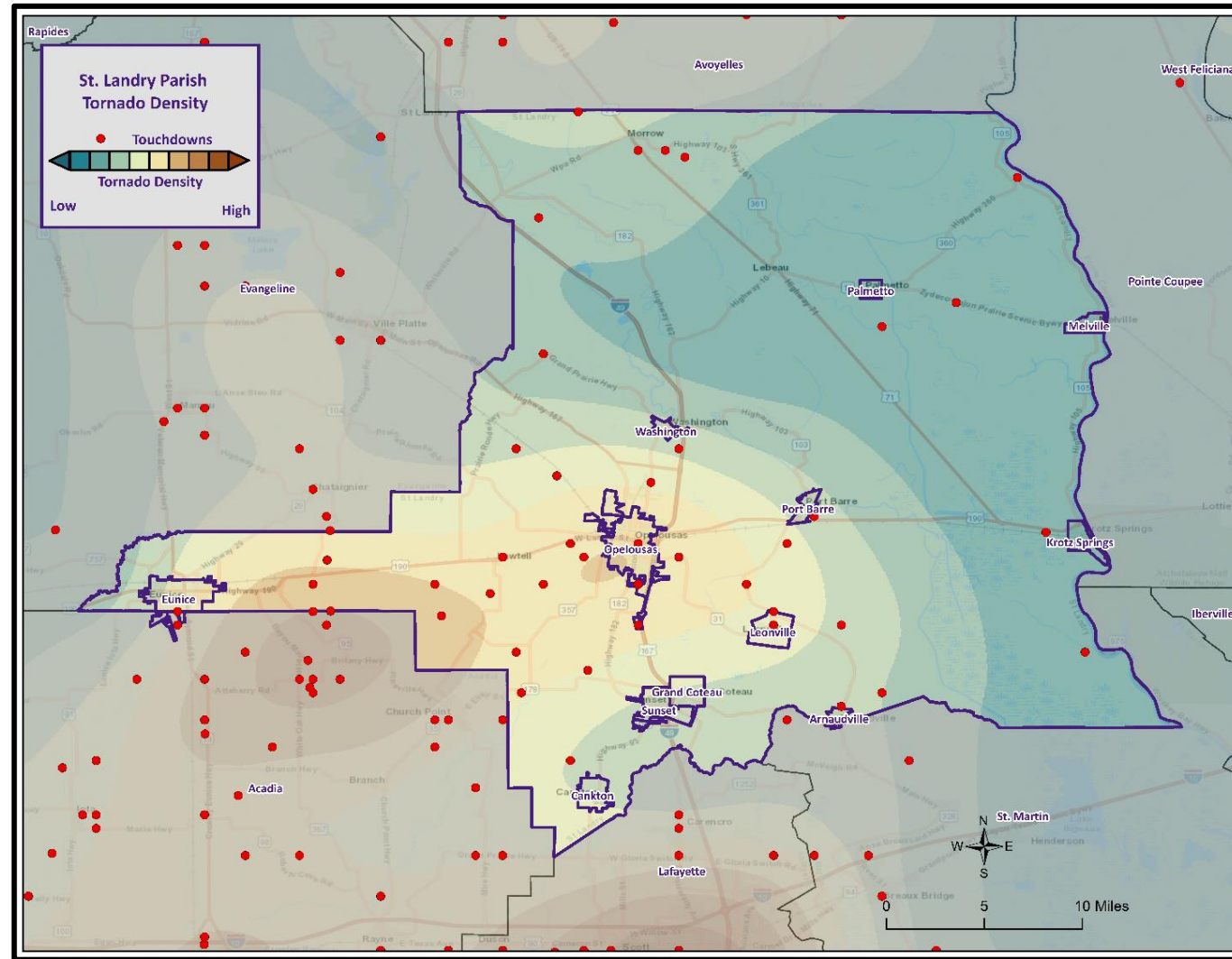
Tornadoes

- Tornadoes (also called twisters and cyclones) 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.

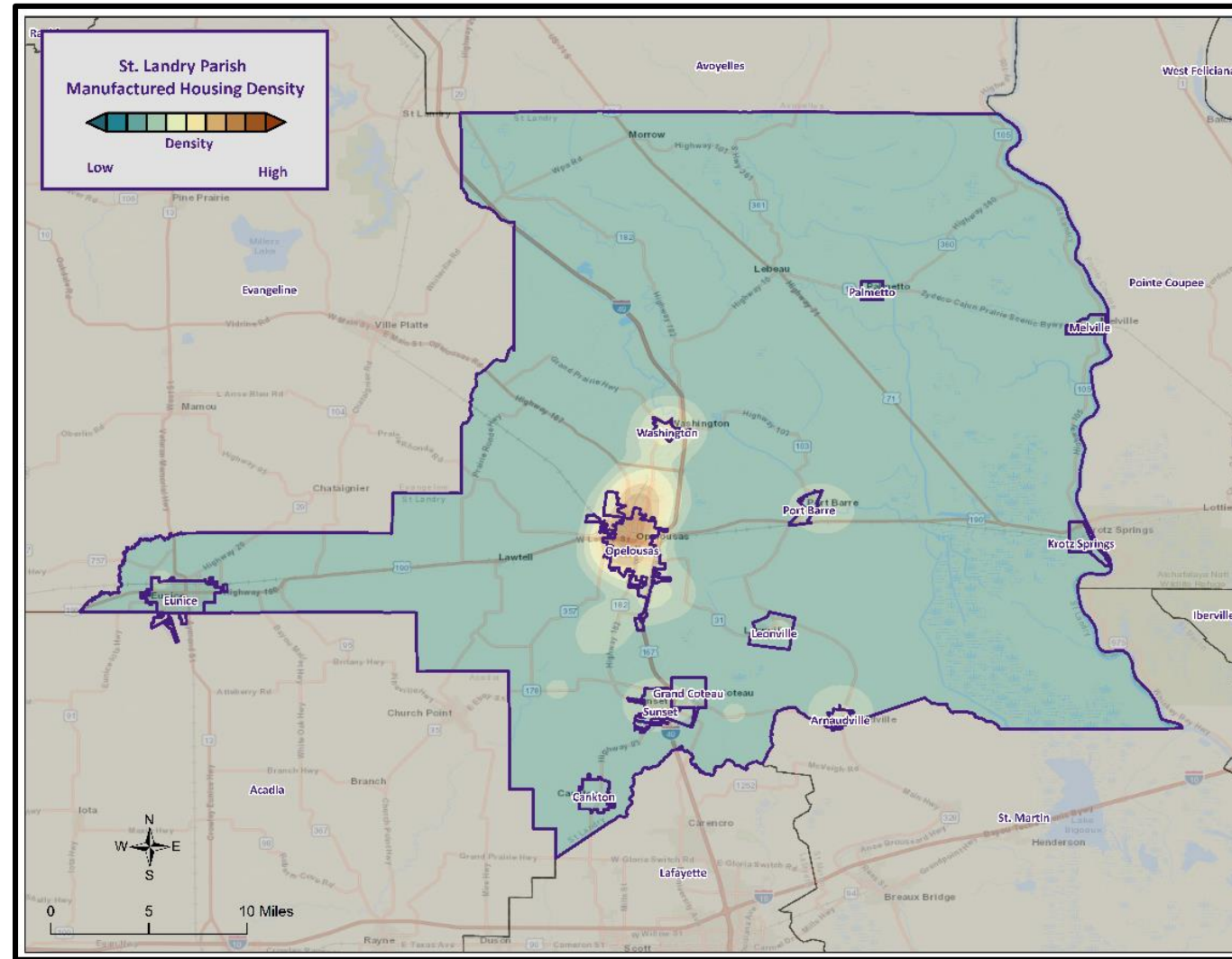
| ORIGINAL FUJITA SCALE | | ENHANCED FUJITA SCALE | |
|--------------------------|-------------|--------------------------|-------------|
| F5 | 261-318 mph | EF5 | +200 mph |
| F4 | 207-260 mph | EF4 | 166-200 mph |
| F3 | 158-206 mph | EF3 | 136-165 mph |
| F2 | 113-157 mph | EF2 | 111-135 mph |
|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



Tornado Density



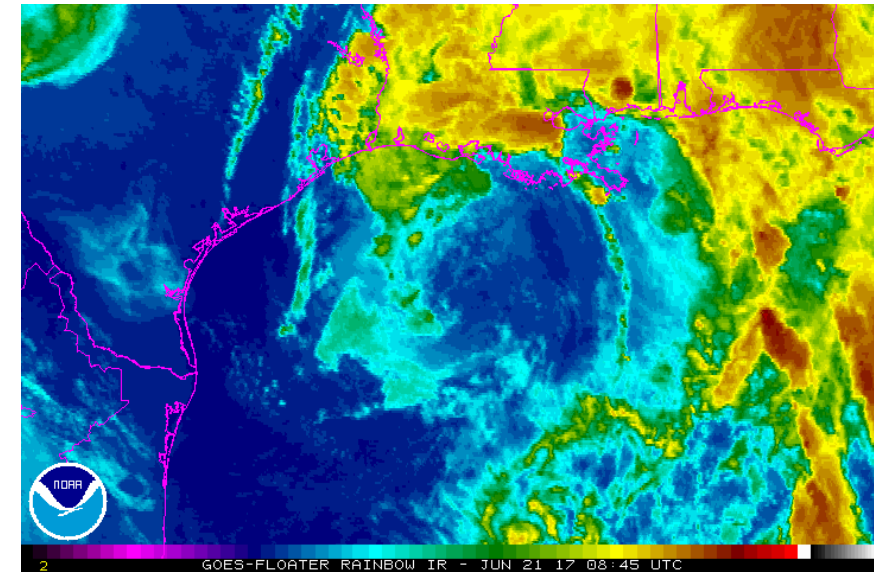
Manufactured Home Density

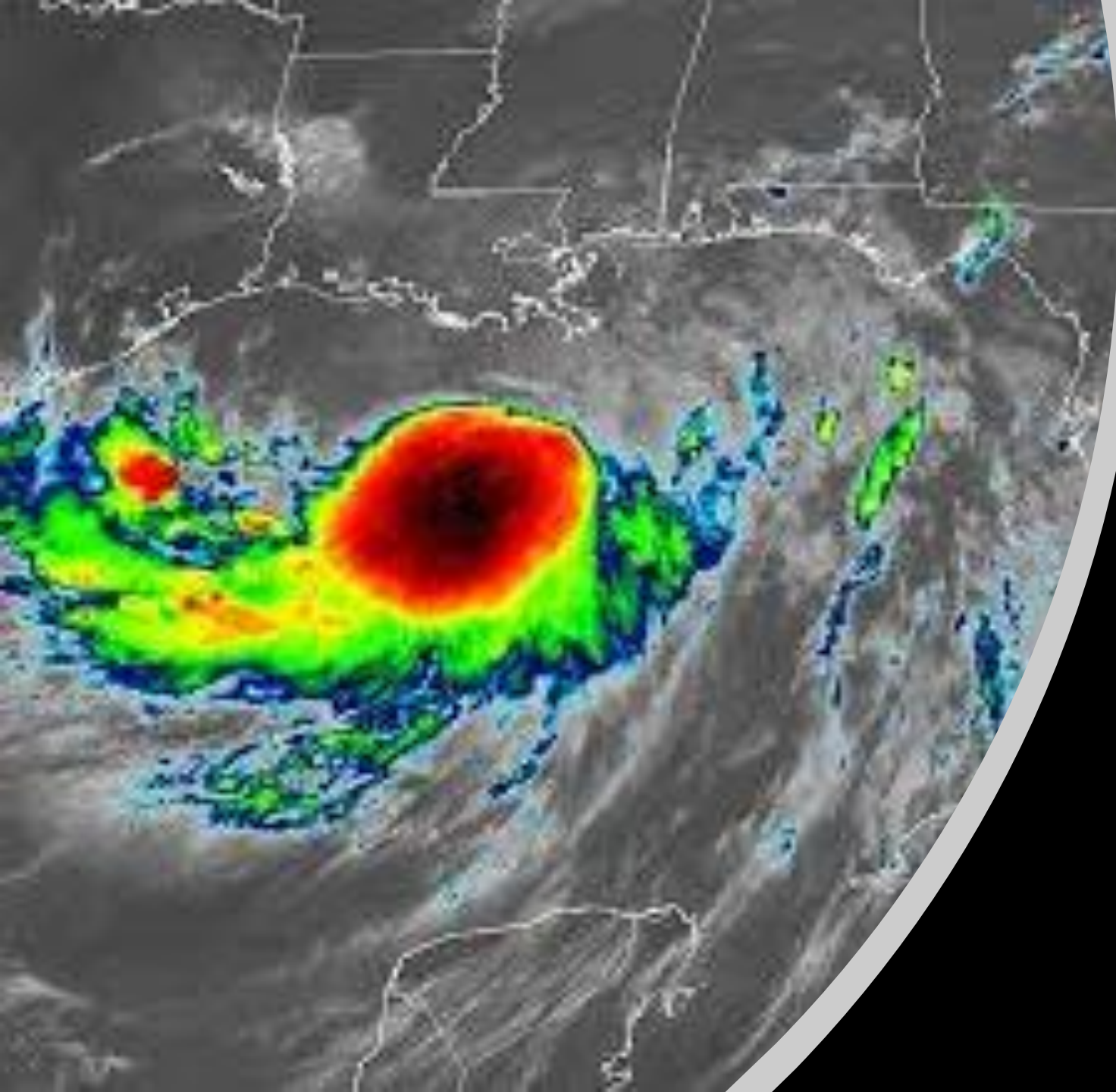


Tropical Cyclones

- 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

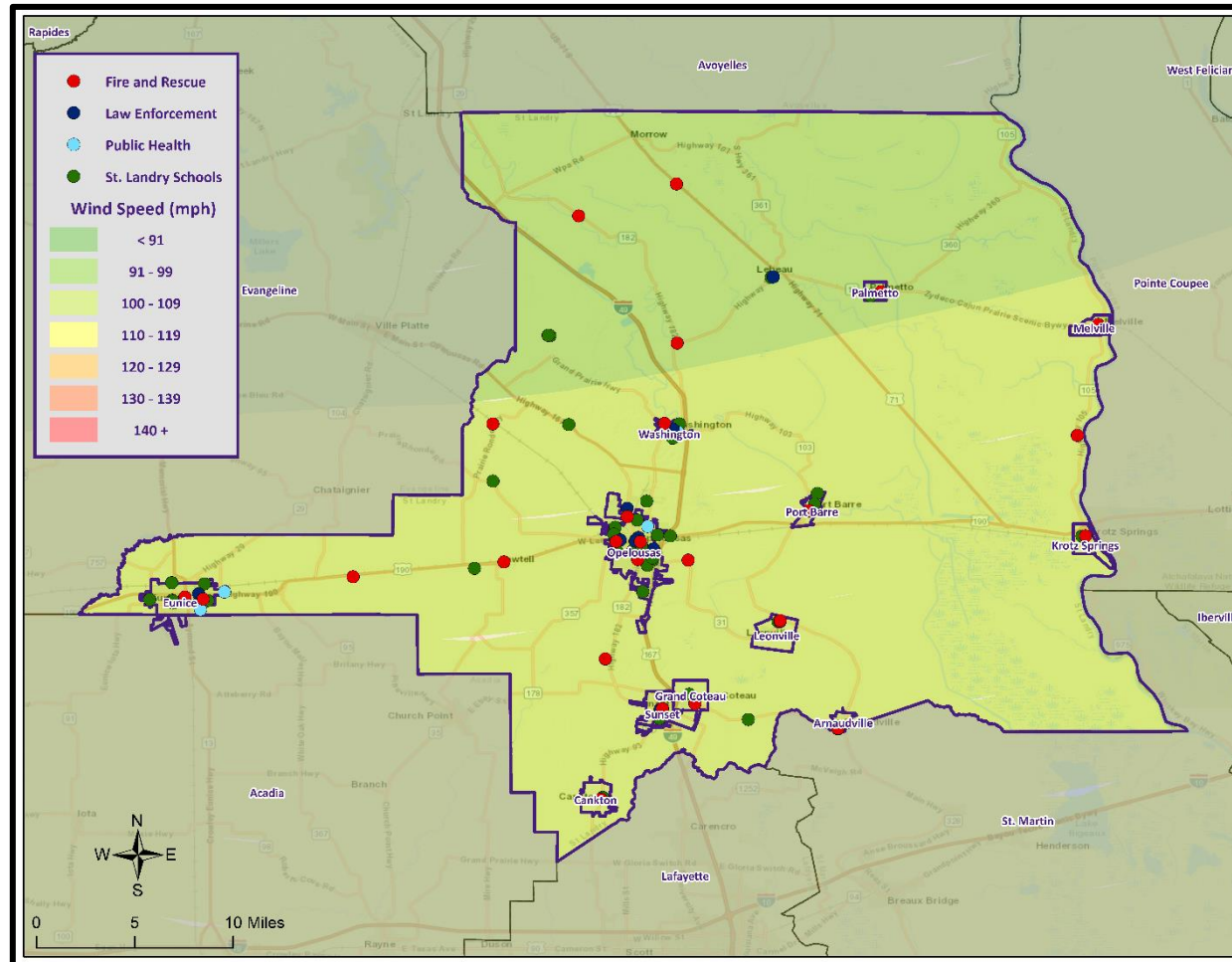


Hurricane Laura



Hurricane Delta

Wind Speed Impacts on Critical Infrastructure

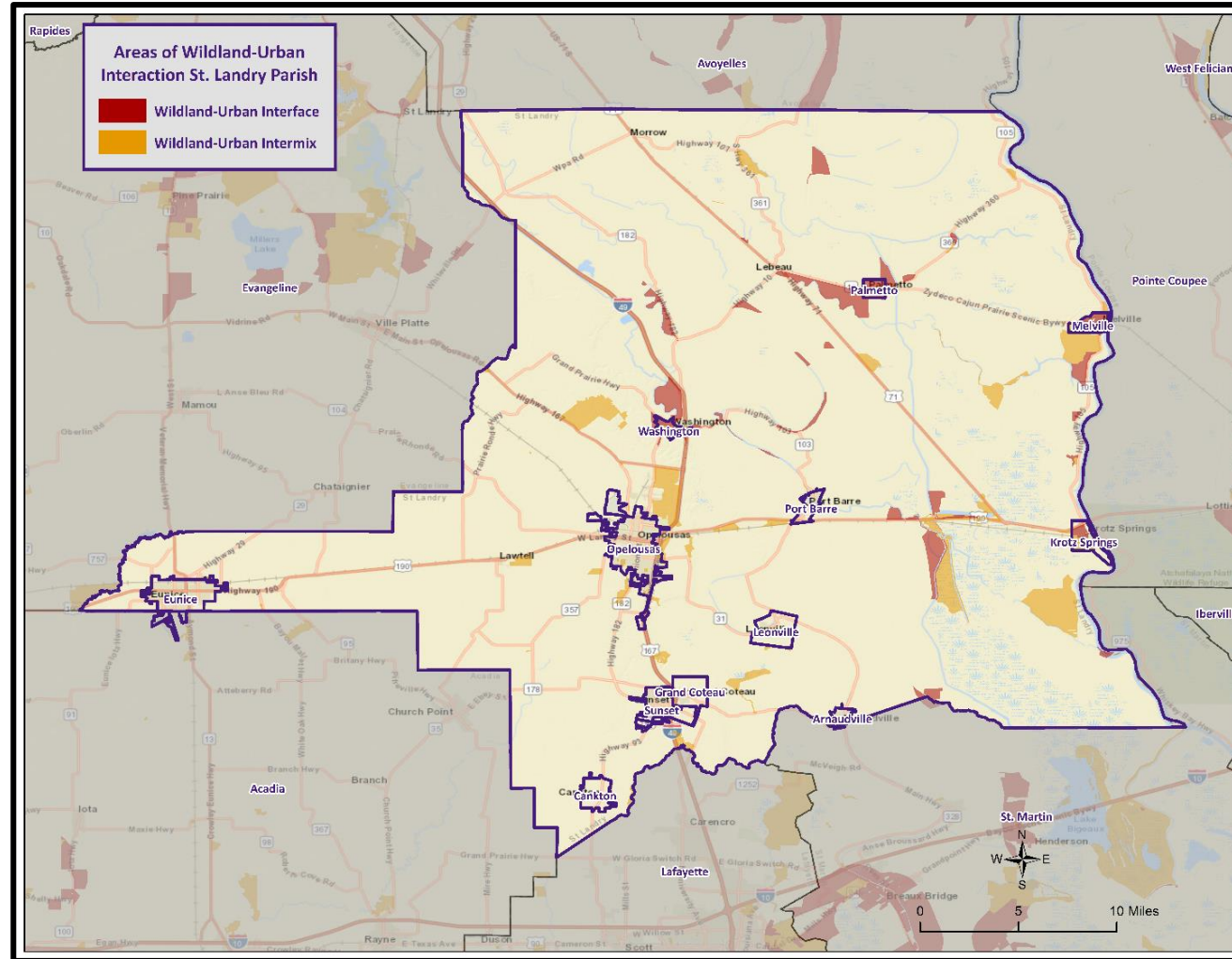




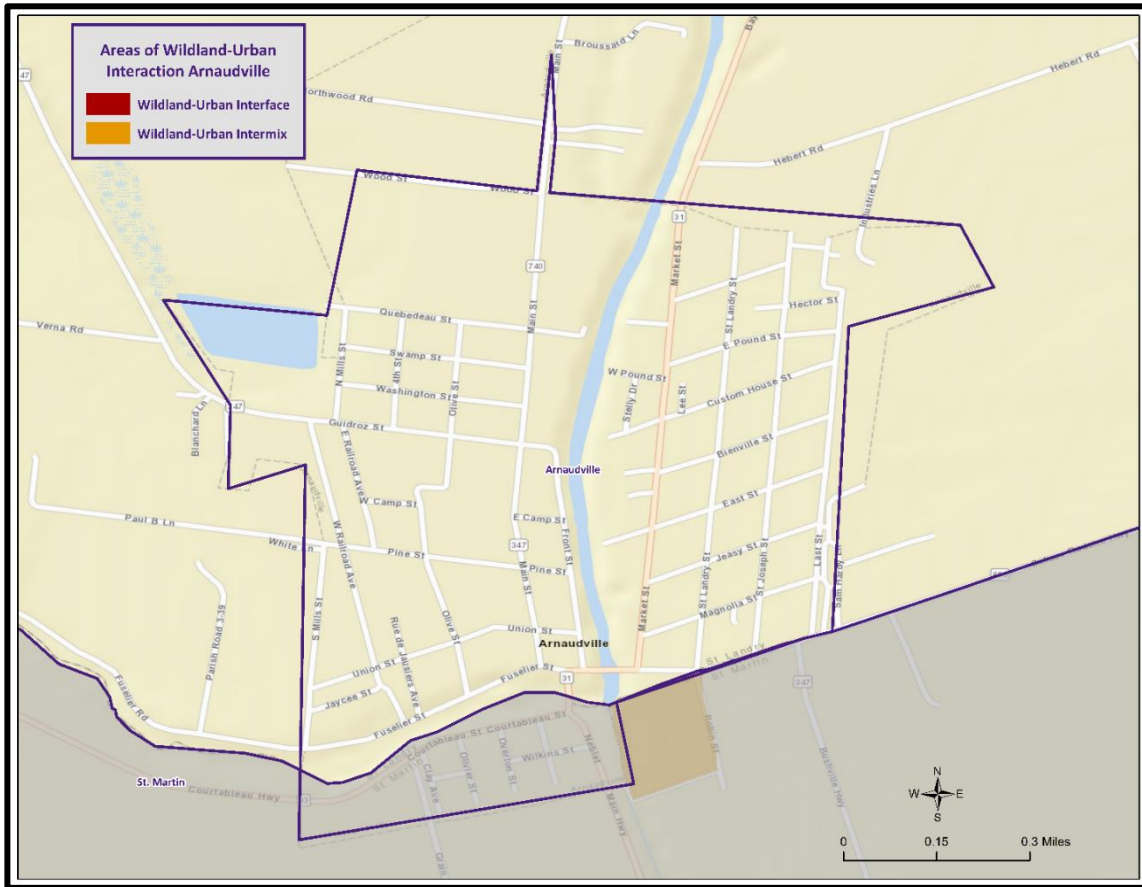
Wildfires

- 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.

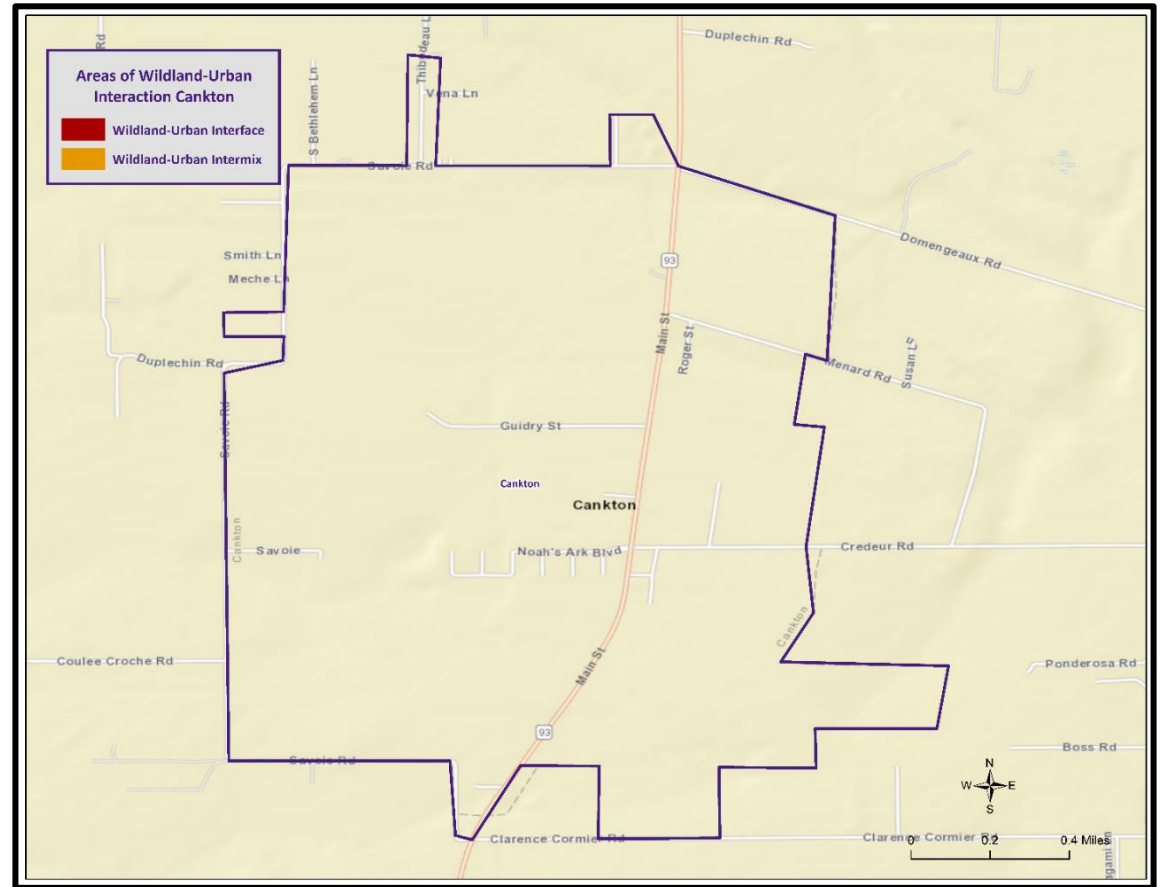
Wildland-Urban Interaction



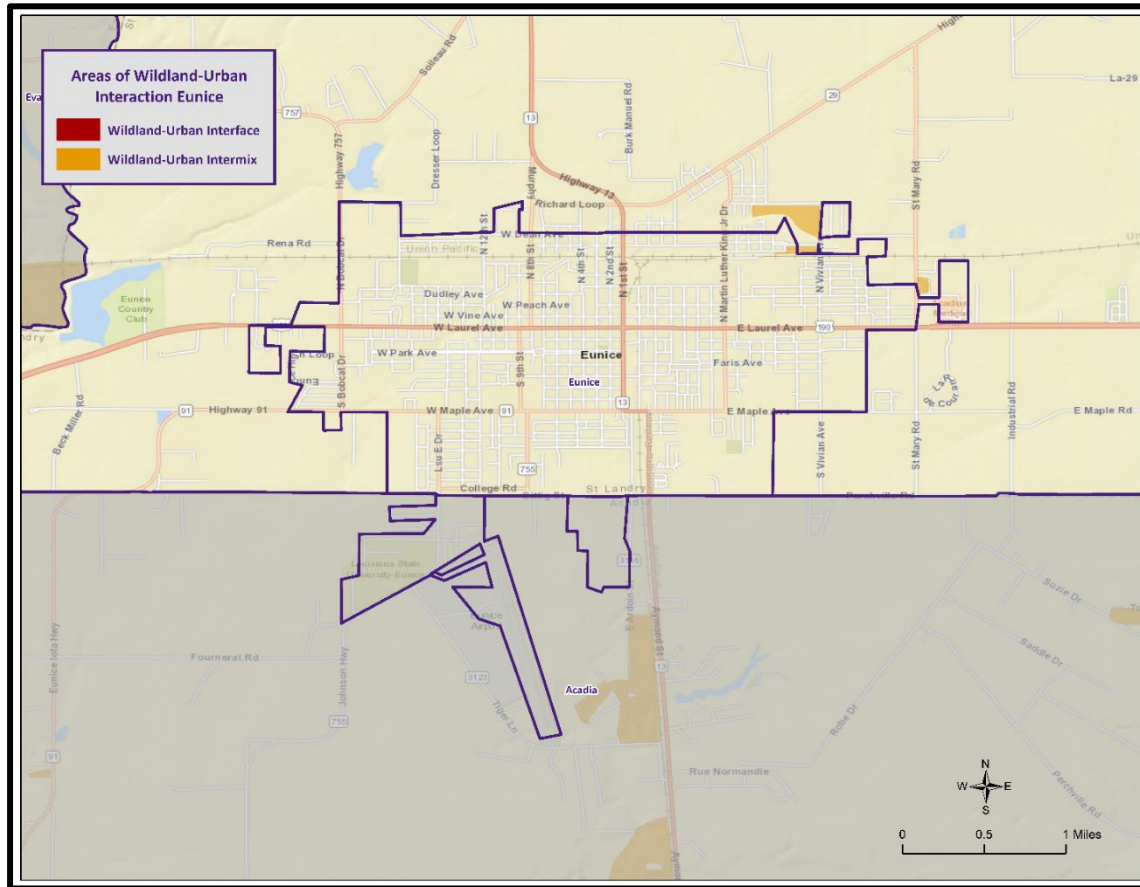
WUI: Arnaudville



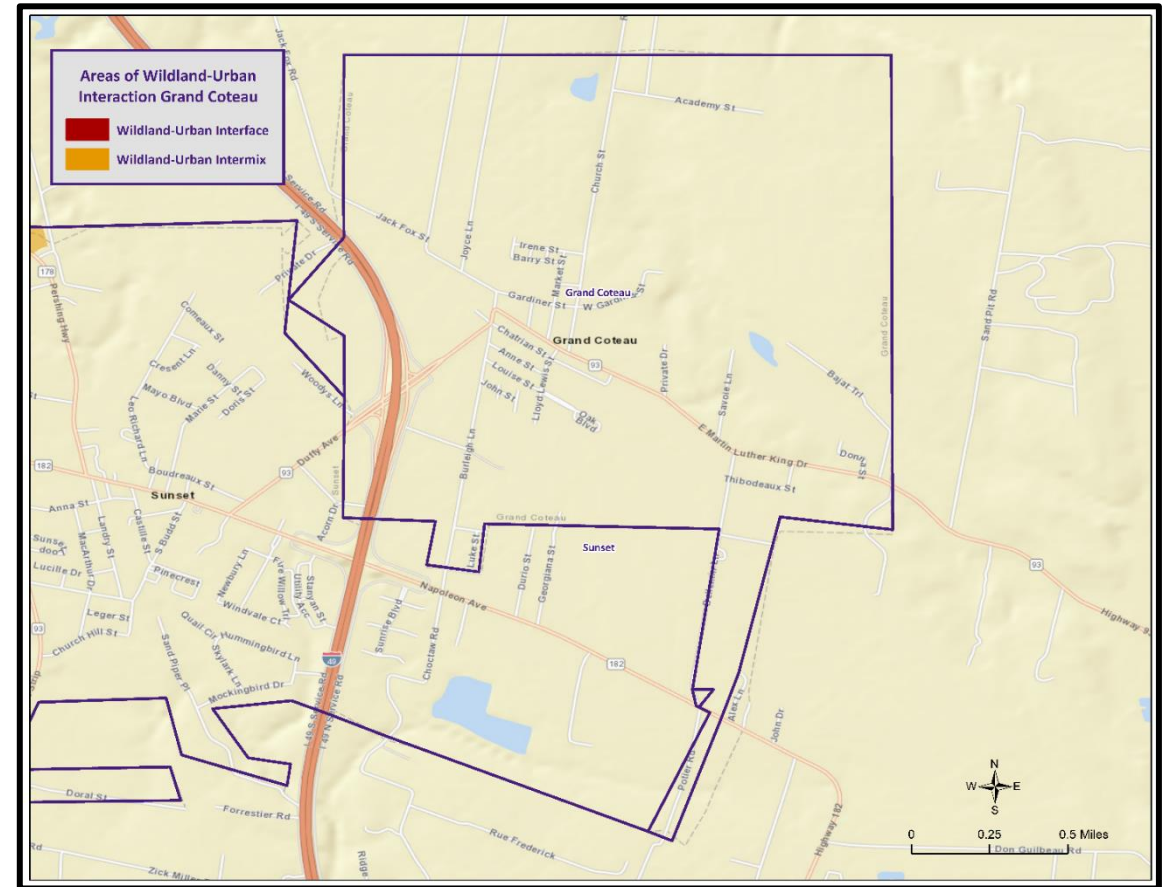
WUI: Cankton



WUI: Eunice



WUI: Grand Coteau



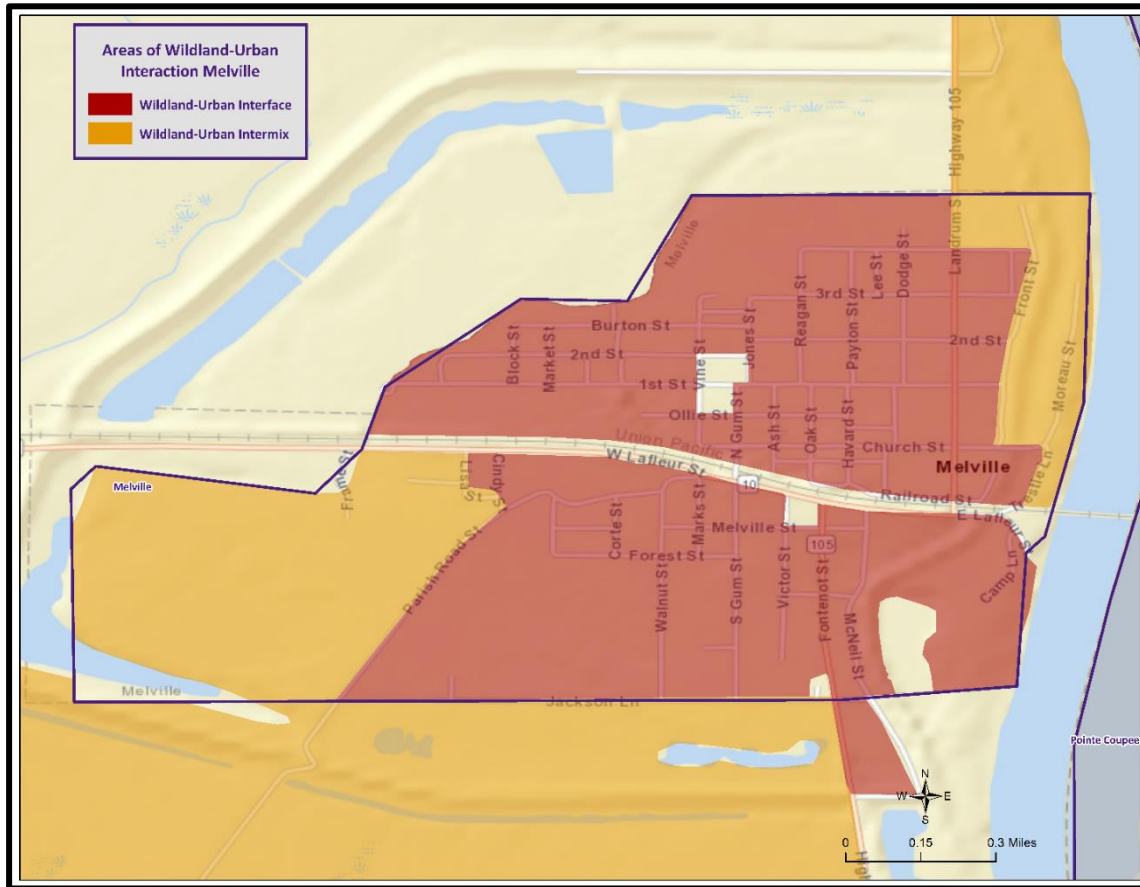
This map illustrates the Wildland-Urban Interface (WUI) and Wildland-Urban Intermix (WUI Intermix) areas in Krotz Springs, Florida. The WUI is shown in red, and the WUI Intermix is shown in orange. The map includes a legend, a north arrow, and a scale bar (0 to 0.4 miles). Key roads and landmarks are labeled, including US Highway 105, State Road 317, and the Krotz Springs area. The map also shows the location of Krotz Springs relative to the surrounding landscape, including the Gulf of Mexico and the Krotz Springs area.

Areas of Wildland-Urban Interaction Leonville

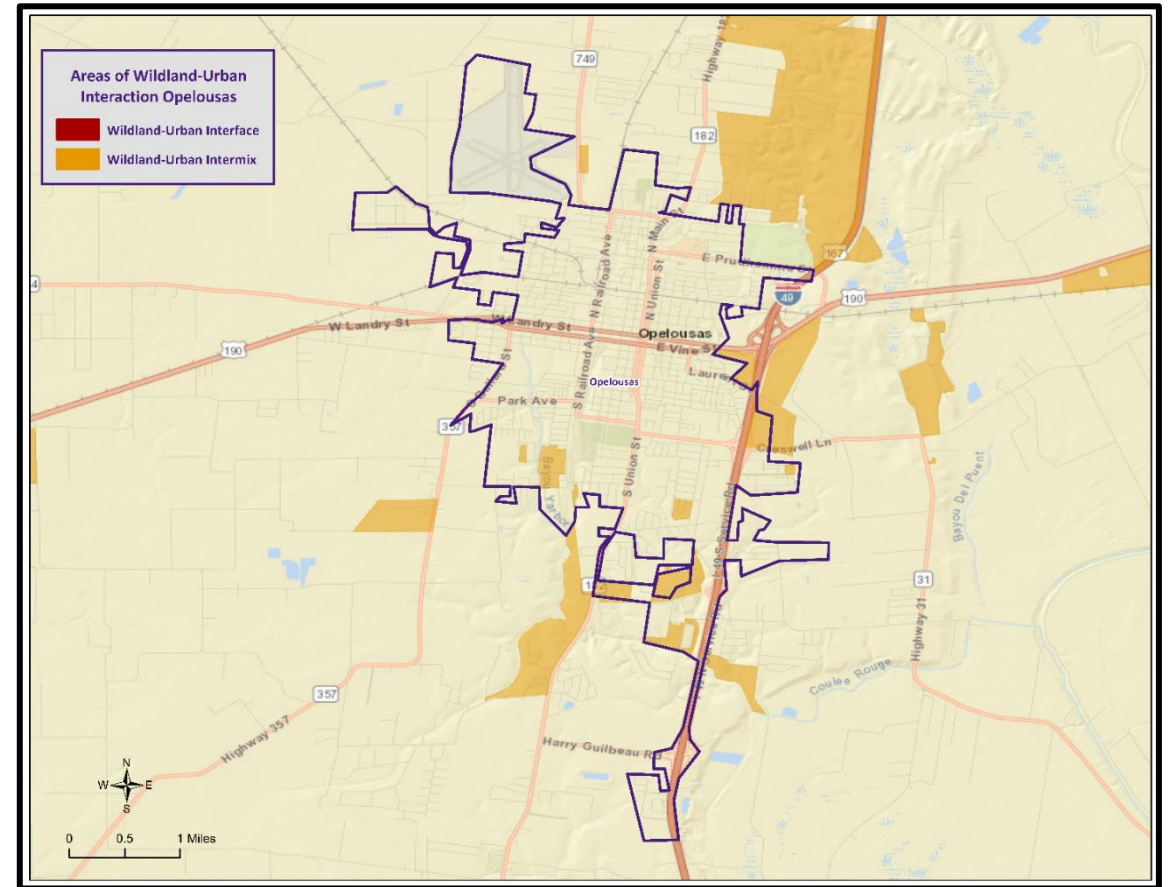
- Wildland-Urban Interface
- Wildland-Urban Intermix

Map of Leonville, Georgia, showing Wildland-Urban Interface (WUI) and Wildland-Urban Intermix (WUI Intermix) areas. The map includes a legend, a scale bar (0 to 0.4 miles), and a north arrow. The WUI area is highlighted in red, and the WUI Intermix area is highlighted in orange. The map shows the town of Leonville, Georgia, with major roads like Highway 31 and Highway 103, and surrounding areas like Marietta and Dalton. The WUI area is primarily along the northern and eastern edges of the town, while the WUI Intermix area is along the southern edge.

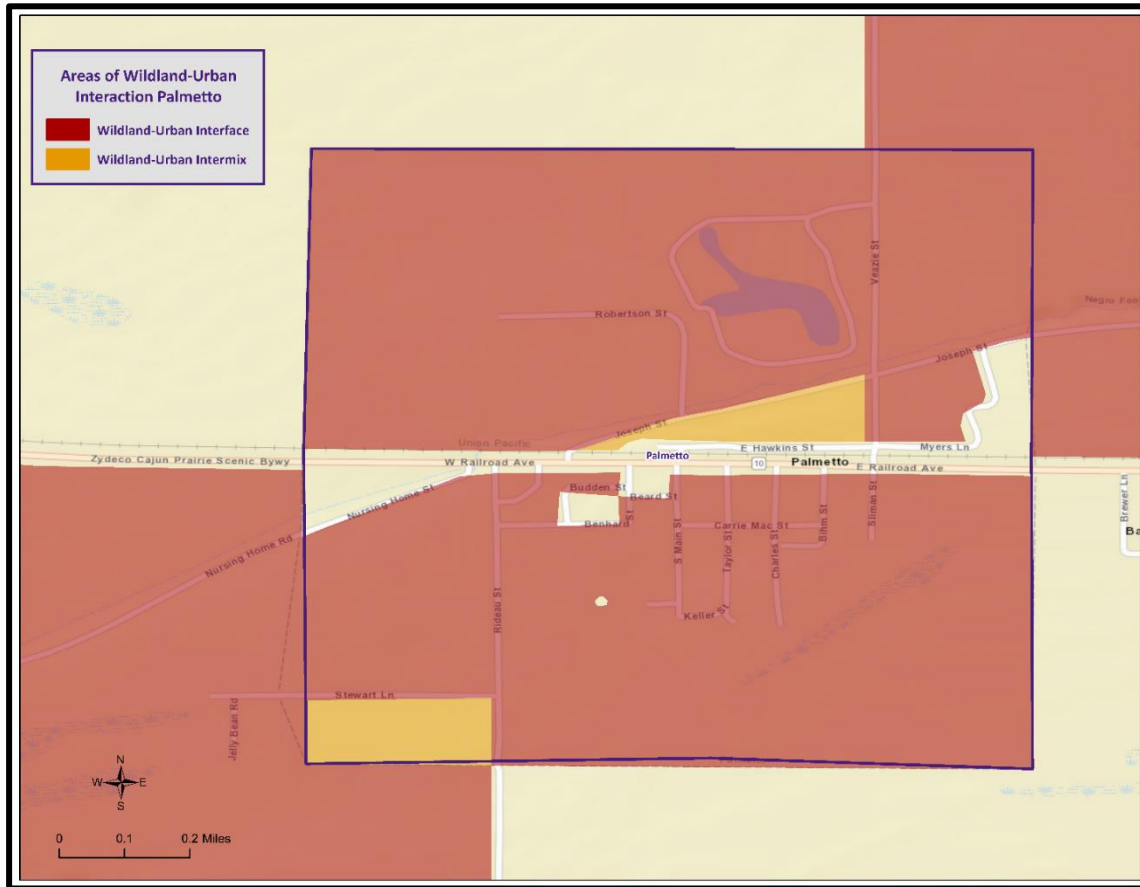
WUI: Melville



WUI: Opelousas



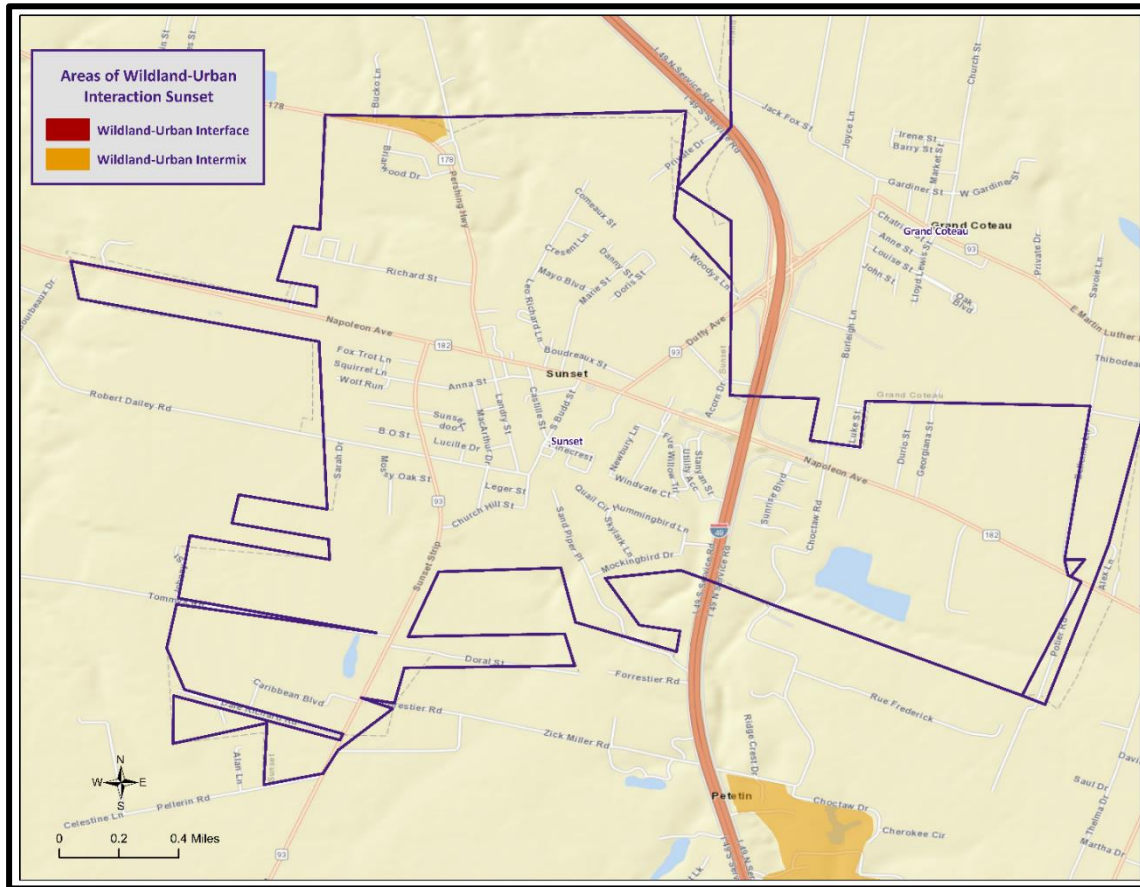
WUI: Palmetto



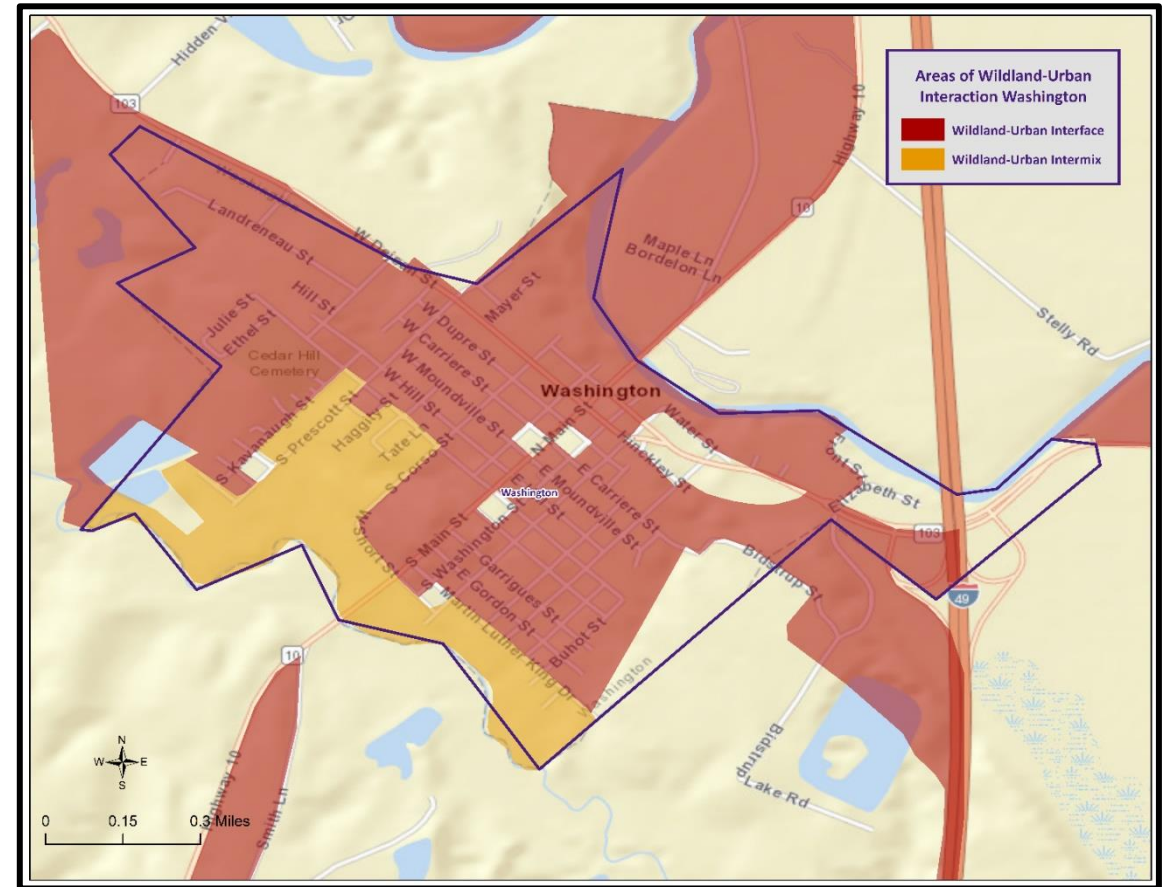
WUI: Port Barre



WUI: Sunset



WUI: Washington



Winter Storms

- 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.





Parish Mitigation Goals

- Identify and pursue preventative measures that will reduce future damages from hazards
- Enhance public awareness and understanding of disaster preparedness
- Reduce repetitive flood losses in the parish and municipalities
- Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impacts of hazards



Parish Hazard Mitigation Project Update

- St. Landry Parish OHSEP/
- St. Landry Parish Government Discussion

Public Outreach Activity

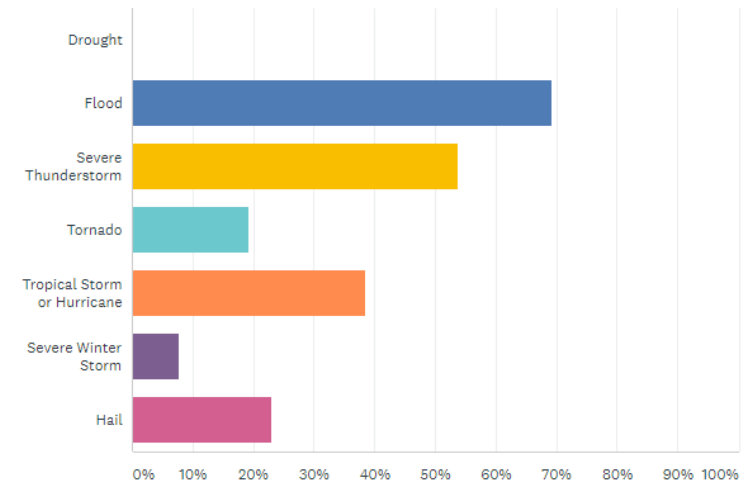
Hazard Mitigation Public Opinion Survey

<https://www.surveymonkey.com/r/StLandryHM2021>



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



SDMI Hazard Mitigation Website

The screenshot shows the SDMI Hazard Mitigation Website for St. Landry Parish. The header includes the LSU logo and the text "Stephenson Disaster Management Institute". The main navigation bar has links for Home, Calendar, Mitigation Resources, Parish Plans, and Settings. The page title is "St. Landry Parish" with a "PLAN DUE DATE: DECEMBER 21 2021". The "DEVELOPMENT STATUS" section shows a progress bar with four stages: PLAN DEVELOPMENT, PLAN REVIEW, PLAN ADOPTION, and COMPLETED. The PLAN DEVELOPMENT stage is currently active, with a "KICKOFF MEETING JUN 2021" scheduled. The PLAN REVIEW and PLAN ADOPTION stages are marked "TBD". The COMPLETED stage is also marked "TBD". The "PARTICIPATING JURISDICTIONS" section lists the following entities: St. Landry Parish, unincorporated areas; Town of Arnaudville; Town of Grand Coteau; City of Opelousas; Town of Washington; Village of Cankton; Town of Krotz Springs; Village of Palmetto; City of Eunice; Town of Leonville; and Town of Port Barre. The "PREVIOUS PLANNING RESOURCES" section lists three resources for 2016: "ST. LANDRY HM PLAN", "ST. LANDRY PARISH KICK OFF MEETING", and "ST. LANDRY PARISH PUBLIC MEETING", each with a "DOWNLOAD" button.

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SDMI HOME

HAZARD MITIGATION

Home Calendar Mitigation Resources Parish Plans Settings

St. Landry Parish

PLAN DUE DATE: DECEMBER 21 2021

DEVELOPMENT STATUS

PLAN DEVELOPMENT PLAN REVIEW PLAN ADOPTION COMPLETED

KICKOFF MEETING JUN 2021 TBD TBD TBD

PARTICIPATING JURISDICTIONS

- St. Landry Parish, unincorporated areas
- Town of Arnaudville
- Town of Grand Coteau
- City of Opelousas
- Town of Washington
- Village of Cankton
- Town of Krotz Springs
- Village of Palmetto
- City of Eunice
- Town of Leonville
- Town of Port Barre

PREVIOUS PLANNING RESOURCES

2016

ST. LANDRY HM PLAN DOWNLOAD

ST. LANDRY PARISH KICK OFF MEETING DOWNLOAD

ST. LANDRY PARISH PUBLIC MEETING DOWNLOAD

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



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