East Baton Rouge Parish Hazard Mitigation Plan Update Public Meeting

May 17, 2023

Baton Rouge, LA

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Introductions

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

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Agenda

Introductions

Hazard Mitigation Overview

Planning Process

Risk Assessment

Maps

Public Outreach Activities

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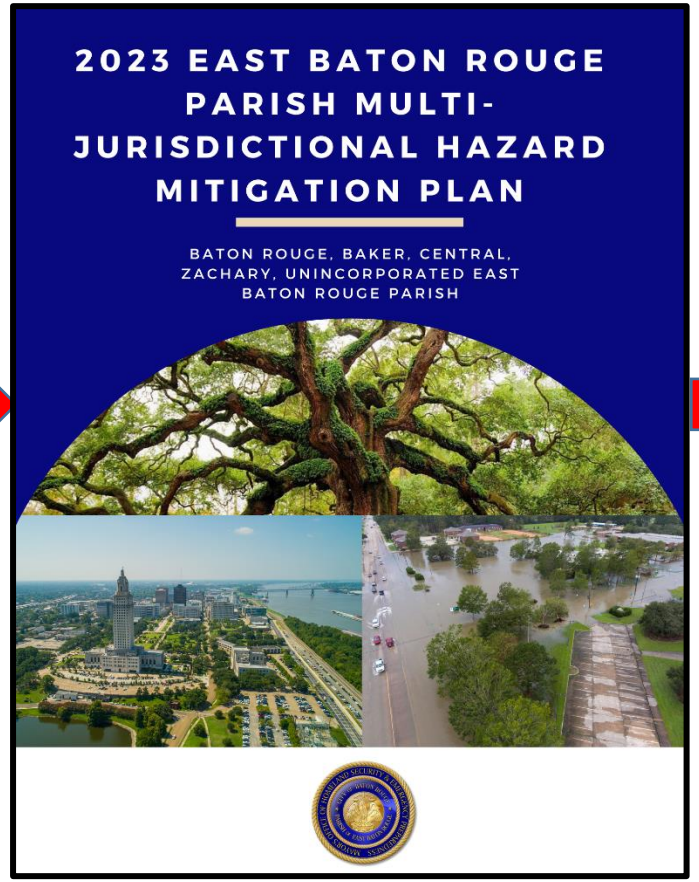
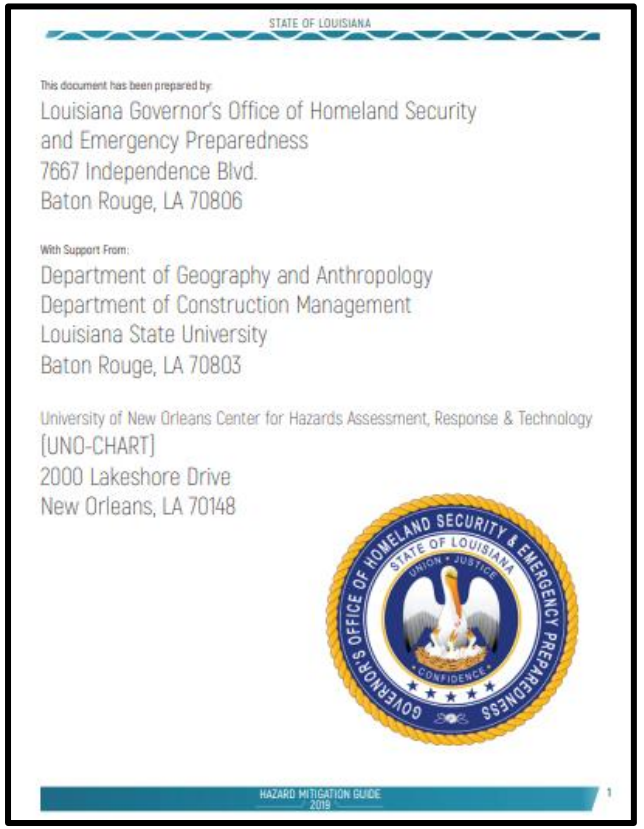
Why We Are Here





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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!***

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Purpose of 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 East Baton Rouge Parish Hazard Mitigation Plan will allow for distribution of HM funding following future disasters.

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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!

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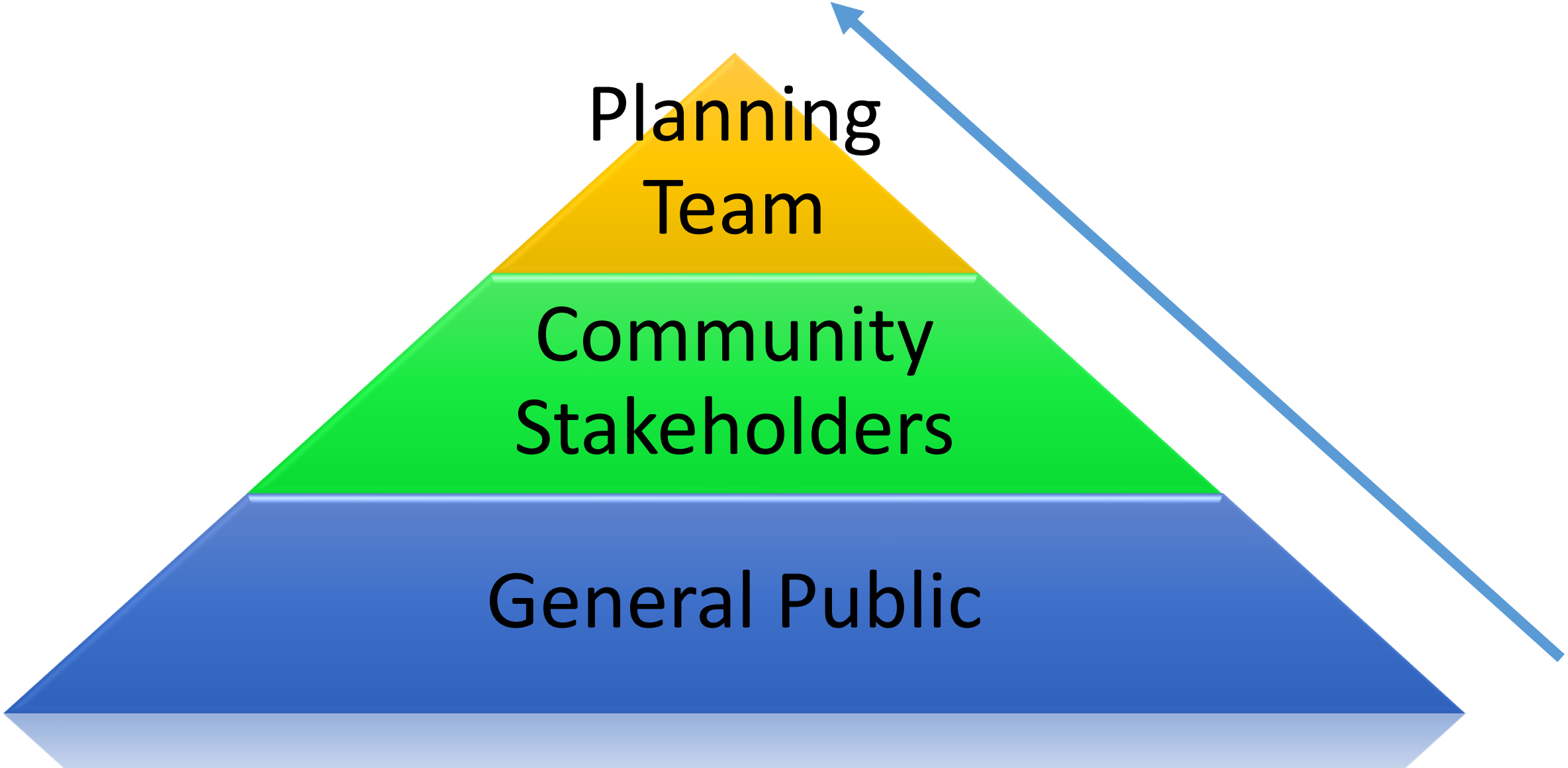
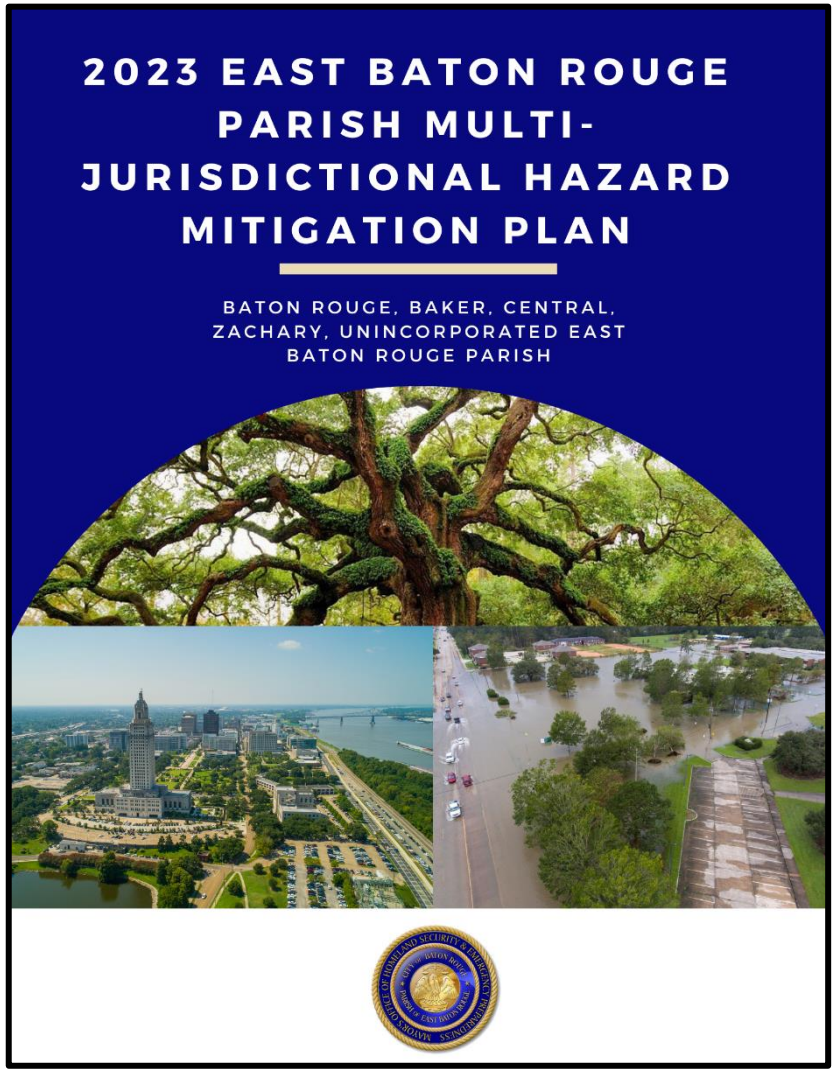
Collaborative Planning Approach



Plan Development



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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**
  - Action updates
  - New actions
  - Survey results

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Plan Layout

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

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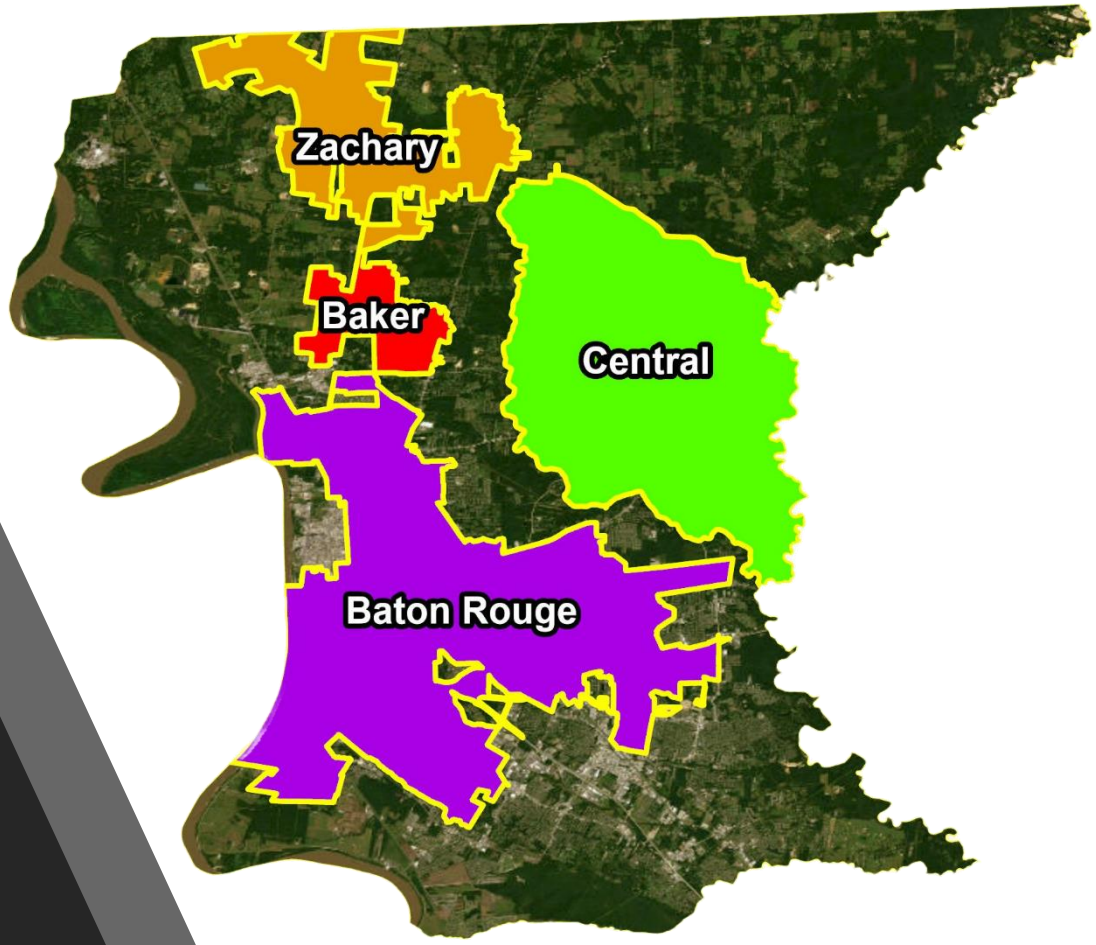
Hazard Identification and Risk Assessment

- The plan includes descriptions of the natural hazards that impact the jurisdictions in the planning area.

- The hazard identification includes the following:
  - *locations affected*
  - *extent or strength*
  - *previous occurrences*
  - *probability of future events*



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Hazard Identification and Risk Assessment

- Dam Failure
- Drought
- Flooding
- Levee Failure
- Thunderstorms
- Tornadoes
- Tropical Cyclones
- Wildfires
- Winter Weather

Risk Assessment Factors

- Previously Profiled Hazards
- Newly Identified Hazards
- Previous Occurrences
- Probability of Future Events
- Potential Losses due to an event
- Zoning and Land Use
- Impacts on Critical Facilities
- Impacts from future development
- Future impacts due to climate change

East Baton Rouge Parish Risk Matrix

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Dam Failure	1	2	1	4	2	1.85
Drought	3	2	4	2	3	2.8
Flooding	4	4	3	4	3	3.65
Levee Failure	1	2	1	4	2	1.85
Thunderstorms - Hail	4	2	3	3	1	2.7
Thunderstorms - Lightning	4	2	2	3	1	2.5
Thunderstorms – High 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	3	4	1	2	2.75

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

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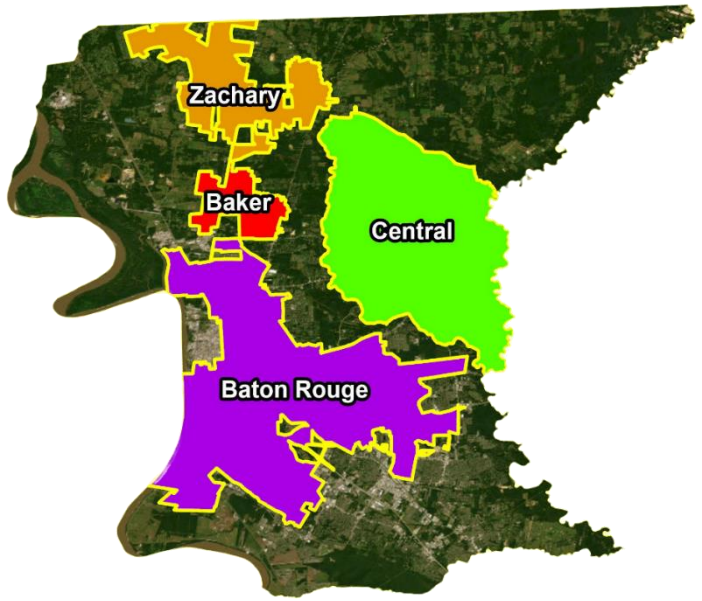
Risk Assessment Maps



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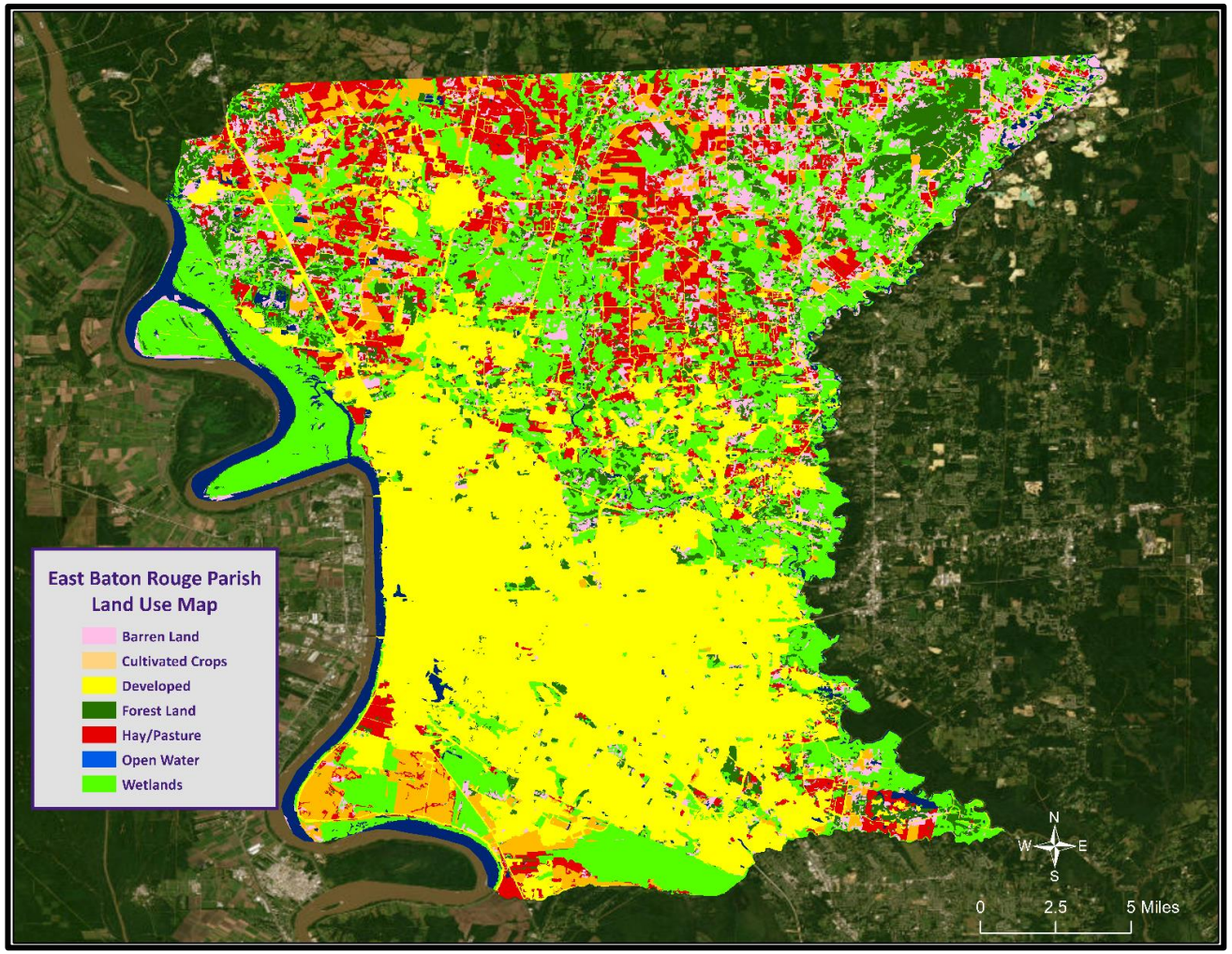
East Baton Rouge Parish Land Use



Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	78,037	26%
Wetlands	77,809	26%
Forest Land (Not including forested wetlands)	27,480	9%
Urban/Development	107,307	36%
Water	10,876	4%

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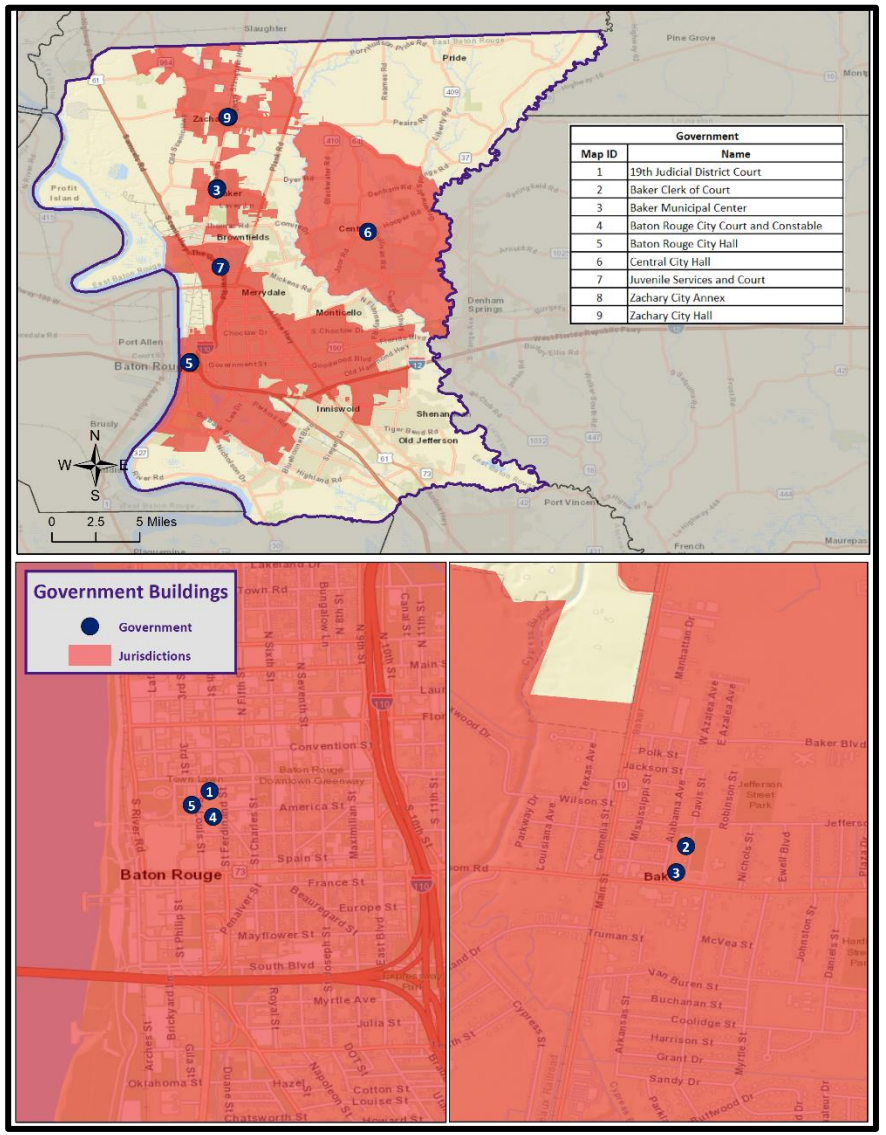
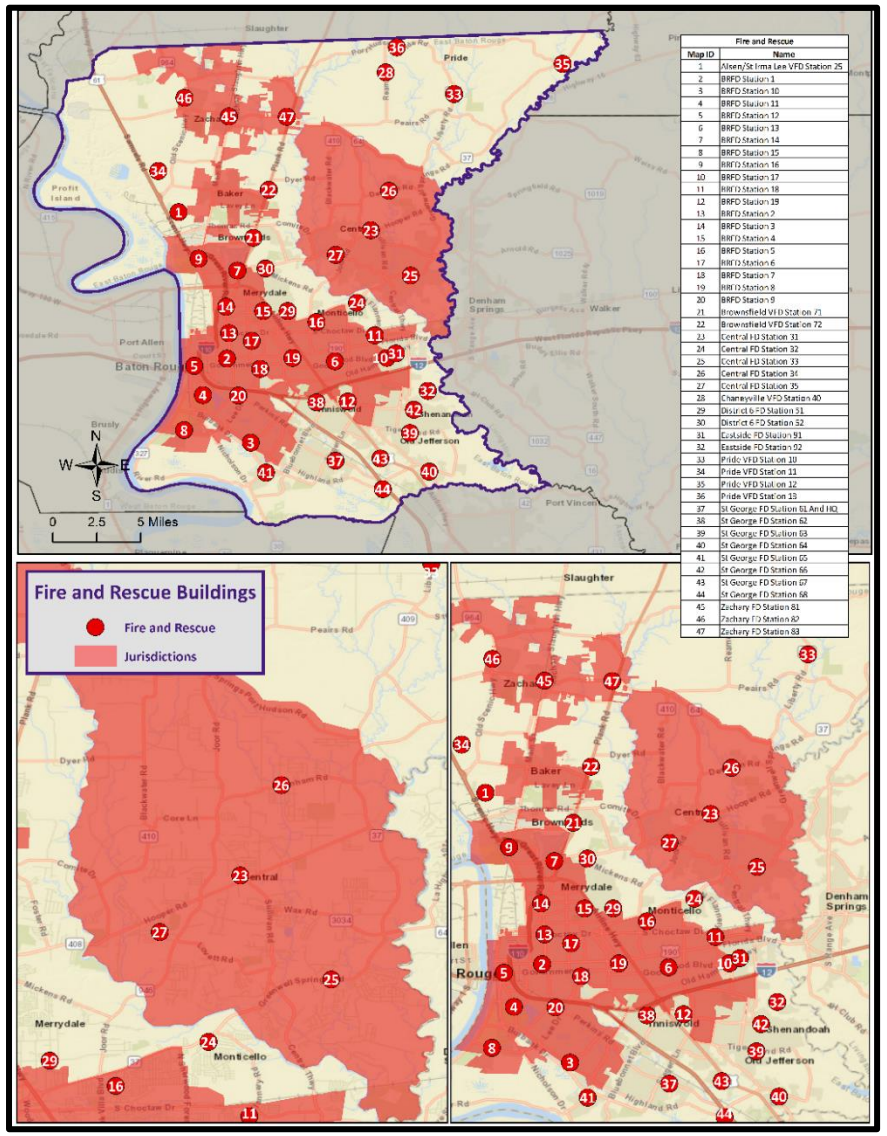
Critical Facilities

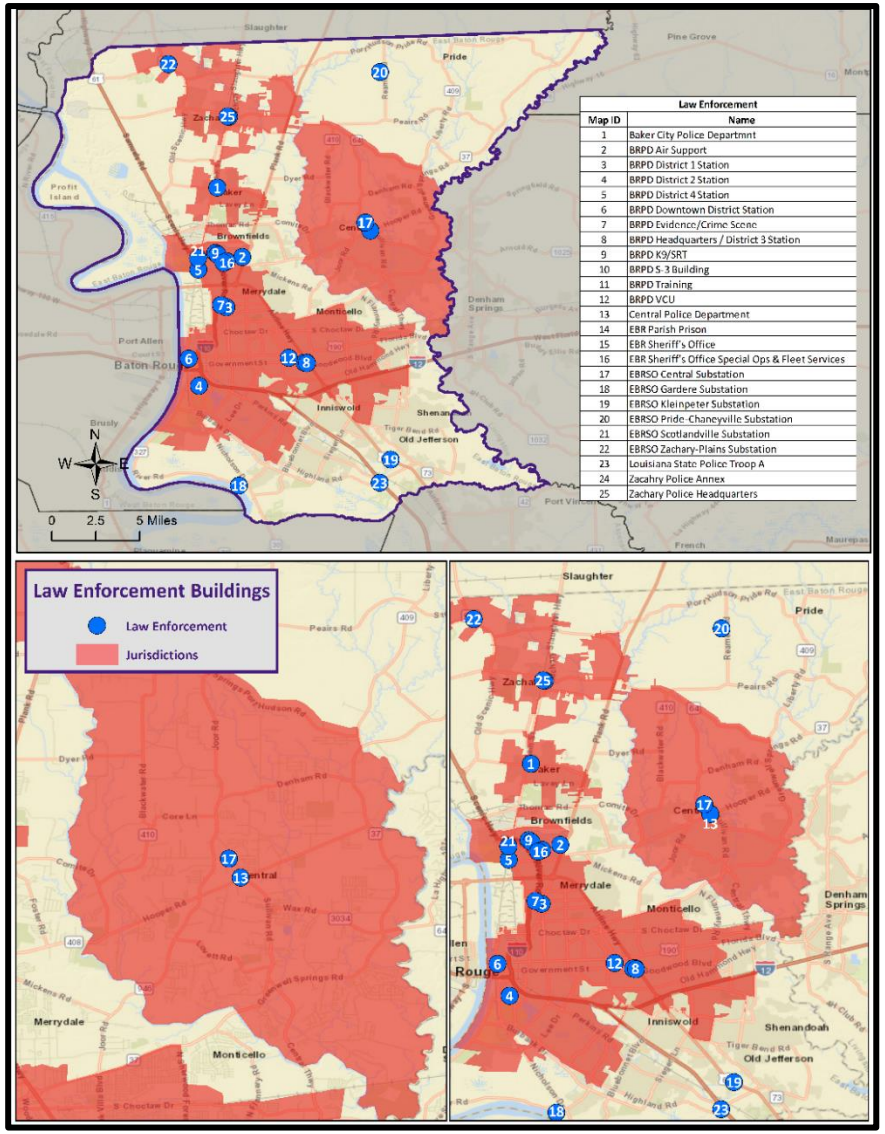


Civil Government

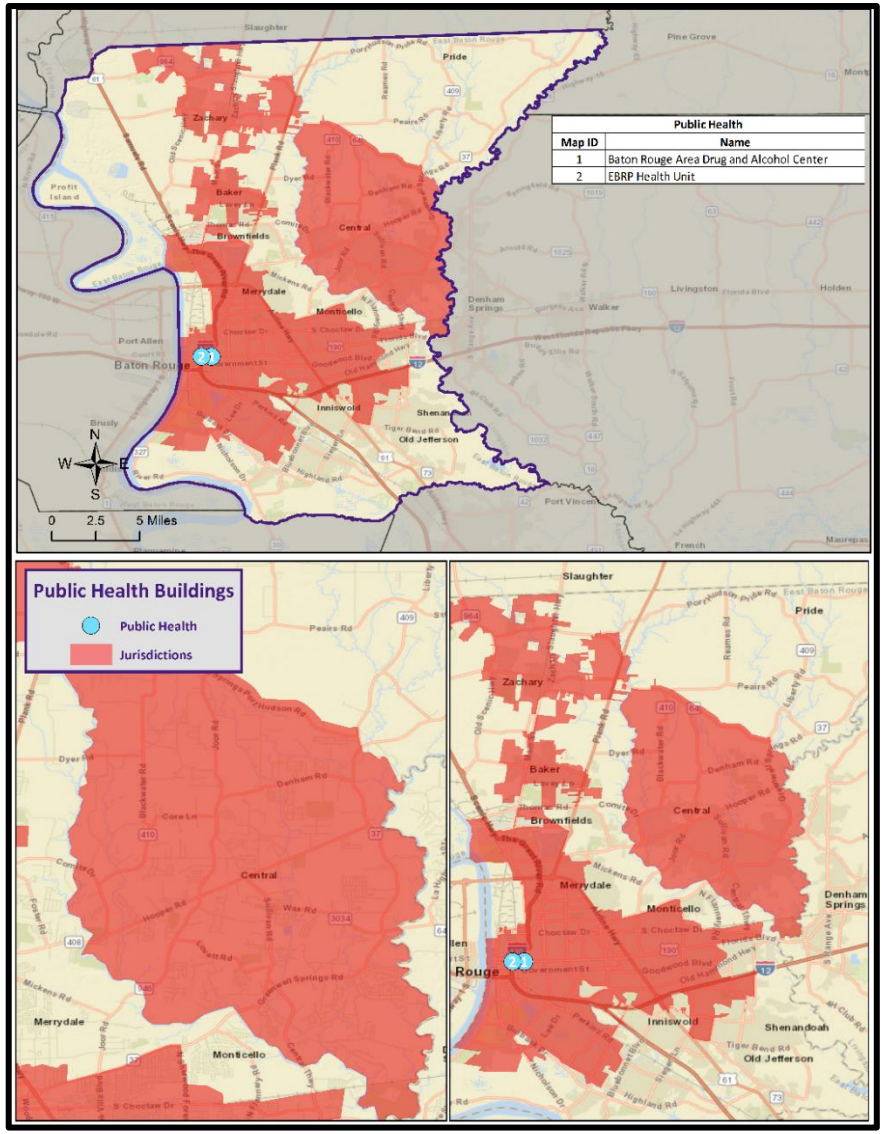


Fire & SAR

Critical Facilities

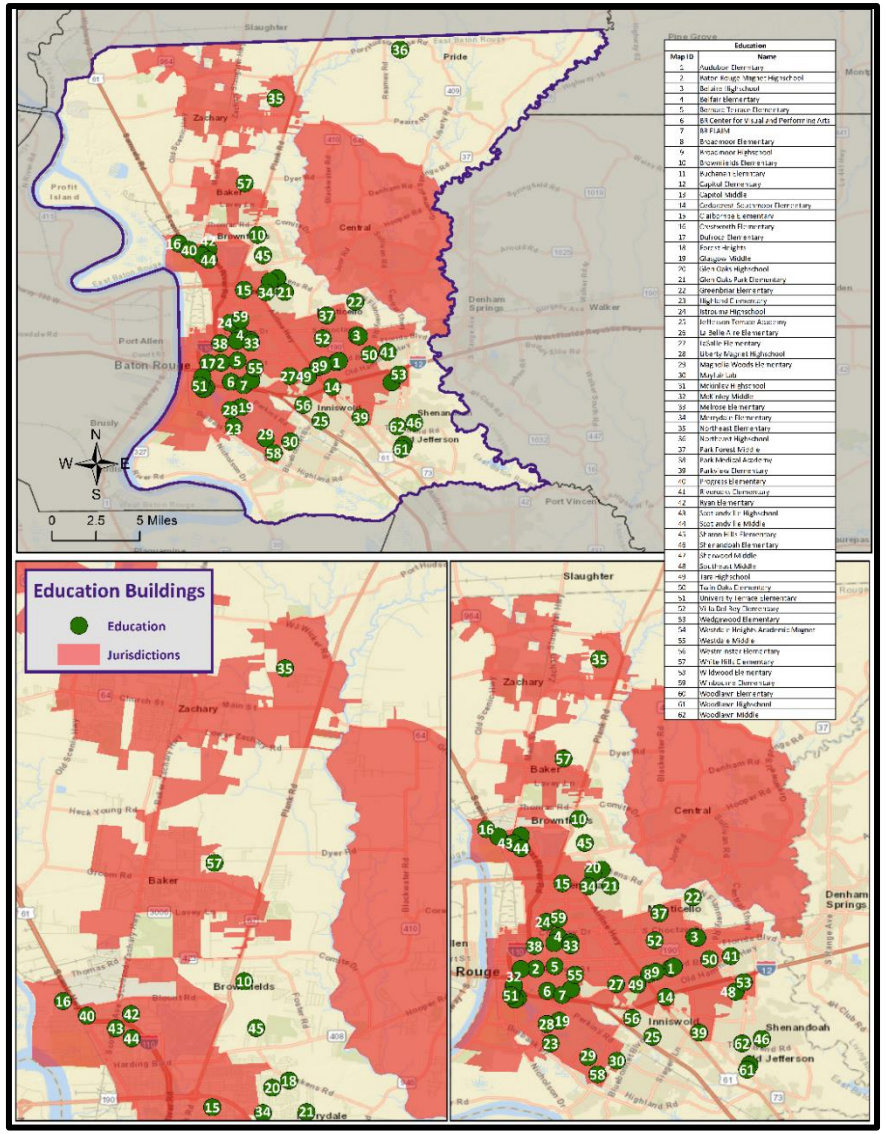


Law Enforcement



Public Health

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

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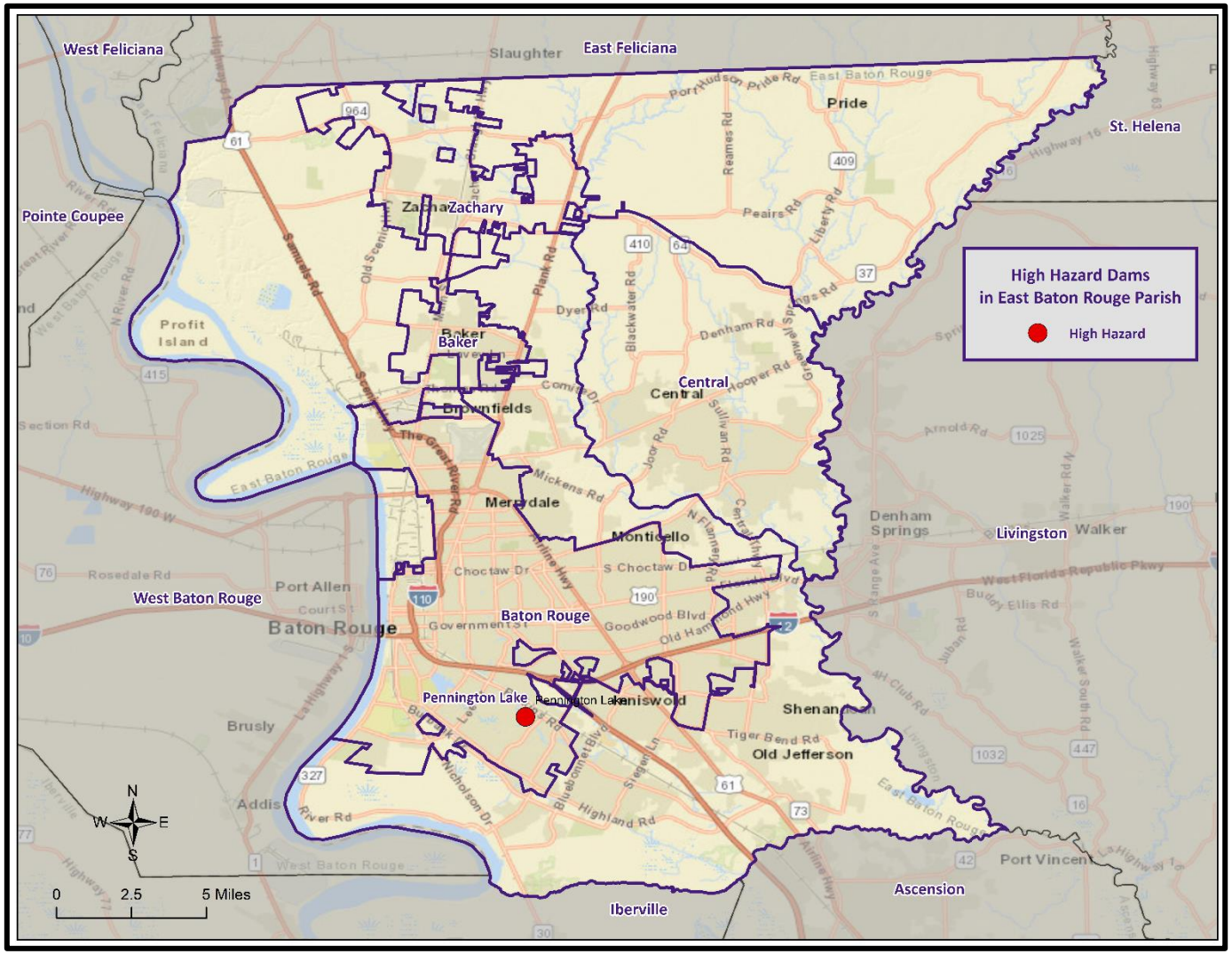
Location of Dams in EBR Parish



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

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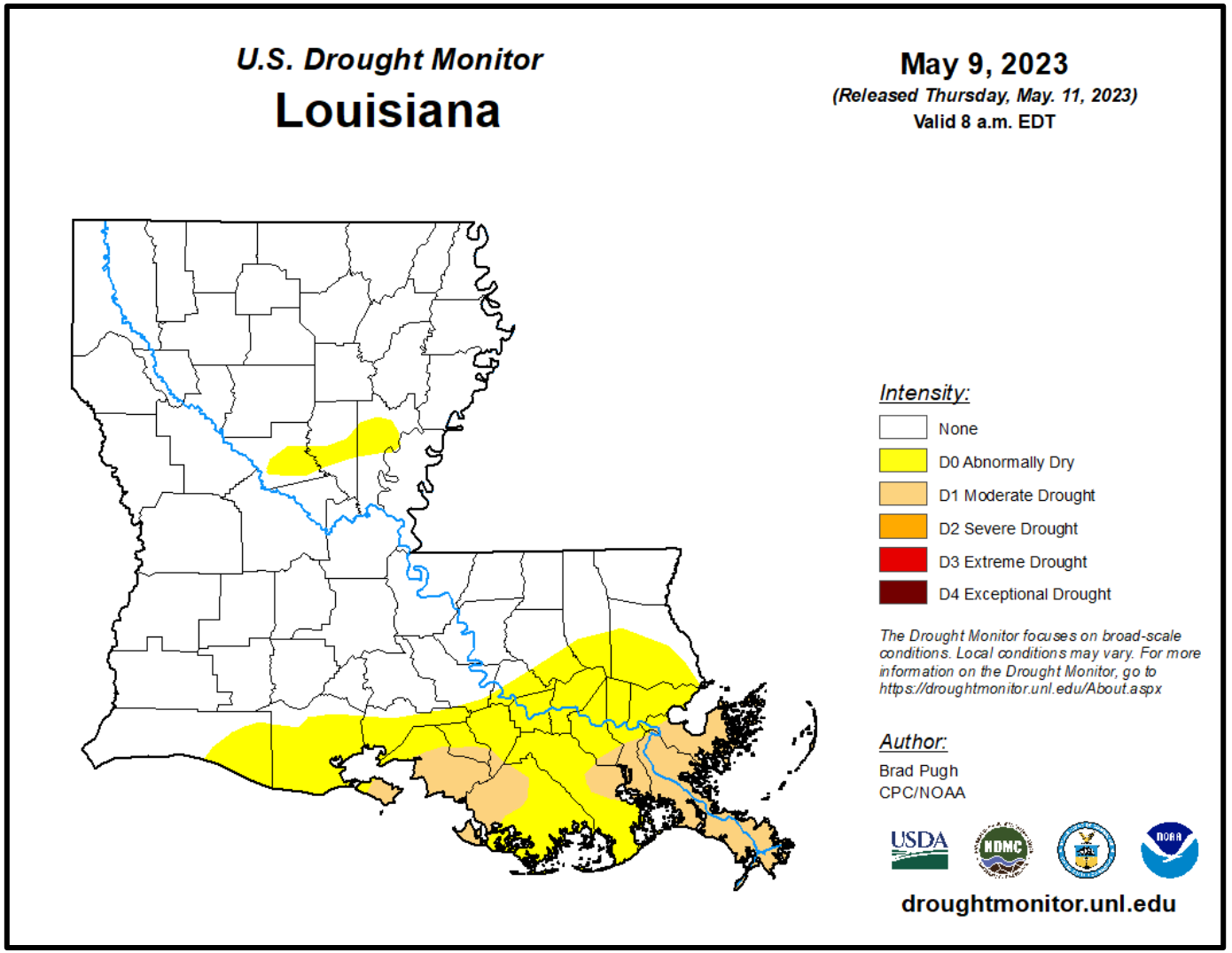
Drought Monitor



Flooding

- A flood is the overflow of water onto land that is usually not inundated.

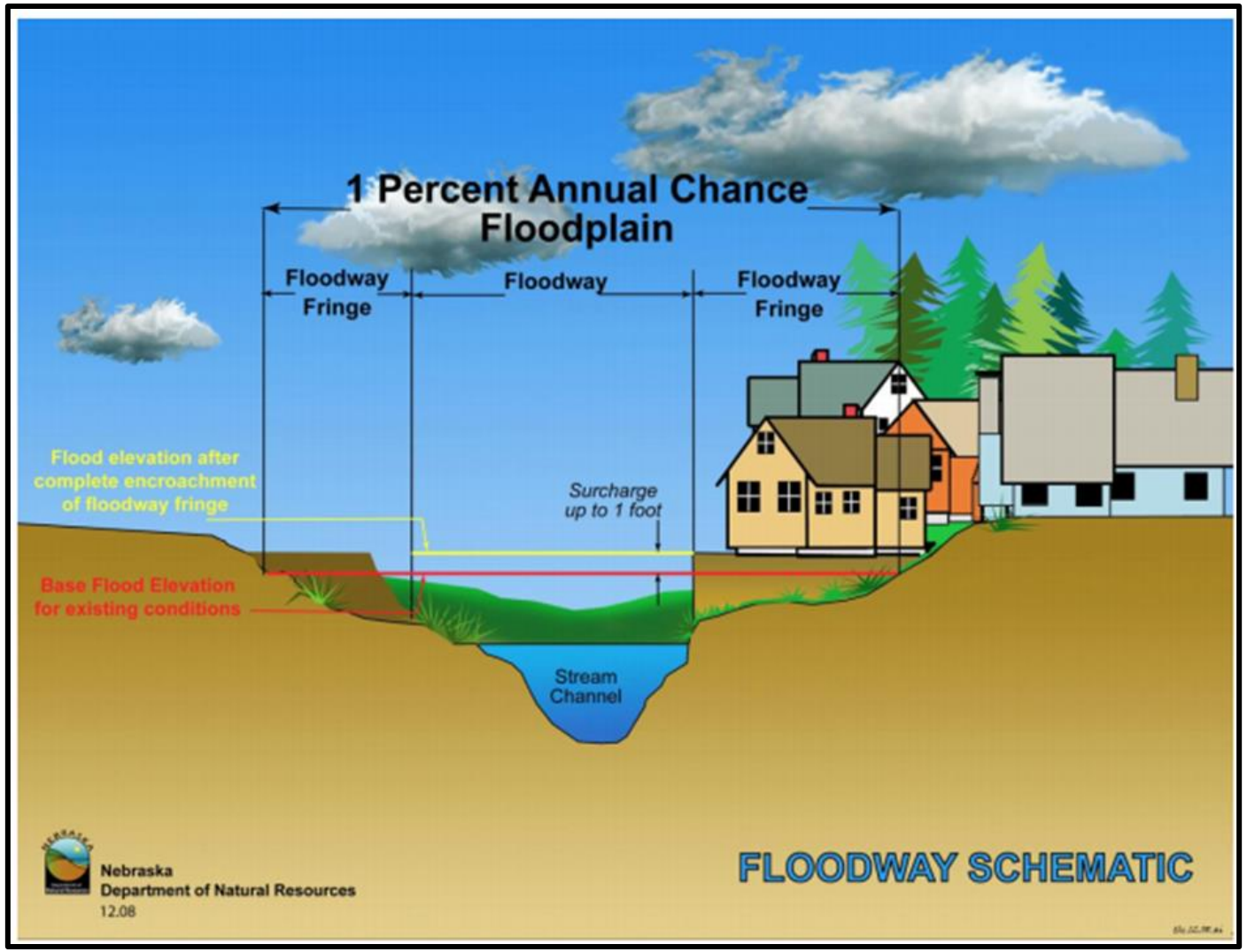
- The National Flood Insurance Program defines a flood as “a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waves, unusual and rapid accumulation or runoff of surface waters 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

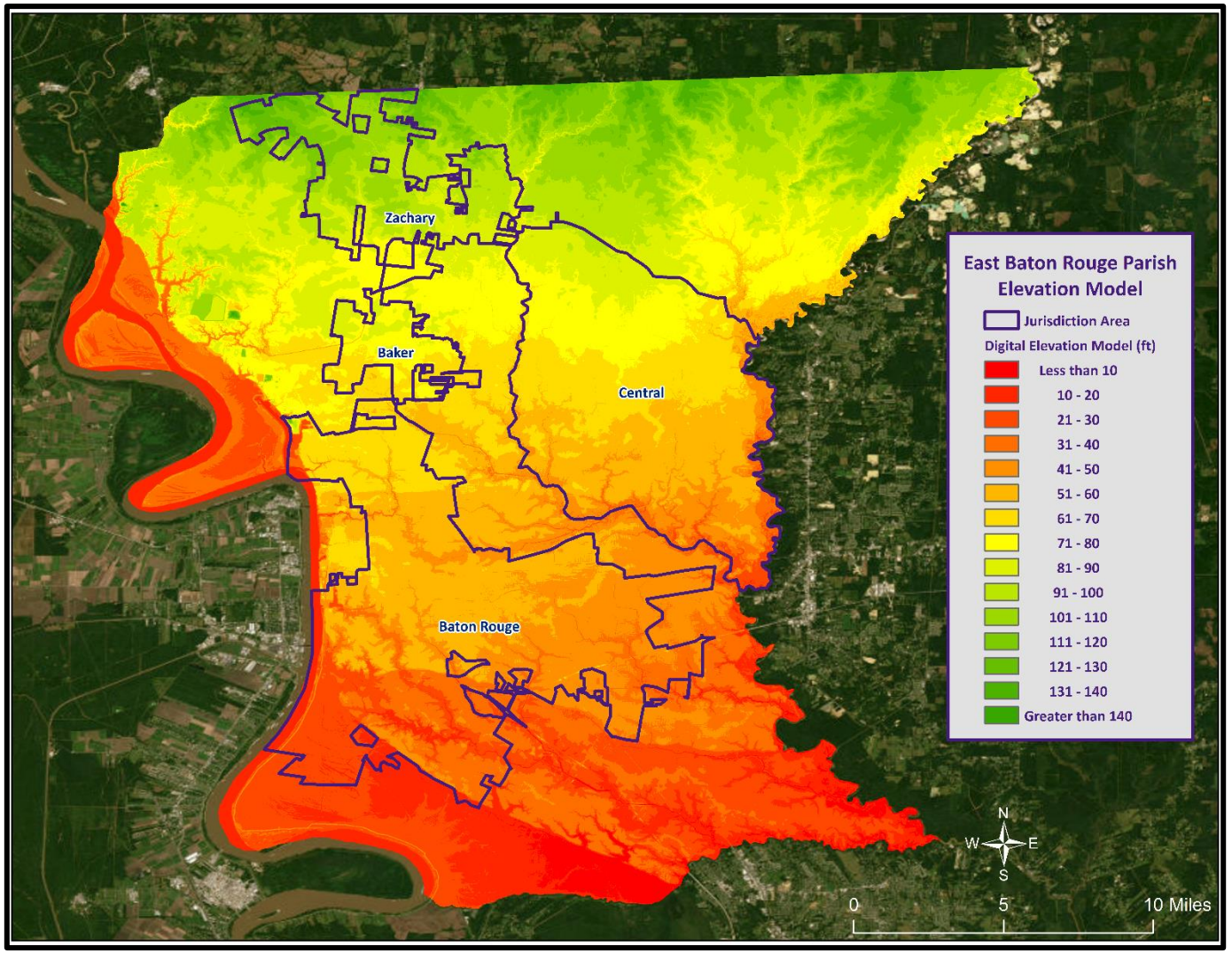
In Louisiana, six specific types of flooding are of main concern:

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

Floodway Diagram



Digital Elevation Model



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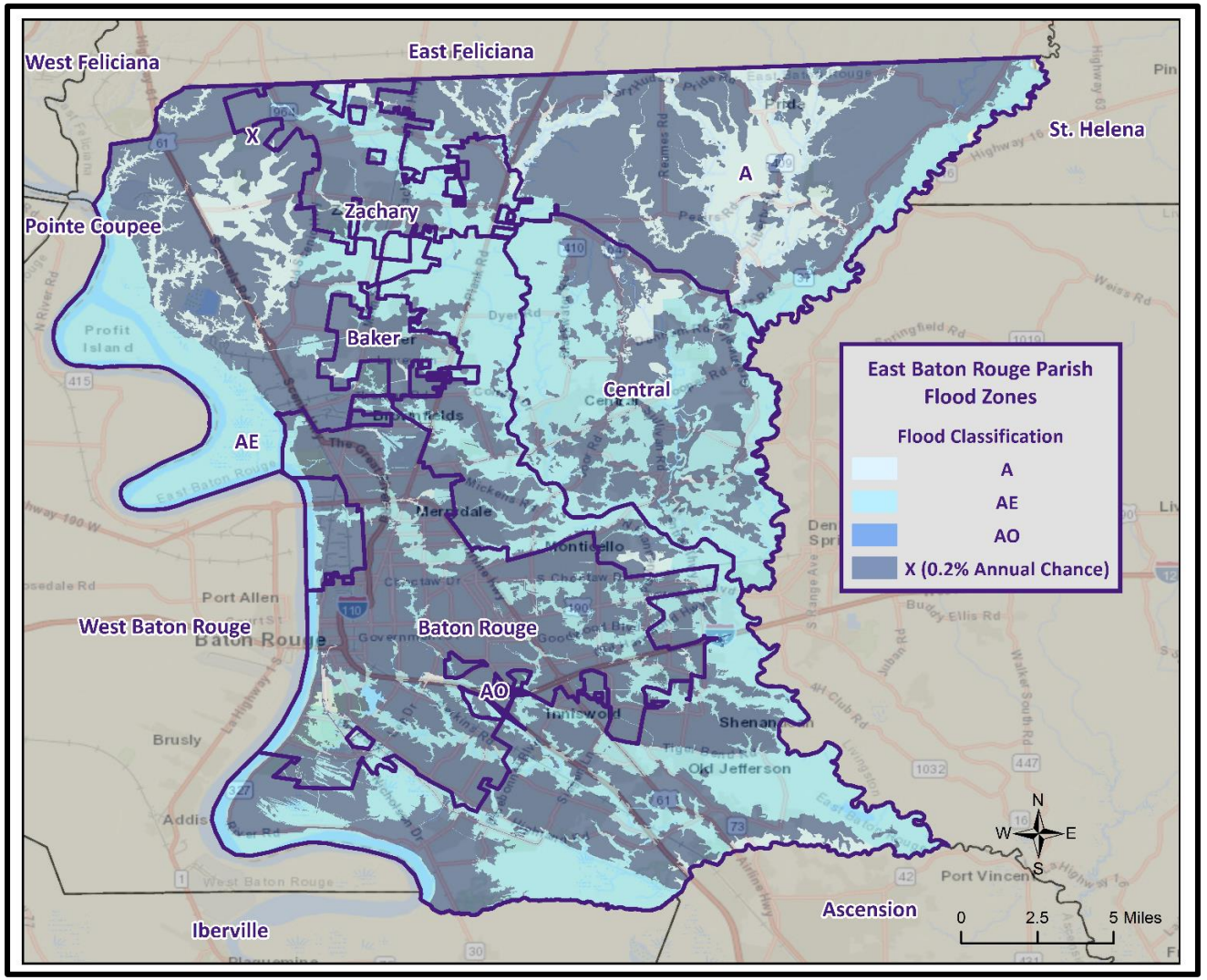
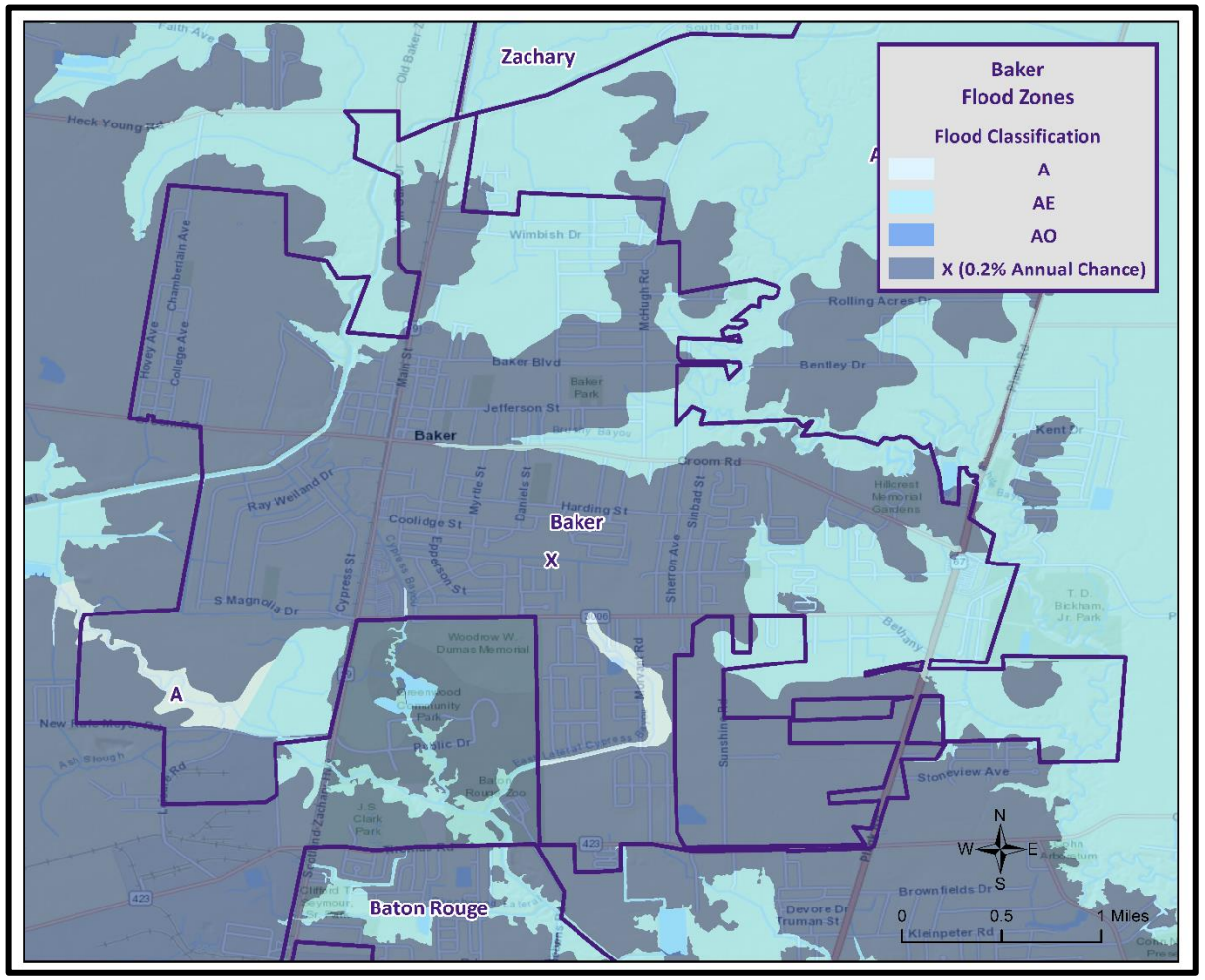
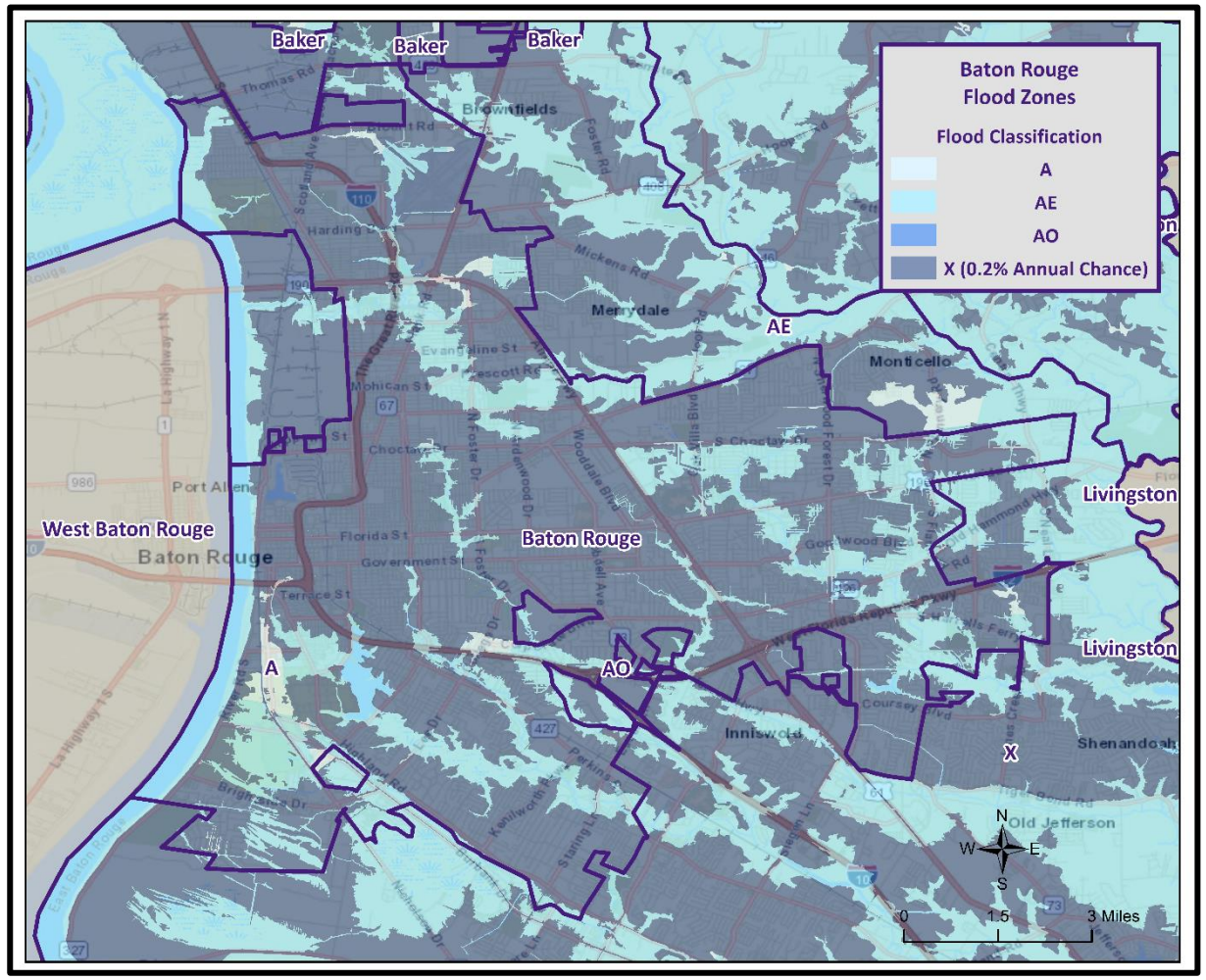
East Baton Rouge Parish Flood Map



Municipal Flood Maps

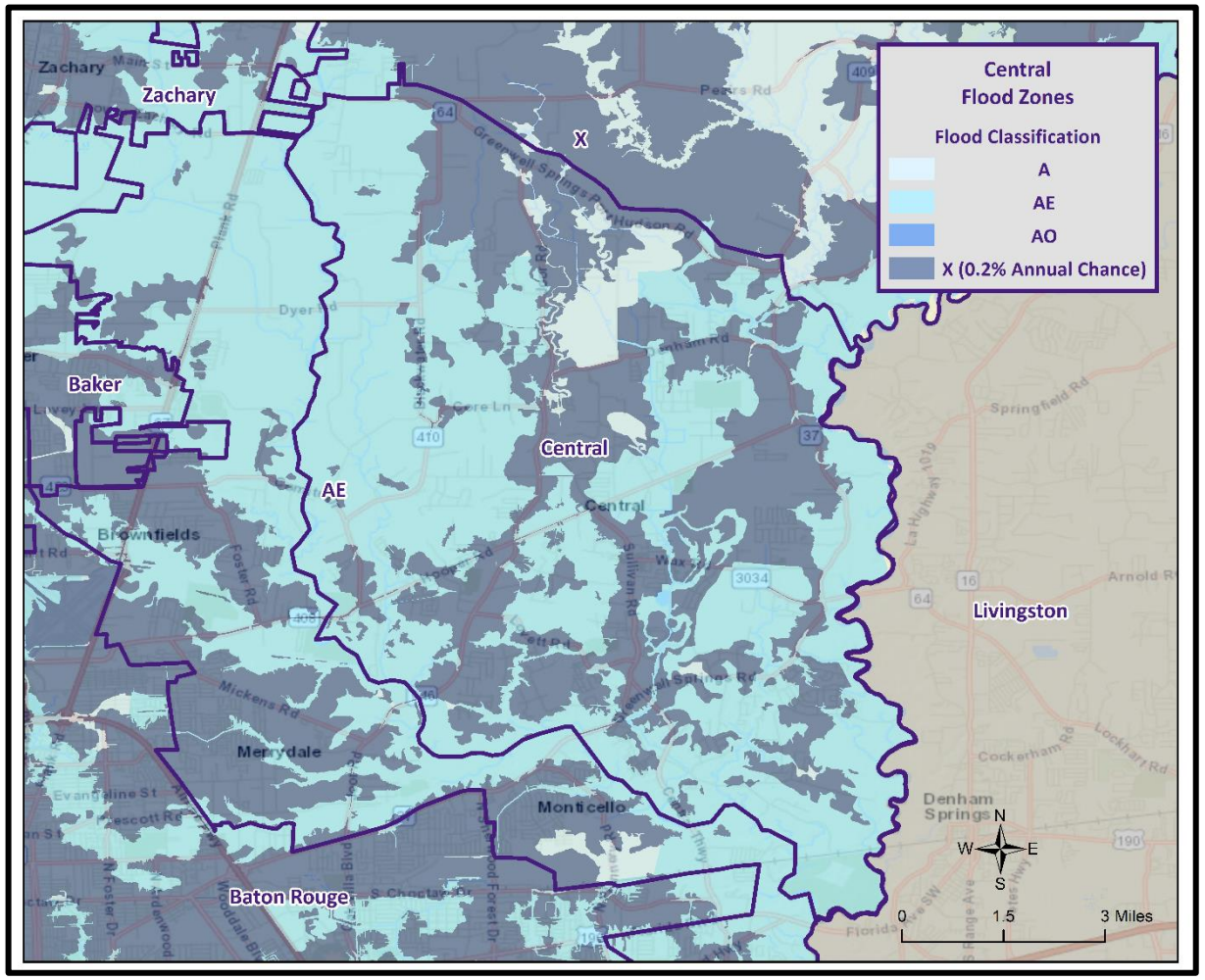


City of Baker

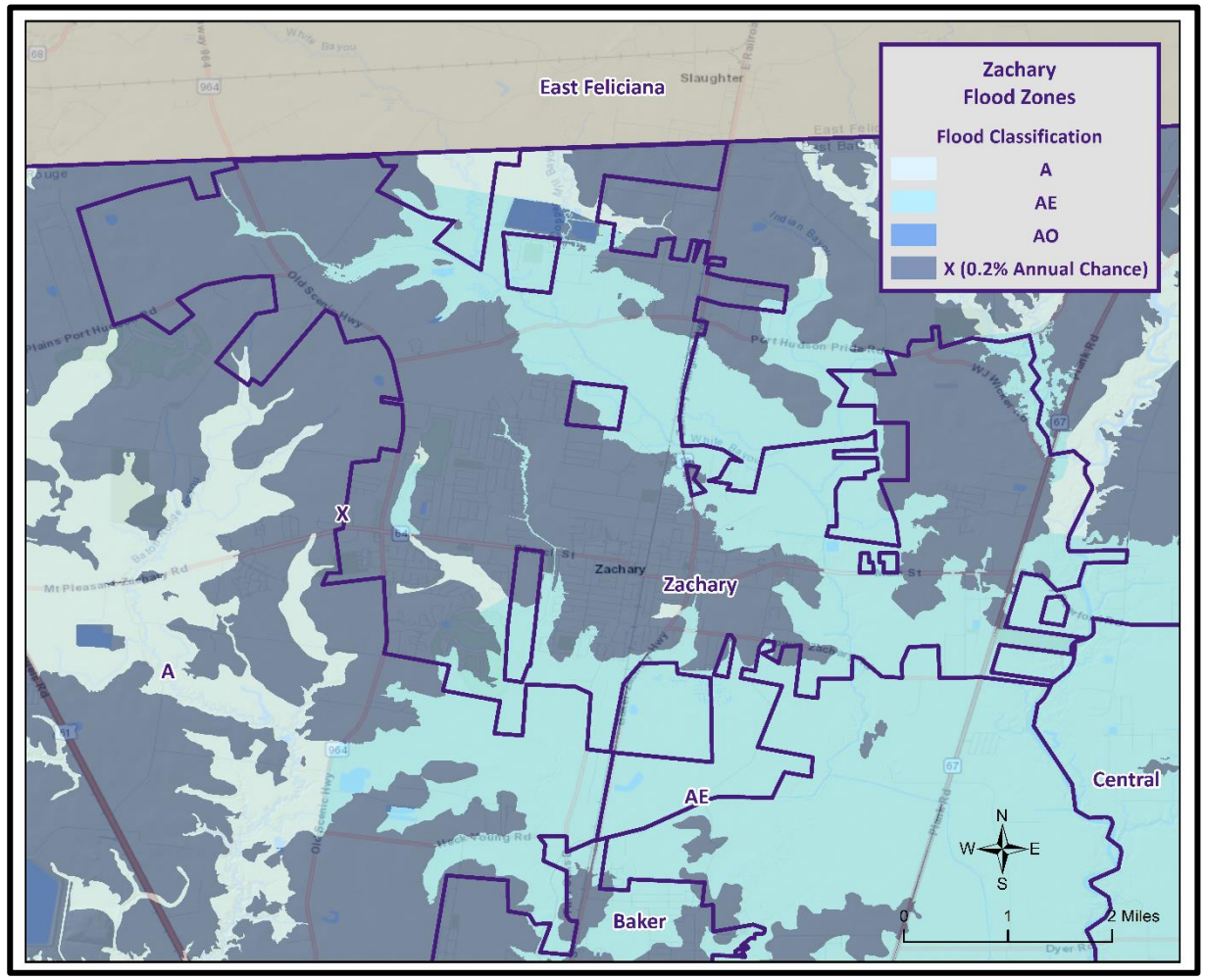


City of Baton Rouge

Municipal Flood Maps



City of Central

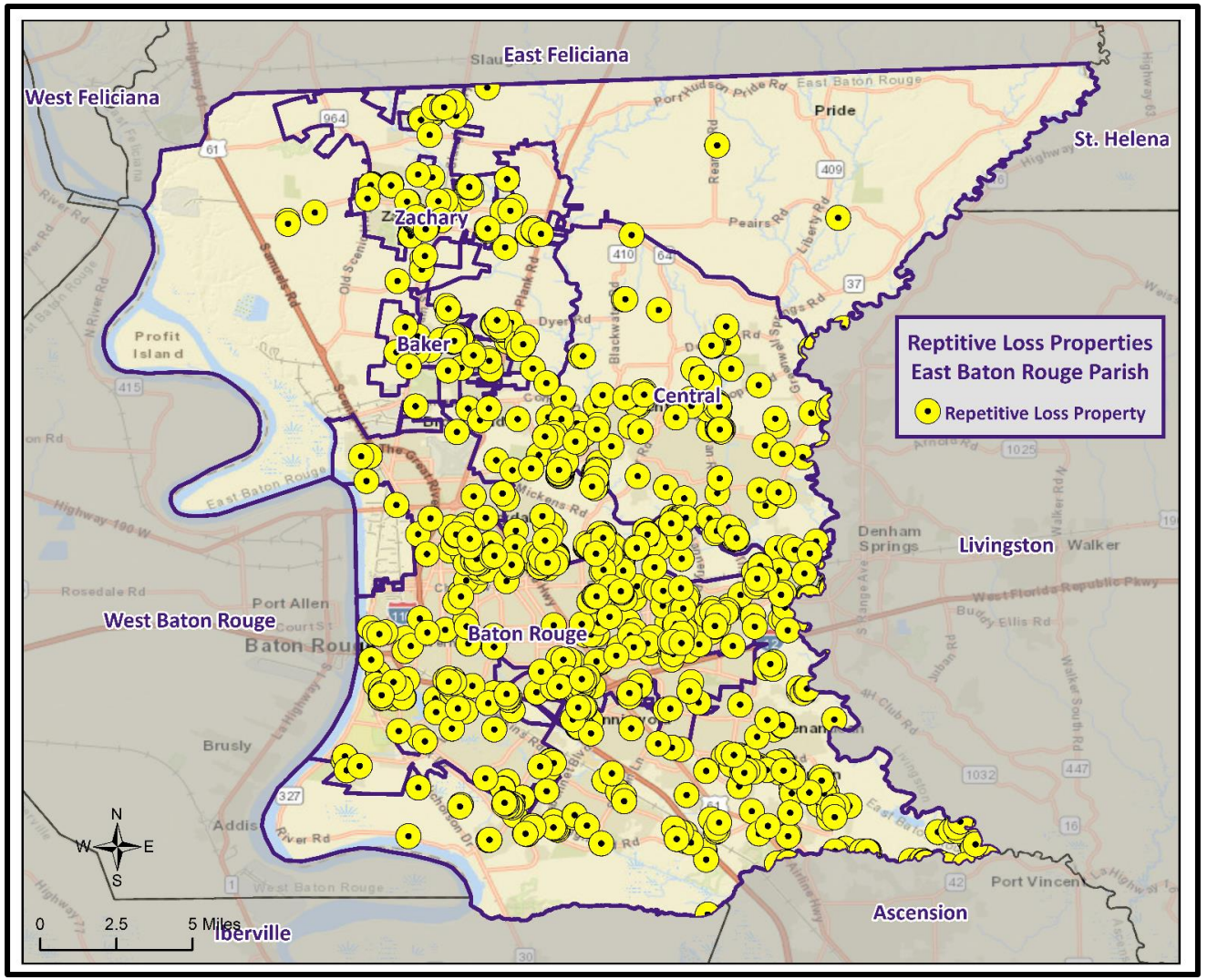


City of Zachary

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 more than 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



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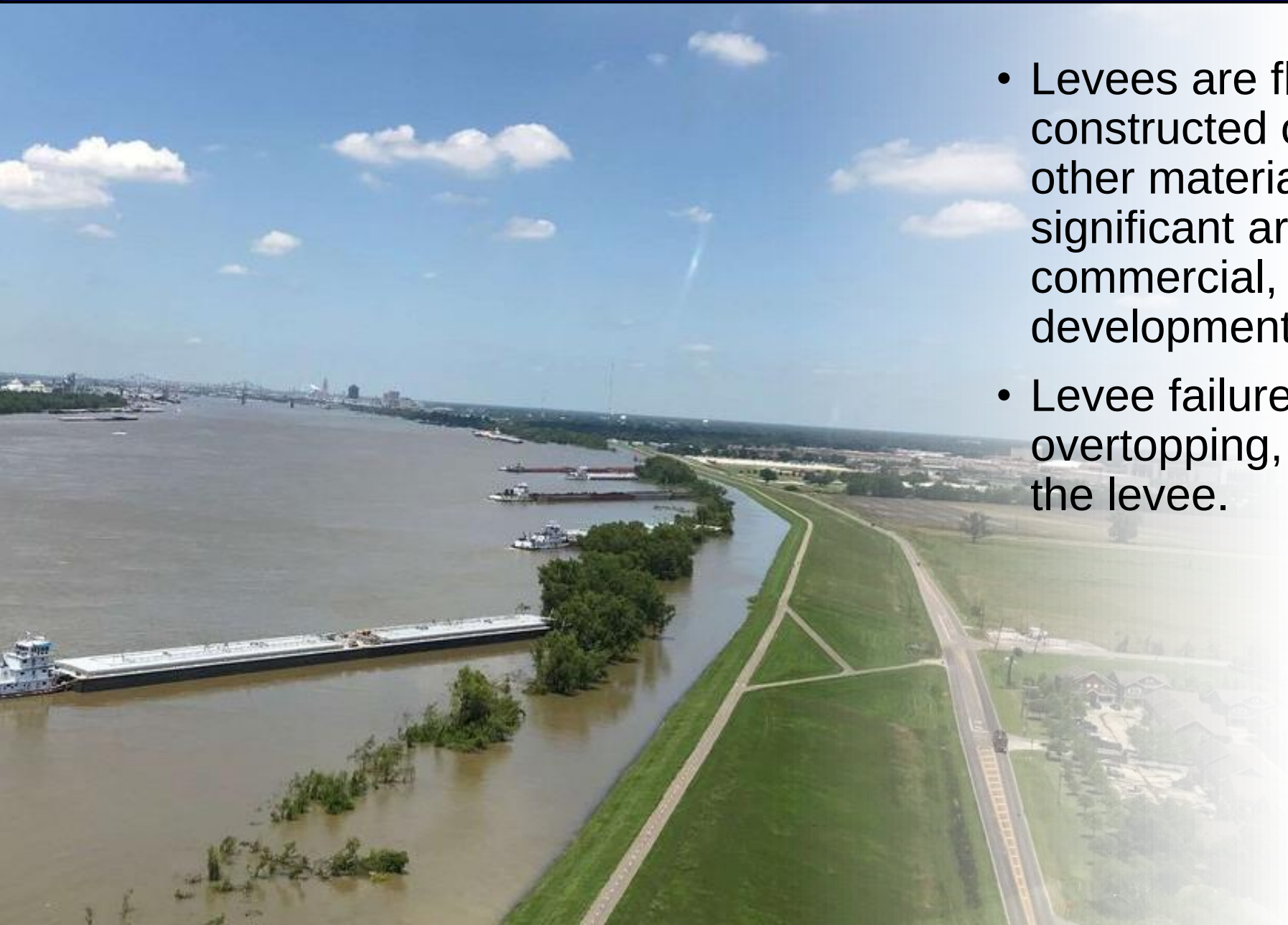
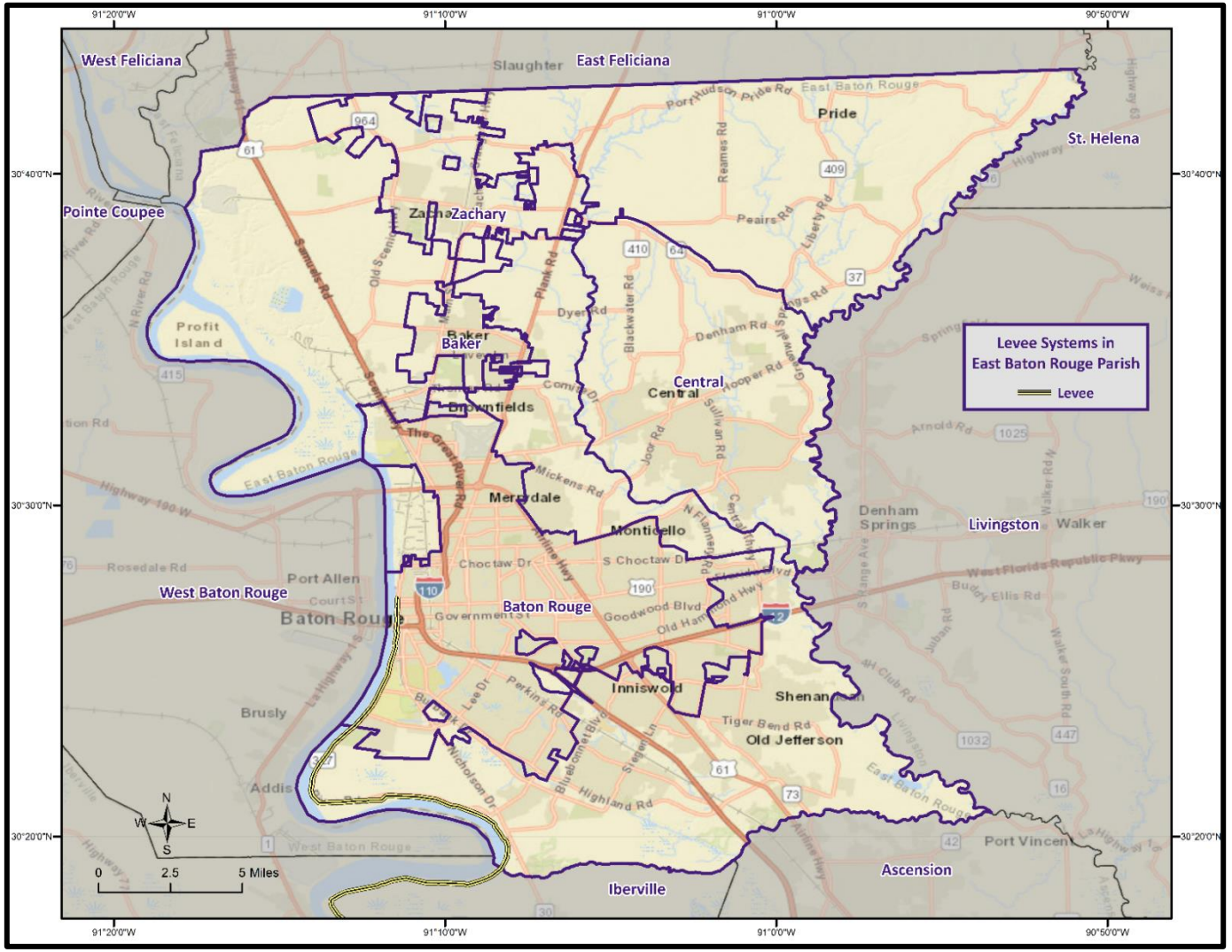
Levee Failure



- 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.

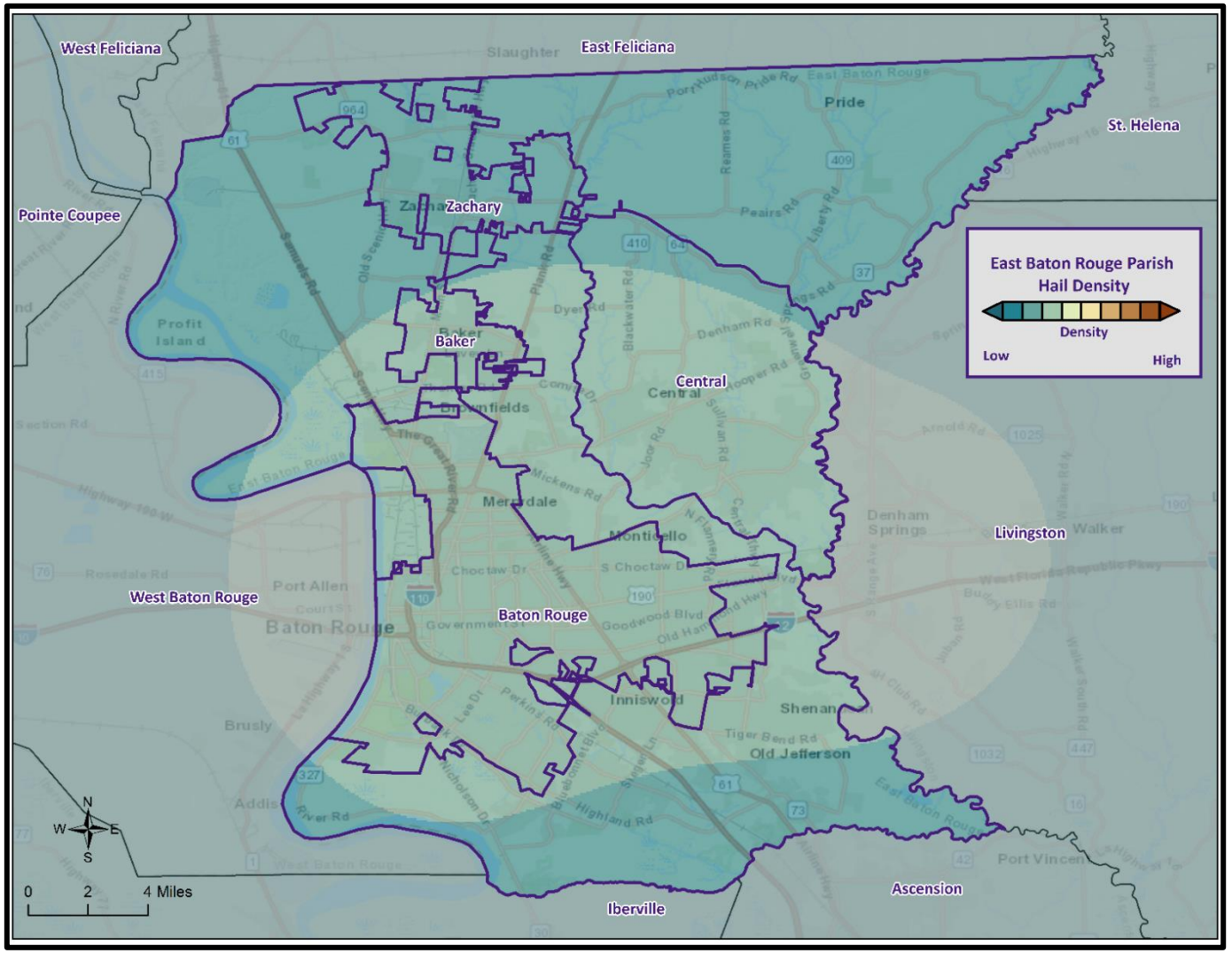
Location of Levees in EBR Parish



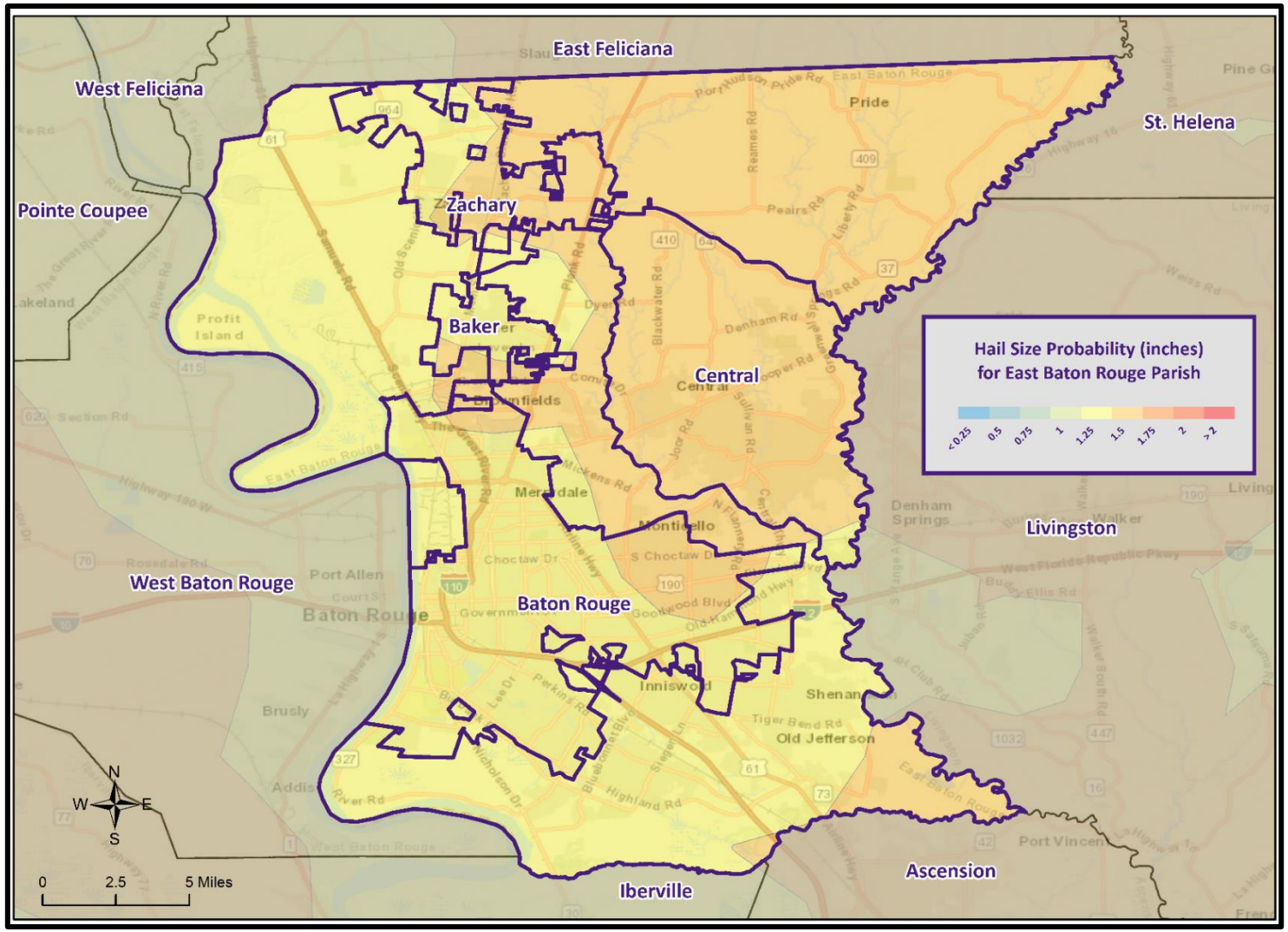
Thunderstorms

- 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 sheer causes a deviation in their course at a right angle to the wind shear direction.

Hailstorm Density



Maximum Hail Size Probability



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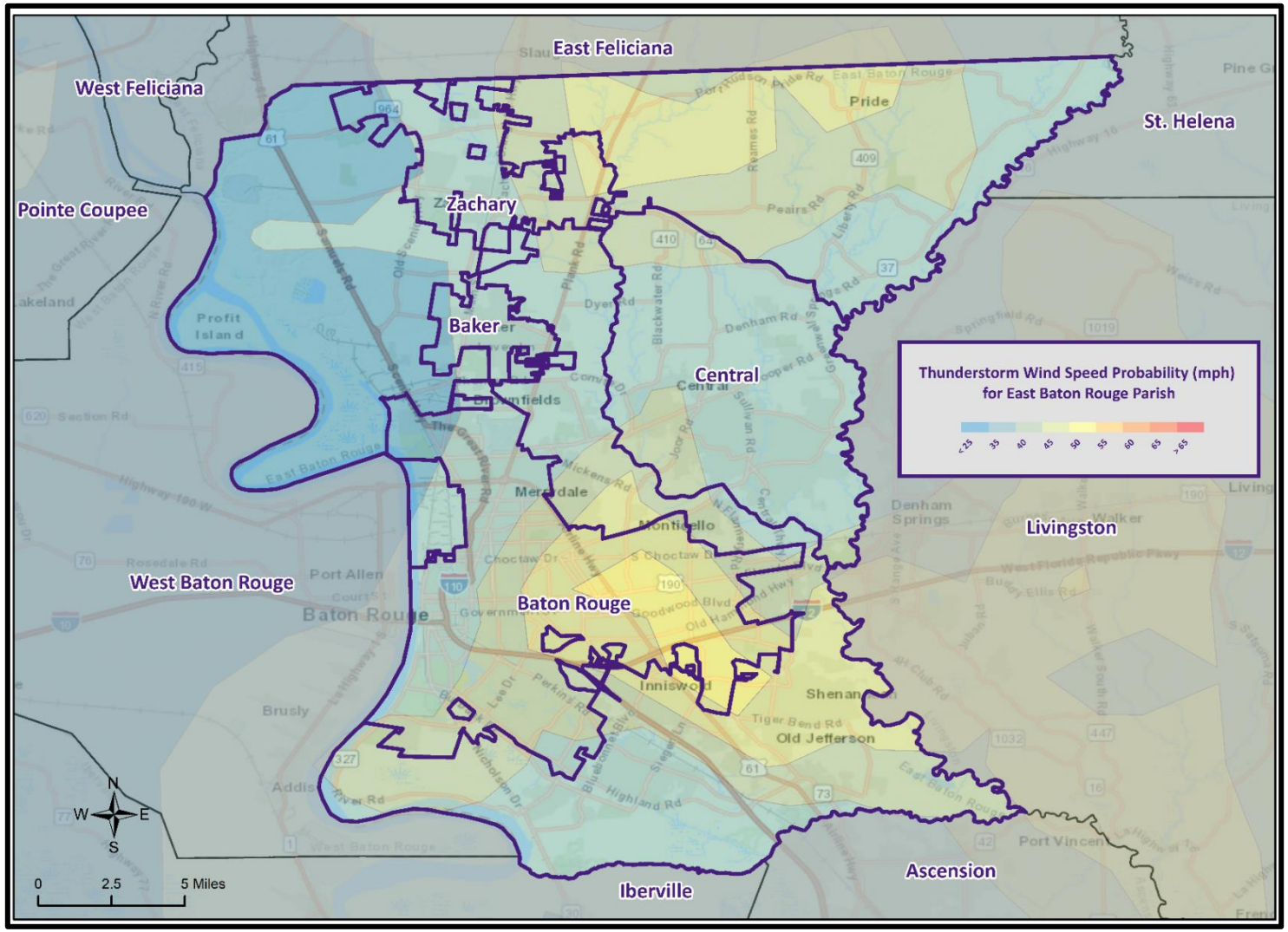
Maximum Wind Speed Probability



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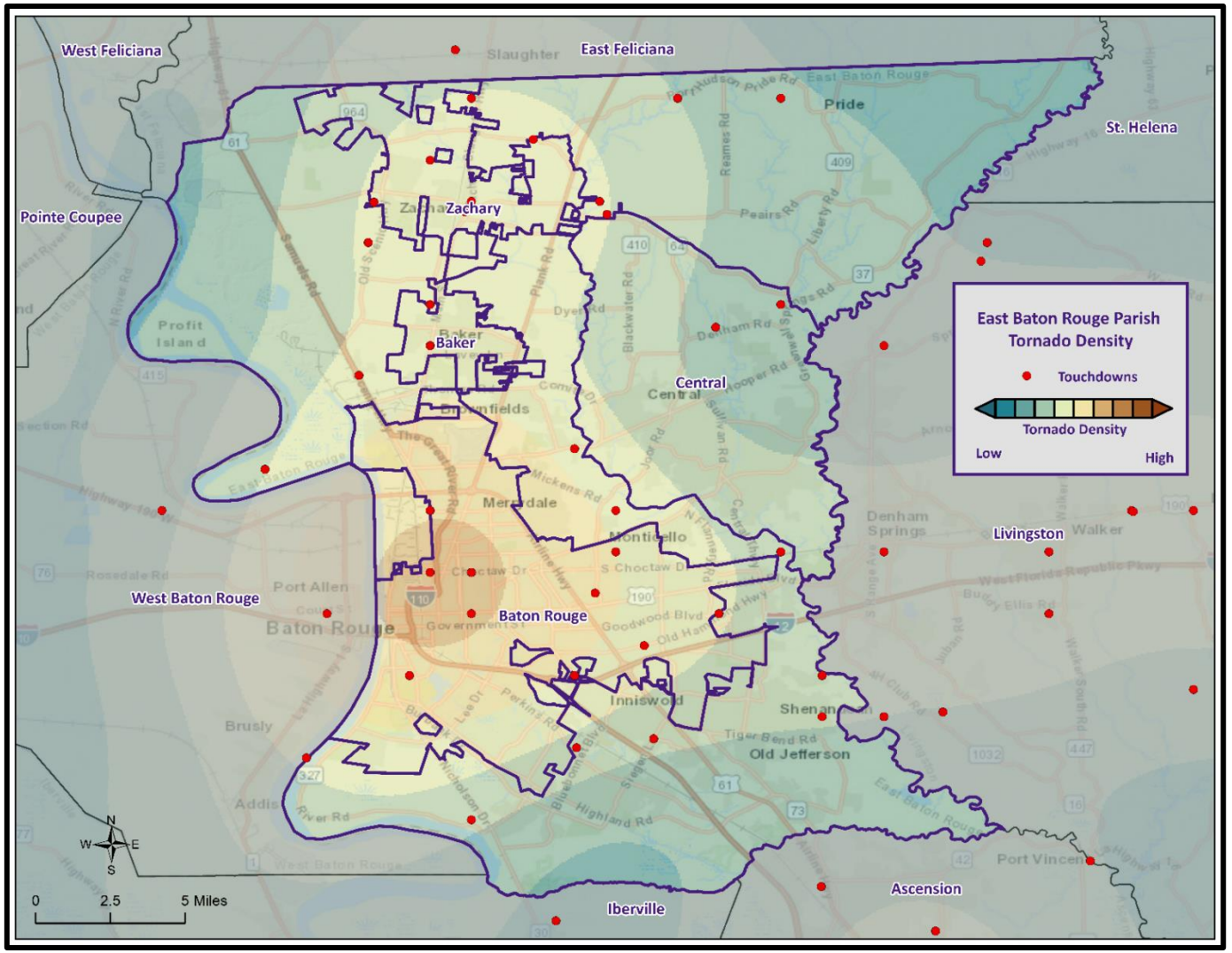
Tornadoes

- 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 East Baton Rouge Parish



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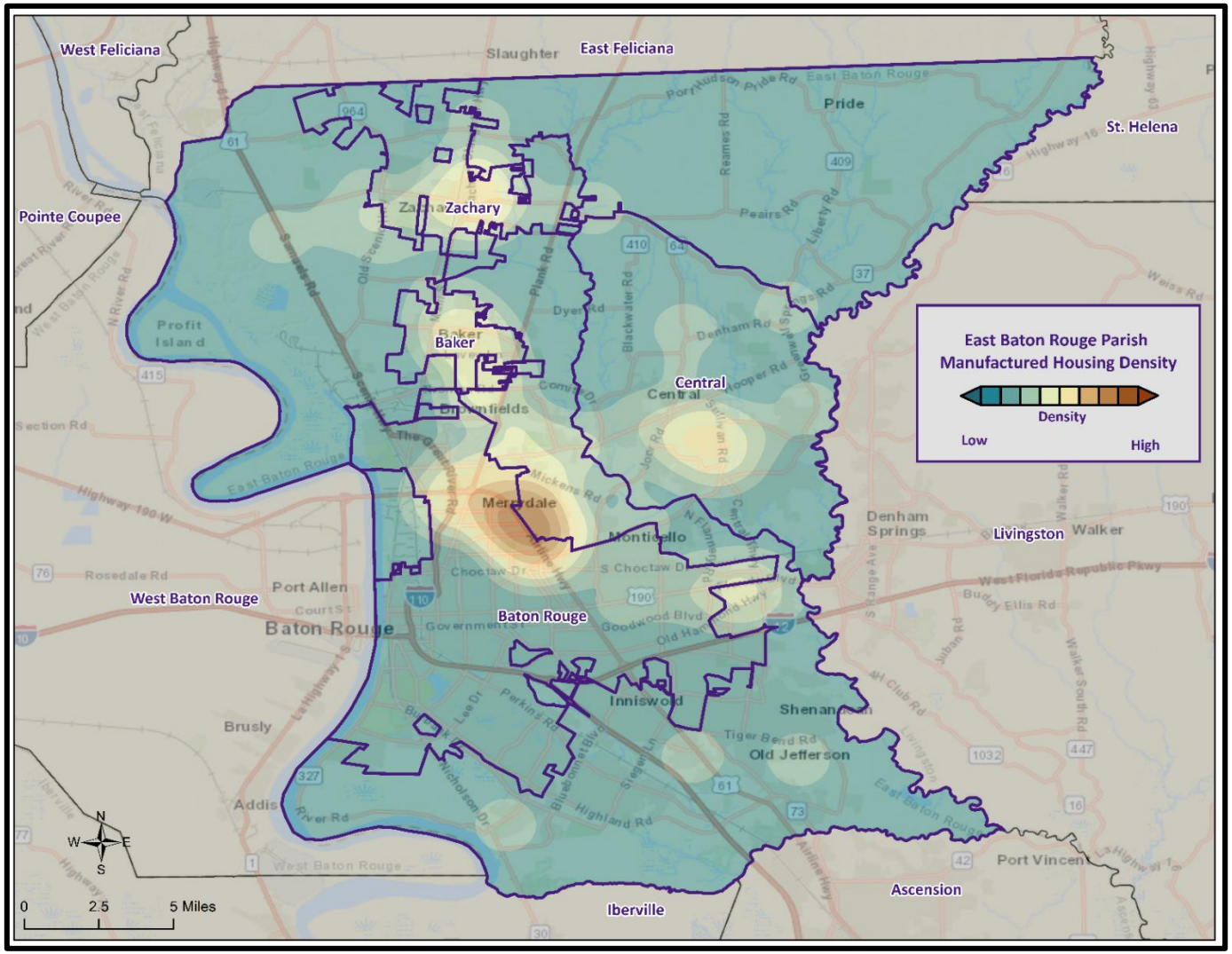
Manufactured Home Density



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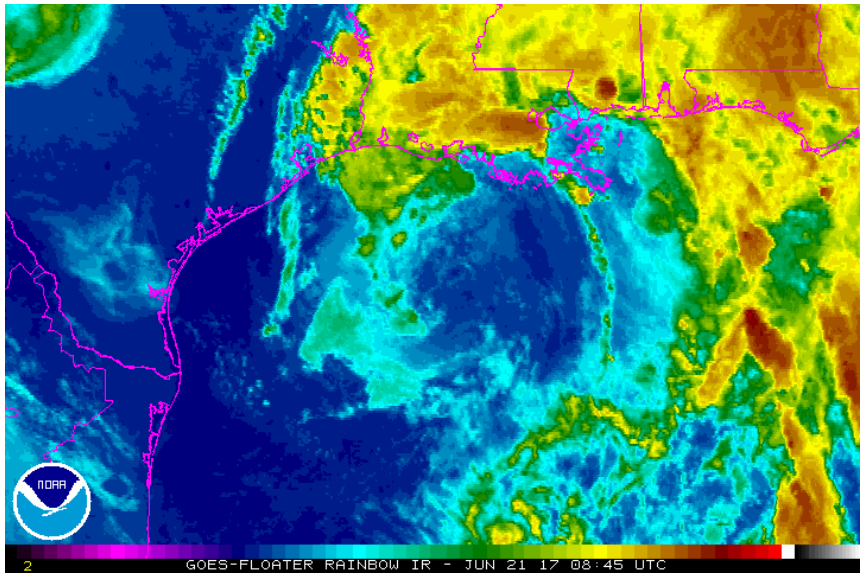
Tropical Cyclones

- 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.



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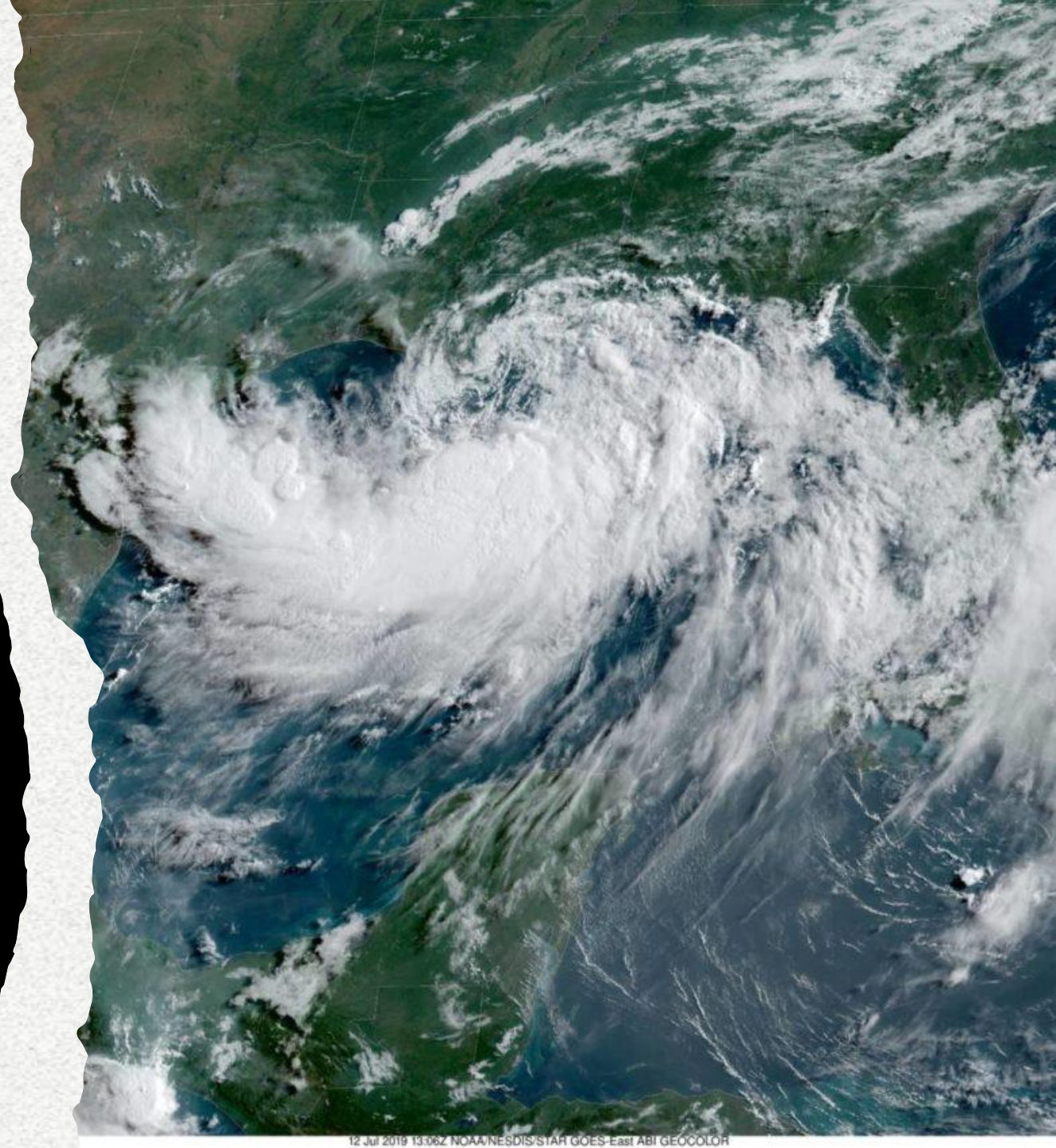
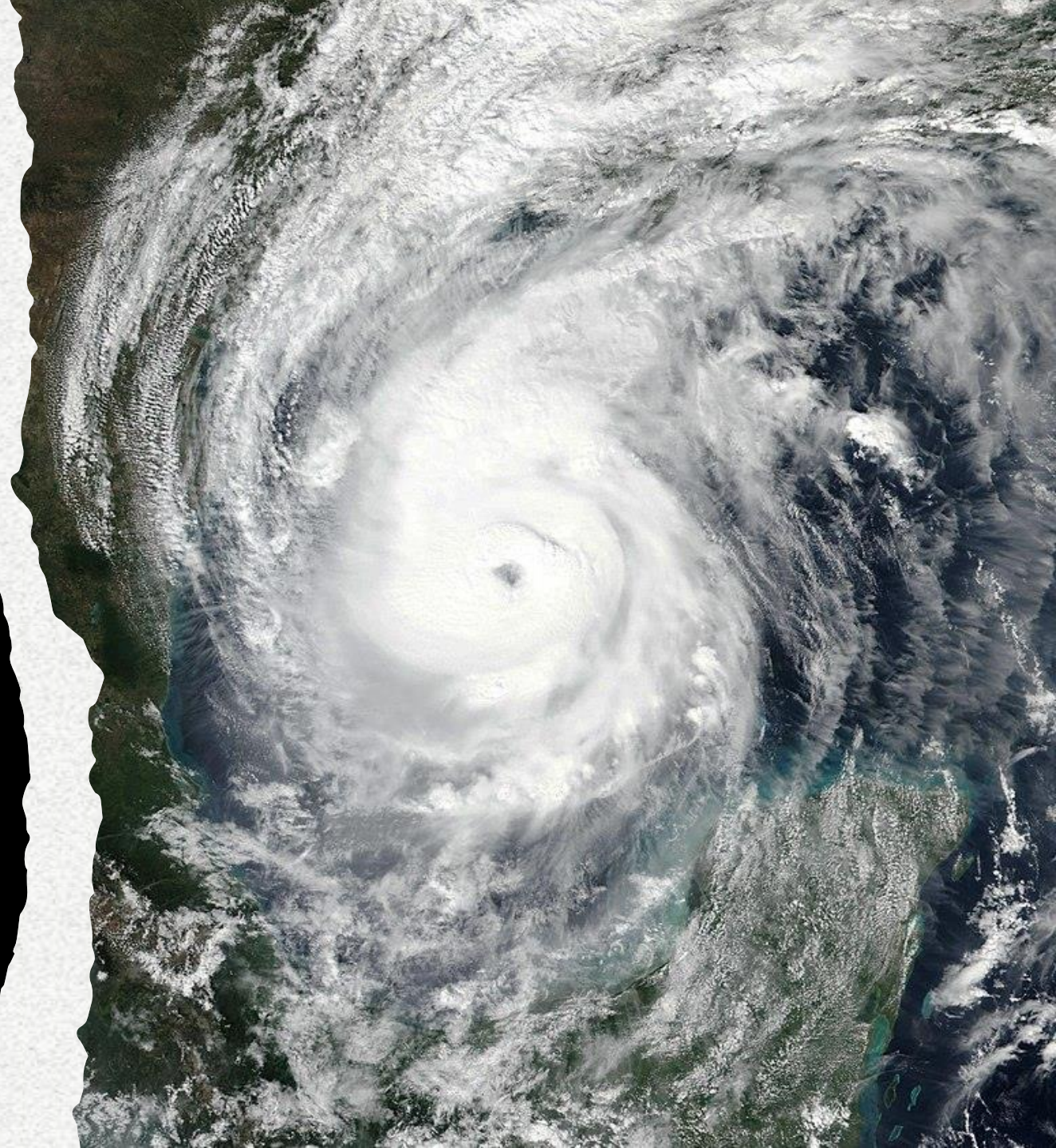
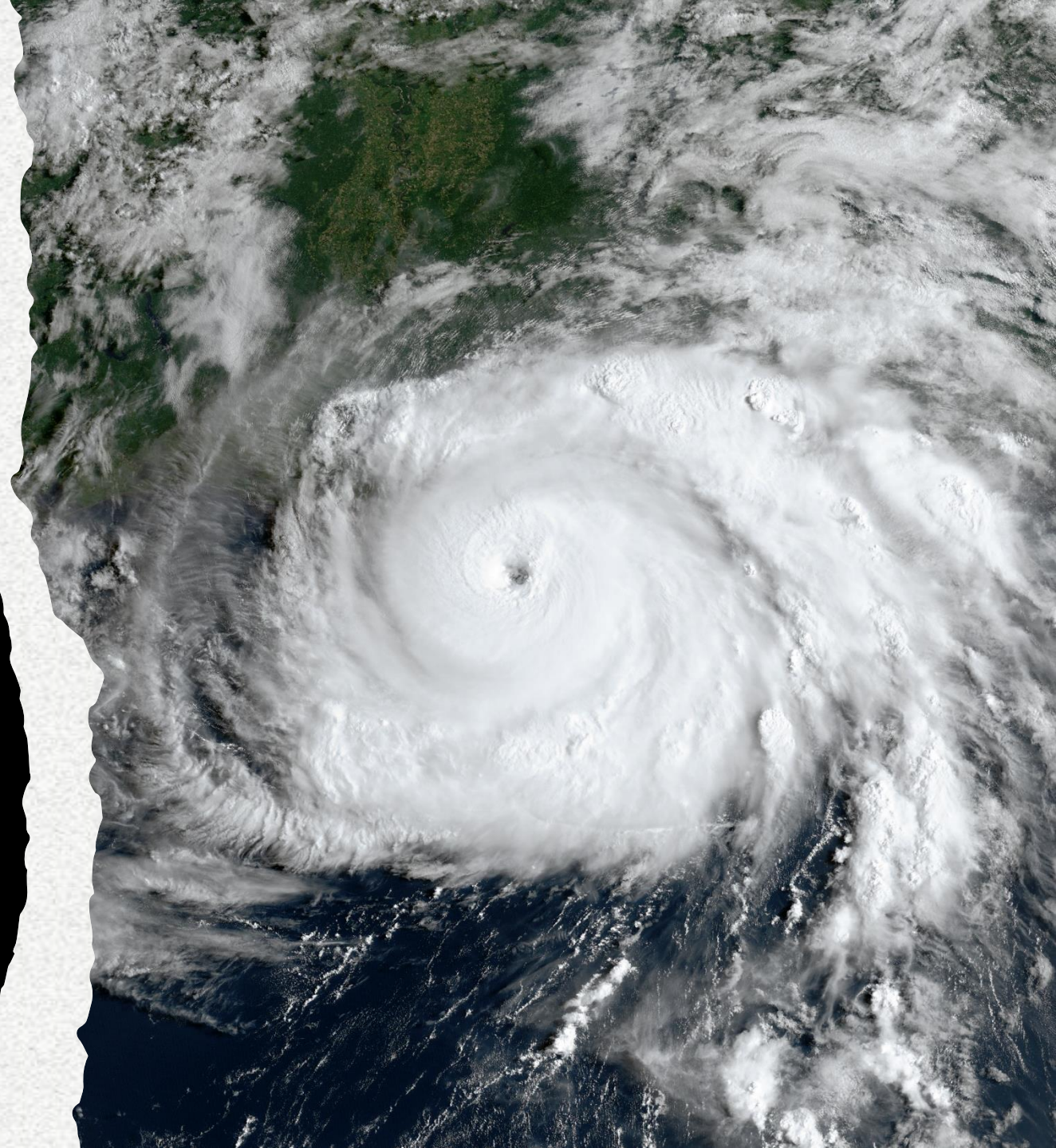
Hurricane Barry (2019)



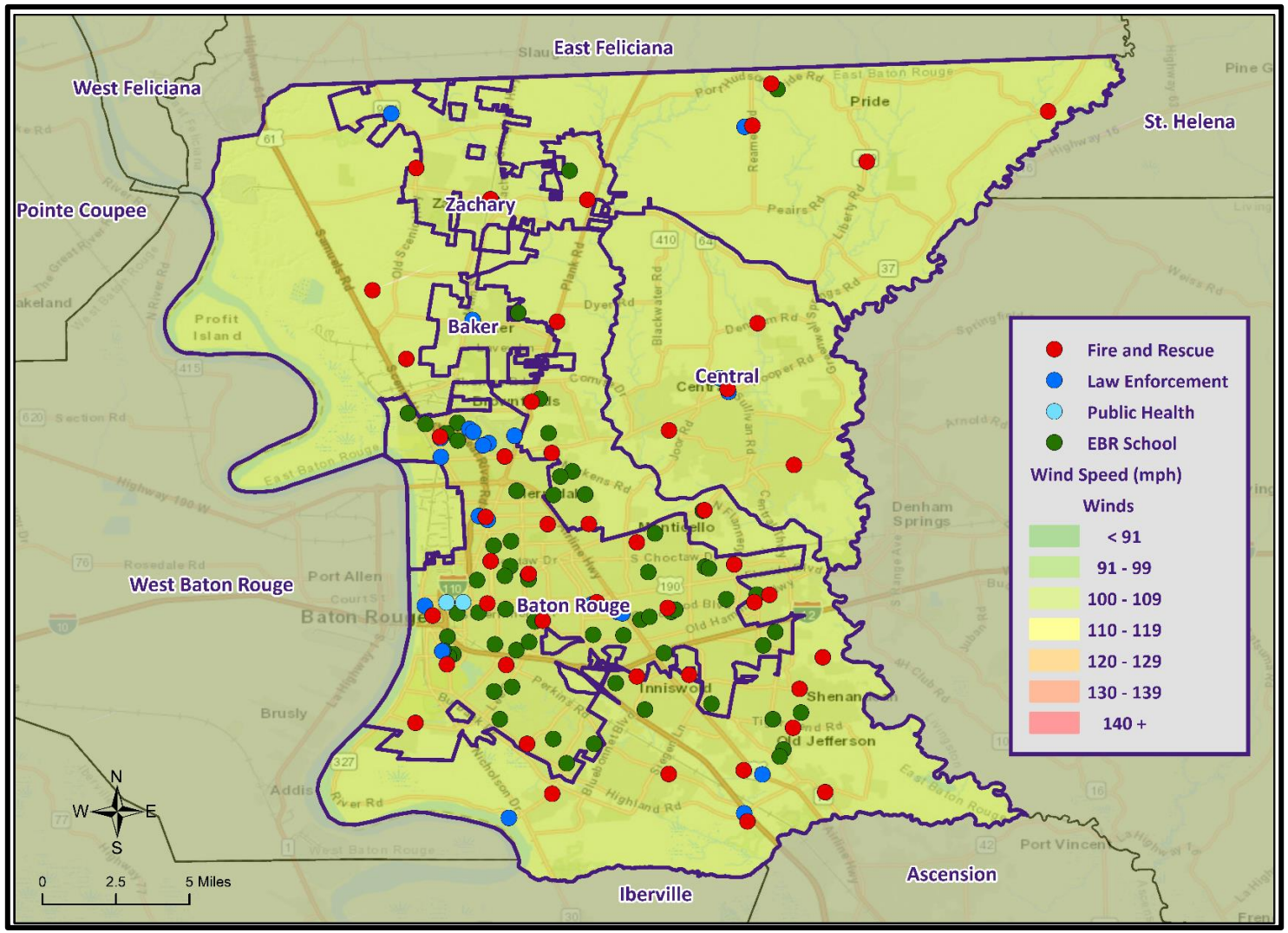
Hurricane Delta (2020)



Hurricane Ida (2021)



Wind Speed Impacts on C.I.



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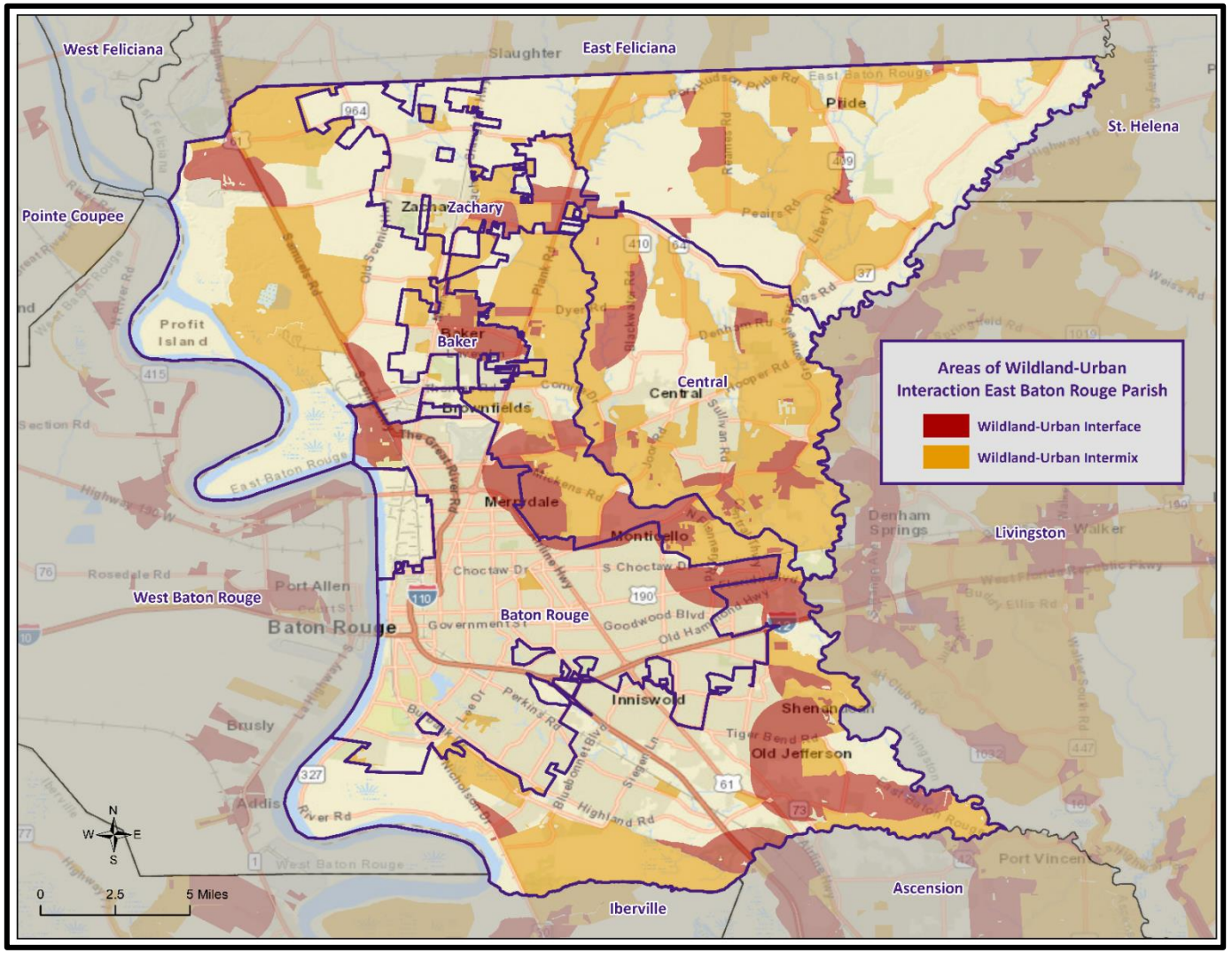
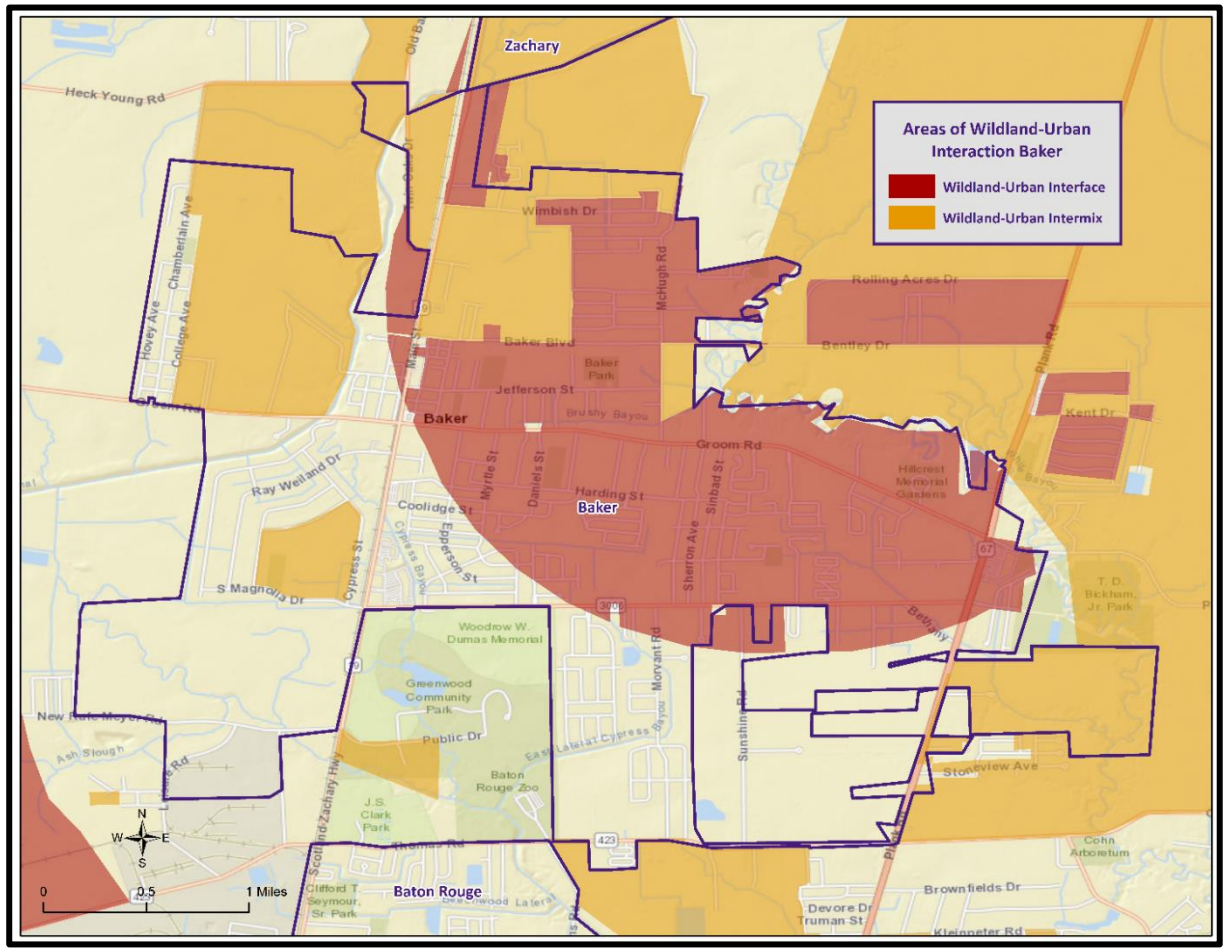
Wildfires

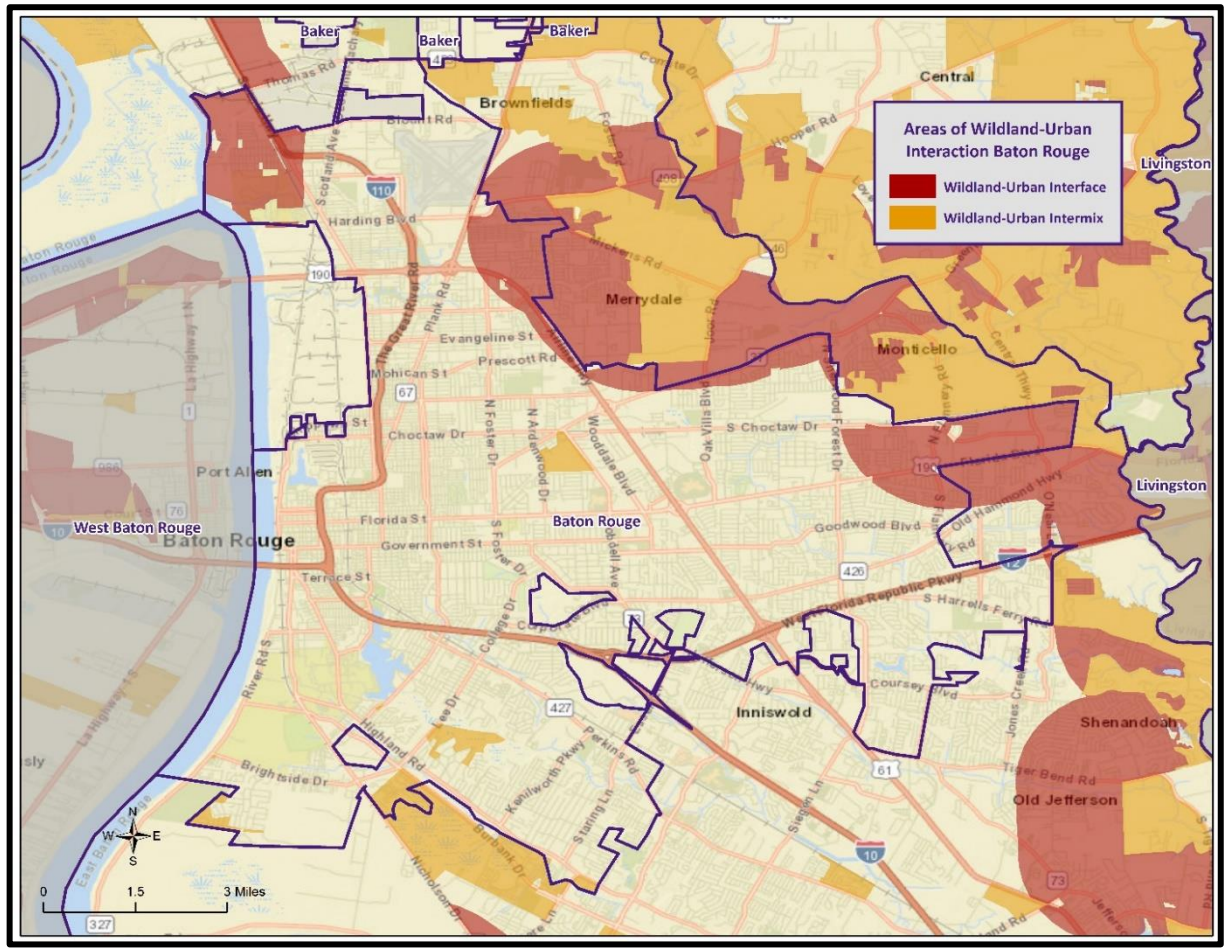
- A wildfire is combustion in a natural setting, marked by flames or intense heat.
- Most frequently, wildfires are ignited by lightning or unintentionally by humans. Fires set purposefully (but lawfully) are referred to as controlled fires or burns
- While loss of timber is a problem, the real hazard 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 EBR



Municipal WUI Maps

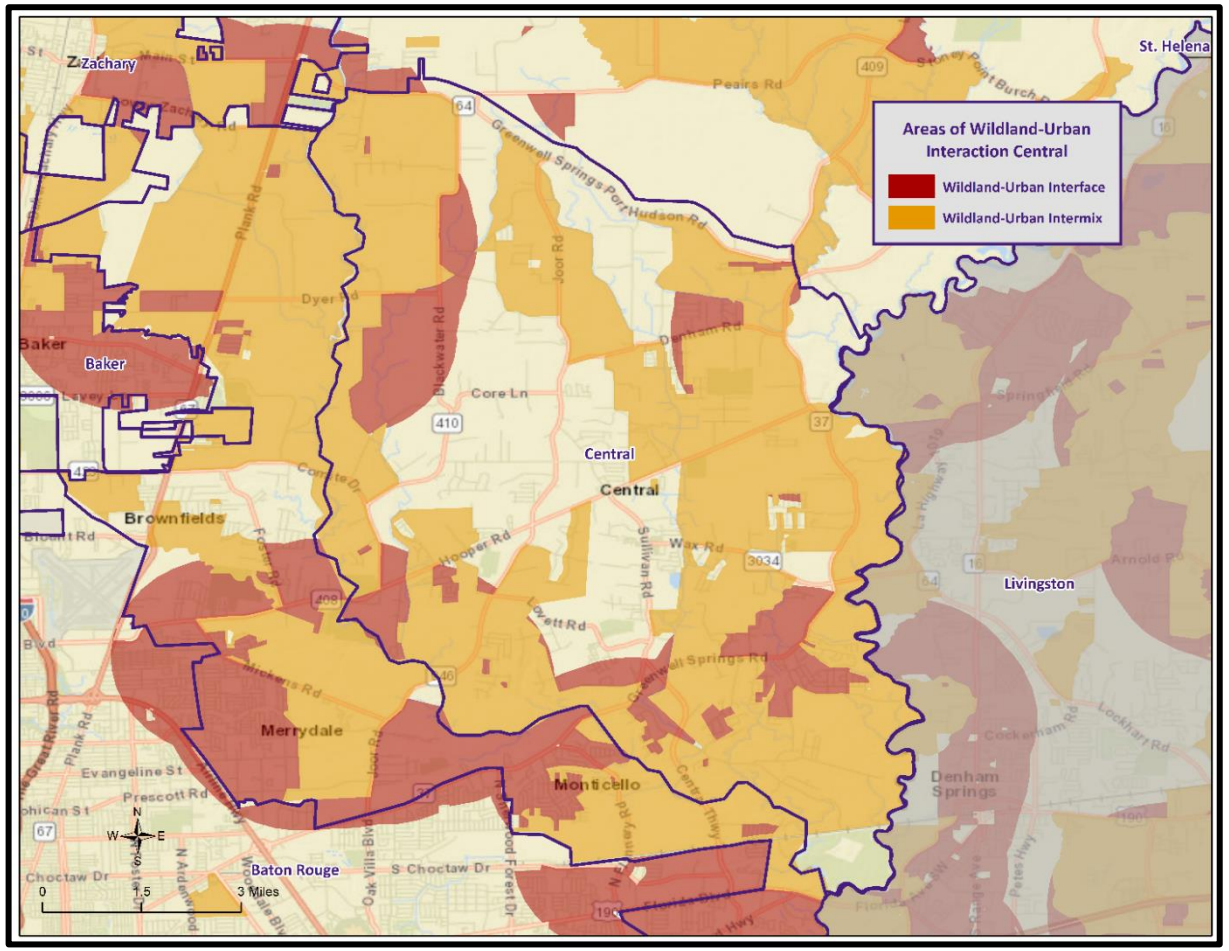




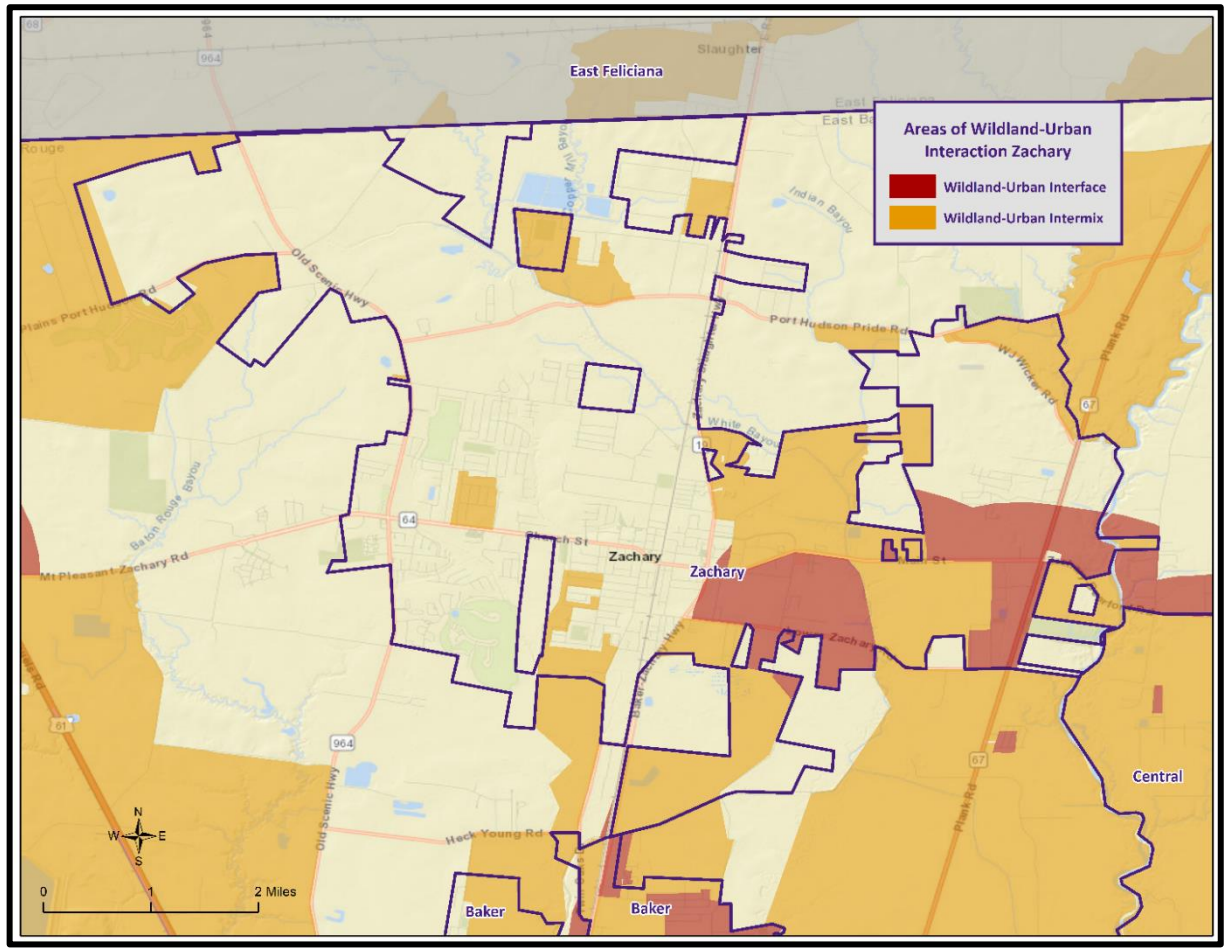
City of Baker

City of Baton Rouge

Municipal WUI Maps



City of Central



City of Zachary

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.

EBR Parish Mitigation Goals

- To mitigate critical infrastructure and governmental/parish facilities to prepare for, protect against, respond to, and recover from natural hazards within East Baton Rouge Parish
- To minimize the NFIP payouts by reducing repetitive flooding in all areas of East Baton Rouge Parish, including all municipalities
- To promote an all-hazards public awareness campaign that focuses on preparing for and mitigating against natural disasters that may affect our community
- To improve the drainage system capacity for all river, creeks, and canals within East Baton Rouge Parish

Parish Hazard Mitigation Project Update

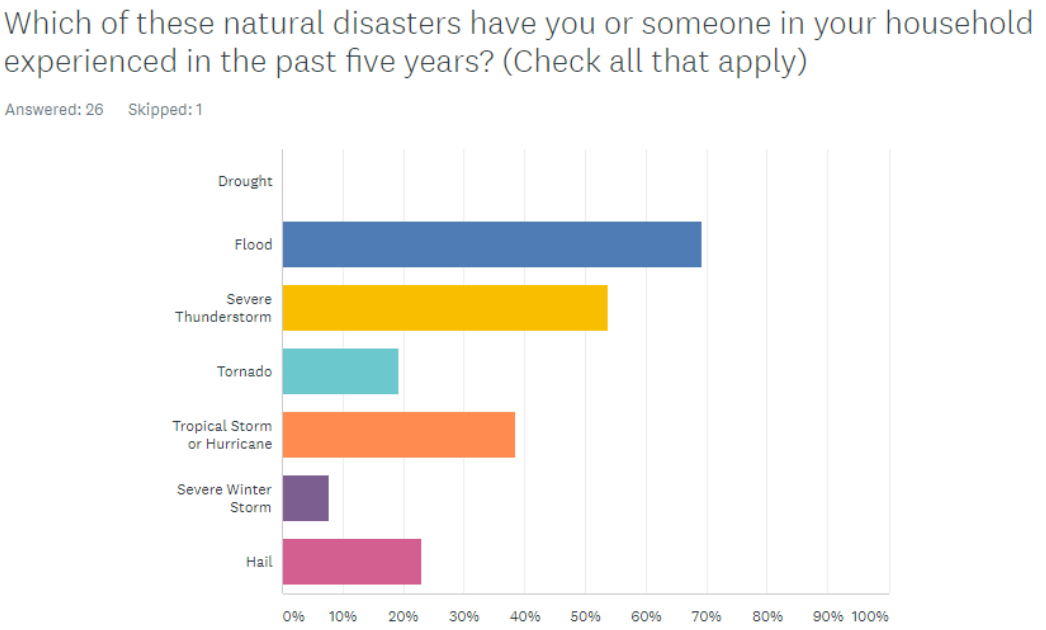
East Baton Rouge OHSEP/

East Baton Rouge Government Discussion

Public Outreach Activity #1

Hazard Mitigation Public Opinion Survey

https://www.surveymonkey.com/r/EBRHM2022



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Public Outreach Activity #2

Please fill out an incident questionnaire!

EAST BATON ROUGE PARISH PUBLIC MEETING

PUBLIC ACTIVITY: INCIDENT/ ISSUE QUESTIONNAIRE

1. HAZARD TYPE(S):

A. DAM FAILURE
B. DROUGHT
C. FLOODING
D. LEVEE FAILURE
E. THUNDERSTORMS
F. TORNADOES
G. TROPICAL CYCLONES
H. WILDFIRES
I. 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/DIDTHE 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?

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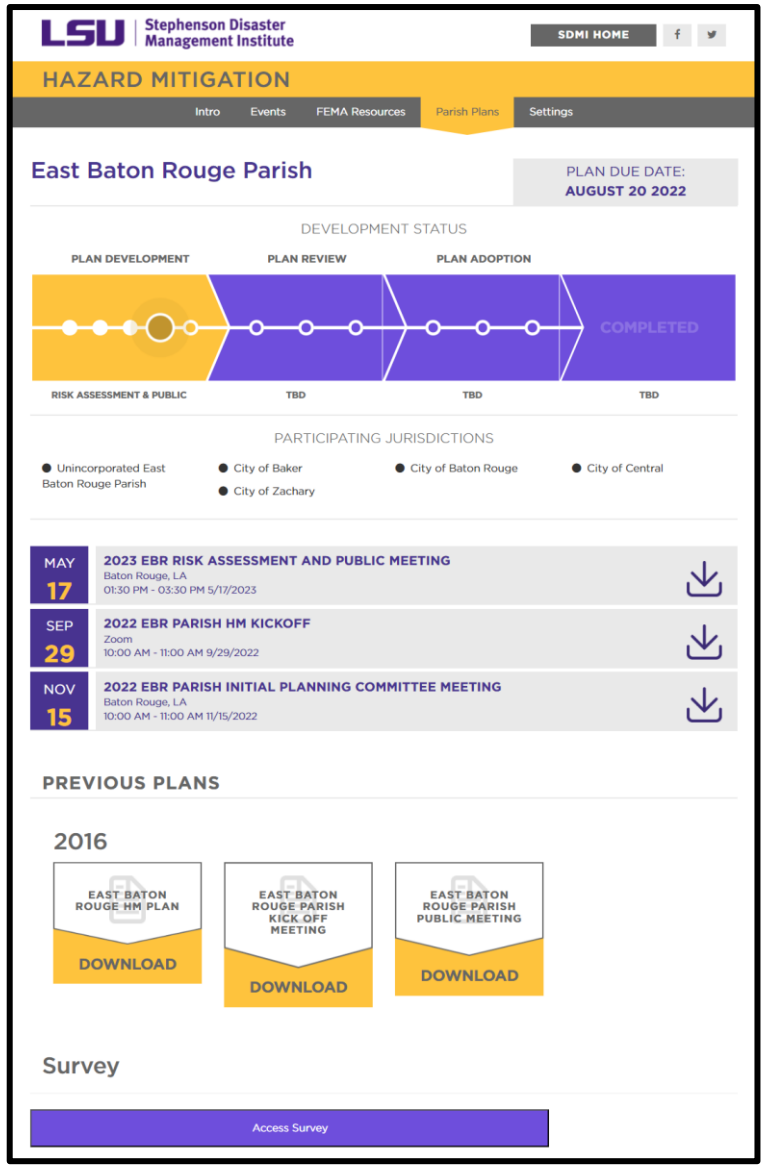
SDMI Hazard Mitigation Website



- Repository for materials used during update process
- https://hmplans.sdmi.lsu.edu/Home/Parish/east-baton-rouge

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