Lafayette Parish Hazard Mitigation Plan Update Public Meeting

April 14, 2021

Lafayette, LA

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Introductions

- **Lafayette Parish OHSEP Director/Parish Staff**
- **Stephenson Disaster Management Institute (SDMI) at LSU**
  - Lauren Stevens – Associate Director, Disaster Management Programs
  - Chris Rippetoe – Hazard Mitigation Program Manager
  - Anna Daigle – Emergency Management Specialist
- **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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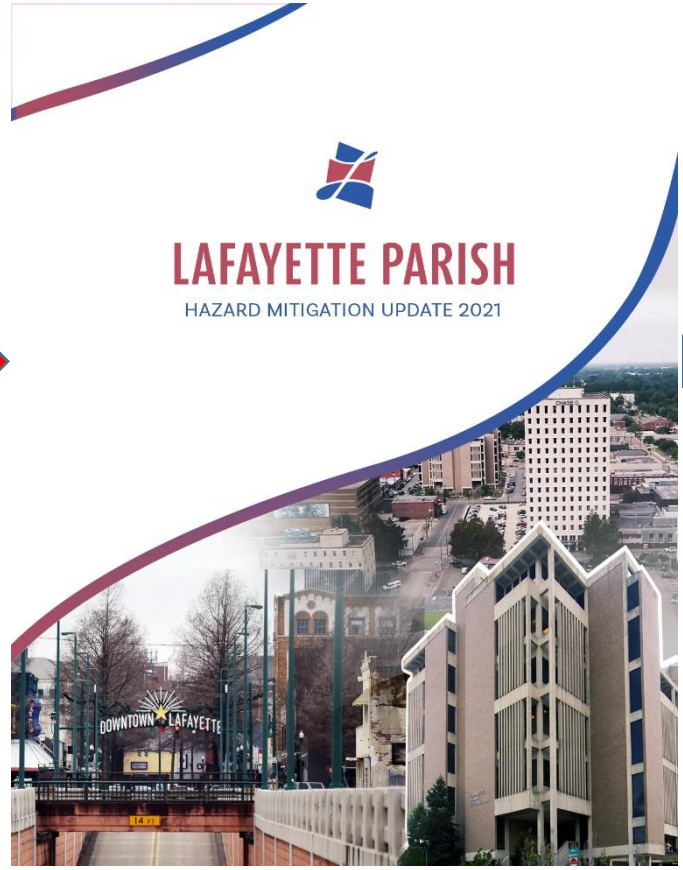
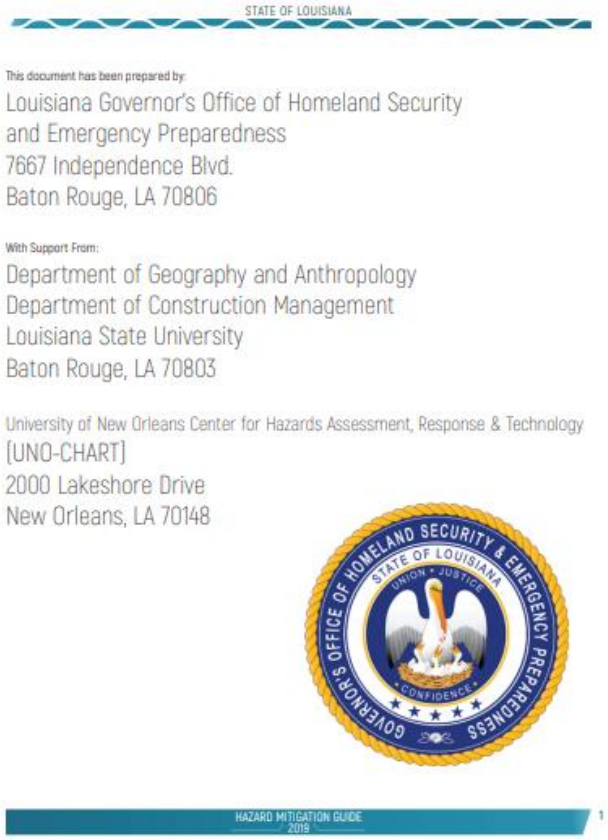
Why Are We Here?





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*;

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

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Why Are We Required To Have A Hazard Mitigation Plan?

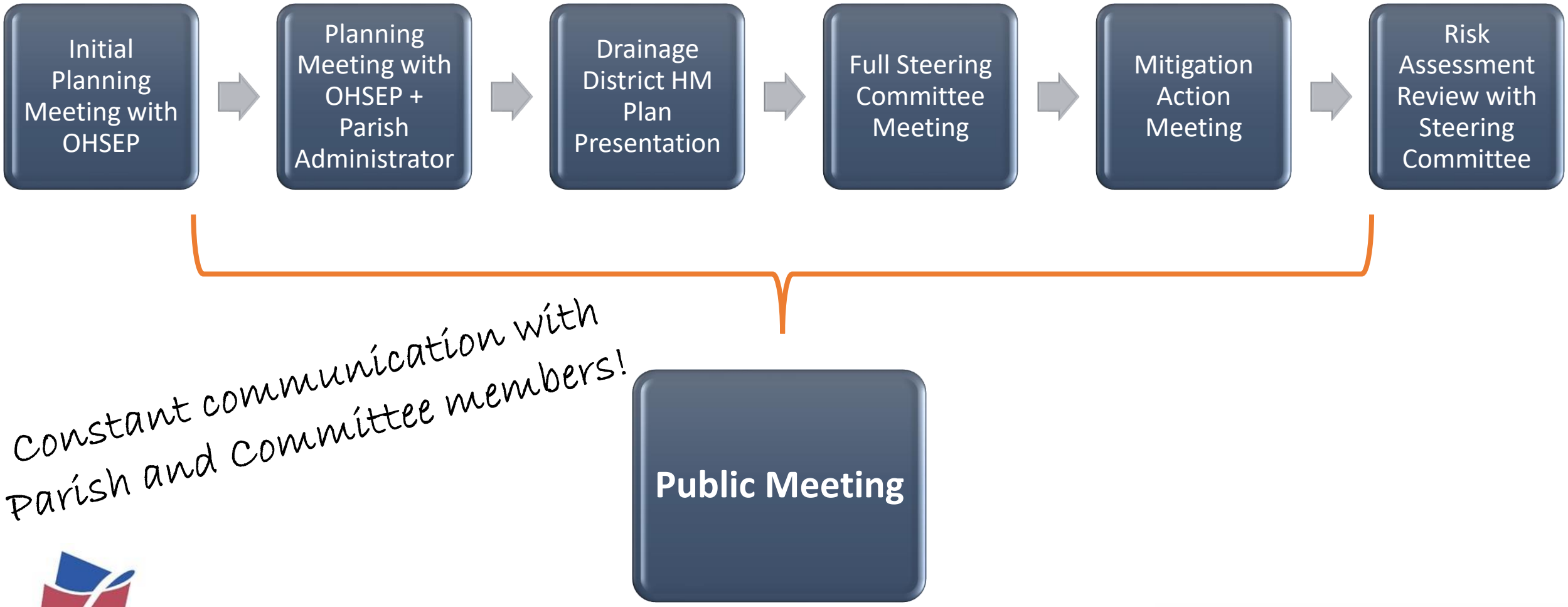
- Disaster Mitigation Act of 2000 (DMA 2000)

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 Lafayette Parish Hazard Mitigation Plan will allow for distribution of HM funding following future disasters.

Planning Process to Date



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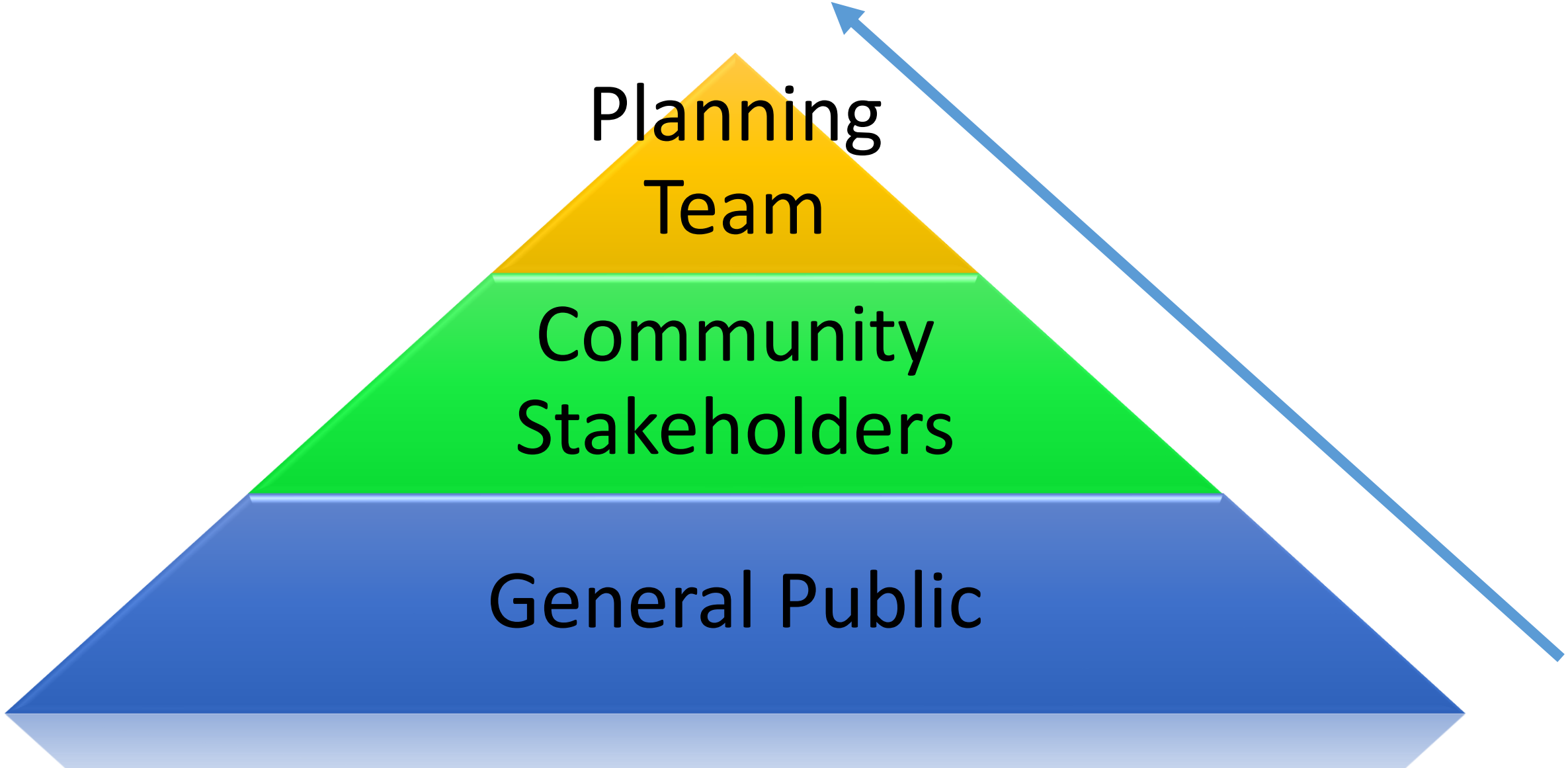
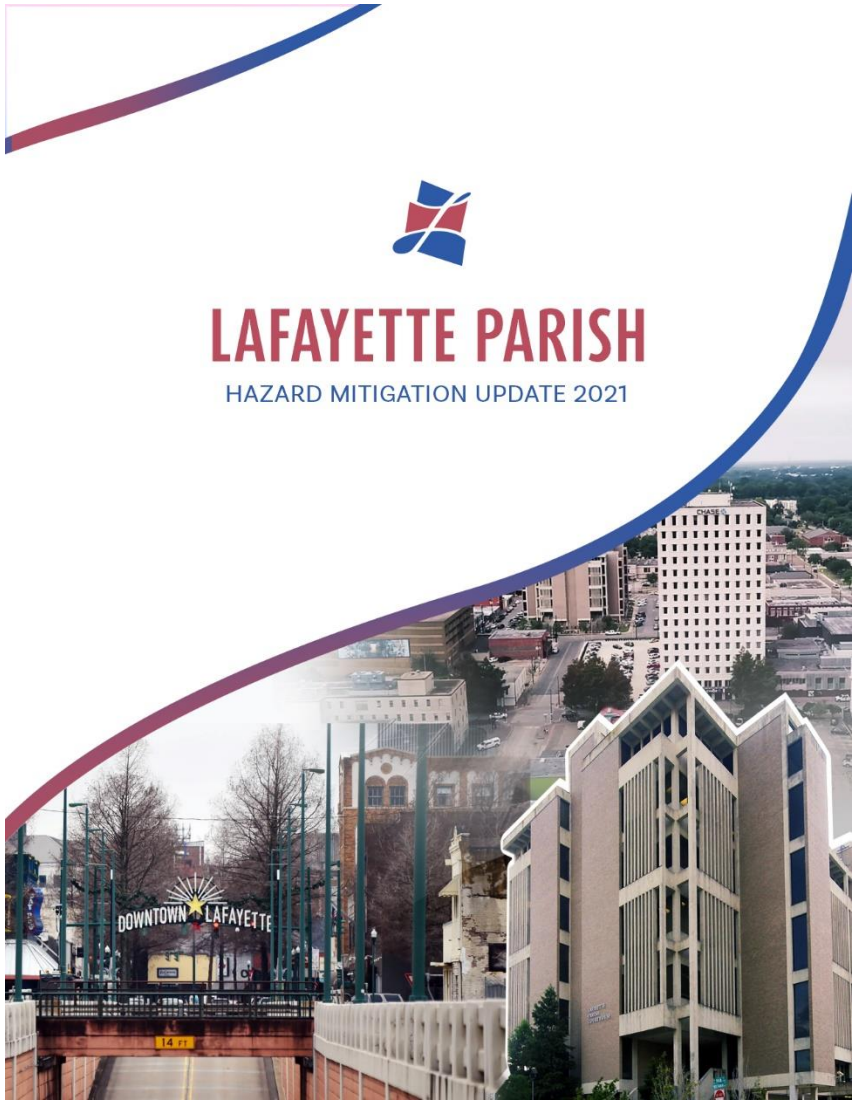
Collaborative Planning Approach



Planning 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**
  - New actions
  - Action updates
  - Survey results

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Plan Layout

- **Appendix A**: Planning Process
- **Appendix B**: Plan Maintenance
- **Appendix C**: Parish Essential Facilities
- **Appendix D**: Plan Adoption
- **Appendix E**: State Required Worksheets
- **Appendix F:** Floodplain Management Activity 510

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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*

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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

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Hazard Identification and Risk Assessment

- Drought
- Excessive Heat
- Flooding
- Sinkholes

- Thunderstorms (Lightning/High Winds/Hail)
- Tornadoes
- Tropical Cyclones
- Wildfires
- Winter Weather

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Risk Matrix for Lafayette Parish

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Drought	3	2	4	2	3	2.8
Excessive Heat	2	1	4	1	3	2.15
Flooding	3	4	3	4	3	3.4
Sinkholes	1	2	1	4	2	1.85
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	3	3	2	4	3	2.95
Tropical Cyclones	3	4	4	1	4	3.3
Wildfires	1	3	3	4	2	2.5
Winter Storms	3	3	4	2	3	3.05

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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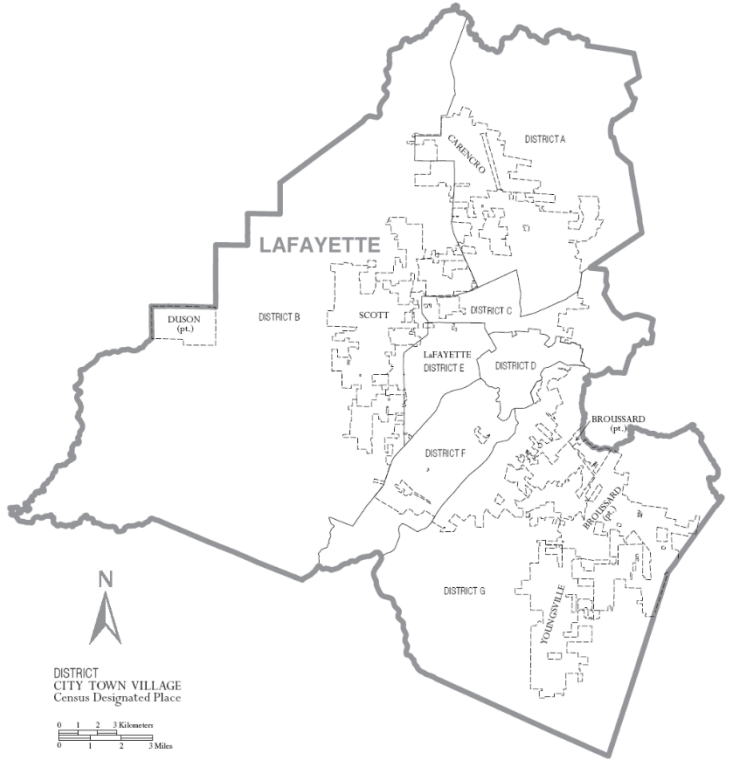
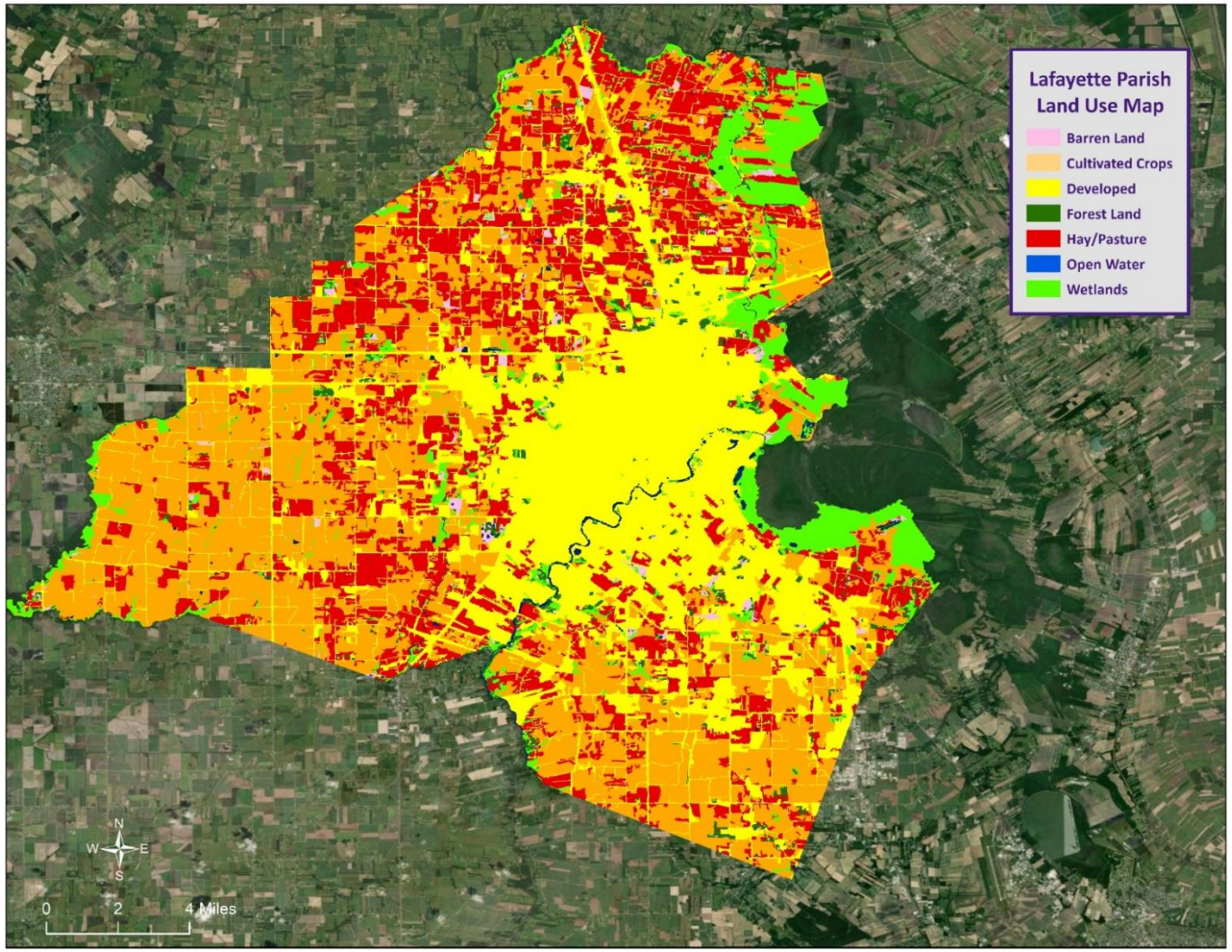


Risk Assessment Maps

Lafayette Parish Land Use



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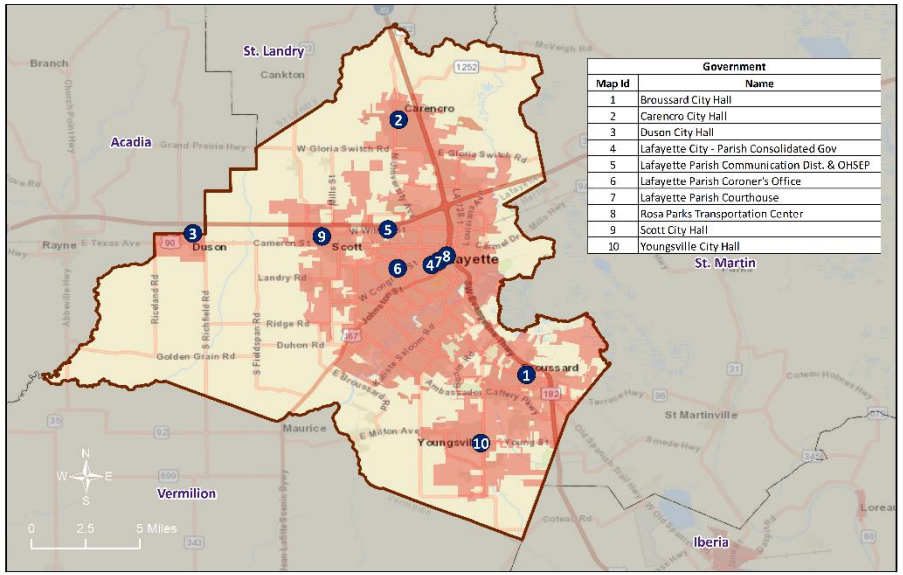
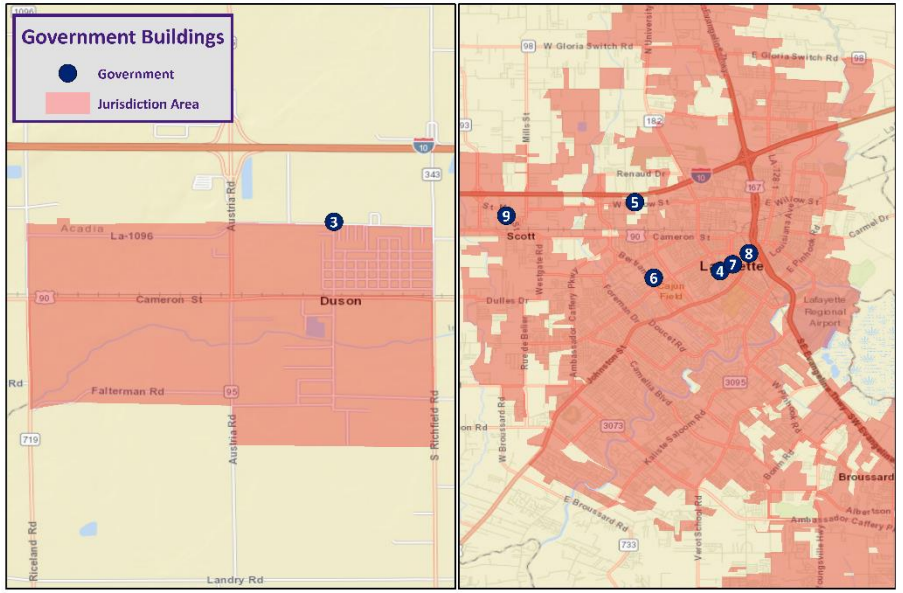
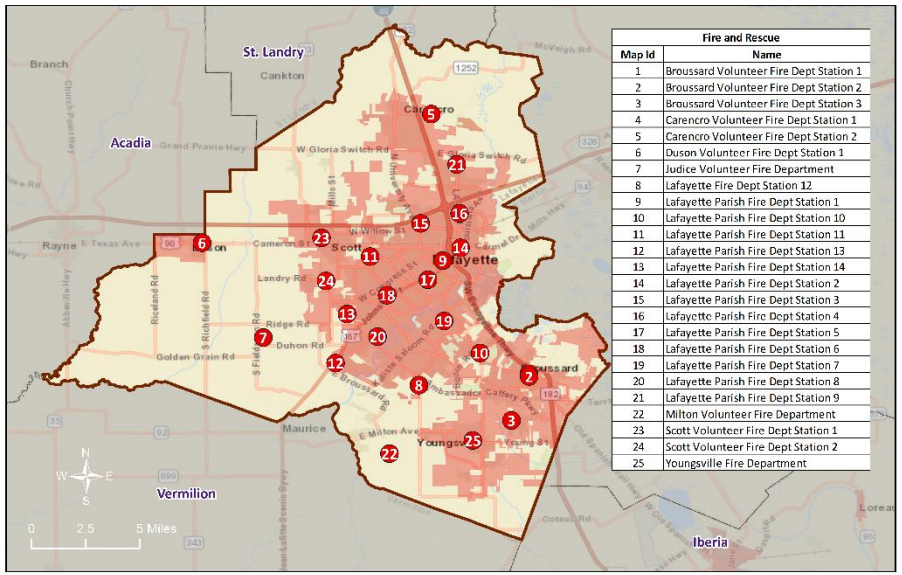
Critical Facilities: Civil Government



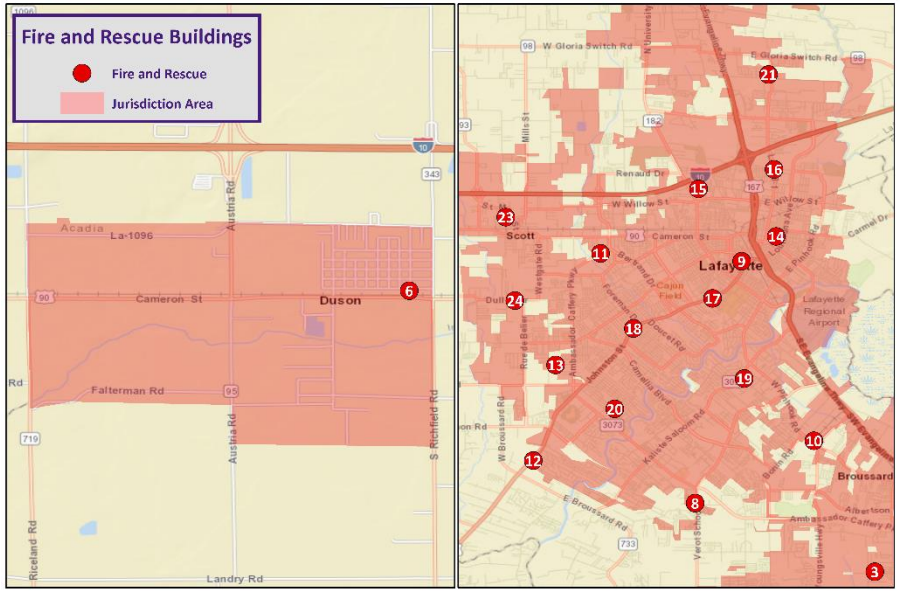
Government	
Map Id	Name
1	Broussard City Hall
2	Carencro City Hall
3	Duson City Hall
4	Lafayette City - Parish Consolidated Gov
5	Lafayette Parish Communication Dist. & OHSEP
6	Lafayette Parish Coroner's Office
7	Lafayette Parish Courthouse
8	Rosa Parks Transportation Center
9	Scott City Hall
10	Youngsville City Hall



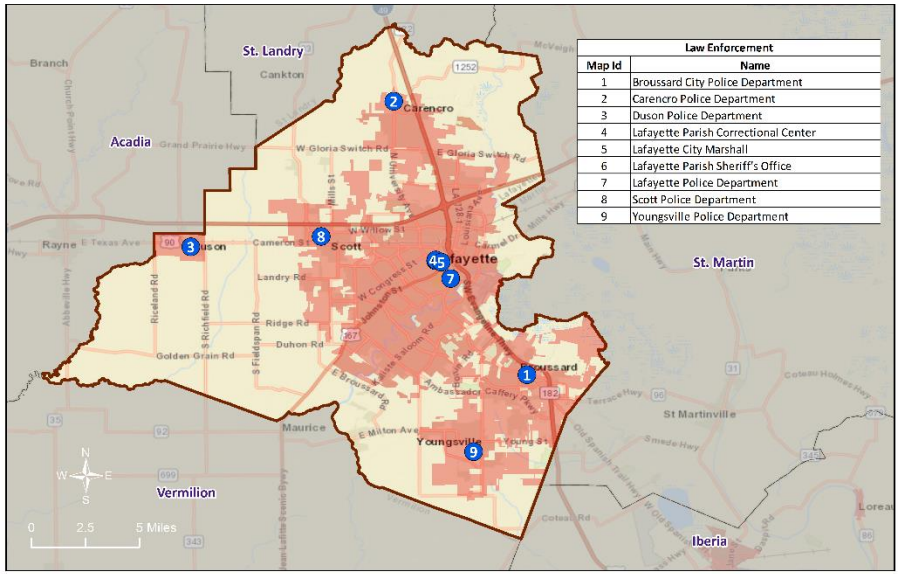
Critical Facilities: Fire & SAR



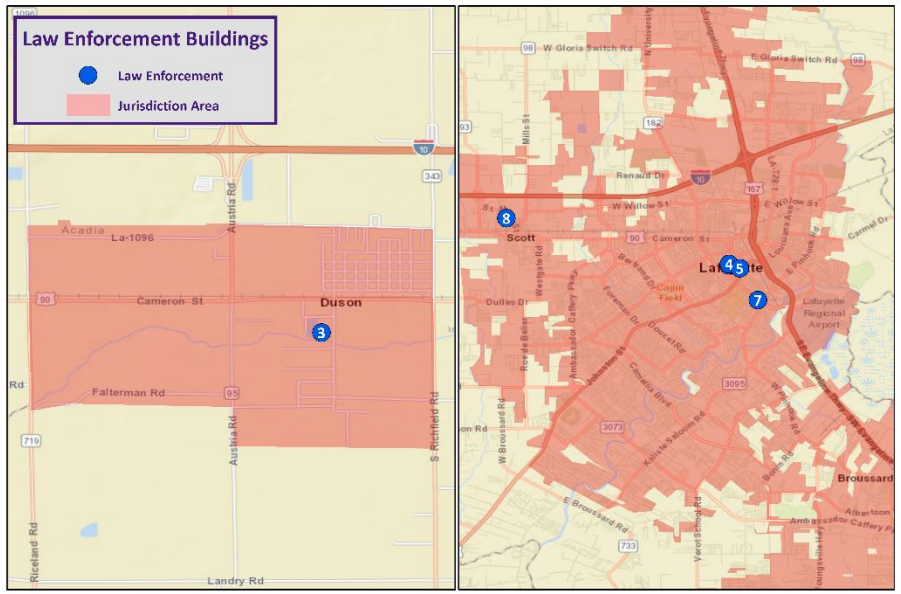
Fire and Rescue	
Map Id	Name
1	Broussard Volunteer Fire Dept Station 1
2	Broussard Volunteer Fire Dept Station 2
3	Broussard Volunteer Fire Dept Station 3
4	Carencro Volunteer Fire Dept Station 1
5	Carencro Volunteer Fire Dept Station 2
6	Duson Volunteer Fire Dept Station 1
7	Judice Volunteer Fire Department
8	Lafayette Fire Dept Station 12
9	Lafayette Parish Fire Dept Station 1
10	Lafayette Parish Fire Dept Station 10
11	Lafayette Parish Fire Dept Station 11
12	Lafayette Parish Fire Dept Station 13
13	Lafayette Parish Fire Dept Station 14
14	Lafayette Parish Fire Dept Station 2
15	Lafayette Parish Fire Dept Station 3
16	Lafayette Parish Fire Dept Station 4
17	Lafayette Parish Fire Dept Station 5
18	Lafayette Parish Fire Dept Station 6
19	Lafayette Parish Fire Dept Station 7
20	Lafayette Parish Fire Dept Station 8
21	Lafayette Parish Fire Dept Station 9
22	Milton Volunteer Fire Department
23	Scott Volunteer Fire Dept Station 1
24	Scott Volunteer Fire Dept Station 2
25	Youngsville Fire Department



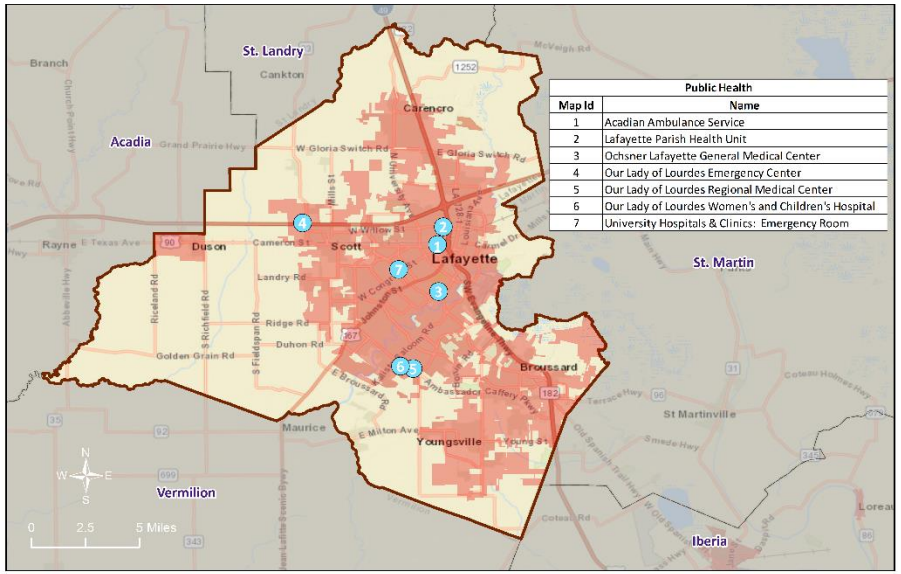
Critical Facilities: Law Enforcement



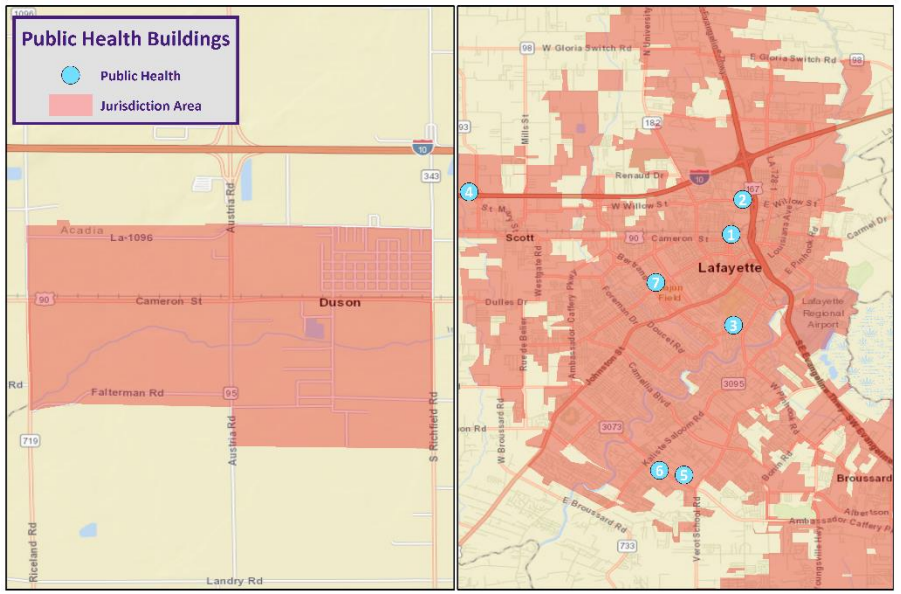
Law Enforcement	
Map Id	Name
1	Broussard City Police Department
2	Carencro Police Department
3	Duson Police Department
4	Lafayette Parish Correctional Center
5	Lafayette City Marshall
6	Lafayette Parish Sheriff's Office
7	Lafayette Police Department
8	Scott Police Department
9	Youngsville Police Department



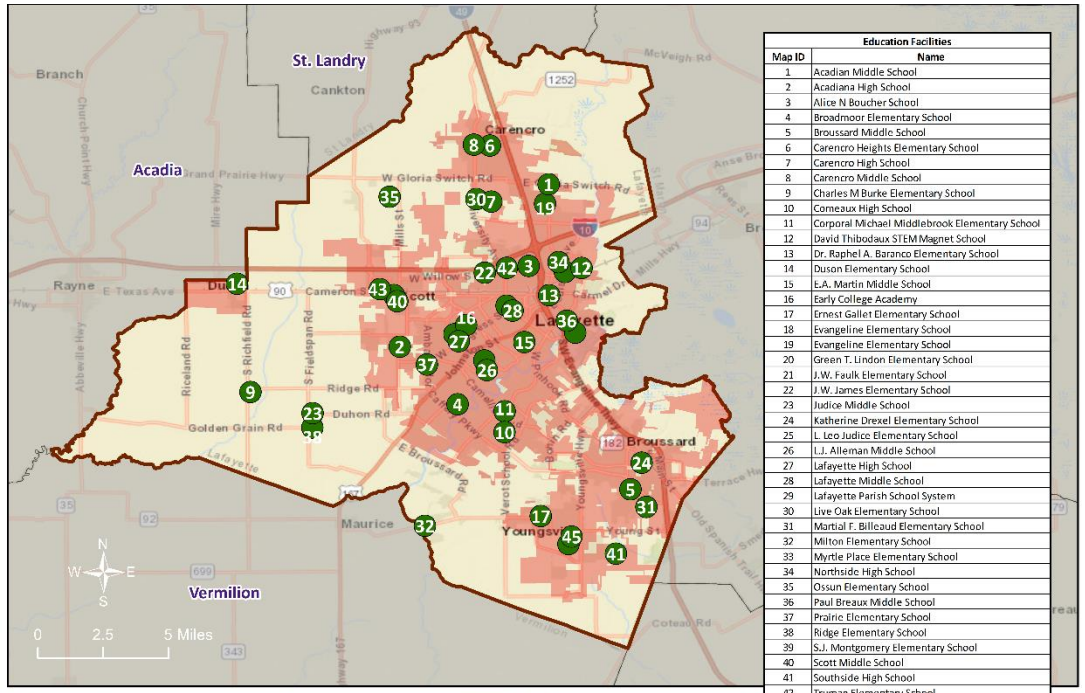
Critical Facilities: Public Health



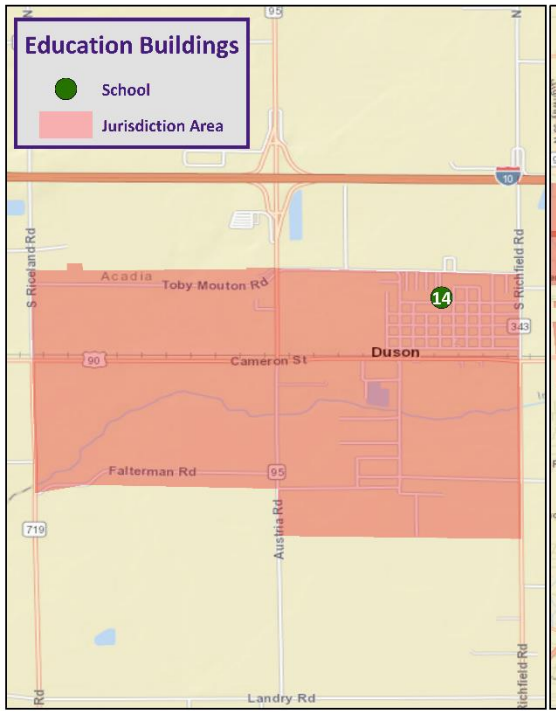
Public Health	
Map Id	Name
1	Acadian Ambulance Service
2	Lafayette Parish Health Unit
3	Ochsner Lafayette General Medical Center
4	Our Lady of Lourdes Emergency Center
5	Our Lady of Lourdes Regional Medical Center
6	Our Lady of Lourdes Women's and Children's Hospital
7	University Hospitals & Clinics: Emergency Room

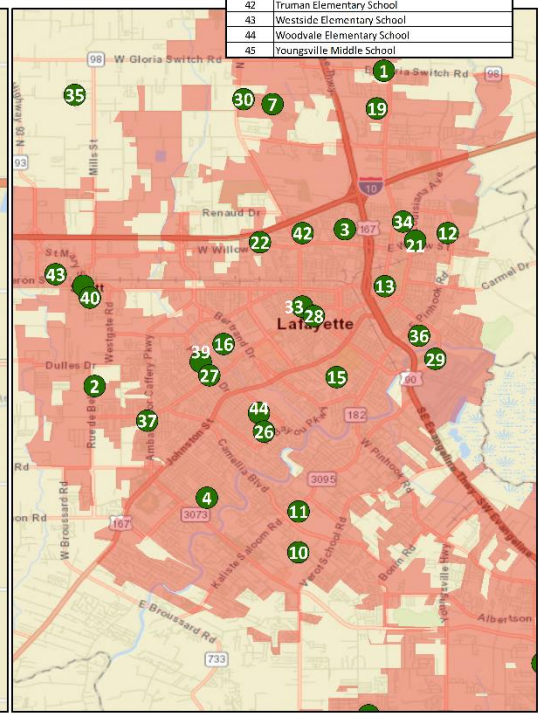


Critical Facilities: Education



Education Facilities	
Map ID	Name
1	Acadian Middle School
2	Acadiana High School
3	Alice N Boucher School
4	Broadmoor Elementary School
5	Broussard Middle School
6	Carencro Heights Elementary School
7	Carencro High School
8	Carencro Middle School
9	Charles M Burke Elementary School
10	Comeaux High School
11	Corporal Michael Middlebrook Elementary School
12	David Thibodaux STEM Magnet School
13	Dr. Raphel A. Baranco Elementary School
14	Duson Elementary School
15	E.A. Martin Middle School
16	Early College Academy
17	Ernest Gallet Elementary School
18	Evangeline Elementary School
19	Evangeline Elementary School
20	Green T. Lindon Elementary School
21	J.W. Faulk Elementary School
22	J.W. James Elementary School
23	Judice Middle School
24	Katherine Drexel Elementary School
25	L. Leo Judice Elementary School
26	L.J. Alleman Middle School
27	Lafayette High School
28	Lafayette Middle School
29	Lafayette Parish School System
30	Live Oak Elementary School
31	Martial F. Billeaud Elementary School
32	Milton Elementary School
33	Myrtle Place Elementary School
34	Northside High School
35	Ossun Elementary School
36	Paul Breaux Middle School
37	Prairie Elementary School
38	Ridge Elementary School
39	S.J. Montgomery Elementary School
40	Scott Middle School
41	Southside High School
42	Truman Elementary School
43	Westside Elementary School
44	Woodvale Elementary School
45	Youngsville Middle School





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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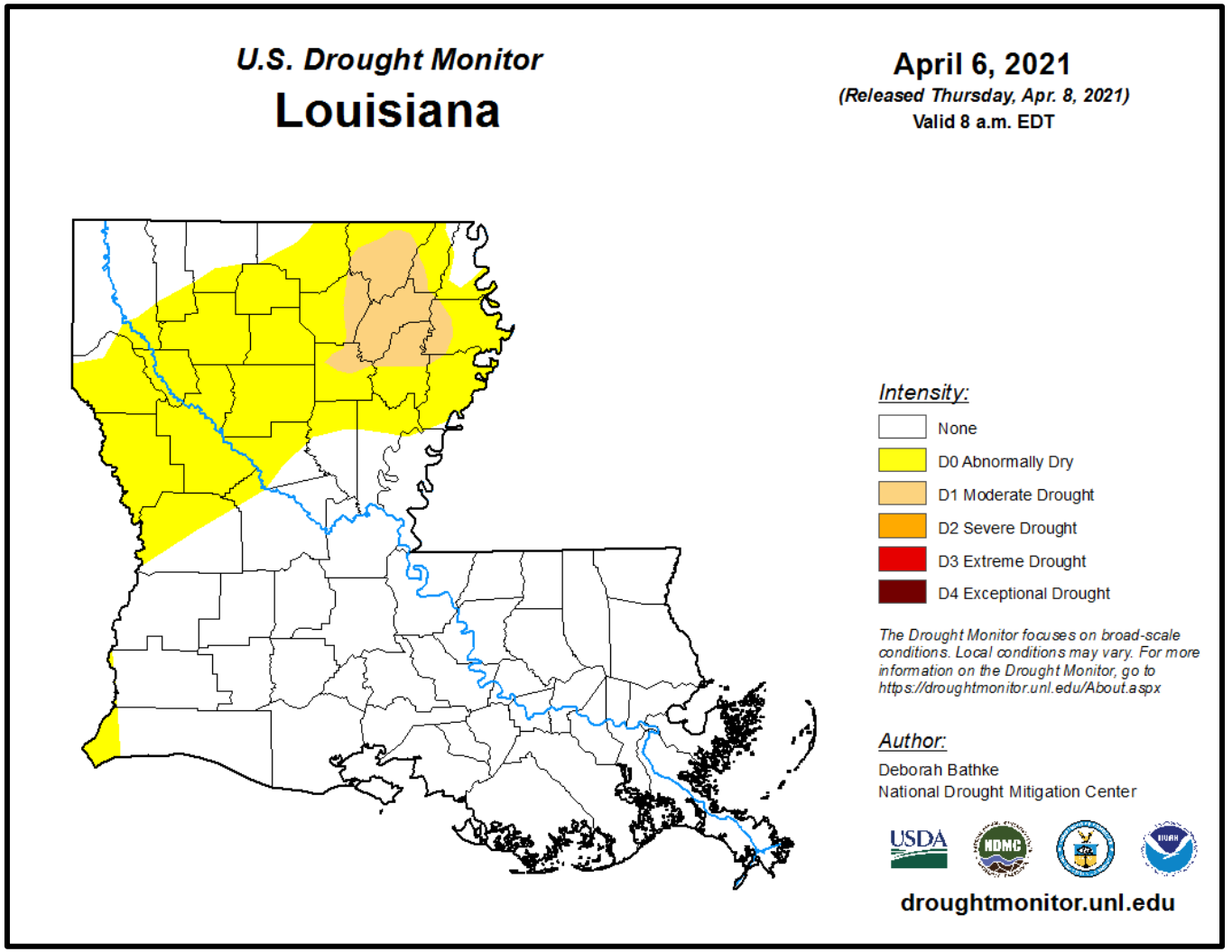
Drought



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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

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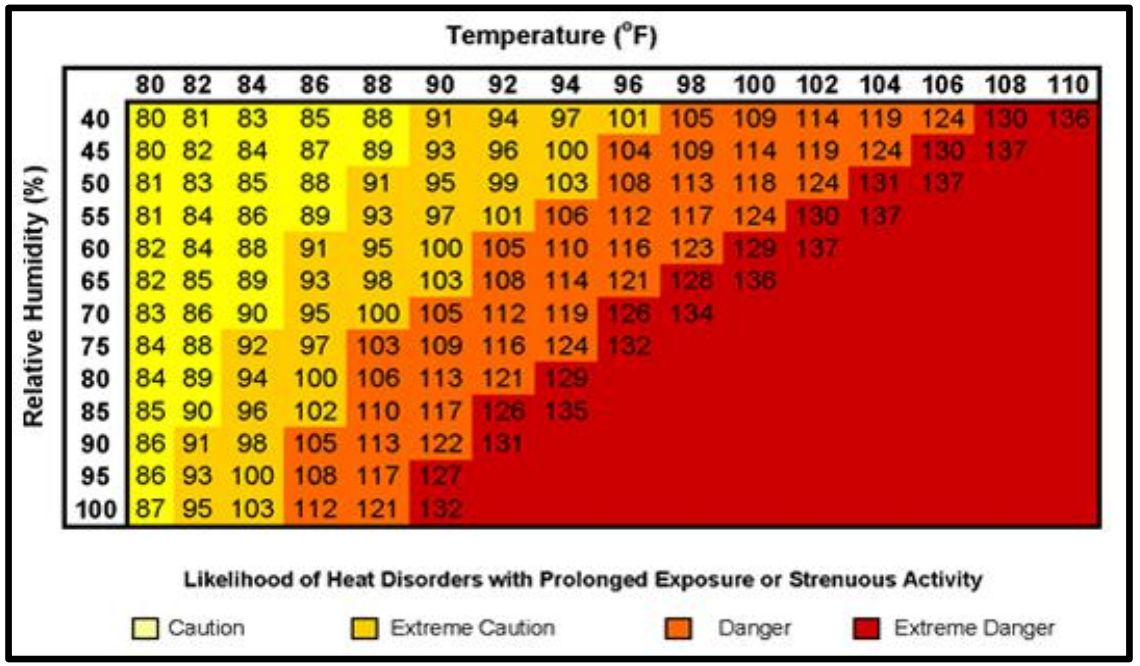
Excessive Heat



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.”

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Flooding

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

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

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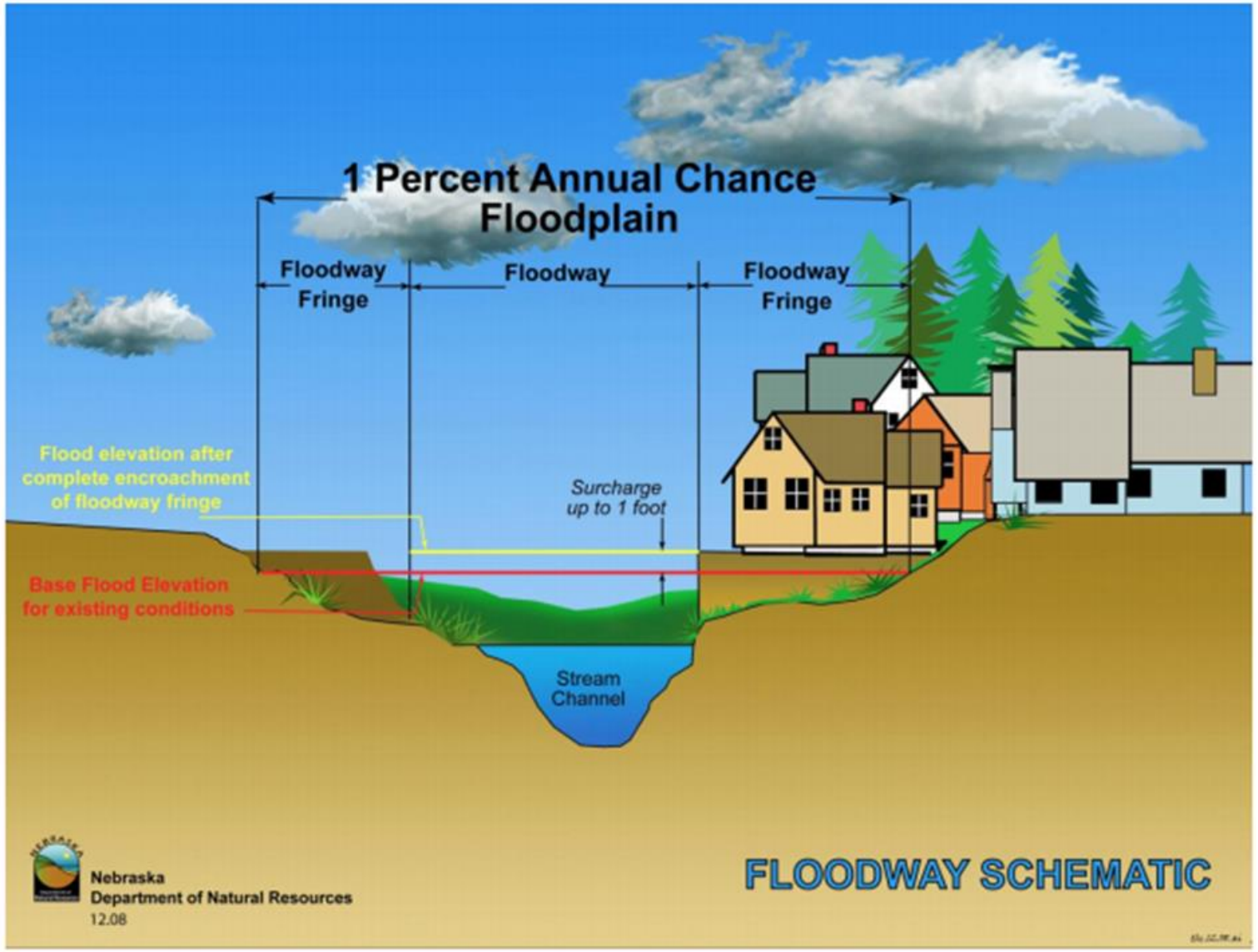
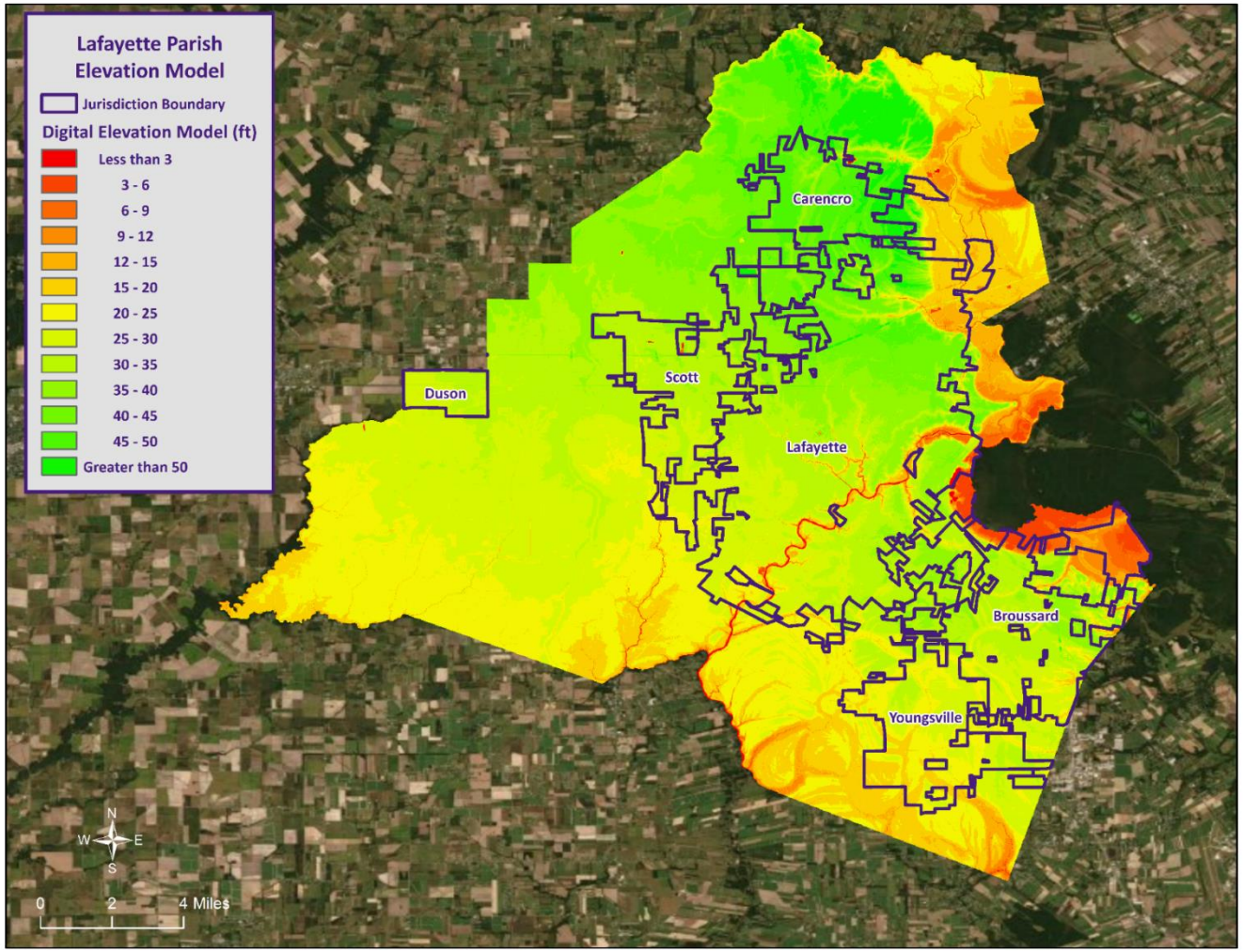
Floodway Diagram



Digital Elevation Model



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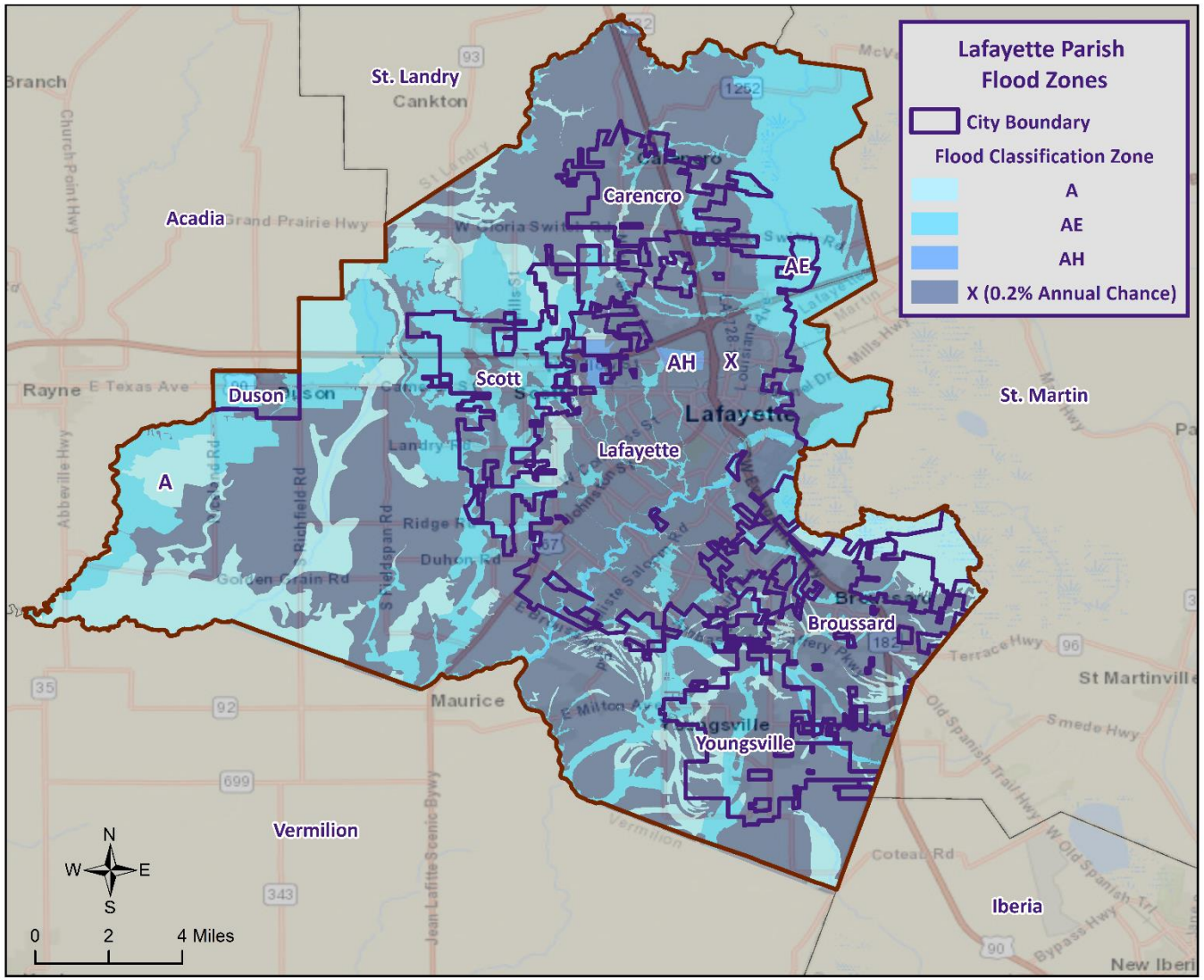
Lafayette Parish Flood Map



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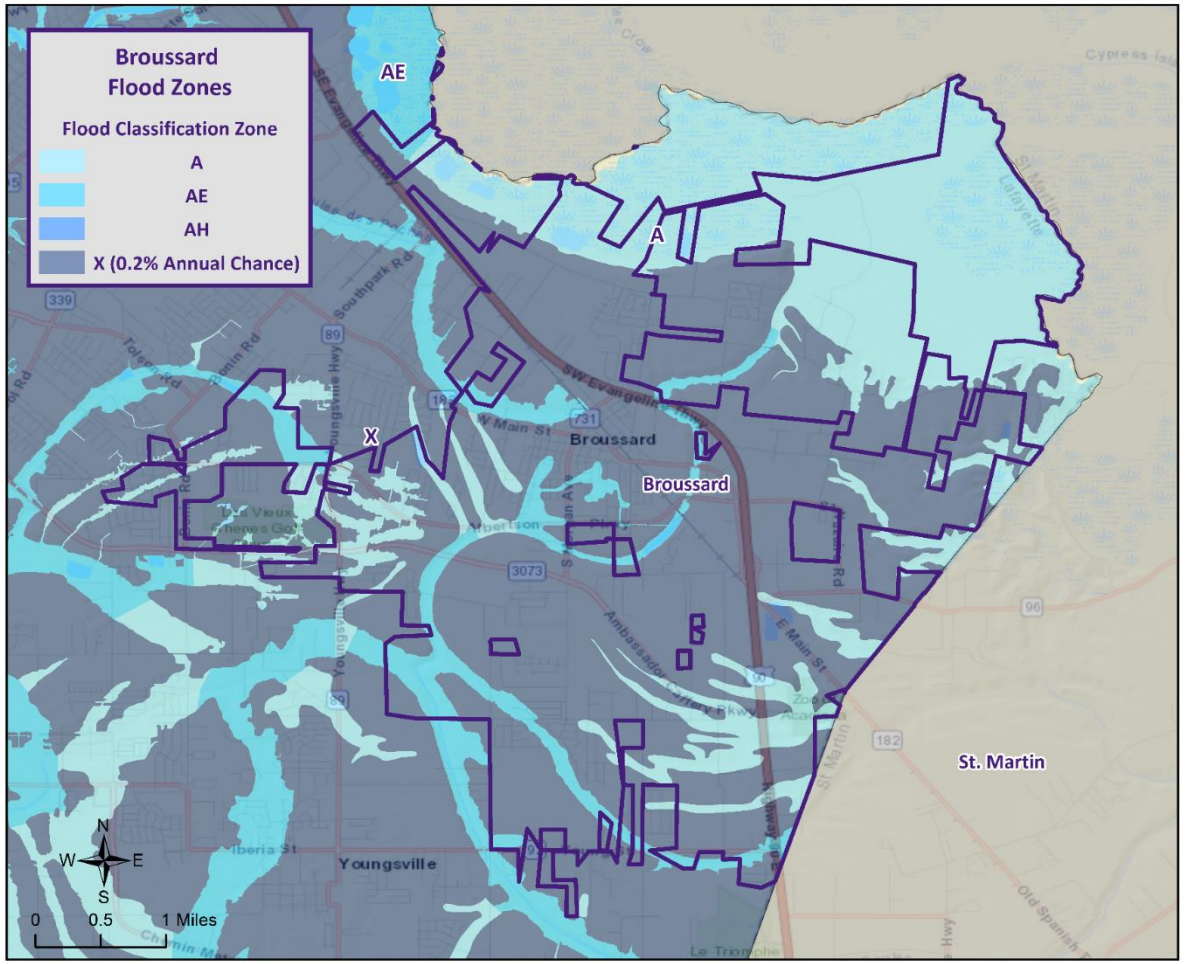
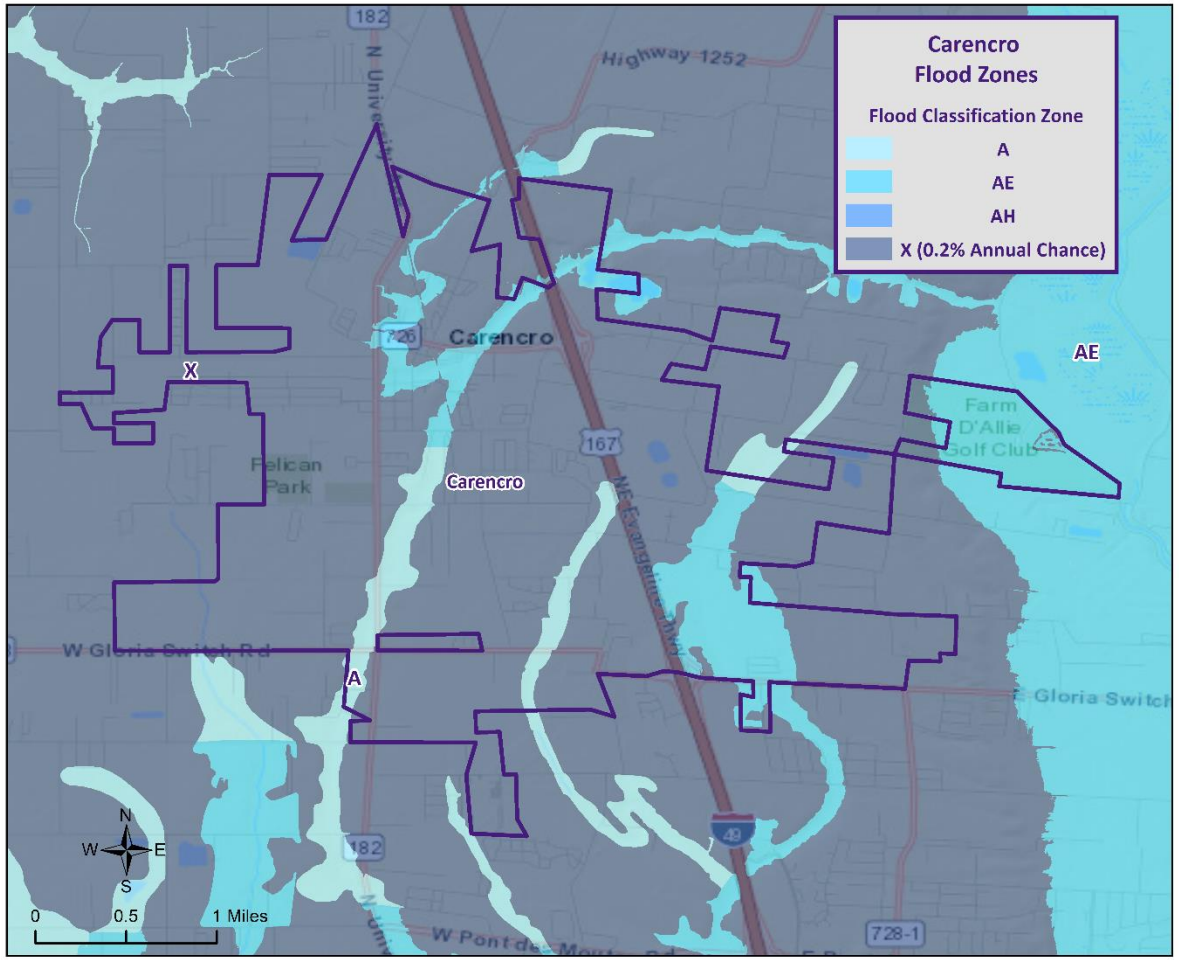
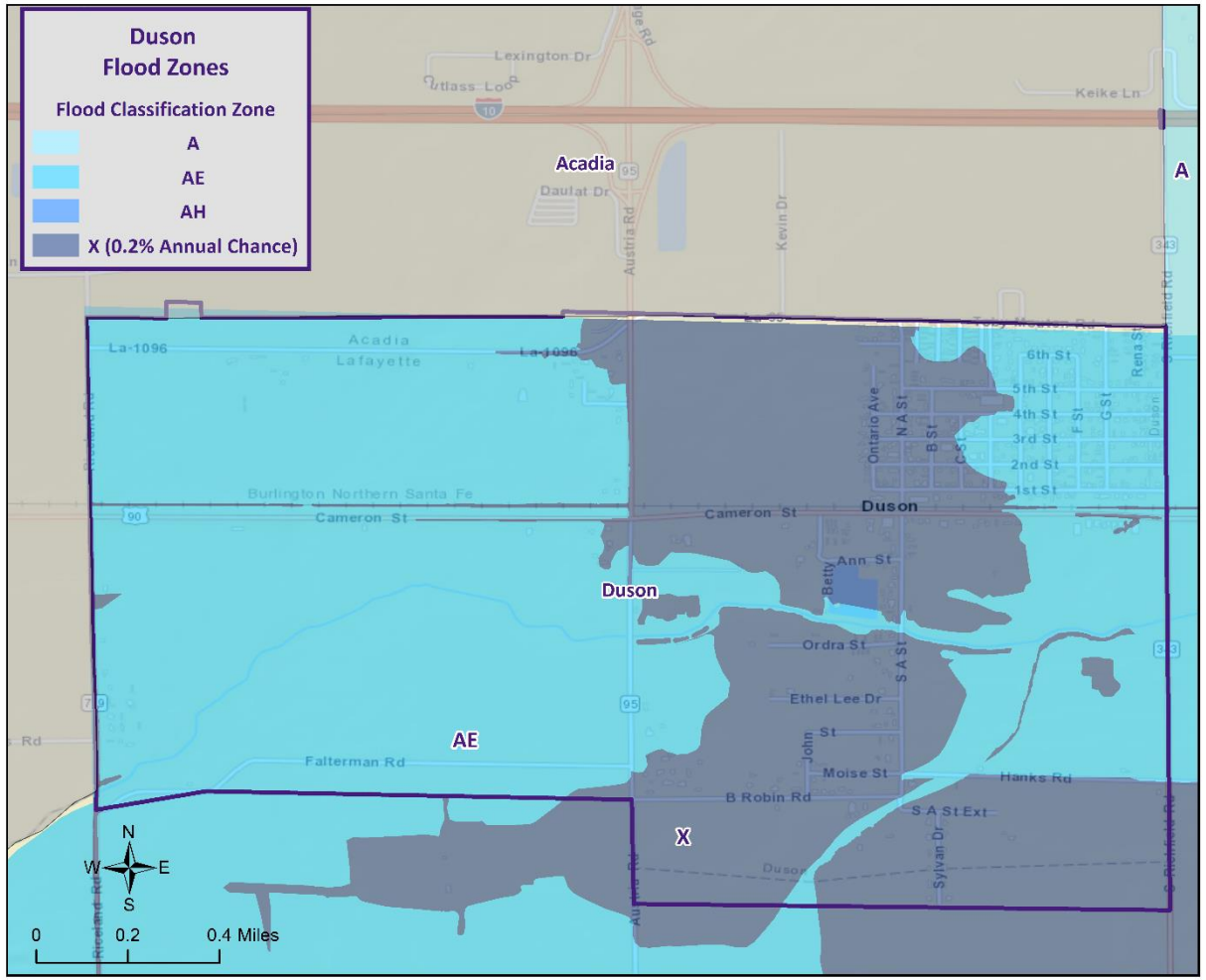
Flood Map: Broussard



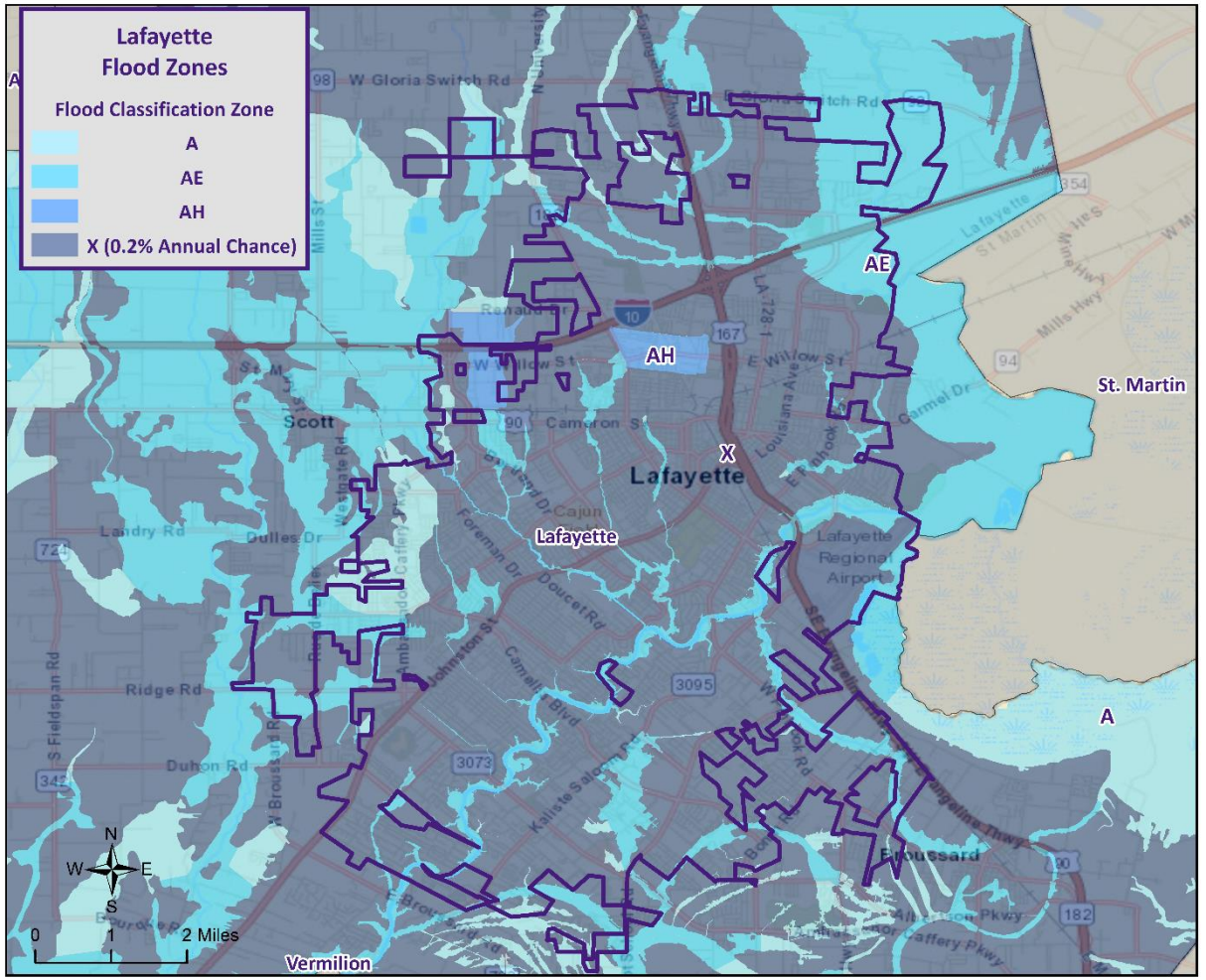
Flood Map: Carencro



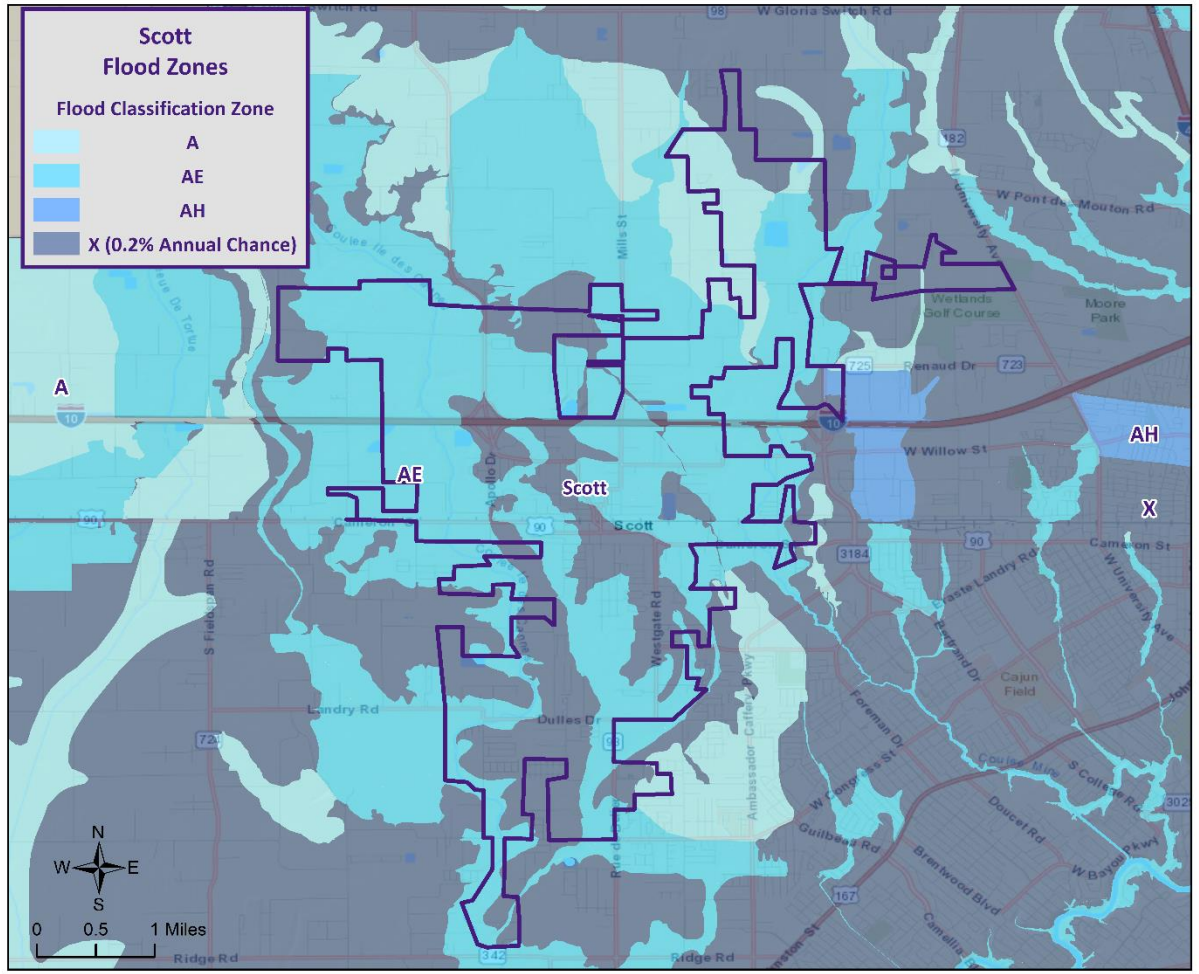
Flood Map: Duson



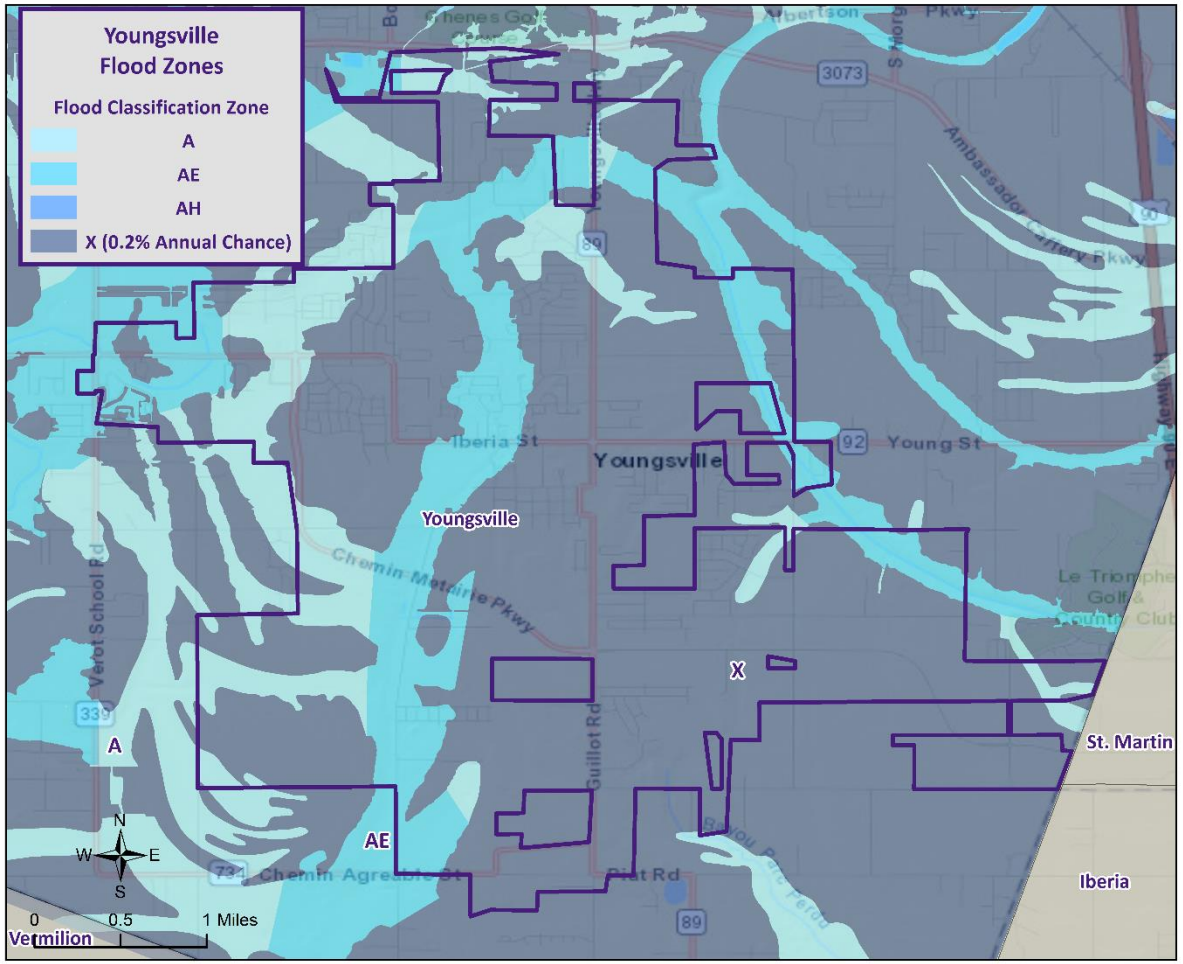
Flood Map: Lafayette



Flood Map: Scott



Flood Map: Youngsville



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.
- These properties are important to the National Flood Insurance Program and the Community Rating System because even though they comprise 1% of the policy base, they account for 30% of the country’s flood insurance claim payments.

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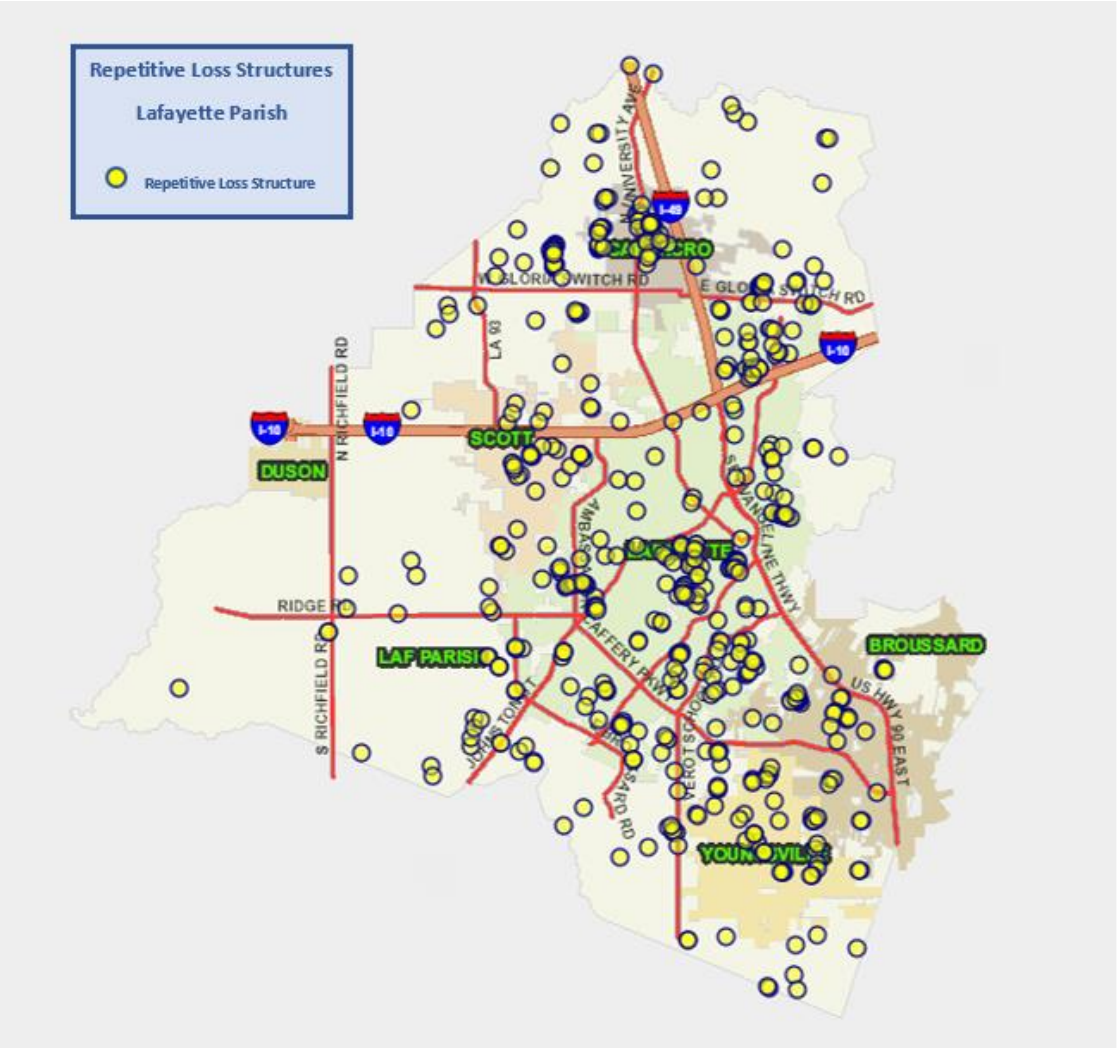
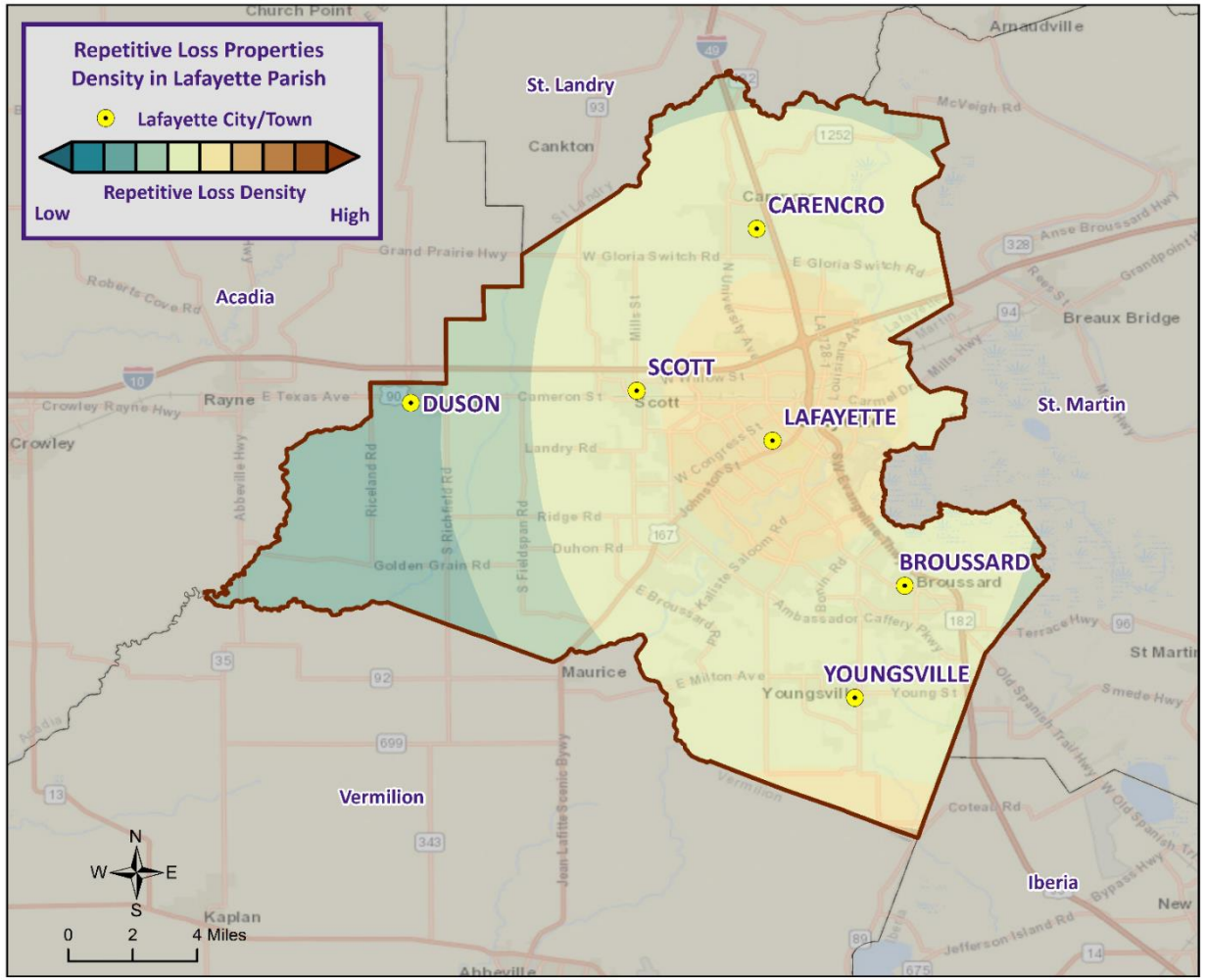
Repetitive Loss Properties



Density of Repetitive Loss Properties



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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.

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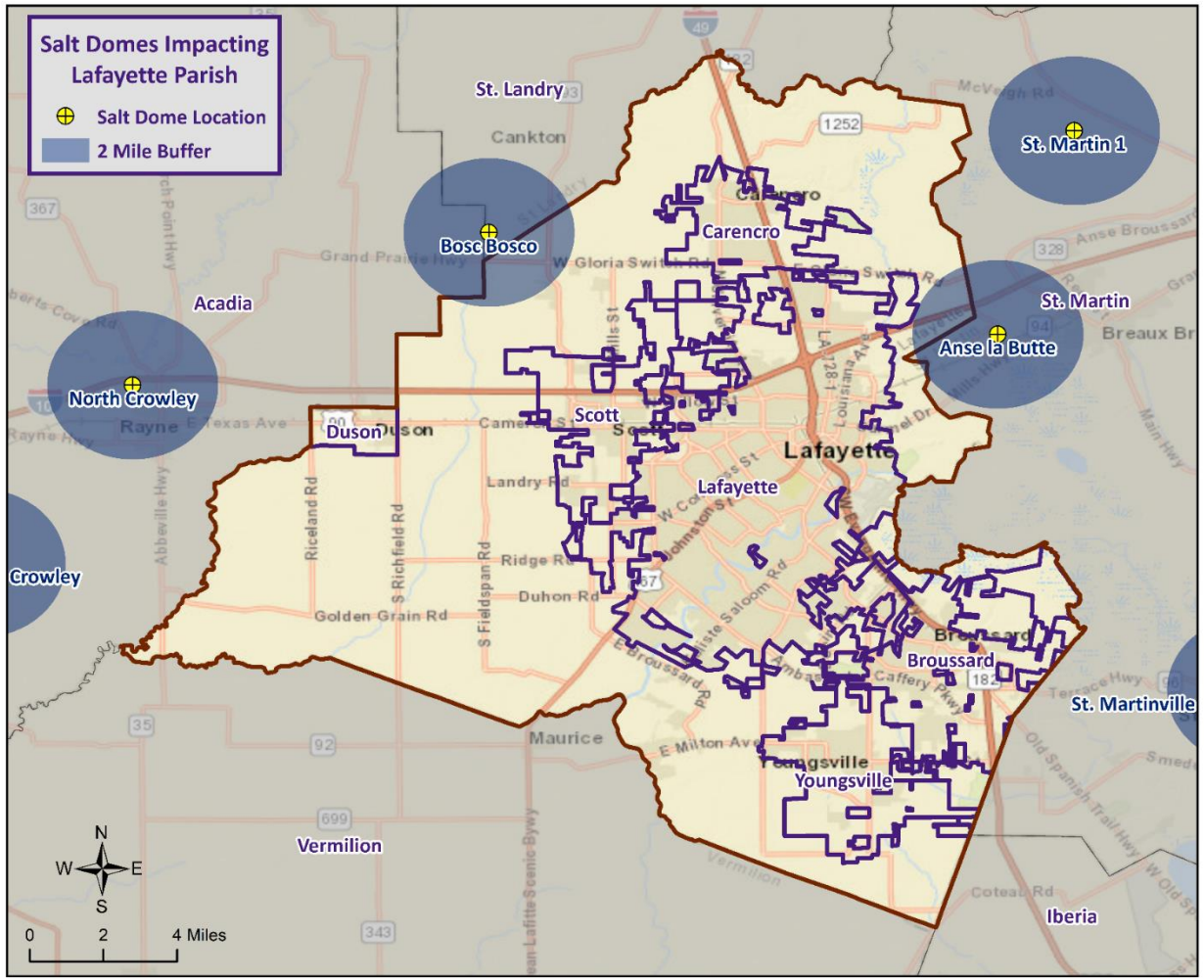
Salt Dome Locations



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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.

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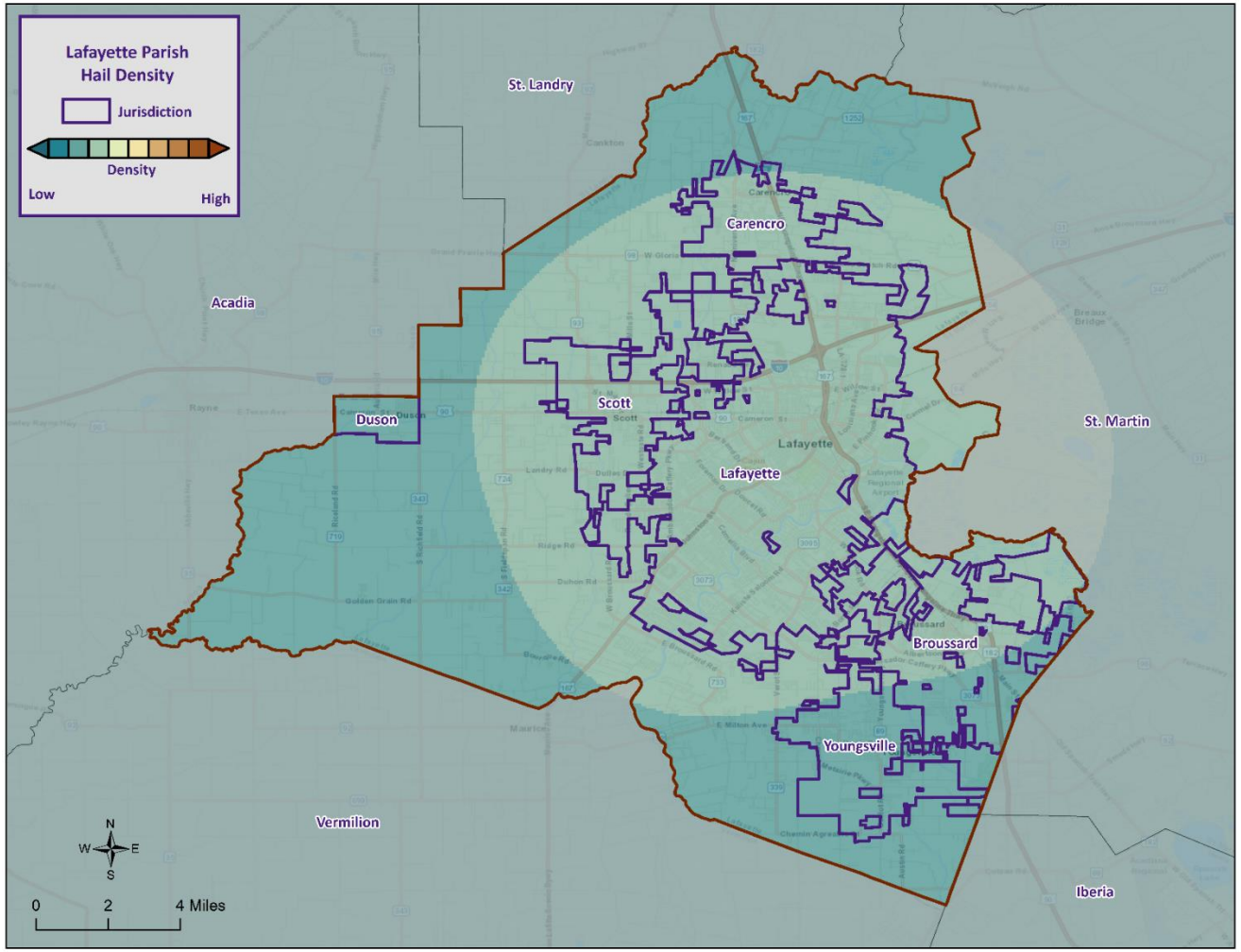
Density of Prior Hailstorms



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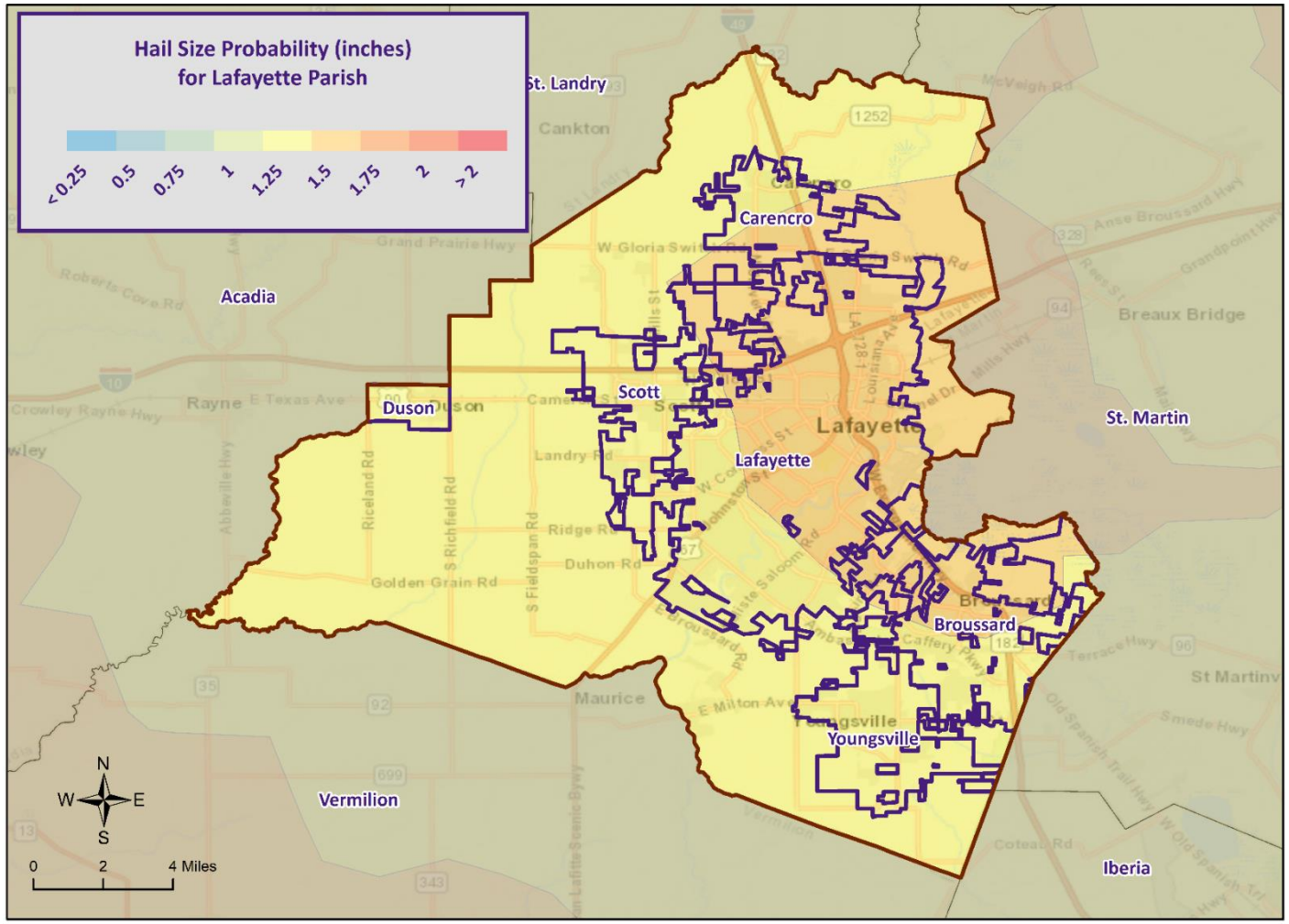
Maximum Hail Size Probability



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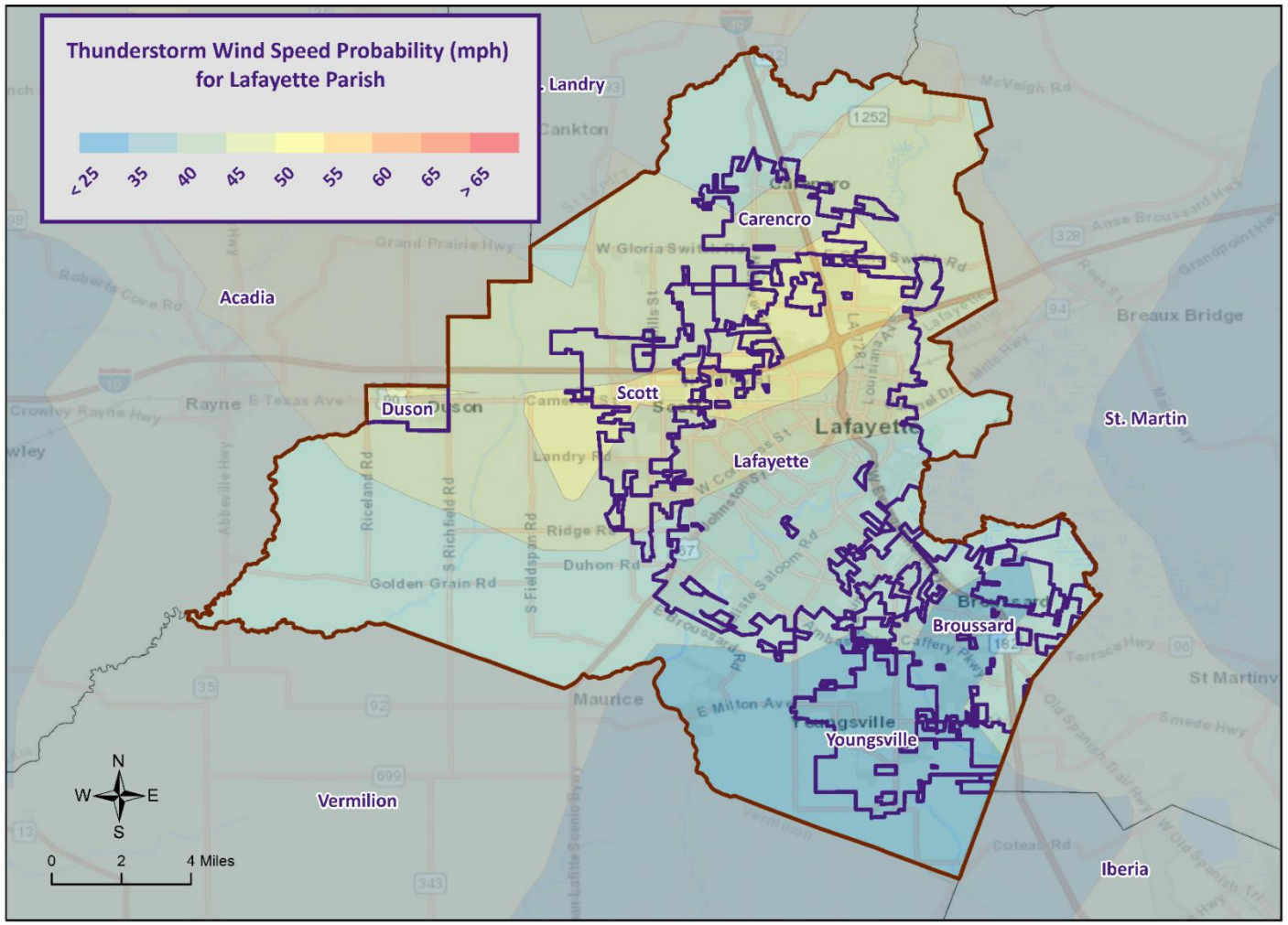
Maximum Wind Speed Probability



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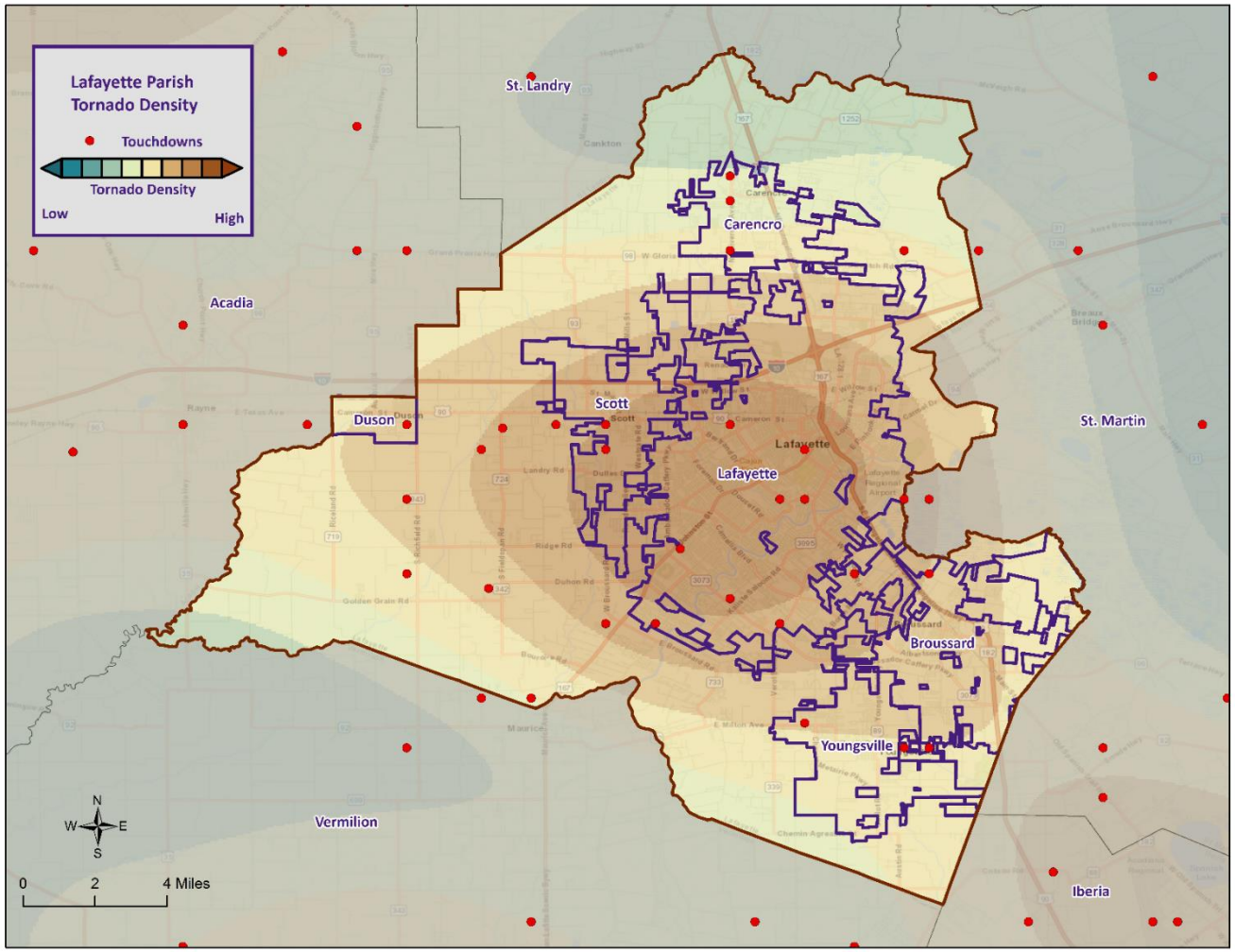
Tornadoes

- 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

Tornadoes



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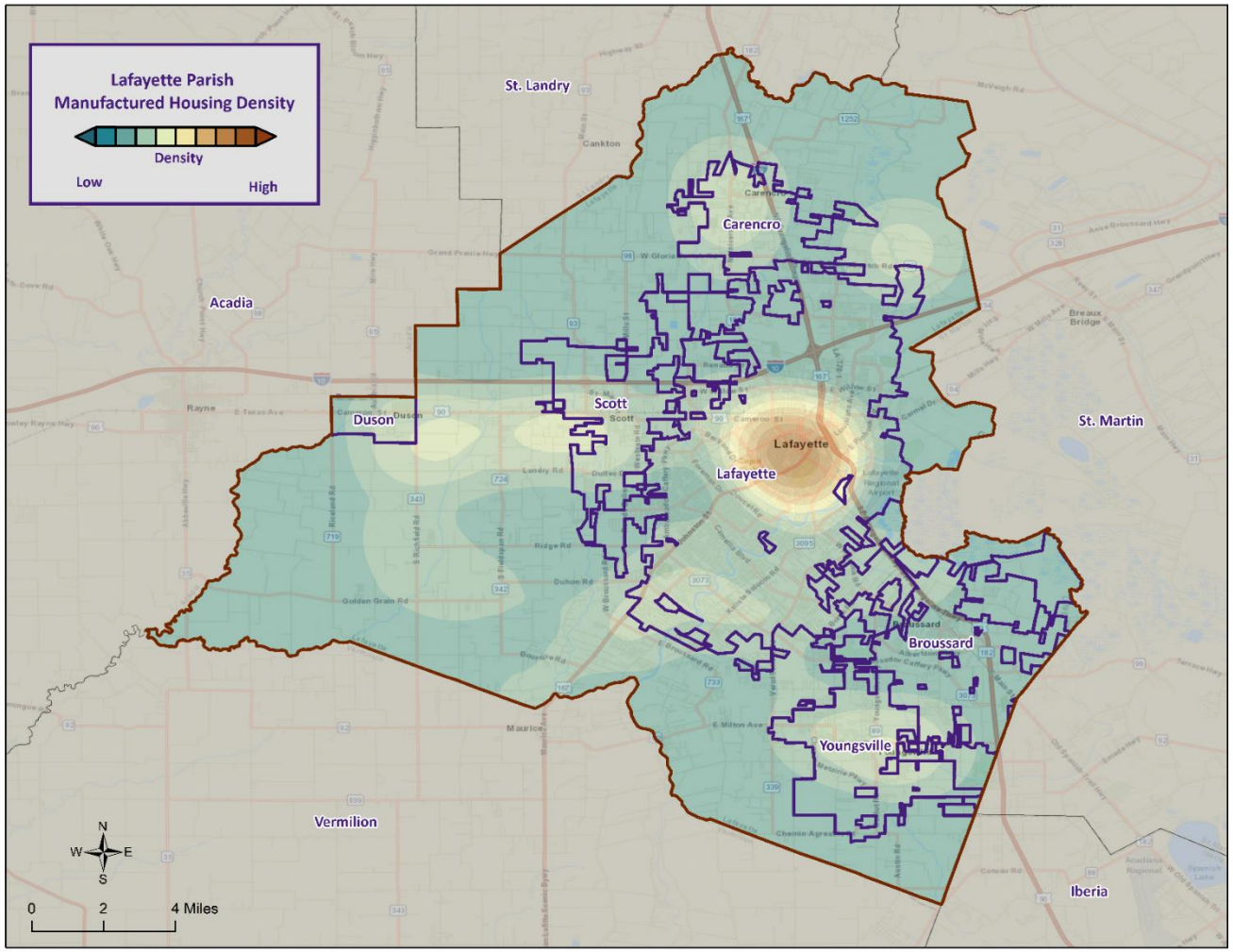
Manufactured Homes Density



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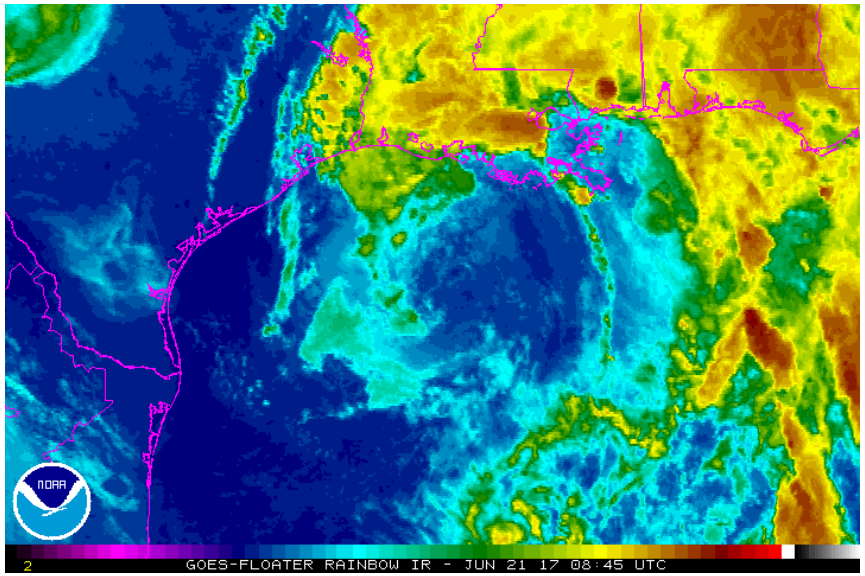
Tropical Cyclones

- 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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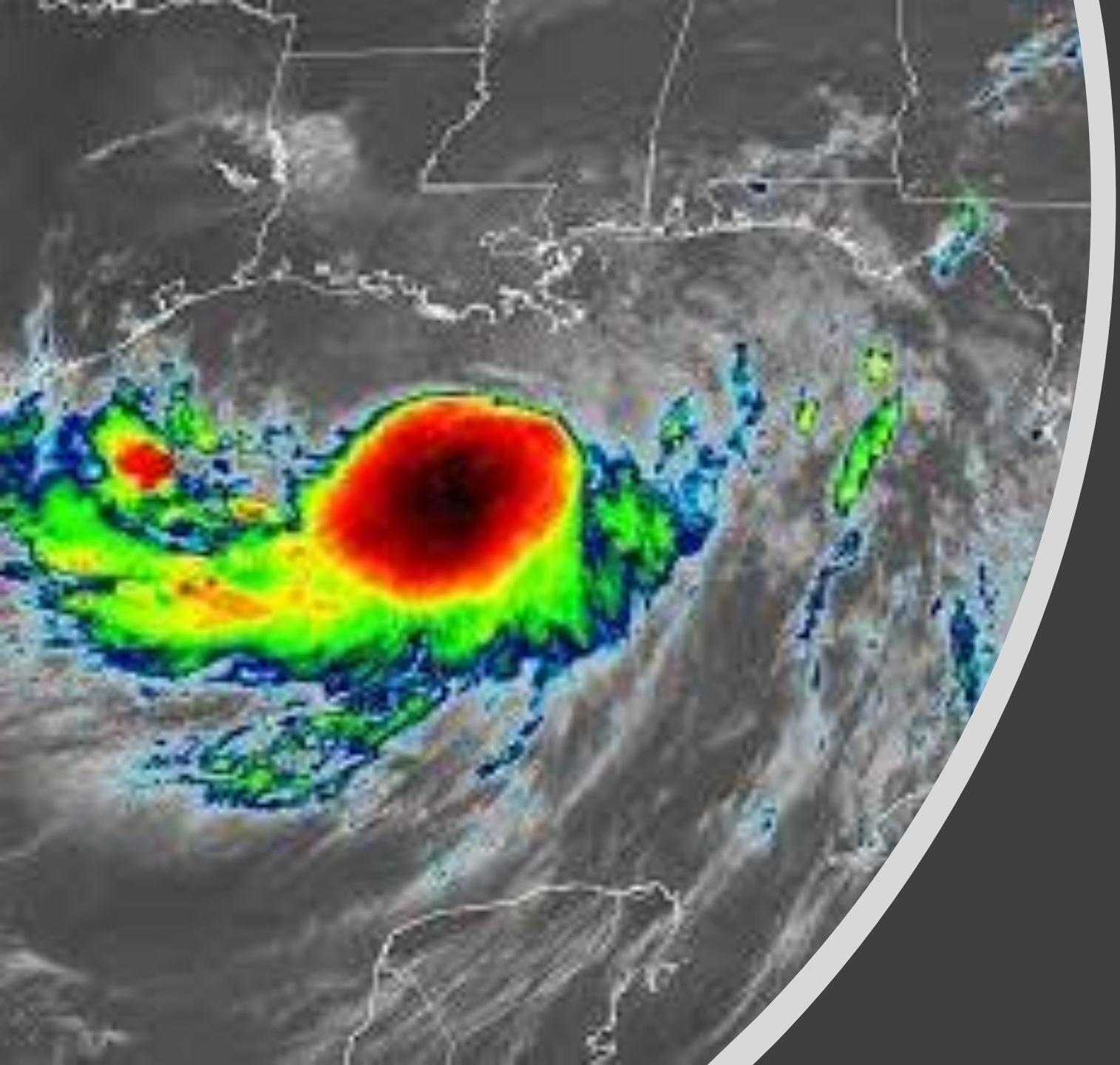
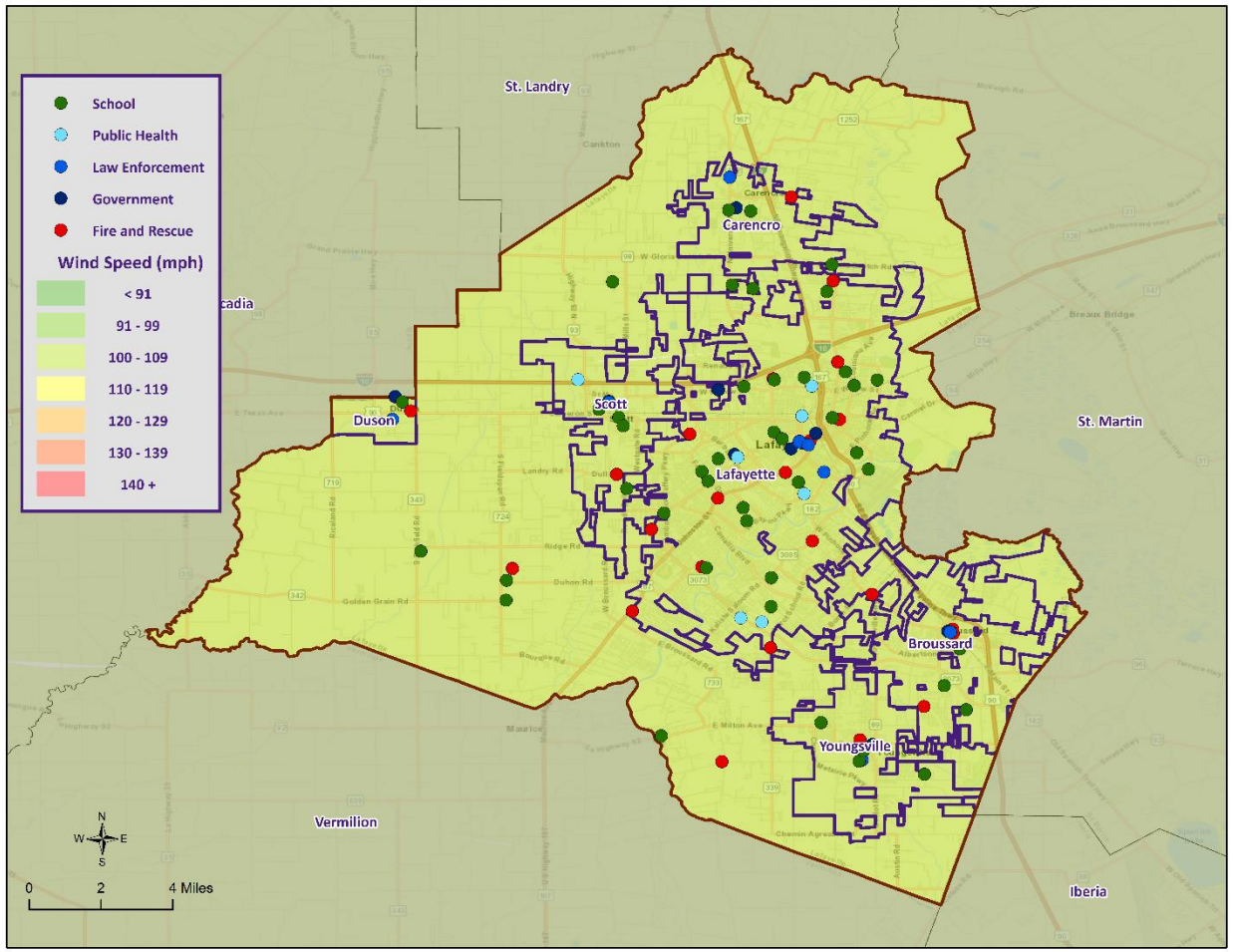


Hurricane Barry

Hurricane Laura

Wind Speed Impacts on Critical Infrastructure



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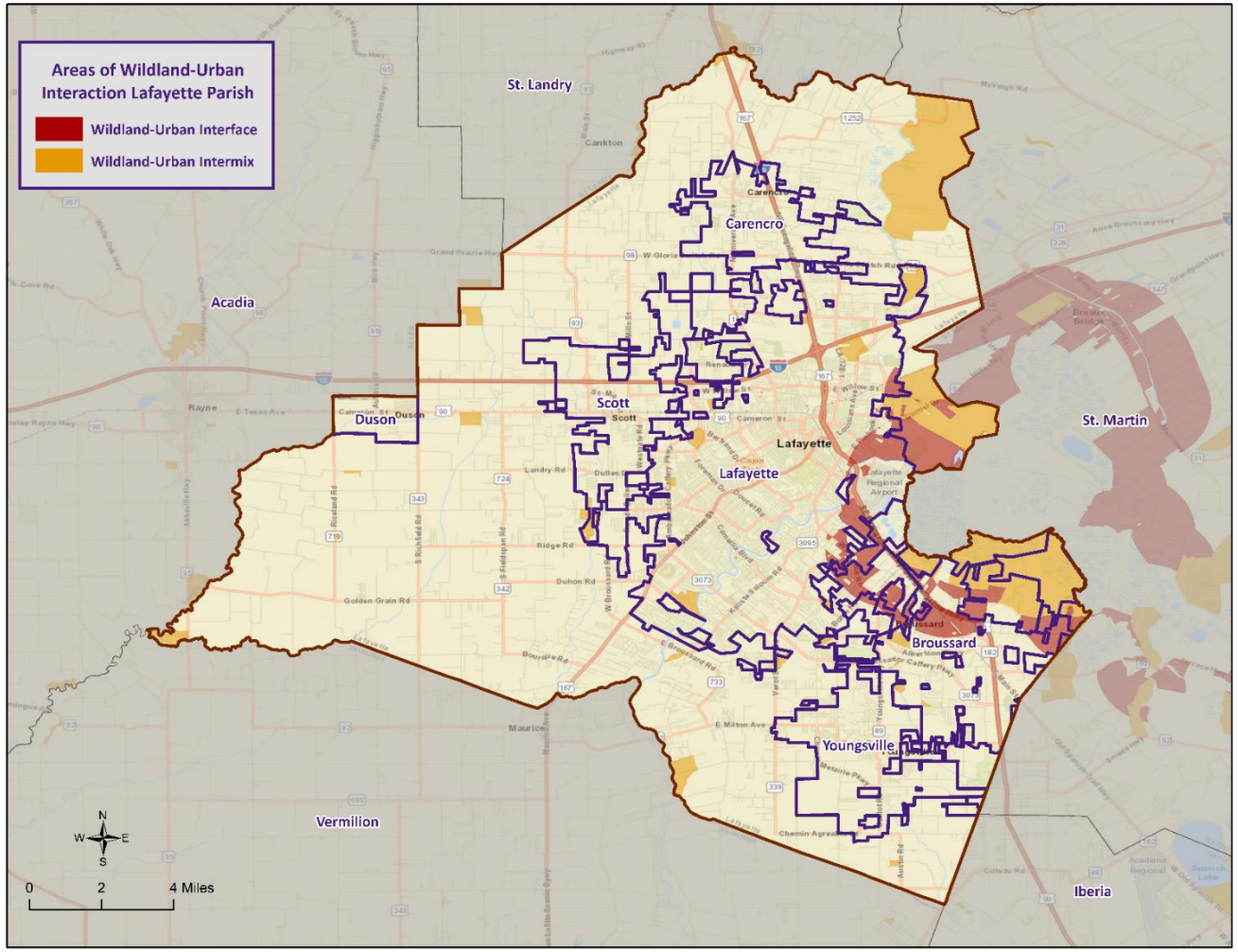
Wildfires

- 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



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

- Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact
- Improve data collection, use, and sharing to reduce the impact of hazards
- Improve capabilities, coordination, and opportunities at the municipal and parish level to plan and implement hazard mitigation projects, programs, and activities
- Pursue opportunities to mitigate repetitive and severe repetitive loss properties and other appropriate hazard mitigation projects, programs, and activities, with a focus on existing structures, future structures, protection of existing infrastructure, and protection of future infrastructure.
- Maintain continuity of operations during and after natural hazard events

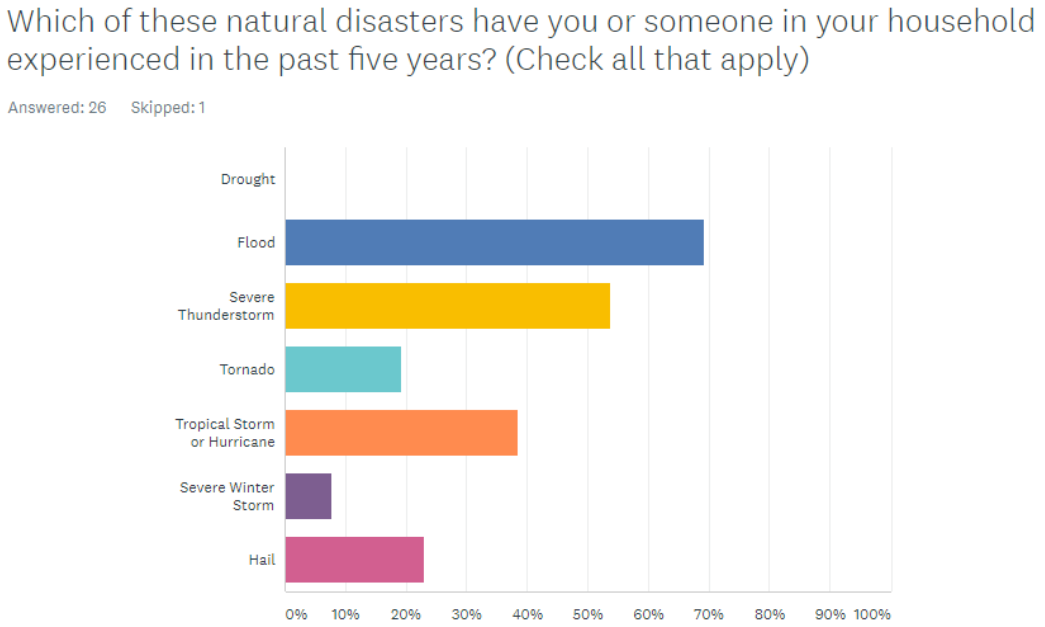
Parish Hazard Mitigation Project Update

Lafayette Parish OHSEP/Lafayette Parish Government Discussion

Public Outreach Activity #1

Hazard Mitigation Public Opinion Survey

https://www.surveymonkey.com/r/LafayetteHM2021



Public Outreach Activity #2

Please fill out an incident questionnaire!

LAFAYETTE PARISH PUBLIC MEETING

PUBLIC ACTIVITY: INCIDENT/ISSUE QUESTIONNAIRE

1. HAZARD TYPE(S):

A. FLOODING
I. RIVERINE
II. STORM SURGE
III. STREET
IV. OTHER (DESCRIBE):
B. HIGH WINDS (NOT TROPICAL)
C. COASTAL
I. SALTWATER INTRUSION
II. EROSION
III. OTHER (DESCRIBE):
D. TROPICAL SYSTEMS
E. WINTER WEATHER

F. OTHER:

2. DESCRIBE INCIDENT OR ISSUE:

3. LOCATION:

A. CITY:

B. ADDRESS OR AREA:

C. LOCALIZED OR DISPERSED:

4. INTENSITY:

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

B. WIND STRENGTH

5. RE-OCCURRING OR ONE-TIME

A. IF RE-OCCURRING, 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 PROBLEM OR IMPACT BE PREVENTED, FIXED OR ALLEVIATED?

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