Acadia Parish
Hazard Mitigation Plan Update
Public Meeting

March 8, 2016

Crowley, LA

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Agenda

- Hazard Mitigation Planning Process – SDMI Staff
- Risk Assessment – SDMI Staff
- Update on Previous/Current Mitigation Projects – Acadia OHSEP
- Public Outreach Activities – SDMI Acadia OHSEP

Hazard Mitigation

- Protect public safety and prevent loss of life and injury;
- Help accomplish community objectives, such as leveraging capital improvements, infrastructure protection, open space preservation, and economic resiliency;
- Prevent damage to a community's economic, cultural and environmental assets;
- Minimize operational downtime and accelerate recovery of government and the private sector after an event

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Why are we required to have a Hazard Mitigation Plan?

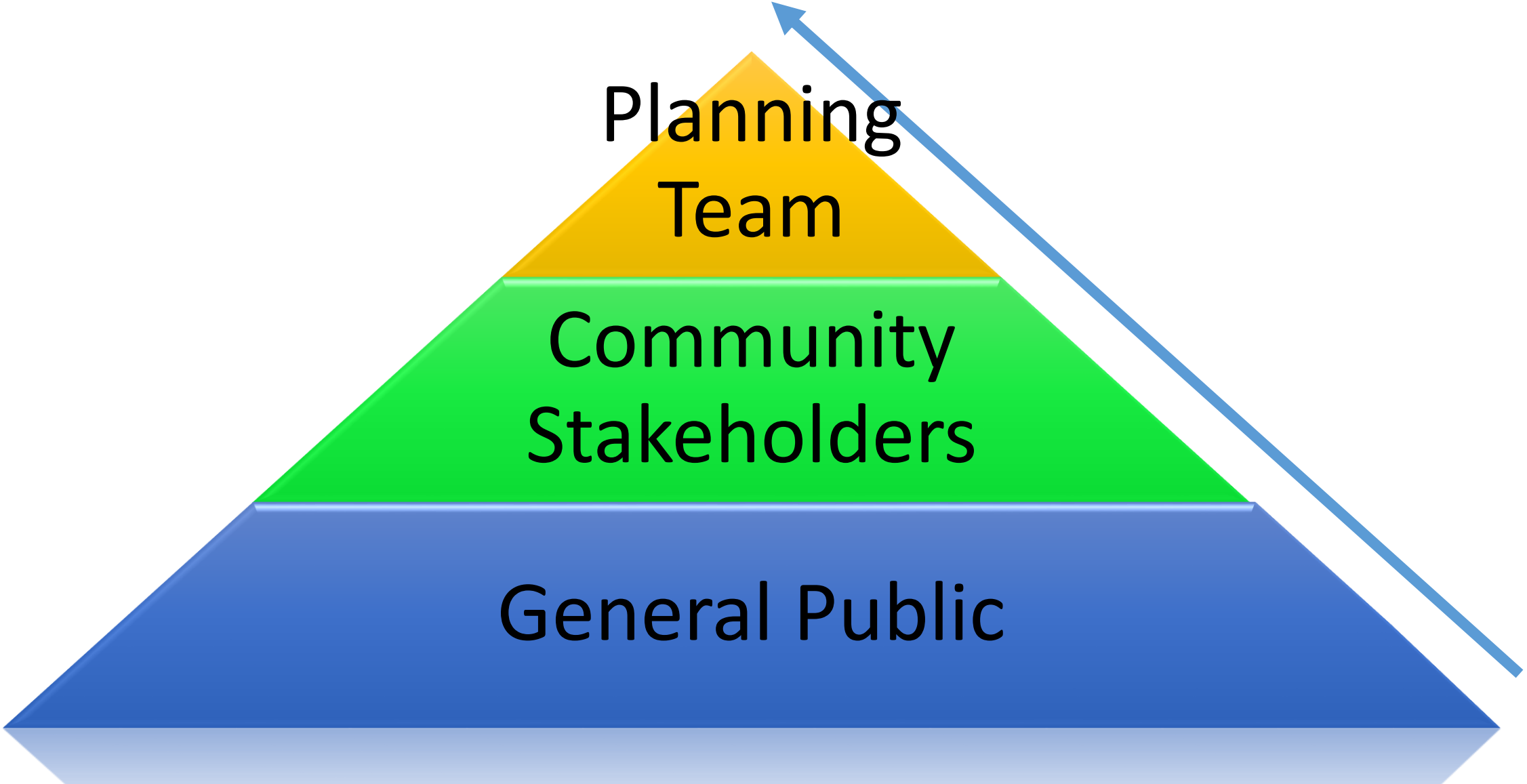
- Disaster Mitigation Act of 2000 (DMA 2000)

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

Collaborative Planning Approach



Planning Development

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New Plan Layout

- Section 1: Introduction
  - Updated demographics
  - Economics
  - Update parish/jurisdiction descriptions
- Section 2: Hazard Identification and Parishwide Risk Assessment
- Section 3: Capability Assessment
- Section 4: Mitigation Strategies
  - New actions
  - Action updates
  - Survey results

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New Plan Layout

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

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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
- Flooding
- Thunderstorms
  - Lightning
  - High Winds
  - Hailstorms
- Tornadoes
- Tropical Cyclones
- Winter Storm

** These natural hazards were selected based on an assessment of the overall impact (geographic extent, magnitude, probability, and exacerbating or mitigating conditions) affecting Acadia Parish.*

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Risk Assessment: Hazard Identification

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

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Risk Assessment: Analyze Risk and Summarize Vulnerability

- Risk analysis involves evaluating vulnerable assets, describing potential impacts, and estimating losses for each hazard.
- This helps the community understand the greatest risks facing the area.
- Methods can include exposure risk analysis, historical analysis and scenario analysis.
- Through the risk analysis the community should be able to verbalize or create problem statements about the identified risks.

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Risk Assessment: Maps

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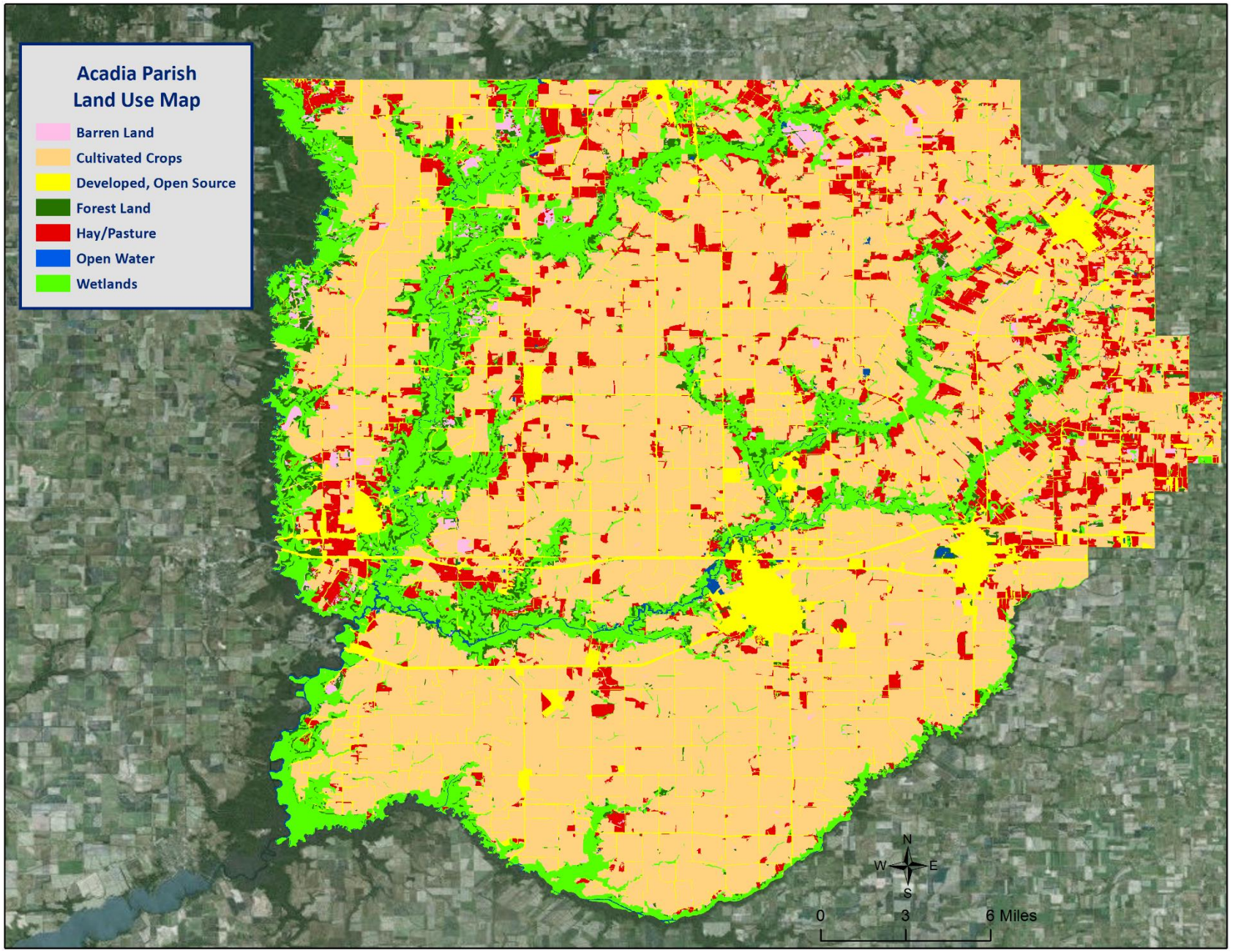
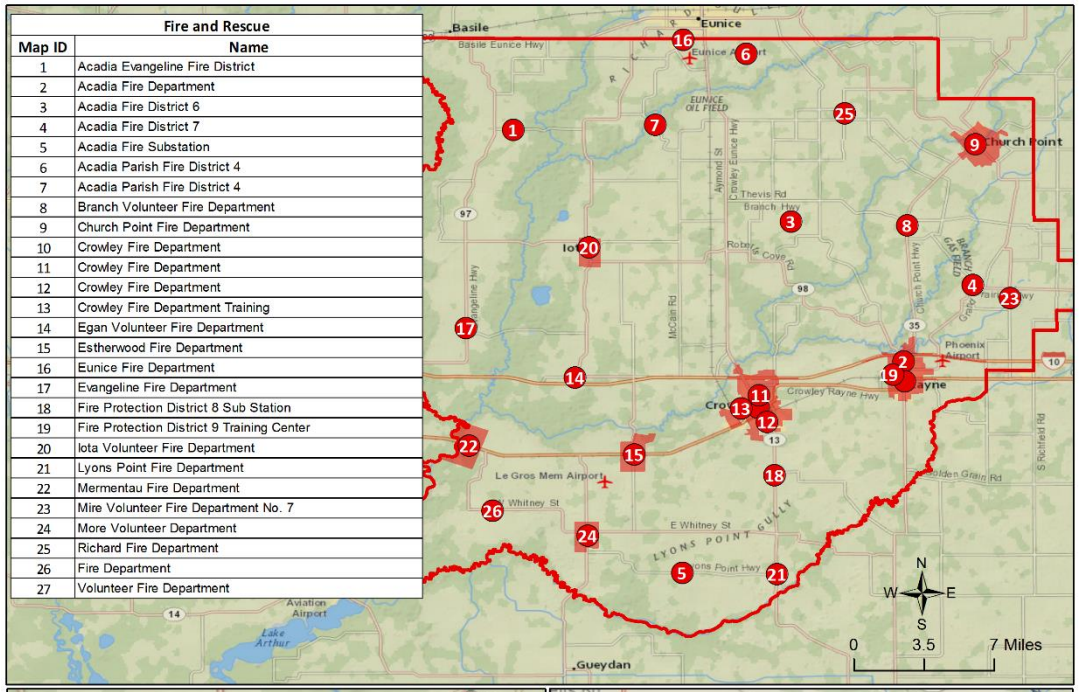
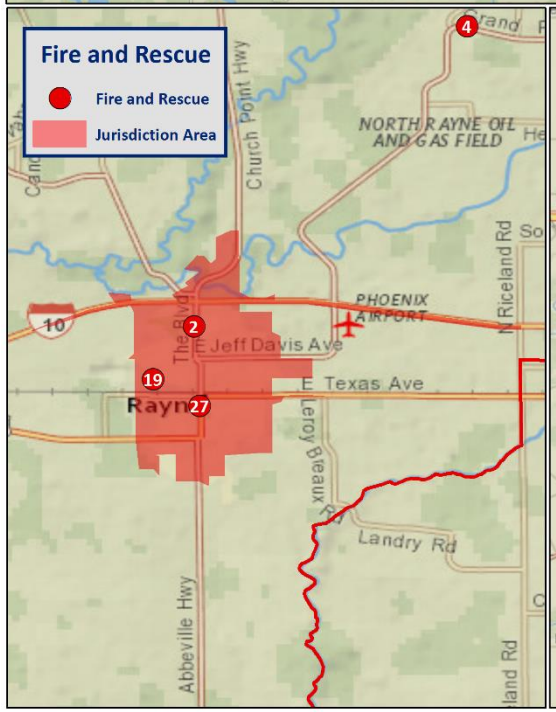
Land Use in Acadia Parish

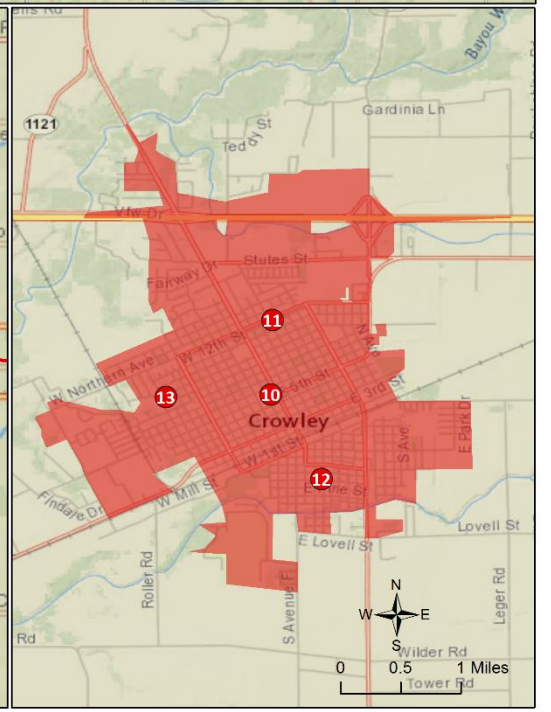


Critical Facilities – Fire Stations

Fire and Rescue	
Map ID	Name
1	Acadia Evangeline Fire District
2	Acadia Fire Department
3	Acadia Fire District 6
4	Acadia Fire District 7
5	Acadia Fire Substation
6	Acadia Parish Fire District 4
7	Acadia Parish Fire District 4
8	Branch Volunteer Fire Department
9	Church Point Fire Department
10	Crowley Fire Department
11	Crowley Fire Department
12	Crowley Fire Department
13	Crowley Fire Department Training
14	Egan Volunteer Fire Department
15	Estherwood Fire Department
16	Eunice Fire Department
17	Evangeline Fire Department
18	Fire Protection District 8 Sub Station
19	Fire Protection District 9 Training Center
20	Iota Volunteer Fire Department
21	Lyons Point Fire Department
22	Mermentau Fire Department
23	Mire Volunteer Fire Department No. 7
24	More Volunteer Department
25	Richard Fire Department
26	Fire Department
27	Volunteer Fire Department

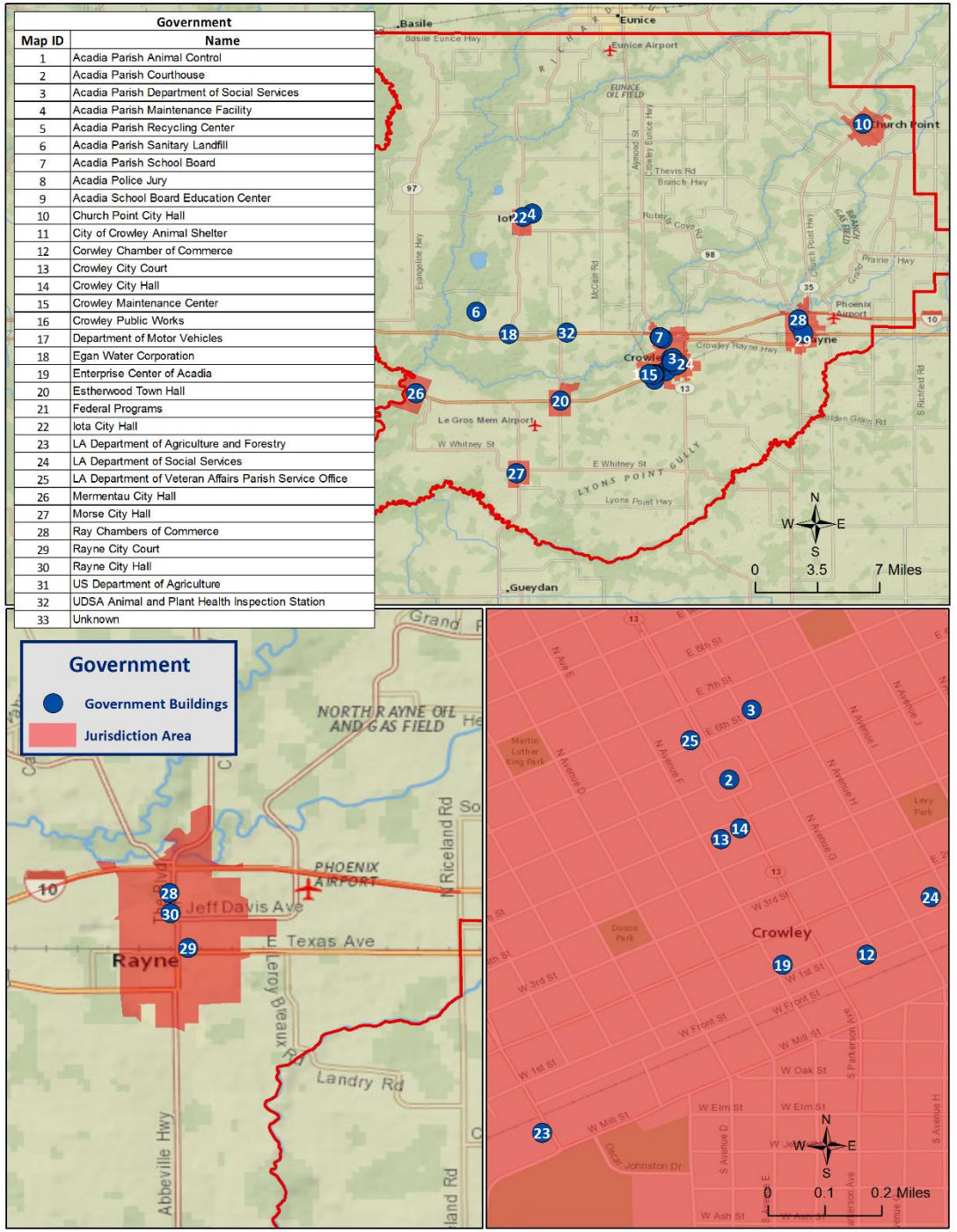






Critical Facilities – Government Buildings

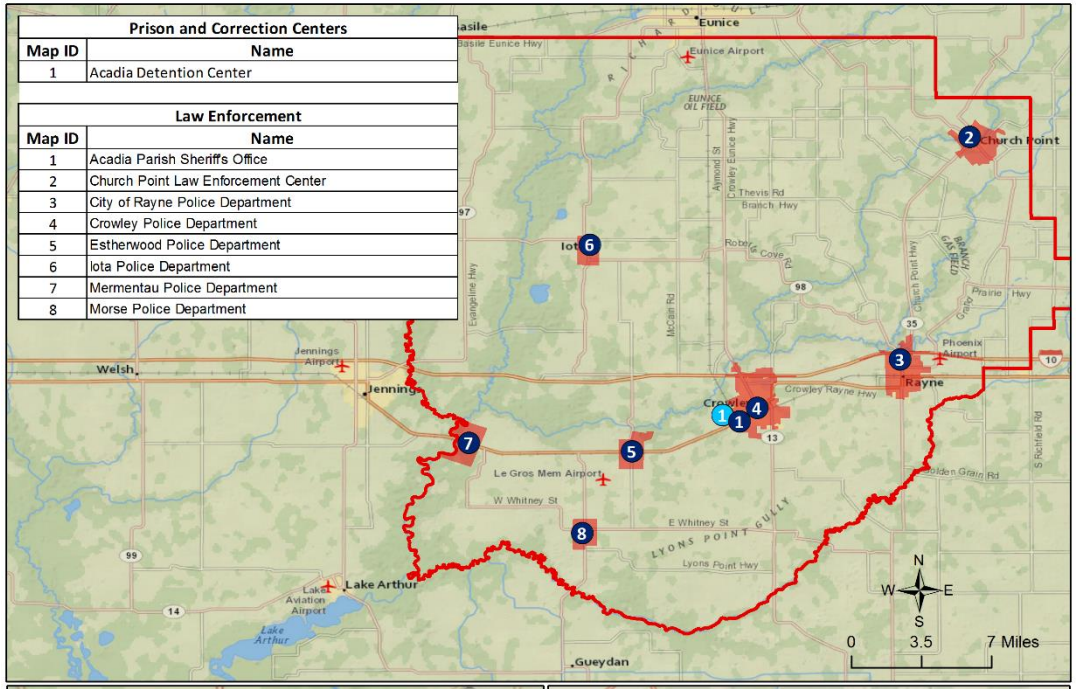
Government	
Map ID	Name
1	Acadia Parish Animal Control
2	Acadia Parish Courthouse
3	Acadia Parish Department of Social Services
4	Acadia Parish Maintenance Facility
5	Acadia Parish Recycling Center
6	Acadia Parish Sanitary Landfill
7	Acadia Parish School Board
8	Acadia Police Jury
9	Acadia School Board Education Center
10	Church Point City Hall
11	City of Crowley Animal Shelter
12	Corwley Chamber of Commerce
13	Crowley City Court
14	Crowley City Hall
15	Crowley Maintenance Center
16	Crowley Public Works
17	Department of Motor Vehicles
18	Egan Water Corporation
19	Enterprise Center of Acadia
20	Estherwood Town Hall
21	Federal Programs
22	Iota City Hall
23	LA Department of Agriculture and Forestry
24	LA Department of Social Services
25	LA Department of Veteran Affairs Parish Service Office
26	Mermentau City Hall
27	Morse City Hall
28	Ray Chambers of Commerce
29	Rayne City Court
30	Rayne City Hall
31	US Department of Agriculture
32	UDSA Animal and Plant Health Inspection Station
33	Unknown

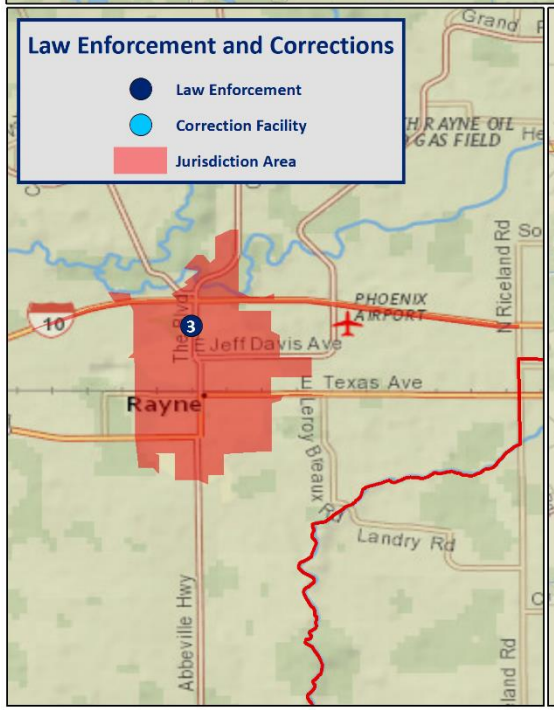


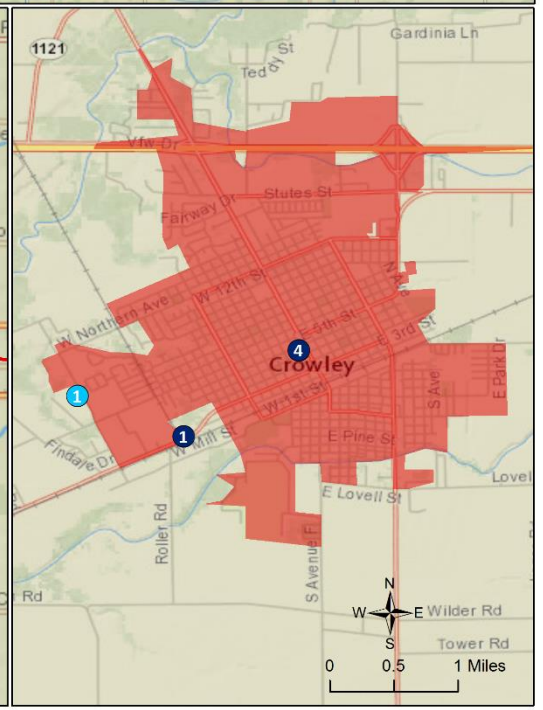
Critical Facilities – Law Enforcement

Prison and Correction Centers	
Map ID	Name
1	Acadia Detention Center

Law Enforcement	
Map ID	Name
1	Acadia Parish Sheriff's Office
2	Church Point Law Enforcement Center
3	City of Rayne Police Department
4	Crowley Police Department
5	Estherwood Police Department
6	Iota Police Department
7	Mermentau Police Department
8	Morse Police Department

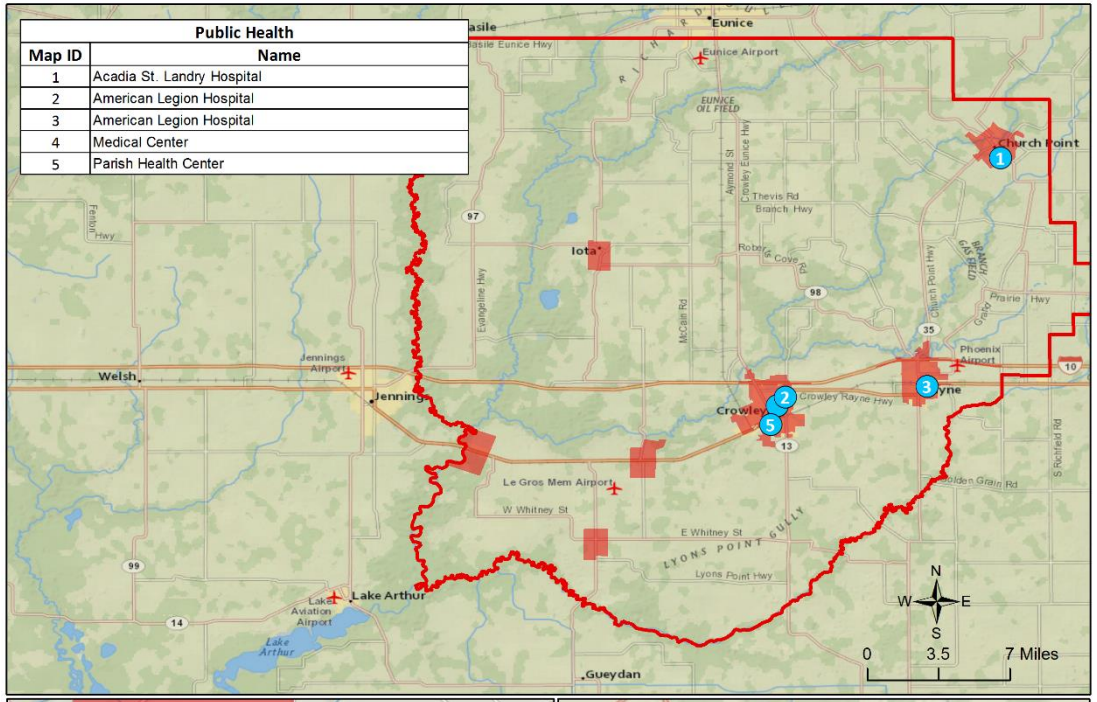


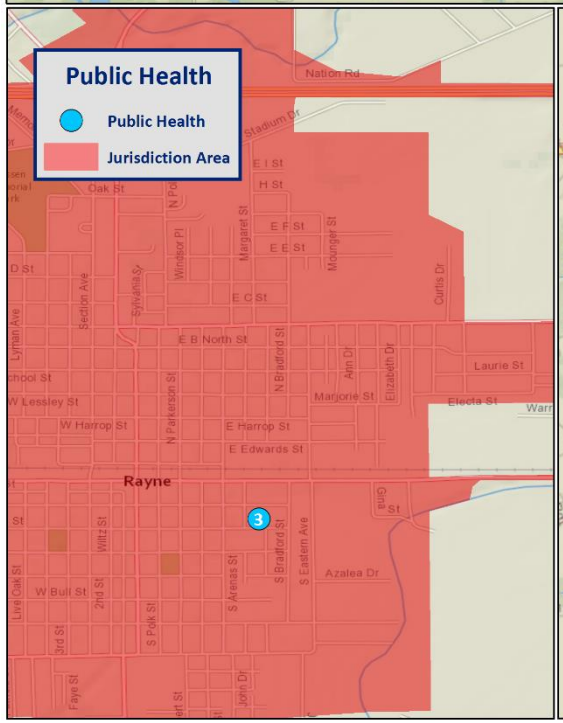


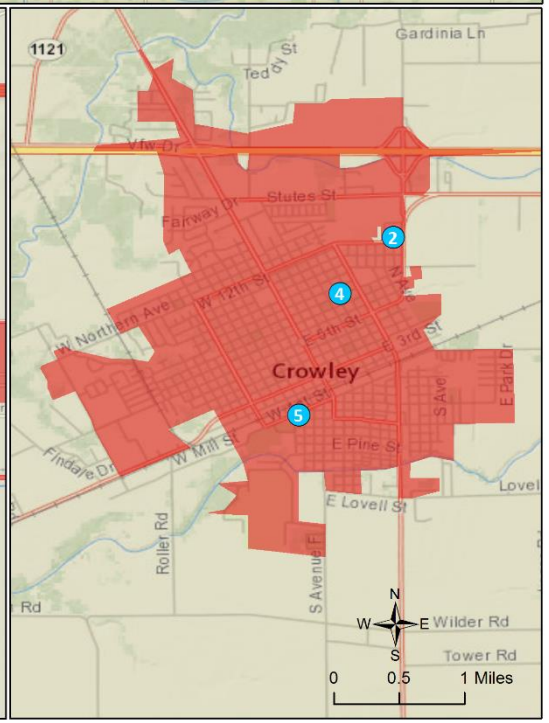


Critical Facilities – Public Health

Public Health	
Map ID	Name
1	Acadia St. Landry Hospital
2	American Legion Hospital
3	American Legion Hospital
4	Medical Center
5	Parish Health Center

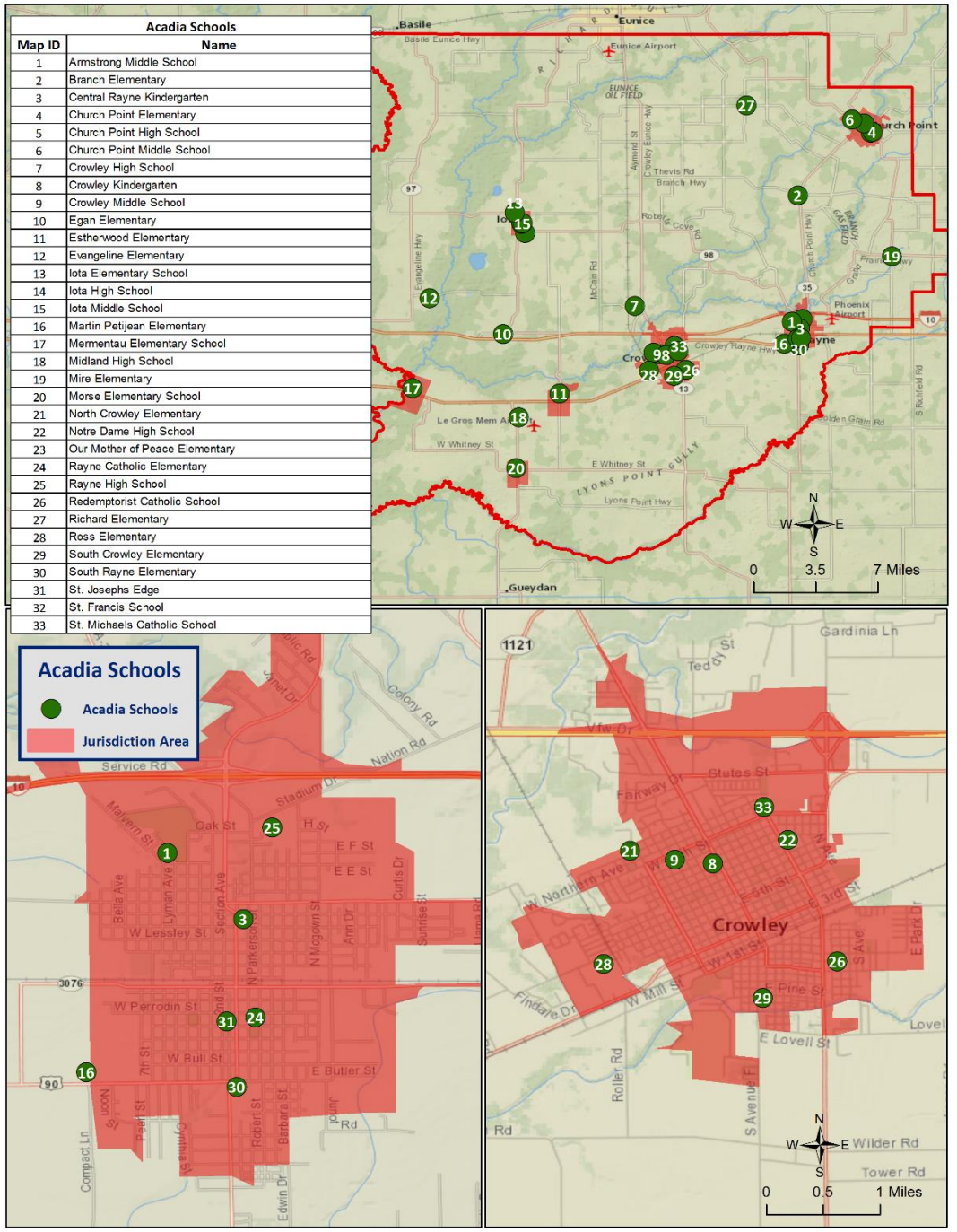






Critical Facilities – Schools

Acadia Schools	
Map ID	Name
1	Armstrong Middle School
2	Branch Elementary
3	Central Rayne Kindergarten
4	Church Point Elementary
5	Church Point High School
6	Church Point Middle School
7	Crowley High School
8	Crowley Kindergarten
9	Crowley Middle School
10	Egan Elementary
11	Estherwood Elementary
12	Evangeline Elementary
13	Iota Elementary School
14	Iota High School
15	Iota Middle School
16	Martin Petijean Elementary
17	Mermentau Elementary School
18	Midland High School
19	Mire Elementary
20	Morse Elementary School
21	North Crowley Elementary
22	Notre Dame High School
23	Our Mother of Peace Elementary
24	Rayne Catholic Elementary
25	Rayne High School
26	Redemptorist Catholic School
27	Richard Elementary
28	Ross Elementary
29	South Crowley Elementary
30	South Rayne Elementary
31	St. Josephs Edge
32	St. Francis School
33	St. Michaels Catholic School



Drought

- Drought is when a region receives below-average precipitation, resulting in prolonged shortages in its water supply, whether atmospheric, surface or ground water.

- Drought can last for months or years, or may be declared after as few as 15 days. It can have a substantial impact on the ecosystem and agriculture of the affected region.

- Periods of heat can significantly worsen drought conditions

U.S. Drought Monitor

Louisiana

November 24, 2015

(Released Wednesday, Nov. 25, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week *11/17/2015*	97.94	2.06	0.00	0.00	0.00	0.00
3 Months Ago *8/25/2015*	0.10	99.90	59.83	6.91	0.00	0.00
Start of Calendar Year *12/30/2014*	47.23	52.77	10.88	0.00	0.00	0.00
Start of Water Year *9/29/2015*	6.86	93.14	71.14	45.44	15.22	0.00
One Year Ago *11/25/2014*	67.24	32.76	2.70	0.00	0.00	0.00

Intensity:

- 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. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCEI/NOAA

http://droughtmonitor.unl.edu/

Flooding

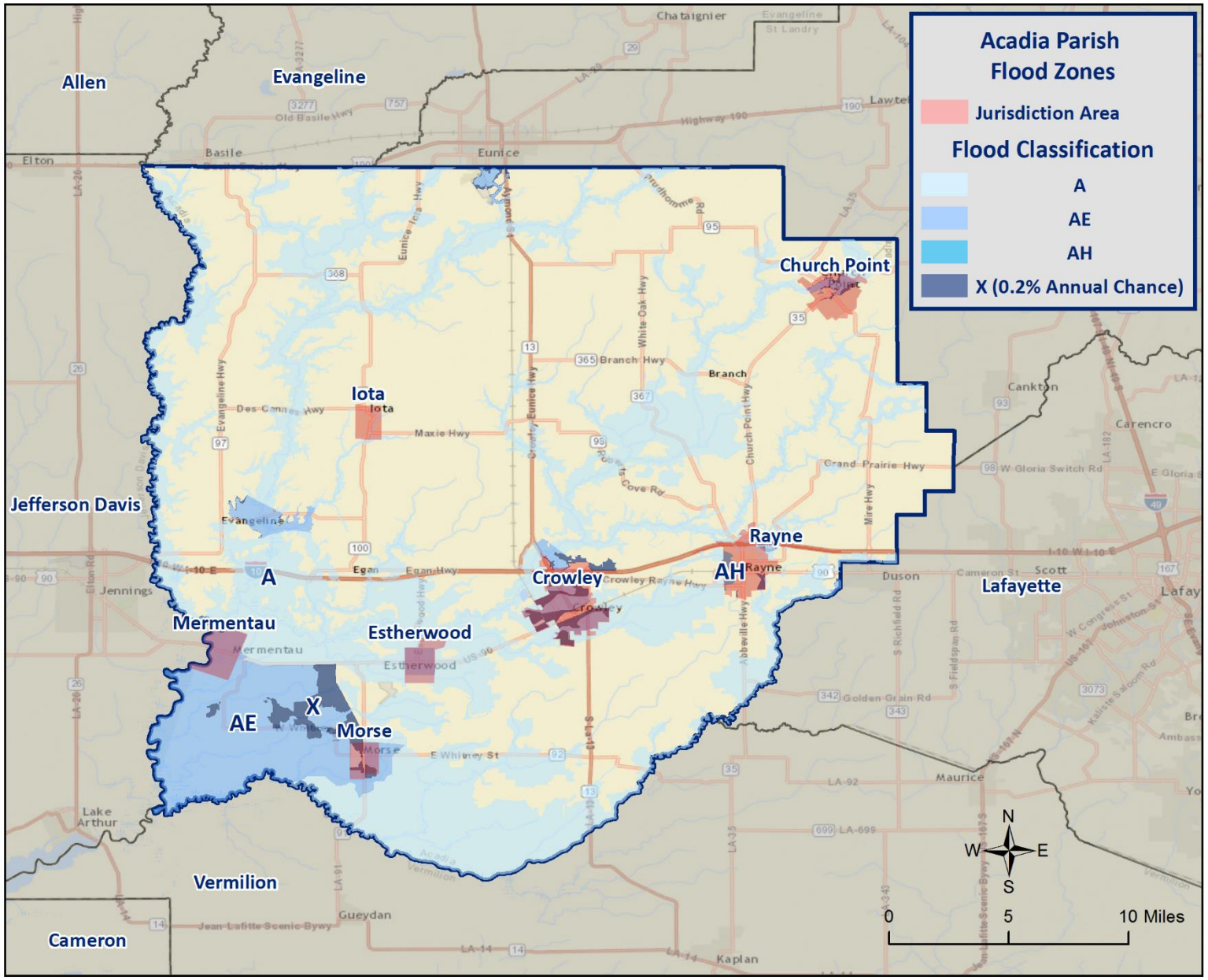
- A flood is the overflow of water onto land that is usually not inundated.
- The National Flood Insurance Program defines a flood as a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland 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

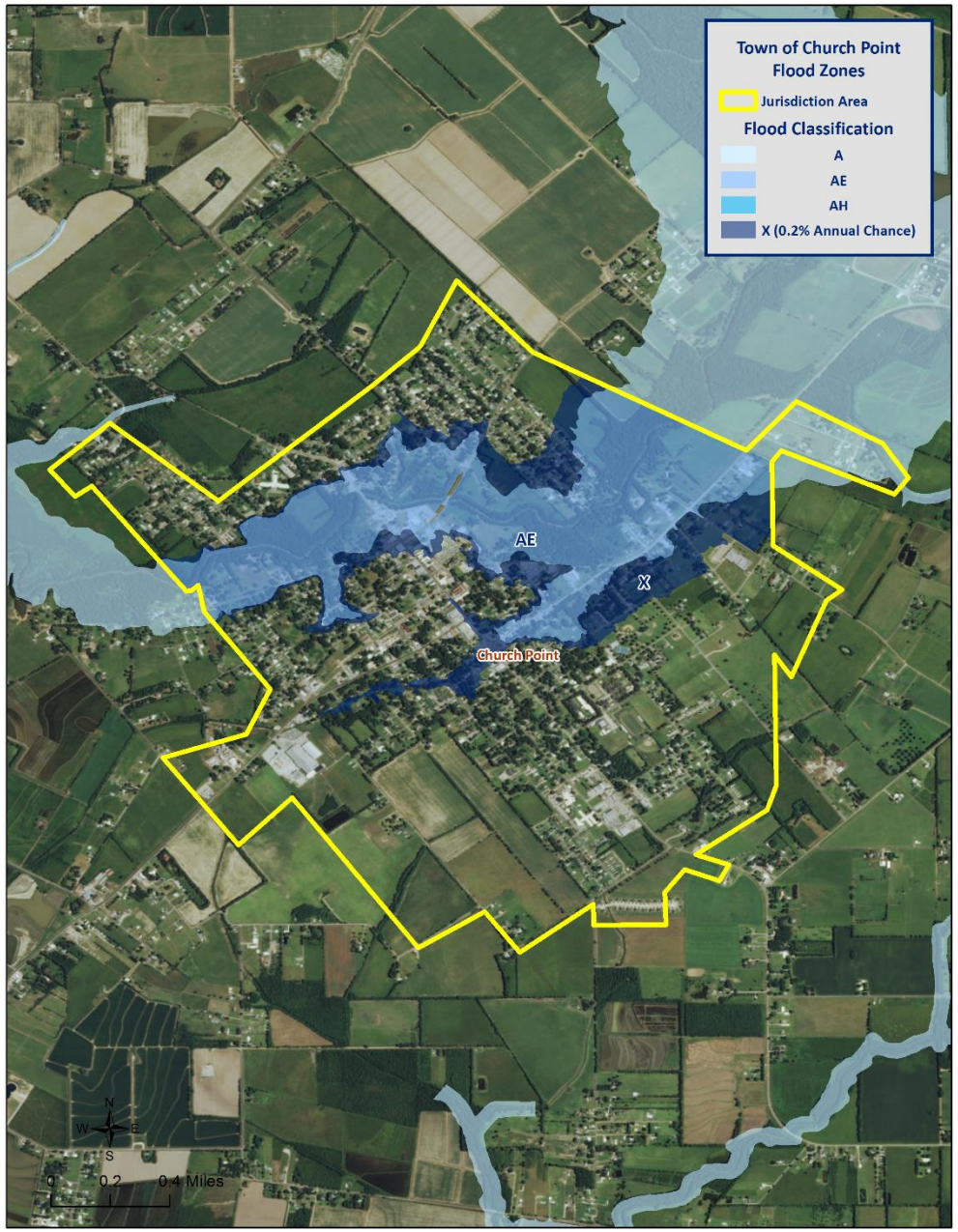
Types of flooding may include the following:

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

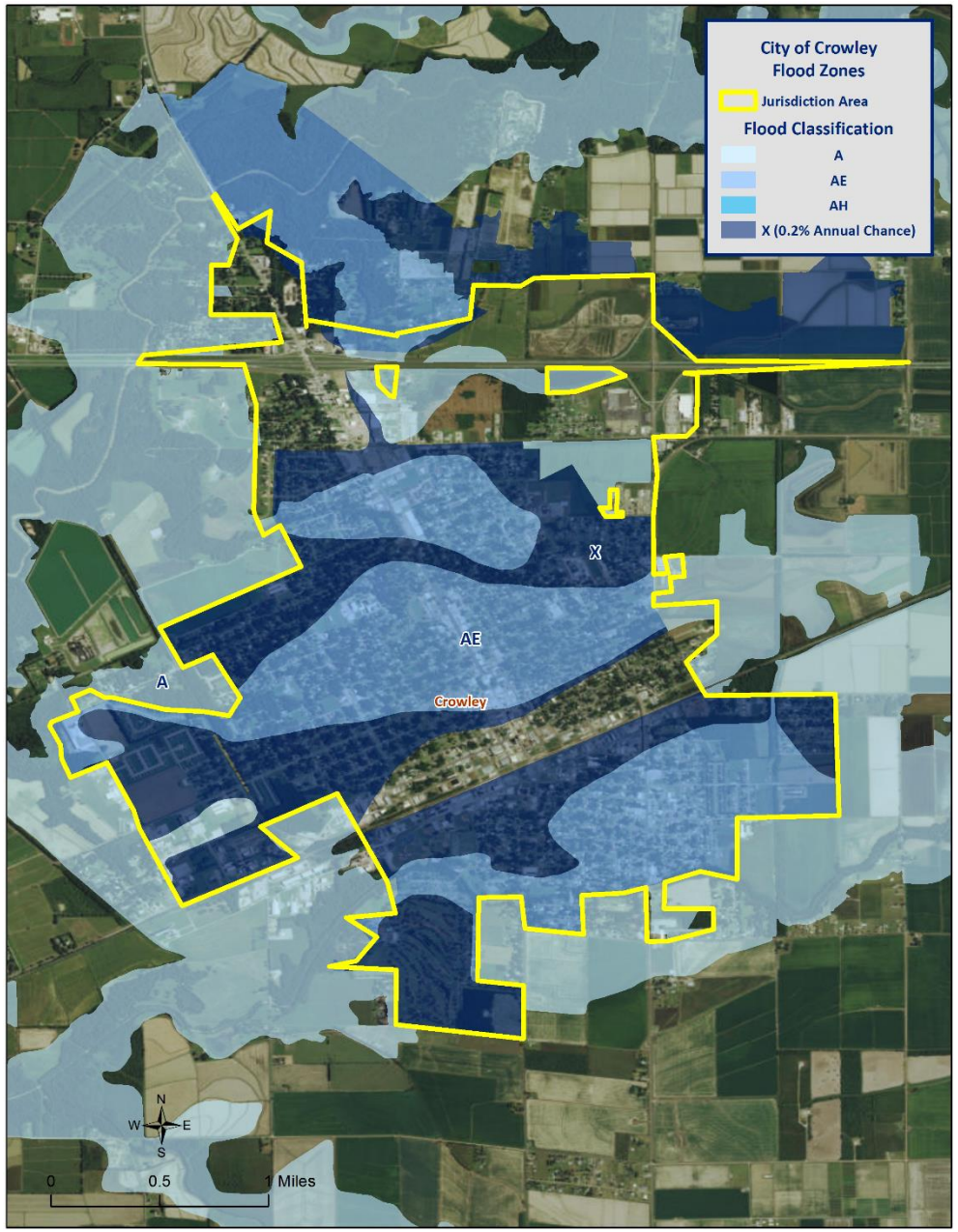
Flood Zone Classifications – Parish/Jurisdictions



Flood Zone Classifications



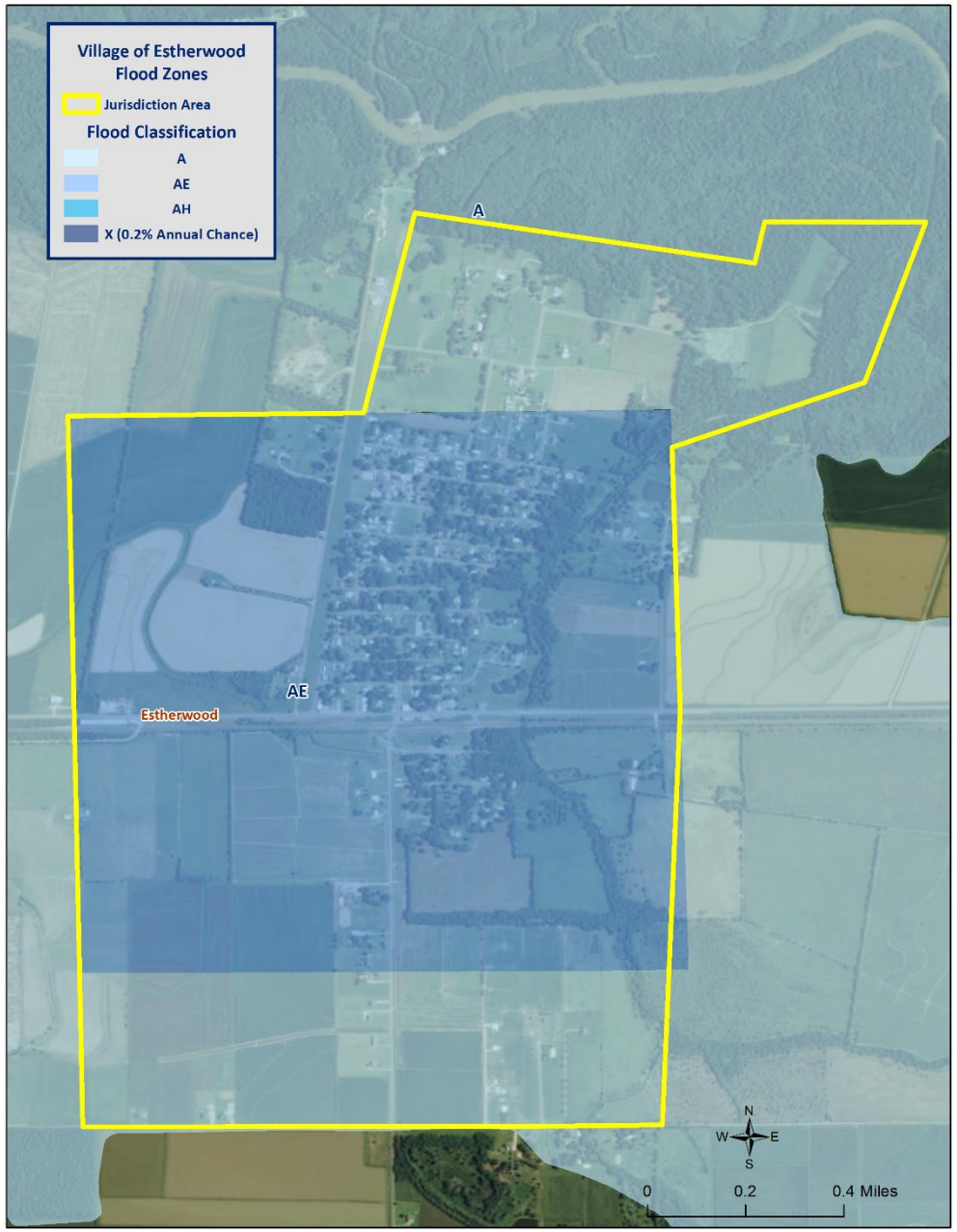
Town of Church Point

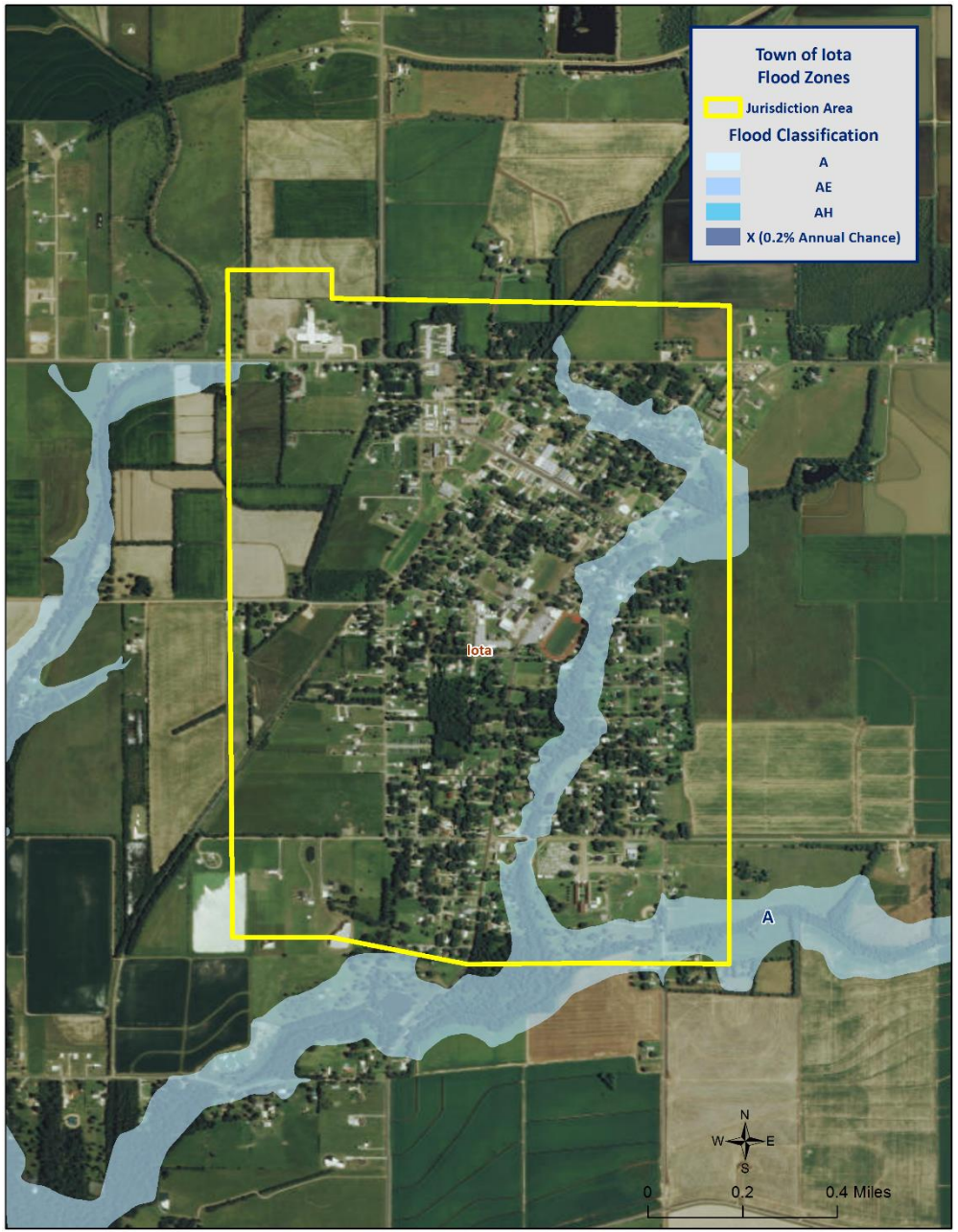


City of Crowley

Flood Zone Classifications

Village of Estherwood

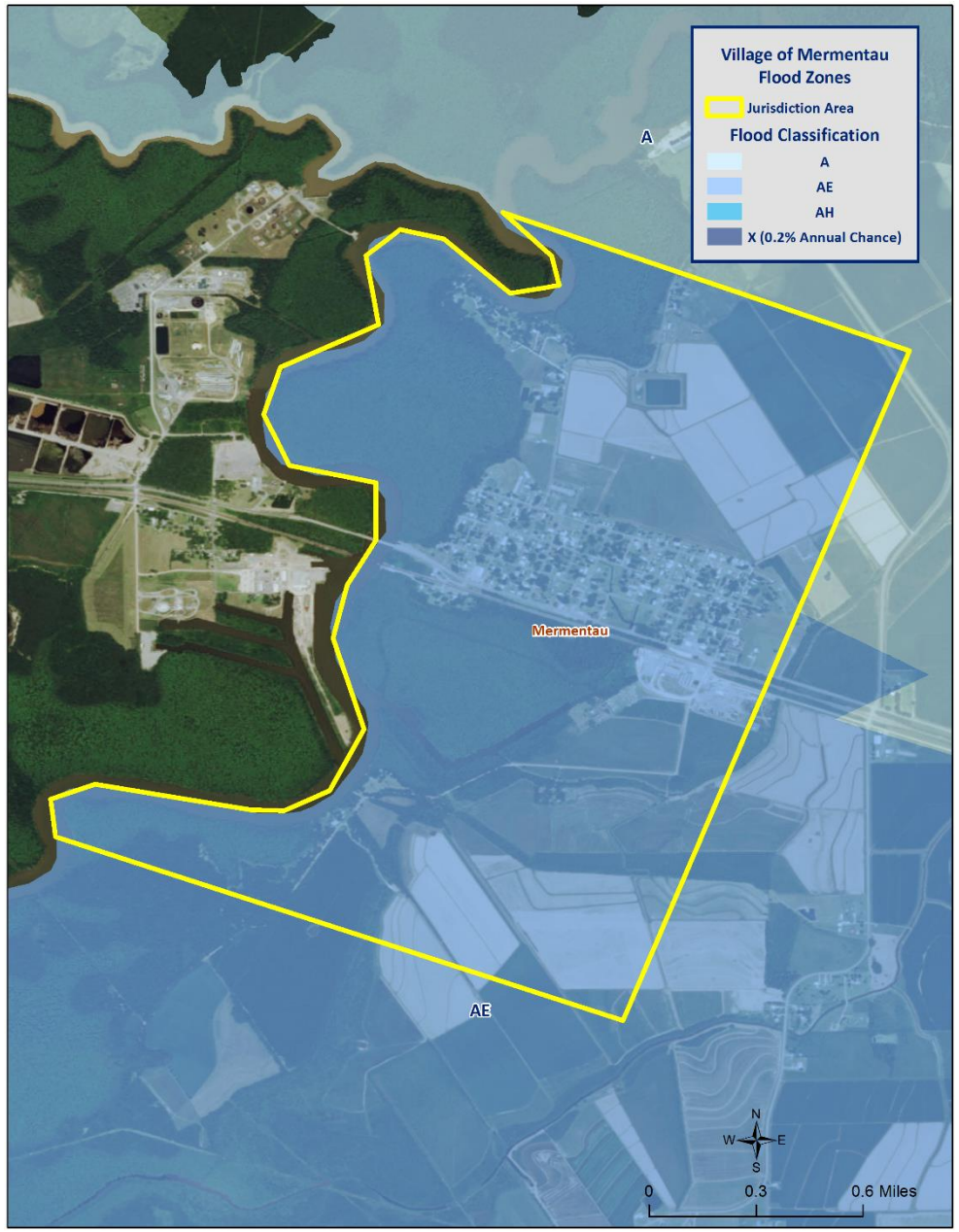


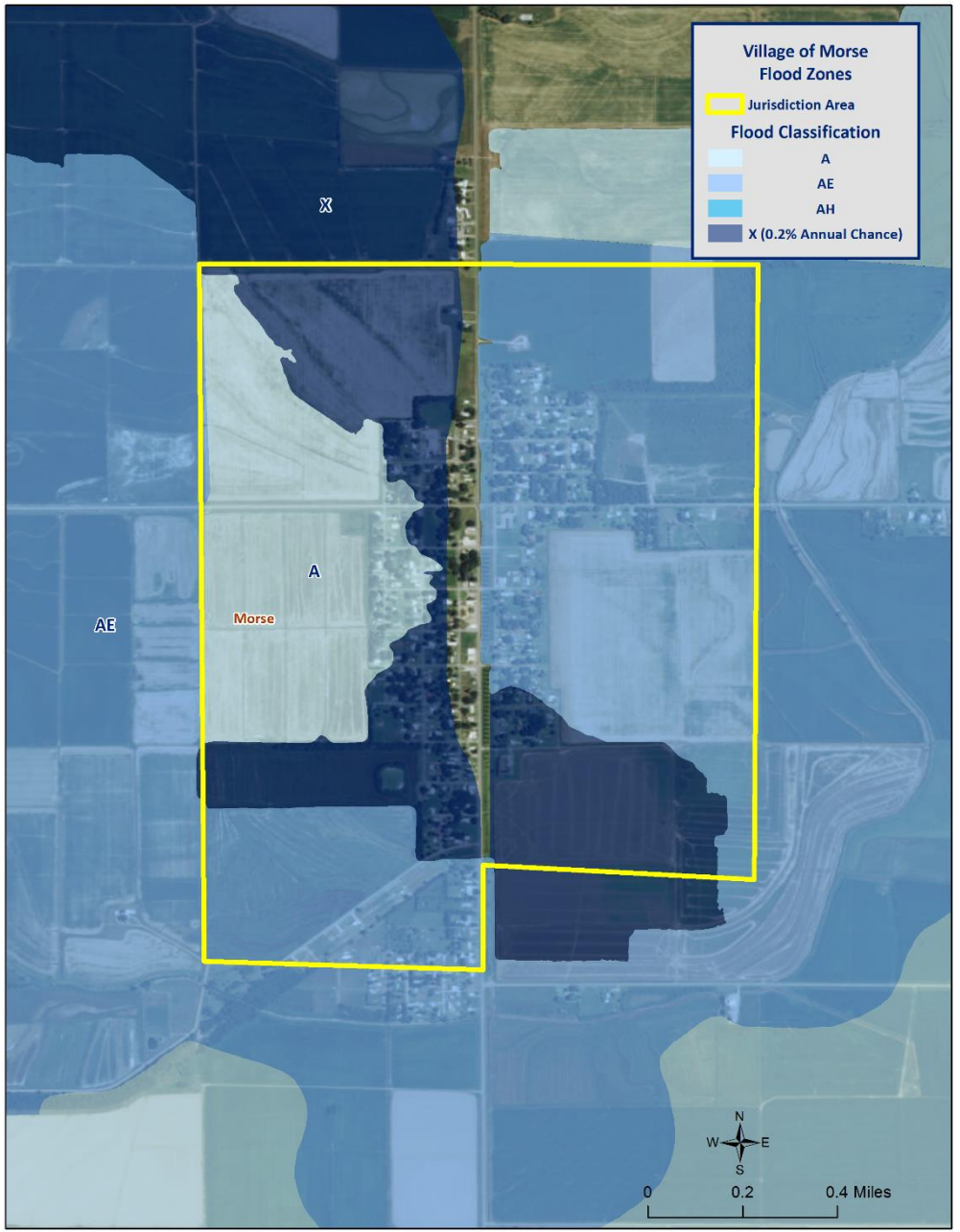


Town of Iota

Flood Zone Classifications

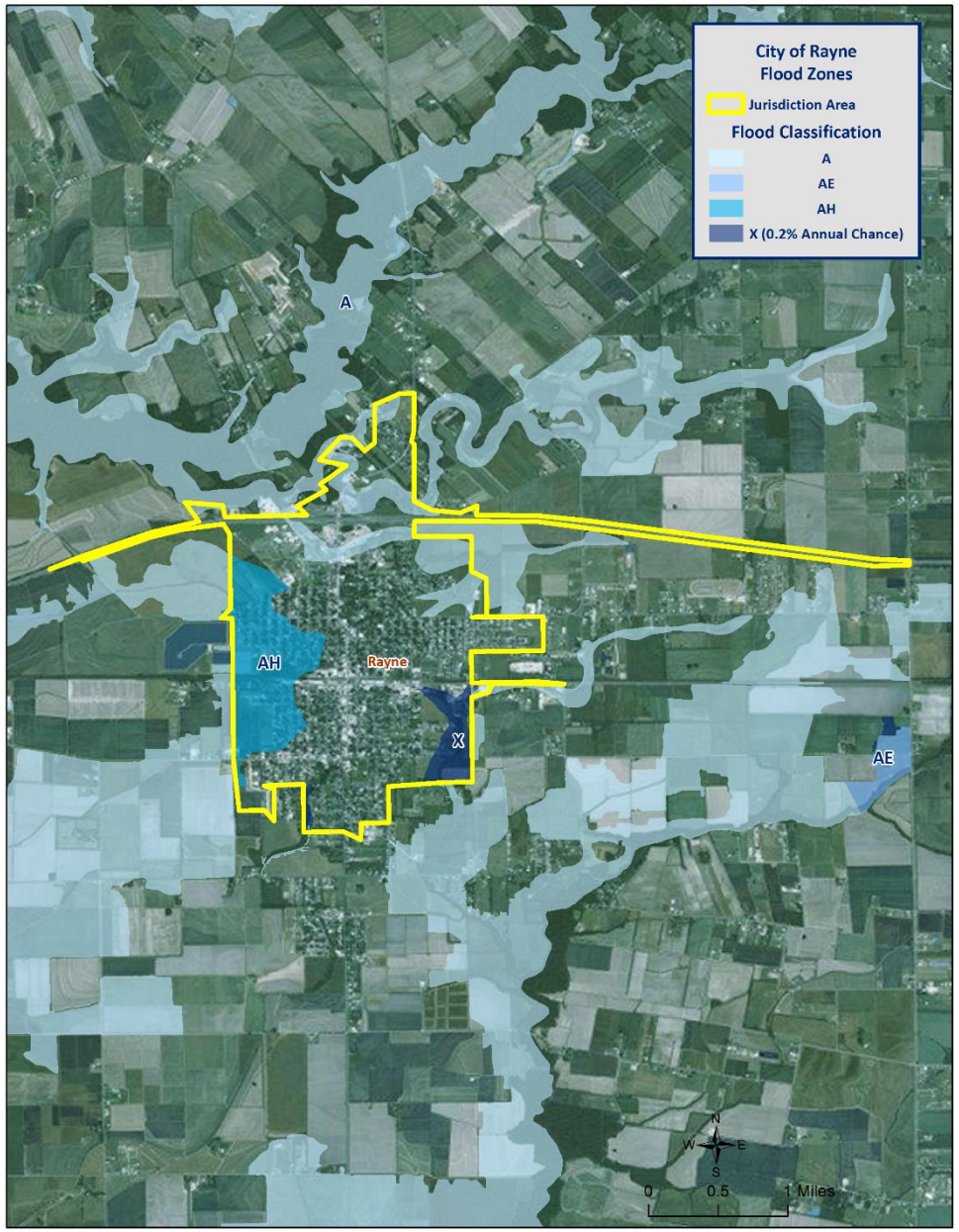
Village of Mermetau





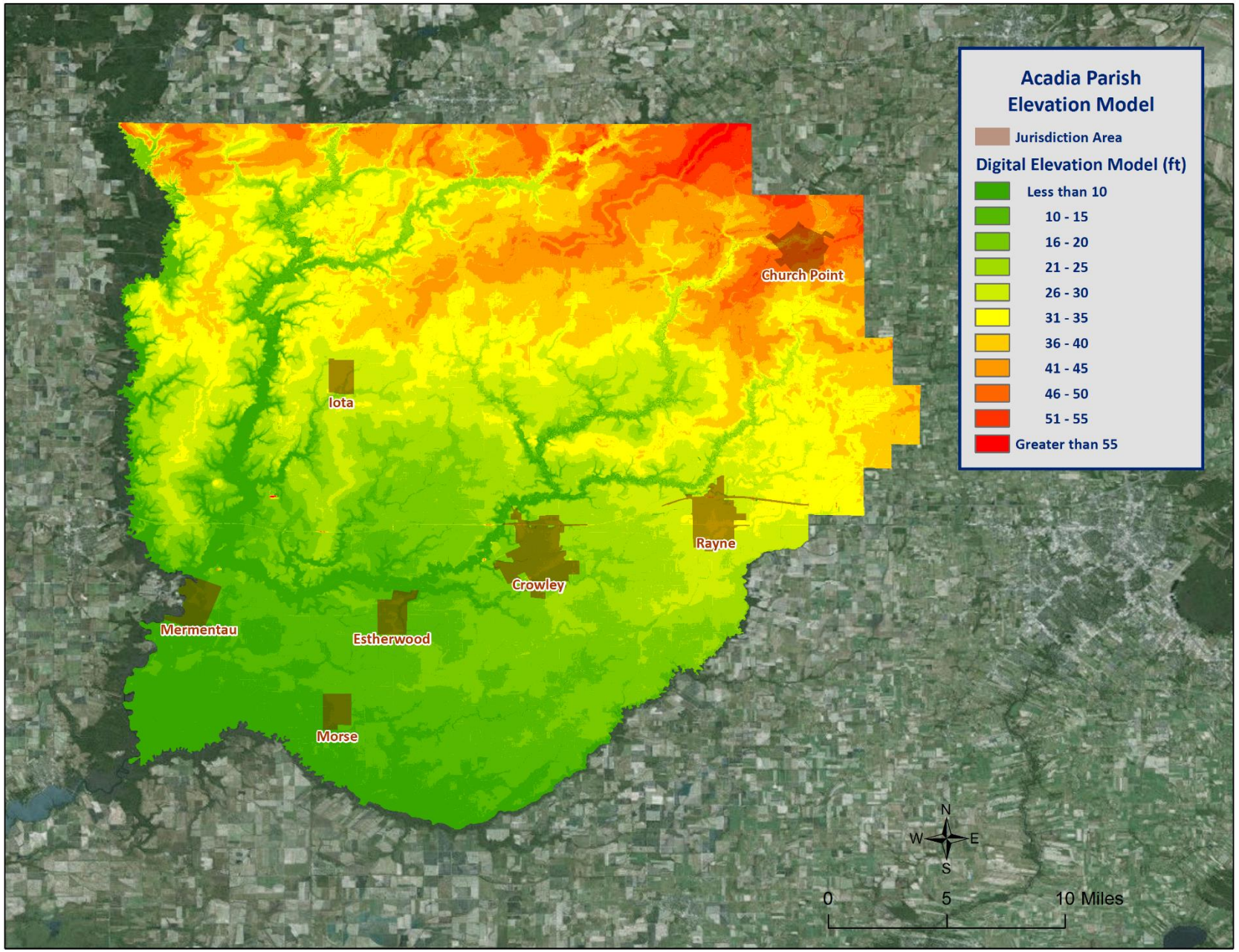
Village of Morse

Flood Zone Classifications



City of Rayne

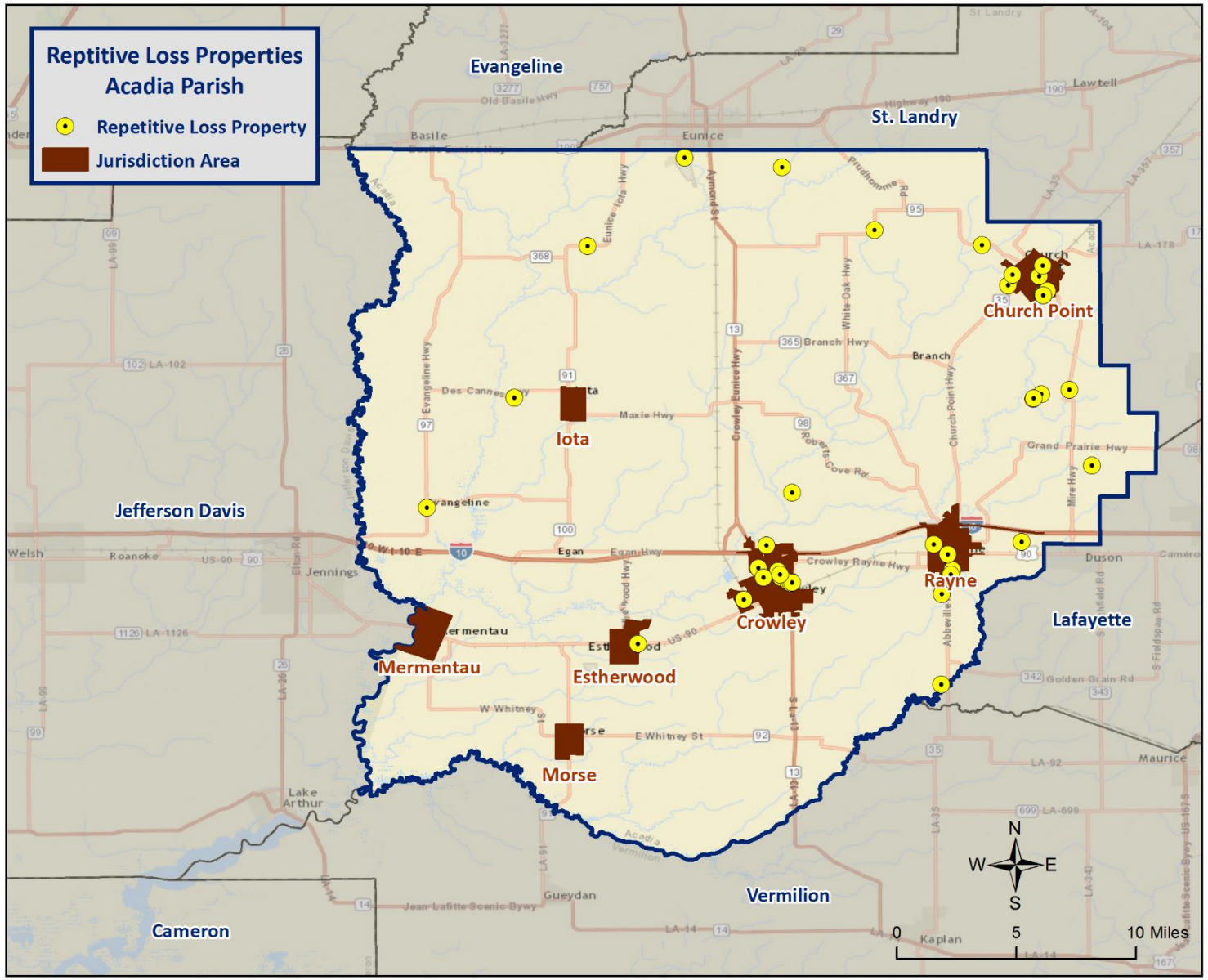
Flooding Elevation Model



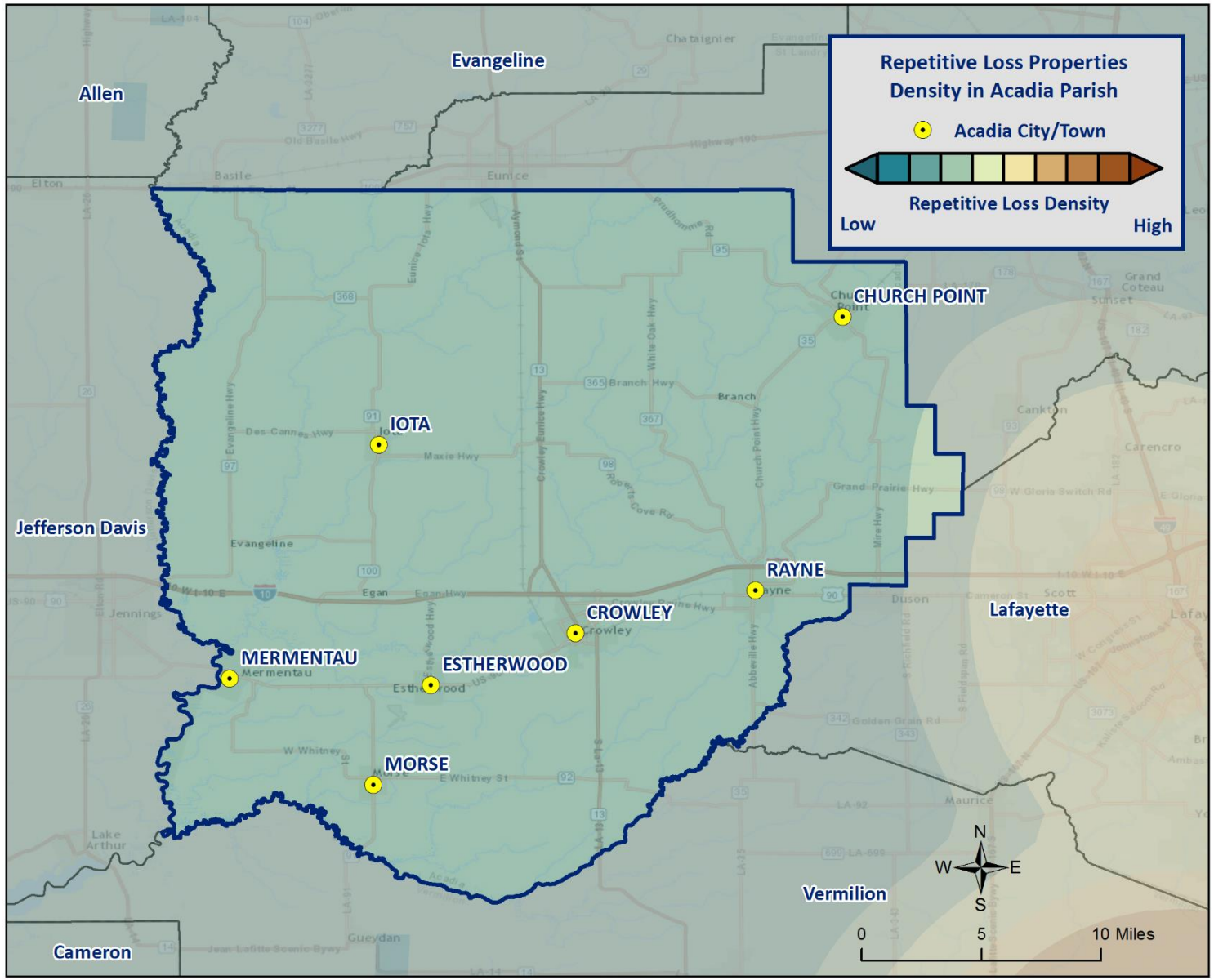
Repetitive Flooding

- 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.

Repetitive Loss Properties



Repetitive Loss Properties Density Model



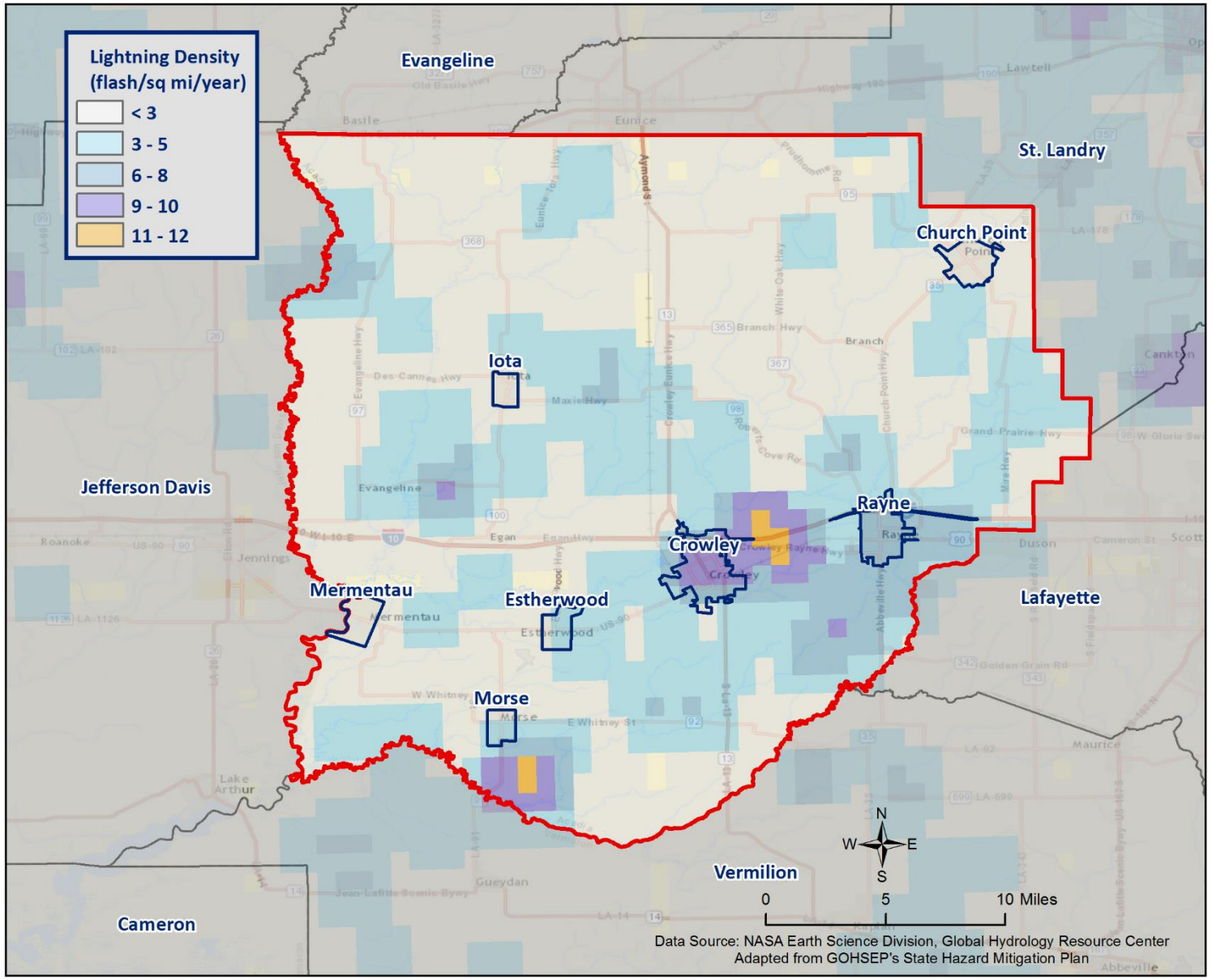
Thunderstorms – Lightning/High Wind/Hail

- 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.

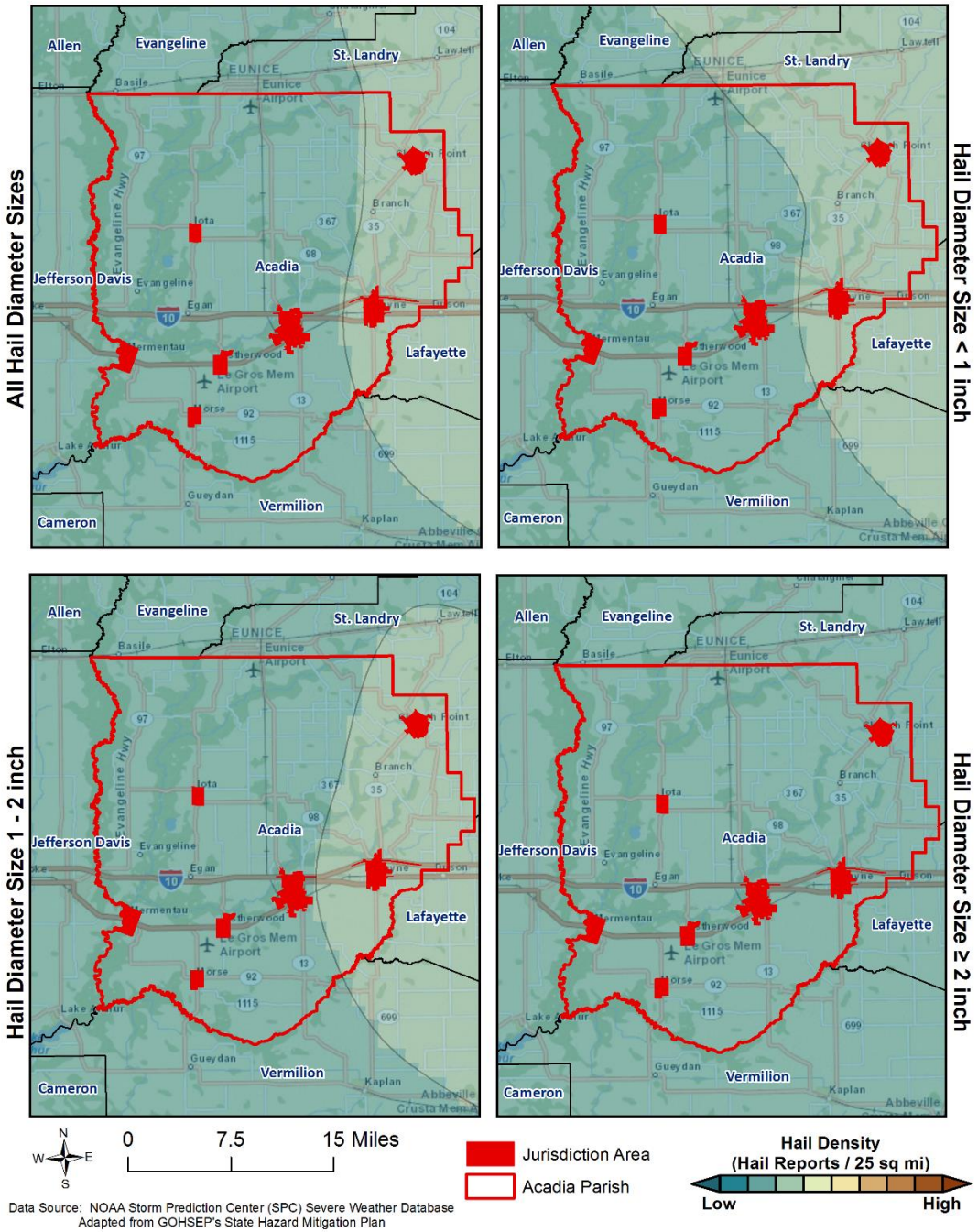
- They are usually accompanied by strong winds, heavy rain, and sometimes snow, sleet, or hail.

- 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.

Lightning Density Model



Hail Density Models



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

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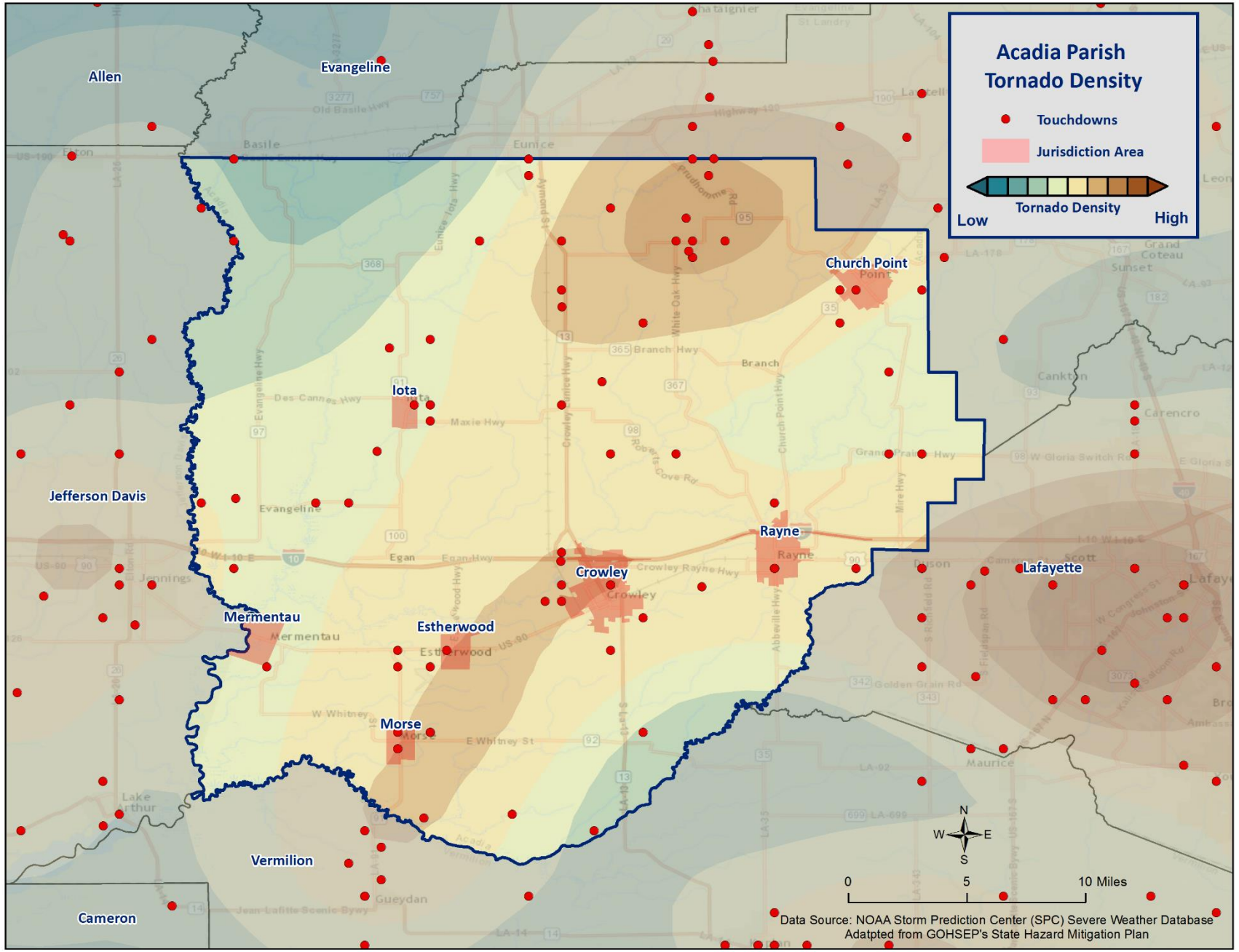
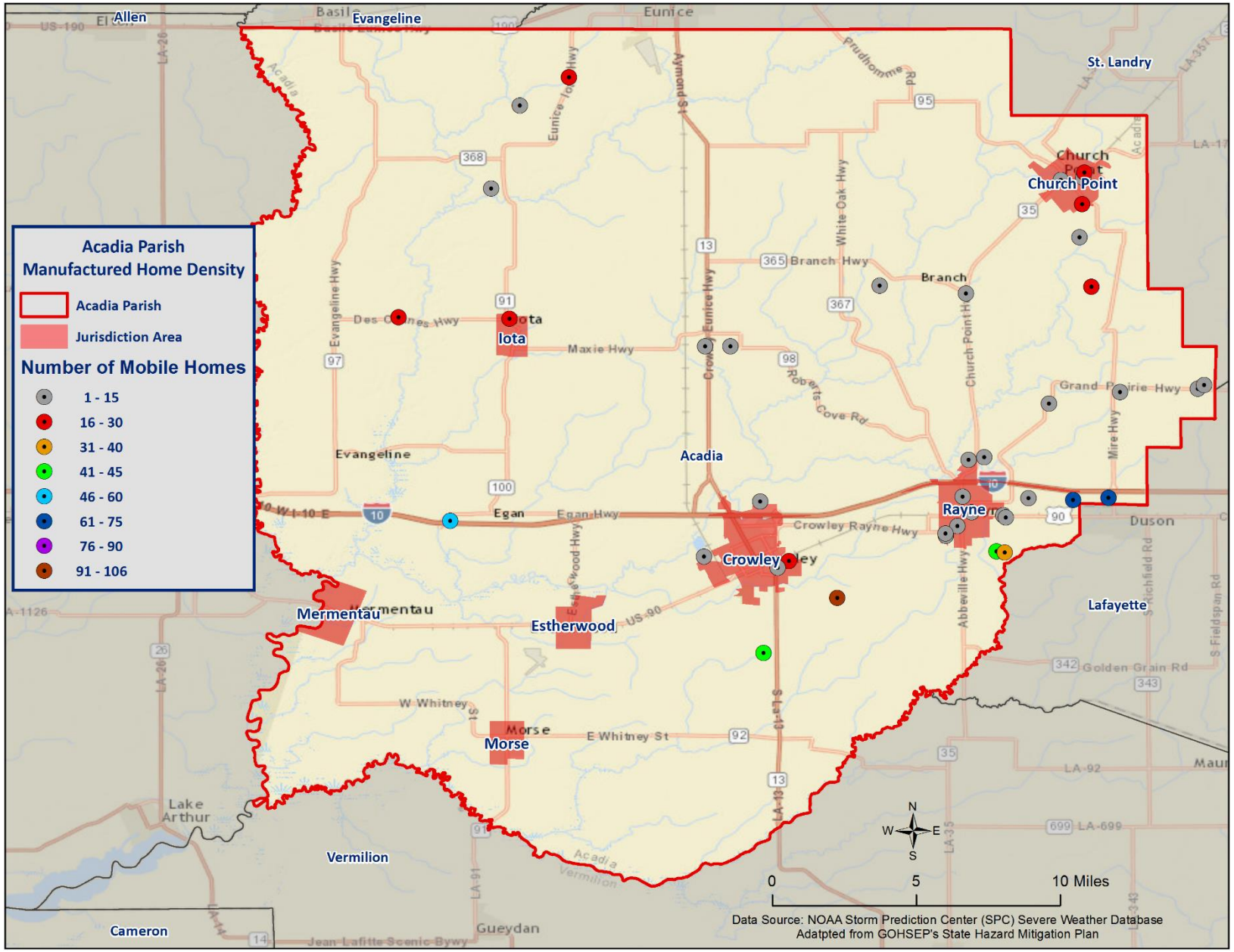
Tornado Density



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.

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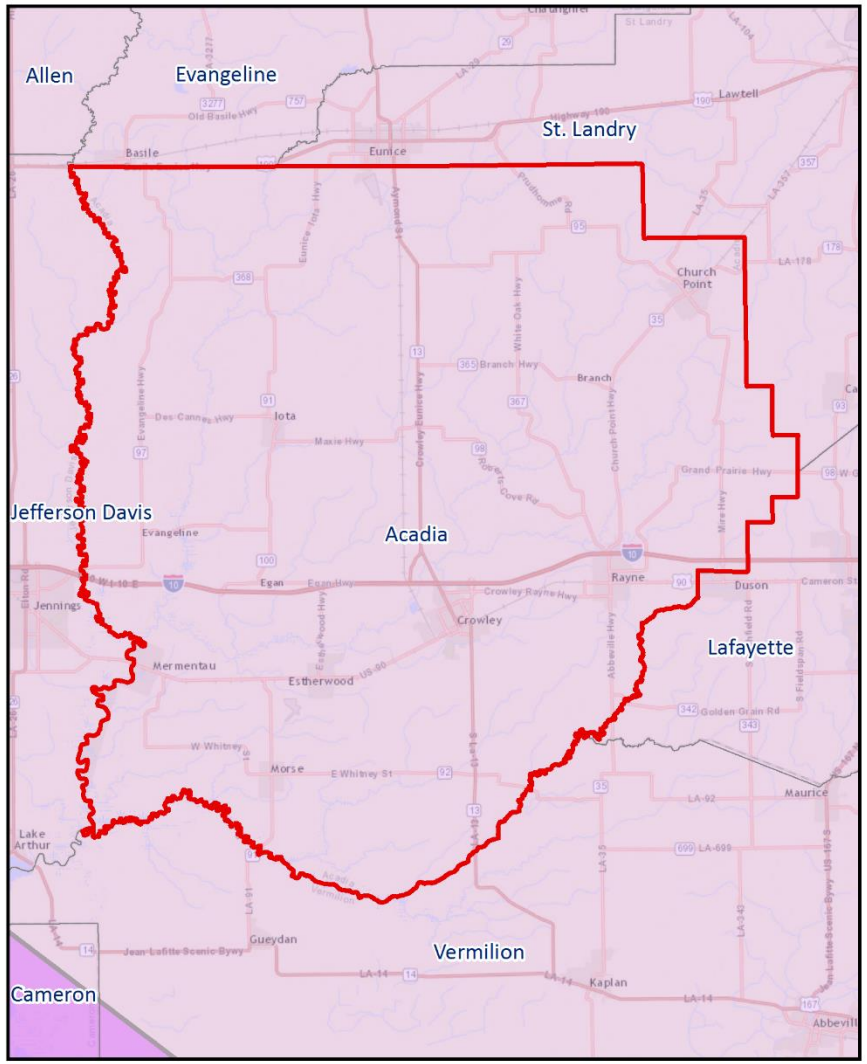
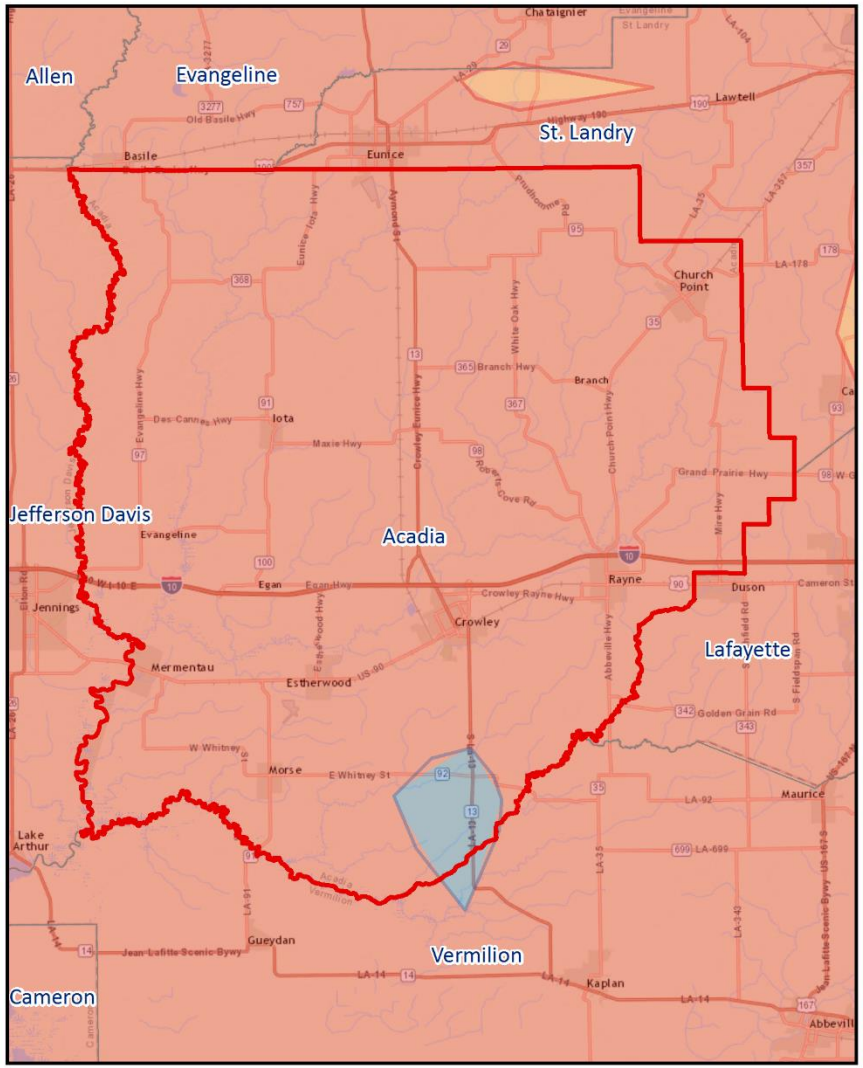
Hurricane Rita (2005)





Wind Speed (Saffir-Simpson Scale)

Tropical Storm (39 - 73 mph)

Hurricane (74 - 110 mph)

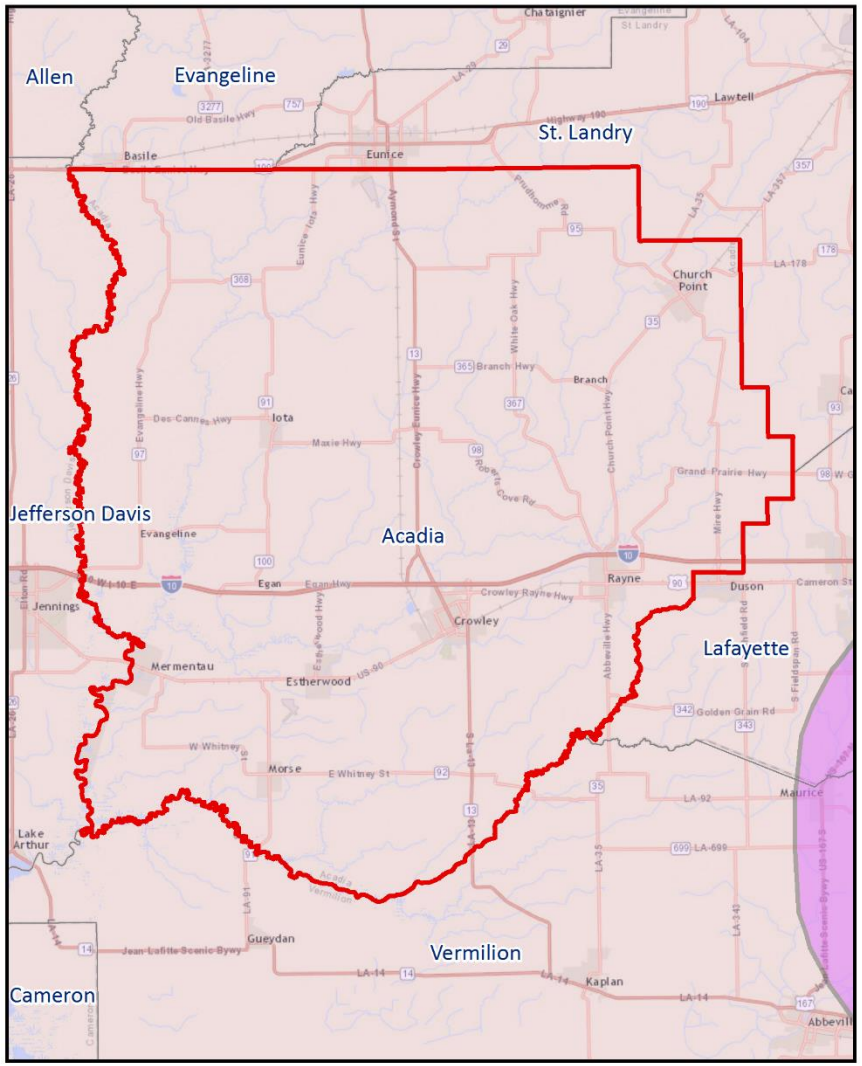
Major Hurricane (> 110 mph)

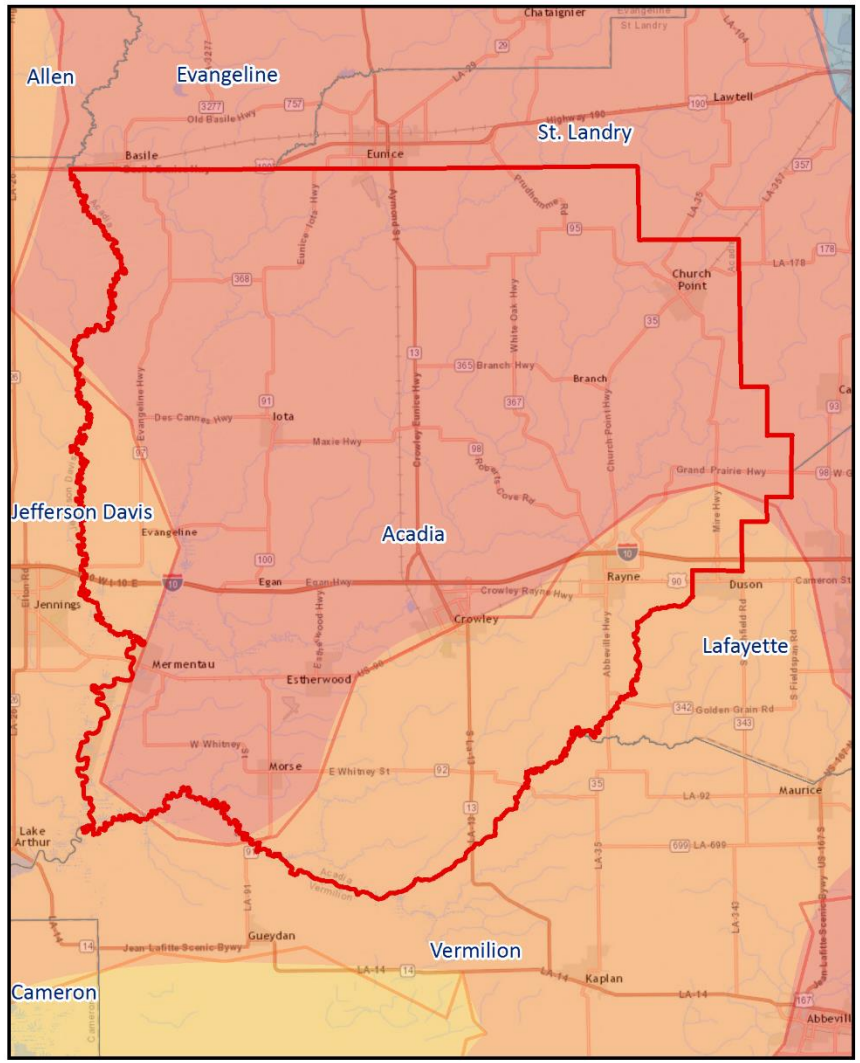
Total Precipitation (inches)

1 3 5 7 10 15 20

Data Source: NOAA Hurricane Research Division (HRD)
Adapted from GOHSEP's State Hazard Mitigation Plan

Hurricane Gustav (2008)





Wind Speed (Saffir-Simpson Scale)

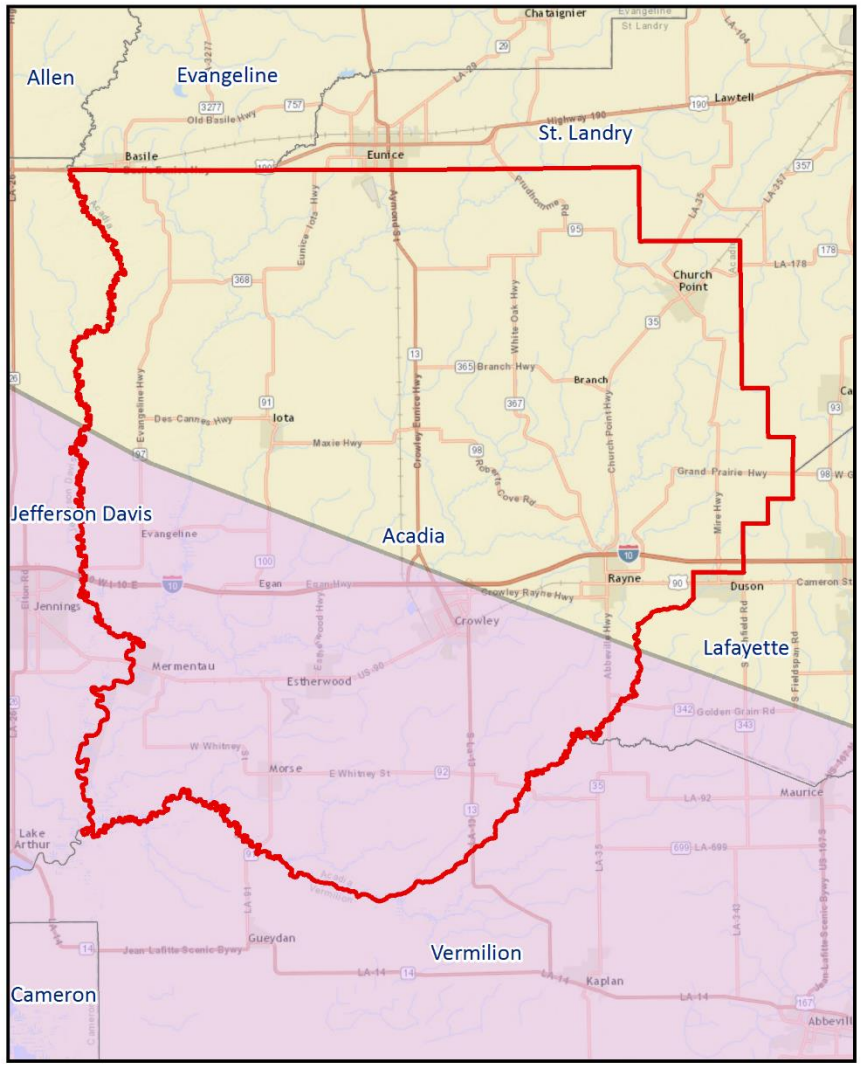
- Tropical Storm (39 - 73 mph)
- Hurricane (74 - 110 mph)
- Major Hurricane (> 110 mph)

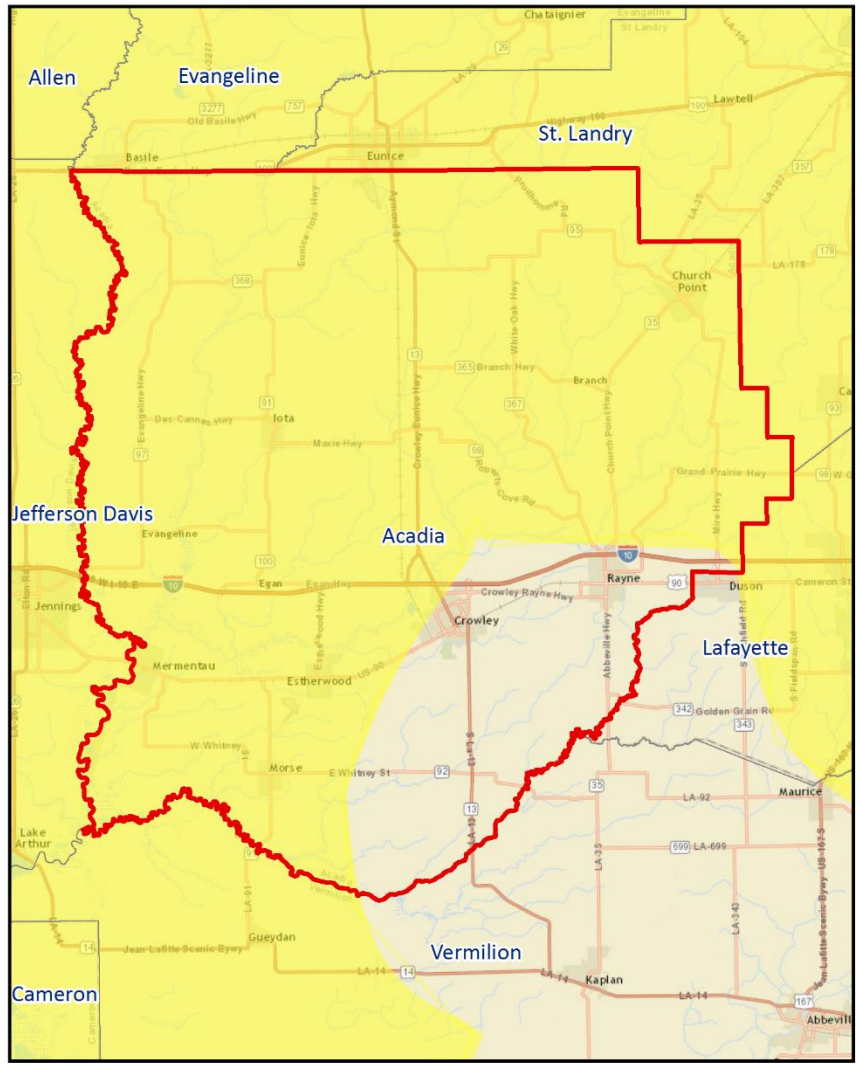
Total Precipitation (inches)

1 3 5 7 10 15 20

Data Source: NOAA Hurricane Research Division (HRD)
Adapted from GOHSEP's State Hazard Mitigation Plan

Hurricane Ike (2008)





Wind Speed (Saffir-Simpson Scale)

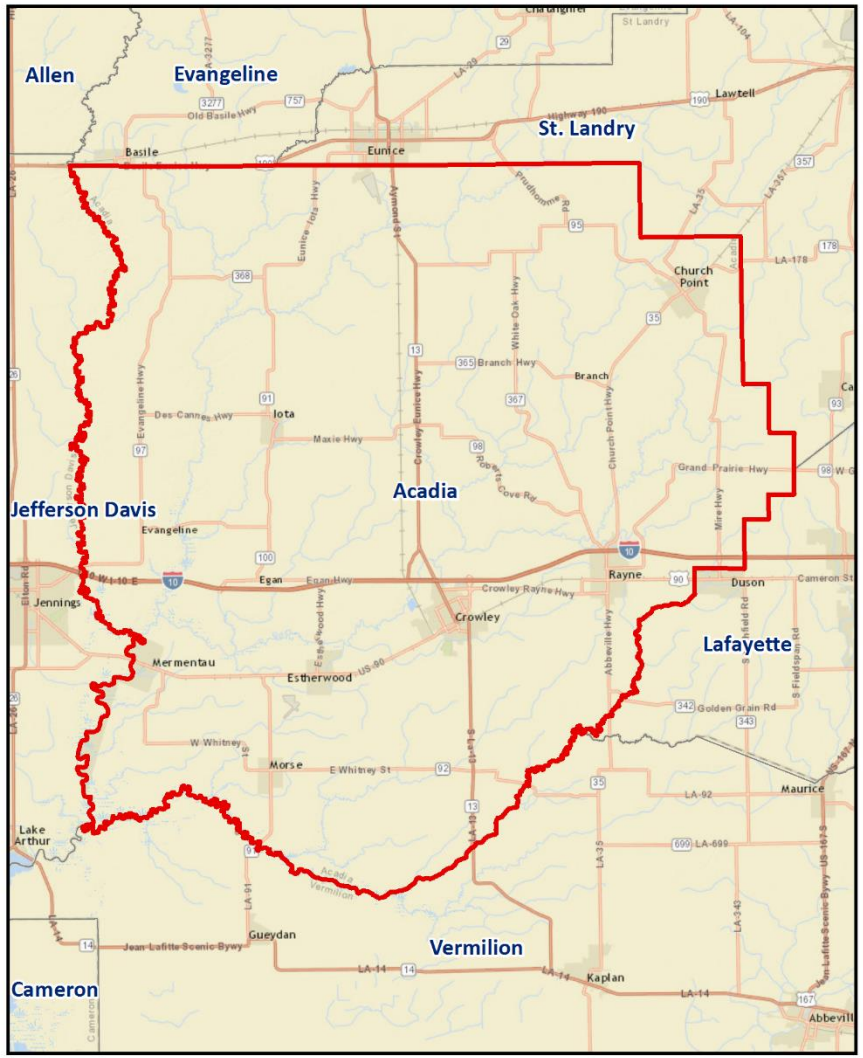
Tropical Storm (39 - 73 mph)
Hurricane (74 - 110 mph)
Major Hurricane (> 110 mph)

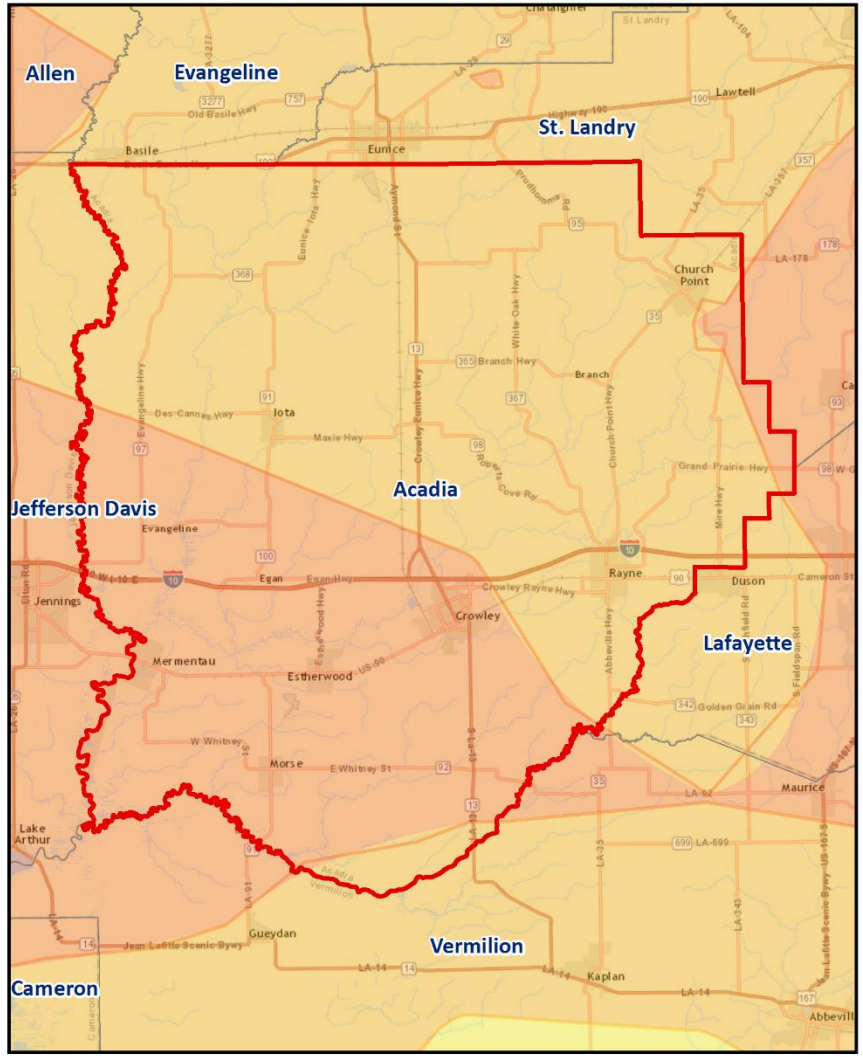
Total Precipitation (inches)

1 3 5 7
10 15 20

Data Source: NOAA Hurricane Research Division (HRD)
Adapted from GOHSEP's State Hazard Mitigation Plan

Tropical Storm Lee (2011)





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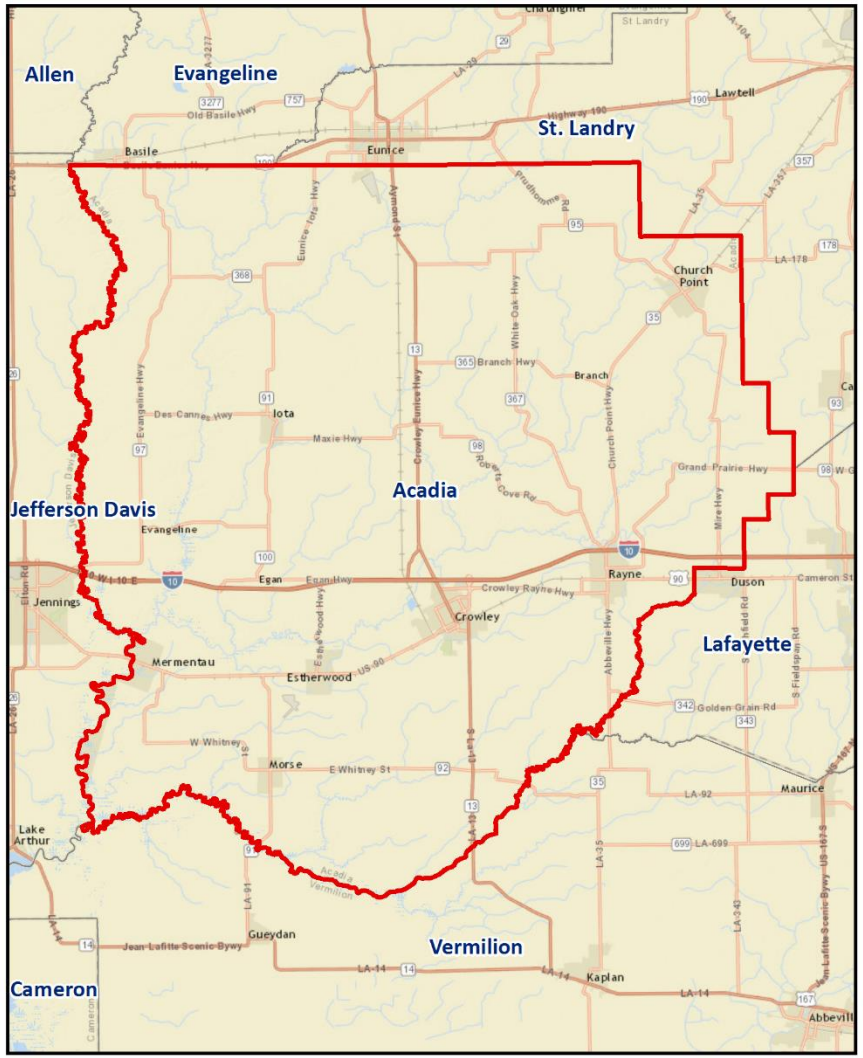
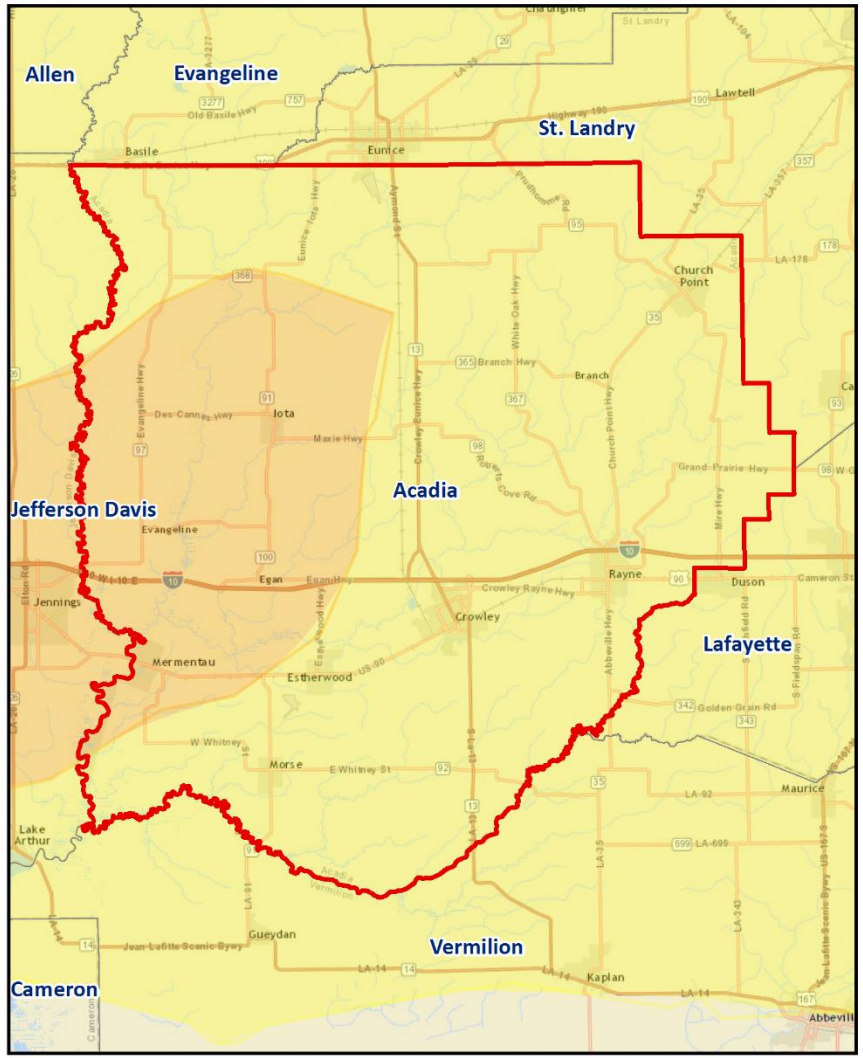
Hurricane Isaac (2012)





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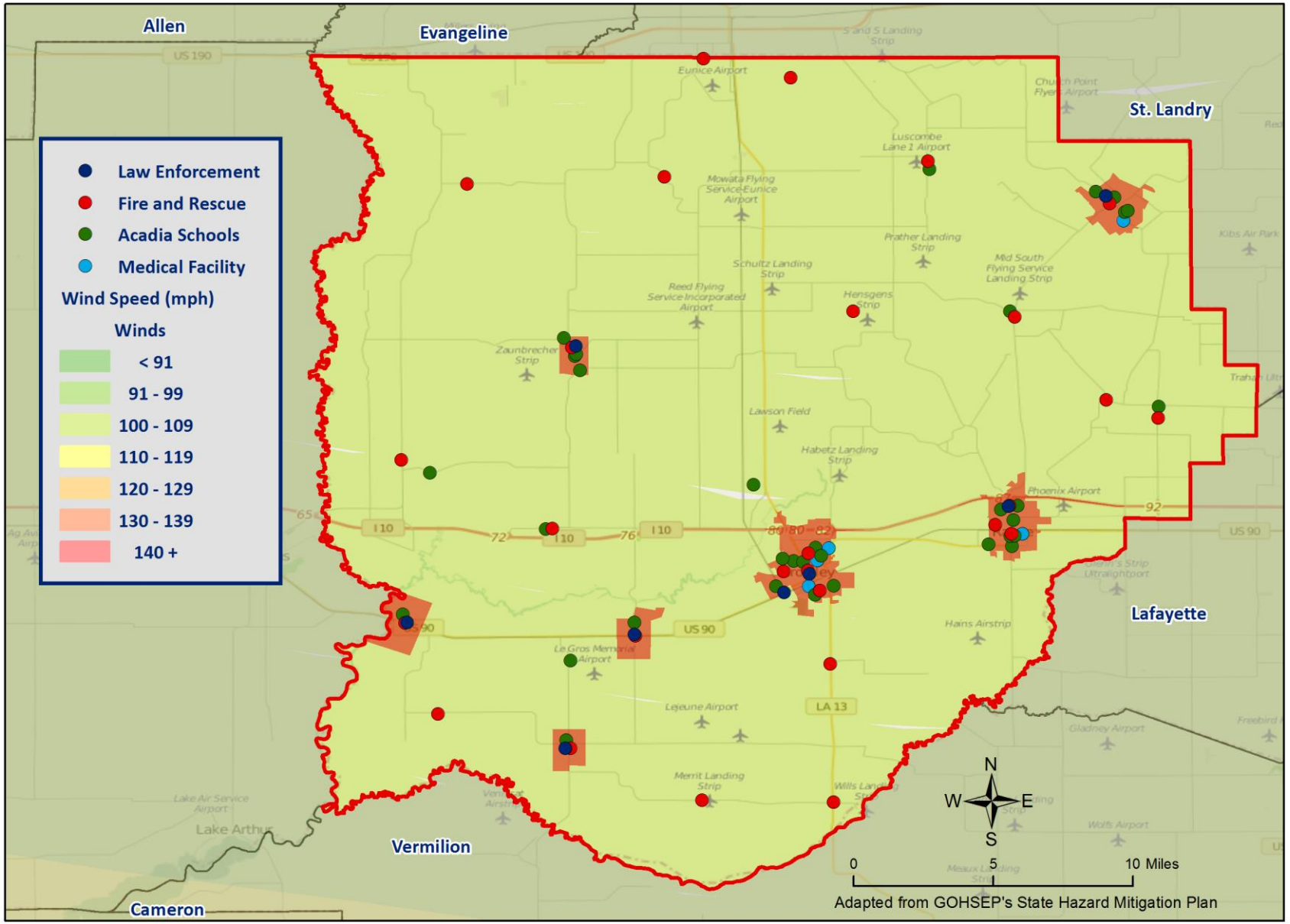
Critical Facilities – Wind Speeds



Winter Weather

- For Louisiana and other parts of the southeastern United States, a severe winter storm occurs when humid air from the Gulf of Mexico meets a cold air mass from the north. As the temperature falls once the cold air mass crosses Louisiana, 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.
  - Ice storms
  - Freezes
  - Snow events
  - Strong winds
    - Wind-driven snow, drifting, wind chill

Mitigation Strategy – Parish Goals

- **Goal 1** Identify and pursue preventative measures that will reduce future damages from hazards
- **Goal 2** Enhance public awareness and understanding of disaster preparedness
- **Goal 3** Reduce repetitive flood losses in the Parish and municipalities
- **Goal 4** Facilitate sound development in the Parish and municipalities so as to reduce or eliminate the potential impact of hazards.

2009-2016 Parish HM Project Status

- Director's Comments

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Public Outreach Activities

- Risk Analysis Activity (Hazard Occurrences)
- Problem Area Identification (Parish Maps)
- Survey

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