



# LAFOURCHE PARISH HAZARD MITIGATION UPDATE - 2015





# LAFOURCHE PARISH HAZARD MITIGATION PLAN UPDATE

*Prepared for:*

Lafourche Parish



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## ACKNOWLEDGMENTS

This 2015 Lafourche Parish Hazard Mitigation Plan Update was coordinated by the Lafourche Parish Hazard Mitigation Plan Update Steering Committee, in collaboration with the participating jurisdictions as well as community stakeholders and the general public. The participating jurisdictions are made up of the following communities:

Lafourche Parish  
 City of Thibodaux  
 Town of Golden Meadow  
 Town of Lockport.

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## Section 1: Introduction

Hazard Mitigation is defined as sustained actions taken to reduce or eliminate long-term risk from hazards and their effects. Hazard Mitigation Planning is the process through which natural hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies that would lessen the impacts are determined, prioritized, and implemented.

In that regard, this plan (a) documents the Lafourche Parish Hazard Mitigation Plan Update (HMPU) process; (b) identifies natural hazards and risks within the parish; and (c) identifies the parish's hazard mitigation strategy to make Lafourche Parish less vulnerable and more disaster resistant. Information in the plan will be used to help guide and coordinate mitigation activities and local policy decisions affecting future land use.

The Lafourche Parish HMPU is a multi-jurisdictional plan that includes the unincorporated areas of the parish as well as the following incorporated communities which participated in the planning process:

1. City of Thibodaux
2. Town of Lockport
3. Town of Golden Meadow

Localized but unincorporated settlements within the parish are included in this plan, as well as additional intra-parish districts and organizations within Lafourche Parish that participated in the planning process.

This plan addresses natural hazards only. The HMPU Committee agreed at its first meeting not to pursue human-caused hazards in this update. Although the Federal Emergency Management Agency (FEMA) encourages integration of human-caused hazards into the mitigation planning process, the scope of this effort did not address these human-caused hazards for three reasons. First, planning activities for mitigation of and emergency response to human-caused hazards are the responsibility of specially designated organizations. Secondly, the Disaster Mitigation Act of 2000 (DMA) requires extensive public information and input conflicting with security and confidentiality issues associated with elements such as chemical hazards deemed to be particularly vulnerable to terrorist acts.

FEMA, now under the Department of Homeland Security, has made reducing losses from natural disasters one of its primary goals. The Hazard Mitigation Plan (HMP) and subsequent implementation of recommended projects, measures, and policies is the primary means to achieving these goals. Mitigation planning and project implementation has become even more significant in a post-Hurricanes Katrina and Rita environment in south Louisiana.

The DMA requires state and local governments to develop and periodically update hazard mitigation plans to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs. Compliance with these requirements will maintain continued eligibility for certain hazard mitigation grant programs from FEMA for each organization participating in this planning process.

### Location, Demography, and Economy

This plan will identify cost effective and environmentally sound mitigation strategies that will reduce or eliminate long-term risk to human life and property from natural hazards. Implementation of this plan can reduce the enormous cost of disasters to property owners and all levels of government. Mitigation

strategies often include protecting critical community facilities, reducing exposure to liability and minimizing community disruption. Land development planning, adoption of building codes, elevation of homes, and acquisition and relocation of homes away from floodplains are just a few examples of mitigation strategies.

Lafourche Parish, Louisiana, is situated along the Gulf coast in the eastern portion of the state's coastline. To the east are St. Charles and Jefferson Parishes, to the west Terrebonne Parish, and to the north Assumption, St. James, and St. John the Baptist Parishes. The map below shows the parish relative to its position in the state.



*Figure 1-1: Lafourche Parish*

A levee system surrounds a portion of lower half of the parish including the communities of Larose, Cut Off, and Golden Meadow protecting them from storm surge. Many of the storm water drainage systems throughout the parish include pumping stations to remove storm water. The layouts of all levees and pump stations in the parish are presented in the Risk Assessment section of this Hazard Mitigation Plan Update (HMPU).

Being a coastal parish along the Gulf of Mexico, the parish is bordered to the south by transitional bays of the Gulf of Mexico, i.e., Timbalier Bay and Caminada Bay. The parish is part of two major watersheds, or drainage basins. The area west of Bayou Lafourche is part of the Terrebonne watershed, and the area east of Bayou Lafourche is part of the Barataria watershed.

Bayou Lafourche traverses the parish from north to south. Geologically, the Bayou Lafourche ridge, the highest area of the parish, formed as the result of annual flooding cycles of the bayou when, centuries ago, the Mississippi River flowed in the Bayou Lafourche riverbed. It is upon this ridge that most urban and agriculture land exist in the parish. Because of the formation of this ridge through alluvial processes, the five foot contour clearly defines the ridge as the "high-ground" of the parish. The depiction of this ridge form an

image that is repeated in this report as almost all land areas other than the ridges are susceptible to flooding of some sort, either storm water, riverine flooding, storm surge, or backwater flooding.

### Demography

Recent demographic data and projections are shown in the following table (US Census 2013):

*Table 1-1: Lafourche Parish Demographic Statistics*

	2010 Census	2013 Census	2014 Estimate	Percent Change 2010 -2014
Total Population	96,592	97,325	98,020	1.5%
Population Density (Pop/Sq Mi)	325.7	—	—	—
Total Households	35,072	35,072	—	0%

### Economy

*Table 1-2: Lafourche Parish Business Patterns*

Business Description	Number of Employees	Number of Establishments	Annual Payroll (\$1,000)
Agriculture, Forestry, Fishing and Hunting	0-19	4	n/a
Mining, Quarrying and Oil and Gas Extraction	1,899	50	\$129,331
Utilities	20-99	5	n/a
Construction	1,252	145	\$76,803
Manufacturing	2,047	56	\$110,974
Wholesale Trade	994	73	\$49,785
Retail Trade	4,026	287	\$91,547
Transportation and Warehousing	6,629	201	\$517,433
Information	303	16	\$13,913
Finance and Insurance	911	164	\$37,404
Real Estate and Rental and Leasing	340	72	\$12,984
Professional, Scientific, and Technical Services	851	168	\$34,696
Management of Companies and Enterprises	373	9	\$22,391
Administrative and Support and Waste Management and Remediation Services	1,192	76	\$45,219
Educational Services	107	11	\$2,289
Health Care and Social Assistance	3,872	187	\$164,758
Arts, Entertainment, and Recreation	280	28	\$5,448
Accommodation and Food Services	2,531	155	\$31,722
Other Services (Except Public Administration)	708	133	\$21,416

Transportation and Warehousing is the largest employment base in Lafourche Parish. It is followed closely by the Retail Trade and then Health Care and Social Assistance industries. These three economic sectors constitute nearly 49% of parish wide employment.

### Hazard Mitigation

To fully understand hazard mitigation efforts in Lafourche Parish and throughout Louisiana, it is first crucial to understand how hazard mitigation relates to the broader concept of emergency management. In the early 1980s, the newly-created Federal Emergency Management Agency (FEMA) was charged with developing a structure for how the federal, state, and local governments would respond to disasters. FEMA developed the *four phases of emergency management*, an approach which can be applied to all disasters. The four phases are as follows:

- **Hazard Mitigation**—described by FEMA and the Disaster Mitigation Act of 2000 (DMA 2000) as “any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event.” The goal of mitigation is to save lives and reduce property damage. Besides significantly aiding in the obviously desirable goal of saving human lives, mitigation can reduce the enormous cost of disasters to property owners and all levels of government. In addition, mitigation can protect critical community facilities and minimize community disruption, helping communities return to usual daily living in the aftermath of disaster. Examples of mitigation involve a range of activities and actions including the following: land-use planning, adoption and enforcement of building codes, and construction projects (e.g., flood proofing homes through elevation, or acquisition or relocation away from floodplains).
- **Emergency Preparedness**—includes plans and preparations made to save lives and property and to facilitate response operations before a disaster event.
- **Disaster Response**—includes actions taken to provide emergency assistance, save lives, minimize property damage, and speed recovery immediately following a disaster.
- **Disaster Recovery**—includes actions taken to return to a normal or improved operating condition following a disaster.

*Figure 1-3* illustrates the basic relationship between these phases of emergency management. While hazard mitigation may occur both before and after a disaster event, it is significantly more effective when implemented before an event occurs. This is one of the key elements of this plan and its overall strategy: reduce risk before disaster strikes in order to minimize the need for post-disaster response and recovery.

As *Figure 1-3* demonstrates, mitigation relies on updating in the wake of disaster. This can give the appearance that mitigation is only reactive rather than proactive. In reality, however, post-disaster



*Figure 1-3: The Four Phases of Emergency Management and their Relation to Future Hazard Mitigation*  
(Source: Louisiana State Hazard Mitigation Plan 2014)

revision is a vital component of improving mitigation. Each hazardous event affords an opportunity to reduce the consequences of future occurrences.

Unfortunately, this cycle can be painful for a community. For instance, the risks of disasters that could create catastrophic incidents in Louisiana were thought to be relatively well-understood prior to 2005. However, the impact of the 2005 hurricane season on the Gulf Coast region of the United States prompted a new level of planning and engagement related to disaster response, recovery, and hazard mitigation. Hurricanes Katrina and Rita hit three weeks apart and together caused astonishing damage to human life and to property. The two storms highlighted a hurricane season that spawned 28 storms—unparalleled in American history. The 2005 hurricane season confirmed Louisiana’s extreme exposure to natural disasters and both the positive effects and the concerns resulting from engineered flood-protection solutions.

The catastrophic events of 2005 had profound impacts on emergency management and hazard mitigation throughout Louisiana. As detailed later in this document, significant funding has been made available to the State of Louisiana and its parishes for the purpose of hazard mitigation planning. The storms also raised awareness of the importance of hazard mitigation among decision-makers and the general population, which has been particularly important since natural hazards will likely be increasing in frequency, magnitude, and impact in the coming years due to climate change.

### General Strategy

Part of the ongoing integration process is that GOHSEP encourages the parishes and the local municipalities with independent hazard mitigation plans to utilize the same plan format and methodologies as the State Hazard Mitigation Plan in order to create continuity of information from local to state mitigation plans and programs.

The 2015 Lafourche Parish Hazard Mitigation Plan (HMP) maintains much of the information from the 2006 and 2010 plan versions, but it now reflects the order and methodologies of the 2014 Louisiana State Hazard Mitigation Plan. The sections in the 2010 Lafourche HMP were as follows:

- Section One            Prerequisites – Formal Plan Adoption with Foreword
- Section Two            Introduction and Parish Background
- Section Three          The Planning Process
- Section Four            Plan Content
- Section Five            Hazard Mitigation Strategies
- Section Six             Plan Maintenance Procedures
- Attachments

This plan update now also coheres with the Plain Writing Act of 2010, which requires federal agencies to use clear communication that is accessible, consistent, understandable, and useful to the public. While the State of Louisiana and its political subdivisions are not required to meet such standards, the Act aligns with best practices in hazard mitigation. Since successful hazard mitigation relies on full implementation and cooperation at all levels of government and community, a successful hazard mitigation plan must also be easily used at all of these levels. Nevertheless, the Lafourche Parish Hazard Mitigation Planning Committee was not ignorant or dismissive of the successful analysis and mitigation planning executed in previous plan updates. This plan update remains coherent with those documents, retaining language and content when needed, deleting it when appropriate, and augmenting it when constructive.

## 2015 Plan Update

This 2015 plan update proceeds with the five previous goals of the Lafourche Parish hazard mitigation plan. The current goals are as follows:

**Goal 1: Identify and pursue preventative structural and non-structural 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 by pursuing various mitigation measures (acquisitions, elevations, and flood-proofing).**

**Goal 4: Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.**

This plan update makes a number of textual changes throughout. But the most obvious changes are data related and structural. First, the Spatial Hazard Events and Losses Database for the United States (SHELDUS) was used as a data source for hazard identification because it incorporates all storm event data from the National Climatic Data Center (NCDC) Storm Events Database used in previous plans, as well as storm event data from other sources including the NOAA Storm Prediction Center, National Hurricane Center, and U.S. Fire Administration. Furthermore, all of the sections were updated to reflect the most current information and the most current vision of the plan update. In addition, the present plan update has four sections and five appendices. The most significant changes are the newly developed hazard profiles and Risk Assessments, the removal of much repetition between sections from the previous plan updates. The 2015 plan update is organized generally as follows:

- Section One Introduction
- Section Two Hazard Identification and Parish-wide Risk Assessment
- Section Three Capability Assessment
- Section Four Mitigation Strategies
- Appendix A Planning Process
- Appendix B Plan Maintenance
- Appendix C Essential Facilities
- Appendix D Plan Adoption
- Appendix E State Required Worksheets

*Table 1-3: Plan Change Crosswalk*

2010 Plan	Revised Plan (2015)
Section 1: Prerequisites	Section 1: Introduction
Section 2: Introduction and Parish Background	Section 2: Hazard Identification and Parish-wide Risk Assessment
Section 3: The Planning Process	Appendix A: Planning Process
Section 4: Plan Content	Section 3: Capability Assessment
Section 5: Hazard Mitigation Strategies	Section 4: Mitigation Strategies
Section 6: Plain Maintenance Procedures	Appendix B: Plan Maintenance
References	Appendix C: Essential Facilities
Attachments	Appendix D: Plan Adoption, Appendix E: State Required Worksheets

Despite numerous changes in this plan update, the plan remains consistent in its emphasis on the few types of hazards that pose the most risk to loss of life, injury, and property in Lafourche Parish and its municipalities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Lafourche Parish remains at high risk of water inundation from various sources, including storm surge caused by tropical storms and hurricanes, backwater flooding, and failure of dams/levees and forced drainage systems. The entire parish is also at high risk of damages from high winds and wind-borne debris caused by various meteorological phenomena.

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## Section 2: Hazard Identification and Parish-wide Risk Assessment

This section assesses the various hazard risks Lafourche Parish faces in order to identify a strategy for mitigation. Having identified the categories of hazards, emergencies, disasters, and catastrophes, this section details the major climatological and natural/human-influenced hazards by (1) defining them, (2) explaining how they are measured, (3) describing their geographic extent, (4) surveying their previous occurrences, and (5) evaluating their future likelihood of occurrences.

The table below provided an overview of the hazards that had been previously profiled in the Lafourche Parish Hazard Mitigation plan published in 2009, as well as the hazards that were identified in the State's 2014 Hazard Mitigation Plan that were considered to be of high or medium risk for the parish by the State. Those hazards identified as high or medium risk by the state or previously identified as a risk by the parish, have been determined to provide a risk to the parish and will be profiled in this section.

*Table 2-1: Hazard Profile Summary*

Hazard	Profiled in Last Plan	Considered Medium or High Risk in the State's HM Plan	Profiled in the 2015 Update
Coastal Land Loss/Subsidence	X	X	X
Drought			
Earthquakes			
Expansive Soils			
Fog			
Floods	X	X	X
Sinkhole		X	X
Termites			
Thunderstorms (Hail, Lightning & Wind)			
Tornado	X	X	X
Tropical Cyclones	X	X	X
Wildfires			
Winter Storm			

### Prevalent Hazards to the Community

While many of the hazards identified in *Table 2-1* occur in the parish, their occurrence was not merited for further study by the planning Committee. The determination was made to focus attention and resources on the most prevalent hazards which include the hazards previously profiled along with sinkholes.

The following hazards have been selected to be included in this risk assessment:

- a) **Flooding (backwater, storm surge, riverine, localized storm water event)**
- b) **Tropical Cyclones (flooding and high winds)**
- c) **Land Change – Coastal  
Erosion/Subsidence/Saltwater  
Intrusion**
- d) **Tornadoes**
- e) **Sinkholes**

For analysis purposes, the impact of the critical and prevalent hazards is summarized as follows:

- Flooding from rivers and waterways, rain storms, tropical storms, and hurricanes in the following forms:
  - a) Riverine
  - b) Stormwater
  - c) Surge
  - d) Back water flooding (as the result of river flooding and surge)
- High wind damage most commonly resulting from hurricanes, thunderstorms and tornadoes
- Land loss as a result of land subsiding, coastal erosion, and saltwater intrusion which have been combined into a single hazard since they both result in increased potential for flooding.

The potential destructive power of tropical cyclones was determined to be the most prevalent and the most frequent hazard to the parish. Thirteen of the twenty presidential declarations Lafourche Parish has received resulted from tropical cyclones which validates this as the most significant hazard. Therefore, the issue of hurricanes will serve as the main focus during the mitigation planning process. Hurricanes present risks from the potential for flooding, primarily resulting from storm surge, and high wind speeds. While storm surge is considered the hazard with the most potential destructive potential, the risk assessment will also assess non-storm surge flooding as well. Since 1972, Lafourche Parish has received six Presidential Declarations as a result of flooding.

Hurricanes, tropical storms, and heavy storms are fairly common occurrences and resultant wind damage is of utmost concern. Damage from high winds can include roof damage, destruction of homes and commercial buildings, downed trees and power lines, and damage and disruption to services caused by heavy debris. A wind map for Lafourche Parish is included in the hurricane risk assessment.

Because Lafourche Parish is a parish with a significant coastline along the Gulf of Mexico, it is also susceptible to land loss through coastal erosion, land subsidence, and saltwater intrusion. The coastal wetlands serve as an important natural barrier to potential storm surge from tropical cyclones and their loss through erosion and subsidence has the potential to significantly increase the risk to Lafourche Parish.

### Previous Occurrences

Table 2-2 summarizes federal disaster declarations for Lafourche Parish since 1972. Information includes names, dates and types of disaster.

Table 2-2: Lafourche Parish Major Disaster Declarations

Disaster Declaration Number	Date	Type of Disaster
374	4/27/1973	Severe Storm, Flood
448	9/23/1974	Tropical Cyclone – Hurricane Carmen
3031	2/22/1977	Drought and Freezing
616	4/9/1980	Severe Storm, Flood
752	11/1/1985	Tropical Cyclone – Hurricane Juan
902	4/23/1991	Severe Storm, Flood
904	5/3/1991	Severe Storm, Flood
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
1049	5/10/1995	Severe Storm, Flood
1246	9/23/1998	Tropical Cyclone – TS Frances and Hurricane Georges
1380	6/11/2001	Tropical Cyclone – Tropical Storm Allison
1435	9/27/2002	Tropical Cyclone – Tropical Storm Isidore
1437	10/3/2002	Tropical Cyclone – Hurricane Lili
1548	9/15/2004	Tropical Cyclone – Hurricane Ivan
1601	8/23/2005	Tropical Cyclone – Tropical Storm Cindy
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
4015	8/18/2011	Severe Storm, Flood
4041	10/28/2011	Tropical Cyclone – Tropical Storm Lee
4080	8/27/2012	Tropical Cyclone – Hurricane Isaac

### Probability of Future Hazard Events

The probability of a hazard event occurring in Lafourche Parish is estimated below. The percent chance of an event happening during any given year was calculated by posting past events and dividing by the time period. Unless otherwise indicated the time period used to access probability followed the method used in the State of Louisiana's most current Hazard Mitigation Plan. The primary source for historical data used throughout the plan is the Spatial Hazards Events and Losses Database (SHELDUS) which provides historical hazard data from 1960 to 2014. In staying consistent with the state plan, the SHELDUS database was evaluated for the last twenty five years (1989 – 2014) in order to determine future probability of a hazard occurring. While the twenty five year record used by the State was adopted

for the purpose of determining the overall probability, to assist with determining estimated losses, unless otherwise stated the full 54 year record was used when HAZUS-HM was not available to determine losses. This full record was used to provide a more extensive record to determine losses. All assessed damages were adjusted to inflation to reflect the equivalent amount of damages with the value of the U.S. dollar today. In addition, the National Climatic Data Center (NCDC) was also used to help identify hazard data specific to the municipalities as it contains specific data for cities, whereas SHELDUS is limited to parishes. The following table shows the annual probability for each hazard occurring across the parish and in separate jurisdictions.

*Table 2-3: Probability of Future Hazard Reoccurrence*

Hazard	Probability			
	Lafourche Parish (Unincorporated)	Golden Meadow	Lockport	Thibodaux
<b>Coastal Land Loss</b>	100%	100%	100%	100%
<b>Floods</b>	64%	24%	28%	36%
<b>Sinkholes</b>	< 1%	< 1%	< 1%	< 1%
<b>Tornado</b>	68%	68%	68%	68%
<b>Tropical Cyclones</b>	64%	64%	64%	64%

As shown in *Table 2-3*, coastal land loss/subsidence/saltwater intrusion have the highest chance of occurrence in the parish (100%) followed by tornadoes (68%). Floods and tropical cyclones both have an annual chance of occurrence of 64%, but these percentages drop for floods for Golden Meadow (24%), Lockport (28%), and Thibodaux (36%). The remaining hazard of sinkholes has less than a 1% chance of occurring annually.

### Inventory of Assets for the Entire Parish

As part of the Risk Assessment, the planning team identified essential facilities throughout the parish. Several methods were used to assist in identifying all essential facilities including field data collected by the Louisiana Governor's Office of Homeland Security and Emergency Preparedness on critical infrastructure from a previous hazard mitigation project.

Within the entire planning area there is an estimated value of \$8,747,345,000 in structures, throughout the parish. The table on the next page provides the total estimated value for each structure by occupancy.

Table 2-4: Estimated Total of Potential Losses throughout Lafourche Parish

Occupancy	Lafourche Parish	Unincorporated Lafourche	Golden Meadow	Lockport	Thibodaux
<b>Agricultural</b>	\$22,767,000	\$19,445,000	\$770,000	\$0	\$2,552,000
<b>Commercial</b>	1,036,536,000	\$623,728,000	\$25,615,000	\$24,025,000	\$363,168,000
<b>Government</b>	\$39,119,000	\$21,197,000	\$769,000	\$25,000	\$17,128,000
<b>Industrial</b>	\$313,950,000	\$203,145,000	\$3,932,000	\$3294,000	\$103,579,000
<b>Religion</b>	\$97,509,000	\$63,825,000	\$3,277,000	\$6,029,000	\$24,378,000
<b>Residential</b>	\$7,153,150,000	\$5,665,808,000	\$164,411,000	\$157,974,000	\$1,164,957,000
<b>Education</b>	\$84,314,000	\$30,989,000	\$5,813,000	\$6,392,000	\$41,120,000
<b>Total</b>	\$8,747,345,000	\$6,628,137,000	\$204,587,000	\$197,739,000	\$1,716,882,000

Essential Facilities of the Parish.

Below are the locations and names of the essential facilities within the parish.

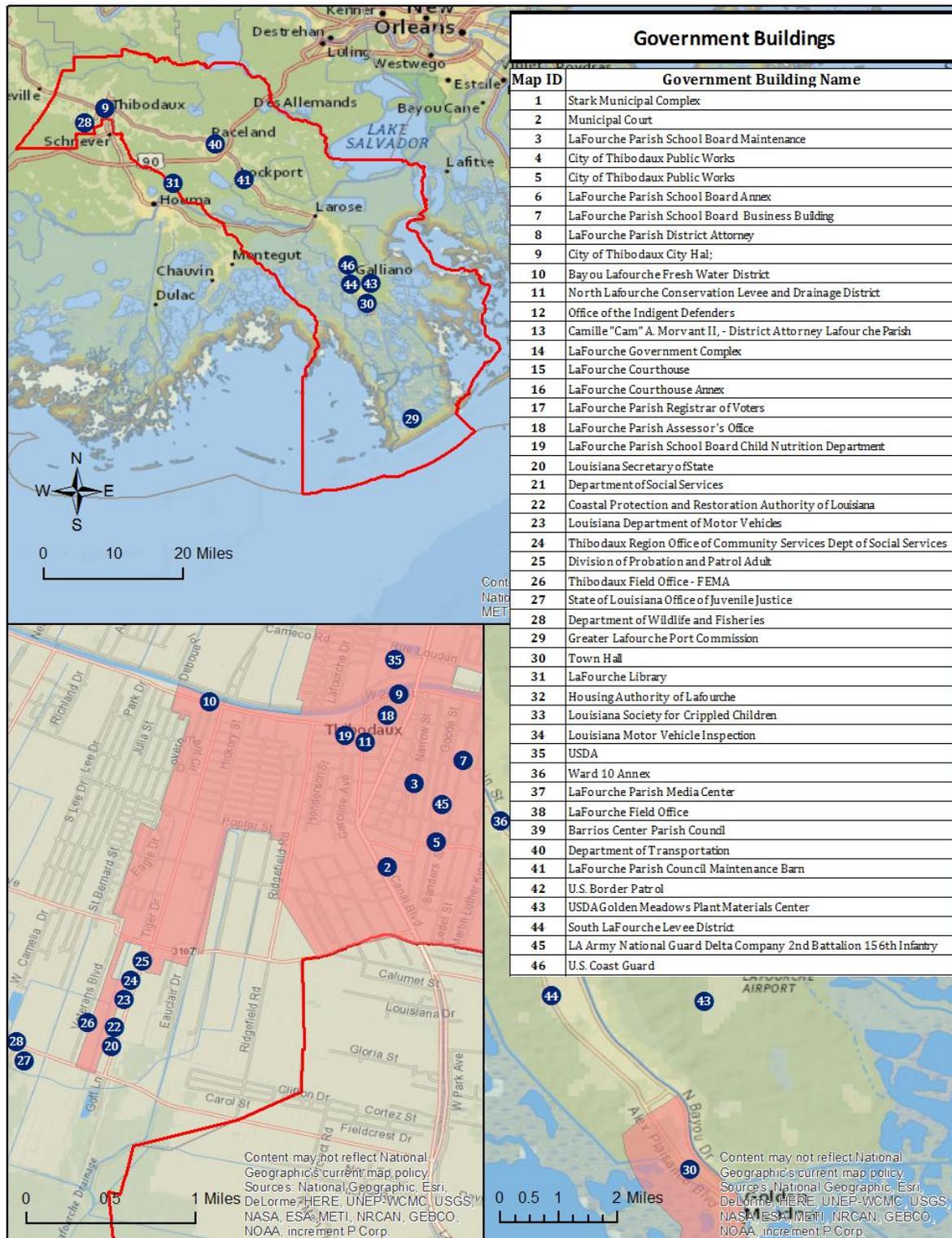


Figure 2-1: Government Buildings throughout Lafourche Parish

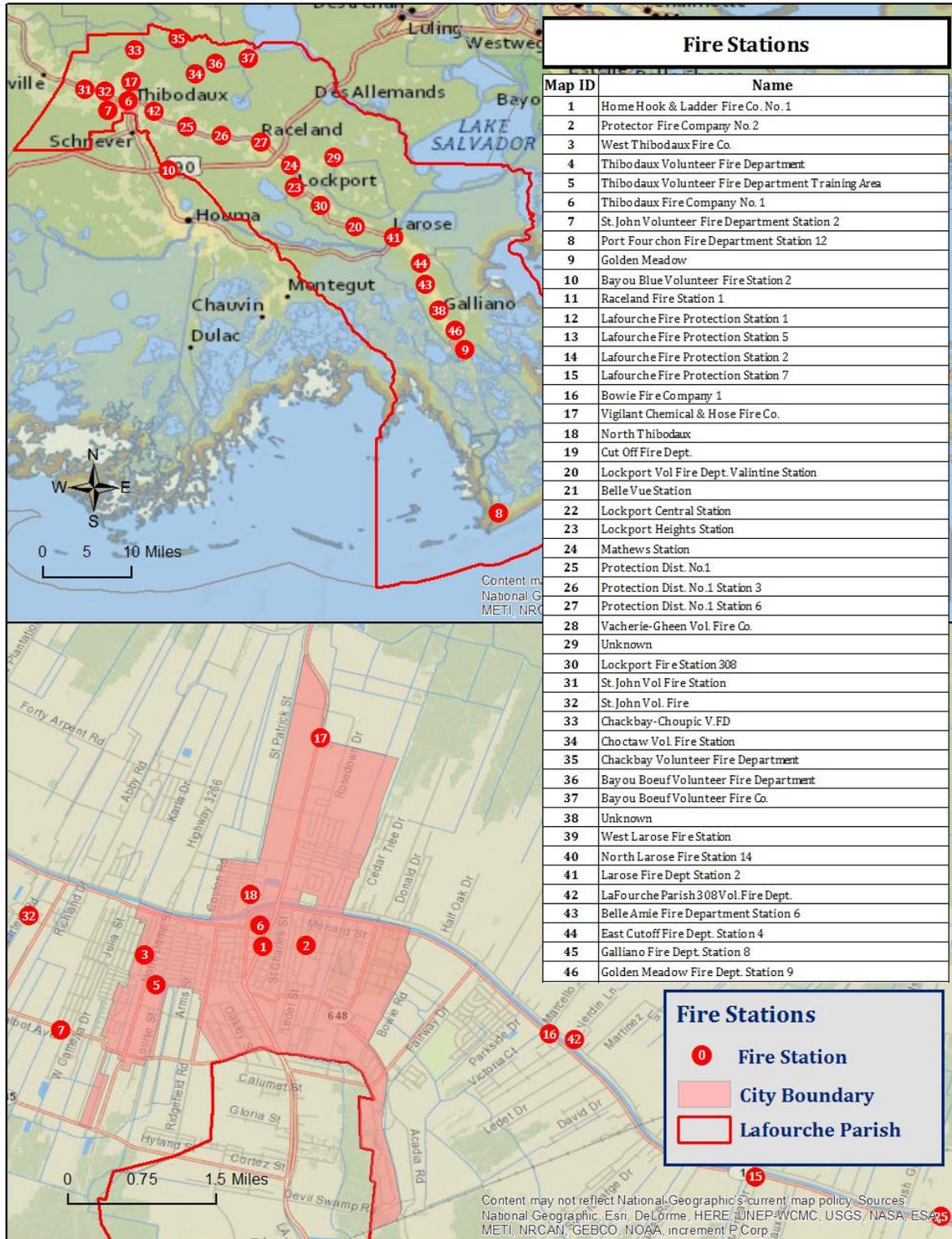


Figure 2-2: Fire Stations throughout Lafourche Parish

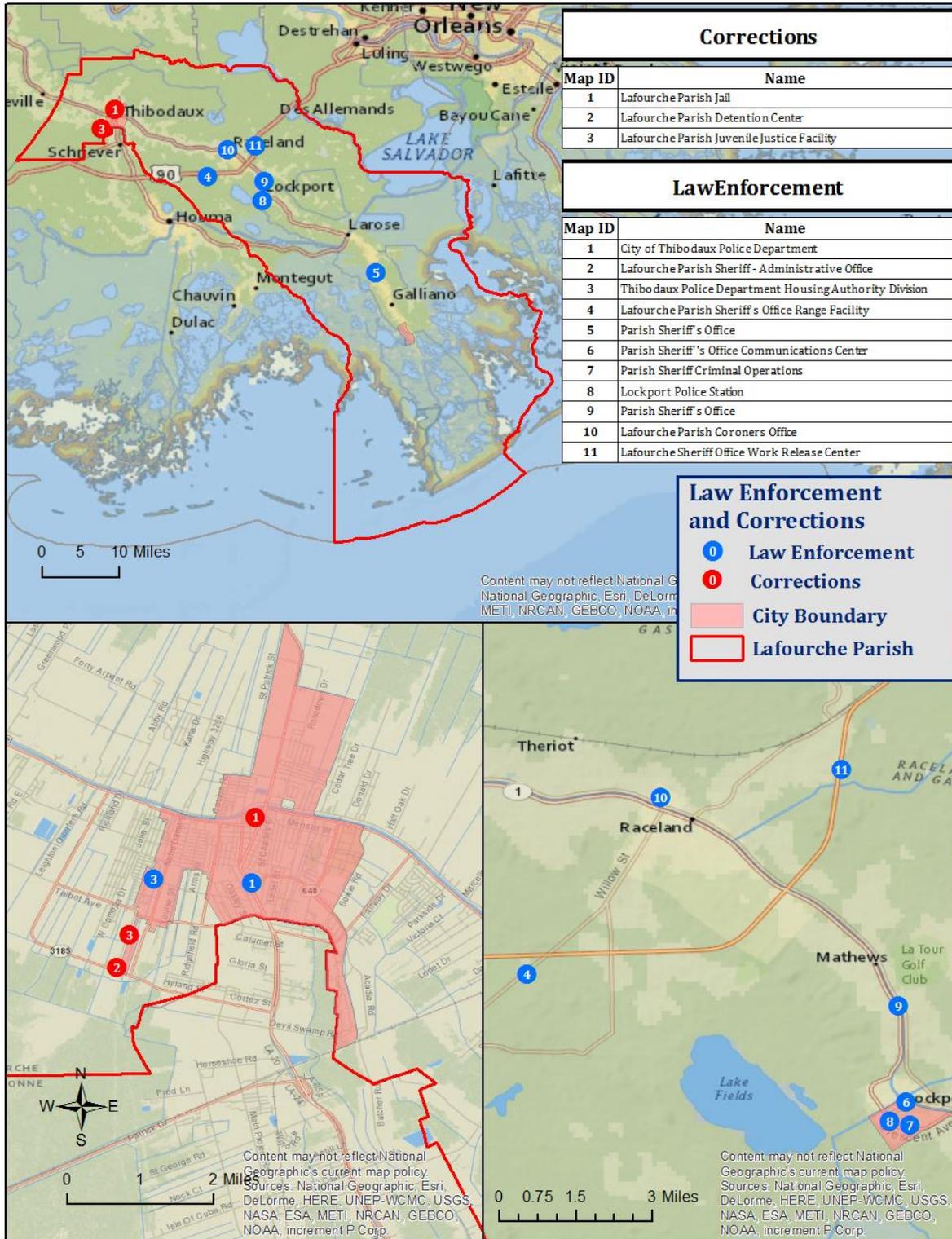


Figure 2-3: Law Enforcement Facilities in Lafourche Parish

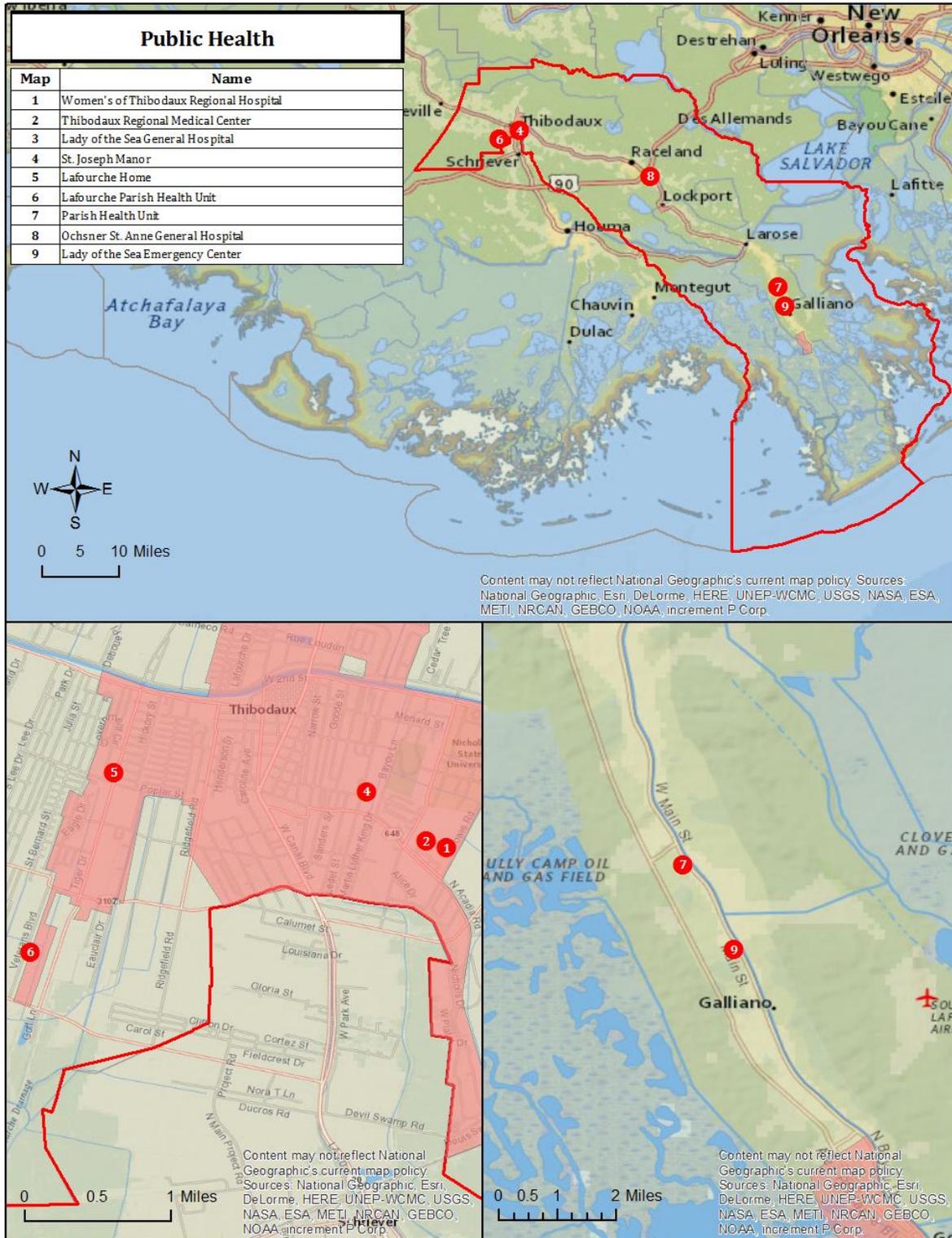


Figure 2-4: Public Health Facilities in Lafourche Parish

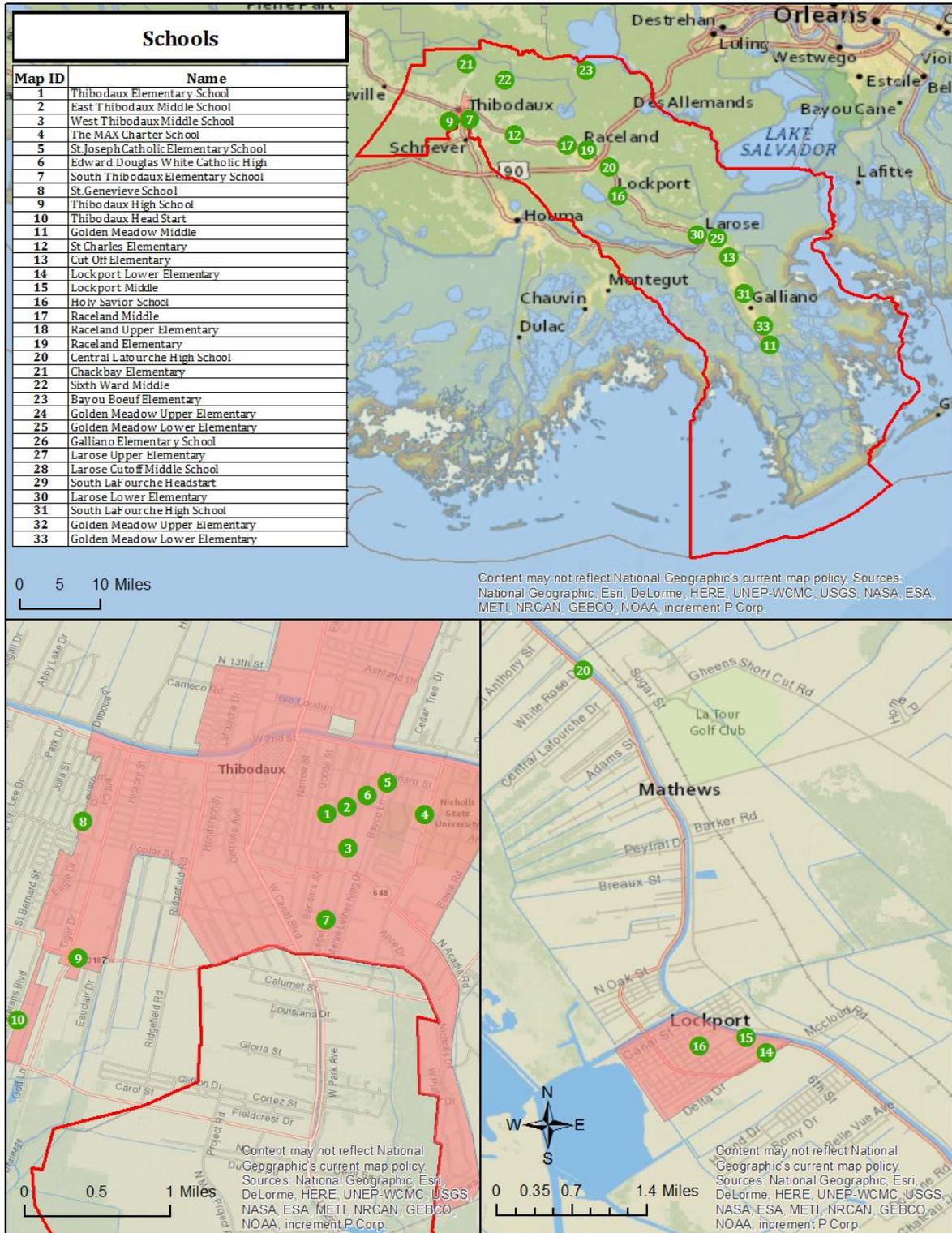


Figure 2-5: Educational Facilities in Lafourche Parish

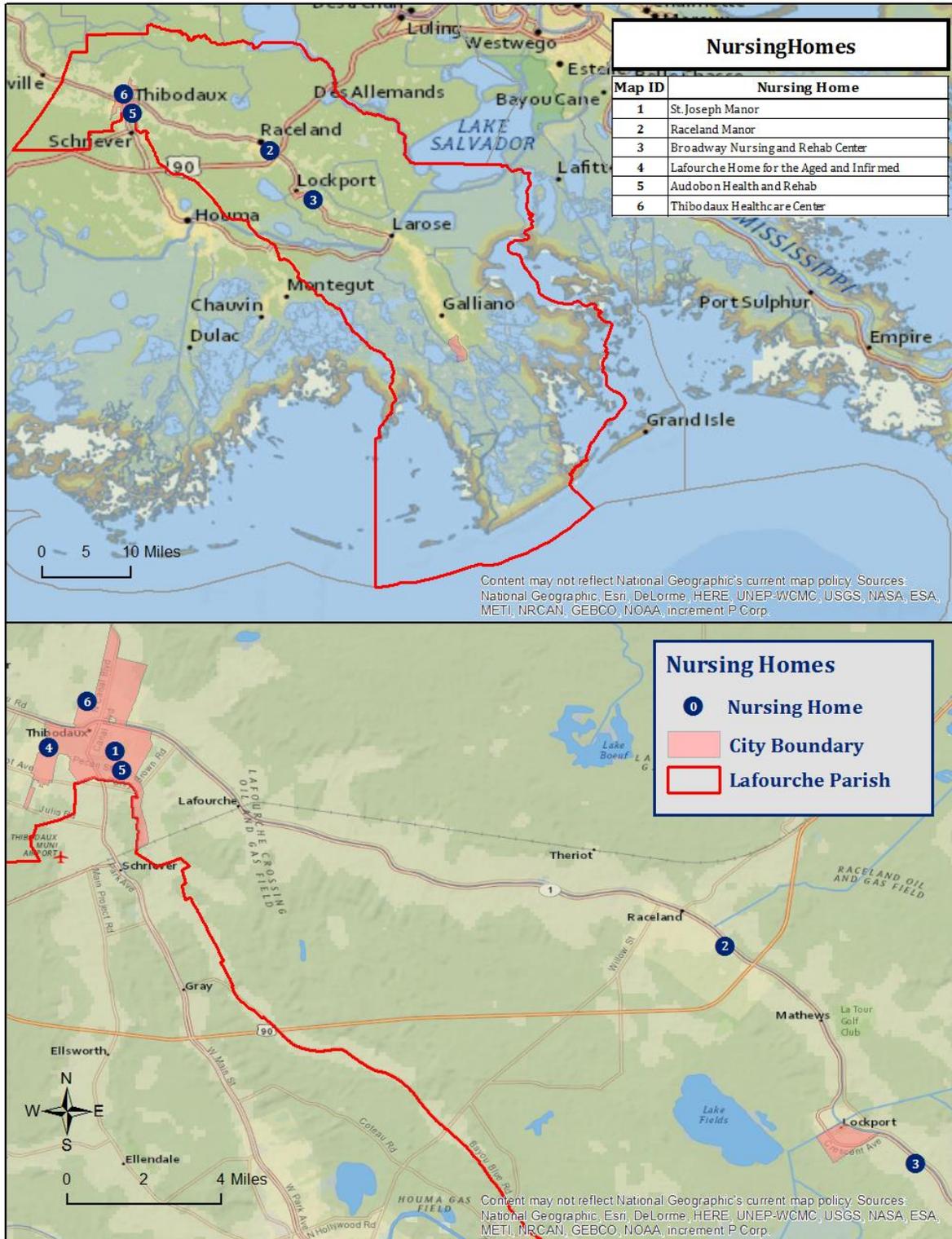


Figure 2-6: Nursing Home Facilities in Lafourche Parish

### Future Development Trends

Lafourche Parish has experienced small growth in population and housing between the years of 2010 – 2013 growing from a population of 89,974 with 35,045 housing units in 2000 to a population of 96,755 with 38,834 housing units in 2013. This growth is largely in the unincorporated areas of Lafourche Parish as many of the incorporated areas have experienced a decline in both population and housing numbers during the same time period with the one exception being the City of Thibodaux. Golden Meadow's population in 2000 was 2,193 and in 2013 it fell to 1,790. Lockport's population was 2,624 in 2000 but fell to 2,568 in 2013. The City of Thibodaux has experienced slight growth in population going from a population of 14,431 in 2000 to a population of 14,576 in 2013. However, housing growth in Thibodaux has decreased to 6,108 in 2013 from 6,324 in 2010. The future population and number of buildings can be estimated using U.S. Census Bureau housing and population data. The tables below show population and housing unit estimates from 2000 to 2013.

*Table 2-5: Population Growth Rate for Lafourche Parish*

Total Population	Lafourche Parish	Lafourche Unincorporated	Golden Meadow	Lockport	Thibodaux
1-Apr-00	89,974	70,726	2,193	2,624	14,431
1-Apr-10	96,318	77,073	2,101	2,578	14,566
1-Jul-13	96,755	77,821	1,790	2,568	14,576
Population Growth between 2000 – 2010	7.1%	9.0%	-4.2%	-1.8%	0.9%
Average Annual Growth Rate between 2000 – 2010	0.7%	0.9%	-0.4%	-0.2%	0.1%
Population Growth between 2010 – 2013	0.5%	1.0%	-14.8%	-0.4%	0.1%
Average Annual Growth Rate between 2010 – 2013	0.15%	0.32%	-4.93%	-0.13%	0.02%

*Table 2-6: Housing Growth Rate for Lafourche Parish*

Total Housing Units	Lafourche Parish	Lafourche Unincorporated	Golden Meadow	Lockport	Thibodaux
1-Apr-00	35,045	27,044	934	1,063	6,004
1-Apr-10	38,582	30,211	959	1,088	6,324
1-Jul-13	38,824	30,773	923	1,020	6,108
Housing Growth between 2000 – 2010	10.1%	11.7%	2.7%	2.4%	5.3%
Average Annual Growth Rate between 2000 – 2010	1.0%	1.2%	0.3%	0.2%	0.5%
Housing Growth between 2010 – 2013	0.6%	1.9%	-3.8%	-6.3%	-3.4%
Average Annual Growth Rate between 2010 – 2013	0.2%	0.6%	-1.3%	-2.1%	-1.1%

As shown in *Table 2-5* and *Table 2-6* Lafourche Parish population and housing has been fairly stagnant over the last 13 years and in some areas declining. Population rates grew at 0.7% between the years 2000 – 2010 and at 0.15% between the years 2010 – 2013, while housing rates during these time tables were 1.0% between the years 2000 – 2010 and 0.2% between the years 2010 – 2013. From 2000 – 2013, the unincorporated areas have experienced growth in both housing and population numbers. In addition, the City of Thibodaux has experienced slight growth in population, but a decline in housing units. The Towns of Lockport and Golden Meadow have both experienced declines in housing and population numbers between the years of 2010 and 2013.

### Future Hazard Impacts

Hazard impacts were estimated for five years and ten years in the future (2019 and 2024). Yearly population and housing growth rates were applied to parish inventory assets for composite flood and tropical cyclones. Based on a review of available information, there is nothing to indicate substantial change in growth rates from the present until 2024. A summary of estimated future impacts is shown in the table below. Dollar values are expressed in future costs and assume an annual rate of inflation of 1.02%.

*Table 2-7: Estimated Future Impacts, 2019-2024*  
(Source: HAZUS, US Census Bureau)

Hazard / Impact	Total in Parish (2014)	Hazard Area (2014)	Hazard Area (2019)	Hazard Area (2024)
<b>Flood Damage</b>				
Structures	38,905	24,420	24,676	24,987
Value of Structures	\$8,855,043,283	\$5,558,052,458	\$5,908,738,971	\$6,358,891,292
# of People	96,901	60,822	61,283	61,842
<b>Tropical Cyclones</b>				
Structures	38,905	38,905	39,314	39,809
Value of Structures	\$8,855,043,283	\$8,855,043,283	\$9,413,754,139	\$10,130,933,100
# of People	96,901	96,901	97,636	98,526

### Land Use

The Lafourche Parish Land Use table is provided on the next page. Residential, commercial and industrial areas account for only 4% of the parish's land use. Wetlands at 487,412 acres is by far the largest category accounting for 52% of parish land. The parish also consists of water areas (33%) and agricultural land (11%).

Table 2-8: Lafourche Parish Land Use  
(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	105,353	11%
Wetlands	487,412	52%
Forest land (not including forested wetlands)	2,809	0%
Urban/Development	33,619	4%
Water	312,456	33%

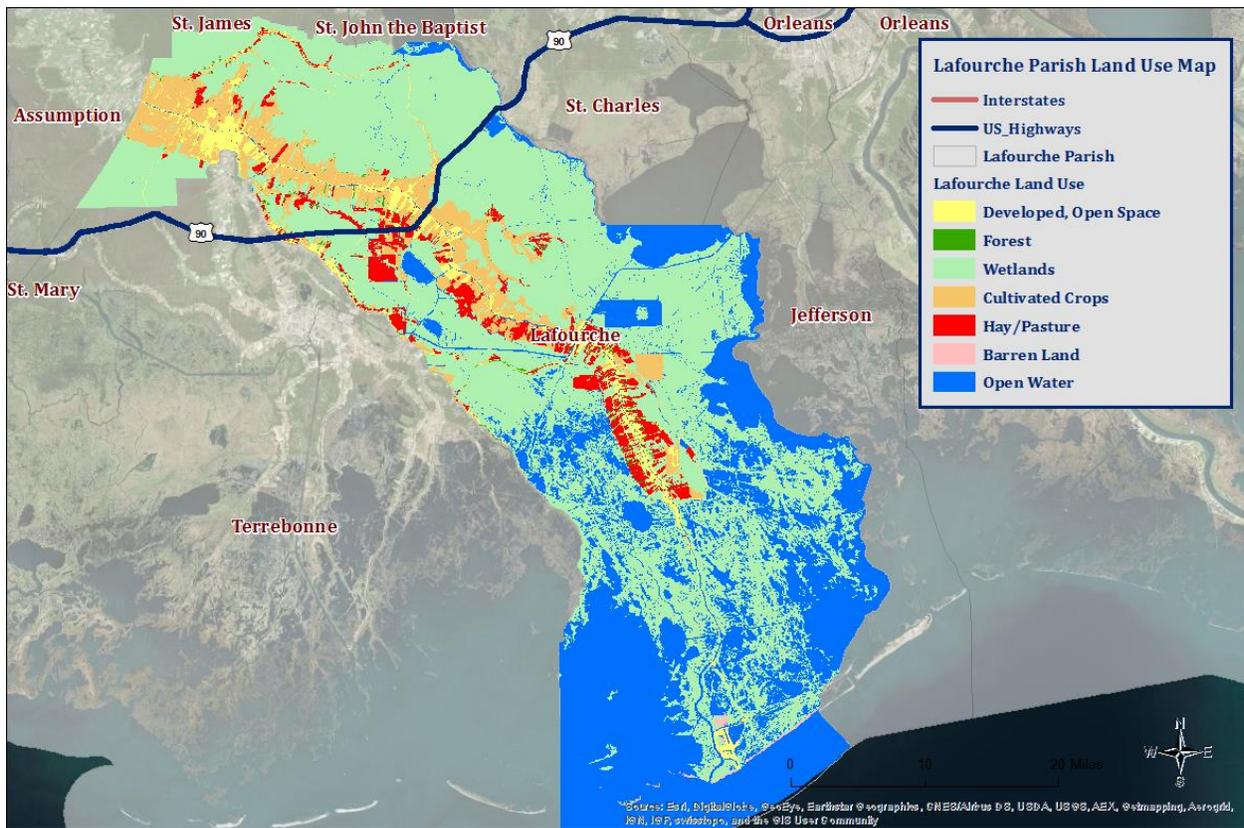


Figure 2-7: Lafourche Parish Land Use Map  
(Source: USGS Land Use Map)

## Hazard Identification

### Coastal Land Loss/Subsidence/Saltwater Intrusion

Coastal land loss is defined as the loss of land (especially beach, shoreline, or dune material) by natural and/or human influences. Coastal land loss occurs through various means, including erosion, subsidence (the sinking of land over time as a result of natural and/or human-caused actions), saltwater intrusion, coastal storms, littoral drift, changing currents, manmade canals, rates of accretion, and sea level rise. The effects of these processes are difficult to differentiate because of their complexity and because they often occur simultaneously, with one influencing each of the others.

Some of the most significant contributors to coastal land loss in the state recently are the tropical cyclones of the past decade. Two storms that stand out in this regard are Hurricanes Katrina and Rita. These powerful cyclones completely covered large tracts of land in a very brief period, permanently altering the landscape. The disastrous legacy of these storms concentrated already ongoing efforts to combat coastal land loss. Consistent with the 2014 State Hazard Mitigation Plan Update, coastal land loss is considered in terms of two of the most dominant factors: sea level rise and subsidence.

Sea level rise and subsidence impact Louisiana in a similar manner—again making it difficult to separate impacts. Rising sea level and subsidence—known together as relative sea level rise—can accelerate coastal erosion and wetland loss, exacerbate flooding, and increase the extent and frequency of storm impacts. According to NOAA, global sea level rise refers to the upward trend currently observed in the average global sea level. Local sea level rise is the level that the sea rises relative to a specific location (or benchmark) at the coastline. The most prominent causes of sea level rise are thermal expansion, tectonic actions (such as sea floor spreading), and the melting of the Earth’s glacial ice caps.

The current U.S. Environmental Protection Agency (EPA) estimate of global sea level rise is ten to twelve inches per century, while future sea level rise could be within the range of one to four feet by 2100. According to the U.S. Geological Survey (USGS), the Mississippi Delta plain is subject to the highest rate of relative sea level rise of any region in the nation largely due to rapid geologic subsidence.

Subsidence results from a number of factors including:

- Compaction/consolidation of shallow strata caused by the weight of sediment deposits, soil oxidation, and aquifer draw-down (shallow component)
- Gas/oil/resource extraction (shallow & intermediate component)
- Consolidation of deeper strata (intermediate components)
- Tectonic effects (deep component).

For the most part, subsidence is a slow-acting process with effects that are not as evident as hazards associated with discrete events. Although the impacts of subsidence can be readily seen in coastal parishes over the course of decades, subsidence is a “creeping” hazard. The highest rate of subsidence is occurring at the Mississippi River Delta (estimated at greater than 3.5 feet/century). Subsidence rates tend to decrease inland, and they also vary across the coast.

Overall, subsidence creates three distinct problems in Louisiana:

- By lowering elevations in coastal Louisiana, subsidence accelerates the effects of saltwater intrusion and other factors that contribute to land loss.
- By lowering elevations, subsidence may make structures more vulnerable to flooding.
- By destabilizing elevations, subsidence undermines the accuracy of surveying benchmarks (including those affecting levee heights, coastal restoration programs, surge modeling, BFEs, and other engineering inputs), which can contribute to additional flooding problems if construction occurs at lower elevations than anticipated or planned.

Saltwater intrusion is one of the major causes of subsidence and marshland loss. Saltwater intrusion refers to the movement of salty water into freshwater aquifers or to the encroachment of saline water into freshwater estuaries. This intrusion flows into streams discharging into the Gulf of Mexico as well as into the marsh areas and subsequently into freshwater streams. Intrusion of saltwater causes the loss of fresh and intermediate vegetation, which results in rapid erosion of marsh soils and the ultimate conversion of the area to open water.

#### *Location*

Historic areas of coastal land loss and gain (Figure 2-8) and subsidence rates (Figure 2-9) have been quantified for Lafourche Parish using data from the U.S. Geologic Survey and Louisiana Coastal Protection and Restoration Authority (CPRA). Since 1932, the average annual land loss in Louisiana is 35 mi<sup>2</sup>, while the average annual land gain has been three mi<sup>2</sup> for a net loss of 32 mi<sup>2</sup> per year. Land loss is primarily occurring on the southern coastline along the Gulf of Mexico in unincorporated Lafourche Parish and in the eastern portion of the town of Golden Meadow (Figure 2-8). Subsidence is occurring in all of unincorporated Lafourche Parish as well as the jurisdictions of the Town of Golden Meadow, the Town of Lockport, and the City of Thibodaux (Figure 2-9).

Saltwater intrusion, which is one of the major causes of coastal land loss, occurs when salt water from the Gulf of Mexico flows inland to freshwater intakes and marshes. Saltwater intrusion not only attributes to subsidence and coastal land loss, but also contaminates drinking water and affects the propagation of fish and wildlife especially in the river of Bayou Lafourche, which traverses from north to south through the parish.

#### *Previous Occurrences / Extent*

Coastal land loss is an ongoing process, including discrete (hurricanes) and continuous (subsidence, sea level rise) processes. While historic flood loss data undoubtedly includes the effects of coastal land loss, specific previous occurrences have not been identified as a source of direct disaster damage in Louisiana. Rather, the effects of the underlying flood or hurricane storm surge hazard are recorded. Land loss is a significant hazard; however, and assessment of the added flood impacts caused by land loss is quantified in the following sections.

*Frequency / Probability*

Subsidence, sea level rise, and coastal land loss are ongoing hazards. Based on historical subsidence rates and land loss/gain trends, the probability of future land loss in Louisiana is 100% certain, but actual rates of subsidence and land loss/gain vary along the coast based on various meteorological, geological, and human-influenced dynamics (e.g., water/resource extraction, canal dredging, saltwater intrusion, marsh restoration projects, etc.).

*Table 2-9: Annual Probability of Coastal Land Loss and Subsidence in Lafourche Parish*

Coastal Land Loss Probability Lafourche Parish			
Lafourche Parish (Unincorporated Area)	Golden Meadow	Lockport	Thibodaux
100%	100%	100%	100%

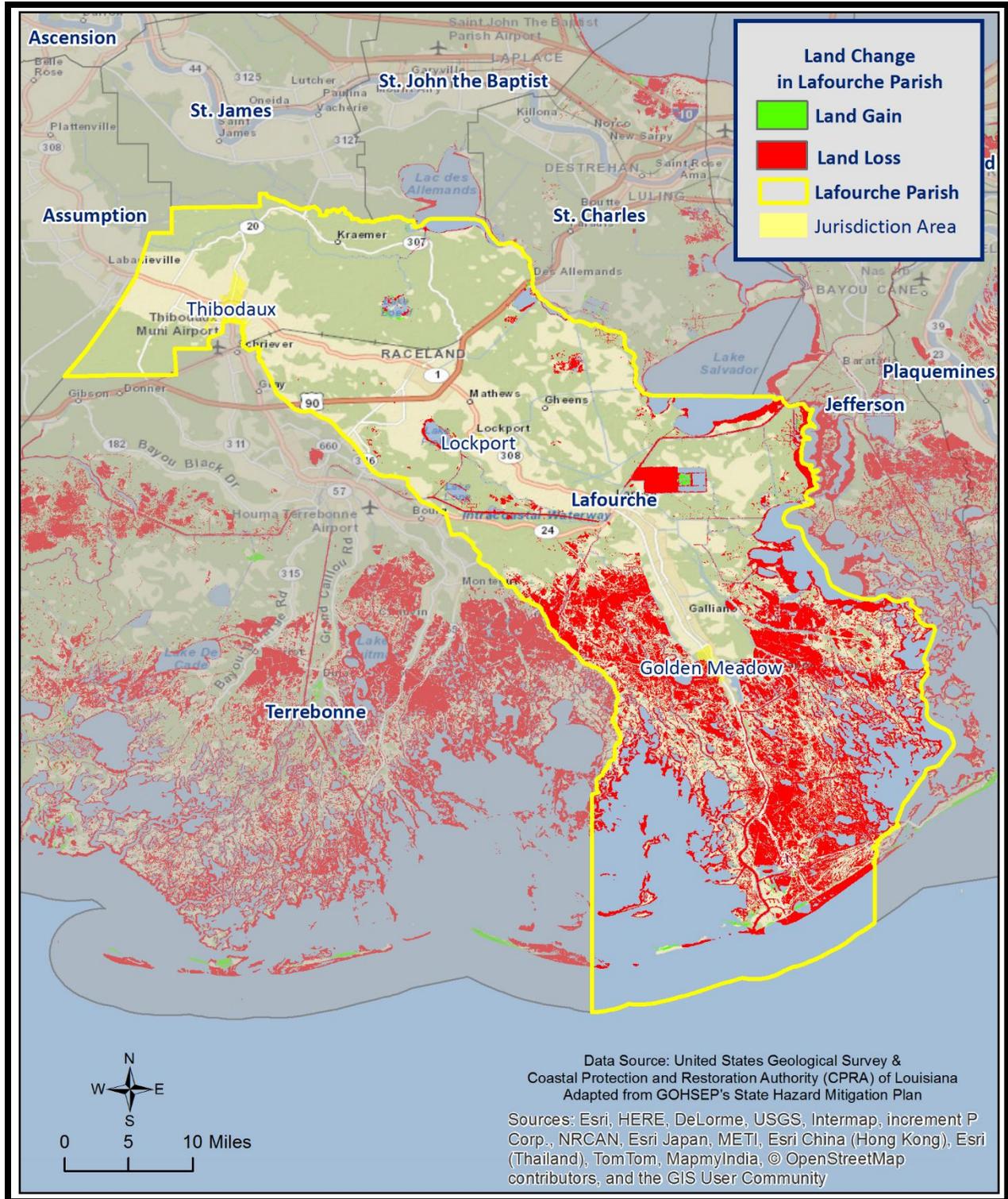


Figure 2-8: Historical Areas of Land Loss and Gain between 1932 and 2011  
(Source: State of Louisiana Hazard Mitigation Plan)

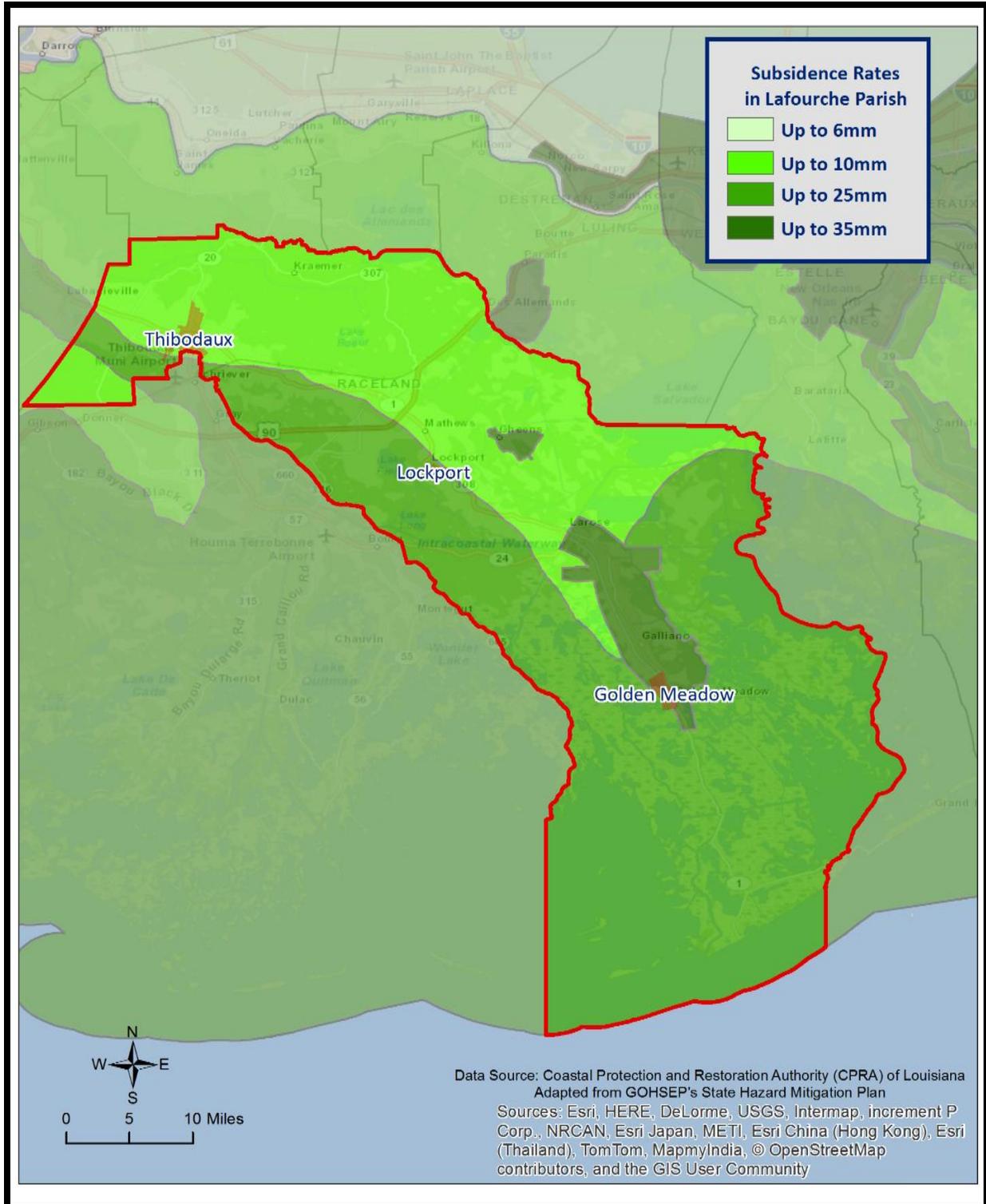


Figure 2-9: Maximum Annual Subsidence Rates based on Subsidence Zones in Coastal Louisiana  
(Source: State of Louisiana Hazard Mitigation Plan)

### *Estimated Potential Losses*

To determine the estimated potential losses, the methodology implemented in the 2014 Louisiana State Plan Update was used. In the state plan, two parameters were considered to estimate the projected increase in coastal flood losses from storm surge scenarios – global sea level rise and subsidence. A timeframe of ten years was used for evaluation of future effects of sea level rise and subsidence for comparison with current conditions. The NOAA Sea, Lake and Overland Surges from Hurricanes (SLOSH) model was used to estimate the maximum of maximum (MOM) storm surge elevations for a Category 1 hurricane at mean tide along the coast of Louisiana. The MOM scenario is not designed to describe the storm surge that would result from a particular event, but rather evaluates the impacts of multiple hurricane scenarios with varying forward speeds and storm track trajectories to create the maximum storm surge elevation surface that would occur given the simultaneous occurrence of all hurricane events for a given category.

There are many global sea level rise scenarios from which to select; however, within a ten year timeframe, methods that predict accelerating sea level rise rates do not deviate significantly from straight line methods. Therefore, a linear sea level rise projection for the sea level rise occurring in ten years (SLR<sub>2024</sub>) using a linear global sea level rise rate of 3.1 mm/year was used (IPCC, 2007), which is also in accordance with the CPRA Coastal Master Plan. This resulted in an increase of 0.1 feet, which was applied to the NOAA MOM storm surge elevation results over the model output domain.

$$SLR_{2024} = 0.0031 \frac{m}{year} \times 10 \text{ years}$$

$$SLR_{2024} = 0.031 \text{ meters} = 0.10 \text{ ft in 2024}$$

To estimate the effects of subsidence, the elevation profile for southern Louisiana was separated into sections based on subsidence zones. The 20th percentile values for subsidence were used, in accordance with the CPRA Master Plan, and subtracted from the digital elevation model (DEM) for each zone and re-joined to create a final subsided ground elevation layer.

To perform the economic loss assessment, depth grids were created for current conditions (SLOSH MOM Results – Current Land Elevation) and for projected 2024 conditions ([SLOSH MOM Results + 0.1 feet sea level rise] – [Current Land Elevation – Subsidence]). Hazus-MH was used to calculate economic loss for the current and future depth grids.

Figure 2-10 shows the projected increase in total flood loss resulting from a SLOSH Category 1 MOM in the year 2014, with many areas expecting increase in losses. Some areas that would be currently unaffected by a SLOSH Category 1 MOM would be impacted in ten years based on subsidence and sea level rise projections (Figure 2-11).

To determine annual potential loss estimates for coastal land loss, increased exposure estimates over the next ten years calculated using Hazus-MH were annualized at the parish level (Figure 2-12). To provide an annual estimated potential loss per jurisdiction, the total loss for the census block groups within each jurisdiction were calculated.

Based on hazard exposure, *Table 2-10* provides an estimate of annual potential losses for Lafourche Parish. Although Thibodaux is subjected to 100% probability of subsidence, there are no increases in loss modeled for this jurisdiction.

*Table 2-10: Estimated Annual Losses for Coastal Land Loss and Subsidence in Lafourche Parish  
(Source: HAZUS-MH)*

Coastal Land Loss Estimated Annual Potential Losses for Lafourche Parish			
Lafourche Parish (Unincorporated Area)	Golden Meadow	Lockport	Thibodaux
\$5,996,100	\$385,200	\$193,100	\$0

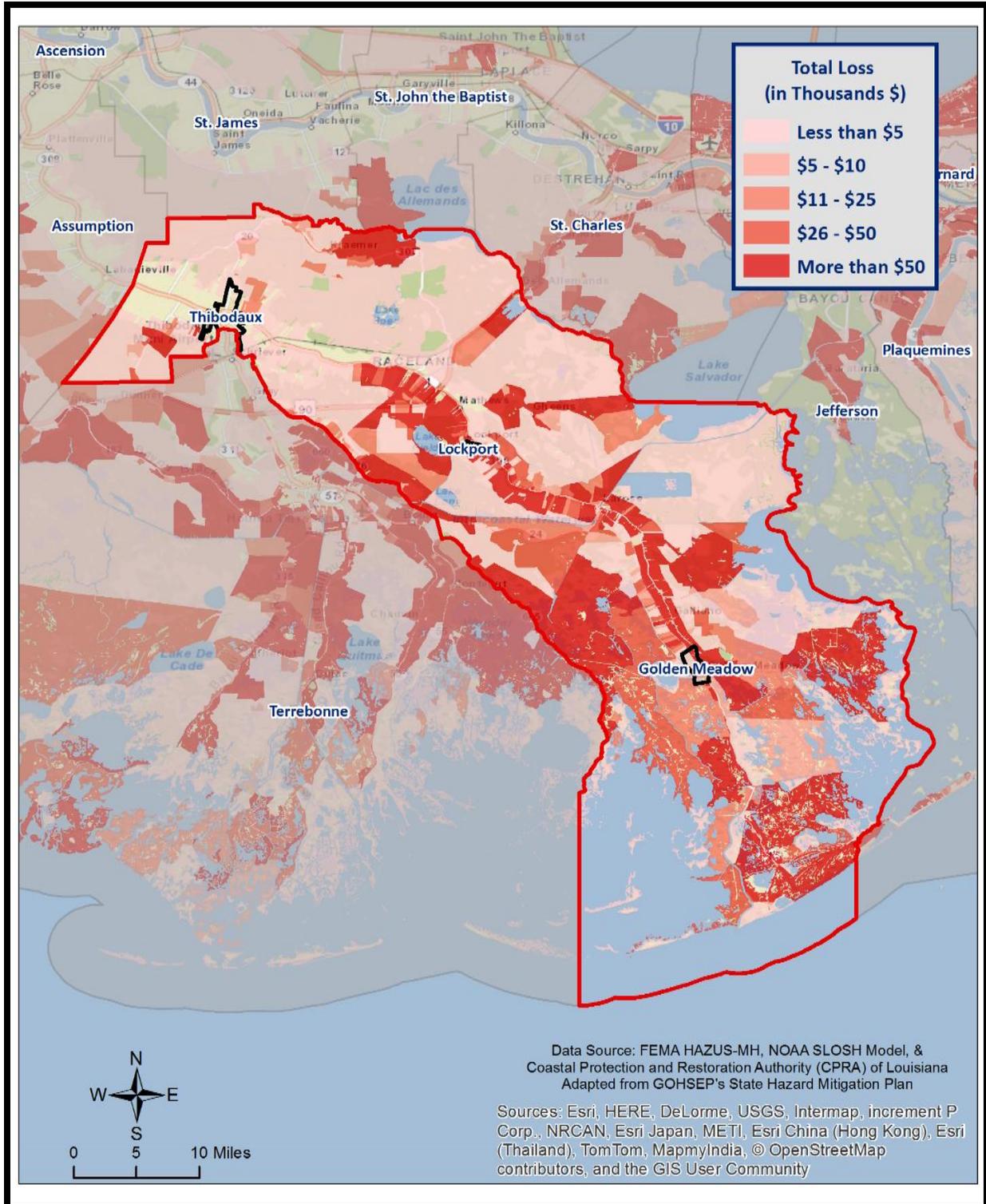


Figure 2-10: Increase in Total Loss Estimates in 2024 by Census Block Group based on the Hazus-MH Flood Model and NOAA SLOSH Model  
(Source: State of Louisiana Hazard Mitigation Plan)

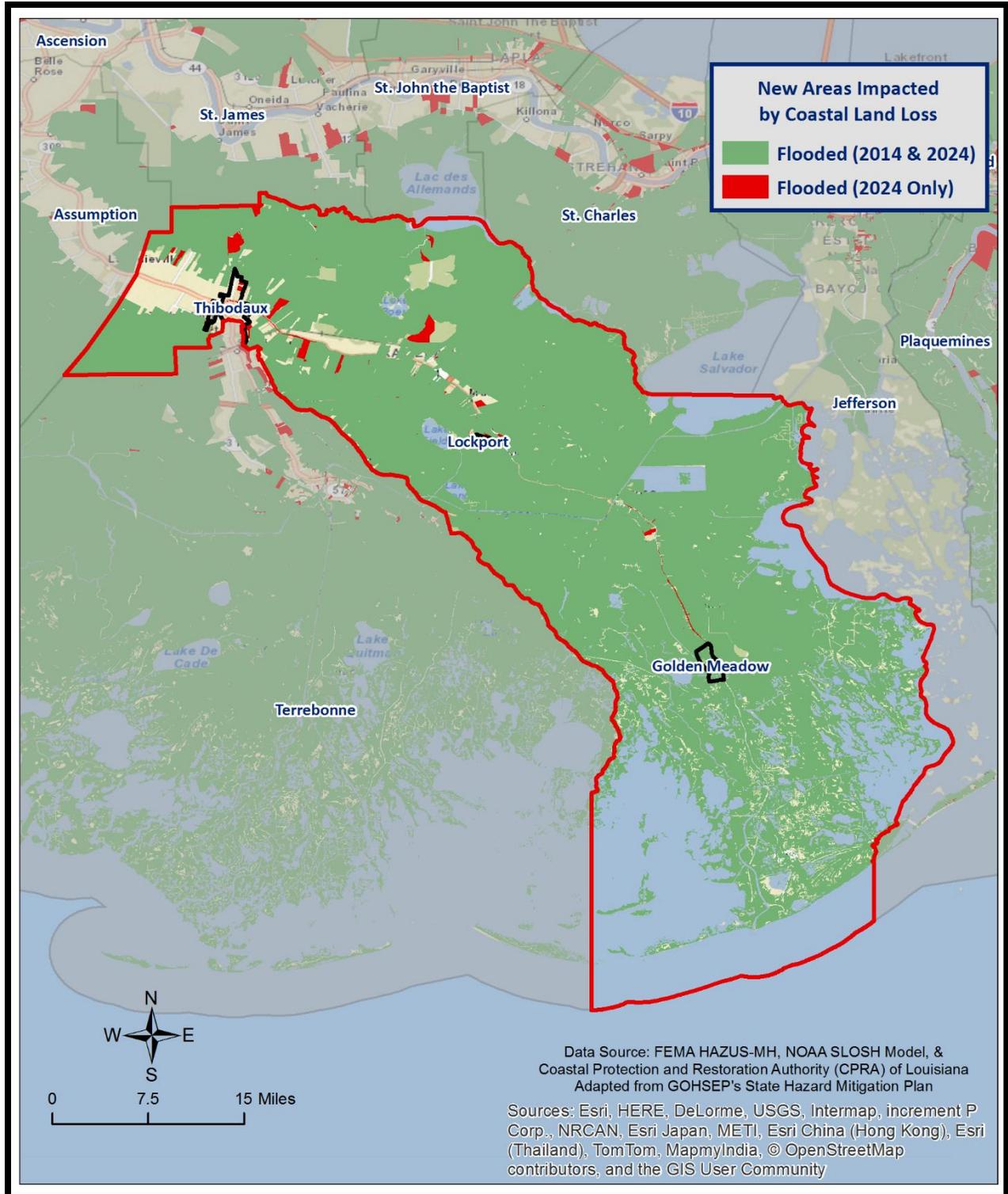


Figure 2-11: Census Block Groups not Currently Impacted by Category 1 Hurricane Storm Surge but Expected to be Impacted in 2024 are Shown in Red (Source: State of Louisiana Hazard Mitigation Plan)

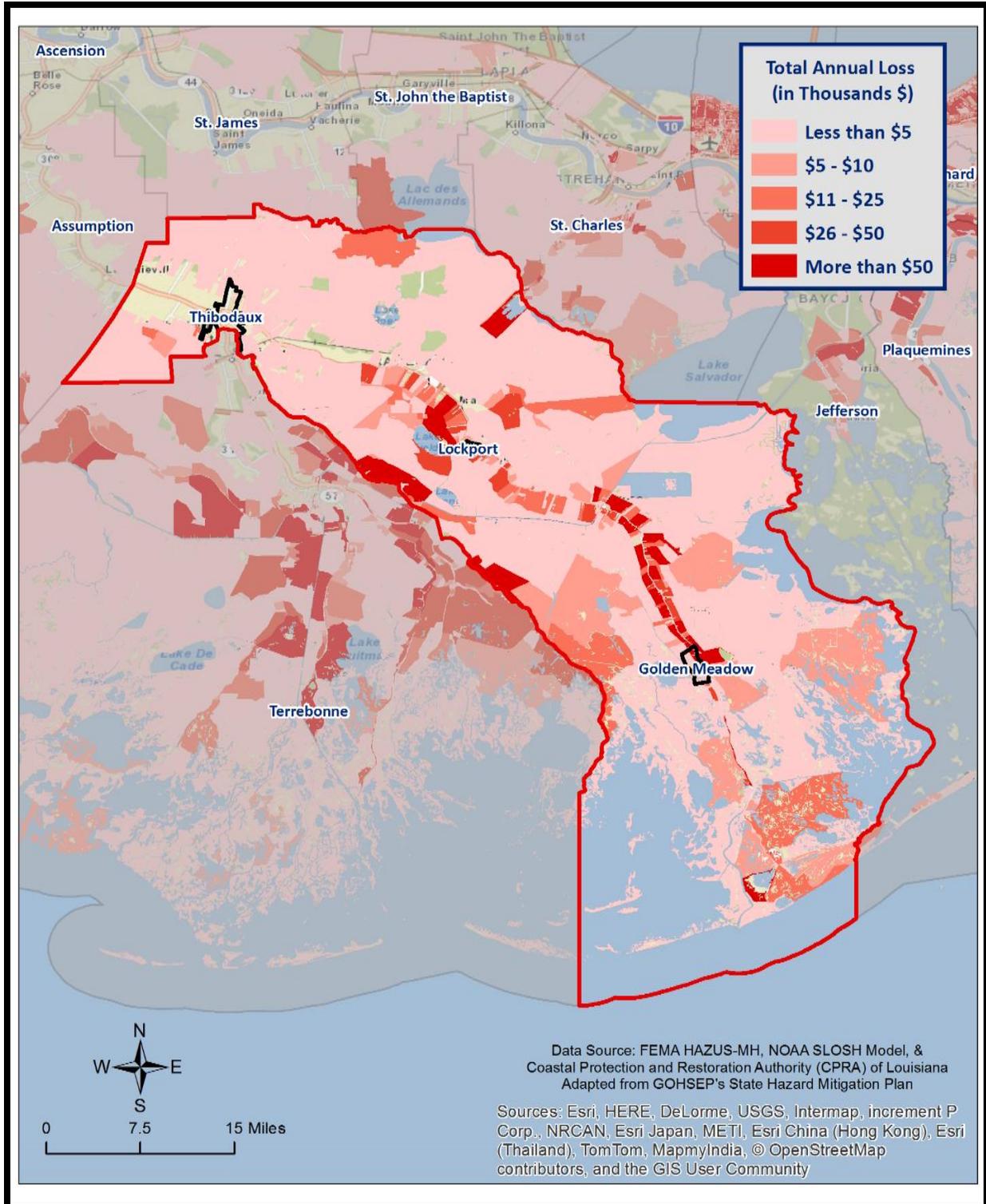


Figure 2-12: Estimated Annual Losses for Coastal Land Loss by Census Block Group

*Threat to People*

Coastal land loss can impact all demographics and age groups. Buildings located within highly vulnerable coastal land loss areas could be eventually permanently shut down and forced to re-locate. Long-term sheltering and permanent relocation could be a concern for communities that are at the highest risk for future coastal land loss. The total population within the parish that is susceptible to the effects of coastal land loss are shown in the table below.

The HAZUS-MH hurricane model was used to identify populations vulnerable to coastal land loss throughout the jurisdictions in the tables below:

*Table 2-11: Population Vulnerable by Jurisdiction in Lafourche Parish*

<b>Number of People Exposed to Flood Hazards</b>			
<b>Location</b>	<b># in Community</b>	<b># in Hazard Area</b>	<b>% in Hazard Area</b>
Lafourche Parish (Unincorporated)	<b>77,073</b>	<b>44,619</b>	<b>57.9%</b>
Golden Meadow	<b>2,101</b>	<b>1,479</b>	<b>70.4%</b>
Lockport	<b>2,578</b>	<b>1,376</b>	<b>53.4%</b>
Thibodaux	<b>14,566</b>	<b>0</b>	<b>0%</b>
<b>Total</b>	<b>96,318</b>	<b>47,474</b>	<b>49.3%</b>

*Table 2-12: Population Vulnerable to Coastal Land Loss and Subsidence in Unincorporated Lafourche Parish*

*(Source: HAZUS-MH)*

<b>Lafourche Parish (Unincorporated Parish)</b>		
<b>Category</b>	<b>Total Numbers</b>	<b>% of People in Hazard Area</b>
Number in Hazard Area	44,619	57.9%
Persons Under 5 years	2,856	6.4%
Persons Under 18 years	10,619	23.8%
Persons 65 Years and Over	6,024	13.5%
White	36,097	80.9%
Minority	8,522	19.1%

*Table 2-13: Population Vulnerable to Coastal Land Loss and Subsidence in Golden Meadow  
(Source: HAZUS-MH)*

Golden Meadow		
Category	Total Numbers	% of People in Hazard Area
Number in Hazard Area	1,479	70.4%
Persons Under 5 years	93	6.3%
Persons Under 18 years	258	17.5%
Persons 65 Years and Over	222	15.0%
White	1,234	83.4%
Minority	245	16.6%

*Table 2-14: Population Vulnerable to Coastal Land Loss and Subsidence in Lockport  
(Source: HAZUS-MH)*

Lockport		
Category	Total Numbers	% of People in Hazard Area
Number in Hazard Area	1,376	53.4%
Persons Under 5 years	99	7.2%
Persons Under 18 years	215	15.6%
Persons 65 Years and Over	217	15.8%
White	1,266	92.0%
Minority	110	8.0%

#### *Vulnerability*

See Appendix C for parish and municipality buildings that are susceptible to coastal land loss.

## Flooding

A flood is defined as the overflow of water onto land that is usually not inundated. The National Flood Insurance Program (NFIP) 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.

Factors influencing the type and severity of flooding include natural variables such as precipitation, topography, vegetation, soil texture, and seasonality, as well as anthropogenic factors such as urbanization (extent of impervious surfaces), land use (e.g., agricultural and forestry tend to remove native vegetation and accelerate soil erosion), and the presence of flood-control structures such as levees and dams.

Excess precipitation, produced from thunderstorms or hurricanes, is often the major initiating condition for flooding, and Louisiana can have high rainfall totals at any time of day or year. During the cooler months, slow-moving frontal weather systems produce heavy rainfalls, while the summer and autumn seasons produce major precipitation in isolated thunderstorm events (often on warm afternoons) that may lead to localized flooding. During these warmer seasons, floods are overwhelmingly of the flash flood variety, as opposed to the slower-developing river floods caused by heavy stream flow during the cooler months.

In cooler months, particularly in the spring, Louisiana is in peak season for severe thunderstorms. The fronts that cause these thunderstorms often stall while passing over the state, occasionally producing rainfall totals exceeding ten inches within a period of a few days. Since soil tends to be nearly saturated at this time (due to relatively low overall evaporation rates), spring typically becomes the period of maximum stream flow across the state. Together, these characteristics increase the potential for high water, and low-lying, poorly drained areas are particularly prone to flooding during these months.

In Louisiana, six specific types of floods are of main concern: riverine, flash, ponding, backwater, urban, and coastal.

- **Riverine flooding** occurs along a river or smaller stream. It is the result of runoff from heavy rainfall or intensive snow or ice melt. The speed with which riverine flood levels rise and fall depends not only on the amount of rainfall, but even more on the capacity of the river itself and the shape and land cover of its drainage basin. The smaller the river, the faster water levels rise and fall. Thus, the Mississippi River levels rise and fall slowly due to its large capacity. Generally, elongated and intensely-developed drainage basins will reach faster peak discharges and faster falls than circular-shaped and forested basins of the same area.
- **Flash flooding** occurs when locally intense precipitation inundates an area in a short amount of time, resulting in local stream flow and drainage capacity being overwhelmed.

- **Ponding** occurs when concave areas (e.g., parking lots, roads, and clay-lined natural low areas) collect water and are unable to drain.
- **Backwater flooding** occurs when water slowly rises from a normally unexpected direction where protection has not been provided. A model example is the flooding that occurred in LaPlace during Hurricane Isaac in 2012. Although the town was protected by a levee on the side facing the Mississippi, floodwaters from Lake Maurepas and Lake Pontchartrain crept into the community on the side of town opposite the Mississippi River.
- **Urban flooding** is similar to flash flooding but is specific to urbanized areas. It takes place when storm water drainage systems cannot keep pace with heavy precipitation, and water accumulates on the surface. Most urban flooding is caused by slow-moving thunderstorms or torrential rainfall.
- **Coastal flooding** can appear similar to any of the other flood types, depending on its cause. It occurs when normally dry coastal land is flooded by seawater, but may be caused by direct inundation (when the sea level exceeds the elevation of the land), overtopping of a natural or artificial barrier, or the breaching of a natural or artificial barrier (i.e., when the barrier is broken down by the sea water). Coastal flooding is typically caused by storm surge, tsunami, and gradual sea level rise.

In Lafourche parish, all six types of flooding have historically been observed. For purposes of this assessment, ponding, flash flood and urban flooding are considered to be flooding as a result of storm water from heavy precipitation thunderstorms.

Based on stream gauge levels and precipitation forecasts, the National Weather Service (NWS) posts flood statements watches and warnings. The NWS issues the following weather statements with regard to floods:

- **Flood Categories**
  - Minor Flooding: Minimal or no property damage, but possibly some public threat.
  - Moderate Flooding: Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations.
  - Major Flooding: Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.
  - Record Flooding: Flooding which equals or exceeds the highest stage or discharge at a given site during the period of record keeping.
- **Flood Warning**
  - Issued along larger streams when there is a serious threat to life or property.
- **Flood Watch**
  - Issued when current and developing hydro meteorological conditions are such that there is a threat of flooding, but the occurrence is neither certain nor imminent.

Floods are measured mainly by probability of occurrence. A 10-yr flood event, for example, is an event of small magnitude (in terms of stream flow or precipitation) but with a relatively high annual probability of recurrence (10%). A 100-yr flood event is larger in magnitude, but it has a smaller chance of recurrence (1%). A 500-yr flood is significantly larger than both a 100-yr event and a 10-yr event, but it has a lower probability than both to occur in any given year (0.2%). It is important to understand that an x-yr flood event does not mean an event of that magnitude occurs only once in x years. Instead, it just means that on average, we can expect a flood event of that magnitude to occur once every x years. Given that such statistical probability terms are inherently difficult for the lay population to understand, the Association of State Floodplain Managers (ASFPM) promotes the use of more tangible expressions of flood probability. As such, the ASFPM also expresses the 100-yr flood event has having a 25% chance of occurring over the life of a 30-yr mortgage.

It is essential to understand that the magnitude of an x-yr flood event for a particular area depends on the source of flooding and the area's location. The size of a specific flood event is defined through historic data of precipitation, flow, and discharge rates. Consequently, different 100-yr flood events can have very different impacts. The 100-yr flood events in two separate locations have the same likelihood to occur, but they do not necessarily have the same magnitude. For example, a 100-yr event for the Mississippi River means something completely different in terms of discharge values ( $\text{ft}^3/\text{s}$ ) than, for example, for the Amite River. Not only are the magnitudes of 100-yr events different between rivers, they can be different along any given river. A 100-yr event upstream is different from one downstream since river characteristics (volume, discharge, and topography) change. As a result, the definition of what constitutes a 100-yr flood event is specific to each location, river, and time, since floodplain and river characteristics change over time. Finally, it is important to note that each flood event is unique. Two hypothetical events at the same location, given the same magnitude of stream flow, may still produce substantially different impacts, if there were different antecedent moisture characteristics, different times of day of occurrence (which indicates the population's probable activities at the flood's onset), or other characteristic differences.

The 100-yr event is of particular significance since it is the regulatory standard that determines the obligation or lack thereof to purchase flood insurance. Flood insurance premiums are set depending on the flood zone as modeled by NFIP Rate Maps. The NFIP and FEMA suggest insurance rates based on Special Flood Hazard Areas (SFHAs), as diagrammed in Figure 2-13.

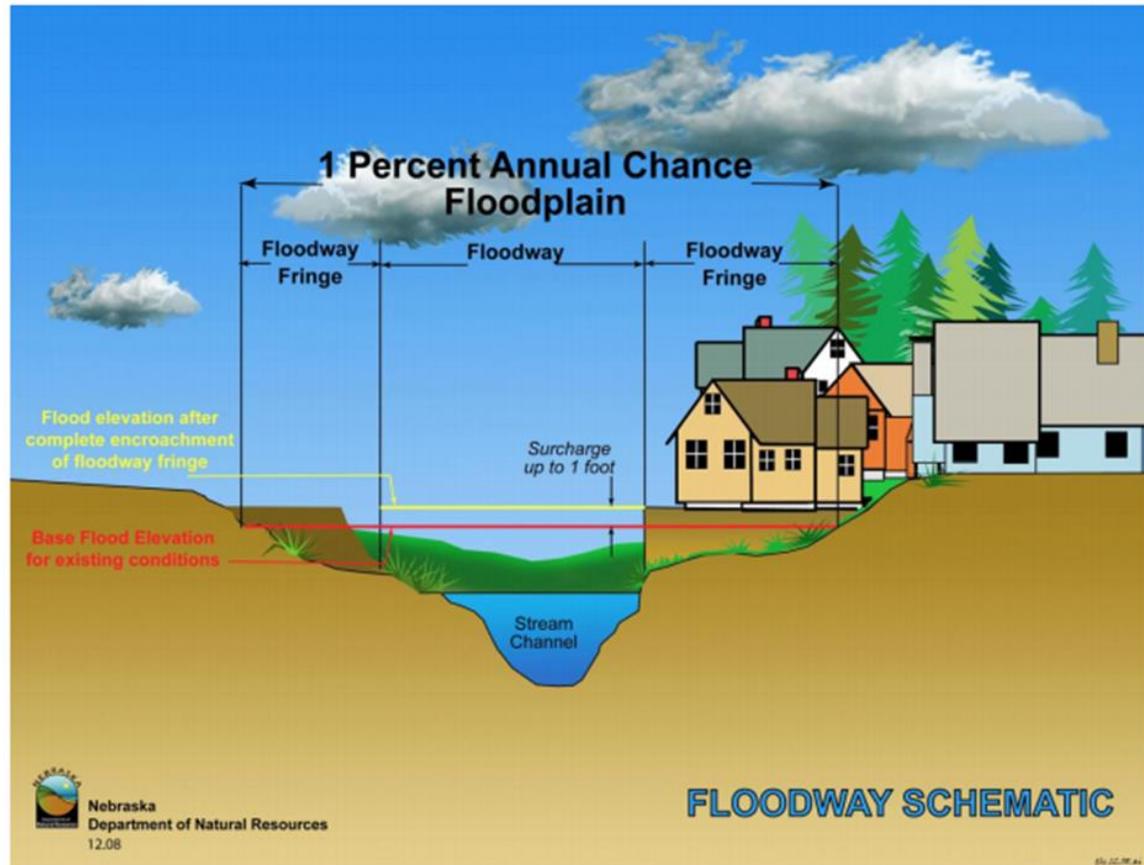


Figure 2-13: Schematic of 100 year Floodplain. The special hazard area (SFHA) extends to the end of the floodway fringe

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in Figure 2-13), where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

#### Property Damage

The depth and velocity of flood waters are the major variables in determining property damage. Flood velocity is important because the faster water moves, the more pressure it puts on a structure and the more it will erode stream banks and scour the earth around a building's foundation. In a few situations, deep and fast moving waters will push a building off its foundation. Structural damage can also be caused by the weight of standing water (hydrostatic pressure).

Another threat to property from a flood is called soaking. When soaked, many materials change their composition or shape. Wet wood will swell, and if dried too quickly, will crack, split, or warp. Plywood can come apart and gypsum wallboard has the potential to fall apart if it is bumped before it has time to completely dry. The longer these materials are saturated, the more moisture, sediment, and pollutants they absorb.

Soaking can also cause extensive damage to household goods. Wooden furniture may become warped, making it unusable while other furnishings such as books, carpeting, mattresses, and upholstery usually are not salvageable. Electrical appliances and gasoline engines will flood, making them worthless until they are professionally dried and cleaned.

Many buildings that have succumbed to flood waters may look sound and unharmed after a flood, but water has the potential to cause severe property damage. Any structure that experiences a flood should be stripped, cleaned and allowed to dry before being reconstructed. This is an extremely expensive and time consuming effort.

#### *Repetitive Loss Properties*

Repetitive loss structures are structures covered by a contract for flood insurance made available under the NFIP that:

- a. Has incurred flood-related damage on two occasions in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- b. At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe Repetitive Loss (SRL) is defined by the Flood Insurance Reform Act of 2004 and updated in the Biggert-Waters Flood Insurance Reform Act of 2012. For a property to be designated SRL, the following criteria must be met:

- a. Is covered under a contract for flood insurance made available under the NFIP; and
- b. Has incurred flood related damage –
  - 1) For which four or more separate claims payments have been made under flood insurance coverage with the amount of each claim exceeding \$5,000 and with the cumulative amount of such claims payments exceeding \$20,000; or
  - 2) For which at least two separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

Repetitive loss properties for Lafourche Parish are provided below:

Table 2-15 : Repetitive Loss Structures for Lafourche Parish

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
Lafourche Parish (Unincorporated)	388	355	31	2	1,168	\$26,957,165	\$23,080
Golden Meadow	12	5	7	0	37	\$597,886	\$16,159
Lockport	16	16	0	0	39	\$909,581	\$23,322
Thibodaux	22	21	1	0	76	\$995,117	\$45,233
<b>Total</b>	<b>438</b>	<b>397</b>	<b>39</b>	<b>2</b>	<b>1,320</b>	<b>\$29,459,749</b>	<b>\$22,318</b>

Of the 438 repetitive loss structures, 385 were able to be geocoded to provide an overview of where the repetitive loss structures were located throughout the parish. Figure 2-14 shows the approximate location of the 434 structures, while Figure 2-15 shows where the highest concentration of repetitive loss structures are located. Through the density map, it is clear that the primary concentrated area of repetitive loss structures are focused around the unincorporated southeastern coastal areas and western areas of Lafourche Parish around Thibodaux and Lockport.

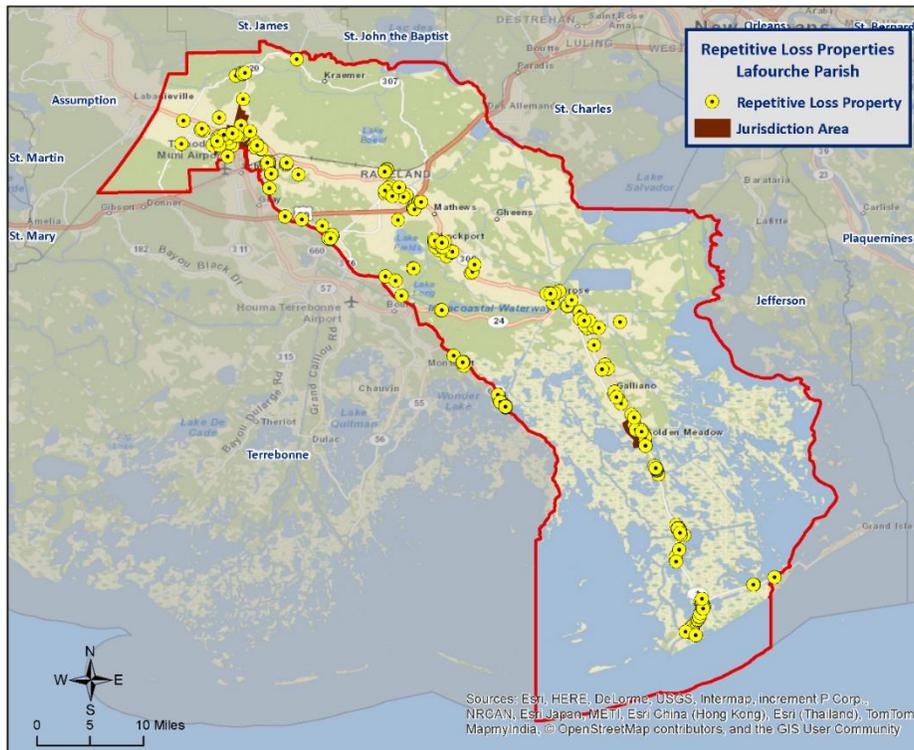


Figure 2-14: Repetitive Loss Properties in Lafourche Parish

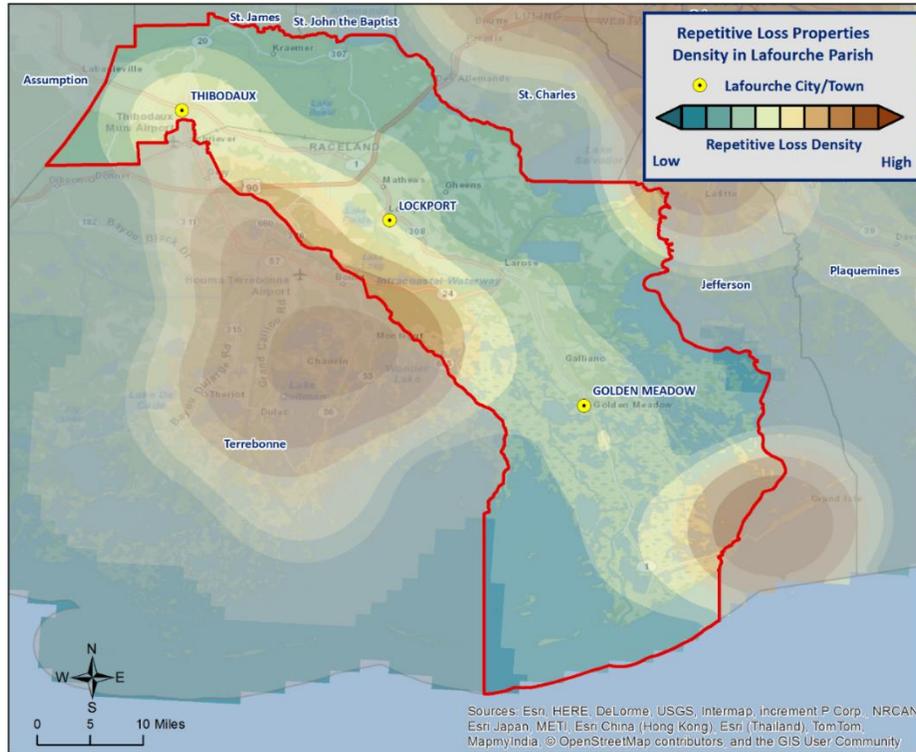


Figure 2-15: Repetitive Loss Property Densities in Lafourche Parish

*National Flood Insurance Program*

Flood insurance statistics indicate that Lafourche Parish has 12,854 flood insurance policies with the NFIP with total annual premiums of approximately \$10 million. Lafourche Parish, Golden Meadow, Lockport, and Thibodaux are all participants in the NFIP. Lafourche Parish and each of the incorporated jurisdictions will continue to adopt and enforce floodplain management requirements, including regulating new construction in SFHA’s, and will continue to monitor activities including local requests for map updates. Flood insurance statistics and additional NFIP participation details for Lafourche Parish are provided in the tables to follow.

Table 2-16: Summary of NFIP Policies for Lafourche Parish

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
<b>Lafourche Parish (Unincorporated)</b>	11,456	\$2,334,371,800	\$9,036,810	4,524	\$57,788,478
<b>Golden Meadow</b>	307	\$45,399,000	\$317,611	307	\$2,796,191
<b>Lockport</b>	340	\$64,003,100	\$279,893	153	\$2,039,874
<b>Thibodaux</b>	751	\$200,442,400	\$396,068	259	\$3,500,874
<b>Total</b>	12,854	\$2,644,216,300	\$10,030,382	5,243	\$66,125,417

Table 2-17: Summary of Community Flood Maps for Lafourche Parish

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
225202	Lafourche Parish (Unincorporated)	5/8/1971	7/1/1974	5/4/1992	4/17/1985	No
225196	Golden Meadow	11/20/1970	9/11/1970	7/11/1975	11/20/1970	No
220254	Lockport	1/10/1975	8/15/1980	8/15/1980	8/15/1980	No
220111	Thibodaux	2/12/1974	2/7/1978	12/15/1989	2/7/1978	No

According to the Community Rating System (CRS) list of eligible communities dated June 1, 2014, Lafourche Parish participates in the CRS. *Table 2-18* provides details regarding CRS participation.

Table 2-18: Participants in the Community Rating System (CRS)

Community Number	Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status
225202	Lafourche Parish	1/1/1992	5/1/2004	10	0%	0%	R

#### *Threat to People*

Just as with property damage, depth and velocity are major factors in determining the threat posed to people by flooding. It takes very little depth or velocity for flood waters to become dangerous. A car will float in less than two feet of moving water and can be swept downstream into deeper waters, trapping the passengers within the vehicle. Victims of floods have often put themselves in perilous situations by entering flood waters they believe are safe or by ignoring travel advisories.

Major health concerns are also associated with floods. Floodwaters can transport materials such as dirt, oil, animal waste, and chemicals (e.g., farm, lawn and industrial), that may cause illnesses of various degrees when coming in contact with humans. Floodwaters can also infiltrate sewer lines and inundate wastewater treatment plants, causing sewage to backup and creating a breeding ground for dangerous bacteria. This infiltration may also cause water supplies to become contaminated and undrinkable.

#### *Flooding in Lafourche Parish*

By definition, flooding is caused by the inundation of more water than the drainage system can convey. The following is a synopsis of the types of flooding that Lafourche Parish experiences.

**Storm Water:** Storm water excesses caused by large amounts of rainfall (also called heavy rain and flash flooding) in a short period of time occur frequently in this coastal parish. Minimal elevations combined with little slope in the topography and an extensive levee system mean that storm water cannot flow out

of many areas of the parish and needs to be pumped out. Generally, the most damaging storm water events were functions of a tropical storm or hurricane.

**Storm Surge:** Storm surge influenced by the winds of hurricanes and tropical storms cause inundation of coastal floodplains through coastal river and drainage systems. In the case of storm surge, southerly winds and high tides rise over and through bayous, canals, and marshlands and overtop levees. Lafourche Parish is vulnerable to this type of flooding due to its predominate marshland coast and its proximity to the Gulf of Mexico.

**Backwater Flooding:** Backwater flooding is normally associated with riverine flooding and connotes minimal velocity. All low lying areas are at risk to this type of flooding. A heavy rainfall event coupled with a swollen river, canal, or bayou and marsh hinders drainage outflow causing backwater flooding to the same areas susceptible to storm surge.

**Riverine:** Riverine flooding, by definition, is river-based. Most of the riverine flooding problems occur when there is a high tide in the Gulf of Mexico and as a result Bayou Lafourche floods low lying areas.

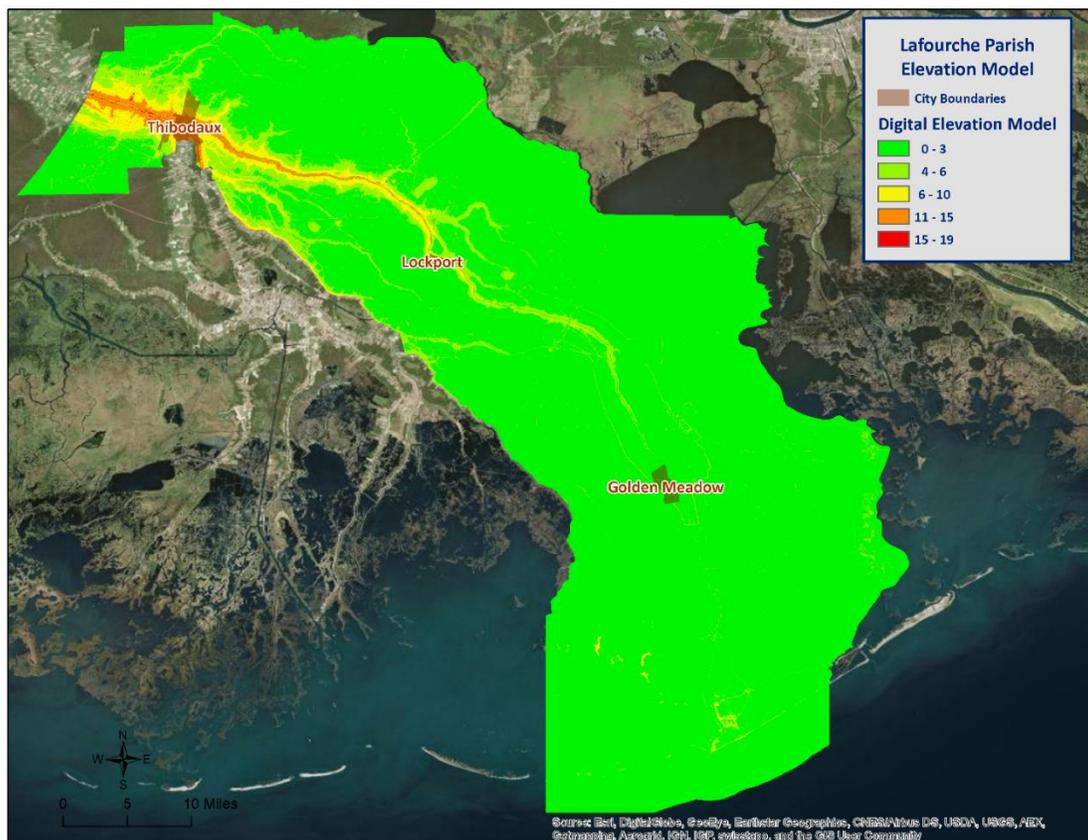


Figure 2-16: Elevation throughout Lafourche Parish

Looking at the digital elevation model (DEM) in Figure 2-16 for Lafourche Parish is instructive in visualizing where the low lying and risk areas are for the parish. The highest elevations in the parish are

approximately fifteen to nineteen feet. These higher elevations are sporadically located throughout the parish with the majority of these areas located in the northeastern portion of the parish. Thibodaux and Lockport have the highest elevations of the incorporated communities, with average elevations in Thibodaux ranging from eleven to fifteen feet and elevations in Lockport ranging from six to ten feet. Golden Meadow has the lowest elevations of the incorporated areas ranging from zero to six feet.

### Location

Lafourche Parish has experienced significant flooding in its history and can expect more in the future. Lafourche Parish is a coastal parish with the Gulf of Mexico bordering to the south. The river, Bayou Lafourche, traverses the parish from north to south and separated the two watersheds that are located within Lafourche Parish. The area west of Bayou Lafourche is part of the Terrebonne watershed and the area east of Bayou Lafourche is part of the Barataria watershed. Below are enlarged maps of the incorporated areas showing the areas within each jurisdiction that are at risk to flooding.

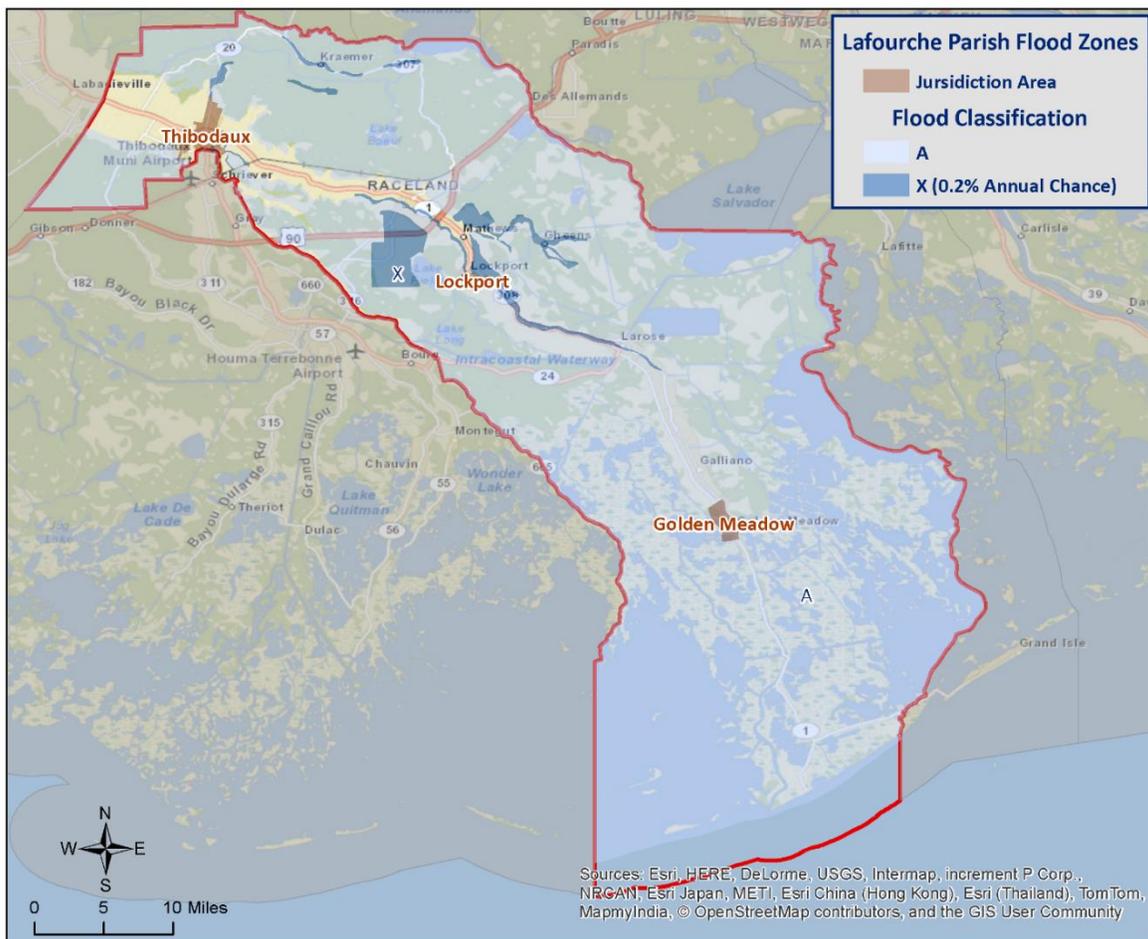


Figure 2-17: Lafourche Parish Areas within the Flood Zones

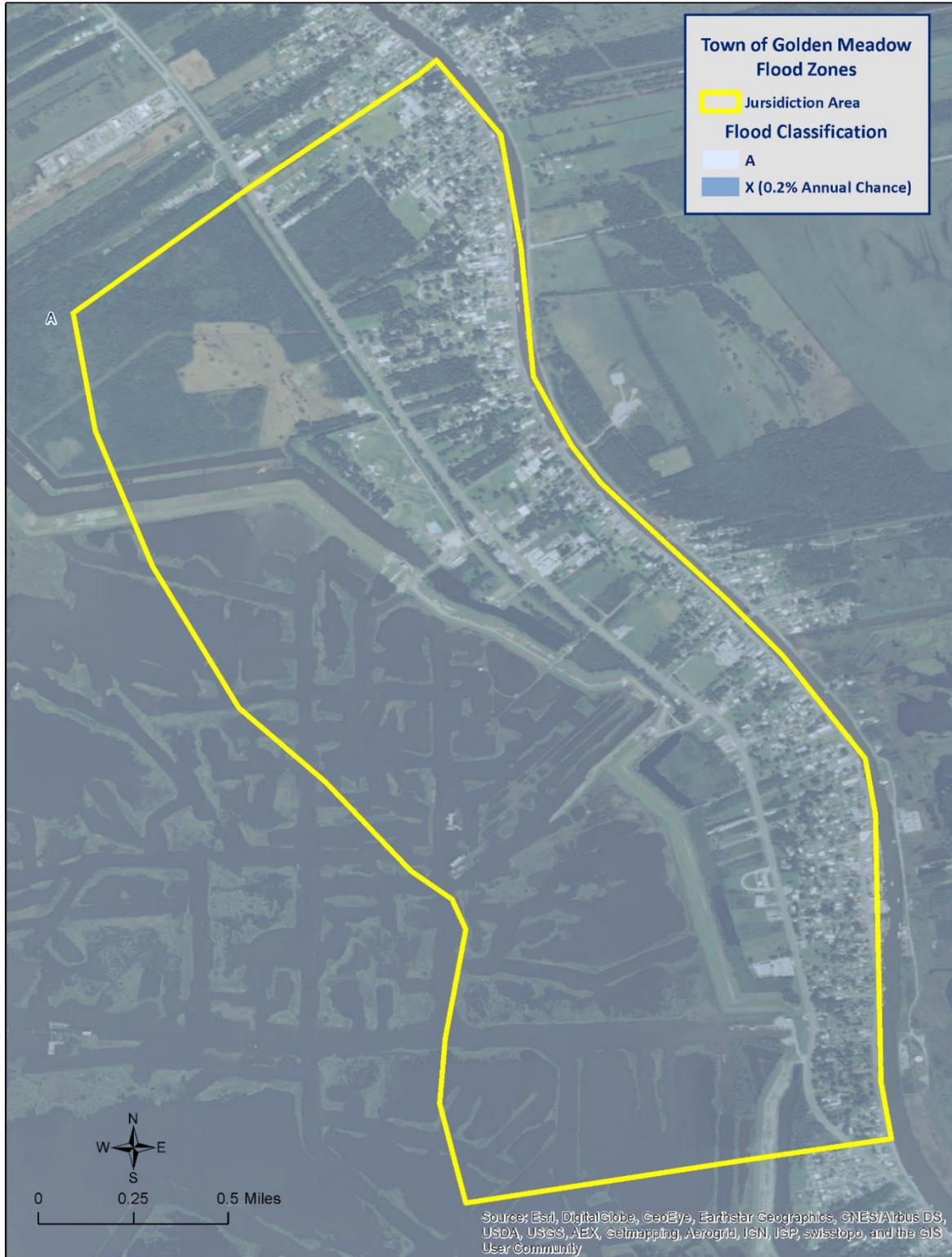


Figure 2-18: Town of Golden Meadow Areas within the Flood Zones



Figure 2-19: Town of Lockport Areas within the Flood Zones



Figure 2-20: City of Thibodaux Areas within the Flood Zones

### Previous Occurrences and Extents

Historically, there have been 21 flood events that have created significant flooding in Lafourche Parish between 1989 and 2014. Below is a brief synopsis of the 21 flooding events over the last 25 years, including each flooding event that has occurred since the parish's last planning update.

*Table 2-19: Historical Floods in Lafourche Parish with Locations from 1989 - 2014*

Date	Extents	Type of Flooding	Estimated Damages	Location
10/5/1996	Coastal flooding resulted from a sustained period of strong east winds. Minor coastal flooding reported in the southern areas of the parish.	Coastal Flood	\$0	UNINCORPORATED LAFOURCHE PARISH
12/27/1996	Periods of heavy rain (3-5 inches) caused extensive street flooding throughout Thibodaux.	Flood	\$0	THIBODAUX
6/18/1997	Heavy rain caused extensive street flooding, submerging 2 automobiles and flooding 6 homes with 5 inches of water.	Flash Flood	\$40,000	THIBODAUX
6/30/1997	One and a half inch of rain fell in a short period of time flooding streets and collapsing a car dealership's metal roof which damaged 4 automobiles.	Flood	\$10,000	THIBODAUX
1/7/1998	Heavy rainfall of 3 to 6 inches occurred throughout Lafourche Parish. Much of the area experienced street flooding and flooding of secondary roadways.	Flood	\$0	PARISHWIDE
6/26/1999	An area of thunderstorms persisted over portions of southeast Louisiana producing 6 to 12 inches of rain across Lafourche Parish. 11.13 inches of rain was recorded just southeast of Thibodaux. Most of the roadways and over 100 homes were flooded.	Flash Flood	\$500,000	PARISHWIDE
10/6/2000	Five homes sustained water damage when nearly 6 inches of rain fell in less than 3 hours.	Flood	\$30,000	LOCKPORT
6/6/2001	Heavy rainfall overwhelmed local drainage and resulted in flooding of several hundred homes.	Flash Flood	\$1,500,000	UNINCORPORATED LAFOURCHE PARISH
6/10/2001	Heavy rainfall aggravated ongoing flooding in the northern portion of the parish that was caused by Tropical Storm Allison a few days prior.	Flash Flood	\$1,000,000	UNINCORPORATED LAFOURCHE PARISH

Date	Extents	Type of Flooding	Estimated Damages	Location
9/25/2002	Tropical Storm Isidor caused localized flooding in the northern portion of the parish.	Flash Flood	\$0	UNINCORPORATED LAFOURCHE PARISH
4/30/2004	Thunderstorms produced rainfall amounts of 5 to 12 inches over sections of Lafourche Parish resulting in the flooding of numerous roadways and 20 homes.	Flash Flood	\$60,000	PARISHWIDE
10/9/2004	Heavy rain from Tropical Storm Matthew caused localized flooding in the town of Golden Meadow.	Flash Flood	\$50,000	GOLDEN MEADOW
10/16/2006	High tides inundated several highways including Louisiana Highway 1.	Coastal Flood	\$0	UNINCORPORATED LAFOURCHE PARISH
12/21/2006	Heavy rainfall caused the flooding of several homes in Golden Meadow and numerous roadways throughout the parish.	Flash Flood	\$0	GOLDEN MEADOW AND UNINCORPORATED LAFOURCHE PARISH
10/22/2007	Rainfall amounts ranging from 3 to 8 inches were common in the northern area of the parish. Street flooding was widespread.	Flash Flood	\$0	THIBODAUX AND UNINCORPORATED LAFOURCHE PARISH
3/27/2009	Widespread and severe flooding occurred in areas of Lafourche Parish due to heavy rain. 150 homes and businesses were flooded including 51 homes in Lockport.	Flash Flood	\$50,000	LOCKPORT AND UNINCORPORATED LAFOURCHE PARISH
3/27/2009	High tides due to persistent strong southeast winds inundated several highways including Louisiana Highway 1.	Coastal Flood	\$0	UNINCORPORATED LAFOURCHE PARISH
12/14/2009	Heavy rainfall resulted in widespread and significant street flooding that threatened a number of homes in Thibodaux and Lockport.	Flash Flood	\$0	THIBODAUX, LOCKPORT, AND UNINCORPORATED LAFOURCHE PARISH
8/29/2010	Heavy rain produced flooding in central and southern portions of Lafourche Parish causing several road closures due to flooding.	Flash Flood	\$0	GOLDEN MEADOW AND UNINCORPORATED LAFOURCHE PARISH

Date	Extents	Type of Flooding	Estimated Damages	Location
7/18/2011	Three homes experienced flooding in Raceland and widespread street flooding was reported in Thibodaux.	Flash Flood	\$10,000	THIBODAUX AND UNINCORPORATED LAFOURCHE PARISH
3/23/2012	Ten to twenty homes in the Raceland and Lockport areas had flood waters enter them. A business in Lockport area had approximately 4 inches of water inside. Extensive street flooding was reported.	Flash Flood	\$40,000	LOCKPORT AND UNINCORPORATED LAFOURCHE PARISH

Based on previous flood events, the worst-case scenarios are based on several different types of flooding events. Storm water excess affects primarily the low lying areas of the parish, and flood depths of up to five feet can be expected in the incorporated areas of Thibodaux, Lockport, and Golden Meadow as well as the low lying areas in the unincorporated areas of the parish. The unincorporated southern areas of Lafourche Parish are susceptible to coastal flooding. Based on historical records the worst case scenario would be flooding levels of approximately two to four feet.

#### Frequency / Probability

While other parts of this plan, along with the State's Hazard Mitigation Plan have relied on the SHELUS database to provide the annual probability, due to Lafourche Parish having multiple jurisdictions, it was necessary to assess the historical data found in the National Climatic Data Center's for Lafourche parish and its jurisdictions to properly determine probability for future flood events. The table below shows the probability and return frequency for each jurisdiction.

*Table 2-20: Flood Annual Probabilities for Lafourche Parish*

Jurisdiction	Annual Probability	Return Frequency
Lafourche Parish (Unincorporated)	64%	1 – 2 years
Golden Meadow	24%	4 – 5 years
Lockport	28%	2 – 4 years
Thibodaux	36%	2 – 3 years

Based on historical record, the overall probability for the entire Lafourche Parish Planning area is 84% with 21 events occurring over a 25 year period. Based on the State's Hazard Mitigation Plan and the amount of significant flood events that have taken place throughout the parish, the Lafourche Parish Planning area can anticipate having a significant flooding event once every one to two years.

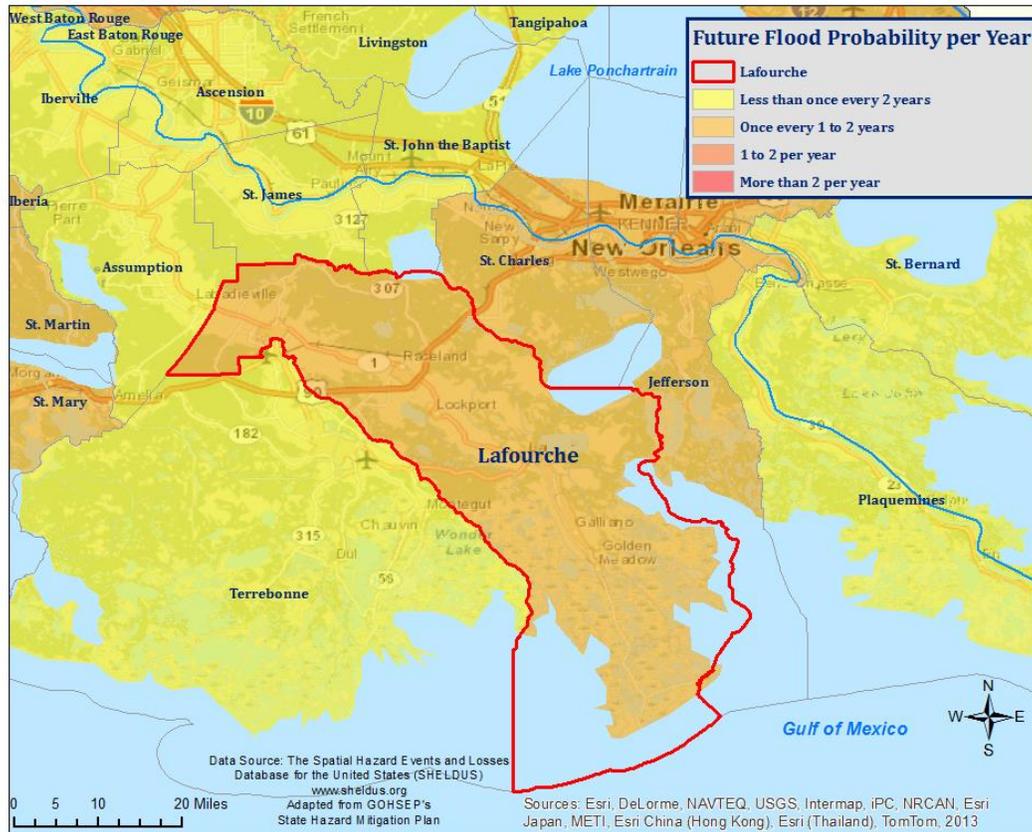


Figure 2-21: Flood Probability for Lafourche Parish

Estimated Potential Losses

Using Hazus-MH Flood Model the 100 year flood scenario, along with the Parish DFIRM, was analyzed to determine losses from this worst-case scenario. *Table 2-21* shows the total economic losses that would result from this occurrence.

Table 2-21: Estimated Losses in Lafourche Parish from a 100 year Flood Event (Source: HAZUS-MH)

Jurisdiction	Estimated Total Losses from 100 Year Flood Event
Lafourche Parish (Unincorporated)	\$3,700,811,000
Golden Meadow	\$157,360,000
Lockport	\$62,528,000
Thibodaux	\$1,513,000
<b>Total</b>	<b>\$3,922,212,000</b>

The Hazus-MH Flood model also provides a breakdown by jurisdiction for seven primary sectors (Hazus occupancy) throughout the parish. The losses for each jurisdiction by sector are listed in the tables below.

*Table 2-22: Estimated 100 year Flood Losses for Unincorporated Lafourche Parish by Sector  
(Source: HAZUS-MH)*

Lafourche Parish (Unincorporated)	Estimated Total Losses from 100 Year Flood Event
Agricultural	\$10,649,000
Commercial	\$500,897,000
Government	\$18,685,000
Industrial	\$139,674,000
Religious / Non-Profit	\$47,292,000
Residential	\$2,951,654,000
Schools	\$31,960,000
<b>Total</b>	<b>\$3,700,811,000</b>

*Table 2-23: Estimated 100 year Flood Losses for Golden Meadow by Sector  
(Source: HAZUS-MH)*

Golden Meadow	Estimated Total Losses from 100 Year Flood Event
Agricultural	\$612,000
Commercial	\$22,223,000
Government	\$570,000
Industrial	\$3,112,000
Religious / Non-Profit	\$2,404,000
Residential	\$124,779,000
Schools	\$3,660,000
<b>Total</b>	<b>\$157,360,000</b>

*Table 2-24: Estimated 100 year Flood Losses for Lockport by Sector  
(Source: HAZUS-MH)*

Lockport	Estimated Total Losses from 100 Year Flood Event
Agricultural	\$0
Commercial	\$3,702,000
Government	\$0
Industrial	\$827,000
Religious / Non-Profit	\$1,040,000
Residential	\$56,516,000
Schools	\$443,000
<b>Total</b>	<b>\$62,528,000</b>

Table 2-25: Estimated 100 year Flood Losses for Thibodaux by Sector  
(Source: HAZUS-MH)

Thibodaux	Estimated Total Losses from 100 Year Flood Event
Agricultural	\$8,000
Commercial	\$77,000
Government	\$34,000
Industrial	\$91,000
Religious / Non-Profit	\$33,000
Residential	\$1,256,000
Schools	\$14,000
<b>Total</b>	<b>\$1,513,000</b>

### Threat to People

The total population within the parish that is susceptible to a flood hazard are shown in the table below.

Table 2-26: Vulnerable Populations Susceptible to a 100 year Flood Event  
(Source: HAZUS-MH)

Number of People Exposed to Flood Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Lafourche Parish (Unincorporated)	<b>77,073</b>	<b>45,801</b>	<b>59.4%</b>
Golden Meadow	<b>2,101</b>	<b>2,101</b>	<b>100%</b>
Lockport	<b>2,578</b>	<b>1,181</b>	<b>45.8%</b>
Thibodaux	<b>14,566</b>	<b>284</b>	<b>1.9%</b>
<b>Total</b>	<b>96,318</b>	<b>49,367</b>	<b>51.3%</b>

The HAZUS-MH flood model was also extrapolated to provide an overview of vulnerable populations throughout the jurisdictions in the tables below:

Table 2-27: Vulnerable Populations Susceptible to a 100 year Flood Event in Unincorporated Lafourche Parish (Source: HAZUS-MH)

Lafourche Parish (Unincorporated)		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	45,801	59.4%
Persons Under 5 years	2,931	6.4%
Persons Under 18 years	10,901	23.8%
Persons 65 Years and Over	6,183	13.5%
White	37,053	80.9%
Minority	8,748	19.1%

Table 2-28: Vulnerable Populations Susceptible to a 100 year Flood Event in Golden Meadow  
(Source: HAZUS-MH)

Golden Meadow		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	2,101	100.0%
Persons Under 5 years	132	6.3%
Persons Under 18 years	367	17.5%
Persons 65 Years and Over	316	15.0%
White	1,753	83.4%
Minority	348	16.6%

Table 2-29: Vulnerable Populations Susceptible to a 100 year Flood Event in Lockport  
(Source: HAZUS-MH)

Lockport		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	1,181	45.8%
Persons Under 5 years	85	7.2%
Persons Under 18 years	185	15.6%
Persons 65 Years and Over	186	15.8%
White	1,086	92.0%
Minority	95	8.0%

Table 2-30: Vulnerable Populations Susceptible to a 100 year Flood Event in Thibodaux  
(Source: HAZUS-MH)

Thibodaux		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	284	1.9%
Persons Under 5 years	18	6.3%
Persons Under 18 years	42	14.6%
Persons 65 Years and Over	41	14.6%
White	181	63.7%
Minority	103	36.3%

### Vulnerability

See Appendix C for parish and municipality buildings that are susceptible to flooding due to proximity within the 100 year flood plain.

## Sinkholes

Sinkholes are areas of ground—varying in size from a few square feet to hundreds of acres, and reaching in depth from one to more than 100 feet—with no natural external surface drainage. Sinkholes are usually found in karst terrain—that is, areas where limestone, carbonate rock, salt beds, and other water-soluble rocks lie below the Earth’s surface. Karst terrain is marked by the presence of other uncommon geologic features such as springs, caves, and dry streambeds that lose water into the ground. In general, sinkholes form gradually (in the case of cover subsidence sinkholes), but they can also occur suddenly (in the case of cover-collapse sinkholes).

Sinkhole formation is a very simple process. When water is absorbed through soil it encounters water-soluble bedrock, which then begins to dissolve, causing sinkholes to begin to form. The karst rock dissolves along cracks; as the fissures grow, soil and other particles fill the gaps, loosening the soil above the bedrock. As the soil sinks from the surface, a depression forms which draws in more water, funneling it down to the water-soluble rock. The increase of water and soil in the rock pushes open the cracks, again drawing more soil and water into it. This positive feedback loop continues, unless clay plugs into the cracks in the bedrock, at which time a pond may form. A sudden cover-collapse sinkhole occurs when the top soil above dissolving bedrock does not sink, but forms a bridge over the soil that is sinking beneath it. Underground soil continues to fill the bedrock fissures, until finally the soil bridge collapses and fills the void beneath it.

Both kinds of sinkholes can occur naturally or through human influence. While sinkholes tend to form naturally in karst areas, sinkholes can form in other geological areas that have been altered by humans such as mining, sewers, hydraulic fracture drilling, groundwater pumping, irrigation, or storage ponds. In all of these cases, and others, the cause for the sinkhole is that support for surface soil has been weakened or substantially removed.

In the United States, 20% of land in the United States is susceptible to sinkholes. Most of this area lies in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania. In Louisiana, most of the sinkholes are precipitated by the human-influenced collapse of salt dome caverns. The collapse of a salt dome is usually a slow process; however, it may occur suddenly and without any advance warning.

## Location

Currently, there are sixteen identifiable salt dome locations in Lafourche Parish. In addition, there are two salt domes in which a two mile buffer area extends into Lafourche Parish. *Figure 2-22* displays the locations of these salt domes with their relative location to the nearest jurisdiction. As depicted in *Figure 2-22* the sink holes are dispersed throughout Lafourche Parish. Two of the sinkholes are located off the shores of Lafourche Parish and are completely discounted. While the majority of sink holes are located in unincorporated areas of the parish, the Bully Camp, Cut Off, and Golden Meadow salt domes’ two mile buffer zones encompass parts of Galliano, Larose, and Golden Meadow respectively. In addition, the Bully Camp and Cut Off salt domes also include small areas of Galliano.

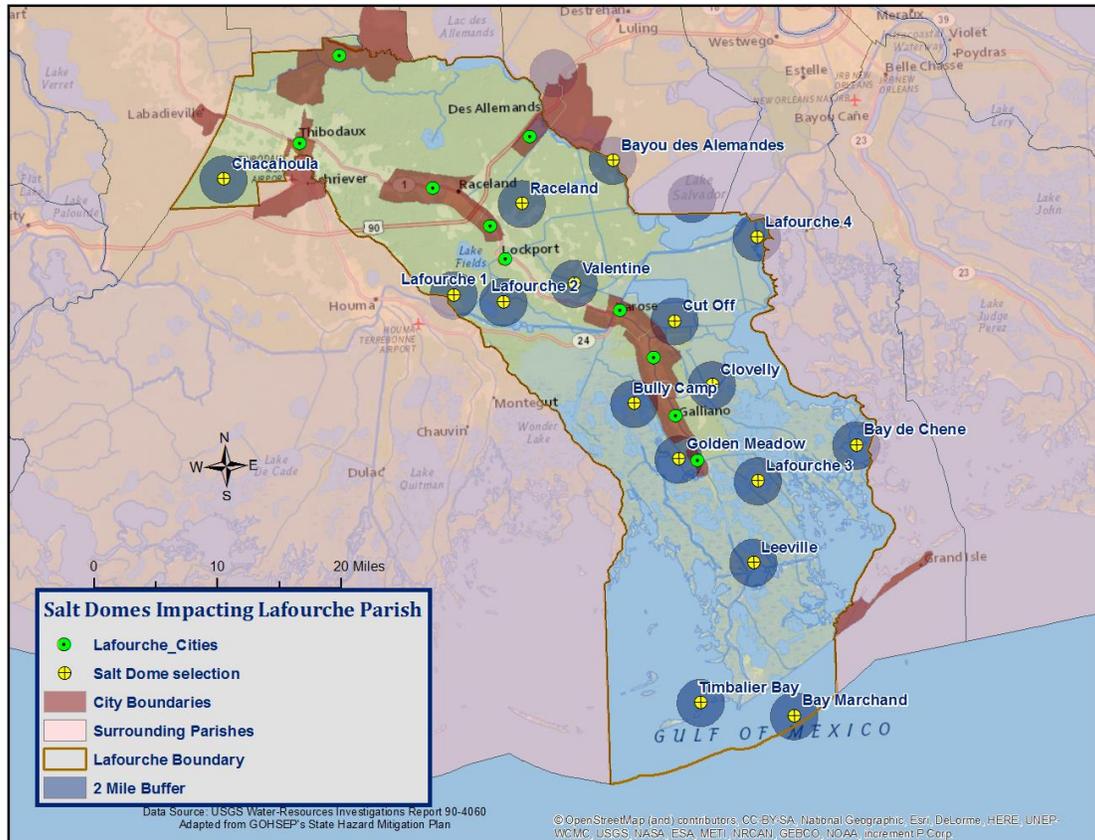


Figure 2-22: Salt dome locations in Lafourche Parish relative to jurisdictions

### Previous Occurrences / Extent

There have been no recorded incidents of sinkholes or salt dome collapses in Lafourche Parish to date.

### Estimated Potential Losses

Of each of the sixteen salt domes that influence Lafourche parish, nine were analyzed to determine the number of people and houses that are potentially susceptible to losses from a sink hole materializing from one of the salt domes. The remainder were discounted because their locations are not near any populated areas of the parish. The following tables are based on conducting a two mile buffer around the center of the salt dome. The values were determined by querying the 2010 U.S. Census block data to determine the number of houses and people that are located within two miles of each salt dome. Critical facilities were also analyzed to determine if they fell within the two mile buffer of a salt dome. Total value for all occupancy group from HAZUS-MH was used to estimate a total loss of all facilities that were within two miles of a salt dome.

The salt dome that poses the greatest risk to Lafourche parish is the Golden Meadow Salt Dome, which has a buffer that extends into Golden Meadow. The Golden Meadow Salt Dome contains a total of 814 homes and a populace of 1,843 within its two mile buffer.

*Table 2-31: Estimated Potential Losses from a Sinkhole formation  
(Source: U.S. 2010 Census Data and HAZUS-MH)*

Salt Dome Name	Total Building Exposure	Critical Infrastructure Exposure	Number of People Exposed	Number of Houses Exposed
<b>Chacahoula</b>	\$13,841,000	0	2	1
<b>Lafourche1</b>	\$134,192,000	0	1,161	436
<b>Lafourche2</b>	\$16,233,000	0	109	36
<b>Raceland</b>	\$29,525,000	0	508	181
<b>Valentine</b>	\$58,022,000	1	123	40
<b>Cut Off</b>	\$3,424,000	0	7	13
<b>Golden Meadow</b>	\$279,342,000	6	1,843	814
<b>Leeville</b>	\$25,380,000	0	19	28
<b>Bully Camp</b>	\$1,885,000	0	39	15

As a result of the isolated locations of the salt domes, there is little to no risk to people in Lafourche Parish, with the exception being the residents within two miles of the Golden Meadow, Lafouche1, and Raceland Salt Domes. The remaining six salt domes that were analyzed also pose some risk but not nearly to the same degree as the Golden Meadow Salt Dome.

#### *Vulnerability*

See Appendix C for parish and municipality building exposure to a sinkhole hazard.

## 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, with 70% of the world's reported tornadoes occurring within the continental United States, they are one of the most significant hazards Americans face. Tornadoes and waterspouts form during severe weather events, such as thunderstorms and hurricanes, when cold air overrides a layer of warm air, causing the warm air to rise rapidly, which usually occurs in a counterclockwise direction in the northern hemisphere. The updraft of air in tornadoes always rotates because of wind shear (differing speeds of moving air at various heights), in either a clockwise or counterclockwise direction - clockwise rotations (in the northern hemisphere) will sustain the system, at least until other forces cause it to die seconds to minutes later.

Since February 1, 2007, the Enhanced Fujita (EF) Scale has been used to classify tornado intensity. The EF Scale classifies tornadoes based on their damage pattern rather than wind speed; wind speed is then derived and estimated. This contrasts with the Saffir-Simpson scale used for hurricane classification, which is based on measured wind speed. Table 2-37 shows the EF scale in comparison with the old Fujita (F) Scale, which was used prior to February 1, 2007. When discussing past tornadoes, the scale used at the time of the hazard is used. Adjustment between scales can be made using [Table 2-32](#).

*Table 2-32: Comparison of the Enhanced Fujita (EF) Scale to the Fujita (F) Scale*

Wind Speed (mph)	Enhanced Fujita Scale					
	EF0	EF1	EF2	EF3	EF4	EF5
	65-85	86-110	111-135	136-165	166-200	>200
	Fujita Scale					
	F0	F1	F2	F3	F4	F5
	<73	73-112	113-157	158-206	207-260	>261

The National Weather Service (NWS) has the ability to issue advisory messages based on forecasts and observations. The following are the advisory messages that may be issued with definitions of each:

- Tornado Watch:** Issued to alert people to the possibility of a tornado developing in the area. A tornado has not been spotted but the conditions are favorable for tornadoes to occur.
- Tornado Warning:** Issued when a tornado has been spotted or when Doppler radar identifies a distinctive "hook-shaped" area within a thunderstorm line.

Structures within the direct path of a tornado vortex are often reduced to rubble. Structures adjacent to the tornado's path are often severely damaged by high winds flowing into the tornado vortex, known as inflow winds. It is here, adjacent to the tornado's path, that the building type and construction techniques are critical to the structure's survival. Although tornadoes strike at random, making all buildings vulnerable, mobile homes, homes on crawlspaces, and buildings with large spans are more likely to suffer damage.

The major health hazard from tornadoes is physical injury from flying debris or being in a collapsed building or mobile home. Within a building, flying debris or missiles are generally stopped by interior walls. However, if a building has no partitions, any glass, brick, or other debris blown into the interior is life threatening. Following a tornado, damaged buildings are a potential health hazard due to instability, electrical system damage, and gas leaks. Sewage and water lines may also be damaged.

Peak tornado activity in Louisiana occurs during the spring, as it does in the rest of the United States. Nearly one-third of observed tornadoes in the United States occur during April. About half of those in Louisiana, including many of the strongest, occur between March and June. Fall and winter tornadoes are less frequent, but the distribution of tornadoes throughout the year is more uniform in Louisiana than in locations farther north.

#### *Location*

While there is a significant tornado record in Lafourche parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in Lafourche parish as all of its jurisdictions. Because a tornado has a similar probability of striking anywhere within the planning area for Lafourche parish, all jurisdictions are equally at risk for tornadoes.

#### *Previous Occurrences / Extent*

Lafourche Parish has not experienced any federally declared disasters due to a tornado alone. SHELDTUS reports a total of seventeen tornadoes or waterspouts occurring within the boundaries of Lafourche Parish between the years of 1989-2014. The tornadoes experienced in Lafourche Parish have been EF0's on the EF scale and ranged from F0 to F4 on the F scale. The worst case scenario Lafourche Parish can expect in the future is an EF0 tornado.

The tornado that caused the most damage to property and resulted in the most injuries and fatalities occurred on October 3, 1964. The F4 tornado was responsible for over \$3,798,702 in damage and caused 165 injuries and 22 deaths. The tornado touched down in the east side of Bayou Lafourche where it then crossed to the west side before lifting and carrying debris with it into the area. It then descended, destroying several homes and automobiles for approximately one mile along Highway 1 around the Intracoastal Canal Bridge. Most of the deaths were results of people trapped in their homes after the homes collapsed, while most injuries were results of flying debris.

Table 2-33: Historical Tornadoes in Lafourche Parish with Locations from 1989-2014

Date	Impacts	Property Damage	Location	Magnitude
March 15, 1990	0.5 mile path with a width of 23 yards. Removed a roof of a mobile home and damaged two cars with debris.	\$8,912	UNINCORPORATED LAFOURCHE PARISH	F0
December 3, 1990	1 mile path with a width of 43 yards. Damaged one mobile home.	\$891	UNINCORPORATED LAFOURCHE PARISH	F1
March 1, 1991	1 mile path with a width of 50 yards. Minor roof damage to 15 homes.	\$8,552	UNINCORPORATED LAFOURCHE PARISH	F1
May 8, 1991	1 mile path with a width of 30 yards. Damaged a roof and blew away a shed.	\$8,552	UNINCORPORATED LAFORUCHE PARISH	F1
January 12, 1992	0.2 mile path with a width of 20 yards. Sucked an air conditioner unit from a parked van. Removed shingles from a roof that were later found embedded in the van's roof.	\$8,302	UNINCORPORATED LAFOURCHE PARISH	F1
November 20, 1992	0.2 mile path with a width of 23 yards. Blew a mobile home off its blocks and pushed two elementary school buildings off their foundations.	\$8,302	UNINCORPORATED LAFOURCHE PARISH	F1
April 11, 1997	0.3 mile path with a width of 100 yards. Caused minor damage to 23 homes. Downed trees and power lines.	\$72,572	GALLIANO	F0
September 10, 1998	4 mile path with a width of 50 yards. Destroyed several mobile homes and three conventional homes had roofs blown off. Two homes were moved off their foundation and two businesses suffered extensive damage.	\$714,592	CUT OFF	F2
November 20, 1998	0.3 mile path with a width of 20 yards. Damaged car windows and downed several power lines.	\$21,438	LOCKPORT	F0
January 2, 1999	1 mile path with a width of 50 yards. Damaged 35 homes along with a post office and a car wash.	\$384,533	BAYOU BOEUF	F1
May 27, 1999	12 mile path with a width of 50 yards. Several buildings experienced roof damage as well as window damage.	\$69,915	VALENTINE	F0
March 15, 2000	0.5 mile path with a width of 30 yards. Destroyed one mobile home and injured the occupant.	\$27,057	LAROSE	F1
October 9, 2004	0.1 mile path with a width of 20 yards. Spawned from Tropical Storm Matthew.	\$6,166	GOLDEN MEADOW	F0

Date	Impacts	Property Damage	Location	Magnitude
April 6, 2005	2 mile path with a width of 50 yards. Damaged 12 structures including several port buildings and three businesses. Over 100 vehicles were damaged and approximately one mile of power lines were downed.	\$298,204	PORT FOURCHON	F2
October 16, 2006	0.75 mile path with a width of 40 yards. Overturned several mobile homes injuring three occupants. Recreational boats were overturned and seven shrimp boats broke loose from their moorings.	\$46,222	LEEVILLE	F1
July 13, 2012	0.17 mile path with a width of 30 yards. Damaged a security guard shack and two vehicles.	\$15,220	PORT FOURCHON	EF0
February 24, 2013	1.95 mile path with a width of 25 yards. Damaged house canopies and roofs. High school fence was knocked down along with several power lines.	\$50,000	CLOTILDA	EF0

Since the 2010 Hazard Mitigation Plan Update, Lafourche parish has experienced two tornado touch downs. The following is a brief synopsis of these events:

#### [July 13, 2012 – EF0 Tornado in Port Fourchon](#)

A waterspout moved onshore at Port Fourchon during the afternoon hours, damaging a security guard shack and two automobiles. One person was slightly injured.

#### [February 24, 2013 – EF0 Tornado in Clotilda](#)

A stationary front with several waves of low pressure ahead of it produced several rounds of severe weather in southeast Louisiana. A weak tornado touched down in the Mathews area and moved north on an intermittent path to the intersection of US Highway 90 and Louisiana Highway 308. A few house canopies were damaged along with roof and fascia damage to a few structures. Fencing was knocked down at the high school and a HVAC unit was blown off a small building. Several power lines and power poles were knocked down on US Highway 90. Estimated maximum winds were 85 mph.

#### [Frequency / Probability](#)

Tornadoes are a sporadic occurrence within Lafourche Parish with an annual chance of occurrence calculated at 68% based on the records for the past 25 years (1989-2014). Figure 2-23 displays the density of tornado touchdowns in Lafourche Parish and neighboring parishes. Based on the State Hazard Mitigation Plan, the overall probability of a tornado touching down in Lafourche Parish is once every one to two years.

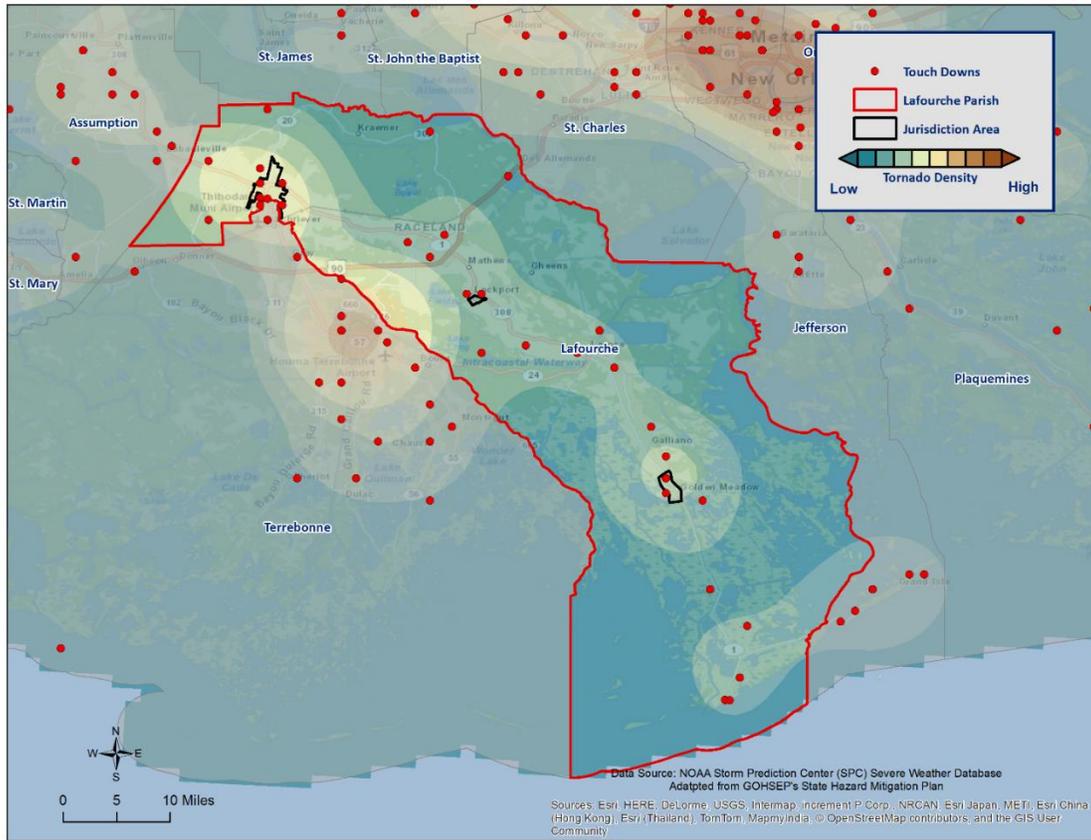


Figure 2-23: Location and Density of Tornadoes to Touchdown in Lafourche Parish (Source: NOAA/SPC Severe Weather Database)

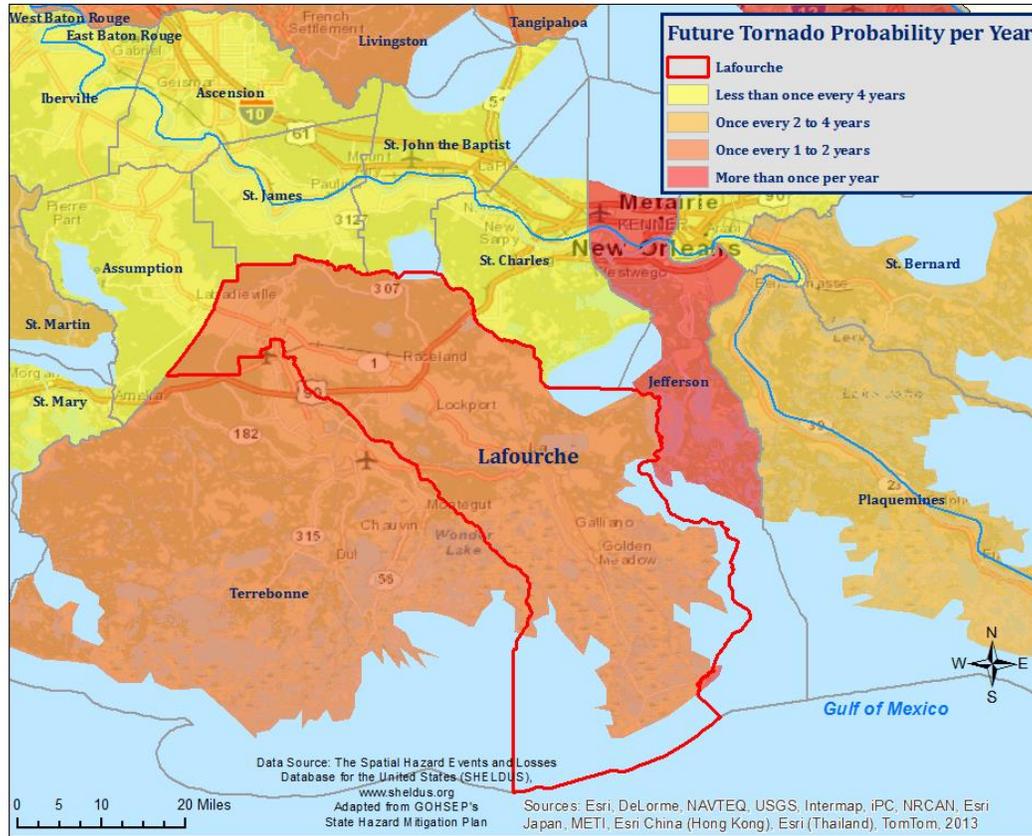


Figure 2-24: Probability of Tornado Events in Lafourche and Adjacent Parishes Based on Data from 1987-2012

(Source: State of Louisiana Hazard Mitigation Plan)

*Estimated Potential Losses*

According to the SHELUDS database, there have been seventeen tornadoes that have caused some level of property damage. The total damage from the actual claims for property is \$1,295,500 with an average cost of \$76,206 per tornado strike. When annualizing the total cost over the 25 year record, total annual losses based on tornadoes are estimated to be \$51,820. To provide an estimated annual potential loss per jurisdiction, the 2010 Census population was used to assign the estimated potential losses proportionally across the jurisdictions. Based on the 2010 Census data, *Table 2-34* provides an annual estimate of potential losses for Lafourche parish.

Table 2-34: Estimated Annual Losses for Tornadoes in Lafourche Parish

Estimated Annual Losses for Tornadoes in Lafourche Parish			
Lafourche Parish (Unincorporated) (80% of Population)	Golden Meadow (2.2% of Population)	Lockport (2.7% of Population)	Thibodaux (15.1% of Population)
\$41,466	\$1,130	\$1,387	\$7,837

Table 2-35 presents an analysis of building exposure that are susceptible to tornadoes by general occupancy type for Lafourche Parish along with the percentage of building stock that are mobile homes.

Table 2-35: Building Exposure by General Occupancy Type for Tornadoes in Lafourche Parish  
(Source: FEMA's Hazus 2.2)

Building Exposure by General Occupancy Type for Tornadoes Exposure Types (\$1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
5,391,107	794,948	232,218	15,707	84,193	33,129	53,942	5.67%

The Parish has suffered through a total of seven days in which tornadoes or waterspouts have accounted for fifteen injuries and one fatality during this 25 year period (Table 2-36). The average injury per event for Lafourche parish is 0.88 per tornado with an average of 0.6 per year for the 25 year period. The average fatality per event is 0.06 per tornado with an average of 0.04 per year during the same time period.

Table 2-36: Tornadoes in Lafourche Parish by Magnitude that Caused Injuries or Deaths

Date	Magnitude	Deaths	Injuries
March 1, 1991	F1	0	1
November 20, 1992	F1	0	1
September 10, 1998	F2	1	6
March 15, 2000	F1	0	1
April 6, 2005	F2	0	2
October 16, 2006	F1	0	3
July 13, 2012	EFO	0	1

In assessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 5.67% of all housing in Lafourche parish consists of manufactured housing. Based on location data collected in a previous hazard mitigation project, there are 59 known locations where manufactured housing is concentrated. Those 59 locations have an overall number of manufactured houses ranging from 1 to 223. The location and density of manufactured houses can be seen in [Figure 2-25](#).

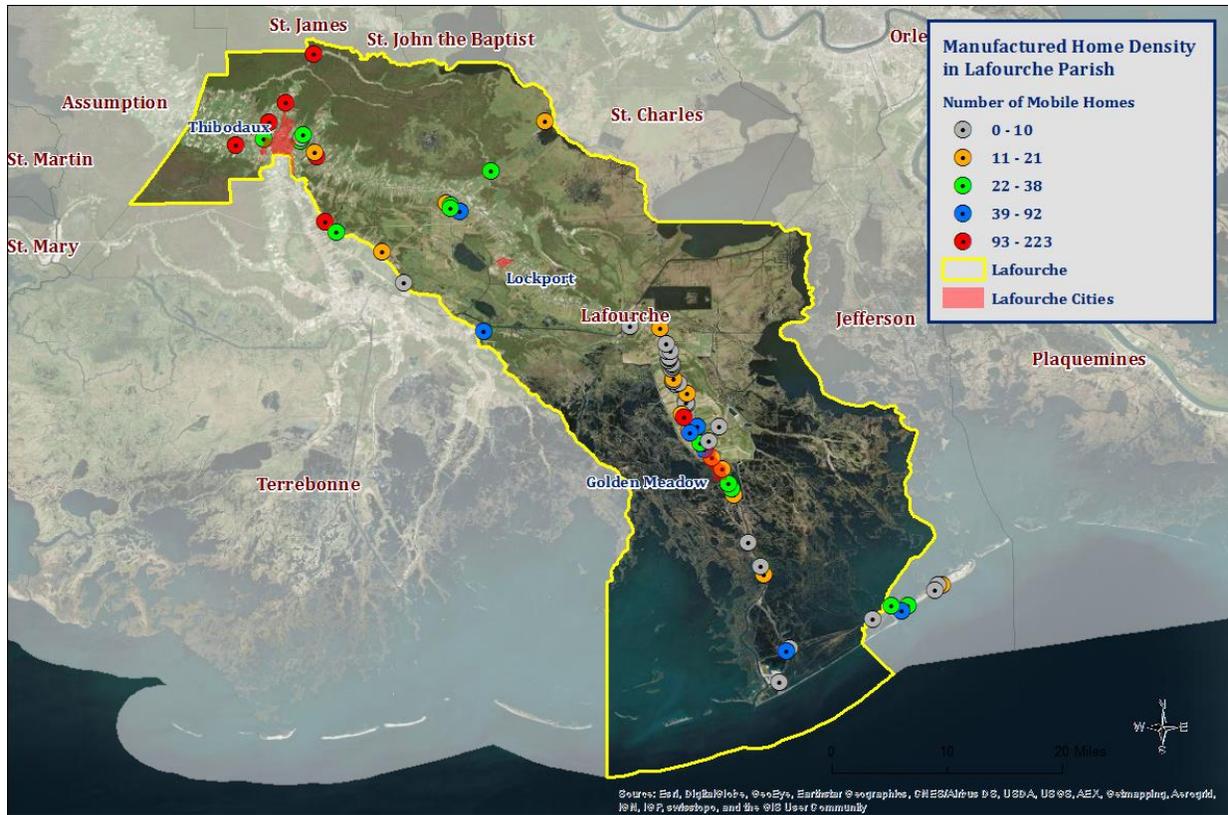


Figure 2-25: Location and Approximate Number of Units in Manufactured Housing Locations throughout Lafourche Parish

*Vulnerability*

See Appendix C for parish and municipality building exposure to tornado hazards.

### Tropical Cyclones

Tropical cyclones are among the most devastating hazards that Louisiana faces. These spinning, low-pressure air masses draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes. Usually, these storms begin as clusters of oceanic thunderstorms off the western coast of Africa, moving westward in the trade wind flow. The spinning of these thunderstorm clusters begins because of the formation of low pressure in a perturbation in the westerly motion of the storms associated with differential impacts of the Earth's rotation. The west-moving, counterclockwise-spinning collection of storms may then gather strength as humid air draws toward the low-pressure center, forming a tropical depression (defined when the maximum sustained surface wind speed is 38 mph or less), then a tropical storm (when the maximum sustained surface wind ranges from 39 mph to 73 mph), and finally a hurricane (when the maximum sustained surface wind speeds exceed 73 mph). On the next page, [Table 2-37](#) presents the Saffir-Simpson Hurricane Wind Scale, which categorizes tropical cyclones based on sustained winds.

Table 2-37: Saffir-Simpson Hurricane Wind Scale

Saffir-Simpson Hurricane Wind Scale			
Category	Sustained Winds	Pressure	Types of Damage Due to Winds
Tropical Depression	<39 mph	N/A	
Tropical Storm	39-73 mph	N/A	
1	74-95 mph	>14.2 psi	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding, and gutters. Large branches of trees will snap and shallow-rooted trees may be toppled, especially after the soil becomes waterlogged. Extensive damage to power lines and poles likely will result in power outages that could last several days.
2	96-110 mph	14-14.2 psi	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallow-rooted trees will be snapped or uprooted, especially after the soil becomes waterlogged, and block numerous roads. Near total power loss is expected with outages that could last from several days to weeks.
3	111-129 mph	13.7 -14 psi	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, especially after the soil becomes waterlogged, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	130-156 mph	13.3-13.7 psi	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted especially after the soil becomes waterlogged, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	157 mph or higher	<13.7 psi	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks to months.

Many associated hazards can occur during a hurricane, including heavy rain, flooding, high winds, and tornadoes. A general rule of thumb in coastal Louisiana is that the number of inches of rainfall to be expected from a tropical cyclone is approximately 100, divided by the forward velocity of the storm in mph – with this approximation, a fast-moving storm (20 mph) might be expected to drop five inches of rain while a slow-moving (five mph) storm could produce totals of around twenty inches. However, no two storms are alike, and such generalizations have limited utility for planning purposes. Hurricane Beulah, which struck Texas in 1967, spawned 115 confirmed tornadoes.

In recent years, extensive coastal development has resulted in significantly increased damage from storm surge, resulting in storm surge being the greatest natural hazard threat to property and loss of life in the state. Storm surge is defined as a temporary rise in sea level generally caused by reduced air pressure and strong onshore winds associated with a storm system near the coast. Although storm surge can technically occur at any time of the year in Louisiana, surges caused by hurricanes can be particularly deadly and destructive. Such storm surge events are often accompanied by large, destructive waves that can inflict high numbers of fatalities and economic losses. In 2005, Hurricane Katrina clearly demonstrated the destructive potential of this hazard, as it produced the highest modern-day storm surge levels in the state of Louisiana, reaching up to 18.7 feet in St. Bernard Parish, near Alluvial City.

Property can be damaged by the various forces that accompany a tropical storm. High winds can directly impact structures in three ways: wind forces, flying debris and pressure. The force of wind alone can topple trees, break tree limbs and destroy loose items, such as television antennas and power lines. Many objects on land can be moved by high winds. As winds increase, so does the pressure against stationary objects. Pressure against a wall rises with the square of the wind speed. For some structures, this force is enough to cause failure. The potential for damage to structures is increased when debris breaks the building “envelope” and allows the wind pressures to impact all surfaces (the building envelope includes all surfaces that make up the barrier between indoors and outdoors, such as the walls, foundations, doors, windows, and roofs). Buildings in need of maintenance as well as mobile homes are most subject to wind damage. High winds also are a cause of larger sized waves. Extended pounding by waves can demolish any structure not properly designed. The waves are also capable of eroding sand beaches, roads, and foundations. When foundations are undermined, the building will collapse.

Nine out of ten deaths during hurricanes are caused by storm surge flooding. In addition, falling tree limbs and flying debris caused by high winds have the ability to cause injury or death. Downed trees and damaged buildings pose a potential health hazard due to instability, electrical system damage, broken pipelines, chemical releases, and gas leaks. Sewage and water lines may also be damaged as a result of hurricanes and tropical storms. In addition, salt water and fresh water intrusions from storm surge may result in the forcing of animals, such as snakes, into areas occupied by humans.

#### *Location*

Hurricanes are one of the most significant hazard threats to all of south Louisiana. With any hurricane having the potential to devastate multiple parishes during a single event, there is the risk of a tropical cyclone impacting anywhere within the planning area for Lafourche Parish. Therefore, all jurisdictions are equally at risk for tropical cyclones.

### *Previous Occurrences / Extent*

While tropical cyclones have the ability to affect each part of the state of Louisiana, the central Gulf of Mexico coastline is among the most hurricane-prone locations in the United States. The SHELUDS database reports a total of sixteen tropical cyclone events occurring within the boundaries of Lafourche Parish between the years 2002-2014 (*Table 2-38*). The tropical cyclone events experienced in Lafourche Parish include depressions, storms, and hurricanes. As a worst case scenario, Lafourche Parish can expect to experience hurricanes at the Category 3 level in the future.

*Table 2-38: Historical Tropical Cyclone Events in Lafourche Parish from 2002- 2014  
(Source: SHELUDS)*

Date	Name	Storm Type While Impacting Parish Name Parish
September 25, 2002	Isidore	Tropical Storm
October 2, 2002	Lili	Hurricane – Category 1
June 30, 2003	Bill	Tropical Storm
September 15, 2004	Ivan	Tropical Storm
September 22, 2004	Ivan	Tropical Storm
October 9, 2004	Matthew	Tropical Storm
July 5, 2005	Cindy	Hurricane – Category 1
August 28, 2005	Katrina	Hurricane – Category 3
September 23, 2005	Rita	Tropical Storm
August 3, 2008	Edouard	Tropical Storm
August 24, 2008	Fay	Tropical Depression
September 1, 2008	Gustav	Hurricane – Category 2
September 11, 2008	Ike	Tropical Storm
November 9, 2009	Ida	Tropical Storm
September 2, 2011	Lee	Tropical Storm
August 28, 2012	Isaac	Hurricane – Category 1

### *Hurricane Betsy (1965)*

Hurricane Betsy made landfall near the mouth of the Mississippi River in Louisiana on September 9, 1965. Hurricane Betsy was a Category 3 storm with maximum winds of 140 mph recorded in Terrebonne Parish. The event caused wind and water damage to area homes and businesses parishwide. In addition, the area's agricultural crops (sugarcane) suffered significant losses. One fatality was reported as a result of Hurricane Betsy.

### *Hurricane Andrew (1992)*

Hurricane Andrew came ashore August 26, 1992 as a Category 3 storm on a track that would guide it up the Atchafalaya River system. Damage caused by the storm was catastrophic with few structures in Lafourche Parish spared by the storm's relentless winds. Storm surge was minimal as the storm followed the coast westward before turning north. However, a small area within the levee protection of the South Lafourche Levee District experienced flooding. While localized areas experienced flooding, wind remained the primary damage factor. Pre-Katrina, Hurricane Andrew was most often referred to as the most expensive storm in United States history with damage totals nearing \$55 billion.

#### [Tropical Storm Allison \(2001\)](#)

In June 2001, Tropical Storm Allison made landfall in the state of Texas and moved across Louisiana, causing extensive flood damage. Up to thirty inches of rain fell in some areas of the state. In Lafourche Parish, Thibodaux received approximately 29.8 inches of rain from Tropical Storm Allison. Over 2,000 homes were flooded in Livingston, Lafourche, St. Tammany, and Ascension Parishes. Tropical Storm Allison caused the most significant flooding of the Amite and Comite Basins since 1983. Damage in excess of \$50 million was caused by Tropical Storm Allison in Louisiana.

#### [Tropical Storm Isidore \(2002\)](#)

Tropical Storm Isidore made landfall in Grand Isle, Louisiana on September 27, 2002. Tropical Storm Isidore had a large circulation with high force winds extending several hundreds of miles from its center. This caused significant storm surge over a large area specifically in areas along Lake Pontchartrain and the Gulf of Mexico where storm surges of four to six feet above normal were measured. Low lying areas, roadways, and some non-elevated structures on the lake were flooded. In Lafourche Parish, an F1 tornado spawned from the storm touched down in Golden Meadow, causing minor property damage to outbuildings.

#### [Hurricane Cindy \(2005\)](#)

Hurricane Cindy made landfall for the second time near Grand Isle, Louisiana on July 5, 2005 as a Category 1 hurricane with sustained winds of 70 mph. The hurricane was originally thought to be a tropical storm at peak strength, but was upgraded to a Category 1 hurricane during post-storm analysis. Hurricane Cindy was responsible for five deaths in the United States. Localized flooding resulting from intense rainfall and power outages were reported throughout Lafourche Parish.

#### [Hurricane Katrina \(2005\)](#)

Hurricane Katrina was one of the strongest and most destructive hurricanes on record to impact the coast of the United States. The National Hurricane Center ranked Katrina as the costliest storm (both before and after adjusting for inflation) and the third deadliest in the U.S. since 1851. The hurricane made landfall in Plaquemines Parish on August 29, 2005, as a Category 3 storm and continued on a north northeast track with a second landfall occurring near the Louisiana and Mississippi border.

Flood damage in Lafourche Parish was widespread in the areas outside of levee protection. According to the U.S. Department of Housing and Urban Development, 63% of homes in Louisiana were damaged or destroyed by wind. Hurricane Katrina was the most damaging natural disaster in United States history with approximately \$81 billion worth of damage.

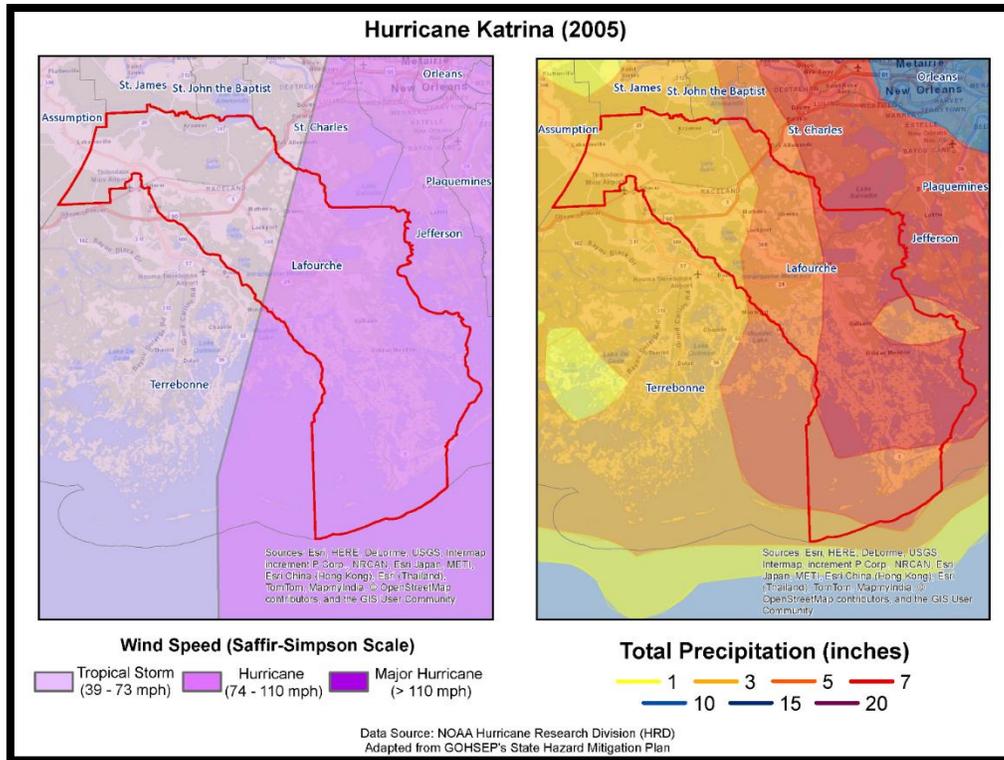


Figure 2-26 : Wind Speed and Precipitation Totals for Hurricane Katrina in Lafourche Parish

### Hurricane Rita (2005)

While Hurricane Katrina and resulting levee failures captured headlines worldwide, lesser known but just as destructive Hurricane Rita wreaked havoc on southwestern Louisiana less than a month later. The storm made landfall as a Category 3 hurricane in Cameron Parish. Across southeast Louisiana, the main affect from Hurricane Rita was the substantial storm surge flooding that occurred in low-lying communities across coastal areas of southern Terrebonne, southern Lafourche, and southern Jefferson Parishes where numerous homes and businesses were flooded. Some of the most substantial damage occurred in southern Terrebonne Parish where storm surge of five to seven feet above normal overtopped or breached local drainage levees inundating many small communities. Newspaper accounts indicated approximately 10,000 structures were flooded in Terrebonne Parish. Lafitte and other communities in lower Jefferson Parish also suffered extensive storm surge flooding. Storm surge flooding also occurred in areas adjacent to Lake Pontchartrain and Lake Maurepas, with some homes and businesses flooded in areas from Slidell to Mandeville and Madisonville. Approximately 1,500 structures were reported flooded in Livingston Parish near Lake Maurepas. Repaired levees damaged by Hurricane Katrina in late August were overtopped or breached along the Industrial Canal in New Orleans resulting in renewed flooding in adjacent portions of New Orleans and St. Bernard Parish, although the flooding was much more limited in areal coverage than during Hurricane Katrina.

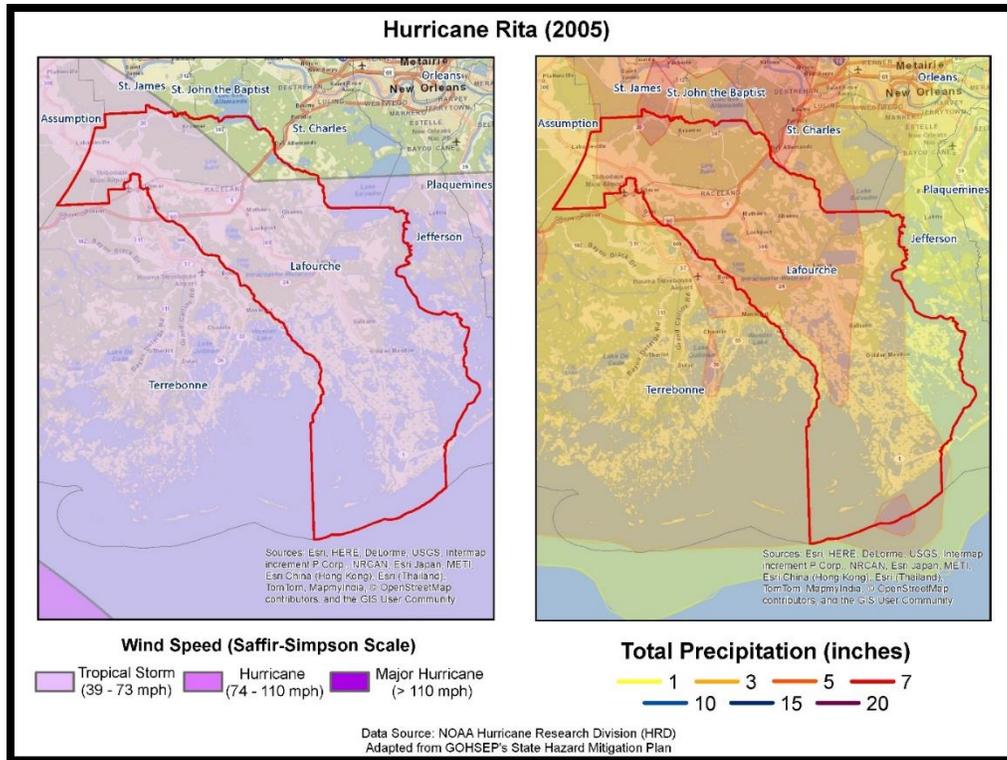


Figure 2-27: Wind Speed and Precipitation Totals for Hurricane Rita in Lafourche Parish

Flood damage in Lafourche Parish was concentrated south of U.S. Highway 90 in areas outside of levee protection. Hurricane Rita caused \$10 billion in damage. Few deaths and injuries were reported as a result of Hurricane Rita.

#### Hurricane Gustav (2008)

Hurricane Gustav emerged into the southeast Gulf of Mexico as a major Category 3 hurricane on August 31, after developing in the Caribbean Sea and moving across western Cuba. Gustav tracked northwestward across the Gulf toward Louisiana and made landfall as a Category 2 hurricane near Cocodrie, Louisiana during the morning of September 1. Gustav continued to move northwest across south Louisiana and weakened to a Category 1 storm over south central Louisiana later that day. The storm diminished to a tropical depression over northwestern Louisiana on September 2.

The highest wind gust recorded was 102 knots or 117 mph at a USGS site at the Houma Navigational Canal and at the Pilot Station East C-MAN near the Southwest Pass of the Mississippi River. The highest sustained wind of 91 mph was recorded at the Pilot's Station East C-MAN site. However, due to the failure of equipment at some observation sites during the storm, higher winds may have occurred. The minimum sea level pressure measured was 951.6 millibars at a USGS site at Caillou Lake southwest of Dulac and 954.5 millibars at the LUMCON facility near Dulac. Rainfall varied considerably across southeast Louisiana ranging from around four inches to just over eleven inches.

Gustav produced widespread wind damage across southeast Louisiana, especially in the areas of Houma and Thibodaux, spanning throughout the greater Baton Rouge area. Hurricane force wind gusts occurred

across the inland areas through Baton Rouge and surrounding parishes. A peak wind gust of 91 mph was recorded at the Baton Rouge (Ryan Field) Airport at 112 PM CST. This recorded gust was only one mph less than the highest wind gust previously recorded during Hurricane Betsy in 1965. The electric utility serving most of southeast Louisiana reported 75 to 100 percent of utility customers were without power after the storm from Lafourche and Terrebonne Parishes northwest, through the Baton Rouge area and into southwest Mississippi and central Louisiana. Considerable damage occurred to many houses and structures as large tree limbs and trees were toppled by the hurricane force winds. Preliminary estimates from the American Red Cross indicated that around 13,000 single family dwellings were damaged by the hurricane in southeast Louisiana, and several thousand more apartments and mobile homes. Early estimates from Louisiana Economic Development indicated that Gustav caused at least \$4.5 billion in property damage in Louisiana, including insured and uninsured losses.

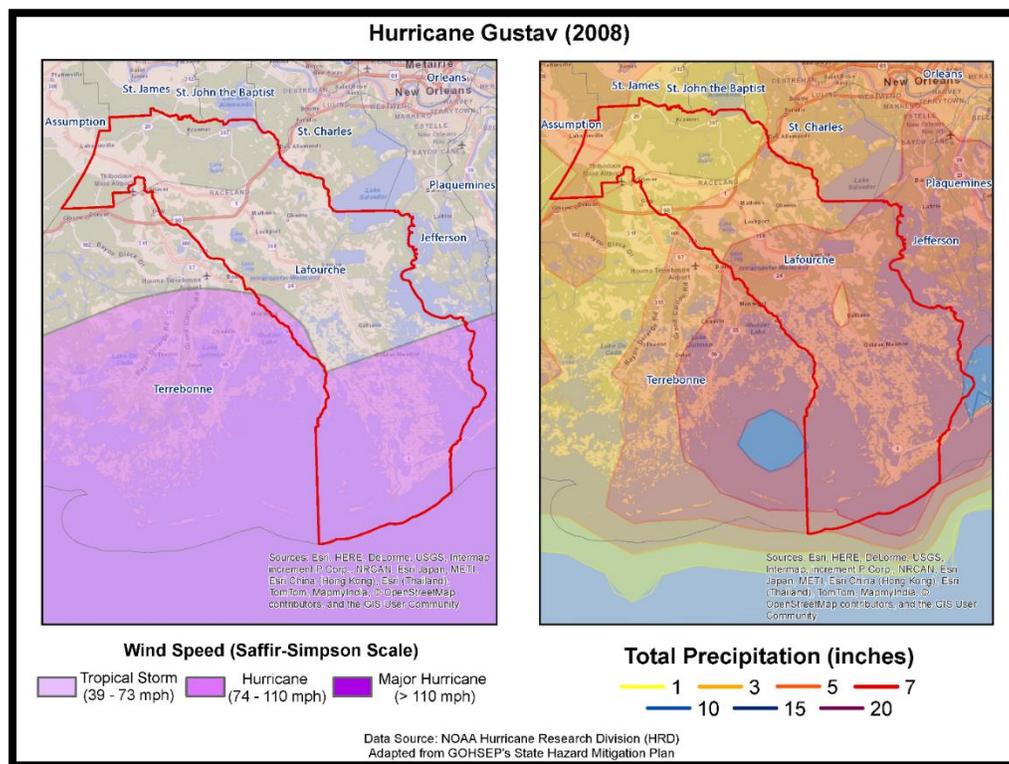


Figure 2-28: Wind Speed and Precipitation Totals for Hurricane Gustav in Lafourche Parish

### Hurricane Ike (2008)

Hurricane Ike caused tropical storm wind gusts of fifty to sixty mph, resulting in minor wind damage across Acadia Parish. Hurricane Ike caused wind damage, storm surge flooding, and tornadoes across southwest Louisiana. Ike made landfall near Galveston, TX early in the morning on September 13 as a strong Category 2 hurricane. Sustained hurricane force winds were confined to extreme western Cameron Parish. The highest recorded winds in southwest Louisiana were at Lake Charles Regional Airport with sustained winds of 46 knots (53 mph) and gusts of 67 knots (77 mph). The lowest pressure reading occurred at Southland Field near Sulphur, LA, with a low of 994.6 mb. Several tornadoes were reported across southwest

Louisiana, with the most significant touchdown located near Mamou. One home lost its roof while another ten to fifteen homes were damaged as a result of this tornado.

Storm surge was a significant event during Hurricane Ike. Water levels ranged from fourteen feet in western Cameron Parish, to eight feet in St. Mary Parish. These water levels resulted in widespread flooding of the same areas that flooded in Hurricane Rita in 2005. Most of Cameron Parish was under water during this time, with over 3,000 homes flooded. Flooding from storm surge extended north into Calcasieu Parish, where another 1,000 homes flooded in Lake Charles, Westlake, and Sulphur. In Vermilion Parish, at least 1,000 homes flooded in Pecan Island, Forked Island, Intracoastal City, and Henry. Flooding extended east into Iberia Parish, where another 1,000 homes flooded south of Highway 14 and Highway 90. In St. Mary Parish, where some of the worst flooding occurred in the City of Franklin, a man-made levee failed, flooding over 450 homes. In addition to the storm surge, maximum total rainfall ranged from six to eight inches across Cameron, Calcasieu, and Beauregard Parishes. No fatalities were reported in southwest Louisiana; however, total property damages were high. Losses are estimated to be almost \$420 million dollars across southwest Louisiana, with agricultural losses over \$225 million dollars.

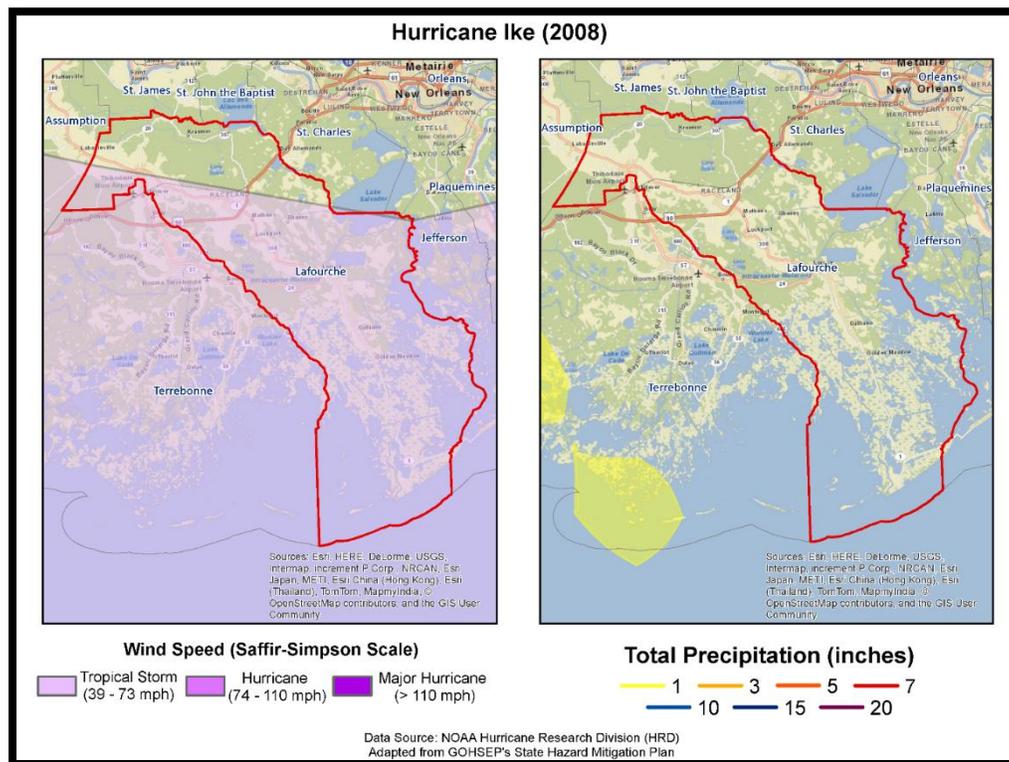


Figure 2-29: Wind Speed and Precipitation Totals for Hurricane Ike

The sequence of both Hurricanes Gustav and Ike occurring within two weeks of each other caused additional damages in south Louisiana - high water from Hurricane Gustav did not have time to recede before Hurricane Ike impacted the region, which increased the still water elevation at the time of landfall. One of the most negative aspects in Lafourche Parish in the aftermath of these two hurricanes was the

impact the damages had on the potable water supply. Water District Number 1 issued a boil advisory following Hurricane Gustav and continued to monitor the water quality following both storms.

**Tropical Storm Lee (2011)**

Tropical Storm Lee initially developed as Tropical Depression Thirteen in the middle of the Gulf of Mexico on Thursday evening September 1, 2011. The depression moved slowly north and gradually strengthened, eventually reaching tropical storm strength just south of the Louisiana coast on Friday afternoon of September 2, 2011. Tropical Storm Lee made only slow and haltingly northward progress over the next 24 hours, eventually moving onshore on the Louisiana coast Saturday night, September 3, 2011, with a maximum sustained wind estimated around sixty mph. Lee moved slowly inland to the north of Baton Rouge late Sunday September 4, 2011, and eventually weakened to a tropical depression Sunday evening.

Tropical Depression Lee then moved steadily northeast throughout Monday, September 5, 2011, taking on extra-tropical characteristics over the next 24 hours as it interacted with an upper level disturbance moving through the region. The maximum wind gust observed in Louisiana was a southerly wind of forty knots (46 mph) sustained, 50 knots (58 mph) gust at New Orleans Lakefront Airport on September 4, 2012 at 0528CST. The lowest minimum central pressure was 993.2 mb at Baton Rouge Ryan Field at September 4, 2012 at 0959CST. As Tropical Depression Lee was moving northeast and taking on mid-latitude characteristics, strong northerly winds were experienced across the region, occasionally gusting to higher levels than experienced when Lee was characterized as a tropical storm. No fatalities or injuries were associated with any Tropical Storm Lee hazards.

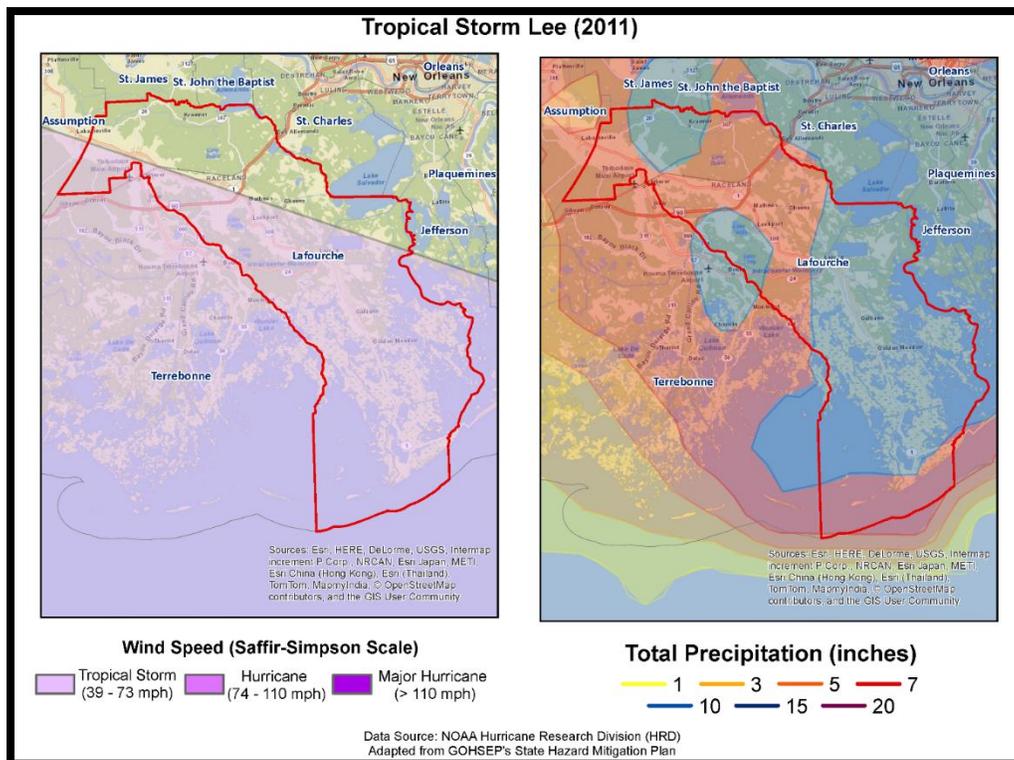


Figure 2-30: Wind Speed and Precipitation Totals for Tropical Storm Lee in Lafourche Parish

The main impacts resulting from Tropical Storm Lee were associated with storm surge and rainfall. Both of these impacts were related to its slow forward speed as it crossed the region, which allowed the circulation to linger over the area for several days. Storm surge associated with Lee caused storm tides three to five feet above normal, causing lowland flooding. Four day total rainfall ranged between seven and fifteen inches across the area. A maximum of 15.48 inches was recorded near Holden in Livingston Parish. Because of dry antecedent conditions, river flooding was minimal for the amount of rainfall that occurred. Tropical storm strength winds resulted in wine-related impacts to be minimal, resulting in downed tree limbs and toppling of weak trees, causing power outages.

Effects from the landfall of Tropical Storm Lee were felt in different areas throughout Lafourche Parish and its incorporated jurisdictions. Three homes experienced minor flooding as a result of heavy rain from Tropical Storm Lee. Louisiana Highway 1 south of Golden Meadow and Louisiana Highway 24 between Bourg and Larose were inundated with flood waters. A few trees and large limbs were downed due to wind gusts and one mobile home had roof damage.

#### [Hurricane Isaac \(2012\)](#)

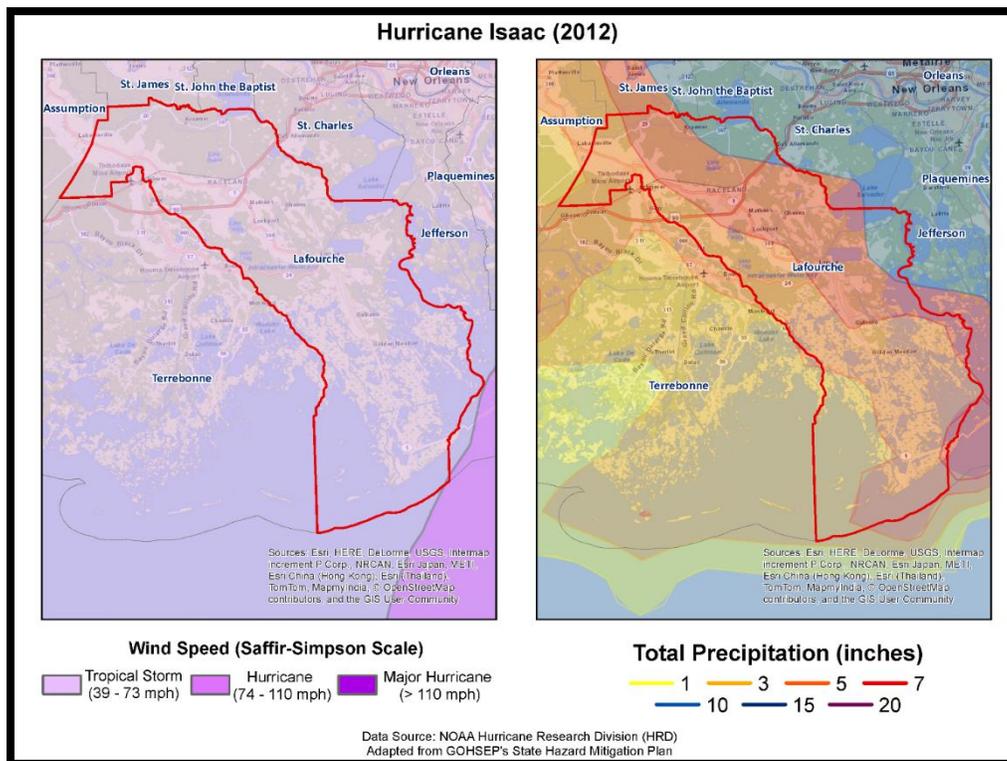
Isaac entered the Gulf of Mexico as a tropical storm on August 26, moving northwest after crossing Haiti, Cuba and the Florida Straits. Isaac strengthened into a hurricane on the morning of the 28th when it was 75 miles south-southeast of the mouth of the Mississippi River. Isaac made landfall in Plaquemines Parish as a Category 1 Hurricane near Southwest Pass of the Mississippi River on the evening of the 28th. A second landfall occurred near Port Fourchon the following morning. The storm weakened to a tropical storm on the afternoon of the 29th about fifty miles west southwest of New Orleans before weakening further to a tropical depression on the afternoon of the 30th near Monroe, Louisiana.

Hurricane Isaac's highest wind gust recorded on land in Louisiana was 75 knots, or 86 mph, measured by a portable weather station (Texas Tech University) near Buras on the evening at August 28. The maximum sustained wind in Louisiana was 65 knots, or 75 mph, at the same portable weather station near Buras on the evening of August 28. Several marine observations near the coast recorded slightly higher wind readings, with observation heights of 80 feet or higher.

Because of the large size of the storm as well as the slow forward speed, tropical storm force winds were experienced in excess of 48 hours in many areas of coastal southeast Louisiana. Occasional hurricane force wind gusts of seventy to 85 mph were recorded across southeast Louisiana during the night of the August 28 and early on August 29, especially south of Lake Pontchartrain. Interior areas of southeast Louisiana such as around Baton Rouge and northward experienced tropical storm force winds during this time, resulting in widespread power outages across the area. Local utility companies reported over 700,000 customers were without power at the peak of the storm in southeast Louisiana. Most of the wind damage was limited to downed trees and power lines, resulting in some roof damage.

Significant impacts also occurred around Lakes Pontchartrain and Maurepas as a result of the storm tide of five to nine feet. Five to ten thousand homes were flooded in low lying areas that border the following parishes: St. Tammany, Tangipahoa, Livingston, Ascension, St. James and St. John the Baptist. Laplace in St. John the Baptist Parish was especially hard hit with over 5,000 homes flooded by storm surge. An additional storm surge fatality occurred in St. Tammany Parish on the morning of the August 30 when a

75 year old man drove his car into a storm surge filled ditch. Storm surge flooding also affected areas south and southwest of New Orleans with a storm tide of four to seven feet. Roadways and low lying property were flooded during this time. Local levees around Lafitte and Myrtle Grove were overtopped and/or breached resulting in flooding of numerous houses and property in this area. Many areas of southeast Louisiana received eight to twelve inches of rain with a few locations experiencing fifteen inches or more. Maximum total storm rainfall was measured at 20.66 inches at the New Orleans Carrollton gauge on the Mississippi River.



*Figure 2-31: Wind Speed and Precipitation Totals for Hurricane Isaac in Lafourche Parish*

Overall impacts of Isaac resulted in at least \$600 million in damages in southeast Louisiana, three direct fatalities, and two indirect fatalities. Storm surge flooding accounted for the bulk of damage, estimated at around \$500 million and resulting in three direct storm surge fatalities. Winds accounted for a lesser amount of slightly more than a \$100 million.

In Lafourche Parish, over 11,000 residents were without power due to high winds damaging power lines and transformers. The Valentine, the Cote Blanche, and Galliano Pontoon bridges over Bayou Lafourche were closed due to safety concerns over high tides. Louisiana Highway 1 near the South Lafourche Levee District flood wall was closed due to flooding.

On the next page, *Figure 2-32* displays the wind zones that affect Lafourche Parish in relation to critical facilities throughout the Parish.

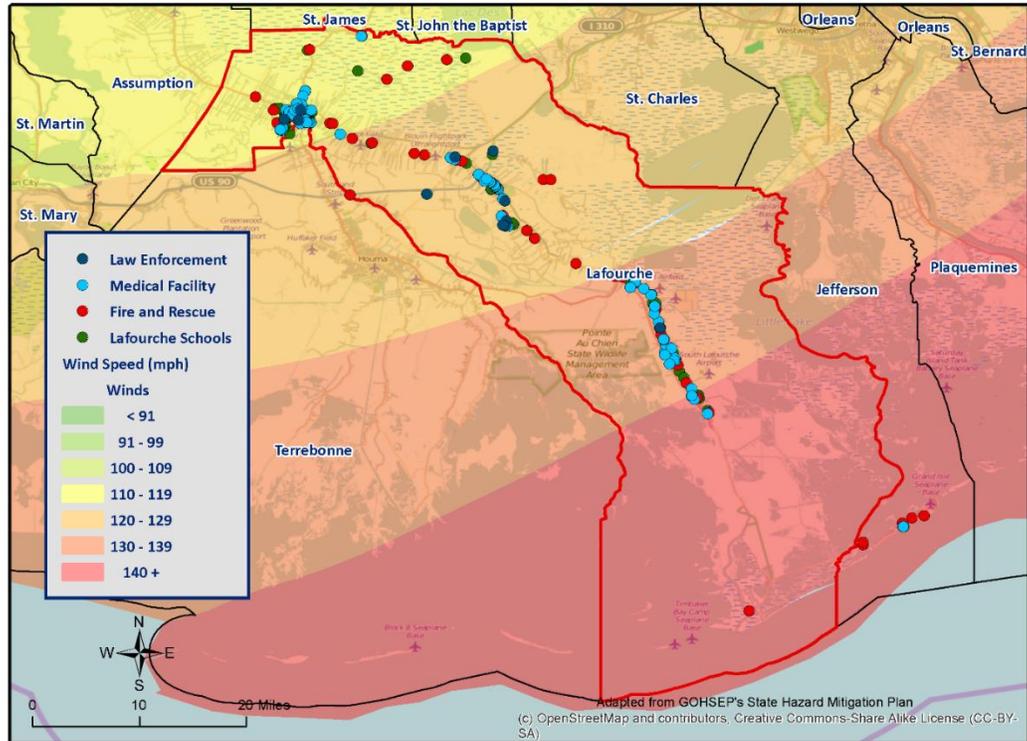


Figure 2-32: Winds Zones for Lafourche Parish in Relation to Critical Facilities

#### Frequency / Probability

Tropical cyclones are large natural hazard events that occur regularly within Lafourche Parish. The annual chance of occurrence for a tropical cyclone occurrence is estimated at 64% for Lafourche parish and its municipalities.

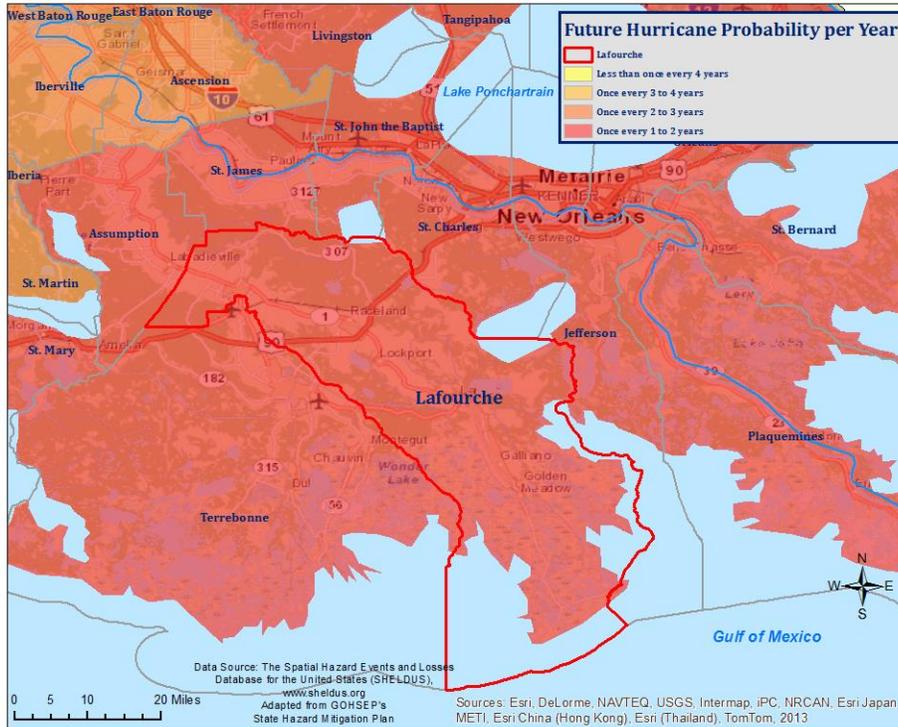


Figure 2-33: Probability of Tropical Cyclones impacting Lafourche Parish (Source: State of Louisiana Hazard Mitigation Plan)

The tropical cyclone season for the Atlantic Basin is from June 1 through November 30 with the majority of the major hurricanes (Saffir-Simpson Categories 3, 4, and 5) occurring between the months of August and October. Based on geographical location alone, Lafourche Parish is highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future. Based on historical record, illustrated in Figure 2-33, the probability of future occurrence of tropical cyclones in Lafourche Parish is approximately one event every one to two years.

*Estimated Potential Losses*

Using Hazus-MH 100 year hurricane model, the 100 year hurricane scenario was analyzed to determine losses from this worst-case scenario. Table 2-39 shows the total economic losses that would result from this occurrence.

Table 2-39: Total Estimated Losses for a 100 Year Hurricane Event

Jurisdiction	Estimated Total Losses from 100 Year Hurricane Event
Unincorporated Lafourche Parish	\$1,326,209,176
Golden Meadow	\$36,470,752
Lockport	\$44,759,560
Thibodaux	\$250,321,982
<b>Total</b>	<b>\$1,657,761,470</b>

The Hazus-MH hurricane model also provides a breakdown by jurisdiction for seven primary sectors (Hazardus occupancy) throughout the parish. The losses for each jurisdiction by sector are listed in the tables below.

*Table 2-40: Estimated Losses in Lafourche Parish for a 100 Year Hurricane Event*

Unincorporated Lafourche Parish	Estimated Total Losses from 100 Year Hurricane Event
Agricultural	\$3,563,425
Commercial	\$182,544,448
Government	\$1,235,200
Industrial	\$33,606,048
Religious / Non-Profit	\$11,878,084
Residential	\$1,086,255,120
Schools	\$7,126,850
<b>Total</b>	<b>\$1,326,209,176</b>

*Table 2-41: Estimated Losses in Golden Meadow Parish for a 100 Year Hurricane Event*

Golden Meadow	Estimated Total Losses from 100 Year Hurricane Event
Agricultural	\$97,994
Commercial	\$5,019,972
Government	\$33,968
Industrial	\$924,166
Religious / Non-Profit	\$326,647
Residential	\$29,872,016
Schools	\$195,988
<b>Total</b>	<b>\$36,470,752</b>

*Table 2-42: Estimated Losses in Lockport for a 100 Year Hurricane Event*

Lockport	Estimated Total Losses from 100 Year Hurricane Event
Agricultural	\$120,266
Commercial	\$6,160,875
Government	\$41,688
Industrial	\$1,134,204
Religious / Non-Profit	\$400,885
Residential	\$36,661,110
Schools	\$240,531
<b>Total</b>	<b>\$44,759,560</b>

Table 2-43: Estimated Losses in Thibodaux for a 100 Year Hurricane Event

Unincorporated Lafourche Parish	Estimated Total Losses from 100 Year Hurricane Event
Agricultural	\$672,597
Commercial	\$34,455,265
Government	\$233,144
Industrial	\$6,343,142
Religious / Non-Profit	\$2,241,988
Residential	\$205,030,654
Schools	\$1,345,193
<b>Total</b>	<b>\$250,321,982</b>

*Threat to People*

The total population within the parish that is susceptible to a hurricane hazard are shown in the table below.

Table 2-44: Number of People Susceptible to a 100 year Hurricane Event in Lafourche Parish  
(Source: HAZUS-MH)

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
Lafourche Parish (Unincorporated)	<b>77,073</b>	<b>77,073</b>	<b>100%</b>
Golden Meadow	<b>2,101</b>	<b>2,101</b>	<b>100%</b>
Lockport	<b>2,578</b>	<b>2,578</b>	<b>100%</b>
Thibodaux	<b>14,566</b>	<b>14,566</b>	<b>100%</b>
<b>Total</b>	<b>96,318</b>	<b>96,318</b>	<b>100%</b>

The HAZUS-MH hurricane model was also extrapolated to provide an overview of vulnerable populations throughout the jurisdictions in the tables below:

Table 2-45: Vulnerable populations in Lafourche Parish for a 100 year hurricane

Lafourche Parish		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	77,073	100%
Persons Under 5 years	4,933	6.4%
Persons Under 18 years	18,343	23.8%
Persons 65 Years and Over	10,405	13.5%
White	62,352	80.9%
Minority	14,721	19.1%

Table 2-46: Vulnerable populations in Golden Meadow for a 100 year hurricane

Golden Meadow		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	2,101	100%
Persons Under 5 years	132	6.3%
Persons Under 18 years	367	17.5%
Persons 65 Years and Over	316	15.0%
White	1,753	83.4%
Minority	348	16.6%

Table 2-47: Vulnerable populations in Lockport for a 100 year hurricane

Lockport		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	2,578	100%
Persons Under 5 years	186	7.2%
Persons Under 18 years	403	15.6%
Persons 65 Years and Over	407	15.8%
White	2,371	92.0%
Minority	207	8.0%

Table 2-48: Vulnerable populations in Thibodaux for a 100 year hurricane

Thibodaux		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	14,566	100%
Persons Under 5 years	913	6.3%
Persons Under 18 years	2,131	14.6%
Persons 65 Years and Over	2,124	14.6%
White	9,284	63.7%
Minority	5,282	36.3%

### Vulnerability

See Appendix C for parish and municipality buildings that are susceptible to hurricanes.

## Section 3: Capability Assessment

This section summarizes all efforts to develop policies, programs, and activities that directly or indirectly support hazard mitigation. It also provides information on resources and gaps in the participating jurisdictions' infrastructure, as well as relevant changes in its law since the last Plan Update, in order to suggest a mitigation strategy.

Through this assessment strengths that could be used to reduce losses and reduce risk throughout the community are identified. In addition, areas where mitigation actions might be used to supplement current capabilities and create a more resilient community before, during and after a hazard event are outlined.

### Policies, Plans, And Programs

Lafourche Parish and its jurisdictions' capabilities are unique to the parish as a whole, including planning, regulatory, administrative, technical, financial, and education and outreach resources. There are a number of mitigation-specific acts, plans, executive orders, and policies that lay out specific goals, objectives, and policy statements which already support or could support pre- and post-disaster hazard mitigation. Many of the ongoing plans and policies hold significant promise for hazard mitigation, and take an integrated and strategic look holistically at hazard mitigation in all jurisdictions to continually propose ways to improve it. These tools are valuable instruments in pre and post disaster mitigation as they facilitate the implementation of mitigation activities through the current legal and regulatory framework.

Some jurisdictions have extensive zoning regulations, which address use and height of buildings, density of populations, open space limitation, and lot and occupancy requirements. The zoning ordinances are consistent with the parish comprehensive plan. Before the Parish Council enacts or amends development regulations or takes any land use action, and before the Zoning Board may make any recommendation to the Parish Council regarding a proposed development regulation or land use action, the Planning Department, or other department responsible for providing findings, recommendations, papers, correspondence, and records related to the regulation, amendment, or action shall provide a written recommendation to the Council and Zoning Board regarding the consistency with the plan. The following tables demonstrate land use, zoning, and ordinance requirements that address many different types of districts in the parish and its incorporated jurisdictions, ranging from suburban, conservation, and mixed-use to industrial.

Table 3-1: Planning and Regulatory Capabilities

Planning and Regulatory					
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.					
	Lafourche Parish	Thibodaux	Lockport	Golden Meadow	Comments
<b>Plans</b>	Yes / No				
Comprehensive / Master Plan	Yes	No	No	No	n/a
Capital Improvements Plan	No	No	No	No	n/a
Economic Development Plan	No	No	No	No	n/a
Local Emergency Operations Plan	Yes	No	No	No	n/a
Continuity of Operations Plan	Yes	No	No	No	n/a
Transportation Plan	No	No	No	No	n/a
Stormwater Management Plan	Yes	No	No	No	n/a
Community Wildfire Protection Plan	No	No	No	No	n/a
Other plans (redevelopment, recovery, coastal zone management)	Yes	No	No	No	n/a
<b>Building Code, Permitting and Inspections</b>	Yes / No				
Building Code	Yes	No	Yes	Yes	n/a
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	No	No	No	n/a
Fire Department ISO/PIAL rating	Yes	No	Yes	Yes	Rating Dist 1-5, Dist 2-5, Dist 3-5, Dist 4-2(Thibodaux) Dist 5-5, Dist 6-5, Dist 7-5 Dist 8-A-7, Dist 8-B-5, Dist 8-C-5, Dist 9-5
Site plan review requirements	Yes	No	Yes	Yes	n/a
<b>Land Use Planning and Ordinances</b>	Yes / No				
Zoning Ordinance	No	No	Yes	Yes	n/a
Subdivision Ordinance	Yes	No	No	Yes	n/a
Floodplain Ordinance	Yes	No	Yes	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	No	Yes	Yes	n/a
Flood Insurance Rate Maps	Yes	No	Yes	Yes	n/a
Acquisition of land for open space and public recreation uses	yes	No	No	No	n/a
Other		No	No	No	n/a

Some programs and policies, such as the ones just described, might use complementary tools to achieve a common end, but fail to coordinate with or support each other. Thus, coordination among local mitigation policies and programs is essential to hazard mitigation.

### Administration, Technical, And Financial

As a community, Lafourche Parish and its jurisdictions have administrative and technical capabilities in place that may be utilized in reducing hazard impacts or implementing hazard mitigation activities. Such capabilities include staff, skillset, and tools available in the community that may be accessed to implement mitigation activities and to effectively coordinate resources.

The following are resources in place in Lafourche Parish and its incorporated jurisdictions:

Table 3-2: Administrative and Technical Capabilities

Administration and Technical					
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.					
	Lafourche Parish	Thibodaux	Lockport	Golden Meadow	Comments
<b>Administration</b>	Yes / No				
Planning Commission	Yes	No	Yes	Yes	n/a
Mitigation Planning Committee	Yes	No	No	Yes	n/a
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	No	Yes	Yes	n/a
Mutual Aid Agreements	No	No	Yes		n/a
<b>Staff</b>	Yes / No; FT/PT; % Hazard Mitigation				
Chief Building Official	Yes	No	No	No	5%
Floodplain Administrator	Yes	No	Yes	Yes	20%
Emergency Manager	Yes	No	Yes	No	5%
Community Planner	Yes	No	No	No	5%
Civil Engineer	No	No	Yes	No	We hire an Engineer When need for projects
GIS Coordinator	Yes	No	No	No	5%
Grant Writer	Yes	No	No	No	40%
Other	No	No	No	No	n/a
<b>Technical</b>	Yes / No				
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	No	No	No	DCC Calling system Alert FM
Hazard Data & Information	No	No	No	No	n/a
Grant Writing	No	No	No	No	n/a
Hazus Analysis	No	No	No	No	n/a
Other	No	No	No	No	n/a

Financial capabilities are the resources that Lafourche Parish and its incorporated jurisdictions have access to or are eligible to use in order to fund mitigation actions. The following resources are available to fund mitigation actions in Lafourche Parish and its incorporated jurisdictions:

Table 3-3: Financial Capabilities

Financial					
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.					
	Lafourche Parish	Thibodaux	Lockport	Golden Meadow	Comments
<b>Funding Resource</b>	Yes / No				
Capital Improvements project funding	No	No	Yes	Yes	n/a
Authority to levy taxes for specific purposes	No	No	Yes	Yes	n/a
Fees for water, sewer, gas, or electric services	No	No	Yes	Yes	n/a
Impact fees for new development	No	No	No	No	n/a
Stormwater Utility Fee	No	No	No	No	n/a
Community Development Block Grant (CDBG)	No	No	Yes	Yes	n/a
Other Funding Programs	Yes	No	Yes	Yes	STATE OF LOUISIANA ELEVATION AND ACQUISITION PROGRAMS

Lafourche Parish and its incorporated jurisdictions have existing programs to implement mitigation activities as well as communicate risk. The existing programs are as follows:

*Table 3-4: Education and Outreach Capabilities*

Education and Outreach					
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.					
	Lafourche parish	Thibodaux	Lockport	Golden Meadow	Comments
Program / Organization	Yes / No				
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	No	No	No	n/a
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	No	No	No	n/a
Natural Disaster or safety related school program	No	No	No	No	n/a
Storm Ready certification	No	No	No	No	n/a
Firewise Communities certification	No	No	No	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	No	No	No	n/a
Other	No	No	No	No	n/a

The following municipalities and entities are recognized by the Parish of Lafourche under the Hazard Mitigation Plan allowing them to apply for available hazard mitigation funding for as long as these municipalities and entities notify the Parish of their intentions and the Parish concurs:

- Parish of Lafourche
- City of Thibodaux
- Town of Lockport
- Town of Golden Meadow.

## Section 4: Mitigation Strategy

### Introduction

A Hazard Mitigation Strategy has a common guiding principle and is the demonstration of the jurisdictions' commitment to reduce risks from hazards. The Strategy also serves as a guide for decision makers as they commit resources to reducing the effects of hazards.

The mitigation actions and projects in this 2015 HMP update are a product of analysis and review of the each participating jurisdiction under the coordination of the Lafourche Parish Office of Homeland Security and Emergency Preparedness.

A crucial component of successful mitigation is analysis of previous actions. The success or failure of mitigation actions implemented before an event should be evaluated. Self-analysis should take place during the recovery and mitigation phases of emergency management when the community can take stock of how well it prepared for an event and to what degree it needed to responded.

An online public opinion survey was conducted of Lafourche Parish residents between March and April 2015. The survey was designed to capture public perceptions and opinions regarding natural hazards in Lafourche Parish. In addition, the survey collected information regarding the methods and techniques preferred by the respondents for reducing the risks and losses associated with local hazards.

When asked to gage from a list which categories were more susceptible to impacts caused by natural hazards, the top three categories selected were:

1. Human (Loss of life and/or injuries)
2. Infrastructure (Damage or loss of bridges, utilities, schools, etc.)
3. Economic (Business closures and/or job losses).

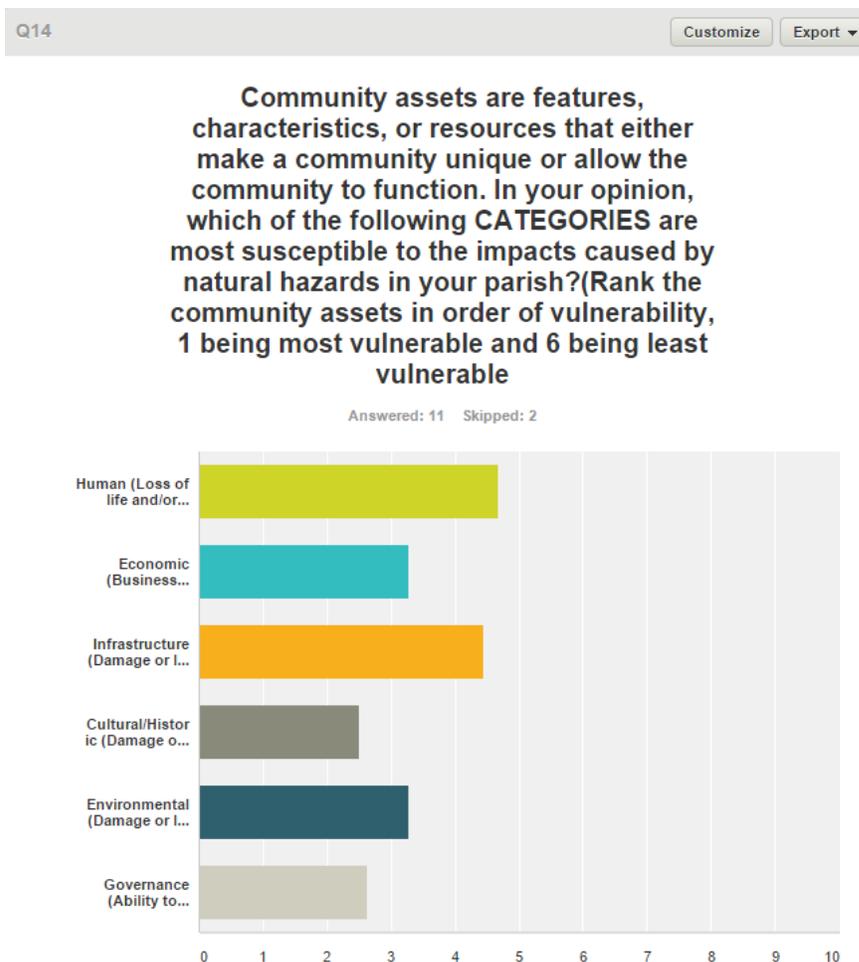


Figure 4-1: Public Opinion Survey - Community Perception of Vulnerability

Respondents to the public opinion survey ranked their top five types of community assets to be the following:

1. Hospitals
2. Major Bridges
3. Major Employers
4. Schools (K-12)
5. Nursing Homes/Assisted Living Facilities and Small Businesses.

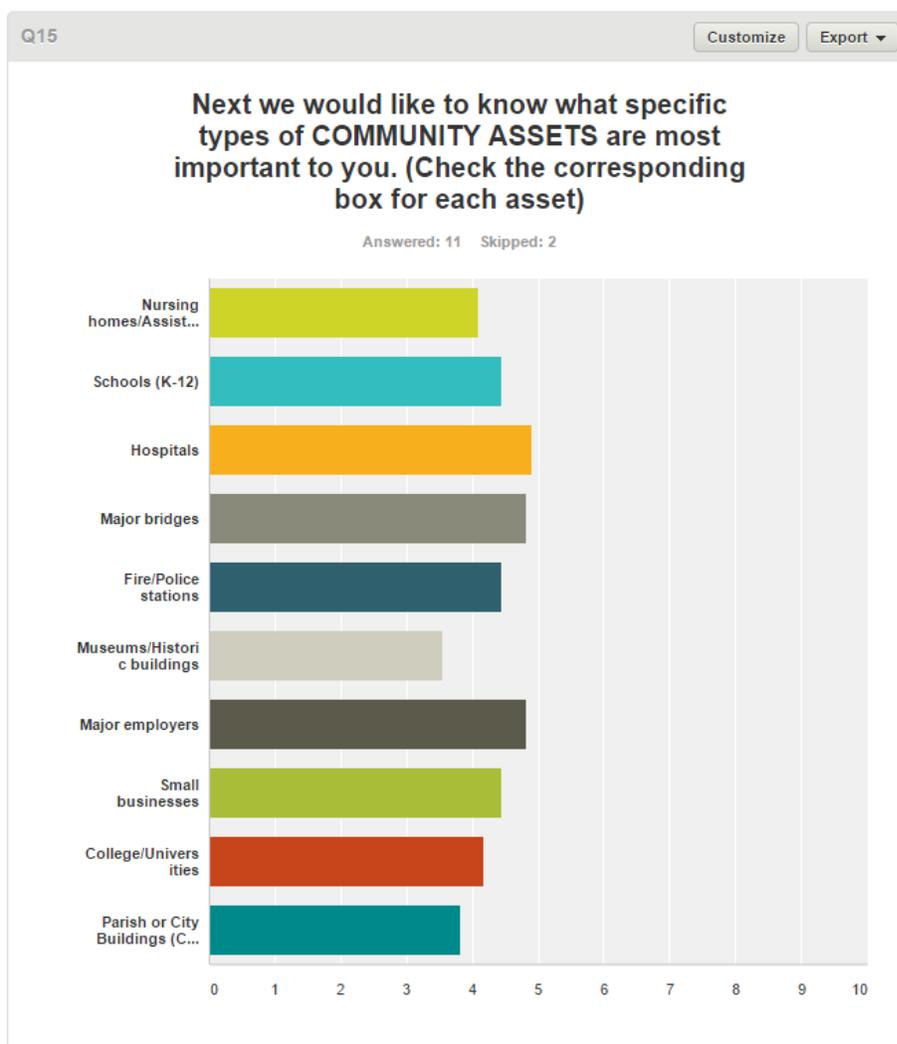


Figure 4-2: Importance of Community Assets

Conducting the public opinion survey activity qualifies that the goals and action items developed by the participating jurisdictions are representative of the outlook of the community at large.

## Goals

The goals represent the guidelines the parish and its communities want to achieve with this plan update. To help implement the strategy and adhere to the mission of the Hazard Mitigation Plan, the preceding section of the Plan Update was focused on identifying and quantifying the risks faced by the residents and property owners in Lafourche Parish from natural and manmade hazards. By articulating goals and objectives based on the Risk Assessment results, and intending to address those results, this section sets the stage for identifying, evaluating, and prioritizing feasible, cost effective, and environmentally sound actions to be promoted at the parish and municipal level – and to be undertaken by the state for its own property and assets. By doing so, each jurisdiction can make progress toward reducing identified risks.

For the purposes of this Plan Update, goals and action items are defined as follows:

- **Goals** are general guidelines that explain what the parish wants to achieve. Goals are expressed as broad policy statements representing desired long-term results.
- **Action Items** are the specific steps (projects, policies, and programs) that advance a given Goal. They are highly focused, specific, and measurable.

The current goals of the Lafourche Parish Hazard Mitigation Plan Update Steering Committee represent long-term commitments by the participating jurisdictions. After assessing these goals, the Committee has decided that the current four goals are valid.

The goals are as follows:

**Goal 1:** Identify and pursue preventative structural and non-structural 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 by pursuing various mitigation measures (acquisitions, elevations, and flood-proofing).

**Goal 4:** Facilitate sound development in the parish and municipalities so as to reduce or eliminate the potential impact of hazards.

All of the activities in the Mitigation Action Plan will be focused on helping the parish and its municipalities in developing and funding projects that are not only cost effective but also meet the other DMA 2000 criteria of environmental compatibility and technical feasibility.

Due to changes in priorities in Lafourche Parish and its jurisdictions, the Hazard Mitigation Plan Update Committee for each jurisdiction reviewed and evaluated the potential project list, in which consideration was given to a variety of factors. Such factors include determining a project's eligibility for federal mitigation grants as well as its ability to be funded. This process required evaluation of each project's engineering feasibility, cost effectiveness, and environmental and cultural factors. The high priority projects determined by the Hazard Mitigation Plan Update Committee:

1. Drainage improvement projects
2. Flood protection projects
3. Wind hardening projects.

### Mitigation Actions

Each participating jurisdiction identified several projects that would reduce and/or prevent future damage. In that effort, each group focused on a comprehensive range of specific mitigation actions and projects specific to their jurisdiction. These actions and projects were identified in thorough fashion by the consultant team, the Steering Committee, and Committee by way of frequent and open communications and meetings held throughout the planning process.

As outlined in the Local Mitigation Planning Handbook the following are eligible types of Mitigation Actions:

1. **Local Plans and Regulations** – These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.
2. **Structure and Infrastructure Projects** – These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area, and also includes projects to construct manmade structures to reduce the impact of hazards.
3. **Natural System Protection** – These actions minimize the damage and losses and also preserve or restore the functions of natural systems.
4. **Education and Awareness Programs** – These actions inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

The established and agreed upon actions relative to the established goals are as follows:

*Table 4-1: Lafourche Parish Unincorporated*

Lafourche Parish - Unincorporated							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
LP1: LA 1 Improvement Project Phase II Segment A	LA 1 Improvement Project Phase II Segment A	LA Capital Outlay Program: LA Coalition, Inc; FEMA	5 years	Lafourche Parish Government/Louisiana Department of Transportation & Development	Flooding, Tropical Cyclones	1, 4	New
LP2: LA 1 Improvement Project Phase II Segment B	LA 1 Improvement Project Phase II Segment B	USDOT Tiger Grant Program; RESTORE Act; OCS; FEMA	5 years	Lafourche Parish Government/Louisiana Department of Transportation & Development	Flooding, Tropical Cyclones	1, 4	New
LP3: LA 1 Improvement Project Phase II Segment C	LA 1 Improvement Project Phase II Segment C	LA Capital Outlay Program: LA Coalition, Inc; FEMA	5 years	Lafourche Parish Government/Louisiana Department of Transportation & Development	Flooding, Tropical Cyclones	1, 4	New
LP4: Drainage improvement projects	Widen drainage ditches and upgrade culverts	HMGP, FEMA, Local, Regional	1-5 years	Lafourche Parish Government, Public Works	Flooding, Tropical Cyclone	1, 3, 4	New
LP5: Pump station improvements	Upgrade Pump station capacity; Ensure pump stations have adequate trash racks to ensure operation during flood events;	HMGP, Local, Regional	1-5 years	Lafourche Parish Government, Public Works	Flooding, Tropical Cyclone	1, 3, 4	New

Lafourche Parish - Unincorporated							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	Provide additional pump station protection inside levee systems						
LP6: Elevation projects	Elevate roads with flood history; Elevate levee and floodwall heights to further protect from storm surge; Elevate, acquire, or pilot reconstruct all RL and SRL structures	HMGP, Local, Regional	1-5 years	Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
LP7: Generator installation	Install generators at all critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	Lafourche Parish Government	Flooding, Coastal Land Loss, Sinkholes, Tornado, Tropical Cyclone	4	New
LP8: Construct safe rooms	Construct safe rooms for all critical facilities and governmental facilities	HMGP	1-5 years	Lafourche Parish Government	Tornado, Tropical Cyclone	1,4	New
LP9: Wind hardening projects	Wind hardening of critical facilities and governmental facilities	HMGP	1-5 years	Lafourche Parish Government	Tornado, Tropical Cyclone	1, 4	New
LP10: Increase sediment diversion	Increase sediment diversion	CPRA	Ongoing	Lafourche Parish Government, Engineering, Zoning	Coastal Land Loss	4	New
LP11: Drinking water protection projects	Locate and construct additional potable water intakes further	Local	Ongoing	Lafourche Parish Government, Water Districts	Coastal Land Loss	4	New

Lafourche Parish - Unincorporated							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	north in the parish to provide drinking water during a saltwater intrusion event						
LP12: Implementation of land loss monitoring	Ensure accurate survey points are located throughout the parish to monitor continued subsidence	Local, Federal	Ongoing	Lafourche Parish Government	Coastal Land Loss	4	New
LP13: Mitigation outreach and education	Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence; Provide educational brochures to libraries, schools, and other public facilities including mitigation measures for all hazards; Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage	Local	Ongoing	Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	2, 4	New

Lafourche Parish - Unincorporated							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	options under the NFIP; Establish a homeowner education program on flood mitigation measures						
LP14: Communication systems upgrades	Acquire all-hazard warning system to ensure proper citizen notification of tornadoes, hurricanes, and coastal/tropical storms	HMGP, Local, Regional	1-5 years	Lafourche Parish Government	Tornado, Tropical Cyclone	2, 4	New
LP15: Participate in Community Rating System (CRS)	Each political subdivision to join the CRS	No Additional Funding	Ongoing	Lafourche Parish Government	Flooding, Tropical Cyclone	3, 4	New
LP16: Lafourche Parish Capital Outlay Projects	Completion of Capital Outlay projects, including additional drainage improvements, infrastructure and building upgrades and improvements, pump station improvements, bulkhead improvements, and other unidentified capital outlay projects	FEMA, Local	1-5 years	Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	1, 3, 4	In Progress

Table 4-2: City of Thibodaux

City of Thibodaux							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
T1: Drainage improvement projects	Widen drainage ditches and upgrade culverts; South Canal Blvd. drainage project; Acadian Woods Subdivision drainage project; East 7th St. drainage project; St. Louis Canal Backflow Project	HMGP, Local, Regional	1-5 years	City of Thibodaux, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
T2: Generator installation	Install generators at all critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	City of Thibodaux, Lafourche Parish Government	Tornadoes, Tropical Cyclone	4	New
T3: Wind hardening projects	Wind harden critical facilities and governmental facilities, including Public Works Office	HMGP	1-5 years	City of Thibodaux, Lafourche Parish Government	Tornadoes, Tropical Cyclone	1, 4	New
T4: Drinking water protection projects	Locate and construct additional potable water intakes further north in the parish to provide drinking water during a saltwater intrusion event	Local	Ongoing	City of Thibodaux, Lafourche Parish Government	Coastal Land Loss	4	New
T5: Implementation of land loss monitoring	Ensure accurate survey points are located throughout the parish to monitor continued subsidence	Local, Federal	Ongoing	City of Thibodaux, Lafourche Parish Government	Coastal Land Loss	4	New
T6: Mitigation outreach and education	Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence; Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage options under the NFIP; Establish a	Local	Ongoing	City of Thibodaux, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	4	New

City of Thibodaux							
Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	homeowner education program on flood mitigation measures; Provide educational brochures to libraries, schools, and other public facilities including mitigation measures for all hazards						
T7: Elevation projects	Elevate, acquire, or pilot reconstruct all RL and SRL structures	HMGP	1-5 years	City of Thibodaux, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
T8: Participate in Community Rating System (CRS)	Each political subdivision to join the CRS	No Additional Funding	Ongoing	City of Thibodaux, Lafourche Parish Government	Flooding, Tropical Cyclone	3, 4	New
T9: Lafourche Parish Capital Outlay Projects	Completion of Capital Outlay projects, including additional drainage improvements, infrastructure and building upgrades and improvements, pump station improvements, bulkhead improvements, and other unidentified capital outlay projects	FEMA, Local	1-5 years	City of Thibodaux, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	1, 3, 4	In Progress
T10: Safe room construction	Construct safe rooms for all critical facilities and governmental facilities	HMGP	1-5 years	City of Thibodaux, Lafourche Parish Government	Tornado, Tropical Cyclone	1, 4	New

Table 4-3: Town of Lockport

Town of Lockport							
Jurisdiction-Specific Action	Project Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
L1: Drainage improvement projects	Widen drainage ditches and upgrade culverts	HMGP, Local, Regional	1-5 years	Town of Lockport, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
L2: Generator installation	Install generators at all critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	Town of Lockport, Lafourche Parish Government	Tornadoes, Tropical Cyclone	4	New
L3: Wind hardening projects	Wind harden critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	Town of Lockport, Lafourche Parish Government	Tornadoes, Tropical Cyclone	1, 4	New
L4: Drinking water protection projects	Locate and construct additional potable water intakes further north in the parish to provide drinking water during a saltwater intrusion event	Local	Ongoing	Town of Lockport, Lafourche Parish Government	Coastal Land Loss	4	New
L5: Implementation of land loss monitoring	Ensure accurate survey points are located throughout the parish to monitor continued subsidence	Local, Federal	Ongoing	Town of Lockport, Lafourche Parish Government	Coastal Land Loss	4	New
L6: Mitigation education and outreach	Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence; Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage options under the NFIP;	Local	Ongoing	Town of Lockport, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	4	New

Town of Lockport							
Jurisdiction-Specific Action	Project Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	Establish a homeowner education program on flood mitigation measures; Provide educational brochures to libraries, schools, and other public facilities including mitigation measures for all hazards						
L7: Elevation projects	Elevate, acquire, or pilot reconstruct all RL and SRL structures	HMGP	1-5 years	Town of Lockport, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
L8: Participate in the Community Rating System (CRS)	Each political subdivision to join the CRS	No Additional Funding	Ongoing	Town of Lockport, Lafourche Parish Government	Flooding, Tropical Cyclone	3, 4	New
L9: Lafourche Parish Capital Outlay Projects	Completion of Capital Outlay projects, including additional drainage improvements, infrastructure and building upgrades and improvements, pump station improvements, bulkhead improvements, and other unidentified capital outlay projects	FEMA, Local	1-5 years	Town of Lockport, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornadoes, Tropical Cyclones	1, 3, 4	In Progress
L10: Safe room construction	Construct safe rooms for critical facilities and governmental facilities	HMGP	1-5 years	Town of Lockport, Lafourche Parish Government	Tornadoes, Tropical Cyclone	1,4	New

Table 4-4: Town of Golden Meadow

Town of Golden Meadow							
Jurisdiction-Specific Action	Project Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
GM1: Drainage improvement projects	Widen drainage ditches and upgrade culverts	HMGP, Local, Regional	1-5 years	Town of Golden Meadow, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
GM2: Elevation projects	Elevate levee and floodwall heights to further protect from storm surge; Elevate, acquire, or pilot reconstruct all RL and SRL structures	HMGP, Local, Regional	1-5 years	Town of Golden Meadow, Lafourche Parish Government	Flooding, Tropical Cyclone	1, 3, 4	New
GM3: Generator installation	Install generators at all critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	Town of Golden Meadow, Lafourche Parish Government	Tornado, Tropical Cyclone	4	New
GM4: Wind hardening projects	Wind harden critical facilities and governmental facilities	HMGP, Local, Regional	1-5 years	Town of Golden Meadow, Lafourche Parish Government	Tornado, Tropical Cyclone	1, 4	New
GM5: Drinking water protection projects	Locate and construct additional potable water intakes further north in the parish to provide drinking water during a saltwater intrusion event	Local	Ongoing	Town of Golden Meadow, Lafourche Parish Government	Coastal Land Loss	4	New
GM6: Implementation of land loss monitoring	Ensure accurate survey points are located throughout the parish to monitor continued subsidence	Local, Federal	Ongoing	Town of Golden Meadow, Lafourche Parish Government	Coastal Land Loss	4	New
GM7: Mitigation education and outreach	Monitor agricultural activities and encourage smart farming practices to reduce soil compaction and acceleration of subsidence; Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of	Local	Ongoing	Town of Golden Meadow, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornado, Tropical Cyclones	2, 4	New

Town of Golden Meadow							
Jurisdiction-Specific Action	Project Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
	coverage options under the NFIP; Establish a homeowner education program on flood mitigation measures; Provide educational brochures to libraries, schools, and other public facilities including mitigation measures for all hazards						
GM8: Participate in the Community Rating System (CRS)	Each political subdivision to join the CRS	No Additional Funding	Ongoing	Town of Golden Meadow, Lafourche Parish Government	Flooding, Tropical Cyclone	2, 3	New
GM9: Lafourche Parish Capital Outlay Projects	Completion of Capital Outlay projects, including additional drainage improvements, infrastructure and building upgrades and improvements, pump station improvements, bulkhead improvements, and other unidentified capital outlay projects	FEMA, Local	1-5 years	Town of Golden Meadow, Lafourche Parish Government	Coastal Land Loss, Flooding, Sinkholes, Tornado, Tropical Cyclones	1, 3, 4	In Progress
GM10: Safe room construction	Construct safe rooms in critical facilities and governmental facilities	FEMA		Town of Golden Meadow, Lafourche Parish Government	Tornado, Tropical Cyclone	1,4	New

## Mitigation Action Update

Previous Mitigation Actions - Complete and/or Removed		
Jurisdiction-Specific Action	Jurisdiction	Status
Drainage Project - Veterans/Tiger Drive/Midland/David Bergeron Road Drainage Area	City of Thibodaux	Removed
Bayou Lafourche Water Plant Aerator Project	City of Thibodaux	Removed
Drainage - Harang Auditorium	City of Thibodaux	Removed
Hardening - Stark Municipal Complex/Police Dept. Generator	City of Thibodaux	Completed
Hardening - Public Works Office	City of Thibodaux	Removed
Hardening - Stark Municipal Complex/Police Department and Maintenance Shop	City of Thibodaux	Removed
Hardening - City Mechanic Shop	City of Thibodaux	Removed
City Repetitive Loss Properties	City of Thibodaux	Removed
Des Allemands Bulkhead	Lafourche Parish Unincorporated	Completed
Delta Woods	Lafourche Parish Unincorporated	Completed
Abby Lakes Drainage - Engineering	City of Thibodaux	Completed
Jesse Dufrene Pumping Station	Lafourche Parish Unincorporated	Completed
East 86th Street Stormwater and W. 111th Street Stormwater	Lafourche Parish Unincorporated	Completed
Lockport Elevated Wetlands Boardwalk	Town of Lockport	Completed
Sugar Ridge East Pump	Lafourche Parish Unincorporated	Completed
1 of 12 Pumping Station	Lafourche Parish Unincorporated	Completed
2 of 12 Pumping Station	Lafourche Parish Unincorporated	Completed
Twin Oaks Bulkhead	Lafourche Parish Unincorporated	Completed
Company Canal Pumping Station - Phase I	Town of Lockport	Completed
Country Club Boulevard Stormwater	Lafourche Parish Unincorporated	Completed
Choctaw Fire Dept Canal Improvements	City of Thibodaux	Completed
Leeville Boat Launch	Lafourche Parish Unincorporated	Completed
Company Canal Pumping Station - Phase II	Town of Lockport	Completed
Road Project No. 2	Lafourche Parish Unincorporated	Completed
Raceland Ag Center	Lafourche Parish Unincorporated	Completed
Capital Outlay Projects	Lafourche Parish Unincorporated	Completed
Drainage - Bayou Lafourche Floodgates	City of Thibodaux	Completed
T16: Drainage Project - Veterans/Tiger Dr/Midland/David Bergeron Rd. Drainage Area	City of Thibodaux	Removed
T19: Bayou Lafourche Water Plant Aerator Project	City of Thibodaux	Removed
T20: Drainage - Audubon Dr	City of Thibodaux	Completed
T23: Drainage - Harang Auditorium	City of Thibodaux	Removed
T24: Hardening - Stark Municipal Complex/ Police Department and Maintenance Shop	City of Thibodaux	Completed
T25: Hardening - City Mechanics Shop	City of Thibodaux	Removed

### Action Prioritization

During the prioritization process, each Jurisdiction and the Steering Committee as a whole considered the costs and relative benefits of each new action. Costs can usually be listed in terms of dollars, although at times it involves staff time rather than the purchase of equipment or services that can be readily measured in dollars. In most cases, benefits, such as lives saved or future damage prevented, are hard to measure in dollars, many projects were prioritized with these factors in mind.

In all cases, the Committee concluded that the benefits (in terms of reduced property damage, lives saved, health problems averted and/or economic harm prevented) outweighed the costs for the recommended action items.

The Committee and individual jurisdictions prioritized the possible activities that could be pursued. The results were items that address the major hazards, are appropriate for those hazards, are cost-effective, and are affordable. Lafourche Parish and the jurisdictions will implement and administer the identified actions based off of the proposed timeframes for each reflected in the portions of this section where actions are summarized. Actions from the previous plan were validated as having no changes in prioritization as they carry over into the current plan update process.

## Appendix A: Planning Process

### Purpose

The hazard mitigation plan update process prompts local jurisdictions to keep their hazard mitigation plan current and moving toward a more resilient community. The plan update builds on the research and planning efforts of previous plans while reviewing recent trends.

### The Lafourche Parish Hazard Mitigation Plan Update

The Lafourche Parish Hazard Mitigation Plan Update process began in September 2014 with a series of meetings and collaborations between the contractor (SDMI) and the participating jurisdictions. Update activities were intended to give each jurisdiction the opportunity to shape the plan to best fit their community's goals. Community stakeholders and the general public were invited to attend and contribute information to the planning process during specific time periods or meetings.

Date	Meeting or Outreach	Location	Public Invited	Purpose
9/10/2014	Coordination Meeting	SDMI, LSU	No	Discuss with Parish HM coordinator (OHSEP Director) expectations and requirements of the project.
9/30/2014	Kick-Off Meeting	OHSEP Office, Mathews	No	Discuss with the plan Steering Committee expectations and requirements of the project. Assign plan worksheets to jurisdictions.
1/14/2015	Risk Assessment Meeting	OHSEP Office, Mathews	No	The Risk Assessment meeting included a presentation of the Risk Assessment portion of the HMP. The Steering Committee had the opportunity to provide feedback.
3/11/2015	Public Survey Tool	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in Lafourche Parish. In addition, we asked about the methods and techniques preferred for reducing the risks and losses associated with these hazards. Survey Results: <a href="https://www.surveymonkey.com/results/SM-DCJ39FKD/">https://www.surveymonkey.com/results/SM-DCJ39FKD/</a>

4/13/15	Steering Committee Meeting	OHSEP Office, Mathews	No	The Steering Committee Meeting allowed the Steering Committee to gather before the public meeting took place, to discuss any additional changes needing to be made in the Risk Assessment or any other portions of the HMP.
4/13/15	Public Meeting	OHSEP Office, Mathews	Yes	The public meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Maps of the Lafourche Parish communities were provide for the meeting attendees to identify specific areas where localized hazards occur.
6/15/15	Public Plan Review (Digital)	Online - <a href="http://www.lafourchegov.org/government/departments/homeland-security-emergency-preparedness">http://www.lafourchegov.org/government/departments/homeland-security-emergency-preparedness</a>	Yes	Provide a draft copy of the plan on the Lafourche Parish OHSEP website, for public review.
6/29/15	Public Plan Review (Hardcopy)	OHSEP Office, Mathews	Yes	Provide a draft copy of the plan at the Lafourche Parish OHSEP Office, for public review.

## Planning

The 7-month plan update process consisted of several phases, as displayed in the table below.

Planning Phase	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
Plan review and revision							
Data collection							
Risk Assessment							
Public outreach and input			Public meetings and survey			Draft Review	
Mitigation strategy and actions							
GOHSEP plan updates review							
Plan updates review by FEMA							
Plan adoption							
Plan approval							Final

## Coordination

The Lafourche Parish Office of Homeland Security and Emergency Preparedness (OHSEP) oversaw the coordination of the 2015 Hazard Mitigation Plan Update Steering Committee during the update process. The OHSEP Director was responsible for identifying members for the Committee.

The OHSEP Director and SDMI were jointly responsible for inviting the Steering Committees and key stakeholders to planned meetings and activities. SDMI assisted the OHSEP Director with press releases and social media statements for notification to the media and general public for public meetings and public outreach activities. SDMI was responsible for facilitating meetings and outreach efforts during the update process.

## Neighboring Community, Local, and Regional Planning Process Involvement

From the outset of the planning process, the Hazard Mitigation Team encouraged participation from a broad range of jurisdictional entities. The involvement of representatives from city, state, and regional agencies provided diverse prospective and mitigation ideas.

The 2015 Hazard Mitigation Plan Update Steering Committee consisted of representatives from the following parish, municipal or community stakeholders:

- Parish of Lafourche
- City of Thibodaux
- Town of Lockport
- Town of Golden Meadow
- Lafourche Parish Public Works
- Lafourche Parish Sheriff's Office
- Lafourche Parish Council Office
- Lafourche Parish School Board.

Adjacent communities were invited by email to participate in each step of the planning process including the St. James, Jefferson, St. John the Baptist, Assumption, St. Charles, and Terrebonne. Agencies such as Acadian Ambulance, the American Red Cross, and the Coastal Protection and Restoration Authority were also invited via email to attend meetings held during the Hazard Mitigation Plan Update process.

Below is a detailed list of the 2015 HMPU Steering Committee:

Name	Agency	Address	Email	Phone
Adrienne Labat	Building Code Enforcement	4876 HWY 1 Mathews 70375	labatav@lafourchegov.org	985-537-7603
Armand Autin	Lockport Volunteer Fire Department	10202 Hwy. 1, Lockport 70374	armand@valentinechemicals.com	9855323876
Brady Daigle	South Lafourche Ambulance Service	17078 W Main St Cut Off 70345	lad1bd@viscom.net	985-632-8638
Chad Davis	Acadian Ambulance	300 Hopkins St Lafayette 70501	cdavis@acadian.com	985-876-8704
Charlene Rodriguez	Lafourche Parish Council on Aging	4876 Highway 1, Mathews 70375.	lafcoadirector@mobiletel.com	985-537-7603
Charles Hudson	Jefferson Parish	910 3rd St. Gretna 70053	CHudson@jeffparish.net	504-349-5360
Chett Chiasson	Greater Lafourche Port Commission-Harbor Police	16829 E Main St Galliano 70354	chettc@portfourchon.com	985-632-1101
Chris Boudreaux	Emergency Management	4876 HWY 1 Mathews 70375	chrisb@lafourchegov.org	985-537-7603
Chris Boudreaux	Chackbay Volunteer Fire Department	100 Hwy. 304, Thibodaux 70301	chrisb@lafourchegov.org	9856332828
Christine Mullarkey	American Red Cross	925 S. Labarre Rd Metairie 70001	Christine.Mullarkey@Redcross.org	504-915-8333
Craig Jaccuzzo	Nicholls State University	906 E 1st St Thibodaux 70310	craig.jaccuzzo@nicholls.edu	(985) 448-4746
Craig Rink	Choctaw Volunteer Fire Department	2854 Choctaw Rd., Thibodaux 70301	choctawfiredepartment@yahoo.com	9856332888

Name	Agency	Address	Email	Phone
Craig Webre	Lafourche Parish Sheriff's Office	200 Canal Blvd Thibodaux 70301	craig-webre@lpso.net	985-447-2255
Daniel Lorraine	Lafourche Parish Council Dist#9	4876 Highway 1, Mathews 70375.	councildist9@lafourchegov.org	985-438-4122
Darla Duet	Floodplain Manager	4876 Highway 1, Mathews 70375.	duetda@lafourchegov.org	(985) 493-6906
David Braud	St. Ann General Hospital	4608 LA1 Raceland 70394	dbraud@ochsner.org	985-537-6841
Earl Eues	Terrebonne Parish	8026 Main St Houma 70360	eeues@tpcg.org	985-873-6357
Eric Benoit	Emergency Management	4876 HWY 1 Mathews 70375	ericb@lafourchegov.org	985-537-7603
Eric DeGravelle	Thibodaux General Hospital	602 North Acadia Rd Thibodaux 70301	eric.degravelle@thibodaux.com	985-493-4587
Eric Deroche	St. James Parish	PO Box 106 Convent 70723	eric.deroche@stjamesla.com	225-562-2265
Errol Price	City Management	310 West Second St. Thibodaux 70301	eprice@ci.thibodaux.la.us	9854467218
Freddy Guidry	Lafourche Fire District #3	17462 W. Main St., Cut Off, 70345	freddyg@lpfd3.com	9856328068
Gary Washington	Public Works	4876 Highway 1, Mathews 70375.	garyw@lafourchegov.org	985-44600335
Grayling Hadnott	Economic Development Agency	402 Green St. Thibodaux 70302	hadnottg@lafourchegov.org	9854936672
Harvey Parks	Bayou Blue Fire Department	1870 Bayou Blue Rd., Gray 70359	hparks@pattersonservices.com	9858765234
Henri Boulet	LA1 Coalition	310 Ardoyne Dr Thibodaux 70310	henri.boulet@nicholls.edu	985-448-4485
Jamey Fontenot	City Management	2072 St. Mary St., Thibodaux 70301	jameyf@ci.thibodaux.la.us	9854480618
Jarrold Naquin	Lafourche Crossing 308 Fire Department	691 Hwy. 308, Thibodaux, 70301	jpn301@charter.net	9854483153
Jeffery Leuenberger	GIS	4876 Highway 1, Mathews 70375.	leuenbergerjl@lafourchegov.org	9854936610
Jennifer Dufrene	Parks and Recreation	4876 Highway 1, Mathews 70375.	recreation@lafourchegov.org	985-537-7603
Jerome Danos	Storm water Management	4876 Highway 1, Mathews 70375.	solidwastemgr@lafourchegov.org	985-537-7603
Jobe Boucvalt	St. John The Baptist Parish	1801 W. Airline HWY LaPlace 70068	publicsafety@sjbparish.com	985-652-2222
John Boudreaux	Assumption Parish	PO Box 520 Napoleonville 70390	johnboudreaux@assumptionoep.com	985-369-7386
John Davenport	Lady of the Sea General Hospital	200 West 134th Place Cut Off 70354	johnd@losgh.org	985-632-6401
Kathy Benoit	Thibodaux Chamber of Commerce	318 E Bayou RD Thibodaux 70301	kathy@thibodauxchamber.com	985-446-1187

Name	Agency	Address	Email	Phone
Kirk Chaisson	City Management	310 West Second St. Thibodaux 70301	kchiasson@ci.thibodaux.la.us	9854467218
Lin Kiger	Lafourche Parish Chamber of Commerce	107 W 26th St Larose 70373		985-693-6700
Lindsey Dufrene	Coastal Protection & Restoration Authority	4876 Highway 1, Mathews 70375.	dufrenell@lafourche.gov.org	985-537-7603
Lisa Orgeron	City/Parish Attorney's Office	103 Maronge St Thibodaux 70301	civilada@lpda.org	985-447-2003
Luci Sposito	City Management	310 West Second St. Thibodaux 70301	lsposito@ci.thibodaux.la.us	9854467218
Maiguel Maggio	City Management	310 West Second St. Thibodaux 70301	mmaggio@ci.thibodaux.la.us	9854467218
Marilyn Benoit	City Management	310 West Second St. Thibodaux 70301	mboenit@ci.thibodaux.la.us	9854467218
Pam Roussel	Homeland Security and Emergency Preparedness		Pam.Roussel@LA.GOV	985-851-2900
Pat Matherne	Planning/Community Development	4876 Highway 1, Mathews 70375.	planning@lafourche.gov.org	985-537-7603
Randy Pate	Thibodaux Fire Department	800 Parish Rd., Thibodaux 70301	thibfiredept@charter.net	9854471986
Reggie Pitre	Golden Meadow Police	107 Jervis Drive Golden Meadow 70357	chief@townofgoldenmeadow-la.gov	985-475-5213
Richard Blanchard	Department of Public Safety	4047 West Park Ave Gray 70359	rblanchard@dps.state.la.us	985-857-3680
Ron Perry	St. Charles Parish	15045 River RD Hahnville 70057	rperry@stcharlesgov.net	985-783-5050
Scott Cortez	Bayou Boeuf Volunteer Fire Department	3447 Hwy. 307, Thibodaux 70301	scottcortez12@gmail.com	9856332649
Scott Silverii	Thibodaux Police Department	310 West Second St. Thibodaux 70301	policechief@ci.thibodaux.la.us	9854467288
Seth Holloway	Lafourche Parish School Board	805 E 7th St Thibodaux 70301	sholloway@lafourche.k12.la.us	985-435-4618
Spence Cressionie	Vacherie/Gheens Volunteer Fire Department	2273 Highway 654, Gheens 70355	vgvfc@myviscom.com	9855326593
Todd Detillier	Lafourche Fire District #1	102 ST Phillip st Raceland 70394	lfd1vchief601@gmail.com	985-537-5000
Tom Simons	City Management	310 West Second St. Thibodaux 70301	tsimons@ci.thibodaux.la.us	9854467218
Wendy Thibodeaux	Tax Assessor's Office	403 St Louis St Thibodaux 70301	wendy@lpao.net	9854477242

## Program Integration

Local governments are required to describe how their mitigation planning process is integrated with other ongoing local and area planning efforts. This subsection describes Lafourche Parish programs and planning.

A measure of integration and coordination is achieved through the HMPU participation of Steering Committee members and community stakeholders who administer programs such as: floodplain management under the National Flood Insurance Program (NFIP), coastal protection and restoration, parish planning and zoning and building code enforcement.

Lafourche Parish as well as its incorporated jurisdictions will continue to integrate the requirements of this Hazard Mitigation Plan into other local planning mechanisms that are to be identified through future meetings of the Parish and Jurisdictions, and through the five-year review process described in the Plan Maintenance Section. The primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update and implementation of each jurisdiction's individual city/town plans that require specific planning and administrative tasks (e.g. risk assessment, plan amendments, ordinance revisions, capital improvement projects, etc.).

The members of the Lafourche Parish Hazard Mitigation Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the goals and actions of the Hazard Mitigation Plan, and will not contribute to increased hazard vulnerability in Parish. Existing plans, studies, and technical information were incorporated in the planning process. Examples include flood data from FEMA, the U. S. Army Corps of Engineers (USACE or Corps), and the U. S. Geological Survey. Much of this data was incorporated into the Risk Assessment component of the plan relative to plotting historical events and the magnitude of damages that occurred. The parish's 2010 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below:

- Coastal Wetlands Planning Protection and Restoration Act Project List
- Louisiana Coastal Impact Assistance Plan
- Louisiana Comprehensive Master Plan for a Sustainable Coast
- Lafourche Long Term Recovery Plan (ESF-14)
- Lafourche Parish Pump Stations Improvement Project List
- Lafourche Parish Public Works Department Project List.

## Documentation (Meetings and Public Outreach)

The following pages contain documentation of the agendas, attendees, and presentations, as well as any other related documents, for the meetings and public outreach activities conducted during this hazard mitigation plan update for Lafourche parish. For each meeting held, agendas were distributed, sign-in sheets were collected to record attendance, and PowerPoint presentations were given. For each meeting involving the public, notification was given via newspaper, social media, press releases, and public notices.

**Meeting #1: Coordination Meeting****Date:** September 10, 2014**Location:** SDMI, LSU Baton Rouge, LA**Purpose:** Discuss with the hazard mitigation lead for the parish (OHSEP director), as well as the parish's lead planner, the expectations and requirements of the hazard mitigation plan update process and to establish and initial project timeline.**Public Initiation:** No**Attendees:** Chris Boudreaux, Lafourche Parish OHSEP Director; SDMI Project Managers**Meeting #2: Hazard Mitigation Plan Update Kick-Off****Date:** September 30, 2014**Location:** Lafourche Parish OHSEP, Mathews, Louisiana**Purpose:** Discuss the expectations and requirements of the hazard mitigation plan update process and to establish and initial project timeline with the Parish's Hazard Mitigation Plan Steering Committee. Assign each individual jurisdiction and the parish data collection for the plan update.**Public Initiation:** No**Invitees – Meeting #2**

Name	Title	Agency
Adrienne Labat	CBO	Building Code Enforcement
Armand Autin	Fire Chief	Lockport Volunteer Fire Department
Brady Daigle	Asst Supervisor	South Lafourche Ambulance Service
Chad Davis	Regional Supervisor	Acadian Ambulance
Charlene Rodriguez	Director COA	Lafourche Parish Council on Aging
Charles Hudson	OHSEP Director	Jefferson Parish
Chett Chiasson	Administrator	Greater Lafourche Port Commission-Harbor Police
Chris Boudreaux	OHSEP Director	Emergency Management
Chris Boudreaux	Fire Chief	Chackbay Volunteer Fire Department
Christine Mullarkey	Resource Manager	American Red Cross
Craig Jaccuzzo	Campus Police Chief	Nicholls State University
Craig Rink	Fire Chief	Choctaw Volunteer Fire Department
Craig Webre	Sheriff	Lafourche Parish Sheriff's Office
Daniel Lorraine	Lafourche Council Chairman	Lafourche Parish Council Dist#9
Darla Duet	Floodplain Manager	Floodplain Manager
David Braud	Director of Enviro Services	St. Ann General Hospital
Earl Eues	OHSEP Director	Terrebonne Parish
Eric Benoit	Asst. OHSEP Director	Emergency Management
Eric DeGravelle	Director of Enviro Services	Thibodaux General Hospital
Eric Deroche	OHSEP Director	St. James Parish

Errol Price	Public Works Director	City Management
Freddy Guidry	Fire Chief	Lafourche Fire District #3
Gary Washington	Field Supervisor	Public Works
Grayling Hadnott	Director	Economic Development Agency
Harvey Parks	Fire Chief	Bayou Blue Fire Department
Henri Boulet	Executive Director	LA1 Coalition
Jamey Fontenot	Asst Police Chief	City Management
Jarrold Naquin	Fire Chief	Lafourche Crossing 308 Fire Department
Jeffery Leuenberger	Senior Planner	GIS
Jennifer Dufrene	Recreation Manager	Parks and Recreation
Jerome Danos	Solid Waste Manager	Storm water Management
Jobe Boucvalt	OHSEP Director	St. John The Baptist Parish
John Boudreaux	OHSEP Director	Assumption Parish
John Davenport	Administrator	Lady of the Sea General Hospital
Kathy Benoit	President/CEO	Thibodaux Chamber of Commerce
Kirk Chaisson	Parks Director	City Management
Lin Kiger	President/CEO	Lafourche Parish Chamber of Commerce
Lindsey Dufrene	CZM Clerk	Coastal Protection & Restoration Authority
Lisa Orgeron	Civil Department	City/Parish Attorney's Office
Luci Sposito	Grants	City Management
Mauguel Maggio	Public Works	City Management
Marilyn Benoit	Auditorium Director	City Management
Pam Roussel	Regional Corr.	Homeland Security and Emergency Preparedness
Pat Matherne	Planning Manager	Planning/Community Development
Randy Pate	Fire Chief	Thibodaux Fire Department
Reggie Pitre	Chief	Golden Meadow Police
Richard Blanchard	Lt. LSP	Department of Public Safety
Ron Perry	OHSEP Director	St. Charles Parish
Scott Cortez	Fire Chief	Bayou Boeuf Volunteer Fire Department
Scott Silverii	Chief	Thibodaux Police Department
Seth Holloway	Safety	Lafourche Parish School Board
Spence Cressionie	Fire Chief	Vacherie/Gheens Volunteer Fire Department
Todd Detillier	Fire Chief	Lafourche Fire District #1
Tom Simons	EM/RM Manger	City Management
Wendy Thibodeaux	Lafourche Assessor	Tax Assessor's Office

## Meeting #3: Risk Assessment Meeting

**Date:** January 14, 2015**Location:** Mathews, Louisiana**Purpose:** The Risk Assessment meeting included a presentation on the results of the Risk Assessment portion of the plan as well as provided an overview of the Public Meeting presentation. The assessment was conducted based on hazards identified during previous plans.**Public Initiation:** No**Invitees:**

Name	Title	Agency
Adrienne Labat	CBO	Building Code Enforcement
Armand Autin	Fire Chief	Lockport Volunteer Fire Department
Brady Daigle	Asst Supervisor	South Lafourche Ambulance Service
Chad Davis	Regional Supervisor	Acadian Ambulance
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Jennifer Dufrene	Recreation Manager	Parks and Recreation
Jerome Danos	Solid Waste Manager	Storm water Management

Jobe Boucvalt	OHSEP Director	St. John The Baptist Parish
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Lindsey Dufrene	CZM Clerk	Coastal Protection & Restoration Authority
Lisa Orgeron	Civil Department	City/Parish Attorney's Office
Luci Sposito	Grants	City Management
Maiguel Maggio	Public Works	City Management
Marilyn Benoit	Auditorium Director	City Management
Pam Roussel	Regional Corr.	Homeland Security and Emergency Preparedness
Pat Matherne	Planning Manager	Planning/Community Development
Randy Pate	Fire Chief	Thibodaux Fire Department
Reggie Pitre	Chief	Golden Meadow Police
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Seth Holloway	Safety	Lafourche Parish School Board
Spence Cressionie	Fire Chief	Vacherie/Gheens Volunteer Fire Department
Todd Detillier	Fire Chief	Lafourche Fire District #1
Tom Simons	EM/RM Manger	City Management
Wendy Thibodeaux	Lafourche Assessor	Tax Assessor's Office

## Meeting #4: Public Meeting

**Date:** April 13, 2015**Location:** Mathews, Louisiana

**Purpose:** The Public Meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Maps of the Lafourche parish communities were provided for the meeting attendees to identify specific areas where localized hazards occur.

**Public Initiation:** Yes**Invitees:**

Name	Title	Agency
Adrienne Labat	CBO	Building Code Enforcement
Armand Autin	Fire Chief	Lockport Volunteer Fire Department
Brady Daigle	Asst Supervisor	South Lafourche Ambulance Service
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Eric Deroche	OHSEP Director	St. James Parish
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**Public Notices**

Lafourche Parish, LA : Press Releases : PARISH TO HOLD MITIGATION PLAN UPD... Page 1 of 1

**PARISH TO HOLD MITIGATION PLAN UPDATE AND PUBLIC MEETING ON APRIL 13**

**Post Date:** 04/08/2015 10:36 AM

Lafourche Parish Government's Office of Emergency Preparedness will be holding its Hazard Mitigation Plan Update and Steering Committee Public Meeting from 5:30 to 6:30 p.m. on Monday, April 13, in the Council Chambers at the Mathews Government Complex, 4876 Hwy. 1.

The update and meeting will focus on the parish's sustained actions to eliminate or reduce future risk to people and property as a result of natural and man-made disasters.

Along with parish officials, other participants will include the Governor's Office of Homeland Security as well as members of the parish's Risk Assessment staff and an update on previous and current Lafourche Parish mitigation projects.

During the meeting portion of the event, a public forum will be held to discuss mitigation strategies in addition to reviewing Lafourche Parish's goals moving forward.

Additionally, a survey is being made available at <https://www.surveymonkey.com/r/LafourcheHMPU> for residents to inform officials about the public perceptions and opinions regarding natural hazards in Lafourche Parish.

Paper copies of this survey will also be available at the forum to be turned in following the meeting.

*[Return to full list >>](#)*

FOR IMMEDIATE RELEASE

March 11, 2015

## Lafourche Parish to hold Public Meeting for Hazard Mitigation Plan Update

Baton Rouge, LA - A Lafourche Parish Hazard Mitigation Plan Update public meeting will be held on Monday, April 13th from 5:30-7:00 p.m. at the Lafourche Parish Complex (4876 Louisiana Hwy 1, Mathews, LA 70375).

Natural hazards have the potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. While an important aspect of emergency management deals with disaster recovery (the actions that a community takes to repair damages), an equally important aspect of emergency management involves hazard mitigation - sustained actions taken to reduce long-term risk to life and property. They are things we do today to be more protected in the future. For example, elevating buildings in flood hazard areas, installing hurricane clips and storm shutters, relocating critical facilities out of hazard areas, using fire-resistant construction materials in wildfire hazard areas, etc. Hazard mitigation actions are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage. With careful selection, they can be long-term, cost-effective means of reducing risk and helping to create a more sustainable and disaster-resilient community.

A hazard mitigation plan describes an area's vulnerability to the various natural hazards that are typically present, along with an array of actions and projects for reducing key risks. While natural disasters cannot be prevented from occurring, the continued implementation of mitigation strategies identified in the plan will gradually, but steadily, make our communities more sustainable and disaster-resilient.

The Disaster Mitigation Act of 2000 (DMA 2000) requires all states and local governments to have a hazard mitigation plan in order to be eligible to apply for certain types of federal hazard mitigation project grants. Hazard mitigation plans must be: (a) implemented on an ongoing basis, and (b) updated every five years to ensure that they remain applicable representations of local risk and locally-preferred risk reduction strategies.

Lafourche Parish, in collaboration with the incorporated areas of Golden Meadow, Lockport and Thibodaux, is updating its hazard mitigation plan. A public meeting will be held on Monday, April 13<sup>th</sup> from 5:30-7:00 p.m. at the Lafourche Parish Complex (4876 Louisiana Hwy 1, Mathews, LA 70375) for all citizens interested in learning about and participating in discussions concerning the Lafourche Parish Hazard Mitigation Plan.

Residents of Lafourche Parish are asked to participate in a survey about public perceptions and opinions regarding natural hazards in the parish. The survey results will be used in the development of the plan. This short web-based survey can be found at <https://www.surveymonkey.com/r/LafourcheHMPU>.

For more information, please contact: Chris Boudreaux, Lafourche Parish Director of Homeland Security at (985) 532-8174.

Media Contact: Brant Mitchell- SDMI at LSU- (225) 578-5939 – [bmitch9@lsu.edu](mailto:bmitch9@lsu.edu).

**Lafourche Parish Government** Home

VIDEOS







Watch has been extended for those areas that have already received heavy rainfall over the past 2 days.

The watch is currently in effect through 7pm Tuesday, but may need to be extended in time and/or area again as localized heavy rainfall will remain possible through much of the week.

[weather.gov/NewOrleans](#) [National Weather Service New Orleans](#) [@NWSN](#)

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**Lafourche Parish Government**  
April 13 at 7:28am · Edited · **1**

FYI...  
**PARISH TO HOLD MITIGATION PLAN UPDATE AND PUBLIC MEETING TONIGHT, APRIL 13**

Mathews, LA – Lafourche Parish Government's Office of Emergency Preparedness will be holding its Hazard Mitigation Plan Update and Steering Committee Public Meeting from 5:30 to 6:30 p.m. tonight, April 13, in the Council Chambers at the Mathews Government Complex, 4876 Hwy. 1. ... See More



**Lafourche Parish Hazard Mitigation Public Opinion Survey**

Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

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## Supplemental Materials

Public Meeting  
Incident/Issue Questionnaire

1. Hazard Type(s):
  - a. Flooding
    - i. Riverine
    - ii. Storm Surge
    - iii. Street
    - iv. Other (describe):
  - b. Thunderstorms
    - i. High wind
    - ii. Lightning
  - c. Tropical Cyclone
  - d. Coastal
    - i. Saltwater Intrusion
    - ii. Erosion
    - iii. Other (describe):
  - e. Dam and Levee Failure
  - 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?  
\_\_\_\_\_  
\_\_\_\_\_
9. Can we contact you if we have further questions about this incident? Yes/No
10. Contact Information (optional)
  - a. Name: \_\_\_\_\_
  - b. City: \_\_\_\_\_

*Outreach Activity #1: Public Opinion Survey***Date:** March 11, 2015 – ongoing throughout planning process**Location:** Web survey**Public Initiation:** Yes**Survey Tool:****SURVEY INFORMATION**

You have been asked to participate in this survey about public perceptions and opinions regarding natural hazards in Lafourche Parish. In addition, we would like information regarding the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your parish. The survey should take less than 30 minutes to complete.

This is a public opinion survey, the results of which will inform local natural hazard mitigation planning in Louisiana.

This survey is being conducted by a division of Louisiana State University on behalf of the Lafourche Parish government.

**CONSENT INFORMATION**

This survey has 25 questions and should take about 30 minutes to complete.

Results of this study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

This study has been approved by the LSU IRB. For questions concerning participants rights, please contact the LSU Institutional Review Board Chair, Dr. Dennis Landin at 225-578-8692 or [irb@lsu.edu](mailto:irb@lsu.edu). The Principal Investigator for this survey, Mr. Brant Mitchell, SDMI, can be reached at or [bmitch9@lsu.edu](mailto:bmitch9@lsu.edu)

I agree to participate in the study described above and do so by continuing to the survey by clicking the "Next" button below. I acknowledge that I may request from the investigators a hard copy of this consent form for my signature.

**1. Are you EIGHTEEN (18) years old or older?**

- Yes  
 No

**2. Do you live in Lafourche Parish?**

- Yes  
 No

**3. Do you live within the incorporated city limits of:**

- Golden Meadow
- Lockport
- Thibodaux
- I do not live within an incorporated jurisdiction.
- Not sure

**NATURAL HAZARD INFORMATION**

First we would like to know about your experiences involving natural hazards and your exposure to preparedness information.

**4. During the past five years in the parish you currently reside in, have you or someone in your household directly experienced a natural disaster such as a severe windstorm, flood, tropical storm or other type of natural disaster?**

- Yes
- No

**5. Which of these natural disasters have you or someone in your household experienced in the past five years? (Check all that apply)**

- Drought
- Flood
- Severe Thunderstorm
- Tornado
- Tropical Storm or Hurricane
- Severe Winter Storm
- Hail

Other (please specify)

**6. How concerned are you about the following natural disasters affecting your parish? (Check the corresponding box for each hazard.)**

	Not Concerned	Not Very Concerned	Neutral	Somewhat Concerned	Very Concerned
Drought	<input type="radio"/>				
Flood	<input type="radio"/>				
Severe Thunderstorm	<input type="radio"/>				
Tornado	<input type="radio"/>				
Tropical Storm or Hurricane	<input type="radio"/>				
Severe Winter Storm	<input type="radio"/>				
Hail	<input type="radio"/>				

Other (please specify)

**7. Have you ever received information about how to make members of your household and your home safer from natural disasters?**

- Yes
- No

**8. How recently?**

- Within the last 6 months
- Between 6 and 12 months
- Between 1 and 2 years
- Between 2 and 5 years
- 5 years or more

**9. From whom did you LAST receive information about how to make members of your household and your home safer from natural disasters? (Check only one)**

- |  |   |
|--|---|
| <input type="radio"/> News media                         | <input type="radio"/> Elected official              |
| <input type="radio"/> Government agency                  | <input type="radio"/> American Red Cross            |
| <input type="radio"/> Insurance company                  | <input type="radio"/> Church or civic association   |
| <input type="radio"/> Utility company                    | <input type="radio"/> Other non-profit organization |
| <input type="radio"/> University or research institution | <input type="radio"/> Social media (Facebook, etc.) |
| <input type="radio"/> Neighbor/friend/family             | <input type="radio"/> Not sure                      |

Other (please specify)

**10. Whom would you MOST TRUST to provide you with information about how to make your household and home safer from natural disasters? (Check up to three answers)**

- |   |  |
|---|--|
| <input type="checkbox"/> News media                         | <input type="checkbox"/> Elected official              |
| <input type="checkbox"/> Government agency                  | <input type="checkbox"/> American Red Cross            |
| <input type="checkbox"/> Insurance company                  | <input type="checkbox"/> Church or civic association   |
| <input type="checkbox"/> Utility company                    | <input type="checkbox"/> Other non-profit organization |
| <input type="checkbox"/> University or research institution | <input type="checkbox"/> Social media (Facebook, etc.) |
| <input type="checkbox"/> Neighbor/friend/family             | <input type="checkbox"/> Not sure                      |

Other (please specify)

**11. What is the MOST EFFECTIVE way for you to receive information about how to make your household and home safer from natural disasters? (Check up to three answers)**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Newspaper stories | <input type="checkbox"/> Online news outlets           | <input type="checkbox"/> Fact sheet/brochure                             |
| <input type="checkbox"/> Newspaper ads     | <input type="checkbox"/> Social media (Facebook, etc.) | <input type="checkbox"/> Chamber of Commerce                             |
| <input type="checkbox"/> TV news           | <input type="checkbox"/> Schools                       | <input type="checkbox"/> Library   |
| <input type="checkbox"/> TV ads            | <input type="checkbox"/> Billboards                    | <input type="checkbox"/> Public workshops/meetings                       |
| <input type="checkbox"/> Radio news        | <input type="checkbox"/> Books                         | <input type="checkbox"/> Displays in public places (mall, grocery, etc.) |
| <input type="checkbox"/> Radio ads         | <input type="checkbox"/> Mail                          | <input type="checkbox"/> University or research institution              |
| <input type="checkbox"/> Email newsletters | <input type="checkbox"/> Fire department               |  |

Other (please specify)

**12. Prior to taking this survey, were you aware of your parish's Hazard Mitigation Plan (HMP)?**

- Yes  
 No

**13. Prior to taking this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your parish to update the hazard mitigation plan every five years in order for your parish to be eligible for federal pre- and post-disaster hazard mitigation funds?**

- Yes  
 No

**COMMUNITY VULNERABILITIES AND HAZARD MITIGATION STRATEGIES**

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, characteristics, or resources that may be impacted by natural hazards (e.g. populations with functional or special needs, economic components, environmental resources, etc.). The next set of questions focuses on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

**14. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following CATEGORIES are most susceptible to the impacts caused by natural hazards in your parish?**

**(Rank the community assets in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable)**

<input type="text"/>	Human (Loss of life and/or injuries)
<input type="text"/>	Economic (Business closures and/or job losses)
<input type="text"/>	Infrastructure (Damage or loss of bridges, utilities, schools, etc.)
<input type="text"/>	Cultural/Historic (Damage or loss of libraries, museums, historic sites)
<input type="text"/>	Environmental (Damage or loss of forests, pastureland, waterways, etc.)
<input type="text"/>	Governance (Ability to maintain order and/or provide public amenities and services)

**15. Next we would like to know what specific types of COMMUNITY ASSETS are most important to you.**

**(Check the corresponding box for each asset)**

	Not Important	Not Very Important	Neutral	Somewhat Important	Very Important
Nursing homes/Assisted-living facilities	<input type="radio"/>				
Schools (K-12)	<input type="radio"/>				
Hospitals	<input type="radio"/>				
Major bridges	<input type="radio"/>				
Fire/Police stations	<input type="radio"/>				
Museums/Historic buildings	<input type="radio"/>				
Major employers	<input type="radio"/>				
Small businesses	<input type="radio"/>				
College/Universities	<input type="radio"/>				
Parish or City Buildings (City Hall, Courthouse, etc.)	<input type="radio"/>				
Other (please specify)	<input type="text"/>				



**17. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural disasters in your parish.**

**(Tell us how important each one is to you.)**

	Not Important	Not Very Important	Neutral	Somewhat Important	Very Important
Protecting private property	<input type="radio"/>				
Protecting critical facilities (transportation networks, hospitals, fire stations)	<input type="radio"/>				
Preventing development in hazard areas	<input type="radio"/>				
Enhancing the function of natural features (bayous, rivers and wetlands)	<input type="radio"/>				
Protecting historical and cultural landmarks	<input type="radio"/>				
Protecting and reducing damage to utilities	<input type="radio"/>				
Strengthening emergency services (police, fire, EMS)	<input type="radio"/>				
Disclosing natural hazard risks during real estate transactions	<input type="radio"/>				
Promoting cooperation among public agencies, citizens, non-profits and businesses	<input type="radio"/>				

**18. What specific mitigation projects do you think would make your property and/or the parish more disaster resilient?****(ANSWER ALL THAT APPLY)**

- Home elevation
- Property acquisition
- Protecting critical facilities (government buildings, hospitals, etc.)
- Improved drainage
- Additional levees or levee raising
- Safe rooms (for high wind, not tropical systems)
- Community education
- Purchase of equipment (radios, etc.)
- Harbors of refuge for commercial fishing vessels
- Sea level monitoring systems
- GIS survey of parish properties

Other (please specify)

**MITIGATION AND PREPAREDNESS ACTIVITIES IN YOUR HOUSEHOLD**

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones and emergency care can be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

**19. In the following list, please check those activities that you HAVE DONE in your household, PLAN TO DO in the near future, HAVE NOT DONE, or are UNABLE TO DO.**

**(Check one answer for each preparedness activity)**

	Have Done	Plan to Do	Not Done	Unable to Do
Attended meetings or received written information on natural disasters or emergency preparedness?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talked with members in your household about what to do in case of a natural disaster or emergency?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries or other emergency supplies)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussed or created a utility shutoff procedure in the event of a natural disaster?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**GENERAL HOUSEHOLD INFORMATION**

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

**20. Gender**

Female

Male

Other (please specify)

**21. How much total combined money did all members of your HOUSEHOLD earn last year?**

- \$0 to \$9,999
- \$10,000 to \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,999
- \$150,000 to \$174,999
- \$175,000 to \$199,999
- \$200,000 and up
- Prefer not to answer

**22. In what ZIP code is your home located? (enter 5-digit ZIP code; for example, 00544 or 94305)****23. Do you rent or own the place where you live?**

- Own
- Rent
- Neither (please specify)

**24. Which category below includes your age?**

- 17 or younger
- 18-20
- 21-29
- 30-39
- 40-49
- 50-59
- 60 or older

**25. Does anyone in your household own a business or a farm?**

- Yes
- No

**26. Which race/ethnicity best describes you? (Please choose only one.)**

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic American
- White / Caucasian
- Multiple ethnicity / Other (please specify)

**27. Please feel free to provide any additional comments in the space provided:**

## Appendix B – Plan Maintenance

### Purpose

The section of the Code of Federal Regulations (CFR) pertaining to Local Mitigation Plans lists five required components for each plan: a description of the planning process, Risk Assessments, mitigation strategies, a method and system for plan maintenance, and documentation of plan adoption. This section details the method and system for plan maintenance, following the CFR's guidelines that the Plan Update must include (1) "a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle," (2) "a process by which local governments incorporated the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans" and (3) "discussion on how the community will continue public participation in the plan maintenance process."

### Monitoring, Evaluating, and Updating the Plan

By law, the Plan must be updated every five years prior to re-submittal to the Federal Emergency Management Agency (FEMA) for re-approval. The first part of this subsection describes the whole update process, including the responsible parties, methods to be used, evaluation criteria to be applied, and scheduling for monitoring and evaluating the plan. These descriptions are followed by an explanation of how and when the plan will be periodically updated:

- Responsible parties
- Methods to be used
- Evaluation criteria to be applied
- Scheduling for monitoring and evaluating the plan.

These descriptions are followed by an explanation of how and when the plan will be periodically updated.

### Responsible Parties

Lafourche Parish has developed a plan maintenance process to ensure that regular review and update of the Hazard Mitigation Plan occurs. The parish has formed a Hazard Mitigation Plan Evaluation Committee that consists of selected members from municipalities, local agencies, and the Hazard Mitigation Plan Update Committee which prepared the HMPU as included herewith. The HMPU Evaluation Committee will consist of the following representation:

1. Lafourche Parish President
2. Lafourche Parish CAO
3. Lafourche Parish Director of Public Works
4. Lafourche Parish Director of Planning and Zoning
5. Lafourche Parish Director of Economic Development
6. Lafourche Parish Director of OEP and Homeland Security (responsible for overall coordination of HMP maintenance activities)
7. Lafourche Parish Sheriff
8. Mayors of each of the three municipalities or their representative.

The OHSEP director of the parish will be responsible for contacting each of the Committee members during January of every year. Members will have a one month period in which to respond to initiate a meeting if any one member feels that issues need to be addressed. However, should a hazard event occur and the need for update analysis surface, a meeting can be called by the OHSEP director or requested by a Committee member.

### Methods for Monitoring and Evaluating the Plan

The OHSEP director will also be responsible for maintaining plan review comments and will monitor the plan's action items on an ongoing basis using phone calls and emails to contact those responsible to implementing action items and bring the project status reports to the yearly evaluation meetings. Ideas to be discussed will include, but are not limited to, the following:

- Does the Committee membership need to be updated?
- Have any new hazard events occurred?
- Has new funding been allotted?
- Have any projects been implemented?
- Have the project priorities changed?
- Are there any new projects to discuss?

In addition to the yearly evaluations, the questions listed above and additional considerations will be made during the formal update process to be completed and approved by FEMA within a five-year cycle. Updates to the Hazard Mitigation Plan will be made fully utilizing the representation of the HMP Committee formed for this purpose. (See §201.6 (c)(4)(i)).

### Plan Evaluation Criteria

The evaluations will consider several basic factors which are similar to those addressed in the monitoring process, and any additional review indicated by GOHSEP or the Lafourche Parish Hazard Mitigation Evaluation Committee. The factors that will be taken into consideration during these periodic evaluations of the plan include the following:

1. Changes in vulnerability assessments and loss estimations. The evaluation will include an examination of the analyses conducted for hazards identified in the plan and determine if there have been changes in the level of risk to the state and its citizens to the extent that the plan (in particular the strategies and prioritized actions the parish/jurisdiction is considering) should be modified.
2. Changes in laws, policies, ordinances, or regulations. The evaluation will include an assessment of the impact of changes in relevant laws, policies, ordinances, and regulations pertaining to elements of the plan.
3. Changes in parish/jurisdiction departments or their procedures (in particular the Lafourche Parish OHSEP, which is responsible for maintaining the plan) that will affect how mitigation programs or funds are administered.
4. Significant changes in funding sources or capabilities.
5. Progress on mitigation actions (including project closeouts) or new mitigation actions that the parish/jurisdiction is considering.

### Updating the Plan

Updates will follow the original planning process outlined in Appendix A. The update process will entail a detailed and structured re-examination of all aspects of the original plan, followed by recommended updates. The update process will be initiated by Lafourche Parish OHSEP and assisted and tracked by the Lafourche Parish Hazard Mitigation Evaluation Committee. The recommendations will be presented to the Lafourche Parish Hazard Mitigation Evaluation Committee for consideration and approval. It is expected that the parish and each jurisdiction's administration will issue a letter of adoption for each update of the plan.

At a minimum, the plan will be updated and re-submitted to FEMA for re-approval every five years, as required by Disaster Mitigation Act of 2000 (DMA2K). The five-year update for FEMA re-approval requires that all the original steps outlined in Appendix A be revisited to make sure the plan assumptions and results remain valid as a basis for further decision-making and priority-setting.

Lafourche Parish OHSEP will initiate, coordinate and lead all plan updates in conjunction with the SHMPC. The next two paragraphs describe the procedures for interim and five-year updates, respectively.

The nature of plan amendment will be determined by the evaluation process described above. In general, the Lafourche Parish OHSEP will notify the Lafourche Parish Hazard Mitigation Evaluation Committee that the parish is initiating an interim amendment, and describe the circumstances that created the need for the amendment (per the list in the Plan Evaluation Criteria section above). The Lafourche Parish OHSEP Director will determine if the Lafourche Parish Hazard Mitigation Evaluation Committee should be consulted regarding potential changes. If it is determined that the Lafourche Parish Hazard Mitigation Evaluation Committee should be involved, the nature of the involvement will be at the discretion of Lafourche Parish OHSEP.

When amendments are completed absent the involvement of the Lafourche Parish Hazard Mitigation Evaluation Committee, the Lafourche Parish OHSEP will advise all Committee members via email that the plan has been amended, and describe the nature of the amendment. In addition, the Lafourche Parish OHSEP will provide GOHSEP with a copy.

As required by the Disaster Mitigation Act of 200 (DMA2K) the plan will be updated every five years and re-submitted to FEMA for re-approval. In those years, the evaluation process will be more rigorous, and will examine all aspects of the plan in detail. It is anticipated that several meetings of the Lafourche Parish Hazard Mitigation Evaluation Committee will be required and that the parish and each jurisdiction will formally re-approve the plan prior to its submission to FEMA.

Based on the five-year renewal requirements for Plan Updates, the Lafourche Parish OHSEP anticipates that the submission date for the required update will be approximately July 2019. Prior to that time, the Lafourche Parish OHSEP will contact the Committee members and other appropriate agencies/organizations to confirm a schedule for the Plan Update.

### 2015 Plan Version Plan Method and Schedule Evaluation

For the current plan update, the previously approved plan's method and schedule were evaluated to determine if the elements and processes involved in the required 2015 update. Based on this analysis, the method and schedule were deemed to be acceptable, and nothing was changed for this update.

### Incorporation into Existing Planning Programs

Members of local and parish departments who interact on planning issues, such as the Parish President, Parish CAO, Parish Director of Planning and Zoning, Parish Director of Grants and Economic Development, Parish OEP Director, Sheriff, and the mayors of each municipality met to review the relevance of the HMP's risks and vulnerabilities identified, as well as the goals, objectives, and actions for mitigating the risks, and catalogued all said information for use in future updates to the other local planning mechanisms. In addition, at the time such update processes take place, these stakeholders will convene as a Committee to review the ongoing relevance of said data and how it can best be utilized in the various planning mechanisms to produce the best possible planning document.

When appropriate, local governments, by way of the individuals who served on the HMPU Committee and the HMP Evaluation Committee, will address the need to incorporate requirements of the mitigation plan into their respective zoning ordinances, comprehensive plans, and/or capital improvement plans if deemed necessary and if not previously included. An effort will be made by all HMPU Committee members to ensure consistency in all future planning efforts with the mitigation goals and risk assessment presented in this plan. Consistency between all planning efforts will ensure a decrease in losses related to hazard events within future and existing developments. During the last five year update cycle, the former hazard mitigation plan's (2006) goals were not incorporated into any other planning mechanisms as no formal plans were prepared. However, the goals and hazard mitigation priorities were also discussed frequently in council meetings at the parish and municipal level.

If amendments to existing ordinances or new ordinances are required, each political jurisdiction will be responsible for its respective updates.

On behalf of the jurisdictions of Thibodaux, Golden Meadow, and Lockport, Lafourche Parish has the authority to incorporate contents of the Hazard Mitigation Plan into the parish's existing regulatory mechanisms. Agreements are currently in place with each jurisdiction to allow for the parish incorporation mechanisms to take place.

The following parish and local plans incorporate requirements of this Hazard Mitigation Plan Update as follows:

**Lafourche Unincorporated**

- Comprehensive Master Plan – Updated as needed, Lafourche Parish OHSEP is the responsible agency.
- Local Emergency Operations Plan – Updated every four years, Lafourche Parish OHSEP is the responsible agency.
- Continuity of Operations Plan – Updated every four years, Lafourche Parish OHSEP is the responsible agency .
- Stormwater Management Plan – Updated as needed, Lafourche Parish OHSEP is the responsible agency.

**Thibodaux**

- There are no plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

**Lockport**

- There are no plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

**Golden Meadow**

- There are no plans within this jurisdiction for the Hazard Mitigation Plan to be integrated.

**Continued Public Participation**

Responsibility for continued public participation will be that of the OHSEP director. Copies of the plan will be kept on file at the parish government office and within each municipality. Contained in the plan and presented in section (c)(4)(i) is a list members of the plan evaluation Committee that can be contacted. In addition, copies of the plan and any proposed changes will be posted on the parish government website. This website will also have an e-mail address and phone numbers to which the public can direct their comments or concerns. The local newspaper will also be notified if HMP issues arise.

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## Appendix C – Lafourche Parish Essential Facilities

Lafourche Unincorporated Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
Fire and Rescue	Bayou Blue Volunteer Fire Station 2	X	X		X	X
	Bayou Boeuf Volunteer Fire Co.	X	X		X	X
	Bayou Boeuf Volunteer Fire Department	X	X		X	X
	Belle Amie Fire Department Station 6	X	X		X	X
	Belle Vue Station	X	X		X	X
	Bowie Fire Company 1	X	X		X	X
	Chackbay Volunteer Fire Department	X	X		X	X
	Chackbay-Choupic V.F.D	X	X		X	X
	Choctaw Vol. Fire Station	X	X		X	X
	Cut Off Fire Dept.	X	X		X	X
	East Cutoff Fire Dept. Station 4	X	X		X	X
	Galliano Fire Dept. Station 8	X	X		X	X
	Lafourche Fire Protection Station 1	X	X		X	X
	Lafourche Fire Protection Station 2	X	X		X	X
	Lafourche Fire Protection Station 5	X	X		X	X
	Lafourche Fire Protection Station 7	X	X		X	X
	Lafourche Parish 308 Vol. Fire Dept.	X	X		X	X
	Larose Fire Dept Station 2	X	X		X	X
	Lockport Fire Station 308	X	X		X	X
	Lockport Heights Station	X	X		X	X
Lockport Vol Fire Dept. Valintine Station	X	X	X	X	X	
Mathews Station	X			X	X	
North Larose Fire Station 14	X	X		X	X	
Port Fourchon Fire Department Station 12	X	X		X	X	

Lafourche Unincorporated Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
	Protection Dist. No.1	X	X		X	X
	Protection Dist. No.1 Station 3	X			X	X
	Protection Dist. No.1 Station 6	X			X	X
	Raceland Fire Station 1	X			X	X
	St. John Vol Fire Station	X			X	X
	St. John Vol. Fire	X			X	X
	St. John Volunteer Fire Department Station 2	X			X	X
	Vacherie-Gheen Vol. Fire Co.	X	X		X	X
	Vigilant Chemical & Hose Fire Co.	X			X	X
	West Larose Fire Station	X	X		X	X
Government	Barrios Center Parish Council	X	X		X	X
	Coastal Protection and Restoration Authority of Louisiana	X	X		X	X
	Department of Social Services	X	X		X	X
	Department of Transportation	X	X		X	X
	Department of Wildlife and Fisheries	X			X	X
	Division of Probation and Patrol Adult	X	X		X	X
	Greater Lafourche Port Commission	X	X		X	X
	Housing Authority of Lafourche	X	X		X	X
	Lafourche Field Office	X	X		X	X
	Lafourche Library	X	X		X	X
	Lafourche Parish Council Maintenance Barn	X	X		X	X
Louisiana Department of Motor Vehicles	X	X		X	X	

Lafourche Unincorporated Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
	Louisiana Motor Vehicle Inspection	X	X		X	X
	Louisiana Secretary of State	X	X		X	X
	Louisiana Society for Crippled Children	X	X		X	X
	South Lafourche Levee District	X	X		X	X
	State of Louisiana Office of Juvenile Justice	X			X	X
	Thibodaux Field Office - FEMA	X	X		X	X
	Thibodaux Region Office of Community Services Dept. of Social Services	X	X		X	X
	U.S. Border Patrol	X	X		X	X
	U.S. Coast Guard	X	X		X	X
	USDA Golden Meadows Plant Materials Center	X	X		X	X
	Ward 10 Annex	X	X		X	X
Law Enforcement	Lafourche Parish Coroner's Office	X			X	X
	Lafourche Parish Sheriff's Office Range Facility	X	X		X	X
	Lafourche Sheriff Office Work Release Center	X	X		X	X
	Parish Sheriff's Office	X	X		X	X
	Parish Sheriff's Office	X	X		X	X
Corrections	Lafourche Parish Detention Center	X			X	X
	Lafourche Parish Juvenile Justice Facility	X			X	X
Public Health	Lady of the Sea Emergency Center	X	X		X	X
	Lady of the Sea General Hospital	X	X		X	X

Lafourche Unincorporated Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
	Ochsner St. Anne General Hospital	X			X	X
	Parish Health Unit	X	X		X	X
Schools	Bayou Boeuf Elementary	X	X		X	X
	Central Lafourche High School	X	X		X	X
	Chackbay Elementary	X	X		X	X
	Cut Off Elementary	X	X		X	X
	Galliano Elementary School	X	X		X	X
	Larose Cutoff Middle School	X	X		X	X
	Larose Lower Elementary	X	X		X	X
	Larose Upper Elementary	X	X		X	X
	Raceland Elementary	X			X	X
	Raceland Middle	X			X	X
	Raceland Upper Elementary	X			X	X
	Sixth Ward Middle	X	X		X	X
	South Lafourche Headstart	X	X		X	X
	South Lafourche High School	X	X		X	X
	St Charles Elementary	X	X		X	X
Nursing Homes	Broadway Nursing and Rehab Center	X	X		X	X
	Raceland Manor	X			X	X
	Thibodaux Healthcare Center	X	X		X	X

Golden Meadow Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
Fire and Rescue	Golden Meadow	X	X	X	X	X
	Golden Meadow Fire Dept. Station 9	X	X	X	X	X
Government	Town Hall	X	X	X	X	X
Schools	Golden Meadow Lower Elementary	X	X	X	X	X
	Golden Meadow Lower Elementary	X	X	X	X	X
	Golden Meadow Middle	X	X	X	X	X
	Golden Meadow Upper Elementary	X	X		X	X
	Golden Meadow Upper Elementary	X	X		X	X

Lockport Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
Fire and Rescue	Lockport Central Station	X			X	X
Government	Lafourche Parish Media Center	X			X	X
Law Enforcement	Lockport Police Station	X	X		X	X
	Parish Sheriff Criminal Operations	X			X	X
	Parish Sheriff's Office Communications Center	X			X	X
Schools	Holy Savior School	X			X	X
	Lockport Lower Elementary	X			X	X
	Lockport Middle	X			X	X

Thibodaux Essential Facilities						
Type	Name	Coastal Land Loss	Flood	Sinkhole	Tornado	Tropical Cyclones
Fire and Rescue	Home Hook & Ladder Fire Co. No. 1	X			X	X
	North Thibodaux	X			X	X
	Protector Fire Company No. 2	X			X	X
	Thibodaux Fire Company No. 1	X			X	X
	Thibodaux Volunteer Fire Department	X			X	X
	Thibodaux Volunteer Fire Department Training Area	X			X	X
	West Thibodaux Fire Co.	X			X	X
Government	Bayou Lafourche Fresh Water District	X	X		X	X
	Camille "Cam" A. Morvant II, - District Attorney Lafourche Parish	X			X	X
	City of Thibodaux City Hall	X	X		X	X
	City of Thibodaux Public Works	X			X	X
	City of Thibodaux Public Works	X			X	X
	LA Army National Guard Delta Company 2nd Battalion 156th Infantry	X			X	X
	Lafourche Courthouse	X			X	X
	Lafourche Courthouse Annex	X			X	X
	Lafourche Government Complex	X			X	X
	Lafourche Parish Assessor's Office	X			X	X
	Lafourche Parish District Attorney	X			X	X
	Lafourche Parish Registrar of Voters	X			X	X
	Lafourche Parish School Board Business Building	X			X	X

	Lafourche Parish School Board Annex	X			X	X
	Lafourche Parish School Board Child Nutrition Department	X			X	X
	Lafourche Parish School Board Maintenance	X			X	X
	Municipal Court	X			X	X
	North Lafourche Conservation Levee and Drainage District	X			X	X
	Office of the Indigent Defenders	X			X	X
	Stark Municipal Complex	X			X	X
	USDA	X			X	X
Corrections	Lafourche Parish Jail	X	X		X	X
Law Enforcement	City of Thibodaux Police Department	X			X	X
	Lafourche Parish Sheriff - Administrative Office	X			X	X
	Thibodaux Police Department Housing Authority Division	X			X	X
Public Health	Lafourche Home	X			X	X
	Lafourche Parish Health Unit	X	X		X	X
	St. Joseph Manor	X			X	X
	Thibodaux Regional Medical Center	X			X	X
	Women's of Thibodaux Regional Hospital	X			X	X
Schools	East Thibodaux Middle School	X			X	X
	Edward Douglas White Catholic High	X			X	X
	South Thibodaux Elementary School	X			X	X
	St. Genevieve School	X			X	X
	St. Joseph Catholic Elementary School	X			X	X
	The MAX Charter School	X	X		X	X

	Thibodaux Elementary School	X			X	X
	Thibodaux Head Start	X	X		X	X
	Thibodaux High School	X	X		X	X
	West Thibodaux Middle School	X			X	X
Nursing Homes	Audubon Health and Rehab	X			X	X
	Lafourche Home for the Aged and Infirm	X			X	X
	St. Joseph Manor	X			X	X

## Appendix D – Plan Adoption

On motion by Phillip Gouaux, seconded by Lindel Toups, the following resolution was introduced and adopted:

### RESOLUTION NO. 15-306

**RESOLUTION ADOPTING THE LAFOURCHE PARISH HAZARD MITIGATION PLAN UPDATE; AND AUTHORIZING THE PARISH PRESIDENT TO SIGN, EXECUTE AND ADMINISTER ANY AND ALL RELEVANT DOCUMENTS.**

**WHEREAS**, Lafourche Parish Government recognizes the threat that natural hazards pose to people and property within Lafourche Parish; and

**WHEREAS**, Lafourche Parish Government has prepared a multi-hazard mitigation plan, hereby know as Lafourche Parish Hazard Mitigation Plan Update in accordance with the Disaster Mitigation Act of 2000; and

**WHEREAS**, Lafourche Parish Hazard Mitigation Plan, updated June 2015, identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Lafourche Parish from the impacts of future hazards and disasters; and

**WHEREAS**, this resolution was sponsored for Administration by Mr. Phillip Gouaux, Councilman, District 7; and

**WHEREAS**, it is recommended by the Administration of Lafourche Parish Government that the Council does hereby adopt the Lafourche Parish Hazard Mitigation Plan Update; and authorizes the Parish President to sign, execute and administer any and all relevant documents.

**THEREFORE, BE IT RESOLVED**, that the Lafourche Parish Council convened in regular session on September 8, 2015, and does hereby adopt the Lafourche Parish Hazard Mitigation Plan Update; and authorizes the Parish President to sign, execute and administer any and all relevant documents.

**BE IT FURTHER RESOLVED**, that a certified copy of this resolution shall be forwarded to: Governor's Office of Homeland Security and Emergency Preparedness, Lafourche Parish Government: Office Of Homeland Security and Emergency Preparedness, Department of Finance, Department of Grants and Economic Development, and the Office of the Parish Administrator.

This resolution having been submitted to a vote, the vote thereon was as follows:

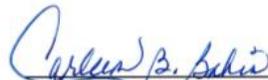
<b>YEAS:</b>	Mr. Jerry Jones	Mr. Joseph "Joe" Fertitta	Mr. Phillip Gouaux
	Mr. Michael Delatte	Mr. John Arnold	Mr. Jerry LaFont
	Mr. Aaron Caillouet	Mr. Lindel Toups	Mr. Daniel Lorraine

**NAYS:** None

**ABSENT:** None

And the resolution was declared adopted this 8th day of September, 2015.

  
\_\_\_\_\_  
JERRY LAFONT, CHAIRMAN  
LAFOURCHE PARISH COUNCIL

  
\_\_\_\_\_  
CARLEEN B. BABIN, COUNCIL CLERK  
LAFOURCHE PARISH COUNCIL

\*\*\*\*\*

I, CARLEEN B. BABIN, Council Clerk for the Lafourche Parish Council, do hereby certify that the foregoing is a true and correct copy of Resolution No. 15-306, adopted by the Assembled Council in Regular Session on September 8, 2015, at which meeting a quorum was present.

GIVEN UNDER MY OFFICIAL SIGNATURE AND SEAL OF OFFICE THIS 10TH DAY OF SEPTEMBER, 2015.

  
\_\_\_\_\_  
CARLEEN B. BABIN, COUNCIL CLERK  
LAFOURCHE PARISH COUNCIL

## RESOLUTION NO. 1653

A WRITTEN RESOLUTION  
ADOPTING THE TOWN OF GOLDEN MEADOW,  
LAFOURCHE PARISH, LOUISIANA  
2015 MITIGATION PLAN

**WHEREAS**, the Mayor and Council of the Town of Golden Meadow recognizes the threat that natural hazards pose to people and property within the Town of Golden Meadow; and

**WHEREAS**, the Town of Golden Meadow has prepared a multi-hazard mitigation plan, hereby known as the Town of Golden Meadow 2015 Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

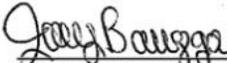
**WHEREAS**, the Town of Golden Meadow 2015 Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Golden Meadow from the impacts of future hazards and disasters; and

**WHEREAS**, adoption by the Town of Golden Meadow demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Town of Golden Meadow 2015 Mitigation Plan.

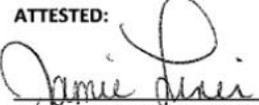
**NOW THEREFORE, BE IT RESOLVED BY** the Mayor and Council of the Town of Golden Meadow, Lafourche Parish, Louisiana, that:

Section 1. In accordance with the Louisiana Revised Statutes the Town of Golden Meadow adopts the 2015 Mitigation Plan.

Adopted by a vote of 4 in favor and 0 against, and 1 absent, and 0 abstaining, on this seventeenth day of August, 2015 by a motion presented by Councilman David Adams and seconded by Councilman Willis Toups.

  
MAYOR JOEY BOUZIGA

ATTESTED:

  
JAMIE LINER, TOWN CLERK

TOWN OF LOCKPORT  
LOUISIANA

RESOLUTION NO. 2015-009

A RESOLUTION OF THE TOWN OF LOCKPORT  
HAZARD MITIGATION PLAN UPDATE JUNE 2015

WHEREAS the Town of Lockport recognizes the threat that natural hazards pose to people and property within the Town of Lockport; and

WHEREAS the Town of Lockport has prepared a multi-hazard mitigation plan, hereby known as Hazard Mitigation Plan Update June 2015 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS Hazard Mitigation Plan Update June 2015 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Lockport from the impacts of future hazards and disasters; and

WHEREAS adoption by the Town of Lockport demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Hazard Mitigation Plan Update June 2015.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN OF LOCKPORT, LOUISIANA, THAT:

Section 1. In accordance with La.R.S. 33:406, the Town of Lockport adopts the Hazard Mitigation Plan Update June 2015.

ADOPTED by a vote of five in favor and zero against, and zero abstaining, this 18th day of August, 2015.

By: Paul Champagne  
Paul Champagne

ATTEST:  
By: Mandy Himel  
Mandy Himel

APPROVED AS TO FORM:  
By: Mandy Himel

***RESOLUTION NO. 1988***

***A RESOLUTION ADOPTING THE LAFOURCHE  
PARISH HAZARD MITIGATION PLAN UPDATE  
HMGP:FEMA-4080-DR-LA:#005***

***BE IT RESOLVED*** by the City Council of the City of Thibodaux in regular session assembled, that;

***WHEREAS***, the City of Thibodaux recognizes the threat that natural hazards pose to people and property within the City; and

***WHEREAS***, the City of Thibodaux has prepared a multi-hazard plan, hereby known as Lafourche Parish Hazard Mitigation Plan Update HMPG: FEMA-4080-DR-LA: #005 in accordance with the Disaster Mitigation Act of 2000; and

***WHEREAS***, Lafourche Parish Hazard Mitigation Plan Update HMPG: FEMA-4080-DR-LA: #005 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Thibodaux from the impacts of future hazards and disasters; and

***WHEREAS***, the adoption by the City of Thibodaux demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Lafourche Parish Mitigation Plan Update HMPG: FEMA-4080-DR-LA: #005.

***NOW, THEREFORE BE IT RESOLVED*** that the City Council of the City of Thibodaux does hereby adopt the Lafourche Parish Mitigation Plan Update HMPG: FEMA-4080-DR-LA: #005.

The above resolution having been submitted to a vote, the vote thereon was as follows:

YEAS: Tabor, Richard, Johnson, Mire, Badeaux  
NAYS: None  
ABSTAIN: None  
ABSENT: None

And the above resolution was declared adopted this 1st day of September 2015.

**\*\*8This Page Left Intentionally Blank\*\***

## Appendix E – State Required Worksheets

During the planning process (Appendix A) the Hazard Mitigation Plan Update Steering Committee was provided state-required plan update process worksheets to be filled out by each jurisdiction. The worksheets were presented at the Kickoff Meeting by the contractor as tools for assisting in the update of the Hazard Mitigation Plan. The plan update worksheets allowed for collection of information such as planning team members, community capabilities, critical infrastructure, hazard profiling, and project identification. The following pages contain documentation of the worksheets.

### Lafourche Parish - Building Inventory (Thibodaux, Lockport, Golden Meadow)

Critical Facility (If Yes, Mark X)	Name of Building	Purpose of Building	Address	City	Latitude	Longitude
Lafourche Unicorporated						
	Central Station	Fire Department	112 St. Phillip St.	Raceland	29-43.7441N	90-36.3090W
	Station #2	Fire Department	4470 Highway 1	Raceland	29-42.4397N	90-34.3985W
	Station #3	Fire Department	2920 Highway 308	Raceland	29-44.3209N	90-39.7928W
	Station #4	Fire Department	2002 Highway 308	Raceland	29-45.1871N	90-43.2275W
	Station #5	Fire Department	3159 Highway 1	Raceland	29-44.1949N	90-38.9672W
	Station #6	Fire Department	4406 Highway 308	Raceland	29-43.6737N	90-35.8800W
	Mathews Station	Fire Department	20 Central Lafourche Dr.	Raceland	29-41.3782N	90-32.9949W
	North Larose Station	Fire Department	12084 Highway 1	Larose	29-34.2568N	90-23.4166W
	West Larose Station	Fire Department	115 West 25th	Larose	29-33.7249N	90-21.8379W
	East Larose Station	Fire Department	12595 East Main	Larose	29-34.2588N	90-22.7610W
	West Cut Off Station	Fire Department	14734 West Main	Cut Off	29-31.5686N	90-20.1600W
	East Cut Off Station	Fire Department	14797 East Main	Cut Off	29-31.7296N	90-20.1001W
	Belle Amie Station	Fire Department	157 East Main	Cut Off	29-29.5937N	90-19.6644W
	Fire Central Station	Fire Department	17462 West Main	Galliano	29-27.0385N	90-18.2860W

Critical Facility (If Yes, Mark X)	Name of Building	Purpose of Building	Address	City	Latitude	Longitude
	West Galliano Station	Fire Department	135 West 158th	Galliano	29-26.5101N	90-18.1373W
	East Galliano Station	Fire Department	182 East Main	Galliano	29-25.6630N	90-17.6365W
	Leeville Station	Fire Department	25754 Highway 1	Leeville	29-12.9673N	90-13.0924W
	Port Fourchon Station	Fire Department	412 A.J. Estay Rd	Port Fourchon	29-7.0091N	90-12.4794W
	Central Station	Fire Department	1870 Bayou Blue Rd	Houma	29-38.5796N	90-41.0610W
	Station # 2	Fire Department	3099 Bayou Blue Rd	Gray	29-40.9284N	90-45.0710W
	Station # 3	Fire Department	109 Lake Long Rd	Houma	29-35.8941N	90-37.0992W
	Station # 1	Fire Department	2273 Highway 654	Gheens	29-42.1818N	90-28.6684W
	Station # 2	Fire Department	105 S. Leon Drive	Gheens	29-42.1683N	90-29.2549W
	Bayou Blue Elementary	School	1916 Bayou Blue Rd	Houma	29.644944N	90.686020W
	Cut Off Elementary	School	177 West 55th St	Cut Off	29.533978N	90.339363W
	Galliano Elementary	School	148 West 158th St	Galliano	29.441809N	90.303462W
	Larose Lower Elementary	School	175 Richardel Dr	Larose	29.572659N	90.396049W
	Raceland Lower Elementary	School	4101 Hwy 308	Raceland	29.725475N	90.591485W
	Larose Upper Elementary	School	13360 West Main St	Larose	29.563599N	90.364127W
	Raceland Upper Elem.	School	4101 Hwy 308	Raceland	29.732864N	90.609713W
	Larose Cut Off Middle	School	13356 West Main	Cut Off	29.563274N	90.364929W
	Raceland Middle	School	3757 Hwy 308	Raceland	29.733909N	90.611498W
	Bayou Blue Middle	School	196 Mazerac St	Houma	29.641505N	90.679272W
	Central Lafourche High	School	4820 Hwy 1	Raceland	29.694695N	90.554786W
	South Lafourche High	School	16911 East Main St	Galliano	29.467385N	90.311203W
	Holy Rosary	School	12925 East Main St	Larose	29.571594N	90.380702W
	St. Mary's Nativity	School	3492 Nies St.	Raceland	29.732351N	90.627541W
	Bayou Blue Headstart	School	197 Mazerac St	Houma	29.643003N	90.680193W
	South Lafourche Headstart	School	13248 West Main St	Cut Off	29.566828N	90.371465W
	Lafourche Parish Government (Mathews)	Governmental Building	4876 Hwy 1	Raceland	29.691632N	90.552090W
	Lafourche Parish Government (Galliano)	Governmental Building	16241 East Main St.	Cut Off	29.474495N	90.313931W

Critical Facility (If Yes, Mark X)	Name of Building	Purpose of Building	Address	City	Latitude	Longitude
	Transitional Work Program	Public Safety	1156 Hwy 90 East	Raceland	29.740885N	90.556144W
	Port Operations Center	Public Safety	108 A.O. Rappelet Rd	Port Fourchon	29.152238N	90.180574W
	South Lafourche Sub-Station	Public Safety	101 West 91st St.	Galliano	29.501611N	90.329729W
	Greater Lafourche Harbor Police	Public Safety	16829 East Main St	Galliano	29.471124N	90.312827W
	Library	Library	305 East 5th St.	Larose	29.574477N	90.377514W
	Library	Library	198 Mazerac St.	Houma	29.642245N	90.678651W
	Library	Library	177 Recreation Drive	Raceland	29.733109N	90.603996W
	Library	Library	153 N. Leon Dr.	Gheens	29.705769N	90.487897W
	Library	Library	16241 E. Main Suite A	Cut Off	29.474266N	90.313807W
	Mathews Adm Office	Governmental Building	4879 Hwy. 1	Raceland	29.691512N	90.552192W
	Morgue	Governmental Building	123 Texas St.	Raceland	29.734006N	90.607944W
	Region A Barn	Governmental Building	2565 Veterans Blvd.		29.770461N	90.845933W
	Region B Barn	Governmental Building	129 Texas St.	Raceland	29.733813N	90.607763W
	Region D Barn	Governmental Building	128 W. 97th St.	Cut Off	29.494282N	90.33064W
	Rev. Lloyd Wallace Community Center	Public Use Facility	3603 Hwy. 308	Raceland	29.736135N	90.620237W
	Sheriff's Office	Public Safety	102 W. 91st St.	Galliano	29.501627N	90.329704W
	Tourist Commission	Governmental Building	4484 Hwy. 1	Raceland	29.706586N	90.572518W
	Raceland Field Office (B)	Public Works	129 Texas St.	Raceland	29.733813N	90.607763W
	Bayou Blue Field Office (11)	Public Works	104 Myrtle Place	Houma	29.659303N	90.684999W
	Galliano Field Office (D)	Public Works	128 West 97th St.	Cut Off	29.494282N	90.33064W
	Mathews Office	Public Works	4876 Hwy. 1	Mathews	29.691632N	90.552090W
	Lafourche Parish Health Unit	EMS	2535 Veterans Blvd	Thibodaux	29.7717N	90.845215W
	Lafourche Parish Health Unit	EMS	2535 Veterans Blvd	Thibodaux	29.7717N	90.845215W
	Department of Health and Hospitals	EMS	1434 Tiger Drive	Thibodaux	29.771073n	90.843515W

Thibodaux						
	Station #7	Fire Department	100 Bayou Vista Dr.	Thibodaux	29-45.5390N	90-44.8630W
	Station # 1	Fire Department	503 St. Louis St	Thibodaux	29-47.7631N	90-49.2252W
	Station # 2	Fire Department	549 Tetreau St	Thibodaux	29-47.5890N	90-48.8170W
	Station # 3	Fire Department	706 Canal Blvd	Thibodaux	29-47.6303N	90-49.2199W
	Station # 4	Fire Department	921 North Canal Blvd	Thibodaux	29-49.4246N	90-48.6905W
	Station # 5	Fire Department	603 St. Patrick Highway	Thibodaux	29-48.0443N	90-49.3091W
	Station # 6	Fire Department	102 Lafaye St.	Thibodaux	29-47.0112N	90-49.2936W
	Station # 7	Fire Department	200 Notre Dame St.	Thibodaux	29-47.5036N	90-50.2639W
	Station # 8	Fire Department	1075 Highway 1	Thibodaux	29-46.8046N	90-46.6782W
	Station # 9	Fire Department	800 Parish Rd.	Thibodaux	29-47.2268N	90-50.1180W
	Station # 1	Fire Department	100 Highway 304	Thibodaux	29-52.8123N	90-48.3577W
	Station # 2	Fire Department	1532 Highway 20	Thibodaux	29-53.8900N	90-44.0719W
	Station # 1	Fire Department	2854 Choctaw Rd	Thibodaux	29-50.3532N	90-42.0372W
	Station # 2	Fire Department	1632 Choctaw Rd	Thibodaux	29-51.0450N	90-44.9463W
	Station # 1	Fire Department	3447 Highway 307	Thibodaux	29-51.9920N	90-37.1375W
	Station # 1	Fire Department	2072 St. Mary St	Thibodaux	29-48.9328N	90-52.7393W
	Station # 2	Fire Department	1905 Talbot Ave	Thibodaux	29-46.8408N	90-50.9925W
	Station # 3	Fire Department	800 Parish Rd	Thibodaux	29-47.8133N	90-51.2949W
	Station # 1	Fire Department	691 Highway 308	Thibodaux	29-46.7652N	90-46.4867W
	Bayou Bouef Elementary	School	4138 Hwy 307	Thibodaux	29.868269N	90.593703W
	Chackbay Elementary	School	101 School Ln	Thibodaux	29.878351N	90.808516W
	WS Lafargue Elementary	School	700 Plantation Rd	Thibodaux	29.781854N	90.830502W
	St. Charles Elementary	School	1690 Hwy 1	Thibodaux	29.751535N	90.722455W
	South Thibodaux Elementary	School	200 Iris St	Thibodaux	29.780887N	90.814747W
	Thibodaux Elementary	School	700 East 7th St.	Thibodaux	29.792748N	90.814569W
	East Thibodaux Middle	School	802 East 7th St	Thibodaux	29.791829N	90.813876W
	Sixth Ward Middle	School	1865 Choctaw Rd	Thibodaux	29.850929N	90.739757W

	West Thibodaux Middle	School	1111 East 12th St	Thibodaux	29.787433N	90.813431W
	Thibodaux High	School	1355 Tiger Dr	Thibodaux	29.778060N	90.839851W
	E.D. White High	School	555 Cardinal Dr	Thibodaux	29.793135N	90.810979W
	St. Genevieve Elementary	School	807 Barbier Ave	Thibodaux	29.790536N	90.839159W
	St. Joseph	School	501 Cardinal Dr	Thibodaux	29.794236N	90.810652W
	Thibodaux Headstart	School	2555 Veterans Blvd	Thibodaux	29.770921N	90.845539W
	Marydale Headstart	School	102 Park Ave	Thibodaux	29.765219N	90.832476W
	Martin Luther King Headstart	School	1445 Martin Luther King Dr	Thibodaux	29.779480N	90.812399W
	Lafourche Parish Government (Main)	Governmental Building	402 Green St	Thibodaux	29.796887N	90.820095W
	City of Thibodaux Government (Main)	Governmental Building	310 West 2nd St.	Thibodaux	29.798431N	90.819672W
	Warren J Harang Jr. Auditorium	Governmental Building	310 North Canal Blvd	Thibodaux	29.803952N	90.817773W
	Administrative Office	Public Safety	200 Canal Blvd	Thibodaux	29.797940N	90.818413W
	Training Academy	Public Safety	751 Goode St	Thibodaux	29.789096N	90.815751W
	Whitney Building	Public Safety	200 West 2nd St.	Thibodaux	29.798179N	90.819169W
	Detention Center	Public Safety	952 Hwy 3185	Thibodaux	29.767761N	90.846798W
	Thibodaux Police Dept.	Public Safety	1309 Canal Blvd	Thibodaux	29.783946N	90.820455W
	Nicholl's State University Police	Public Safety	906 East First St	Thibodaux	29.794588N	90.801730W
	Library	Library	1887 Choctaw Rd.	Thibodaux	29.851007N	90.738707W
	Library	Library	314 St. Mary St.	Thibodaux	29.796228N	90.824926W
	Library	Library	705 W. 5th St.	Thibodaux	29.796134N	90.822233W
	Clerk of Court	Governmental Building	311 Green St.	Thibodaux	29.797436N	90.8196W
	Sheriff's Office	Public Safety	200 Canal St.	Thibodaux	29.79799N	90.818535W
	Ward 6 Office	Governmental Building	114 Choctaw Barn Rd.	Thibodaux	29.851208N	90.737258W
	Whitney Building	Governmental Building	200 West 2nd St.	Thibodaux	29.79851N	90.819044W
	Thibodaux Field Office (A)	Public Works	2565 Veterans Blvd.	Thibodaux	29.770499N	90.845979W
	Chackbay Field Office (6)	Public Works	122 Choctaw Barn Road	Thibodaux	29.851507N	90.737271W
	Thibodaux Main Office	Public Works	402 Green St.	Thibodaux	29.796875N	90.820117W

Lockport						
	Lockport Heights Station	Fire Department	5511 Highway 1	Lockport	29-39.1987N	90-32.5857W
	Bellevue Station	Fire Department	7519 Highway 1	Lockport	29-38.0324N	90-30.6199W
	308 Station	Fire Department	8028 Highway 308	Lockport	29-37.3746N	90-29.9865W
	Valentine Station	Fire Department	10202 Highway 1	Lockport	29-35.2825N	90-26.6470W
	Lockport Central	Fire Department	806 Crescent Ave	Lockport	29-38.3521N	90-32.4010W
	Lockport Lower Elementary	School	1421 Crescent Ave	Lockport	29.641907N	90.528607W
	Lockport Upper Elem.	School	201 School St	Lockport	29.643977N	90.532938W
	Lockport Middle	School	720 Main St	Lockport	29.644225N	90.532155W
	Holy Savior Elementary	School	210 Church St	Lockport	29.643133N	90.537102W
	Myra G. Champagne Headstart	School	203 East Fontenelle St	Lockport	29.649076N	90.532685W
	Town of Lockport Government	Governmental Building	710 Church St.	Lockport	29.640816N	90.542585W
	Personnel/Motor Pool	Public Safety	5200 Hwy 1	Lockport	29.673683N	90.540988W
	Communications Office	Public Safety	207 Main St	Lockport	29.647027N	90.538054W
	Criminal Operations Center	Public Safety	805 Crescent Ave	Lockport	29.639868N	90.539478W
	Lockport Police Dept.	Public Safety	710 Church St.	Lockport	29.641093N	90.542821W
	Library	Library	720 Crescent Ave.	Lockport	29.851022N	90.738702W
	Region C Barn	Governmental Building	6236 Hwy. 308	Lockport	29.64864N	90.531326W
	Sheriff's Comm Bldg	Public Safety	1300 Lynn Ave.	Lockport	29.78487N	90.827857W
	Lockport Field Office	Public Works	6236 Hwy. 308	Lockport	29.64864N	90.531326W
	Lockport Town Office	Governmental Building	601 First Street	Lockport	29.639509	-90.545634

Golden Meadow						
	North Golden Meadow	Fire Department	2502 Norman Street	Golden Meadow	29-24.3918N	90-16.7408W
	South Golden Meadow	Fire Department	1003 South Bayou Dr	Golden Meadow	29-23.1834N	90-15.7398W
	Golden Meadow Lower Elem.	School	118 Alcide St	Golden Meadow	29.409051N	90.277211W
	Golden Meadow Upper Elem.	School	2201 N. 3rd St.	Golden Meadow	29.405329N	90.276361W
	Golden Meadow Middle	School	630 South Bayou Dr	Golden Meadow	29.388486N	90.264699W
	Town Of Golden Meadow Government	Governmental Building	107 Jervais Dr	Golden Meadow	29.392284N	90.273289W
	Golden Meadow Police Dept.	Public Safety	107 Jervais Dr	Golden Meadow	29.392331N,	90.274010W
	Library	Library	1403 N. Bayou Drive	Golden Meadow	29.401639N	90.273666W
	TOWN HALL	POLICE/PUBLIC UTILITIES/EMERGENCY OPERATIONS	107 JERVIS DRIVE	Golden Meadow	29.392284N	90.273289W
	DMV	HOUSES THE OFFICE OF MOTOR VEHICLES	119 JERVIS DRIVE	Golden Meadow	29.392524N	90.272835W
	CIVIL DEFENSE BUILDING	EQUIPMENT STORAGE	119 WASHINGTON STREET	Golden Meadow	29.385413N	90.262151W
	PUMP STATION	PUMP STATION HOUSE	246 DURSETTE STREET	Golden Meadow	29.386531N	90.267599W
	OLD TOWN HALL	STORAGE	313 NORTH BAYOU DRIVE	Golden Meadow	29.393667N	90.269843W
	SENIOR CITIZEN CENTER	HOUSES THE SENIOR CITIZENS OF GM	145 ENA DRIVE	Golden Meadow	29.392591N	90.277215W

	SWIMMING POOL BATHHOUSE	BATHROOMS/SHOWERS FOR POOL	136 ENA DRIVE	Golden Meadow	29.3922733 N	90.276669W
	SENIOR CITIZEN CERAMIC SHOP	SENIOR CITIZEN PROJECTS	147 ENA DRIVE	Golden Meadow	29.392591N	90.277215W
	WALKING TRAIL RESTROOM	RESTROOM FACILITY	177 ENA DRIVE	Golden Meadow	29.39429N	90.277545W
	PAVILION	COVER IN OAKRIDGE PARK	955 J. V. ALARIO DRIVE	Golden Meadow	29.396537N	90.279606W
	BASKETBALL PAVILION	COVERED BASKETBALL COURTS	988 J.V. ALARIO DRIVE	Golden Meadow	29.395384N	90.277488W
	TOOL HOUSE	TOOL STORAGE BUILDING	942 J.V. ALARIO DRIVE	Golden Meadow	29.394841N	90.277631W

## Vulnerable Populations

## Vulnerable Populations Worksheet

### Lafourche Parish

Name	Street	City	Zip Code	Latitude	Longitude
<b>All Hospitals (Private or Public)</b>					
Ochsner St. Ann Hospital	4608 West 134 Pl	Cut Off	70345	29.456857N	90.311350W
Lady of the Sea	West 134 Pl	Cut Off	70345	29.456857N	90.311350W
Thibodaux Regional Medical Center	North Acadia Rd	Thibodaux	70301	29.780536N	90.805620W
* There are no Hospitals located in the Town of Lockport or Golden Meadow					
<b>Nursing Homes (Private or Public)</b>					
Lafourche Home for the Aged	1002 Tiger Dr.	Thibodaux	70301	29.789188N	90.836692W
Audubon Guest Home	2110 Audubon Ave	Thibodaux	70301	29.781151N	90.809810W
Thibodaux Healthcare Center	1300 Lafourche Dr.	Thibodaux	70301	29.806698N	90.822784W
Raceland Manor	4302 Hwy 1	Raceland	70394	29.714529N	90.582374W
Broadway Nursing Home	7534 Hwy 1	Lockport	70374	29.632998N	90.510820W

**Mobile Home Parks**

Abby Plantation Estates	n/a	Thibodaux	n/a	n/a	n/a
Alma Trailer Park	n/a	Thibodaux	n/a	n/a	n/a
Burgo Trailer Park	n/a	Thibodaux	n/a	n/a	n/a
Civic Center	n/a	Thibodaux	n/a	n/a	n/a
Marydale Subdivision	n/a	Thibodaux	n/a	n/a	n/a
Woodland Heights	n/a	Chackbay	n/a	n/a	n/a
Grand Bayou	n/a	Chackbay	n/a	n/a	n/a
Big Blue Trailer Park	n/a	Gray	n/a	n/a	n/a
Cypress Court Trailer Park	n/a	Gray	n/a	n/a	n/a
Kajun Trailer Park	n/a	Gray	n/a	n/a	n/a
LuLu MHP	n/a	Gray	n/a	n/a	n/a
Brien MHP	n/a	Bayou Blue	n/a	n/a	n/a
Chloe Court MHP	n/a	Bayou Blue	n/a	n/a	n/a
Eschette's Trailer Park	n/a	Bayou Blue	n/a	n/a	n/a
Martin's Trailer Park	n/a	Bayou Blue	n/a	n/a	n/a
Pellegrin's Trailer Park	n/a	Bayou Blue	n/a	n/a	n/a
Drachenburg Trailer Park	n/a	Raceland	n/a	n/a	n/a
Bessie Dufrene Rentals	St. Louis Street	Raceland	n/a	n/a	n/a
Kirlin Matherne Rentals	St. Louis Street	Raceland	n/a	n/a	n/a
Oak Pointe	Hwy. 308	Raceland	n/a	n/a	n/a
Shady Trailer Park	n/a	Raceland	n/a	n/a	n/a
Cajun on the Bayou RV Park	Hwy. 90 East	Des Allemands	n/a	n/a	n/a
Dan Folse - Dantana RV Park	Hwy. 90 East	Des Allemands	n/a	n/a	n/a
Vanacor's KOA Campground	Hwy. 90 East	Des Allemands	n/a	n/a	n/a
Earl Comardelle Trailer Park	Hwy. 654	Gheens	n/a	n/a	n/a
Allemand's	Hwy. 1& H20 Tower	Lockport	n/a	n/a	n/a
Roger's Trailer Park	Hwy. 308	Lockport	n/a	n/a	n/a
Larose Civic Center - Kelly Grove RV Park	n/a	Larose	n/a	n/a	n/a
Matherne's	Sandras St.	Larose	n/a	n/a	n/a
Kirlin Matherne Rentals	St. Pierre Dr.	Larose	n/a	n/a	n/a
R&R Rentals	East 69th Pl.	Cut Off	n/a	n/a	n/a
Doublewide MHP	n/a	Galliano	n/a	n/a	n/a
J&K Trailer Park	n/a	Galliano	n/a	n/a	n/a
LA Leisure	Hwy. 3235	Galliano	n/a	n/a	n/a
Bayou Resort Campground	Hwy. 3235	Golden Meadow	n/a	n/a	n/a
Boudreaux's Condos Town GM	Hwy. 3235	Golden Meadow	n/a	n/a	n/a
Catfish Lake Cabins & RVs	Hwy. 3235	Golden Meadow	n/a	n/a	n/a
Cheremie Trailer Park	E. 179th St.	Golden Meadow	n/a	n/a	n/a
Nicholas Cheremie MH & RV Park	Hwy. 1	Fourchon	n/a	n/a	n/a
Bobby Lynn's Marina & Marina South	n/a	Fourchon	n/a	n/a	n/a
Port Fourchon Hotel/Marina/RV Park	n/a	Fourchon	n/a	n/a	n/a

Lafourche Parish – National Flood Insurance Program (NFIP) (Thibodaux, Lockport, Golden Meadow)

<b>ELEMENT F: STATE REQUIREMENT National Flood Insurance Program (NFIP)</b>		
<b>Jurisdiction: Lafourche Unincorporated</b>		
	<b>Lafourche Parish</b>	
<b>Insurance Summary</b>		<b>Comments</b>
How many NFIP policies are in the community? What is the total premium and coverage?	11,643 Premium \$9,204,010 Coverage \$2,338,257,700	n/a
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	4,522 Claim payouts \$57,788,486 information not available	n/a
How many structures are exposed to flood risk with in the community?	85%	n/a
Describe any areas of flood risk with limited NFIP policy coverage.	information not available	n/a
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	Yes	n/a
Is flood plain management an auxiliary function?	No	n/a
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Permit reviews, Plan reviews, Subdivision reviews, some building inspections, education and outreach to residents and public officials	n/a
What are the barriers to running an effective NFIP program in the community, if any?	People do not want to follow the guidelines much less do anything above the minimum requirements.	n/a

<b>Compliance History</b>		
Is the community in good standing with the NFIP?	Yes	n/a
Are there any outstanding compliance issues(i.e., current violations)?	No	n/a
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	going through a CAV now	n/a
Is a CAV or CAC scheduled or needed? If so when?	going through a CAV now	n/a
<b>Regulation</b>		
When did the community enter the NFIP?	1978	n/a
Are the FIRMs digital or paper?	paper	n/a
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	meet, we follow CFR 44 guidelines, Technical Bulletins and all other FEMA requirements	n/a
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	no	n/a
What is the community's CRS Class Ranking?		n/a
Does the plan include CRS planning requirements?	information not available	n/a

## Thibodaux – National Flood Insurance Program

<b>ELEMENT F: STATE REQUIREMENT</b>		
<b>National Flood Insurance Program (NFIP)</b>		
<b>Jurisdiction: Thibodaux</b>		
<b>Insurance Summary</b>		<b>Comments</b>
How many NFIP policies are in the community? What is the total premium and coverage?	952; \$397,361; \$200,778,500	n/a
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	259, \$3,500,874; n/a	n/a
How many structures are exposed to flood risk with in the community?	0.85	n/a
Describe any areas of flood risk with limited NFIP policy coverage.	n/a	n/a
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	No	n/a
Is flood plain management an auxiliary function?	No	n/a
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	n/a	n/a
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	n/a
<b>Compliance History</b>		
Is the community in good standing with the NFIP?	Yes	n/a
Are there any outstanding compliance issues(i.e., current violations)?	No	n/a
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	going through a CAV now	n/a
Is a CAV or CAC scheduled or needed? If so when?	going through a CAV now	n/a

<b>Regulation</b>		
When did the community enter the NFIP?	1978	n/a
Are the FIRMs digital or paper?	paper	n/a
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	n/a	n/a
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	No	n/a
What is the community's CRS Class Ranking?	n/a	n/a
Does the plan include CRS planning requirements?	n/a	n/a

## Lockport – National Flood Insurance Program

<b>ELEMENT F: STATE REQUIREMENT</b>		
<b>National Flood Insurance Program (NFIP)</b>		
<b>Jurisdiction: Lockport</b>		
<b>Insurance Summary</b>		<b>Comments</b>
How many NFIP policies are in the community? What is the total premium and coverage?	340; \$64,003,100	n/a
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	153; \$2,039,874	n/a
How many structures are exposed to flood risk with in the community?	85%	n/a
Describe any areas of flood risk with limited NFIP policy coverage.	n/a	n/a
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	Community FPA	n/a
Is flood plain management an auxiliary function?	Community FPA	n/a
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	n/a
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	n/a
<b>Compliance History</b>		
Is the community in good standing with the NFIP?	Yes	n/a
Are there any outstanding compliance issues(i.e., current violations)?	No	n/a
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	going through a CAV now	n/a
Is a CAV or CAC scheduled or needed? If so when?	going through a CAV now	n/a

<b>Regulation</b>		
When did the community enter the NFIP?	1980	n/a
Are the FIRMs digital or paper?	paper	n/a
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	meet, we follow CFR 44 guidelines, Technical Bulletins and all other FEMA requirements	n/a
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	Yes	n/a
What is the community's CRS Class Ranking?	10	n/a
Does the plan include CRS planning requirements?	n/a	n/a

## Golden Meadow – National Flood Insurance Program

<b>ELEMENT F: STATE REQUIREMENT</b>		
<b>National Flood Insurance Program (NFIP)</b>		
<b>Jurisdiction: Golden Meadow</b>		
<b>Insurance Summary</b>		<b>Comments</b>
How many NFIP policies are in the community? What is the total premium and coverage?	307; \$45,399,000	n/a
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	307; \$2,796,191	n/a
How many structures are exposed to flood risk with in the community?	85%	n/a
Describe any areas of flood risk with limited NFIP policy coverage.	n/a	n/a
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	Community FPA	n/a
Is flood plain management an auxiliary function?	Community FPA	n/a
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	n/a
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	n/a
<b>Compliance History</b>		
Is the community in good standing with the NFIP?	State NFIP Coordinatorr, FEMA NFIP Specialist, community records	n/a
Are there any outstanding compliance issues(i.e., current violations)?	NO	n/a
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	OCT. 2014	n/a
Is a CAV or CAC scheduled or needed? If so when?	NO	n/a

<b>Regulation</b>		
When did the community enter the NFIP?	1974	n/a
Are the FIRMs digital or paper?	PAPER	n/a
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	MEET	n/a
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	No	n/a
What is the community's CRS Class Ranking?	No	n/a
Does the plan include CRS planning requirements?	No	n/a

Capability Assessment

Lafourche Parish

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
<b>Planning and Regulatory</b>		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
	<i>Lafourche Parish</i>	Comments
<b>Plans</b>	<b>Yes / No</b>	
Comprehensive / Master Plan	Yes	n/a
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	n/a
Continuity of Operations Plan	Yes	n/a
Transportation Plan	No	n/a
Stormwater Management Plan	Yes	n/a
Community Wildfire Protection Plan	No	n/a
Other plans (redevelopment, recovery, coastal zone management)	Yes	n/a
<b>Building Code, Permitting and Inspections</b>	<b>Yes / No</b>	
Building Code	Yes	n/a
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	n/a
Fire Department ISO/PIAL rating	Yes	Rating Dist 1-5, Dist 2-5, Dist 3-5, Dist 4-2(Thibodaux) Dist 5-5, Dist 6-5, Dist 7-5 Dist 8-A-7, Dist 8-B-5, Dist 8-C-5, Dist 9-5
Site plan review requirements	Yes	n/a
<b>Land Use Planning and Ordinances</b>	<b>Yes / No</b>	
Zoning Ordinance	No	n/a
Subdivision Ordinance	Yes	n/a
Floodplain Ordinance	Yes	n/a
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	n/a
Flood Insurance Rate Maps	Yes	n/a
Acquisition of land for open space and public recreation uses	yes	n/a
Other		n/a

Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
	<i>La fourche parish</i>	Comments
<b>Administration</b>	<b>Yes / No</b>	
Planning Commission	Yes	n/a
Mitigation Planning Committee	Yes	n/a
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	n/a
Mutual Aid Agreements	No	n/a
<b>Staff</b>	<b>Yes / No;</b>	
Chief Building Official	Yes	5%
Floodplain Administrator	Yes	20%
Emergency Manager	Yes	5%
Community Planner	Yes	5%
Civil Engineer	No	We hire an Engineer When need for projects
GIS Coordinator	Yes	5%
Grant Writer	Yes	40%
Other	No	n/a
<b>Technical</b>	<b>Yes / No</b>	
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	DCC Calling system Alert FM
Hazard Data & Information	No	n/a
Grant Writing	No	n/a
Hazus Analysis	No	n/a
Other	No	n/a

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
<i>Lafourche parish</i>		Comments
Funding Resource	Yes / No	
Capital Improvements project funding	No	n/a
Authority to levy taxes for specific purposes	No	n/a
Fees for water, sewer, gas, or electric services	No	n/a
Impact fees for new development	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	No	n/a
Other Funding Programs	Yes	STATE OF LOUISIANA ELEVATION AND ACQUISITION PROGRAMS
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
<i>Lafourche parish</i>		Comments
Program / Organization	Yes / No	
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	n/a
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	n/a
Natural Disaster or safety related school program	No	n/a
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

Thibodaux

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
<b>Planning and Regulatory</b>		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
<b>THIBODAUX</b>		
Plans	Yes/No	Comments
Comprehensive / Master Plan	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	No	
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
<b>Building Code, Permitting and Inspections</b>		
Building Code	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	No	
Site plan review requirements	No	
<b>Land Use Planning and Ordinances</b>		
Zoning Ordinance	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Subdivision Ordinance	No	
Floodplain Ordinance	No	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	No	
Acquisition of land for open space and public recreation uses	No	
Other	No	

Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes/No	Comments
Planning Commission	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	
Staff		
Chief Building Official	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Floodplain Administrator	No	
Emergency Manager	No	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	No	
Grant Writer	No	
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Hazard Data & Information	No	
Grant Writing	No	
Hazus Analysis	No	
Other	No	

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Authority to levy taxes for specific purposes	No	
Fees for water, sewer, gas, or electric services	No	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	No	
Other Funding Programs	No	
	No	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	*Based on current parish agreements, Thibodaux has the ability to utilize the capabilities of the parish government.
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	
Natural Disaster or safety related school program	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

Lockport

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
LOCKPORT		
Plans	Yes/No	Comments
Comprehensive / Master Plan	No	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	No	
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Subdivision Ordinance	No	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	No	
Other	No	

Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes/No	Comments
Planning Commission	Yes	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Mutual Aid Agreements	Yes	
Staff		
Chief Building Official	No	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner	No	
Civil Engineer	Yes	
GIS Coordinator	No	
Grant Writer	No	
Other	No	
Technical		
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Hazard Data & Information	No	
Grant Writing	No	
Hazus Analysis	No	
Other	No	

Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes/No	Comments
Capital Improvements project funding	Yes	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
Education and Outreach		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
Program / Organization	Yes/No	Comments
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	*Based on current parish agreements, Lockport has the ability to utilize the capabilities of the parish government.
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	
Natural Disaster or safety related school program	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

Golden Meadow

Worksheet 4.1: Capability Assessment Worksheet		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
GOLDEN MEADOW		Comments
Plans	Yes/No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Comprehensive / Master Plan	No	
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	No	
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections	Yes/No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	No	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances	Yes/No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	No	
Other	No	
How can these capabilities be expanded and improved to reduce risk?		
Increased participation in funding opportunities and mitigation programs will enhance and expand risk reduction measures.		

Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes/No	Comments
Planning Commission	Yes	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (tree	Yes	
Mutual Aid Agreements	Yes	
Staff	Yes/No	
Chief Building Official	No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Floodplain Administrator	Yes	
Emergency Manager	No	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	No	
Grant Writer	No	
Other	No	
Technical	Yes/No	
Warning Systems / Service (Reverse 911, outdoor warning signals)	No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Hazard Data & Information	No	
Grant Writing	No	
Hazus Analysis	No	
Other	No	
How can these capabilities be expanded and improved to reduce risk?		
Increased participation in funding opportunities and mitigation programs will enhance and expand risk reduction measures.		

<b>Financial</b>		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
<b>Funding Resource</b>	<b>Yes/No</b>	<b>Comments</b>
Capital Improvements project funding	Yes	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	Yes	
Other Funding Programs	Yes	
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
Increased participation in funding opportunities and mitigation programs will enhance and expand risk reduction measures.		
<b>Education and Outreach</b>		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
<b>Program / Organization</b>	<b>Yes/No</b>	<b>Comments</b>
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	*Based on current parish agreements, Golden Meadow has the ability to utilize the capabilities of the parish government.
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	No	
Natural Disaster or safety related school program	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
Increased participation in funding opportunities and mitigation programs will enhance and expand risk reduction measures.		

