2021 ST. JAMES PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

UNINCORPORATED ST. JAMES PARISH, TOWN OF GRAMERCY, TOWN OF LUTCHER

ST. JAMES PARISH
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN UPDATE

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St. James Parish

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ACKNOWLEDGMENTS

This 2021 St. James Parish Hazard Mitigation Plan Update was coordinated by the St. James Parish Hazard Mitigation Plan Update Steering Committee, in collaboration with community stakeholders and the general public. The participating jurisdictions are made up of the following communities:

St. James Parish
Town of Gramercy
Town of Lutcher

Special thanks is directed to all of those who assisted in contributing their expertise and feedback on this document, especially the St. James Parish Office of Homeland Security and Emergency Management. These combined efforts have made this project possible. The St. James Parish Steering Committee consists of the following individuals, who are credited in the creation of this document:

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Contents

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 St. James 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 St. James Parish and its jurisdictions less vulnerable and more disaster resilient. It also includes mitigation project scoping to further identify scopes of work, funding sources, and implementation timing requirements of proposed selected mitigation projects. Information in the plan will be used to help guide and coordinate mitigation and local policy decisions affecting future land use.

The St. James Parish Hazard Mitigation Plan is a multi-jurisdictional plan that includes the following jurisdictions which participated in the planning process:

- St. James Parish
- Town of Gramercy
- Town of Lutcher

The Federal Emergency Management Agency (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-Katrina/Rita, Gustav/Ike, and Laura/Delta environment in south Louisiana.

This Hazard Mitigation Plan is a comprehensive plan for disaster resiliency in St. James Parish. The parish is subject to natural hazards that threaten life and health and have caused extensive property damage. To better understand these hazards and their impacts on people and property, and to identify ways to reduce those impacts, the parish's Office of Homeland Security and Emergency Preparedness undertook this Natural Hazards Mitigation Plan. "Hazard mitigation" does not mean that all hazards are stopped or prevented. It does not suggest complete elimination of the damage or disruption caused by such incidents. Natural forces are powerful and most natural hazards are well beyond our ability to control. Mitigation does not mean quick fixes. It is a long-term approach to reduce hazard vulnerability. As defined by FEMA, "hazard mitigation" means any sustained action taken to reduce or eliminate the long-term risk to life and property from a hazard event.

Every community faces different hazards, and every community has different resources and interests to bring to bear on its problems. Because there are many ways to deal with natural hazards and many agencies that can help, there is no one solution for managing or mitigating their effects. Planning is one of the best ways to correct these shortcomings and produce a program of activities that will best mitigate the impact of local hazards and meet other local needs. A well-prepared plan will ensure that all possible activities are reviewed and implemented so that the problem is addressed by the most appropriate and efficient solutions. It can also ensure that activities are coordinated with each other and with other goals and programs, preventing conflicts and reducing the costs of implementing each individual activity.

Under the Disaster Mitigation Act of 2000 (42 USC 5165), a mitigation plan is a requirement for Federal mitigation funds. Therefore, a mitigation plan will both guide the best use of mitigation funding and meet the prerequisite for obtaining such funds from FEMA. FEMA also recognizes plans through its Community Rating System (CRS), a program that reduces flood insurance premiums in participating communities. This program is further described in Section Three: Capability Assessment.

This plan identifies activities that can be undertaken by both the public and the private sectors to reduce safety hazards, health hazards, and property damage caused by natural hazards. It fulfills the Federal mitigation planning requirements, qualifies for CRS credit, and provides St. James Parish and its communities with a blueprint for reducing the impacts of these natural hazards on people and property.

Geography, Population and Economy

Geography

St. James Parish is located in the southeastern region of Louisiana, approximately 35 miles southeast of Baton Rouge and approximately 40 miles east of New Orleans (*Figure 1-1*). In terms of area, St. James Parish is one of the smallest parishes in Louisiana, consisting of approximately 241 square miles. Neighboring parishes are St. John the Baptist Parish to the east, Ascension Parish to the north, Lafourche Parish to the south and Assumption Parish to the west. Convent, a census designated place, is the parish seat and is located along the eastern bank of the Mississippi River near the center of the parish.

Figure 1-1: Location of St. James Parish in the State of Louisiana

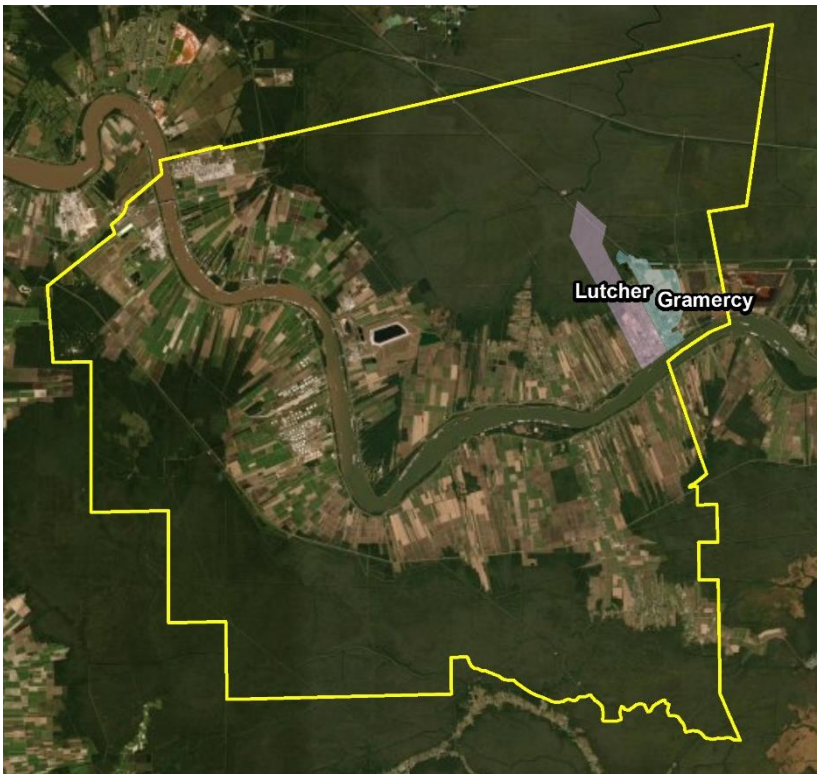

Figure 1-2: Incorporated Jurisdictions within St. James Parish

St. James Parish is located within the Lake Pontchartrain Basin (east bank) and the Barataria Basin (west bank). The topography consists of flat land throughout the parish. The flooding that does occur in this parish is primarily experienced in the alluvial valley, where drainage is poor and where most of the population centers and agricultural development are located. There are two main drainage outlets for St. James Parish. The Blind River drains the east bank of the parish, and Bayou Chevreuil drains the west bank of the parish.

St. James Parish weather is typically warm and humid. Variations in daily temperature are determined by distance from the Gulf of Mexico and, to a much lesser degree, by differences in elevation. The average annual temperature for the state as a whole is 68ºF. January is typically the coldest month for Louisiana, averaging approximately 54ºF, while July is typically the warmest at an average of 83ºF. Winter months are usually mild with cold spells of short duration. For St. James Parish in particular, the summer months are usually quite warm, with an average daily maximum temperature in July and August of 92°F. Winters are typically mild. Snowfall averages less than one inch per year. Average annual rainfall for the area is 62.9 inches. St. James Parish is susceptible to the normal weather dangers, such as thunderstorms and flooding, but due to its location within the state and its proximity to the Gulf of Mexico, the parish is highly susceptible to tropical cyclones. Hurricane season lasts from June 1st to November 30th, with most hurricanes forming in August, September, and October.

Figure 1-3: Louisiana Homeland Security Regions

St. James Parish is located in Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 3 (*Figure 1-3*).

Population

The population of St. James Parish is estimated at 20,192 (2020 Census) with a population percent change from April 1, 2010 – April 1, 2020 of -9.46%.

Table 1-1: St. James Parish Population
(Source: US Census)

	2010 Census	2013 Estimate	2020 Census	Percent Change 2010 - 2020
Total Population	22,102	21,700	20,192	-9.46%
Population Density (Pop/Sq. Mi.)	91.5	-------	-------	-------
Total Households	7,786	7,786	7,719	-0.87%
Persons Per Household	-------	-------	2.73	-------

Economy

This area has seen growth primarily in the industrial sector, particularly with chemical, oil, fertilizer, and gas production, storage, and refining. The agricultural sector is also strong within the parish. Sugarcane is the parish's main agricultural crop, but other crops of the parish include soybeans, perique tobacco, hay, oats, corn, and fruit. Other agricultural production includes vegetables, beef cattle, and crawfish. St. James Parish also has facilities that are part of the Port of South Louisiana, one of the largest ports in the United States in terms of total throughput tonnage. Its hard-working labor force, excellent transportation network, abundant raw materials, and land for commercial and industrial development make the area an ideal prospect for business investment. Industry data for business patterns in St. James Parish can be found in the table on the next page.

Table 1-2: St. James Parish Business Patterns
(Source: US Census, CBP)

Business Description	Number of Establishments	Number of Employees	Annual Payroll ($1,000)
Retail Trade	44	544	12,919
Manufacturing	28	2,615	316,000
Health Care and Social Assistance	28	548	21,753
Educational Services	5	59	2041
Transportation and Warehousing	47	1,663	119,858
Construction	16	182	8,615
Administration/Support and Waste Management/Remediation Services	14	132	6,647
Real Estate and Rental and Leasing	8	129	4,842
Wholesale Trade	9	27	2,052
Other Services (except Public Administration)	27	167	3,622
Accommodation and Food Services	27	380	5,771
Financial and Insurance	23	213	12,488
Professional, Scientific, and Technical Services	19	130	4,842
Information			
Arts, Entertainment, and Recreation	7	133	3,376
Management of Companies and Enterprises	3	12	4,331

Hazard Mitigation

To fully understand hazard mitigation efforts in St. James 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 desirous 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 in advance of 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 1-4 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 1-4* 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, post-disaster 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. More recently, the historically impactful 2020 hurricane season reinforced the need for proper planning and mitigation strategies.

Figure 1-4: The Four Phases of Emergency Management and their Relation to Future Hazard Mitigation (Source: Louisiana State Hazard Mitigation Plan 2014)

The catastrophic tropical events of 2005 and 2020, coupled with the unprecedented flooding events of 2016 have 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

During the last update to the Louisiana State Hazard Mitigation Plan, the State Hazard Mitigation Team (SHMT) began a long-term effort to better integrate key components of all plans with hazard mitigation implications in Louisiana to ensure that the programs, policies, recommendations, and implementation strategies are internally consistent. As each of these documents has been adopted by various agencies within the state, the SHMT has worked to incorporate this information into the decision process.

Part of the ongoing integration process is that the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) encourages the parishes and the local communities 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 2021 St. James Parish Hazard Mitigation Plan (HMP) maintains much of the information from the 2016 plan version, but it now incorporates the order and methodologies of the 2019 Louisiana State Hazard Mitigation Plan.

The sections in the 2016 St. James Parish HMP were as follows:

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

This plan update 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 St. James Parish Hazard Mitigation Steering Committee recognized the benefits from the successful analysis and mitigation planning executed in previous plan updates, as well as improvements to be made in the 2021 update. This plan update remains coherent with those documents, retaining language and content when needed, deleting it when appropriate, and augmenting it when constructive.

2021 Plan Update

This 2021 plan update proceeds with the previous goals of the St. James Parish Hazard Mitigation Plan. The current goals are as follows:

1. Identify and pursue preventative measures that will reduce future damages from hazards
2. Enhance public awareness and understanding of disaster preparedness
3. Reduce repetitive losses in the parish
4. Facilitate sound development in the parish so as to reduce or eliminate the potential impact of hazards
5. Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish

This plan update makes a number of textual changes throughout, but the most obvious changes are data related and structural edits. First, the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information's (NCEI) Storm Events Database was used in the analysis, which provides historical hazard data from 1950 to 2020. The steering committee was also instrumental in providing detailed data where appropriate to more accurately reflect hazard impacts on the parish and jurisdictions. Furthermore, all of the sections were updated to reflect the most current information and the most current vision of the plan update. The most significant changes are the newly developed hazard profiles and risk assessments, as well as the removal of much repetition between sections from the previous plan updates.

The 2021 plan update is organized in the same format as the 2016 update, with one minor change to this 2021 update as outlined below:

- 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 Critical Facilities
- Appendix D Plan Adoption
- Appendix E State Required Worksheets

Table 1-3: 2021 Plan Update Crosswalk

Plan Update Crosswalk	
2016 Update	**2021 Update**
Section 1: Introduction	Section 1: Introduction
Section 2: Hazard Identification and Parish-Wide Risk Assessment	Section 2: Hazard Identification and Parish-Wide Risk Assessment
Section 3: Capability Assessment	Section 3: Capability Assessment
Section 4: Mitigation Strategy	Section 4: Mitigation Strategy
Appendix A: Planning Process	Appendix A: Planning Process
Appendix B: Plan Maintenance	Appendix B: Plan Maintenance
Appendix C: Essential Facilities	Appendix C: Critical Facilities
Appendix D: Plan Adoptions	Appendix D: Plan Adoptions
Appendix E: State Required Worksheets	Appendix E: State Required Worksheets

Despite numerous changes in this plan update, the plan remains consistent in its emphasis on the types of hazards that pose the most risk to loss of life, injury, and property in St. James Parish and its communities. The extent of this risk is dictated primarily by its geographic location. Most significantly, St. James Parish remains at high risk of water inundation from various sources, including flooding and tropical cyclone activity. The entire parish is also at high risk of damages from high winds and wind-borne debris. The 2016 flooding events, along with the 2020 hurricane season were both felt heavily in all parts of St. James Parish. Other hazards threaten the parish and/or its communities, although not to such great degrees and not in such widespread ways. In all cases, the relative social vulnerability of areas threatened and affected plays a significant role in how governmental agencies and their partners (local, parish, state and federal) prepare for and respond to disasters.

Mitigation efforts related to particular hazards are highly individualized by jurisdiction. Flexibility in response and planning is essential. The most important step forward to improve hazard management capability is to improve coordination and information sharing between the various levels of government regarding hazards.

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2. Hazard Identification and Parish-Wide Risk Assessment

This section assesses the various hazard risks that St. James 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 provides an overview of the hazards that had been previously profiled in the St. James Parish Hazard Mitigation Plan published in 2016, as well as the hazards that were identified in the state's 2019 Hazard Mitigation Plan that were 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 2021 Update
Coastal Hazards	X		X
Drought	X		X
Expansive Soils	X		X
Flooding	X	X	X
Sinkholes	X		X
Thunderstorms	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Wildfires	X		X
Winter Storms	X		X

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

a) Coastal Hazards
b) Drought
c) Expansive Soils
d) Flooding
e) Sinkholes
f) Thunderstorms (Hail, Lightning, & Wind)
g) Tornadoes
h) Tropical Cyclones
i) Wildfires
j) Winter Storms

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

- Flooding from rivers and waterways, rainstorms, tropical cyclones, and hurricanes in the following forms:
    a) Riverine
    b) Stormwater
    c) Surge
    d) Backwater flooding (as the result of river flooding and surge)
    e) Coastal
- High wind damage most commonly resulting from hurricanes, thunderstorms, and tornadoes
- Property damage resulting from all profiled natural hazards

The potential destructive power of tropical cyclones and floods were determined to be the most prevalent hazard to the parish. Seventeen of the twenty-six disaster declarations St. James Parish has received resulted from tropical cyclones (8), which validates tropical cyclones as the most significant hazard. Therefore, the issues 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 destructive potential, the risk assessment will also assess non-storm surge flooding as well. Flooding can also occur from non-hurricane events, as flash floods are a common occurrence due to heavy rainfall.

Hurricanes, tropical storms, and heavy storms are 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 St. James Parish is included in the hurricane risk assessment.

St. James Parish is also susceptible to tornadoes. Tornadoes can spawn from tropical cyclones or severe weather systems that pass-through St. James Parish. High winds produced by tornadoes have the potential to destroy residential and commercial buildings, as well as create wind-borne objects from the debris produced by the destruction of the natural and human environment, such as building materials and trees.

Previous Occurrences

On the next page, *Table 2-2* summarizes federal disaster declarations for St. James Parish since 1965. Information includes names, dates, and types of disaster.

Table 2-2: St. James Parish Major Disaster Declarations.

Disaster Number	Year	Declaration
208	9/10/1965	Tropical Cyclone – Hurricane Betsy
315	10/13/1971	Tropical Cyclone – Hurricane Edith
374	4/27/1973	Severe Storms, Flooding
829	5/20/1989	Severe Storms, Flooding
904	5/3/1991	Severe Storms, Tornadoes, and Flooding
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
1049	5/10/1995	Severe Storm, Flood
1246	9/23/1998	Tropical Cyclone – Hurricane Georges/TS Frances
1380	6/11/2001	Tropical Cyclone – TS Allison
1435	9/27/2002	Tropical Cyclone – TS Isidore
1437	10/3/2002	Tropical Cyclone – Hurricane Lili
3172	2/1/2003	Loss of Space Shuttle Columbia
1548	9/15/2004	Tropical Cyclone – Hurricane Ivan
1603	8/29/2005	Tropical Cyclone – Hurricane Katrina
1607	9/24/2005	Tropical Cyclone – Hurricane Rita
1786	9/2/2008	Tropical Cyclone – Hurricane Gustav
3322	5/6/2011	Severe Storms, Flooding
4015	8/18/2011	Severe Storms, Flooding
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac
4277	8/14/2016	Severe Storms, Flooding
3392	10/6/2017	Tropical Cyclone – TS Nate
3416	7/11/2019	Tropical Cyclone – TS Barry
4484	3/24/2020	COVID-19 Pandemic
3527	6/7/2020	Tropical Cyclone – Tropical Storm Cristobal
3538	8/23/2020	Tropical Cyclone – Tropical Storms Laura and Marco
4559	8/28/2020	Tropical Cyclone – Hurricane Laura

Probability of Future Hazard Events

The probability of a hazard event occurring in St. James Parish is estimated in the table on the following page. 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 National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information's (NCEI) Storm Events Database, which provides historical hazard data from 1950 to 2020. In staying consistent with the state plan, the Storm Events Database was evaluated for the last thirty years (1990 – 2020) to determine future probability of a hazard occurring. While the 30-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 70-year record was used when Hazus 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 for inflation in order to reflect the equivalent amount of damages with the value of the U.S. dollar today.

The following table shows the annual probability for each hazard occurring across the parish:

Table 2-3: Probability of Future Hazard Reoccurrence.

Hazard	Probability		
	St. James Parish (Unincorporated)	Gramercy	Lutcher
Coastal Hazards	100%	100%	100%
Drought	10%	10%	10%
Expansive Soils	100%	100%	100%
Flooding	40%	24%	36%
Sinkholes	< 1%	< 1%	< 1%
Thunderstorms - Hail	53%	53%	53%
Thunderstorms - Lightning	10%	10%	10%
Thunderstorms - Winds	100%	100%	100%
Tornadoes	27%	27%	27%
Tropical Cyclones	56%	56%	56%
Wildfires	< 1%	< 1%	< 1%
Winter Storms	3%	3%	3%

As shown in the table above, coastal hazards, expansive soils, and thunderstorm winds have the highest chance of occurrence in the parish (100%). These are followed by tropical cyclones (56%), hail (53%), flooding for the unincorporated area of St. James Parish (40%), flooding for the incorporated area of Lutcher (36%), tornadoes (27%), flooding for the incorporated area of Gramercy (24%), drought and lightning (10%), and winter storms (3%). Wildfires and sinkholes for the entire parish have an annual chance of occurrence of less than 1%.

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 (GOHSEP) on critical infrastructure from a previous hazard mitigation project.

Within the entire planning area, there is an estimated value of $2,072,726,000 in structures throughout the parish. The table on the next page provides the total estimated value for each type of structure by occupancy.

Table 2-4: Estimated Total of Potential Losses throughout St. James Parish.

Occupancy	St. James Parish	Unincorporated Area	Gramercy	Lutcher
Agricultural	$8,284,000	$7,197,000	$300,000	$787,000
Commercial	$193,711,000	$115,211,000	$27,028,000	$51,472,000
Government	$20,725,000	$17,967,000	$976,000	$1,782,000
Industrial	$96,116,000	$42,453,000	$50,315,000	$3,348,000
Religion	$39,122,000	$26,811,000	$4,547,000	$7,764,000
Residential	$1,706,357,000	$1,113,912,000	$303,162,000	$289,283,000
Education	$8,411,000	$6,741,000	$475,000	$1,195,000
Total	**$2,072,726,000**	**$1,330,292,000**	**$386,803,000**	**$355,631,000**

Essential Facilities of the Parish

The following figures show the locations and names of the essential facilities within the parish:

Fire and Rescue	
Map ID	Name
1	Gramercy Volunteer Fire Dept.
2	Gramercy Volunteer Fire Dept.
3	Lutcher Volunteer Fire Dept.
4	South Vacherie Volunteer Fire Dept.
5	South Vacherie Volunteer Fire Dept.
6	St. James Volunteer Fire Dept.
7	St. James Volunteer Fire Dept.
8	St. James Volunteer Fire Dept.
9	St. James Volunteer Fire Dept.
10	St. James Volunteer Fire Dept.
11	St. James Volunteer Fire Dept.
12	St. James Volunteer Fire Dept.
13	Union-Convent Vol. Fire Dept.
14	Union-Convent Vol. Fire Dept.
15	Union-Convent Vol. Fire Dept.
16	Union-Convent Vol. Fire Dept.
17	Union-Convent Vol. Fire Dept.
18	Vacherie Volunteer Fire Dept.
19	Vacherie Volunteer Fire Dept.
20	Vacherie Volunteer Fire Dept.
21	Vacherie Volunteer Fire Dept.

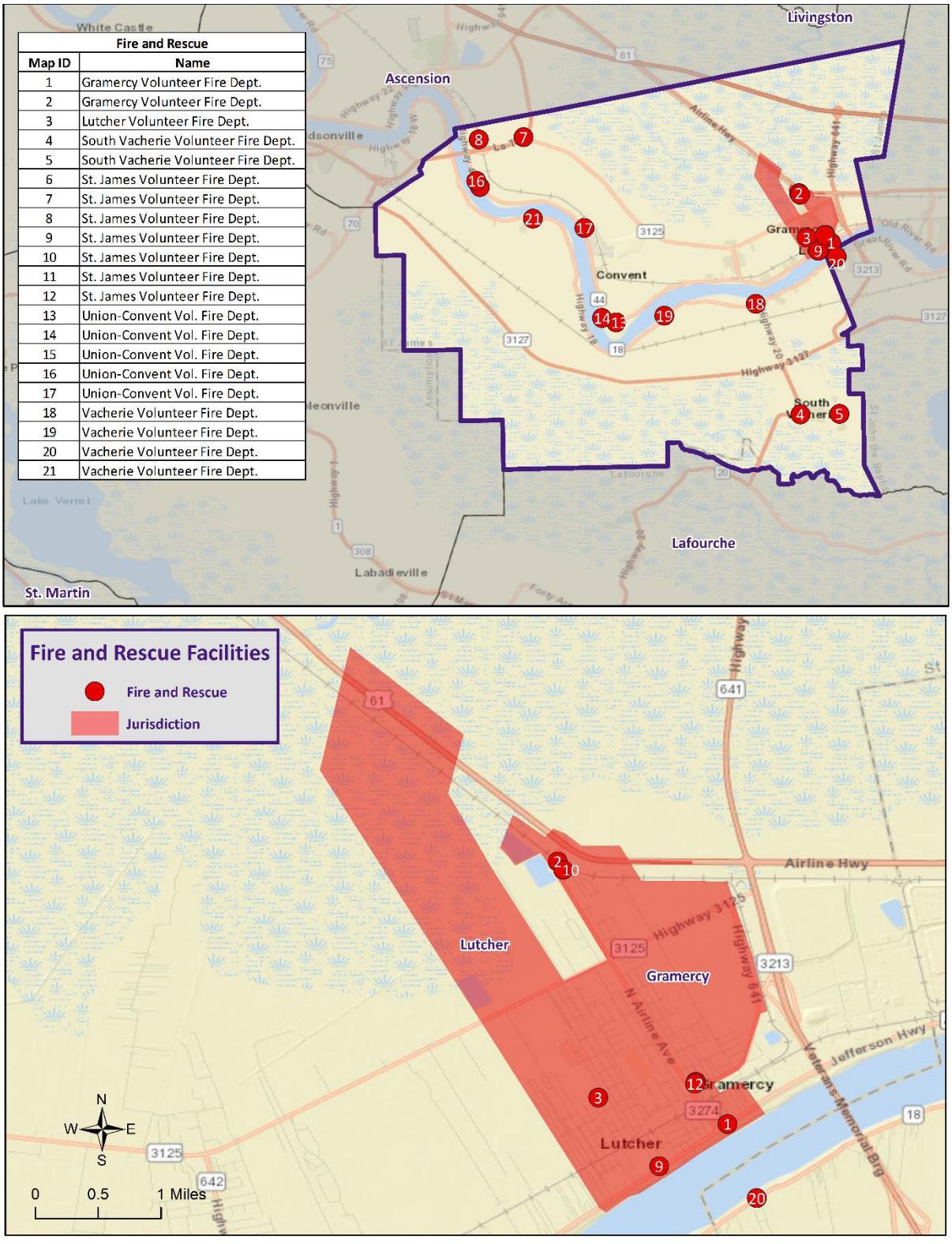


Figure 2-1: Fire and Rescue Facilities in St. James Parish.

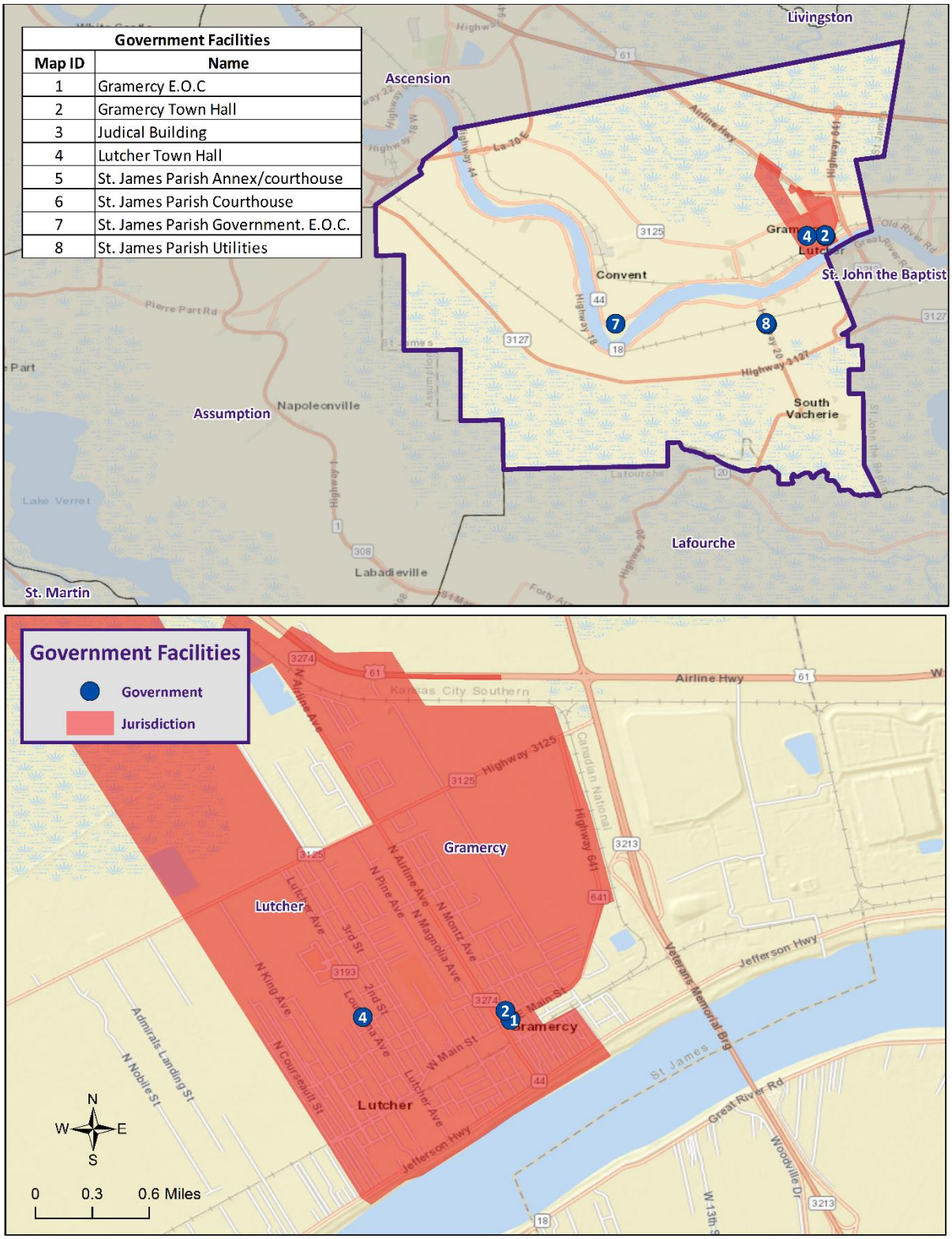


Figure 2-2: Government Buildings in St. James Parish.

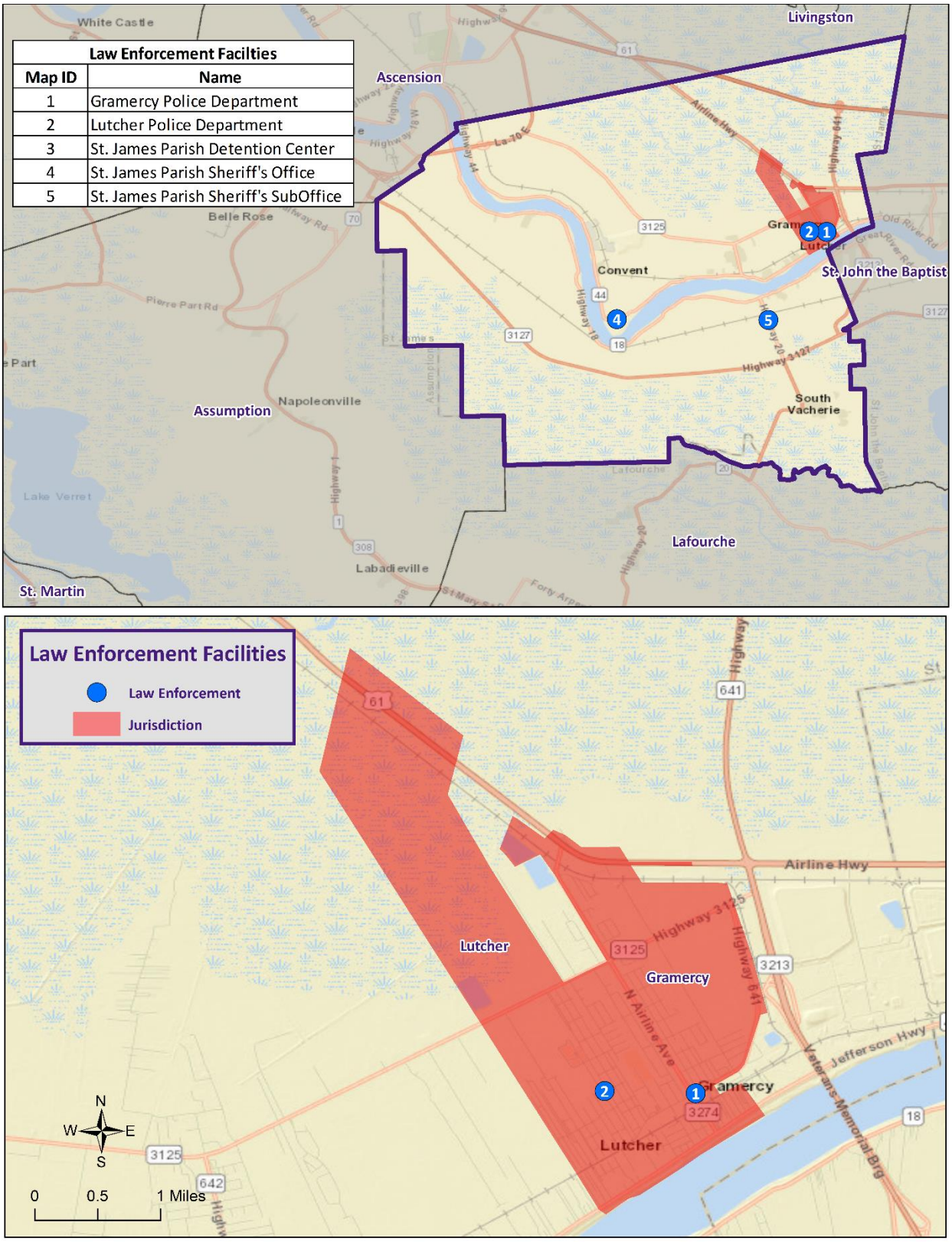
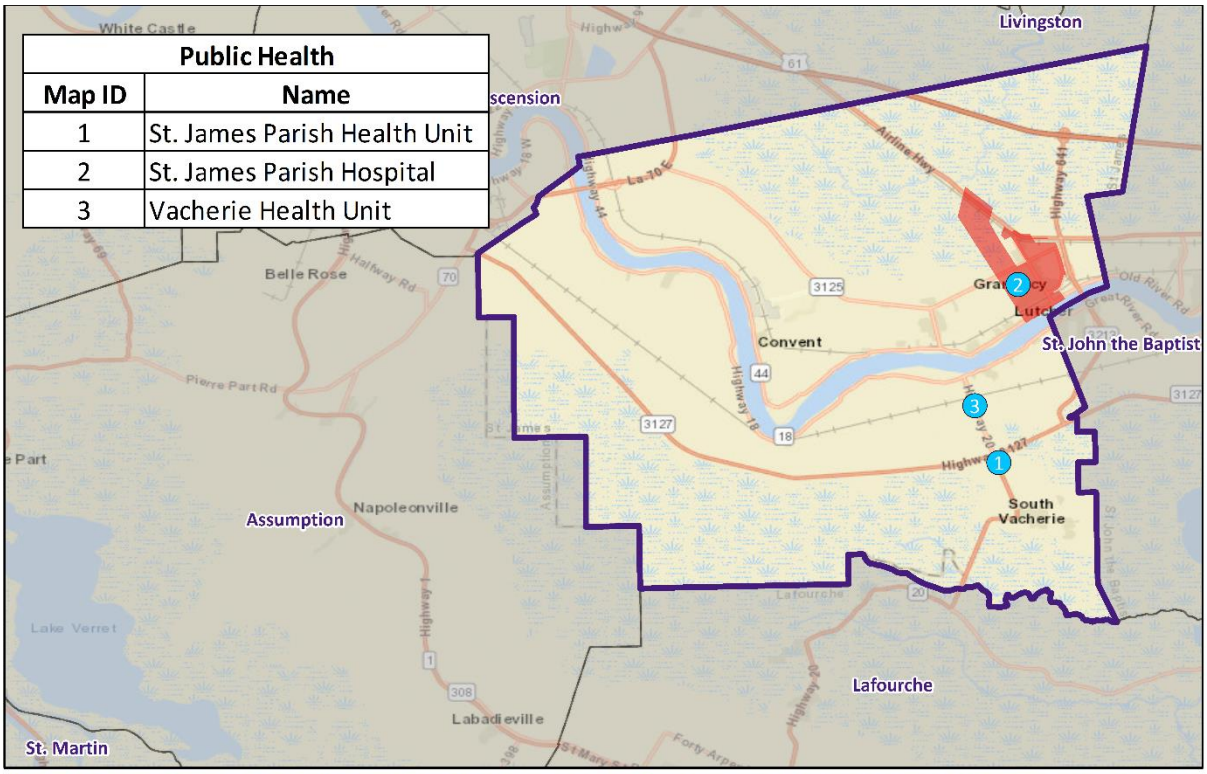


Figure 2-3: Law Enforcement in St. James Parish.



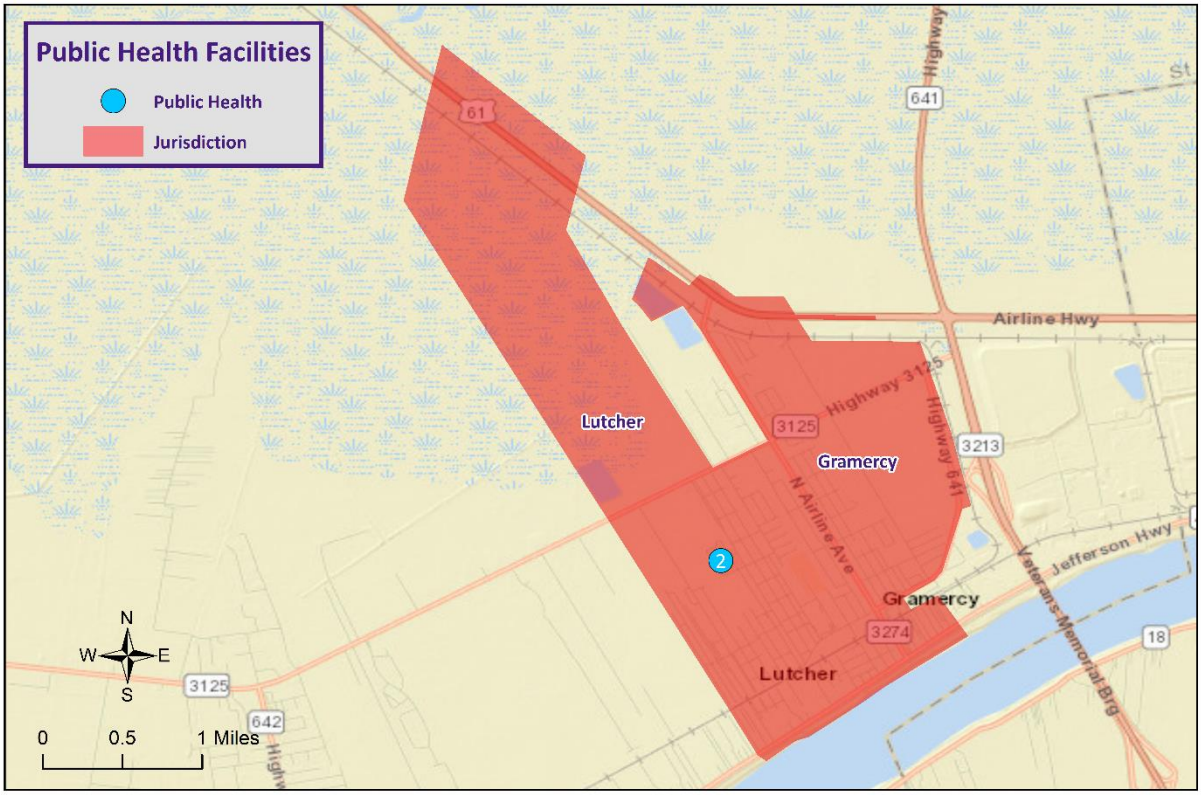


Figure 2-4: Public Health Facilities in St. James Parish.

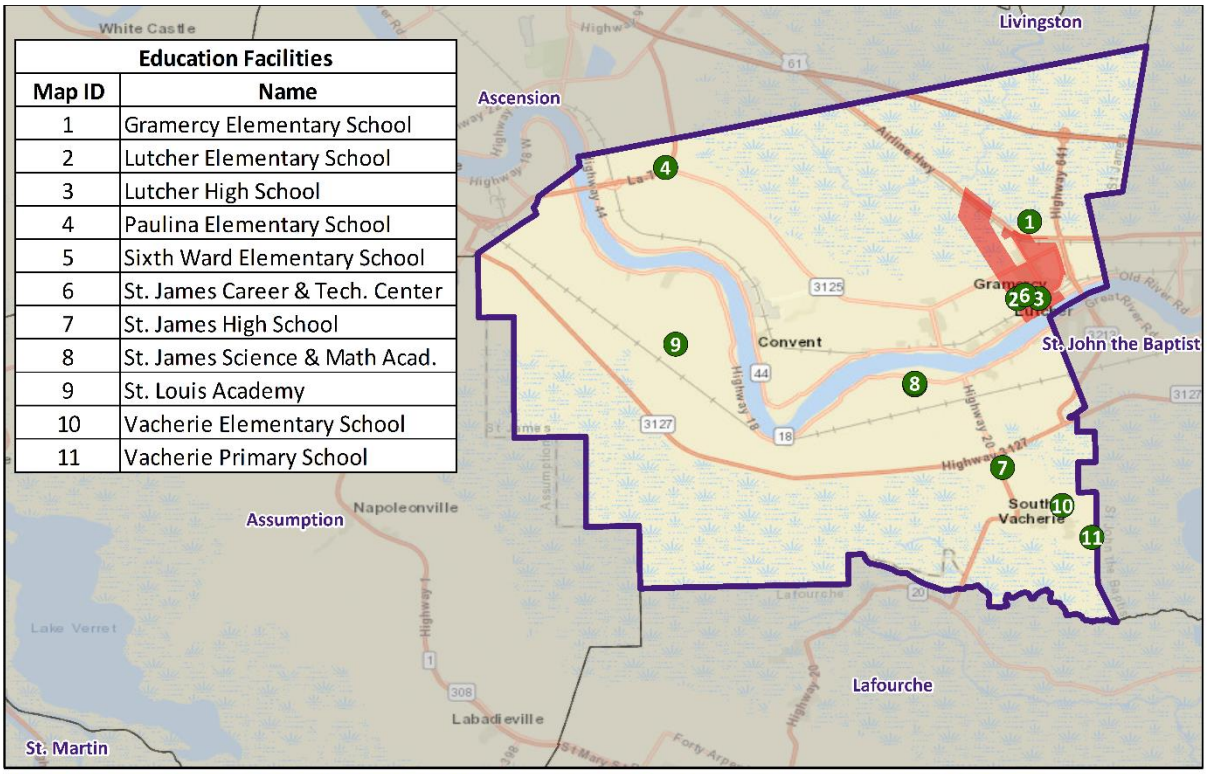


Figure 2-5: Educational Facilities in St. James Parish.

Future Development Trends

St. James Parish experienced a decline in population and housing between the years of 2000 and 2019, falling from a population of 21,216 with 7,605 housing units in the year 2000 to a population of 21,096 with 8,919 housing units in the year 2019. The incorporated area of Lutcher experienced the largest population decline within the parish falling from a populace of 3,559 in 2010 to 3,183 in 2019 (10.6% overall decline) which is then followed by the incorporated area of Gramercy which fell from a populace of 3,613 in 2010 to 3,281 in 2019. The unincorporated area of St. James Parish also experienced a decline in population during this same time period.

The unincorporated area of St. James Parish experienced the largest growth of housing units from 2010 to 2019 growing from 8,455 in 2010 to 8,919 in 2019. The incorporated area of Lutcher experienced the second largest growth in housing units during this time period with a 0.7%% annual growth rate followed by the incorporated area of Gramercy with a less than 1% annual growth rate. The future population and number of buildings can be estimated using U.S. Census Bureau housing and population data. The following tables show population and housing unit estimates from 2000 to 2019:

Table 2-5: Population Growth Rate for St. James Parish.

Total Population	St. James Parish	Unincorporated Area	Gramercy	Lutcher
1-Apr-00	21,216	14,415	3,066	3,735
1-Apr-10	22,102	14,930	3,613	3,559
1-Jul-19	21,096	14,632	3,281	3,183
Population Growth between 2000 – 2010	4.2%	3.6%	17.8%	-4.7%
Average Annual Growth Rate between 2000 – 2010	0.4%	0.4%	1.8%	-0.5%
Population Growth between 2010 – 2019	-4.6%	-2.0%	-9.2%	-10.6%
Average Annual Growth Rate between 2010 – 2019	-0.51%	-0.22%	-1.02%	-1.17%

Table 2-6: Housing Growth Rate for St. James Parish.

Total Housing Units	St. James Parish	Unincorporated Area	Gramercy	Lutcher
1-Apr-00	7,605	5,074	1,163	1,368
1-Apr-10	8,455	5,667	1,382	1,406
1-Jul-19	8,919	6,041	1,384	1,494
Housing Growth between 2000 – 2010	11.2%	11.7%	18.8%	2.8%
Average Annual Growth Rate between 2000 – 2010	1.1%	1.2%	1.9%	0.3%
Housing Growth between 2010 – 2019	5.5%	6.6%	0.1%	6.3%
Average Annual Growth Rate between 2010 – 2019	0.6%	0.7%	0.0%	0.7%

Future Hazard Impacts

Hazard impacts were estimated for five years and ten years in the future (2025 and 2030). 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, it is assumed that population and housing units will grow within St. James Parish from the present until 2030. 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, 2019-2030.
(Source: Hazus, US Census Bureau)

Hazard / Impact	Total in Parish (2019)	Hazard Area (2018)	Hazard Area (2025)	Hazard Area (2030)
Flood Damage				
Structures	8,973	5,025	5,180	5,373
Value of Structures	2,106,635,460	1,179,715,857	1,279,425,174	1,410,262,187
# of People	20,989	11,754	11,460	11,116
Tropical Cyclone Damage				
Structures	8,973	8,973	9,250	9,594
Value of Structures	$2,106,635,460	$2,106,635,460	$2,284,687,811	$2,518,325,333
# of People	20,989	20,989	20,464	19,851

Both population and housing numbers have remained relatively steady throughout the parish since the last update to the St. James Parish Hazard Mitigation Plan. With that in mind, LaSalle Parish is mindful in offsetting any new development around the parish with appropriate mitigative actions. Initiatives such as active floodplain management have regulated the development of flood prone areas to continue supporting and encouraging safer communities within St. James Parish. Strict enforcement of building codes for all new development is an additional step taken by the parish in its effort to decrease its vulnerability and increase the resiliency of the parish against natural hazards. The small amount of development that has occurred since 2016 has not in any knowing way altered the jurisdiction's vulnerability to natural hazards.

Assessing Vulnerability Overview

The purpose of assessing vulnerability is to quantify and/or qualify exposure and determine how various threats and hazards impact life, property, the environment, and critical operations in St. James Parish. Vulnerability can be defined as the manifestation of the inherent states of the system (e.g., physical, technical, organizational, cultural) that can be exploited to adversely affect (cause harm or damage to) that system. For example, identifying areas in the parish that suffer disproportional damages from flooding compared with other areas, or overall exposure of an entire town to flooding. Identifying and understanding vulnerability to each threat and hazard provides a strong foundation for developing and pursuing mitigation actions.

The Vulnerability Assessment section for each hazard builds upon the information provided in the Risk Assessment by assessing the potential impact and amount of damage that each hazard has on the parish and each jurisdiction location. To complete the assessment, best available data were collected from a variety of sources, including local, state, and federal agencies, and multiple analyses were performed

qualitatively and quantitatively. The estimates provided in the Vulnerability Assessment should be used to understand relative risk from each hazard and the potential losses that may be incurred; however, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning specific hazards and their effects on the built environment, as well as incomplete datasets from approximations and simplifications that are necessary to provide a meaningful and complete analysis. Further, most datasets used in this assessment contain relatively short periods of records, which increases the uncertainty of any statistically based analysis.

Quantitative Methodology

The quantitative methodology consists of utilizing a detailed GIS-based approach informed through the development of comprehensive hazard and infrastructure databases. This data-centric approach forms the foundation for our quantitative vulnerability assessment. GIS technology allowed for the identification and analysis of potentially at-risk community assets such as people and infrastructure. This analysis was completed for hazards that can be spatially defined in a meaningful manner (i.e., hazards with an official and scientifically determined geographic extent) and for which GIS data were readily available.

Qualitative Methodology

The qualitative assessment relies less on technology, but more on historical and anecdotal data regarding expected hazard impacts. The qualitative assessment completed for St. James Parish is based on the Priority Risk Index (PRI). The purpose of the PRI is to prioritize all potential hazards, and then group them into three categories of high, moderate, or low risk to identify and prioritize mitigation opportunities. The PRI is a good practice to use when prioritizing hazards because it provides a standardized numerical value for hazards to be compared. PRI scores were calculated using five categories:

- Probability
- Impact
- Spatial Extent
- Warning Time
- Duration

Each degree of risk is assigned a value (1-4) and a weighting factor. To calculate the Risk Factor for a given hazard, the assigned risk value for each category is multiplied by the weighted factor, and the sum of all six categories is totaled together to determine the final Risk Factor. The highest possible Risk Factor is 4.0.

Risk Factor = [(Probability * 0.25) + (Impact * 0.25) + (Spatial Extent * 0.20) + (Warning Time *0.15) + (Duration * 0.15)]

Priority Risk Index and Hazard Risk

Hazard risk is determined by calculating the Risk Factor for each hazard impacting St. James Parish. A summary of the PRI is found in the table on the next page. The conclusions drawn from the qualitative and quantitative assessments are fitted into three categories based on High, Moderate, or Low designations. Hazards identified as high risk have risk factors of 2.5 or greater. Risk Factors ranging from 2.0 to 2.4 are deemed moderate risk hazards. Hazards with Risk Factors less than 2.0 are considered low risk.

Table 2-8: Summary of the Priority Risk Index.

PRI Category	Degree of Risk			Assigned Weighting Factor
	Level	Criteria	Index Value	
Probability	Unlikely	Less than 1% annual probability	1	25%
	Possible	Between 1 and 10% annual probability	2	
	Likely	Between 10 and 100% probability	3	
	Highly Likely	100% annual probability	4	
Impact	Minor	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	1	25%
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	2	
	Critical	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than a week.	3	
	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	4	
Spatial Extent	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1 and 10% of area affected	2	
	Moderate	Between 10 and 50% of area affected	3	
	Large	Between 50 and 100% of area affected	4	
Warning Time	More than 24 hours	Self-explanatory	1	15%
	12 to 24 hours	Self-explanatory	2	
	6 to 12 hours	Self-explanatory	3	
	Less than 6 hours	Self-explanatory	4	
Duration	Less than 6 hours	Self-explanatory	1	15%
	Less than 24 hours	Self-explanatory	2	
	Less than one week	Self-explanatory	3	
	More than one week	Self-explanatory	4	

Table 2-9: Associated Risk Factor with PRI Value Range.

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

Table 2-10: Risk Assessment for St. James Parish.

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Coastal Hazards	4	1	3	1	4	**2.6**
Drought	2	2	4	2	3	**2.55**
Flooding	4	1	4	1	4	**2.8**
Sinkholes	3	4	3	4	3	**3.4**
Thunderstorms - Hail	1	2	1	4	2	**1.85**
Thunderstorms - Lightning	3	2	3	3	1	**2.45**
Thunderstorms - Wind	2	2	2	3	1	**2**
Tornadoes	4	2	3	3	1	**2.7**
Tropical Cyclones	3	3	2	4	3	**2.95**
Wildfires	3	4	4	1	4	**3.3**
Winter Storms	1	3	4	1	2	**2.25**

Land Use

The St. James Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 10% of the parish's land use. Wetlands at 94,826 acres is the largest category accounting for 58% of land in the parish. The parish also consists of agricultural land (27%), water areas (5%), and forested areas (< 1%).

Table 2-11: St. James Parish Land Use.
(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	45,247	27%
Wetlands	94,826	58%
Forest Land (Not including forested wetlands)	479	< 1%
Urban/Development	16,985	10%
Water	7,555	5%

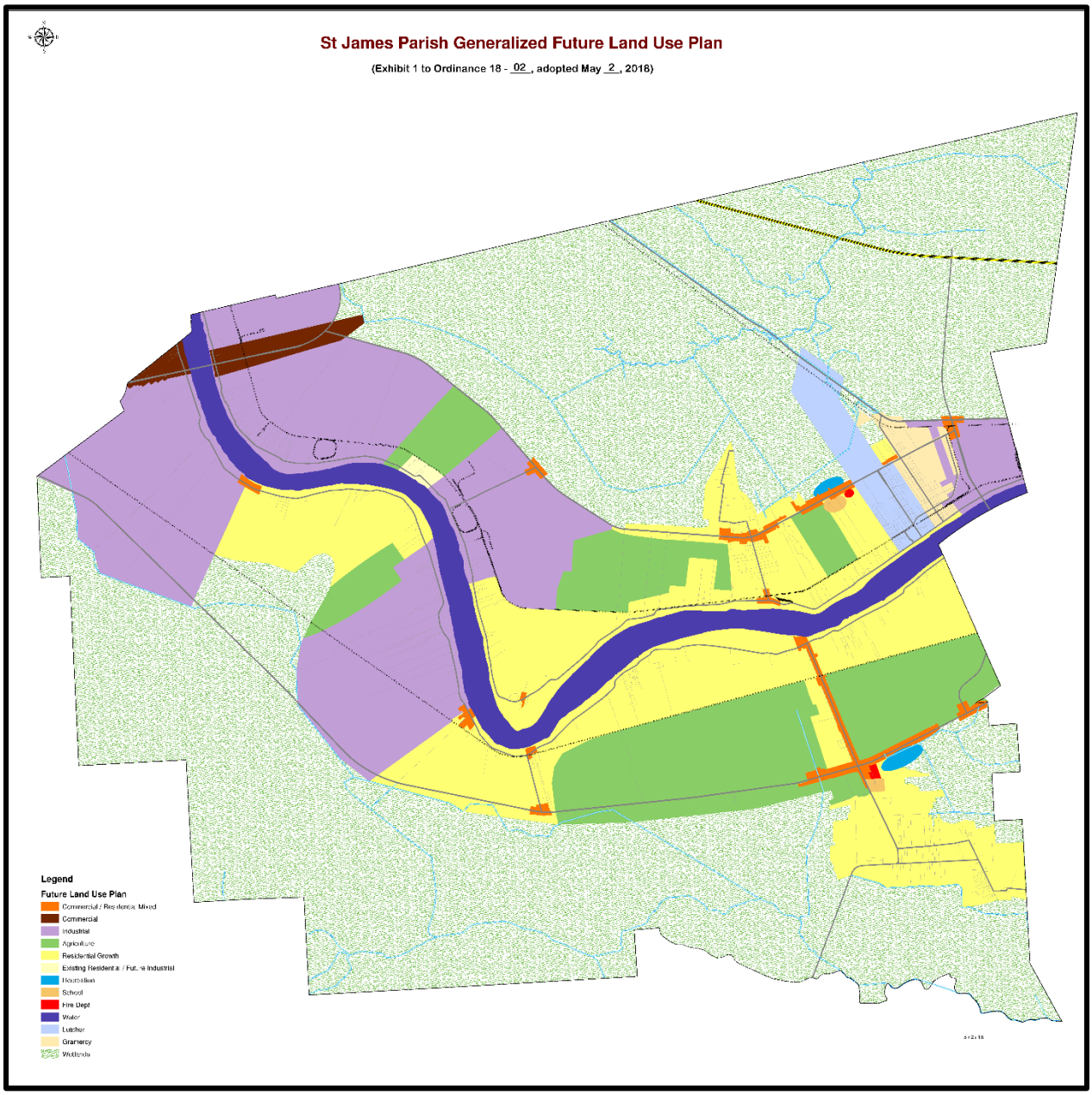


Figure 2-6: St. James Parish Land Use Map.
(Source: St. James Land Use Ordinance; Adopted May 2, 2018)

Hazard Identification

Coastal Hazards/Subsidence

Coastal land loss is 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 worst recent contributors to coastal land loss in the state 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. Together, 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 10–12 in. per century, while future sea level rise could be within the range of 1–4 ft. 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 ft./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 saltwater 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 the marsh areas, 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 2-7*) and subsidence rates (*Figure 2-8)* have been quantified for St. James 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^2, while the average annual land gain has been 3 mi^2 for a net loss of 32 mi^2 per year. Land loss is sparsely occurring in the northern unincorporated areas of St. James Parish (*Figure 2-7*). Additionally, subsidence is also occurring in unincorporated areas and in the incorporated areas of Gramercy and Lutcher (*Figure 2-8*).

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 include 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. The unincorporated area of St. James Parish south of the Mississippi River can expect to experience subsidence rates of approximately 10 mm annually, while the unincorporated areas north of the Mississippi River and the incorporated areas of Gramercy and Lutcher can expect subsidence rates of approximately 6 mm annually.

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 2-12: Estimated Annual Probability of Coastal Land Loss and Subsidence in St. James Parish.

Annual Probability of Coastal Land Loss in St. James Parish		
St. James Parish (Unincorporated Area)	Gramercy	Lutcher
100%	100%	100%

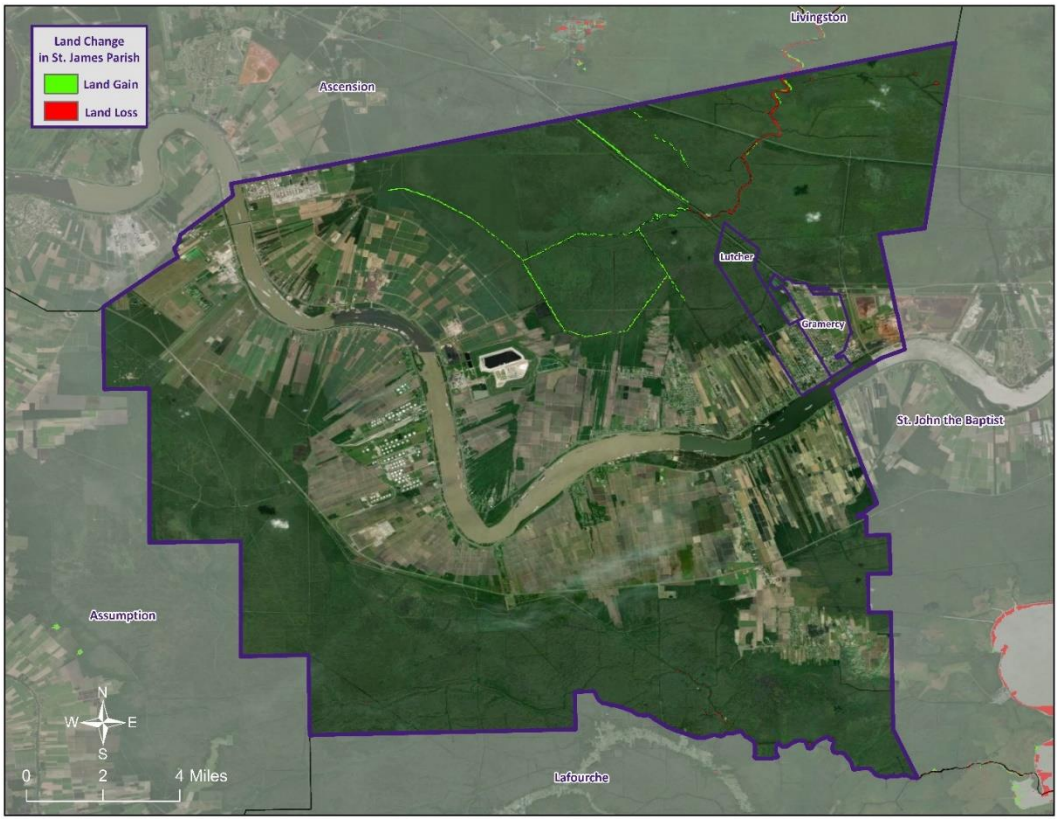


Figure 2-7: Historical Areas of Land Loss and Gain between 1932 and 2010.
(Source: State of Louisiana Hazard Mitigation Plan)

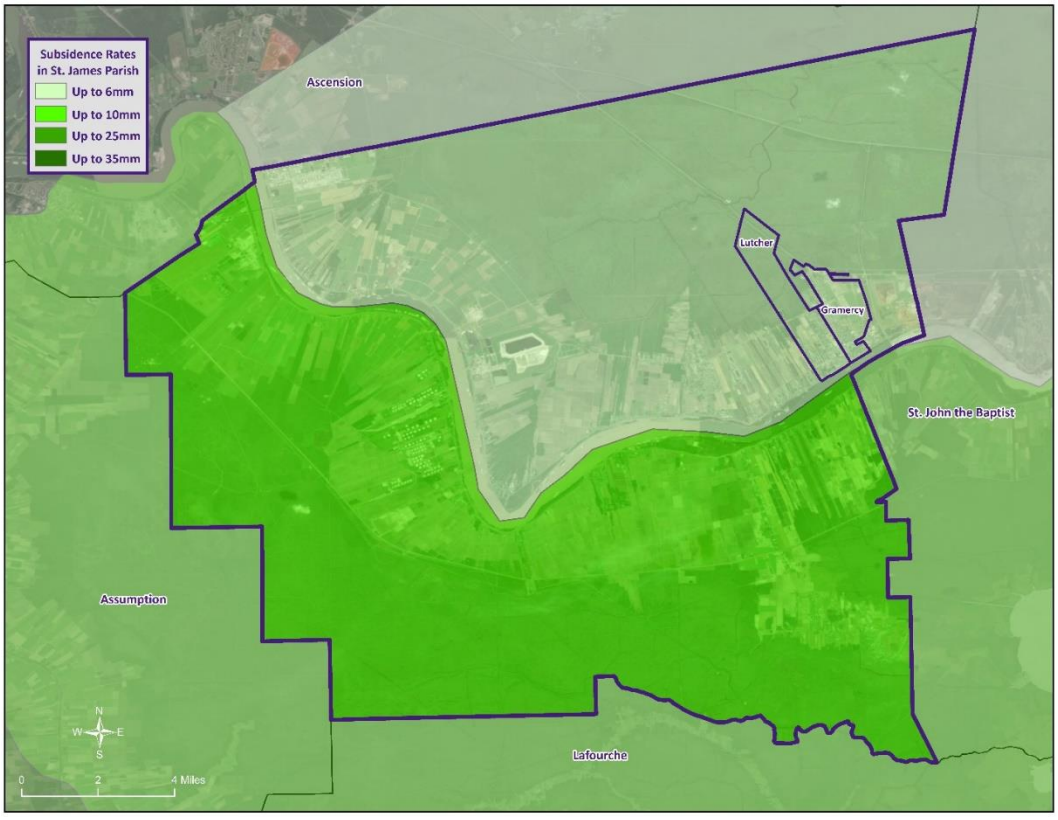


Figure 2-8: Maximum Annual Subsidence Rates Based on Subsidence Zones in Coastal Louisiana.
(Source: State of Louisiana Hazard Mitigation Plan)

Estimated Potential Loses

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 10 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 10-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 10 years (SLR2024) 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.

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

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

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 ft sea level rise] – [Current Land Elevation – Subsidence]). Hazus was used to calculate economic loss for the current and future depth grids.

Figure 2-9 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 2-10*).

To determine annual potential loss estimates for coastal land loss, increased exposure estimates over the next 10 years calculated using Hazus were annualized at the parish level (*Figure 2-11*). 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 2-13* provides an estimate of annual potential losses for St. James Parish.

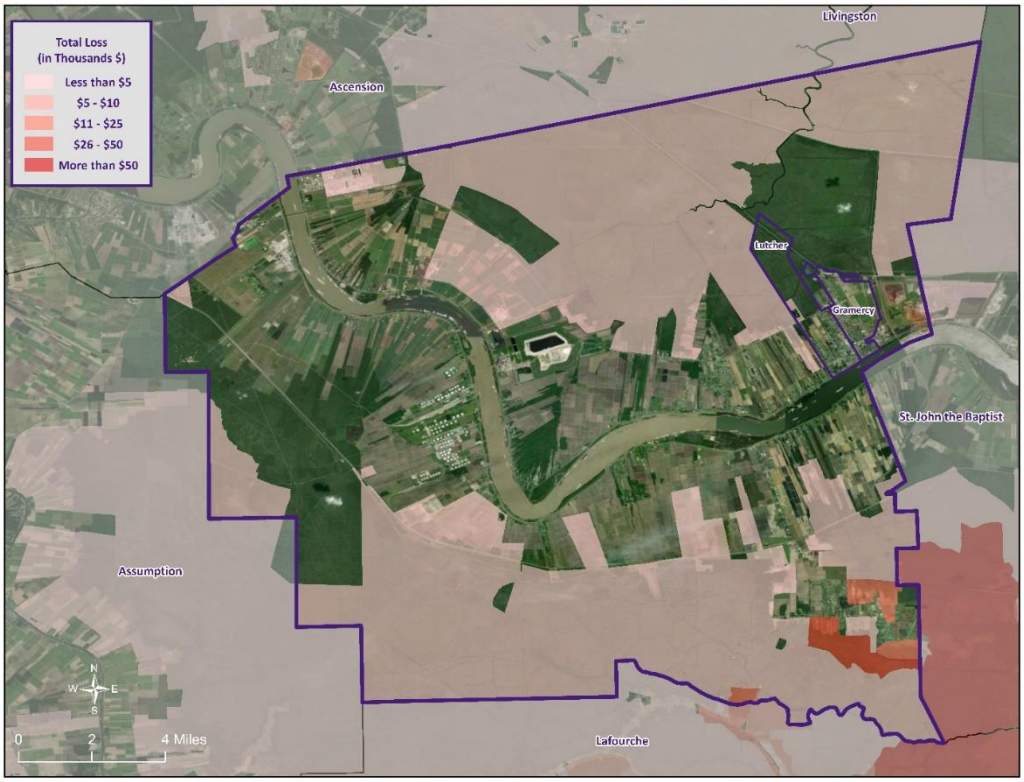


Figure 2-9: Increase in Total Loss Estimates in 2024 by Census Block Group Based on the Hazus Flood Model and NOAA SLOSH Model.
(Source: State of Louisiana Hazard Mitigation Plan)

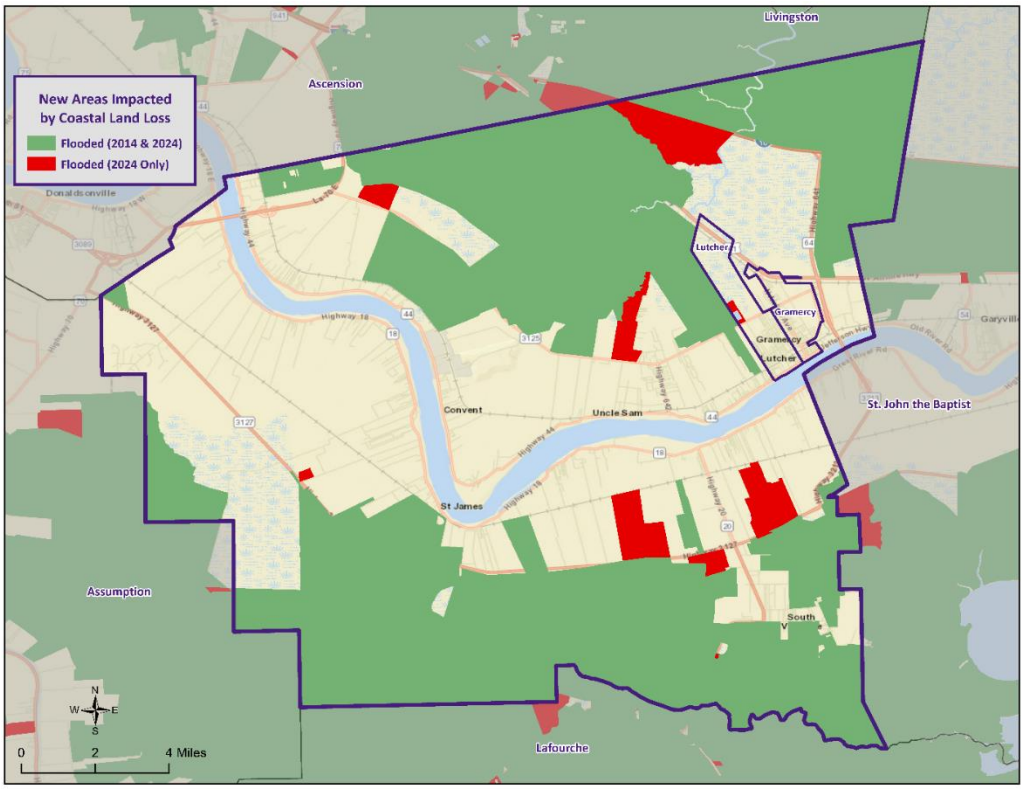


Figure 2-10: Census Block Groups not Currently Impacted by Category 1 Hurricane Storm Surge but Expected to be Impacted in 2024 are Shown in Red.
(Source: State of Louisiana Hazard Mitigation Plan)

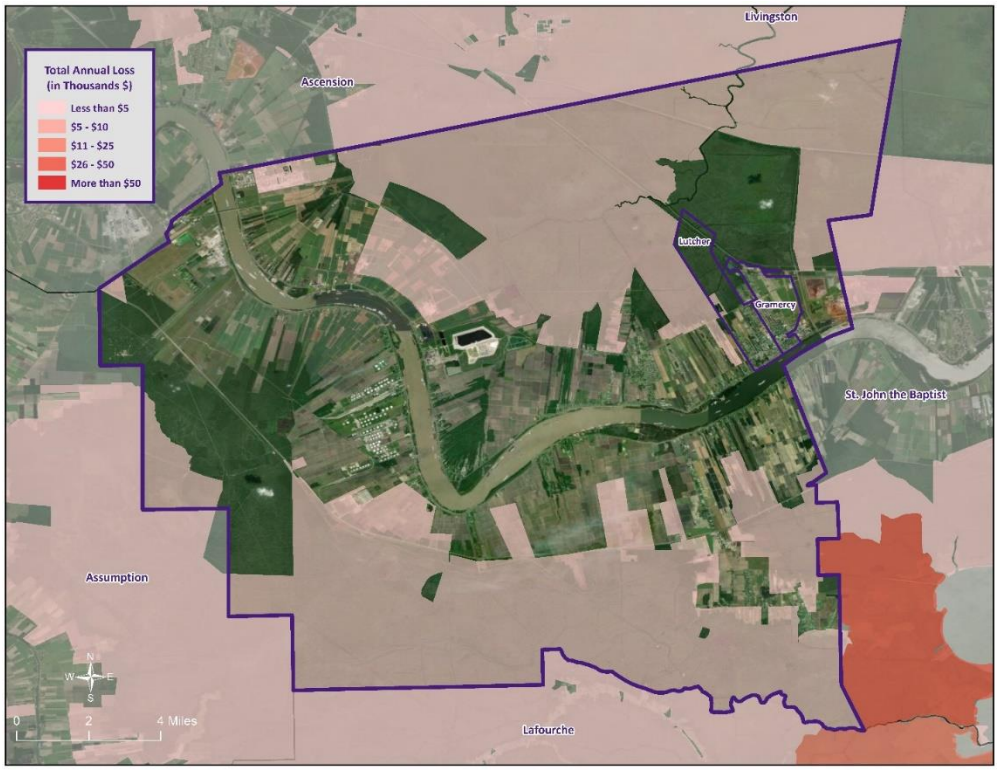


Figure 2-11: Estimated Annual Losses for Coastal Land Loss by Census Block Group.

The following table shows the current and future exposure potential based on the Hazus inventory database.

Table 2-13: Estimated Annual Losses for Coastal Land Loss in St. James Parish. (Source: Hazus)

Estimated Annual Losses for Coastal Land Loss in St. James Parish		
St. James Parish (Unincorporated Area)	Gramercy	Lutcher
$11,300	$0	$0

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 following table.

Table 2-14: Number of People Susceptible to Coastal Land Loss in St. James Parish.

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
St. James Parish (Unincorporated Area)	14,930	1,807	12.1%
Gramercy	3,613	0	0%
Lutcher	3,559	0	0%
Total	22,102	8,155	8.2%

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

Table 2-15: Population Vulnerable to Coastal Land Loss in St. James Parish.

St. James Parish Unincorporated		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	14,930	100.0%
Persons Under 5 years	956	6.4%
Persons Under 18 years	3,613	24.2%
Persons 65 Years and Over	2,150	14.4%
White	7,375	49.4%
Minority	7,555	50.6%

Table 2-16: Population Vulnerable to Coastal Land Loss in Gramercy.

Gramercy		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,613	100.0%
Persons Under 5 years	271	7.5%
Persons Under 18 years	957	26.5%
Persons 65 Years and Over	502	13.9%
White	1,861	51.5%
Minority	1,752	48.5%

Table 2-17: Population Vulnerable to Coastal Land Loss in Lutcher.

Lutcher		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,559	100.0%
Persons Under 5 years	217	6.1%
Persons Under 18 years	632	17.8%
Persons 65 Years and Over	607	17.1%
White	1,646	46.3%
Minority	1,913	53.8%

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to coastal land loss and subsidence.

Drought

A drought is a deficiency in water availability over an extended period of time, caused by precipitation totals and soil water storages that do not satisfy the environmental demand for water, either by evaporation or transpiration through plant leaves. It is important to note that the lack of precipitation alone does not constitute drought; the season during which the precipitation is lacking has a major impact on whether drought occurs. For example, a week of no precipitation in July, when the solar energy to evaporate water and vegetation's need for water to carry on photosynthesis are both high, may trigger a drought, while a week of no precipitation in January may not initiate a drought.

Drought is a unique and insidious hazard. Unlike other natural hazards, no specific threshold of "dryness" exists for declaring a drought. In addition, the definition of drought depends on stakeholder needs. For instance, the onset (and demise) of agricultural drought is quick, as crops need water every few days; once they get rainfall, they improve. But hydrologic drought sets in (and is alleviated) only over longer time periods. A few dry days will not drain a reservoir, but a few rain showers cannot replenish it either. Moreover, different geographical regions define drought differently based on the deviation from local, normal precipitation. And drought can occur anywhere, triggered by changes in the local-to-regional-scale atmospheric circulation over an area, or by broader-scale circulation variations such as the expansion of semi-permanent oceanic high-pressure systems or the stalling of an upper-level atmospheric ridge in place over a region. The severity of a drought depends upon the degree and duration of moisture deficiency, as well as the size of the affected area. Periods of drought also tend to be associated with other hazards, such as wildfires and/or heat waves. Lastly, drought is a slow onset event, causing less direct—but tremendous indirect—damage. Depletion of aquifers, crop loss, and livestock and wildlife mortality rates are examples of direct impacts. Since the groundwater found in aquifers is the source of about 38% of all county and city water supplied to households (and comprises 97% of the water for all rural populations that are not already supplied by cities and counties), droughts can potentially have direct, disastrous effects on human populations. The indirect consequences of drought, such as unemployment, reduced tax revenues, increased food prices, reduced outdoor recreation opportunities, higher energy costs as water levels in reservoirs decrease and consumption increases, and water rationing, are not often fully known. This complex web of impacts causes drought to affect people and economies well beyond the area physically experiencing the drought.

This hazard is often measured using the Palmer Drought Severity Index (PDSI, also known operationally as the Palmer Drought Index). The PDSI, first developed by Wayne Palmer in a 1965 paper for the U.S. Weather Bureau, measures drought through recent precipitation and temperature data with regard to a basic supply-and-demand model of soil moisture. It is most effective in long-term calculations. Three other indices used to measure drought are the Palmer Hydrologic Drought Index (PHDI), the Crop Moisture Index (CMI), which is derived from the PDSI, and the Keetch-Byram Drought Index (KBDI), created by John Keetch and George Byram in 1968 for the U.S. Forest Service. The KBDI is used mainly for predicting the likelihood of wildfire outbreaks. As a compromise, the PDSI is used most often for droughts since it is a medium-response drought indicator. The objective of the PDSI is to provide measurements of moisture conditions that are standardized so that comparisons using the index can be made between locations and between months. *Table 2-18* displays the range and Palmer classifications of the PDSI index while *Figure 2-12* displays the current drought monitor for the State of Louisiana and its parishes.

Table 2-18: Palmer Drought Severity Index Classification and Range

Range	Palmer Classifications
4.0 or more	Extremely Wet
3.0 to 3.9	Very Wet
2.0 to 2.9	Moderately Wet
1.0 to 1.99	Slightly Wet
0.5 to 0.99	Incipient Wet Spell
0.49 to -0.49	Near Normal
-0.5 to -0.99	Incipient Dry Spell
-1.0 to -1.99	Mild Drought
-2.0 to -2.99	Moderate Drought
-3.0 to -3.99	Severe Drought
-4.0 or less	Extreme Drought

The PDSI best measures the duration and intensity of drought-inducing circulation patterns at a somewhat long-term time scale, although not as long-term as the PHDI. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns in addition to the effects of cumulative patterns of previous months. Although weather patterns can change almost overnight from a long-term drought pattern to a long-term wet pattern, as a medium-response indicator, the PDSI responds relatively rapidly. Data compiled by the National Drought Mitigation Center indicates normal conditions currently exists within St. James Parish.

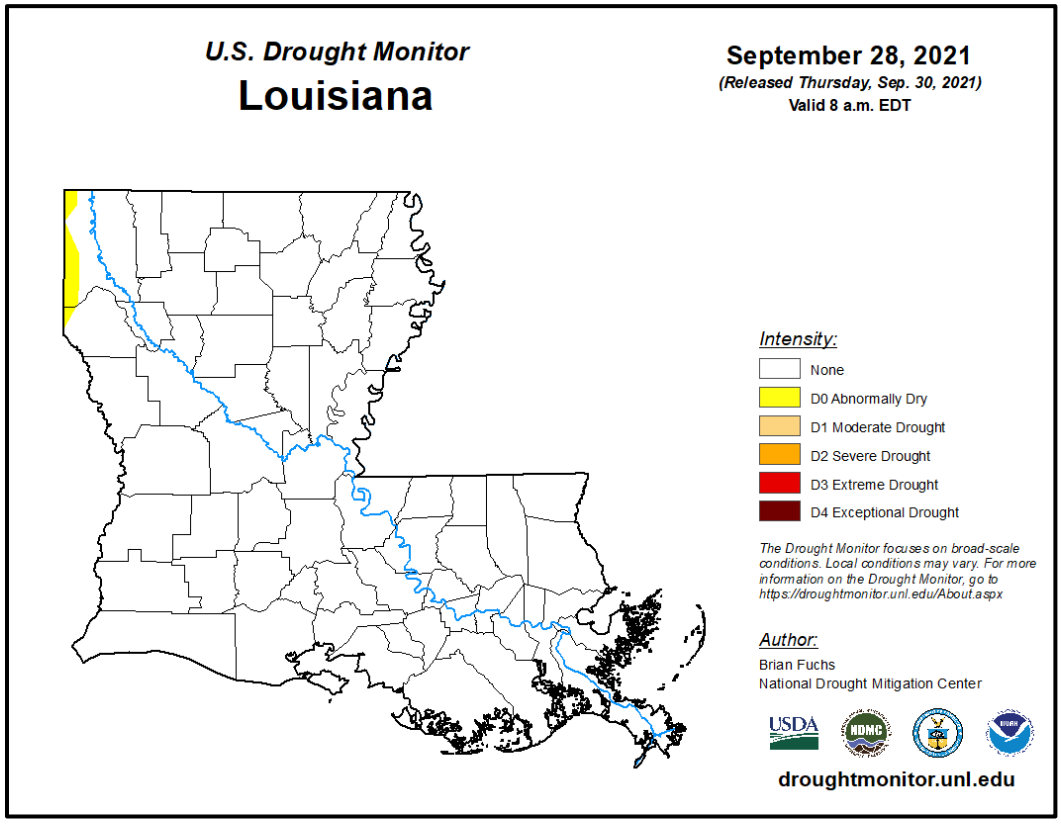


Figure 2-12: United States Drought Monitor for the State of Louisiana and its Parishes. (Source: The National Drought Mitigation Center)

Location

Drought typically impacts a region and not one specific parish or jurisdiction. While the entire planning area can experience drought, the major impact of a drought event in St. James Parish is on the agricultural community. The worst-case drought scenario for St. James Parish would be an extreme drought (D3).

Previous Occurrences / Extent

Historically, there have been three drought incidents in St. James Parish. Drought events have ranged from Mild to Extreme per the National Climatic Data Center. Since the last update in 2016, there have been no drought events within the boundaries of St. James Parish.

Frequency / Probability

Based on three drought events since 1990, the annual chance of occurrence of a drought event occurring within a given year is calculated at 10% for St. James Parish.

Estimated Potential Loses

According to the NCEI Storm Events Database, there have been three drought events which have impacted St. James Parish which resulted in limited to no damage to crops in the parish. When examining the drought hazard, the main impact will primarily be on the crops. The following table presents an analysis of agricultural exposure which are susceptible to droughts by type for St. James Parish.

Table 2-19: Agricultural Exposure by Crop Type for Droughts in St. James Parish. (Source: LSU AG Center 2018 Parish Totals)

Agricultural Exposure by Type for Drought				
Cabbage	**Cucumber**	**Mustard**	**Tomato**	**Sugarcane**
$104,811	$6,233	$274,844	$349,254	$28,613,790

There have been no reported injuries or deaths as a direct result of drought in St. James Parish.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to drought.

Expansive Soils

Soils and soft rock that tend to swell or shrink due to changes in moisture content are commonly known as expansive soils. Changes in soil volume present a hazard primarily to structures built on top of expansive soils. The most extensive damage occurs to highways and streets.

"Clay" is defined as a natural, earthy, fine-grained material that develops plasticity when mixed with a limited amount of water. Swelling clay is clay that is capable of absorbing large quantities of water, thus increasing greatly in volume.

Variations in moisture content and volume changes are greatest in clays found in regions of moderate to high precipitation, where prolonged periods of drought are followed by long periods of rainfall. It is in these regions, which include many of the Southern, Central, and Western States, that swelling of clays resulting from climatic fluctuations cause the most severe engineering problems. There are a number of ways to identify expansiveness of clay soils, with the most notable being the plasticity index.

Table 2-20: The Expansion Potential of Soil Based on the Plasticity Index.

Plasticity Index, PI (%)	Expansion Potential
0 – 15	Low
0 – 35	Medium
20 – 55	High
> 35	Very High

Location

The availability of data on expansive soils varies greatly. In or near metropolitan centers and at dam sites, abundant information on the amount of clay generally is available. However, for large areas of the United States, little information is reported other than field observations of the physical characteristics of clay of a particular stratigraphic unit. Therefore, fixed criteria for determining the swelling potential have not been devised. However, one method that was devised in 1989 was based mostly on numerous published descriptions of the physical and mineralogical properties of clays. Using this classification system, one sees that the southeastern portion of Louisiana, primarily along the Mississippi River from about East Baton Rouge Parish to the mouth of the Mississippi River, is abundant with high swelling potential clays. Clays in the Quaternary alluvium of the lower Mississippi River valley in Louisiana are reported to be of the "montmorillonite type". Clayey soils of the alluvial valley have high "shrink-swell capacity," and foundation problems in the area are associated with changing water levels and the instability of clayey soils. Foundation failures in alluvial deposits of the Mississippi River valley are common. *Figure 2-13* shows the primary locations of swelling clays in Louisiana and *Figure 2-14* shows the areas within the planning area that are at risk to expansive soils.

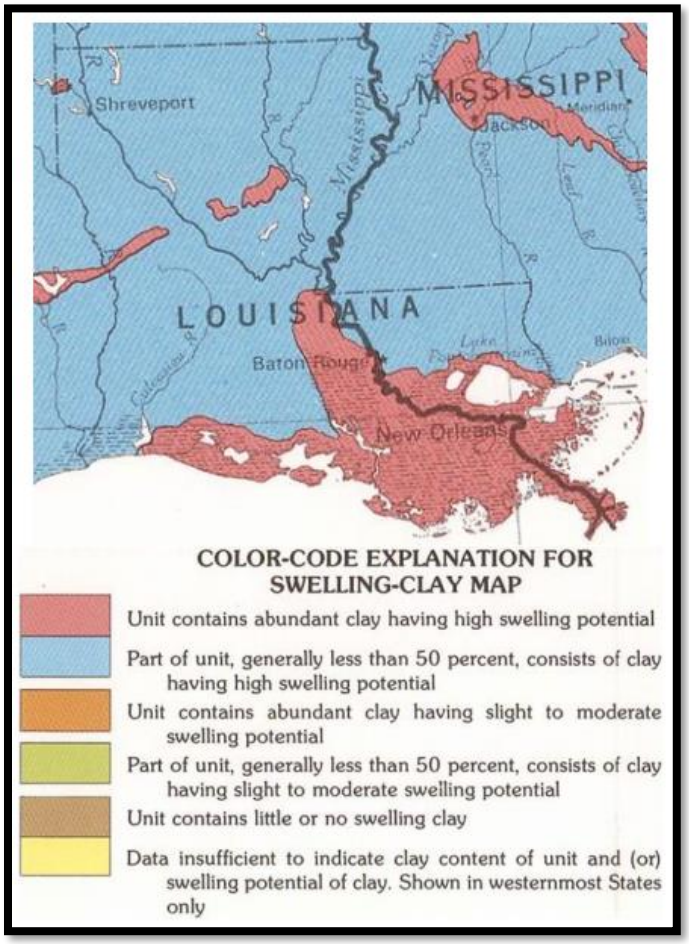


Figure 2-13: Location of Swelling Clays in Louisiana.
(Source: "Swelling Clays Map of the Conterminous United States", W.W. Olive, A.F. Chleborad, C.W. Frahme, J. Schlocker, R.R. Schneider, and R.L. Shuster; 1989)

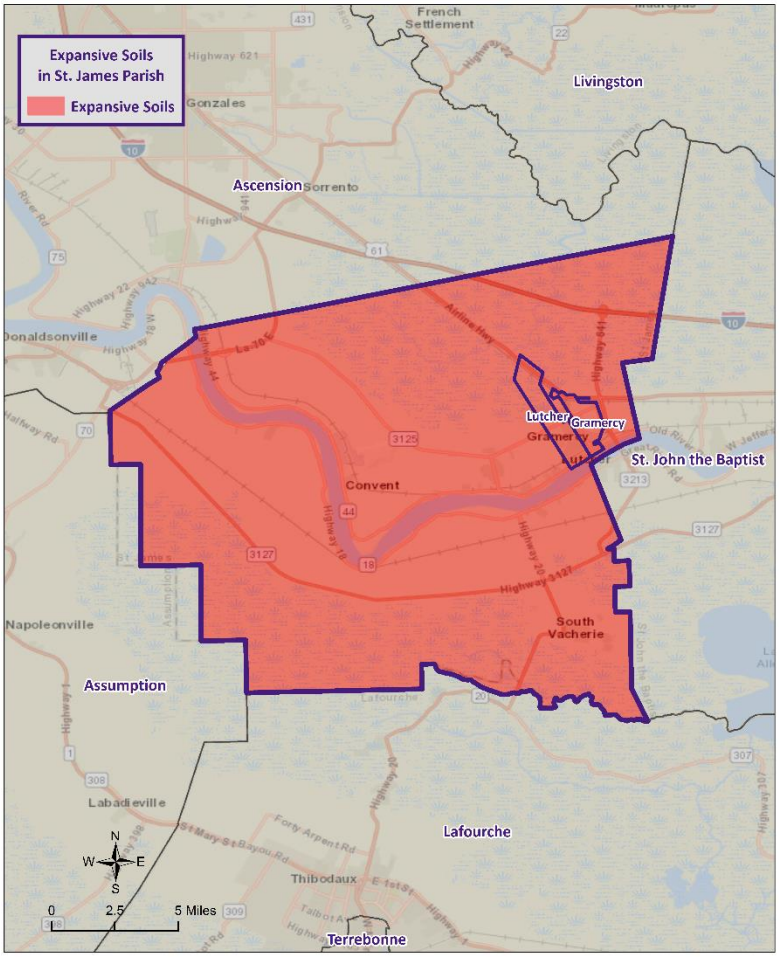


Figure 2-14: Location of Swelling Clays in St. James Parish.
(Source: "Swelling Clays Map of the Conterminous United States", W.W. Olive, A.F. Chleborad, C.W. Frahme, J. Schlocker, R.R. Schneider, and R.L. Shuster; 1989)

Based on the map above, the entire parish is susceptible to expansive soils.

Previous Occurrences / Extent

The NCEI Storm Events Database does not track damages caused by expansive soils, but the parish's previous hazard mitigation plan update noted that several buildings have been damaged in the past due to expansive soils. Due to continued heavy rains and the lack of rain for a long period of time, expansive soils have caused damage to building foundations, walls, and ceilings. Since the past update to this plan, there has been no new information found regarding previous occurrences in the parish. The worst-case scenario for expansive soils in the parish is a plasticity index % of 20 – 55, which equates to a high expansion potential.

Frequency / Probability

Based on *Figure 2-14*, expansive soils dominate throughout the St. James Planning area and an annual chance of occurrence is calculated at 100%.

Estimated Potential Losses

Because NOAA's Storm Events Database does not track expansive soils, it is difficult to estimate the annualized losses that have occurred within the parish. The following table presents an analysis of building exposure that are susceptible to expansive soils by general occupancy type for St. James Parish.

Table 2-21: Building Exposure by General Occupancy Type for Expansive Soils in St. James Parish. (Source: Hazus)

Building Exposure by General Occupancy Type for Expansive Soils ($1,000)						
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education
1,706,357	193,711	96,116	8,284	39,122	20,725	8,411

Vulnerability

See *Appendix C: Critical Facilities* for parish building exposure to expansive soils hazard.

Flooding

A flood is the overflow of water onto land that is usually not inundated. The National Flood Insurance Program defines a flood as:

> A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waves, unusual and rapid accumulation or runoff of surface waters from any source, mudflow, or collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.

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 (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, with low-lying, poorly drained areas being particularly susceptible to flooding during these months.

In Louisiana, six specific types of flooding 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, as well as the shape and land cover of its drainage basin. The smaller the river, the faster that 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 River, 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, tsunamis, or gradual sea level rise.

Historically, in St. James Parish, all types of flooding events 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 flooding:

- **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 hydrometeorological 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-year 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-year flood event is larger in magnitude, but it has a smaller chance of recurrence (1%). A 500-year flood is significantly larger than both a 100-year event and a 10-year 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-year flood event does not mean an event of that magnitude occurs only once in X years. Instead, it 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 general 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-year flood event as having a 25% chance of occurring over the life of a 30-year mortgage.

It is essential to understand that the magnitude of an X-year 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-year flood events can have very different impacts. The 100-year flood event in two separate locations have the same likelihood to occur, but they do not necessarily have the same magnitude. For example, a 100-year event for the Mississippi River means something completely different in terms of discharge values (ft^3/s) than for the Amite River. Not only are the magnitudes of 100-year events different between rivers, but they can also be different along any given river. A 100-year event upstream is different from one downstream due to the change of river characteristics (volume, discharge, and topography). As a result, the definition of what constitutes a 100-year 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-year flood 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 National Flood Insurance Program (NFIP) Rate Maps. The NFIP and FEMA suggest insurance rates based on Special Flood Hazard Areas (SFHAs), as diagrammed in *Figure 2-15*.

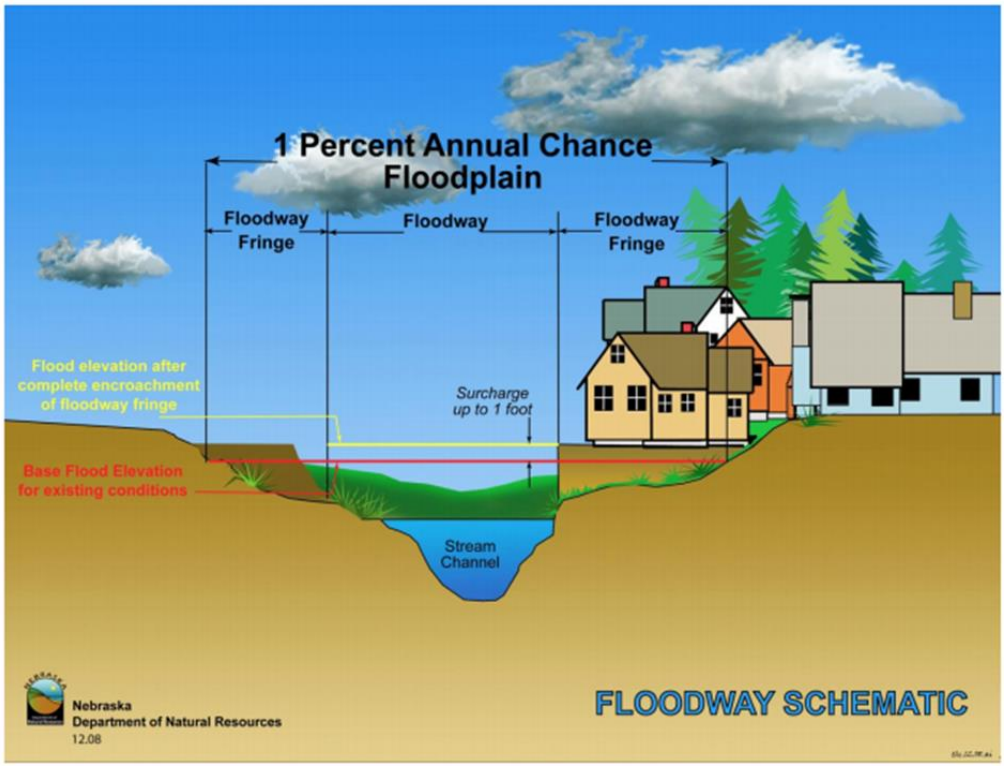


Figure 2-15: Schematic of 100-year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.
(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-15*), 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 some situations, deep and fast-moving waters can 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 can deteriorate 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 can be 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. Have 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. It is covered under a contract for flood insurance made available under the NFIP; and
b. It 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.

Figures regarding repetitive loss structures for Washington Parish are provided in the table below:

Table 2-22: Repetitive Loss Structures for Washington Parish.

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
St. James Parish (Unincorporated)	16	15	1	0	42	$1,329,855	$31,663
Gramercy	2	2	0	0	5	$279,287	$55,857
Lutcher	2	1	1	0	5	$11,583	$2,317
Total	**20**	**18**	**2**	**0**	**52**	**$1,620,725**	**$31,168**

All 20 repetitive loss structures were geocoded in order to provide an overview of where the repetitive loss structures are located throughout the parish. *Figure 2-16* shows the approximate location of the structures, while *Figure 2-17* shows where the highest concentration of repetitive loss structures is located. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the incorporated areas of Gramercy and Lutcher.

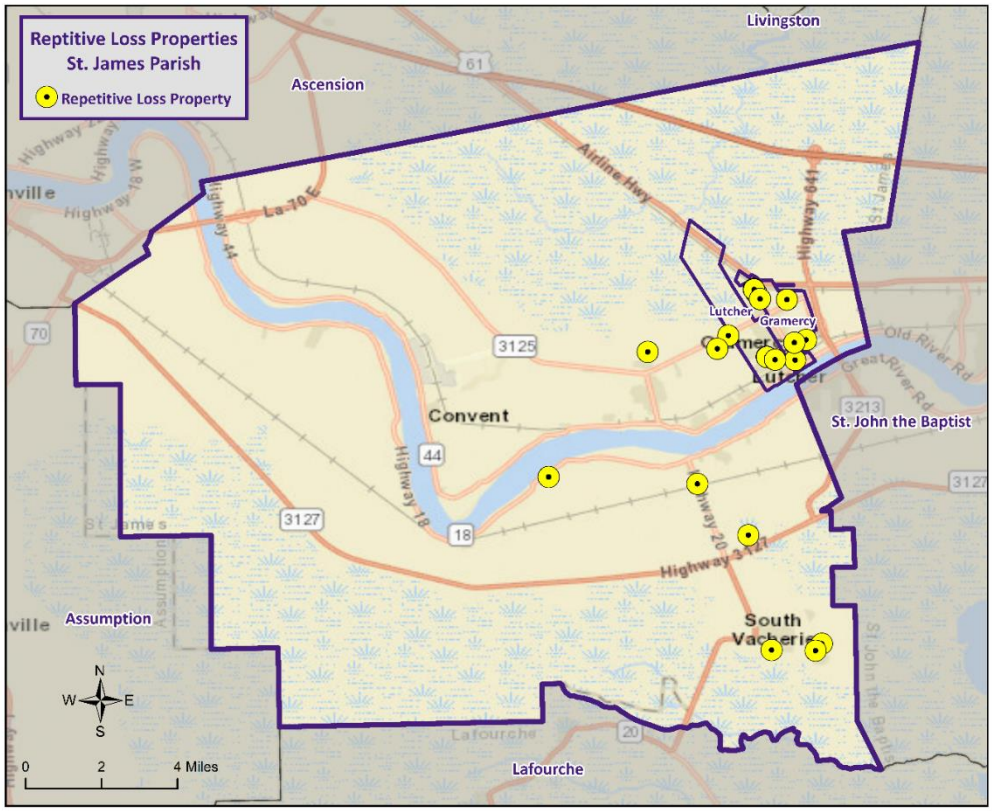


Figure 2-16: Repetitive Loss Properties in St. James Parish.

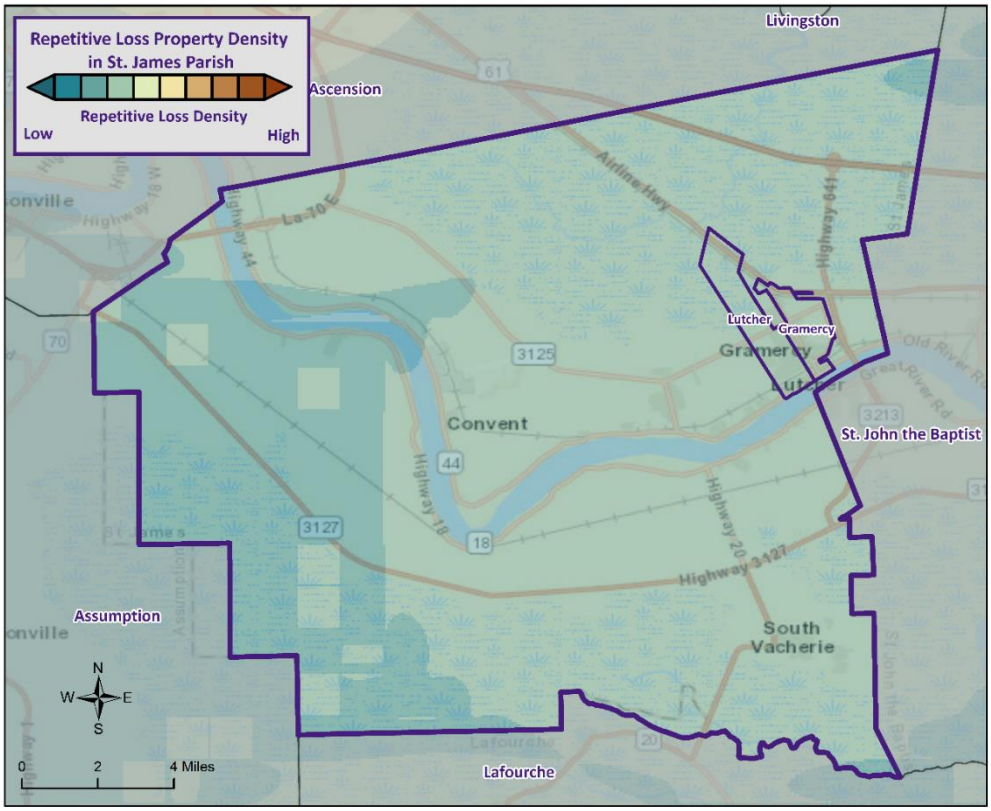


Figure 2-17: Repetitive Loss Property Densities in St. James Parish.

National Flood Insurance Program

Flood insurance statistics indicate that St. James Parish has 66 flood insurance policies with the NFIP, with total annual premiums of $52,798. St. James Parish and the jurisdictions of Gramercy and Lutcher are participants in the NFIP. St. James Parish and all of its jurisdictions will continue to adopt and enforce floodplain management requirements, including regulating new construction Special Flood Hazard Areas, and will continue to monitor activities including local requests for new map updates. Flood insurance statistics and additional NFIP participation details for St. James Parish and its jurisdictions is provided in the tables to follow.

Table 2-23: Summary of NFIP Policies for St. James Parish.

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	Insurance Claims Filed Since 1978	Total Loss Payments
St. James Parish	1,255	$391,541,100	$667,137	162	$2,588,782
Gramercy	284	$88,552,000	$137,171	34	$1,519,322
Lutcher	295	$95,472,000	$153,987	39	$1,592,723
Total	**1,834**	**$575,565,100**	**$958,295**	**235**	**$5,700,827**

Table 2-24: Summary of Community Flood Maps for St. James Parish.

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220162	Gramercy	5/3/1974	1/24/1978	7/4/2011	1/24/1978	No
220248	Lutcher	5/3/1974	4/24/1979	7/4/2011	4/24/1979	No
220261	St. James Parish	5/24/1977	7/13/1982	7/4/2011	7/13/1982	No

According to the Community Rating System (CRS) list of eligible communities dated April 1, 2021, St. James Parish and the incorporated area of Lutcher participate in the CRS program. The incorporated area of Gramercy does not participate in the CRS program.

Table 2-25: List of Areas within St. James Parish that Participate in the Community Rating System.

Community Number	Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status
220248	Lutcher	10/1/1992	10/1/2018	8	10%	5%	C
220261	St. James Parish	10/1/1991	5/1/2012	7	15%	5%	C

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 passengers within the vehicle. Victims of floods have often put themselves in perilous situations by entering flood waters that they believe to be safe, or by ignoring travel advisories.

Major health concerns are also associated with floods. Flood waters 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. Flood waters 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 St. James Parish

By definition, flooding is caused when an area receives more water than the drainage system can convey. The following is a synopsis of the types of flooding that St. James Parish experiences.

Flash Floods: Flash floods are characterized by a rapid rise in water level, high velocity, and large amounts of debris. They are capable of uprooting trees, undermining buildings, and bridges, and scouring new channels. Major factors in flash flooding are the high intensity and short duration of rainfall, as well as the steepness of watershed and stream gradients.

Local Drainage or High Groundwater Levels: Locally heavy precipitation may produce flooding in areas other than delineated floodplains or along recognizable drainage channels. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding problems.

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

Riverine Flooding: Riverine flooding, by definition, is river-based. Most of the riverine flooding problems occur when rivers crests at flood stage levels, causing extensive flooding in low-lying areas.

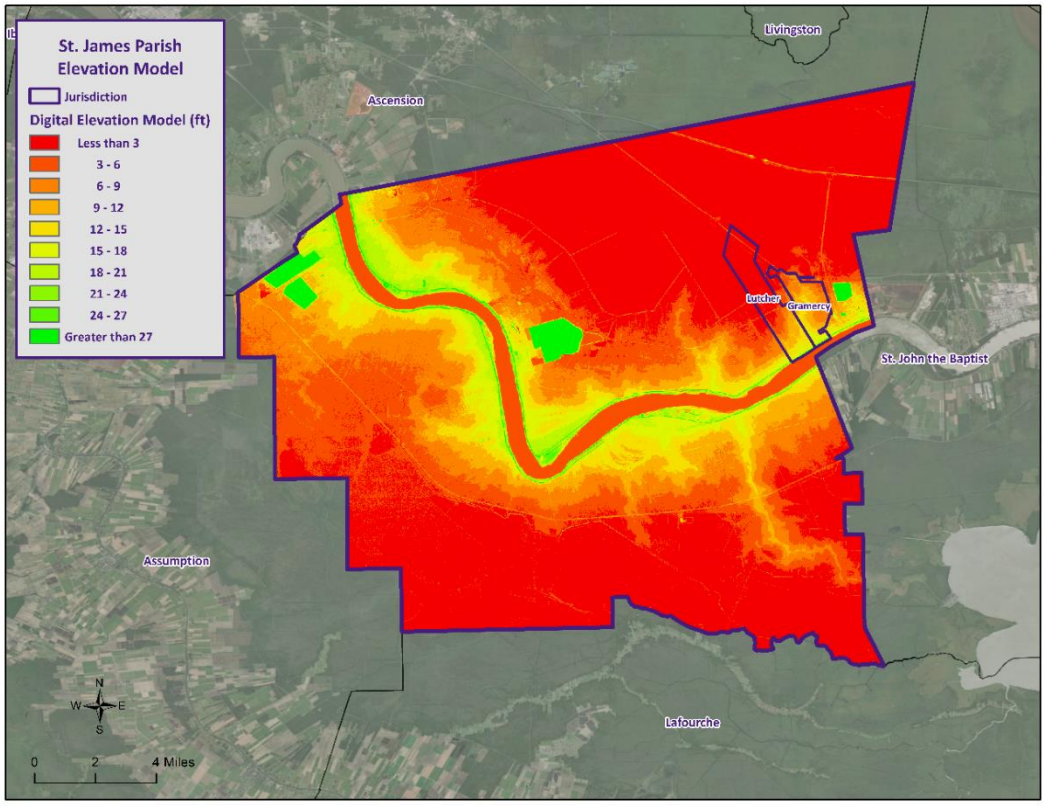


Figure 2-18: Elevation throughout St. James Parish.

The digital elevation model (DEM) in the figure below for St. James Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish Elevations in the parish range from near sea level (NAVD88) to approximately 30 feet (NAVD88). The highest elevations in the parish are approximately 30 feet (NAVD88), located in the unincorporated areas of the parish. These higher elevations are mainly concentrated along the banks of the Mississippi River and are not common for the majority of the area. The incorporated areas of Lutcher and Gramercy both have an average elevation of approximately 16 feet (NAVD88).

Location

St. James Parish is located within the Lake Pontchartrain Basin (east bank) and the Barataria Basin (west bank). The flooding that does occur in St. James Parish is primarily experienced in the alluvial valley, where drainage is poor and where most of the population centers and agricultural development is located. There are two main drainage outlets for St. James Parish. The Blind River drains the east bank of the parish and Bayou Chevreuil drains the west bank of the parish.

Based on previous flood events, the worst-case scenarios are based on several different types of flooding events. Storm water excesses and riverine flooding primarily affect the low-lying areas of the parish, and flood depths of up to six feet can be expected in the unincorporated areas of the parish. The incorporated areas of Lutcher and Gramercy can expect flood depths from three to five feet.

The following is a flood zone map displaying 100- and 500-year flood zones for St. James Parish:

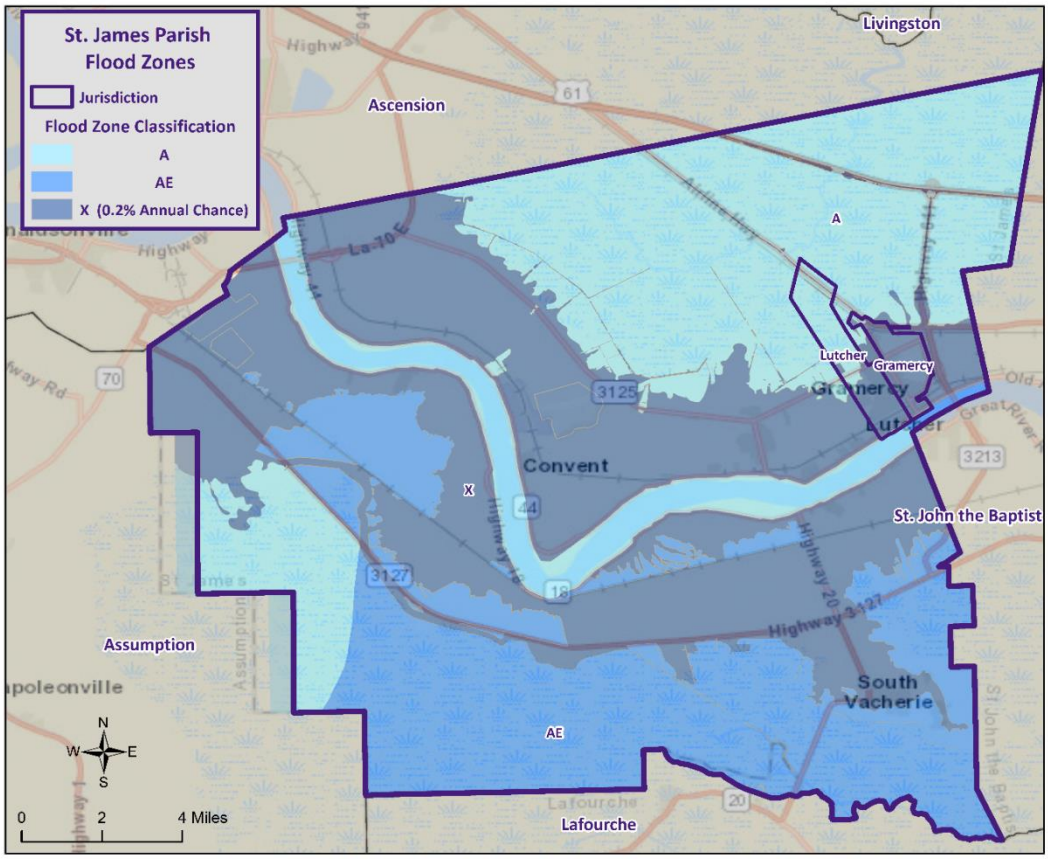


Figure 2-19: St. James Parish Areas within the Flood Zones.

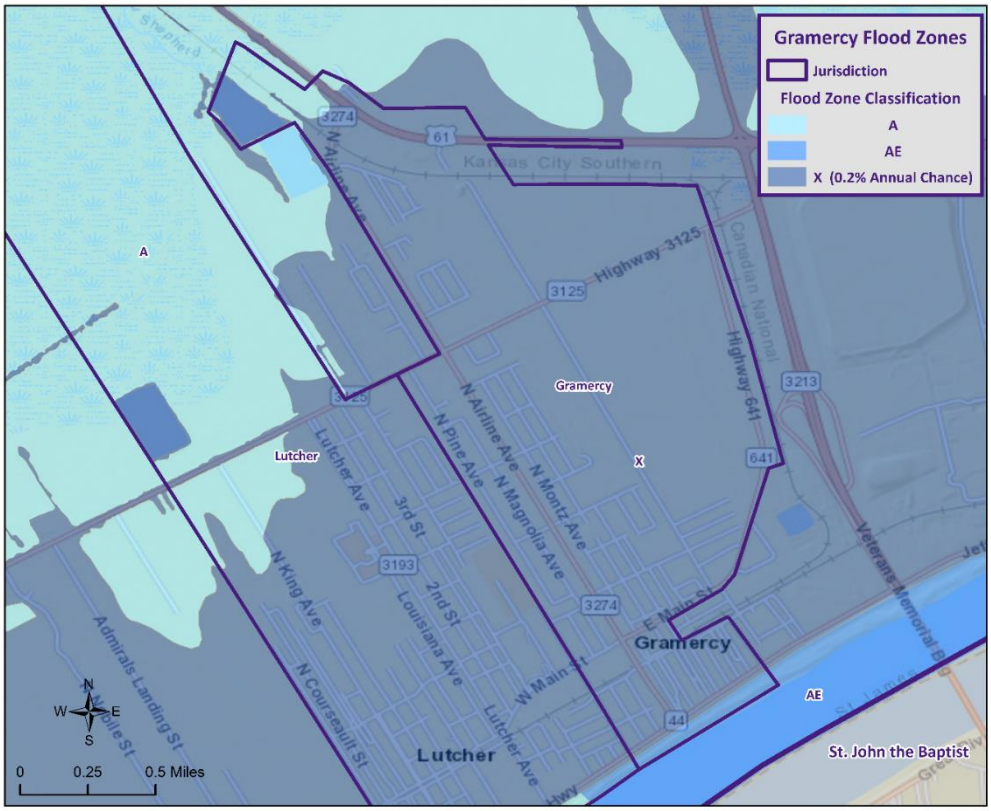


Figure 2-20: Gramercy Areas within the Flood Zones.

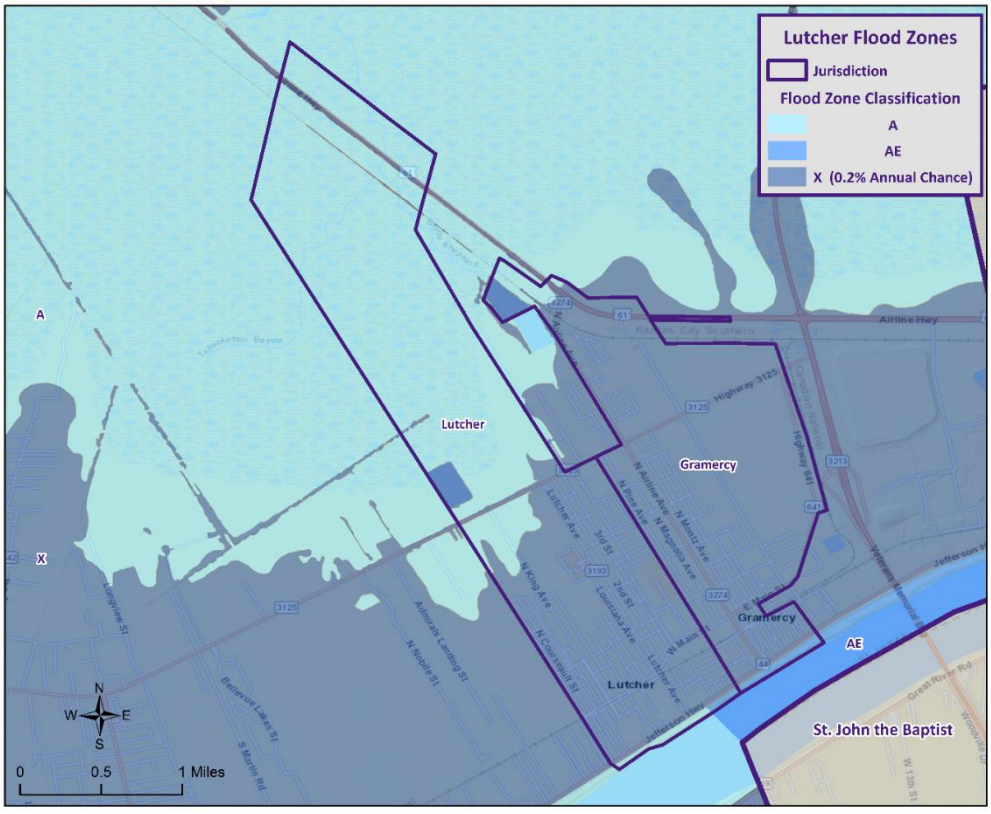


Figure 2-21: Lutcher Areas within the Flood Zones.

Previous Occurrences / Extents

Historically, there have been 16 flooding events that have caused significant flooding in St. James Parish and its jurisdictions between 1990 and 2020. Below is a brief synopsis of the flooding event which occurred since the last St. James Parish HMP Update in 2016.

Table 2-26: Historical Floods in St. James Parish with Locations since the 2016 St. James Parish HMP Update.

Date	Extents	Type of Flooding	Estimated Damages	Location
August 29, 2017	A few homes were reported to have water inside in the Convent area. Multiple roads were flooded in St. James Parish.	Flash Flood	$0	UNCLE SAM

Frequency / Probability

The NCEI Storm Events Database identified 16 flooding events within the St. James Parish planning area since 1990. The table below shows the probability and return frequency for each jurisdiction.

Table 2-27: Annual Flood Probabilities for St. James Parish.

Jurisdiction	Annual Probability	Return Frequency
St. James Parish (Unincorporated)	40%	1event every 2 to 3 years
Gramercy	24%	1 event every 4 to 5 years
Lutcher	36%	1 event every 2 to 3 years

Based on historical record, the overall flooding probability for the entire St. James Parish Planning area is 53% with 16 events occurring over a 30-year period.

Estimated Potential Losses

Using the Hazus Flood Model, the 100-year flood scenario, along with the Parish DFIRM, was analyzed to determine losses from this worst-case scenario. *Table 2-32* shows the total economic losses that would result from this occurrence.

Table 2-28: Estimated Losses in St. James Parish from a 100-year Flood Event. (Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
St. James Parish (Unincorporated Area)	$1,163,000
Gramercy	$639,000
Lutcher	$331,000
Total	**$2,133,000**

The Hazus Flood model also provides a breakdown for seven primary sectors (Hazus occupancy) throughout the parish. The losses for St. James Parish by sector are listed in the following table:

Table 2-29: Estimated 100-year Flood Losses for St. James Parish by Sector. (Source: Hazus)

St. James Parish (Unincorporated)	Estimated Total Losses from 100-Year Flood Event
Agricultural	$20,000
Commercial	$97,000
Government	$46,000
Industrial	$92,000
Religious / Non-Profit	$98,000
Residential	$779,000
Schools	$31,000
Total	**$1,163,000**

Table 2-30: Estimated 100-year Flood Losses for Gramercy by Sector. (Source: Hazus)

Gramercy	Estimated Total Losses from 100-Year Flood Event
Agricultural	$1,000
Commercial	$23,000
Government	$0
Industrial	$0
Religious / Non-Profit	$41,000
Residential	$574,000
Schools	$0
Total	**$639,000**

Table 2-31: Estimated 100-year Flood Losses for Lutcher by Sector. (Source: Hazus)

Lutcher	Estimated Total Losses from 100-Year Flood Event
Agricultural	$0
Commercial	$4,000
Government	$0
Industrial	$0
Religious / Non-Profit	$6,000
Residential	$321,000
Schools	$0
Total	**$331,000**

Threat to People

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

Table 2-32: Vulnerable Populations Susceptible to a 100-year Flood Event.
(Source: Hazus)

Number of People Exposed to Flood Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
St. James Parish (Unincorporated)	14,930	3,117	20.9%
Gramercy	3,613	1,213	33.6%
Lutcher	3,559	1,001	28.1%
Total	**22,102**	**5,331**	**24.1%**

The Hazus flood model was also extrapolated to provide an overview of vulnerable populations throughout the jurisdictions in the following table:

Table 2-33: Vulnerable Populations Susceptible to a 100-year Flood Event in St. James Parish.
(Source: Hazus)

St. James Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,117	20.9%
Persons Under 5 Years	199	6.4%
Persons Under 18 Years	754	24.2%
Persons 65 Years and Over	449	14.4%
White	1,540	49.4%
Minority	1,577	50.6%

Table 2-34: Vulnerable Populations Susceptible to a 100-year Flood Event in Gramercy.
(Source: Hazus)

Gramercy		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	1,213	33.6%
Persons Under 5 Years	91	7.5%
Persons Under 18 Years	321	26.5%
Persons 65 Years and Over	169	13.9%
White	625	51.5%
Minority	588	48.5%

Table 2-35: Vulnerable Populations Susceptible to a 100-year Flood Event in Lutcher. (Source: Hazus)

Lutcher		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	1,001	28.1%
Persons Under 5 Years	61	6.1%
Persons Under 18 Years	178	17.8%
Persons 65 Years and Over	171	17.1%
White	463	46.3%
Minority	538	53.7%

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to flooding due to proximity within the 100-year floodplain.

Sinkholes

Sinkholes are areas of ground—varying in size from a few square feet to hundreds of acres and reaching in depth from 1 to more than 100 ft.—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. Whenever water is absorbed through soil, encounters water-soluble bedrock, and then begins to dissolve it, sinkholes start 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. Figure 1 illustrates the development of a cover subsidence sinkhole. 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 topsoil 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 is one identifiable salt dome location in St. James Parish. *Figure 2-22* displays the location of this salt dome with it relative location to the nearest jurisdiction. As depicted in the figure, the salt dome is located in the central section of the unincorporated area of the parish.

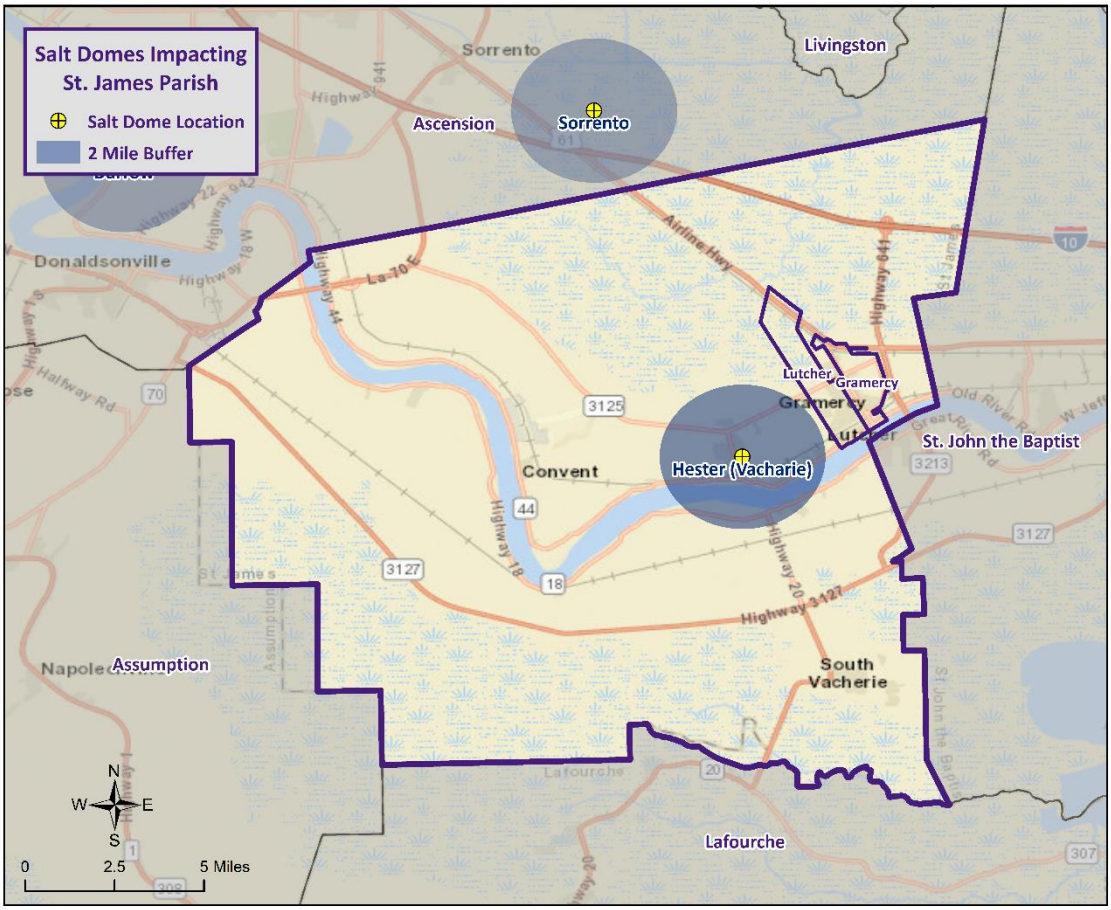


Figure 2-22: Salt Dome Locations in St. James Parish.

Previous Occurrences / Extent

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

Frequency / Probability

Based on historical data for the past 30-years, there has been no incident of a sinkhole formation or salt dome collapse in St. James Parish. The annual chance of occurrence is calculated at less than 1%.

Estimated Potential Losses

The one salt dome location was analyzed to determine the number of people and homes that are potentially susceptible to losses from a sinkhole materializing from the salt dome. The table on the next page is 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 located within two miles of the salt dome and sinkhole. Critical facilities were also analyzed to determine if they fell within the two-mile buffer of the salt dome and sinkhole. Total value for all occupancy group from Hazus was used to estimate a total loss of all facilities that were within two miles of the salt dome and sinkhole.

Table 2-36: Estimated Potential Losses from a Sinkhole Formation.
(Source: U.S. 2010 Census Data and Hazus)

Salt Dome Name	Total Building Exposure	Critical Infrastructure Exposure	Number of People Exposed	Number of Houses Exposed
Hester (Vacharie)	$398,118,000	8	4,809	1,498

The salt dome that poses the greatest risk to St. James Parish is the Hester (Vacharie) Salt Dome. The Hester (Vacharie) Salt Dome contains a total of 1,498 homes and 4,809 people within its two mile buffer.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality building exposure to a sinkhole hazard.

Thunderstorms

The term "thunderstorm" is usually used as a catch-all term for several kinds of storms. Here "thunderstorm" is defined to include any precipitation event in which thunder is heard or lightning is seen. Thunderstorms are often accompanied by heavy rain and strong winds and, depending on conditions, occasionally by hail or snow. Thunderstorms form when humid air masses are heated, which causes them to become convectively unstable and therefore rise. Upon rising, the air masses' water vapor condenses into liquid water and/or deposits directly into ice when they rise sufficiently to cool to the dew-point temperature.

Thunderstorms are classified into four main types (single cell, multicell, squall line, and supercell), depending on the degree of atmospheric instability, the change in wind speed with height (called wind shear), and the degree to which the storm's internal dynamics are coordinated with those of adjacent storms. There is no such interaction for single-cell thunderstorms, but there is significant interaction with clusters of adjacent thunderstorms in multicell thunderstorms and with a linear "chain" of adjacent storms in squall line thunderstorms. Though supercell storms have no significant interactions with other storms, they have very well-organized and self-sustaining internal dynamics, which allows them to be the longest-lived and most severe of all thunderstorms.

The life of a thunderstorm proceeds through three stages: the developing (or cumulus) stage, the mature stage, and the dissipation stage. During the developing stage, the unstable air mass is lifted as an updraft into the atmosphere. This sudden lift rapidly cools the moisture in the air mass, releasing latent heat as condensation and/or deposition occurs, and warming the surrounding environment, thus making it less dense than the surrounding air. This process intensifies the updraft and creates a localized lateral rush of air from all directions into the area beneath the thunderstorm to feed continued updrafts. At the mature stage, the rising air is accompanied by downdrafts caused by the shear of falling rain (if melted completely), or hail, freezing rain, sleet, or snow (if not melted completely). The dissipation stage is characterized by the dominating presence of the downdraft as the hot surface that gave the updrafts their buoyancy is cooled by precipitation. During the dissipation stage, the moisture in the air mass largely empties out.

The Storm Prediction Center in conjunction with the National Weather Service (NWS) have 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:

- *Severe Thunderstorm Watch*: Issued to alert people to the possibility of a severe thunderstorm developing in the area. Expected time frame for these storms is three to six hours.
- *Severe Thunderstorm Warning*: Issued when severe thunderstorms are imminent. This warning is highly localized and covers parts of one to several counties (parishes).

A variety of hazards might be produced by thunderstorms, including lightning, hail, tornadoes or waterspouts, flash floods, and high-speed winds called downbursts. Nevertheless, given all of these criteria, the National Oceanic and Atmospheric Administration (NOAA) characterizes a thunderstorm as severe when it produces one or more of the following:

- Hail of 1 inch in diameter or larger
- Wind gusts to 58 mph or greater
- One or more tornadoes

Tornadoes and flooding hazards have been profiled within this report; therefore, for the purpose of thunderstorms, the sub hazards of hail, high winds, and lightning will be profiled.

Thunderstorms occur throughout Louisiana at all times of the year, although the types and severity of those storms vary greatly, depending on a wide variety of atmospheric conditions. Thunderstorms generally occur more frequently during the late spring and early summer when extreme variations exist between ground surface temperatures and upper atmospheric temperatures.

Hazard Description

Hailstorms

Hailstorms are severe thunderstorms in which balls or chunks of ice fall along with rain. Hail develops in the upper atmosphere initially as ice crystals that are bounced about by high-velocity updraft winds. The ice crystals grow through deposition of water vapor onto their surface, fall partially to a level in the cloud where the temperature exceeds the freezing point, melt partially, get caught in another updraft whereupon re-freezing and deposition grows another concentric layer of ice, and fall after developing enough weight, sometimes after several trips up and down the cloud. The size of hailstones varies depending on the severity and size of the thunderstorm. Higher surface temperatures generally mean stronger updrafts, which allows more massive hailstones to be supported by updrafts, leaving them suspended longer. This longer time means larger hailstone sizes. The tables on the next page display the TORRO Hailstorm Intensity Scale along with a spectrum of hailstone diameters and their everyday equivalents.

Table 2-37: TORRO Hailstorm Intensity Scale.

Intensity Category		Hail Diameter (mm)	Probable Kinetic Energy	Typical Damage Impacts
H0	Hard Hail	5	0 - 20	No damage
H1	Potentially Damaging	5 - 15	>20	Slight general damage to plant, crops
H2	Significant	10 - 20	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20 - 30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25 - 40	>500	Widespread glass damage, vehicle body work
H5	Destructive	30 - 50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40 - 60		Bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50 - 75		Severe roof damage, risk of serious injuries
H8	Destructive	60 - 90		Severe damage to aircraft bodywork
H9	Super Hailstorms	75 - 100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Table 2-38: Spectrum of Hailstone Diameters and their Everyday Description.
(Source: National Weather Service)

Spectrum of Hailstone Diameters	
Hail Diameter Size	**Description**
1/4”	Pea
1/2”	Plain M&M
3/4”	Penny
7/8”	Nickle
1” (severe)	Quarter
1 1/4”	Half Dollar
1 1/2”	Ping Pong Ball / Walnut
1 3/4”	Golf Ball
2”	Hen Egg / Lime
2 1/2"	Tennis Ball
2 3/4"	Baseball
3”	Teacup / Large Apple
4”	Softball
4 1/2"	Grapefruit
4 3/4” – 5”	Computer CD-DVD

Hailstorms can cause widespread damage to homes and other structures, automobiles, and crops. While the damage to individual structures or vehicles is often minor, the cumulative cost to communities, especially across large metropolitan areas, can be quite significant. Hailstorms can also be devastating to crops. Thus, the severity of hailstorms depends on the size of the hailstones, the length of time the storm lasts, and where it occurs.

Hail rarely causes loss of life, although large hailstones can cause bodily injury.

High Winds

In general, high winds can occur in a number of different ways, within and without thunderstorms. The Federal Emergency Management Agency (FEMA) distinguishes these as shown in *Table 2-39*.

Table 2-39: High Winds Categorized by Source, Frequency, and Duration.
(Source: Making Critical Facilities Safe from High Wind, FEMA)

High Winds Categories			
High Wind Type	**Description**	**Relative Frequency in Louisiana**	**Relative Maximum Duration in Louisiana**
Straight-line Winds	Wind blowing in straight line; usually associated with intense low-pressure area	High	Few-minutes – 1 day
Downslope Winds	Wind blowing down the slope of a mountain; associated with temperature and pressure gradients	N/A	N/A
Thunderstorm Winds	Wind blowing due to thunderstorms, and thus associated with temperature and pressure gradients	High (especially in the spring and summer	~Few minutes – several hours
Downbursts	Sudden wind blowing down due to downdraft in a thunderstorm; spreads out horizontally at the ground, possibly forming horizontal vortex rings around the downdraft	Medium-to-High (~5% of all thunderstorms)	~15 – 20 minutes
Northeaster (nor'easter) Winds	Wind blowing due to cyclonic storm off the east coast of North America; associated with temperature and pressure gradients between the Atlantic and land	N/A	N/A
Hurricane Winds	Wind blowing in spirals, converging with increasing speed toward eye; associated with temperature and pressure gradients between the Atlantic and Gulf and land	Low-to-Medium	Several days
Tornado Winds	Violently rotating column of air from base of a thunderstorm to the ground with rapidly decreasing winds at greater distances from center; associated with extreme temperature gradient	Low-to-Medium	Few minutes – few hours

The only high winds of present concern are thunderstorm winds and downbursts. Straight-line winds are common but are a relatively insignificant hazard (on land) compared to other high winds. Downslope winds are common but relatively insignificant in the mountainous areas of Louisiana where they occur. Nor'easters are cyclonic events that have at most a peripheral effect on Louisiana, and none associated with high winds. Winds associated with hurricanes and tornadoes will be considered in their respective sections.

Table 2-40 presents the Beaufort Wind Scale, first developed in 1805 by Sir Francis Beaufort, which aids in determining relative force and wind speed based on the appearance of wind effects.

Table 2-40: Beaufort Wind Scale.
(Source: NOAA's SPC)

Beaufort Wind Scale			
Force	**Wind (MPH)**	**WMO Classification**	**Appearance of Wind Effects on Land**
			Calm, smoke rises vertically
1	1-3	Light Air	Smoke drift indicates wind direction, still wind vanes
2	4-7	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8-12	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	13-17	Moderate Breeze	Dust, leaves, and loose paper lifted, small tree branches move
5	18-24	Fresh Breeze	Small trees in leaf begin to sway
6	25-30	Strong Breeze	Larger tree branches moving, whistling in wires
7	31-38	Near Gale	Whole trees moving, resistance felt walking against wind
8	39-46	Gale	Twigs breaking off trees, generally impedes progress
9	47-54	Strong Gale	Slight structural damage occurs, slate blows off roofs
10	55-63	Storm	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	54-73	Violent Storm	
12	74+	Hurricane	

Major damage directly caused by thunderstorm winds is relatively rare, while minor damage is common and pervasive, and most noticeable when it contributes to power outages. These power outages can have major negative impacts such as increased tendency for traffic accidents, loss of revenue for businesses, increased vulnerability to fire, food spoilage, and other losses that might be sustained by a loss of power.

Power outages may pose a health risk for those requiring electric medical equipment and/or air conditioning.

Lightning

Lightning is a natural electrical discharge in the atmosphere that is a by-product of thunderstorms. Every thunderstorm produces lightning. There are three primary types of lightning: intra-cloud, cloud-to-ground, and cloud-to-cloud. Cloud-to-ground lightning has the potential to cause the most damage to property and crops, while also posing as a health risk to the populace in the area of the strike.

Damage caused by lightning is usually to homes or businesses. These strikes have the ability to damage electrical equipment inside the home or business and can also ignite a fire that could destroy homes or crops.

Lightning continues to be one of the top three storm-related killers in the United States per FEMA, but it also has the ability to cause negative long-term health effects to the individual that is struck. The following table outlines the lightning activity level that is a measurement of lightning activity.

Table 2-41: Lightning Activity Level (LAL) Grids.

LAL	Cloud and Storm Development	Lightning Strikes/15 Min
1	No thunderstorms.	-
2	Cumulus clouds are common but only a few reach the towering cumulus stage. A single thunderstorm must be confirmed in the observation area. The clouds produce mainly virga, but light rain will occasionally reach the ground. Lightning is very infrequent.	1-8
3	Towering cumulus covers less than two-tenths of the sky. Thunderstorms are few, but two to three must occur within the observation. Light to moderate rain will reach the ground, and lightning is infrequent.	9-15
4	Towering cumulus covers two to three-tenths of the sky. Thunderstorms are scattered and more than three must occur within the observation area. Moderate rain is common and lightning is frequent.	16-25
5	Towering cumulus and thunderstorms are numerous. They cover more than three-tenths and occasionally obscure the sky. Rain is moderate to heavy and lightning is frequent.	>25
6	Similar to LAL 3 except thunderstorms are dry	

Hazard Profile

Hailstorms

Location

Hailstorms are a meteorological phenomenon that can occur anywhere. Therefore, the entire planning area for St. James Parish and its jurisdictions are equally at risk for hailstorms. The worst-case scenario for hailstorms is hail up to a 1.75” diameter.

Previous Occurrences / Extents

Historically, there have been 12 hail incidents in St. James Parish. Hailstorm diameters have ranged from 0.75 inches to 1.75 inches per the National Climatic Data Center since 1990. The most frequently recorded hail sizes have been 1-inch in diameter. There has been one significant hailstorm event in St. James Parish since the 2016 St. James Parish HMP update. A brief synopsis of that event can be found on the next page.

Table 2-42: Previous Occurrences for Hailstorm Events since the 2016 Hazard Mitigation Plan Update. (Source: NCEI Storm Events Database)

Date	Hail Size (inches)	Property Damage	Crop Damage
April 13, 2021	1	$0	$0

Frequency

Hailstorms occur frequently within St. James Parish with an annual chance of occurrence calculated at 53% based on the records for the past 30 years (1990 - 2020). *Figure 2-23* displays the density of hailstorm events in St. James Parish, while *Figure 2-24* provides an overview of hailstorm size based on location.

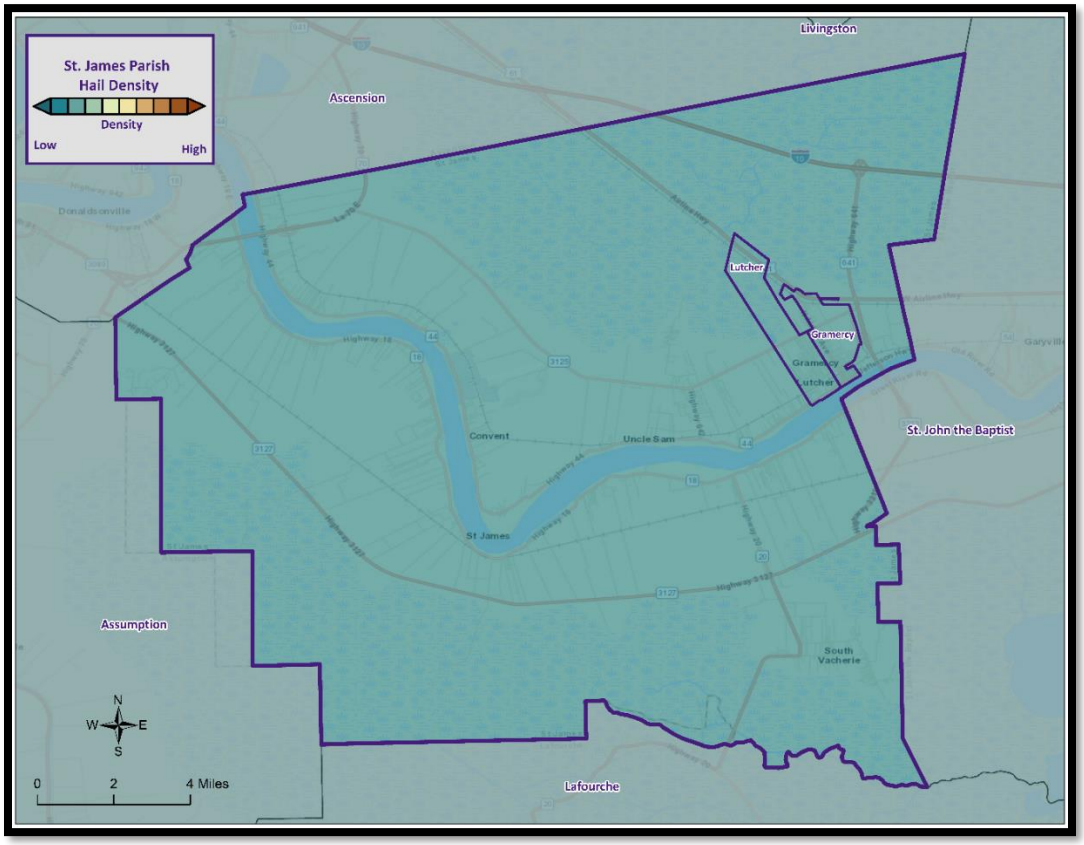


Figure 2-23: Density of Hailstorms by Diameter from 1950-2019.

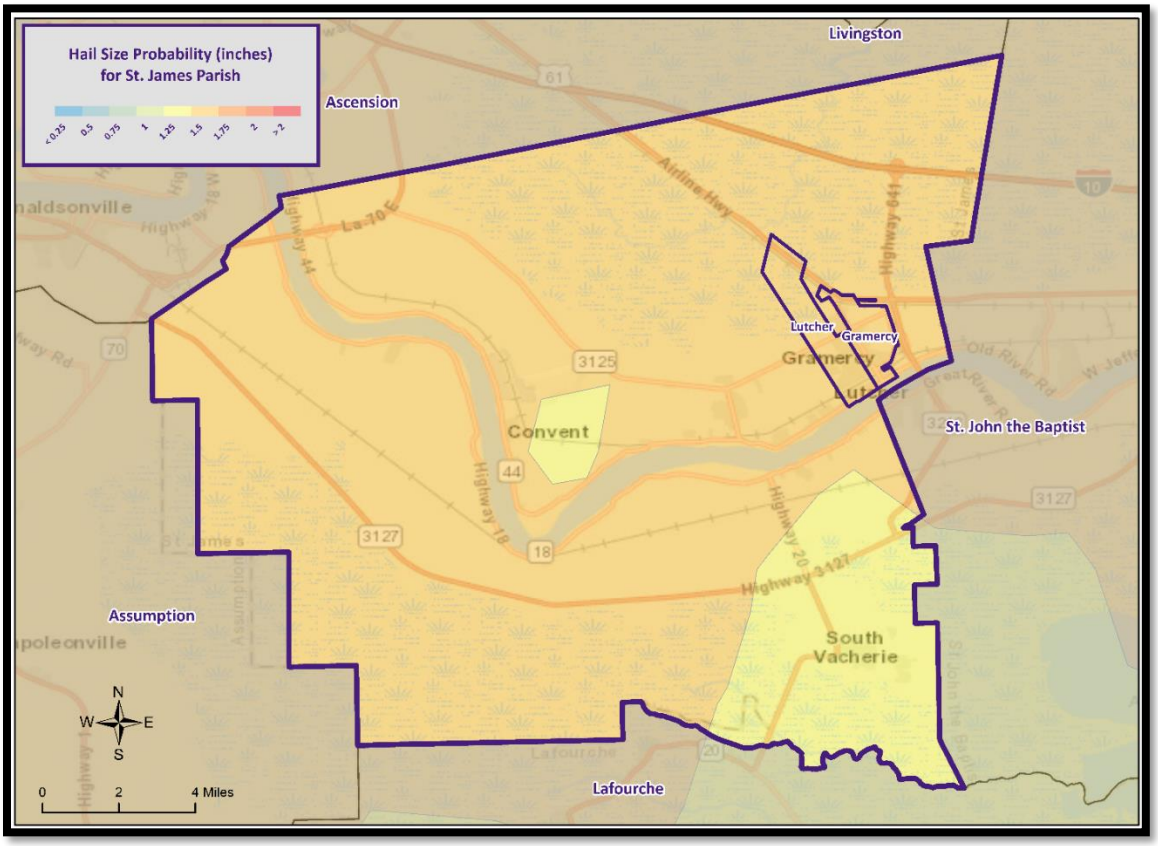


Figure 2-24: Hail Size Probability in Inches for St. James Parish.

Estimated Potential Losses

Since 1990, there have been 16 significant hail events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with those storms have totaled approximately $1,000. To estimate the potential losses of a hailstorm event on an annual basis, the total damages recorded for wind events was divided by the total number of years of available wind data in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of $40 and $63 per event. The following table provides an estimate of potential property losses for St. James Parish:

Table 2-43: Estimated Annual Losses St. James Parish and its Jurisdictions Resulting from Hailstorms.

Estimated Potential Annual Losses from Hailstorms		
Unincorporated Area	**Gramercy**	**Lutcher**
$27	$7	$6

There have been no reported injuries or fatalities as a result of a hail events over the 30-year record.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to hailstorms.

High Winds

Location

Because high winds are a meteorological phenomenon that can occur anywhere, the entire planning area for St. James Parish is equally at risk from high winds. The worst-case scenario for thunderstorm high wind is wind speeds of approximately 70 mph.

Previous Occurrences / Extents

Historically, there have been 36 thunderstorm high wind event in St. James Parish. High wind events range in speeds from 57 mph to 70 mph per the National Climatic Data Center since 1990. There have been three high wind speed events which impacted the St. James Parish Planning area since the 2016 St. James Parish HMP update.

Table 2-44: Previous Occurrences for Thunderstorm High Wind Events since the 2016 Hazard Mitigation Plan Update.
(Source: NCEI Storm Events Database)

Date	Windspeed (mph)	Property Damage	Crop Damage
May 4, 2019	70	$0	$0
June 16, 2019	70	$0	$0
April 13, 2021	57	$0	$0

Frequency

High winds are a fairly common occurrence within St. James Parish and its jurisdictions with an annual chance of occurrence calculated at 100% based on the records for the past 30 years (1990 - 2020). On the next page, *Figure 2-25* displays the thunderstorm wind speed probability for St. James Parish and its jurisdictions.

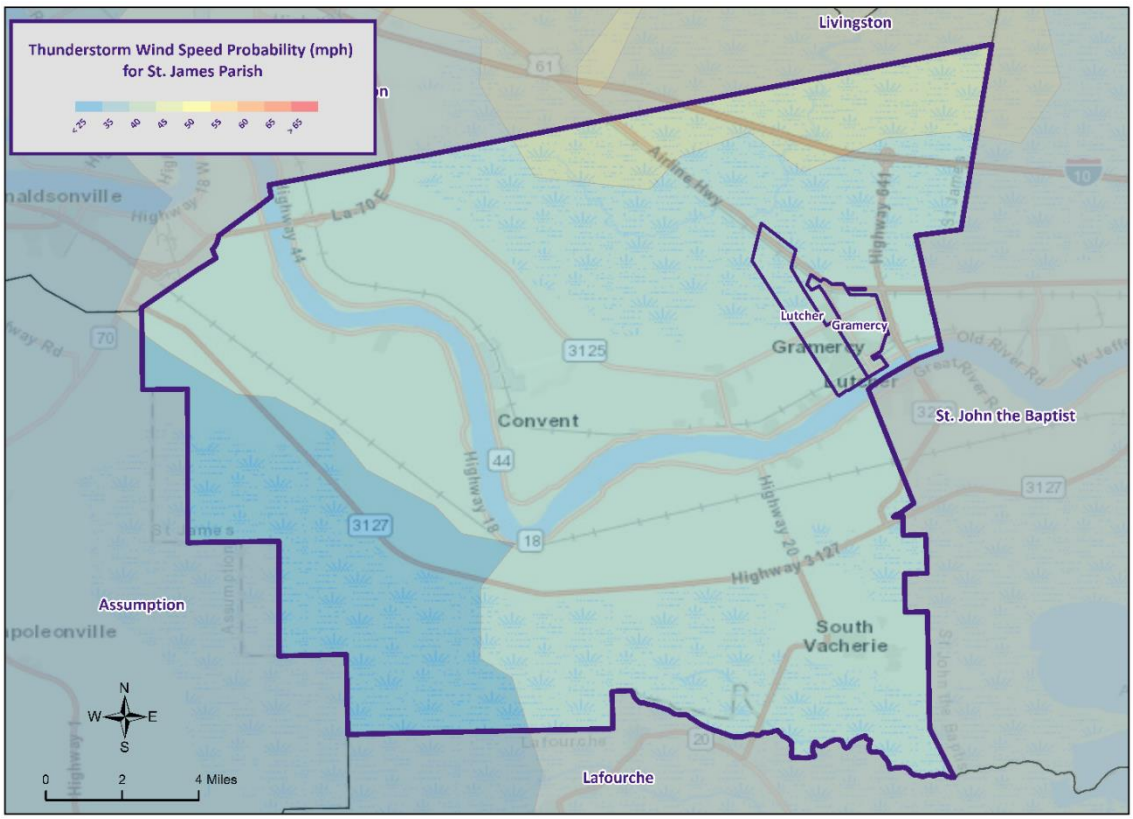


Figure 2-25: Thunderstorm High Wind Speed Probability in Miles Per Hour for St. James Parish.

Estimated Potential Losses

Since 1990, there have been 36 significant wind events that have resulted in property damages according to NCEI Storm Events Database. The total property damage associated with this storm totaled approximately $100,045. To estimate the potential losses of a wind event on an annual basis, the total damages recorded for wind events was divided by the total number of years of available wind data in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of $4,002 and $6,253 per event. The following table provides an estimate of potential property losses for St. James Parish:

Table 2-45: Estimated Annual Property Losses in St. James Parish resulting from Wind Damage.

Estimated Potential Annual Losses from High Winds		
Unincorporated Area	**Gramercy**	**Lutcher**
$2,703	$654	$644

There have been no injuries or fatalities as a result of a thunderstorm high wind event over the 30-year record.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to thunderstorm high winds.

Lightning

Location

Like hail and high winds, lightning is a meteorological phenomenon that can occur anywhere within the St. James Parish planning area. The worst-case scenario for lightning events is a lightning activity level of 4 which is approximately 16 to 25 lightning strikes every 15 minutes.

Previous Occurrences / Extent

Historically, there have been three lightning events in St. James Parish and its jurisdictions between the years 1990 and 2020. Since the last HMP update, there has been no significant lighting events within the boundaries of St. James Parish.

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in St. James Parish is high. However, lightning that meets the definition that is used by the NCEI Storm Events Database that results in damages to property and injury or death to people is a less likely event. St. James Parish experienced 15 significant lightning events between the years 1990 and 2020 resulting in a 10% annual chance of occurrence.

Estimated Potential Losses

Since 1990, there have been three significant lightning events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with this storm has totaled approximately $3,000. To estimate the potential losses of a lightning event on an annual basis, the total damages recorded for lightning events was divided by the total number of years of available lightning data in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of $120 and $1,000 per event. The following tables provide an estimate of potential property losses for St. James Parish:

Table 2-46: Estimated Annual Property Losses in St. James Parish resulting from Lightning Damage.

Estimated Potential Annual Losses from Lightning		
Unincorporated Area	**Gramercy**	**Lutcher**
$81	$20	$19

Per the NCEI Storm Events Database, there have been no fatalities or injuries as a result of lightning in St. James Parish.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality building exposure to lightning hazards.

Tornadoes

Tornadoes (also called twisters and cyclones) are rapidly rotating funnels of wind extending between storm clouds and the ground. For their size, tornadoes are the most severe storms, and 70% of the world's reported tornadoes occur within the continental United States, making them 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), and it can rotate 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 2-47* 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. Damage and adjustment between scales can be made using the following tables.

Table 2-47: 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

Table 2-48: Fujita and Enhanced Fujita Tornado Damage Scale.

Scale	Typical Damage
F0/EF0	Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1/EF1	Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
F2/EF2	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; light-object missiles generated; cars lifted off ground.
F3/EF3	Severe damage. Roofs and some walls torn of well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
F4/EF4	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
F5/EF5	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.

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 St. James Parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in St. James Parish as all of its jurisdictions. Because a tornado has a similar probability of striking anywhere within the planning area for St. James Parish, all areas in the parish are equally at risk for tornadoes.

Previous Occurrences / Extent

The NCEI Storm Events Database reports a total of eight tornadoes or waterspouts occurring within the boundaries of St. James Parish since 1990 ranging in extent from F0 to F1 under the Fujita Scale and EF0 to EF2 on the Enhanced Fujita Scale. St. James Parish can expect future tornadoes up to an EF2 under the Enhanced Fujita Scale as a worst-case scenario.

The most destructive tornado to impact St. James Parish was an EF0 tornado which occurred on April 4, 2011. The EF0 tornado touched down near the intersection of North Airline Avenue and Louisiana Highway 3124 in Gramercy. The tornado caused significant tree damage and removed a carport from a home. Total damages were in excess of $50,000. Since the 2016 HMP Update, three tornadoes have occurred within the boundaries of St. James Parish. Below is a list and brief description of the impact for the event.

Table 2-49: Historical Tornadoes in St. James Parish with Locations since the 2016 Update.

Date	Impacts	Property Damage	Location	Magnitude
February 7, 2017	A tornado moved into St. James Parish from Ascension Parish. It moved nearly due east, affecting small communities on both the west and east bank of the Mississippi River near the Hwy 70 bridge. Damage primarily consisted of roof damage, blown out windows, and down trees and power lines. In St. James Parish, 4 homes were classified as heavily damaged or destroyed, and another 14 were considered to have minor to moderate damage. Maximum estimated winds are estimated to be around 105 mph. An 83 year old man died as a result of injuries sustained during the tornado. He was outside when his trailer rolled, trapping him between the trailer and a parked truck.	$0	SALSBURG	EF1
April 7, 2018	The tornado touched down near the north end of Denise Street where it destroyed a metal building. It moved east across an empty field into an established subdivision. The storm caused damage to trees, as well as mostly minor roof damage along Oak Grove Drive. As the tornado approached St. Joseph Street, it began to strengthen and uprooted a large maple tree. Removed most of a metal roof covering a home on the corner of St. Joseph Street and Louisiana Highway 642, and entirely removed the roof of a second home across Highway 642. The tornado continued eastward causing tree and roof damage until it lifted near the intersection of Sugar House Street and Sugar House Lane. Event times are estimated from radar. Maximum wind speed was estimated at 100 mph.	$0	BEND	EF1
June 6, 2019	A NWS storm survey found damage consistent with an EF-1 tornado near Union in St. James Parish. The tornado touched down on the east bank of the Mississippi River near the intersection of Methodist Street and Louisiana Highway 44. The storm continued northeastward, tearing the roof off of a farm utility shed. It then snapped a few more trees as it progressed northeast and lifted before it reached the Canadian National Railroad tracks. Estimated peak wind 105 mph, path length 0.52 miles, path width 75 yards.	$0	UNION	EF1

Frequency / Probability

Tornadoes occur frequently within St. James Parish and its jurisdictions with an annual chance of occurrence calculated at 27% based on the records for the past 30 years (1990 - 2020). *Figure 2-26* displays the density of tornado touchdowns in St. James Parish and neighboring parishes.

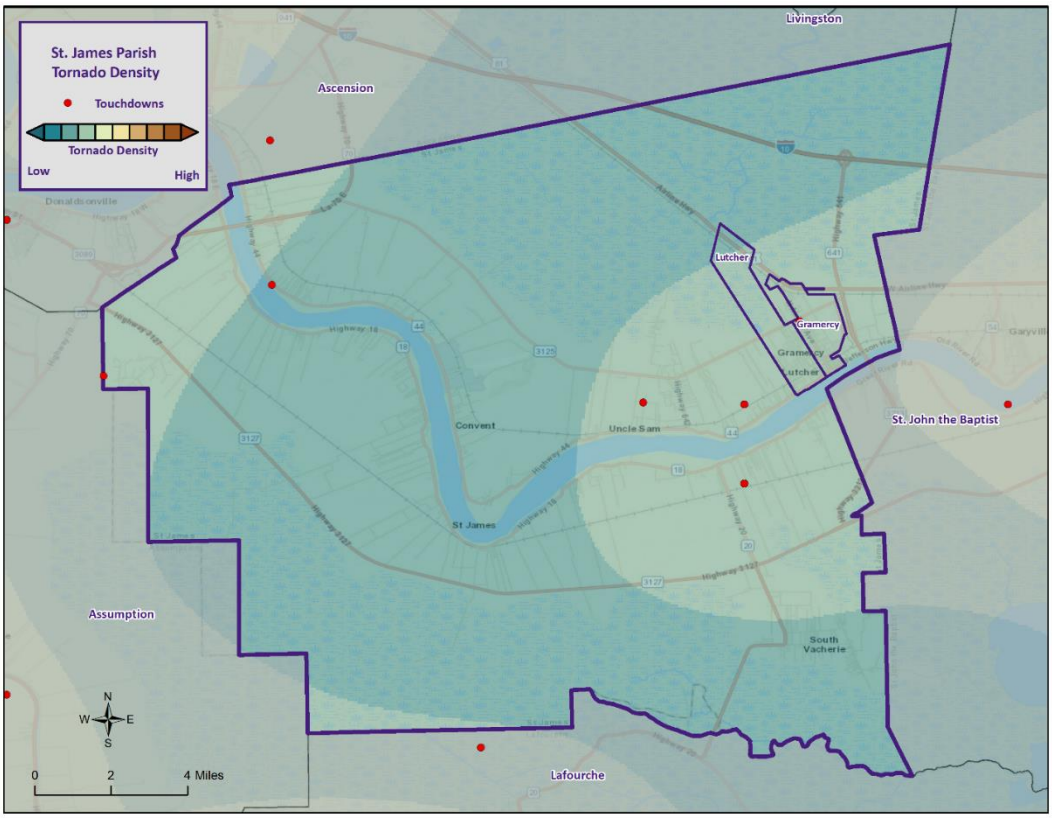


Figure 2-26: Location and Density of Tornadoes to Touchdown in St. James Parish. (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Loses

According to the NCEI Storm Events Database, there have been 8 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is approximately $91,000 with an average cost of $11,375 per tornado event. When annualizing the total cost over the 30-year record, total annual loses based on tornadoes are estimated to be $3,033. The following tables provide an annual estimate of potential losses for St. James Parish.

Table 2-50 Estimated Annual Losses for Tornadoes in St. James Parish.

Estimated Potential Annual Losses from Tornadoes		
Unincorporated Area	**Gramercy**	**Lutcher**
$2,049	$496	$488

On the next page, *Table 2-51* presents an analysis of building exposure that are susceptible to tornadoes by general occupancy type for St. James Parish along with the percentage of building stock that are mobile homes.

Table 2-51: Building Exposure by General Occupancy Type for Tornadoes in St. James Parish. (Source: Hazus)

Building Exposure by General Occupancy Type for Tornadoes ($1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
1,706,357	193,711	96,116	8,284	39,122	20,725	8,411	16.2%

The Parish has suffered through a total of eight events in which tornadoes or waterspouts have accounted for 75 injuries and three fatalities during this 30-year period.

In accessing the overall risk to population, the most vulnerable population throughout the parish are those residing in manufacturing housing. Approximately 16.2% of all housing in St. James Parish consists of manufactured housing. The location and density of manufactured houses can be seen in *Figure 2-27*.

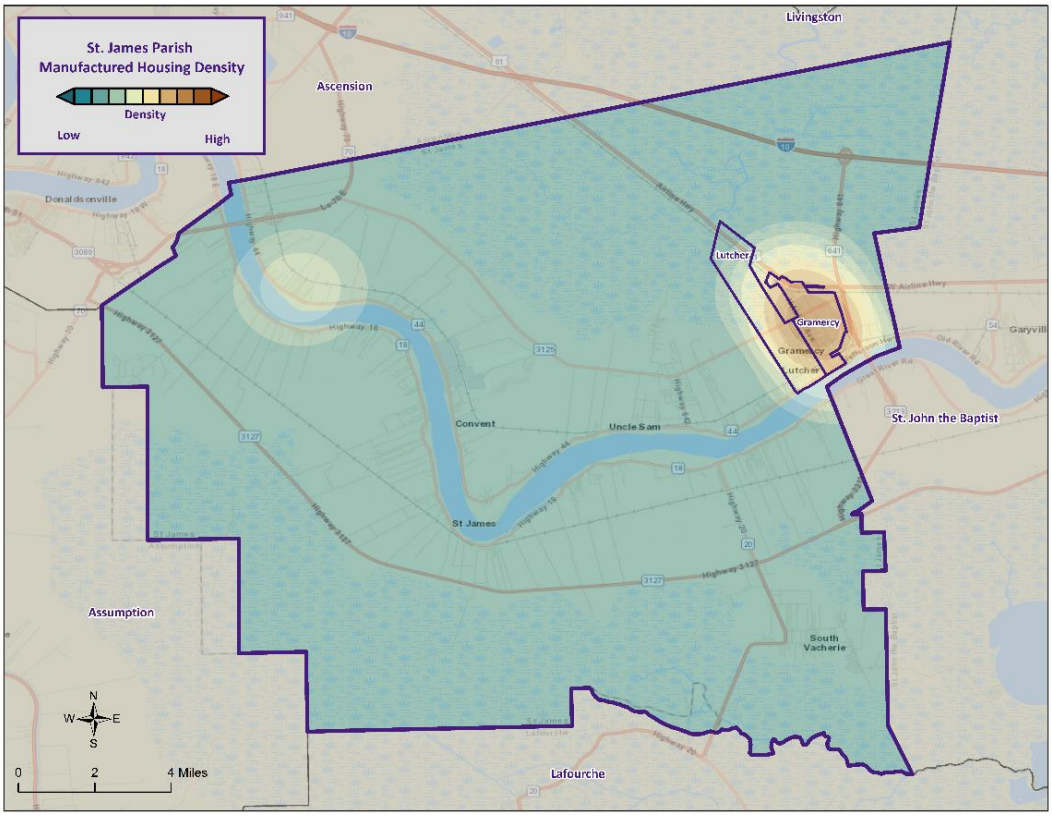


Figure 2-27: Location and Approximate Number of Units in Manufactured Housing Locations throughout St. James Parish.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality building exposure to tornadoes.

Tropical Cyclones

Tropical cyclones are among the worst hazards 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, now called a tropical disturbance, may then gather strength as it draws humid air toward its low-pressure center. This results in the formation of a tropical depression (defined when the maximum sustained surface wind speed is 38 mph or less), then a Tropical Cyclone (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, the table presents the Saffir-Simpson Hurricane Wind Scale, which categorizes tropical cyclones based on sustained winds.

Table 2-52: 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	N/A
Tropical Cyclone	39-73 mph	N/A	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 will likely 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 may 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 rains, 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; so, a fast-moving storm (20 mph) might be expected to drop five inches of rain while a slow-moving (5 mph) storm could produce totals of around 20 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 increased the storm surge resulting from these storms so much that this has become the greatest natural hazard threat to property and loss of life in the state. Storm surge is 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 (exceeding ten meters in some places) that can inflict a high number 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 near Alluvial City in St. Bernard Parish.

Property can be damaged by the various forces that accompany a tropical cyclone. High winds can directly impact structures in three ways: wind forces, flying debris, and pressure. By itself, the force of the wind can knock over trees, break tree limbs, and destroy loose items, such as television antennas and power lines. Many things 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 pressure to impact all surfaces (the building envelope includes all surfaces that make up the barrier between the indoors and the outdoors, such as the walls, foundation, doors, windows, and roof). Mobile homes and buildings in need of maintenance are most subject to wind damage. High winds mean bigger waves. Extended pounding by waves can demolish any poorly or improperly designed structures. The waves also erode sand beaches, roads, and foundations. When foundations are compromised, the building will collapse.

Nine out of ten deaths during hurricanes are caused by storm surge flooding. Falling tree limbs and flying debris caused by high winds have the ability to cause injury or death. Downed trees and damaged buildings are 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. Salt water and freshwater intrusions from storm surge send animals, such as snakes, into areas occupied by humans.

Location

Hurricanes are the single biggest threat to the entire state of Louisiana. With any single tropical cyclone event having the potential to devastate multiple parishes at once, tropical cyclones are a significant threat to the entire St. James Parish planning area. The worst-case scenario for a tropical cyclone event in St. James Parish is a Category 3 Hurricane.

Previous Occurrences / Extents

St. James Parish has experienced 10 major tropical cyclone events since 2002. The table on the next page provides a list of tropical cyclones which have impacted St. James Parish since 2002.

Table 2-53: Historical Tropical Cyclone Events in St. James Parish from 2002 – 2020.

Date	Name	Storm Type at Time of Impact
2002	Isidore	Tropical Storm
2002	Lili	Hurricane
2005	Katrina	Hurricane
2005	Rita	Hurricane
2008	Gustav	Tropical Storm
2008	Ike	Tropical Storm
2012	Isaac	Tropical Storm
2019	Barry	Tropical Storm
2020	Delta	Tropical Storm
2020	Zeta	Tropical Storm
2021	Ida	Hurricane

Since the last St. James Parish HMP update in 2016, there have been four tropical cyclone events which have impacted the parish. However, only three of the events were included in the summary as Hurricane Ida occurred very recently relative to the writing of this risk assessment and a complete synopsis of the event and its impacts has yet to be compiled. Below is a brief description of the other three events and the impact they had on St. James Parish.

Tropical Storm Barry (2019)

Hurricane Barry initial developed from a disturbance that moved from Georgia southwest to the northeast Gulf of Mexico on July 8-9, 2019. The weak low-pressure system continued to move west-southwest and strengthen and was eventually classified as Tropical Storm Barry on the morning of July 11th, 95 miles south-southeast of the mouth of the Mississippi River. Barry continued to move slowly west then northwest and briefly reached hurricane strength on the morning of July 13th before landfall in south-central Louisiana near Intracoastal City, Louisiana in Vermillion Parish. Tropical storm force winds reached the southeast Louisiana coast by midday on Friday, July 12th and spread slowly northwest reaching the Baton Rouge area during the evening of the 12th. Tropical storm wind impacts had ended across all of southeast Louisiana by midday on July 14th. Tropical storm force winds were primarily measured in gusts across southeast Louisiana. The exception was in Terrebonne and Assumption Parishes, close to the landfall location, where sustained tropical storm force winds and frequent gusts caused more significant power line and tree damage. A few tropical storm wind gusts were recorded in the metro New Orleans area but were not very impactful. No hurricane force wind gusts were recorded in southeast Louisiana.

Mostly minor to moderate storm surge flooding occurred across coastal southeast Louisiana, including Lake Pontchartrain, and a small part of the Mississippi Coast. Terrebonne Parish had significant storm surge flooding in the lower portion of the parish with storm tides of five to eight feet, locally up to nine feet. Several local levees were overtopped on the morning of July 13th flooding roads and a few homes. The highest storm tide reading was 9.11 feet NAVD88 at a USGS tide gauge at Caillou Lake near Dulac, Louisiana.

Storm total rainfall was generally between four and eight inches with a maximum rainfall of 8.83 inches recorded northeast of Denham Springs, Louisiana in Livingston Parish. Isolated flash flooding of streets and secondary roadways occurred on July 13th in the greater Baton Rouge area, but flash flooding was not widespread or significant. The lower Mississippi River was at unusually high stages from late August with

the state at the New Orleans Carrolton gauge near 16.5 feet. The combination of storm surge entering the lower Mississippi River with very high river stages prompted concern of potential overtopping of levees along the Mississippi River in lower Plaquemines Parish prompting some evacuations of the area.

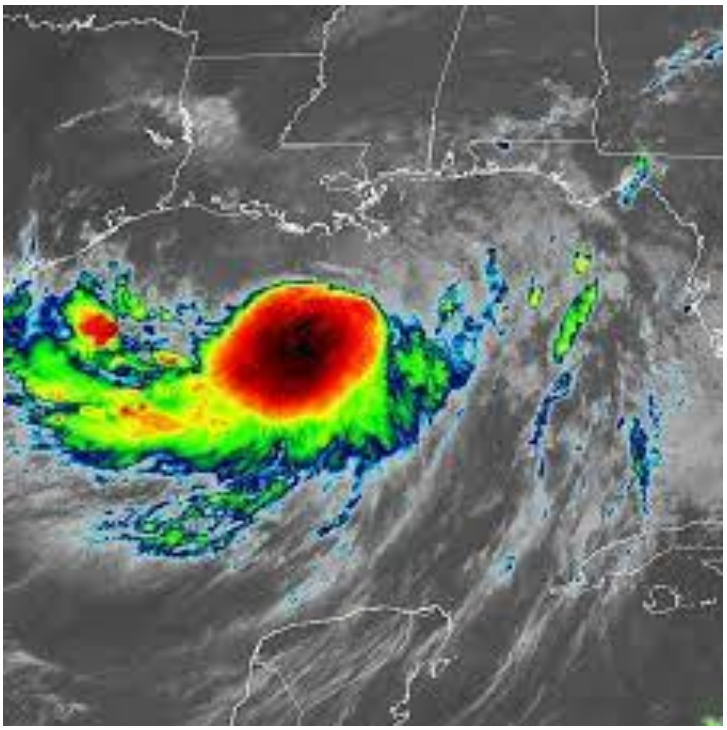


Figure 2-28: Hurricane Barry Rain Bands in the Gulf Coast Area. (Source: NOAA)

In St. James Parish, tropical storm force winds, mainly in gusts, downed several trees and large branches across the parish. At the peak of the storm, around 10% of the parish was without power. Storm total rainfall across the parish was estimated to be in the three to five inch range.

Tropical Storm Delta (2020)

Hurricane Delta was the record-tying fourth named storm of 2020 to strike Louisiana, as well as the record-breaking tenth named storm to strike the United States in that year. The twenty-sixty tropical cyclone, twenty-fifth named storm, ninth hurricane, and third major hurricane of the record breaking 2020 Atlantic hurricane season, Delta formed from a tropical wave which was first monitored by the National Hurricane Center on October 1. As it tracked across the western Caribbean, it rapidly intensified into a Category 4 hurricane. In fact, intensifying from tropical depression to Category strength in 40 hours is the fastest rate of intensification of any storm on record in the Atlantic Basin and accomplished by Delta. Delta quickly weakened to a category 1 hurricane after making its first landfall on the Yucatan Peninsula. It gradually recurved north towards the Louisiana coastline, fluctuating in intensity between category 2 and 3.

Hurricane Delta made landfall around 5 pm as a category 2 storm east of Cameron, Louisiana or about 15 miles east of where category 4 Hurricane Laura made landfall just a couple of months earlier of the same year. Local impacts included 50 to 70 mph wind gusts across the area, storm surge of 2 to 3 feet above ground, and widespread tree and structural damage. There were six injuries due to Hurricane Delta. In addition, outer bands of Delta produced a significant amount of rainfall on the north side of Baton Rouge Metro. Upwards of five to 10 inches of rain fell, causing street flooding in Baton Rouge and moderate river

flooding in the region. Delta caused approximately $100 million worth of damage across southeast Louisiana.

In St. James Parish, Delta produced minor impacts as a result of tropical storm force winds across the parish. Peak wind gusts were estimated in the 50 to 60 mph range. At the peak, roughly 1,200 homes were without power in the parish.

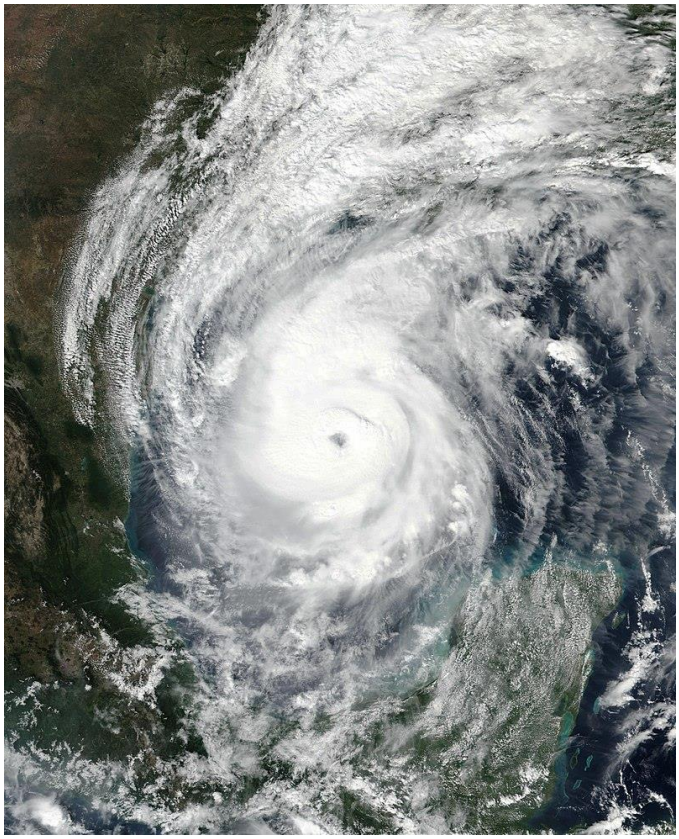


Figure 2-29: Hurricane Delta in the Gulf Coast Area. (Source: NOAA)

Tropical Storm Zeta (2020)

A tropical depression formed in the northwestern Caribbean on the afternoon of October 24th. Nine hours later, it became the twenty-seventh named storm and eleventh hurricane of the exceptionally active 2020 Atlantic hurricane season. After meandering virtually in the same place, Zeta finally began moving northwest and slowly strengthening before making its first landfall on the Yucatan Peninsula on October 26th. Zeta exited the Yucatan Peninsula weaker but still a strong tropical storm. The path of the storm began shifting from the northwest to northeast and heading straight towards the state of Louisiana. In terms of intensity, Zeta slowly but steadily strengthened from this point all the way up until landfall. It reached the highest wind speed possible of a Category 2 storm, 110 mph. Zeta produced extensive wind damage across southeast Louisiana with measured sustained winds up to 87 mph and gusts up to 110 mph. Thousands of power poles were downed, and thousands of homes experienced minor damage. Storm surge ranged from a few feet to several feet. There was a total of one fatality and one injury. Hurricane Zeta caused approximately $1 billion worth of damage. Zeta was the record-tying sixth hurricane to make landfall in the United States and the record fifth named storm to strike Louisiana in 2020.

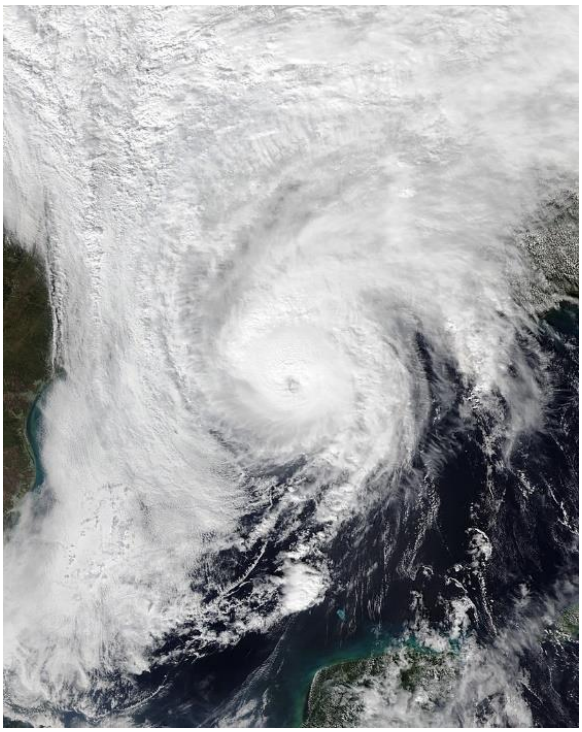


Figure 2-30: Hurricane Zeta in the Gulf Coast Area.
(Source: NOAA)

In St. James Parish, Zeta produced tropical storm force winds which downed trees, power lines, and power poles across the parish. Roughly 1,000 customers were without power at the peak.

The following figure displays the wind zones that affect St. James Parish in relation to critical facilities throughout the parish.

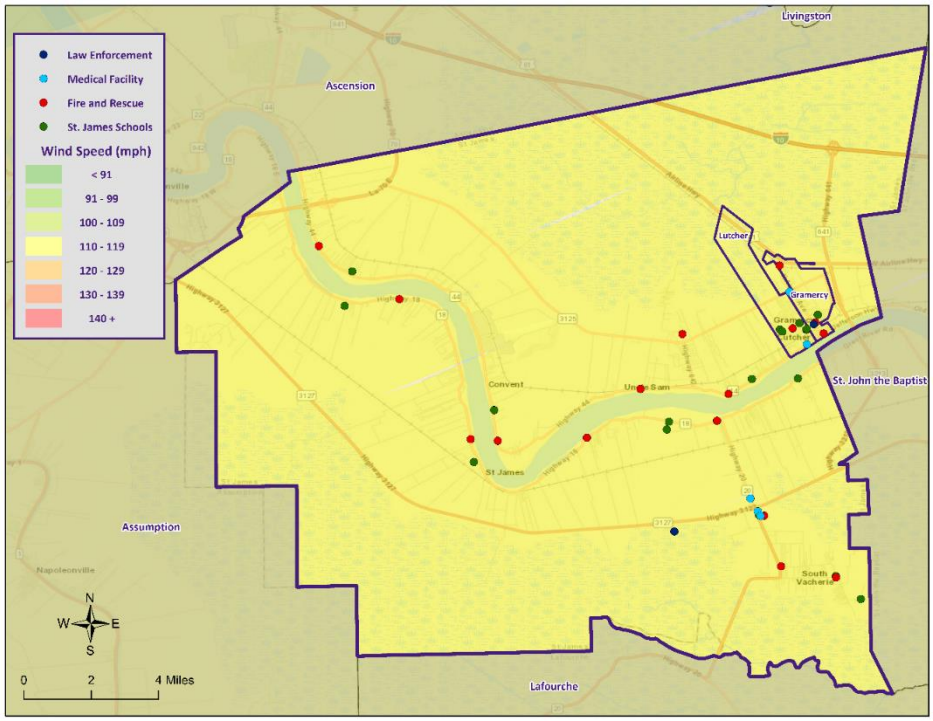


Figure 2-31: Winds Zones for St. James Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact St. James Parish. The annual chance of occurrence for a tropical cyclone is estimated at 56% for St. James Parish with 10 events occurring within 18 years (2002 to 2020). The tropical cyclone season for the Atlantic Basin is from June 1st through November 30th, with most of the major hurricanes (Saffir-Simpson Categories 3, 4, & 5) occurring between the months of August and October. Based on geographical location alone St. James Parish and its jurisdictions are highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

Estimated Potential Losses

Using Hazus 100-Year Hurricane Model, the 100-year hurricane scenario was analyzed to determine losses from this worst-case scenario. The following table shows the total economic losses that would result from this occurrence.

Table 2-54: Total Estimated Losses for a 100-Year Hurricane Event
(Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
St. James Parish (Unincorporated)	$94,505,180
Gramercy	$22,869,874
Lutcher	$22,528,060
Total	**$139,903,113**

Total losses from a 100-year hurricane event for St. James Parish were compared with the total value of assets to determine the ratio of potential damage to total inventory in the table below.

Table 2-55: Ratio of Total Losses to Total Estimated Value of Assets for St. James Parish
(Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event	Total Estimated Value of Assets	Ratio of Estimated Losses to Total Value
St. James Parish (Unincorporated)	$94,505,180	$1,330,292,000	7.1%
Gramercy	$22,869,874	$386,803,000	5.9%
Lutcher	$22,528,060	$355,631,000	6.3%

Based on the Hazus Hurricane Model, estimated total losses for St. James Parish and its jurisdictions ranged from 5.9% to 7.1% of the total estimated value of all assets.

The Hazus Hurricane Model also provides a breakdown for seven primary sectors (Hazus occupancy) throughout the parish. The losses for St. James Parish by sector are listed in the tables on the next page.

Table 2-56: Estimated Losses in Unincorporated St. James Parish for a 100-Year Hurricane Event (Source: Hazus)

St. James Parish (Unincorporated)	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$393,471
Commercial	$5,616,220
Government	$514,573
Industrial	$1,774,316
Religious / Non-Profit	$708,068
Residential	$85,247,104
Schools	$251,428
Total	**$94,505,180**

Table 2-57: Estimated Losses in Gramercy for a 100-Year Hurricane Event (Source: Hazus)

Gramercy	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$95,218
Commercial	$1,359,103
Government	$124,525
Industrial	$429,377
Religious / Non-Profit	$171,350
Residential	$20,629,456
Schools	$60,845
Total	**$22,869,874**

Table 2-58: Estimated Losses in Lutcher for a 100-Year Hurricane Event (Source: Hazus)

Lutcher	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	$93,795
Commercial	$1,338,789
Government	$122,664
Industrial	$422,960
Religious / Non-Profit	$168,789
Residential	$20,321,128
Schools	$59,935
Total	**$22,528,060**

Threat to People

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

Table 2-59: Number of People Susceptible to a 100-Year Hurricane Event in St. James Parish (Source: Hazus)

Number of People Exposed to Hurricane Hazards			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
St. James Parish (Unincorporated)	14,930	14,930	100%
Gramercy	3,613	3,613	100%
Lutcher	3,559	3,559	100%
Total	**22,102**	**22,102**	**100%**

The Hazus hurricane model was also extrapolated to provide an overview of vulnerable populations throughout St. James Parish. These populations are illustrated in the following tables:

Table 2-60: Vulnerable Populations in Unincorporated St. James Parish for a 100-Year Hurricane Event (Source: Hazus)

St. James Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	14,930	100.0%
Persons Under 5 Years	956	6.4%
Persons Under 18 Years	3,613	24.2%
Persons 65 Years and Over	2,150	14.4%
White	7,375	49.4%
Minority	7,555	50.6%

Table 2-61: Vulnerable Populations in Gramercy for a 100-Year Hurricane Event (Source: Hazus)

Gramercy		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,613	100.0%
Persons Under 5 Years	271	7.5%
Persons Under 18 Years	957	26.5%
Persons 65 Years and Over	502	13.9%
White	1,861	51.5%
Minority	1,752	48.5%

Table 2-62: Vulnerable Populations in Lutcher for a 100-Year Hurricane Event (Source: Hazus)

Lutcher		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,559	100.0%
Persons Under 5 Years	217	6.1%
Persons Under 18 Years	632	17.8%
Persons 65 Years and Over	607	17.1%
White	1,646	46.3%
Minority	1,913	53.8%

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality buildings that are susceptible to tropical cyclones.

Wildfires

A wildfire is combustion in a natural setting, marked by flames or intense heat. Most frequently wildfires are ignited by lightning or unintentionally by humans. Fires set purposefully (but lawfully) are referred to as controlled fires or burns. There are three different types of wildfires. (1) **Ground fires** burn primarily in the thick layers of organic matter directly on the forest floor and even within the soil. Ground fires destroy root networks, peat, and compact litter. These fires spread extremely slowly and can smolder for months. (2) **Surface fires** burn litter and vegetative matter in the underbrush of a forest. (3) **Crown fires** spread rapidly by wind and move quickly by jumping along the tops of trees. There are two types of crown fires—(a) passive (or dependent) crown fires rely on heat transfer from surface fire, whereas (b) active (or independent) crown fires do not require any heat transfer from below. Active crown fires tend to occur with greater tree density and drier conditions. A firestorm is a mass, crown fire (also called a running crown fire, area fire, or conflagration). They are large, continuous, intense fires that lead to violent convection. They are characterized by destructively violent surface in-drafts near and beyond their perimeter. Crown fires are the most damaging and most difficult to contain. The intensity of crown fires enables the fire to produce its own wind gusts. These so-called fire whirls can move embers ahead of the fire front and ignite new fires. Fire whirls are spinning vortex columns of ascending hot air and gases rising from the fire. Large fire whirls have the intensity of a small tornado.

The conditions conducive to the occurrence of wildfires are not distributed equally across the United States. Wildfires have a much greater likelihood of occurring in the western part of the country. Although less frequent than in other areas, wildfires do occur in Louisiana. Wildfire danger can vary greatly season to season and is exacerbated by dry weather conditions. Factors that increase susceptibility to wildfires are the availability of fuel (e.g., litter and debris), topography (i.e., slope and elevation affect various factors like precipitation, fuel amount, and wind exposure), and specific meteorological conditions (e.g., low rainfall, high temperatures, low relative humidity, and winds). The potential for wildfire is often measured by the Keetch–Byram Drought Index (KBDI), which represents the net effect of evapotranspiration and precipitation in producing cumulative moisture deficiency in the soil. The KBDI tries to measure the amount of precipitation needed to return soil to its full field capacity, with KBDI values ranging from 0 (moist soil) to 800 (severe drought).

According to the State of Louisiana Forestry Division, most forest fires in Louisiana are caused by intentional acts (arson) or carelessness and negligence committed by people, exacerbated by human confrontation with nature. The wildland–urban interface is the area in which development meets wildland vegetation, where both vegetation and the built environment provide fuel for fires. As development near wildland settings continues, more people and property are exposed to wildfire danger.

The Southern Group of State Foresters developed the Southern Wildfire Risk Assessment Portal to create awareness among the public and government sectors about the threat of wildfires in their areas. The Southern Wildfire Assessment Portal allows users to identify areas that are most prone to wildfires. The table on the next page summarizes the intensity levels assigned to areas in the Southern Wildfire Assessment Portal.

Table 2-63: Southern Group of State Foresters Wildfire Risk Assessment Fire Intensity Scale. (Source: Southern Wildfire Assessment Portal)

Fire Intensity	
Level	**Definition**
1	Lowest Intensity: Minimal direct wildfire impacts. Location has a minimal chance of being directly impacted by a wildfire.
2	Low Intensity: Small flames usually less than two feet long; small amount of very short-range spotting possible. Fires are easy to suppress.
3	Moderate Intensity: Flames up to eight feet in length; short-range spotting is possible.
4	High Intensity: Large flames up to 30 feet in length; short-range spotting common; medium range spotting possible.
5	Highest Intensity: Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire induced winds.

Location

Wildfires impact areas that are populated with forests and grasslands. The worse-case scenario for St. James Parish is a level 5; Gramercy a level 1; and Lutcher a level 3 on the fire intensity scale. The following figure displays the areas of wildland-urban interface and intermix in St. James Parish and its jurisdictions.

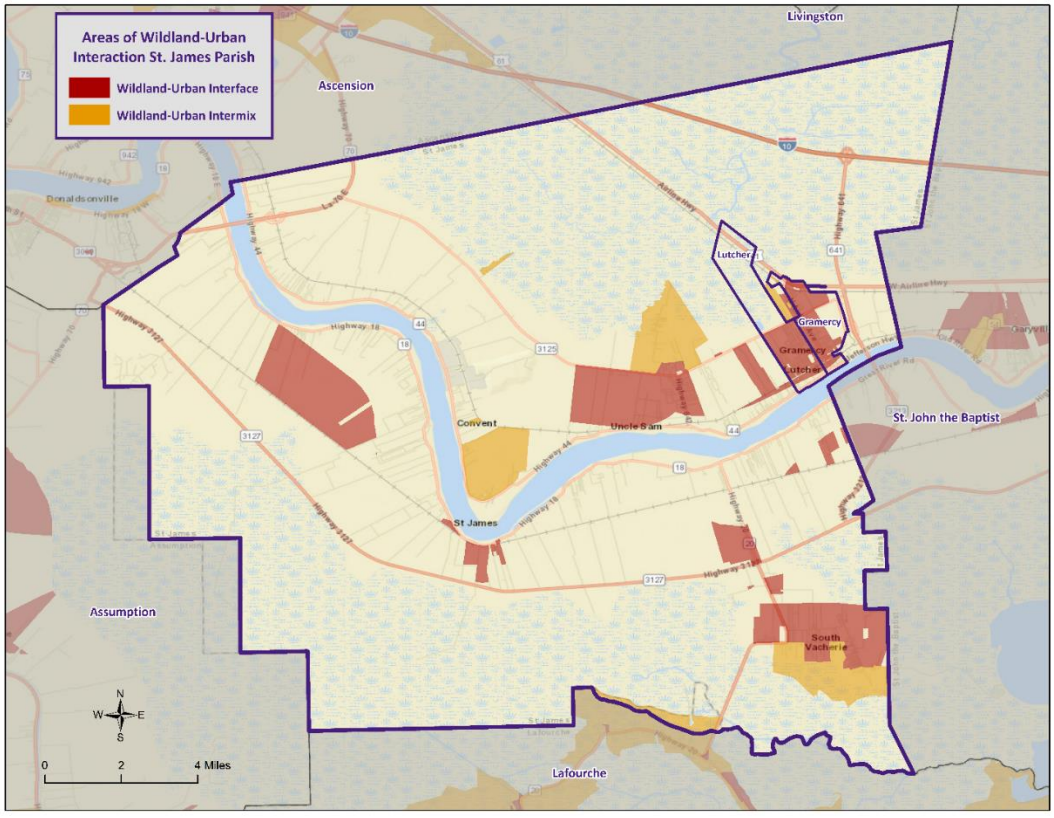


Figure 2-32: Wildland-Urban Interaction in St. James Parish.

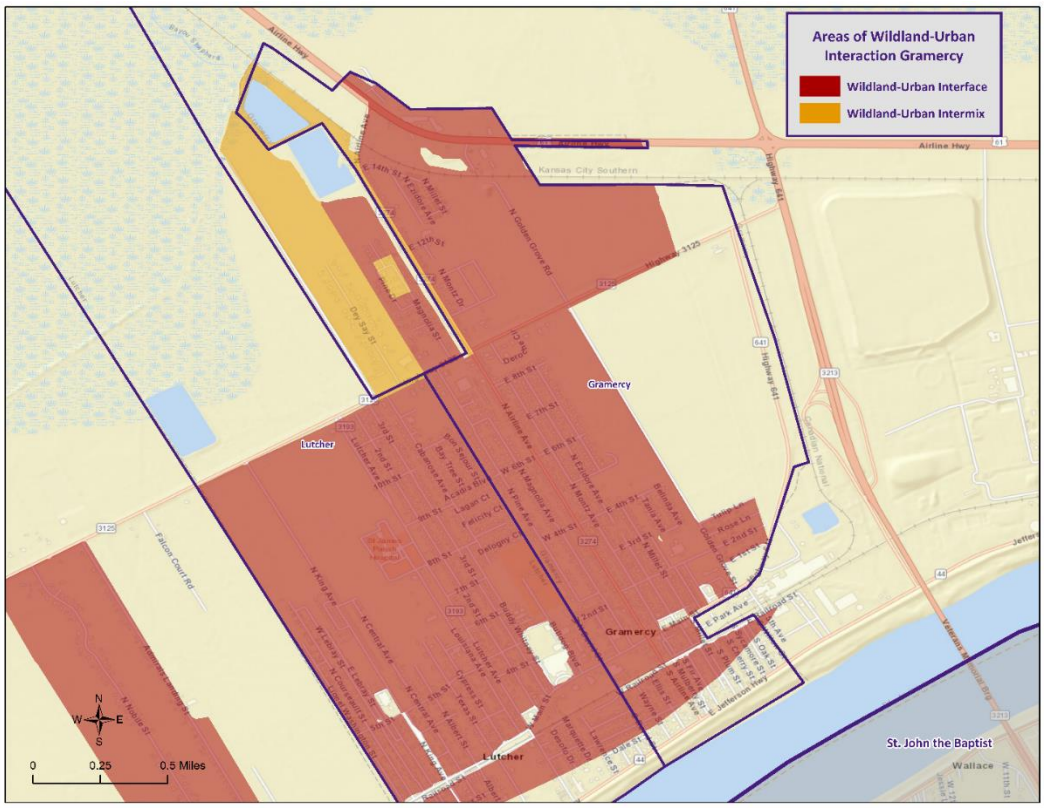


Figure 2-33: Wildland-Urban Interaction in Gramercy.

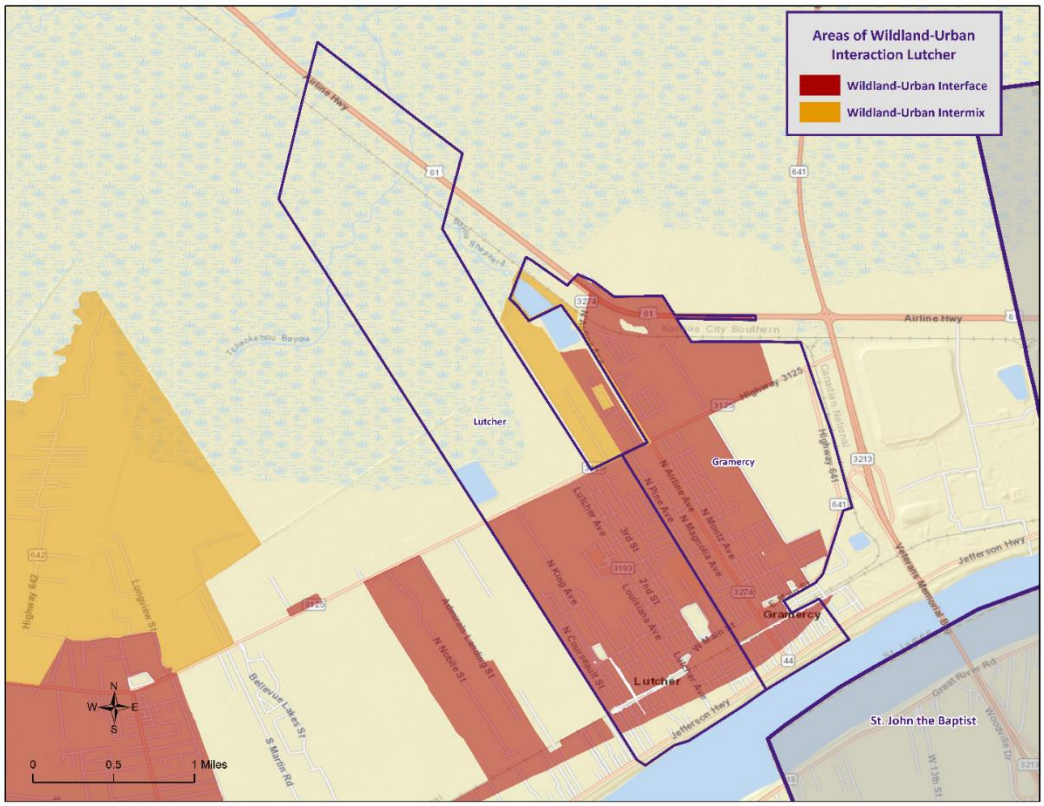


Figure 2-34: Wildland-Urban Interaction in Lutcher.

Previous Occurrences / Extents

The NCEI Storm Events report no wildfire events occurring within the boundaries of St. James Parish between the years 1990 and 2020.

Based on the Southern Group of State Foresters Risk Assessment Portal, the following table outlines the intensity that each jurisdictional area within St. James Parish could potential experience due to a wildfire event.

Table 2-64: Potential Wildfire Intensity Levels for St. James Parish.
(Source: Southern Wildfire Assessment Portal)

Fire Intensity	
St. James (Unincorporated)	Highest Intensity Level 5
Gramercy	Moderate Intensity Level 1
Lutcher	Moderate Intensity Level 3

Frequency / Probability

Based on historical records, there have been no significant wildfire events within the boundaries of St. James Parish and the jurisdictions of Gramercy and Lutcher; therefore, the annual chance of occurrence for wildfires is estimated at less than 1%.

Estimated Potential Loses

According to the NCEI Storm Events database, there have been no wildfire events which have caused property damage, crop damage, injuries, or fatalities in St. James Parish and its jurisdictions. In assessing over risk to population, the most vulnerable population throughout the parish consists of those residing in areas of wildland-urban interaction.

Using Hazus, along with wildland-urban interaction areas, the following table presents an analysis of total building exposure that is located within the wildland-urban interaction areas.

Table 2-65: Total Building Exposure by Wildland-Urban Interaction Areas.
(Source: Hazus)

Jurisdiction	Estimated Total Building Exposure
St. James Parish (Unincorporated)	$790,539,000
Gramercy	$312,031,000
Lutcher	$287,865,000
Total	**$1,390,435,000**

Hazus also provides a breakdown by jurisdiction for seven primary sectors (Hazus occupancy) throughout the parish. Utilizing this information with the wildland-urban interaction areas allows for identifying the total exposure by jurisdiction. The total exposure for each jurisdiction by sector is listed in the following tables. These sectors are comprised of privately owned structures/facilities, as well as locally, state, and federally owned structures/facilities.

Table 2-66: Estimated Exposure for Unincorporated St. James Parish by Sector. (Source: Hazus)

St. James Parish (Unincorporated)	Estimated Total Building Exposure by Sector
Agricultural	$2,082,000
Commercial	$19,766,000
Government	$13,367,000
Industrial	$7,087,000
Religious / Non-Profit	$6,175,000
Residential	$737,662,000
Schools	$4,400,000
Total	**$790,539,000**

Table 2-67: Estimated Exposure for Gramercy by Sector. (Source: Hazus)

Gramercy	Estimated Total Building Exposure by Sector
Agricultural	$300,000
Commercial	$21,922,000
Government	$976,000
Industrial	$9,945,000
Religious / Non-Profit	$4,547,000
Residential	$273,866,000
Schools	$475,000
Total	**$312,031,000**

Table 2-68: Estimated Exposure in Lutcher by Sector. (Source: Hazus)

Lutcher	Estimated Total Building Exposure by Sector
Agricultural	$723,000
Commercial	$43,377,000
Government	$1,782,000
Industrial	$2,140,000
Religious / Non-Profit	$7,430,000
Residential	$231,359,000
Schools	$1,054,000
Total	**$287,865,000**

Threat to People

The total population within the parish that is located within a wildland-urban interaction area is shown in the table below:

Table 2-69: Population Located within a Wildland-Urban Interaction Areas.
(Source: 2010 U.S. Census Data)

Number of People Located in Wildland-Urban Interaction Areas			
Location	**# in Community**	**# in Hazard Area**	**% in Hazard Area**
St. James Parish (Unincorporated)	14,930	9,531	63.8%
Gramercy	3,613	3,613	100%
Lutcher	3,559	3,408	95.8%
Total	**22,102**	**16,552**	**74.9%**

The 2010 U.S. Census data was also extrapolated to provide an overview of populations located within wildland-urban interaction areas throughout the jurisdictions. The date is illustrated in the following tables:

Table 2-70: Population in Unincorporated St. James Parish Located within a Wildland-Urban Interaction Area.
(Source: 2010 Census Data)

St. James Parish (Unincorporated)		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	9,531	63.8%
Persons Under 5 Years	610	6.4%
Persons Under 18 Years	2,307	24.2%
Persons 65 Years and Over	1,372	14.4%
White	4,708	49.4%
Minority	4,823	50.6%

Table 2-71: Population in Gramercy Located within a Wildland-Urban Interaction Area.
(Source: 2010 Census Data)

Gramercy		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,613	100%
Persons Under 5 Years	271	7.5%
Persons Under 18 Years	957	26.5%
Persons 65 Years and Over	502	13.9%
White	1,861	51.5%
Minority	1,752	48.5%

Table 2-72: Population in Lutcher Located within a Wildland-Urban Interaction Area. (Source: 2010 Census Data)

Lutcher		
Category	**Total Numbers**	**Percentage of People in Hazard Area**
Number in Hazard Area	3,405	95.8%
Persons Under 5 Years	208	6.1%
Persons Under 18 Years	607	17.8%
Persons 65 Years and Over	583	17.1%
White	1,578	46.3%
Minority	1,830	53.7%

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality facilities that could potentially be exposed to a wildfire hazard. Buildings were determined based on whether or not they fall within the wildfire-urban interface and/or intermix.

Winter Weather

For Louisiana and other parts of the southeastern United States, a severe winter storm occurs when humid air from the Gulf of Mexico meets a cold air mass from the north. Once the cold air mass crosses Louisiana, and the temperature drops, precipitation may fall in the form of snow or sleet. If the ground temperature is cold enough but air temperature is above freezing, rain can freeze instantly on contact with the surface, causing massive ice storms.

The winter storm events that affect the state of Louisiana are ice storms, freezes, and snow events. Of the winter storm types listed above, ice storms are the most dangerous. Ice storms occur during a precipitation event when warm air aloft exceeds 32 °F, while the surface remains below the freezing point. Ice will form on all surfaces when precipitation originating as rain or drizzle contacts physical structures. These ice storms are usually accompanied by freezing temperatures and occasionally snow.

Winter storms can be accompanied by strong winds, creating blizzard conditions with blinding, wind driven snow, severe drifting, and dangerous wind chill. These types of conditions are very rare in Louisiana, even in north Louisiana, but ice storms are more common. The climatic line between snow and rain often stalls over north Louisiana, creating ideal conditions for ice accumulation.

In a typical winter storm event, homes and buildings are damaged by ice accumulation, either directly by the weight of the ice on the roofs or by trees and/or limbs falling on buildings. While it is not very prevalent, this type of damage can occur in Louisiana, particularly in north Louisiana. Effects of winter weather more likely to occur in Louisiana, especially southern Louisiana, include extreme temperatures which can cause waterlines to freeze and sewer lines to rupture. This is especially true with elevated or mobile homes since cold air is able to access more of the building's infrastructure. Winter storms can also have a devastating effect on agriculture, particularly on crops (like citrus) that are dependent on warm weather. Long exposures to low temperatures can kill many kinds of crops, and ice storms can weigh down branches and fruit.

Winter storms are not only a direct threat to human health through conditions like frostbite and hypothermia, but they are also an indirect threat to human health due to vehicle accidents and loss of power and heat, which can be disrupted for days. However, these impacts are rarely seen in Louisiana. As people use space heaters and fireplaces to stay warm, the risk of household fires and carbon monoxide poisoning increases.

Winter storm events occur throughout Louisiana usually during the colder calendar months of December, January, and February. Severe weather events do not occur with the same frequency across all parts of Louisiana. The northern quarter of Louisiana has historically experienced the most severe winter events between 1987 and 2012. The central, and to an even greater extent the southern parts of the state, such as Ascension Parish, have experienced the fewest severe winter events. The following table shows the Sperry-Piltz Ice Accumulation Index which is utilized to predict the potential damage to overhead utility systems from freezing rain and ice storms.

Table 2-73: Sperry-Piltz Ice Accumulation Index

Ice Damage Index	Damage and Impact Descriptions
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
4	Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structure. Outages lasting 5 – 10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

Location

Because a winter storm is a climatological based hazard and has the same probability of occurring in St. James Parish as all of the adjacent parishes, the entire planning area for St. James Parish is equally at risk for winter storms. The worst-case scenario for St. James Parish and its jurisdictions is a level 2 on the Sperry-Piltz ice accumulation index.

Previous Occurrences / Extents

The NCEI Storm Events Database reports one winter weather event occurring within the boundaries of St. James Parish between the years 1990 and 2020. Since the last St. James Parish HMP Update in 2016, there have been no winter weather events occurring within the boundaries of St. James Parish. The worst-case scenario for St. James Parish is a level 2 on the Sperry-Piltz ice accumulation index.

Frequency / Probability

Based on historical records, there has been one significant winter weather event within the boundaries of St. James Parish and the jurisdictions of Gramercy and Lutcher; therefore, the annual chance of occurrence for winter weather is estimated at 3%.

Estimated Potential Loses

Since 1990, there has been one winter weather event that has resulted in property damages according to NCEI Storm Events Database. The total property damages associated with this storm has totaled approximately $1,000. To estimate the potential losses of a winter weather event on an annual basis, the total damages recorded for winter weather was divided by the total number of years of available winter weather in the NCEI Storm Events Database (1990 - 2020). This provides an annual estimated potential loss of $33 and $1,000 per event.

The following table provides an estimate of potential property losses for St. James Parish:

Table 2-74: Estimated Annual Losses St. James Parish and its Jurisdictions Resulting from Winter Weather.

Estimated Annual Potential Losses from Winter Weather		
Unincorporated Area	**Gramercy**	**Lutcher**
$23	$5	$5

There have been no reported injuries or fatalities as a result of winter weather over the 30-year record.

Vulnerability

See *Appendix C: Critical Facilities* for parish and municipality building exposure to winter weather.

3. Capability Assessment

This section summarizes the results of efforts by each jurisdiction and other agency to develop policies, programs, and activities that directly or indirectly support hazard mitigation. It also provides information on resources and gaps in the parish's infrastructure, as well as relevant changes in its law since the last plan update, in order to suggest a mitigation strategy.

Through this assessment, St. James Parish and the incorporated jurisdictions are able to identify strengths that could be used to reduce losses and reduce risk throughout the communities. It also identifies areas where mitigation actions might be used to supplement current capabilities and create a more resilient community before, during, and after a hazard event.

Policies, Plans and Programs

These capabilities are unique to the parish and jurisdictions, 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 the St. James Parish planning area to propose ways to continually 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. Examples of existing documents include the following:

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.				
	St. James Unincorporated	Gramercy	Lutcher	Comments
Plans	**Yes / No**			
Comprehensive / Master Plan	Yes	Yes	Yes	
Capital Improvements Plan	Yes	No	No	
Economic Development Plan	No	No	No	
Local Emergency Operations Plan	Yes	Yes	Yes	
Continuity of Operations Plan	Yes	Yes	Yes	
Transportation Plan	Yes	Yes	Yes	
Stormwater Management Plan	No	No	No	
Community Wildfire Protection Plan	Yes	Yes	Yes	
Other plans (redevelopment, recovery, coastal zone management)	Yes	Yes	Yes	
Building Code, Permitting and Inspections	**Yes / No**			
Building Code	Yes	Yes	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Yes	Yes	
Fire Department ISO/PIAL rating	Yes	Yes	Yes	
Site plan review requirements	Yes	Yes	Yes	
Land Use Planning and Ordinances	**Yes / No**			
Zoning Ordinance	Yes	Yes	Yes	
Subdivision Ordinance	Yes	Yes	Yes	
Floodplain Ordinance	Yes	Yes	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	Yes	Yes	Yes	
Flood Insurance Rate Maps	Yes	Yes	Yes	
Acquisition of land for open space and public recreation uses	Yes	Yes	Yes	
Other	No	No	No	

All jurisdictions within the St. James Parish planning area will work to expand their capabilities by adding to these plans, as well as work to create new plans that will address a long-term recovery and resiliency framework. In instances where there are no existing plans, there will be a concerted effort to explore opportunities to create new plans that will address long-term recovery and resiliency framework as parish and local resources allow.

Building Codes, Permitting, Land Use Planning and Ordinances

The St. James Parish Government provides oversight for building permits and codes, land use planning, and all parish ordinances.

As of the 2021 update, St. James Parish and the incorporated communities ensure that all adopted building codes are enforced and in compliance relating to the construction of any structure within the boundaries of the parish. Building permits are required prior to beginning any type of construction or renovation projects, installation of electrical wiring, plumbing or gas piping, moving manufactured/modular or portable buildings, and reroofing or demolitions.

The St. James Parish Government is also responsible for enforcing the parish ordinances related to health and safety, property maintenance standards, and condemnation of unsafe structures.

The St. James Parish Government meets regularly to consider any proposed ordinance changes, and to take final actions on proposed changes.

While local capabilities for mitigation can vary from community to community, the jurisdictions within the St. James Parish planning area as a whole have a system in place to coordinate and share these capabilities through the OHSEP and through this Parish Hazard Mitigation Plan.

Some programs and policies, such as the above 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

The jurisdictions within the St. James Parish planning area 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 ability to access and coordinate these resources is also important. The table on the following page shows examples of resources in place.

Table 3-2: Administration and Technical Capabilities

Administrative 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.				
	St. James Unincorporated	Gramercy	Lutcher	Comments
Administration	**Yes / No**			
Planning Commission	Yes	Yes	Yes	
Mitigation Planning Committee	Yes	Yes	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	Yes	Yes	
Staff	**Yes / No**			
Chief Building Official	Yes	Yes	Yes	
Floodplain Administrator	Yes	Yes	Yes	
Emergency Manager	Yes	Yes	Yes	
Community Planner	No	No	No	
Civil Engineer	No	No	No	
GIS Coordinator	Yes	Yes	Yes	
Grant Writer	Yes	Yes	Yes	
Other	No	No	No	
Technical	**Yes / No**			
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	Yes	Yes	
Hazard Data & Information	Yes	Yes	Yes	
Grant Writing	Yes	Yes	Yes	
Hazus Analysis	Yes	Yes	Yes	
Other	No	No	No	

Financial capabilities are the resources that St. James Parish and its incorporated jurisdictions have access to or are eligible to use in order to fund mitigation actions. Costs associated with implementing the actions identified by the parish may vary from little to no cost actions, such as outreach efforts, or substantial action costs such acquisition of flood prone properties.

The following financial resources are available to fund mitigation actions in the St. James Parish planning area:

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.				
	St. James Unincorporated	Gramercy	Lutcher	Comments
Funding Resource	**Yes / No**			
Capital Improvements project funding	Yes	Yes	Yes	
Authority to levy taxes for specific purposes	Yes	Yes	Yes	
Fees for water, sewer, gas, or electric services	Yes	Yes	Yes	
Impact fees for new development	No	No	No	
Stormwater Utility Fee	No	No	No	
Community Development Block Grant (CDBG)	Yes	Yes	Yes	
Other Funding Programs	Yes	Yes	Yes	

Education and Outreach

A key element in hazard mitigation is promoting a safer, more disaster resilient community through education and outreach activities and/or programs. Successful outreach programs provide data and information that improves overall quality and accuracy of important information for citizens to feel better prepared and educated with mitigation activities. These programs enable the individual communities and the parish as a whole to maximize opportunities for implementation of activities through greater acceptance and consensus of the community.

The jurisdictions within the St. James Parish planning area have existing education and outreach programs to implement mitigation activities, as well as communicate risk and hazard related information to its communities. Specifically, focusing on advising repetitive loss property owners of ways they can reduce their exposure to damage by repetitive flooding remains a priority for the entire parish. 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.				
	St. James Unincorporated	Gramercy	Lutcher	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	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	Yes	Yes	
Natural Disaster or safety related school program	Yes	Yes	Yes	
Storm Ready certification	No	No	No	
Firewise Communities certification	No	No	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	Yes	Yes	
Other	No	No	No	

As reflected with the above existing regulatory mechanisms, programs and resources within the parish, the jurisdictions within the St. James Parish planning area remain committed to expanding and improving on the existing capabilities within the parish. Communities will work together along with St. James Parish Government toward increased participation in funding opportunities and available mitigation programs. Should funding become available, the hiring of additional personnel to dedicate to hazard mitigation initiatives and programs, as well as increasing ordinances within the parish, will enhance and expand overall risk reduction for the entirety of St. James Parish.

Flood Insurance and Community Rating System

Participation in the CRS strengthens local capabilities by lowering flood insurance premiums for jurisdictions that exceed NFIP minimum requirements. As noted in the CRS Eligible Communities List effective October 1, 2021, St. James Parish is rated as a Class 7 community and the Town of Lutcher is rated as a Class 8 community.

The Federal Emergency Management Agency's National Flood Insurance Program (NFIP) administers the Community Rating System (CRS). Under the CRS, flood insurance premiums for properties in participating communities are reduced to reflect the flood protection activities that are being implemented. This program can have a major influence on the design and implementation of flood mitigation activities, so a brief summary is provided here.

A community receives a CRS classification based upon the credit points it receives for its activities. It can undertake any mix of activities that reduce flood losses through better mapping, regulations, public information, flood damage reduction and/or flood warning and preparedness programs.

There are ten CRS classes: Class 1 requires the most credit points and gives the largest premium reduction; Class 10 receives no premium reduction (see *Figure 3-1*). A community that does not apply for the CRS or that does not obtain the minimum number of credit points is a class 10 community.

CLASS	DISCOUNT	CLASS	DISCOUNT
1	45%	6	20%
2	40%	7	15%
3	35%	8	10%
4	30%	9	5%
5	25%	10	–
SFHA (Zones A, AE, A1–A30, V, V1–V30, AO, and AH): Discount varies depending on class.			
SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO): 10% discount for Classes 1–6; 5% discount for Classes 7–9.*			
Non-SFHA (Zones B, C, X, D): 10% discount for Classes 1–6; 5% discount for Classes 7–9.			

Figure 3-1: CRS Discounts by Class (Source: FEMA)

As of April 2021, 352 communities in the State of Louisiana participate in the Federal Emergency Management Agency's National Flood Insurance Program (NFIP). Of these communities, 46 (or 13%) participate in the Community Rating System (CRS). Jefferson Parish leads the state with a rating of Class 5, followed by three cities with a rating of Class 6: the Cities of Gretna and Kenner in Jefferson Parish and the City of Mandeville in St. Tammany Parish. Of the top fifty Louisiana communities, in terms of total flood insurance policies held by residents, 27 participate in the CRS. The remaining 23 communities present an outreach opportunity for encouraging participation in the CRS.

The CRS provides an incentive not just to start new mitigation programs, but to keep them going. There are two requirements that "encourage" a community to implement flood mitigation activities. Once the parish has obtained a CRS rating and is a participant, the parish will receive CRS credit for this plan when it is adopted. To retain that credit, though, the parish must submit an evaluation report on progress toward implementing this plan to FEMA by October 1 of each year. That report must be made available to the media and the public. Second, the parish must annually recertify to FEMA that it is continuing to implement its CRS credited activities. Failure to maintain the same level of involvement in flood protection can result in a loss of CRS credit points and a resulting increase in flood insurance rates to residents.

In 2011[1], the National Flood Insurance Program (NFIP) completed a comprehensive review of the Community Rating System (CRS) that resulted in the release of a new CRS Coordinator's Manual. The changes to the 2013 CRS Coordinator's Manual are the result of a multi-year program evaluation that included input from a broad group of contributors to evaluate the CRS and refine the program to meet its stated goals. The changes helped to drive new achievements in the following six core flood loss reduction areas important to the NFIP: (1) reduce liabilities to the NFIP Fund; (2) improve disaster resiliency and

[1] https://www.fema.gov/national-flood-insurance-program-community-rating-system

sustainability of communities; (3) integrate a Whole Community approach to addressing emergency management; (4) promote natural and beneficial functions of floodplains; (5) increase understanding of risk, and; (6) strengthen adoption and enforcement of disaster-resistant building codes.

Since the revision of the 2013 Coordinator's Manual, FEMA released the 2017 CRS Coordinator's Manual which continued the evolution of the CRS program and its mission to reward communities that prioritize mindful floodplain regulations. As with the 2013 manual, the changes made in the 2017 manual impact each CRS community differently. Some communities see an increase in the points they receive since points for certain activities have increased (e.g., Activity 420 Open Space Preservation). Other communities receive fewer points for certain activities (e.g., Activity 320 Map Information Service). It is likely that some communities with marginal CRS Class 9 programs have to identify new CRS credits in order to remain in the CRS class. Most notably, as it relates to this hazard mitigation plan, more credit was made available for Activity 410 Floodplain Mapping.

Typically, CRS communities do not request credit for all the activities they are currently implementing unless it would earn enough credit to advance the community to a higher CRS Class. A community that finds itself losing CRS credit with the 2017 manual could likely identify activities deserving credit they had not previously received. Due to the changes in both activities and CRS points, community CRS coordinators should speak with their ISO/CRS Specialist to understand how the 2017 manual will impact their community and when.

In addition to the direct financial reward for participating in the Community Rating System, there are many other reasons to participate in the CRS. As FEMA staff often say, "If you are only interested in saving premium dollars, you're in the CRS for the wrong reason."

The other benefits that are more difficult to measure in dollars include:

1. The activities credited by the CRS provide direct benefits to residents, including:
   – Enhanced public safety
   – A reduction in damage to property and public infrastructure
   – Avoidance of economic disruption and losses
   – Reduction of human suffering
   – Protection of the environment

2. A community's flood programs will be better organized and more formal. Ad hoc activities, such as responding to drainage complaints rather than an inspection program, will be conducted on a sounder, more equitable basis.

3. A community can evaluate the effectiveness of its flood program against a nationally recognized benchmark.

4. Technical assistance in designing and implementing a number of activities is available at no charge from the Insurance Services Office.

5. The public information activities will build a knowledgeable constituency interested in supporting and improving flood protection measures.

6. A community would have an added incentive to maintain its flood programs over the years. The fact that its CRS status could be affected by the elimination of a flood related activity or a weakening of the regulatory requirements for new developments would be taken into account by the governing board when considering such actions.

7. Every time residents pay their insurance premiums, they are reminded that the community is working to protect them from flood losses, even during dry years.

NFIP Worksheets

Parish NFIP worksheets can be found in *Appendix E: State Required Worksheets*.

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4. Mitigation Strategy

Introduction

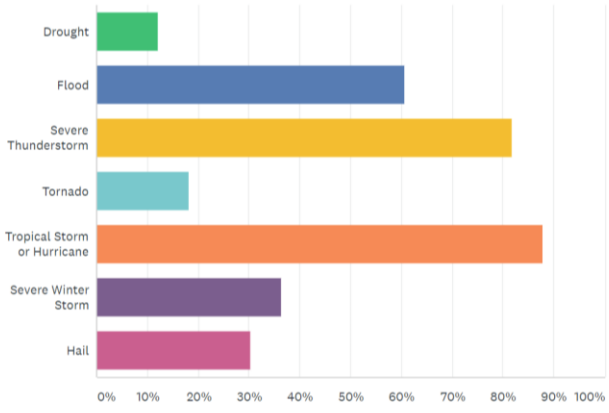
The Hazard Mitigation Strategy for St. James Parish and its incorporated communities have a common guiding principle and is the demonstration of the parish's commitment to reduce risks from hazards. The strategy also serves as a guide for parish and local decision makers as they commit resources to reducing the effects of hazards.

Officials from all jurisdictions within the planning area confirmed the goals, objectives, actions and projects over the period of the hazard mitigation plan update process. The mitigation actions and projects in this 2021 HMP update are a product of analysis and review of the St. James Parish Hazard Mitigation Plan Steering Committee under the coordination of the St. James Parish Office of Homeland Security and Emergency Preparedness. The committee was presented a list of projects and actions, new and from the 2016 plan, for review from June 2021 – October 2021.

An online public opinion survey of St. James Parish residents was conducted between June 2021 and October 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in the St. James Parish planning area. 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 which natural disasters citizens or someone in their household had experienced in the last five years, the following responses were recorded:

1. Tropical Storm/Hurricane
2. Severe Thunderstorm
3. Flood



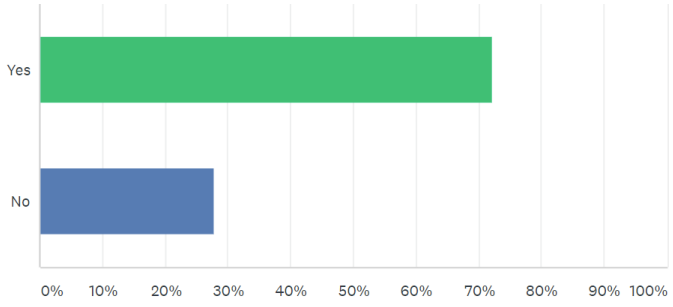
ANSWER CHOICES	RESPONSES	
Drought	12.12%	4
Flood	60.61%	20
Severe Thunderstorm	81.82%	27
Tornado	18.18%	6
Tropical Storm or Hurricane	87.88%	29
Severe Winter Storm	36.36%	12
Hail	30.30%	10
Total Respondents: 33		

The survey results also indicated which natural disasters citizens were *concerned* with being affected by in the St. James Parish planning area. The top three natural disasters selected for "very concerned" were:

1. Tropical Storm or Hurricane
2. Flooding
3. Severe Thunderstorm

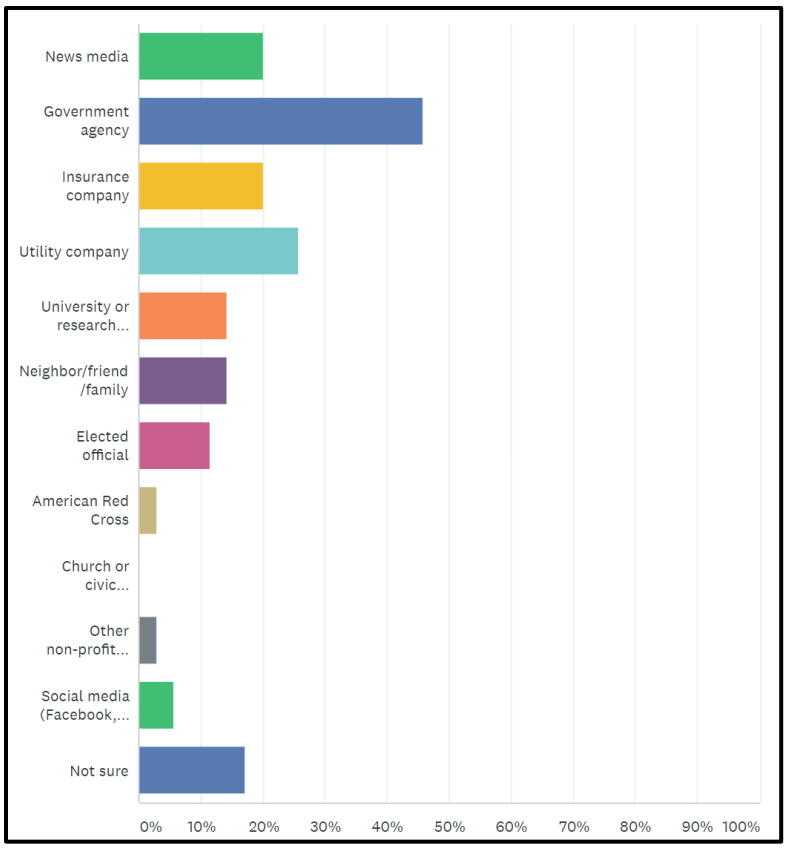
	NOT CONCERNED	NOT VERY CONCERNED	NEUTRAL	SOMEWHAT CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Drought	34.29% 12	14.29% 5	17.14% 6	20.00% 7	14.29% 5	35	2.66
Flood	0.00% 0	0.00% 0	8.33% 3	22.22% 8	69.44% 25	36	4.61
Severe Thunderstorm	2.78% 1	8.33% 3	11.11% 4	36.11% 13	41.67% 15	36	4.06
Tornado	0.00% 0	8.33% 3	16.67% 6	38.89% 14	36.11% 13	36	4.03
Tropical Storm or Hurricane	0.00% 0	0.00% 0	0.00% 0	27.78% 10	72.22% 26	36	4.72
Severe Winter Storm	2.78% 1	19.44% 7	27.78% 10	33.33% 12	16.67% 6	36	3.42
Hail	2.86% 1	11.43% 4	40.00% 14	31.43% 11	14.29% 5	35	3.43

The survey also asked if citizens had received information about making their homes safer from disasters. The following responses were recorded:



ANSWER CHOICES	RESPONSES	
Yes	72.22%	26
No	27.78%	10
TOTAL		36

Always important to decision makers is how citizens best receive emergency information. According to the survey, the citizens within the St. James Parish planning area MOST trust the following entities in the dissemination of emergency related information:



The results shown above are related to the manner in which the general population receives information on how to make their home safer from natural disasters. These results are encouraging because it shows that the public has high confidence in the information being disseminated by local government agencies. Implementation of the outreach activities put forth by parish officials and offices seem to have been executed in a successful manner.

This activity confirms that the goals and action items developed by the St. James Parish Hazard Mitigation Plan Steering Committee are representative of the outlook of the community at large. Full survey results can be found here:

https://www.surveymonkey.com/results/SM-BJBCFFGY9/

Goals

The goals represent the guidelines that 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 St. James Parish from natural and manmade hazards. By articulating goals and objectives based on the previous plans, 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, St. James Parish 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 St. James Parish Hazard Mitigation Plan Update Steering Committee represent long-term commitments by the parish. After assessing these goals, the committee decided that the current remain valid.

The goals are as follows:

1. Identify and pursue preventative measures that will reduce future damages from hazards

2. Enhance public awareness and understanding of disaster preparedness

3. Reduce repetitive losses in the parish

4. Facilitate sound development in the parish so as to reduce or eliminate the potential impact of hazards

5. Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish

The Mitigation Action Plan focuses on actions to be taken by St. James Parish and its communities. All of the activities in the Mitigation Action Plan will be focused on helping the parish and its communities 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.

After the adoption of the 2016 St. James Parish Hazard Mitigation Plan, large portions of South Louisiana were impacted by a flooding event whose ramifications are still being felt by the population. Because of this event, St. James Parish and its jurisdictions reprioritized its efforts and became much more aggressive in seeking funding for flood mitigation efforts, particularly related to drainage. Pressure was placed on political leaders throughout the parish and jurisdictions to ensure that money and resources were sought and made available to mitigate against such events in the future.

The Hazard Mitigation Plan Steering Committee reviewed and evaluated the potential action and project lists 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.

2021 Mitigation Actions and Update on Previous Plan Actions

The St. James Parish Hazard Mitigation Plan Steering Committee identified new actions that would reduce and/or prevent future damage within the St. James Parish planning area. In that effort, the committee

focused on a comprehensive range of specific mitigation actions. These actions were identified in thorough fashion by the consultant team and the committee by way of frequent and open communications and meetings held throughout the planning process. The addition of these new actions, coupled with any ongoing and/or carried over projects from their previous update, provide St. James Parish with a solid mitigation strategy through which risk and losses will be reduced throughout the parish and its communities.

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

- **Local Plans and Regulations –** These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.
- **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.
- **Natural System Protection –** These actions minimize the damage and losses and also preserve or restore the functions of natural systems.
- **Education and Awareness Programs –** These actions inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

Status updates for actions included in the previous plan can be found on the following pages. Additionally, new mitigation actions agreed upon by the parish and its jurisdictions are included.

Unincorporated St. James Mitigation Actions

Previous Action Update

St. James Unincorporated							
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Goal**	**Status**
SJ1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA, Local	2-5 years	St James Parish OHSEP	Thunderstorms, Tornadoes, Tropical Cyclones	1,5	Ongoing
Update: Primary buildings have been hardened off with retrofitting. Secondary buildings are being identified to protect public assets							
SJ2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA, Local	1-10 years	St James Parish OHSEP	Flooding, Thunderstorms, Tropical Cyclones	1,3,5	Ongoing
Update: Major drainage projects along LA 3125, Humble St. and Magnolia have been completed. St. James Parish has completed a hydrology study on the east and west banks identifying needs throughout the parish for additional projects.							
SJ3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties.	FEMA, Local	1-5 years	St James Parish OHSEP	Flooding, Tropical Cyclones	1,2,3,5	Ongoing
Update: Mitigation needs are assessed and identified after every natural disaster. St. James Parish is seeking funds for assistance.							

SJ4: Safe Room Projects	Construction of a safe room for first responders located in St James Parish. Other locations will be identified based on funding availability.	FEMA, Local	1-10 years	St James Parish OHSEP	Thunderstorms, Tornadoes, Tropical Cyclones	1,5	Ongoing
Update: Completed safe room at the Convent Community Center on the east bank. Have identified other locations and trying to acquire funding.							
SJ5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, tornados, wildfire, sinkholes, thunderstorms (lightning, high wind, hail), subsidence and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA, Local	1-5 years	St James Parish OHSEP	Coastal Hazards, Drought, Expansive Soils, Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Storms	1,2,3,4, 5	Ongoing
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
SJ6: Generators for Continuity of Operations and Government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA, Local	1-5 years	St James Parish OHSEP	Coastal Hazards, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1	Ongoing
Update: Primary buildings for essential services have generators installed and completed. Secondary buildings are being identified for generator installations for continuity of operations during events.							
SJ7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA, Local	1-5 years	St James Parish OHSEP	Thunderstorms	1	Not Started/ Carried Over
SJ8: Pumping Station Projects	Elevate or flood proof pump stations; upgrade existing pump stations by installing block valves to prevent/protect against backwater	FEMA, Local	1-5 years	St James Parish OHSEP	Coastal Hazards, Flooding, Tropical Cyclone	1,3,5	Ongoing;
Update: Pumps changed from PTO Tractor driven pumps to fixed pumps at the Vacherie Weir. Current drainage studies are identifying pumping and structural protection needs throughout the parish for upcoming projects.							

SJ9: Warning Systems	Install audible and/or reverse 911 warning system(s)	FEMA, Local	1-5 years	St James Parish OHSEP	Sinkholes, Tornadoes, Wildfires	1,2,5	Completed
SJ10: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in the parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA, Local	1-5 years	St. James Parish OHSEP/Parish Engineer/ Parish Department of Public Works	Drought, Thunderstorms, Tornadoes, Tropical Cyclones	1	Ongoing
SJ11: Storm Surge Protection	East Bank Backwater / Levee Protection project with pumps. Provide storm surge protection to low-lying areas on the east bank of the Parish. Construct berms and flood gates to prevent backwater flooding from Lake Maurepas and Blind River.	FEMA, Local	1-5 years	St. James Parish OHSEP/Parish Engineer/ Parish Department of Public Works	Coastal Hazards, Tropical Cyclones	1,3,5	Ongoing
Update: USACE has identified the need for protections in St. James Parish, but not yet finalized the system to be put in place. St. James Parish is working with USACE to identify the structures and minimum elevation of structural protection.							
SJ12: Backwater Protection Structure	Construct small backwater protection structure with pumps at locations where necessary to prevent flooding in low-lying areas.	FEMA, Local	1-5 years	St. James Parish OHSEP/Parish Engineer/ Parish Department of Public Works	Coastal Hazards, Flooding, Tropical Cyclones	1,3,5	Ongoing
Update: Elevation of the Vacherie backwater protection structure has begun. Options for the East bank protection are currently being researched.							
SJ13: Adding Protective Structures	Add protective structures, such as dolphins or similar barriers in the Miss. River, to protect potable water intake structures from damages caused by vessels becoming unmoored during high wind hazard events and flooding.	FEMA, Local	1-5 years	St. James Parish OHSEP/Parish Engineer/ Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones,	1,3,5	Not Started/ Carried Over

SJ14: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local	1-5 years	Parish Floodplain Manager	Flooding, Tropical Cyclones	1,3,5	Ongoing
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
SJ15: Evacuation Routes	Develop in conjunction with local and state law enforcement officials and publish primary and alternate evacuation routes in the parish for those hazard events that would prompt evacuation of parish residents.	Parish Budget, DHS grant funding	1-2 years	St. James OHSEP/ Local and State Law Enforcement Offices/ Public Works Director/ Planning Director	Flooding, Tornadoes, Tropical Cyclones	1,2	Ongoing
Update: Completed engineering estimates on five different routes. Currently working with landowners and state to obtain right of ways. No funding has been identified for construction.							
SJ16: Bank Stabilization and Culvert Improvements	Provide bank stabilization and culvert improvements at various canal locations throughout the parish.	Parish Budget	1-5 years	St. James OHSEP/ Parish Engineer/ Parish Department of Public Works	Coastal Hazards, Flooding, Tropical Cyclones	1,3	Ongoing
Update: Areas along LA 3125 have been completed. Engineering has identified other needs throughout the parish and we will continue to address them as funding is available.							
SJ17: Community Rating System	Review the existing floodplain ordinance and evaluate ways to improve the parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating.	Parish Budget	1 year	Floodplain Manager	Flooding, Thunderstorms, Tropical Cyclones	1,2,3,4,5	Ongoing
Update: St. James Parish is currently going through rating and improvements to the CRS program are being identified.							

SJ18: Building Regulations	Adopt additional residential and commercial building regulations, which are in conformance with the State's building standards, and incorporate dry flood proofing techniques.	Parish Budget	1-2 years	Parish Floodplain Manager/ Planning Director	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1,2,3, 4,5	Ongoing
Update: Improvements are continuously identified and implemented.							
SJ19: Subdivision Regulations	Develop additional subdivision guidelines that would help reduce flooding, such as requiring proper drainage with adequate sloping; storm water retention ponds; dikes; levees and floodwalls if appropriate, and requiring freeboard above the Base Flood Elevation (BFE) in flood prone areas. Encourage new subdivision developments to install underground utilities, which would help reduce the chances of power outages, and incorporate these provisions into subdivision regulations which are part of the comprehensive planning process.	Parish Budget	1-2 years	Parish Floodplain Manager/ Planning Department/ Parish Department of Public Works	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones	1,2,3, 4,5	Ongoing
Update: St. James Parish ordinances are being reviewed for improvements.							
SJ20: Expansive Soil Ordinances	Develop and enforce city ordinances that will limit development on soils known to have problems with expansion in the planning area.	FEMA	1-5 Years	St James Parish Government	Expansive Soils	1,2	Not Started/ Carried Over
SJ21: Expansive Soil Data Collection and Tracking	Create a monitoring system in an effort to track losses due to expansive soil occurrences	FEMA	1-5 Years	St. James Parish Government	Expansive Soils	1,2	Not Started/ Carried Over

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST. JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 1	Lightning Mitigation
LEAD AGENCY	Director - St. James Parish OHSEP
SUPPORTING AGENCIES	Town of Lutcher, Town of Gramercy
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decreases the risk of damage or halting operations of critical facilities due to impacts from lightning.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST. JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 2	Expansive Soil Ordinances
LEAD AGENCY	St. James Parish Government President
SUPPORTING AGENCIES	St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Develop and enforce city ordinances that will regulate development on soils known to have problems with expansion in the planning area.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST. JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 3	Expansive Soil Data Collection and Tracking
LEAD AGENCY	Director - St. James Parish OHSEP
SUPPORTING AGENCIES	Mayor - Town of Lutcher, Mayor - Town of Gramercy
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Create a monitoring system in an effort to track losses due to expansive soil occurrences.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New; Carried Over/Not Started from 2016 Update
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 4	Natural Gas Supply for Generator Operations
LEAD AGENCY	Director - St James Parish OHSEP
SUPPORTING AGENCIES	Mayor Town of Gramercy, Mayor Town of Lutcher
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Establish infrastructure to provide natural gas supply to critical facilities which run on generator power when events impact the electric grid. The supply of natural gas to these facilities with generators will reduce downtime and continue their ability to provide critical services within the parish.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 5	Generator Procurement and Transfer Switch Installation for Critical Facilities
LEAD AGENCY	Director – St James Parish OHSEP
SUPPORTING AGENCIES	Director – Department of Public Works, Mayor – Town of Gramercy, Mayor – Town of Lutcher
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Procure and install generators and/or transfer switches at critical facilities
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Coastal Hazards, Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST. JAMES ACTION 6	Drainage Projects
LEAD AGENCY	Director – St James Parish Public Works
SUPPORTING AGENCIES	Director – St James Parish OHSEP, Mayor – Town of Gramercy, Mayor – Town of Lutcher
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	High
Action Description	Identify and execute draining projects within St James Parish to eliminate and minimize impacts to roadways during rain and surge events. Roadways in the parish must remain passable for public safety missions and citizens.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate impassable roadways or danger to citizens during rain and surge events.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 7	Procurement and distribution of all-weather radios
LEAD AGENCY	Director – St James Parish OHSEP
SUPPORTING AGENCIES	Director – St James Parish Public Works, Mayor – Town of Gramercy, Mayor – Town of Lutcher
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish/Local, other Federal Funds
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Purchase and distribution of weather radios for public, to be used for emergency notification
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Allows for redundant communications with citizens. Also provides citizens with method to access weather related information in the event of systems being down. Increases overall safety of the community
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 8	Addition of Protective Structures
LEAD AGENCY	Director – St James Parish Public Works
SUPPORTING AGENCIES	Director – St James Parish OHSEP, Parish Engineer
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Add protective structures, such as dolphins or similar barriers in the Mississippi River, to protect potable water intake structures from damages caused by vessels becoming unmoored during high wind hazard events and flooding.
Type of Mitigation Action	Structure and Infrastructure Project
How Action Aligns with Risk Reduction	Provides additional protection against loss of potable water during times of flooding and/or high winds
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 9	Water System Retrofitting
LEAD AGENCY	St. James Parish OHSEP
SUPPORTING AGENCIES	St. James Parish Department of Public Works; Parish Engineer
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Upgrading of the existing water delivery system to eliminate breaks/leaks and account for the natural expansion/compaction of soils through which the water system runs.
Type of Mitigation Action	Structure and Infrastructure Project
How Action Aligns with Risk Reduction	Improving water delivery systems reduces chance of loss through damaged infrastructure and ultimately saves water when it is needed most.
Current Status of Action	New
Hazard Addressed	Drought, Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 10	Incentivize Fire-Resistant Construction Techniques
LEAD AGENCY	St. James Parish Government
SUPPORTING AGENCIES	St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	• Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of St. James Parish a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 11	Adopt ordinances to restrict the use of public water resources for non-essential usage
LEAD AGENCY	St. James Parish Government
SUPPORTING AGENCIES	St. James Parish OHSEP; St. James Parish Department of Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Adopt ordinances to restrict the use of public water resources for non-essential usage
Type of Mitigation Action	Local Planning and Regulation
How Action Aligns with Risk Reduction	Restricting the use of public water resources for non essential usage during times of drought will allow the parish to allocate water resources to critical operations
Current Status of Action	New
Hazard Addressed	Drought

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 12	Incorporate and implement design-failure mode for power line design to allow lines to fall or fail in small sections rather than as a complete system to enable faster restoration.
LEAD AGENCY	St. James Parish Government
SUPPORTING AGENCIES	St. James Parish OHSEP; St. James Parish Department of Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Construct and install design-failure mode power lines.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Reducing or preventing further power outages and/or damages can significantly reduce the impacts on local government, residents, etc. throughout the Parish
Current Status of Action	New
Hazard Addressed	Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfire, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 13	Planting of Grasses and Other Vegetation to Provide Soil Stabilization and Erosion Control
LEAD AGENCY	St. James Parish Government
SUPPORTING AGENCIES	St. James Parish OHSEP; St. James Parish Department of Public Works
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Introduce grasses and other vegetation to high-risk areas impacted by coastal erosions/subsidence
Type of Mitigation Action	Natural Resource Protection
How Action Aligns with Risk Reduction	Introduction of marsh grass and other vegetation to high risk areas will help to slow erosion/subsidence rates and prevent further loss of land
Current Status of Action	New
Hazard Addressed	Coastal Hazards

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ST JAMES PARISH	
	DESCRIPTION
ST JAMES ACTION 14	Marsh and Wetland Restoration Programs
LEAD AGENCY	St. James Parish Government
SUPPORTING AGENCIES	St. James Parish OHSEP; CPRA
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP, Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Identify and implement marsh and wetland preservation and restoration projects/programs
Type of Mitigation Action	Natural Resource Protection
How Action Aligns with Risk Reduction	Marsh and wetland preservation and restoration will help to reduce the impacts associated with coastal erosion and subsidence, as well as storm surge from tropical cyclones
Current Status of Action	New
Hazard Addressed	Coastal Hazards, Tropical Cyclones

Additional Supporting Information:

Town of Gramercy Mitigation Actions

Previous Action Update

Town of Gramercy							
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Goal**	**Status**
G1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA, Local	2-5 years	Town of Gramercy Mayor's Office	Thunderstorms, Tornadoes, Tropical Cyclones	1,5	Ongoing
Update: Gramercy Water Plant completed, and other projects are awaiting funding.							
G2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA, Local	1-10 years	Town of Gramercy Mayor's Office	Flooding, Thunderstorms, Tropical Cyclone	1,3,5	Ongoing
Update: Completed culvert work in Hymel Subdivision, drainage canal debris clearing on Ferrera Canal etc.							
G3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Coastal Hazards, Flooding, Tropical Cyclones	1,2,3,5	Ongoing
Update: Mitigation needs are assessed and identified after every natural disaster. Gramercy is seeking funds for assistance.							

G4: Safe Room Projects	Construction of a safe room for first responders located in St James Parish. Other locations will be identified based on funding availability.	FEMA, Local	1-10 years	Town of Gramercy Mayor's Office	Thunderstorms, Tornadoes, Tropical Cyclones,	1,5	Not Started/ Carried Over
G5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for coastal hazards, drought, flooding, sinkholes, thunderstorms, tornadoes, tropical cyclones, wildfires, and winter weather hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Coastal Hazards, Drought, Expansive Soils, Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather	1,2,3,4,5	Ongoing;
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
G6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Coastal Hazards, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1	Ongoing;
Update: Gramercy Water Plant completed. Other buildings are currently being identified for generator installations for continuity of operations during events.							
G7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Thunderstorms	1	Not Started/ Carried Over
G8: Pumping station projects	Elevate or flood proof pump stations; upgrade existing pump stations by installing block valves to prevent/protect against backwater	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Coastal Hazards, Flooding, Tropical Cyclones	1,3,5	Not Started/ Carried Over

G9: Warning Systems	Install audible and/or reverse 911 warning system(s)	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office	Tornadoes Sinkholes, Wildfires	1,2,5	Not Started/ Carried Over
G10: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office/ St. James OHSEP	Drought, Thunderstorms, Tornadoes, Tropical Cyclones,	1	Not Started/ Carried Over
G11: Backwater Protection Structure	Construct small backwater protection structure with pumps at locations where necessary to prevent flooding in low-lying areas.	FEMA, Local	1-5 years	Town of Gramercy Mayor's Office / St. James OHSEP	Flooding, Tropical Cyclones	1,3,5	Not Started/ Carried Over
G12: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local	1-5 years	Town of Gramercy Mayor's Office/ St. James OHSEP	Flooding, Tropical Cyclones	1,3,5	Ongoing
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
G13: Bank Stabilization and Culvert Improvements	Provide bank stabilization and culvert improvements at various canal locations throughout the parish.	Parish Budget	1-5 years	Town of Gramercy Mayor's Office/ St. James OHSEP	Flooding, Tropical Cyclones	1,3,5	Not Started/ Carried Over
G14: Community Rating System	Review the existing floodplain ordinance and evaluate ways to improve the parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to	Parish Budget	1-5 years	Town of Gramercy Mayor's Office/ St. James OHSEP	Flooding, Thunderstorms, Tropical Cyclones	1,2,3,4,5	Not Started/ Carried Over

	improve the CRS rating.						
G15: Expansive Soil Ordinances	Develop and enforce city ordinances that will limit development on soils known to have problems with expansion in the planning area.	FEMA	1-5 Years	Town of Gramercy Mayor's Office/ St. James Parish Government	Expansive Soils	1,2	Not Started/ Carried Over
G16: Expansive Soil Data Collection and Tracking	Create a monitoring system in an effort to track losses due to expansive soil occurrences	FEMA	1-5 Years	Town of Gramercy Mayor's Office/ St. James Parish Government	Expansive Soils	1,2	Not Started/ Carried Over

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-10 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Construction of a safe room for first responders located in St James Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Allows for continued operations of essential personal to actively respond during a natural hazard event.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 2	Lightning Mitigation
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decreases the risk of damage or halting operations of critical facilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 3	Pumping Station Projects
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	High
Action Description	Elevate or flood proof pump stations; upgrade existing pump stations by installing block valves to prevent/protect against backwater.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Enhances pumping station capabilities, lowering the risk to people and facilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Coastal Hazards, Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 4	Warning Systems
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Install audible and/or reverse 911 warning system(s).
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Creates redundant communications, enhancing local capabilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Sinkholes, Tornadoes, Tropical Cyclones, Wildfires

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 5	Potable Water
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Create redundancy of potable water supply to critical facilities, especially hospitals in parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Bolstering the efficiency of the water supply can increase the resiliency of the community and reduce impacts on individuals and businesses.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 6	Backwater Protection Structure
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director – St James OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Construct small backwater protection structure with pumps at locations where necessary to prevent flooding in low-lying areas.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Provides additional protection from backwater flooding in vulnerable areas of Gramercy
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 7	Bank Stabilization and Culvert Improvement
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Provide bank stabilization and culvert improvements at various canal locations throughout the parish.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Coastal Hazards, Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 8	Community Rating System (CRS)
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness 3) Reduce repetitive flood losses in the parish 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Review the existing floodplain ordinance and evaluate ways to improve the parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Will provide better outreach to the community about risks and hazards. Will reduce losses.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 9	Expansive Soil Ordinances
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Develop and enforce city ordinances that will limit development on soils known to have problems with expansion in the planning area.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 10	Expansive Soil Data Collection and Tracking
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Create a monitoring system in an effort to track losses due to expansive soil occurrences.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 11	Natural Gas Supply for Generator Operations
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Establish infrastructure to provide natural gas supply to critical facilities which run on generator power when events impact the electric grid. The supply of natural gas to these facilities with generators will reduce downtime and continue their ability to provide critical services within the parish.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 12	Generator Procurement and Transfer Switch Installation for Critical Facilities
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Procure and install generators and/or transfer switches at critical facilities
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 13	Drainage Projects
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	High
Action Description	Identify and execute draining projects within Gramercy to eliminate and minimize impacts to roadways during rain and surge events. Roadways in Gramercy must remain passable for public safety missions and citizens.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate impassable roadways or danger to citizens during rain and surge events.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 14	Procurement and Distribution of All-Weather Radios
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	Director – St James OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish/Local, other Federal Funds
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Purchase and distribution of weather radios for public, to be used for emergency notification
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Allows for redundant communications with citizens. Also provides citizens with method to access weather related information in the event of systems being down. Increases overall safety of the community
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 15	Water System Retrofitting
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	St. James Parish Department of Public Works, Parish Engineer
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Upgrading of the existing water delivery system to eliminate breaks/leaks and account for the natural expansion/compaction of soils through which the water system runs.
Type of Mitigation Action	Structure and Infrastructure Project
How Action Aligns with Risk Reduction	Improving water delivery systems reduces chance of loss through damaged infrastructure and ultimately saves water when it is needed most.
Current Status of Action	New
Hazard Addressed	Drought, Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF GRAMERCY	
	DESCRIPTION
GRAMERCY ACTION 16	Incentivize Fire-Resistant Construction Techniques
LEAD AGENCY	Mayor – Town of Gramercy
SUPPORTING AGENCIES	St. James Parish OHSEP, St. James Parish Government
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	2) Identify and pursue preventative measures that will reduce future damages from hazards 5) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	• Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of St. James Parish a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Additional Supporting Information:

Town of Lutcher Mitigation Actions

Previous Action Update

Town of Lutcher							
Jurisdiction-Specific Action	**Action Description**	**Funding Source**	**Target Completion Date**	**Responsible Party, Agency, or Department**	**Hazard**	**Goal**	**Status**
L1: Building Retrofits	Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms.	FEMA, Local	2-5 years	Town of Lutcher Mayor's Office	Tornadoes, Thunderstorms, Tropical Cyclones	1,5	Ongoing
Update: Town Hall completed, and other buildings are awaiting funding to complete.							
L2: Drainage Improvement	Will relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Benefits: Relieves Parish or local government and property owners of the continual flooding problems, with closed roadways (loss of function). Saves public funds for road repairs, drainage ditch repairs, sandbagging and blocking of roadways during storm periods.	FEMA, Local	1-10 years	Town of Lutcher Mayor's Office	Flooding, Thunderstorms, Tropical Cyclones	1,3,5	Ongoing
Update: Finished Marquette Subdivision drainage improvements. Other projects are awaiting funding.							
L3: Mitigation of repetitive loss and severe repetitive loss properties and other hazard prone structures	Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flooding or other hazard prone properties. .	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Coastal Hazards, Flooding, Tropical Cyclones	1,2,3,5	Ongoing
Update: Mitigation needs are assessed and identified after every natural disaster. Lutcher is seeking funds for assistance.							

L4: Safe Room Projects	Construction of a safe room for first responders located in St James Parish. Other locations will be identified based on funding availability.	FEMA, Local	1-10 years	Town of Lutcher Mayor's Office	Thunderstorms, Tornadoes, Tropical Cyclones	1,5	Not Started/ Carried Over
L5: Education and Outreach	Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for Flooding, Tropical Cyclone, tornados, wildfire, sinkholes, thunderstorms (lightning, high wind, hail), subsidence and winter storm hazards as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities.	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Coastal Hazards, Drought, Expansive Soils, Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Wildfires, Winter Weather	1,2,3,4,5	Ongoing
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
L6: Generators for continuity of operations and government	Procurement and Installation of generators at public facilities to ensure continued operations during and after events.	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Coastal Hazards, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather	1	Ongoing
Update: Town Hall completed. Sewer Lift Stations and other locations are being identified for generator installations for continuity of operations during events.							
L7: Lightning Mitigation	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Thunderstorms	1	Not Started/ Carried Over
L8: Pumping station projects	Elevate or flood proof pump stations; upgrade existing pump stations by installing block valves to prevent/protect against backwater	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Coastal Hazards, Flooding, Tropical Cyclones	1,3,5	Not Started/ Carried Over

L9: Warning Systems	Install audible and/or reverse 911 warning system(s)	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office	Sinkholes, Tornadoes, Wildfires	1,2,5	Not Started/ Carried Over
L10: Potable Water	Create redundancy of potable water supply to critical facilities, especially hospitals in parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office /St. James Parish OHSEP	Drought, Thunderstorms, Tornadoes, Tropical Cyclones	1	Not Started/ Carried Over
L11: Backwater Protection Structure	Construct small backwater protection structure with pumps at locations where necessary to prevent flooding in low-lying areas.	FEMA, Local	1-5 years	Town of Lutcher Mayor's Office /St. James Parish OHSEP	Flooding, Tropical Cyclones,	1,3,5	Not Started/ Carried Over.
L12: Promote Flood Insurance	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the National Flood Insurance Program (NFIP).	Community Development Block Grant (CDBG), Flood Mitigation Assistance (FMA) Project Funds, Hazard Mitigation Grant Program (HMGP) Funds, Small Business Administration (SBA), U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local	1-5 years	Town of Lutcher Mayor's Office /St. James Parish OHSEP	Flooding, Tropical Cyclones,	1,3,5	Ongoing
Update: Public outreach activities are performed on a regular basis and continue to keep residents well informed and engaged through social media and printed media.							
L13: Bank Stabilization and Culvert Improvement	Provide bank stabilization and culvert improvements at various canal locations throughout the parish.	Parish Budget	1-5 Years	Town of Lutcher Mayor's Office /St. James Parish OHSEP	Flooding, Tropical Cyclones,	1,3,5	Not Started/ Carried Over

L14: Community Rating System	Review the existing floodplain ordinance and evaluate ways to improve the parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating.	Parish Budget	1-5 Years	Town of Lutcher Mayor's Office /St. James Parish OHSEP	Flooding, Thunderstorms, Tropical Cyclones	1,2,3,4,5	Not Started/ Carried Over
L15: Expansive Soil Ordinances	Develop and enforce city ordinances that will limit development on soils known to have problems with expansion in the planning area.	FEMA	1-5 Years	Town of Lutcher Mayor's Office /St. James OHSEP	Expansive Soils	1,2	Not Started/ Carried Over
L16: Expansive Soil Data Collection and Tracking	Create a monitoring system in an effort to track losses due to expansive soil occurrences	FEMA	1-5 Years	Town of Lutcher Mayor's Office /St. James Parish Government	Expansive Soils	1,2	Not Started/ Carried Over

New Mitigation Actions

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 1	Safe Room Projects
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-10 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Construction of a safe room for first responders located in St James Parish. Other locations will be identified based on funding availability.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Allows for continued operations of essential personal to actively respond during a natural hazard event.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 2	Lightning Mitigation
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Procurement and Installation of Lightning rods and surge protectors for public buildings to preserve life and property.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decreases the risk of damage or halting operations of critical facilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Thunderstorms

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 3	Pumping Station Projects
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	High
Action Description	Elevate or flood proof pump stations; upgrade existing pump stations by installing block valves to prevent/protect against backwater.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Enhances pumping station capabilities, lowering the risk to people and facilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Coastal Hazards, Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 4	Warning Systems
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Install audible and/or reverse 911 warning system(s).
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Creates redundant communications, enhancing local capabilities.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Sinkholes, Tornadoes, Tropical Cyclones, Wildfires

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 5	Potable Water
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Medium
Action Description	Create redundancy of potable water supply to critical facilities, especially hospitals in parish, and provide protection of potable water supply by acquisition/installation of backflow preventers at appropriate critical locations.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Bolstering the efficiency of the water supply can increase the resiliency of the community and reduce impacts on individuals and businesses.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
GRAMERCY ACTION 6	Backwater Protection Structure
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director – St James OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Local
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Construct small backwater protection structure with pumps at locations where necessary to prevent flooding in low-lying areas.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Provides additional protection from backwater flooding in vulnerable areas of Lutcher
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 7	Bank Stabilization and Culvert Improvement
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Provide bank stabilization and culvert improvements at various canal locations throughout the parish.
Type of Mitigation Action	Local Plans and Regulations Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Relieves property owners and local government of future damages and/or claims of homes and structures in flood prone areas.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Coastal Hazards, Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 8	Community Rating System (CRS)
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness 3) Reduce repetitive flood losses in the parish 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	Medium
Action Description	Review the existing floodplain ordinance and evaluate ways to improve the parish's "Community Rating System (CRS) rating to reduce the flood insurance premium. Choose from the variety of methods and projects available that can be implemented to improve the CRS rating.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Will provide better outreach to the community about risks and hazards. Will reduce losses.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 9	Expansive Soil Ordinances
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Develop and enforce city ordinances that will limit development on soils known to have problems with expansion in the planning area.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 10	Expansive Soil Data Collection and Tracking
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 2) Enhance public awareness and understanding of disaster preparedness
PRIORITY	Low
Action Description	Create a monitoring system in an effort to track losses due to expansive soil occurrences.
Type of Mitigation Action	Local Plans and Regulations
How Action Aligns with Risk Reduction	Decrease the risk of damage from expansive soils of critical facilities and vulnerable populations.
Current Status of Action	New (Carried Over/Not Started from 2016 Update)
Hazard Addressed	Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 11	Natural Gas Supply for Generator Operations
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Establish infrastructure to provide natural gas supply to critical facilities which run on generator power when events impact the electric grid. The supply of natural gas to these facilities with generators will reduce downtime and continue their ability to provide critical services within the parish.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 12	Generator Procurement and Transfer Switch Installation for Critical Facilities
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	High
Action Description	Procure and install generators and/or transfer switches at critical facilities
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate critical facility downtime, allow for continued operations of government and public safety services.
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 13	Drainage Projects
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director - St. James Parish OHSEP
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	FEMA/Federal/Other
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 3) Reduce repetitive flood losses in the parish 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards 5) Maintain and continue to improve Community Rating System (CRS) ratings throughout the parish
PRIORITY	High
Action Description	Identify and execute draining projects within Gramercy to eliminate and minimize impacts to roadways during rain and surge events. Roadways in Lutcher must remain passable for public safety missions and citizens.
Type of Mitigation Action	Structure and Infrastructure Projects
How Action Aligns with Risk Reduction	Decrease or eliminate impassable roadways or danger to citizens during rain and surge events.
Current Status of Action	New
Hazard Addressed	Flooding, Tropical Cyclones

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 14	Procurement and Distribution of All-Weather Radios
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	Director – St James OHSEP
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	HMGP/Parish/Local, other Federal Funds
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Purchase and distribution of weather radios for public, to be used for emergency notification
Type of Mitigation Action	Education and Awareness Programs
How Action Aligns with Risk Reduction	Allows for redundant communications with citizens. Also provides citizens with method to access weather related information in the event of systems being down. Increases overall safety of the community
Current Status of Action	New
Hazard Addressed	Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 15	Water System Retrofitting
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	St. James Parish Department of Public Works, Parish Engineer
TIMELINE	1-5 Years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, FEMA
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards
PRIORITY	Low
Action Description	Upgrading of the existing water delivery system to eliminate breaks/leaks and account for the natural expansion/compaction of soils through which the water system runs.
Type of Mitigation Action	Structure and Infrastructure Project
How Action Aligns with Risk Reduction	Improving water delivery systems reduces chance of loss through damaged infrastructure and ultimately saves water when it is needed most.
Current Status of Action	New
Hazard Addressed	Drought, Expansive Soils

Additional Supporting Information:

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS TOWN OF LUTCHER	
	DESCRIPTION
LUTCHER ACTION 16	Incentivize Fire-Resistant Construction Techniques
LEAD AGENCY	Mayor – Town of Lutcher
SUPPORTING AGENCIES	St. James Parish OHSEP, St. James Parish Government
TIMELINE	1-5 years
COST ESTIMATE	TBD
POSSIBLE FUNDING SOURCE(S)	Parish Budget, HMGP
ASSOCIATED GOALS	1) Identify and pursue preventative measures that will reduce future damages from hazards 4) Facilitate sound development in the parish to reduce or eliminate the potential impact of hazards
PRIORITY	Low
Action Description	• Encourage the use of non-combustible materials (i.e., stone, brick, and stucco) for new construction in wildfire hazard areas. • Using fire resistant roofing and building materials in remodels, upgrades, and new construction. • Encourage the use of functional shutters on windows.
Type of Mitigation Action	Local Planning and Regulations
How Action Aligns with Risk Reduction	Encouraging fire-resistant construction will provide the citizens of St. James Parish a safety measure to protect them against the possibility of a wildfire hazard.
Current Status of Action	New
Hazard Addressed	Wildfires

Additional Supporting Information:

Action Prioritization

During the prioritization process, the steering committee 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. Therefore, many projects were prioritized with these factors in mind. In addition, prioritization of the mitigation actions was performed based on the following economic criteria: i) whether the action can be performed with the existing parish resources; ii) whether the action requires additional funding from external sources; and iii) relative costs of the mitigation actions.

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 steering committee prioritized the possible activities that could be pursued. Steering committee members consulted appropriate agencies in order to assist with the prioritizations. The results were items that address the major hazards, are appropriate for those hazards, are cost-effective, and are affordable. On-going actions, as well as actions which will provide maximum benefit that can be undertaken by existing parish staff with or without additional external funding were given high priority. The actions with medium benefit and relatively low cost, political support, and public support but require additional funding from parish or external sources were given medium priority. The actions that require substantial funding from external sources and would result in limited benefit to the community were given low priority.

St. James Parish and the incorporated jurisdictions will implement and administer the identified actions based off the proposed timeframes and priorities for each reflected in the portions of this section where actions are summarized. The inclusion of any specific action item in this document does not commit the parish to implementation. Each action item will be subject to availability of staff and funding. Certain items may require regulatory changes or other decisions that must be implemented through standard processes. This plan is intended to offer priorities based on an examination of hazards.

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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 steering committee followed FEMA's hazard mitigation planning process per the FEMA Local Mitigation Planning Handbook. This planning process assured public involvement and the participation of interested agencies and private organizations. Documentation of the planning process for the updated plan is addressed in this section.

The St. James Parish Hazard Mitigation Plan Update

The St. James Parish Hazard Mitigation Plan Update process began in May 2021 with a series of emails, phone calls, meetings, and collaborations between the contractor (SDMI) and a diverse group of participating agencies and stakeholders. Update activities were intended to give each participating agency and stakeholder the opportunity to shape the plan to best fit their community's mitigation goals. Community stakeholders and the general public were invited to attend and contribute information to the planning process during specific time periods or meetings.

The table below details the meeting schedule and purpose for the planning process:

Date	Meeting or Outreach	Location	Public Invited	Purpose
5/27/2021	Kick Off Email	Email	No	Schedule kick off call with Parish OHSEP and SDMI Staff.
6/1/2021	Kick Off Meeting	Phone Conference	No	Discuss with the Parish OHSEP Director expectations and requirements of the project. Discuss meeting schedules, committee make up, and next steps.
6/29/2021	Initial Planning Meeting	Convent, LA	No	Discussion with St. James Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish.
8/24/2021	Risk Assessment Review	Convent, LA	Yes	Presentation of Risk Assessment Hazards and maps to Steering Committee.
8/24/2021	Public Meeting	Convent, LA	Yes	Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion.
5/27/2021 – 10/22/2021	Public Opinion Survey	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in St. James Parish. In addition, questions covered the methods and techniques preferred for reducing the risks and losses associated with these hazards. Survey Results: https://www.surveymonkey.com/results/SM-BJBCFFGY9/

Planning

The plan update process consisted of several phases:

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8
Plan Revision								
Data Collection								
Risk Assessment								
Public Input								
Mitigation Strategy								
Plan Review by GOHSEP and FEMA								
FEMA APA								
Plan Adoptions								
Final Plan Approval								

Coordination

The St. James Parish Office of Homeland Security and Emergency Preparedness (OHSEP) oversaw the coordination of the 2021 Hazard Mitigation Plan Update Steering Committee during the update process. The parish OHSEP was responsible for identifying members for the committee.

The Parish Director was responsible for inviting the steering committee and key stakeholders to planned meetings and activities via phone call and/or email. SDMI assisted the Parish 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 all meetings and outreach efforts during the update process.

Neighboring Community, Local and Regional Planning Process Involvement

From the outset of the planning process, the steering committee encouraged participation from a broad range of parish entities. The involvement of representatives from the city, state, and regional agencies provided diverse perspectives and mitigation ideas.

Formal participation in this plan includes but is not limited to the following activities:

- Participation in Hazard Mitigation planning meetings at the local and parish level
- Sharing local data and information with jurisdictions
- Incorporation of other planning documents, studies and efforts
- Action item development and action progress from 2016 update
- Risk Assessment review
- Plan document draft review
- Formal adoption of the Hazard Mitigation Plan

The Ascension Parish OHSEP Director was invited to attend the Kick Off, Initial Planning, and Risk Assessment Meetings for St. James Parish in an effort to coordinate mitigation efforts where possible as neighboring communities. The Ascension OHSEP Director was invited via email and phone call to participate in an effort to collaborate with neighboring communities. SDMI assisted St. James Parish with encouraging the collaboration with these neighboring communities via email by extending an invitation to the St. James Hazard Mitigation Plan Update Meetings.

As part of the coordination and planning process, the parish was provided the State Required Hazard Mitigation Plan Update Worksheet. The completed worksheets can be found in *Appendix E: State Required Worksheets*.

The 2021 Hazard Mitigation Plan Update Steering Committee consisted of representatives from the following parish, municipal or community stakeholders. Below is a detailed list of the 2021 HMPU Steering Committee:

St James Parish Hazard Mitigation Planning Committee			
Name	**Title**	**Agency**	**Email**
Eric Deroche	OHSEP Director	St James OHSEP	eric.deroche@stjamesla.com
Alvin St. Pierre	Councilman	St. James Parish	alvin.stpierre@stjamesla.com
Jason Amato	Councilman	St. James Parish	jason.amato@stjamesla.com
Ryan Louque	Councilman	St. James Parish	ryan.louque@stjamesla.com
Mason Bland	Councilman	St. James Parish	mason.bland@stjamesla.com
Clyde Cooper	Councilman	St. James Parish	clyde.cooper@stjamesla.com
Vondra Steib	Councilman	St. James Parish	vondra.steib@stjamesla.com
Donald Nash	Councilman	St. James Parish	donald.nash@stjamesla.com
Claude Louis	Major	St. James Parish Sheriff's Office	claude.louis@stjamessheriff.com
Dustin Poche	Lieutenant	St. James Parish Sheriff's Office	dustin.poche@stjamessheriff.com
Steve Nosacka	Mayor of Gramercy	Town of Gramercy	mayor@townofgramercy.com
Patrick St. Pierre	Mayor of Lutcher	Town of Lutcher	patrick@townoflutcher.com
Pete Dufresne	Parish President	St. James Parish	pete.dufresne@stjamesla.com
Rick Webre	Operations Director	St. James Parish	rick.webre@stjamesla.com
Ryan Larousse	Operations Assistant Director	St. James Parish	ryan.larousse@stjamesla.com
Ryan Donadieu	OHSEP Assistant Director	St. James Parish	ryan.donadieu@stjamesla.com
Jace Granier	OHSEP Planner	St. James Parish	jace.granier@stjamesla.com
Jeremy Martin	Chief Support Services	St. James Parish Hospital	jmartin@sjph.org
Jaye Ambrose	Director of Operations	St. James Parish School System	jpambrose@sjpsb.org
Ingrid Bergeron	DHR Director	St. James Parish	ingrid.bergeron@stjamesla.com
Jackie McCreary	Public Affaris Manager	Mosaic	jackie.mccreary@mosaicco.com
Jon Hotard	Operations Supervisor	Plains	jahotard@paalp.com
Sean O'Connor	President	North Vacherie Volunteer Fire	sean.oconnor@hhs.gov

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 St. James 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), Community Rating System, parish planning and zoning and building code enforcement.

St. James Parish 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 through the five-year review process described in *Appendix B: Plan Maintenance*. The primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update and implementation of any individual municipal plans that require specific planning and administrative tasks (e.g. risk assessment, plan amendments, ordinance revisions, capital improvement projects, etc.).

The members of the St. James Parish Hazard Mitigation Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their communities or agencies are consistent with the goals and actions of the Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in the parish. Existing plans, studies, and technical information were incorporated in the planning process. Examples include flood data from FEMA 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 2016 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below.

- Parish Master Plan
- Parish Emergency Operations Plan
- Stormwater Management Plan
- Flood Insurance Rate Maps
- State of Louisiana Hazard Mitigation Plan

Further information on the plans can be found in *Section 3: Capability Assessment*.

Meeting Documentation and Public Outreach Activities

The following pages contain documentation of the meetings and public outreach activities conducted during this hazard mitigation plan update.

Meeting #1: Hazard Mitigation Plan Update Kick-Off

Date: June 1, 2021

Location: Conference Call

Purpose: Discuss with the Parish OHSEP Director expectations and requirements of the project. Discuss meeting schedules, committee make up, and next steps.

Public Invitation: No

Meeting Invitees:

Name	Title	Agency
Eric Deroche	OHSEP Director	St James OHSEP
Ryan Donadieu	OHSEP Assistant Director	St. James Parish
Lauren Morgan	Associate Director	LSU-SDMI
Chris Rippetoe	HM Program Manager	LSU-SDMI

Meeting #2: Hazard Mitigation Plan Update Initial Planning Meeting

Date: Jun 29, 2021

Location: Convent, LA

Purpose: Discuss the expectations and requirements of the hazard mitigation plan update process and establish an initial project timeline with the Parish's Hazard Mitigation Plan Steering Committee. Assign each individual tasks related to the parish data collection for the plan update.

Public Invitation: No

Meeting Invitees:

Name	Title	Agency
Eric Deroche	OHSEP Director	St James OHSEP
Alvin St. Pierre	Councilman	St. James Parish
Jason Amato	Councilman	St. James Parish
Ryan Louque	Councilman	St. James Parish
Mason Bland	Councilman	St. James Parish
Clyde Cooper	Councilman	St. James Parish
Vondra Steib	Councilman	St. James Parish
Donald Nash	Councilman	St. James Parish
Claude Louis	Major	St. James Parish Sheriff's Office
Dustin Poche	Lieutenant	St. James Parish Sheriff's Office
Steve Nosacka	Mayor of Gramercy	Town of Gramercy
Patrick St. Pierre	Mayor of Lutcher	Town of Lutcher
Pete Dufresne	Parish President	St. James Parish
Rick Webre	Operations Director	St. James Parish
Ryan Larousse	Operations Assistant Director	St. James Parish
Ryan Donadieu	OHSEP Assistant Director	St. James Parish
Jace Granier	OHSEP Planner	St. James Parish
Jeremy Martin	Chief Support Services	St. James Parish Hospital
Jaye Ambrose	Director of Operations	St. James Parish School System
Ingrid Bergeron	DHR Director	St. James Parish
Jackie McCreary	Public Affaris Manager	Mosaic
Jon Hotard	Operations Supervisor	Plains
Sean O'Connor	President	North Vacherie Volunteer Fire

Meeting #3: Risk Assessment Presentation to Steering Committee

Date: August 24, 2021

Location: Convent, LA

Purpose: Presentation of Risk Assessment hazards and maps to Steering Committee.

Public Invitation: No

Meeting Invitees:

Name	Title	Agency
Eric Deroche	OHSEP Director	St James OHSEP
Alvin St. Pierre	Councilman	St. James Parish
Jason Amato	Councilman	St. James Parish
Ryan Louque	Councilman	St. James Parish
Mason Bland	Councilman	St. James Parish
Clyde Cooper	Councilman	St. James Parish
Vondra Steib	Councilman	St. James Parish
Donald Nash	Councilman	St. James Parish
Claude Louis	Major	St. James Parish Sheriff's Office
Dustin Poche	Lieutenant	St. James Parish Sheriff's Office
Steve Nosacka	Mayor of Gramercy	Town of Gramercy
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Pete Dufresne	Parish President	St. James Parish
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Jace Granier	OHSEP Planner	St. James Parish
Jeremy Martin	Chief Support Services	St. James Parish Hospital
Jaye Ambrose	Director of Operations	St. James Parish School System
Ingrid Bergeron	DHR Director	St. James Parish
Jackie McCreary	Public Affaris Manager	Mosaic
Jon Hotard	Operations Supervisor	Plains
Sean O'Connor	President	North Vacherie Volunteer Fire

Meeting #4: Public Meeting

Date: August 24, 2021

Location: Convent, LA

Purpose: The Public Meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process.

Public Invitation: Yes

Meeting Invitees:

Name	Title	Agency
Eric Deroche	OHSEP Director	St James OHSEP
Alvin St. Pierre	Councilman	St. James Parish
Jason Amato	Councilman	St. James Parish
Ryan Louque	Councilman	St. James Parish
Mason Bland	Councilman	St. James Parish
Clyde Cooper	Councilman	St. James Parish
Vondra Steib	Councilman	St. James Parish
Donald Nash	Councilman	St. James Parish
Claude Louis	Major	St. James Parish Sheriff's Office
Dustin Poche	Lieutenant	St. James Parish Sheriff's Office
Steve Nosacka	Mayor of Gramercy	Town of Gramercy
Patrick St. Pierre	Mayor of Lutcher	Town of Lutcher
Pete Dufresne	Parish President	St. James Parish
Rick Webre	Operations Director	St. James Parish
Ryan Larousse	Operations Assistant Director	St. James Parish
Ryan Donadieu	OHSEP Assistant Director	St. James Parish
Jace Granier	OHSEP Planner	St. James Parish
Jeremy Martin	Chief Support Services	St. James Parish Hospital
Jaye Ambrose	Director of Operations	St. James Parish School System
Ingrid Bergeron	DHR Director	St. James Parish
Jackie McCreary	Public Affaris Manager	Mosaic
Jon Hotard	Operations Supervisor	Plains
Sean O'Connor	President	North Vacherie Volunteer Fire

Meeting Announcement:

ST JAMES PARISH OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

PUBLIC MEETING ANNOUNCEMENT

St James Parish and its partners are seeking community input for the 2021 St James Parish Hazard Mitigation Plan update!

St James Parish OHSEP, in partnership with The Louisiana Governor's Office of Homeland Security and Emergency Preparedness and the Stephenson Disaster Management Institute at LSU, is leading the process to update the plan. The St James Parish Hazard Mitigation Multi-Jurisdictional Plan describes the **naturally occurring** risks to the region and outlines strategies to reduce these risks to save lives, reduce property damage, and lessen the impact of future disasters.

Are you passionate about building a more resilient future for your parish? Do you have questions about the natural hazards your community is at risk to? Please join us on Tuesday, August 24th for a public meeting to learn more about the plan and share your input on the risks and vulnerabilities that most impact you and your community.

Meeting Details:

Tuesday, August 24, 2021: Convent Community Center 10:00am – 11:00am

Residents of St James 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 the following link:

https://www.surveymonkey.com/r/StJameshm2021

The Parish appreciates your input. If you have questions, please contact: Eric Deroche, eric.deroche@stjamesla.com

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process
Location: Web survey
Public Invitation: Yes

As referenced in the *Mitigation Strategy* section of this document, an online public opinion survey of Livingston Parish residents was conducted between May and October 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in St. James 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. As of October 20, 2021, there have been 45 responses to the St. James Parish Hazard Mitigation Public Opinion Survey, with a completion rate of approximately 67%. Full survey results can be found here: https://www.surveymonkey.com/results/SM-BJBCFFGY9/

Outreach Activity #2: Incident Questionnaire

Date: August 24, 2021; Public Meeting Activity
Location: Public Meeting
Public Invitation: Yes

An incident/issue questionnaire was provided at the public meeting in an effort to collect additional information from residents of St. James Parish regarding hazard events and their localized impacts. While the information collected via the questionnaire was to be integrated into this planning document, there was no public turnout for the meeting, and subsequently no results could be collected. A copy of the incident questionnaire can be found on the next page.

ST. JAMES PARISH PUBLIC MEETING

PUBLIC ACTIVITY: INCIDENT/ISSUE QUESTIONNAIRE

1. HAZARD TYPE(S):

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

F. OTHER:

2. DESCRIBE INCIDENT OR ISSUE:

3. LOCATION:

A. CITY:

B. ADDRESS OR AREA:

C. LOCALIZED OR DISPERSED:

4. INTENSITY:

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

B. WIND STRENGTH

5. RE-OCCURRING OR ONE-TIME

A. IF RE-OCCURRING, HOW OFTEN?

6. WHAT TYPE OF INTERRUPTIONS DOES/DID THE INCIDENT OR ISSUE CAUSE? (BUSINESS CLOSURE, DAMAGE, EVACUATION, ETC.)

7. HOW LONG WAS THE INTERRUPTION (HOURS, DAYS, WEEKS, ETC.)?

8. HOW COULD THIS PROBLEM OR IMPACT BE PREVENTED, FIXED OR ALLEVIATED?

Outreach Activity #3: 2021 St. James Parish Hazard Mitigation Plan Public Review
Date: Ongoing
Location: SDMI Hazard Mitigation Website
Public Initiation: Yes

After an initial review by the St. James Parish Planning Committee was completed, the 2021 St. James Parish Hazard Mitigation Plan was made available for public review and comment. The plan was hosted on SDMI's Hazard Mitigation website: https://hmplans.sdmi.lsu.edu/Home/Parish/st-james

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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

The St. James Parish Hazard Mitigation Steering Committee will be responsible for monitoring, evaluating, and documenting the plan's progress throughout the year. Part of the plan maintenance process should include a system by which local governing bodies incorporate the HMP into the parish's other applicable plans. This process provides for continued public participation through the diverse resources of the parish to help in achieving the goals and objectives of the plan. Public participation will be achieved through availability of copies of HMP in parish public buildings and parish website. This section describes the whole update process which includes the following:

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

Responsible Parties

St. James Parish has developed a method to ensure that a regular review and update of the Hazard Mitigation Plan occurs. This will be the responsibility of the Steering Committee, which consists of representatives from governmental organizations, local businesses, and private citizens, who will be involved in the process of monitoring, evaluating and updating the plan. All committee members in this plan will remain active in the Steering Committee.

Although the people filling the positions may change from year to year, the parish and its stakeholders will have representatives on the steering committee. The future Steering Committee will continue to be comprised of the same job functions as currently evident in the Steering Committee. However, the decision of specific job duties will be left to the Parish OHSEP Director to be assigned as deemed appropriate.

Methods for Monitoring and Evaluating the Plan and Plan Evaluation Criteria

St. James Parish has developed a method to ensure monitoring, evaluating, and updating of the HMP occurs during the five-year cycle of the plan. The steering committee will become a permanent body and will be responsible for monitoring, evaluating, and updating of the plan. The steering committee meeting will be held annually in order to monitor, evaluate, and update the plan. The St. James Parish OHSEP Director will be responsible for conducting the annual Steering Committee meetings.

The lead person of the agency responsible for the implementation of a specific mitigation action will submit a progress report to the Director at least thirty days prior to the planning committee meeting. The progress report will provide project status monitoring to include the following: whether the project has started; if not started, reason for not starting; if started, status of the project; if the project is completed, whether it has eliminated the problem; and any changes recommended to improve the implementation of the project etc. In addition, the progress report will provide status monitoring on the plan evaluation, changes to the hazard profile, changes to the risk assessment, and public input on the Hazard Mitigation Plan updates and reviews.

Progress on the mitigation action items and projects will be reviewed during the annual planning committee meeting. The criteria that would be utilized in the project review will include the following:

1) Whether the action was implemented and reasons, if the action was not implemented

2) What were the results of the implemented action

3) Were the outcomes as expected, and reasons if the outcomes were not as expected

4) Did the results achieve the stated goals and objectives

5) Was the action cost-effective

6) What were the losses avoided after completion of the project

7) In case of a structural project, did it change the hazard profile

In addition to monitoring and evaluating the progress of the mitigation plan actions and projects, the mitigation plan is required to be maintained and monitored annually, and fully updated every five years. The annual maintenance, monitoring and evaluation of the plan will be conducted in the annual Steering Committee meeting. The Steering Committee will review each goal to determine their relevance to changing situations in the parish, as well as changes to state or federal policy, and to ensure that they are addressing current and expected conditions. The Steering Committee will evaluate if any change in hazard profile and risk in the parish occurred during the past year. In addition, the evaluation will include the following criteria in respect of plan implementation:

1) Any local staffing changes that would warrant inviting different members to the planning committee

2) Any new organizations that would be valuable in the planning process or project implementation need to be included in the planning committee

3) Any new or existing procedures that can be done more efficiently

4) Any additional ways to gain more diverse and widespread cooperation

5) Any different or additional funding sources available for mitigation planning and implementation

The HMP will be updated every five years to remain eligible for continued HMGP funding. The Steering Committee will be responsible for updating the HMP. The OHSEP Director will be the lead person for the HMP update. The HMP update process will commence at least one year prior to the expiration of the plan. The HMP will be updated after a major disaster if an annual evaluation of the plan indicates a substantial change in hazard profile and risk assessment in the parish.

Additionally, the public will be canvassed to solicit public input to continue St. James Parish's dedication to involving the public directly in review and updates of the Hazard Mitigation Plan. Meetings will be scheduled as needed by the plan administrator to provide a forum for which the public can express their concerns, opinions, and/or ideas about the plan. The plan administrator will be responsible for using parish resources to publicize the annual public meetings and maintain public involvement through the newspapers, radio, and public access television channels. Copies of the plan will be catalogued and kept at all appropriate agencies in the city government, as well as at the St. James Parish website.

The review by the Steering Committee and input from the public will determine whether a plan update is needed prior to the required five-year update.

Annual reports on the progress of actions, plan maintenance, monitoring, evaluation, incorporation into existing planning programs, and continued public involvement will be documented at each annual meeting of the committee and kept by the Parish OHSEP Director. The Steering Committee will work together as a team, with each member sharing responsibility for completing the monitoring, evaluation and updates. It is the responsibility of the Parish OHSEP Director for contacting committee members, organizing the meeting and providing public noticing for the meeting to solicit public input.

2021 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 2021 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

It is and has been the responsibility of the St. James Parish Hazard Mitigation Plan Steering Committee and participating jurisdictions to determine additional implementation procedures when appropriate. This may include integrating the requirements of the St. James Parish Hazard Mitigation Plan into each jurisdiction's planning documents, processes, or mechanisms as follows:

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Master Plans
- Capital Improvement Plans
- Economic Development Plans
- Emergency Operations Plans
- Continuity of Operations Plans
- Transportation Plan
- Community Wildfire Protection Plan

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the St. James Parish Hazard Mitigation Steering Committee and through the five-year review process described herein. 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 plans that require specific planning and administrative tasks (e.g. risk assessment, plan amendments, ordinance revisions, capital improvement projects, etc.). While there have been no instances of the mitigation strategy being incorporated into other planning documents since the adoption of the 2016 St. James Hazard Mitigation Plan, the committee members

recognize the importance of a holistic approach across all planning efforts and will use their standing to integrate the mitigation strategy outlined in the 2021 St. James Hazard Mitigation Plan into other planning documents when appropriate.

During the planning process for new and updated local planning documents at the parish and jurisdiction level, such as a risk assessment, comprehensive plan, capital improvements plan, or emergency operations plan, the jurisdictions will provide a copy of the Parish Hazard Mitigation Plan to the appropriate parties and recommend that all goals and strategies of new and updated local planning documents are consistent with and support the goals of the Parish Hazard Mitigation Plan and will not contribute to increased hazards.

Although it is recognized that there are many possible benefits to integrating components of this plan into other parish and jurisdiction planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan is deemed by the steering committee to be the most effective and appropriate method to ensure implementation of Parish and local hazard mitigation actions.

On behalf of the Towns of Gramercy and Lutcher, St. James Parish has the authority to incorporate the contents of the Hazard Mitigation Plan into the parish's existing regulatory mechanisms. Agreements are currently in place with jurisdictions to allow for the parish incorporation mechanisms to take place.

The following parish and local plans incorporate requirements of this HMP Update as follows through steering committee member and jurisdiction representation throughout the planning process as described above:

St. James Parish

Comprehensive Master Plan	Updated as needed	St. James Parish Government	✓
Capital Improvements Plan	Updated as needed	St. James Parish Government	✓
Continuity of Operations Plan	Updated as needed	St. James Parish OHSEP	✓
Local Emergency Operations Plan	Updated as needed	St. James Parish OHSEP	✓
Transportation Plan	Updated as needed	St. James Parish Government	✓
Community Wildfire Protection Plan	Updated as needed	St. James Parish OHSEP	✓

Town of Gramercy

Comprehensive Master Plan	Updated as needed	Gramercy Mayor's Office	✓
Continuity of Operations Plan	Updated as needed	St. James Parish OHSEP and Gramercy Mayor's Office	✓
Local Emergency Operations Plan	Updated as needed	St. James Parish OHSEP and Gramercy Mayor's Office	✓
Transportation Plan	Updated as needed	St. James Parish Government and Gramercy Mayor's Office	✓
Community Wildfire Protection Plan	Updated as needed	St. James Parish OHSEP and Gramercy Mayor's Office	✓

Town of Lutcher			
Comprehensive Master Plan	Updated as needed	Lutcher Mayor's Office	✓
Continuity of Operations Plan	Updated as needed	St. James Parish OHSEP and Lutcher Mayor's Office	✓
Local Emergency Operations Plan	Updated as needed	St. James Parish OHSEP and Lutcher Mayor's Office	✓
Transportation Plan	Updated as needed	St. James Parish Government and Lutcher Mayor's Office	✓
Community Wildfire Protection Plan	Updated as needed	St. James Parish OHSEP and Lutcher Mayor's Office	✓

Continued Public Participation

Public participation is an integral component of the mitigation planning process and will continue to be essential as this plan evolves over time. Significant changes or amendments to the plan require a public hearing prior to any adoption procedures. Other efforts to involve the public in the maintenance, evaluation, and revision process will be made as necessary. These efforts may include:

- Advertising meetings of the Mitigation Committee in the local newspaper, public bulletin boards, and/or city and county office buildings
- Designating willing and voluntary citizens and private sector representatives as official members of the Mitigation Committee
- Utilizing local media to update the public of any maintenance and/or periodic review activities taking place
- Utilizing city and Parish web sites to advertise any maintenance and/or periodic review activities taking place
- Keeping copies of the plan in appropriate public locations.

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Appendix C: Critical Facilities

Critical Facilities within the St. James Planning Area

St. James Parish Planning Area Critical Facilities											
Type	Name	Coastal Hazards	Drought	Expansive Soils	Flooding	Sinkholes	Thunderstorms	Tornadoes	Tropical Cyclones	Wildfires	Winter Weather
Government	St. James Parish Courthouse	X		X			X	X	X	X	X
	St. James Parish Government. E.O.C.	X		X			X	X	X	X	X
	St. James Parish Annex/courthouse	X		X			X	X	X	X	X
	St. James Parish Utilities	X		X			X	X	X	X	X
	Judicial Building	X		X			X	X	X	X	X
	Gramercy Town Hall	X		X			X	X	X	X	X
	Gramercy E.O.C	X		X			X	X	X	X	X
	Lutcher Town Hall	X		X			X	X	X	X	X
Fire & SAR	Gramercy Volunteer Fire Dept.	X		X			X	X	X	X	X
	Gramercy Volunteer Fire Dept.	X		X			X	X	X	X	X
	Lutcher Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X

	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	St. James Volunteer Fire Dept.	X		X			X	X	X	X	X
	South Vacherie Volunteer Fire Dept.	X		X			X	X	X	X	X
	South Vacherie Volunteer Fire Dept.	X		X			X	X	X	X	X
	Union-Convent Vol. Fire Dept.	X		X			X	X	X	X	X
	Union-Convent Vol. Fire Dept.	X		X			X	X	X	X	X
	Union-Convent Vol. Fire Dept.	X		X			X	X	X	X	X
	Union-Convent Vol. Fire Dept.	X		X			X	X	X	X	X
	Union-Convent Vol. Fire Dept.	X		X			X	X	X	X	X
	Vacherie Volunteer Fire Dept.	X		X		X	X	X	X	X	X
	Vacherie Volunteer Fire Dept.	X		X			X	X	X	X	X
	Vacherie Volunteer Fire Dept.	X		X			X	X	X	X	X
	Vacherie Volunteer Fire Dept.	X		X			X	X	X	X	X
Law Enforcement	St. James Parish Sheriff's Office	X		X			X	X	X	X	X
	St. James Parish Sheriff's Sub Office	X		X			X	X	X	X	X
	Gramercy Police Department	X		X			X	X	X	X	X

	Lutcher Police Department	X		X			X	X	X	X	X
	St. James Parish Detention Center	X		X			X	X	X	X	X
Public Health	Vacherie Health Unit	X		X			X	X	X	X	X
	St. James Parish Hospital	X		X			X	X	X	X	X
	St. James Parish Health Unit	X		X			X	X	X	X	X
Schools	Gramercy Elementary School	X		X	X		X	X	X	X	X
	Lutcher Elementary School	X		X			X	X	X	X	X
	Lutcher High School	X		X			X	X	X	X	X
	Paulina Elementary School	X		X			X	X	X	X	X
	St. James Career & Tech. Center	X		X			X	X	X	X	X
	St. Louis Academy	X		X	X		X	X	X	X	X
	St. James High School	X		X			X	X	X	X	X
	St. James Science & Math Acad.	X		X		X	X	X	X	X	X
	Sixth Ward Elementary School	X		X			X	X	X	X	X
	Vacherie Elementary School	X		X			X	X	X	X	X
	Vacherie Primary School	X		X	X		X	X	X	X	X

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Appendix D: Plan Adoption

St. James Parish

PASSED

The following resolution was offered and moved for adoption by Councilman St. Pierre and seconded by Councilman Amato:

RESOLUTION 22-03
ST. JAMES PARISH COUNCIL

A RESOLUTION ADOPTING THE PARISHWIDE HAZARD MITIGATION PLAN UPDATE

WHEREAS, the St. James Parish Government recognizes the threat that natural hazards pose to people and property within St. James Parish; and

WHEREAS, the St. James Parish Government has prepared a multi-hazard mitigation plan hereby known as the ST JAMES PARISH HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, St. James Parish Government has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS, ST JAMES PARISH HAZARD MITIGATION PLAN 2021 identifies goals and actions to reduce or eliminate long-term risk to people and property in St. James Parish from the impacts of future hazards and disasters; and

WHEREAS, St. James Parish Government is participating in the Hazard Mitigation Plan prepared by the St. James Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS, St. James Parish and local city representatives and governments have participated in the mitigation planning process;

WHEREAS, appropriate opportunity for input by public and community officials has been provided through meeting notices, open meetings and availability of draft documents;

WHEREAS, the Plan has been recommended for adoption by the steering committee;

WHEREAS, adoption of the Plan is required prior to further consideration for FEMA funding under the following programs:

- Pre-Disaster Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program

NOW, THEREFORE, BE IT RESOLVED that the St. James Parish Council does hereby adopt the St. James Parish Hazard Mitigation Plan Update.

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

YEAS:	Cooper, Amato, Bland, St. Pierre, Nash, and Etienne-Steib
NAYS:	None
ABSTAIN:	None
ABSENT:	Louque

And the resolution was declared adopted on this, the 5th day of January 2022.

Vondra Etienne-Steib
Council Chairwoman

Linda Hubbell
Secretary

Delivered to Parish President: 1-6-2022

Approved: 1-6-2022

Disapproved: _____

Parish President

Returned to Secretary on 1-6-2022

At 10:48 AM/PM

Received by Linda Hubbell

* * * * *

CERTIFICATE

I, Linda Hubbell, Secretary of the Council of the Parish of St. James, State of Louisiana, hereby certify that the foregoing is a true and correct copy of a resolution adopted by the St. James Parish Council in regular meeting held on the 5th day of January 2022.

Signed at Vacherie, Louisiana, this 6th day of January 2022.

Linda Hubbell
Secretary

(S E A L)

Town of Gramercy

RESOLUTION 01-2022

A RESOLUTION ADOPTING THE PARISHWIDE HAZARD MITIGATION PLAN UPDATE

WHEREAS, the Town of Gramercy recognizes the threat that natural hazards pose to people and property within St. James Parish and the Town of Gramercy; and

WHEREAS, the St. James Parish Government has prepared a multi-hazard mitigation plan hereby known as the ST JAMES PARISH HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Town of Gramercy has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides;

WHEREAS, ST JAMES PARISH HAZARD MITIGATION PLAN 2021 identifies goals and actions to reduce or eliminate long-term risk to people and property in St. James Parish and the Town of Gramercy from the impacts of future hazards and disasters; and

WHEREAS, Town of Gramercy is participating in the Hazard Mitigation Plan prepared by the St. James Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives;

WHEREAS, the Plan has been recommended for adoption by the steering committee;

WHEREAS, adoption of the Plan is required prior to further consideration for FEMA funding under the following programs: Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program, and Flood Mitigation Assistance Program.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND BOARD OF ALDERMEN, TOWN OF GRAMERCY, LOUISIANA, THAT:

SECTION 1. The ST JAMES PARISH HAZARDOUS MITIGATION PLAN 2021 is hereby adopted and Steven T. Nosacka, Mayor, is authorized to take all actions necessary for the Town to approve the ST JAMES PARISH HAZARD MITIGATION PLAN 2021.

A motion to adopt the above resolution was made by Alderman Calcagno, seconded by Alderman Louque and resulted in the following vote:

YEAS:	Brack, Calcagno, Louque, Wiggins, Woods
NAYS:	None
ABSENT:	None
ABSTAIN:	None

And the resolution was declared adopted on this the 10th of January, 2022.

***** CERTIFICATION *****

I, Amy O. St. Pierre, Clerk of the Town of Gramercy, Louisiana, do hereby certify that the above is a true and correct copy of a resolution duly adopted by the Mayor and Board of Aldermen of the Town of Gramercy, Louisiana, duly convened on the 10TH day of January 10, 2022.

Amy O. St. Pierre, Clerk

Town of Lutcher

The following resolution was offered by Alderman St. Pierre and seconded by Alderman Batiste:

RESOLUTION 22-03
TOWN OF LUTCHER

A RESOLUTION ADOPTING THE PARISHWIDE HAZARD MITIGATION PLAN UPDATE 2021

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

WHEREAS, the Town of Lutcher has prepared a multi-hazard mitigation plan hereby known as the ST JAMES PARISH HAZARD MITIGATION PLAN 2021 in accordance with the Disaster Mitigation Act of 2000. and

WHEREAS, the Town of Lutcher has participated in the process to prepare a DMA compliant Hazard Mitigation Plan based in the FEMA guidance available in the How to Guides.

WHEREAS, ST JAMES PARISH HAZARD MITIGATION PLAN 2021 identifies goals and actions to reduce or eliminate long-term risk to people and property in the Town of Lutcher from the impacts of future hazards and disasters; and

WHEREAS, the Town of Lutcher is participating in the Hazard Mitigation Plan prepared by the St. James Parish Government under the oversight of a Steering Committee comprised of Parish-Wide representatives.

WHEREAS, the Town of Lutcher has participated in the mitigation planning process.

WHEREAS, appropriate opportunity for input by public and community officials has been provided through meeting notices, open meetings and availability of draft documents.

WHEREAS, the Plan has been recommended for adoption by the steering committee.

WHEREAS, adoption of the Plan is required prior to further consideration for FEMA funding under the following programs:

- Pre-Disaster Mitigation
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program

NOW, THEREFORE, BE IT RESOLVED that the Board of Aldermen of the Town of Lutcher does hereby adopt the St. James Parish Hazard Mitigation Plan Update 2021.

This Resolution 22-03 having been submitted to a vote, the vote thereon, was as follows:

YEAS: Batiste, Manuel, St. Pierre
NAYS: None
ABSTAIN: None
ABSENT: George, Riley

As declared adopted on this 4th day of January 2022.

By: _____
Patrick P. St. Pierre, Mayor

ATTEST:
By: Vanessa C Roussel
Vanessa C. Roussel, LMMC, Town Clerk

APPROVED AS TO FORM:

By: Vanessa C Roussel
Vanessa C. Roussel, LMMC, Town Clerk

CERTIFICATE

I, Vanessa C. Roussel, LMMC Town Clerk for the Town of Lutcher, do hereby certify that the above is a true ad exact copy of adopted resolution 22-03 from the minutes of a regular meeting of the Mayor and Board of Aldermen duly called and held on January 4, 2022, and that the same is still in full force and effect.

Witness my hand and the seal of the Town of Lutcher on this 5th day of January 2022.

Vanessa C Roussel
Vanessa C. Roussel, LMMC
Town Clerk

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Appendix E: State Required Worksheets

During the planning process (*Appendix A: Planning Process*), the Hazard Mitigation Plan Update Steering Committee was provided state-required plan update process worksheets to be filled out. The worksheets were presented at the Initial Planning Meeting by SDMI as tools for assisting in the update of the Hazard Mitigation Plan, but also as a state requirement for the update. The plan update worksheets allowed for collection of information such as planning team members, community capabilities, community infrastructure, vulnerable populations and NFIP information. The following pages contain documentation of the state required worksheets.

Mitigation Planning Team

St James Parish Hazard Mitigation Planning Committee			
Name	**Title**	**Agency**	**Email**
Eric Deroche	OHSEP Director	St James OHSEP	eric.deroche@stjamesla.com
Alvin St. Pierre	Councilman	St. James Parish	alvin.stpierre@stjamesla.com
Jason Amato	Councilman	St. James Parish	jason.amato@stjamesla.com
Ryan Louque	Councilman	St. James Parish	ryan.louque@stjamesla.com
Mason Bland	Councilman	St. James Parish	mason.bland@stjamesla.com
Clyde Cooper	Councilman	St. James Parish	clyde.cooper@stjamesla.com
Vondra Steib	Councilman	St. James Parish	vondra.steib@stjamesla.com
Donald Nash	Councilman	St. James Parish	donald.nash@stjamesla.com
Claude Louis	Major	St. James Parish Sheriff's Office	claude.louis@stjamessheriff.com
Dustin Poche	Lieutenant	St. James Parish Sheriff's Office	dustin.poche@stjamessheriff.com
Steve Nosacka	Mayor of Gramercy	Town of Gramercy	mayor@townofgramercy.com
Patrick St. Pierre	Mayor of Lutcher	Town of Lutcher	patrick@townoflutcher.com
Pete Dufresne	Parish President	St. James Parish	pete.dufresne@stjamesla.com
Rick Webre	Operations Director	St. James Parish	rick.webre@stjamesla.com
Ryan Larousse	Operations Assistant Director	St. James Parish	ryan.larousse@stjamesla.com
Ryan Donadieu	OHSEP Assistant Director	St. James Parish	ryan.donadieu@stjamesla.com
Jace Granier	OHSEP Planner	St. James Parish	jace.granier@stjamesla.com
Jeremy Martin	Chief Support Services	St. James Parish Hospital	jmartin@sjph.org
Jaye Ambrose	Director of Operations	St. James Parish School System	jpambrose@sjpsb.org
Ingrid Bergeron	DHR Director	St. James Parish	ingrid.bergeron@stjamesla.com
Jackie McCreary	Public Affaris Manager	Mosaic	jackie.mccreary@mosaicco.com
Jon Hotard	Operations Supervisor	Plains	jahotard@paalp.com
Sean O'Connor	President	North Vacherie Volunteer Fire	sean.oconnor@hhs.gov

Capability Assessment

St. James Parish

Capability Assessment Worksheet - St. James Unincorporated		
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.		
Plans	**Yes / No**	**Comments**
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	Yes	Now have a Plan
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	Yes	
Other plans (redevelopment, recovery, coastal zone management)	Yes	
Building Code, Permitting and Inspections	**Yes / No**	**Comments**
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances	**Yes / No**	**Comments**
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	Yes	
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	
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff	**Yes / No**	**Comments**
Chief Building Official	Yes	
Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	Yes	
Grant Writer	Yes	
Other	No	
Technical	**Yes / No**	**Comments**
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	
Hazard Data & Information	Yes	
Grant Writing	Yes	
Hazus Analysis	Yes	
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	
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	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	
Other	No	

Town of Gramercy

Capability Assessment Worksheet – Town of Gramercy		
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.		
Plans	**Yes / No**	**Comments**
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	Yes	
Other plans (redevelopment, recovery, coastal zone management)	Yes	
Building Code, Permitting and Inspections	**Yes / No**	**Comments**
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances	**Yes / No**	**Comments**
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	Yes	
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	
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff	**Yes / No**	**Comments**
Chief Building Official	Yes	
Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	Yes	
Grant Writer	Yes	
Other	No	
Technical	**Yes / No**	**Comments**
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	
Hazard Data & Information	Yes	
Grant Writing	Yes	
Hazus Analysis	Yes	
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	
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	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	
Other	No	

Town of Lutcher

Capability Assessment Worksheet – Town of Lutcher		
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.		
Plans	**Yes / No**	**Comments**
Comprehensive / Master Plan	Yes	
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	
Continuity of Operations Plan	Yes	
Transportation Plan	Yes	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	Yes	
Other plans (redevelopment, recovery, coastal zone management)	Yes	
Building Code, Permitting and Inspections	**Yes / No**	**Comments**
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	
Fire Department ISO/PIAL rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances	**Yes / No**	**Comments**
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	Yes	
Other	No	

Administration and Technical		
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Administration	**Yes / No**	**Comments**
Planning Commission	Yes	
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	Yes	
Staff	**Yes / No**	**Comments**
Chief Building Official	Yes	
Floodplain Administrator	Yes	
Emergency Manager	Yes	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	Yes	
Grant Writer	Yes	
Other	No	
Technical	**Yes / No**	**Comments**
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	
Hazard Data & Information	Yes	
Grant Writing	Yes	
Hazus Analysis	Yes	
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	
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	
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	
Natural Disaster or safety related school program	Yes	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	Yes	
Other	No	

Building Inventory

Parish and Jurisdiction Owned Building Information in the St. James Parish Planning Area								
St. James Unincorporated								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
St. James Parish Courthouse	Parish Administrative Office/ Sheriff's Office/ Administrative Office	5800 Highway 44	Convent	29.9943112W	90.817299N	$5,000,000	1971	Concrete
St. James Parish Gov. E.O.C.	Parish Emergency Operations Center and Administrative Office/911	5153 Canatella St.	Convent	29.9943116W	90.817299N	$2,500,000	1985	Concrete
St. James Parish D.H.R.	Parish Department of Human Resources and Administrative Office	5153 Canatella St.	Convent	29.99431156W	90.817299N	$3,750,000	1984	Concrete
St. James Parish Detention Ctr.	Parish Jail housing facility	5800 Highway 44	Convent	29.99431156W	90.817299N	$4,250,000	1988	Concrete
St. James Parish Annex/Courthouse	Parish Annex Administrative Office/ Sheriff's Substation	2631 Highway 20	Vacherie	29.993842W	90.724988N	$15,000,000	1971	Brick
West Bank Reception Center	Parish Public Building/open for rent/ holding events	Highway 18	Vacherie	30.012387W	90.717392N	$800,000	1979	Metal/ Brick
Magnolia 6th District Center/park	Parish Public Building/open for rent/ holding events	2205 Church St.	Vacherie	30.012387W	90.717392N	$445,000	2011	Metal
St. James 5th District Center/park	Parish Public Building/open for rent/holding events	7260 Park St.	St. James	30.049839W	90.848756N	$234,800	1990	Concrete
Paulina Park	Parish Recreational Park/Pavilion	3360 Sugar House St.	Paulina	30.029666W	90.738206N	$316,000	2012	Concrete/Wood/Metal
South Vacherie Park	Parish Recreational Park/Pavilion	13271 Jake Gravois St.	Vacherie	29.940083W	90.695248N	$335,000	2012	Wood/Metal
St. James High School	Public School	22187 Hwy 20	St. James	29.963673W	90.711400N			Brick
St. Louis Academy	Public School	8184 Villavaso St.	St. James	30.023052W	90.86854N			Brick
Vacherie Elementary School	Public School	13440 Highway 644	Vacherie	29.945363W	90.682802N			Brick

Vacherie Primary School	Public School	19177 Highway 643	Vacherie	29.930041W	90.668468N			Brick
St. James Science & Math Acad.	Public School	3125 Valcour Aime	Vacherie	30.004249W	90.753655N			Brick
Paulina Elementary School	Public School	2756 Highway 44	Paulina	30.108105W	90.873432N			Concrete/Brick
St. Peter Chanel Catholic School	Parochial School	2590 Highway 44	Paulina	30.056302W	90.575771N			Concrete/Brick
6th Ward Elementary School	Public School	3245 Valcour Aime	Vacherie	30.003394W	90.753655N			Concrete/Metal
Union-Convent Vol. Fire Dept.	Public Volunteer Fire Department	Highway 44	Convent	30.052773W	90.83631N			Metal
Vacherie Volunteer Fire Dept.	Public Volunteer Fire Department	2433 Highway 18	Vacherie	30.006516W	90.731854N			Metal
Vacherie Volunteer Fire Dept.	Public Volunteer Fire Department	4021 Highway 18	Vacherie	29.999231W	90.787601N			Metal
Vacherie Volunteer Fire Dept.	Public Volunteer Fire Department	6041 Highway 18	St. James	30.035165W	90.682461N			Metal
Vacherie Volunteer Fire Dept.	Public Volunteer Fire Department	8120 Kingview St.	St. James	30.058456W	90.867638N			Metal
St. James Volunteer Fire Dept.	Public Volunteer Fire Department	3054 Highway 44	Paulina	30.28218W	90.921411N		1972	Metal
St. James Volunteer Fire Dept.	Public Volunteer Fire Department	32122 Highway 642	Paulina	30.108105W	90.873432N		1981	Metal
St. James Volunteer Fire Dept.	Public Volunteer Fire Department	4062 Highway 44	Paulina	30.131195W	90.917849N		2005	Metal
South Vacherie Volunteer F/D	Public Volunteer Fire Department	29170 Highway 644	Vacherie	29.939041W	90.704603N			Brick
South Vacherie Volunteer F/D	Public Volunteer Fire Department	19455 Highway 643	Vacherie	29.939376W	90.680785N			Brick
St. James Parish S/O Range	Law Enforcement Building	29449 Sheriff Range Rd.	Vacherie	29.981762W	90.70868N	1000000	2006	Concrete
St. James O.E.P. Warehouse	Emergency Operations Facility	5787 Highway 44	Convent	29.9943112W	90.817299N	364200	2015	Metal
Welcome Senior Center	Parish Senior Citizens Building	7140 Park Ave.	St. James	30.049727W	90.848884N	330000	1997	Metal
Romeville Senior Center	Parish Senior Citizens Building	8188 Romeville St.	Convent	30.068559W	90.840602N	10000	1974	Brick

Vacherie Senior Center	Parish Senior Citizens Building	29166 Health Unit St.	Vacherie	29.96533W	90.713272N	225000	1984	Brick/Metal
Vacherie Library	Parish Public Library Building	2593 Hwy.20	Vacherie	29.994623W	90.725288N	2302000	2003	Brick
West Bank Water Treatment Plant	Parish Water Work Building	3261 La. Hwy. 18	Vacherie	30.006827W	90.772235N	1100000	1955	Concrete
East Bank Water Treatment Plant	Parish Water Work Building	51288 La. 44	Convent	30.071063W	90.892764N	800000	1955	Concrete
St. James Parish Utilities	Parish Utilities Administrative Office	2600 La. 20	Vacherie	29.9947171W	90.725494N	400000	1955	Brick
St. James Operation Center	Parish Works Equipment Building	22176 La. 20	Vacherie	29.964672W	90.714045N	350000		Metal
Radio Tower-192	Communications/911	5153 Canatella St.	Convent	29.9943446W	90.817299N	400000	1987	Steel/Metal
NEW-Communications Tower 400	Communications/911	5153 Canatella St.	Convent	29.9943446W	90.817299N	1200000	2012	Steel/Metal
Parish-Emergency Warning Syst.	Communications/911	5153 Canatella St.	Convent	29.9943446W	90.817299N	992900	1989	Hardened Building
E.O.C Server/Core Network	Communications/911	5153 Canatella St.	Convent	29.9943446W	90.817299N	225000	2011	Hardened Building
Judicial Building	Court House/Judges and Administration Offices	5816 La. Hwy. 44	Convent	29.9943446W	90.817299N	3250000	2011	Steel Frame/Metal Panels
Water Tank-South Vacherie	Water Tower	19460 Hwy. 643	Vacherie	29.939138W	90.694158N	500000	1968	Steel/Metal
Water Tank-South Vacherie	Water Tower	23160 Hwy. 20	Vacherie	30.002369W	90.728148N	150000	1955	Steel/Metal
Water Tank-North Vacherie	Water Tower	2185 Hwy. 20	Vacherie	30.004977W	90.729129N	150000	1955	Steel/Metal
Water Tank-Welcome	Water Tower	9119 Hwy. 18	St. James	30.060416W	90.897563N	150000	1955	Steel/Metal
Water Tank-Union	Water Tower	9108 Water Tower St.	Convent	30.072902W	90.895338N	200000	1955	Steel/Metal
Water Tank-Convent	Water Tower	3160 Hwy.642	Paulina	30.032792W	90.744178N	200000	1955	Steel/Metal
Purification-Radio Tower	Utilities	3261 La. 18	Vacherie	30.006021W	90.770035N	30000	2010	Steel/Metal
Vacherie Health Unit	Medical	29170 Health Unit St.	Vacherie	29.993395W	90.724686N	960000	2011	Brick/ Metal
West Bank Maintenance Buildings	Parish Works Equipment Building	22176 Hwy. 20	Vacherie	29.964672W	90.714045N	350000		Metal

West Bank Radio Tower	Communications	22176 Hwy. 20	Vacherie	29.964672W	90.714045N	30000		Steel/Metal
Convent Center/ Community Center		5775 LA Hwy 44	Convent	29.992840W	90.816859N		2015	Brick/Metal
St. James Volunteer Fire Dept. Station 13	Public Volunteer Fire Department	1988 Jefferson	Lutcher	30.038852W	90.693713N			Brick/Metal
St. James Volunteer Fire Dept. Station 15	Public Volunteer Fire Department	1502 Airline Hwy.	Gramercy	30.07301W	90.704783N			Metal
St. James Volunteer Fire Dept. Station 16	Public Volunteer Fire Department	124 N. Montz St.	Gramercy	30.048584W	90.689489N			Brick/Metal
Union-Convent Vol. Fire Dept. Convent Station 1	Public Volunteer Fire Department	5171 Canatella St.	Convent	29.995215W	90.81697N			Metal
Union-Convent Vol. Fire Dept. Convent Station 2	Public Volunteer Fire Department	6100 Hwy 44	Convent	29.997823W	90.825597N			Metal
Union-Convent Vol. Fire Dept. Union Station 1	Public Volunteer Fire Department	9790 Hwy 44	Convent	30.077746W	90.899995N			Metal
Union-Convent Vol. Fire Dept. Union Station 2	Public Volunteer Fire Department	9918 Hwy 44	Convent	30.08147W	90.902189N			Metal
Lutcher Senior Center	Parish Senior Citizens Building	2631 Louisiana Ave.	Lutcher	30.047721W	90.700397N	870000	2003	Brick
Lutcher Library	Parish Public Library Building	1879 West Main St.	Lutcher	30.04553W	90.693188N	2400000	1971	Brick
Lutcher Park	Parish Recreational Park/Pavilion	2545 Louisiana Ave.	Lutcher	30.058976W	90.706663N	505,000	2011	Concrete/ Wood/ Metal

Town of Gramercy								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Gramercy Park A & B	Parish Recreational Park/Pavilion	412 N. Ezidore Ave.	Gramercy	30.0544556W	90.692372N	$794,800	1963	Concrete/ Wood/Metal
Gramercy Town Hall	Administrative Office	120 North Montz Ave.	Gramercy	30.048353W	90.689583N			Brick
Gramercy E.O.C	Emergency Operations Center/ Office	111 East Main St.	Gramercy	30.047647W	90.689196N			Brick/Metal
Gramercy Elementary School	Public School	601 E. 2nd St.	Gramercy	30.082077W	90.698423N			Concrete
St. James Volunteer Fire Dept.	Public Volunteer Fire Department	120 North Montz Ave.	Gramercy	30.048353W	90.689583N			Metal
Gramercy Volunteer Fire Dept.	Public Volunteer Fire Department	407 East Jefferson Hwy.	Gramercy	30.043709W	90.685849N			Metal
Gramercy Volunteer Fire Dept.	Public Volunteer Fire Department	1502 North Airline Ave.	Gramercy	30.073981W	90.705418N			
Gramercy Water Treatment Plant	Town Water Work Building	407 East Jefferson Hwy.	Gramercy	30.043926W	90.685494N			Concrete
Gramercy Police Department	Town Police Headquarters Building/Emergency Operations Center	111 East Main St.	Gramercy	30.047435W	90.689490N			Brick
Sewer Lift Station	Sewer pump station	Railroad Ave.	Gramercy	30.045454W	90.689375N			Brick
Sewer Lift Station	Sewer pump station	Golden Grove	Gramercy	30.05189W	90.6864N			Brick
Sewer Lift Station	Sewer pump station	298 Mobile Ln.	Gramercy	30.052892W	90.689678N			Brick
Sewer Lift Station	Sewer pump station	1379 N Airline Ave.	Gramercy	30.072359W	90.705855N			Brick

Town of Lutcher								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
Lutcher Park	Parish Recreational Park/Pavilion	2545 Louisiana Ave.	Lutcher	30.058976W	90.706663N	505,000	2011	Concrete/ Wood/ Metal
Lutcher Town Hall	Administrative Office	2500 Louisiana Ave.	Lutcher	30.04787W	90.700483N			Brick
Lutcher Elementary School	Public School	2461 North King Ave.	Lutcher	30.044972W	90.704131N			Brick
Lutcher High School	Public School	1910 West Main St.	Lutcher	30.045121W	90.69396N			Brick
St. James Career & Tech. Center	Public School	1410 Buddy Whitney St.	Lutcher	30.046755W	90.700741N			Brick
Lutcher Volunteer Fire Dept.	Public Volunteer Fire Department	2437 Louisiana Ave.	Lutcher	30.046755W	90.700741N			Metal
Lutcher Water Treatment Plant	Town Water Works Building	1143 Lutcher Ave.	Lutcher	30.039466W	90.694484N			Brick
Sewer Lift Station	Sewer Lift Station	1430 Lutcher Ave.	Lutcher	30.046351W	90.698535N			Brick
Sewer Lift Station	Sewer Lift Station	1813 Lutcher Ave.	Lutcher	30.05548W	90.704624N			Brick
Sewer Lift Station	Sewer Lift Station	2701 N Courseault St.	Lutcher	30.049163W	90.709283N			Brick
Lutcher Police Department	Law Enforcement	2500 Louisiana Ave.	Lutcher	30.047691W	90.699976N			Brick

Vulnerable Populations

Vulnerable Populations Worksheet					
St. James Parish Planning Area					
All Hospitals (Private or Public)	**Address**	**City**	**Zip Code**	**Latitude**	**Longitude**
Vacherie Health Unit	29170 Health Unit Street	Vacherie, La.	70090	29.993395W	90.724686N
St. James Parish Hospital	1645 Lutcher Avenue	Lutcher, La.	70071	30.051990W	90.703531N
Beacon Behavioral Hospital	2471 Louisiana Avenue	Lutcher, La.	70071	30.04657W	90.700206N
Nursing Homes (Private or Public)	**Address**	**City**	**Zip Code**	**Latitude**	**Longitude**
Chateau St. James	1980 Jefferson Highway	Lutcher, La.	70071	30.039426W	90.693533N
Mobile Home Parks	**Address**	**City**	**Zip Code**	**Latitude**	**Longitude**
Sugar Hill RV Park	9450 La. State Hwy. 44	Convent, La.	70723	30.067561W	90.882643N
St. James RV Park	10463 Northline Street	St. James, La.	70086	30.89547W	90.934126N
Poche Plantation RV Park	6554 Highway 44	Convent, La.	70723	30.012630W	90.826792N
E & P Deroche Trailer Park	1362 North Ezidore Avenue	Gramercy, La.	70052	30.071423W	90.702289N
Millet Trailer Park	319 East Airline Highway	Gramercy, La.	70052	30.075567W	90.703462N
Mobile Lane Trailer Park	Mobile lane,	Gramercy, La.	70052	30.047424W	90.689813N
Cherry Street Trailer Park	225 Cherry Street	Gramercy, La.	70052	30.046695W	90.685243N

National Flood Insurance Program (NFIP)

National Flood Insurance Program (NFIP)			
	St. James Unincorporated	**Town of Gramercy**	**Town of Lutcher**
Insurance Summary			
How many NFIP polices are in the community? What is the total premium and coverage?	1048 Polices are in the community/ total premium & coverage $284,989.000	240 Polices are in the community/ total premium & coverage $63,627,000	255 polices are in community/ total premium and coverage $72,047,400
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?	145 claims paid in community/ total amount of paid claims, $2,527.877, and, 126 claims for substantial damage for $489,205	27 paid claims in community/ total amount of paid claims, $1,275,587, and 0 claims for substantial damage.	37 claims paid in community/ total amount of paid claims $1,510,513 and 2 claims for substantial damage for $107,781
How many structures are exposed to flood risk within the community?	465	Rely on Parish flood risk assessment	Rely on Parish flood risk assessment.
Describe any areas of flood risk with limited NFIP policy coverage.	None	None	None
Staff Resources			
Is the Community FPA or NFIP Coordinator certified?	Yes	Yes (Rely on Parish)	Yes (Rely on Parish)
Is flood plain management an auxiliary function?	No	No	No
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Public Outreach, Flood Plain Determinations, GIS, Permit Review, Inspections, EC Requirements	Flood plan determinations: permit review, GIS, education and outreach, inspects; engineering capability. (Rely on Parish)	Flood plan determinations: permit review, GIS, education and outreach, inspects; engineering capability. (Rely on Parish)
What are the barriers to running an effective NFIP program in the community, if any?	Public Outreach and Awareness, Technical Resources	Public Awareness	Public Awareness
Compliance History			
Is the community in good standing with the NFIP?	Yes	Yes (Rely on Parish)	Yes (Rely on Parish)
Are there any outstanding compliance issues (i.e., current violations)?	No	No	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)?	Ongoing at this time	October, 2012 (Rely on Parish)	October, 2012 (Rely on Parish)
Is a CAV or CAC scheduled or needed? If so when?	Ongoing at this time	Yes, October (Rely on Parish)	Yes, October (Rely on Parish)
Regulation			
When did the community enter the NFIP?	3/8/1974	2/17/1979	2/4/1974
Are the FIRMs digital or paper?	Digital	Both (Rely on Parish)	Both
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Yes	Yes Requires 1' freeboard (Rely on Parish)	Yes, Requires 1' freeboard (Rely on Parish)
Community Rating System (CRS)			
Does the community participate in CRS?	Yes	No	Yes (Rely on Parish)
What is the community's CRS Class Ranking?	7	N/A	7 (Rely on Parish)
Does the plan include CRS planning requirements?	Yes	N/A	Yes