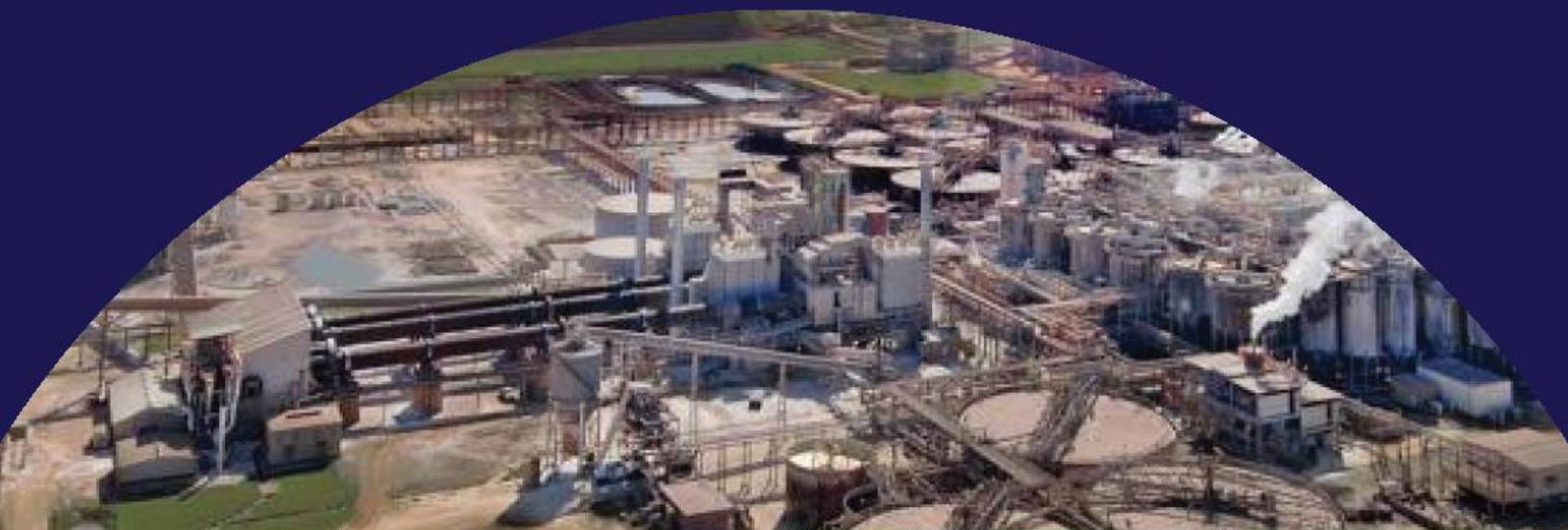


# 2021 ST. JOHN THE BAPTIST PARISH SINGLE JURISDICTION HAZARD MITIGATION PLAN

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# ST. JOHN THE BAPTIST PARISH HAZARD MITIGATION PLAN UPDATE

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

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## 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. John the Baptist 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. John the Baptist Parish 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. John the Baptist Parish Hazard Mitigation Plan is a single jurisdictional plan that covers the unincorporated communities of LaPlace, Reserve, Garyville, and Edgard, among others. Multi-Jurisdictional requirements are not required nor addressed in this plan update.

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. John the Baptist 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. John the Baptist Parish and its communities with a blueprint for reducing the impacts of these natural hazards on people and property.

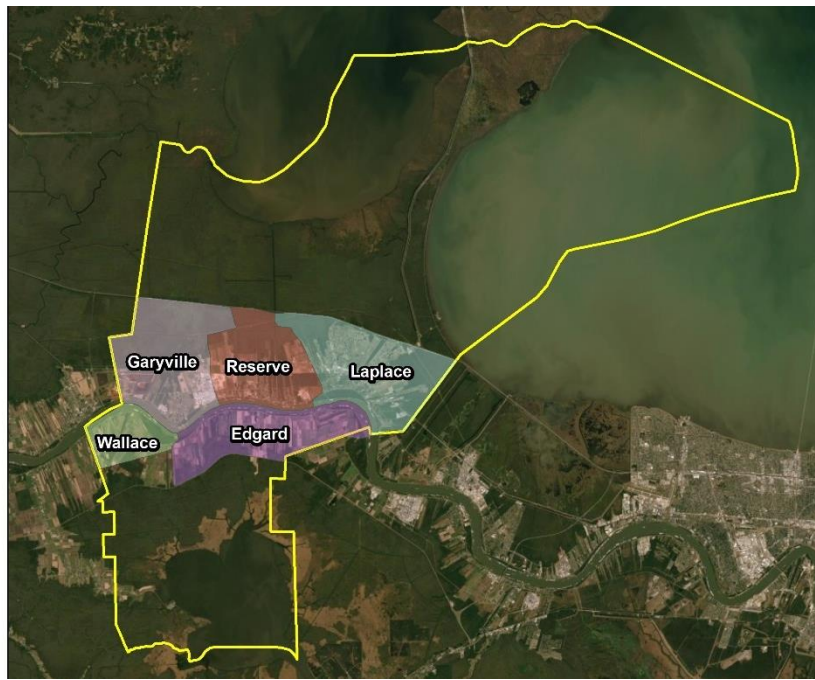
## Geography, Population and Economy

### Geography

St. John the Baptist Parish is located in south-central Louisiana along the Mississippi River, approximately 40 miles southeast of Baton Rouge and approximately 25 miles northwest of New Orleans (*Figure 1-1*). Lake Maurepas and Manchac Pass form the watery border between St. John the Baptist Parish and Livingston and Tangipahoa Parishes to the north. To the east is St. Charles Parish, along with Lake Pontchartrain. Lac Des Allemands forms the southern border with Lafourche Parish, and to the west is St. James Parish. St. John the Baptist Parish is divided into two sections by the Mississippi River, with 70% of the land being east of the river and the balance on the west bank. St. John the Baptist Parish consists of an area of 219 square miles (140,104 acres) of land and 129 square miles (82,529 acres) of water, and is located in the terrace and Mississippi floodplain region of southeast Louisiana.



*Figure 1-1: Location of St. John the Baptist Parish in the State of Louisiana*



*Figure 1-2: Census Designated Places within St. John the Baptist Parish*

The topography of St. John the Baptist Parish is relatively flat. In the southern portion of the parish, the land is ten to fifteen feet above sea level along the riverbanks, sloping gradually down to five feet or less away from the river. This sloping resulted from natural levees formed by the Mississippi River.

St. John the Baptist Parish is primarily rural. Land uses within the parish consist of industrial, commercial, and residential areas, agricultural land, woodlands, and wetlands. The majority of the industrial and commercial areas are located along the Mississippi River corridor. The residential areas are primarily along the Mississippi River and in the northeast portion of the parish, near the intersection of I-10 and I-55. Agricultural land, woodlands, and wetlands comprise the rest of the parish's acreage.

St. John the Baptist Parish weather is typically warm and humid. Variations in daily temperature are very minimal across the parish. The average annual temperature for the state as a whole is 68°F. January is typically the coldest month for Louisiana, averaging approximately 54°F, while July is typically the warmest at an average of 83°F. Winter months are usually mild with cold spells of short duration. For St. John the Baptist Parish in particular, the summer months are usually quite warm, with an average daily maximum temperature in July and August of 91°F. Winters are typically mild. Snowfall averages less than one inch per year. Average annual rainfall for the area is 63.1 inches. St. John the Baptist 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.

St. John the Baptist Parish is located in Louisiana Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP) Region 3 (Figure 1-3).

As noted above, St. John the Baptist Parish is located in the southeastern region of Louisiana.



Figure 1-3: Louisiana Homeland Security Regions

Population

The population of St. John the Baptist Parish is estimated at 42,477 (2020 Census) with a population percent change from April 1, 2010 – April 1, 2020 of -8.11%.

Table 1-1: St. John the Baptist Parish Population (Source: US Census)

	2010 Census	2013 Estimate	2020 Census	Percent Change 2010 - 2020
<b>Total Population</b>	45,924	43,619	42,477	-8.11%
<b>Population Density (Pop/Sq. Mi.)</b>	215.5	-----	-----	-----
<b>Total Households</b>	15,440	15,440	15,270	-1.11%
<b>Persons Per Household</b>	-----	-----	2.79	-----

Economy

St. John the Baptist Parish is centered primarily around agriculture and chemical and petroleum processing. Chief crops include sugarcane, soybeans, and forestry. Other agricultural production includes vegetables, beef cattle, and crawfish. The industrial base of the planning area consists of companies in the oil and gas sector, including manufacturing and processing. St. John the Baptist 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, and land for commercial and industrial development make the area an ideal prospect for business investment. Industry data for business patterns in St. John the Baptist Parish can be found in the table on the next page.

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

Business Description	Number of Establishments	Number of Employees	Annual Payroll (\$1,000)
Retail Trade	109	1,576	42,127
Manufacturing	19	2,544	240,432
Mining, Quarrying, and Oil & Gas Extraction	3	88	4,785
Health Care and Social Assistance	74	1,024	36,821
Educational Services	12	241	7387
Transportation and Warehousing	43	646	34,850
Construction	62	6,116	339,650
Administration/Support and Waste Management/Remediation Services	49	863	40,942
Real Estate and Rental and Leasing	35	614	31,456
Wholesale Trade	33	601	58,996
Other Services (except Public Administration)	60	510	19,609
Accommodation and Food Services	86	1,177	17,342
Finance and Insurance	54	350	17,812
Professional, Scientific, and Technical Services	43	339	15,346
Information	17	151	7,299
Arts, Entertainment, and Recreation	13	164	3,597
Management of Companies and Enterprises	4	40	7,425

## Hazard Mitigation

To fully understand hazard mitigation efforts in St. John the Baptist 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. John the Baptist Parish Hazard Mitigation Plan (HMP) maintains much of the information from the 2015 plan version, but it now incorporates the order and methodologies of the 2019 Louisiana State Hazard Mitigation Plan.

The sections in the 2015 St. John the Baptist 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
- Appendix F Public Outreach and Mitigation Efforts

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. John the Baptist 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. John the Baptist 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 flood losses in the parish
4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards

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 2015 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
- Appendix F Community Rating System

Table 1-3: 2021 Plan Update Crosswalk

Plan Update Crosswalk	
2015 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
Appendix F: Public Outreach and Mitigation Efforts	Appendix F: Community Rating System

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. John the Baptist Parish and its communities. The extent of this risk is dictated primarily by its geographic location. Most significantly, St. John the Baptist 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. John the Baptist 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. John the Baptist 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. John the Baptist 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
Drought	X		X
Expansive Soils	X		X
Extreme Heat	*		
Flooding	X	X	X
Thunderstorms	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Winter Storms	X		X

\*Discounted in last HMP Update.

### 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) Drought
- b) Expansive Soils
- c) Flooding
- d) Thunderstorms
- e) Tornadoes
- f) Tropical Cyclones
- g) 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 was determined to be the most prevalent hazard to the parish. Seventeen of the twenty-three disaster declarations St. John the Baptist Parish has received resulted from tropical cyclones, which validates this as the most significant hazard. Therefore, the issue of hurricanes will serve as the main focus during the mitigation planning process. Hurricanes present risks from the potential for flooding, primarily resulting from storm surge, and high wind speeds. While storm surge is considered the hazard with the most 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. John the Baptist Parish is included in the hurricane risk assessment.

St. John the Baptist Parish is also susceptible to tornadoes. Tornadoes can spawn from tropical cyclones or severe weather systems that pass-through St. John the Baptist 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

*Table 2-2* summarizes federal disaster declarations for St. John the Baptist Parish since 1965. Information includes names, dates, and types of disaster.

*Table 2-2: St. John the Baptist Parish Major Disaster Declarations.*

Disaster Number	Year	Declaration
374	4/27/1973	Severe Storm, Flood
556	5/9/1978	Severe Storm, Flood
752	11/1/1985	Tropical Cyclone – Hurricane Juan
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
1049	5/10/1995	Severe Storm, Flood

Disaster Number	Year	Declaration
1246	9/23/1998	Tropical Cyclone – TS Frances and Hurricane Georges
1380	6/11/2001	Tropical Cyclone – TS Allison
1435	9/27/2002	Tropical Cyclone – TS Isidore
1437	10/3/2022	Tropical Cyclone – Hurricane Lili
1548	10/18/2004	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
1792	9/13/2008	Tropical Cyclone – Hurricane Ike
3322	8/18/2011	Severe Storm, Flood
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac
4277	8/14/2016	Severe Storm, Flood
3392	10/6/2017	Tropical Cyclone – TS Nate
4458	8/27/2019	Tropical Cyclone – Hurricane 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
4611	8/29/2021	Tropical Cyclone – Hurricane Ida

### Probability of Future Hazard Events

The probability of a hazard event occurring in St. John the Baptist 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 assess 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. John the Baptist Parish
Drought	7%
Expansive Soils	100%
Flooding	37%
Thunderstorms - Hail	17%
Thunderstorms - Lightning	3%
Thunderstorms - Winds	3%
Tornadoes	30%
Tropical Cyclones	100%
Winter Storms	13%

As shown in the previous table, expansive soils and tropical cyclones have the highest chance of occurrence in the parish (100%). These are followed by flooding (37%), tornadoes (30%), hailstorms (17%), winter storms (13%), drought (7%), lightning and thunderstorm winds (3%).

### 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 \$4,280,777,000 in structures throughout the parish. The table below provides the total estimated value for each type of structure by occupancy.

*Table 2-4: Estimated Total of Potential Losses throughout St. John the Baptist Parish.*

Occupancy	St. John the Baptist Parish
Agricultural	\$5,338,000
Commercial	\$472,112,000
Government	\$27,086,000
Industrial	\$105,143,000
Religion	\$57,436,000
Residential	\$3,557,675,000
Education	\$55,987,000
<b>Total</b>	<b>\$4,280,777,000</b>



Essential Facilities of the Parish

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

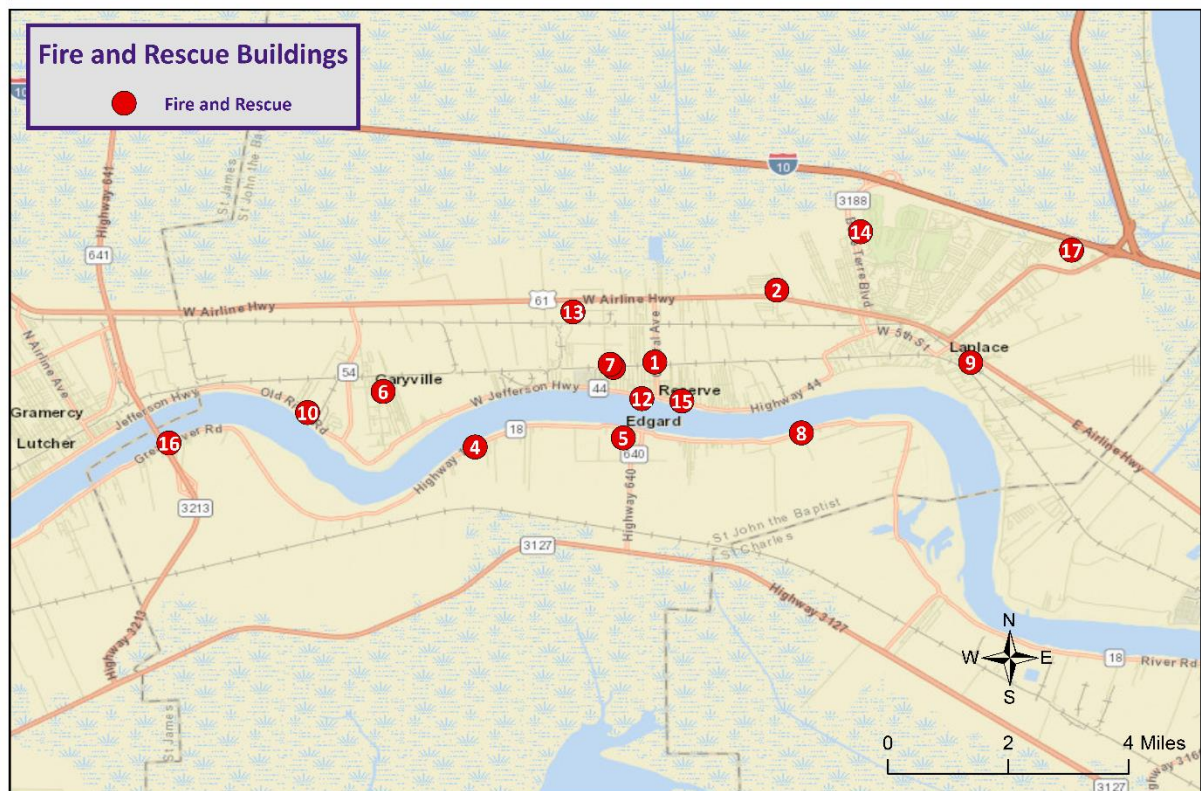
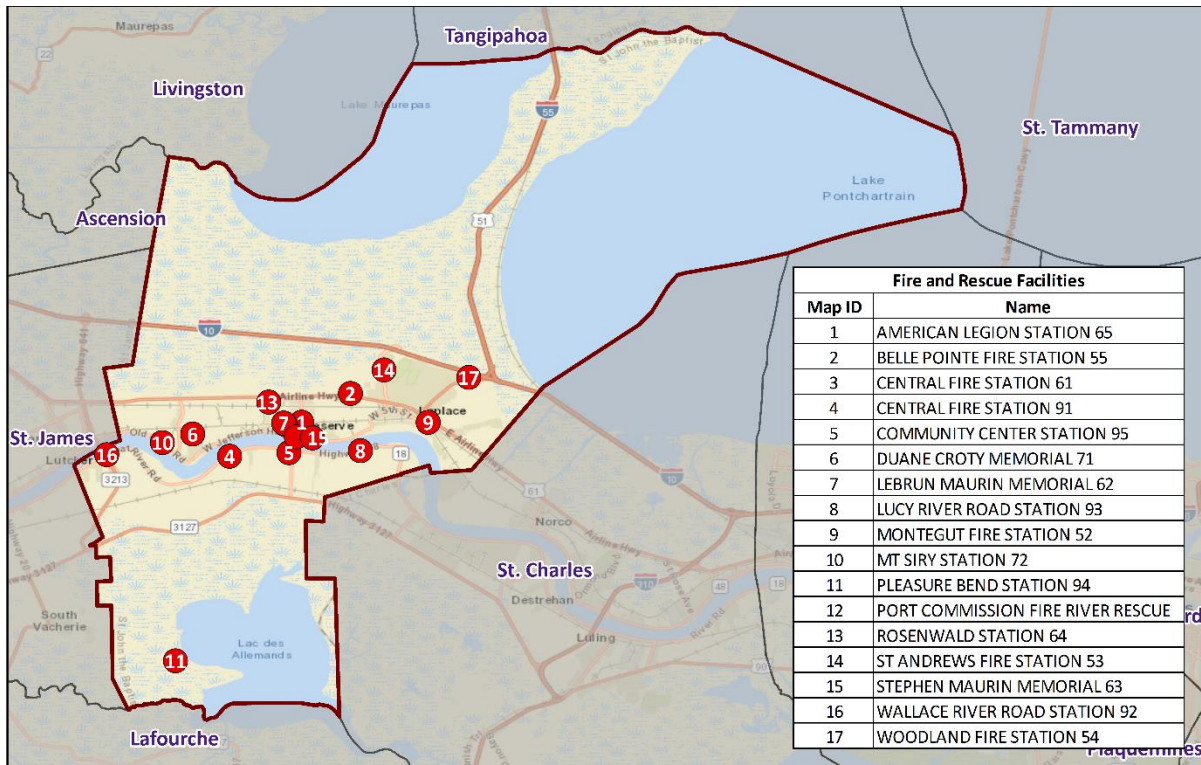


Figure 2-1: Fire and Rescue Facilities in St. John the Baptist Parish.

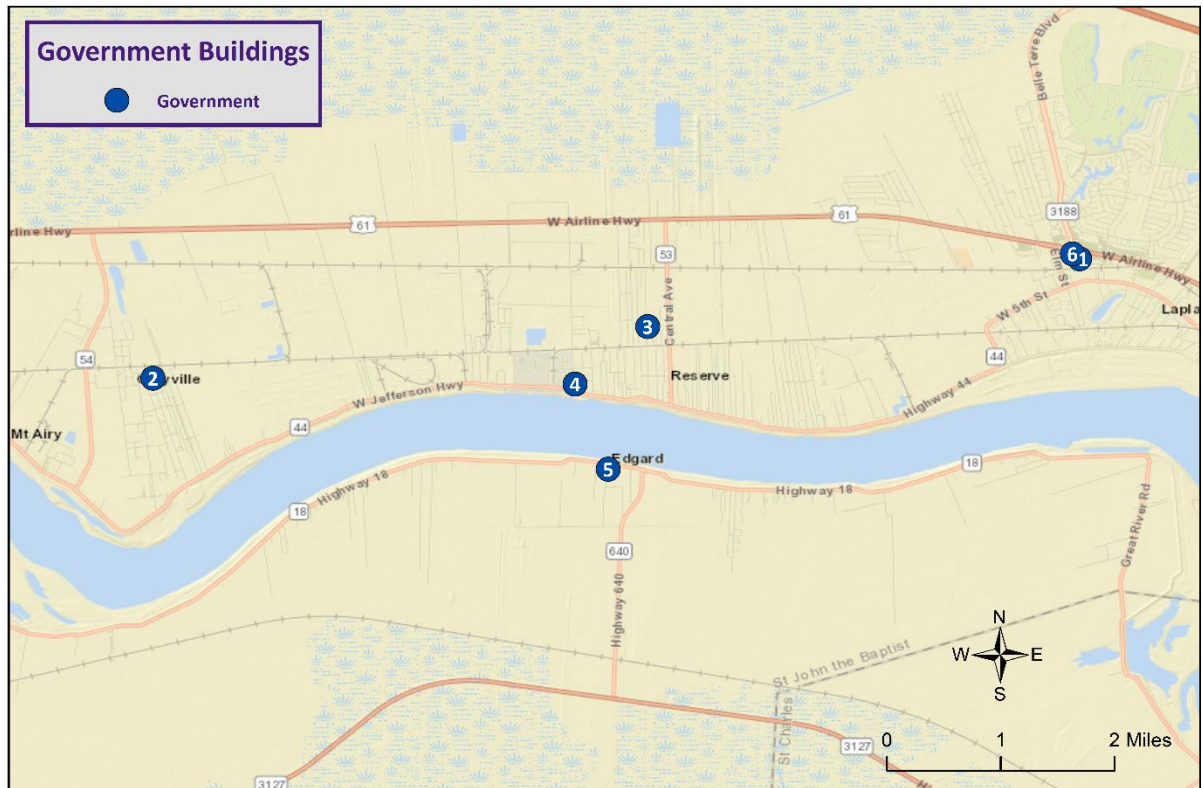
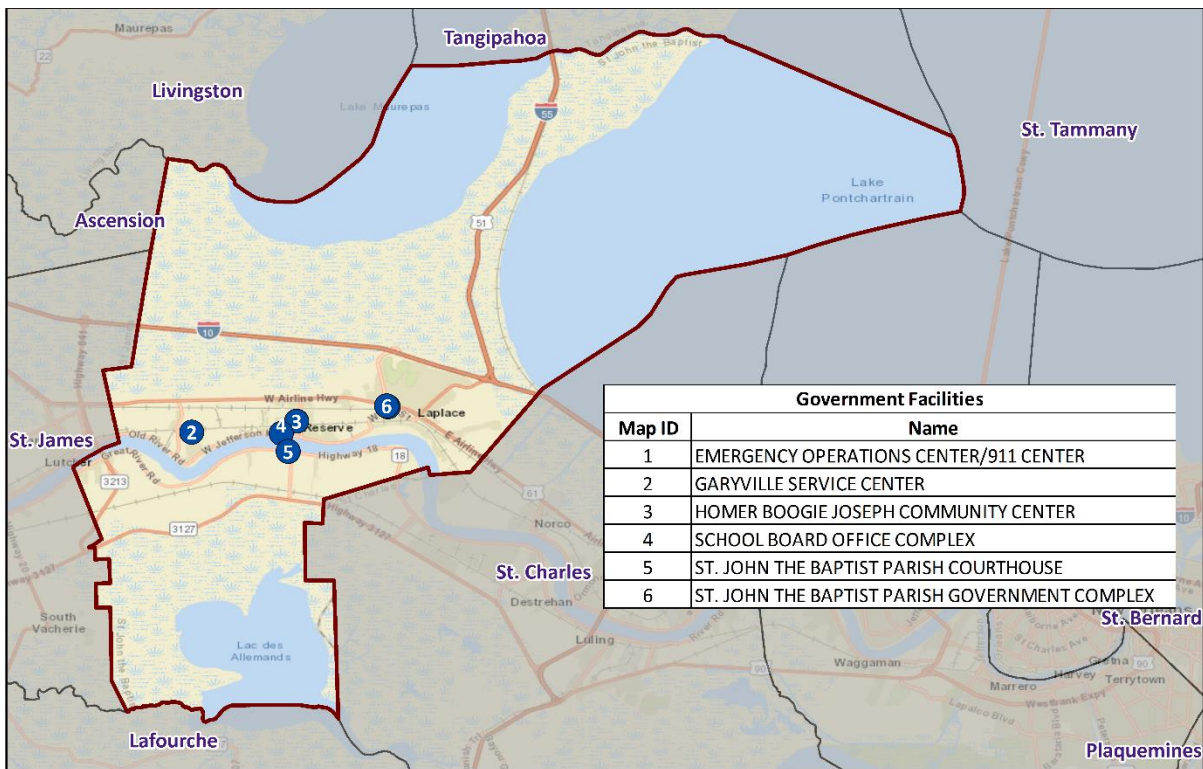


Figure 2-2: Government Buildings in St. John the Baptist Parish.

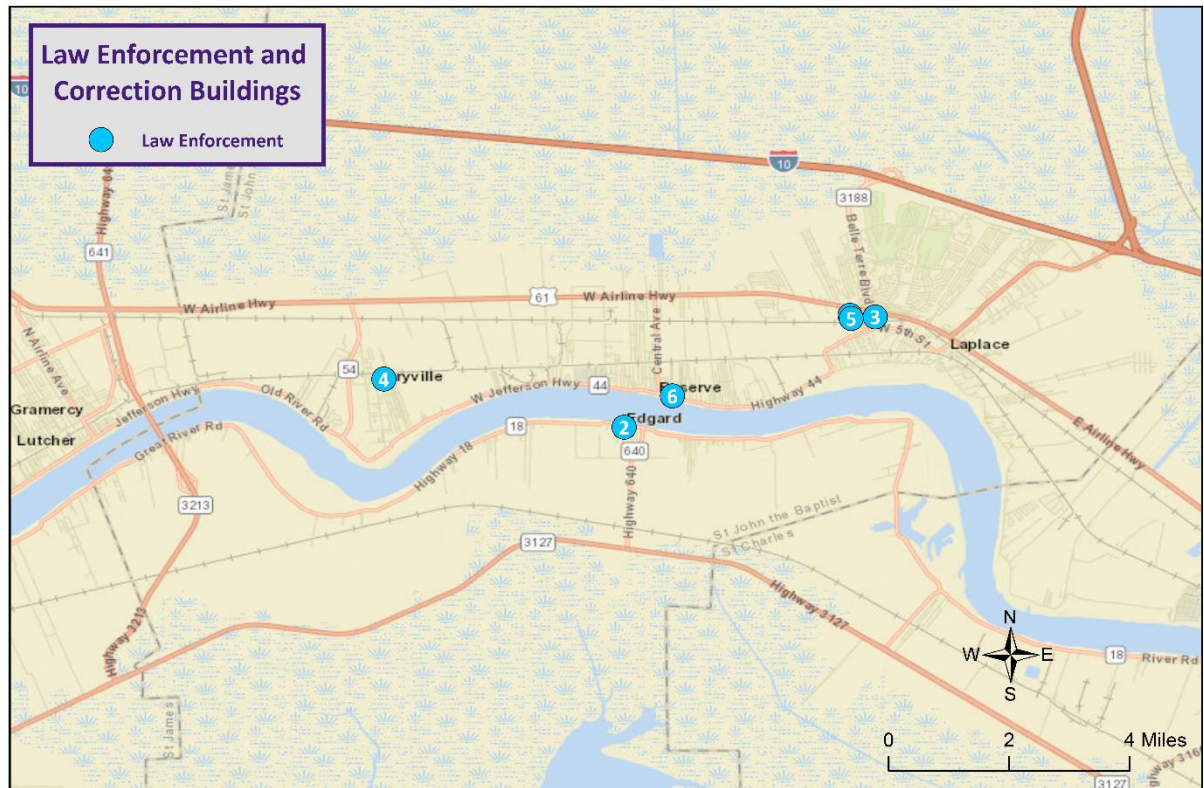
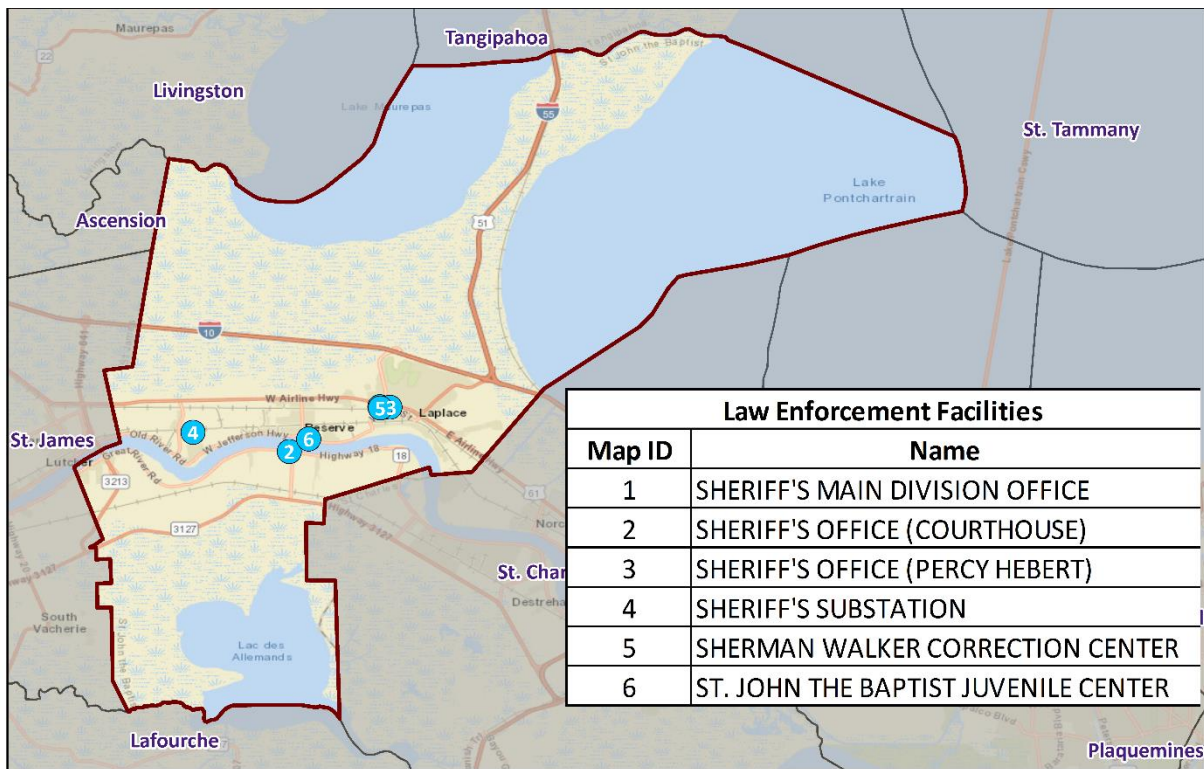


Figure 2-3: Law Enforcement in St. John the Baptist Parish.

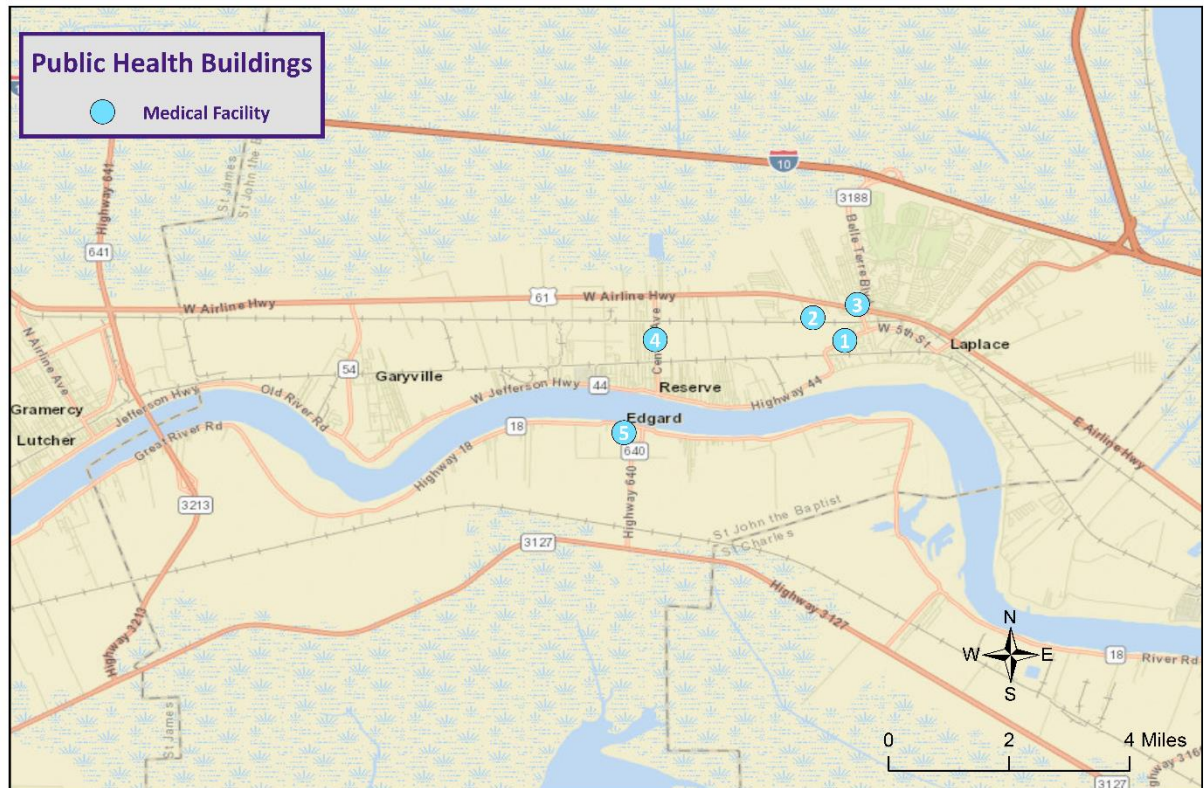
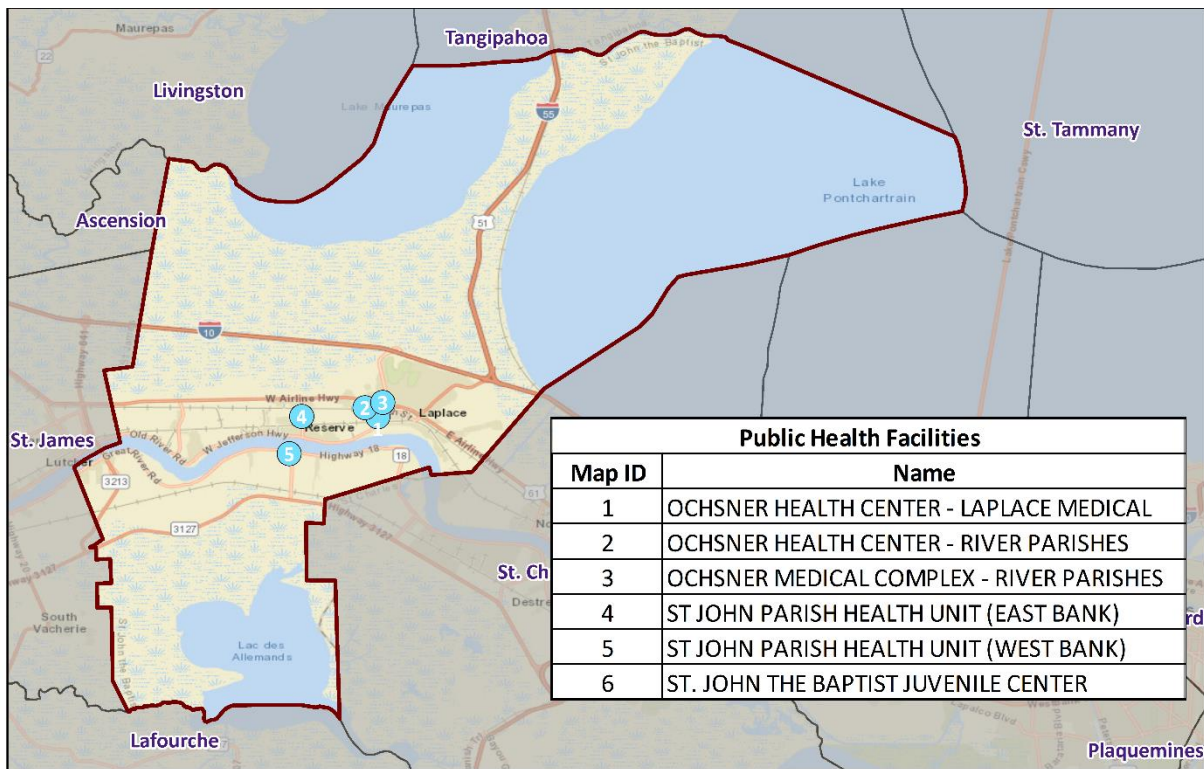


Figure 2-4: Public Health Facilities in St. John the Baptist Parish.

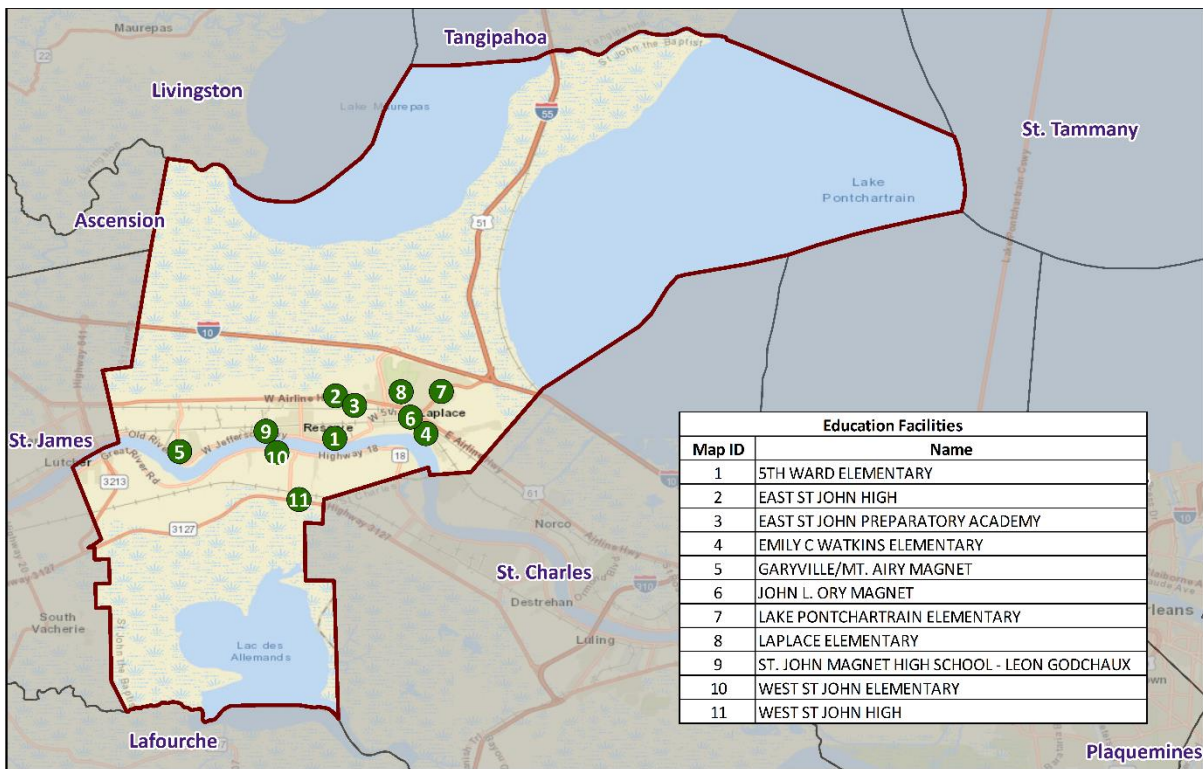


Figure 2-5: Educational Facilities in St. John the Baptist Parish.

### Future Development Trends

St. John the Baptist Parish experienced a decline in population and a rise in housing between the years of 2000 and 2019, falling from a population of 43,044 in the year 2000 to a population of 42,837 in the year 2019. St. John the Baptist Parish grew from 15,532 housing units in the year 2000 to 17,879 housing units in the year 2019. 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. John the Baptist Parish.*

Total Population	St. John the Baptist Parish
1-Apr-00	43,044
1-Apr-10	45,924
1-Jul-19	42,837
Population Growth between 2000 – 2010	6.7%
Average Annual Growth Rate between 2000 – 2010	0.7%
Population Growth between 2010 – 2019	-6.7%
Average Annual Growth Rate between 2010 – 2019	-0.75%

*Table 2-6: Housing Growth Rate for St. John the Baptist Parish.*

Total Housing Units	St. John the Baptist Parish
1-Apr-00	15,532
1-Apr-10	17,510
1-Jul-19	17,879
Housing Growth between 2000 – 2010	12.7%
Average Annual Growth Rate between 2000 – 2010	1.3%
Housing Growth between 2010 – 2019	2.1%
Average Annual Growth Rate between 2010 – 2019	0.2%

### 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. John the Baptist Parish from the present until 2030. A summary of estimated future impacts is shown in the table on the next page. 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 (2019)	Hazard Area (2025)	Hazard Area (2030)
<b>Flood Damage</b>				
<b>Structures</b>	17,879	5,377	5,377	5,377
<b>Value of Structures</b>	\$4,324,440,925	\$1,300,609,225	\$1,368,307,322	\$1,454,212,375
<b># of People</b>	42,837	12,884	12,884	12,884
<b>Tropical Cyclone Damage</b>				
<b>Structures</b>	17,879	17,879	17,879	17,879
<b>Value of Structures</b>	\$4,324,440,925	\$4,324,440,925	\$4,549,532,687	\$4,835,161,390
<b># of People</b>	42,837	42,837	42,837	42,837

Population numbers have declined slightly, but housing numbers have slightly increased since the last update to the St. John the Baptist Parish Hazard Mitigation Plan. However, initiatives such as active floodplain management have regulated the development of flood prone areas to continue supporting and encouraging safer communities within St. John the Baptist. 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 development that has occurred since 2015 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. John the Baptist 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 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. John the Baptist 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.

$$\text{Risk Factor} = [(Probability * 0.25) + (Impact * 0.25) + (Spatial Extent * 0.20) + (Warning Time * 0.15) + (Duration * 0.15)]$$

### Priority Risk Index and Hazard Risk

Hazard risk is determined by calculating the Risk Factor for each hazard impacting St. John the Baptist Parish. A summary of the PRI is found in the following table. 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. John the Baptist Parish.

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Drought	2	2	4	2	3	2.55
Expansive Soils	4	2	1	1	4	2.45
Flooding	3	4	3	4	3	3.4
Thunderstorms - Hail	3	2	3	3	1	2.45
Thunderstorms - Lightning	2	2	2	3	1	2
Thunderstorms - Wind	2	2	3	3	1	2.2
Tornadoes	3	3	2	4	3	2.95
Tropical Cyclones	4	4	4	1	4	3.55
Winter Storms	2	3	3	1	2	2.3

### Land Use

The St. John the Baptist Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 8% of the parish's land use. Wetlands at 105,893 acres is the largest category accounting for 47% of land in the parish. The parish also consists of water areas (37%), agricultural land (8%), and forested areas (< 1%).

Table 2-11: St. John the Baptist Parish Land Use.

(Source: USGS Land Use Map)

Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	17,067	8%
Wetlands	105,893	47%
Forest Land (Not including forested wetlands)	454	< 1%
Urban/Development	16,993	8%
Water	82,079	37%

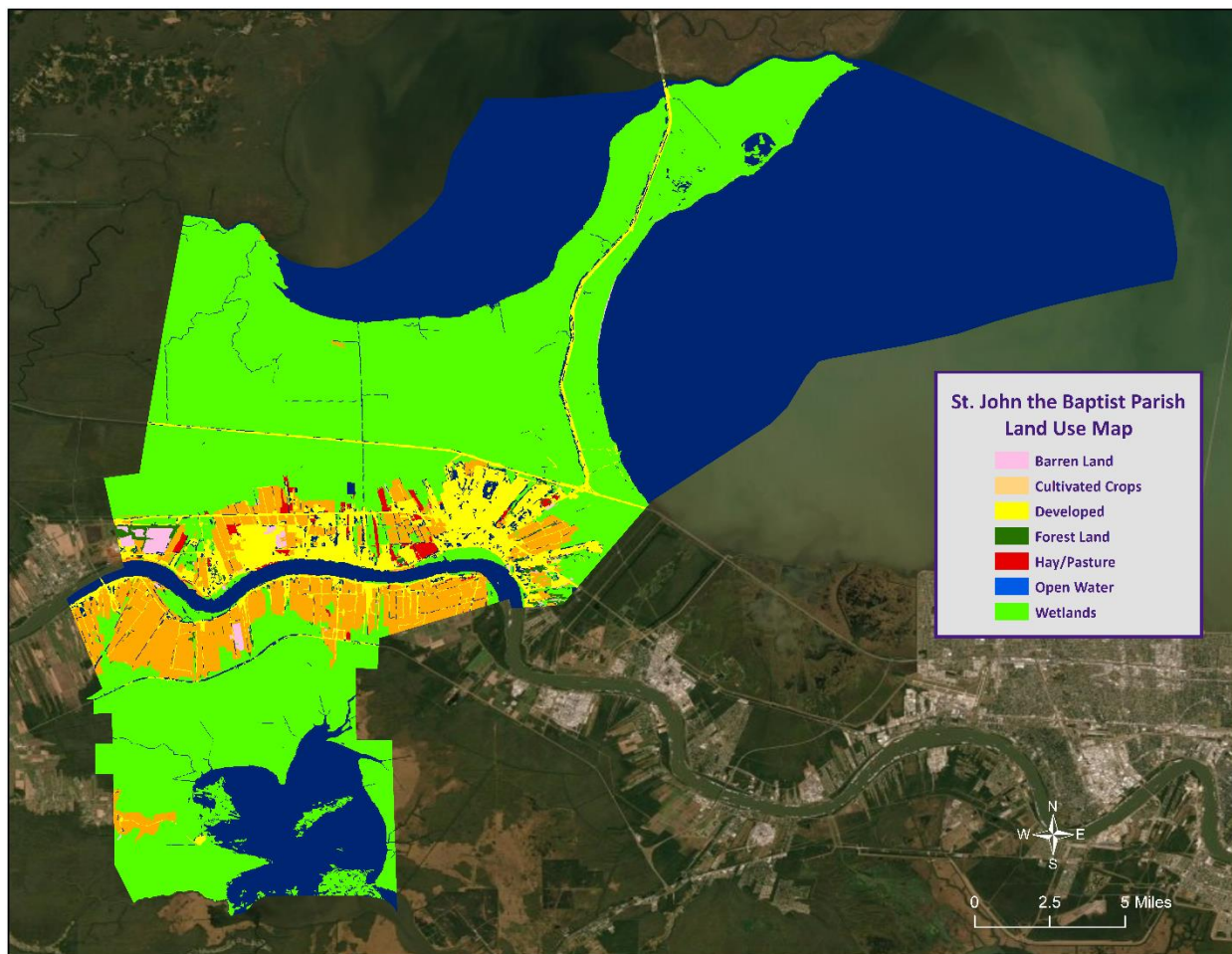


Figure 2-6: St. John the Baptist Parish Land Use Map.  
(Source: USGS Land Use Map)



## Hazard Identification

### 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 2-12* displays the range and Palmer classifications of the PDSI index while *Figure 2-7* displays the current drought monitor for the state of Louisiana and its parishes.

Table 2-12: 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 Abnormally Dry and Moderate Drought conditions currently exists within St. John the Baptist Parish.

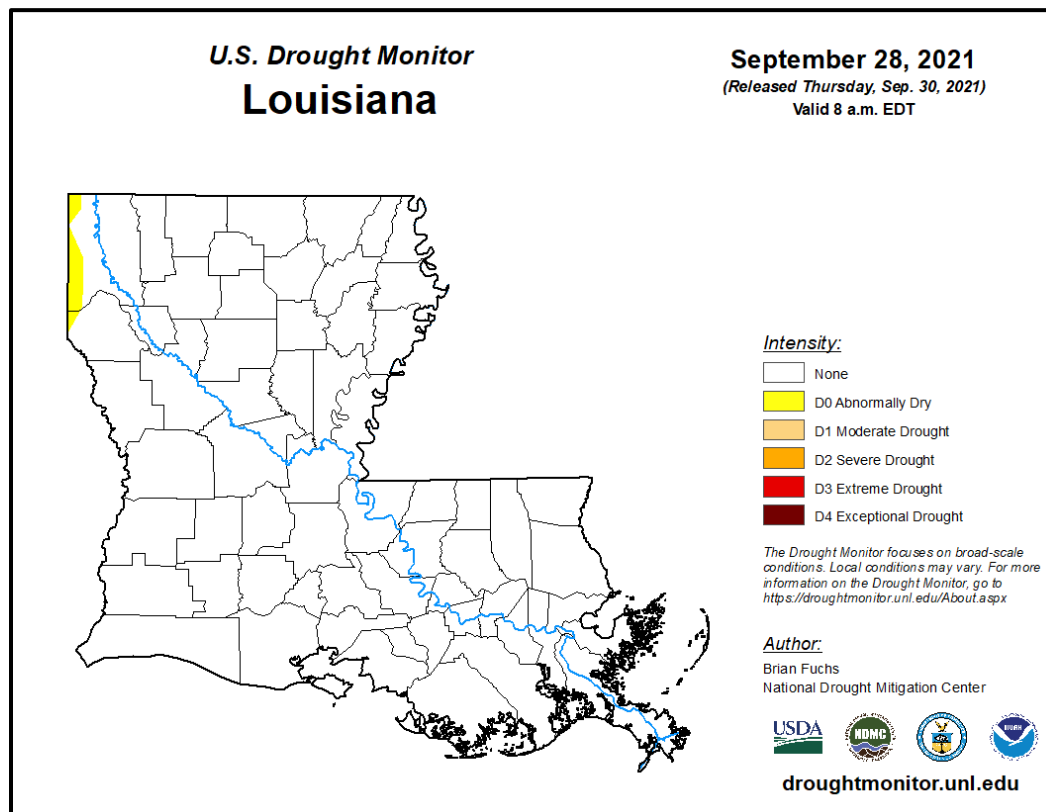


Figure 2-7: United States Drought Monitor for the State of Louisiana and its Parishes.  
(Source: The National Drought Mitigation Center)

*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. John the Baptist Parish is on the agricultural community. The worst-case drought scenario for St. John the Baptist Parish would be a severe drought (D2).

*Previous Occurrences / Extent*

Historically, there have been two drought incidents in St. John the Baptist Parish. Drought events have ranged from Mild to Moderate per the National Climatic Data Center. Since the last update in 2016, there has been no drought events within the boundaries of St. John the Baptist Parish.

*Frequency / Probability*

Based on two drought events since 1990, the annual chance of occurrence of a drought event occurring within a given year is calculated at 7% for St. John the Baptist Parish.

*Estimated Potential Loses*

According to the NCEI Storm Events Database, there have been two drought events which have impacted St. John the Baptist 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. John the Baptist Parish.

*Table 2-13: Agricultural Exposure by Crop Type for Droughts in St. John the Baptist Parish.  
(Source: LSU AG Center 2018 Parish Totals)*

<b>Agricultural Exposure by Type for Drought</b>			
<b>Soybeans</b>	<b>Sugarcane</b>	<b>Sweet Corn</b>	<b>Tomatoes</b>
768,918	\$8,143,133	\$125,899	\$237,611

There have been no reported injuries or deaths as a direct result of drought in St. John the Baptist 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 2-14: 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 2-8* shows the primary locations of swelling clays in Louisiana and *Figure 2-9* shows the areas within the planning area that are at risk to expansive soils.

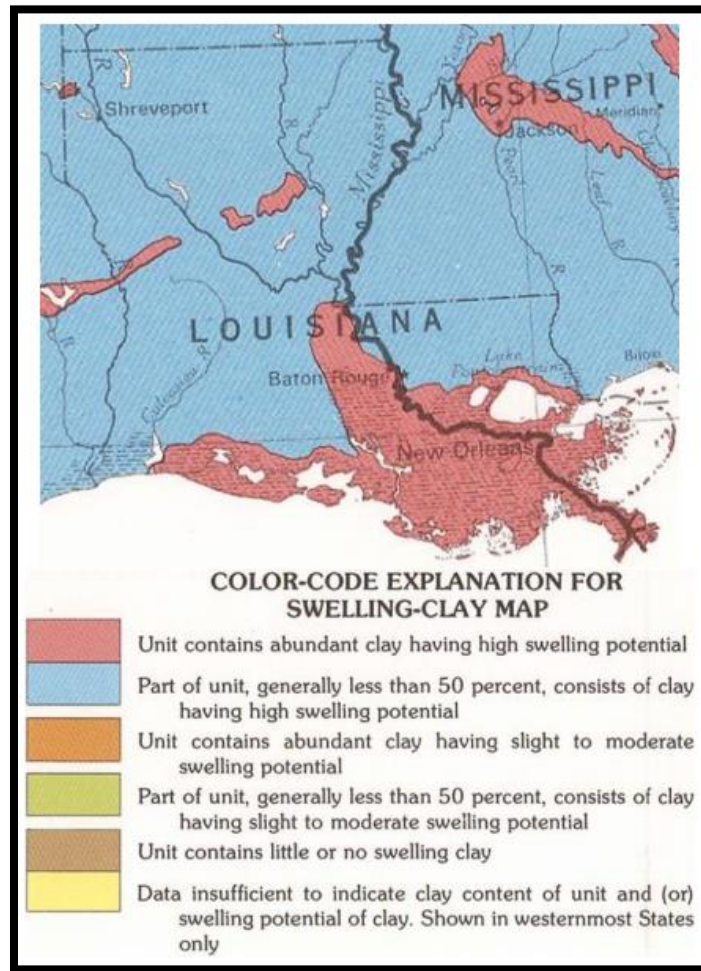


Figure 2-8: Location of Swelling Clays in Louisiana.

(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)



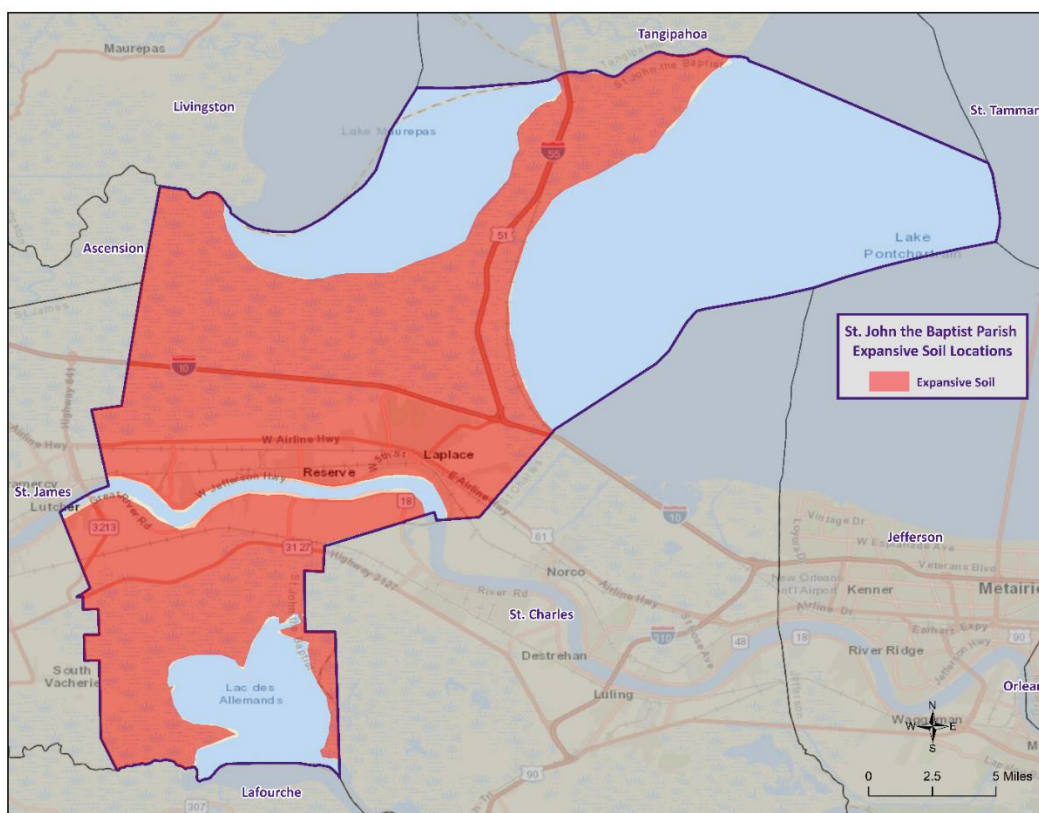


Figure 2-9: Location of Swelling Clays in St. John the Baptist Parish.

(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 2-9, expansive soils dominate throughout St. John the Baptist 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. John the Baptist Parish.

*Table 2-15: Building Exposure by General Occupancy Type for Expansive Soils in St. John the Baptist Parish.  
(Source: Hazus)*

Building Exposure by General Occupancy Type for Expansive Soils (\$1,000)						
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education
3,557,675	472,112	105,143	5,338	57,436	27,086	55,987

*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. John the Baptist 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 ( $\text{ft}^3/\text{s}$ ) 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 2-10*.

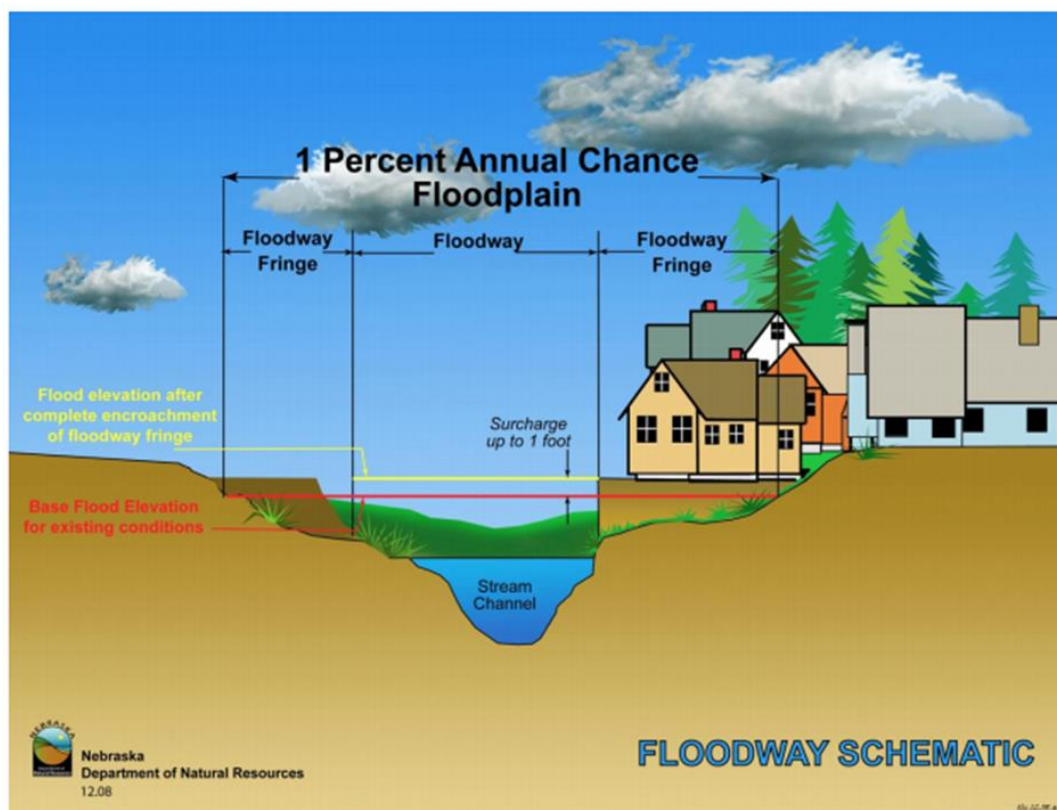


Figure 2-10: Schematic of 100-year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-10*), 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 St. John the Baptist Parish are provided in the table below:

*Table 2-16: Repetitive Loss Structures for St. John the Baptist Parish.*

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
<b>St. John the Baptist Parish</b>	296	291	5	0	751	\$29,446,430	\$39,209

All 296 repetitive loss structures were geocoded in order to provide an overview of where the repetitive loss structures were located. *Figure 2-11* shows the approximate location of the structures, while *Figure 2-12* shows where the highest concentration of repetitive loss structures are located. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the central and eastern portion of St. John the Baptist Parish.

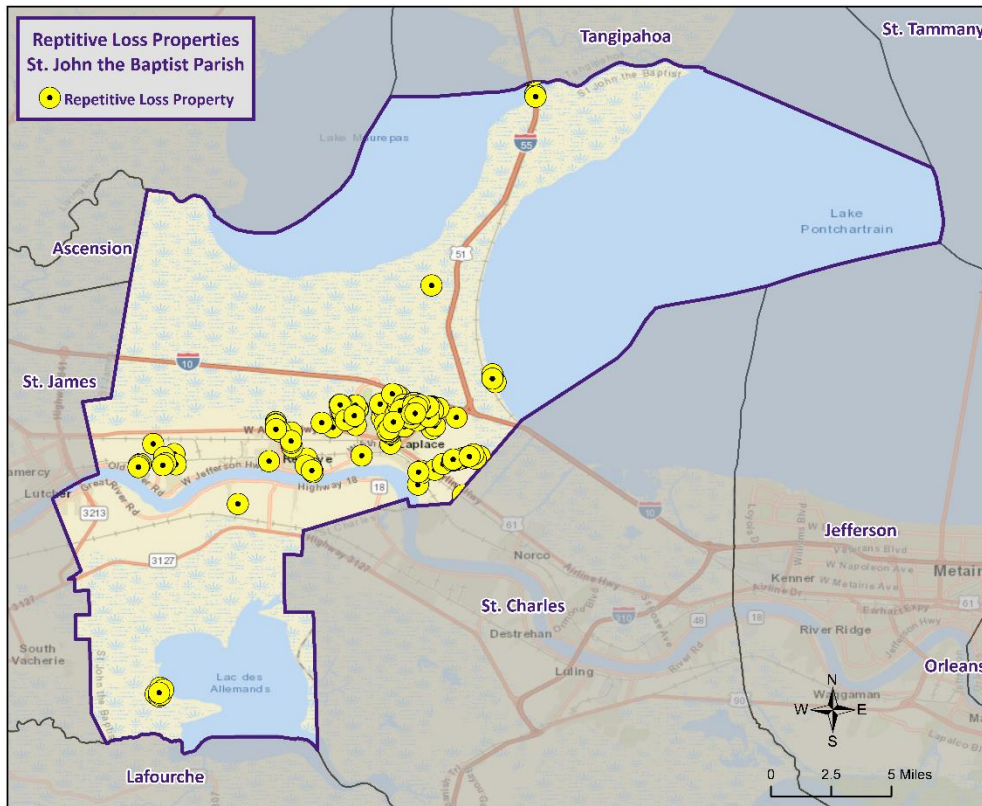


Figure 2-11: Repetitive Loss Properties in St. John the Baptist Parish.

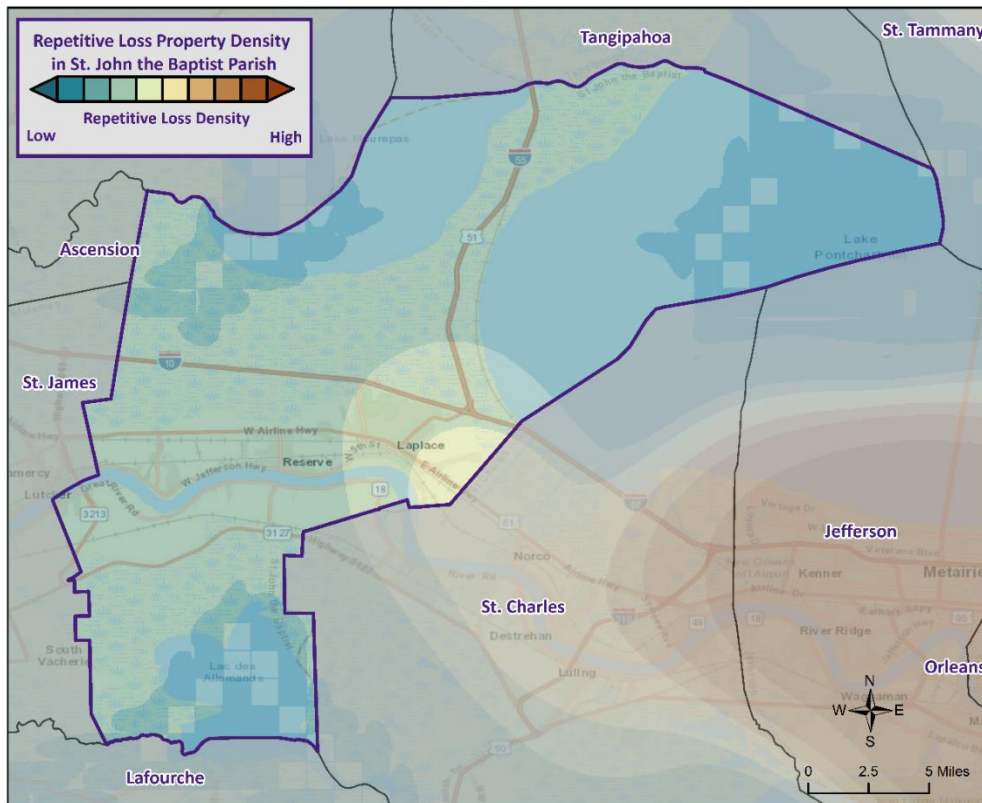


Figure 2-12: Repetitive Loss Property Densities in St. John the Baptist Parish.



*National Flood Insurance Program*

Flood insurance statistics indicate that St. John the Baptist Parish has 7,121 flood insurance policies with the NFIP, with total annual premiums of \$5,796,043. St. John the Baptist Parish participants in the NFIP. St. John the Baptist Parish 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. John the Baptist Parish is provided in the tables to follow.

*Table 2-17: Summary of NFIP Policies for St. John the Baptist Parish.*

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
<b>St. John the Baptist Parish</b>	7,121	\$599,527,480	\$5,796,043	5,007	\$265,861,224

*Table 2-18: Summary of Community Flood Maps for St. John the Baptist Parish.*

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
<b>220164</b>	St. John the Baptist Parish	8/9/1974	7/16/1980	11/4/2010	7/16/1980	No

According to the Community Rating System (CRS) list of eligible communities dated October 1, 2020, St. John the Baptist Parish participates in the CRS program.

*Table 2-19: List of Areas within St. John the Baptist 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
<b>220164</b>	St. John the Baptist Parish	10/1/1994	4/1/2021	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.

One major flood-related impact on public health comes in the form of mold. During and immediately after a flooding event, many people are displaced from their homes and businesses. If residents are unable to access their homes and businesses for an extended period of time, mold can quickly begin to grow. If the damp conditions are compounded by the lack of electricity and residents are unable to dry out these flooded structures, mold will spread extremely quickly throughout the structure. This mold has been linked to numerous respiratory conditions, including asthma and allergies.

Another key concern related to flooding in St. John the Baptist is the evacuation of residents during a flooding event and the impact that flooding may have on evacuation routes. Generally, the larger the road, the less likely it is to flood, although that is not always the case. In addition, a bridge does not have to be underwater to be damaged, thereby cutting off an evacuation route. In some cases, the bridge might be at a high point, but the access road on either side may be flooded. In other cases, the bridge or culvert can be washed out entirely. This is especially dangerous if a person drives on a flooded roadway assuming that a bridge is still in place and structurally sound.

#### *Impacts of Future Flooding*

Many of the areas are at risk to future flooding as a result of increased floodplain and watershed development, as well as sea level rise.

Development within the floodplain and watershed will reduce the amount of permeable surface area that flood waters typically use for infiltration into the ground. This, in turn, will create conditions wherein additional volumes of water are “trapped” on the surface, resulting in increased flooding to people and property within St. John the Baptist Parish.

Sea level rise will contribute to worsening future flood conditions as this will effectively raise the water level within susceptible areas such that lesser volumes of rainfall will cause similar flooding effects experienced by communities in the past. With a higher baseline water table, less precipitation will be allowed to absorb into the ground, resulting in greater impacts to people and property from smaller storm events.

The fluctuation of water levels in area wetlands, especially flood waters, supports the bio-diversity of low-lying areas by releasing nutrients into the soil and germinating wetland flora. Flooding also offers some control of invasive water weeds. Most features of the environment have come to adapt to the effects of a flood event and adjust quickly to events, although it is possible that some species may not be resilient enough to survive.

Areas that have been modified by human activity such as the modification of stream banks or removal of riverside vegetation tend to suffer more negative consequences from flooding. When these alterations occur, flooding can cause unnatural erosion of sediment into the waterway, creating an imbalance of nutrients in the water which may harm ecosystems and have a negative impact on downstream water quality.

Each of these conditions may contribute to worsening of flooding impacts on the community's people, property, and the natural functions of the floodplain. In addition, personal property such as homes and businesses that have been impacted by past flooding events are a major concern in future flooding events. Although a great deal of effort has been undertaken to reduce the number of properties at risk through the use of improved risk assessment, mitigation techniques, and floodplain management regulations, there are still a significant number of structures within the parish and communities' flood zones which have not been properly mitigated to reduce risk.

#### *Flooding in St. John the Baptist 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. John the Baptist 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 crest at flood stage levels, causing extensive flooding in low-lying areas.

The digital elevation model (DEM) in the figure for St. John the Baptist Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish. The average elevation throughout the parish is approximately 15 feet (NAVD88). In the southern portion of the parish, the land is dominated by wetlands approximately 10 to 15 feet above sea level (NAVD88) along the riverbanks, sloping gradually down to 5 feet (NAVD88) away from the river towards Lac Des Allemands. The northern portion of the parish is comprised mostly of forested wetlands with elevations ranging from less than 2 feet (NAVD88) up to 5 feet (NAVD88).

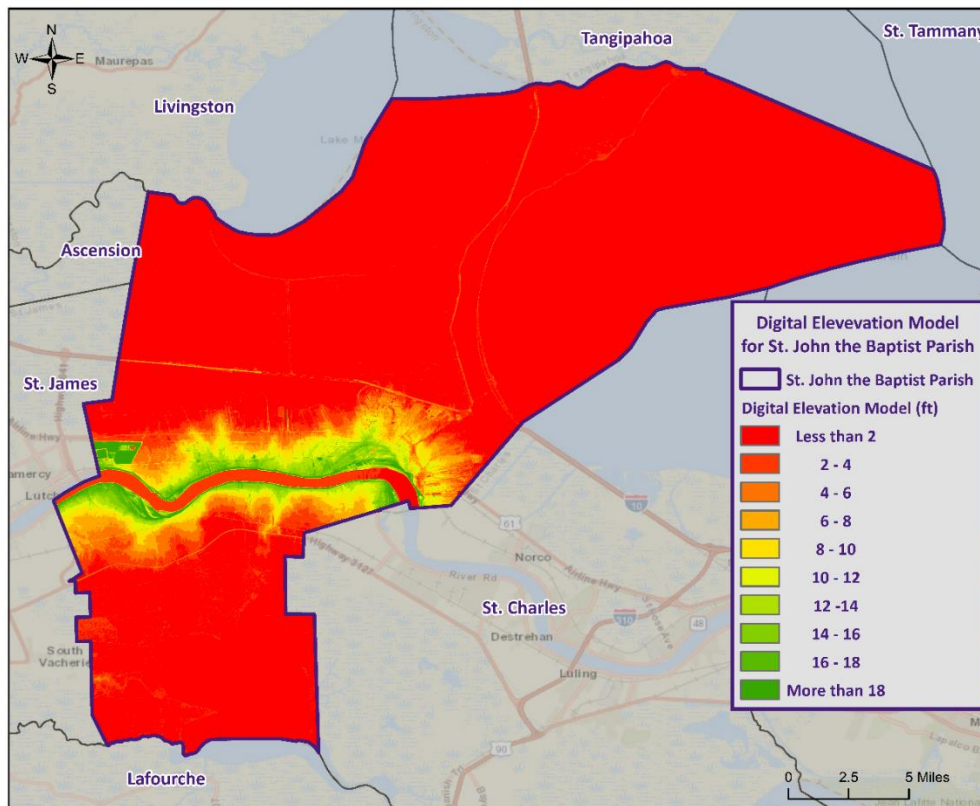


Figure 2-13: Elevation throughout St. John the Baptist Parish.

#### Location

St. John the Baptist Parish has experienced significant flooding in its history and can expect more in the future. St. John the Baptist Parish is susceptible to several different types of flooding (riverine, flash, and storm surge) due to its geographical location.

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 four to six feet can be expected. Areas located along the banks of the Mississippi River can expect flood depths of approximately five feet in the future.

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

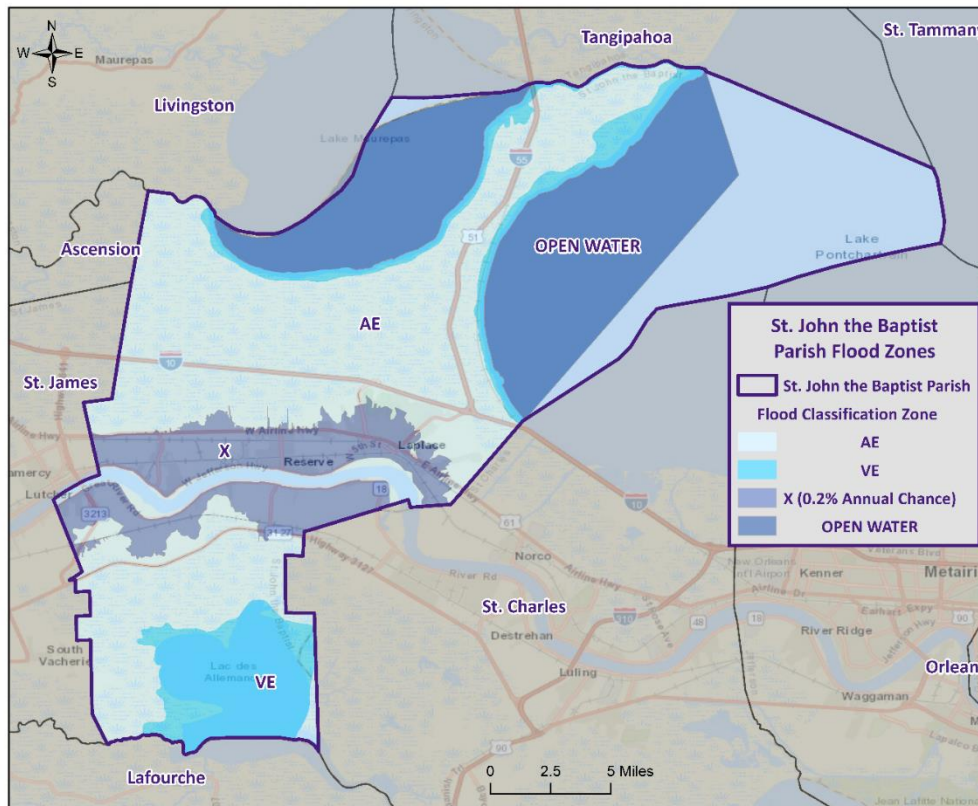


Figure 2-14: St. John the Baptist Parish Areas within the Flood Zones.

*Previous Occurrences / Extents*

Historically, there have been 11 flooding events that have caused significant flooding in St. John the Baptist Parish between 1990 and 2020. Since the last St. John the Baptist Parish HMP Update in 2016, there have been no significant flooding events.

*Frequency / Probability*

The NCEI Storm Events Database identified 11 flooding events within the St. John the Baptist Parish planning area since 1990. The table below shows the probability and return frequency for each jurisdiction.

Table 2-20: Annual Flood Probabilities for St. John the Baptist Parish.

Jurisdiction	Annual Probability	Return Frequency
St. John the Baptist Parish	37%	1 event every 2 to 3 years

*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 2-21 shows the total economic losses that would result from this occurrence.

Table 2-21: Estimated Losses in St. John the Baptist Parish from a 100-year Flood Event.  
(Source: Hazus)

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
St. John the Baptist Parish	\$2,284,000

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

Table 2-22: Estimated 100-year Flood Losses for St. John the Baptist Parish by Sector.  
(Source: Hazus)

St. John the Baptist Parish	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$193,000
Government	\$0
Industrial	\$1,505,000
Religious / Non-Profit	\$0
Residential	\$586,000
Schools	\$0
<b>Total</b>	<b>\$2,284,000</b>

#### Threat to People

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

Table 2-23: 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. John the Baptist Parish	45,924	13,812	30.1%

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

*Table 2-24: Vulnerable Populations Susceptible to a 100-year Flood Event in St. John the Baptist Parish.  
(Source: Hazus)*

St. John the Baptist Parish		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	13,812	30.1%
Persons Under 5 Years	1,012	7.3%
Persons Under 18 Years	2,703	19.6%
Persons 65 Years and Over	1,424	10.3%
White	5,865	42.5%
Minority	7,947	57.5%

#### *Vulnerability*

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

## 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 2-25: 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 2-26: 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 2-27*.

*Table 2-27: 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 hilly 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 2-28 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 2-28: 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 2-29: 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. John the Baptist Parish is 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 five hail incidents in St. John the Baptist 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 0.75-inch in diameter. There have been no significant hailstorm events in St. John the Baptist Parish since the 2016 St. John the Baptist Parish HMP update.

##### Frequency

Hailstorms occur frequently within St. John the Baptist Parish with an annual chance of occurrence calculated at 17% based on the records for the past 30 years (1990-2020). *Figure 2-15* displays the density of hailstorm events in St. John the Baptist Parish, while *Figure 2-16* provides an overview of hailstorm size based on location.

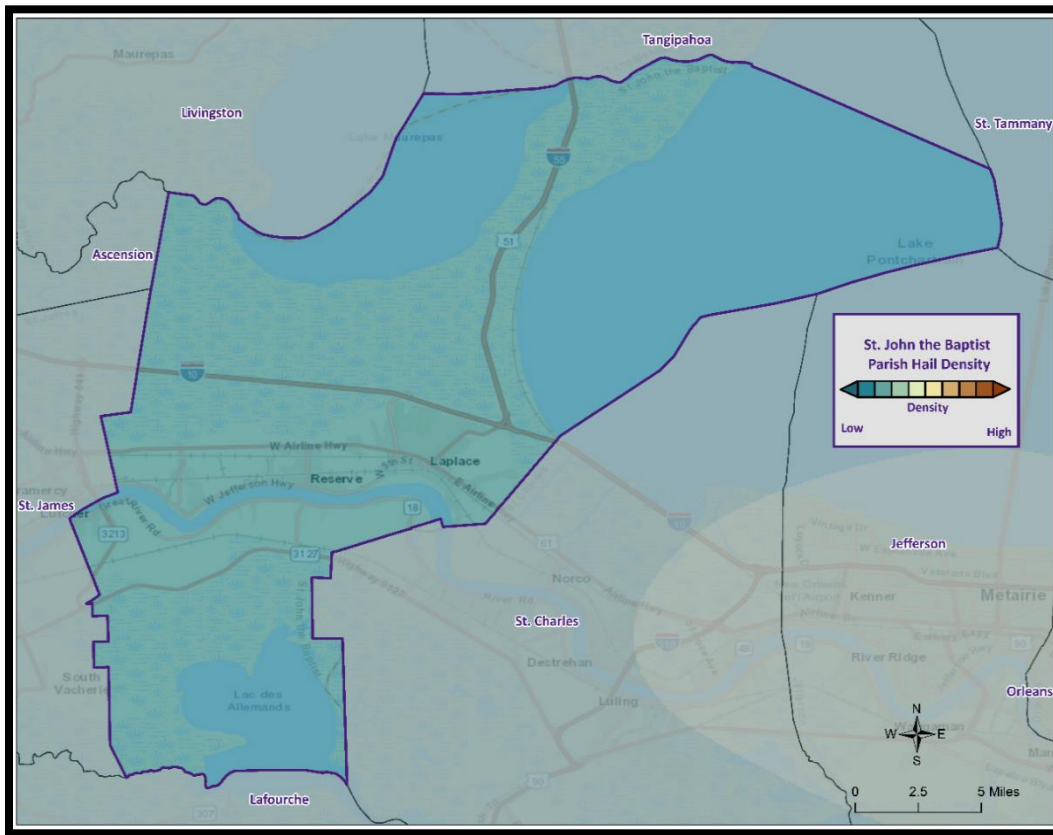


Figure 2-15: Density of Hailstorms by Diameter from 1950-2020.

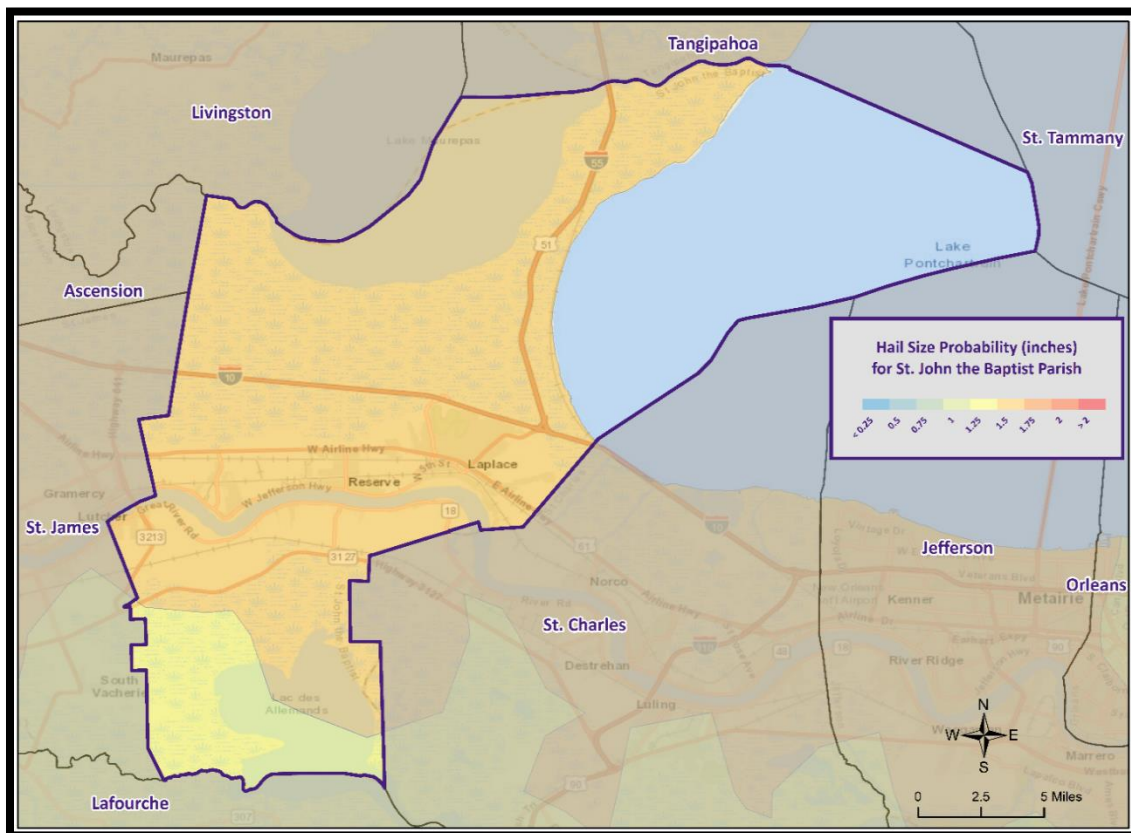


Figure 2-16: Hail Size Probability in Inches for St. John the Baptist Parish.

### Estimated Potential Losses

Since 1990, there have been five 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 \$33 and \$200 per event. The following table provides an estimate of potential property losses for St. John the Baptist Parish:

*Table 2-30: Estimated Annual Losses St. John the Baptist Parish Resulting from Hailstorms.*

Estimated Potential Annual Losses from Hailstorms
St. John the Baptist Parish
\$33

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. John the Baptist Parish is equally at risk from high winds. The worst-case scenario for thunderstorm high wind is wind speeds of approximately 46 mph.

#### Previous Occurrences / Extents

Historically, there has been one thunderstorm high wind event in St. John the Baptist Parish. The high wind event had a wind speed of 46 mph per the National Climatic Data Center. There have been no thunderstorm wind events which impacted the St. John the Baptist Parish Planning area since the 2016 St. John the Baptist Parish HMP update.

#### Frequency

High winds are a fairly uncommon occurrence within St. John the Baptist Parish with an annual chance of occurrence calculated at 3% based on the records for the past 30 years (1990-2020). *Figure 2-17* displays the thunderstorm wind speed probability for St. John the Baptist Parish.

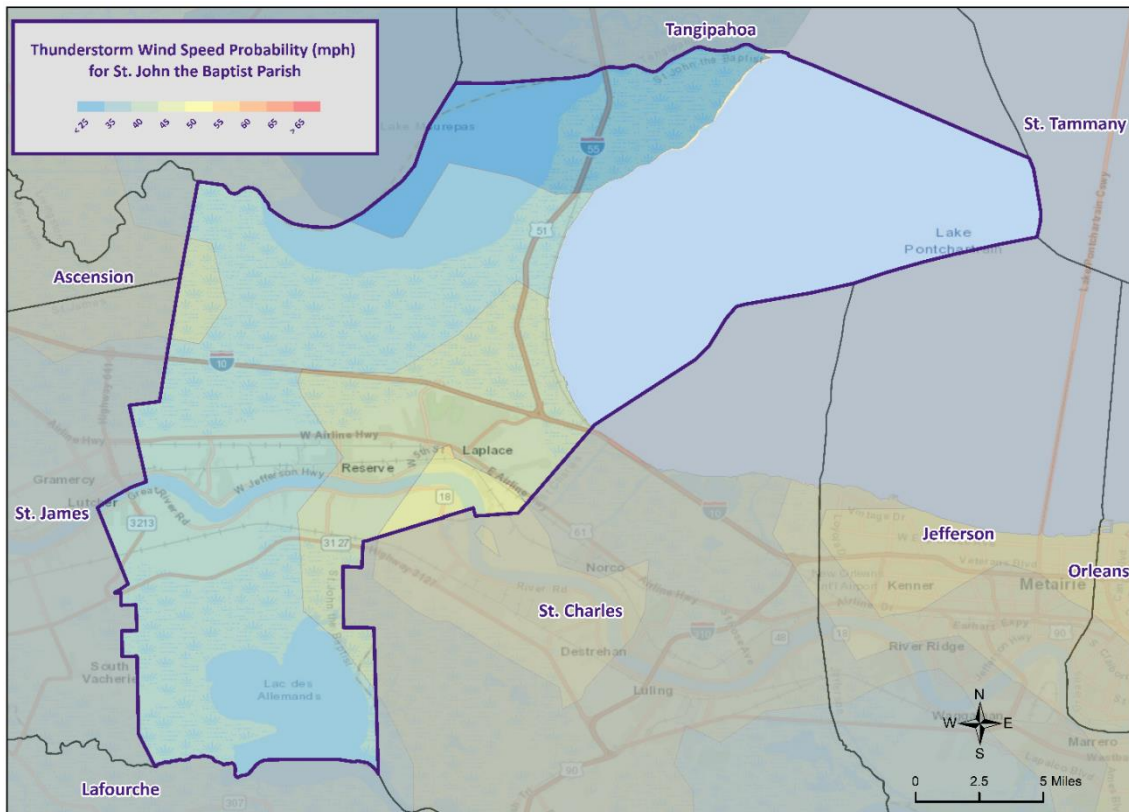


Figure 2-17: Thunderstorm High Wind Speed Probability in Miles Per Hour for St. John the Baptist Parish.

Estimated Potential Losses

Since 1990, there has been one significant wind event that have resulted in property damages according to NCEI Storm Events Database. The total property damage associated with this storm totaled approximately \$1,000. 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 \$33 and \$1,000 per event. The following table provides an estimate of potential property losses for St. John the Baptist Parish:

Table 2-31: Estimated Annual Property Losses in St. John the Baptist Parish resulting from Wind Damage.

Estimated Potential Annual Losses from High Winds
St. John the Baptist Parish
\$33

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. John the Baptist 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 has been one lightning event in St. John the Baptist Parish between the years 1990 and 2020. Since the last HMP update, there have been no significant lightning events within the boundaries of St. John the Baptist Parish.

### Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in St. John the Baptist 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. John the Baptist Parish experienced one significant lightning event between the years 1990 and 2020 resulting in a 3% annual chance of occurrence.

### Estimated Potential Losses

Since 1990, there has been one significant lightning 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 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 \$33 and \$1,000 per event. The following tables provide an estimate of potential property losses for St. John the Baptist Parish:

*Table 2-32: Estimated Annual Property Losses in St. John the Baptist Parish resulting from Lightning Damage.*

Estimated Potential Annual Losses from Lightning
St. John the Baptist Parish
\$279

Per the NCEI Storm Events Database, there have been no fatalities or injuries as a result of lightning in St. John the Baptist 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 2-33* 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 2-33: 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 2-34: Fujita and Enhanced Fujita Tornado Damage Scale.*

Scale	Typical Damage
<b>F0/EF0</b>	Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
<b>F1/EF1</b>	Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
<b>F2/EF2</b>	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; light-object missiles generated; cars lifted off ground.
<b>F3/EF3</b>	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
<b>F4/EF4</b>	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
<b>F5/EF5</b>	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. John the Baptist Parish with actual locations, tornadoes in general are a climatological based hazard and have the same approximate probability of occurring in all of St. John the Baptist Parish planning area. Because a tornado has a similar probability of striking anywhere within the planning area for St. John the Baptist Parish, all areas in the parish are equally at risk for tornadoes.

#### *Previous Occurrences / Extent*

The NCEI Storm Events Database reports a total of nine tornadoes or waterspouts occurring within the boundaries of St. John the Baptist Parish since 1990 ranging in extent from F0 to F3 under the Fujita Scale and EF0 to EF2 on the Enhanced Fujita Scale. St. John the Baptist Parish can expect future tornadoes up to an EF4 under the Enhanced Fujita Scale as a worst-case scenario.

The most destructive tornado to impact St. John the Baptist Parish was a F4 tornado which occurred on December 6, 1983. The tornado caused in excess of \$25 million worth of damage. The tornado responsible for the most injuries and fatalities was a F3 tornado that occurred on August 25, 1992, resulting in 32 injuries and two deaths. Since the 2016 HMP Update, two tornadoes have occurred within

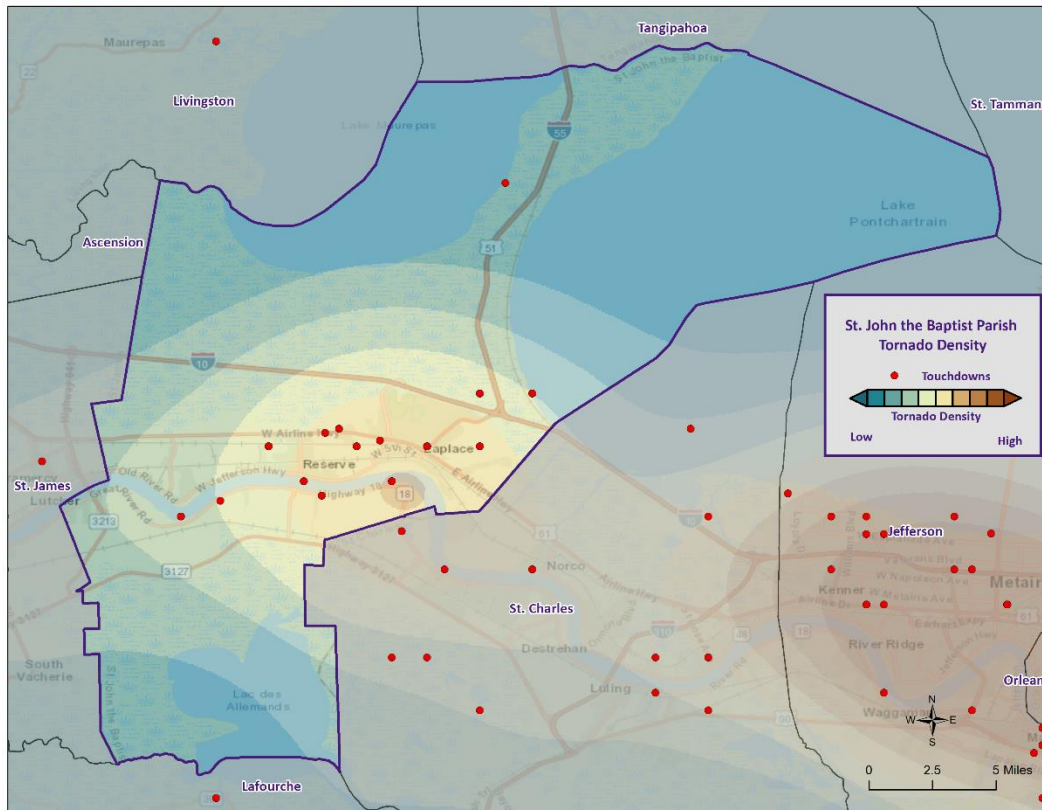
the boundaries of St. John the Baptist Parish. Below is a list and brief description of the impact for the event.

*Table 2-35: Historical Tornadoes in St. John the Baptist Parish with Locations since the 2016 Update.*

Date	Impacts	Property Damage	Location	Magnitude
February 23, 2016	3.15 mile path with a width of 250 yards. A tornadic waterspout spawned from the same parent supercell as the Assumption/St. James tornado moved on shore from Lake Maurepas near Akers. It snapped numerous cypress trees before moving into Lake Pontchartrain.	\$0	RUDDOCK	EF1
February 23, 2016	4.69 mile path with a width of 250 yards. A strong tornado touched down in the LaPlace area, just south of Airline Hwy near a church, removing much of its roof covering. It moved northeast through a retail area causing damage consistent with an EF-1 before moving through several densely populated subdivisions. In the Carrollwood subdivision, mostly superficial roof and tree damage was observed. It strengthened as it moved into the Riverland Heights subdivision, moving roughly parallel to Greenwood Drive where many homes suffered roof damage and a few lost portions of the roof structure. It continued intensifying as it moved into the Cambridge area. Here, a few homes and duplexes suffered partial to total loss of roof structure and decking, along with partial collapse of exterior walls consistent with estimated winds around 120 mph. The tornado was strongest in the Palmetto and Indigo Estates areas. Near the intersection of Nicole and Gail Streets, 2 single story homes suffered complete roof loss as well as total failure of most exterior walls. A third home lost about half of its second floor. Damage in this area was consistent with strong EF-2 winds near 130 mph. The tornado then weakened as it crossed Interstates 10 and 55. It continued to cause tree damage until it reached the intersection of Frenier Rd and US Hwy 51, where it lifted.	\$0	MONTEGUT	EF2

*Frequency / Probability*

Tornadoes occur frequently within St. John the Baptist Parish with an annual chance of occurrence calculated at 30% based on the records for the past 30 years (1990-2020). *Figure 2-18* displays the density of tornado touchdowns in St. John the Baptist Parish and neighboring parishes.



*Figure 2-18: Location and Density of Tornadoes to Touchdown in St. John the Baptist Parish. (Source: NOAA/SPC Severe Weather Database)*

*Estimated Potential Losses*

According to the NCEI Storm Events Database, there have been nine tornadoes that have caused some level of property damage. The total damage from the actual claims for property is approximately \$27,020,000 with an average cost of \$3,002,222 per tornado event. When annualizing the total cost over the 30-year record, total annual losses based on tornadoes are estimated to be \$900,667. The following tables provide an annual estimate of potential losses for St. John the Baptist Parish.

*Table 2-36 Estimated Annual Losses for Tornadoes in St. John the Baptist Parish.*

Estimated Potential Annual Losses from Tornadoes	
St. John the Baptist Parish	
	\$900,667

*Table 2-37* presents an analysis of building exposure that are susceptible to tornadoes by general occupancy type for St. John the Baptist Parish along with the percentage of building stock that are mobile homes.

Table 2-37: Building Exposure by General Occupancy Type for Tornadoes in St. John the Baptist Parish.  
(Source: Hazus)

Building Exposure by General Occupancy Type for Tornadoes (\$1,000)							
Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	Mobile Homes (%)
3,557,675	472,112	105,143	5,338	57,436	27,086	55,987	11.7%

The Parish has suffered through a total of nine events in which tornadoes or waterspouts have accounted for 53 injuries and two 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 11.7% of all housing in St. John the Baptist Parish consists of manufactured housing. The location and density of manufactured houses can be seen in *Figure 2-19*.

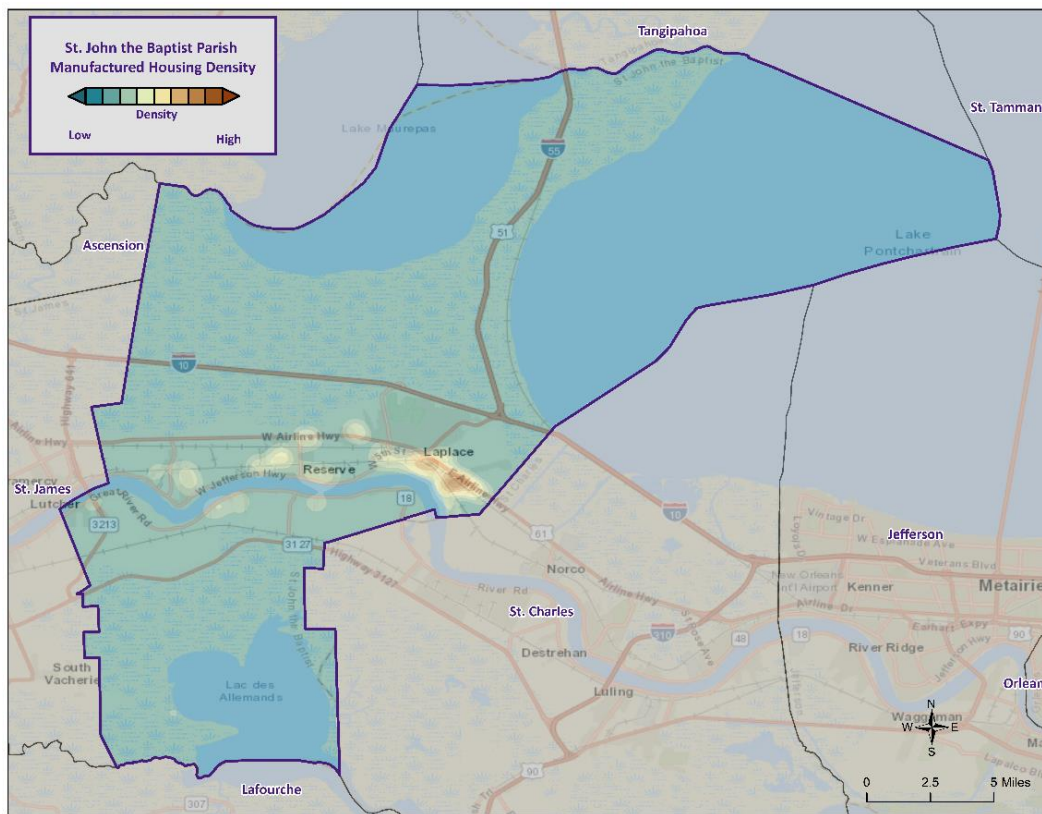


Figure 2-19: Location and Approximate Number of Units in Manufactured Housing Locations throughout St. John the Baptist Parish.

*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 2-38: 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 all of South 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. John the Baptist Parish planning area. The worst-case scenario for a tropical cyclone event in St. John the Baptist Parish is a Category 5 Hurricane.

*Previous Occurrences / Extents*

St. John the Baptist Parish has experienced 20 major tropical cyclone events since 2002. The following table provides a list of tropical cyclones which have impacted St. John the Baptist Parish since 2002.

*Table 2-39: Historical Tropical Cyclone Events in St. John the Baptist Parish from 2002 – 2021.*

Date	Name	Storm Type at Time of Impact
2002	Bertha	Tropical Storm
2002	Hanna	Tropical Storm
2002	Isidore	Hurricane
2003	Bill	Tropical Storm
2004	Ivan	Hurricane
2004	Matthew	Tropical Storm
2005	Cindy	Hurricane
2005	Katrina	Hurricane
2005	Rita	Tropical Storm
2008	Fay	Tropical Depression
2008	Gustav	Hurricane
2008	Ike	Tropical Storm
2009	Ida	Tropical Storm
2011	Lee	Tropical Storm
2012	Isaac	Hurricane
2017	Cindy	Tropical Storm
2019	Barry	Tropical Storm
2020	Delta	Tropical Storm
2020	Zeta	Tropical Storm
2021	Ida	Hurricane

Since the last St. John the Baptist Parish HMP update in 2015, there have been five tropical cyclone events which have impacted the parish. However, only four 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 four events and the impact they had on St. John the Baptist Parish.

#### Tropical Storm Cindy (2017)

Tropical Storm Cindy was the first tropical cyclone to make landfall in Louisiana since Hurricane Isaac in 2012. The third named storm of the 2017 Atlantic hurricane season, Cindy formed out of a broad area of low pressure that developed in the northwestern Caribbean Sea near the Yucatan Peninsula in June 2017. The disturbance gradually organized as it drifted northwards into the Gulf of Mexico before organizing into a tropical storm on June 20, 2017. Tropical Storm peaked with sustained winds of 60 mph on June 21, and weakened slightly prior to making landfall in southwestern Louisiana on June 22. The storm quickly weakened as it moved further inland eventually degenerating into a remnant low on June 23, 2017.

The minimum sea level pressure of 1004.4 mb, along with the highest wind gust, and highest sustained wind in southeast Louisiana were all measured by the New Orleans Lakefront Airport. The highest wind gust recorded was 49 mph, and the highest maximum sustained wind was 44 mph. Tropical storm force winds were primarily experienced in gusts as squalls moved through the area. The winds did cause minor damage to trees, roofs, and power lines. The only known injuries in southeast Louisiana resulted from a tree falling on a mobile home in Houma, Louisiana.

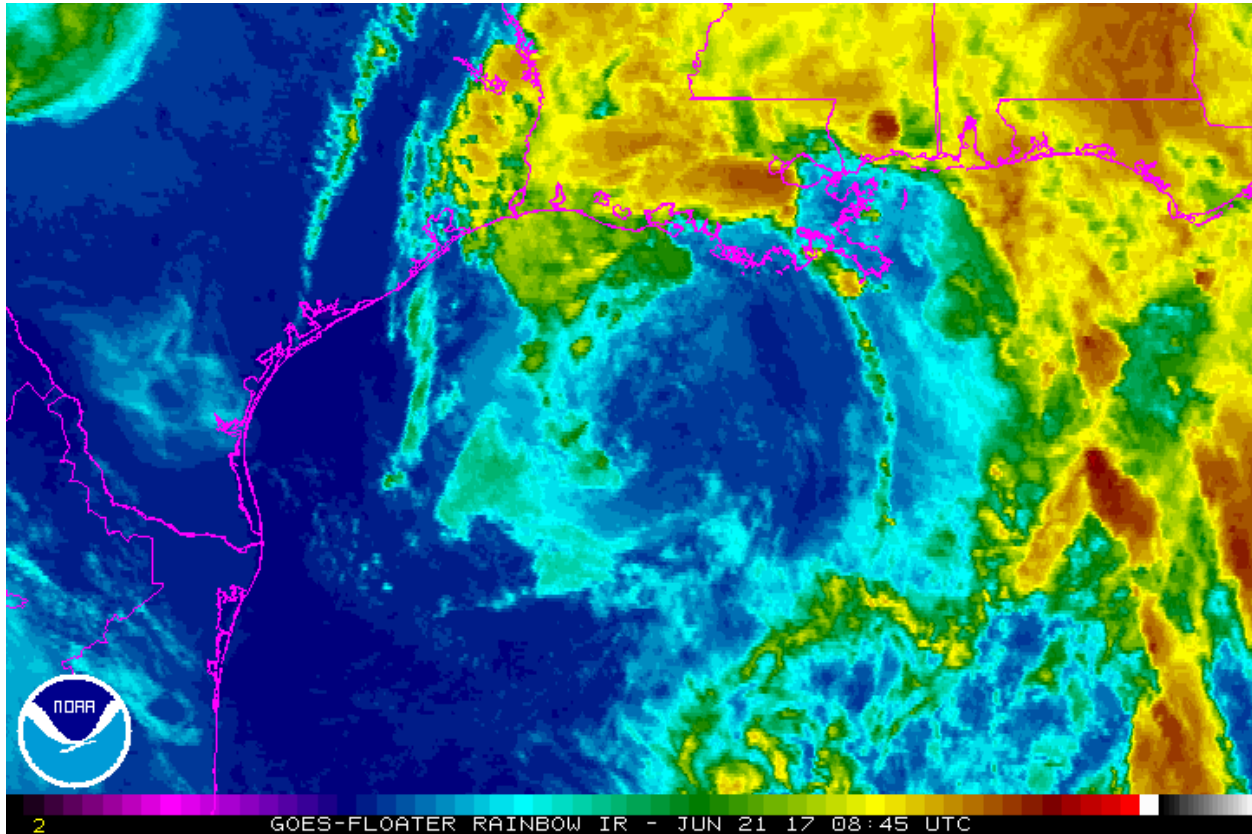


Figure 2-20: Tropical Cyclone Cindy Rain Bands across the Gulf Coast Area.  
(Source: NOAA)

A storm tide of generally four to six feet occurred along the Gulf Coast of southeast Louisiana from St. Bernard Parish to Terrebonne Parish. The highest measured storm tide was 6.18 feet NAVD88 at the USCOE gauge near Mandeville, Louisiana. Impacts from storm surge were minor to moderate with flooding occurring in low lying areas and roadways outside of levee systems.

Many areas of southeast Louisiana received three to five inches of rain with a few measurements in excess of six inches. Maximum storm total rainfall was 6.52 inches measured in St. Bernard Parish. The rainfall resulted in some minor river flooding across portions of the north shore of Lake Pontchartrain.

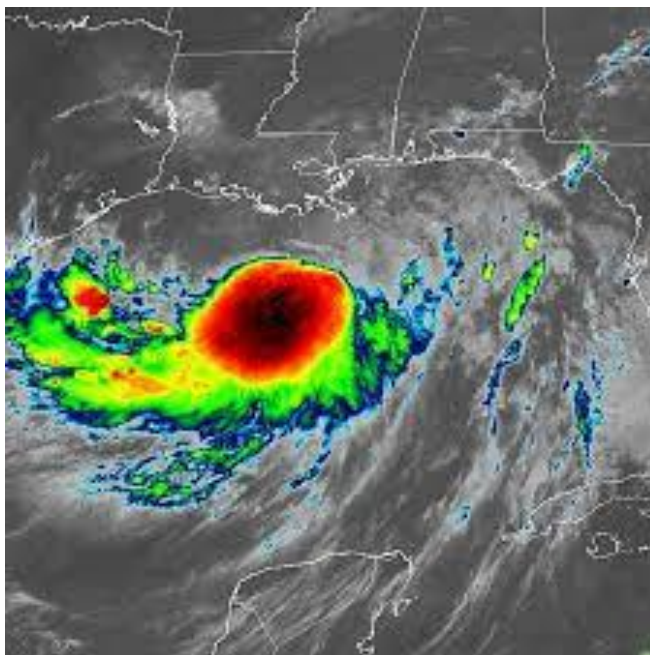
The primary impact in St. John the Baptist Parish was a few tropical storm force wind gusts that were reported at the Frenier Landing C-Man (FREL1). The highest gust reported was 39 knots at 11:36 pm CST on June 20.

#### 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 11<sup>th</sup>, 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 13<sup>th</sup> 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 12<sup>th</sup> and spread slowly northwest reaching the Baton Rouge area during the evening of the 12<sup>th</sup>. Tropical storm wind impacts had ended across all of southeast Louisiana by midday on July 14<sup>th</sup>. 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 13<sup>th</sup> 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 13<sup>th</sup> 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 Carrollton 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.

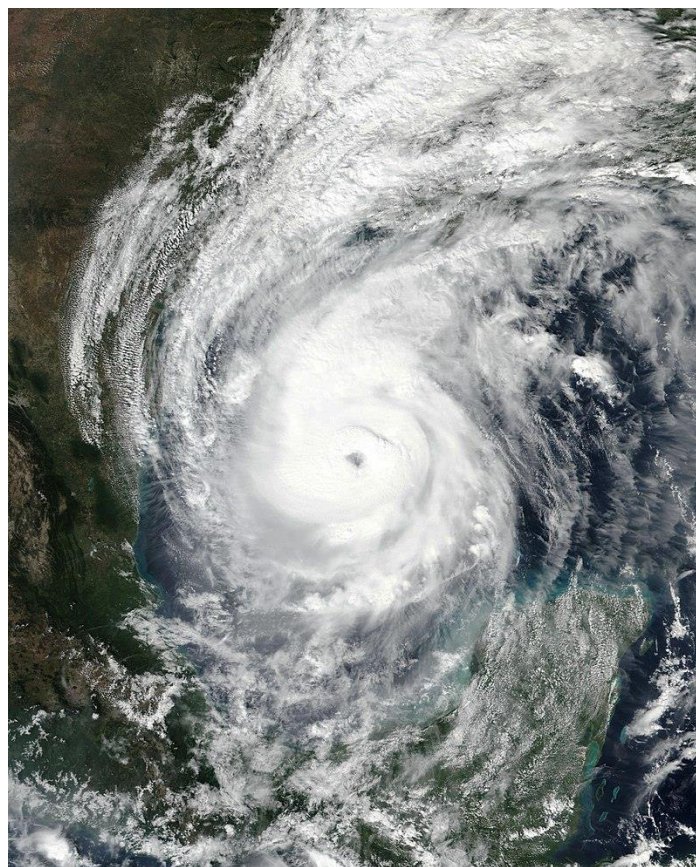


*Figure 2-21: Hurricane Barry Rain Bands in the Gulf Coast Area.  
(Source: NOAA)*

In St. John the Baptist Parish, storm total rainfall was estimated to be 2 to 4 inches across the parish. There were occasional tropical storm force wind gusts, with the peak reported gust of 39 knots at Frenier Landing.

#### 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-sixth 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.



*Figure 2-22: Hurricane Delta in the Gulf Coast Area.  
(Source: NOAA)*

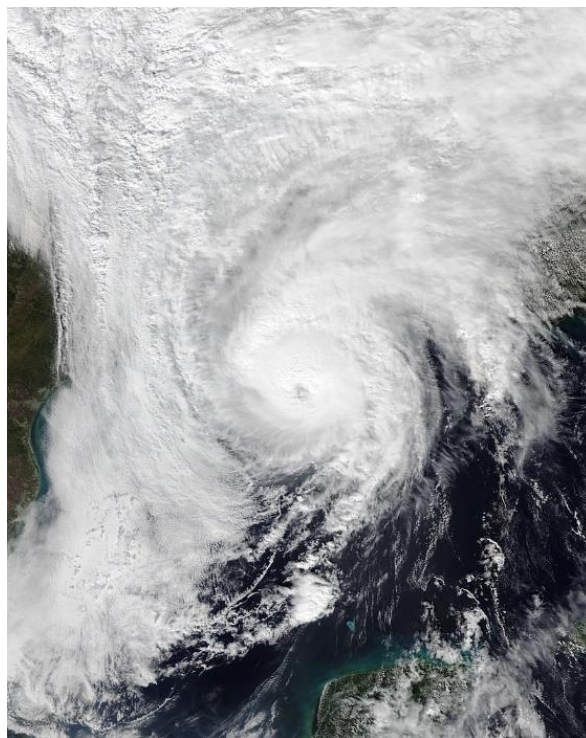
Hurricane Delta made landfall around 5 pm as a category 2 storm east of Cameron, Louisiana or about 15 miles east of where category 4 Hurricane Laura made landfall just a couple of months earlier of the same year. Local impacts included 50 to 70 mph wind gusts across the area, storm surge of 2 to 3 feet 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. John the Baptist Parish, Delta had major impacts as a result of tropical storm force winds and tidal surge across the parish. Peak wind gusts were estimated in the 50 to 60 mph range, but the surge from Lake Pontchartrain and Lake Maurepas inundated Highways 51 and 55, rendering them impassable. The flooding also impacted the on and off ramps of Interstate 10 near LaPlace. Several trees were downed and at the peak, roughly 20% of the parish was without power.

#### Tropical Storm Zeta (2020)

A tropical depression formed in the northwestern Caribbean on the afternoon of October 24<sup>th</sup>. 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 26<sup>th</sup>. 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 2-23: Hurricane Zeta in the Gulf Coast Area.  
(Source: NOAA)*

In St. John the Baptist Parish, Zeta produced tropical storm force wind gusts which downed trees, power lines, and power poles across the parish. At the peak, roughly one third of the parish was without power. The following figure displays the wind zones that affect St. John the Baptist Parish in relation to critical facilities throughout the parish.

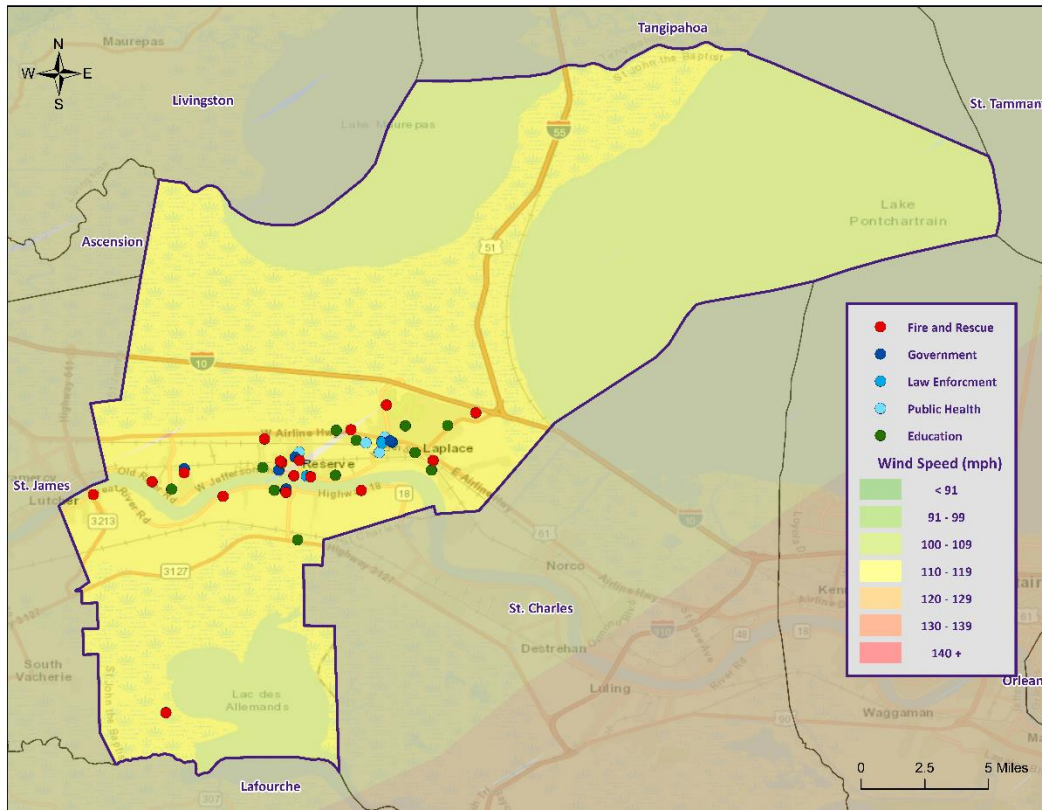


Figure 2-24: Winds Zones for St. John the Baptist Parish in Relation to Critical Facilities

#### Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact St. John the Baptist Parish. The annual chance of occurrence for a tropical cyclone is estimated at 100% for St. John the Baptist Parish with 19 events occurring within 18 years (2002 to 2020). The tropical cyclone season for the Atlantic Basin is from June 1st through November 30<sup>th</sup>, 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. John the Baptist Parish is highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

#### 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 table on the next page shows the total economic losses that would result from this occurrence.

*Table 2-40: Total Estimated Losses for a 100-Year Hurricane Event  
(Source: Hazus)*

Jurisdiction	Estimated Total Losses from 100-Year Hurricane Event
St. John the Baptist Parish	\$172,012,061

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

*Table 2-41: Ratio of Total Losses to Total Estimated Value of Assets for St. John the Baptist 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. John the Baptist Parish	\$172,012,061	\$4,280,777,000	4%

Based on the Hazus Hurricane Model, estimated total losses for St. John the Baptist Parish were 4% 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. John the Baptist Parish by sector are listed in the table below.

*Table 2-42: Estimated Losses in St. John the Baptist Parish for a 100-Year Hurricane Event  
(Source: Hazus)*

St. John the Baptist Parish	Estimated Total Losses from 100-Year Hurricane Event
Agricultural	\$367,922
Commercial	\$11,925,827
Government	\$1,542,027
Industrial	\$2,300,729
Religious / Non-Profit	\$1,033,646
Residential	\$153,387,625
Schools	\$1,454,286
<b>Total</b>	<b>\$172,012,061</b>



*Threat to People*

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

*Table 2-43: Number of People Susceptible to a 100-Year Hurricane Event in St. John the Baptist Parish  
(Source: Hazus)*

Number of People Exposed to Hurricane Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
St. John the Baptist Parish	45,924	45,924	100.0%

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

*Table 2-44: Vulnerable Populations in St. John the Baptist Parish for a 100-Year Hurricane Event  
(Source: Hazus)*

St. John the Baptist Parish		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	45,924	100.0%
Persons Under 5 Years	3,366	7.3%
Persons Under 18 Years	8,987	19.6%
Persons 65 Years and Over	4,735	10.3%
White	19,499	42.5%
Minority	26,425	57.5%

*Vulnerability*

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

## 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 2-45: 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. John the Baptist Parish as all of the adjacent parishes, the entire planning area for St. John the Baptist Parish is equally at risk for winter storms. The worst-case scenario for St. John the Baptist Parish is a level 2 on the Sperry-Piltz ice accumulation index.

*Previous Occurrences / Extents*

The NCEI Storm Events Database reports four winter weather events occurring within the boundaries of St. John the Baptist Parish between the years 1990 and 2020. Since the last St. John the Baptist Parish HMP Update in 2015, there has been one major winter weather event to impact the parish. Below is a brief synopsis of the event:

Table 2-46: Previous Occurrences for Winter Storm Event.

Date	Synopsis	Property Damage	Crop Damage
December 8, 2017	Emergency Management reported 1 to 2 inches of snow at Vacherie and Reserve.	\$0	\$0

*Frequency / Probability*

Based on historical records, there have been four significant winter weather events within the boundaries of St. John the Baptist Parish; therefore, the annual chance of occurrence for winter weather is estimated at 13%.

*Estimated Potential Losses*

Since 1990, there have been four winter weather events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with those storms have totaled approximately \$5,000. 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 \$333 and \$2,500 per event. The following table provides an estimate of potential property losses for St. John the Baptist Parish:

*Table 2-47: Estimated Annual Losses St. John the Baptist Parish Resulting from Winter Weather.*

Estimated Annual Potential Losses from Winter Weather
St. John the Baptist Parish
\$333

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.

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### 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. John the Baptist Parish is able to identify strengths that could be used to reduce losses and reduce risk throughout its 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, 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. John the Baptist 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 can be found in the figure on the next page.

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. John the Baptist Parish	Comments
Plans		
Comprehensive / Master Plan	Yes	Adopted 2017
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	Every 4 years.
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	Version / Year: <ul style="list-style-type: none"> <li>• International Residential Code , 2012</li> <li>• International Building Code, 2012</li> <li>• International Existing Building Code, 2012</li> <li>• International Mechanical Code, 2012</li> <li>• International Fuel Gas Code, 2012</li> <li>• Louisiana State Plumbing Code, 2013</li> <li>• National Electric Code, 2011</li> </ul>
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Score = Third class for 1 and 2 family residential and third class for commercial and industrial
Fire Department ISO/PIAL rating	Yes	Class 3
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	No	
Other	No	

St. John the Baptist Parish will work to expand its 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. John the Baptist Parish Government provides oversight for building permits and codes, land use planning, and all parish ordinances.

As of the 2021 update, St. John the Baptist Parish Government ensures 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. John the Baptist 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. John the Baptist 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. John the Baptist 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

St. John the Baptist Parish has 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 below shows examples of resources in place.

Table 3-2: Administration and Technical Capabilities

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

Financial capabilities are the resources that St. John the Baptist Parish Government has 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. John the Baptist 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. John the Baptist Parish	
Funding Resource		Comments
Capital Improvements project funding	No	
Authority to levy taxes for specific purposes	No	
Fees for water, sewer, gas, or electric services	No	
Impact fees for new development	No	
Stormwater Utility Fee	No	
Community Development Block Grant (CDBG)	No	
Other Funding Programs	No	

### 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 parish as a whole to maximize opportunities for implementation of activities through greater acceptance and consensus of the community.

St. John the Baptist Parish has 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. John the Baptist Parish	
Program / Organization		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	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

As reflected with the above existing regulatory mechanisms, programs and resources within the parish, St. John the Baptist Parish remains committed to expanding and improving on the existing capabilities



within the parish. St. John the Baptist Parish Government will work 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. John the Baptist 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 April 1, 2021, St. John the Baptist Parish is currently rated as a Class 7 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<sup>1</sup>, 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 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

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<sup>1</sup> <https://www.fema.gov/national-flood-insurance-program-community-rating-system>

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. John the Baptist Parish has 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 St. John the Baptist Parish 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. John the Baptist Parish Hazard Mitigation Plan Steering Committee under the coordination of the St. John the Baptist Parish Office of Homeland Security and Emergency Preparedness. The committee was presented a list of projects and actions, new and from the 2015 plan, for review from June 2021 – September 2021.

An online public opinion survey of St. John the Baptist Parish residents was conducted from May to September 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in the St. John the Baptist 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.

This activity was created in an effort to confirm that the goals and action items developed by the St. John the Baptist Parish Hazard Mitigation Plan Steering Committee are representative of the outlook of the community at large. However, because there were so few responses to the survey, this public feedback could not be incorporated into the plan. The full St. John the Baptist Parish survey can be found at the following link:

<https://www.surveymonkey.com/results/SM-ZYL7T6L29/>

### 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. John the Baptist 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. John the Baptist 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. John the Baptist 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 flood losses in the parish
4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards

The Mitigation Action Plan focuses on actions to be taken by St. John the Baptist Parish. 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 2015 St. John the Baptist 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. John the Baptist Parish 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. John the Baptist Parish Hazard Mitigation Plan Steering Committee identified new actions that would reduce and/or prevent future damage within the St. John the Baptist 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. John the Baptist 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 below and on the following pages. Additionally, new mitigation actions agreed upon by the parish are included.

## St. John the Baptist Parish Mitigation Actions

### Previous Action Update

Jurisdiction-Specific Action	Action Description	Funding Source	Target Completion Date	Responsible Party, Agency, or Department	Hazard	Goal	Status
<b>SJB1: Drainage Improvements</b>	Improve drainage ways including, but not limited to, by enlarging and upgrading any inferior culverts, upgrading pumps and flapper valves, and installing retention ponds to ensure water flows freely within the drainage system, which will protect the surrounding area from flooding. Expand the drainage districts to cover the entire parish.	CDBG, FMA Project Funds, HMGP Funds, SBA, U.S. Army Corps of Engineers - Section 205, and State Capital Outlay, Local Drainage Funds	On-Going	Parish Floodplain Manager/ Public Works Director	Flooding, Tropical Cyclones	1, 3, 4	In Progress
<p><b>Type of Mitigation Action:</b> Structure and Infrastructure Projects, Structural Projects (CRS)</p> <p><b>Status:</b> Completed Reserve Drainage Project Phase II in 2020. Construction set to begin on LA SAFE Airline and Main Project in 2021. Design ongoing on Belle Terre Complete Streets project. Canal dredging began in 2020 and will continue as funds are available. Future drainage projects continue to be developed and evaluated, pending funding availability.</p>							
<b>SJB2: Update Master Drainage Plan</b>	Update the master drainage plan which will increase drainage capacity at major drainage laterals and evaluate drainage projects at major drainage laterals to determine best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan to reduce the number of flooded structures by increasing the volume of water the pumps can handle at the final outfall.	Parish Budget/ Grant Funding	On-Going	Parish Engineer	Flooding, Tropical Cyclones	1, 3, 4	In Progress
<p><b>Type of Mitigation Action:</b> Local Plans and Regulations, Preventative (CRS)</p> <p><b>Status:</b> The Parish is working to solicit qualified firms to update drainage models and develop a 10 year capital improvement plan for drainage. This data will be used to update flood maps following construction of the West Shore Levee Project and identify priority areas for future drainage projects. This is scheduled to begin in 2022.</p>							

<p><b>SJB3: Hardening of Governmental Buildings and Critical Facilities</b></p>	<p>Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/generators at these locations. Benefits include the providing of safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.</p>	<p>Parish Budget/ Grant Funding</p>	<p>On-Going</p>	<p>Parish Emergency Manager</p>	<p>Flooding, Thunderstorms, Tornadoes, Tropical Cyclones</p>	<p>1, 4</p>	<p>Carried Over/ Not Started (See St. John the Baptist Mitigation Action 1)</p>
<p><b>SJB4: Implementation of New Mitigation Initiatives</b></p>	<p>Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the state and FEMA.</p>	<p>Staff Time/ Grant Funding</p>	<p>On-Going</p>	<p>Parish Emergency Manager</p>	<p>Expansive Soils, Flooding, Tropical Cyclones</p>	<p>1, 3, 4</p>	<p>In Progress</p>
<p><b>Type of Mitigation Action:</b> Structure and Infrastructure Projects, Structural Projects (CRS)  <b>Status:</b> Since 2015, the Parish has made progress in implementation of new mitigation initiatives including: coordination with the Army Corps of Engineers on construction of the West Shore Levee project, development of a Low Impact Development program to manage stormwater on commercial sites, design of a breakwater system on Lake Pontchartrain to further a "multiple lines of defense strategy," etc. The Parish continues to implement new and innovative strategies to mitigate risk, pending funding availability.</p>							
<p><b>SJB5: Improvement of Public Notification System</b></p>	<p>Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.</p>	<p>Parish Budget/ Grant Funding</p>	<p>On-Going</p>	<p>Parish Emergency Manager</p>	<p>Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather</p>	<p>1, 2, 4</p>	<p>In Progress</p>
<p><b>Type of Mitigation Action:</b> Education and Awareness Programs, Emergency Services (CRS)  <b>Status:</b> The Parish implemented a Test 2 Notification System -- new streamlined emergency notifications allowing residents easy access to messaging and other forms of communications during natural disasters and other Parish emergencies. The Parish continues to seek out new ways to notify and engage the public.</p>							



<p><b>SJB6: Promotion of Participation in the NFIP</b></p>	<p>Continue to promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the NFIP. This enables homeowners to financially recover from the devastating effects of flooding as rapidly as possible. Serves to educate area residents that any homeowner, regardless of location, can purchase flood insurance.</p>	<p>Parish Budget</p>	<p>On-Going</p>	<p>Parish Emergency Manager</p>	<p>Flooding, Tropical Cyclones</p>	<p>1, 2, 3</p>	<p>In Progress</p>
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**Type of Mitigation Action:** Education and Awareness Programs, Property Protection (CRS), Public Information (CRS)  
**Status:** The Parish remains committed to participation in the NFIP. As part of the CRS system, the Parish continues to promote flood insurance, mitigation, etc. each year through in-person events, social media, etc. Since 2015, the Parish has moved to a Class 7 CRS score, securing flood insurance discounts for all residents. The Parish continues to seek out new ways to promote the NFIP.

<p><b>SJB7: Mitigation Education and Public Outreach</b></p>	<p>Continue to increase public awareness of hazards and hazardous areas by the following: distribute public awareness information regarding flood hazards, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website; provide an educational program for school age children; integrate "Disaster Resistance Education" into the public school curriculum; provide public education on the importance of maintaining the ditches; sponsor "Multi-Hazard Awareness Activities" for public education purposes</p>	<p>Parish Budget/Grant Funding</p>	<p>On-Going</p>	<p>Parish School Board and Parish Emergency Manager</p>	<p>Drought, Expansive Soils, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather</p>	<p>1, 2</p>	<p>In Progress</p>
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**Type of Mitigation Action:** Education and Awareness Programs, Public Information (CRS)  
**Status:** The Parish continues to promote flood insurance, mitigation, etc. each year through in-person events, social media, etc. Since 2015, the Parish has moved to a Class 7 CRS score, securing flood insurance discounts for all residents. The Parish continues to seek out new ways to promote the NFIP and engage citizens about mitigation.

<p><b>SJB8: Elevation and Acquisition Projects</b></p>	<p>Pursue elevation/ acquisition/ flood proofing/ reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.</p>	<p>Parish Budget</p>	<p>On-Going</p>	<p>Building Permit Director/ Emergency Manager</p>	<p>Flooding, Tropical Cyclones</p>	<p>1, 3, 4</p>	<p>In Progress</p>
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**Type of Mitigation Action:** Structure and Infrastructure Projects, Property Protection (CRS), Public Information (CRS)  
**Status:** Since 2015, the Parish utilized grant funds to elevate 22 homes. The Parish continues to seek out funding to elevate and acquire flood-prone properties.

<p><b>SJB9: CRS Participation</b></p>	<p>Continue to participate in the CRS. Review the existing floodplain ordinance and evaluate ways to improve the Parish's 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. Benefits: Reduce flood insurance premiums and thereby encourage more people to purchase flood insurance, which would potentially result in lower cost and a more timely recovery</p>	<p>Parish Budget</p>	<p>On-Going</p>	<p>Parish Floodplain Manager</p>	<p>Flooding, Tropical Cyclones</p>	<p>1, 3, 4</p>	<p>In Progress</p>
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**Type of Mitigation Action:** Local Plans and Regulations, Education and Outreach, Preventative (CRS) Property Protection (CRS), Public Information (CRS)  
**Status:** The Parish continues to promote flood insurance, mitigation, etc. each year through in-person events, social media, etc. Since 2015, the Parish has moved to a Class 7 CRS score, securing flood insurance discounts for all residents. The Parish continues to seek out new ways to promote the NFIP and engage citizens about mitigation.

<p><b>SJB10: Hardening of Future Industrial, Commercial, and Residential Structures</b></p>	<p>Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.</p>	<p>Parish Budget</p>	<p>On-Going</p>	<p>Parish Floodplain Manager/ Inspection and Code Planning Department/ Parish Department of Public Works</p>	<p>Thunderstorm Tornadoes, Tropical Cyclones</p>	<p>1, 4</p>	<p>Carried Over/ Not Started (See St. John the Baptist Mitigation Action 2)</p>
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<p><b>SJB11: Safe Room Construction</b></p>	<p>Construct safe rooms for governmental buildings and critical facilities</p>	<p>HMGP</p>	<p>1 - 5 years</p>	<p>Building Permit Director/ Emergency Manager</p>	<p>Thunderstorms, Tornadoes</p>	<p>1, 4</p>	<p>Completed</p>
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**Type of Mitigation Action:** Structure and Infrastructure Projects  
**Status:** Construction of a new Safe Room was completed in 2020.

<b>SJB12: Generator Installation for Governmental Buildings and Critical Facilities</b>	Install generators for governmental buildings and critical facilities as needed	HMGP	1 - 5 years	Building Permit Director/ Emergency Manager	Flooding, Thunderstorms, Tropical Cyclones, Tornadoes, Winter Weather	1, 4	In Progress
<b>Type of Mitigation Action:</b> Structure and Infrastructure Projects, Property Protection (CRS), Emergency Services (CRS) <b>Status:</b> The Parish purchased portable generators for drainage pumps through a grant from FEMA and also 3 emergency generators for use at sewer facilities. The Parish continues to seek funding to purchase additional generators for use during emergency events.							
<b>SJB13: Expansive Soil Data Collection and Tracking</b>	Create a monitoring system in an effort to track losses due to expansive soil occurrences	FEMA	1-5 Years	St. John the Baptist Parish Government	Expansive Soils	1,2	Carried Over/ Not Started (See St. John the Baptist Mitigation Action 3)
<b>SJB14: Lightning Mitigation</b>	Procurement and installation of lightning rods and surge protectors for public buildings to preserve life and property	FEMA, Local	1-5 years	St. John the Baptist Parish OHSEP/ Parish Engineer/ Parish Department of Public Works	Thunderstorms	1	Carried Over/ Not Started (See St. John the Baptist Mitigation Action 4)
<b>SJB15: Potable Water</b>	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. John the Baptist Parish OHSEP/ Parish Engineer/ Parish Department of Public Works	Drought, Thunderstorms Tornadoes, Tropical Cyclones	1	Carried Over/ Not Started (See St. John the Baptist Mitigation Action 5)
<b>SJB16: Hardening of Governmental Buildings and Critical Facilities</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/ generators at these locations. Benefits include the providing of safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.	Parish Budget/ Grant Funding	On-Going	Parish Emergency Manager	Thunderstorms, Tornadoes, Tropical Cyclones	1, 4	Delete (Duplicate)

<b>SJB17: Improvement of Public Notification System</b>	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.	Parish Budget/ Grant Funding	On-Going	Parish Emergency Manager	Tornadoes	1, 2, 4	Delete (Duplicate)
<b>SJB18: Elevation and Acquisition Projects</b>	Pursue elevation/ acquisition/ flood proofing/reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.	Parish Budget	On-Going	Building Permit Director/ Emergency Manager	Flooding, Tropical Cyclones	1, 3, 4	Delete (Duplicate)
<b>SJB19: Hardening of Future Industrial, Commercial, and Residential Structures</b>	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.	Parish Budget	On-Going	Parish Floodplain Manager/Insp ection and Code Planning Department/ Parish Department of Public Works	Thunderstorms, Tornadoes, Tropical Cyclone	1, 4	Delete (Duplicate)

*New Mitigation Actions*

IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 1</b>	Hardening of Governmental Buildings and Critical Facilities
<b>LEAD AGENCY</b>	St. John the Baptist Parish OHSEP
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish Council; St. John the Baptist Parish Department of Public Works
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget; Grant Funding
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Medium
<b>Action Description</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass
<b>Type of Mitigation Action</b>	Structure and Infrastructure Projects Property Protection (CRS)
<b>How Action Aligns with Risk Reduction</b>	Benefits include the providing of safety during events to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.
<b>Current Status of Action</b>	New (Carried Over/Not Started from 2016 Update)
<b>Hazard Addressed</b>	Expansive Soils, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

**Additional Supporting Information:**



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 2</b>	Adopt Building Codes and Ordinances Related to Hardening of Future Industrial, Commercial, and Residential Structures
<b>LEAD AGENCY</b>	St. John the Baptist Parish Council
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish OHSEP; St. John the Baptist Parish Department of Public Works; Parish Inspection and Code Planning Department
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>3. Reduce repetitive flood losses in the parish</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Medium
<b>Action Description</b>	Adopt building codes and ordinances related to improved building regulations of industrial, commercial, and residential structures, and future or new structures. Measures include but are not limited to implementation of the drilled pier method to increase foundation stability, inclusion of “floating walls” in new construction, floodproofing of utilities and low lying structures, and using materials rated for the appropriate windspeeds.
<b>Type of Mitigation Action</b>	Local Plans and Ordinances Preventative (CRS) Property Protection (CRS)
<b>How Action Aligns with Risk Reduction</b>	Results in additional, more stringent techniques to harden structures and thereby better withstand impacts of hazards.
<b>Current Status of Action</b>	New (Carried Over/Not Started from 2016 Update)
<b>Hazard Addressed</b>	Expansive Soils, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 3</b>	Expansive Soil Data Collection and Tracking
<b>LEAD AGENCY</b>	St. John the Baptist Parish Government
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish OHSEP; St. John the Baptist Parish Department of Public Works
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget; FEMA
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>2. Enhance public awareness and understanding of disaster preparedness</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Low
<b>Action Description</b>	Create a monitoring system in an effort to track current and future losses due to expansive soil occurrences
<b>Type of Mitigation Action</b>	Natural System Protection Education and Awareness Programs
<b>How Action Aligns with Risk Reduction</b>	Tracking prevalent expansive soil areas and subsequent/potential losses will help the parish focus mitigation areas on those areas most heavily impacted
<b>Current Status of Action</b>	New (Carried Over/Not Started from 2016 Update)
<b>Hazard Addressed</b>	Expansive Soils

Additional Supporting Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 4</b>	Lightning Mitigation
<b>LEAD AGENCY</b>	St. John the Baptist Parish OHSEP
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish Department of Public Works; Parish Engineer
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget; FEMA
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Low
<b>Action Description</b>	Procurement and installation of lightning rods and surge protectors for public buildings
<b>Type of Mitigation Action</b>	Structure and Infrastructure Projects
<b>How Action Aligns with Risk Reduction</b>	The installation of lightning rods and surge protectors in public buildings and critical infrastructure will reduce losses due to lightning strikes and surges in electricity.
<b>Current Status of Action</b>	New (Carried Over/Not Started from 2016 Update)
<b>Hazard Addressed</b>	Thunderstorms

**Additional Supporting Information:**





IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 5</b>	Potable Water
<b>LEAD AGENCY</b>	St. John the Baptist Parish OHSEP
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish Department of Public Works; Parish Engineer
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget; FEMA
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Low
<b>Action Description</b>	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.
<b>Type of Mitigation Action</b>	Structure and Infrastructure Projects Property Protection (CRS) Emergency Services (CRS)
<b>How Action Aligns with Risk Reduction</b>	Creating a redundancy of potable water for critical facilities will reduce downtime and allow for the continuity of essential operations during and after an event.
<b>Current Status of Action</b>	New (Carried Over/Not Started from 2016 Update)
<b>Hazard Addressed</b>	Drought, Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather

Additional Supporting Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITGATION ACTION 6</b>	Adopt ordinances to restrict the use of public water resources for non-essential usage
<b>LEAD AGENCY</b>	St. John the Baptist Parish Council
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish OHSEP; St. John the Baptist Parish Department of Public Works
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	HMGP, Local
<b>ASSOCIATED GOALS</b>	1. Identify and pursue preventative measures that will reduce future damages from hazards
<b>PRIORITY</b>	Low
<b>Action Description</b>	Adopt ordinances to restrict the use of public water resources for non-essential usage
<b>Type of Mitigation Action</b>	Local Planning and Regulation
<b>How Action Aligns with Risk Reduction</b>	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
<b>Current Status of Action</b>	New
<b>Hazard Addressed</b>	Drought

Additional Supporting Information:



IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS ST. JOHN THE BAPTIST PARISH	
DESCRIPTION	
<b>ST. JOHN THE BAPTIST MITIGATION ACTION 7</b>	Water System Retrofitting
<b>LEAD AGENCY</b>	St. John the Baptist Parish OHSEP
<b>SUPPORTING AGENCIES</b>	St. John the Baptist Parish Department of Public Works; Parish Engineer
<b>TIMELINE</b>	1-5 Years
<b>COST ESTIMATE</b>	TBD
<b>POSSIBLE FUNDING SOURCE(S)</b>	Parish Budget, FEMA
<b>ASSOCIATED GOALS</b>	<ol style="list-style-type: none"> <li>1. Identify and pursue preventative measures that will reduce future damages from hazards</li> <li>4. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards</li> </ol>
<b>PRIORITY</b>	Low
<b>Action Description</b>	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.
<b>Type of Mitigation Action</b>	Structure and Infrastructure Project
<b>How Action Aligns with Risk Reduction</b>	Improving water delivery systems reduces chance of loss through damaged infrastructure and ultimately saves water when it is needed most.
<b>Current Status of Action</b>	New
<b>Hazard Addressed</b>	Drought, Expansive Soils

**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. The steering committee met internally for mitigation action meetings to review and approve mitigation actions for St. John the Baptist Parish. 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. John the Baptist Parish 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.

## 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. John the Baptist Parish Hazard Mitigation Plan Update

The St. John the Baptist Parish Hazard Mitigation Plan Update process began in March 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
3/1/2021	Kick Off Email	Email	No	Schedule kick off call with Parish OHSEP and SDMI Staff.
3/4/2021	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.
6/22/2021	Steering Committee Meeting (Planning Process)	LaPlace, LA	No	Discussion with St. John the Baptist Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish.
10/6/2021	Risk Assessment Review with Steering Committee	Zoom	No	Presentation of Risk Assessment Hazards and maps to Steering Committee.
10/6/2021	Public Meeting	Zoom	Yes	Presentation of Risk Assessment Hazards and maps to Public. Presentation also includes current mitigation project highlights within communities and public survey discussion. Members of public were directed to SDMI website where a draft copy of the plan can be reviewed and commented on.
3/4/2021 – 10/19/2021	Public Opinion Survey	Online	Yes	This survey asked participants about public perceptions and opinions regarding natural hazards in St. John the Baptist Parish. In addition, questions covered the methods and techniques preferred for reducing the risks and losses associated with these hazards. Survey Results: <a href="https://www.surveymonkey.com/results/SM-ZYL7T6L29/">https://www.surveymonkey.com/results/SM-ZYL7T6L29/</a>

### 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	Month 9	Month 10
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. John the Baptist Parish Office of Homeland Security and Emergency Preparedness (OHSEP) and St. John the Baptist Parish Government 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
- Community Rating System Meetings and coordination
- Sharing local data and information with jurisdictions
- Incorporation of other planning documents, studies and efforts
- Action item development and action progress from 2015 update
- Risk Assessment review
- Plan document draft review
- Formal adoption of the Hazard Mitigation Plan

The St. Charles Parish OHSEP Director was invited to attend the Initial Planning and Risk Assessment Meetings for St. John the Baptist Parish in an effort to coordinate mitigation efforts where possible as neighboring communities. The St. Charles Parish OHSEP Director was invited via email to participate in an effort to collaborate with neighboring communities. SDMI assisted St. John the Baptist Parish with encouraging the collaboration with these neighboring communities via email by extending an invitation to the St. John the Baptist Parish 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 Plan Update 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 John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Natasha Chopin	Emergency Preparedness Coordinator	St. John the Baptist Parish	<a href="mailto:n.chopin@stjohn-la.gov">n.chopin@stjohn-la.gov</a>
Rebecca Hymel	GIS Administrator	St. John the Baptist Parish	<a href="mailto:r.hymel@stjohn-la.gov">r.hymel@stjohn-la.gov</a>
Rene' Pastorek	Director of Planning & Zoning	St. John the Baptist Parish	<a href="mailto:r.pastorek@stjohn-la.gov">r.pastorek@stjohn-la.gov</a>
Tara Lambeth	Floodplain Manager	St. John the Baptist Parish	<a href="mailto:t.lambeth@stjohn-la.gov">t.lambeth@stjohn-la.gov</a>
Colin Crumbley	Planning & Zoning Manager	St. John the Baptist Parish	<a href="mailto:c.crumbley@stjohn-la.gov">c.crumbley@stjohn-la.gov</a>
Phyl Cornman	Administrative Assistant/CRS Coordinator	St. John the Baptist Parish	<a href="mailto:f.cornman@stjohn-la.gov">f.cornman@stjohn-la.gov</a>

## 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. John the Baptist Parish Government 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. John the Baptist 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. John the Baptist 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 2015 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below.

- Flood Insurance Rate Maps
- CRS Coordinators Manual
- Floodplain Management Activity 510
- 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:** March 4, 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:**

St John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Lauren Morgan	Associate Director	LSU-SDMI	<a href="mailto:lstevens@lsu.edu">lstevens@lsu.edu</a>
Chris Rippetoe	Hazard Mitigation Program Manager	LSU-SDMI	<a href="mailto:crippe2@lsu.edu">crippe2@lsu.edu</a>
Anna Daigle	Emergency Management Specialist	LSU-SDMI	<a href="mailto:adaig35@lsu.edu">adaig35@lsu.edu</a>



Meeting #2: Hazard Mitigation Plan Update Initial Planning Meeting

Date: June 22, 2021

Location: LaPlace, LA

Purpose: Discuss with the St. John the Baptist Parish Steering Committee expectations and requirements of the project. Discuss meeting schedules, committee make up, and next steps.


Public Invitation: No


Meeting Invitees:

St John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Natasha Chopin	Emergency Preparedness Coordinator	St. John the Baptist Parish	<a href="mailto:n.chopin@stjohn-la.gov">n.chopin@stjohn-la.gov</a>
Rebecca Hymel	GIS Administrator	St. John the Baptist Parish	<a href="mailto:r.hymel@stjohn-la.gov">r.hymel@stjohn-la.gov</a>
Rene' Pastorek	Director of Planning & Zoning	St. John the Baptist Parish	<a href="mailto:r.pastorek@stjohn-la.gov">r.pastorek@stjohn-la.gov</a>
Tara Lambeth	Floodplain Manager	St. John the Baptist Parish	<a href="mailto:t.lambeth@stjohn-la.gov">t.lambeth@stjohn-la.gov</a>
Colin Crumbley	Planning & Zoning Manager	St. John the Baptist Parish	<a href="mailto:c.crumbley@stjohn-la.gov">c.crumbley@stjohn-la.gov</a>
Phyl Cornman	Administrative Assistant/CRS Coordinator	St. John the Baptist Parish	<a href="mailto:f.cornman@stjohn-la.gov">f.cornman@stjohn-la.gov</a>
Chris Rippetoe	Hazard Mitigation Program Manager	LSU-SDMI	<a href="mailto:crippe2@lsu.edu">crippe2@lsu.edu</a>
Anna Daigle	Emergency Management Specialist	LSU-SDMI	<a href="mailto:adaig35@lsu.edu">adaig35@lsu.edu</a>

ST. JOHN THE BAPTIST PARISH HAZARD MITIGATION PLAN UPDATE PLANNING COMMITTEE  
MEETING  
June 22, 2021

Name	Organization	Email	Phone
Anna Daigle	SDMI	adaig35@lsu.edu	
Chris Rippetoe	LSU SDMI	crippe2@lsu.edu	
Ann Koussef	CONSEP	Ann.Koussef@la.gov	985-226-3684
Tara Lambeth	St John	t.lambeth@stjohn-la.gov	
Phyl Cornman	St. John	f.cornman@stjohn-la.gov	
Rebecca Hymel	St. John	r.hymel@stjohn-la.gov	
Travis B Perrilloux	St. John	travis.perrilloux@stjohn-la.gov	985-652-2222
Natasha Chopin	St. John	n.chopin@stjohn-la.gov	985-652-2222
DESTINIA FIRMEN	Administrator	d.firmen@stjohn-la.gov	504-444-9037



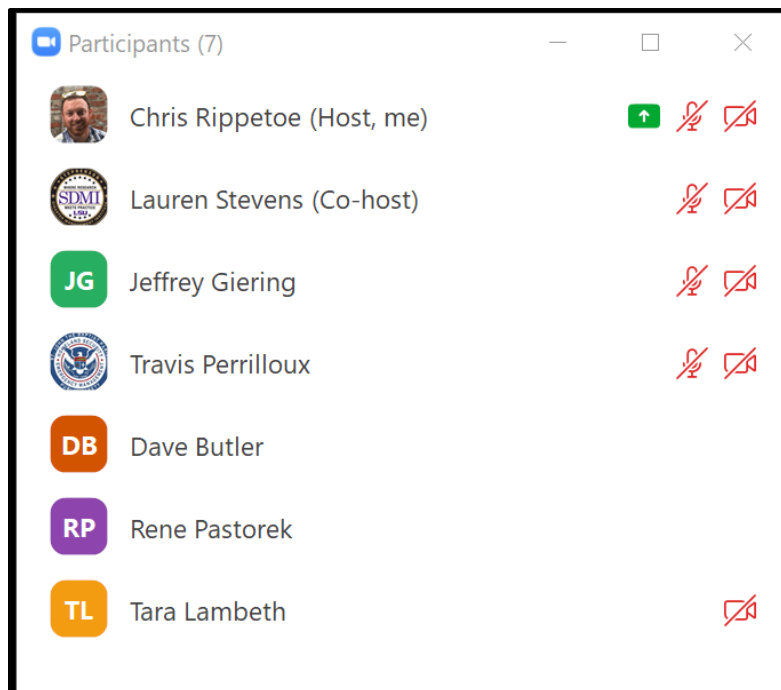


Stephenson Disaster Management Institute

## Meeting #3: Risk Assessment Presentation to Steering Committee

**Date:** October 6, 2021**Location:** Zoom Presentation**Purpose:** Presentation of Risk Assessment hazards and maps to Steering Committee.**Public Invitation:** No**Meeting Invitees:**

St John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Natasha Chopin	Emergency Preparedness Coordinator	St. John the Baptist Parish	<a href="mailto:n.chopin@stjohn-la.gov">n.chopin@stjohn-la.gov</a>
Rebecca Hymel	GIS Administrator	St. John the Baptist Parish	<a href="mailto:r.hymel@stjohn-la.gov">r.hymel@stjohn-la.gov</a>
Rene' Pastorek	Director of Planning & Zoning	St. John the Baptist Parish	<a href="mailto:r.pastorek@stjohn-la.gov">r.pastorek@stjohn-la.gov</a>
Tara Lambeth	Floodplain Manager	St. John the Baptist Parish	<a href="mailto:t.lambeth@stjohn-la.gov">t.lambeth@stjohn-la.gov</a>
Colin Crumbley	Planning & Zoning Manager	St. John the Baptist Parish	<a href="mailto:c.crumbley@stjohn-la.gov">c.crumbley@stjohn-la.gov</a>
Phyl Cornman	Administrative Assistant/CRS Coordinator	St. John the Baptist Parish	<a href="mailto:f.cornman@stjohn-la.gov">f.cornman@stjohn-la.gov</a>
Chris Rippetoe	Hazard Mitigation Program Manager	LSU-SDMI	<a href="mailto:crippe2@lsu.edu">crippe2@lsu.edu</a>
Lauren Morgan	Associate Director	LSU-SDMI	<a href="mailto:lstevens@lsu.edu">lstevens@lsu.edu</a>



**Meeting #4: Public Meeting****Date:** October 6, 2021**Location:** Zoom Presentation




















**Purpose:** The Public Meeting allowed the public and community stakeholders to participate and provide input into the hazard mitigation planning process. Maps of the St. John the Baptist Parish planning area were provided for the meeting attendees to identify specific areas where localized hazards occur. The public was also directed to the SDMI website where a draft copy of the plan could be reviewed and commented on.

**Public Invitation:** Yes**Meeting Invitees:**

St John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Natasha Chopin	Emergency Preparedness Coordinator	St. John the Baptist Parish	<a href="mailto:n.chopin@stjohn-la.gov">n.chopin@stjohn-la.gov</a>
Rebecca Hymel	GIS Administrator	St. John the Baptist Parish	<a href="mailto:r.hymel@stjohn-la.gov">r.hymel@stjohn-la.gov</a>
Rene' Pastorek	Director of Planning & Zoning	St. John the Baptist Parish	<a href="mailto:r.pastorek@stjohn-la.gov">r.pastorek@stjohn-la.gov</a>
Tara Lambeth	Floodplain Manager	St. John the Baptist Parish	<a href="mailto:t.lambeth@stjohn-la.gov">t.lambeth@stjohn-la.gov</a>
Colin Crumbley	Planning & Zoning Manager	St. John the Baptist Parish	<a href="mailto:c.crumbley@stjohn-la.gov">c.crumbley@stjohn-la.gov</a>
Phyl Cornman	Administrative Assistant/CRS Coordinator	St. John the Baptist Parish	<a href="mailto:f.cornman@stjohn-la.gov">f.cornman@stjohn-la.gov</a>
Chris Rippetoe	Hazard Mitigation Program Manager	LSU-SDMI	<a href="mailto:crippe2@lsu.edu">crippe2@lsu.edu</a>
Lauren Morgan	Associate Director	LSU-SDMI	<a href="mailto:lstevens@lsu.edu">lstevens@lsu.edu</a>

**Participants (19)**

Find a participant

-  Lauren Stevens (Co-host, me)
-  Chris Rippetoe (Host)
-  bdivaut
-  iPhone
-  A. Brock
-  Anita Powell
-  Anquienetta
-  Dave Butler
-  Devona
-  EDC
-  iPad (5th generation)
-  Jeffrey Giering
-  Michael Hopkins
-  Monica Farris UNO-CHART
-  Rene Pastorek
-  Robin Bailey
-  Sheila's iPad
-  Tara Lambeth
-  Travis Perrilloux

**Meeting Announcement:**

ST. JOHN THE BAPTIST PARISH OFFICE OF HOMELAND SECURITY & EMERGENCY PREPAREDNESS

**PUBLIC MEETING ANNOUNCEMENT**

**St. John the Baptist Parish and its partners are seeking community input for the 2021 St John the Baptist Parish Hazard Mitigation Plan update!**

St. John the Baptist 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 John the Baptist 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 Wednesday, October 6<sup>th</sup> for a virtual 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:**

Wednesday, October 6th, 2021: Zoom Meeting, 2:00-3:00pm

<https://lsu.zoom.us/j/98361588916?pwd=eWVxMEhiK2YwOFp4NGt1Y2ZCQ25aUT09>

Residents of St John the Baptist 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/StJohnTheBaptistHM2021>



The Parish greatly appreciates your input. If you have questions, please contact the St. John the Baptist OHSEP office.

**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 St. John the Baptist Parish residents was conducted between May and October 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in St. John the Baptist 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 6, 2021, there have been four responses to the St. John the Baptist Parish Hazard Mitigation Public Opinion Survey, with a completion rate of approximately 75%. Full survey results can be found here: <https://www.surveymonkey.com/results/SM-ZYL7T6L29/>

**Outreach Activity #2: 2021 St. John the Baptist Parish Hazard Mitigation Plan Public Review****Date:** Ongoing**Location:** SDMI Hazard Mitigation Website**Public Initiation:** Yes

After an initial review by the St. John the Baptist Parish Planning Committee was completed, the 2021 St. John the Baptist 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-john-the-baptist>

## 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. John the Baptist 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. John the Baptist 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 and community stakeholders 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. John the Baptist Parish Government 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. John the Baptist 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. John the Baptist Parish Government'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. John the Baptist Parish Government 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. John the Baptist 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. John the Baptist Parish Hazard Mitigation Plan into each jurisdiction's planning documents, processes, or mechanisms as follows:

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Comprehensive/Master Plan
- Emergency Operations Plans

Opportunities to integrate the requirements of this plan into other local planning mechanisms will continue to be identified through future meetings of the St. John the Baptist 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 2015 St. John the Baptist Parish 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. John the Baptist Parish Hazard Mitigation Plan into other planning documents when appropriate.

During the planning process for new and updated local planning documents at the parish level, such as a risk assessment, comprehensive plan, capital improvements plan, or emergency operations plan, the parish will provide a copy of the St. John the Baptist 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 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.

St. John the Baptist Parish Government 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 plans incorporate requirements of this HMP Update as follows through steering committee member and jurisdiction representation throughout the planning process as described above:

St. John the Baptist Parish Government			
<i>Comprehensive Master Plan</i>	Updated as needed	St. John the Baptist Parish Government	✓
<i>Local Emergency Operations Plan</i>	Updated every four years	St. John the Baptist Parish OHSEP	✓

### 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 Steering 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 Steering Committee
- Utilizing local media to update the public of any maintenance and/or periodic review activities taking place
- Utilizing Parish websites to advertise any maintenance and/or periodic review activities taking place
- Keeping copies of the plan in appropriate public locations.

## Appendix C: Critical Facilities

Critical Facilities within the St. John the Baptist Parish Planning Area

St. John the Baptist Parish Planning Area Critical Facilities								
Type	Name	Drought	Expansive Soils	Flooding	Thunderstorms	Tornadoes	Tropical Cyclones	Winter Weather
Government	ST. JOHN THE BAPTIST PARISH COURTHOUSE		X		X	X	X	X
	EMERGENCY OPERATIONS CENTER/911 CENTER		X		X	X	X	X
	ST. JOHN THE BAPTIST PARISH GOVERNMENT COMPLEX		X		X	X	X	X
	SCHOOL BOARD OFFICE COMPLEX		X		X	X	X	X
	GARYVILLE SERVICE CENTER		X		X	X	X	X
	HOMER BOOGIE JOSEPH COMMUNITY CENTER		X		X	X	X	X
Fire & SAR	CENTRAL FIRE STATION 91		X		X	X	X	X
	LUCY RIVER ROAD STATION 93		X		X	X	X	X
	COMMUNITY CENTER STATION 95		X		X	X	X	X
	DUANE CROTY MEMORIAL 71		X		X	X	X	X
	MONTEGUT FIRE STATION 52		X		X	X	X	X
	ST ANDREWS FIRE STATION 53		X		X	X	X	X
	WOODLAND FIRE STATION 54		X	X	X	X	X	X
	BELLE POINTE FIRE STATION 55		X		X	X	X	X
	MT SIRY STATION 72		X		X	X	X	X
	PORT COMMISSION FIRE RIVER RESCUE		X	X	X	X	X	X
	CENTRAL FIRE STATION 61		X		X	X	X	X
	LEBRUN MAURIN MEMORIAL 62		X		X	X	X	X
	STEPHEN MAURIN MEMORIAL 63		X		X	X	X	X
	ROSENWALD STATION 64		X		X	X	X	X
	AMERICAN LEGION STATION 65		X		X	X	X	X
PLEASURE BEND STATION 94		X		X	X	X	X	
WALLACE RIVER ROAD STATION 92		X			X	X	X	

<b>Law Enforcement</b>	SHERIFF'S OFFICE (COURTHOUSE)		X		X	X	X	X
	SHERIFF'S SUBSTATION		X		X	X	X	X
	SHERIFF'S MAIN DIVISION OFFICE		X		X	X	X	X
	SHERIFF'S OFFICE (PERCY HEBERT)		X		X	X	X	X
	SHERMAN WALKER CORRECTION CENTER		X		X	X	X	X
	ST. JOHN THE BAPTIST JUVENILE CENTER		X		X	X	X	X
<b>Public Health</b>	ST JOHN PARISH HEALTH UNIT (WEST BANK)		X		X	X	X	X
	ST JOHN PARISH HEALTH UNIT (EAST BANK)		X		X	X	X	X
	OCHSNER HEALTH CENTER - LAPLACE MEDICAL		X		X	X	X	X
	OCHSNER MEDICAL COMPLEX - RIVER PARISHES		X		X	X	X	X
	OCHSNER HEALTH CENTER - RIVER PARISHES		X		X	X	X	X
<b>Schools</b>	WEST ST JOHN ELEMENTARY		X		X	X	X	X
	WEST ST JOHN HIGH		X		X	X	X	X
	GARYVILLE/MT. AIRY MAGNET		X		X	X	X	X
	LAKE PONTCHARTRAIN ELEMENTARY		X	X	X	X	X	X
	JOHN L. ORY MAGNET		X		X	X	X	X
	LAPLACE ELEMENTARY		X		X	X	X	X
	EAST ST JOHN PREPARATORY ACADEMY		X		X	X	X	X
	EMILY C WATKINS ELEMENTARY		X		X	X	X	X
	EAST ST JOHN HIGH		X		X	X	X	X
	5TH WARD ELEMENTARY		X		X	X	X	X
	ST. JOHN MAGNET HIGH SCHOOL - LEON GODCHAUX		X		X	X	X	X

## Appendix D: Plan Adoption

**ST. JOHN THE BAPTIST PARISH COUNCIL**  
**STATE OF LOUISIANA**

**RESOLUTION**  
**R22-19**

Councilman Madere proposed and Councilman Malik seconded the following resolution:

**THE ST. JOHN THE BAPTIST PARISH COUNCIL HEREBY RESOLVES:**

**A RESOLUTION AUTHORIZING ST. JOHN THE BAPTIST PARISH TO ADOPT THE REVISED HAZARD MITIGATION PLAN**

**WHEREAS**, Article IV, Section H (2) and (5) of the St. John the Baptist Parish Home Rule Charter permits the Parish Council to adopt a resolution when authorizing a designated person(s) to execute a previously approved contract on its behalf and/or to perform a ministerial act related to the administrative business of the Parish; and

**WHEREAS**, based on a State requirement to update the Hazard Mitigation Plan every five years, the revised plan is being presented for adoption; and,

**WHEREAS**, all Parish Directors, led by the Department of Public Safety, have reviewed the plan and made revisions, and it has been reviewed and approved by GOHSEP and FEMA.

**NOW, THEREFORE, BE IT RESOLVED**, by the St. John the Baptist Parish Council, St. John the Baptist Parish is hereby authorized to adopt the revised Hazard Mitigation Plan.

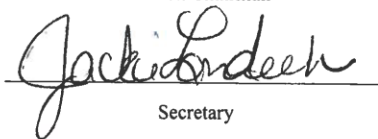
This resolution having been submitted to a vote, the vote thereon was as follows:

YEAS: Madere, Houston, Wright, Duhe-Griffin, Arcuri, Malik, Becnel  
NAYS: None  
ABSTAIN: None  
ABSENT: Schnyder, Torres

And, the resolution was declared adopted on this, the 8<sup>th</sup> day of February 2022.



Council Chairman



Secretary

Approved: \_\_\_\_\_ X \_\_\_\_\_

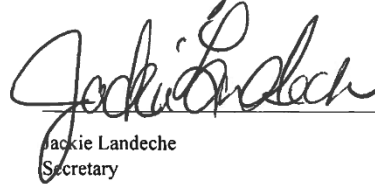
Veto: \_\_\_\_\_

  
Parish President

\* \* \* \* \*  
C E R T I F I C A T E

I, Jackie Landeche, Secretary of the Council of the Parish of St. John, State of Louisiana, hereby certify that the foregoing is a true and correct copy of a resolution adopted by the St. John Parish Council in regular meeting held on the 8<sup>th</sup> day of February 2022.

Signed at Laplace, Louisiana this 8<sup>th</sup> day of February 2022.

  
Jackie Landeche  
Secretary

( S E A L )

## 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 John the Baptist Parish Hazard Mitigation Planning Committee			
Name	Title	Agency	Email
Travis Perrilloux	Interim Director of Public Safety	St. John the Baptist Parish	<a href="mailto:travis.perrilloux@stjohn-la.gov">travis.perrilloux@stjohn-la.gov</a>
Natasha Chopin	Emergency Preparedness Coordinator	St. John the Baptist Parish	<a href="mailto:n.chopin@stjohn-la.gov">n.chopin@stjohn-la.gov</a>
Rebecca Hymel	GIS Administrator	St. John the Baptist Parish	<a href="mailto:r.hymel@stjohn-la.gov">r.hymel@stjohn-la.gov</a>
Rene' Pastorek	Director of Planning & Zoning	St. John the Baptist Parish	<a href="mailto:r.pastorek@stjohn-la.gov">r.pastorek@stjohn-la.gov</a>
Tara Lambeth	Floodplain Manager	St. John the Baptist Parish	<a href="mailto:t.lambeth@stjohn-la.gov">t.lambeth@stjohn-la.gov</a>
Colin Crumbley	Planning & Zoning Manager	St. John the Baptist Parish	<a href="mailto:c.crumbley@stjohn-la.gov">c.crumbley@stjohn-la.gov</a>
Phyl Cornman	Administrative Assistant/CRS Coordinator	St. John the Baptist Parish	<a href="mailto:f.cornman@stjohn-la.gov">f.cornman@stjohn-la.gov</a>

## Capability Assessment

### St. John The Baptist Parish

<b>Capability Assessment Worksheet</b>		
<b>St. John the Baptist Unincorporated</b>		
Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible.		
<b>Planning and Regulatory</b>		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
<b>Plans</b>	<b>Yes / No</b>	<b>Comments</b>
Comprehensive / Master Plan	Yes	Adopted 2017
Capital Improvements Plan	No	n/a
Economic Development Plan	No	n/a
Local Emergency Operations Plan	Yes	Every 4 years.
Continuity of Operations Plan	No	n/a
Transportation Plan	No	n/a
Stormwater Management Plan	No	n/a
Community Wildfire Protection Plan	No	n/a
Other plans (redevelopment, recovery, coastal zone management)	No	n/a
<b>Building Code, Permitting and Inspections</b>	<b>Yes / No</b>	<b>Comments</b>
Building Code	Yes	Version / Year • International Residential Code , 2012 • International Building Code, 2012 • International Existing Building Code, 2012 • International Mechanical Code, 2012 • International Fuel Gas Code, 2012 • Louisiana State Plumbing Code, 2013 • National Electric Code, 2011
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Score = Third class for 1 and 2 family residential and third class for commercial and industrial
Fire Department ISO/PIAL rating	Yes	Class 3
Site plan review requirements	Yes	n/a
<b>Land Use Planning and Ordinances</b>	<b>Yes / No</b>	<b>Comments</b>
Zoning Ordinance	Yes	Yes
Subdivision Ordinance	Yes	Yes
Floodplain Ordinance	Yes	Yes
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	n/a



Flood Insurance Rate Maps	Yes	Yes
Acquisition of land for open space and public recreation uses	No	n/a
Other	No	n/a
Administration and Technical		
Identify whether your community has the following administrative and technical capabilities. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.		
Administration	Yes / No	Comments
Planning Commission	Yes	n/a
Mitigation Planning Committee	No	n/a
Maintenance programs to reduce risk (tree trimming, clearing drainage systems)	No	n/a
Staff	Yes / No	Comments
Chief Building Official	Yes	Third Party Contractor
Floodplain Administrator	Yes	n/a
Emergency Manager	Yes	n/a
Community Planner	No	n/a
Civil Engineer	No	n/a
GIS Coordinator	Yes	n/a
Grant Writer	No	n/a
Other	No	n/a
Technical	Yes / No	Comments
Warning Systems / Service (Reverse 911, outdoor warning signals)	Yes	n/a
Hazard Data & Information	No	n/a
Grant Writing	No	n/a
Hazus Analysis	No	n/a
Other	No	n/a
Financial		
Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.		
Funding Resource	Yes / No	Comments
Capital Improvements project funding	No	n/a
Authority to levy taxes for specific purposes	No	n/a
Fees for water, sewer, gas, or electric services	No	n/a

Impact fees for new development	No	n/a
Stormwater Utility Fee	No	n/a
Community Development Block Grant (CDBG)	No	n/a
Other Funding Programs	No	n/a
<b>Education and Outreach</b>		
Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information.		
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	n/a
Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education)	Yes	n/a
Natural Disaster or safety related school program	No	n/a
Storm Ready certification	No	n/a
Firewise Communities certification	No	n/a
Public/Private partnership initiatives addressing disaster-related issues	No	n/a
Other	No	n/a

## Building Inventory

St. John the Baptist Parish Owned Building Information								
Name of Building	Purpose of Building	Address	City	Latitude	Longitude	Assessed Value	Date Built	Construction Type
ST. JOHN COUNCIL ON AGING (WEST BANK)	MUNICIPAL	155 E 3RD ST	EDGARD	30.044299	-90.559784	\$100,000.00	1978	Wood
ST. JOHN ADMIN/MAINTENANCE BUILDING	MUNICIPAL	149 E 3RD ST	EDGARD	30.04445	-90.559783	\$126,720	n/a	Wood
ST. JOHN PARISH COURT HOUSE	MUNICIPAL	2393 HWY 18	EDGARD	30.045459	-90.559588	n/a	n/a	n/a
WESTBANK COMMUNITY CENTER	MUNICIPAL	173 E 3RD ST	EDGARD	30.043677	-90.559791	n/a	n/a	Reinforced Masonry
GARYVILLE SERVICE CENTER	MUNICIPAL	492 HISTORIC MAIN ST	GARYVILLE	30.057023	-90.617525	\$320,000	1980	Concrete
EMERGENCY OPERATIONS CENTER/911 CENTER	MUNICIPAL	1801 W AIRLINE HWY	LAPLACE	30.072224	-90.499634	\$2,000,000	1989	Steel
LAPLACE SERVICE CENTER	MUNICIPAL	102 E AIRLINE HWY	LAPLACE	30.065863	-90.480436	\$275,000	1975	Steel
ST JOHN PARISH GOVERNMENT COMPLEX	MUNICIPAL	1811 W AIRLINE HWY	LAPLACE	30.072867	-90.500541	\$11,000,000	2019	Concrete
ST JOHN COUNCIL OFFICE	MUNICIPAL	1805 W AIRLINE HWY	LAPLACE	30.072079	-90.500176	\$300,000	1970	Concrete
ST JOHN ARCURI CENTER	MUNICIPAL	1020 CAMBRIDGE DR	LAPLACE	30.072497	-90.484607	\$425,000	1985	Concrete
ST JOHN COMMUNITY CENTER	MUNICIPAL	2900 HWY 51	LAPLACE	30.073041	-90.476239	\$7,500,000	2006	Steel
PORT OF SOUTH LA	MUNICIPAL	171 BELLE TERRE BLVD	LAPLACE	30.075958	-90.501657	n/a	n/a	n/a
LOUISIANA ARMY NATIONAL GUARD	MUNICIPAL	4120 W AIRLINE HWY	RESERVE	30.077878	-90.575812	n/a	n/a	n/a
ST JOHN COUNCIL ON AGING (EAST BANK)	MUNICIPAL	214 REGALA PARK DR	RESERVE	30.079769	-90.571891	\$1,250,000.00	2006	Wood
ST JOHN HEALTH & HUMAN SERVICES	MUNICIPAL	128 CENTRAL AVE	RESERVE	30.054665	-90.551249	\$105,000.00	1990	Wood
PORT OF SOUTH LOUISIANA GLOBALPLEX	MUNICIPAL	1692 HWY 44	RESERVE	30.056495	-90.566041	n/a	n/a	n/a
ST JOHN PARISH LIBRARY (EDGARD)	LIBRARY	2979 HWY 18	EDGARD	30.046202	-90.582422	\$750,000.00	2000	Wood
ST JOHN PARISH LIBRARY (GARYVILLE)	LIBRARY	111 HISTORIC FRONT ST	GARYVILLE	30.058059	-90.618785	\$800,000.00	2005	Wood
ST JOHN PARISH CENTRAL LIBRARY	LIBRARY	2920 HWY 51	LAPLACE	30.075483	-90.474415	\$3,250,000.00	2002	Steel
ST JOHN PARISH LIBRARY (RESERVE)	LIBRARY	170 W 10TH ST	RESERVE	30.058088	-90.563666	\$1,000,000.00	1985	Wood
HOMER BOOGIE JOSEPH CENTER	MUNICIPAL	366 NW 2ND ST	RESERVE	30.063605	-90.554569	\$100,000.00	1995	Wood

CENTRAL FIRE STATION 91	FIRE STATION	3347 HWY 18	EDGARD	30.041354	-90.595423	\$490,000.00	2004	Metal
LUCY RIVER ROAD STATION 93	FIRE STATION	1283 HWY 18	EDGARD	30.044723	-90.516905	25000	1989	Metal
COMMUNITY CENTER STATION 95	FIRE STATION	173 E 3RD ST	EDGARD	30.043549	-90.559729	n/a	n/a	Metal
DUANE CROTY MEMORIAL 71	FIRE STATION	418 HISTORIC WEST ST	GARYVILLE	30.054698	-90.617541	\$150,000.00	1988	Reinforced Masonry
MONTEGUT FIRE STATION 52	FIRE STATION	801 WALNUT ST	LAPLACE	30.061695	-90.47616	\$88,000.00	1987	Metal
ST ANDREWS FIRE STATION 53	FIRE STATION	1703 ST ANDREWS BLVD	LAPLACE	30.093161	-90.502646	315000	1988	Concrete
WOODLAND FIRE STATION 54	FIRE STATION	220 WOODLAND DR	LAPLACE	30.088748	-90.451876	128000	1993	Metal
BELLE POINTE FIRE STATION 55	FIRE STATION	1401 BELLE POINTE BLVD	LAPLACE	30.079098	-90.522829	122000	1993	Metal
MT SIRY STATION 72	FIRE STATION	3772 HWY 44	MT. AIRY	30.049631	-90.635738	\$90,225.00	1990	Metal
PORT COMMISSION FIRE RIVER RESCUE	RIVER RESCUE	1403 HWY 44	RESERVE	30.052989	-90.555275	n/a	n/a	n/a
CENTRAL FIRE STATION 61	FIRE STATION	105 FIREHOUSE LN	RESERVE	30.060496	-90.562103	\$66,000	1959	Concrete
LEBRUN MAURIN MEMORIAL 62	FIRE STATION	378 RAILROAD AVE	RESERVE	30.061265	-90.562909	\$58,000	1982	Metal
STEPHEN MAURIN MEMORIAL 63	FIRE STATION	1152 HWY 44	RESERVE	30.052409	-90.54566	\$168,000	1989	Concrete
ROSENWALD STATION 64	FIRE STATION	394 ROSENWALD DR	RESERVE	30.07387	-90.57189	\$11,000	1993	Metal
AMERICAN LEGION STATION 65	FIRE STATION	337 CENTRAL AVE	RESERVE	30.061809	-90.552154	\$1,150,000	2007	Metal
PLEASURE BEND STATION 94	FIRE STATION	1200 HWY 643	VACHERIE	29.918614	-90.627877	\$151,000	2002	Metal
WALLACE RIVER ROAD STATION 92	FIRE STATION	5733 HWY 18	WALLACE	30.042298	-90.669109	\$58,000	1993	Metal
WEST ST JOHN ELEM	SCHOOL	2555 HWY 18	EDGARD	30.044756	-90.566335	n/a	n/a	n/a
WEST ST JOHN HIGH	SCHOOL	480 HWY 3127	EDGARD	30.016689	-90.553093	n/a	n/a	n/a
GARYVILLE/MT AIRY MAGNET	SCHOOL	240 HWY 54	GARYVILLE	30.045442	-90.624661	n/a	n/a	n/a
REDIRECTION CENTER	SCHOOL	152 ANTHONY F	GARYVILLE	30.057142	-90.618697	n/a	n/a	n/a
ST JOHN CHILD DEVELOPMENT CENTER	SCHOOL	117 STEBBINS ST	GARYVILLE	30.047641	-90.613636	n/a	n/a	n/a
ASCENSION OF OUR LORD	SCHOOL	1809 GREENWOOD DR	LAPLACE	30.084309	-90.481238	n/a	n/a	n/a
LAKE PONTCHARTRAIN ELEM	SCHOOL	3328 HWY 51	LAPLACE	30.081501	-90.467839	n/a	n/a	n/a
JOHN L ORY	SCHOOL	182 W 5TH ST	LAPLACE	30.066135	-90.486332	n/a	n/a	n/a
LAPLACE ELEM	SCHOOL	393 GREENWOOD DR	LAPLACE	30.081296	-90.491905	n/a	n/a	n/a
ST CHARLES CATHOLIC	SCHOOL	100 DOMINICAN DR	LAPLACE	30.075578	-90.494274	n/a	n/a	n/a
ST JOAN OF ARC CATHOLIC	SCHOOL	412 FIR ST	LAPLACE	30.068256	-90.499129	n/a	n/a	n/a
EAST ST JOHN ELEM	SCHOOL	400 ORY DR	LAPLACE	30.073116	-90.51982	n/a	n/a	n/a

EMILY C WATKINS ELEM	SCHOOL	938 HWY 628	LAPLACE	30.056225	-90.477056	n/a	n/a	n/a
MILESVILLE TESTING CENTER	SCHOOL	538 W 2ND ST	LAPLACE	30.060492	-90.503917	n/a	n/a	n/a
ST JOHN ARC WORK ACTIVITY CENTER	SCHOOL	101 BAMBOO RD	LAPLACE	30.083251	-90.467453	\$550,000	1992	Wood
EAST ST JOHN HIGH	SCHOOL	1 GIORDANO LN	RESERVE	30.078811	-90.531126	n/a	n/a	n/a
5TH WARD ELEM	SCHOOL	158 PANTHER DR	RESERVE	30.053322	-90.531654	n/a	n/a	n/a
SOUTH CENTRAL LA TECHNICAL COLLEGE	SCHOOL	181 REGALA PARK RD	RESERVE	30.078615	-90.568617	n/a	n/a	n/a
ST. JOHN MAGNET HIGH SCHOOL – LEON GODCHAUX	SCHOOL	1880 HWY 44	RESERVE	30.057656	-90.573252	n/a	n/a	n/a
SCHOOL BOARD OFFICE COMPLEX	GOVERNMENT	118 W 10TH ST	RESERVE	30.056288	-90.563804	n/a	n/a	n/a
OUR LADY OF GRACE	SCHOOL	780 HWY 44	RESERVE	30.051078	-90.531506	n/a	n/a	n/a
LIFE HOUSE DANIEL ACADEMY	SCHOOL	3550 W AIRLINE HWY	RESERVE	30.078335	-90.553044	n/a	n/a	n/a
RIVERSIDE ACADEMY	SCHOOL	332 RAILROAD AVE	RESERVE	30.062111	-90.561371	n/a	n/a	n/a
ST PETER'S CATHOLIC	SCHOOL	188 W 7TH ST	RESERVE	30.057861	-90.560292	n/a	n/a	n/a
ST JOHN PARISH HEALTH UNIT (WEST BANK)	HEALTH UNIT	159 E 3RD ST	EDGARD	30.044097	-90.559719	\$250,000	1995	Wood
ST JOHN PARISH HEALTH UNIT (EAST BANK)	HEALTH UNIT	473 CENTRAL AVE	RESERVE	30.066475	-90.552212	\$400,000	1975	Concrete
SHERIFF'S OFFICE (COURTHOUSE)	LAW ENFORCEMENT	2393 HWY 18	EDGARD	30.045371	-90.559679	\$3,750,000	1975	Steel
SHERIFF'S SUBSTATION	LAW ENFORCEMENT	492 HISTORIC MAIN ST	GARYVILLE	30.056955	-90.617438	n/a	n/a	n/a
SHERIFF'S MAIN DIVISION OFFICE	LAW ENFORCEMENT	100 DEPUTY BARTON GRANIER DR	LAPLACE	30.072327	-90.505402	n/a	n/a	n/a
SHERIFF'S OFFICE (PERCY HEBERT)	LAW ENFORCEMENT	1801 W AIRLINE HWY	LAPLACE	30.071958	-90.499328	n/a	n/a	n/a
SHERMAN WALKER CORRECTION CENTER	LAW ENFORCEMENT	122 DEPUTY BARTON GRANIER DR	LAPLACE	30.071569	-90.505104	n/a	n/a	n/a
LA STATE POLICE COMMUNICATION TOWER	TOWER	n/a	LAPLACE	n/a	n/a	n/a	n/a	n/a
RIVER PARISH HOSPITAL HELIPORT	n/a	500 RUE DE SANTE	LAPLACE	30.072668	-90.513871	n/a	n/a	n/a
ST JOHN PARISH AIRPORT	n/a	355 AIRPORT RD	RESERVE	30.085688	-90.580137	n/a	n/a	n/a
CLERK OF COURT RECORDS STORAGE	n/a	n/a	EDGARD	n/a	n/a	n/a	2008	Metal
AG BUILDING (COUNTY AGENT)	n/a	151 E 3RD ST	EDGARD	30.044397	-90.559769	\$160,000	1978	Wood

ST JOHN THEATER	n/a	115 W 4TH ST	RESERVE	30.0551	-90.558	\$700,000	1970	Wood
ST. JOHN THE BAPTIST JUVENILE CENTER	LAW ENFORCEMENT	1212 HWY 44	RESERVE	30.0529116	-90.548047	\$150,000	2010	Wood
TECH ACTION (EAST BANK)	n/a	471 CENTRAL AVENUE	RESERVE	30.0665	-90.5524	\$300,000	2007	Wood
STREET LIGHT BUILDING	n/a	1801 W AIRLINE HWY	LAPLACE	30.0716	-90.4994	\$100,000	1980	Metal
UTILITY MAINTENANCE CENTER	n/a	434 ELM ST	LAPLACE	30.0714	-90.502	\$90,000	1973	Wood/Brick
PARISH WAREHOUSE	n/a	1801 W AIRLINE HWY	LAPLACE	30.0717	-90.4998	\$175,000	1980	ICM/Wood
MECHANIC SHOP	n/a	1809 W AIRLINE	LAPLACE	30.0717	-90.4999	\$150,000	1975	ICM
DIVERS LICENSE BUILDING	n/a	4034 W AIRLINE HWY	RESERVE	30.0774	-90.572	\$300,000	2001	Wood

## Vulnerable Populations

Vulnerable Populations Worksheet – St. John the Baptist Parish					
All Hospitals (Private or Public)	Street	City	Zip Code	Latitude	Longitude
No Hospitals within the boundaries of St. John the Baptist Parish					
Nursing Homes (Private or Public)	Street	City	Zip Code	Latitude	Longitude
Twin Oaks Nursing Home/Assisted Living	506 W 5TH ST	LAPLACE	70068	30.070048	-90.498427
Southeast Louisiana War Veterans Home	4080 W AIRLINE HWY	RESERVE	70084	30.078693	-90.573539
Place Dubourg	201 RUE DUBOURG	LAPLACE	70068	30.078209	-90.492878
Mobile Home Parks	Street	City	Zip Code	Latitude	Longitude
No Mobile Home Parks within the boundaries of St. John the Baptist Parish					

## National Flood Insurance Program (NFIP)

National Flood Insurance Program (NFIP)		
	St. John the Baptist Parish	Comments
<b>Insurance Summary</b>		
How many NFIP policies are in the community? What is the total premium and coverage?	# Policies 7,130 as of July 2021. Total premiums \$5,606,609 and total coverage \$2,057,962,700.	State NFIP Coordinator or FEMA NFIP Specialist
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?	# Claims paid 5,084. Claims paid \$267,083,298. 1,413 substantial damage claims.	FEMA NFIP or Insurance Specialist
How many structures are exposed to flood risk within the community?	Approx 4,087 in Zones AE and VE.	Community FPA
Describe any areas of flood risk with limited NFIP policy coverage.	The community of Pleasure Bend lies on Lac des Allemands in Zone VE, but very few homeowners have a flood policy.	Community FPA and FEMA Insurance Specialist
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	Yes	Community FPA
Is flood plain management an auxiliary function?	Yes	Community FPA
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Review permits for construction, improvements, and repairs for compliance with floodplain regulations; Annual outreach to repetitive loss areas; field inspections of violations for compliance	Community FPA
What are the barriers to running an effective NFIP program in the community, if any?	Budget; dedicated staff	Community FPA
<b>Compliance History</b>		
Is the community in good standing with the NFIP?	Yes	State NFIP Coordinator, FEMA NFIP Specialist, community records
Are there any outstanding compliance issues (i.e., current violations)?	No	Community FPA
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Last CAV was in 2017.	Community FPA
Is a CAV or CAC scheduled or needed? If so when?	Next CAV should be in 2021, or every 3 years.	Community FPA
<b>Regulation</b>		
When did the community enter the NFIP?	16-Jul-80	Community FPA
Are the FIRMs digital or paper?	Digital and Paper	Community FPA
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Regulations meet FEMA and state minimum requirements.	Community FPA
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	Yes	Community FPA
What is the community's CRS Class Ranking?	Seven	Community FPA
Does the plan include CRS planning requirements?	Yes	Community FPA



## Appendix F: Community Rating System

### Introduction To The Community Rating System (CRS)

The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP). In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program:

- Reduce and avoid flood damage to insurable property
- Strengthen and support the insurance aspects of the National Flood Insurance Program
- Foster comprehensive floodplain management

The parish is currently a Class 7 in the CRS, which provides a 15% premium reduction for residents in the Special Flood Hazard Area, and a 5% reduction for residents outside of the Special Flood Hazard Area.

Community Number	Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status
220164	St. John the Baptist Parish	10/1/1994	4/1/2021	7	15%	5%	C

As a part of the 2021 Hazard Mitigation Plan Update, St. John the Baptist Parish worked to follow the Community Rating System guidance for Flood Mitigation Planning. This guidance includes organizing, involving the public, assessing the hazard, assessing the problem, setting goals, reviewing possible activities, drafting an action plan, adopting the plan, and evaluating the plan over time. This appendix details how the Parish followed this guidance for the 2021 Hazard Mitigation Plan Update.

### Organize a Planning Committee

The 2021 Hazard Mitigation Update planning team recognized the importance of including multiple and diverse voices in the planning effort. The team reached out to members of St. John the Baptist Parish departments including emergency management, planning and zoning, public information, and public safety. The team also invited members of regional agencies, such as the Capital Region Planning Commission, South Central Planning and Development Commission; state agencies such as the Office of Community Development, the Governor's Office of Homeland Security and Emergency Preparedness, and Louisiana Wildlife and Fisheries; and local groups such as the local newspaper, members of the Coastal Zone Committee, local residents, and local nonprofits. The planning committee members are detailed below.

#### Parish Committee Members

Constable Bobby Brady – District 5  
 Dov Block – Planning & Zoning Department  
 Felice (Phyl) Cornman – Planning & Zoning Department  
 Rebecca Hymel – Planning & Zoning Department  
 Tara Lambeth – Planning & Zoning Department  
 Rene Pastorek – Planning & Zoning Department

### Local Committee Members

Robin Bailey – Resident  
Rachel B. Burns – Q Hotels, Resident  
Brooke Cantrell – L’Observateur Newspaper, Resident  
Jillian Day – Resident  
Steven Fraker – Coastal Zone Management Advisory Committee, Resident  
Robin Franks – First Source Realty, Resident  
Ivy Mathieu – Coastal Zone Management Advisory Committee, Resident  
Kevin Patel – Q Hotels, Resident  
Galen Schum – Resident  
Ben Taylor – Friends of the Manchac Greenway, Resident  
Travis Trosclair – Riverlands Surveying, Resident

### Regional Committee Members

Patrick Gordon – South Central Planning and Development Commission  
Rachelle Sanderson – Capital Region Planning Commission, Region 7

### State Committee Members

Bradley Breland – LA Wildlife and Fisheries  
Dave Butler – LA Wildlife and Fisheries  
Alex Gelpi Carter – LA Office of Community Development  
Jeffrey Giering – LA Governor’s Office of Homeland Security and Emergency Preparedness  
Steve Smith – LA Wildlife and Fisheries

### Nonprofit Committee Members

Monica Farris – UNO-CHART  
Michael Hopkins – Pontchartrain Conservancy  
Andreanecia Morris – Housing NOLA

## Formally Adopt the Planning Process

The Parish Council formally adopted the 2021 Hazard Mitigation Plan Update planning process on August 24, 2021. The adopted resolution is below.

ST. JOHN THE BAPTIST PARISH  
STATE OF LOUISIANA

RESOLUTION  
R21-124

Mr. Madere proposed and Mr. Wright seconded the following resolution:

**THE ST. JOHN THE BAPTIST PARISH COUNCIL HEREBY RESOLVES:**

**A RESOLUTION OF SUPPORT FOR THE 2021 HAZARD MITIGATION PLAN UPDATE**

**WHEREAS**, Hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters; and

**WHEREAS**, the Federal Emergency Management Agency (FEMA) requires an update to the Hazard Mitigation Plan every 5 years; and

**WHEREAS**, the Community Rating System program recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP); and

**WHEREAS**, these practices result in flood insurance discounts for residents of St. John the Baptist Parish; and

**WHEREAS**, an enhanced Hazard Mitigation Plan Update process that involves the public and follows the recommended Community Rating System practices for Floodplain Management Planning will result in additional points towards that discount. Now, therefore:

**THE ST. JOHN THE BAPTIST COUNCIL HEREBY RESOLVES:**


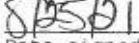
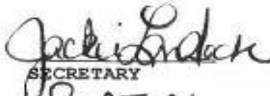
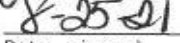

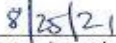
That the Parish hereby supports the 2021 Hazard Mitigation Plan Update planning process; and

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

**YEAS:** Madere, Malik, Torres, Houston, Becnel, Duhe-Griffin, Arcuri, Schnyder, Wright

**NAYS:** None      **ABSENT:** None      **ABSTAINING:** None

The result of the vote on the resolution was 9 **YEAS**, 0 **NAYS**, 0 **ABSENT** and 0 **ABSTAINING** and this resolution was declared adopted on the 24<sup>th</sup> day of August, 2021.

 COUNCIL CHAIR  Date signed	 SECRETARY  Date signed	 PARISH PRESIDENT  Date signed
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## Review Existing Plans

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 2015 Hazard Mitigation Plan was also used in the planning process. Other existing data and plans used in the planning process include those listed below.

- Flood Insurance Study
- Flood Insurance Rate Maps
- CRS Coordinators Manual
- Floodplain Management Activity 510
- State of Louisiana Hazard Mitigation Plan

## Assess the Hazard

The first committee meeting was held on August 25, 2021 via a virtual platform due to Covid-19 concerns.



**St. John the Baptist Parish** ✓

August 20 at 12:13 PM · 🌐

⋮

Join us for a virtual public meeting on the 2021 St. John the Baptist Parish Hazard Mitigation Plan update.

You'll hear about the draft plan, which describes the man-made and naturally occurring risks to our region, and strategies to help reduce the risks in the future.

Please call Planing & Zoning at 985-651-5565 for meeting information. This will be the first of four meetings.

**Hazard Mitigation Plan  
Update Committee**



**ST. JOHN**  
THE BAPTIST PARISH  
COASTAL AND WATER  
MANAGEMENT

St. John the Baptist Parish is hosting the first public meeting to update the Hazard Mitigation Plan for 2021.

The Hazard Mitigation Plan must be updated every five years to maintain eligibility for FEMA hazard mitigation project funding and to earn points for the Community Rating System.



St. John the Baptist Parish invites you to become a member of the Hazard Mitigation Planning Committee as a representative of your organization or as a Parish resident.

We will update our mitigation strategy and set goals and actions for the next five years. Public participation is critical to assessing and revising our Hazard Mitigation Plan. We appreciate your participation in this essential process.

**Date:** Wednesday, August 25<sup>th</sup>, 2021

**Time:** 2:00 PM

**Please contact Planning & Zoning at 985-651-5565 for meeting information.**

This will be the first of four meetings throughout August and September.

\* St. John the Baptist Parish's participation in the Community Rating System (CRS) helps residents receive discounts on flood insurance premiums. Updating the Hazard Mitigation Plan is part of this participation process and helps maintain the community's CRS rating.

At the meeting, the committee reviewed the planning steps for the plan update, detailed in the slide below.

## Hazard Mitigation Plan Update Committee Steps

- Assess the hazard
- Assess the problem
- Set goals
- Review activities
- Review the plan

The committee discussed the current hazards included in the plan, also detailed in the slide below.

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

- Drought
- Expansive Soils
- Flooding
- Thunderstorms
- Tornadoes
- Tropical Cyclones
- Winter Storms

The committee further discussed the summary of hazards included in the plan, and what was considered medium or high risk. The table on the following page includes the hazard profile summary, what was included in the previous plan, what was considered medium or high risk, and what is profiled in the 2021 update.

Hazard	Profiled in Last Plan	Considered Medium or High Risk in the State's HM Plan	Profiled in the 2021 Update
Drought	X		X
Expansive Soils	X		X
Extreme Heat	*		
Flooding	X	X	X
Thunderstorms	X	X	X
Tornadoes	X	X	X
Tropical Cyclones	X	X	X
Winter Storms	X		X

## Flood Hazards

### *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.

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.

In St. John the Baptist 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.

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.

#### Other Natural Hazards

The other natural hazards detailed in the 2021 Hazard Mitigation Plan include drought, expansive soils, thunderstorms, tornadoes, tropical cyclones, and winter weather.

The following hazards were included in the risk assessment:

- a) Drought
- b) Expansive Soils
- c) Flooding
- d) Thunderstorms
- e) Tornadoes
- f) Tropical Cyclones
- g) Winter Storms

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

- Flooding from rivers and waterways, rain storms, 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 other natural hazards are detailed in the 2021 Hazard Mitigation Plan Update.

### Repetitive Loss Assessment

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:

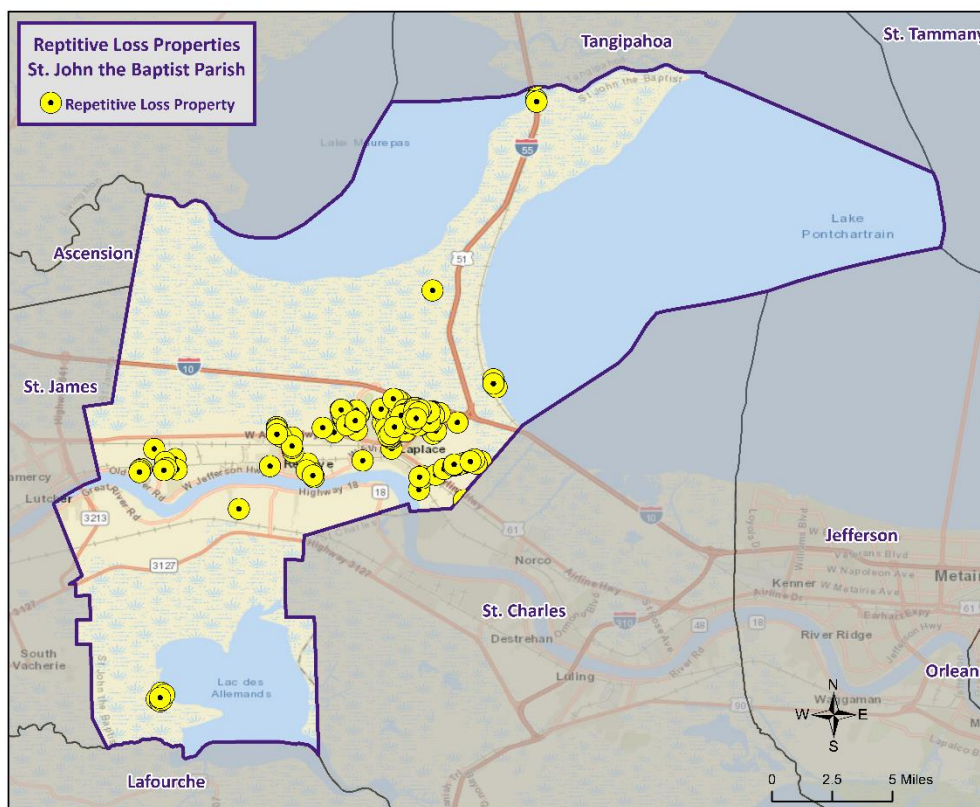
- a. It is covered under a contract for flood insurance made available under the NFIP; and
- b. It has incurred flood related damage –
  - 1) For which four or more separate claims payments have been made under flood insurance coverage with the amount of each claim exceeding \$5,000 and with the cumulative 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 St. John the Baptist Parish are provided in the table below:

Jurisdiction	Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid	Average Claim Paid
<b>St. John the Baptist Parish</b>	296	291	5	0	751	\$29,446,430	\$39,209

All 296 repetitive loss structures were geocoded in order to provide an overview of where the repetitive loss structures were located. The figure on the following page shows the approximate location of the structures. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the central and eastern portion of St. John the Baptist Parish.



### National Flood Insurance Program

Flood insurance statistics indicate that St. John the Baptist Parish has 7,121 flood insurance policies with the NFIP, with total annual premiums of \$5,796,043. St. John the Baptist Parish participants in the NFIP. St. John the Baptist Parish 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. John the Baptist Parish is provided in the tables to follow.

Location	No. of Insured Structures	Total Insurance Coverage Value	Annual Premiums Paid	No. of Insurance Claims Filed Since 1978	Total Loss Payments
St. John the Baptist Parish	7,121	\$599,527,480	\$5,796,043	5,007	\$265,861,224

CID	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Date Joined the NFIP	Tribal
220164	St. John the Baptist Parish	8/9/1974	7/16/1980	11/4/2010	7/16/1980	No

### 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.

### Assess the Problem

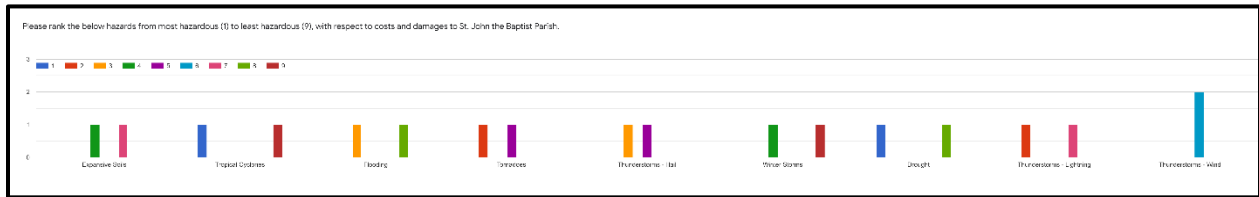
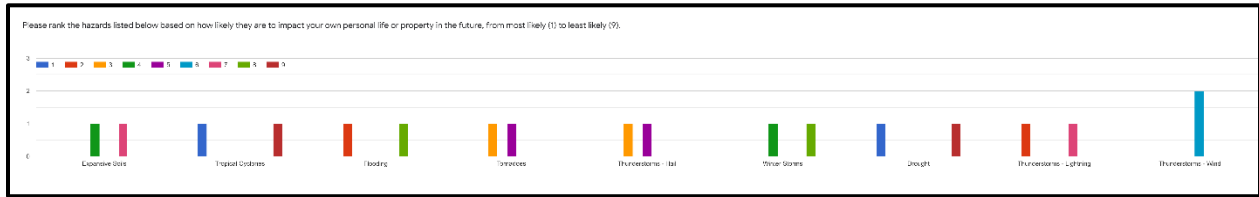
The committee discussed the impact of the hazards, which includes flooding from rivers and waterways, rainstorms, tropical cyclones, and hurricanes in the following forms: riverine, stormwater, surge, backwater flooding, and coastal flooding. The committee also touched on the damage caused by high wind during hurricanes, thunderstorms, and tornadoes. The committee further underlined the property damage resulting from all of the profiled natural hazards.

The planning team asked committee members what hazards were missing. The committee members noted that extreme heat and pandemics could be listed. One committee member asked if subsidence was included in the expansive soils hazard, and the planning team explained that it was. The committee considered breaking down expansive soils into multiple solutions to include naturally occurring long term subsidence and how it relates to special projects like levee improvement. Other committee members brought up the hazard of levee failure, in addition to long term hazards such as sea level rise. Other committee members discussed environmental quality hazards such as hazardous materials. The Planning Director mentioned that those hazards are included in the parish emergency management plan. One committee member pointed out that FEMA mitigation grants are often focused on natural hazards.

Committee members also discussed the hazards as a whole. Two committee members suggested that the plan tie hazards to specific risk assessments to improve eligibility for FEMA funding. Another member asked the planning team to consider hazards that interact with each other such as levees impacting subsidence. The committee further ruminated on how hazards have disproportionate impacts to specific groups as risks are not distributed equitably.

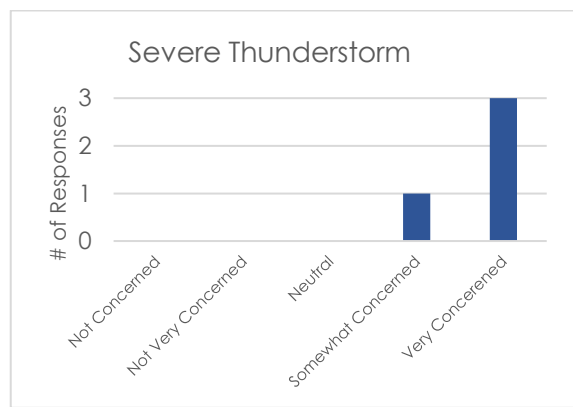
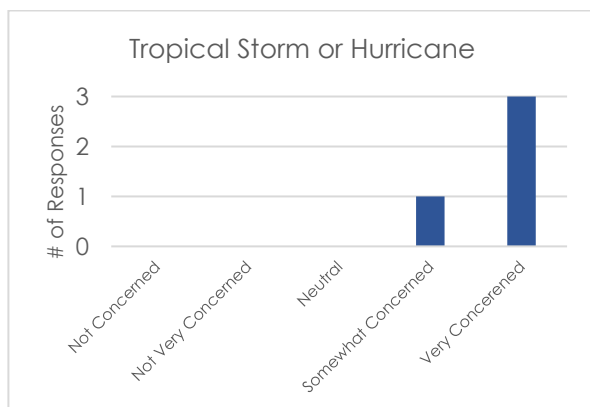
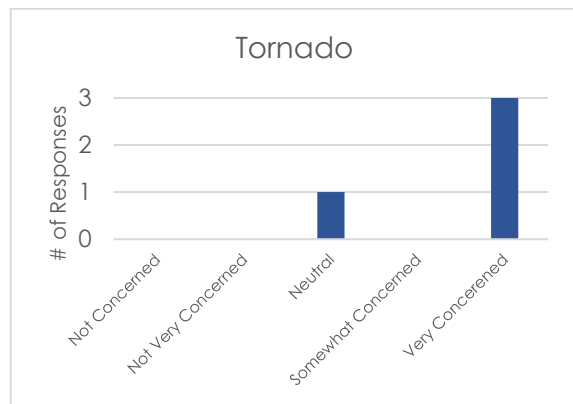
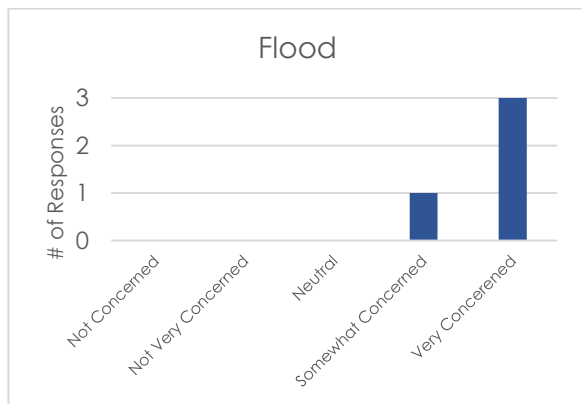


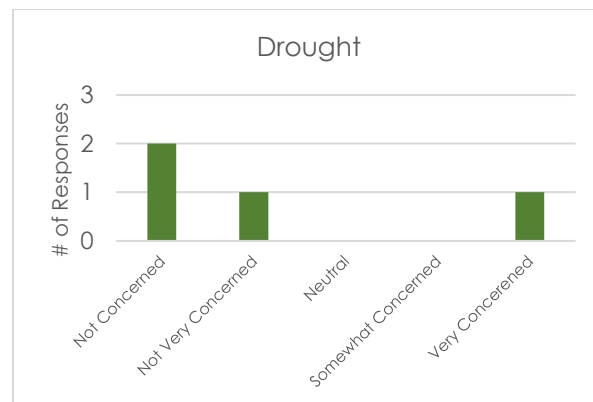
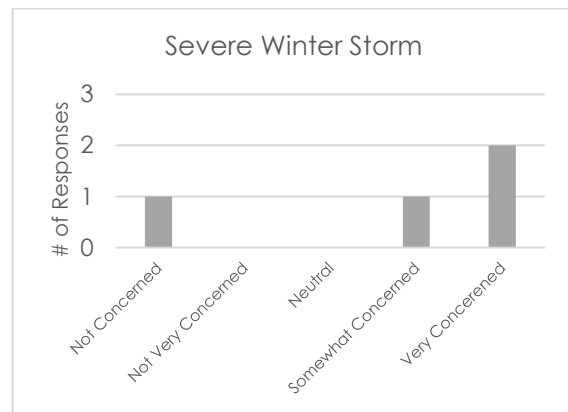
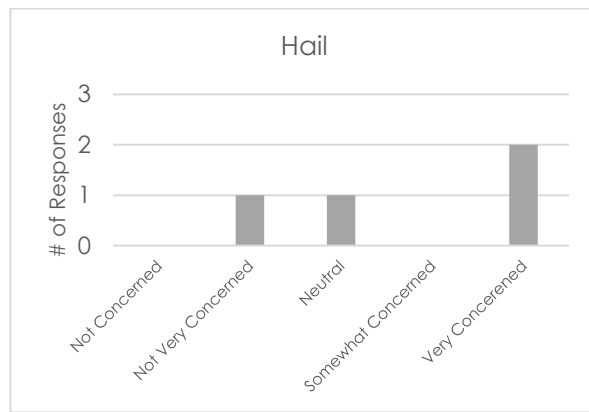
The committee ranked all of the hazards highly, with the wind hazards ranked less high than the other hazards, as detailed below:



In the survey, committee members also emphasized the need to address excessive heat, levee failure, post-storm evacuation routes, and the need for an elevation program.

When asked how concerned committee members were about these natural disasters impacting their parish, the majority of respondents ranked flooding, severe thunderstorms, tornadoes, and hurricanes as a high concern. Respondents were least concerned about drought impacting the parish. The charts detailing these responses are found below and on the following page.





### Warning and Evacuation

Another key concern related to flooding in St. John the Baptist is the evacuation of residents during a flooding event and the impact that flooding may have on evacuation routes. Generally, the larger the road, the less likely it is to flood, although that is not always the case. In addition, a bridge does not have to be underwater to be damaged, thereby cutting off an evacuation route. In some cases, the bridge might be at a high point, but the access road on either side may be flooded. In other cases, the bridge or culvert can be washed out entirely. This is especially dangerous if a person drives on a flooded roadway assuming that a bridge is still in place and structurally sound.

### Public Health

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.

One major flood-related impact on public health comes in the form of mold. During and immediately after a flooding event, many people are displaced from their homes and businesses. If residents are unable to access their homes and businesses for an extended period of time, mold can quickly begin to grow. If the damp conditions are compounded by the lack of electricity and residents are unable to dry out these flooded structures, mold will spread extremely quickly throughout the structure. This mold has been linked to numerous respiratory conditions, including asthma and allergies.

### Critical Facilities

There are a number of critical facilities in St. John the Baptist Parish, although only a portion of them are at risk of flooding. These include Woodland Fire Station 54, Port Commission Fire River Rescue, Pleasure Bend Station 94, and Lake Pontchartrain Elementary. The critical facilities at risk of flooding are detailed in the table below.

Name	Flooding
WOODLAND FIRE STATION 54	X
PORT COMMISSION FIRE RIVER RESCUE	X
PLEASURE BEND STATION 94	X
LAKE PONTCHARTRAIN ELEMENTARY	X

### Economy and Employers

There are multiple business sectors in St. John the Baptist Parish. The sectors with the highest number of employees are construction, manufacturing, retail trade, accommodation and food services, and health care and social assistance.

Business Description	Number of Establishments	Number of Employees	Annual Payroll (\$1,000)
Retail Trade	109	1,576	42,127
Manufacturing	19	2,544	240,432
Mining, Quarrying, and Oil & Gas Extraction	3	88	4,785
Health Care and Social Assistance	74	1,024	36,821
Educational Services	12	241	7387
Transportation and Warehousing	43	646	34,850
Construction	62	6,116	339,650
Administration/Support and Waste Management/Remediation Services	49	863	40,942
Real Estate and Rental and Leasing	35	614	31,456
Wholesale Trade	33	601	58,996
Other Services (except Public Administration)	60	510	19,609
Accommodation and Food Services	86	1,177	17,342
Finance and Insurance	54	350	17,812
Professional, Scientific, and Technical Services	43	339	15,346
Information	17	151	7,299
Arts, Entertainment, and Recreation	13	164	3,597
Management of Companies and Enterprises	4	40	7,425

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. The table on the next page shows the total economic losses that would result from this occurrence.

Jurisdiction	Estimated Total Losses from 100-Year Flood Event
St. John the Baptist Parish	\$2,284,000

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

St. John the Baptist Parish	Estimated Total Losses from 100-Year Flood Event
Agricultural	\$0
Commercial	\$193,000
Government	\$0
Industrial	\$1,505,000
Religious / Non-Profit	\$0
Residential	\$586,000
Schools	\$0
<b>Total</b>	<b>\$2,284,000</b>

Therefore, a catastrophic flood would have a large impact on industrial and commercial enterprises in the parish.

#### Numbers and Types of Buildings

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. John the Baptist 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%.

Hazard / Impact	Total in Parish (2019)	Hazard Area (2019)	Hazard Area (2025)	Hazard Area (2030)
<b>Flood Damage</b>				
Structures	17,879	5,377	5,377	5,377
Value of Structures	\$4,324,440,925	\$1,300,609,225	\$1,368,307,322	\$1,454,212,375
# of People	42,837	12,884	12,884	12,884
<b>Tropical Cyclone Damage</b>				
Structures	17,879	17,879	17,879	17,879
Value of Structures	\$4,324,440,925	\$4,324,440,925	\$4,549,532,687	\$4,835,161,390
# of People	42,837	42,837	42,837	42,837

Population numbers have declined slightly, but housing numbers have slightly increased since the last update to the St. John the Baptist Parish Hazard Mitigation Plan. However, initiatives such as active floodplain management, have regulated the development of flood prone areas to continue supporting and encouraging safer communities within St. John the Baptist. 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 development that has occurred since 2015 has not in any knowing way altered the jurisdiction's vulnerability to natural hazards.

### Historical Damage to Buildings

St. John the Baptist Parish has weathered numerous disasters since 1965. All of the disasters were hurricanes or floods. Another hurricane, Hurricane Ida, hit the parish on August 29, 2021. It was both a wind and water event, resulting in flooding and wind damage throughout the LaPlace area.

Disaster Number	Year	Declaration
374	4/27/1973	Severe Storm, Flood
556	5/9/1978	Severe Storm, Flood
752	11/1/1985	Tropical Cyclone – Hurricane Juan
956	8/26/1992	Tropical Cyclone – Hurricane Andrew
1049	5/10/1995	Severe Storm, Flood
1246	9/23/1998	Tropical Cyclone – TS Frances and Hurricane Georges
1380	6/11/2001	Tropical Cyclone – TS Allison
1435	9/27/2002	Tropical Cyclone – TS Isidore
1437	10/3/2022	Tropical Cyclone – Hurricane Lili
1548	10/18/2004	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
1792	9/13/2008	Tropical Cyclone – Hurricane Ike
3322	8/18/2011	Severe Storm, Flood
4080	8/29/2012	Tropical Cyclone – Hurricane Isaac
4277	8/14/2016	Severe Storm, Flood
3392	10/6/2017	Tropical Cyclone – TS Nate
4458	8/27/2019	Tropical Cyclone – Hurricane 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
4611	8/29/2021	Tropical Cyclone – Hurricane Ida

### Natural Floodplain Functions

Floodplains are lowland areas adjacent to lakes, wetlands and rivers that are covered by water during a flood. The most easily seen function of a floodplain is its ability to carry and store floodwaters.



Undeveloped floodplain also provides many other natural and economic resource benefits. Floodplains have high biological diversity and productivity. Floodplain vegetation and soils serve as water filters, intercepting surface water runoff before it reaches nearby lakes. This process aids in the removal of excess nutrients, pollutants and sediments from the water and helps reduce the need for costly clean-ups and sediment removal. The floodplain also serves as a natural reservoir, temporarily holding flood waters and slowly releasing them, reducing the extent and frequency of flooding.

### Development and Population Trends

St. John the Baptist Parish experienced a decline in population and a rise in housing between the years of 2000 and 2019, falling from a population of 43,044 in the year 2000 to a population of 42,837 in the year 2019. St. John the Baptist Parish grew from 15,532 housing units in the year 2000 to 17,879 housing units in the year 2019. 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:

Total Population	St. John the Baptist Parish
1-Apr-00	43,044
1-Apr-10	45,924
1-Jul-19	42,837
Population Growth between 2000 – 2010	6.7%
Average Annual Growth Rate between 2000 – 2010	0.7%
Population Growth between 2010 – 2019	-6.7%
Average Annual Growth Rate between 2010 – 2019	-0.75%

Total Housing Units	St. John the Baptist Parish
1-Apr-00	15,532
1-Apr-10	17,510
1-Jul-19	17,879
Housing Growth between 2000 – 2010	12.7%
Average Annual Growth Rate between 2000 – 2010	1.3%
Housing Growth between 2010 – 2019	2.1%
Average Annual Growth Rate between 2010 – 2019	0.2%

### Impact of Future Flooding

Many of the areas are at risk to future flooding as a result of increased floodplain and watershed development, as well as sea level rise.

Development within the floodplain and watershed will reduce the amount of permeable surface area that flood waters typically use for infiltration into the ground. This, in turn, will create conditions wherein additional volumes of water are “trapped” on the surface, resulting in increased flooding to people and property within St. John the Baptist Parish.

Sea level rise will contribute to worsening future flood conditions as this will effectively raise the water level within susceptible areas such that lesser volumes of rainfall will cause similar flooding effects experienced by communities in the past. With a higher baseline water table, less precipitation will be allowed to absorb into the ground, resulting in greater impacts to people and property from smaller storm events.

The fluctuation of water levels in area wetlands, especially flood waters, supports the bio-diversity of low-lying areas by releasing nutrients into the soil and germinating wetland flora. Flooding also offers some control of invasive water weeds. Most features of the environment have come to adapt to the effects of a flood event and adjust quickly to events, although it is possible that some species may not be resilient enough to survive.

Areas that have been modified by human activity such as the modification of stream banks or removal of riverside vegetation tend to suffer more negative consequences from flooding. When these alterations occur, flooding can cause unnatural erosion of sediment into the waterway, creating an imbalance of nutrients in the water which may harm ecosystems and have a negative impact on downstream water quality.

Each of these conditions may contribute to worsening of flooding impacts on the community's people, property, and the natural functions of the floodplain. In addition, personal property such as homes and businesses that have been impacted by past flooding events are a major concern in future flooding events. Although a great deal of effort has been undertaken to reduce the number of properties at risk through the use of improved risk assessment, mitigation techniques, and floodplain management regulations, there are still a significant number of structures within the parish and communities' flood zones which have not been properly mitigated to reduce risk.

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. John the Baptist Parish experiences.

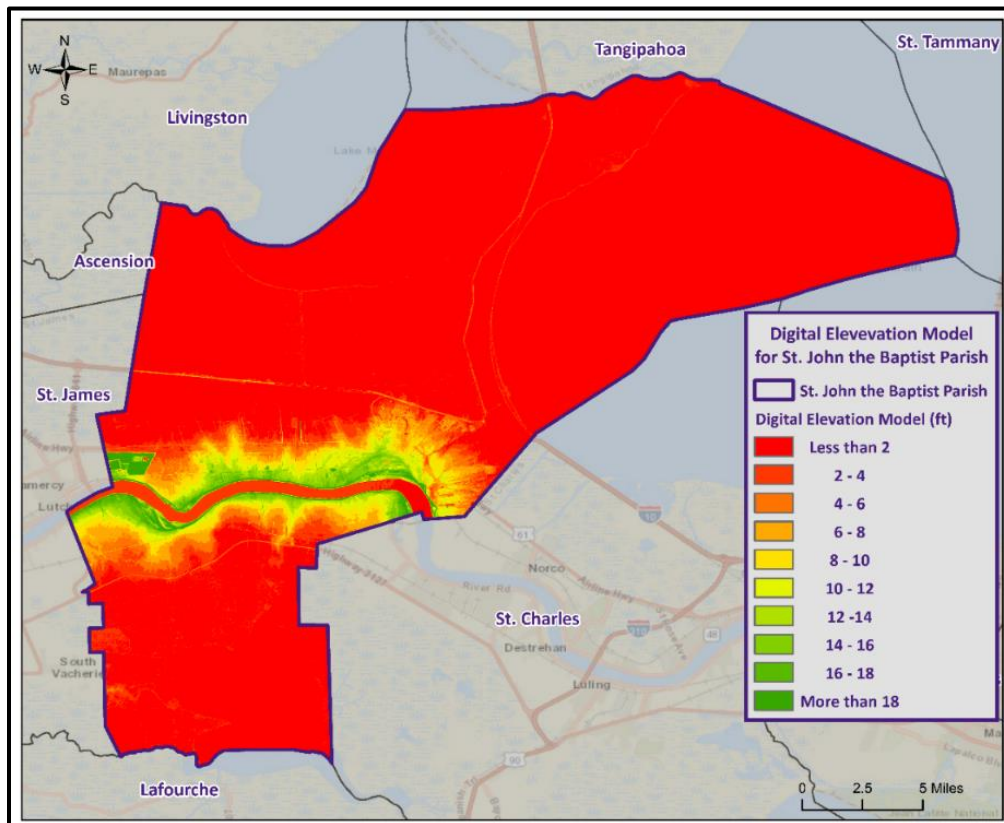
**Flash Floods:** Flash floods are characterized by a rapid rise in water level, high velocity, and large amounts of debris. They are capable of uprooting trees, undermining buildings, and bridges, and scouring new channels. Major factors in flash flooding are the high intensity and short duration of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

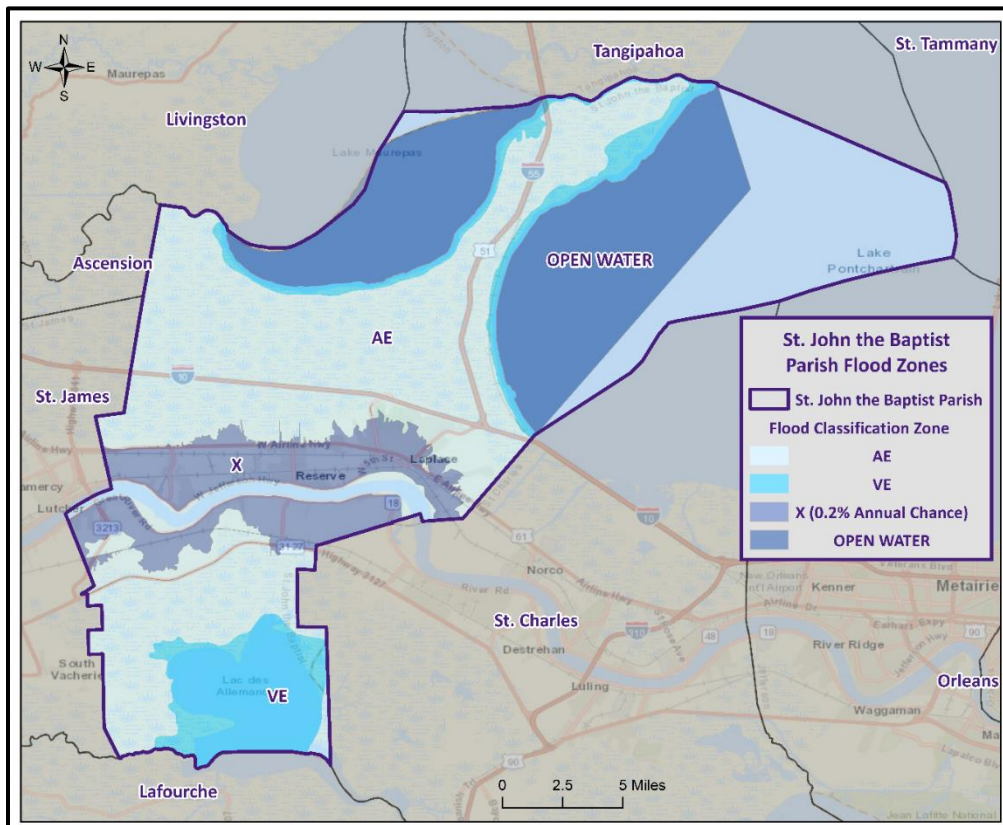
**Riverine Flooding:** Riverine flooding, by definition, is river-based. Most of the riverine flooding problems occur when rivers crest at flood stage levels, causing extensive flooding in low-lying areas.

The digital elevation model (DEM) in the figure for St. John the Baptist Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish. The average elevation throughout the parish is approximately 15 feet (NAVD88). In the southern portion of the parish, the land is dominated by wetlands approximately 10 to 15 feet above sea level (NAVD88) along the riverbanks, sloping gradually down to 5 feet (NAVD88) away from the river towards Lac Des Allemands. The northern portion of the parish is comprised mostly of forested wetlands with elevations ranging from less than 2 feet (NAVD88) up to 5 feet (NAVD88).



St. John the Baptist Parish has experienced significant flooding in its history and can expect more in the future. St. John the Baptist Parish is susceptible to several different types of flooding (riverine, flash, and storm surge) due to its geographical location.

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 four to six feet can be expected. Areas located along the banks of the Mississippi River can expect flood depths of approximately five feet in the future. The map on the following page is a flood zone map displaying 100- and 500-year flood zones for St. John the Baptist Parish.



Historically, there have been 12 flooding events that have caused significant flooding in St. John the Baptist Parish between 1990 and 2021.

The NCEI Storm Events Database identified 12 flooding events within the St. John the Baptist Parish planning area since 1990. The table below shows the probability and return frequency for each jurisdiction.

Jurisdiction	Annual Probability	Return Frequency
St. John the Baptist Parish	37%	1 event every 2 to 3 years

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

Number of People Exposed to Flood Hazards			
Location	# in Community	# in Hazard Area	% in Hazard Area
St. John the Baptist Parish	45,924	13,812	30.1%

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

St. John the Baptist Parish		
Category	Total Numbers	Percentage of People in Hazard Area
Number in Hazard Area	13,812	30.1%
Persons Under 5 Years	1,012	7.3%
Persons Under 18 Years	2,703	19.6%
Persons 65 Years and Over	1,424	10.3%
White	5,865	42.5%
Minority	7,947	57.5%

### Set Goals

The 2021 Hazard Mitigation Plan Update uses the same goals as the 2016 plan. These goals include:

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 and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards

The committee members suggested two additional goals:

5. Consider cascading impacts of multiple hazards
6. Consider disproportionate impacts of hazards and how to mitigate with equitable outcomes


### Goals for Each Hazard

Most of the goals coincide with most of the hazards. The table below details which goals pertain to which hazard. The hazards that can result in flooding – flooding, thunderstorms, and tropical cyclones – match every goal in the plan.

Hazard	Goal
Drought	1, 2, 5, 6
Expansive Soils	1, 2, 4, 5, 6
Extreme Heat	1, 2, 4, 5, 6
Flooding	1, 2, 3, 4, 5, 6
Thunderstorms	1, 2, 3, 4, 5, 6
Tornadoes	1, 2, 4, 5, 6
Tropical Cyclones	1, 2, 3, 4, 5, 6
Winter Storms	1, 2, 4, 5, 6

## Review Possible Activities

The committee planned to meet weekly throughout the month of September, but Hurricane Ida hit on August 29, 2021 and derailed all committee meetings. The committee met once more in October and provided feedback at that meeting.




## PUBLIC MEETING

**St. John the Baptist Parish and its partners are seeking community input for the 2021 St John the Baptist Parish Hazard Mitigation Plan update!**

St. John the Baptist 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 John the Baptist 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 Wednesday, October 6th for a virtual public meeting to learn more about the plan and share your input on the risks and vulnerabilities that most impact you and your community.

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**Meeting Details:**  
**Wednesday, October 6th, 2021:**  
**Zoom Meeting, 2:00-3:00 pm**

<https://isu.zoom.us/j/98361588916?pwd=eWVxMEhiK2YwOFp4NGt1Y2ZCQ25aUT09>

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Residents of St John the Baptist 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/StJohnTheBaptistHM2021>

At the meeting, the committee reviewed specific actions to include in the plan update. Committee members emphasized the need for an elevation program, which is included on the list of activities and addresses goals 1, 3, and 4. Members also emphasized the need to address energy failures, which the hardening of critical facilities will help with. Committee members further pointed out that after the levee is built, levee failure should be a consideration, which can include both flooding and subsidence. Finally, committee members brought up the need for a look at post-storm evacuation routes and how to improve them for safety, accessibility, and infrastructure.

## Review of Existing Flood Mitigation Activities

The existing flood mitigation activities include drainage improvements, updating the master drainage plan, hardening of government buildings and critical facilities, implementation of new mitigation

initiatives, improvement of the public notification system, promotion of participation in the NFIP, education and public outreach, elevation and acquisition projects, CRS participation, hardening of structures, safe room construction, generator installation, and potable water. The activities, along with the related goals, are detailed below.

Jurisdiction-Specific Action	Action Description	Goal
<b>SJB1: Drainage Improvements</b>	Improve drainage ways including, but not limited to, by enlarging and upgrading any inferior culverts, upgrading pumps and flapper valves, and installing retention ponds to ensure water flows freely within the drainage system, which will protect the surrounding area from flooding. Expand the drainage districts to cover the entire parish.	1, 3, 4
<b>SJB2: Update Master Drainage Plan</b>	Update the master drainage plan which will increase drainage capacity at major drainage laterals and evaluate drainage projects at major drainage laterals to determine best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan to reduce the number of flooded structures by increasing the volume of water the pumps can handle at the final outfall.	1, 3, 4
<b>SJB3: Hardening of Governmental Buildings and Critical Facilities</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/generators at these locations. Benefits include the providing of safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.	1, 4
<b>SJB4: Implementation of New Mitigation Initiatives</b>	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the state and FEMA.	1, 3, 4
<b>SJB5: Improvement of Public Notification System</b>	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.	1, 2, 4
<b>SJB6: Promotion of Participation in the NFIP</b>	Continue to promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the NFIP. This enables homeowners to financially recover from the devastating effects of flooding as rapidly as possible. Serves to educate area residents that any homeowner, regardless of location, can purchase flood insurance.	1, 2, 3
<b>SJB7: Mitigation Education and Public Outreach</b>	Continue to increase public awareness of hazards and hazardous areas by the following: distribute public awareness information regarding flood hazards, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website; provide an educational program for school age children; integrate "Disaster Resistance Education" into the public school curriculum; provide public education on the importance of maintaining the ditches; sponsor "Multi-Hazard Awareness Activities" for public education purposes	1, 2
<b>SJB8: Elevation and Acquisition Projects</b>	Pursue elevation/ acquisition/ flood proofing/ reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.	1, 3, 4
<b>SJB9: CRS Participation</b>	Continue to participate in the CRS. Review the existing floodplain ordinance and evaluate ways to improve the Parish's 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. Benefits: Reduce flood insurance premiums and thereby encourage more people to	1, 3, 4

	purchase flood insurance, which would potentially result in lower cost and a more timely recovery	
<b>SJB10: Hardening of Future Industrial, Commercial, and Residential Structures</b>	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.	1, 4
<b>SJB11: Safe Room Construction</b>	Construct safe rooms for governmental buildings and critical facilities	1, 4
<b>SJB12: Generator Installation for Governmental Buildings and Critical Facilities</b>	Install generators for governmental buildings and critical facilities as needed	1, 4
<b>SJB13: Expansive Soil Data Collection and Tracking</b>	Create a monitoring system in an effort to track losses due to expansive soil occurrences	1,2
<b>SJB14: Lightning Mitigation</b>	Procurement and installation of lightning rods and surge protectors for public buildings to preserve life and property	1
<b>SJB15: Potable Water</b>	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.	1
<b>SJB16: Hardening of Governmental Buildings and Critical Facilities</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/ generators at these locations. Benefits include the providing of safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.	1, 4
<b>SJB17: Improvement of Public Notification System</b>	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.	1, 2, 4
<b>SJB18: Elevation and Acquisition Projects</b>	Pursue elevation/ acquisition/ flood proofing/reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.	1, 3, 4
<b>SJB19: Hardening of Future Industrial, Commercial, and Residential Structures</b>	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.	1, 4

### Review of Preventative Activities

The preventative activities in the above list include drainage improvements, updating the master drainage plan, hardening of structures, government buildings, and critical facilities, implementation of new mitigation initiatives, improvement of the public notification system, promotion of participation in the



NFIP, education and public outreach, elevation and acquisition projects, CRS participation, generator installation, and potable water. All of these activities will help to prevent catastrophe during a flooding event.

#### Review of Floodplain Management Regulatory Standards

The St. John the Baptist Parish Government provides oversight for building permits and codes, land use planning, and all parish ordinances. The St. John the Baptist 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. John the Baptist 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. The parish currently receives CRS points for: adopting the state building code and attaining a Class 2/2 under the Building Code Effectiveness Grading Schedule, requiring all new buildings to be elevated a certain distance above the centerline of the street, and having staff who attend certain training and/or are Certified Floodplain Managers.

#### Review of Property Protection Activities

The property protection activities in the activities list include drainage improvements, updating the master drainage plan, hardening of structures, government buildings, and critical facilities, implementation of new mitigation initiatives, promotion of participation in the NFIP, education and public outreach, elevation and acquisition projects, and CRS participation. All of these activities will help to protect buildings during a flooding event.

#### Review of Natural Resource Protection Activities

The natural resource protection activities in the activities list include education and public outreach, and CRS participation. The CRS has multiple activities that work towards resource protection, including preserving open space, floodplain management planning, watershed master plans, and higher regulatory standards.

#### Review of Emergency Services Activities

The emergency services activities in the activities list include hardening of structures, government buildings, and critical facilities, improvement of the public notification system, education and public outreach, CRS participation, generator installation, and potable water. All of these activities will help parish officials to respond during an emergency.

#### Review of Structural Projects

The structural projects in the activities list include drainage improvements, updating the master drainage plan, hardening of structures, government buildings, and critical facilities, implementation of new mitigation initiatives, elevation and acquisition projects, generator installation, and potable water. All of these structural projects will help to mitigate the impacts of flooding.

#### Review of Public Information Activities

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 parish as a whole to

maximize opportunities for implementation of activities through greater acceptance and consensus of the community.

St. John the Baptist Parish has 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:

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. John the Baptist Parish	Comments
Program / Organization		
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	No	
Storm Ready certification	No	
Firewise Communities certification	No	
Public/Private partnership initiatives addressing disaster-related issues	No	
Other	No	

As reflected with the above existing regulatory mechanisms, programs and resources within the parish, St. John the Baptist Parish remains committed to expanding and improving on the existing capabilities within the parish. St. John the Baptist Parish Government will work 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. John the Baptist Parish.

### Draft an Action Plan

List a Goal for Each Action

Jurisdiction-Specific Action	Action Description	Goal
<b>SJB1: Drainage Improvements</b>	Improve drainage ways including, but not limited to, by enlarging and upgrading any inferior culverts, upgrading pumps and flapper valves, and installing retention ponds to ensure water flows freely within the drainage system, which will protect the surrounding area from flooding. Expand the drainage districts to cover the entire parish.	1, 3, 4
<b>SJB2: Update Master Drainage Plan</b>	Update the master drainage plan which will increase drainage capacity at major drainage laterals and evaluate drainage projects at major drainage laterals to determine best method of increasing drainage capacity. Implement recommended projects resulting from drainage plan to reduce the number of flooded structures by increasing the volume of water the pumps can handle at the final outfall.	1, 3, 4
<b>SJB3: Hardening of Governmental Buildings and Critical Facilities</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/generators at these locations. Benefits include the providing of safety and a source of power during power	1, 4



	outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.	
<b>SJB4: Implementation of New Mitigation Initiatives</b>	Implement new initiatives including, but not limited to, the Pilot Planning Grant Program (PPGP), Pilot Reconstruction, and Repetitive Flood Claims, developed by the state and FEMA.	1, 3, 4
<b>SJB5: Improvement of Public Notification System</b>	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.	1, 2, 4
<b>SJB6: Promotion of Participation in the NFIP</b>	Continue to promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the NFIP. This enables homeowners to financially recover from the devastating effects of flooding as rapidly as possible. Serves to educate area residents that any homeowner, regardless of location, can purchase flood insurance.	1, 2, 3
<b>SJB7: Mitigation Education and Public Outreach</b>	Continue to increase public awareness of hazards and hazardous areas by the following: distribute public awareness information regarding flood hazards, SFHA's, and potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, and parish hazards awareness website; provide an educational program for school age children; integrate "Disaster Resistance Education" into the public school curriculum; provide public education on the importance of maintaining the ditches; sponsor "Multi-Hazard Awareness Activities" for public education purposes	1, 2
<b>SJB8: Elevation and Acquisition Projects</b>	Pursue elevation/ acquisition/ flood proofing/ reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.	1, 3, 4
<b>SJB9: CRS Participation</b>	Continue to participate in the CRS. Review the existing floodplain ordinance and evaluate ways to improve the Parish's 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. Benefits: Reduce flood insurance premiums and thereby encourage more people to purchase flood insurance, which would potentially result in lower cost and a more timely recovery	1, 3, 4
<b>SJB10: Hardening of Future Industrial, Commercial, and Residential Structures</b>	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.	1, 4
<b>SJB11: Safe Room Construction</b>	Construct safe rooms for governmental buildings and critical facilities	1, 4
<b>SJB12: Generator Installation for Governmental Buildings and Critical Facilities</b>	Install generators for governmental buildings and critical facilities as needed	1, 4
<b>SJB13: Expansive Soil Data Collection and Tracking</b>	Create a monitoring system in an effort to track losses due to expansive soil occurrences	1,2

<b>SJB14: Lightning Mitigation</b>	Procurement and installation of lightning rods and surge protectors for public buildings to preserve life and property	1
<b>SJB15: Potable Water</b>	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.	1
<b>SJB16: Hardening of Governmental Buildings and Critical Facilities</b>	Harden critical facilities including, but not limited to, utilizing applicable floodproofing techniques, adding roof tie-downs and additional storm protecting features such as storm shutters or impact resistant glass, and add back up power supply/ generators at these locations. Benefits include the providing of safety and a source of power during power outages to continue essential operations. Creates a more disaster resistant structure, which will prevent interruption of services in times of emergencies.	1, 4
<b>SJB17: Improvement of Public Notification System</b>	Improve coverage of the public notification system by upgrading the technology including, but not limited to, sirens and a call down system with a backup communication.	1, 2, 4
<b>SJB18: Elevation and Acquisition Projects</b>	Pursue elevation/ acquisition/ flood proofing/reconstruction projects and structural solutions to flooding using available grant funding for repetitive loss structures and severe repetitive loss structures. Annually review and correct the Repetitive Loss list by submitting correction worksheets to FEMA.	1, 3, 4
<b>SJB19: Hardening of Future Industrial, Commercial, and Residential Structures</b>	Continue to review and evaluate improved building regulations of industrial, commercial, and residential structures, and future or new structures. Benefits: Results in additional techniques to harden structures and thereby withstand impacts of hazards.	1, 4

In addition to the activities listed previously, the planning team identified two new mitigation actions to help combat flooding:

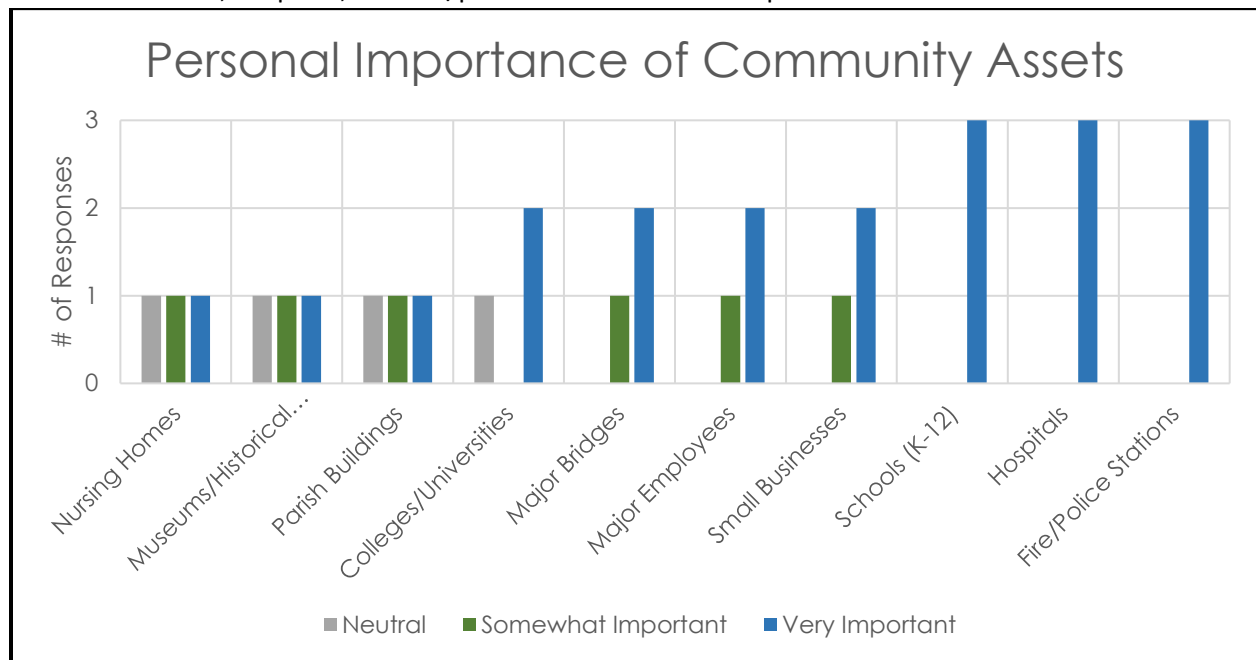
- **Hardening of Governmental Buildings and Critical Facilities**
  1. Identify and pursue preventative measures that will reduce future damages from hazards
  2. Facilitate sound development and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards
  
- **Adopt Building Codes and Ordinances Related to Hardening of Future Industrial, Commercial, and Residential Structures**
  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 and rebuilding in the parish so as to reduce or eliminate the potential impacts of hazards

### Prioritize the Actions

In a survey sent to committee members, the planning team sought feedback on perceived vulnerability of community assets. Survey respondents ranked community asset categories 1 through 6, with 1 identified as most vulnerable to natural hazards and 6 identified as least vulnerable. Committee members identified human (loss of life and/or injuries), economic, and infrastructure assets as most vulnerable to impacts of natural hazards. Environmental, governance, and cultural/historic assets were ranked less vulnerable by committee members.

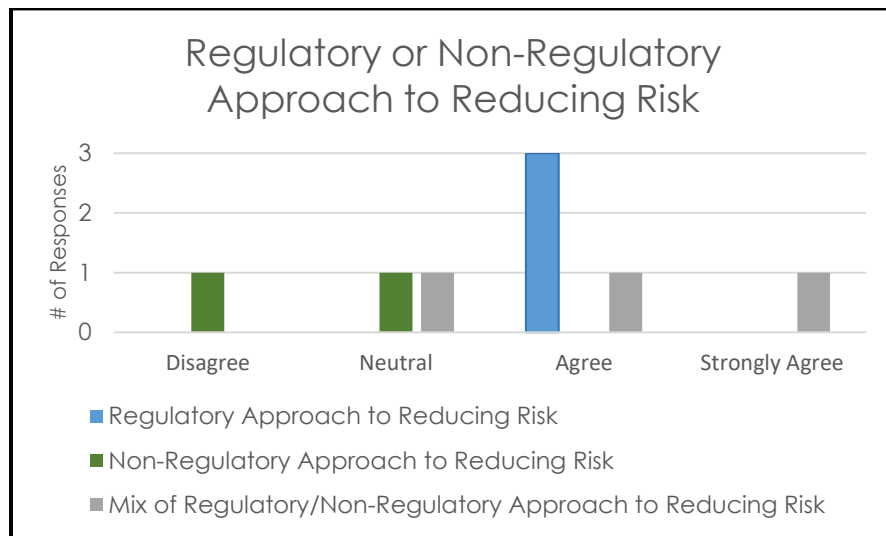


Committee members were then asked to identify personal importance of community assets. Respondents identified schools, hospitals, and fire/police stations as most important to them.

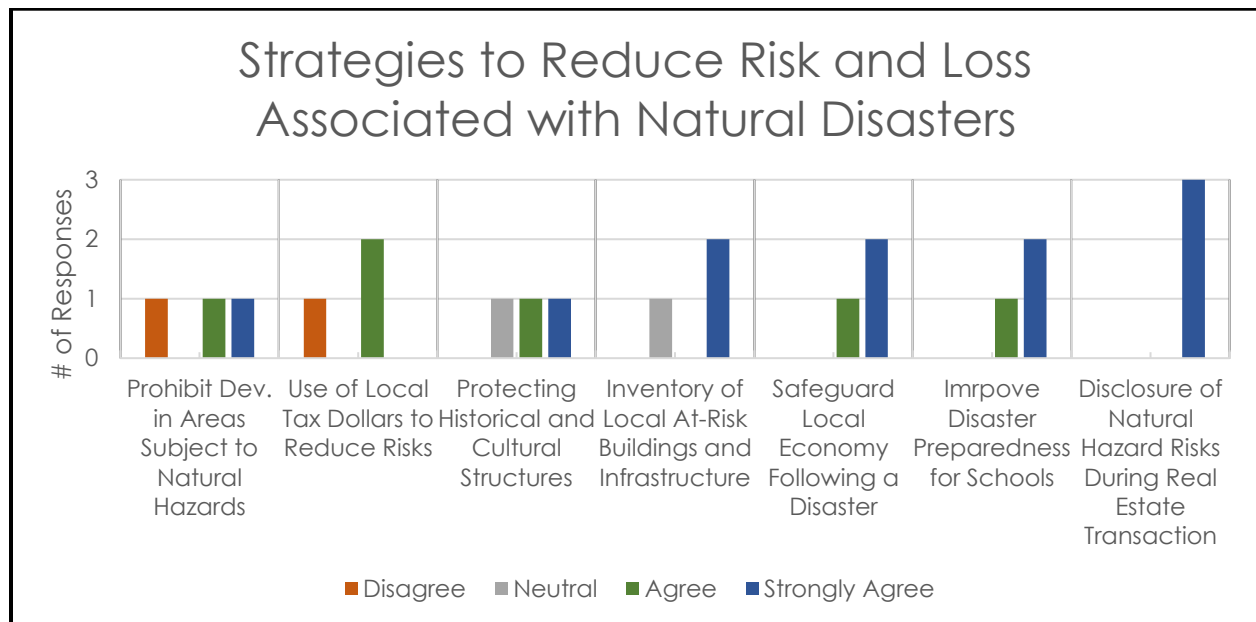


Committee members identified economic and infrastructure assets as most important to them and most susceptible to impacts of natural hazards. Cultural/historic assets and governance assets were considered least important and least vulnerable to natural hazards.

To better prioritize hazard mitigation approaches, the planning team asked committee members to rank a series of community-wide strategies aimed at reducing hazard risk and loss. Committee members supported a regulatory approach to reducing hazard risk and policies that improve disaster preparedness of public and private properties.



All respondents strongly supported the disclosure of natural hazard risks during real estate transactions and making their homes more disaster resistant. Prohibiting development in areas subject to natural hazards and use of tax local tax dollars were the least popular strategies for risk reduction among respondents. The table below details these responses.

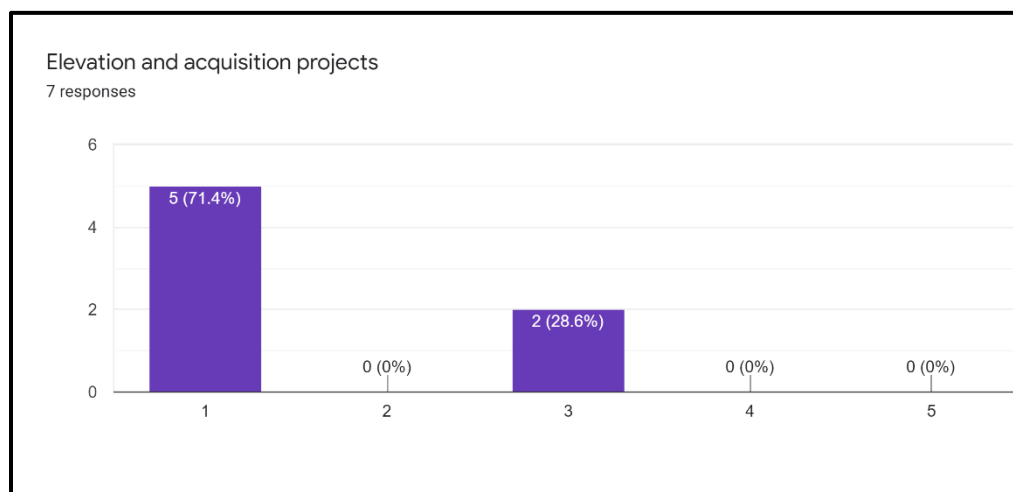


Finally, committee members were asked to categorize the importance of statements to determine their priorities and inform hazard mitigation planning.

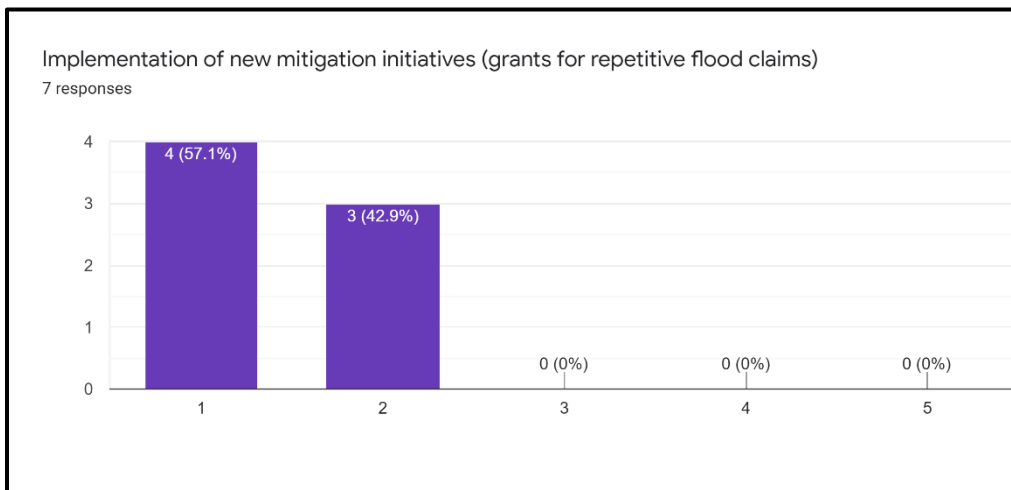
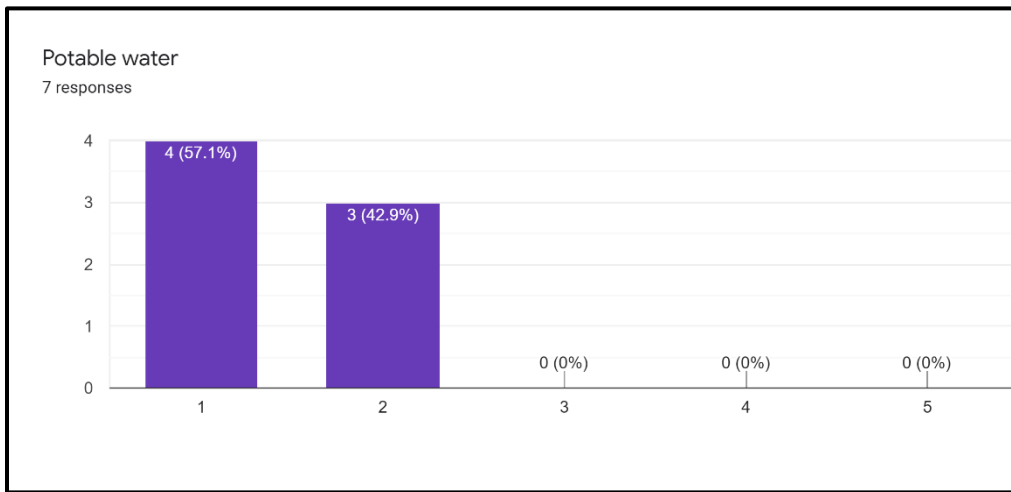
Level of Importance	Priority Statement
<b>Very Important</b>	<ul style="list-style-type: none"> <li>Protecting critical facilities</li> <li>Preventing development in hazard areas</li> <li>Protecting and reducing damage to utilities</li> <li>Strengthening emergency services</li> <li>Disclosing natural hazard risks during real estate transactions</li> <li>Promoting cooperation among public agencies, citizens, non-profits, and businesses</li> </ul>
<b>Somewhat Important</b>	<ul style="list-style-type: none"> <li>Protecting private property</li> <li>Enhancing the function of natural features (bayous, rivers, and wetlands)</li> </ul>
<b>Neutral</b>	<ul style="list-style-type: none"> <li>Protecting cultural and historical landmarks</li> </ul>

Strategies to improve and protect human, infrastructure, and economic community assets remained a priority throughout survey responses. Protecting cultural and historical community assets were consistently the lowest priority for survey respondents.

The planning team sent a final survey to committee members for feedback on the planned actions and activities. In the final survey, committee members provided comments on the possible activities. The committee members ranked the activities from 1 through 5, with 1 identified as most important and 5 identified as least important.



The activity that received the most votes in option 1 was elevation and acquisition projects.



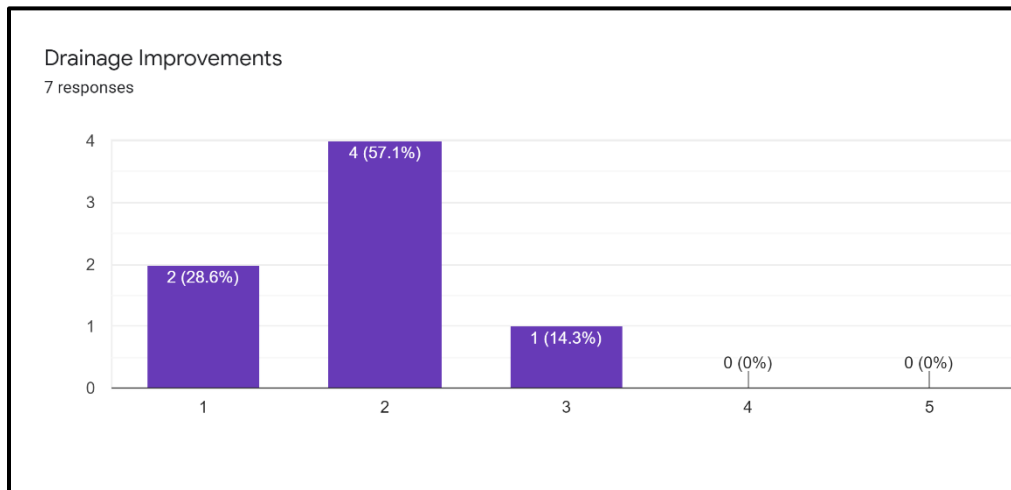
The second highest rated activities were potable water and implementing new mitigation initiatives like grants for repetitive flood claims.



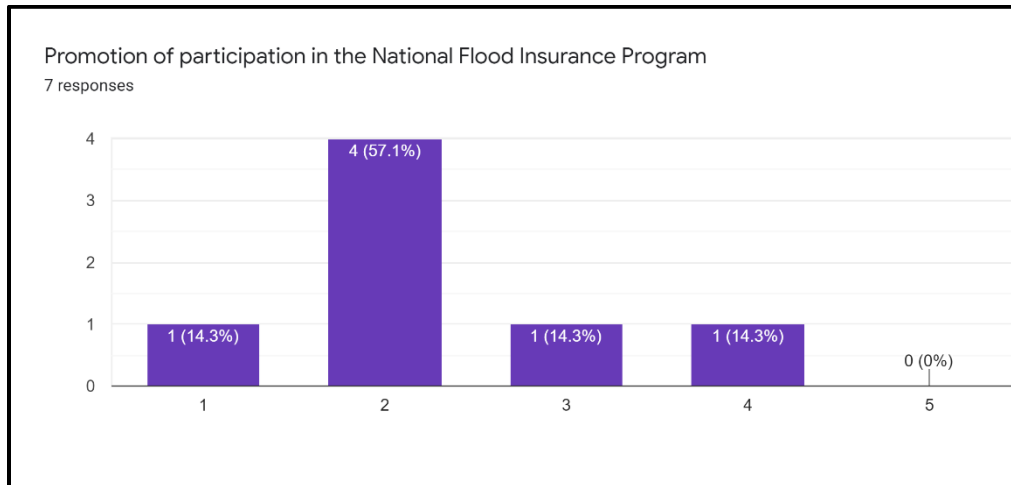
The majority of survey respondents ranked updating the drainage plan highly as well.



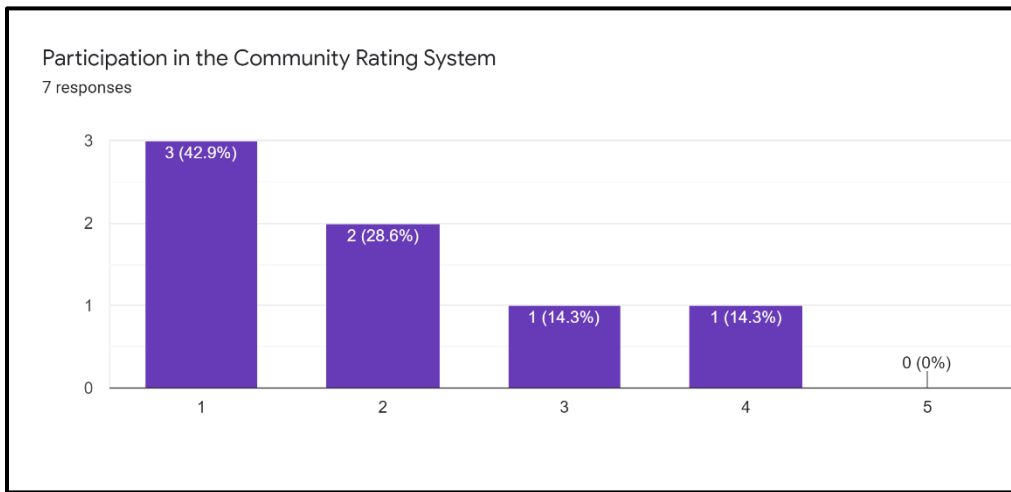




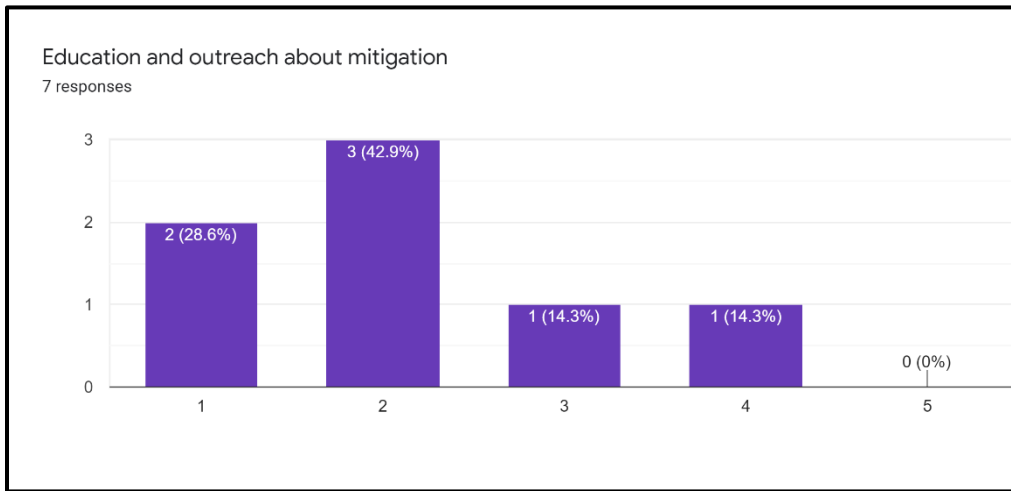
Most of the respondents chose option 2 for the drainage improvement activity, revealing that both a drainage plan and drainage improvements are given high importance by the committee.



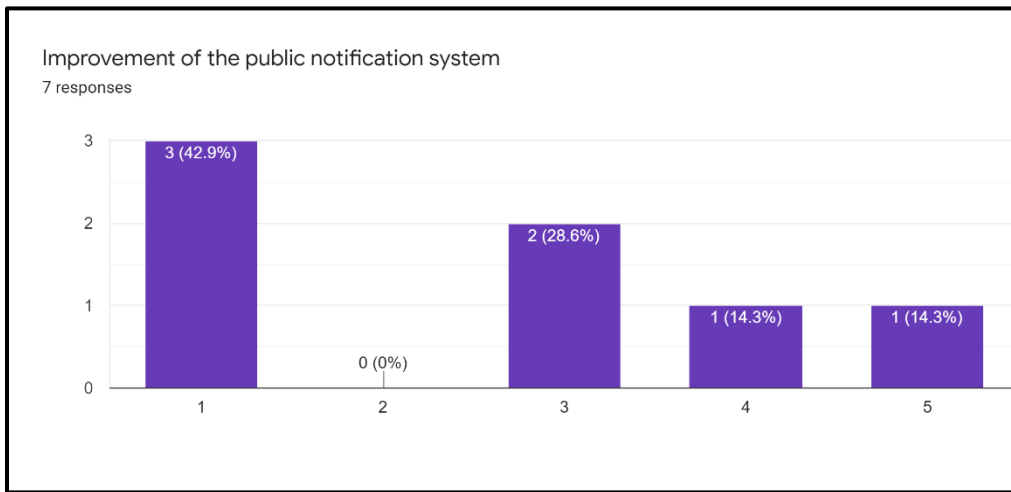
Most of the survey respondents ranked participation in the National Flood Insurance Program (NFIP) highly.



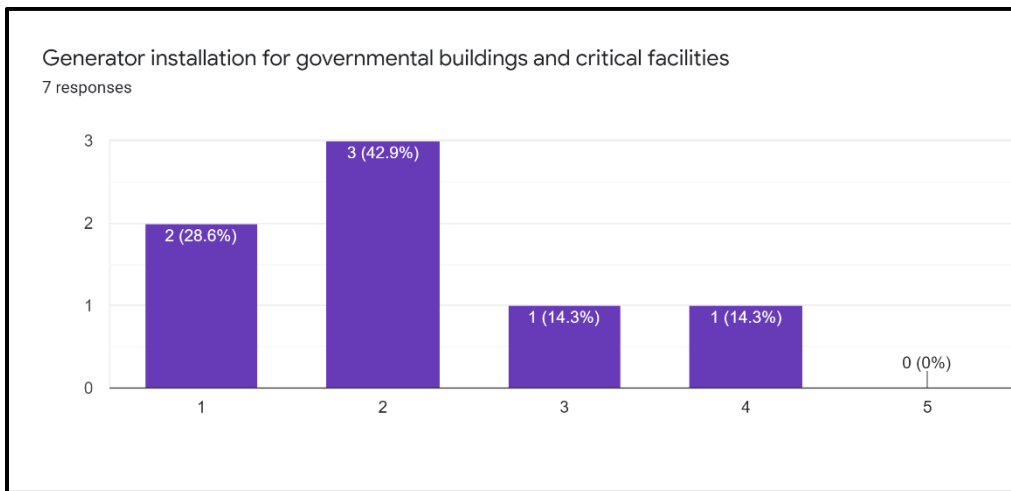
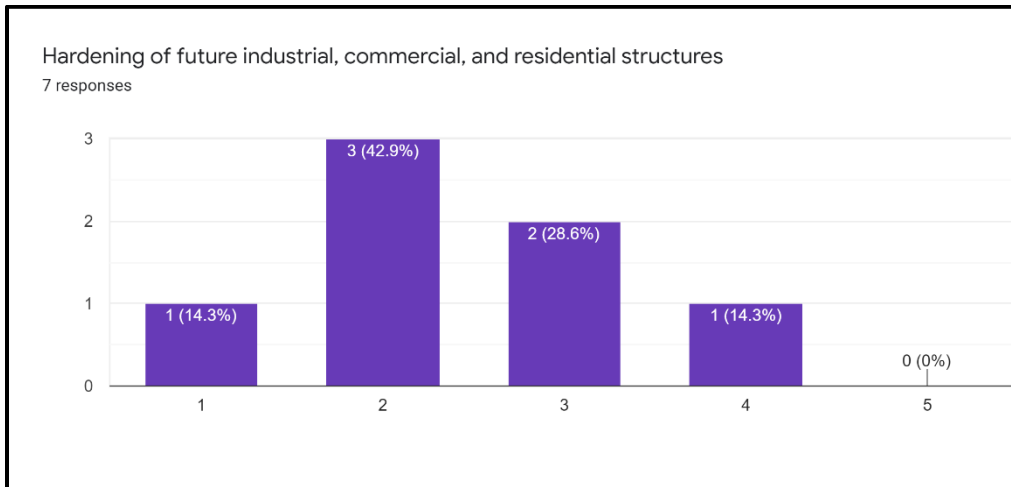
In addition to support for the NFIP, respondents also supported participation in the Community Rating System.



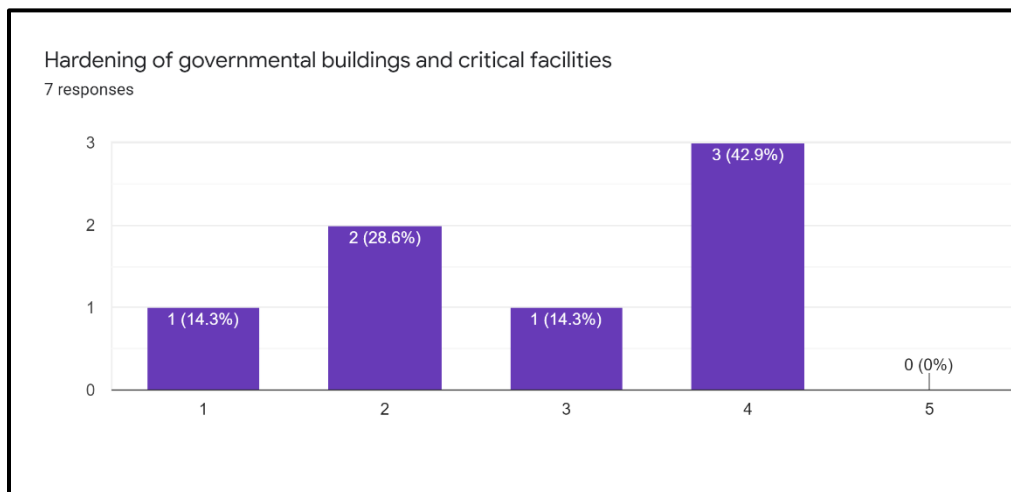
Respondents thought that education and outreach about mitigation was an important activity also.



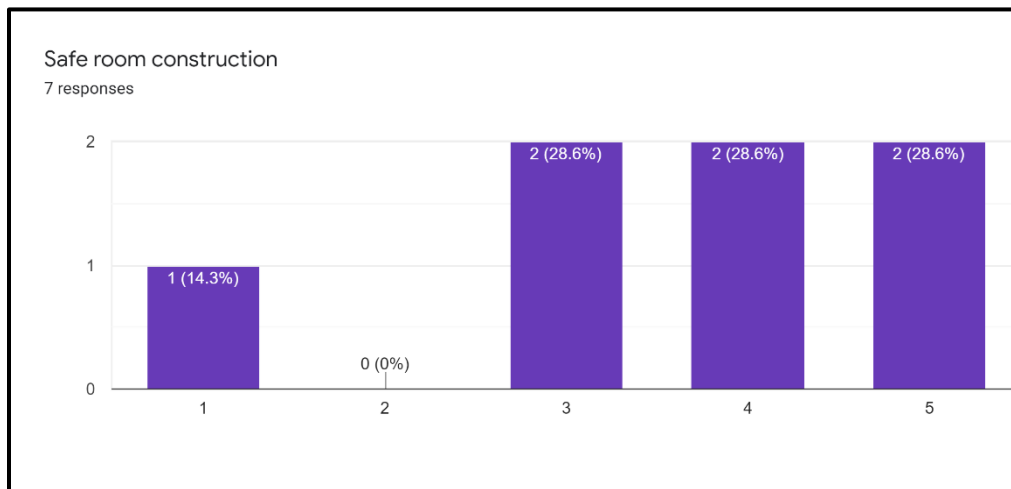
Most of the respondents ranked improvement of the public notification system highly as well, but a few respondents ranked it with low importance.



Survey respondents had mixed ideas about the importance of both hardening of future industrial, commercial, and residential structures, and generator installation.



The respondents did not find that hardening of governmental buildings and critical facilities was as important as other activities, with the majority choosing option 4 for that activity.



Safe room construction received the least support, with most respondents ranking it on the low end of the scale.

The prioritization of the mitigation projects with the committee survey responses taken into account is detailed in the table below.

<b>2021 Hazard Mitigation Plan Update Activity Prioritization</b>	
<b>1.</b>	<b>Elevation and acquisition projects</b>
<b>2.</b>	<b>Implementation of new mitigation initiatives</b>
<b>3.</b>	<b>Potable water</b>
<b>4.</b>	<b>Update the master drainage plan</b>
<b>5.</b>	<b>Drainage improvements</b>
<b>6.</b>	<b>Promotion of participation in the National Flood Insurance Program</b>
<b>7.</b>	<b>Participation in the Community Rating System</b>
<b>8.</b>	<b>Education and outreach about mitigation</b>
<b>9.</b>	<b>Improvement of the public notification system</b>
<b>10.</b>	<b>Generator installation for government buildings and critical facilities</b>
<b>11.</b>	<b>Hardening of future industrial, commercial, and residential structures</b>
<b>12.</b>	<b>Hardening of governmental buildings and critical facilities</b>
<b>13.</b>	<b>Safe room construction</b>

Survey respondents were also asked if there are any other mitigation actions that are missing from the list. Respondents mentioned building elevation in repetitively flooded areas; elevation, hardening, acquisition and relocation projects for commercial structures; sustainable affordable housing and energy efficiency priorities; water retention and detention strategies; long term risk assessment; Master Plan redesign using long term risk assessment and climate modeling; relocation strategies for repetitive loss areas; equitable community engagement and education; transparent decision making processes; communication investments that recognize climate realities; and long term assessment on the impacts of existing and projected petrochemical projects on communities.

The final survey question asked respondents if there was anything further they would like to share with the planning team. The respondents mentioned speeding up levee construction, adopting and enforcing Fortified Roof Construction codes, and providing a public statement on the impacts of Hurricane Ida and any short and long term recovery plans.

### Floodplain Ordinance Recommendations

The Parish identified five regulatory standards to help increase CRS points, as detailed in the LA SAFE CRS Strategy ([lasafe.la.gov](http://lasafe.la.gov)). These standards include development limitations, freeboard, cumulative substantial improvements, protection of critical facilities and enclosure limits. The information on each higher regulatory standard is listed below.

- **Development limitations:** Development limitations include prohibiting fill, development, and/or material storage in the floodplain.
- **Freeboard:** Freeboard is a requirement for new and substantially improved buildings to be elevated one foot or more above the base flood elevation (BFE). This requirement can greatly reduce flood insurance premiums, because buildings with freeboard receive less flood damage. The Parish will need to implement this requirement before the next cycle visit in order to keep a Class 7 in the CRS.

- **Cumulative substantial damage:** Cumulative substantial damage is a higher standard for substantial improvements that triggers the elevation requirement for repetitively flooded properties. It also makes Increased Cost of Compliance financial assistance available for elevating substantially damaged buildings.
- **Protection of critical facilities:** The parish could receive credit for protecting facilities such as hospitals, fire stations, drainage pumps, and other safety, health care, or utility facilities that are vital to the community to the 500 year flood level.
- **Nonconversion agreements:** The parish could receive points for requiring nonconversion agreements for elevated buildings. Nonconversion agreements prevent residents in the floodplain from converting a part of the lower area under their home into a habitable space.

### Process for Incorporating Recommendations in the Plans

The Hazard Mitigation Committee provided recommendations to the plan via online survey. These recommendations were then shared with the Stephenson Disaster Management Institute and incorporated into the plan update as well as the Community Rating System Appendix.

### Post-Disaster Redevelopment Mitigation

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. John the Baptist 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 can be found in the figure on the next page.

Planning and Regulatory		
Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place.		
	St. John the Baptist Parish	Comments
Plans		
Comprehensive / Master Plan	Yes	Adopted 2017
Capital Improvements Plan	No	
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	Every 4 years.
Continuity of Operations Plan	No	
Transportation Plan	No	
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other plans (redevelopment, recovery, coastal zone management)	No	
Building Code, Permitting and Inspections		
Building Code	Yes	Version / Year: <ul style="list-style-type: none"> <li>• International Residential Code , 2012</li> <li>• International Building Code, 2012</li> <li>• International Existing Building Code, 2012</li> <li>• International Mechanical Code, 2012</li> <li>• International Fuel Gas Code, 2012</li> <li>• Louisiana State Plumbing Code, 2013</li> <li>• National Electric Code, 2011</li> </ul>
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes	Score = Third class for 1 and 2 family residential and third class for commercial and industrial
Fire Department ISO/PIAL rating	Yes	Class 3
Site plan review requirements	Yes	
Land Use Planning and Ordinances		
Zoning Ordinance	Yes	
Subdivision Ordinance	Yes	
Floodplain Ordinance	Yes	
Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire)	No	
Flood Insurance Rate Maps	Yes	
Acquisition of land for open space and public recreation uses	No	
Other	No	

St. John the Baptist Parish will work to expand its 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.

**Items to Mitigate Other Hazards**

There are two additional actions in the mitigation strategy to mitigate additional hazards. One is expansive soil data collection and tracking so that the parish can create a monitoring system to help track subsidence in the parish. The other action is lightning mitigation, so that the Parish can procure and install lightning rods and surge protectors for public buildings in order to preserve life and property.

**Monitoring and Reviewing Procedure**

The Hazard Mitigation Committee will review and evaluate the plan annually via online survey and will share this evaluation with the Parish Council.



## Adopt the Plan

**ST. JOHN THE BAPTIST PARISH COUNCIL**  
**STATE OF LOUISIANA**

**RESOLUTION**  
**R22-19**

Councilman Madere proposed and Councilman Malik seconded the following resolution:

**THE ST. JOHN THE BAPTIST PARISH COUNCIL HEREBY RESOLVES:**

**A RESOLUTION AUTHORIZING ST. JOHN THE BAPTIST PARISH TO ADOPT THE REVISED HAZARD MITIGATION PLAN**

**WHEREAS**, Article IV, Section H (2) and (5) of the St. John the Baptist Parish Home Rule Charter permits the Parish Council to adopt a resolution when authorizing a designated person(s) to execute a previously approved contract on its behalf and/or to perform a ministerial act related to the administrative business of the Parish; and

**WHEREAS**, based on a State requirement to update the Hazard Mitigation Plan every five years, the revised plan is being presented for adoption; and,

**WHEREAS**, all Parish Directors, led by the Department of Public Safety, have reviewed the plan and made revisions, and it has been reviewed and approved by GOHSEP and FEMA.

**NOW, THEREFORE, BE IT RESOLVED**, by the St. John the Baptist Parish Council, St. John the Baptist Parish is hereby authorized to adopt the revised Hazard Mitigation Plan.

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

YEAS: Madere, Houston, Wright, Duhe-Griffin, Arcuri, Malik, Becnel

NAYS: None

ABSTAIN: None

ABSENT: Schnyder, Torres

And, the resolution was declared adopted on this, the 8<sup>th</sup> day of February 2022.



Council Chairman



Secretary

Approved: \_\_\_\_\_ X \_\_\_\_\_

Veto: \_\_\_\_\_

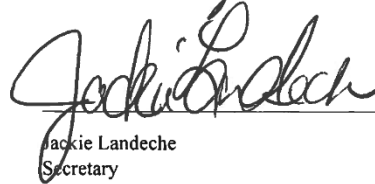


  
Parish President

\* \* \* \* \*  
C E R T I F I C A T E

I, Jackie Landeche, Secretary of the Council of the Parish of St. John, State of Louisiana, hereby certify that the foregoing is a true and correct copy of a resolution adopted by the St. John Parish Council in regular meeting held on the 8<sup>th</sup> day of February 2022.

Signed at Laplace, Louisiana this 8<sup>th</sup> day of February 2022.

  
Jackie Landeche  
Secretary

( S E A L )