

2021 ASSUMPTION PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

UNINCORPORATED ASSUMPTION
PARISH, VILLAGE OF
NAPOLEONVILLE



ASSUMPTION PARISH MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

Prepared for:

Assumption Parish



Prepared by:

Stephenson Disaster Management Institute

Mr. Brant Mitchell, CEM
Mrs. Lauren Morgan, MEPP
Mr. Chris Rippetoe, CFM
Dr. Joseph B. Harris, PhD*

Louisiana State University – Louisiana Emerging Technology Center
Baton Rouge, LA 70803



*Western Carolina University, Emergency and Disaster Management Program (Dept. of Criminology and Criminal Justice)

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Assumption Parish
Village of Napoleonville

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| | |
|-----------------|-------------------------------|
| John Boudreaux | Assumption Parish OHSEP |
| Anne Blanchard | Assumption Parish OHSEP |
| Ron Animashaun | Village of Napoleonville |
| Patrick Johnson | Assumption Parish Police Jury |

The 2021 Assumption Parish Hazard Mitigation Plan Update was written by the Stephenson Disaster Management Institute, Louisiana State University. Further comments should be directed to the Assumption Parish Office of Homeland Security and Emergency Preparedness: 105 Martin Luther King Drive, Napoleonville, LA 70390.



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

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

- Unincorporated Assumption Parish
- Village of Napoleonville

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

Geography, Population and Economy

Geography

Assumption Parish is located in southeastern Louisiana, approximately 18 miles north of the Gulf of Mexico (*Figure 1-1*). Known as one of the 22 Acadiana parishes, Assumption Parish is one of the smallest parishes in Louisiana in terms of area, consisting of approximately 338 square miles. Neighboring parishes are St. James and Lafourche Parishes to the east, Iberville and Ascension Parishes to the north, St. Mary and Terrebonne Parishes to the south and St. Martin and Iberia Parishes to the west. The Village of Napoleonville is the largest urban area in the parish and is located in the eastern part of the parish along Bayou Lafourche.

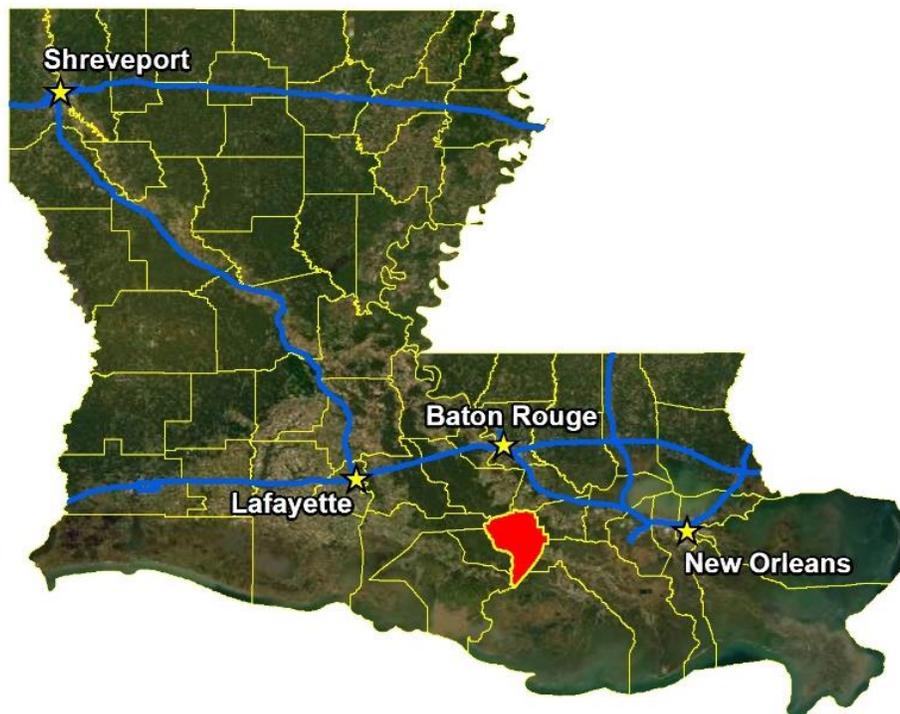


Figure 1-1: Location of Assumption Parish in the State of Louisiana

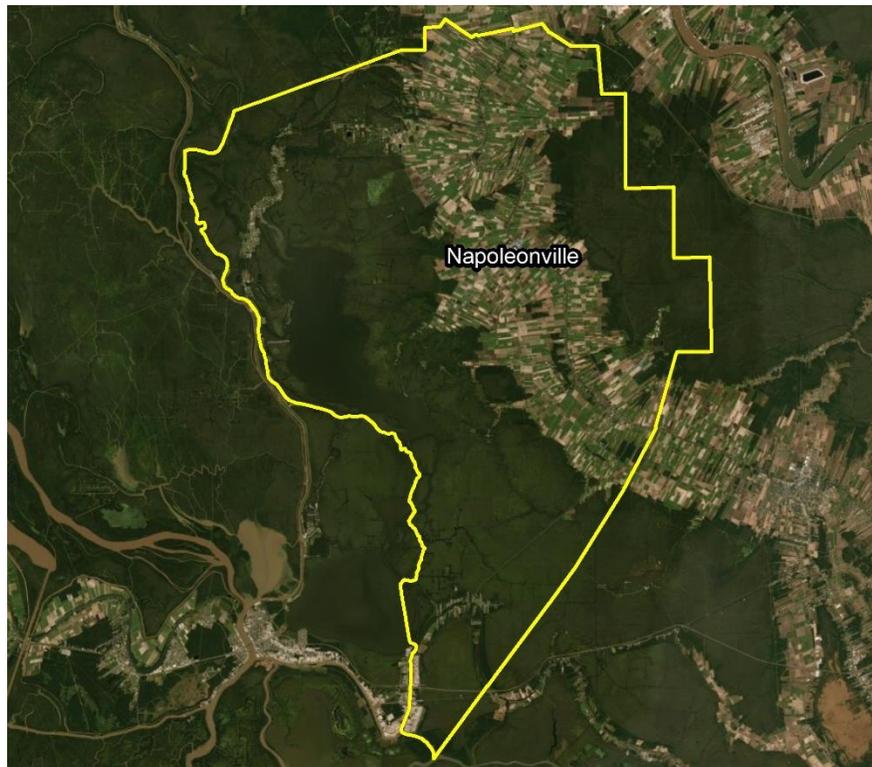


Figure 1-2: Incorporated Jurisdictions within Assumption Parish

Sugarcane is the main crop in Assumption Parish. In proportion to this area, there is more sugar production in this parish than any other parish in Louisiana. Most of the soils in the parish not subject to flooding have been used in the production of sugarcane. Many residents of Assumption Parish grow home gardens because the rich loamy soil is well suited for vegetable crops.

Much of Assumption Parish is laced with bayous. The highest land in the parish is located along the banks of Bayou Lafourche, where the elevations range from fifteen to twenty feet above sea level, forming a natural levee. Bayou Lafourche is 107 miles long and is presently navigable from Thibodaux to Belle Pass at the Gulf of Mexico. Lake Verret, Grassy Lake, and Lake Palourde form the western boundary of the parish.

Assumption Parish weather is typically warm and humid. Variations in daily temperature throughout the state are primarily determined by distance from the Gulf of Mexico and, to a much lesser degree, by differences in elevation. The average annual temperature for the state as a whole is 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 Assumption 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 62 inches. Assumption 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.

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

As noted above, Assumption Parish is located in the south-central region of Louisiana.



Figure 1-3: Louisiana Homeland Security Regions

Population

The population of Assumption Parish is estimated at 21,039 (2020 Census) with a population percent change from April 1, 2010 – April 1, 2020 of -11.32%.

Table 1-1: Assumption Parish Population (Source: US Census)

| | 2010 Census | 2013 Estimate | 2020 Census | Percent Change 2010 - 2020 |
|---|-------------|---------------|-------------|----------------------------|
| Total Population | 23,421 | 23,196 | 21,039 | -11.32% |
| Population Density (Pop/Sq. Mi.) | 69.2 | ----- | ----- | ----- |
| Total Households | 8,571 | 8,571 | 8,552 | -0.22% |
| Persons Per Household | ----- | ----- | 2.60 | ----- |

Economy

A hard-working labor force, abundant raw materials, location near a corridor of significant industrial activity, and land for commercial and industrial development make Assumption Parish an ideal prospect for business investment. Although agriculture dominates the local economic base, related industrial activity, including sugar processing and refining, also impact the local economy. Major industries in Assumption Parish include fabrication, sugar, food products, agriculture, and fishing. Cajun Fry Company and Savoie Industries are a couple of the major private employers in this area. Industry data for business patterns in Assumption Parish can be found in the table on the next page.

Table 1-2: Assumption Parish Business Patterns
(Source: US Census, CBP)

| Business Description | Number of Establishments | Number of Employees | Annual Payroll (\$1,000) |
|--|--------------------------|---------------------|--------------------------|
| Retail Trade | 38 | 463 | 10,888 |
| Manufacturing | 15 | 457 | 22,120 |
| Health Care and Social Assistance | 15 | 279 | 7,808 |
| Mining, Quarrying, Oil and Gas Extraction | 7 | 93 | 6,855 |
| Transportation and Warehousing | 24 | 204 | 12,165 |
| Construction | 27 | 543 | 38,454 |
| Real Estate and Rental and Leasing | 5 | 7 | 197 |
| Wholesale Trade | 7 | 63 | 1,951 |
| Other Services (except Public Administration) | 31 | 145 | 3,480 |
| Accommodation and Food Services | 16 | 120 | 1,632 |
| Financial and Insurance | 22 | 206 | 6,875 |
| Professional, Scientific, and Technical Services | 29 | 75 | 3,887 |

Hazard Mitigation

To fully understand hazard mitigation efforts in Assumption 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 Assumption 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 Assumption Parish HMP were as follows:

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

This plan update also coheres with the Plain Writing Act of 2010, which requires federal agencies to use clear communication that is accessible, consistent, understandable, and useful to the public. While the State of Louisiana and its political subdivisions are not required to meet such standards, the Act aligns with best practices in hazard mitigation. Since successful hazard mitigation relies on full implementation and cooperation at all levels of government and community, a successful hazard mitigation plan must also be easily used at all of these levels. Nevertheless, the Assumption 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 Assumption Parish Hazard Mitigation Plan. The current goals are as follows:

1. Reduce the impact of future flooding
2. Provide shelter and protection for the citizens of Assumption Parish during a hazard event
3. Provide safe travel routes during a hazard event
4. Increase public support and understanding of hazard mitigation
5. Protect existing infrastructure
6. Improve the quality and timeliness of public notification
7. Prepare and plan before a disaster strikes
8. Improve existing communication system
9. Improve floodplain management activities

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 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 Assumption Parish Drainage & Flood Mitigation Master Plan

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: Assumption Parish Drainage & Flood Mitigation Master Plan |

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 Assumption Parish and its communities. The extent of this risk is dictated primarily by its geographic location. Most significantly, Assumption 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 Assumption 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 Assumption 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 Assumption 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 Previous Plan | Considered Medium or High Risk in the State's HM Plan | Profiled in the 2021 Update |
|-------------------|---------------------------|---|-----------------------------|
| Flooding | X | X | X |
| Sinkholes | X | | X |
| Thunderstorms | X | X | X |
| Tornadoes | X | X | X |
| Tropical Cyclones | X | X | X |
| Winter Storms | X | | X |

Prevalent Hazards to the Community

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

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

- a) Flooding
- b) Sinkholes
- c) Thunderstorms (Hail, Lightning, & Wind)
- d) Tornadoes
- e) Tropical Cyclones
- f) 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 potential destructive power of tropical cyclones was determined to be the most prevalent hazard to the parish. Eighteen of the thirty-three disaster declarations Assumption 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 Assumption Parish is included in the hurricane risk assessment.

Assumption Parish is also susceptible to tornadoes. Tornadoes can spawn from tropical cyclones or severe weather systems that pass-through Assumption 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 Assumption Parish since 1965. Information includes names, dates, and types of disaster.

Table 2-2: Assumption Parish Major Disaster Declarations.

| Disaster Number | Year | Declaration |
|-----------------|------------|---|
| 208 | 9/10/1965 | Tropical Cyclone – Betsy |
| 315 | 10/13/1971 | Tropical Cyclone – Hurricane Edith |
| 374 | 4/27/1973 | Severe Storm, Flood |
| 584 | 6/2/1979 | Severe Storm, Flood |
| 616 | 4/9/1980 | Severe Storm, Flood |
| 904 | 5/3/1991 | Severe Storms, Tornadoes and Floods |
| 956 | 8/25/1992 | Tropical Cyclone – Hurricane Andrew |
| 1049 | 5/10/1995 | Severe Storm, Flood |
| 1246 | 9/23/1998 | Tropical Cyclone – Hurricane Georges/TS Frances |
| 1380 | 6/5/2001 | Tropical Cyclone – TS Allison |
| 1435 | 9/27/2002 | Tropical Cyclone – TS Isidore |
| 1437 | 10/3/2002 | Tropical Cyclone – Hurricane Lili |
| 1548 | 9/15/2004 | Tropical Cyclone – Hurricane Ivan |

| Disaster Number | Year | Declaration |
|-----------------|------------|--|
| 1603 | 8/29/2005 | Tropical Cyclone – Hurricane Katrina |
| 1607 | 9/24/2005 | Tropical Cyclone – Hurricane Rita |
| 1786 | 9/2/2008 | Tropical Cyclone – Hurricane Gustav |
| 4015 | 8/18/2011 | Severe Storm, Flood |
| 3322 | 5/6/2011 | Severe Storm, Flood |
| 4080 | 8/29/2012 | Tropical Cyclone – Hurricane Isaac |
| 4102 | 2/22/2013 | Severe Storm, Flood |
| 4228 | 7/13/2015 | Severe Storm, Flood |
| 3376 | 2/5/2016 | Flooding |
| 4277 | 8/14/2016 | Severe Storm, Flood |
| 4300 | 2/11/2017 | Severe Storms, Tornadoes, & Straight Line Winds |
| 3392 | 10/6/2017 | Tropical Cyclone – Tropical Storm Nate |
| 4345 | 10/16/2017 | Tropical Cyclone – Tropical Storm Harvey |
| 4439 | 6/3/2019 | Severe Storm, Tornadoes |
| 4458 | 8/27/2019 | Tropical Cyclone – Hurricane Barry |
| 4462 | 9/19/2019 | Flooding |
| 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 Assumption 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 | |
|---------------------------|---------------------------------------|---------------|
| | Assumption Parish (Unincorporated) | Napoleonville |
| Flooding | 28% | 8% |
| Sinkholes | 3% | < 1% |
| Thunderstorms - Hail | 20% | 20% |
| Thunderstorms - Lightning | 7% | 7% |
| Thunderstorms - Winds | 100% | 100% |
| Tornadoes | 33% | 33% |
| Tropical Cyclones | 61% | 61% |
| Winter Storms | 3% | 3% |

As shown in the above tables, high winds have the highest chance of occurrence in the parish (100%). These are followed by tropical cyclones (61%), tornadoes (33%), flooding for the unincorporated area of Assumption Parish (28%), hailstorms (20%), flooding for Napoleonville (8%), lightning (7%), and sinkholes for the unincorporated area of Assumption parish and Winter Storms (3%). Sinkholes for the incorporated area of Napoleonville have an annual chance of occurrence of less than 1%.

Inventory of Assets for the Entire Parish

As part of the Risk Assessment, the planning team identified essential facilities throughout the parish. Several methods were used to assist in identifying all essential facilities, including field data collected by the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) on critical infrastructure from a previous hazard mitigation project. Within the entire planning area, there is an estimated value of \$2,015,149,000 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 Assumption Parish.

| Occupancy | Assumption Parish | Unincorporated Area | Napoleonville |
|--------------|------------------------|------------------------|---------------------|
| Agricultural | \$8,114,000 | \$8,114,000 | \$0 |
| Commercial | \$158,505,000 | \$155,151,000 | \$3,354,000 |
| Government | \$8,605,000 | \$8,513,000 | \$92,000 |
| Industrial | \$49,899,000 | \$49,738,000 | \$161,000 |
| Religion | \$31,231,000 | \$27,877,000 | \$3,354,000 |
| Residential | \$1,733,683,000 | \$1,676,133,000 | \$57,550,000 |
| Education | \$25,112,000 | \$25,112,000 | \$0 |
| Total | \$2,015,149,000 | \$1,950,638,000 | \$64,511,000 |

Essential Facilities of the Parish

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

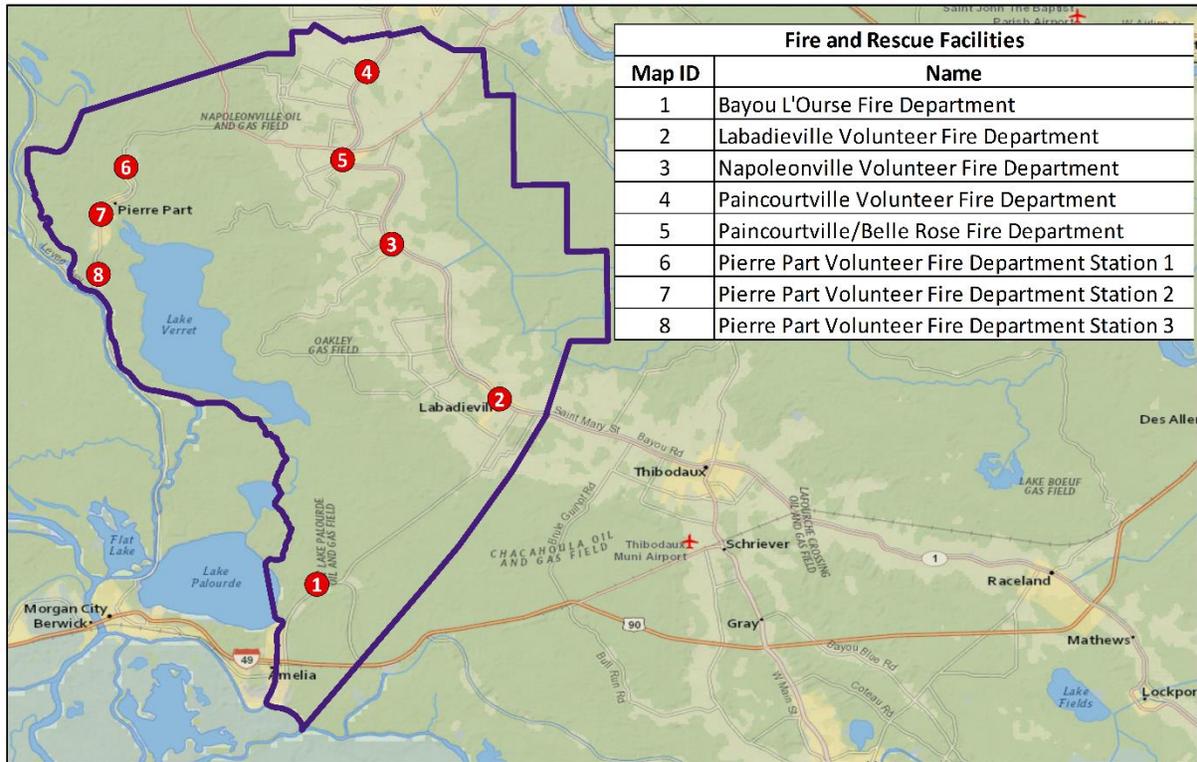


Figure 2-1: Fire and Rescue Facilities in Assumption Parish.

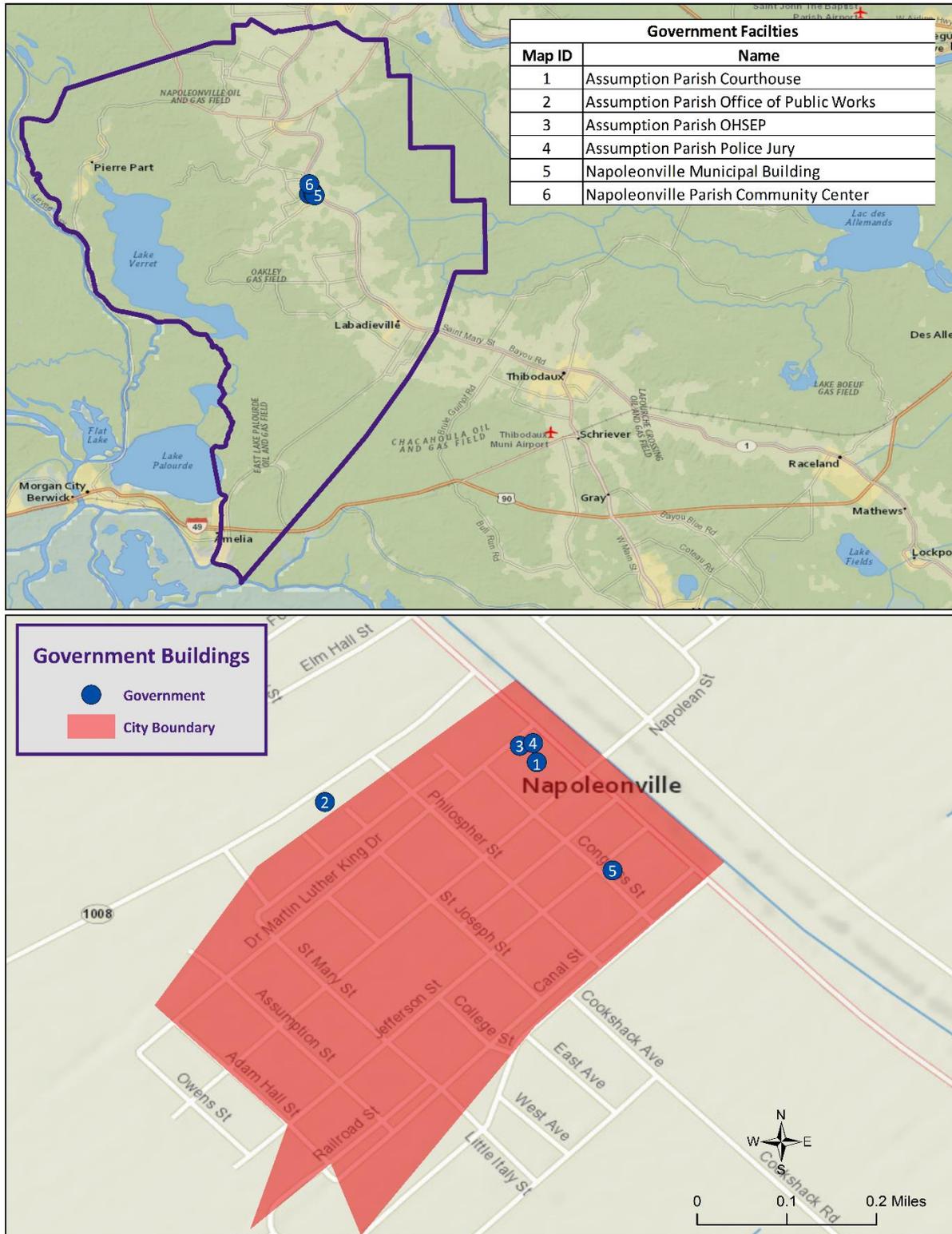


Figure 2-2: Government Buildings in Assumption Parish.

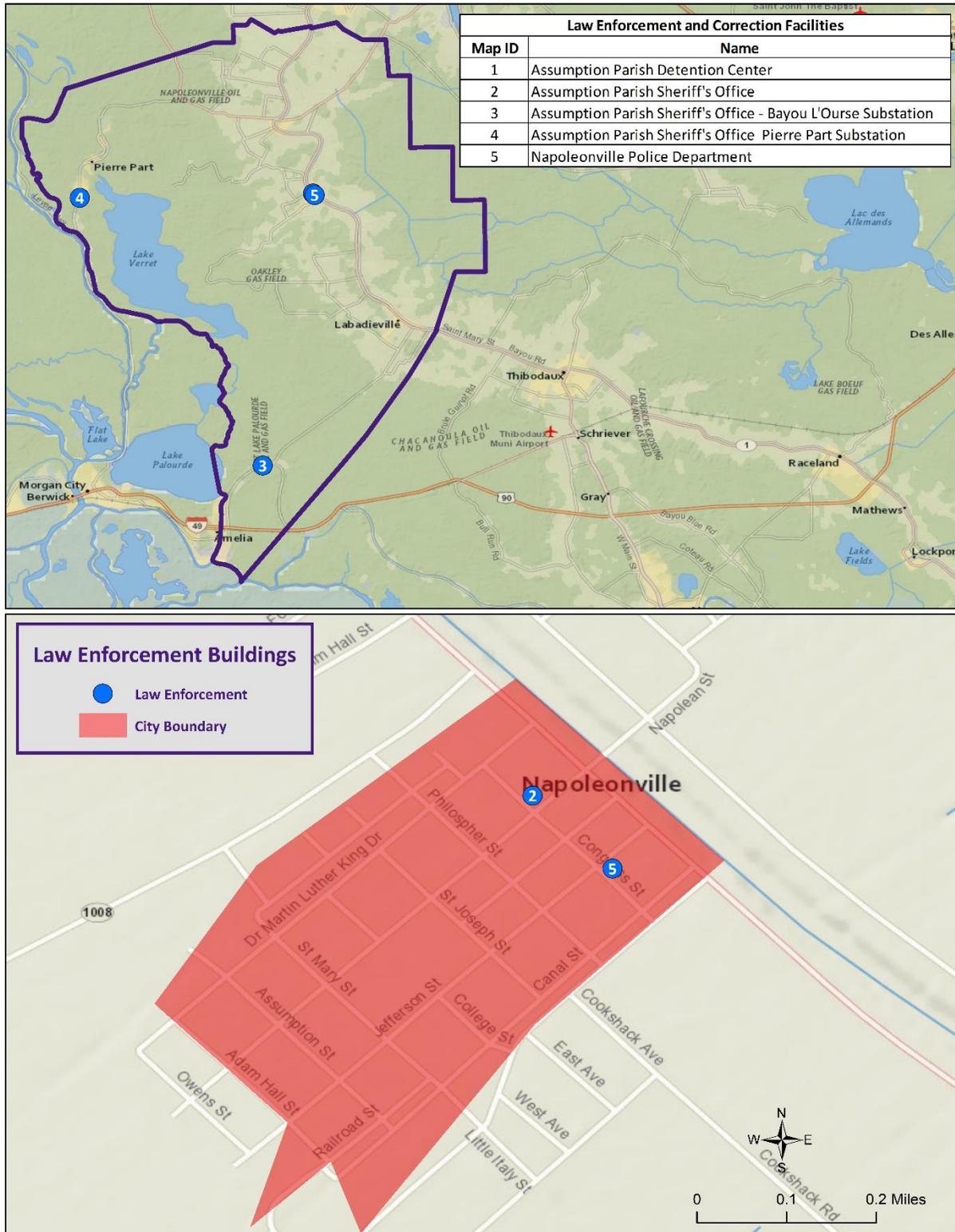


Figure 2-3: Law Enforcement in Assumption Parish.

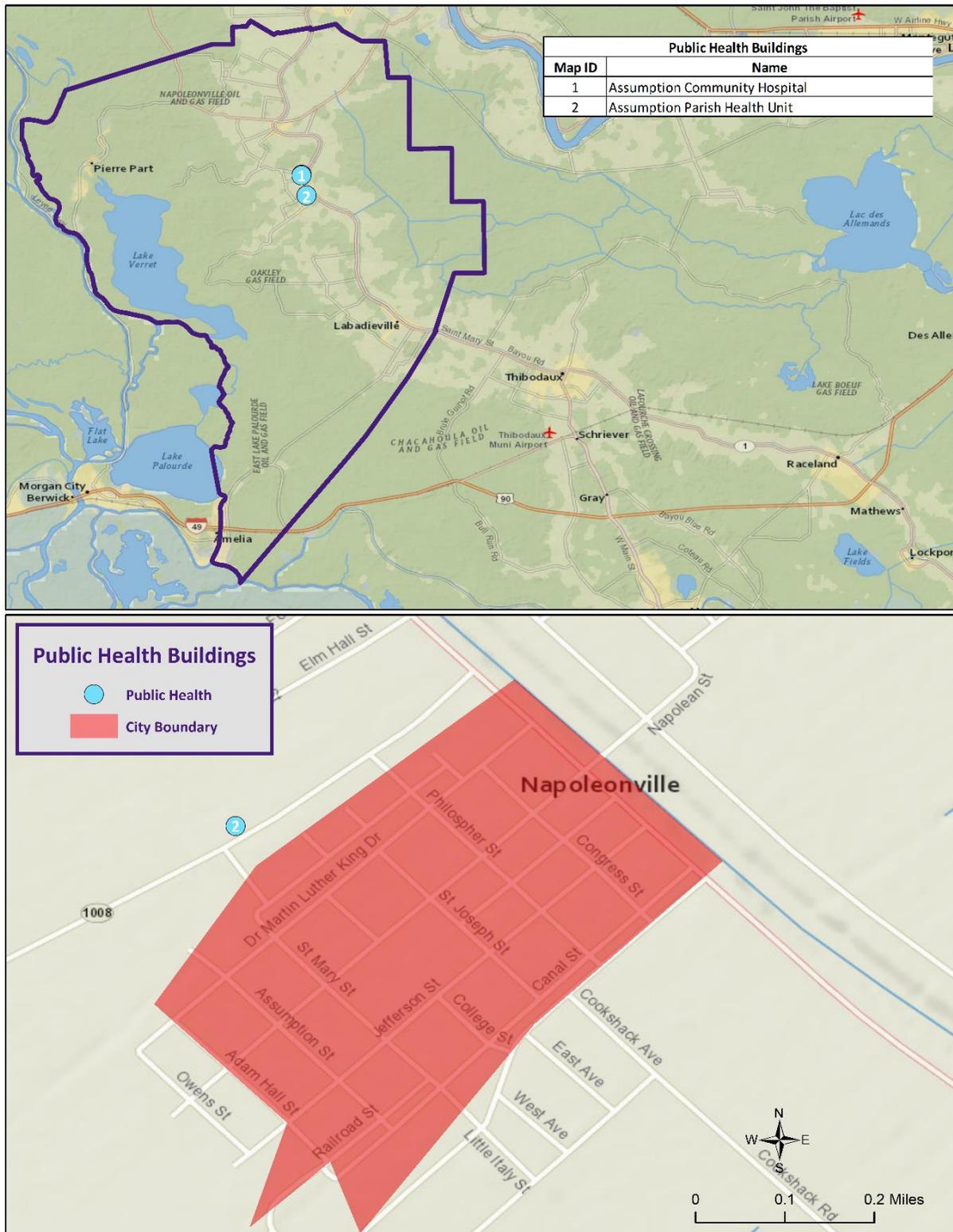


Figure 2-4: Public Health Facilities in Assumption Parish.

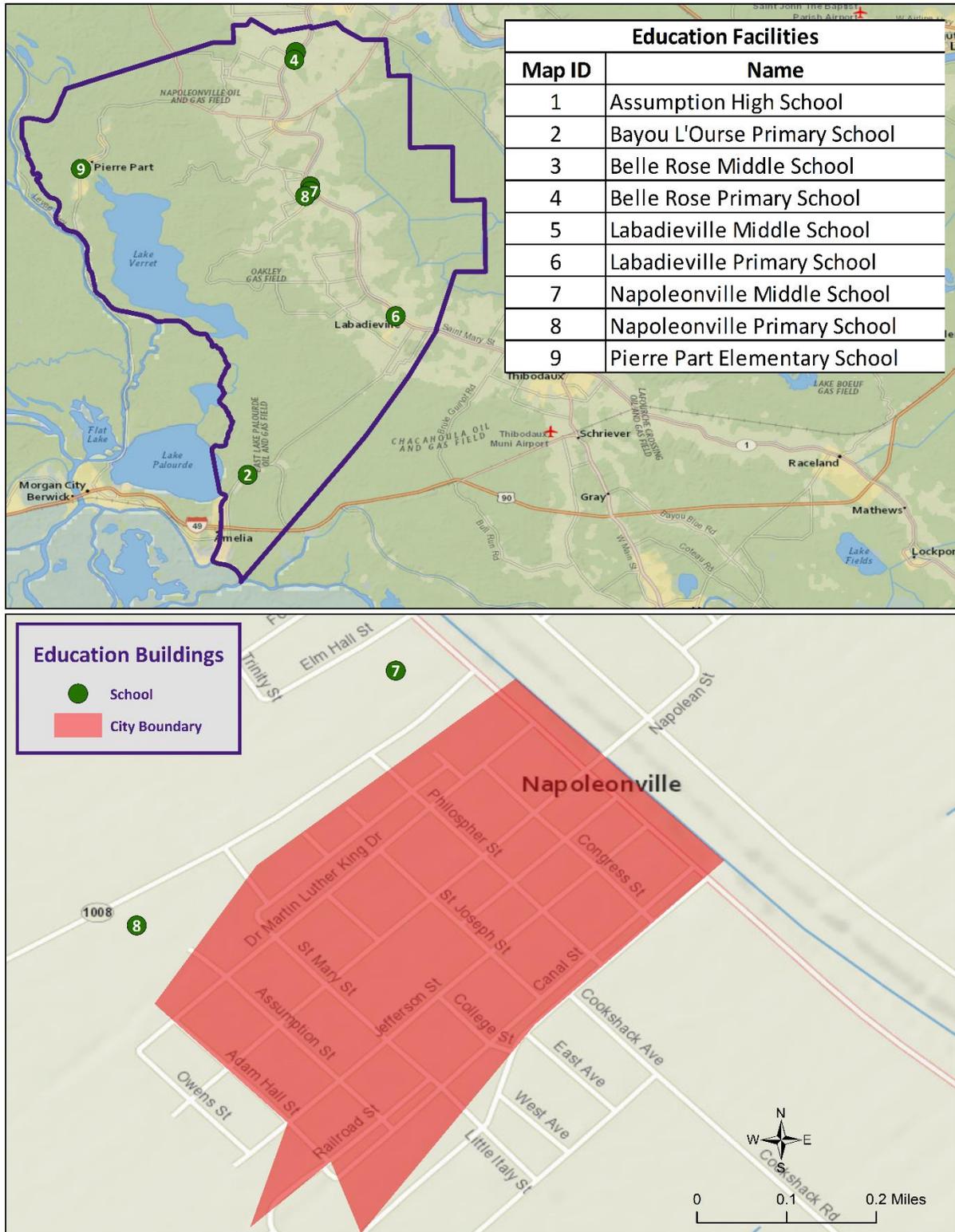


Figure 2-5: Educational Facilities in Assumption Parish.

Future Development Trends

Assumption Parish experienced a decline in population between the years of 2000 and 2019, declining in population from 23,388 in the year 2000 to a population of 21,891 in the year 2019. The unincorporated area of Assumption Parish experienced the largest decline in population declining from a populace of 22,761 in 2010 to 21,191 in 2019 (6.9% overall decline). The incorporated area of Napoleonville experienced an increase in population during this same time period growing from a populace of 660 in 2010 to 700 in 2019.

The unincorporated area of Assumption Parish experienced a growth in housing units growing from 10,442 housing units in 2010 to 10,655 in 2019. The incorporated area of Napoleonville experienced a decline in housing units during this time falling from 287 housing units in 2010 to 284 housing units in 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 Assumption Parish.

| Total Population | Assumption Parish | Unincorporated Area | Napoleonville |
|--|-------------------|---------------------|---------------|
| 1-Apr-00 | 23,388 | 22,702 | 686 |
| 1-Apr-10 | 23,421 | 22,761 | 660 |
| 1-Jul-19 | 21,891 | 21,191 | 700 |
| Population Growth between 2000 – 2010 | 0.1% | 0.3% | -3.8% |
| Average Annual Growth Rate between 2000 – 2010 | 0.0% | 0.0% | -0.4% |
| Population Growth between 2010 – 2019 | -6.5% | -6.9% | 6.1% |
| Average Annual Growth Rate between 2010 – 2019 | -0.73% | -0.77% | 0.67% |

Table 2-6: Housing Growth Rate for Assumption Parish.

| Total Housing Units | Assumption Parish | Unincorporated Area | Napoleonville |
|--|-------------------|---------------------|---------------|
| 1-Apr-00 | 9,635 | 9,347 | 288 |
| 1-Apr-10 | 10,729 | 10,442 | 287 |
| 1-Jul-19 | 10,939 | 10,655 | 284 |
| Housing Growth between 2000 – 2010 | 11.4% | 11.7% | -0.3% |
| Average Annual Growth Rate between 2000 – 2010 | 1.1% | 1.2% | 0.0% |
| Housing Growth between 2010 – 2019 | 2.0% | 2.0% | -1.0% |
| Average Annual Growth Rate between 2010 – 2019 | 0.2% | 0.2% | -0.1% |

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 Assumption 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, 2018-2030.

(Source: Hazus, US Census Bureau)

| Hazard / Impact | Total in Parish (2018) | Hazard Area (2018) | Hazard Area (2025) | Hazard Area (2030) |
|--------------------------------|------------------------|--------------------|--------------------|--------------------|
| Flood Damage | | | | |
| Structures | 11,053 | 2,672 | 2,814 | 2,994 |
| Value of Structures | \$2,056,896,745 | \$497,252,439 | \$550,939,054 | \$623,068,111 |
| # of People | 21,891 | 5,292 | 5,292 | 5,292 |
| Tropical Cyclone Damage | | | | |
| Structures | 11,053 | 11,053 | 11,640 | 12,387 |
| Value of Structures | \$2,056,896,745 | \$2,056,896,745 | \$2,278,972,729 | \$2,577,336,316 |
| # of People | 21,891 | 21,891 | 21,891 | 21,891 |

While the population of Assumption Parish has generally decreased over the last decade, the housing numbers have remained relatively steady. With that in mind, Assumption Parish is mindful in offsetting any new development around the parish with appropriate mitigative actions. Initiatives such as active floodplain management have regulated the development of flood prone areas to continue supporting and encouraging safer communities within Assumption Parish. Strict enforcement of building codes for all new development is an additional step taken by the parish in its effort to decrease its vulnerability and increase the resiliency of the parish against natural hazards. The 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 Assumption Parish. Vulnerability can be defined as the manifestation of the inherent states of the system (e.g., physical, technical, organizational, cultural) that can be exploited to adversely affect (cause harm or damage to) that system. For example, identifying areas in the parish that suffer disproportional damages from flooding compared with other areas, or overall exposure of an entire town to flooding. Identifying and understanding vulnerability to each threat and hazard provides a strong foundation for developing and pursuing mitigation actions.

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

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

Quantitative Methodology

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

Qualitative Methodology

The qualitative assessment relies less on technology, but more on historical and anecdotal data regarding expected hazard impacts. The qualitative assessment completed for Assumption 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.

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

Priority Risk Index and Hazard Risk

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

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

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

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

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

Table 2-10: Risk Assessment for Assumption Parish.

| Hazard | Probability | Impact | Spatial Extent | Warning Time | Duration | Overall Risk |
|---------------------------|-------------|--------|----------------|--------------|----------|--------------|
| Flooding | 3 | 4 | 3 | 4 | 3 | 3.4 |
| Sinkholes | 2 | 2 | 1 | 4 | 2 | 2.1 |
| Thunderstorms - Hail | 3 | 2 | 3 | 3 | 1 | 2.45 |
| Thunderstorms - Lightning | 2 | 2 | 2 | 3 | 1 | 2 |
| Thunderstorms - Wind | 4 | 2 | 3 | 3 | 1 | 2.7 |
| Tornadoes | 3 | 3 | 2 | 4 | 3 | 2.95 |
| Tropical Cyclones | 3 | 4 | 4 | 1 | 4 | 3.3 |
| Winter Storms | 2 | 3 | 4 | 1 | 2 | 2.5 |

Land Use

The Assumption Parish Land Use table is provided below. Residential, commercial, and industrial areas account for only 6% of the parish's land use. Wetlands at 138,690 acres is the largest category accounting for 59% of land in the parish. The parish also consists of agricultural land (28%), water areas (8%), and forest land (< 1%).

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

| Land Use | Acres | Percentage |
|--|---------|------------|
| Agricultural Land, Cropland, and Pasture | 65,623 | 28% |
| Wetlands | 138,690 | 59% |
| Forest Land (Not including forested) | 727 | < 1% |
| Urban/Development | 13,023 | 6% |
| Water | 18,588 | 8% |

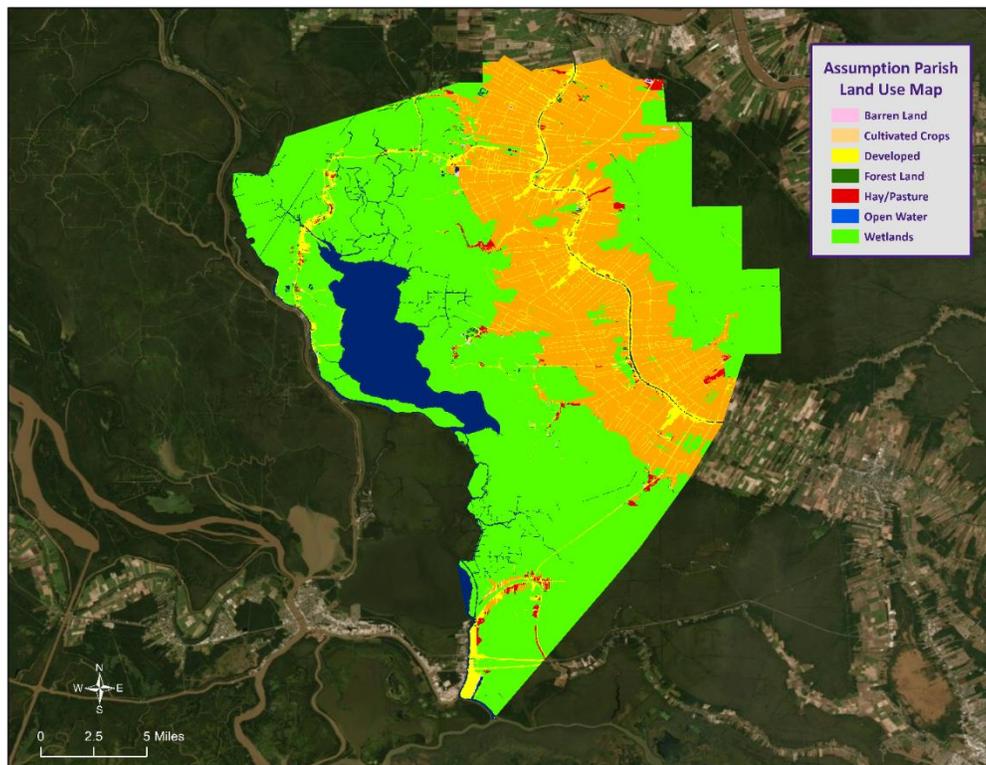


Figure 2-6: Assumption Parish Land Use Map.
(Source: USGS Land Use Map)

Hazard Identification

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 Assumption Parish, all types of flooding events have historically been observed except for coastal flooding. For purposes of this assessment, ponding, flash flood, and urban flooding are considered to be flooding as a result of storm water from heavy precipitation thunderstorms

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

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

Floods are measured mainly by probability of occurrence. A 10-year flood event, for example, is an event of small magnitude (in terms of stream flow or precipitation) but with a relatively high annual probability of recurrence (10%). A 100-year flood event is larger in magnitude, but it has a smaller chance of recurrence (1%). A 500-year flood is significantly larger than both a 100-year event and a 10-year event, but it has a lower probability than both to occur in any given year (0.2%). It is important to understand that an X-year flood event does not mean an event of that magnitude occurs only once in X years. Instead, it means that on average, we can expect a flood event of that magnitude to occur once every X years.

Given that such statistical probability terms are inherently difficult for the general population to understand, the Association of State Floodplain Managers (ASFPM) promotes the use of more tangible expressions of flood probability. As such, the ASFPM also expresses the 100-year flood event as having a 25% chance of occurring over the life of a 30-year mortgage.

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

The 100-year flood event is of particular significance since it is the regulatory standard that determines the obligation (or lack thereof) to purchase flood insurance. Flood insurance premiums are set depending on the flood zone, as modeled by National Flood Insurance Program (NFIP) Rate Maps. The NFIP and FEMA suggest insurance rates based on Special Flood Hazard Areas (SFHAs), as diagrammed in *Figure 2-7*.

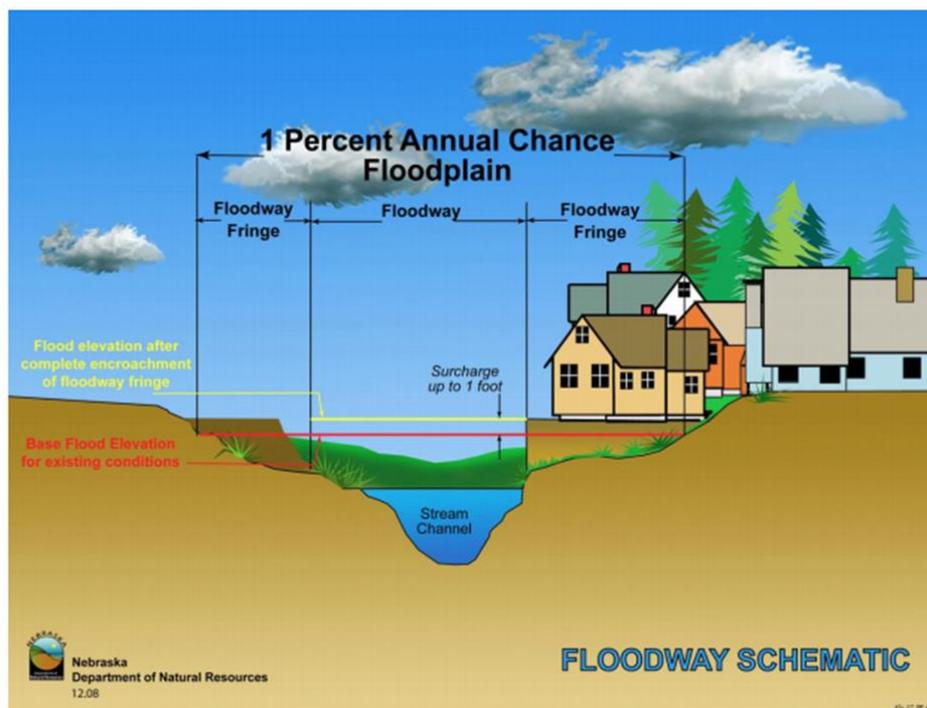


Figure 2-7: Schematic of 100-year Floodplain. The Special Flood Hazard Area (SFHA) extends to the end of the floodway fringe.

(Source: Nebraska Department of Natural Resources)

A SFHA is the land area covered by the floodwaters of the base flood (red line in *Figure 2-7*), 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 Assumption Parish are provided in the table below:

Table 2-12: Repetitive Loss Structures for Assumption Parish.

| Jurisdiction | Number of Structures | Residential | Commercial | Government | Total Claims | Total Claims Paid | Average Claim Paid |
|------------------------------------|----------------------|-------------|------------|------------|--------------|--------------------|--------------------|
| Assumption Parish (Unincorporated) | 49 | 46 | 3 | 0 | 133 | 1,554,993 | \$11,692 |
| Napoleonville | 28 | 28 | 0 | 0 | 30 | \$325,133 | \$10,838 |
| Total | 77 | 74 | 3 | 0 | 163 | \$1,880,126 | \$11,535 |

All 77 repetitive loss structures were geocoded in order to provide an overview of where the repetitive loss structures are located throughout the parish. *Figure 2-8* shows the approximate location of the structures, while *Figure 2-9* shows where the highest concentration of repetitive loss structures is located. Through the repetitive loss map, it is clear the primary concentrated area of repetitive loss structures is focused in and around the western portion of the unincorporated area of Assumption.

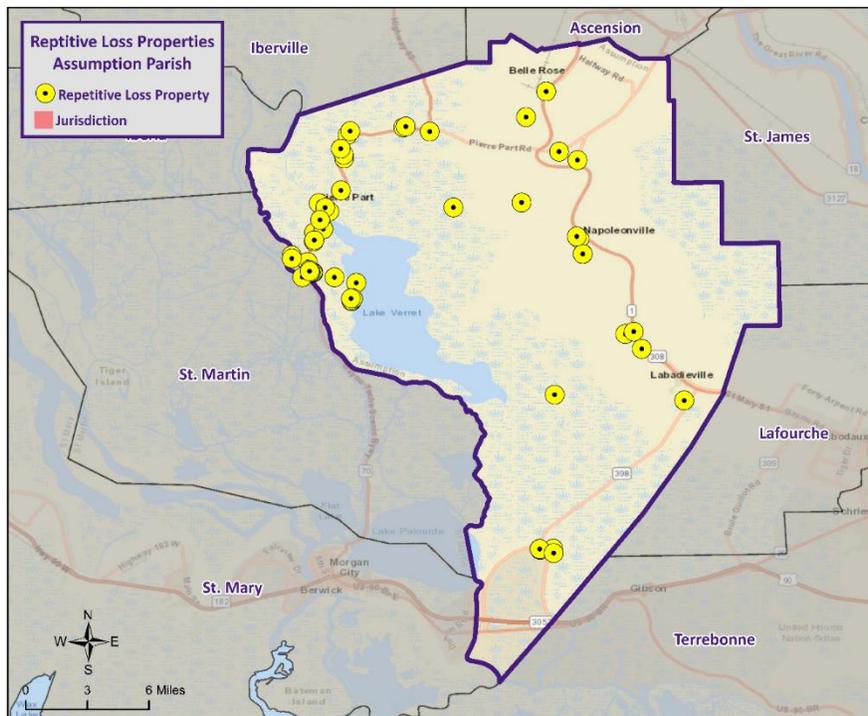


Figure 2-8: Repetitive Loss Properties in Assumption Parish.

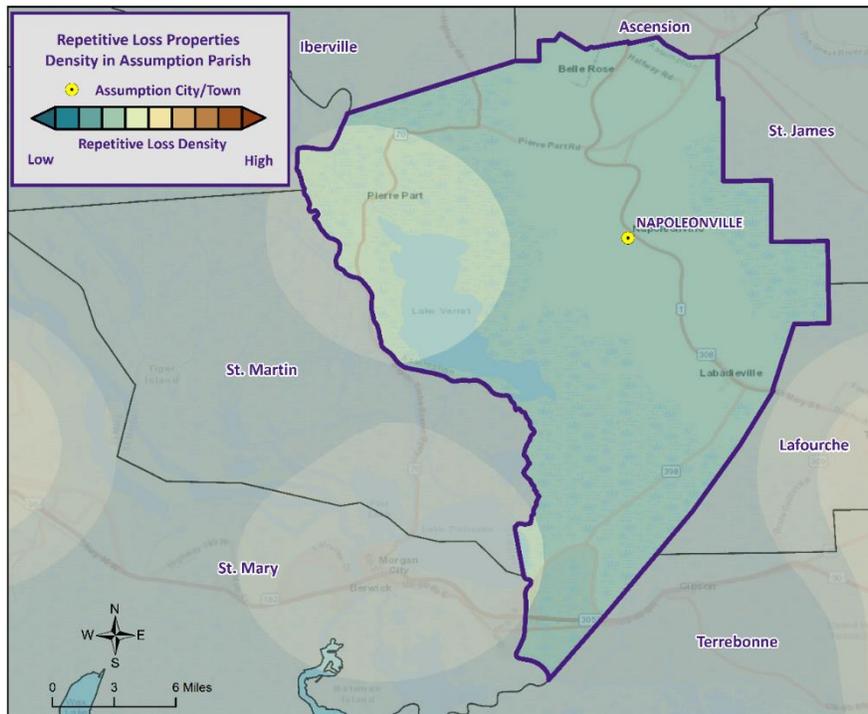


Figure 2-9: Repetitive Loss Property Densities in Assumption Parish.

National Flood Insurance Program

Flood insurance statistics indicate that Assumption Parish has 1,202 flood insurance policies with the NFIP, with total annual premiums of \$638,113. Assumption Parish and the jurisdiction of Napoleonville are all participants in the NFIP. Assumption Parish and its jurisdiction 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 Assumption Parish and its jurisdiction is provided in the tables to follow.

Table 2-13: Summary of NFIP Policies for Assumption Parish.

| Location | No. of Insured Structures | Total Insurance Coverage Value | Annual Premiums Paid | Insurance Claims Filed Since 1978 | Total Loss Payments |
|-------------------|---------------------------|--------------------------------|----------------------|-----------------------------------|---------------------|
| Assumption Parish | 1,195 | \$252,229,800 | \$634,738 | 456 | \$3,345,371 |
| Napoleonville | 7 | \$1,385,000 | \$3,375 | 1 | \$3,612 |
| Total | 1,202 | \$253,614,800 | \$638,113 | 457 | \$3,348,983 |

Table 2-14: Summary of Community Flood Maps for Assumption Parish.

| CID | Community Name | Initial FHBM Identified | Initial FIRM Identified | Current Effective Map Date | Date Joined the NFIP | Tribal |
|---------|-------------------|-------------------------|-------------------------|----------------------------|----------------------|--------|
| 220017# | Assumption Parish | 1/24/1975 | 5/19/1981 | 9/14/2018 | 5/19/1981 | No |
| 220018# | Napoleonville | 1/24/1975 | 5/19/1981 | 9/14/18 (M) | 6/20/1976 | No |

According to the Community Rating System (CRS) list of eligible communities dated April 1, 2021, neither Assumption Parish nor the jurisdiction of Napoleonville participate in the CRS program.

Threat to People

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

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

Flooding in Assumption 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 Assumption 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 on the next page for Assumption Parish is instructive in visualizing where the low-lying and high-risk areas are for the parish. Elevations in the parish range from near sea level to approximately 20 feet (NAVD88). The highest elevations in the parish are located along the banks of Bayou Lafourche, where the elevations range from approximately 15 to 20 feet (NAVD88). Much of Assumption Parish is laced with bayous that have elevations of less than 6 feet. The incorporated area of Napoleonville, located along Bayou Lafourche, has an elevation of approximately 20 feet.

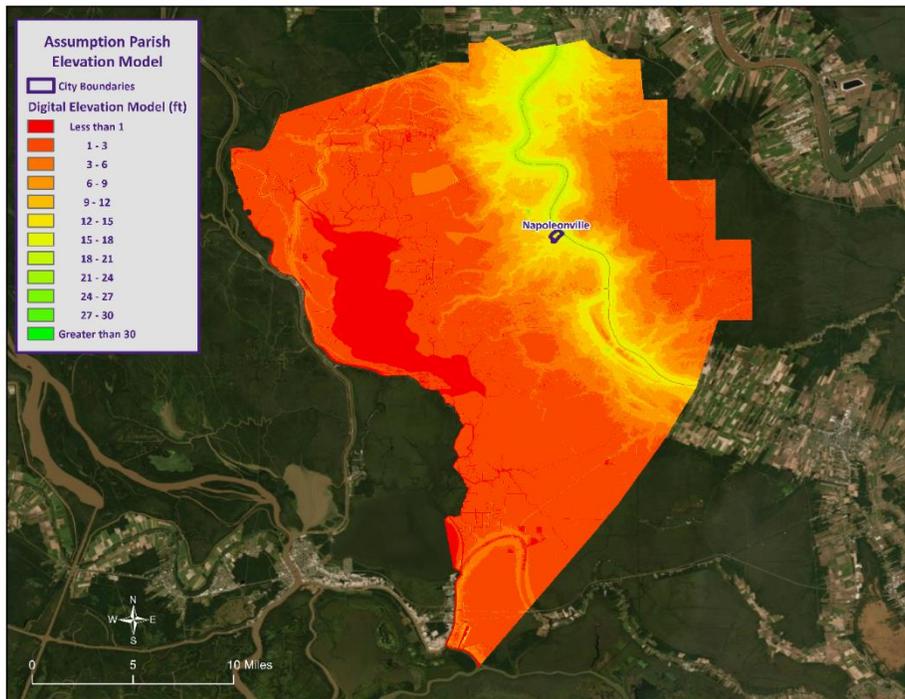


Figure 2-10: Elevation throughout Assumption Parish.

Location

Assumption Parish has experienced significant flooding in its history and can expect more in the future. A large percentage of the parish is interwoven with bayous, which makes these low-lying areas susceptible to flooding. Bayou Lafourche is a major river that runs through the parish, but the bank of this river acts as a natural levee, preventing major riverine flooding. The following is a flood zone map displaying 100- and 500-year flood zones for Assumption Parish:

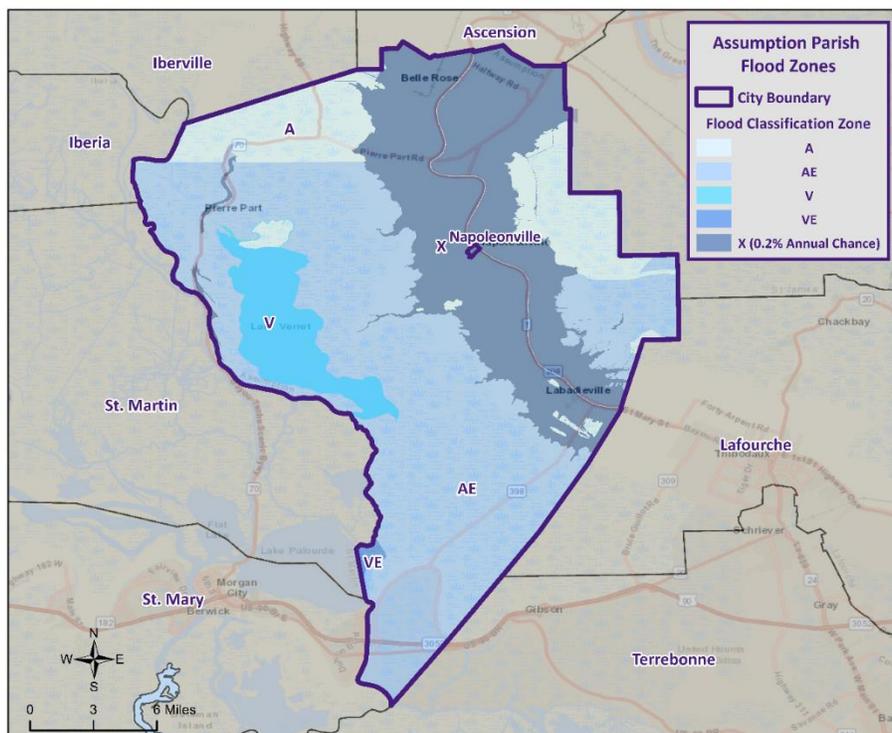


Figure 2-11: Assumption Parish Areas within the Flood Zones.



Figure 2-12: Napoleonville Areas within the Flood Zones.

Previous Occurrences / Extents

Historically, there have been seven flooding events that have caused significant flooding in Assumption Parish and its jurisdiction between 1990 and 2020. Since the 2015 Assumption Parish HMP update, there have been no significant flooding events that have caused loss of life and/or property.

Frequency / Probability

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

Table 2-15: Annual Flood Probabilities for Assumption Parish.

| Jurisdiction | Annual Probability | Return Frequency |
|---|--------------------|------------------------------|
| Assumption Parish (Unincorporated) | 28% | 1 event every 3 to 4 years |
| Napoleonville | 8% | 1 event every 12 to 13 years |

Based on historical record, the overall flooding probability for the entire Assumption Parish Planning area is 28%, with seven events occurring over a 30-year period.

Estimated Potential Losses

Using the Hazus Flood Model, the 100-year flood scenario, along with the Parish DFIRM, was analyzed to determine losses from this worst-case scenario. On the next page, *Table 2-16* shows the total economic losses that would result from this occurrence.

*Table 2-16: Estimated Losses in Assumption Parish from a 100-year Flood Event.
(Source: Hazus)*

| Jurisdiction | Estimated Total Losses from 100-Year Flood Event |
|---|--|
| Assumption Parish (Unincorporated Area) | \$28,860,000 |
| Napoleonville | \$2,589,000 |
| Total | \$31,449,000 |

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

*Table 2-17: Estimated 100-year Flood Losses for Assumption Parish by Sector.
(Source: Hazus)*

| Assumption Parish (Unincorporated) | Estimated Total Losses from 100-Year Flood Event |
|------------------------------------|--|
| Agricultural | \$110,000 |
| Commercial | \$2,802,000 |
| Government | \$206,000 |
| Industrial | \$2,272,000 |
| Religious / Non-Profit | \$418,000 |
| Residential | \$22,836,000 |
| Schools | \$216,000 |
| Total | \$28,860,000 |

*Table 2-18: Estimated 100-year Flood Losses for Napoleonville by Sector.
(Source: Hazus)*

| Napoleonville | Estimated Total Losses from 100-Year Flood Event |
|------------------------|--|
| Agricultural | \$0 |
| Commercial | \$42,000 |
| Government | \$2,000 |
| Industrial | \$31,000 |
| Religious / Non-Profit | \$47,000 |
| Residential | \$2,467,000 |
| Schools | \$0 |
| Total | \$2,589,000 |

Threat to People

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

*Table 2-19: 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 |
| Assumption Parish (Unincorporated) | 22,761 | 5,583 | 24.5% |
| Napoleonville | 660 | 79 | 12.0% |
| Total | 23,421 | 5,662 | 24.2% |

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

*Table 2-20: Vulnerable Populations Susceptible to a 100-year Flood Event in Assumption Parish.
(Source: Hazus)*

| Assumption Parish (Unincorporated) | | |
|------------------------------------|---------------|-------------------------------------|
| Category | Total Numbers | Percentage of People in Hazard Area |
| Number in Hazard Area | 5,583 | 24.5% |
| Persons Under 5 Years | 313 | 5.6% |
| Persons Under 18 Years | 1,279 | 22.9% |
| Persons 65 Years and Over | 832 | 14.9% |
| White | 3,813 | 68.3% |
| Minority | 1,770 | 31.7% |

*Table 2-21: Vulnerable Populations Susceptible to a 100-year Flood Event in Napoleonville.
(Source: Hazus)*

| Napoleonville | | |
|---------------------------|---------------|-------------------------------------|
| Category | Total Numbers | Percentage of People in Hazard Area |
| Number in Hazard Area | 79 | 12.0% |
| Persons Under 5 Years | 6 | 7.3% |
| Persons Under 18 Years | 20 | 25.2% |
| Persons 65 Years and Over | 11 | 13.6% |
| White | 14 | 18.0% |
| Minority | 65 | 82.0% |

Vulnerability

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

Sinkholes

Sinkholes are areas of ground—varying in size from a few square feet to hundreds of acres and reaching in depth from 1 to more than 100 ft.—with no natural external surface drainage. Sinkholes are usually found in karst terrain—that is, areas where limestone, carbonate rock, salt beds, and other water-soluble rocks lie below the Earth’s surface. Karst terrain is marked by the presence of other uncommon geologic features such as springs, caves, and dry streambeds that lose water into the ground. In general, sinkholes form gradually (in the case of cover subsidence sinkholes), but they can also occur suddenly (in the case of cover-collapse sinkholes).

Sinkhole formation is a very simple process. Whenever water is absorbed through soil, encounters water-soluble bedrock, and then begins to dissolve it, sinkholes start to form. The karst rock dissolves along cracks; as the fissures grow, soil and other particles fill the gaps, loosening the soil above the bedrock. Figure 1 illustrates the development of a cover subsidence sinkhole. As the soil sinks from the surface, a depression forms, which draws in more water, funneling it down to the water-soluble rock. The increase of water and soil in the rock pushes open the cracks, again drawing more soil and water into it. This positive feedback loop continues, unless clay plugs into the cracks in the bedrock, at which time a pond may form. A sudden cover-collapse sinkhole occurs when the topsoil above dissolving bedrock does not sink, but forms a bridge over the soil that is sinking beneath it. Underground soil continues to fill the bedrock fissures, until finally the soil bridge collapses and fills the void beneath it.

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

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

Location

Currently, there is one identifiable sinkhole in Assumption Parish. On the next page, *Figure 2-13* displays the location of the sinkhole with its relative location to the nearest jurisdiction.

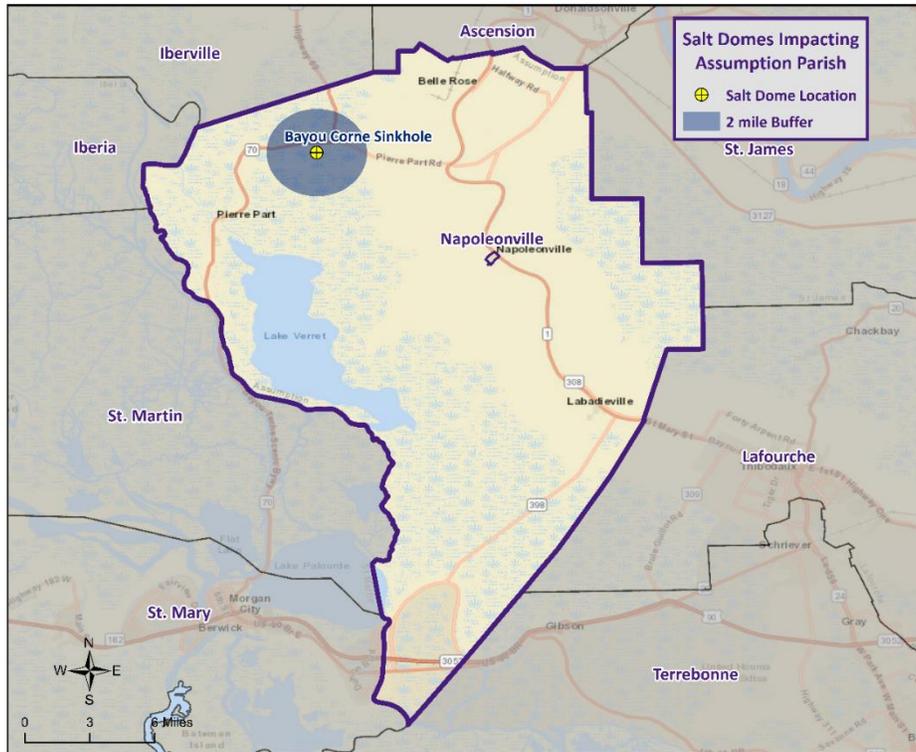


Figure 2-13: Salt Dome Locations in Assumption Parish.

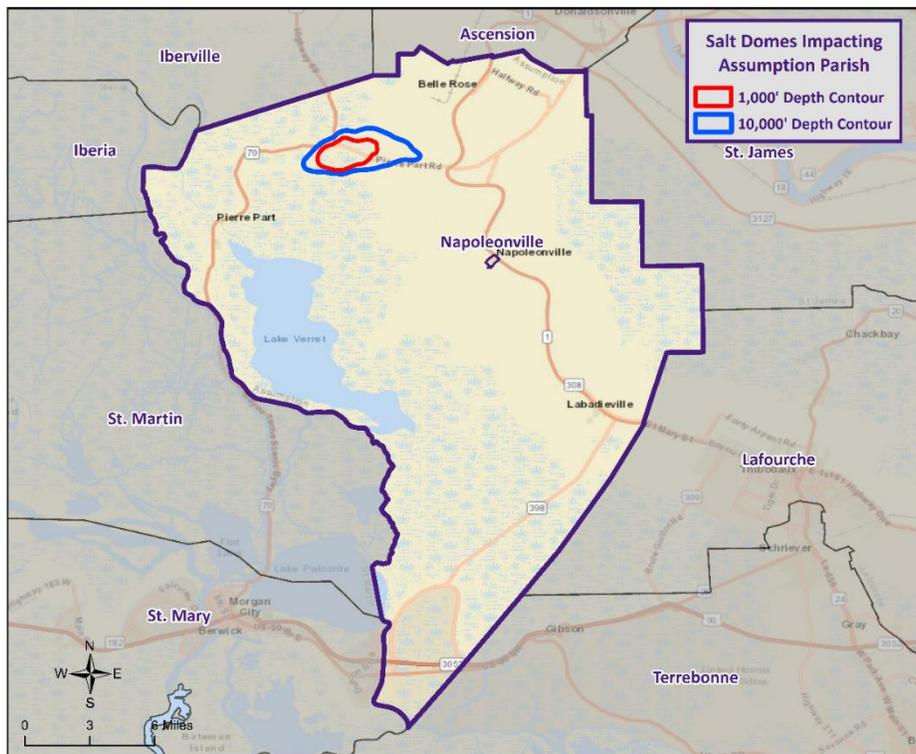


Figure 2-14: Salt Dome Locations and Depth Contours in Assumption Parish.

Previous Occurrences / Extent

There has been one incident of a sinkhole formation in Assumption Parish. On August 3, 2012, a sinkhole formed overnight on a salt dome in the area of Bayou Corne, forcing the mandatory evacuation of 350 residents in the community. The sinkhole is approximately 32 acres in size and continues to expand, destroying the land and the trees surrounding the sinkhole. There have been no reports of new sinkhole activity since the 2015 Assumption Parish HMP update.

Frequency / Probability

Based on historical data for the past 30-years, there has been one incident of a sinkhole formation or salt dome collapse in Assumption Parish. The annual chance of occurrence based on this historical data is calculated at 3% in the unincorporated area of Assumption Parish and < 1% in the incorporated area of Napoleonville since no salt domes are located within the vicinity of the jurisdiction.

Estimated Potential Losses

The Bayou Corne Sinkhole was analyzed to determine the number of people and houses that are potentially susceptible to losses. The following table is based on conducting a two-mile buffer around the center of the salt dome. The values were determined by querying the 2010 U.S. Census block data to determine the number of houses and people located within two miles of the salt dome and sinkhole. Critical facilities were also analyzed to determine if they fell within the two-mile buffer of the salt dome and sinkhole. Total value for all occupancy group from Hazus was used to estimate a total loss of all facilities that were within two miles of the salt dome and sinkhole.

*Table 2-22: Estimated Potential Losses from a Sinkhole Formation.
(Source: U.S. 2010 Census Data and Hazus)*

| Sinkhole Name | Total Building Exposure | Critical Infrastructure Exposure | Number of People Exposed | Number of Houses Exposed |
|----------------------|-------------------------|----------------------------------|--------------------------|--------------------------|
| Bayou Corne Sinkhole | \$39,205,000 | 0 | 296 | 169 |

The Bayou Corne sinkhole poses the greatest risk to Assumption Parish since it is continuing to expand in size. Most residents in the area have relocated, but a small populace continues to remain in the area. Louisiana Highway 70, which is a major road in the parish, is also in the vicinity of Bayou Corne sinkhole, and several alternatives have been deployed in the event that the road is affected by the sinkhole.

It must be noted that sinkhole formation and risks associated with sinkholes are due to exploration activities by companies in solution mining. These activities are regulated by the Department of Natural Resources' Office of Conservation (Revised Statute 30), which is a state agency and is an authority of the Commissioner of Conservation (appointment of the Governor). In the original law, no local jurisdiction has the right to regulate any exploration of any kind; therefore, Assumption Parish does not have any regulatory authority. It is therefore necessary to refer to the State of Louisiana Hazard Mitigation Plan for mitigation strategies.

Vulnerability

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

Thunderstorms

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

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

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

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

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

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

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

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

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

Hazard Description

Hailstorms

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

Table 2-23: 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 2-24: 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 2-25*.

Table 2-25: High Winds Categorized by Source, Frequency, and Duration.
(Source: *Making Critical Facilities Safe from High Wind, FEMA*)

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

The only high winds of present concern are thunderstorm winds and downbursts. Straight-line winds are common but are a relatively insignificant hazard (on land) compared to other high winds. Downslope winds are common but relatively insignificant in the mountainous areas of Louisiana where they occur.

Nor'easters are cyclonic events that have at most a peripheral effect on Louisiana, and none associated with high winds. Winds associated with hurricanes and tornadoes will be considered in their respective sections.

Table 2-26 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 2-26: 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 2-27: 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 Assumption Parish and its jurisdiction are equally at risk for hailstorms. The worst-case scenario for hailstorms is hail up to a 1.75" diameter.

Previous Occurrences / Extents

Historically, there have been six hail incidents in Assumption Parish. Since 1990, hailstorm diameters have ranged from 0.75 inches to 1.75 inches per the National Climatic Data Center. The most frequently recorded hail sizes have been 1.75-inch in diameter. There has been one significant hailstorm event in Assumption Parish since the 2015 Assumption Parish HMP update. Below is a brief synopsis of the event.

Table 2-28: Previous Occurrences for Hailstorm Events since the 2015 Hazard Mitigation Plan Update.

(Source: NCEI Storm Events Database)

| Date | Hail Size (inches) | Property Damage | Crop Damage |
|----------------|--------------------|-----------------|-------------|
| April 18, 2020 | 1.75 | \$0 | \$0 |

Frequency

Hailstorms occur frequently within Assumption Parish with an annual chance of occurrence calculated at 20% based on the records for the past 30 years (1990 – 2020). *Figure 2-15* displays the density of hailstorm events in Assumption Parish, while *Figure 2-16* provides an overview of hailstorm size based on location.

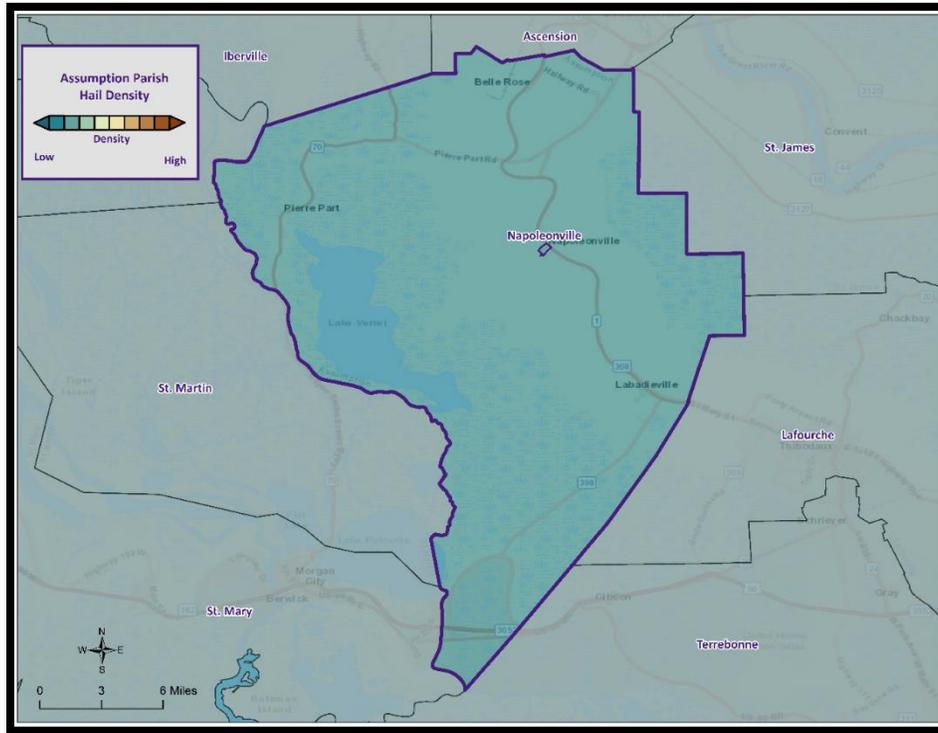


Figure 2-15: Density of Hailstorms by Diameter from 1950-2020.

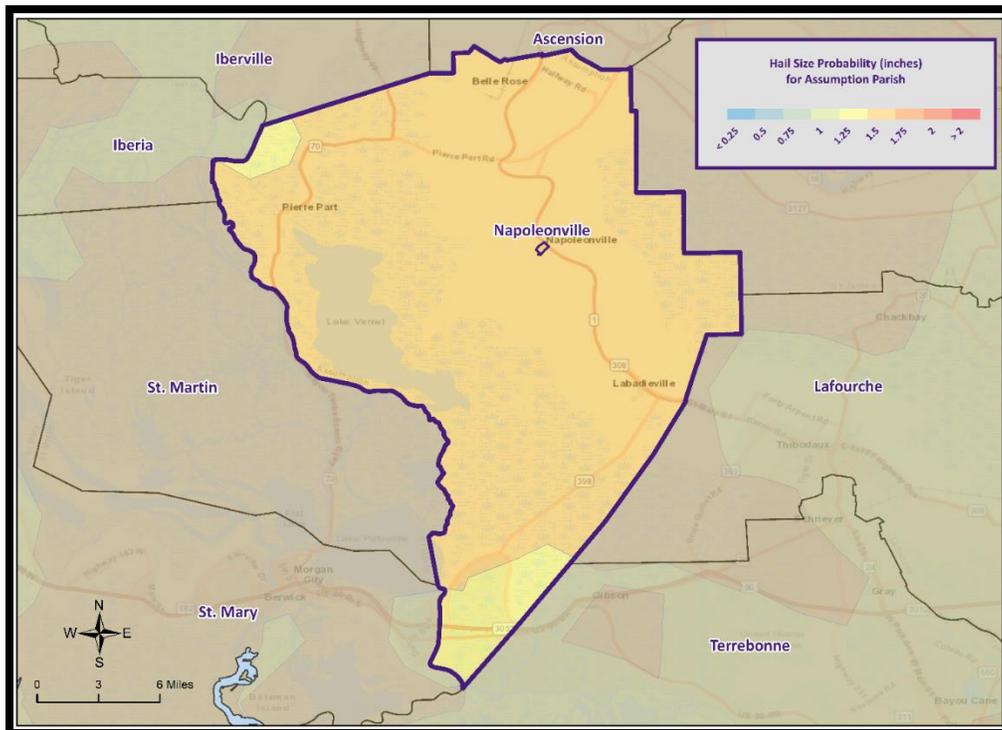


Figure 2-16: Hail Size Probability in Inches for Assumption Parish.

Estimated Potential Losses

Since 1990, there have been six 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 \$6,000. 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 \$200 and \$1,000 per event. The following table provides an estimate of potential property losses for Assumption Parish:

Table 2-29: Estimated Annual Losses Assumption Parish and its Jurisdiction Resulting from Hailstorms.

| Estimated Potential Annual Losses from Hailstorms | |
|---|---------------|
| Unincorporated Area | Napoleonville |
| \$194 | \$6 |

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

Vulnerability

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

High Winds

Location

Because high winds are a meteorological phenomenon that can occur anywhere, the entire planning area for Assumption Parish is equally at risk from high winds. The worst-case scenario for thunderstorm high wind is wind speeds of approximately 81 mph.

Previous Occurrences / Extents

Historically, there have been 31 thunderstorm high wind events in Assumption Parish. The high wind events have ranged in wind speeds from 58 mph to 81 mph per the National Climatic Data Center since 1990. There has been one high wind speeds event which impacted the Assumption Parish Planning area since the 2015 Assumption Parish HMP update. Below is a brief synopsis of the event.

Table 2-30: Previous Occurrences for Thunderstorm High Wind Events since the 2015 Hazard Mitigation Plan Update.

(Source: NCEI Storm Events Database)

| Date | Wind Speed (mph) | Property Damage | Crop Damage |
|----------------|------------------|-----------------|-------------|
| April 25, 2019 | 69 | \$0 | \$0 |

Frequency

High winds are a fairly common occurrence within Assumption Parish and its jurisdiction with an annual chance of occurrence calculated at 100% based on the records for the past 30 years (1990 - 2020). *Figure 2-17* displays the thunderstorm wind speed probability for Assumption Parish and its jurisdiction.

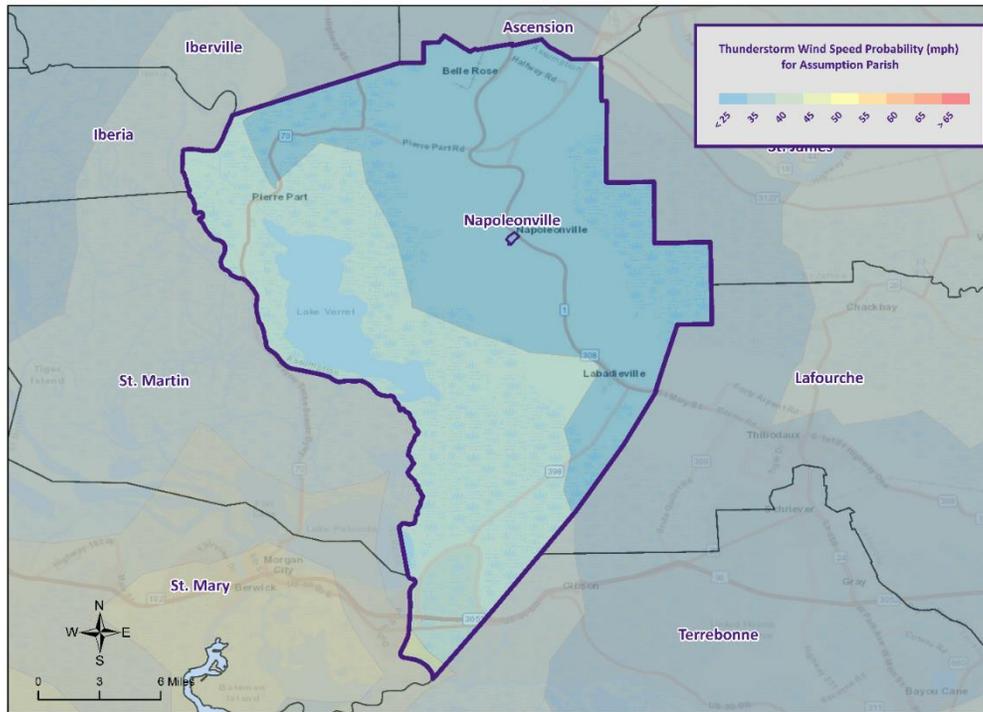


Figure 2-17: Thunderstorm High Wind Speed Probability in Miles Per Hour for Assumption Parish.

Estimated Potential Losses

Since 1990, there have been 31 significant wind events that have resulted in property damages according to NCEI Storm Events Database. The total property damage associated with this storm totaled approximately \$788,500. 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 \$26,283 and \$25,435 per event. The following table provides an estimate of potential property losses for Assumption Parish:

Table 2-31: Estimated Annual Property Losses in Assumption Parish resulting from Wind Damage.

| Estimated Potential Annual Losses from High Winds | |
|---|---------------|
| Unincorporated Area | Napoleonville |
| \$25,543 | \$741 |

There have been no fatalities or injuries 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 Assumption Parish planning area. The worst-case scenario for lightning events is a lightning activity level of 4 which is approximately 16 to 25 lightning strikes every 15 minutes.

Previous Occurrences / Extent

Historically, there have been two lightning events in Assumption Parish and its jurisdiction between the years 1990 and 2020. Since the last HMP update, there have been no significant lightning events within the boundaries of Assumption Parish.

Frequency

Lightning can strike anywhere and is produced by every thunderstorm, so the chance of lightning occurring in Assumption 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. Assumption Parish experienced two significant lightning events between the years 1990 and 2020 resulting in a 7% annual chance of occurrence.

Estimated Potential Losses

Since 1990, there have been two significant lightning events that have resulted in property damages according to NCEI Storm Events Database. The total property damages associated with those storms have totaled approximately \$5,528,000. 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 \$35,000 and \$525,000 per event. The following table provide an estimate of potential property losses for Assumption Parish:

Table 2-32: Estimated Annual Property Losses in Assumption Parish resulting from Lightning Damage.

| Estimated Potential Annual Losses from Lightning | |
|--|---------------|
| Unincorporated Area | Napoleonville |
| \$34,014 | \$986 |

Per the NCEI Storm Events Database, there have been no fatalities or injuries as a result of lightning in Assumption 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 |
|---------------|--|
| F0/EF0 | Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged. |
| F1/EF1 | Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads. |
| F2/EF2 | Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; light-object missiles generated; cars lifted off ground. |
| F3/EF3 | Severe damage. Roofs and some walls torn of well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown. |
| F4/EF4 | Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated. |
| F5/EF5 | Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur. |

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

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

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

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

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

Location

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

Previous Occurrences / Extent

The NCEI Storm Events Database reports a total of 10 tornadoes or waterspouts occurring within the boundaries of Assumption Parish since 1990 ranging in extent from F0 to F1 under the Fujita Scale and EF0 to EF3 on the Enhanced Fujita Scale. Assumption Parish can expect future tornadoes up to an EF3 under the Enhanced Fujita Scale as a worst-case scenario.

The most destructive tornado to impact Assumption Parish was a F1 tornado which occurred on October 9, 2002. The tornado touched down near Louisiana Highway 1 damaging 39 homes and causing over \$1 million in damages. The tornado responsible for the most injuries occurred on February 15, 1987 when a F2 tornado destroyed a mobile home, throwing the four residents from the structure. Two of the residents were tossed more than 150 feet from where the trailer once stood. There have been no fatalities in Assumption Parish as a result of tornadoes. Since the 2015 HMP Update, two tornadoes have

occurred within the boundaries of Assumption Parish. Below is a list and brief description of the impact for the event.

Table 2-35: Historical Tornadoes in Assumption Parish with Locations since the 2015 Update.

| Date | Impacts | Property Damage | Location | Magnitude |
|-----------------|---|-----------------|----------|-----------|
| June 6, 2019 | 1.72-mile path with a 50 yard width. A NWS storm survey found damage consistent with an EF-0 tornado northwest of Paincourtville. The tornado touched down near the intersection of Pierre Part Road and County Road 1004, causing a power pole to lean sideways. It then traveled northeastward through a field and crossed County Road 1003. It continued northeastward toward Virginia Street, where it tore off a corner piece of metal off an old mobile home and damaged some large tree branches in the area. It then lifted just northeast of Virginia Street. Estimated winds were 80 mph. | \$0 | MAGNOLIA | EF0 |
| August 26, 2020 | 0.05-mile path with a 10 yard path. A tornado touched down near Paincourtville. No damage was reported. | \$0 | MAGNOLIA | EF0 |

Frequency / Probability

Tornadoes occur frequently within Assumption Parish and its jurisdiction with an annual chance of occurrence calculated at 33% based on the records for the past 30 years (1990 - 2020). Figure 2-18 displays the density of tornado touchdowns in Assumption Parish and neighboring parishes.

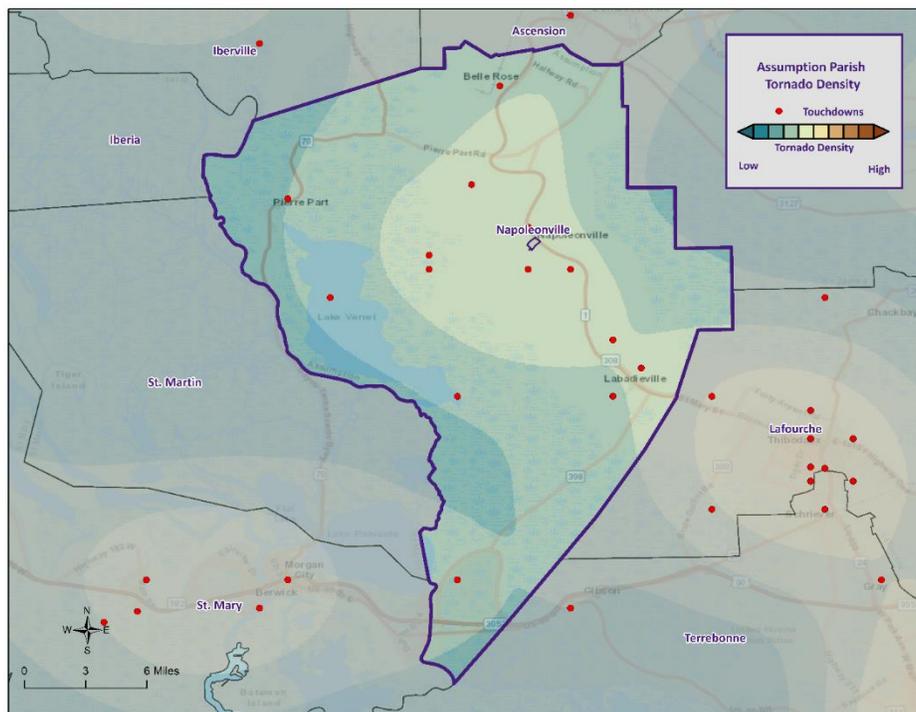


Figure 2-18: Location and Density of Tornadoes to Touch Down in Assumption Parish. (Source: NOAA/SPC Severe Weather Database)

Estimated Potential Losses

According to the NCEI Storm Events Database, there have been 10 tornadoes that have caused some level of property damage. The total damage from the actual claims for property is approximately \$1,525,000 with an average cost of \$152,500 per tornado event. When annualizing the total cost over the 30-year record, total annual losses based on tornadoes are estimated to be \$50,833. The following table provide an annual estimate of potential losses for Assumption Parish.

Table 2-36 Estimated Annual Losses for Tornadoes in Assumption Parish.

| Estimated Potential Annual Losses from Tornadoes | |
|--|---------------|
| Unincorporated Area | Napoleonville |
| \$49,401 | \$1,432 |

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

*Table 2-37: Building Exposure by General Occupancy Type for Tornadoes in Assumption Parish.
(Source: Hazus)*

| Building Exposure by General Occupancy Type for Tornadoes (\$1,000) | | | | | | | |
|---|------------|------------|--------------|----------|------------|-----------|------------------|
| Residential | Commercial | Industrial | Agricultural | Religion | Government | Education | Mobile Homes (%) |
| 1,733,683 | 158,505 | 49,899 | 8,114 | 31,231 | 8,605 | 25,112 | 29.7% |

The Parish has suffered through a total of 10 events in which tornadoes or waterspouts have accounted for no injuries or 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. 29.7% of all housing in Assumption Parish consists of manufactured housing. The location and density of manufactured houses can be seen in *Figure 2-19*.

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 Assumption Parish planning area. The worst-case scenario for a tropical cyclone event in Assumption Parish is a Category 5 Hurricane.

Previous Occurrences / Extents

Assumption Parish has experienced 11 major tropical cyclone events since 2002. The tropical cyclone events experienced in Assumption Parish include depressions, storms, and hurricanes. The table on the next page provides a list of tropical cyclones which have impacted Assumption Parish since 2002.

Table 2-39: Historical Tropical Cyclone Events in Assumption Parish from 2002 – 2020.

| Date | Name | Storm Type at Time of Impact |
|------|---------|------------------------------|
| 2002 | Lili | Hurricane |
| 2005 | Katrina | Hurricane |
| 2005 | Rita | Tropical Storm |
| 2008 | Fay | Tropical Depression |
| 2008 | Gustav | Hurricane |
| 2008 | Ike | Tropical Storm |
| 2011 | Lee | Tropical Storm |
| 2012 | Isaac | Hurricane |
| 2019 | Barry | Tropical Storm |
| 2020 | Delta | Tropical Storm |
| 2021 | Ida | Hurricane |

Since the last Assumption Parish HMP update in 2015, there have been three tropical cyclone events which have impacted the parish. Below is a brief description of the events from 2019 and 2020 and the impact they had on Assumption Parish. A description related to Hurricane Ida impacts has not been included as storm impacts were extensive throughout all of South Louisiana and impact/recovery data is still being compiled.

Tropical Storm Barry (2019)

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

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

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

the state at the New Orleans 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.

In Assumption Parish, frequent tropical storm force wind gusts led to mainly minor damage of approximately 25 houses and mobile homes. A few suffered moderate damage due to falling trees or large limbs. Approximately 75% of Assumption Parish was without power during the peak of the storm. The Emergency Operations Center in Napoleonville recorded a maximum wind gust of 55 mph. Storm total rainfall estimates ranged from 3 to 4 inches across eastern portions of the parish to around 8 inches across the extreme western portion of the parish.

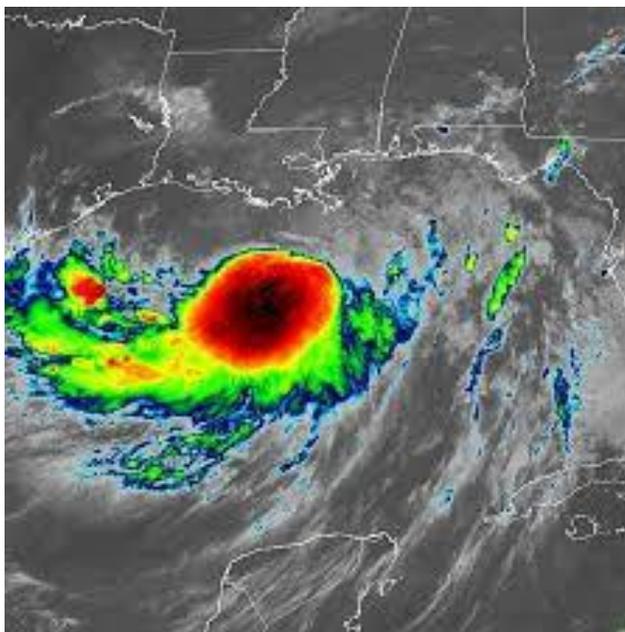


Figure 2-20: Hurricane Barry Rain Bands in the Gulf Coast Area.
(Source: NOAA)

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.

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.



Figure 2-21: Hurricane Delta in the Gulf Coast Area.
(Source: NOAA)

In Assumption Parish, Delta produced sustained tropical storm force winds with peak gusts estimated in the 50 to 60 mph range. Delta also down numerous trees and some power lines across Assumption Parish. At the peak of the storm, approximately 25% of the parish was without power.

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

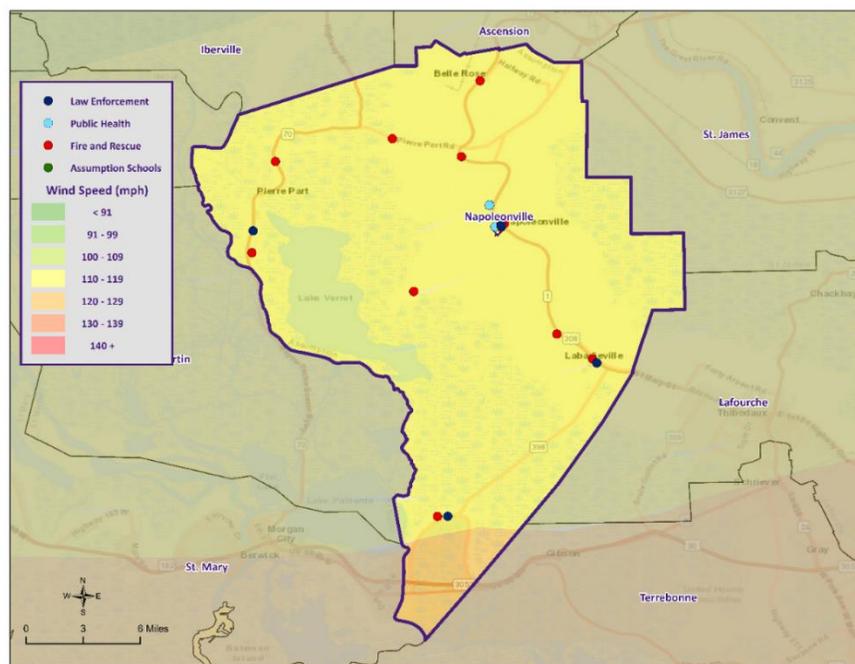


Figure 2-22: Winds Zones for Assumption Parish in Relation to Critical Facilities

Frequency / Probability

Tropical cyclones are large natural hazard events that regularly impact Assumption Parish. The annual chance of occurrence for a tropical cyclone is estimated at 61% for Assumption Parish with 11 events occurring within 18 years (2002 to 2020). The tropical cyclone season for the Atlantic Basin is from June 1st through November 30th, with most of the major hurricanes (Saffir-Simpson Categories 3, 4, & 5) occurring between the months of August and October. Based on geographical location alone Assumption Parish and its jurisdiction are highly vulnerable to tropical cyclones. This area has experienced several tropical cyclone events in the past and can expect more in the future.

Estimated Potential Losses

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

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

| Jurisdiction | Estimated Total Losses from 100-Year Hurricane Event |
|---|--|
| Assumption Parish (Unincorporated) | \$128,012,197 |
| Napoleonville | \$3,660,044 |
| Total | \$131,672,241 |

Total losses from a 100-year hurricane event for Assumption 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 Assumption Parish
(Source: Hazus)*

| Jurisdiction | Estimated Total Losses from 100-Year Hurricane Event | Total Estimated Value of Assets | Ratio of Estimated Losses to Total Value |
|---|--|---------------------------------|--|
| Assumption Parish (Unincorporated) | \$128,012,197 | \$1,950,638,000 | 6.6% |
| Napoleonville | \$3,660,044 | \$64,511,000 | 5.7% |

Based on the Hazus Hurricane Model, estimated total losses for Assumption Parish and its jurisdiction ranged from 5.7% to 6.6% 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 Assumption Parish by sector are listed in the tables on the next page.

Table 2-42: Estimated Losses in Unincorporated Assumption Parish for a 100-Year Hurricane Event
(Source: Hazus)

| Assumption Parish (Unincorporated) | Estimated Total Losses from 100-Year Hurricane Event |
|------------------------------------|--|
| Agricultural | \$701,122 |
| Commercial | \$6,652,051 |
| Government | \$516,705 |
| Industrial | \$2,107,226 |
| Religious / Non-Profit | \$968,065 |
| Residential | \$115,977,574 |
| Schools | \$1,089,454 |
| Total | \$128,012,197 |

Table 2-43: Estimated Losses in Napoleonville for a 100-Year Hurricane Event
(Source: Hazus)

| Napoleonville | Estimated Total Losses from 100-Year Hurricane Event |
|------------------------|--|
| Agricultural | \$0 |
| Commercial | \$192,889 |
| Government | \$14,983 |
| Industrial | \$61,103 |
| Religious / Non-Profit | \$28,071 |
| Residential | \$3,362,998 |
| Schools | \$0 |
| Total | \$3,660,044 |

Threat to People

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

Table 2-44: Number of People Susceptible to a 100-Year Hurricane Event in Assumption Parish
(Source: Hazus)

| Number of People Exposed to Hurricane Hazards | | | |
|---|----------------|------------------|------------------|
| Location | # in Community | # in Hazard Area | % in Hazard Area |
| Assumption Parish (Unincorporated) | 22,761 | 22,761 | 100% |
| Napoleonville | 660 | 660 | 100% |
| Total | 23,421 | 23,421 | 100% |

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

*Table 2-45: Vulnerable Populations in Unincorporated Assumption Parish for a 100-Year Hurricane Event
(Source: Hazus)*

| Assumption Parish (Unincorporated) | | |
|------------------------------------|---------------|-------------------------------------|
| Category | Total Numbers | Percentage of People in Hazard Area |
| Number in Hazard Area | 22,761 | 100.0% |
| Persons Under 5 Years | 1,275 | 5.6% |
| Persons Under 18 Years | 5,212 | 22.9% |
| Persons 65 Years and Over | 3,391 | 14.9% |
| White | 15,546 | 68.3% |
| Minority | 7,215 | 31.7% |

*Table 2-46: Vulnerable Populations in Napoleonville for a 100-Year Hurricane Event
(Source: Hazus)*

| Napoleonville | | |
|---------------------------|---------------|-------------------------------------|
| Category | Total Numbers | Percentage of People in Hazard Area |
| Number in Hazard Area | 660 | 100.0% |
| Persons Under 5 Years | 48 | 7.3% |
| Persons Under 18 Years | 166 | 25.2% |
| Persons 65 Years and Over | 90 | 13.6% |
| White | 119 | 18.0% |
| Minority | 541 | 82.0% |

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 2-47: 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 Assumption Parish as all of the adjacent parishes, the entire planning area for Assumption Parish is equally at risk for winter storms.

Previous Occurrences / Extents

The NCEI Storm Events Database reports one winter weather event occurring within the boundaries of Assumption Parish between the years 1990 and 2020. Below is a brief synopsis of the winter weather event which occurred since the last Assumption Parish HMP Update in 2015.

Table 2-48: Previous Occurrences for Winter Storm Events

| Date | Synopsis | Property Damage | Crop Damage |
|------------------|--|-----------------|-------------|
| January 16, 2018 | A light dusting of snow and sleet over a thin glaze of ice occurred during the 16th. Sleet was reported in the incorporated area of Napoleonville with accumulations less than one quarter inch. | \$0 | \$0 |

The worst-case scenario for Assumption Parish is a level 2 on the Sperry-Piltz ice accumulation index.

Frequency / Probability

Based on historical records, there has been one significant winter weather event within the boundaries of Assumption Parish and the jurisdiction of Napoleonville; therefore, the annual chance of occurrence for winter weather is estimated at 3%.

Estimated Potential Losses

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

Table 2-49: Estimated Annual Losses Assumption Parish and its Jurisdiction Resulting from Winter Weather.

| Estimated Annual Potential Losses from Winter Weather | |
|---|---------------|
| Unincorporated Area | Napoleonville |
| \$39 | \$1 |

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

Vulnerability

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

3. Capability Assessment

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

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

Policies, Plans and Programs

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

Table 3-1: Planning and Regulatory Capabilities

| Planning and Regulatory | | | |
|--|---|-----|----------|
| Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place. | | | |
| Plans | Assumption Unincorporated Village of Naplesville | | Comments |
| | Yes | No | |
| Comprehensive / Master Plan | Yes | No | |
| Capital Improvements Plan | No | No | |
| Economic Development Plan | Yes | No | |
| Local Emergency Operations Plan | Yes | Yes | |
| Continuity of Operations Plan | Yes | No | |
| Transportation Plan | No | No | |
| Stormwater Management Plan | No | No | |
| Community Wildfire Protection Plan | No | No | |
| Other plans (redevelopment, recovery, coastal zone management) | No | No | |
| Building Code, Permitting and Inspections | Yes / No | | |
| Building Code | Yes | Yes | |
| Score | No | No | |
| Fire Department ISO/PIAL rating | Yes | Yes | |
| Site plan review requirements | Yes | Yes | |
| Land Use Planning and Ordinances | Yes / No | | |
| Zoning Ordinance | No | No | |
| Subdivision Ordinance | Yes | Yes | |
| Floodplain Ordinance | Yes | Yes | |
| Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire) | No | No | |
| Flood Insurance Rate Maps | Yes | No | |
| Acquisition of land for open space and public recreation | No | No | |
| Other | No | No | |

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

Building Codes, Permitting, Land Use Planning and Ordinances

The Assumption Parish Police Jury provides oversight for building permits and codes, land use planning, and all parish ordinances.

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

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

The Assumption Parish Police Jury 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 Assumption Parish planning area as a whole have a system in place to coordinate and share these capabilities through the OHSEP and through this Parish Hazard Mitigation Plan.

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

Administration, Technical, and Financial

The jurisdictions within the Assumption Parish planning area have administrative and technical capabilities in place that may be utilized in reducing hazard impacts or implementing hazard mitigation activities. Such capabilities include staff, skillset, and tools available in the community that may be accessed to implement mitigation activities and to effectively coordinate resources. The ability to access and coordinate these resources is also important. The table on the following page shows examples of resources in place.

Table 3-2: Administration and Technical Capabilities

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

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

The following financial resources are available to fund mitigation actions in the Assumption 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. | | | |
| | Assumption Unincorporated Village of Naplesville | | Comments |
| Funding Resource | Yes / No | | |
| Capital Improvements project funding | Yes | Yes | |
| Authority to levy taxes for specific purposes | Yes | Yes | |
| Fees for water, sewer, gas, or electric services | Yes | Yes | |
| Impact fees for new development | Yes | No | |
| Stormwater Utility Fee | No | No | |
| Community Development Block Grant (CDBG) | Yes | Yes | |
| Other Funding Programs | Yes | Yes | |

Education and Outreach

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

The jurisdictions within the Assumption Parish planning area have existing education and outreach programs to implement mitigation activities, as well as communicate risk and hazard related information to its communities. Specifically, focusing on advising repetitive loss property owners of ways they can reduce their exposure to damage by repetitive flooding remains a priority for the entire parish. The existing programs are as follows:

Table 3-4: Education and Outreach Capabilities

| Education and Outreach | | | |
|--|---|----|----------|
| Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information. | | | |
| | Assumption Unincorporated Village of Napoleonville | | Comments |
| Program / Organization | Yes / No | | |
| on environmental protection, emergency preparedness, access and functional needs populations, etc. | Yes | No | |
| Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education) | No | No | |
| Natural Disaster or safety related school program | No | No | |
| Storm Ready certification | No | No | |
| Firewise Communities certification | Yes | No | |
| Public/Private partnership initiatives addressing disaster-related issues | Yes | No | |
| Other | No | No | |

As reflected with the above existing regulatory mechanisms, programs and resources within the parish, the jurisdictions within the Assumption Parish planning area remain committed to expanding and improving on the existing capabilities within the parish. Communities will work together along with Assumption Parish Police Jury 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 Assumption Parish.

Flood Insurance and Community Rating System

Participation in the CRS strengthens local capabilities by lowering flood insurance premiums for jurisdictions that exceed NFIP minimum requirements. As noted in the CRS Eligible Communities List effective October 1, 2021, neither Assumption Parish nor the Village of Napoleonville participate in the CRS program.

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 2011¹, the National Flood Insurance Program (NFIP) completed a comprehensive review of the Community Rating System (CRS) that resulted in the release of a new CRS Coordinator’s Manual. The changes to the 2013 CRS Coordinator’s Manual are the result of a multi-year program evaluation that included input from a broad group of contributors to evaluate the CRS and refine the program to meet its stated goals. The changes helped to drive new achievements in the following six core flood loss reduction areas important to the NFIP: (1) reduce liabilities to the NFIP Fund; (2) improve disaster resiliency and

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

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

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

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

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

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

1. The activities credited by the CRS provide direct benefits to residents, including:

- Enhanced public safety
- A reduction in damage to property and public infrastructure
- Avoidance of economic disruption and losses
- Reduction of human suffering
- Protection of the environment

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

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

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

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

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

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

NFIP Worksheets

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

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4. Mitigation Strategy

Introduction

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

Officials from all jurisdictions within the planning area confirmed the goals, objectives, actions and projects over the period of the hazard mitigation plan update process. The mitigation actions and projects in this 2021 HMP update are a product of analysis and review of the Assumption Parish Hazard Mitigation Plan Steering Committee under the coordination of the Assumption 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 April 2021 – June 2021.

An online public opinion survey of Assumption Parish residents was conducted between March and November 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in the Assumption 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 Assumption Parish Hazard Mitigation Plan Steering Committee are representative of the outlook of the community at large. However, because there were no responses to the survey, this public feedback could not be incorporated into the plan. The full Assumption Parish survey can be found at the following link:

<https://www.surveymonkey.com/r/AssumptionParish>

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 Assumption 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, Assumption 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 Assumption 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. Reduce the impact of future flooding
2. Provide shelter and protection for the citizens of Assumption Parish during a hazard event
3. Provide safe travel routes during a hazard event
4. Increase public support and understanding of hazard mitigation
5. Protect existing infrastructure
6. Improve the quality and timeliness of public notification
7. Prepare and plan before a disaster strikes
8. Improve existing communication system
9. Improve floodplain management activities

The Mitigation Action Plan focuses on actions to be taken by Assumption Parish and its communities. All of the activities in the Mitigation Action Plan will be focused on helping the parish and its communities in developing and funding projects that are not only cost effective but also meet the other DMA 2000 criteria of environmental compatibility and technical feasibility.

After the adoption of the 2015 Assumption 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, Assumption 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 Assumption Parish Hazard Mitigation Plan Steering Committee identified new actions that would reduce and/or prevent future damage within the Assumption 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 Assumption 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 and its jurisdictions are included.

Unincorporated Assumption Parish Mitigation Actions

Previous Action Update

| Assumption Parish - Action Update From 2010 Plan | | | | | | | |
|--|---|----------------|-------------------------|--|---|---------------|-------------|
| Jurisdiction-Specific Action | Description | Funding Source | Target Completion Date | Responsible Party, Agency, or Department | Hazard | Goal | Status |
| Hardening Project | Harden Assumption Parish School Buildings | Federal | As funding is available | Assumption Parish OHSEP | Thunderstorms - High Wind and Hail, Tornadoes, Tropical Cyclones | 2, 5, 7 | Completed |
| Landry Subdivision Pump Station | Expand the pumping capacity of the St Landry Pump Station; upgrade existing St Landry Pump Station pumps to natural gas powered pumps. | FEMA | As funding is available | Landry DD; Parish Manager | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Knotts Subdivision Pump Station | Upgrade the Knotts Subdivision Pump Station. Homes and schools in this area are subjected to recurring flooding. This upgrade will reduce the impact of water intrusion; Install a backflow preventer on the culvert near the school area to stop water backflow into the school area | FEMA | As funding is available | Knotts DD; Parish Manager | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Labadieville Drainage District | Clean the canals south of Labadieville. Normal rainfall will cause some home flooding, as the drainage is poor. The canals need opening to create proper drainage | FEMA | As funding is available | Labadv DD & Parish Mgr | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Water Plant Generator System | Upgrade the emergency generator system at the Parish Water Plant to allow the plant to maintain water for the parish when electrical power is out. (Hurricane) | FEMA | As funding is available | Water Mgr & Parish Mgr | Flooding, Thunderstorms - High Wind, Tornadoes, Tropical Cyclones, Winter Weather | 5, 7, 9 | Completed |

| | | | | | | | |
|--------------------------------|--|-----------------------------------|-------------------------|-------------------------|--|---------|-------------|
| Upgrade the Phone Alert System | Provide phone alert system. This is a computer system that will automatically call a geographic section of the Parish and deliver a recorded message. This system will be used to warn of extremely severe weather | Parish FEMA | As funding is available | Assumption Parish OHSEP | Flooding, Sinkholes, Thunderstorms - High Wind, Hail and Lightning, Tornadoes, Tropical Cyclones, Winter Weather | 4, 6, 8 | Completed |
| Safe Room Survey | Survey existing buildings to identify potential shelters | Parish FEMA | As funding is available | Assumption Parish OHSEP | Thunderstorms - High Wind and Hail, Tornadoes, Tropical Cyclones | 2, 5, 7 | In Progress |
| Communications System | Create a single radio system that will back up landline and cellular telephone for all Parish agencies and those disaster essential organizations such as the Drainage District members, Hospitals, Nursing Homes, School system and shelters. | Ongoing as funds become available | As funding is available | Assumption Parish OHSEP | Flooding, Sinkholes, Thunderstorms - High Wind, Hail and Lightning, Tornadoes, Tropical Cyclones, Winter Weather | 6, 8 | Ongoing |

| Assumption Parish - Action Update From 2015 Plan | | | | | | | |
|--|--|----------------|-------------------------|--|--|------------------|---------------------------|
| Jurisdiction-Specific Action | Description | Funding Source | Target Completion Date | Responsible Party, Agency, or Department | Hazard | Goal | Status |
| Water Source Improvements | Provide another fresh water source for the Parish | TBD | As funding is available | Assumption Parish OHSEP, TBD | Flooding, Tropical Cyclones | 1 | Not Started/ Carried Over |
| Drainage Improvement Projects | Implement recommended drainage improvement/flood mitigation projects to relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. Projects include but are not limited to: HWY 662/HWY 663 drainage upgrades, Hwy. North Dam Pump Station upgrade, Hwy 663 South Dam upgrade, staging area construction and implementation for pump maintenance, Brusly/St. Vincent drainage project including the Whimel Canal, improvements to Hwy 1. to prevent culvert erosion, Landry subdivision canal dredging, elevation of HWY 663 to prevent overflow (South Dam Pump Stations would remove trapped water) | TBD | As funding is available | Assumption Parish OHSEP; B LOurs DD & Parish Mgr | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Multi-Use Shelter Construction | Construction of multi-purpose emergency shelters for essential personnel and governmental employees. | FEMA | As funding is available | Assumption Parish OHSEP; Rd & Bridge & Parish Mgr. | Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones | 2, 7 | Completed |
| Infrastructure improvements for evacuation | Add turning lanes on HWY 70 from LA HWY 1 to the Bell River Bridge. | LA DOT | As funding is available | Assumption Parish OHSEP; LA DOTD & Parish Mgr. | Tropical Cyclones | 1, 3, 4, 5, 7, 9 | Delete |
| Bayou L’Ourse Drainage Basin | Conduct an engineering study of the drainage of Bayou L’Ourse to determine the effectiveness of the Bayou L’Ourse Dam. | USACE, FEMA | As funding is available | Bayou LOurs DD & Parish Mgr. | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | Delete |
| Grand Bayou/ Gulf Watershed | Work with adjoining parishes to resolve the water restriction issues of the pass-by water that flows through Assumption. | USACE, FEMA | As funding is available | Assumption Parish; USA COE & Parish Mgr. | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Begin the CRS Rating system | Begin the CRS rating process. | Parish | As funding is available | Assumption Parish OHSEP | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | Not Started/ Carried Over |

| | | | | | | | |
|---|--|-----------------|-----------------------------------|-------------------------|--|---------------|------------------------------|
| Mitigation Outreach and Education | Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, sinkholes, thunderstorms (lightning, high wind, hail), tropical cyclones, and winter weather as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities. | Parish, Village | As funding is available | Assumption Parish OHSEP | Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather | 4, 7 | Not Started/ Carried Over |
| Evaluate the Building Standard for New Construction | Evaluate and adopt the building codes for new construction.(all) | Parish | As funding is available | Assumption Parish OHSEP | Flooding, Sinkholes, Tornadoes, Tropical Cyclones | 1, 5, 7, 9 | Completed |
| Communications System | Create a single radio system that will back up landline and cellular telephone for all Parish agencies and those disaster essential organizations such as the Drainage District members, Hospitals, Nursing Homes, School system and shelters. | Parish | Ongoing as funds become available | Assumption Parish OHSEP | Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather | 1, 4, 6, 8 | Delete |
| Safe Room Projects | Construction of a safe room for first responders located in Assumption Parish. Other locations will be identified based on funding availability. | Parish | As funding is available | Assumption Parish OHSEP | Thunderstorms, Tornadoes, Tropical Cyclones | 2, 7 | In Progress |
| Building Retrofit Projects | Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms. | Parish | As funding is available | Assumption Parish OHSEP | Thunderstorms, Tornadoes, Tropical Cyclones | 2, 5, 7 | Completed |
| Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures | Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property. | Parish | As funding is available | Assumption Parish OHSEP | Flooding, Tropical Cyclones | 1, 4, 5, 7, 9 | Not Started/ Carried Over |
| Generators for Continuity of Operations and Government | Procurement and Installation of generators at public facilities to ensure continued operations during and after events. | Parish | As funding is available | Assumption Parish OHSEP | Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather | 5, 7 | Completed |
| Lightning Mitigation | Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property. | Parish | As funding is available | Assumption Parish OHSEP | Thunderstorms | 5, 7 | Not Started/ Carried Over |

New Mitigation Actions

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|---|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 1 | Water Source Improvements |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | TBD |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 1. Reduce the impact of future flooding |
| PRIORITY | Low |
| Action Description | Provide another fresh water source for the Parish |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By providing an additional source of drinking water, the likelihood of water loss due to flooding would be greatly reduced. Residents would likely be able to access fresh water throughout a disaster events without fear of shortage. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Tropical Cyclones |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|--|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 2 | Begin the CRS Rating System |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | TBD |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Federal Emergency Management Agency (FEMA) |
| ASSOCIATED GOALS | <ul style="list-style-type: none"> 1. Reduce the impact of future flooding 3. Provide safe travel routes during a hazard event 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes 9. Improve floodplain management activities |
| PRIORITY | Medium |
| Action Description | 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). |
| Type of Mitigation Action | Local Plans and Regulations |
| How Action Aligns with Risk Reduction | Participating in the CRS would encourage Assumption Parish residents and officials to reduce and avoid flood damage to insurable property, strengthen and support the NFIP, and foster comprehensive floodplain management |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Tropical Cyclones |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|---|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 3 | Mitigation Outreach and Education |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Village of Napoleonville Mayor’s Office |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Hazard Mitigation Grant Program (HMGP) |
| ASSOCIATED GOALS | 4. Increase public support and understanding of hazard mitigation 7. Prepare and plan before a disaster strikes |
| PRIORITY | High |
| Action Description | Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, sinkholes, thunderstorms (lightning, high wind, hail), tropical cyclones, and winter weather as well as providing information on high-risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities. |
| Type of Mitigation Action | Education and Awareness Programs |
| How Action Aligns with Risk Reduction | Educating the public on hazard mitigation would increase community support for mitigation projects and safety. It would also encourage parish residents to take emergencies seriously and to follow local guidelines preceding and amid disaster. Communication/understanding between parish officials and residents can be made clear through education prior to disaster events. Educating the local community would foster comprehensive/timely responses to emergency situations. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|---|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 4 | Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Village of Napoleonville Mayor’s Office |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 1. Reduce the impact of future flooding 4. Increase public support and understanding of hazard mitigation 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes 9. Improve floodplain management activities |
| PRIORITY | High |
| Action Description | Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | Performing structural improvements to reduce flooding in frequently flooded areas will reduce damage, loss and increase public safety. By reconstructing/repurposing frequently flooded structures that were not originally constructed to withstand such events, the parish will be able to prepare and plan quickly for when disaster strikes and reduce damages. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Tropical Cyclones |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|---|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 5 | Lightning Mitigation |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Village of Napoleonville |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes |
| PRIORITY | Low |
| Action Description | Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | Performing structural improvements to reduce the impacts of lightning can reduce power loss during thunderstorms. It will also increase public safety by preserving life and property |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Thunderstorms |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|--|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 6 | Warning Systems |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Village of Napoleonville |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | FEMA HMGP, Local |
| ASSOCIATED GOALS | 6. Improve the quality and timeliness of public notification 7. Prepare and plan before a disaster strikes 8. Improve existing communication system |
| PRIORITY | Medium |
| Action Description | Update/upgrade public warning system components throughout Webster Parish as necessary. Install audible and/or reverse 911 warning system(s) |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By improving warning systems within the parish, local government can make residents and essential facilities aware of potential hazards in a timely manner and reduce the intensity of the impact. |
| Current Status of Action | New |
| Hazard Addressed | Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|--|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 7 | Install Frangible Pole Connections |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Assumption Parish Public Works |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Parish |
| ASSOCIATED GOALS | 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes |
| PRIORITY | Medium |
| Action Description | Install frangible (break away) pole connections for power line networks to reduce potential for electrical transmission loss. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By reducing power loss during a hazard event, the parish can ensure that essential facilities remain operational, and residents remain safe. |
| Current Status of Action | New |
| Hazard Addressed | Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS UNINCORPORATED ASSUMPTION PARISH | |
|--|--|
| DESCRIPTION | |
| ASSUMPTION PARISH MITIGATION ACTION 8 | Purchase Weather Radios |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Assumption Parish Police Jury |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | HMGP, local, regional, and federal |
| ASSOCIATED GOALS | 6. Improve the quality and timeliness of public notification 7. Prepare and plan before a disaster strikes 8. Improve existing communication system |
| PRIORITY | Low |
| Action Description | Purchase weather radios for public to be used for emergency notification |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | In the event of power outages/loss of phone services, radios would allow the local government to communicate with residents during a disaster and provide additional warnings, resources, and information. |
| Current Status of Action | New |
| Hazard Addressed | Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Information:

Village of Napoleonville Mitigation Actions

Previous Action Update

| Village of Napoleonville | | | | | | | |
|---|--|-----------------|-------------------------|--|--|---------------|--------------------------|
| Jurisdiction-Specific Action | Description | Funding Source | Target Completion Date | Responsible Party, Agency, or Department | Hazard | Goal | Status |
| Safe Room Projects | Build a storm shelter/saferoom/multi-use building in Napoleonville. This building would be available for those needing shelter from storm and tornado threats. Also, this facility would be a refuge of last resort for refugees from Lafourche and Terrebonne | Parish | As funding is available | Village of Napoleonville, Assumption Parish OHSEP, Assumption Parish Manager | Thunderstorms, Tornadoes, Tropical Cyclones | 2, 7 | Not Started/Carried Over |
| Mitigation Outreach and Education | Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, sinkholes, thunderstorms (lightning, high wind, hail), tropical cyclones, and winter weather as well as providing information on high risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities. | Parish, Village | As funding is available | Village of Napoleonville, Parish OHSEP | Flooding, Sinkholes, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather | 4, 7 | Not Started/Carried Over |
| Evaluate the Building Standard for New Construction | Evaluate and adopt the building codes for new construction. (all) | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Flooding, Sinkholes, Tornadoes, Tropical Cyclones | 1, 5, 7, 9 | Completed |
| Drainage Improvement Projects | Implement recommended drainage improvement/flood mitigation projects to relieve flooding problems, reduce flood damage and costs of damage, overtopping of roads with drain water, while also keeping open roadways during periods of high precipitation. | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Flooding, Tropical Cyclones | 1, 3, 5, 7, 9 | In Progress |
| Building Retrofit Projects | Retrofit public buildings exterior shell to maintain use during and after storm events. Benefits: Reduces damage from high winds, and helps assure that the public buildings can be used, occupied and operable during or after storms. | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Thunderstorms, Tornadoes, Tropical Cyclones | 2, 5, 7 | Completed |
| Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures | Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property. | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Flooding, Tropical Cyclones | 1, 4, 5, 7, 9 | Not Started/Carried Over |

| | | | | | | | |
|--|---|--------|-------------------------|--|---|------|---------------------------|
| Generators for Continuity of Operations and Government | Procurement and Installation of generators at public facilities to ensure continued operations during and after events. | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather | 5, 7 | Not Started/ Carried Over |
| Lightning Mitigation | Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property. | Parish | As funding is available | Village of Napoleonville, Parish OHSEP | Thunderstorms | 5, 7 | Not Started/ Carried Over |

New Mitigation Actions

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|---|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 1 | Safe Room Projects |
| LEAD AGENCY | Assumption Parish OHSEP |
| SUPPORTING AGENCIES | Village of Napoleonville, Assumption Parish Manager |
| TIMELINE | 1-5 Years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 2. Provide shelter and protection for the citizens of Assumption Parish during a hazard event 7. Prepare and plan before a disaster strikes |
| PRIORITY | Medium |
| Action Description | Build a storm shelter/safe room/multi-use building in Napoleonville. This building would be available for those needing shelter from storm and tornado threats. Also, this facility would be a refuge of last resort for refugees from Lafourche and Terrebonne |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | A storm shelter would not only preserve the lives of residents in Assumption Parish but could serve as refuge for neighboring parishes as well in the midst of a disaster. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Thunderstorms, Tornadoes, Tropical Cyclones |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|---|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 2 | Mitigation Outreach and Education |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Hazard Mitigation Grant Program (HMGP) |
| ASSOCIATED GOALS | 4. Increase public support and understanding of hazard mitigation 7. Prepare and plan before a disaster strikes |
| PRIORITY | High |
| Action Description | Enhance the public outreach programs for the parish and all communities by increasing awareness of risks and safety for flooding, sinkholes, thunderstorms (lightning, high wind, hail), tropical cyclones, and winter weather as well as providing information on high-risk areas. Informing communities, business and citizens on proper mitigation efforts and activities will create resiliency within the parish and its communities. |
| Type of Mitigation Action | Education and Awareness Programs |
| How Action Aligns with Risk Reduction | Educating the public on hazard mitigation would increase community support for mitigation projects and safety. It would also encourage parish residents to take emergencies seriously and to follow local guidelines preceding and amid disaster. Communication/understanding between parish officials and residents can be made clear through education prior to disaster events. Educating the local community would foster comprehensive/timely responses to emergency situations. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|---|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 3 | Flood Mitigation of Repetitive Loss Properties and Other Flood Prone Structures |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | HMGP, Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 1. Reduce the impact of future flooding 4. Increase public support and understanding of hazard mitigation 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes 9. Improve floodplain management activities |
| PRIORITY | High |
| Action Description | Elevation, acquisition-demolition, acquisition-relocations, and reconstruction of repetitive loss or flood prone properties. Benefits: Relieves property owners of the continual flooding problems. Saves flood relief and damage repayment for each property. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | Performing structural improvements to reduce flooding in frequently flooded areas will reduce damage, loss and increase public safety. By reconstructing/repurposing frequently flooded structures that were not originally constructed to withstand such events, the parish will be able to prepare and plan quickly for when disaster strikes and reduce damages. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Tropical Cyclones |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|---|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 4 | Generators for Continuity of Operations and Government |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes |
| PRIORITY | High |
| Action Description | Procurement and Installation of generators at public facilities to ensure continued operations during and after events. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By ensuring that public facilities (many of them considered essential) have generators, facilities can provide services needed during any disaster or emergency event thus serving to preserve and protect human life of the local community. |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|---|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 5 | Lightning Mitigation |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Building Resilient Infrastructure and Communities (BRIC) |
| ASSOCIATED GOALS | 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes |
| PRIORITY | Low |
| Action Description | Procurement and Installation of lightning rods and surge protectors for public buildings to preserve life and property. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | Performing structural improvements to reduce the impacts of lightning can reduce power loss during thunderstorms. It will also increase public safety by preserving life and property |
| Current Status of Action | New (Not Started/Carried Over to 2021 Plan) |
| Hazard Addressed | Thunderstorms |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|--|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 6 | Warning Systems |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | FEMA HMGP, Local |
| ASSOCIATED GOALS | 6. Improve the quality and timeliness of public notification 7. Prepare and plan before a disaster strikes 8. Improve existing communication system |
| PRIORITY | Medium |
| Action Description | Update/upgrade public warning system components throughout Webster Parish as necessary. Install audible and/or reverse 911 warning system(s) |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By improving warning systems within the parish, local government can make residents and essential facilities aware of potential hazards in a timely manner and reduce the intensity of the impact. |
| Current Status of Action | New |
| Hazard Addressed | Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|--|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 7 | Install Frangible Pole Connections |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | Parish, HMGP |
| ASSOCIATED GOALS | 5. Protect existing infrastructure 7. Prepare and plan before a disaster strikes |
| PRIORITY | Medium |
| Action Description | Install frangible (break away) pole connections for power line networks to reduce potential for electrical transmission loss. |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | By reducing power loss during a hazard event, the parish can ensure that essential facilities remain operational, and residents remain safe. |
| Current Status of Action | New |
| Hazard Addressed | Tropical Cyclones, Thunderstorms, Tornadoes, Winter Weather |

Additional Supporting Information:

| IMPLEMENTATION KEY FOR POTENTIAL HAZARD MITIGATION ACTIONS VILLAGE OF NAPOLEONVILLE | |
|--|--|
| DESCRIPTION | |
| NAPOLEONVILLE MITIGATION ACTION 8 | Purchase of All Weather Radios |
| LEAD AGENCY | Village of Napoleonville |
| SUPPORTING AGENCIES | Assumption Parish OHSEP |
| TIMELINE | 1-5 years |
| COST ESTIMATE | TBD |
| POSSIBLE FUNDING SOURCE(S) | HMGP, local, regional, and federal |
| ASSOCIATED GOALS | 6. Improve the quality and timeliness of public notification 7. Prepare and plan before a disaster strikes 8. Improve existing communication system |
| PRIORITY | Low |
| Action Description | Purchase all weather radios for public to be used for emergency notification |
| Type of Mitigation Action | Structure and Infrastructure Projects |
| How Action Aligns with Risk Reduction | In the event of power outages/loss of phone services, radios would allow the local government to communicate with residents during a disaster and provide additional warnings, resources, and information. |
| Current Status of Action | New |
| Hazard Addressed | Flooding, Thunderstorms, Tornadoes, Tropical Cyclones, Winter Weather |

Additional Supporting Information:

Action Prioritization

During the prioritization process, the steering committee considered the costs and relative benefits of each new action. Costs can usually be listed in terms of dollars, although at times it involves staff time rather than the purchase of equipment or services that can be readily measured in dollars. In most cases, benefits, such as lives saved or future damage prevented, are hard to measure in dollars. Therefore, many projects were prioritized with these factors in mind. In addition, prioritization of the mitigation actions was performed based on the following economic criteria: i) whether the action can be performed with the existing parish resources; ii) whether the action requires additional funding from external sources; and iii) relative costs of the mitigation actions.

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

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

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

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Appendix A: Planning Process

Purpose

The Hazard Mitigation Plan Update process prompts local jurisdictions to keep their hazard mitigation plan current and moving toward a more resilient community. The plan update builds on the research and planning efforts of previous plans while reviewing recent trends. The steering committee followed FEMA's hazard mitigation planning process per the FEMA Local Mitigation Planning Handbook. This planning process assured public involvement and the participation of interested agencies and private organizations. Documentation of the planning process for the updated plan is addressed in this section.

The Assumption Parish Hazard Mitigation Plan Update

The Assumption Parish Hazard Mitigation Plan Update process began in February 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 |
|-----------------------|---|------------------|----------------|---|
| 2/23/2021 | Kick Off Email | Email | No | Schedule kick off call with Parish OHSEP and SDMI Staff. |
| 3/2/2021 | 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. |
| 3/18/2020 | Steering Committee Meeting (Planning Process) | Zoom VTC | No | Discussion with Assumption Parish Hazard Mitigation Steering Committee the process and expectations of plan participants. Discuss timeline and action items of each jurisdiction and parish. |
| 5/13/2021 | Steering Committee Meeting (Mitigation Actions) | Zoom VTC | No | Discussion with Assumption Parish Hazard Mitigation Steering Committee of the outstanding data required for plan update, as well as discussion of mitigation actions (old and new) for plan update. Continued timeline discussions. |
| 3/2/2021 – 11/19/2021 | Public Opinion Survey | Online | Yes | This survey asked participants about public perceptions and opinions regarding natural hazards in Assumption Parish. In addition, questions covered the methods and techniques preferred for reducing the risks and losses associated with these hazards. Survey Results: https://www.surveymonkey.com/results/SM-MD9L5GYC/ |

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 | Month 11 | |
|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|--|
| Plan Revision | Yellow | | | | | | | | White | | | |
| Data Collection | Yellow | | | | | | White | | | | | |
| Risk Assessment | Yellow | | | | | | | White | | | | |
| Public Input | Yellow | | | | | | | | | White | | |
| Mitigation Strategy | White | | | Yellow | | | | White | | | | |
| Plan Review by GOHSEP and FEMA | White | | | | | | | | | Yellow | White | |
| FEMA APA | White | | | | | | | | | | | |
| Plan Adoptions | White | | | | | | | | | | | |
| Final Plan Approval | White | | | | | | | | | | | |

Coordination

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

The Parish Director was responsible for inviting the steering committee and key stakeholders to planned meetings and activities via phone call and/or email. SDMI assisted the Parish Director with press releases and social media statements for notification to the media and general public for public meetings and public outreach activities.

SDMI was responsible for facilitating all meetings and outreach efforts during the update process.

Neighboring Community, Local and Regional Planning Process Involvement

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

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

- Participation in Hazard Mitigation planning meetings at the local and parish level
- Sharing local data and information with jurisdictions
- Incorporation of other planning documents, studies and efforts
- Action item development and action progress from 2015 update
- Risk Assessment review
- Plan document draft review
- Formal adoption of the Hazard Mitigation Plan

The Lafourche Parish OHSEP Director was invited to attend the Kick Off and Initial Planning Meetings for Assumption Parish in an effort to coordinate mitigation efforts where possible as neighboring communities. The Lafourche OHSEP Director was invited via email and phone call to participate in an effort to collaborate with neighboring communities. SDMI assisted Assumption Parish with encouraging the collaboration with these neighboring communities via email by extending an invitation to the Assumption 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:

| Assumption Parish Hazard Mitigation Planning Committee | | | |
|--|--------------------|-------------------------------|--|
| Name | Title | Agency | Email |
| John Boudreaux | OEP Director | Assumption Parish OHSEP | johnboudreaux@assumptionoep.com |
| Anne Blanchard | Assistant Director | Assumption Parish OHSEP | anneblanchard@assumptionoep.com |
| Ron Animashaun | Mayor | Village of Napoleonville | animashaunron@gmail.com |
| Patrick Johnson | President | Assumption Parish Police Jury | pi582021@gmail.com |

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 Assumption Parish programs and planning.

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

Assumption 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 Assumption 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.

- Parish Emergency Operations Plan
- Assumption Parish Drainage and Flood Mitigation Master Plan
- Flood Insurance Rate Maps
- State of Louisiana Hazard Mitigation Plan

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

Meeting Documentation and Public Outreach Activities

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

Meeting #1: Hazard Mitigation Plan Update Kick-Off

Date: March 2, 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:

| Assumption Parish Hazard Mitigation Planning Committee | | | |
|--|--------------------|-------------------------|--|
| Name | Title | Agency | Email |
| John Boudreaux | OEP Director | Assumption Parish OHSEP | johnboudreaux@assumptionoep.com |
| Anne Blanchard | Assistant Director | Assumption Parish OHSEP | anneblanchard@assumptionoep.com |
| Lauren Morgan | Associate Director | LSU-SDMI | lstevens@lsu.edu |
| Chris Rippetoe | Program Manager | LSU-SDMI | crippe2@lsu.edu |

Meeting #2: Hazard Mitigation Plan Steering Committee Meeting – Planning Process**Date:** March 18, 2021**Location:** Zoom Video Teleconference**Purpose:** Discuss the expectations and requirements of the hazard mitigation plan update process and establish an initial project timeline with the Parish's Hazard Mitigation Plan Steering Committee. Assign each individual tasks related to the parish data collection for the plan update.**Public Invitation:** No**Meeting Invitees:**

| Assumption Parish Hazard Mitigation Planning Committee | | | |
|--|--------------------|-------------------------------|--|
| Name | Title | Agency | Email |
| John Boudreaux | OEP Director | Assumption Parish OHSEP | johnboudreaux@assumptionoep.com |
| Anne Blanchard | Assistant Director | Assumption Parish OHSEP | anneblanchard@assumptionoep.com |
| Ron Animashaun | Mayor | Village of Napoleonville | animashaunron@gmail.com |
| Patrick Johnson | President | Assumption Parish Police Jury | pj582021@gmail.com |

Meeting #3: Hazard Mitigation Plan Steering Committee Meeting – Mitigation Actions**Date:** May 13, 2021**Location:** Zoom Video Teleconference**Purpose:** Discussion with Assumption Parish Hazard Mitigation Steering Committee of the outstanding data required for plan update, as well as discussion of mitigation actions (old and new) for plan update. Continued timeline discussions.**Public Invitation:** No**Meeting Invitees:**

| Assumption Parish Hazard Mitigation Planning Committee | | | |
|--|--------------------|-------------------------------|--|
| Name | Title | Agency | Email |
| John Boudreaux | OEP Director | Assumption Parish OHSEP | johnboudreaux@assumptionoep.com |
| Anne Blanchard | Assistant Director | Assumption Parish OHSEP | anneblanchard@assumptionoep.com |
| Ron Animashaun | Mayor | Village of Napoleonville | animashaunron@gmail.com |
| Patrick Johnson | President | Assumption Parish Police Jury | pj582021@gmail.com |

Meeting #4: Public Meeting – Unable to Conduct Due to Hurricane Ida Response and Recovery

Throughout the process, the public opinion survey was open for response and advertised. Unfortunately, on August 29th, deadly and destructive Hurricane Ida made landfall in Grand Isle, LA. The impacts throughout southeast Louisiana, specifically Assumption Parish, were catastrophic. As Ida lashed Assumption, she retained Category 4 winds for four hours following landfall, and then Category 3 status for the next four hours. Impacts included extensive long-term power outages, destroyed homes, businesses and government buildings. Over 100 structures sustained major damage or were destroyed, and over 3,500 structures sustained minor damage (mainly roof damage). Due to the damage to infrastructure and emotional and physical toll on the parish government and citizens, it was not feasible or possibly to hold a public meeting. The recovery efforts continue to be full time efforts for all agencies within the parish, as they move toward rebuilding and utilizing the strategies within this plan to mitigate against future hazards. The public survey will remain open as an ongoing tool for the parish to gauge citizen preparedness and concerns. The parish will provide outreach as part of their preparedness programs to educate citizens on the plan over the next 5 years.

Outreach Activity #1: Public Opinion Survey

Date: Ongoing throughout planning process

Location: Web survey

Public Invitation: Yes

As referenced in the *Mitigation Strategy* section of this document, an online public opinion survey of Livingston Parish residents was conducted between March and November 2021. The survey was designed to capture public perceptions and opinions regarding natural hazards in Assumption 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 November 19, 2021, there has been one response to the Assumption Parish Hazard Mitigation Public Opinion Survey. Full survey results can be found here: <https://www.surveymonkey.com/results/SM-MD9L5GYC/>

Outreach Activity #2: 2021 Assumption Parish Hazard Mitigation Plan Public Review

Date: Ongoing

Location: SDMI Hazard Mitigation Website

Public Initiation: Yes

After an initial review by the Assumption Parish Planning Committee was completed, the 2021 Assumption Parish Hazard Mitigation Plan was made available for public review and comment. The plan was hosted on SDMI's Hazard Mitigation website at the following URL:

<https://hmplans.sdmi.lsu.edu/Home/Parish/assumption>

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 Assumption 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. 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

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

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

Methods for Monitoring and Evaluating the Plan and Plan Evaluation Criteria

Assumption Parish has developed a method to ensure monitoring, evaluating, and updating of the HMP occurs during the five-year cycle of the plan. The steering committee will become a permanent body and will be responsible for monitoring, evaluating, and updating of the plan. The steering committee meeting will be held annually in order to monitor, evaluate, and update the plan. The Assumption 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 Assumption Parish's dedication to involving the public directly in review and updates of the Hazard Mitigation Plan. Meetings will be scheduled as needed by the plan administrator to provide a forum for which the public can express their concerns, opinions, and/or ideas about the plan. The plan administrator will be responsible for using parish resources to publicize the annual public meetings and maintain public involvement through the newspapers, radio, and public access television channels. Copies of the plan will be catalogued and kept at all appropriate agencies in the city government, as well as at the Assumption Parish website.

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

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

2021 Plan Version Plan Method and Schedule Evaluation

For the current plan update, the previously approved plan's method and schedule were evaluated to determine if the elements and processes involved in the required 2021 update. Based on this analysis, the method and schedule were deemed to be acceptable, and nothing was changed for this update.

Incorporation into Existing Planning Programs

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

- Ordinances, Resolutions, Regulations
- Floodplain Ordinances
- Comprehensive/Master Plans
- Economic Development Plans
- Local Emergency Operations Plans
- Continuity of 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 Assumption 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 Assumption 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 Assumption Parish Hazard Mitigation Plan into other planning documents when appropriate.

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

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

On behalf of the Village of Napoleonville, Assumption Parish has the authority to incorporate the contents of the Hazard Mitigation Plan into the parish’s existing regulatory mechanisms. Agreements are currently in place with jurisdictions to allow for the parish incorporation mechanisms to take place.

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

Assumption Parish

| | | | |
|--|-------------------|-------------------------------|---|
| <i>Comprehensive Master Plan</i> | Updated as needed | Assumption Parish Police Jury | ✓ |
| <i>Continuity of Operations Plan</i> | Updated as needed | Assumption Parish OHSEP | ✓ |
| <i>Local Emergency Operations Plan</i> | Updated as needed | Assumption Parish OHSEP | ✓ |
| <i>Economic Development Plan</i> | Updated as needed | Assumption Parish Police Jury | ✓ |

Village of Napoleonville

| | | | |
|--|-------------------|---|---|
| <i>Local Emergency Operations Plan</i> | Updated as needed | Assumption Parish OHSEP and Assumption Mayor’s Office | ✓ |
|--|-------------------|---|---|

Continued Public Participation

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

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

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Appendix C: Critical Facilities

Critical Facilities within the Assumption Parish Planning Area

| Assumption Parish Planning Area Critical Facilities | | | | | | | |
|---|---|----------|-----------|---------------|-----------|-------------------|----------------|
| Type | Name | Flooding | Sinkholes | Thunderstorms | Tornadoes | Tropical Cyclones | Winter Weather |
| Government | Assumption Parish Courthouse | | | X | X | X | X |
| | Assumption Parish Police Jury | | | X | X | X | X |
| | Assumption Parish OHSEP | | | X | X | X | X |
| | Assumption Parish Office of Public Works | | | X | X | X | X |
| | Napoleonville Municipal Building | | | X | X | X | X |
| | Napoleonville Parish Community Center | | | X | X | X | X |
| Fire & SAR | Napoleonville Volunteer Fire Department | | | X | X | X | X |
| | Paincourtville/Belle Rose Fire Department | | | X | X | X | X |
| | Paincourtville Volunteer Fire Department | | | X | X | X | X |
| | Pierre Part Volunteer Fire Department Station 1 | | | X | X | X | X |
| | Pierre Part Volunteer Fire Department Station 2 | | | X | X | X | X |
| | Pierre Part Volunteer Fire Department Station 3 | X | | X | X | X | X |
| | Bayou L'Ourse Fire Department | X | | X | X | X | X |
| | Labadieville Volunteer Fire Department | | | X | X | X | X |
| Law Enforcement | Assumption Parish Sheriff's Office | | | X | X | X | X |
| | Assumption Parish Sheriff's Office - Pierre Part Substation | X | | X | X | X | X |
| | Assumption Parish Sheriff's Office - Bayou L'Ourse Substation | X | | X | X | X | X |
| | Assumption Parish Detention Center | | | X | X | X | X |
| | Napoleonville Police Department | | | X | X | X | X |
| Public Health | Assumption Community Hospital | | | X | X | X | X |
| | Assumption Parish Health Unit | | | X | X | X | X |

| Type | Name | Flooding | Sinkholes | Thunderstorms | Tornadoes | Tropical Cyclones | Winter Weather |
|---------|-------------------------------|----------|-----------|---------------|-----------|-------------------|----------------|
| Schools | Belle Rose Primary School | | | X | X | X | X |
| | Labadieville Primary School | | | X | X | X | X |
| | Napoleonville Primary School | | | x | x | x | x |
| | Bayou L'Ourse Primary School | X | | X | X | X | X |
| | Pierre Part Elementary School | | | X | X | X | X |
| | Belle Rose Middle School | | | X | X | X | X |
| | Labadieville Middle School | | | X | X | X | X |
| | Napoleonville Middle School | | | X | X | X | X |
| | Assumption High School | | | X | X | X | X |

Appendix D: Plan Adoption

WILL UPDATE ONCE JURISDICTIONS FORMALLY ADOPT HMP AFTER FEMA REVIEW

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Appendix E: State Required Worksheets

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

Mitigation Planning Team

| Assumption Parish Hazard Mitigation Planning Committee | | | |
|--|--------------------|-------------------------------|--|
| Name | Title | Agency | Email |
| John Boudreaux | OEP Director | Assumption Parish OHSEP | johnboudreaux@assumptionoep.com |
| Anne Blanchard | Assistant Director | Assumption Parish OHSEP | anneblanchard@assumptionoep.com |
| Ron Animashaun | Mayor | Village of Napoleonville | animashaunron@gmail.com |
| Patrick Johnson | President | Assumption Parish Police Jury | pj582021@gmail.com |

Capability Assessment
Unincorporated Assumption Parish

| Capability Assessment Worksheet – Unincorporated Assumption Parish | | |
|--|----------|----------|
| Local mitigation capabilities are existing authorities, polices and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. | | |
| Planning and Regulatory | | |
| Please indicate which of the following plans and regulatory capabilities your jurisdiction has in place. | | |
| Plans | Yes / No | Comments |
| Comprehensive / Master Plan | Yes | n/a |
| Capital Improvements Plan | No | n/a |
| Economic Development Plan | Yes | n/a |
| Local Emergency Operations Plan | Yes | n/a |
| Continuity of Operations Plan | Yes | 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 |
| Building Code, Permitting and Inspections | Yes / No | Comments |
| Building Code | Yes | SCPDC |
| Building Code Effectiveness Grading Schedule (BCEGS) Score | No | n/a |
| Fire Department ISO/PIAL rating | Yes | n/a |
| Site plan review requirements | Yes | SCPDC |
| Land Use Planning and Ordinances | Yes / No | Comments |
| Zoning Ordinance | No | n/a |
| Subdivision Ordinance | Yes | OHSEP |
| Floodplain Ordinance | Yes | OHSEP |
| Natural Hazard Specific Ordinance (stormwater, steep slope, wildfire) | No | n/a |
| Flood Insurance Rate Maps | Yes | OHSEP |
| 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 | No | n/a |
| Mitigation Planning Committee | Yes | LEPC |
| Maintenance programs to reduce risk (tree trimming, clearing drainage systems) | Yes | n/a |
| Staff | Yes / No | Comments |
| Chief Building Official | Yes | Contract with South Central Planning to enforce |
| Floodplain Administrator | Yes | OHSEP |
| Emergency Manager | Yes | OHSEP |
| Community Planner | Yes | OHSEP |
| Civil Engineer | Yes | Contract with C.J. Savole Consulting Engineers |
| GIS Coordinator | Yes | Minimal GIS |
| Grant Writer | Yes | Position is being filled |
| Other | No | n/a |
| Technical | Yes / No | Comments |
| Warning Systems / Service (Reverse 911, outdoor warning signals) | Yes | CivicSource |
| Hazard Data & Information | No | n/a |
| Grant Writing | Yes | Position is being filled |
| 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 | Yes | n/a |
| Authority to levy taxes for specific purposes | Yes | n/a |
| Fees for water, sewer, gas, or electric services | Yes | n/a |
| Impact fees for new development | Yes | n/a |
| Stormwater Utility Fee | No | n/a |
| Community Development Block Grant (CDBG) | Yes | n/a |
| Other Funding Programs | Yes | n/a |

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

Village of Napoleonville

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

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

| Financial | | |
|---|----------|--|
| Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation. | | |
| Funding Resource | Yes / No | Comments |
| Capital Improvements project funding | Yes | *Based on current parish agreements, Napoleonville has the ability to utilize the capabilities of the parish government. |
| Authority to levy taxes for specific purposes | Yes | |
| Fees for water, sewer, gas, or electric services | Yes | |
| Impact fees for new development | No | |
| Stormwater Utility Fee | No | |
| Community Development Block Grant (CDBG) | Yes | |
| Other Funding Programs | Yes | |

| Education and Outreach | | |
|--|----------|--|
| Identify education and outreach programs and methods, already in place that could be used to implement mitigation activities and communicate hazard-related information. | | |
| Program / Organization | Yes / No | Comments |
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | No | *Based on current parish agreements, Napoleonville has the ability to utilize the capabilities of the parish government. |
| Ongoing public education or information program (responsible water use, fire safety, household preparedness, environmental education) | No | |
| Natural Disaster or safety related school program | No | |
| Storm Ready certification | No | |
| Firewise Communities certification | No | |
| Public/Private partnership initiatives addressing disaster-related issues | No | |
| Other | No | |

Building Inventory

| Assumption Parish and Jurisdiction Owned Building Information | | | | | | | | |
|---|---|----------------------------------|----------------|----------------|-----------------|----------------|------------|-------------------|
| Assumption Unincorporated | | | | | | | | |
| Name of Building | Purpose of Building | Address | City | Latitude | Longitude | Assessed Value | Date Built | Construction Type |
| Assumption Parish Sheriff's Office | Offices for the Assumption Parish Sheriff's | 112 Franklin Street | Napoleonville | 29°56'26.53"N | -91°01'28.38"W | 2.5M | 1969 | Brick Veneer |
| Assumption Parish Sheriff's Office - Pierre Part Substation | Law Enforcement | 4024 Hwy 70 S | Pierre Part | 29°56'14.1"N | -91°12'47.19"W | | | |
| Assumption Parish Sheriff's Office - Bayou L'Ourse Substation | Law Enforcement | 1214 Hwy 662 | Bayou L'Ourse | 29°43'13.96"N | -91°03'54.97"W | | | |
| Assumption Parish OHSEP | Offices for the Assumption Parish OHSEP | 105 Dr. Martin Luther King Drive | Napoleonville | 29°56'29.57"N | -91°01'29.24"W | 2M | 1860 | Brick |
| Assumption Parish Police Jury | Administrative Offices for Police Jury | 4813 Hwy. 1 | Napoleonville | 29°56'29.73"N | -91°01'28.47"W | 3M | 2014 | Stucco Clad |
| Assumption Parish Court House | Courtroom, Assessor's office, Clerk of Court Office and D. A. Offices | 4809 Hwy. 1 | Napoleonville | 29°56'28.62"N | -91°01'28.25"W | 10M | 1896 | Brick |
| Assumption Parish School Board | School Administration | 4880 Hwy 308 | Napoleonville | 29°56'248.44"N | -91°01'42.55"W | 2M | 1990 | Brick Veneer |
| Assumption Parish Detention Center | Detention Center and Offices | 108 Parish Complex Road | Napoleonville | 29°56'09.47"N | -91°02'00.57"W | 5M | 1986 | Brick |
| Assumption Community Hospital | Hospital and Administrative Offices | 135 Hwy. 402 | Napoleonville | 29°57'23.41"N | -91°02'01.71"W | 10M | 1969 | Brick Veneer |
| Napoleonville Volunteer Fire Department | Volunteer Fire Station | 213 Franklin Street | Napoleonville | 29°56'24.02"N | -91°01'29.20"W | 1M | 1990 | Metal |
| Paincourtville/Belle Rose Fire Department | Volunteer Fire Station | 6074 LA Hwy. 1 | Paincourtville | 29°59'40.18"N | -91°03'22.22"W | 2M | 2005 | Brick Veneer |
| Paincourtville Volunteer Fire Department | Volunteer Fire Station | 7112 Hwy 1 | Belle Rose | 30°3'4.5662"N | -91°02'26.64"W | | | Metal |
| Pierre Part Volunteer Fire Department Station 1 | Volunteer Fire Station | 2552 Lee Dr. | Pierre Part | 29°59'23.28"N | -91°11'46.32"W | | | Brick Veneer |
| Pierre Part Volunteer Fire Department Station 2 | Volunteer Fire Station | 3343 Hwy 70 | Pierre Part | 29°57'33.29"N | -91°12'44.50"W | 1.5M | 2001 | Metal |
| Pierre Part Volunteer Fire Department Station 3 | Volunteer Fire Station | Shell Beach Rd | Pierre Part | 29°55'13.98"N | 91°12'50.3532"W | | | |
| Bayou L'Ourse Fire Department | Volunteer Fire Station | 333 Hwy 663 | Morgan City | 29°43'13.63"N | -91°04'23.23"W | 1M | 1980 | Metal |
| Labadieville Volunteer Fire Department | Volunteer Fire Station | 2709 LA Hwy. 1 | Labadieville | 29°50'24.09"N | -90°57'18.90"W | 1M | 1980 | Metal |

| | | | | | | | | |
|--|---|---------------|----------------|---------------|----------------|----|------|--------------|
| Assumption Parish Road & Bridge Office | Public Works Department - Offices and Parish Yard | 141 Hwy. 1008 | Napoleonville | 29°56'26.30"N | -91°01'40.57"W | 2M | 1981 | Brick Veneer |
| Assumption Parish Waterworks | Water Plant and Administrative Offices | 4633 Hwy. 1 | Napoleonville | 29°56'04.45"N | -91°00'59.44"W | 5M | 1968 | Brick Veneer |
| Belle Rose Primary School | Education | 7100 Hwy 308 | Donaldsonville | 30°02'56.42"N | -91°00'59.44"W | | | |
| Labadieville Primary School | Education | 3045 Hwy 1 | Labadieville | 29°50'29.35"N | -90°57'28.47"W | | | |
| Napoleonville Primary School | Education | 185 Hwy 1008 | Napoleonville | 29°56'19.03"N | -91°01'51.51"W | | | |
| Bayou L'Ourse Primary School | Education | 1397 Hwy 662 | Morgan City | 29°42'46.86"N | -91°04'38.58"W | | | |
| Pierre Part Elementary School | Education | 3321 Hwy 70 | Pierre Part | 29°57'38.75"N | -91°12'43.62"W | | | |
| Belle Rose Middle School | Education | 7177 Hwy 1 | Belle Rose | 30°03'18.68"N | -91°02'18.27"W | 5M | 1941 | Masonry |
| Labadieville Middle School | Education | 2747 Hwy 1 | Labadieville | 29°50'29.37"N | -90°57'28.77"W | | | |
| Napoleonville Middle School | Education | 4847 Hwy 1 | Napoleonville | 29°56'35.69"N | -91°01'36.48"W | 5M | 1941 | Masonry |
| Assumption High School | Education | 4880 Hwy 308 | Napoleonville | 29°56'47.67"N | -91°01'36.59"W | | | |

| Village of Napoleonville | | | | | | | | |
|----------------------------------|-----------------------------|-------------------|---------------|---------------|----------------|----------------|------------|-------------------|
| Name of Building | Purpose of Building | Address | City | Latitude | Longitude | Assessed Value | Date Built | Construction Type |
| Napoleonville Community Center | Community Building | 4770 Highway 1 | Napoleonville | 29°56'26.27"N | -91°01'22.15"W | 1.5M | 1975 | Brick Veneer |
| Veteran's Affair Office | Veteran's Affair Department | 4751 Highway 1 | Napoleonville | 29°56'21.69"N | -91°01'19.25"W | n/a | n/a | n/a |
| Napoleonville Municipal Building | File Storage | 123 Washington St | Napoleonville | 29°56'22.32"N | -91°01'23.85"W | n/a | n/a | n/a |

Vulnerable Populations

| Vulnerable Populations Worksheet | | | | | |
|-----------------------------------|---|---------------|----------|---------------|----------------|
| Assumption Parish Planning Area | | | | | |
| All Hospitals (Private or Public) | Address | City | Zip Code | Latitude | Longitude |
| Assumption Community Hospital | 135 Hwy. 402 | Napoleonville | 70390 | 29°57'23.41"N | -91°02'01.71"W |
| Nursing Homes (Private or Public) | Address | City | Zip Code | Latitude | Longitude |
| Heritage Manor of Napoleonville | 252 Hwy 402 | Napoleonville | 70390 | 29°57'34.66"N | -91°02'20.75"W |
| Mobile Home Parks | Address | City | Zip Code | Latitude | Longitude |
| Crochet's Trailer Park | Reno Street | Pierre Part | 70339 | 29°57'54.20"N | -91°12'28.04"W |
| Jerry Landry's Trailer Park | Derrick Street | Pierre Part | 70339 | 30°00'06.37"N | -91°11'51.86"W |
| Theriot's Trailer Park | 3203 Hwy. 70S | Pierre Part | 70339 | 29°57'53.65"N | -91°12'22.58"W |
| Crochet's Trailer Park | 3203 Hwy. 70S | Pierre Part | 70339 | 29°57'53.65"N | -91°12'22.58"W |
| Nicesse Templet Trailer Park | Tut Street | Pierre Part | 70339 | 29°57'53.65"N | -91°12'22.58"W |
| C&C Trailer Park | Sugar Cane Lane | Pierre Part | 70339 | 29°59'07.19"N | -91°11'41.68"W |
| Gerald Theriot's Mobile Home Park | Gerald Street | Pierre Part | 70339 | 29°56'35.38"N | -91°13'13.01"W |
| J&J Properties | Jerome Ct. | Labadieville | 70372 | 29°51'43.48"N | -90°59'05.11"W |
| Pelican Park Mobile Home Park | Hwy. 663, Jamie Ct., Rayne Ct., Griffin Ct. | Bayou L'Ourse | 70380 | 29°43'10.62"N | -91°04'40.83"W |
| Country Side Trailer Park | 313 Aristle Road | Bayou L'Ourse | 70380 | 29°43'21.28"N | -91°02'42.93"W |
| Moffett's Trailer Park | Hwy. 398, Moffette Ct.&Fernandez Ct. | Bayou L'Ourse | 70380 | 29°43'32.50"N | -91°03'18.93"W |
| B & L Trailer Park | B&L Street | Bertrandville | 70391 | 29°59'04.26"N | -91°01'19.24"W |

National Flood Insurance Program (NFIP)

| National Flood Insurance Program (NFIP) | | |
|---|---------------------------------|---------------------------|
| | Assumption Parish | Village of Napoleonville |
| Insurance Summary | | |
| How many NFIP policies are in the community? What is the total premium and coverage? | 1,195; \$634,738; \$252,229,800 | 7, \$638,113; \$1,385,000 |
| 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? | 456; \$3,345,371 | 1; \$3,612 |
| How many structures are exposed to flood risk with in the community? | Unknown | Unknown |
| Describe any areas of flood risk with limited NFIP policy coverage. | Unknown | Unknown |
| Staff Resources | | |
| Is the Community FPA or NFIP Coordinator certified? | No | No |
| Is flood plain management an auxiliary function? | Yes | Yes |
| Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability) | Minimal | Permit |
| What are the barriers to running an effective NFIP program in the community, if any? | Lack of funds | Lack of funds |
| Compliance History | | |
| Is the community in good standing with the NFIP? | Yes | Yes |
| Are there any outstanding compliance issues(i.e., current violations)? | No | No |
| When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact(CAC)? | Unknown | Unknown |
| Is a CAV or CAC scheduled or needed? If so when? | No | No |
| Regulation | | |
| When did the community enter the NFIP? | Mid 80's | 6/7/1905 |
| Are the FIRMs digital or paper? | Both | Both |
| Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways? | Meet | Meet |
| Community Rating System (CRS) | | |
| Does the community participate in CRS? | No | No |
| What is the community's CRS Class Ranking? | N/A | N/A |
| Does the plan include CRS planning requirements? | N/A | N/A |

Appendix F: Assumption Parish Drainage & Flood Mitigation Master Plan